

# GENERAL CATALOGUE W4

Volume 1



## **Rail-Mounted Terminal Block Systems**

Rail-Mounted Terminal Blocks

X-COM<sup>®</sup>-SYSTEM

Terminal Strips

Patchboard Systems

Shield (Screen)

Connecting System

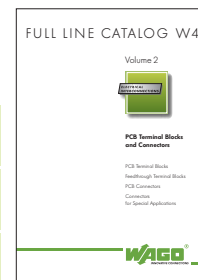
**WAGO** CAGE CLAMP topJob X-COM CC-Matic ProServe TOPLON

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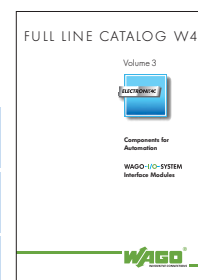
<b>1</b>	<b>PCB terminal blocks</b>		
<b>2</b>	<b>Pluggable PCB connectors</b>		
<b>3</b>	<b>Feedthrough terminal blocks</b>		
<b>4</b>	<b>PCB connectors</b>	<b>Pin spacing</b>	<b>Cross section</b>
<b>5</b>	<i>MULTI CONNECTION SYSTEM MICRO</i> <b>100% protected against mismatching</b>	2.5 mm/0.098 in	0.08 mm <sup>2</sup> - 0.5 mm <sup>2</sup> /AWG 28 - 20
<b>6</b>	<i>MULTI CONNECTION SYSTEM MINI</i> <b>100% protected against mismatching</b>	3.5+3.81 mm/0.138+0.15 in	0.08 mm <sup>2</sup> - 1.5 mm <sup>2</sup> /AWG 28 - 14
<b>7</b>	<i>MULTI CONNECTION SYSTEM MIDI</i> <b>100% protected against mismatching</b>	5 / 7.5 mm/0.197+0.295 in	0.08 mm <sup>2</sup> - 2.5 mm <sup>2</sup> /AWG 28 - 12
<b>7</b>	<i>MULTI CONNECTION SYSTEM MIDI</i> <b>Standard design</b>	5 / 5.08 mm/0.197+0.2 in 7.5 / 7.62 mm/0.295+0.3 in	0.08 mm <sup>2</sup> - 2.5 mm <sup>2</sup> /AWG 28 - 12 0.08 mm <sup>2</sup> - 2.5 mm <sup>2</sup> /AWG 28 - 12
<b>8</b>	<b>X-COM<sup>®</sup> connectors</b> for PCBs	5 mm/0.197 in	0.08 mm <sup>2</sup> - 4 mm <sup>2</sup> / AWG 28 - 12
<b>9</b>	<b>WINSTA connectors</b> for PCBs	10 mm/0.394 in	2 x 0.5 mm <sup>2</sup> - 4 mm <sup>2</sup> / AWG 20 - 12
<b>10</b>	<b>Connectors for special applications</b>		
<b>11</b>	<b>Accessories</b>	<b>Marking material</b> <b>Tools</b>	
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VOLUME 2

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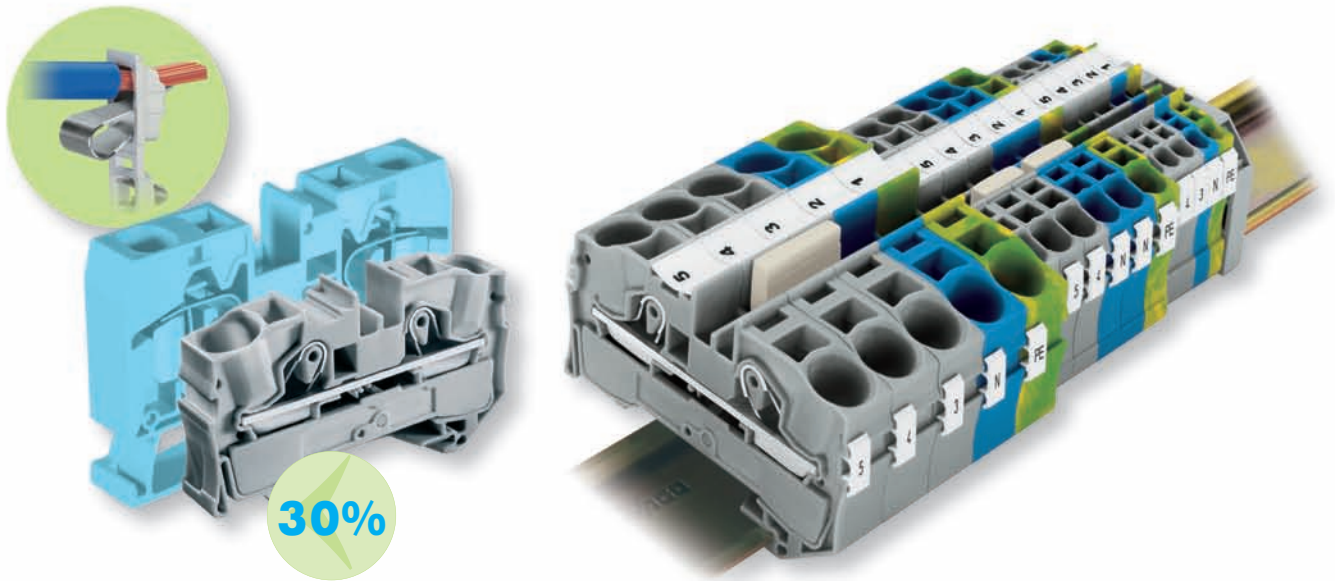
<b>1</b>	<b>WAGO-I/O-SYSTEM</b>	<b>Modular system</b>	<b>Series 750</b>
<b>2</b>	<b>WAGO-I/O-SYSTEM</b>	<b>Compact system</b>	<b>Series 752</b>
<b>3</b>	<b>WAGO-I/O-SYSTEM</b>	<b>Modules for severe conditions</b>	<b>Series 755</b>
<b>4</b>	<b>WAGO-I/O-SYSTEM</b>	<b>Industrial compact PC</b>	<b>Series 758</b>
<b>5</b>	<b>Service and programming software/WAGO TOPLON<sup>®</sup> software for building automation</b>		<b>Series 759</b>
<b>6</b>	<b>Interface modules</b>		
<b>7</b>	<b>Overvoltage protection</b>		
<b>8</b>	<b>Power supplies</b>		
<b>9</b>	<b>Empty housings</b>		
<b>10</b>	<b>Accessories, shield (screen) connection system</b>		
<b>11</b>	<b>Technical section</b>		



VOLUME 3

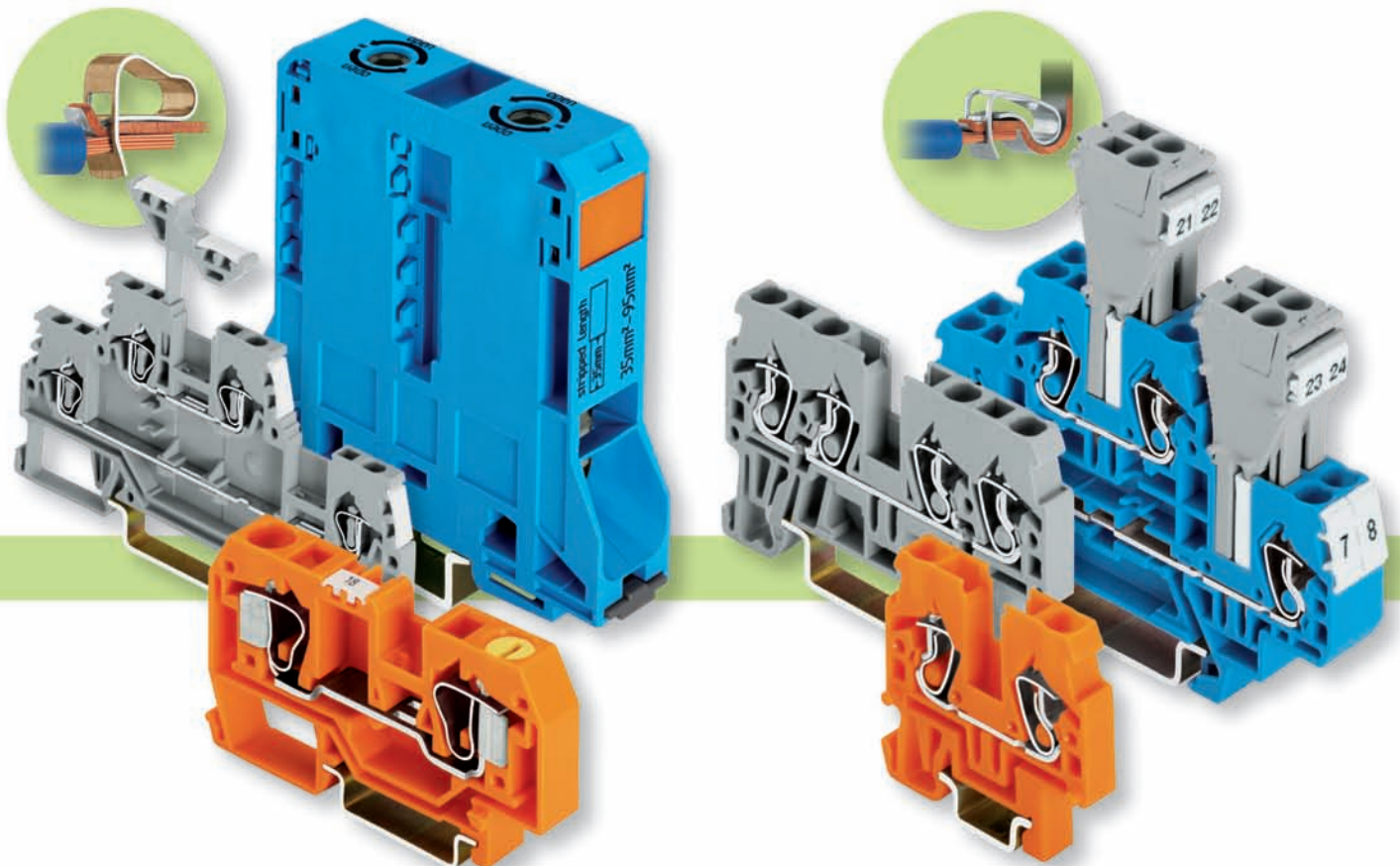
<b>1</b>	<b>TOPJOB<sup>®</sup>S</b> Rail-mounted terminal blocks with CAGE CLAMP <sup>®</sup> S connection	Through terminal blocks Ground (earth) conductor terminal blocks	 terminal blocks	<b>1</b>
<b>2</b>	<b>Front-entry</b> Rail-mounted terminal blocks	Through terminal blocks Ground (earth) conductor Double deck terminal blocks Triple deck terminal blocks	 terminal blocks Distribution terminal blocks Shield (screen) terminal blocks Term. bl. for electric motor wiring	<b>2</b>
<b>3</b>	<b>COMPACT</b> Rail-mounted terminal blocks	Through terminal blocks Ground (earth) conductor Double deck terminal blocks Triple deck terminal blocks	 terminal blocks	<b>3</b>
<b>4</b>	<b>MINI</b> Rail-mounted terminal blocks	Through terminal blocks Ground (earth) conductor	 terminal blocks	<b>4</b>
<b>5</b>	<b>topJob<sup>®</sup></b> rail mounted terminal blocks	see Full Line Catalog W4 Volume 1 – German version		<b>5</b>
<b>6</b>	Rail-mounted terminal blocks with side-entry	Through terminal blocks Ground (earth) conductor		<b>6</b>
<b>7</b>	Function terminal blocks	Disconnect terminal blocks Disconnect terminal blocks for test and measurement Fused disconnect term. blocks	Sensor/actuator terminal blocks Diode/LED terminal blocks Terminal blocks with surge suppression	<b>7</b>
<b>8</b>	<b>FIT CLAMP</b> Rail-mounted terminal blocks with IDC connection	Through terminal blocks Ground (earth) conductor		<b>8</b>
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# Innovations from the Leader of Spring



TOPJOB<sup>®</sup> S RAIL-MOUNTED TERMINAL BLOCKS

CAGE CLAMP<sup>®</sup> RAIL-MOUNTED TERMINAL BLOCKS





# Clamp Termination Technology

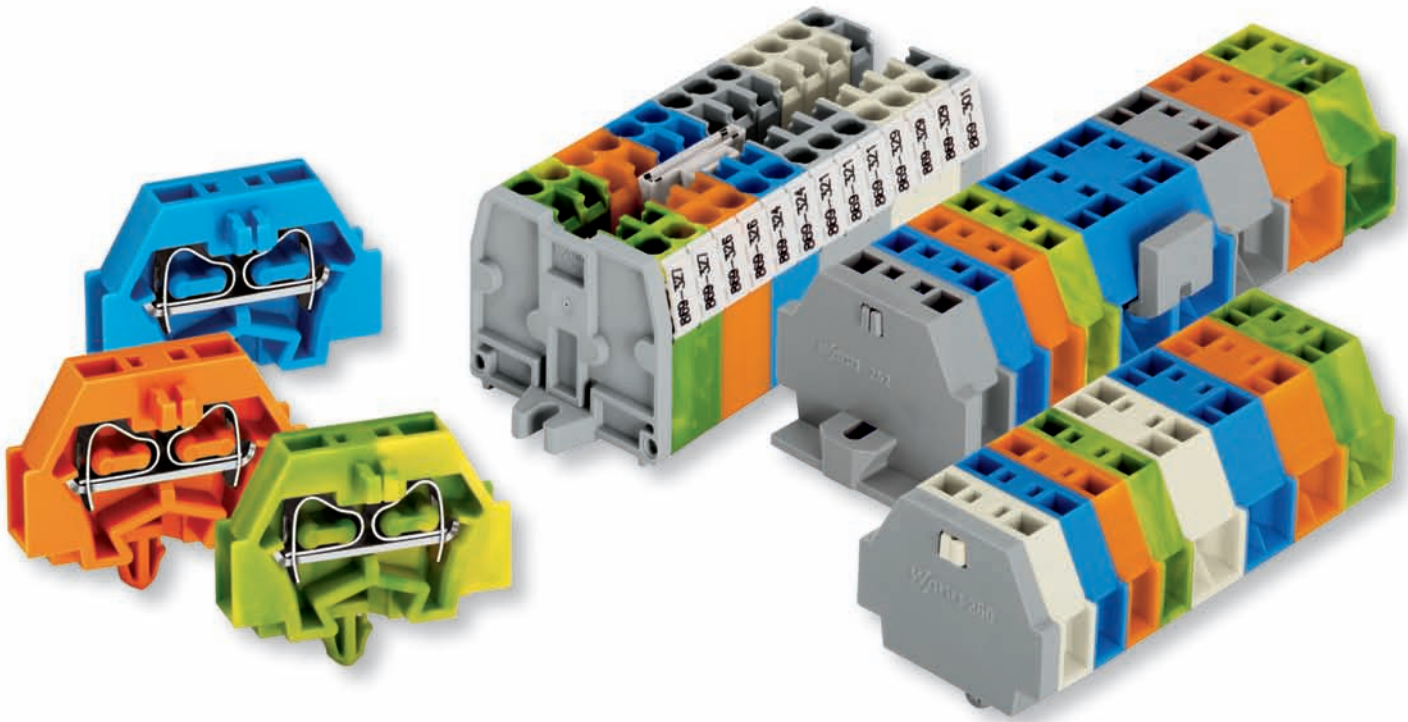


*FUNCTION TERMINAL BLOCKS*

*FIT CLAMP RAIL-MOUNTED TERMINAL BLOCKS*

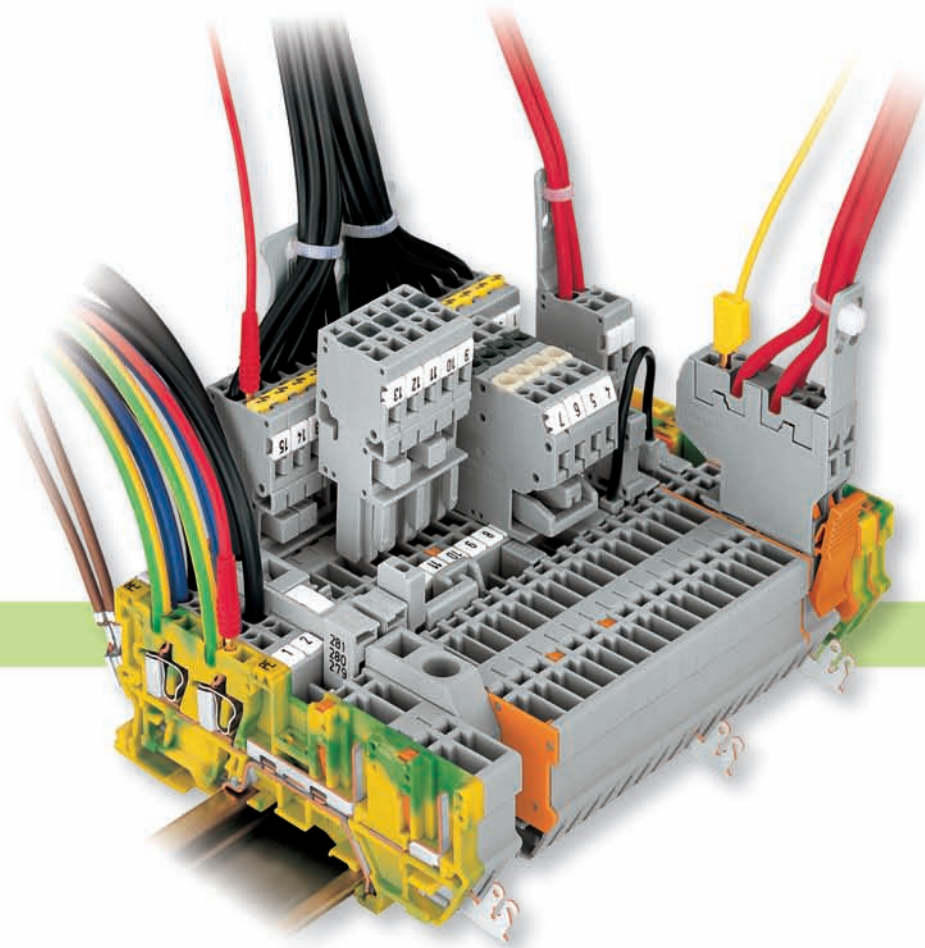


# Innovations from the Leader of Spring



*MODULAR TERMINAL BLOCKS/TERMINAL STRIPS*

*X-COM<sup>®</sup>-SYSTEM*



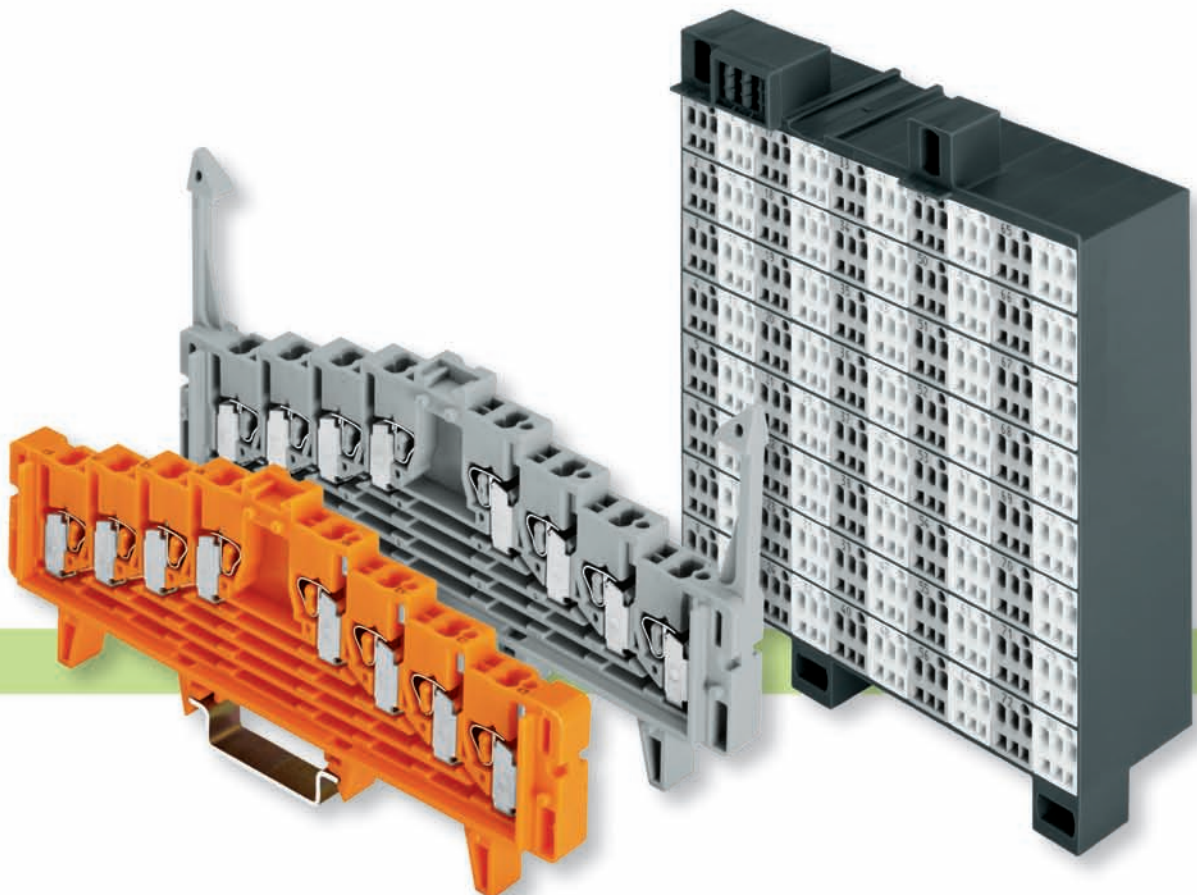


# Clamp Termination Technology



*SHIELD (SCREEN) CONNECTING SYSTEM*

*PATCHBOARD SYSTEMS*



Series	279	2001	290	270	280	264	2002	870	880	281
Characteristic	Standard	TOJOB <sup>®</sup> S	FIT CLAMP	Sensor/actuator	Standard	Miniature term. bl.	TOJOB <sup>®</sup> S	Compact	Slim Line	Standard
Cross section (mm <sup>2</sup> )	max. 1.5   min. 0.08	1.5   0.25	1 "s"   1.5 "f-st" 0.31 0.34	2.5   0.08	2.5   0.08	2.5   0.08	2.5   0.25	4   0.08	4   0.08	4   0.08
Nominal current (ampere)	18	18	13.5	18	24	24	24	24	25	32
Overall width (mm)	4	4.2	5	5	5	6	5.2	5	5	6
Test slot (Ø mm)									2	
Comment			FIT specifications							
	<b>Page</b>									
2-conductor terminal block	6.6/2.8	1.6	8.6		6.6/2.10	4.4	1.7	3.6	2.14	6.6/2.16
3-conductor terminal block	2.8	1.6	8.6		2.10		1.7	3.6	2.14	2.16
4-conductor terminal block	2.8	1.6	8.6		2.10	4.4	1.7	3.6	2.14	2.16
2-cond. (earth) term. block	2.8	1.6	8.6		6.6/2.10		1.7	3.6	2.14	6.6/2.16
3-cond. (earth) term. block	2.8	1.6	8.6		2.10		1.7	3.6	2.14	2.16
4-cond. (earth) term. block	2.8	1.6	8.6		2.10	4.4		3.6	2.14	2.16
Double potential	2.9				2.11					
Double deck	2.29				2.30			3.8		2.33
Triple deck					2.34			3.9		
Quadruple deck										2.36
Disconnect terminal block					7.10					7.12
N-disconnect terminal block										
Fused disconnect term. block										7.30
Diode terminal block	7.56				7.57			7.64		7.58
Surge suppression devices					Vol. 3			Vol. 3		
Sensor/actuator				7.39	7.44					
Front-entry	X	X	X	X	X	X	X	X	X	X
Side-entry	X				X					X
Adjacent jumper	X		X		X			X	X	X
Staggered jumpers			X		X				X	X
Push-in type jumper bar		X					X	X		
Comb type jumper bar						X				
Step-down jumpers										
Nominal current for jumpers (A)	15	18	24		24	16	25	18	24	32
WSB Quick marking	X		X		X				X	X
WMB Multi marking		X	X	X	X		X	X	X	X
Mini WSB		X		X		X	X			

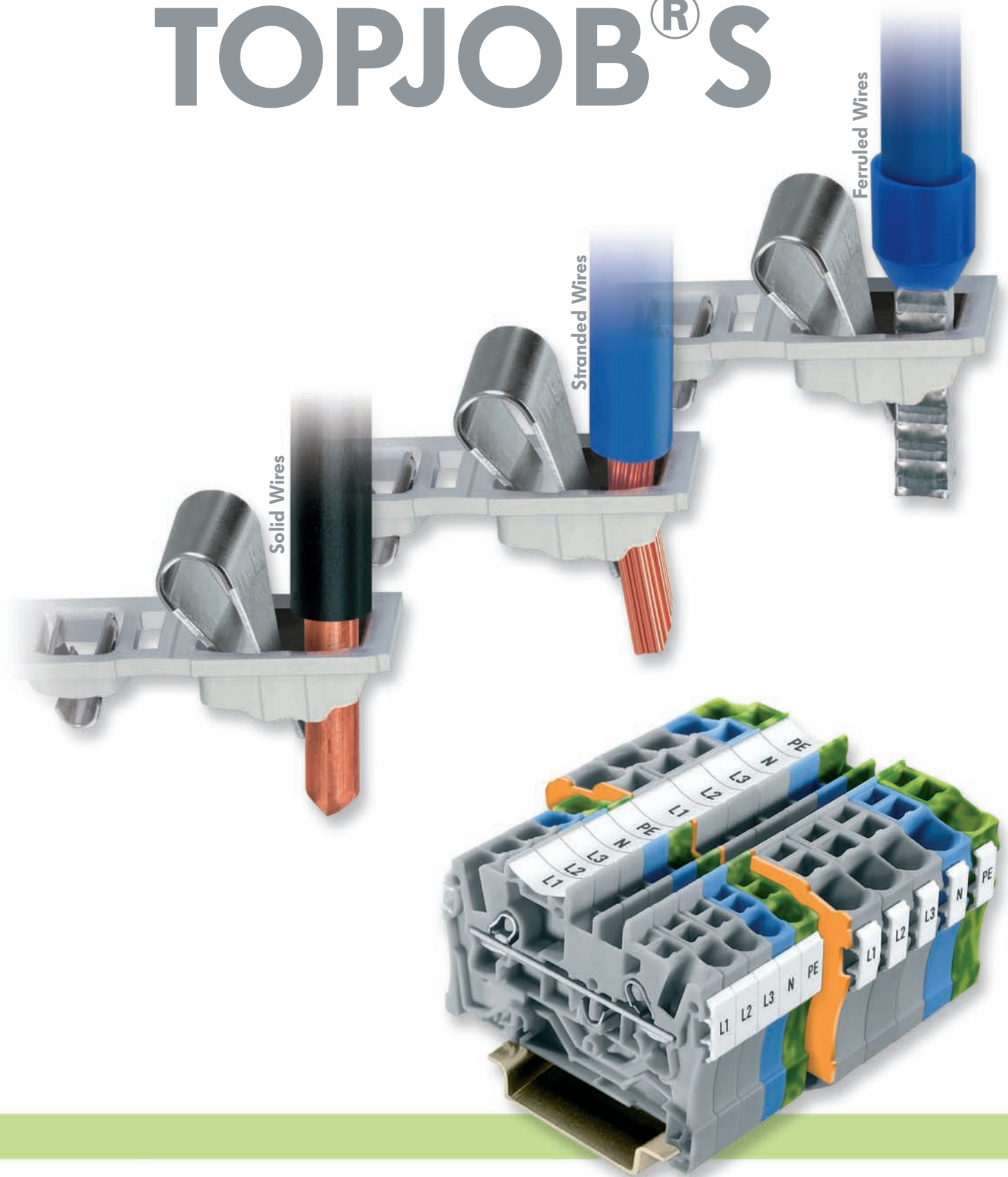
■ = front-entry

■ = side-entry

Series	2004	282	2006	284	2010	283	2016	285 -6xx	285 -19x	
Characteristic	TOPJOB <sup>®</sup> S	Standard	TOPJOB <sup>®</sup> S	Standard		Standard	TOPJOB <sup>®</sup> S	Standard	Standard	
Cross section (mm <sup>2</sup> )	max. <b>4</b>   min. 0.5	<b>6</b>   0.2	<b>6</b>   0.5	<b>10</b>   0.2	<b>10</b>   0.5	<b>16</b>   0.2	<b>16</b>   0.5	<b>35</b>   6	<b>95</b>   35	
Nominal current (ampere)	32	41	41	57	57	76	76	125	232	
Overall width (mm)	6.2	8	7.5	10	10	12	12	16	25	
Test slot (Ø mm)										
Comment										
	<b>Page</b>									
2-conductor terminal block	1.8	6.7/2.18	1.9	6.7/2.19	1.10	6.7/2.20	1.11	2.21	2.24	
3-conductor terminal block	1.8	2.18	1.9	2.19	1.10	2.20	1.11			
4-conductor terminal block	1.8									
2-cond. (earth) term. block	1.8	6.7/2.18	1.9	6.7/2.19	1.10	6.7/2.20	1.11	2.21	2.24	
3-cond. (earth) term. block	1.8	2.18	1.9	2.19	1.10	2.20	1.11			
4-cond. (earth) term. block	1.8									
Double potential										
Double deck										
Triple deck										
Quadruple deck										
Disconnect terminal block		7.26/7.22								
N-disconnect terminal block										
Fused disconnect term. block		7.36								
Diode terminal block										
Surge suppression devices										
Sensor/actuator										
Front-entry	X	X	X	X	X	X	X	X		
Side-entry		X		X		X			X	
Adjacent jumper		X		X		X		X	X	
Staggered jumpers										
Push-in type jumper bar	X		X		X		X			
Comb type jumper bar										
Step-down jumpers		X		X		X		X		
Nominal current for jumpers (A)	32	41	41	57	57	70	76	85	232	
WSB Quick marking		X		X		X		X	X	
WMB Multi marking	X	X	X	X	X	X	X	X		
Mini WSB	X		X		X		X			



# TOPJOB<sup>®</sup>S





**TOPJOB<sup>®</sup>S rail-mounted terminal blocks with CAGE CLAMP<sup>®</sup>S connection**

<b>AWG 22 – 14 (0.25 mm<sup>2</sup>– 1.5 (2.5) mm<sup>2</sup>)</b>	<b>Series 2001</b> _____	<b>1.6</b>
<b>AWG 22 – 12 (0.25 mm<sup>2</sup>– 2.5 (4) mm<sup>2</sup>)</b>	<b>Series 2002</b> _____	<b>1.7</b>



**TOPJOB<sup>®</sup>S rail-mounted terminal blocks with CAGE CLAMP<sup>®</sup>S connection**

<b>AWG 20 – 10 (0.5 mm<sup>2</sup>– 4 (6) mm<sup>2</sup>)</b>	<b>Series 2004</b> _____	<b>1.8</b>
<b>AWG 20 – 8 (0.5 mm<sup>2</sup>– 6 (10) mm<sup>2</sup>)</b>	<b>Series 2006</b> _____	<b>1.9</b>



**TOPJOB<sup>®</sup>S rail-mounted terminal blocks with CAGE CLAMP<sup>®</sup>S connection**

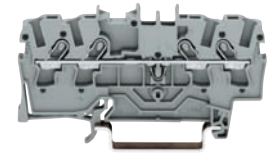
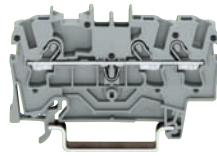
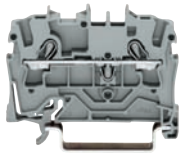
<b>AWG 20 – 6 (0.5 mm<sup>2</sup> – 10 (16) mm<sup>2</sup>)</b>	<b>Series 2010</b> _____	<b>1.10</b>
<b>AWG 20 – 4 (0.5 mm<sup>2</sup> – 16 (25) mm<sup>2</sup>)</b>	<b>Series 2016</b> _____	<b>1.11</b>



<b>Ferrules and crimping tools</b> _____	<b>1.13</b>
<b>Modular TOPJOB<sup>®</sup>S connectors</b> _____	<b>1.12</b>
<b>Testing accessories</b> _____	<b>1.12</b>

# TOPJOB® S Rail-Mounted Terminal Blocks with CAGE CLAMP® S Connection – Product Summary –

## Series 2001/2002/2004 Through terminal blocks



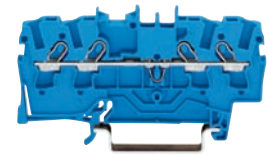
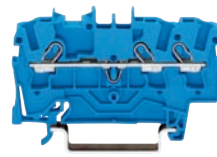
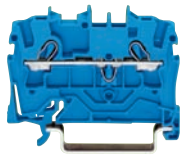
2-conductor terminal blocks

3-conductor terminal blocks

4-conductor terminal blocks

mm <sup>2</sup> /AWG	0.25 – 1.5 (2.5)/14	0.25 – 2.5 (4)/12	0.5 – 4 (6)/10
Page 1.	6	7	8

## Series 2001/2002/2004 Ex i Through terminal blocks



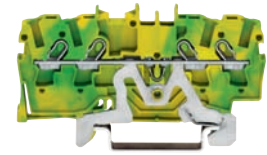
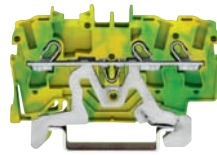
2-conductor terminal blocks

3-conductor terminal blocks

4-conductor terminal blocks

mm <sup>2</sup> /AWG	0.25 – 1.5 (2.5)/14	0.25 – 2.5 (4)/12	0.5 – 4 (6)/10
Page 1.	6	7	8

## Series 2001/2002/2004 Ground (earth) conductor terminal blocks



2-conductor terminal blocks

3-conductor terminal blocks

4-conductor terminal blocks

mm <sup>2</sup> /AWG	0.25 – 1.5 (2.5)/14	0.25 – 2.5 (4)/12	0.5 – 4 (6)/10
Page 1.	6	7	8

## Accessories (selection)



Insulation stops  
for Series 2001  
Page 1.6

Insulation stops  
for Series 2002 and 2004  
Page 1.7 and 1.8

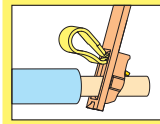
Protective warning marker  
Page 1.7



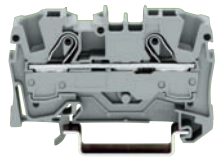
Push-in type jumper bars  
Page 1.6

Push-in type jumper bars  
Page 1.6

Marker strips  
for center marking  
Page 1.6

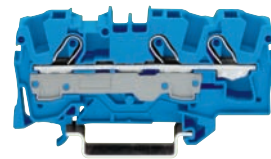
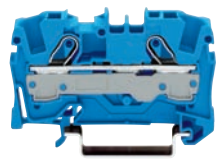


**Series 2006/2010/2016 Through terminal blocks**



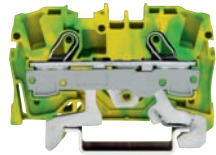
2-conductor terminal blocks		3-conductor terminal blocks		
mm <sup>2</sup> /AWG	0.5 - 6 (10)/8	0.5 - 10 (16)/6	0.5 - 16 (25 "f-st")/4	
Page 1.	9	10	11	

**Series 2006/2010/2016 Ex i Through terminal blocks**



2-conductor terminal blocks		3-conductor terminal blocks		
mm <sup>2</sup> /AWG	0.5 - 6 (10)/8	0.5 - 10 (16)/6	0.5 - 16 (25 "f-st")/4	
Page 1.	9	10	11	

**Series 2006/2010/2016 Ground (earth) conductor terminal blocks**



2-conductor terminal blocks		3-conductor terminal blocks		
mm <sup>2</sup> /AWG	0.5 - 6 (10)/8	0.5 - 10 (16)/6	0.5 - 16 (25 "f-st")/4	
Page 1.	9	10	11	

**Accessories (selection)**



Modular TOPJOB®S connectors  
Page 1.6



Test plug adapter  
for test plug 4 mm Ø  
Page 1.12



Ferrules and crimping tools  
Page 1.13



Testing tap  
for max. 2.5 mm<sup>2</sup> / AWG 12  
Page 1.12



# TOPJOB<sup>®</sup>S with CAGE CLAMP<sup>®</sup>S

## ► Wire connection

**Push-in connection – Solid wires** can be pushed in directly without tools.

**Push-in connection – Stranded conductors with ferrules** can also be easily inserted without using any tools.



## ► Wire connection

**Using a screwdriver** – Similar to the original CAGE CLAMP<sup>®</sup>, all conductor types can be terminated via a simple screwdriver actuation.



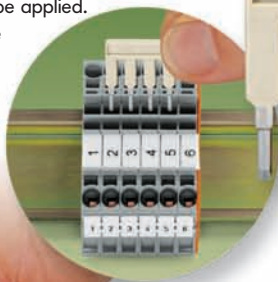
## ► Wire removal

The conductor is removed using a standard screwdriver, like the original CAGE CLAMP<sup>®</sup>.

## ► Commoning

The unique “plug and socket” design of the push-in, comb style jumper systems allows the full rated current of the terminal block to be applied.

The dual jumper slots offer more flexibility. Testing accessories and jumpers can be used in parallel.



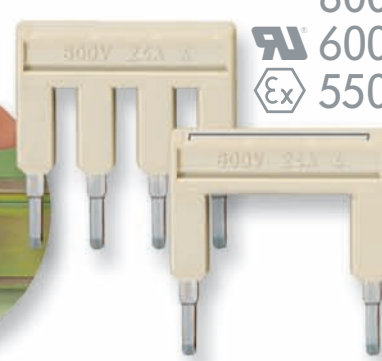
800 V

600 V

550 V

## ► Ready-made push-in type jumper bars

The rated voltage of the factory delivered push-in type jumper bars is 800 V.



500 V

300 V

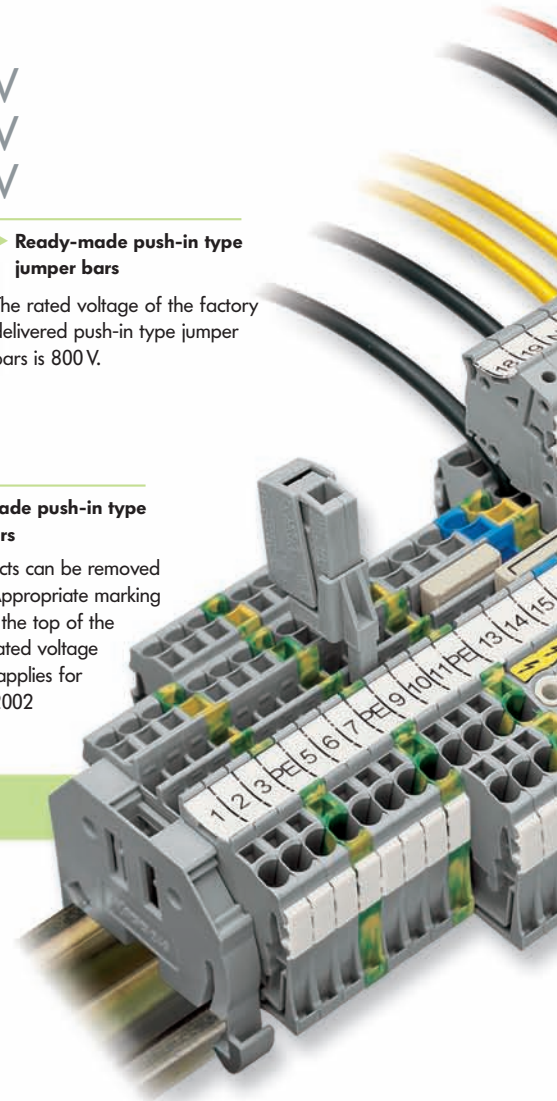
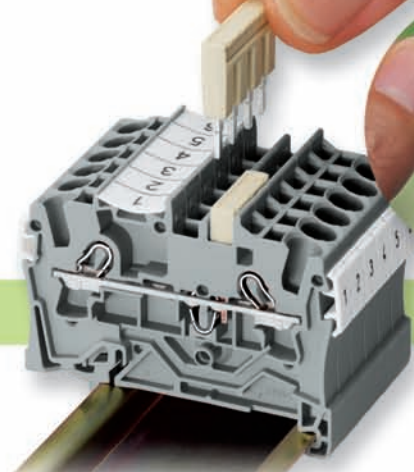
## ► Custom made push-in type jumper bars

Jumper contacts can be removed using pliers. Appropriate marking is possible on the top of the jumper. The rated voltage is 500 V. This applies for Series 2001, 2002 and 2004.



## ► Commoning with step-down jumpers

The spring-loaded jumper system allows commoning of two adjacent terminal blocks of different size using a standard jumper. This way, it is possible to jump over a cross section size. Special step-down jumpers can be used for even greater leaps.





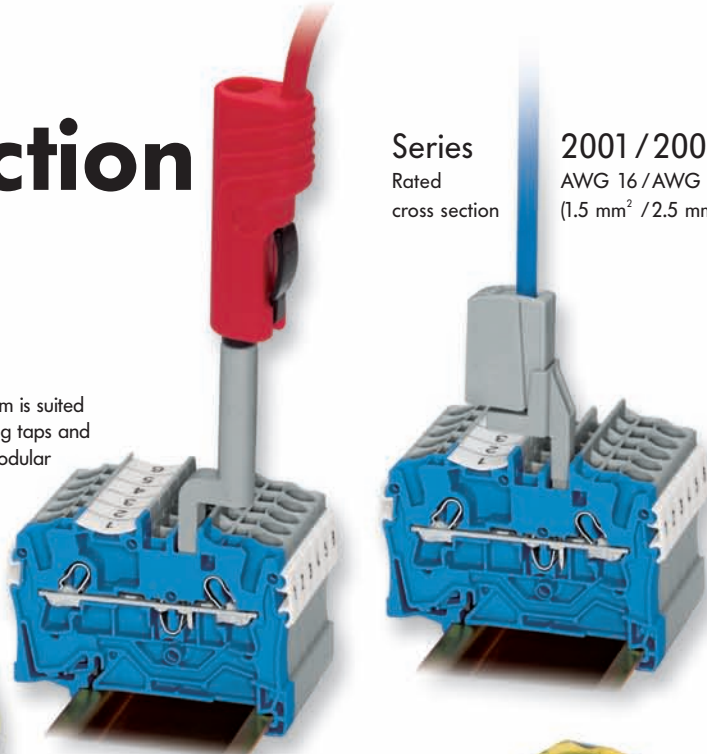
# Connection

Series  
Rated  
cross section

2001 / 2002 / 2004 / 2006 / 2010 / 2016  
AWG 16 / AWG 14 / AWG 12 / AWG 10 / AWG 8 / AWG 6  
(1.5 mm<sup>2</sup> / 2.5 mm<sup>2</sup> / 4 mm<sup>2</sup> / 6 mm<sup>2</sup> / 10 mm<sup>2</sup> / 16 mm<sup>2</sup>)

## ▶ Testing

The spring-loaded jumper system is suited for testing accessories like testing taps and test plug adapters as well as modular TOPJOB® S connectors.



## ▶ Testing tap

Testing tap suited for series 2001 to 2016. Individual test wires up to AWG 12 (2.5 mm<sup>2</sup>) can be connected without using any tools.

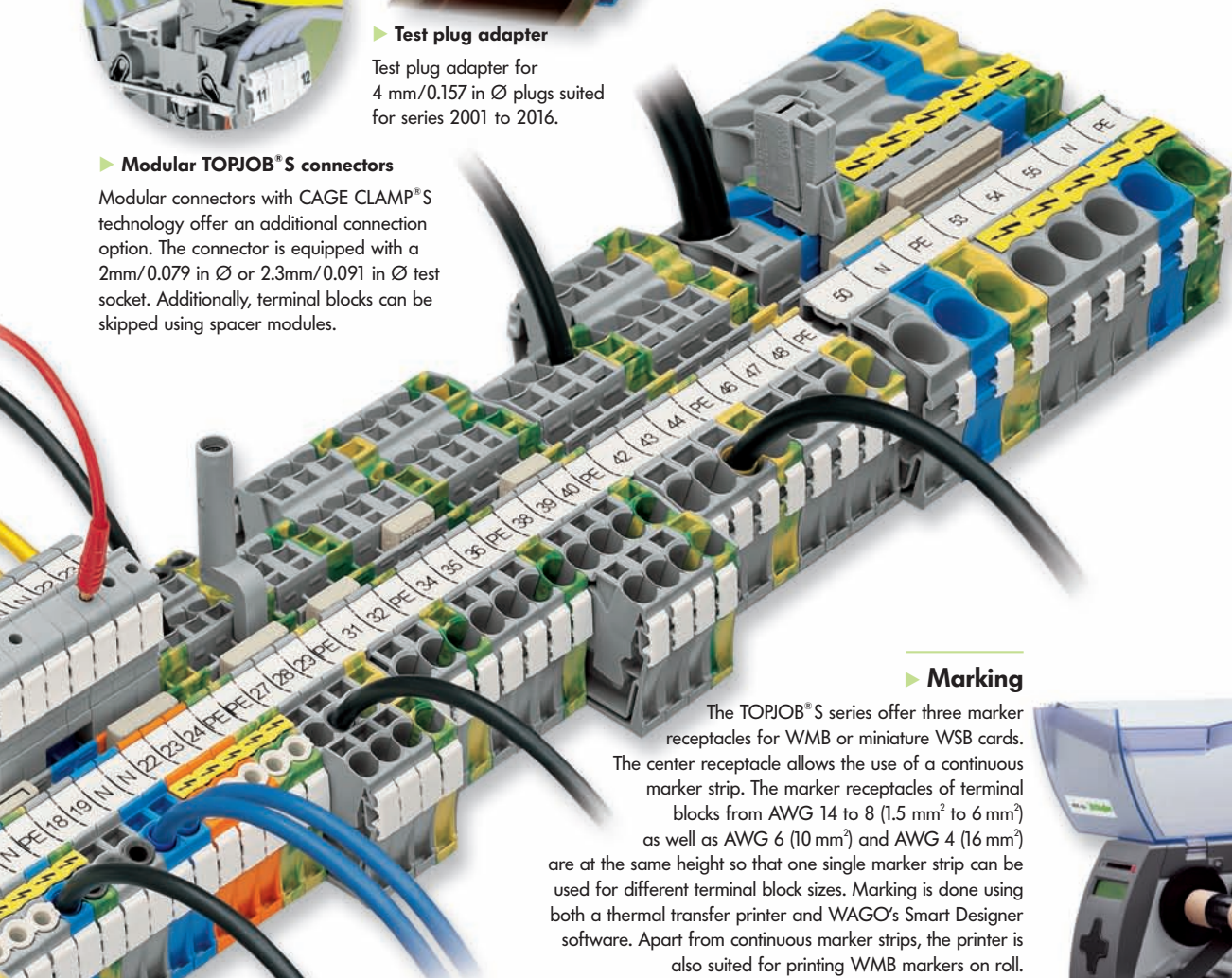


## ▶ Test plug adapter

Test plug adapter for 4 mm/0.157 in Ø plugs suited for series 2001 to 2016.

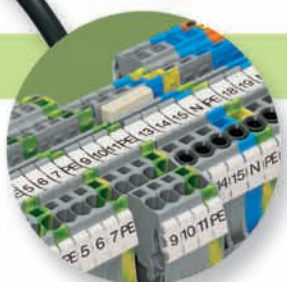
## ▶ Modular TOPJOB® S connectors

Modular connectors with CAGE CLAMP® S technology offer an additional connection option. The connector is equipped with a 2mm/0.079 in Ø or 2.3mm/0.091 in Ø test socket. Additionally, terminal blocks can be skipped using spacer modules.












## ▶ Marking

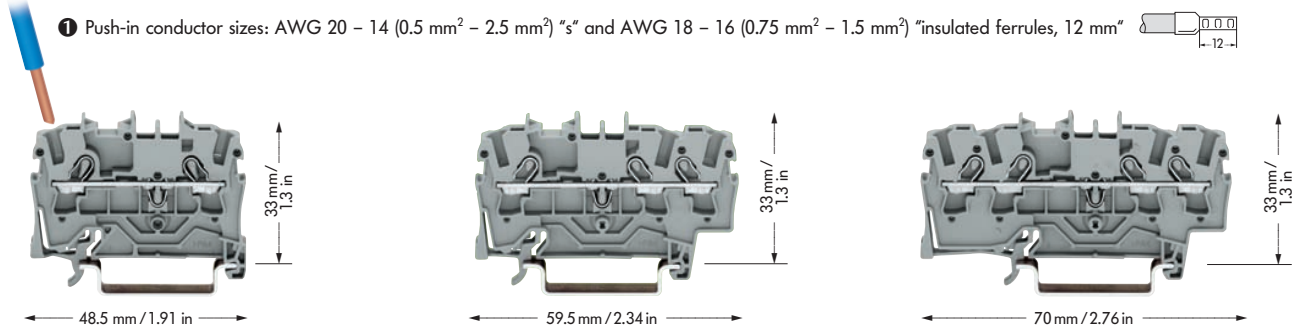
The TOPJOB® S series offer three marker receptacles for WMB or miniature WSB cards. The center receptacle allows the use of a continuous marker strip. The marker receptacles of terminal blocks from AWG 14 to 8 (1.5 mm<sup>2</sup> to 6 mm<sup>2</sup>) as well as AWG 6 (10 mm<sup>2</sup>) and AWG 4 (16 mm<sup>2</sup>) are at the same height so that one single marker strip can be used for different terminal block sizes. Marking is done using both a thermal transfer printer and WAGO's Smart Designer software. Apart from continuous marker strips, the printer is also suited for printing WMB markers on roll.





















# TOPJOB® Rail-Mounted Terminal Blocks 1.5 (2.5) mm<sup>2</sup>/AWG 14 Series 2001

<b>0.25 – 1.5 (2.5) mm<sup>2</sup> ①</b> AWG 22 – 14 800 V/8 kV/3 18 A Terminal block width 4.2 mm / 0.165 in  9 – 11 mm / 0.39 in *  	<b>0.25 – 1.5 (2.5) mm<sup>2</sup> ①</b> AWG 22 – 14 800 V/8 kV/3 18 A Terminal block width 4.2 mm / 0.165 in  9 – 11 mm / 0.39 in *  	<b>0.25 – 1.5 (2.5) mm<sup>2</sup> ①</b> AWG 22 – 14 800 V/8 kV/3 18 A Terminal block width 4.2 mm / 0.165 in  9 – 11 mm / 0.39 in *  
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① Push-in conductor sizes: AWG 20 – 14 (0.5 mm<sup>2</sup> – 2.5 mm<sup>2</sup>) "s" and AWG 18 – 16 (0.75 mm<sup>2</sup> – 1.5 mm<sup>2</sup>) "insulated ferrules, 12 mm" 



Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
<b>2-conductor through terminal blocks</b>		<b>3-conductor through terminal blocks</b>		<b>4-conductor through terminal blocks</b>	
grey <b>2001-1201</b> 	100	grey <b>2001-1301</b> 	100	grey <b>2001-1401</b> 	100
blue <b>2001-1204</b> 	100	blue <b>2001-1304</b> 	100	blue <b>2001-1404</b> 	100
orange <b>2001-1202</b> 	100	orange <b>2001-1302</b> 	100	orange <b>2001-1402</b> 	100
more colors are being prepared		more colors are being prepared		more colors are being prepared	
<b>2-conductor ground (earth) terminal block</b>		<b>3-conductor ground (earth) terminal block</b>		<b>4-conductor ground (earth) terminal block</b>	
green-yellow <b>2001-1207</b> 	100	green-yellow <b>2001-1307</b> 	100	green-yellow <b>2001-1407</b> 	100
 Ex e II applications are being prepared		 Ex e II applications are being prepared		 Ex e II applications are being prepared	
 Suitable for Ex i applications		 Suitable for Ex i applications		 Suitable for Ex i applications	

## Accessories

appropriate marker system **WMB/Marker strips** (see section 14)

<b>End and intermediate plate, 0.8 mm/0.031 in thick</b>  orange <b>2002-1292</b> 100 (4 x 25) grey <b>2002-1291</b> 100 (4 x 25)	<b>End and intermediate plate, 0.8 mm/0.031 in thick</b>  orange <b>2002-1392</b> 100 (4 x 25) grey <b>2002-1391</b> 100 (4 x 25)	<b>End and intermediate plate, 0.8 mm/0.031 in thick</b>  orange <b>2002-1492</b> 100 (4 x 25) grey <b>2002-1491</b> 100 (4 x 25)
<b>Insulation stop, 5 pcs/strip</b> 200 strips  dark grey <b>2001-172</b> 0.75-1 mm <sup>2</sup>	<b>Insulation stop, 5 pcs/strip</b> 200 strips  dark grey <b>2001-172</b> 0.75-1 mm <sup>2</sup>	<b>Insulation stop, 5 pcs/strip</b> 200 strips  dark grey <b>2001-172</b> 0.75-1 mm <sup>2</sup>
<b>Push-in type jumper bars, light grey, insulated, I<sub>N</sub> 18 A</b>  2-way <b>2001-402</b> 200 (8 x 25) 3-way <b>2001-403</b> 200 (8 x 25) 4-way <b>2001-404</b> 200 (8 x 25) 5-way <b>2001-405</b> 100 (4 x 25) : : 10-way <b>2001-410</b> 100 (4 x 25)	<b>Push-in type jumper bars, light grey, insulated, I<sub>N</sub> 18 A</b>  2-way <b>2001-402</b> 200 (8 x 25) 3-way <b>2001-403</b> 200 (8 x 25) 4-way <b>2001-404</b> 200 (8 x 25) 5-way <b>2001-405</b> 100 (4 x 25) : : 10-way <b>2001-410</b> 100 (4 x 25)	<b>Push-in type jumper bars, light grey, insulated, I<sub>N</sub> 18 A</b>  2-way <b>2001-402</b> 200 (8 x 25) 3-way <b>2001-403</b> 200 (8 x 25) 4-way <b>2001-404</b> 200 (8 x 25) 5-way <b>2001-405</b> 100 (4 x 25) : : 10-way <b>2001-410</b> 100 (4 x 25)
<b>Push-in type jumper bars, light grey, insulated, I<sub>N</sub> 18 A</b>  1 - 3 <b>2001-433</b> 200 (8 x 25) 1 - 4 <b>2001-434</b> 200 (8 x 25) 1 - 5 <b>2001-435</b> 100 (4 x 25) : : 1 - 10 <b>2001-440</b> 100 (4 x 25)	<b>Push-in type jumper bars, light grey, insulated, I<sub>N</sub> 18 A</b>  1 - 3 <b>2001-433</b> 200 (8 x 25) 1 - 4 <b>2001-434</b> 200 (8 x 25) 1 - 5 <b>2001-435</b> 100 (4 x 25) : : 1 - 10 <b>2001-440</b> 100 (4 x 25)	<b>Push-in type jumper bars, light grey, insulated, I<sub>N</sub> 18 A</b>  1 - 3 <b>2001-433</b> 200 (8 x 25) 1 - 4 <b>2001-434</b> 200 (8 x 25) 1 - 5 <b>2001-435</b> 100 (4 x 25) : : 1 - 10 <b>2001-440</b> 100 (4 x 25)
<b>Modular TOPJOB®S connector,</b>  for jumper contact slot 1 pole <b>2001-501</b> 100 (4 x 25)	<b>Modular TOPJOB®S connector,</b>  for jumper contact slot 1 pole <b>2001-501</b> 100 (4 x 25)	<b>Modular TOPJOB®S connector,</b>  for jumper contact slot 1 pole <b>2001-501</b> 100 (4 x 25)
<b>Spacer, modular</b> <b>2001-549</b> 100 (4 x 25) see also page 1.12	<b>Spacer, modular</b> <b>2001-549</b> 100 (4 x 25) see also page 1.12	<b>Spacer, modular</b> <b>2001-549</b> 100 (4 x 25) see also page 1.12
<b>Test plug adapter, for test plug 4 mm/0.157 in Ø</b>  <b>2009-174</b> 100 (4 x 25) <b>Testing tap, for max. 2.5 mm<sup>2</sup></b> <b>2009-182</b> 100 (4 x 25)	<b>Test plug adapter, for test plug 4 mm/0.157 in Ø</b>  <b>2009-174</b> 100 (4 x 25) <b>Testing tap, for max. 2.5 mm<sup>2</sup></b> <b>2009-182</b> 100 (4 x 25)	<b>Test plug adapter, for test plug 4 mm/0.157 in Ø</b>  <b>2009-174</b> 100 (4 x 25) <b>Testing tap, for max. 2.5 mm<sup>2</sup></b> <b>2009-182</b> 100 (4 x 25)
<b>Marker strip, white, plain</b>  for center marking 11 mm/0.433 in wide 50 m <b>2009-110</b> 1 on roll 300 m <b>2009-130</b> 1	<b>Marker strip, white, plain</b>  for center marking 11 mm/0.433 in wide 50 m <b>2009-110</b> 1 on roll 300 m <b>2009-130</b> 1	<b>Marker strip, white, plain</b>  for center marking 11 mm/0.433 in wide 50 m <b>2009-110</b> 1 on roll 300 m <b>2009-130</b> 1






















\* For further approvals with corresponding ratings see section 15.

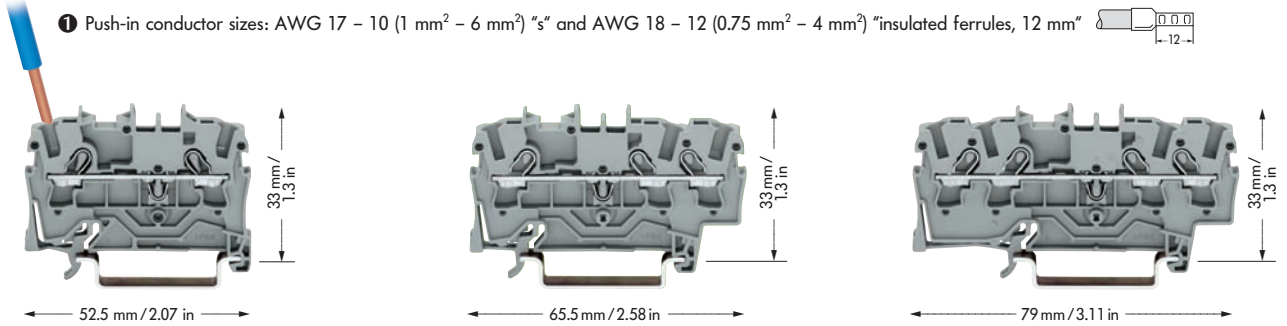













# TOPJOB®S Rail-Mounted Terminal Blocks 4 (6) mm<sup>2</sup>/AWG 10 Series 2004

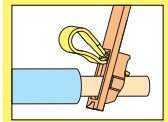
<b>0.5 – 4 (6) mm<sup>2</sup> ①</b> 800 V/8 kV/3 32 A Terminal block width 6.2 mm / 0.244 in  11 – 13 mm / 0.47 in *  	<b>AWG 20 – 10</b> 600 V, 30 A   600 V, 30 A  	<b>0.5 – 4 (6) mm<sup>2</sup> ①</b> 800 V/8 kV/3 32 A Terminal block width 6.2 mm / 0.244 in  11 – 13 mm / 0.47 in *  	<b>AWG 20 – 10</b> 600 V, 30 A   600 V, 30 A  	<b>0.5 – 4 (6) mm<sup>2</sup> ①</b> 800 V/8 kV/3 32 A Terminal block width 6.2 mm / 0.244 in  11 – 13 mm / 0.47 in *  	<b>AWG 20 – 10</b> 600 V, 30 A   600 V, 30 A  
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















Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
<b>2-conductor through terminal blocks</b>		<b>3-conductor through terminal blocks</b>		<b>4-conductor through terminal blocks</b>	
grey <b>2004-1201</b> 	50	grey <b>2004-1301</b> 	50	grey <b>2004-1401</b> 	50
blue <b>2004-1204</b> 	50	blue <b>2004-1304</b> 	50	blue <b>2004-1404</b> 	50
orange <b>2004-1202</b> 	50	orange <b>2004-1302</b> 	50	orange <b>2004-1402</b> 	50
more colors are being prepared		more colors are being prepared		more colors are being prepared	
<b>2-conductor ground (earth) terminal block</b>		<b>3-conductor ground (earth) terminal block</b>		<b>4-conductor ground (earth) terminal block</b>	
green-yellow <b>2004-1207</b> 	50	green-yellow <b>2004-1307</b> 	50	green-yellow <b>2004-1407</b> 	50
 Ex e II applications are being prepared		 Ex e II applications are being prepared		 Ex e II applications are being prepared	
 Suitable for Ex i applications		 Suitable for Ex i applications		 Suitable for Ex i applications	
<b>Accessories</b> appropriate marker system <b>WMB/Miniature WSB/Marker strips</b> (see section 14)					
<b>End and intermediate plate</b> , 1 mm/0.039 in thick		<b>End and intermediate plate</b> , 1 mm/0.039 in thick		<b>End and intermediate plate</b> , 1 mm/0.039 in thick	
 orange <b>2004-1292</b> 100 (4 x 25)		 orange <b>2004-1392</b> 100 (4 x 25)		 orange <b>2004-1492</b> 100 (4 x 25)	
 grey <b>2004-1291</b> 100 (4 x 25)		 grey <b>2004-1391</b> 100 (4 x 25)		 grey <b>2004-1491</b> 100 (4 x 25)	
<b>Insulation stop</b> , 5 pcs/strip 200 strips		<b>Insulation stop</b> , 5 pcs/strip 200 strips		<b>Insulation stop</b> , 5 pcs/strip 200 strips	
 light grey <b>2004-171</b> 0.25-0.5 mm <sup>2</sup>		 light grey <b>2004-171</b> 0.25-0.5 mm <sup>2</sup>		 light grey <b>2004-171</b> 0.25-0.5 mm <sup>2</sup>	
dark grey <b>2004-172</b> 0.75-1 mm <sup>2</sup>		dark grey <b>2004-172</b> 0.75-1 mm <sup>2</sup>		dark grey <b>2004-172</b> 0.75-1 mm <sup>2</sup>	
<b>Push-in type jumper bars</b> , light grey, insulated, I <sub>N</sub> 32 A		<b>Push-in type jumper bars</b> , light grey, insulated, I <sub>N</sub> 32 A		<b>Push-in type jumper bars</b> , light grey, insulated, I <sub>N</sub> 32 A	
 2-way <b>2004-402</b> 100 (4 x 25)		 2-way <b>2004-402</b> 100 (4 x 25)		 2-way <b>2004-402</b> 100 (4 x 25)	
 3-way <b>2004-403</b> 100 (4 x 25)		 3-way <b>2004-403</b> 100 (4 x 25)		 3-way <b>2004-403</b> 100 (4 x 25)	
 4-way <b>2004-404</b> 100 (4 x 25)		 4-way <b>2004-404</b> 100 (4 x 25)		 4-way <b>2004-404</b> 100 (4 x 25)	
 5-way <b>2004-405</b> 50 (2 x 25)		 5-way <b>2004-405</b> 50 (2 x 25)		 5-way <b>2004-405</b> 50 (2 x 25)	
:	:	:	:	:	:
10-way <b>2004-410</b> 50 (2 x 25)		10-way <b>2004-410</b> 50 (2 x 25)		10-way <b>2004-410</b> 50 (2 x 25)	
<b>Push-in type jumper bars</b> , light grey, insulated, I <sub>N</sub> 32 A		<b>Push-in type jumper bars</b> , light grey, insulated, I <sub>N</sub> 32 A		<b>Push-in type jumper bars</b> , light grey, insulated, I <sub>N</sub> 32 A	
 1 - 3 <b>2004-433</b> 100 (4 x 25)		 1 - 3 <b>2004-433</b> 100 (4 x 25)		 1 - 3 <b>2004-433</b> 100 (4 x 25)	
 1 - 4 <b>2004-434</b> 100 (4 x 25)		 1 - 4 <b>2004-434</b> 100 (4 x 25)		 1 - 4 <b>2004-434</b> 100 (4 x 25)	
 1 - 5 <b>2004-435</b> 50 (2 x 25)		 1 - 5 <b>2004-435</b> 50 (2 x 25)		 1 - 5 <b>2004-435</b> 50 (2 x 25)	
:	:	:	:	:	:
1 - 10 <b>2004-440</b> 50 (2 x 25)		1 - 10 <b>2004-440</b> 50 (2 x 25)		1 - 10 <b>2004-440</b> 50 (2 x 25)	
<b>Protective warning marker</b> , for 5 terminal blocks		<b>Protective warning marker</b> , for 5 terminal blocks		<b>Protective warning marker</b> , for 5 terminal blocks	
 yellow <b>2004-115</b> 100 (4 x 25)		 yellow <b>2004-115</b> 100 (4 x 25)		 yellow <b>2004-115</b> 100 (4 x 25)	
<b>Modular TOPJOB®S connector</b> , for jumper contact slot		<b>Modular TOPJOB®S connector</b> , for jumper contact slot		<b>Modular TOPJOB®S connector</b> , for jumper contact slot	
 1 pole <b>2004-501</b> 100 (4 x 25)		 1 pole <b>2004-501</b> 100 (4 x 25)		 1 pole <b>2004-501</b> 100 (4 x 25)	
<b>Spacer</b> , modular <b>2004-549</b> 100 (4 x 25) see also page 1.12		<b>Spacer</b> , modular <b>2004-549</b> 100 (4 x 25) see also page 1.12		<b>Spacer</b> , modular <b>2004-549</b> 100 (4 x 25) see also page 1.12	
<b>Test plug adapter</b> , for test plug 4 mm/0.157 in Ø		<b>Test plug adapter</b> , for test plug 4 mm/0.157 in Ø		<b>Test plug adapter</b> , for test plug 4 mm/0.157 in Ø	
 <b>2009-174</b> 100 (4 x 25)		 <b>2009-174</b> 100 (4 x 25)		 <b>2009-174</b> 100 (4 x 25)	
 <b>Testing tap</b> , for max. 2.5 mm <sup>2</sup>		 <b>Testing tap</b> , for max. 2.5 mm <sup>2</sup>		 <b>Testing tap</b> , for max. 2.5 mm <sup>2</sup>	
<b>2009-182</b> 100 (4 x 25)		<b>2009-182</b> 100 (4 x 25)		<b>2009-182</b> 100 (4 x 25)	

\* For further approvals with corresponding ratings see section 15.

# TOPJOB® S Rail-Mounted Terminal Blocks 6 (10) mm<sup>2</sup>/AWG 8 Series 2006

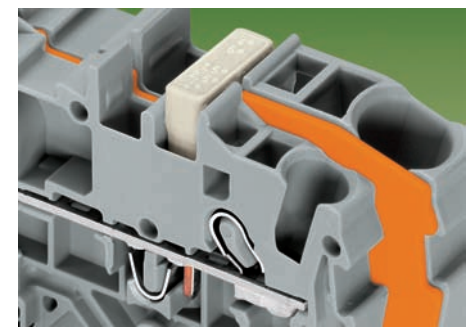
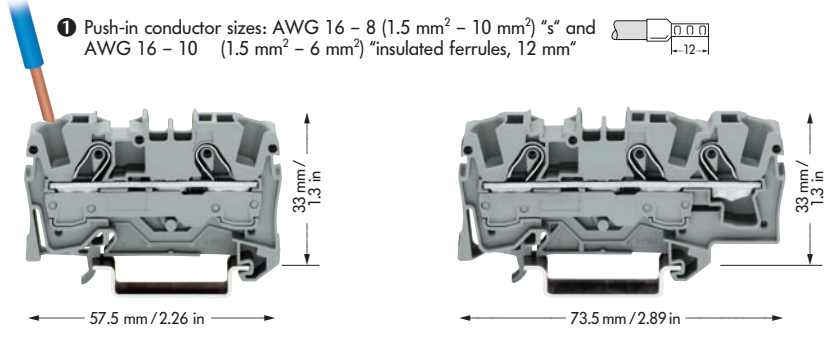












1  
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






















<b>0.5 – 6 (10) mm<sup>2</sup> ①</b> 800 V/8 kV/3 41 A Terminal block width 7.5 mm / 0.295 in  13 – 15 mm / 0.55 in *    CCA LR	<b>AWG 20 – 8</b> 600 V, 50 A   600 V, 50 A  	<b>0.5 – 6 (10) mm<sup>2</sup> ①</b> 800 V/8 kV/3 41 A Terminal block width 7.5 mm / 0.295 in  13 – 15 mm / 0.55 in *    CCA LR	<b>AWG 20 – 8</b> 600 V, 50 A   600 V, 50 A  
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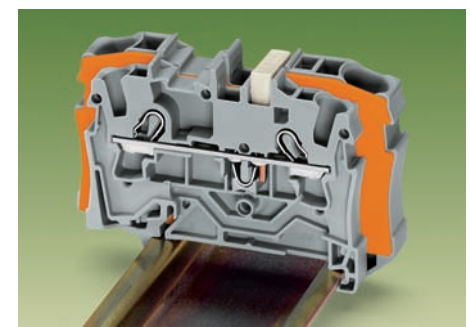
**Commoning with step-down jumpers**

Note:  
The total current flowing must not exceed the rating of the step-down jumper/push-in type jumper bar.



Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
<b>2-conductor through terminal blocks</b>		<b>3-conductor through terminal blocks</b>		<b>Commoning with step-down jumpers</b>	
grey <b>2006-1201</b> 	50	grey <b>2006-1301</b> 	25	An end plate must be applied between the two terminal blocks.	
blue <b>2006-1204</b> 	50	blue <b>2006-1304</b> 	25	Step-down jumper 2006-499 can be used for commoning AWG 12/10 (4/6 mm <sup>2</sup> ) terminal blocks with AWG 12/14/16 (4/2.5/1.5 mm <sup>2</sup> ) terminal blocks.	
orange <b>2006-1202</b> 	50	orange <b>2006-1302</b> 	25	Step-down jumpers are simply pushed down to full insertion, in the same way as all other push-in type jumper bars.	
<b>2-conductor ground (earth) terminal block</b>		<b>3-conductor ground (earth) terminal block</b>			
green-yellow <b>2006-1207</b> 	50	green-yellow <b>2006-1307</b> 	25		
Ex Ex II applications are being prepared		Ex Ex II applications are being prepared			
 Suitable for Ex i applications		 Suitable for Ex i applications			

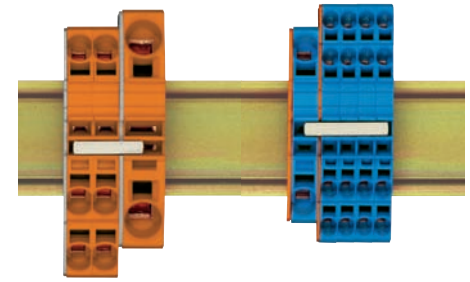
Accessories		appropriate marker system WMB/Miniature WSB/Marker strips (see section 14)	
<b>End and intermediate plate, 1 mm/0.039 in thick</b>		<b>End and intermediate plate, 1 mm/0.039 in thick</b>	
 orange <b>2006-1292</b> 100 (4 x 25)		 orange <b>2006-1392</b> 100 (4 x 25)	
 grey <b>2006-1291</b> 100 (4 x 25)		 grey <b>2006-1391</b> 100 (4 x 25)	
<b>Push-in type jumper bars, light grey, insulated, I<sub>N</sub> 41 A</b>		<b>Push-in type jumper bars, light grey, insulated, I<sub>N</sub> 41 A</b>	
 2-way <b>2006-402</b> 50 (2 x 25)		 2-way <b>2006-402</b> 50 (2 x 25)	
 3-way <b>2006-403</b> 50 (2 x 25)		 3-way <b>2006-403</b> 50 (2 x 25)	
 4-way <b>2006-404</b> 50 (2 x 25)		 4-way <b>2006-404</b> 50 (2 x 25)	
 5-way <b>2006-405</b> 50 (2 x 25)		 5-way <b>2006-405</b> 50 (2 x 25)	
<b>Push-in type jumper bars, light grey, insulated, I<sub>N</sub> 41 A</b>		<b>Push-in type jumper bars, light grey, insulated, I<sub>N</sub> 41 A</b>	
 1 - 3 <b>2006-433</b> 50 (2 x 25)		 1 - 3 <b>2006-433</b> 50 (2 x 25)	
 1 - 4 <b>2006-434</b> 50 (2 x 25)		 1 - 4 <b>2006-434</b> 50 (2 x 25)	
 1 - 5 <b>2006-435</b> 50 (2 x 25)		 1 - 5 <b>2006-435</b> 50 (2 x 25)	
<b>Protective warning marker, for 5 terminal blocks</b>		<b>Protective warning marker, for 5 terminal blocks</b>	
 yellow <b>2006-115</b> 100 (4 x 25)		 yellow <b>2006-115</b> 100 (4 x 25)	
<b>Test plug adapter, for test plug 4 mm/0.157 in Ø</b>		<b>Test plug adapter, for test plug 4 mm/0.157 in Ø</b>	
 <b>2009-174</b> 100 (4 x 25)		 <b>2009-174</b> 100 (4 x 25)	
<b>Testing tap, for max. 2.5 mm<sup>2</sup></b>		<b>Testing tap, for max. 2.5 mm<sup>2</sup></b>	
 <b>2009-182</b> 100 (4 x 25)		 <b>2009-182</b> 100 (4 x 25)	
<b>Marker strip, white, plain for center marking</b>		<b>Marker strip, white, plain for center marking</b>	
 11 mm/0.433 in wide		 11 mm/0.433 in wide	
50 m <b>2009-110</b>	1	50 m <b>2009-110</b>	1
on roll 300 m <b>2009-130</b>	1	on roll 300 m <b>2009-130</b>	1



**Commoning with push-in type jumper bars**

**Commoning over the open side of the terminal block with end plate** allows jumpering over one cross section size for 6 mm<sup>2</sup>, 4 mm<sup>2</sup> and 2.5 mm<sup>2</sup>.

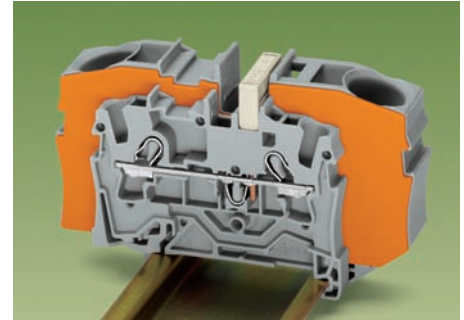
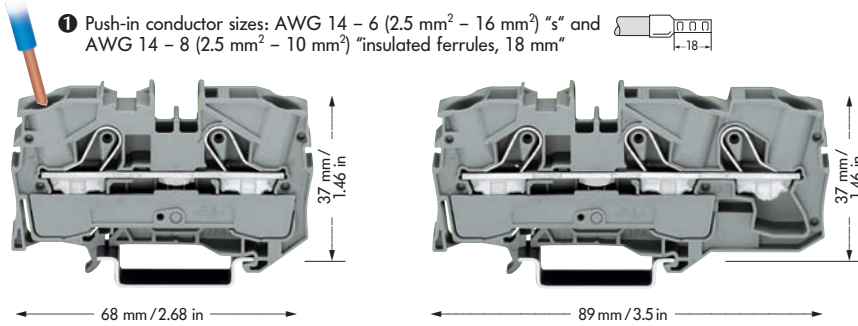
**Commoning over the closed side of the terminal block with end plate** allows jumpering over two cross section sizes: e.g. from 6 mm<sup>2</sup> to 2.5 mm<sup>2</sup> (see blue terminal blocks).



\* For further approvals with corresponding ratings see section 15.

# TOPJOB<sup>®</sup>S Rail-Mounted Terminal Blocks 10 (16) mm<sup>2</sup>/AWG 6 Series 2010

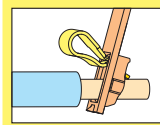
<p>0.5 – 10 (16) mm<sup>2</sup> ① 800 V/8 kV/3 57 A</p> <p>Terminal block width 10 mm / 0.394 in 17 – 19 mm / 0.71 in</p> <p>* </p>	<p>AWG 20 – 6 600 V, 65 A </p> <p>600 V, 65 A </p>	<p>0.5 – 10 (16) mm<sup>2</sup> ① 800 V/8 kV/3 57 A</p> <p>Terminal block width 10 mm / 0.394 in 17 – 19 mm / 0.71 in</p> <p>* </p>	<p>AWG 20 – 6 600 V, 65 A </p> <p>600 V, 65 A </p>	<p><b>Commoning with step-down jumpers</b></p> <p>Note: The total current flowing must not exceed the rating of the step-down jumper/push-in type jumper bar.</p>
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Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
<b>2-conductor through terminal blocks</b>		<b>3-conductor through terminal blocks</b>		<b>Commoning with step-down jumpers</b>	
grey 2010-1201	25	grey 2010-1301	25	An end plate must be applied between the two terminal blocks.	
blue 2010-1204	25	blue 2010-1304	25	Step-down jumper 2016-499 can be used for commoning AWG 8/6 (10/16 mm <sup>2</sup> ) terminal blocks with AWG 8/10/12/14 (10/6/4/2.5 mm <sup>2</sup> ) terminal blocks.	
orange 2010-1202	25	orange 2010-1302	25	Step-down jumpers are simply pushed down to full insertion, in the same way as all other push-in type jumper bars.	
<b>2-conductor ground (earth) terminal block</b>		<b>3-conductor ground (earth) terminal block</b>			
green-yellow 2010-1207	25	green-yellow 2010-1307	25		
Ex e II applications are being prepared		Ex e II applications are being prepared			
Suitable for Ex i applications		Suitable for Ex i applications			
<b>Accessories</b> appropriate marker system <b>WMB/Miniature WSB/Marker strips</b> (see section 14)					
<b>End and intermediate plate</b> , 1 mm/0.039 in thick		<b>End and intermediate plate</b> , 1 mm/0.039 in thick		<b>Step-down jumper</b> , light grey, insulated	
orange 2010-1292 100 (4 x 25)		orange 2010-1392 100 (4 x 25)		57 A	
grey 2010-1291 100 (4 x 25)		grey 2010-1391 100 (4 x 25)		<b>2016-499</b>	50 (2 x 25)
<b>Push-in type jumper bars</b> , light grey, insulated, I <sub>N</sub> 57 A		<b>Push-in type jumper bars</b> , light grey, insulated, I <sub>N</sub> 57 A			
2-way 2010-402 50 (2 x 25)		2-way 2010-402 50 (2 x 25)			
3-way 2010-403 50 (2 x 25)		3-way 2010-403 50 (2 x 25)			
4-way 2010-404 50 (2 x 25)		4-way 2010-404 50 (2 x 25)			
5-way 2010-405 50 (2 x 25)		5-way 2010-405 50 (2 x 25)			
<b>Push-in type jumper bars</b> , light grey, insulated, I <sub>N</sub> 57 A		<b>Push-in type jumper bars</b> , light grey, insulated, I <sub>N</sub> 57 A			
1 - 3 2010-433 50 (2 x 25)		1 - 3 2010-433 50 (2 x 25)			
1 - 4 2010-434 50 (2 x 25)		1 - 4 2010-434 50 (2 x 25)			
1 - 5 2010-435 50 (2 x 25)		1 - 5 2010-435 50 (2 x 25)			
<b>Protective warning marker</b> , for 5 terminal blocks		<b>Protective warning marker</b> , for 5 terminal blocks			
yellow 2010-115 100 (4 x 25)		yellow 2010-115 100 (4 x 25)			
<b>Test plug adapter</b> , for test plug 4 mm Ø		<b>Test plug adapter</b> , for test plug 4 mm Ø			
2009-174 100 (4 x 25)		2009-174 100 (4 x 25)			
<b>Testing tap</b> , for max. 2.5 mm <sup>2</sup>		<b>Testing tap</b> , for max. 2.5 mm <sup>2</sup>			
2009-182 100 (4 x 25)		2009-182 100 (4 x 25)			
<b>Marker strip</b> , white, plain for center marking		<b>Marker strip</b> , white, plain for center marking			
11 mm/0.433 in wide		11 mm/0.433 in wide			
50 m 2009-110	1	50 m 2009-110	1		
on roll 300 m 2009-130	1	on roll 300 m 2009-130	1		

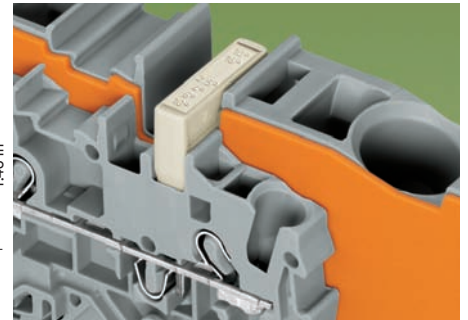
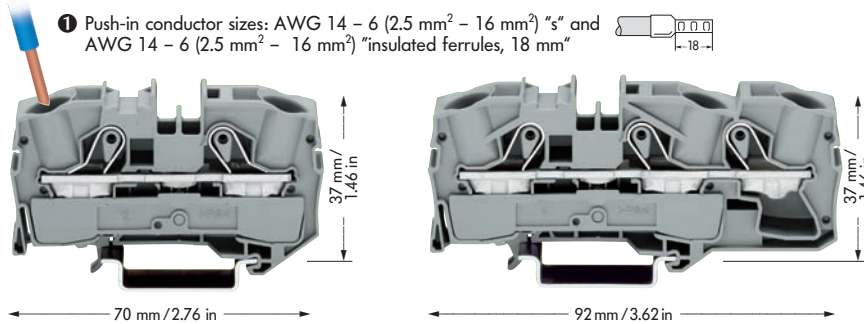
\* For further approvals with corresponding ratings see section 15.

# TOPJOB® Rail-Mounted Terminal Blocks 16 (25 "f-st") mm<sup>2</sup>/AWG 4 Series 2016



1  
11

<p>0.5 – 16 (25 "f-st") mm<sup>2</sup> ①   AWG 20 – 4 800 V/8 kV/3   600 V, 85 A ② 76 A   600 V, 85 A ③</p> <p>Terminal block width 12 mm / 0.472 in 18 – 20 mm / 0.75 in</p> <p>*      CCA LR</p>	<p>0.5 – 16 (25 "f-st") mm<sup>2</sup> ①   AWG 20 – 4 800 V/8 kV/3   600 V, 85 A ② 76 A   600 V, 85 A ③</p> <p>Terminal block width 12 mm / 0.472 in 18 – 20 mm / 0.75 in</p> <p>*      CCA LR</p>	<p><b>Commoning with step-down jumpers</b></p> <p>Note: The total current flowing must not exceed the rating of the step-down jumper/push-in type jumper bar.</p>
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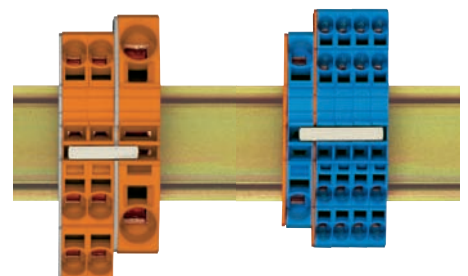


Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
<b>2-conductor through terminal blocks</b>		<b>3-conductor through terminal blocks</b>		<b>Commoning with step-down jumpers</b>	
grey 2016-1201 ①	20	grey 2016-1301 ①	20	An end plate must be applied between the two terminal blocks.	
blue 2016-1204 ②	20	blue 2016-1304 ②	20	Step-down jumper 2016-499 can be used for commoning AWG 8/6 (10/16 mm <sup>2</sup> ) terminal blocks with AWG 8/10/12/14 (10/6/4/2.5 mm <sup>2</sup> ) terminal blocks.	
orange 2016-1202 ③	20	orange 2016-1302 ③	20	Step-down jumpers are simply pushed down to full insertion, in the same way as all other push-in type jumper bars.	
<b>2-conductor ground (earth) terminal block</b>		<b>3-conductor ground (earth) terminal block</b>			
green-yellow 2016-1207 ④	20	green-yellow 2016-1307 ④	20		
④ Ex e II applications are being prepared		④ Ex e II applications are being prepared			
② Suitable for Ex i applications		② Suitable for Ex i applications			
<b>Accessories</b> appropriate marker system <b>WMB/Miniature WSB/Marker strips</b> (see section 14)					
<b>End and intermediate plate, 1 mm / 0.039 in thick</b>		<b>End and intermediate plate, 1 mm / 0.039 in thick</b>		<b>Step-down jumper, light grey, insulated</b>	
orange 2016-1292 100 (4 x 25)		orange 2016-1392 100 (4 x 25)		57 A	
grey 2016-1291 100 (4 x 25)		grey 2016-1391 100 (4 x 25)		2016-499	50 (2 x 25)
<b>Push-in type jumper bars, light grey, insulated, I<sub>N</sub> 76 A</b>		<b>Push-in type jumper bars, light grey, insulated, I<sub>N</sub> 76 A</b>			
2-way 2016-402 50 (2 x 25)		2-way 2016-402 50 (2 x 25)			
3-way 2016-403 50 (2 x 25)		3-way 2016-403 50 (2 x 25)			
4-way 2016-404 50 (2 x 25)		4-way 2016-404 50 (2 x 25)			
5-way 2016-405 50 (2 x 25)		5-way 2016-405 50 (2 x 25)			
<b>Push-in type jumper bars, light grey, insulated, I<sub>N</sub> 76 A</b>		<b>Push-in type jumper bars, light grey, insulated, I<sub>N</sub> 76 A</b>			
1 - 3 2016-433 50 (2 x 25)		1 - 3 2016-433 50 (2 x 25)			
1 - 4 2016-434 50 (2 x 25)		1 - 4 2016-434 50 (2 x 25)			
1 - 5 2016-435 50 (2 x 25)		1 - 5 2016-435 50 (2 x 25)			
<b>Protective warning marker, for 5 terminal blocks</b>		<b>Protective warning marker, for 5 terminal blocks</b>			
yellow 2016-115 100 (4 x 25)		yellow 2016-115 100 (4 x 25)			
<b>Test plug adapter, for test plug 4 mm Ø</b>		<b>Test plug adapter, for test plug 4 mm Ø</b>			
2009-174 100 (4 x 25)		2009-174 100 (4 x 25)			
<b>Testing tap, for max. 2.5 mm<sup>2</sup></b>		<b>Testing tap, for max. 2.5 mm<sup>2</sup></b>			
2009-182 100 (4 x 25)		2009-182 100 (4 x 25)			
<b>Marker strip, white, plain for center marking</b>		<b>Marker strip, white, plain for center marking</b>			
11 mm / 0.433 in wide		11 mm / 0.433 in wide			
50 m 2009-110 1		50 m 2009-110 1			
on roll 300 m 2009-130 1		on roll 300 m 2009-130 1			

**Commoning with push-in type jumper bars**

Commoning over the open side of the terminal block with end plate allows jumpering over two cross section sizes for 16 mm<sup>2</sup> and 10 mm<sup>2</sup> and one cross section size for 6 mm<sup>2</sup>, 4 mm<sup>2</sup> and 2.5 mm<sup>2</sup>: e.g. from 16 mm<sup>2</sup> to 6 mm<sup>2</sup> (see orange terminal blocks) or from 10 mm<sup>2</sup> to 4 mm<sup>2</sup>.

Commoning over the closed side of the terminal block with end plate allows jumpering over two cross section sizes: e.g. from 16 mm<sup>2</sup> to 6 mm<sup>2</sup> or from 6 mm<sup>2</sup> to 2.5 mm<sup>2</sup> (see blue terminal blocks).



\* For further approvals with corresponding ratings see section 15.



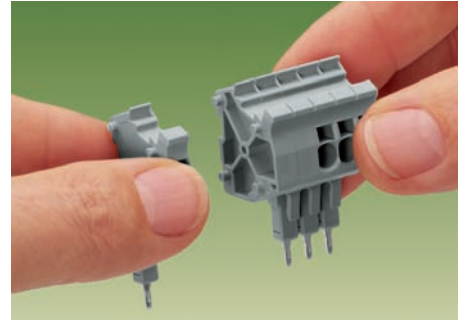
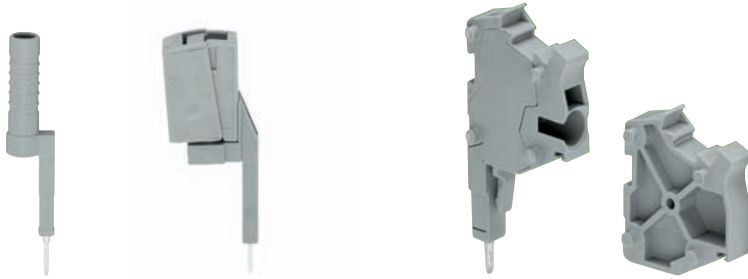
# Test Plug Adapter and Testing Tap

# Modular TOPJOB® S Connectors with CAGE CLAMP® S Connection

Test plug adapter and testing tap for testing rail-mounted terminal blocks of series 2001/2002/2004/2006/2010/2016

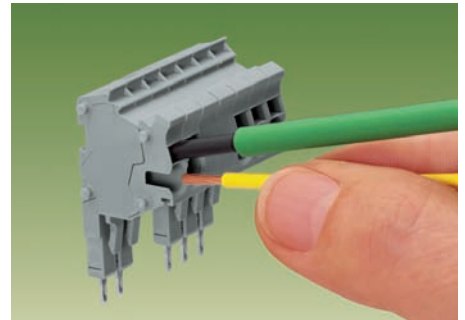
Modular TOPJOB® S connectors ❶ for rail-mounted terminal blocks of series  
**2001** AWG 22 – 14 / 0.25 mm<sup>2</sup> – 1.5 (2.5) mm<sup>2</sup>  
**2002** AWG 22 – 12 / 0.25 mm<sup>2</sup> – 2.5 (4) mm<sup>2</sup>  
**2004** AWG 20 – 10 / 0.5 mm<sup>2</sup> – 4 (6) mm<sup>2</sup>

❶ Test voltage 500 V/ 6 kV  
 Test current 18 A/24 A/32 A  
**Note:** Unmated connectors must not be live. Also, connectors used according to the regulations must not be connected or disconnected under load.







Snapping together of connectors and spacers to assemble a multi-pole connector

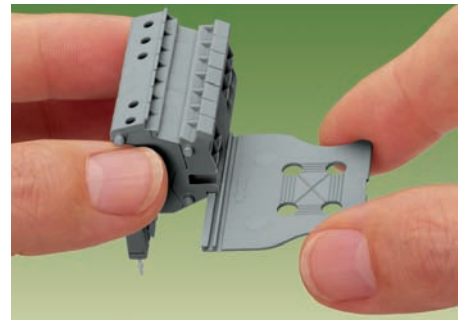
Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Test plug adapter,</b> for test plugs 4 mm/0.157 in Ø, for testing rail-mounted terminal blocks of series 2001/2002/2004/2006/2010/2016		<b>Modular TOPJOB® S connectors with CAGE CLAMP® S connection,</b> modular, grey, for series 2001, module width 4.2 mm/0.165 in, 18 A 1 pole <b>2001-501</b> 100 (4 x 25) for Series 2002, module width 5.2 mm/0.205 in, 24 A 1 pole <b>2002-501</b> 100 (4 x 25) for Series 2004, module width 6.2 mm/0.244 in, 32 A 1 pole <b>2004-501</b> 100 (4 x 25)	
<b>2009-174</b>	100 (4 x 25)	<b>Spacer,</b> modular, grey, for series 2001, width 4.2 mm/0.165 in <b>2001-549</b> 100 (4 x 25) for series 2002, width 5.2 mm/0.205 in <b>2002-549</b> 100 (4 x 25) for series 2004, width 6.2 mm/0.244 in <b>2004-549</b> 100 (4 x 25)	
<b>Testing tap,</b> for connecting individual test wires of AWG 28 to 14 (0.08 mm <sup>2</sup> – 2.5 mm <sup>2</sup> ) without tools			
<b>2009-182</b>	100 (4 x 25)		



Wire connection:  
Screwdriver actuation for connection of all conductor types, i.e. stripped stranded conductors, or push-in connection of solid or ferruled stranded conductors.

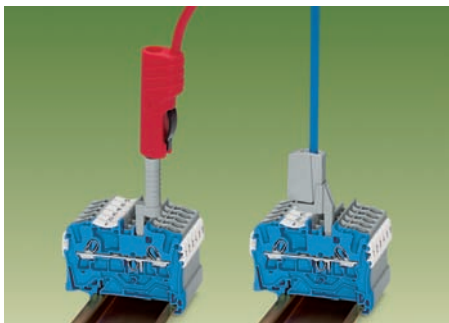
**Accessories** appropriate marker system **WMB/Mini-WSB/Marker strips** (see section 14)

<b>Banana plugs,</b> for sockets 4 mm/0.157 in Ø  see page 2.42	<b>Test plug,</b> with cable 500 mm/17.7"  2 mm/0.079 in Ø, red <b>210-136</b> 50 2.3 mm/0.091 in Ø, yel. <b>210-137</b> 50
<b>Test plug,</b> 4 mm/0.157 in Ø,  touch proof, not offered by WAGO	<b>Strain relief plate,</b> grey  snappable onto connector strips
for ex. mfd by Multi Contact Deutschland GmbH	6 mm/0.236 in wide <b>734-327</b> 100 (4 x 25) 12.5 mm/0.492 in wide <b>734-328</b> 100 (4 x 25) 25 mm/0.984 in wide <b>734-329</b> 100 (4 x 25) 35 mm/1.378 in wide <b>734-326</b> 100 (4 x 25)

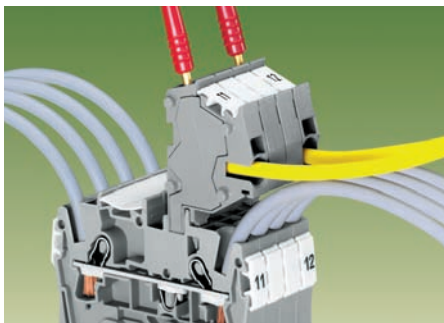


Snapping on a strain relief plate

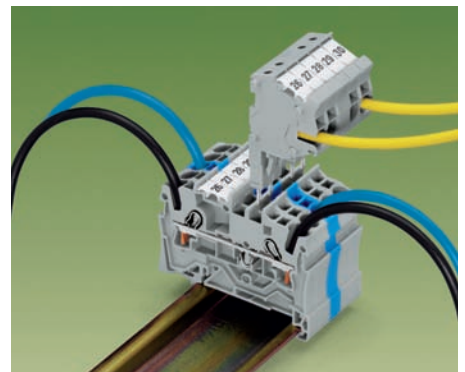
**Application notes**



Testing TOPJOB® S rail-mounted terminal blocks using a test plug adapter or testing tap.

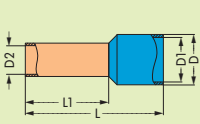


The connector has a test socket for 2 mm/0.079 in or 2.3 mm/0.091 in test plugs.













The modular connectors provide an additional connection option for conductors of the same cross section range as the terminal blocks being used.

# Ferrules for TOPJOB® S Rail-mounted Terminal Blocks and Crimping Tools











Dimensions (in mm)	suitable for series	Sleeve for mm <sup>2</sup>	AWG	Color	Stripped length mm	L	L1	D mm	D1	D2	Item No.	Pack.-unit pcs
 <p>Insulated ferrules, electrolytic copper, electro-finish plated, acc. to DIN 46228, part 4/09.90</p>	2001 – 2002	0.5	22	white	12	16	10	3.1	2.6	1.0	216-241	1000
	2001 – 2002	0.75	20	grey	12	16	10	3.3	2.8	1.2	216-242	1000
	2002 – 2006	0.75	20	grey	14	18	12	3.3	2.8	1.2	216-262	1000
	2001 – 2002	1.0	18	red	12	16	10	3.5	3.0	1.4	216-243	1000
	2002 – 2006	1.0	18	red	14	18	12	3.5	3.0	1.4	216-263	1000
	2001 – 2002	1.5	16	black	12	16	10	4.0	3.5	1.7	216-244	1000
	2002 – 2006	1.5	16	black	14	18	12	4.0	3.5	1.7	216-264	1000
	2010 – 2016	1.5	16	black	20	24	18	4.0	3.5	1.7	216-284	1000
	2002	2.5	14	blue	12	17	10	4.7	4.2	2.2	216-246	1000
	2002 – 2006	2.5	14	blue	14	19	12	4.7	4.2	2.2	216-266	1000
	2010 – 2016	2.5	14	blue	20	25	18	4.7	4.2	2.2	216-286	1000
	2004 – 2006	4.0	12	grey	14	20	12	5.4	4.8	2.8	216-267	500
	2010 – 2016	4.0	12	grey	20	26	18	5.4	4.8	2.8	216-287	500
	2006	6.0	10	yellow	14	20	12	6.9	6.3	3.5	216-208	500
	2010 – 2016	6.0	10	yellow	20	26	18	6.9	6.3	3.5	216-288	500
2010 – 2016	10.0	8	red	20	28	18	8.4	7.6	4.5	216-289	500	
2016	16.0	6	blue	23	28	18	9.6	8.8	5.8	216-210	500	

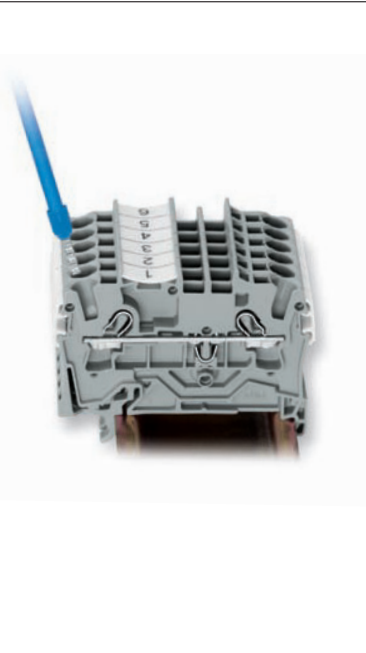
## TOPJOB® S – overview of ferrules from 0.5 mm<sup>2</sup>

										
Series	Rated cross section in mm <sup>2</sup>	0.5 mm <sup>2</sup>	0.75 mm <sup>2</sup>	1 mm <sup>2</sup>	1.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	4 mm <sup>2</sup>	6 mm <sup>2</sup>	10 mm <sup>2</sup>	16 mm <sup>2</sup>
2001	0.25 – 1.5 (2,5)	216-241	216-242	216-243	216-244	—	—	—	—	—
2002	0.25 – 2.5 (4)	216-241	216-242	216-243	216-244	216-246	—	—	—	—
2003	0.25 – 2.5 (4)	216-241	216-242	216-243	216-244	216-246	—	—	—	—
2004	0.5 – 4 (6)	—	216-262	216-263	216-264	216-266	216-267	—	—	—
2006	0.5 – 6 (10)	—	216-262	216-263	216-264	216-266	216-267	216-208	—	—
2010	0.5 – 10 (16)	—	—	—	216-284	216-286	216-287	216-288	216-289	—
2016	0.5 – 16 (25)	—	—	—	216-284	216-286	216-287	216-288	216-289	216-210

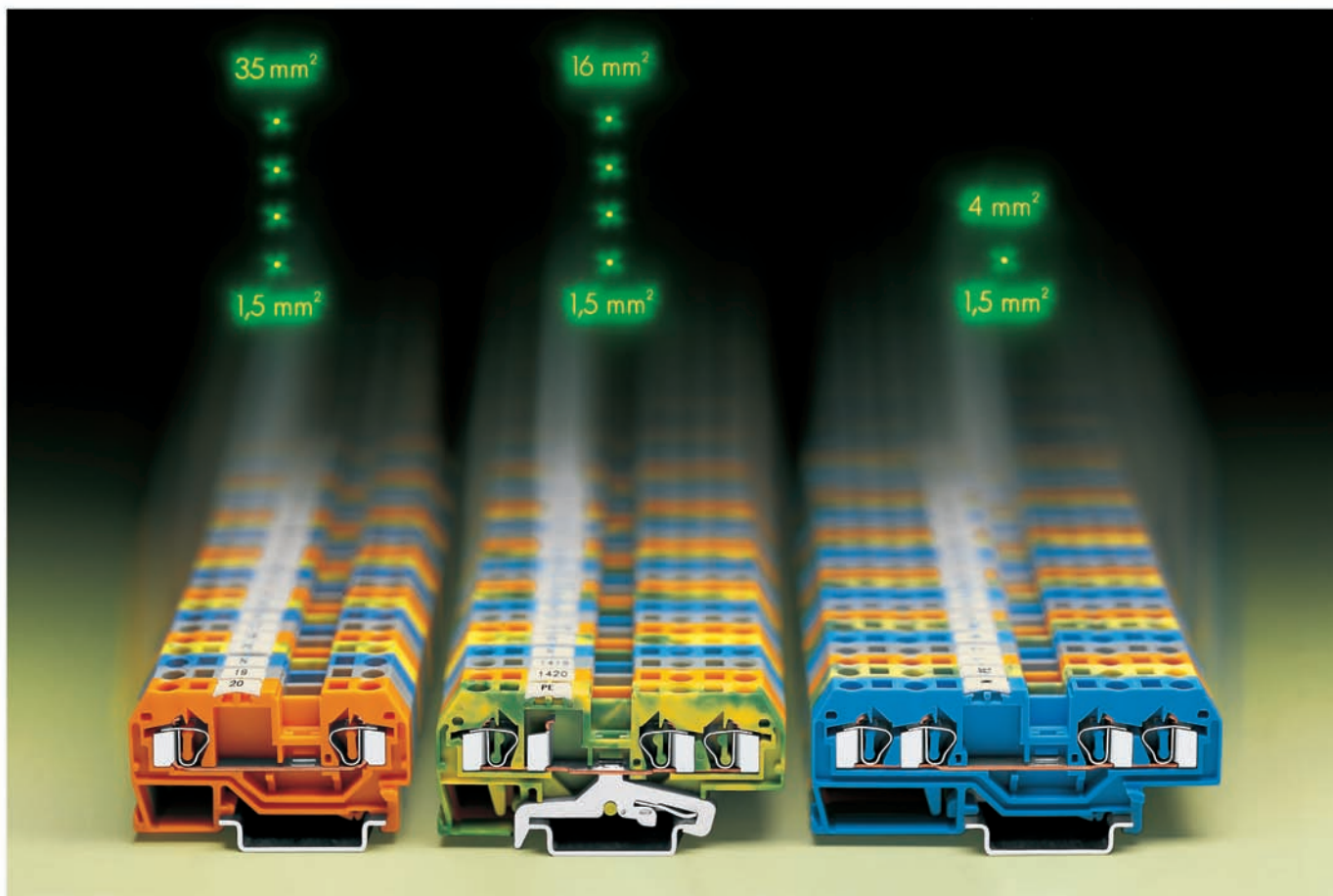


## TOPJOB® S – overview of directly connectable ferrules

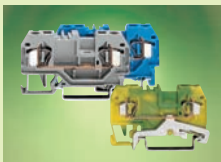
										
Series	Rated cross section in mm <sup>2</sup>	0.5 mm <sup>2</sup>	0.75 mm <sup>2</sup>	1 mm <sup>2</sup>	1.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	4 mm <sup>2</sup>	6 mm <sup>2</sup>	10 mm <sup>2</sup>	16 mm <sup>2</sup>
2001	0.25 – 1.5 (2,5)	—	216-242	216-243	216-244	—	—	—	—	—
2002	0.25 – 2.5 (4)	—	216-242	216-243	216-244	216-246	—	—	—	—
2003	0.25 – 2.5 (4)	—	216-242	216-243	216-244	216-246	—	—	—	—
2004	0.5 – 4 (6)	—	216-262	216-263	216-264	216-266	216-267	—	—	—
2006	0.5 – 6 (10)	—	—	—	216-264	216-266	216-267	216-208	—	—
2010	0.5 – 10 (16)	—	—	—	—	216-286	216-287	216-288	216-289	—
2016	0.5 – 16 (25)	—	—	—	—	216-286	216-287	216-288	216-289	216-210



Crimping tools see section 14



WAGO front-entry  
rail-mounted terminal blocks  
of series 279 to 285

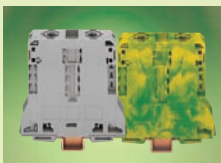


**Through, ground (earth) conductor and shield (screen) terminal blocks**  
 – angled type  
 – horizontal type  
 0.08 mm<sup>2</sup> to 16 mm<sup>2</sup> / AWG 28 – 6

Series 279 – 284 and 880 2.8 – 2.20

**Distribution terminal blocks**  
 10 mm<sup>2</sup>/35 mm<sup>2</sup> / AWG 8/2

Series 284 \_\_\_\_\_ 2.25



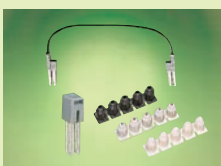
**High current terminal blocks**  
 6 mm<sup>2</sup> – 35 mm<sup>2</sup> / AWG 8 – 2  
 25 mm<sup>2</sup> – 95 mm<sup>2</sup> / AWG 4 – 0000

Series 285 \_\_\_\_\_ 2.21  
 Series 285 \_\_\_\_\_ 2.22 – 2.24



**Multilevel terminal blocks**  
 – Double deck 1.5 mm<sup>2</sup> / AWG 16  
                   2.5 mm<sup>2</sup> / AWG 12  
                   4 mm<sup>2</sup> / AWG 12  
 – Triple deck 2.5 mm<sup>2</sup> / AWG 12  
 – Quadruple deck 4 mm<sup>2</sup> / AWG 12

Series 279 \_\_\_\_\_  
 Series 280 \_\_\_\_\_  
 Series 281 \_\_\_\_\_ 2.29 – 2.33  
 Series 280 \_\_\_\_\_ 2.34 – 2.35  
 Series 281 \_\_\_\_\_ 2.36



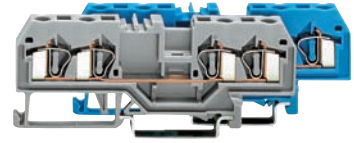
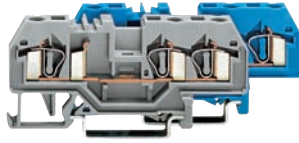
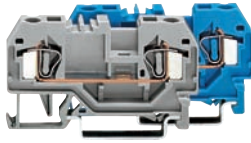
**Accessories for rail-mounted terminal blocks**

– Banana plugs \_\_\_\_\_ 2.42  
 – Busbar terminal blocks \_\_\_\_\_ 11.20 – 11.21  
 – Comb type jumper bars \_\_\_\_\_ 2.44  
 – Insulations stops \_\_\_\_\_ 2.43  
 – Staggered jumpers \_\_\_\_\_ 2.45  
 – Step-down jumpers for through terminal blocks \_\_\_\_\_ 2.26 – 2.27  
 – Test plug modules \_\_\_\_\_ 2.38 – 2.41  
 – Wire jumpers \_\_\_\_\_ 2.45



# Rail-Mounted Terminal Blocks with CAGE CLAMP® Connection – Product Summary –

## Series 279 – 285 Through terminal blocks



2-conductor terminal blocks

mm <sup>2</sup> /AWG	1.5/16	2.5/12	4/12	6/10	10/8	16/6	35/2
Page 2.	8	10/12	16/17	18	19	20	21

3-conductor terminal blocks

mm <sup>2</sup> /AWG	1.5/16	2.5/12	4/12	6/10	10/8	16/6
Page 2.	8	10	16	18	19	20

4-conductor terminal blocks

mm <sup>2</sup> /AWG	1.5/16	2.5/12	4/12
Page 2.	8	10-12	16

### Through terminal blocks



2-conductor terminal blocks

mm <sup>2</sup> /AWG	1.5/16	2.5/12	4/12
Page 2.	8	10	16

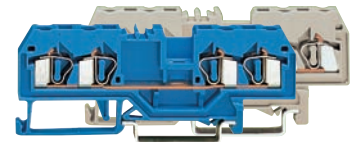
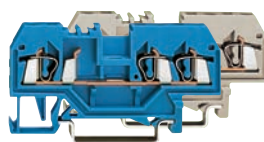
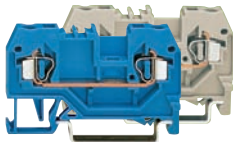
3-conductor terminal blocks

mm <sup>2</sup> /AWG	1.5/16	2.5/12	4/12
Page 2.	8	10	16

4-conductor terminal blocks

mm <sup>2</sup> /AWG	1.5/16	2.5/12	4/12
Page 2.	8	11-12	16

## Series 279 – 282 Through terminal blocks for hazardous environments Ex i and Ex e II



2-conductor terminal blocks

mm <sup>2</sup> /AWG	1.5/16	2.5/12	4/12	6/10
Page 2.	8	10/12	16/17	18

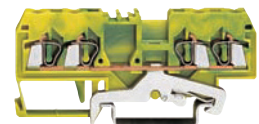
3-conductor terminal blocks

mm <sup>2</sup> /AWG	1.5/16	2.5/12	4/12	6/10
Page 2.	8	10	16	18

4-conductor terminal blocks

mm <sup>2</sup> /AWG	1.5/16	2.5/12	4/12
Page 2.	8/9	10-12	16

## Series 279 – 285 Ground (earth) conductor terminal blocks



2-conductor terminal blocks

mm <sup>2</sup> /AWG	1.5/16	2.5/12	4/12	6/10	10/8	16/6	35/2
Page 2.	8	10/12	16/17	18	19	20	21

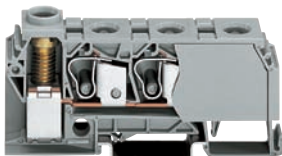
3-conductor terminal blocks

mm <sup>2</sup> /AWG	1.5/16	2.5/12	4/12	6/10	10/8	16/6
Page 2.	8	10/12	16	18	19	20

4-conductor terminal blocks

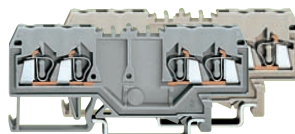
mm <sup>2</sup> /AWG	1.5/16	2.5/12	4/12
Page 2.	8	10/11	16

## Series 284 Distribution terminal blocks



mm <sup>2</sup> /AWG	35/2 and 3x10/3x8
Page 2.	25

## Series 279/280 Double potential terminal blocks and Ex e II double potential terminal blocks



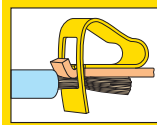
mm <sup>2</sup> /AWG	1.5/16	2.5/12
Page 2.	8	10/12

## Series 279 – 281 Shield (screen) terminal blocks

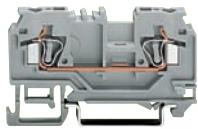


4-conductor terminal blocks

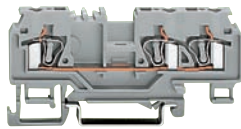
mm <sup>2</sup> /AWG	1.5/16	2.5/12	4/12
Page 2.	8	10/11	16



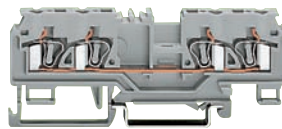
**Series 880 Through terminal blocks without/with shield (screen) contact, Slim-Line, 5 mm/0.197 in wide**



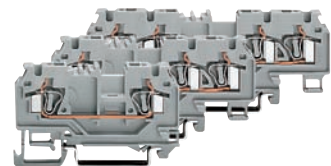
2-conductor terminal block  
mm<sup>2</sup>/AWG 4/12  
Page 2. 14



3-conductor terminal block  
mm<sup>2</sup>/AWG 4/12  
Page 2. 14



4-conductor terminal block  
mm<sup>2</sup>/AWG 4/12  
Page 2. 14



2- to 4-conductor terminal blocks  
4 mm<sup>2</sup>/AWG 12 with ferrules  
Page 2.15

**Series 880 Ground (earth) conductor terminal blocks, Slim-Line, 5 mm/0.197 in wide**



2-conductor terminal block  
mm<sup>2</sup>/AWG 4/12  
Page 2. 14



3-conductor terminal block  
mm<sup>2</sup>/AWG 4/12  
Page 2. 14



4-conductor terminal block  
mm<sup>2</sup>/AWG 4/12  
Page 2. 14



2- to 4-conductor terminal blocks  
4 mm<sup>2</sup>/AWG 12 with ferrules  
Page 2.15

**Series 280/281 Through terminal blocks**



3-conductor terminal blocks  
mm<sup>2</sup>/AWG 2.5/12 4/12  
Page 2. 12 17



4-conductor terminal block  
mm<sup>2</sup>/AWG 2.5/12  
Page 2. 13



3- and 4-conductor terminal blocks  
mm<sup>2</sup>/AWG 2.5/12  
Page 2. 12 - 13

**Series 280/281 Through terminal blocks for hazardous environments Ex i and Ex e II**



3- and 4-conductor terminal blocks  
mm<sup>2</sup>/AWG 2.5/12 4/12  
Page 2. 12 17

**Series 280 Shield (screen) terminal blocks**



3-conductor terminal block  
mm<sup>2</sup>/AWG 2.5/12  
Page 2. 12

**Series 280/281 Ground (earth) conductor terminal blocks**



3-conductor terminal blocks  
mm<sup>2</sup>/AWG 2.5/12 4/12  
Page 2. 12 17

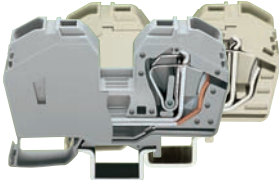
**Series 283 Ground (earth) conductor terminal blocks Supply terminal blocks**



Supply terminal block 0.2 – 16 mm<sup>2</sup>/AWG 24 – 6  
283-609  
Accessories end plate 283-320


# High Current Rail-Mounted Terminal Blocks and Multilevel Rail-Mounted Terminal Blocks – Product Summary –

**Series 285** Through terminal block and Ex e II through terminal block



mm <sup>2</sup> /AWG	35/2
Page 2.	21

**Series 285** Ground (earth) conductor terminal block




mm <sup>2</sup> /AWG	35/2
Page 2.	21

**Series 285** Through terminal block and Ex e II through terminal block




mm <sup>2</sup> /AWG	25 to 95/4 to 0000
Page 2.	24

**Series 285** Ground (earth) conductor terminal block



mm <sup>2</sup> /AWG	25 to 95/4 to 0000
Page 2.	24

**Series 280/281** Double deck terminal blocks (selection)

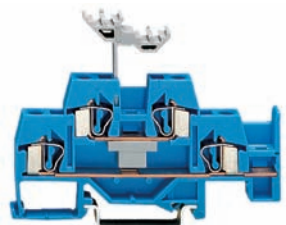


Through/through connection	mm <sup>2</sup> /AWG	1.5/16	2.5/12	4/12
Page 2.	29	30-32	33	

Through/carrier connection	mm <sup>2</sup> /AWG	2.5/12
Page 2.	31	

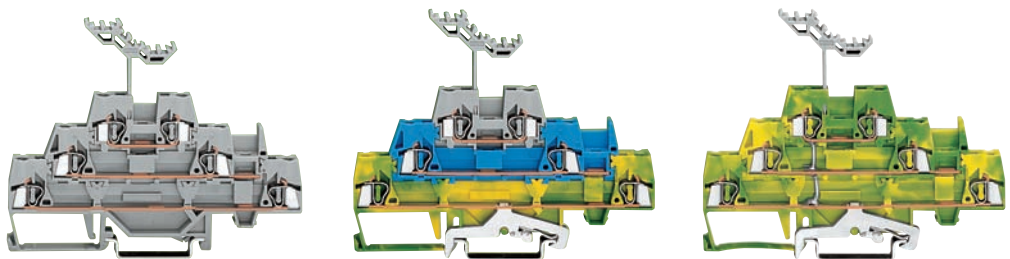
4-conductor terminal block	mm <sup>2</sup> /AWG	1.5/16	2.5/12
Page 2.	29	30	

**Series 280/281** Ex i double deck terminal blocks



Through/through connection	mm <sup>2</sup> /AWG	1.5/16	2.5/12	4/12
Page 2.	29	30	33	

**Series 280** Triple deck terminal blocks (selection)

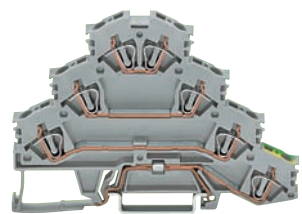


Through/through/through connection	mm <sup>2</sup> /AWG	2.5/12
Page 2.	34 - 35	

Ground (earth)/through/through connection	mm <sup>2</sup> /AWG	2.5/12
Page 2.	34 - 35	

6-conductor ground (earth) terminal block	mm <sup>2</sup> /AWG	2.5/12
Page 2.	34 - 35	

**Series 281** Rail-mounted terminal blocks for wiring of electric motors



Quadruple deck	mm <sup>2</sup> /AWG	2.5/12
Page 2.	34 - 35	

## Accessories (selection)



Adjacent jumpers  
Page 2.8



Alternate jumper  
Page 2.8



Staggered jumper  
Page 2.45



Wire jumper  
Page 2.45



Step-down jumper  
Pages 2.26 – 2.27



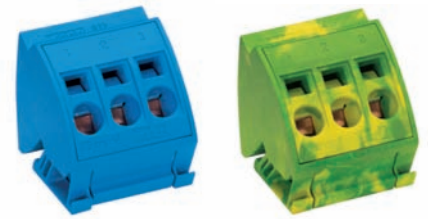
Comb type jumper bar  
Page 2.44



Protective warning marker  
Page 2.8



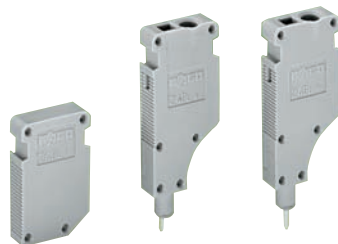
Insulation stops  
Page 2.43



Busbar terminal blocks  
Pages 11.20 – 11.21



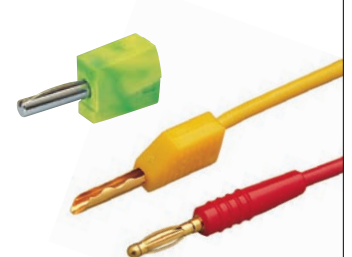
Modular test plugs  
Page 2.40



Test plug modules  
using cond. wire opening  
Page 2.38



Test plug modules  
using jumper contact position  
Page 2.39 and 2.41

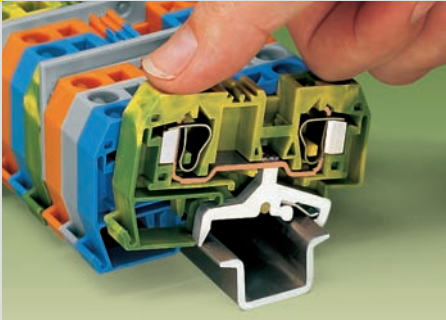


Banana plugs – Page 2.42  
Test plugs

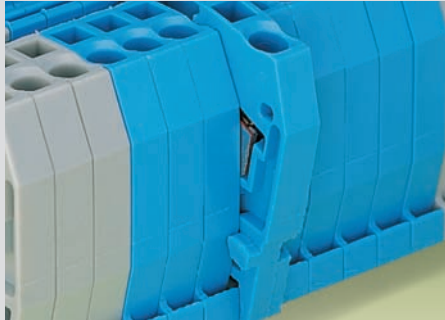


# Rail-mounted Terminal Blocks with CAGE CLAMP® . . . Series 279 to 285 and 880

## Assembly

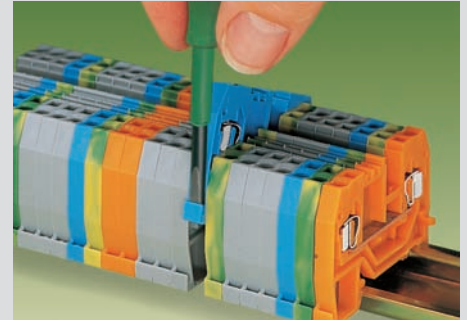


By snapping a ground (earth) conductor terminal block onto the carrier rail, a direct electrical connection is automatically made to the rail.



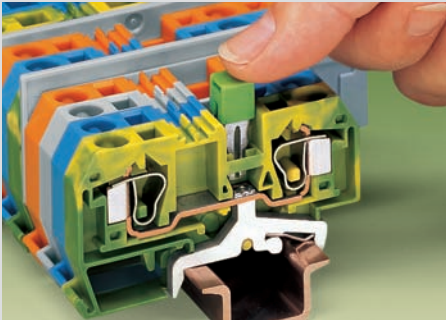
Quick assembly keys prevent reverse mounting

## Removal



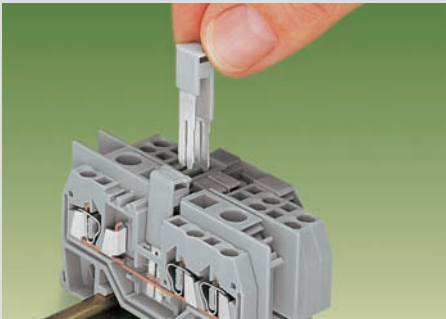
Removal of a terminal block from the assembly

## Commoning



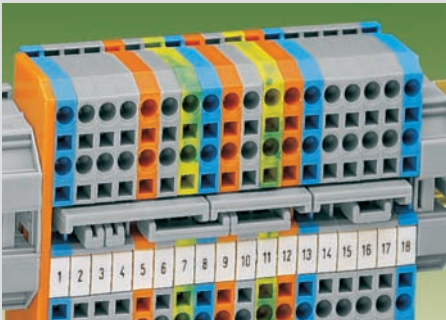
Commoning of ground (earth) cond. term. blocks with through term. bl. is possible in one direction only using adjacent jumpers. In addition to the required marking of these term. blocks, we also recommend the use of the yell.-green adj. jumpers.

## Commoning



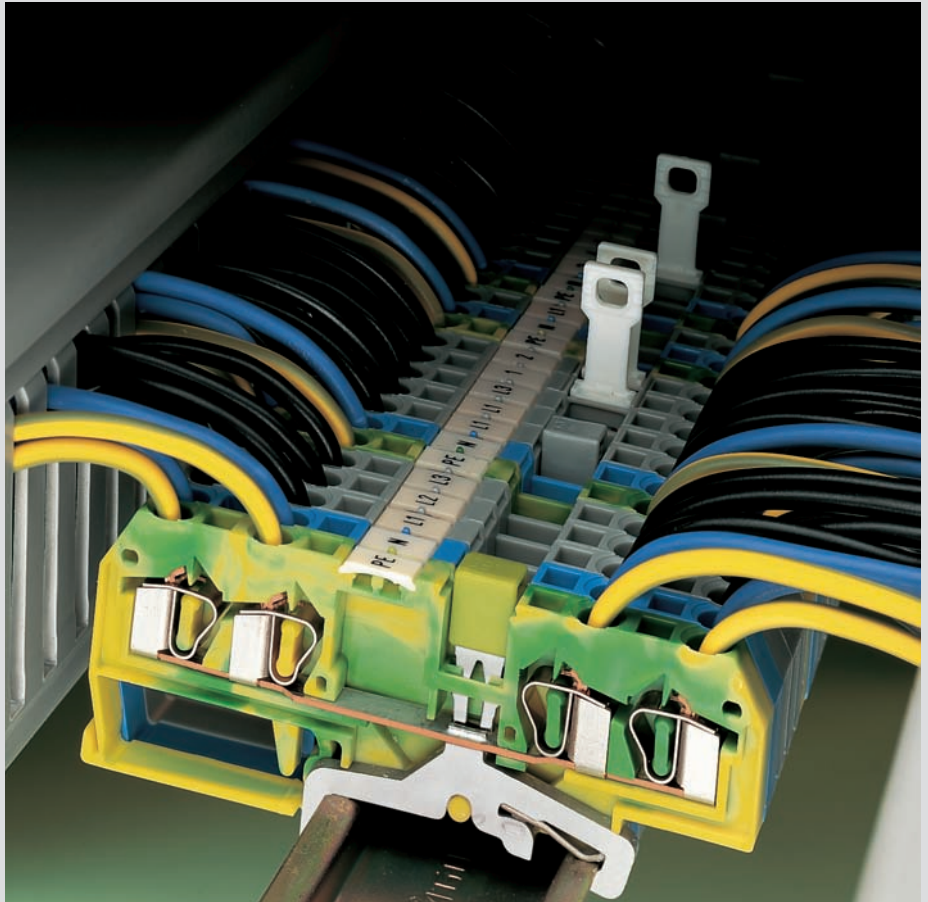
Commoning of terminal blocks of different sizes – step down  
Application notes see page 2.26

## Commoning

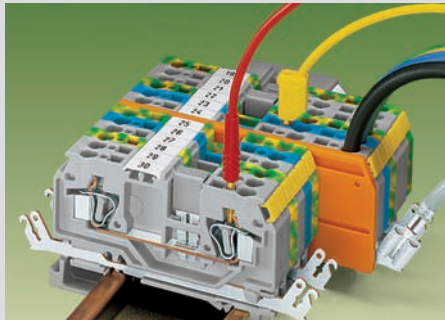


Staggered jumpers for sophisticated wiring jobs.  
Application notes see page 2.45

According to EN 60947-7-2 [VDE 0611, part 3] steel carrier rails may not be used for PEN applications.

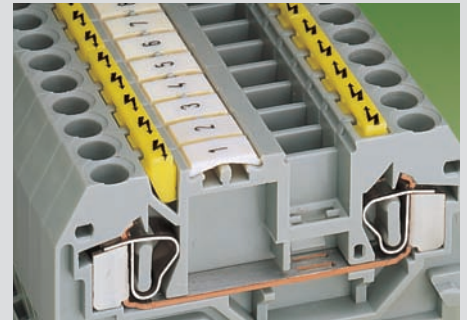


## Testing – Series 880



The terminal blocks of series 880 have an additional test slot for test plugs 2 mm / 0.079 in Ø or 2.3 mm / 0.091 in Ø

## Protective warning marker

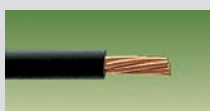


Protective warning markers inserted into the operating slots



CAGE CLAMP® clamps the following copper wires: \*

solid



stranded



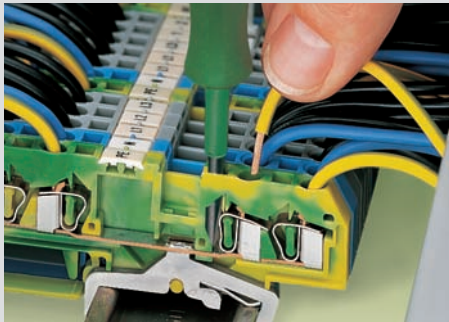
fine stranded, also with tinned single strands

\* For aluminum wire see notes in section 15!

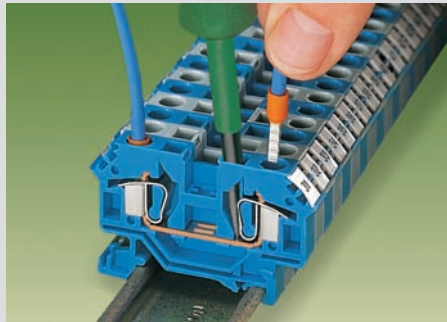


# ... Description and Handling

## CAGE CLAMP® connection



Connection of conductors



Connection of conductors

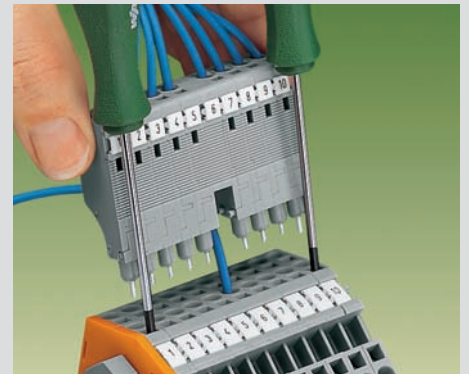
❶ When using conductors with ferrules, it is necessary to use a terminal block one size larger than the nominal cross section of the conductor

## Testing



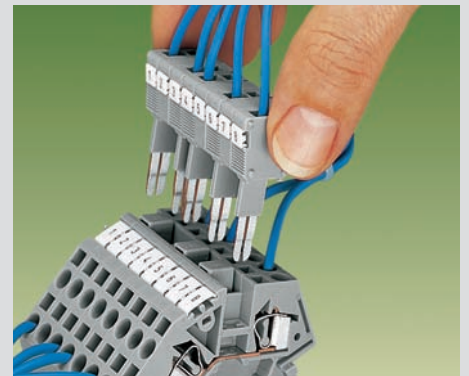
Testing with test plug.  
Test plug with CAGE CLAMP®

## Testing

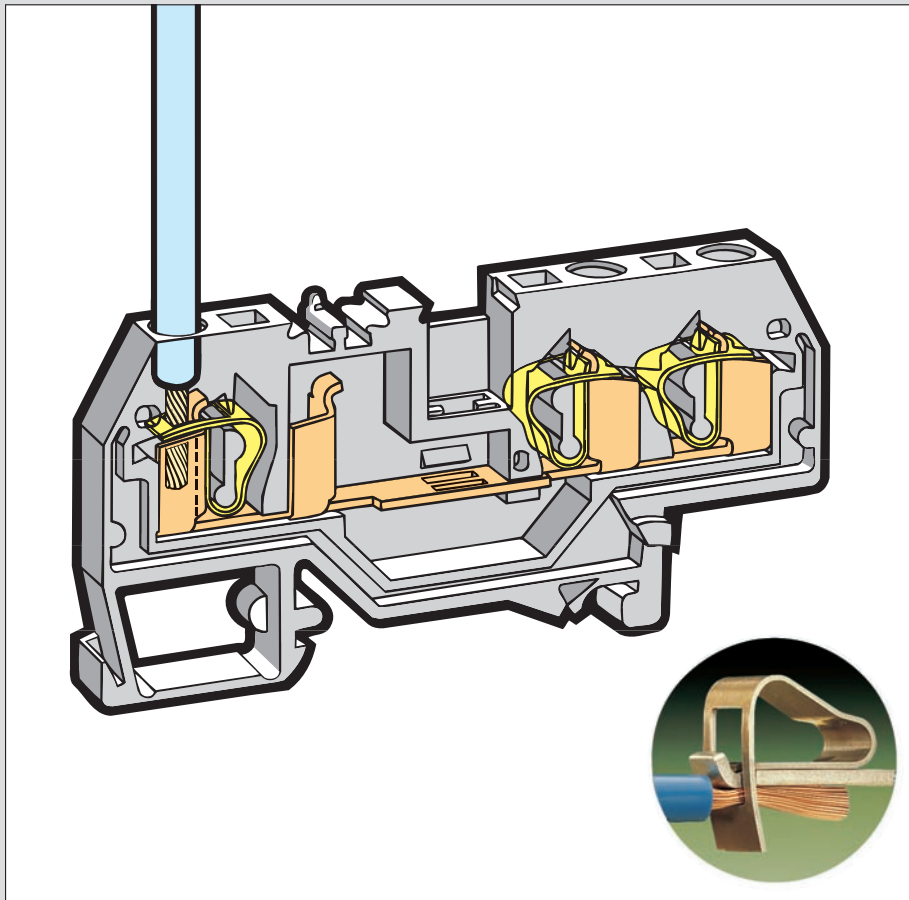


Test plug modules with CAGE CLAMP®. Testing using the conductor wire opening, see page 2.38

## Testing



Test plug modules with CAGE CLAMP®. Testing using jumper contact position in current bar, see page 2.39



## Marking



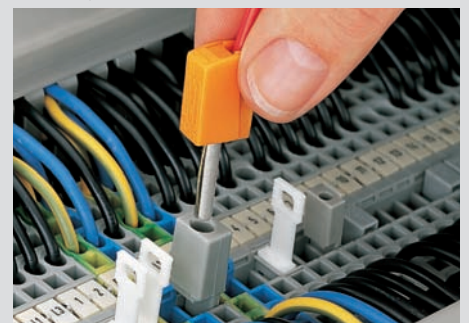
Marking with WMB multi-marking system or WSB quick marking system.  
For other systems see section 14

## Insulation stop



Insertion of insulation stop.  
Application notes see page 2.43

## Testing



Testing with banana plug 4 mm / 0.157 in Ø,  
using test plug adapter 209-170



fine-stranded wire –  
tip bonded

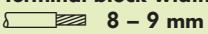



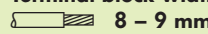



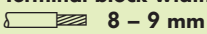





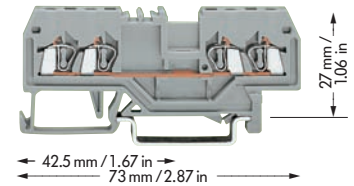
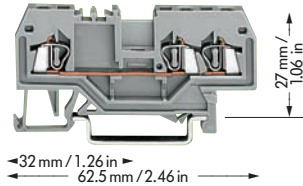
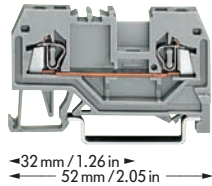
fine-stranded wire  
with crimped ferrule ❶




































fine-stranded wire  
with crimped pin terminal

# Through/Ground (Earth) Conductor/Shield (Screen) and Terminal Blocks 1.5 mm<sup>2</sup> / AWG 16, Series 279




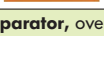
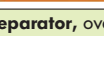
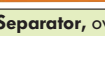








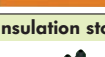
























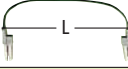
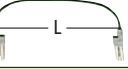
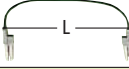
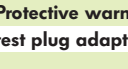
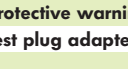
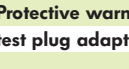
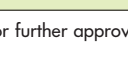


<b>0.08 – 1.5 mm<sup>2</sup></b> <b>800 V/8 kV/3 ①</b> <b>18 A</b> <b>Terminal block width 4 mm / 0.157 in</b>  <b>8 – 9 mm / 0.33 in</b> <small>* </small>	<b>AWG 28 – 16</b> <b>600 V, 10 A </b> <b>600 V, 10 A </b>	<b>0.08 – 1.5 mm<sup>2</sup></b> <b>800 V/8 kV/3 ①</b> <b>18 A</b> <b>Terminal block width 4 mm / 0.157 in</b>  <b>8 – 9 mm / 0.33 in</b> <small>* </small>	<b>AWG 28 – 16</b> <b>600 V, 10 A </b> <b>600 V, 10 A </b>	<b>0.08 – 1.5 mm<sup>2</sup></b> <b>800 V/8 kV/3 ①</b> <b>18 A</b> <b>Terminal block width 4 mm / 0.157 in</b>  <b>8 – 9 mm / 0.33 in</b> <small>* </small>	<b>AWG 28 – 16</b> <b>600 V, 10 A </b> <b>600 V, 10 A </b>
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Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>2-conductor through terminal blocks</b>		<b>3-conductor through terminal blocks</b>		<b>4-conductor through terminal blocks</b>	
grey 	<b>279-901</b> 100	grey 	<b>279-681</b> 100	grey 	<b>279-831</b> 100
blue 	<b>279-904</b> 100	blue 	<b>279-684</b> 100	blue 	<b>279-834</b> 100
orange 	<b>279-902</b> 100	orange 	<b>279-682</b> 100	orange 	<b>279-832</b> 100
red 	<b>279-903</b> 100	red 	<b>279-683</b> 100	red 	<b>279-833</b> 100
black 	<b>279-905</b> 100	black 	<b>279-685</b> 100	black 	<b>279-835</b> 100
yellow 	<b>279-906</b> 100	yellow 	<b>279-686</b> 100	yellow 	<b>279-836</b> 100
light grey  	<b>279-992</b> 100	light grey  	<b>279-993</b> 100	light grey  	<b>279-994</b> 100
<b>2-conductor ground (earth) terminal blocks</b>		<b>3-conductor ground (earth) terminal blocks</b>		<b>4-conductor ground (earth) terminal blocks</b>	
green-yellow 	<b>279-907</b> 100	green-yellow 	<b>279-687</b> 100	green-yellow 	<b>279-837</b> 100
green-yellow  	<b>279-907/999-950</b> 100	green-yellow  	<b>279-687/999-950</b> 100	green-yellow  	<b>279-837/999-950</b> 100
<b>Other terminal blocks with the same shape</b>		<b>Other terminal blocks with the same shape</b>		<b>Other terminal blocks with the same shape</b>	
diode <b>279-915/...-...</b>	page 7.56	diode <b>279-673/...-...</b>	page 7.56	double potential <b>279-826</b>	page 2.9
		LED <b>279-674/...-...</b>	page 7.60	diode <b>279-815/...-...</b>	page 7.56
				LED <b>279-809/...-...</b>	page 7.60

## Accessories Series 279

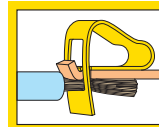
Appropriate marking system **WMB/WSB/WFB** (see section 14)

End and intermediate plate, 2 mm / 0.079 in thick	End and intermediate plate, 2 mm / 0.079 in thick	End and intermediate plate, 2 mm / 0.079 in thick
 orange <b>279-328</b> 100 (4 x 25)	 orange <b>279-339</b> 100 (4 x 25)	 orange <b>279-346</b> 100 (4 x 25)
 grey <b>279-325</b> 100 (4 x 25)	 grey <b>279-308</b> 100 (4 x 25)	 grey <b>279-344</b> 100 (4 x 25)
 light grey <b>279-330</b> 100 (4 x 25)	 light grey <b>279-341</b> 100 (4 x 25)	 light grey <b>279-348</b> 100 (4 x 25)
<b>Separator, oversized, 2 mm / 0.079 in thick</b>	<b>Separator, oversized, 2 mm / 0.079 in thick</b>	<b>Separator, oversized, 2 mm / 0.079 in thick</b>
 orange <b>279-329</b> 100 (4 x 25)	 orange <b>279-340</b> 100 (4 x 25)	 orange <b>279-347</b> 100 (4 x 25)
 grey <b>279-326</b> 100 (4 x 25)	 grey <b>279-309</b> 100 (4 x 25)	 grey <b>279-345</b> 100 (4 x 25)
 light grey <b>279-331</b> 100 (4 x 25)	 light grey <b>279-342</b> 100 (4 x 25)	 light grey <b>279-349</b> 100 (4 x 25)
<b>Insulation stop , 5 pcs/strip</b>	<b>Insulation stop , 5 pcs/strip</b>	<b>Insulation stop , 5 pcs/strip</b>
 white <b>279-470</b> 200 strips	 white <b>279-470</b> 200 strips	 white <b>279-470</b> 200 strips
 dark grey <b>279-471</b> 200 strips	 dark grey <b>279-471</b> 200 strips	 dark grey <b>279-471</b> 200 strips
<b>Adjacent jumper, insulated, I<sub>N</sub> 15 A</b>	<b>Adjacent jumper, insulated, I<sub>N</sub> 15 A</b>	<b>Adjacent jumper, insulated, I<sub>N</sub> 15 A</b>
 grey <b>279-402</b> 200 (8 x 25)	 grey <b>279-402</b> 200 (8 x 25)	 grey <b>279-402</b> 200 (8 x 25)
 yell.-green <b>279-422</b> 200 (8 x 25)	 yell.-green <b>279-422</b> 200 (8 x 25)	 yell.-green <b>279-422</b> 200 (8 x 25)
<b>Alternate jumper, insulated, I<sub>N</sub> 15 A</b>	<b>Alternate jumper, insulated, I<sub>N</sub> 15 A</b>	<b>Alternate jumper, insulated, I<sub>N</sub> 15 A</b>
 grey <b>279-409</b> 100 (4 x 25)	 grey <b>279-409</b> 100 (4 x 25)	 grey <b>279-409</b> 100 (4 x 25)
<b>Push-in type wire jumper , insulated, I<sub>N</sub> 9 A</b>	<b>Push-in type wire jumper , insulated, I<sub>N</sub> 9 A</b>	<b>Push-in type wire jumper , insulated, I<sub>N</sub> 9 A</b>
 L = 60 mm <b>249-125</b> 10	 L = 60 mm <b>249-125</b> 10	 L = 60 mm <b>249-125</b> 10
 L = 110 mm <b>249-126</b> 10	 L = 110 mm <b>249-126</b> 10	 L = 110 mm <b>249-126</b> 10
 L = 250 mm <b>249-127</b> 10	 L = 250 mm <b>249-127</b> 10	 L = 250 mm <b>249-127</b> 10
<b>Protective warning marker, comp type jumper bar, test plug adapter, etc. (see right page)</b>	<b>Protective warning marker, comp type jumper bar, test plug adapter, etc. (see right page)</b>	<b>Protective warning marker, comp type jumper bar, test plug adapter, etc. (see right page)</b>

\* For further approvals with corresponding ratings see section 15.

# Double Potential Terminal Blocks

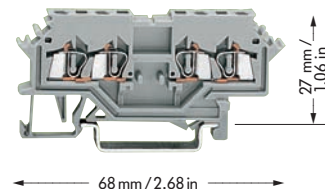
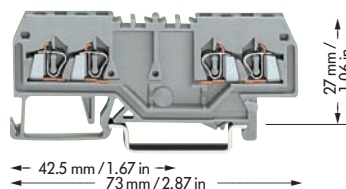
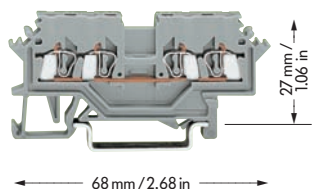
## 1.5 mm<sup>2</sup> / AWG 16, Series 279



2  
9

2

<p>0.08 – 1.5 mm<sup>2</sup>   AWG 28 – 16 800 V/8 kV/3 ①   600 V, 10 A ② 18 A   600 V, 10 A ③</p> <p>Terminal block width 4 mm / 0.157 in 8 – 9 mm / 0.33 in</p> <p>* ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿</p>	<p>0.08 – 1.5 mm<sup>2</sup>   AWG 28 – 16 800 V/8 kV/3 ①   600 V, 10 A ② 18 A   600 V, 10 A ③</p> <p>Terminal block width 4 mm / 0.157 in 8 – 9 mm / 0.33 in</p> <p>* ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿</p>	<p>0.08 – 1.5 mm<sup>2</sup>   AWG 28 – 16 800 V/8 kV/3 ①   600 V, 10 A ② 18 A   600 V, 10 A ③</p> <p>Terminal block width 4 mm / 0.157 in 8 – 9 mm / 0.33 in</p> <p>* ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿</p>
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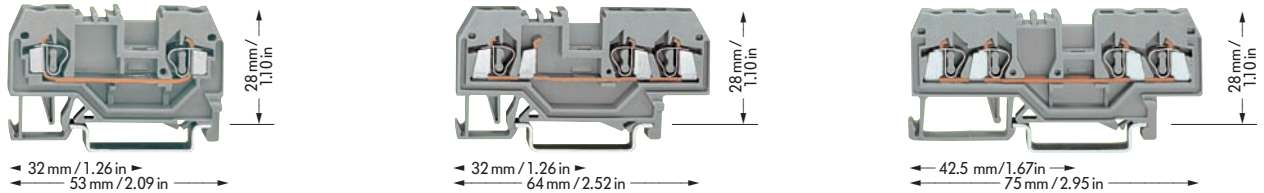


Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>4-conductor through terminal blocks</b>		<b>Double potential terminal blocks, with double marker receptacle in the center of the terminal block</b>		<b>Double potential terminal blocks, with marker receptacle on the side of the terminal block</b>	
grey <b>279-621</b> ①	100	grey <b>279-826</b> ①	100	grey <b>279-626</b> ①	100
blue <b>279-604</b> ②	100	light grey ④ <b>279-995</b> ④	100	light grey ④ <b>279-989</b> ④	100
light grey ④ <b>279-990</b> ④	100				
<b>Other terminal blocks with the same shape</b>		<b>Attention! These double potential terminal blocks cannot be commoned with adjacent jumpers!</b>		<b>Attention! These double potential terminal blocks cannot be commoned with adjacent jumpers!</b>	
double potential <b>279-626</b>					
diode <b>279-623/...-...</b>	page 7.56				
LED <b>279-624/...-...</b>	page 7.60				
<b>End and intermediate plate, 2 mm/0.079 in thick</b>		<b>End and intermediate plate, 2 mm/0.079 in thick</b>		<b>End and intermediate plate, 2 mm/0.079 in thick</b>	
orange <b>279-317</b> 100 (4 x 25)		orange <b>279-346</b> 100 (4 x 25)		orange <b>279-317</b> 100 (4 x 25)	
grey <b>279-316</b> 100 (4 x 25)		grey <b>279-344</b> 100 (4 x 25)		grey <b>279-316</b> 100 (4 x 25)	
light grey <b>279-318</b> 100 (4 x 25)		light grey <b>279-348</b> 100 (4 x 25)		light grey <b>279-318</b> 100 (4 x 25)	
<b>Separator, oversized, 2 mm/0.079 in thick</b>		<b>Separator, oversized, 2 mm/0.079 in thick</b>		<b>Separator, oversized, 2 mm/0.079 in thick</b>	
orange <b>279-327</b> 100 (4 x 25)		orange <b>279-347</b> 100 (4 x 25)		orange <b>279-327</b> 100 (4 x 25)	
grey <b>279-337</b> 100 (4 x 25)		grey <b>279-345</b> 100 (4 x 25)		grey <b>279-337</b> 100 (4 x 25)	
light grey <b>279-338</b> 100 (4 x 25)		light grey <b>279-349</b> 100 (4 x 25)		light grey <b>279-338</b> 100 (4 x 25)	
<b>Insulation stop ③, 5 pcs/strip</b>		<b>Insulation stop ③, 5 pcs/strip</b>		<b>Insulation stop ③, 5 pcs/strip</b>	
white <b>279-470</b> 200 strips		white <b>279-470</b> 200 strips		white <b>279-470</b> 200 strips	
dark grey <b>279-471</b> 200 strips		dark grey <b>279-471</b> 200 strips		dark grey <b>279-471</b> 200 strips	
<b>Adjacent jumper, insulated, I<sub>N</sub> 15 A</b>		<b>Comb type jumper bar ③, insulated,</b>		<b>Comb type jumper bar ③, insulated,</b>	
grey <b>279-402</b> 200 (8 x 25)		I <sub>N</sub> = I <sub>N</sub> of terminal block		I <sub>N</sub> = I <sub>N</sub> of terminal block	
yell.-green <b>279-422</b> 200 (8 x 25)		2-way <b>279-482</b> 200 (8 x 25)		2-way <b>279-482</b> 200 (8 x 25)	
		3-way <b>279-483</b> 200 (8 x 25)		3-way <b>279-483</b> 200 (8 x 25)	
<b>Alternate jumper, insulated, I<sub>N</sub> 15 A</b>		<b>Alternate comb type jumper bar, insulated,</b>		<b>Alternate comb type jumper bar, insulated,</b>	
grey <b>279-409</b> 100 (4 x 25)		I <sub>N</sub> = I <sub>N</sub> of terminal block		I <sub>N</sub> = I <sub>N</sub> of terminal block	
		2-way <b>279-492</b> 200 (8 x 25)		2-way <b>279-492</b> 200 (8 x 25)	
<b>Push-in type wire jumper ③, insulated, I<sub>N</sub> 9 A</b>		<b>Operating tool, insulated</b>		<b>Operating tool, insulated</b>	
L = 60 mm <b>249-125</b> 10		2-way <b>279-432</b> 1		2-way <b>279-432</b> 1	
L = 110 mm <b>249-126</b> 10		3-way <b>279-433</b> 1		3-way <b>279-433</b> 1	
L = 250 mm <b>249-127</b> 10					
<b>Protective warning marker, for 5 terminal blocks, fits into screwdriver slot</b>		<p>Double potential terminal blocks are space savers. Two independent through terminal blocks are placed in one insulated housing on one level. The width of the housing is only 4 mm/0.157 in. Compared to standard through terminal blocks, the width is only 2 mm/0.079 in for a total height of only 27 mm/1.063 in from the upper edge of the carrier rail. Input and output contacts of one circuit are placed on the same side of the terminal block. Both circuits can be individually marked according to input and output.</p> <p>① 800 V = rated voltage 8 kV = rated surge voltage 3 = pollution degree (see also section 15)</p> <p>② Suitable for Ex i applications</p> <p>④ Suitable for Ex e II applications 0.2 – 1.5 mm<sup>2</sup> AWG 24 – 16 550 V, 15 A (see also section 13) Ex e/Ex i separator see page 2.13</p> <p>③ See application notes on pages 2.43 – 2.45</p>			
yellow <b>279-415</b> 100 (4 x 25)					
<b>Test plug adapter, suitable f. term. bl. 1.5 mm<sup>2</sup> – 4 mm<sup>2</sup>, 5 mm/0.197 in wide</b>					
<b>280-404</b> 100 (4 x 25)					
or. test plug 210-137 (2.3 mm Ø)					
<b>Test plug adapter, suitable f. term. bl. 1.5 mm<sup>2</sup> – 10 mm<sup>2</sup>, 8 mm/0.315 in wide</b>					
<b>209-170</b> 50 (2 x 25)					
for test plug 4 mm/0.157 in Ø					
<b>Comp type jumper bar (see right column)</b>					



# Through/Ground (Earth) Conductor/Shield (Screen) and Terminal Blocks 2.5 mm<sup>2</sup> / AWG 12, Series 280

<p>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 12 800 V/8 kV/3 ①   600 V, 20 A ② 24 A   600 V, 25 A ③</p> <p>Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in</p> <p>* ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿</p>	<p>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 12 800 V/8 kV/3 ①   600 V, 20 A ② 24 A   600 V, 25 A ③</p> <p>Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in</p> <p>* ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿</p>	<p>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 12 800 V/8 kV/3 ①   600 V, 20 A ② 20 A   600 V, 25 A ③</p> <p>Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in</p> <p>* ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿</p>
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Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item-No.	Pack.-unit pcs			
<b>2-conductor through terminal blocks</b>			<b>3-conductor through terminal blocks</b>			<b>4-conductor through terminal blocks</b>		
grey 280-901	100	grey 280-681	100	grey 280-833	100			
blue 280-904	100	blue 280-684	100	blue 280-834	100			
orange 280-902	100	orange 280-650	100	orange 280-835	100			
red 280-903	100	red 280-653	100	red 280-830	100			
black 280-905	100	black 280-671	100	black 280-831	100			
yellow 280-906	100	yellow 280-672	100	yellow 280-832	100			
light grey 280-992	100	light grey 280-993	100	light grey 280-994	100			
<b>2-conductor ground (earth) terminal blocks</b>			<b>3-conductor ground (earth) terminal blocks</b>			<b>4-conductor ground (earth) terminal blocks</b>		
green-yellow 280-907	100	green-yellow 280-687	100	green-yellow 280-837	100			
green-yellow 280-907/999-950	100	green-yellow 280-687/999-950	100	green-yellow 280-837/999-950	100			
<b>Other terminal blocks with the same shape</b>			<b>Other terminal blocks with the same shape</b>			<b>Other terminal blocks with the same shape</b>		
disconnect 280-912	page 7.10	disconnect 280-683	page 7.10	double potential 280-826	page 2.11			
carrier term. block 280-916	page 7.35	carrier term. block 280-610	page 7.35	disconnect 280-836	page 7.10			
diode 280-915/...-...	page 7.57	diode 280-673/...-...	page 7.57	disc., test a. meas. 280-829	page 7.10			
				carrier term. block 280-816	page 7.35			
				diode 280-815/...-...	page 7.57			
				LED 280-809/...-...	page 7.60			
spacer 280-902/056-000		spacer 280-650/056-000		spacer 280-835/056-000				

## Accessories Series 280

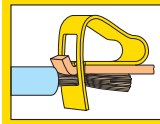
Appropriate marking system **WMB/WSB/WFB** (see section 14)

End and intermediate plate, 2.5 mm/0.098 in thick	End and intermediate plate, 2.5 mm/0.098 in thick	End and intermediate plate, 2.5 mm/0.098 in thick
orange 280-309 100 (4 x 25) grey 280-308 100 (4 x 25) light grey 280-356 100 (4 x 25)	orange 280-326 100 (4 x 25) grey 280-324 100 (4 x 25) light grey 280-358 100 (4 x 25)	orange 280-315 100 (4 x 25) grey 280-314 100 (4 x 25) light grey 280-352 100 (4 x 25)
<b>Separator, oversized, 2 mm/0.079 in thick</b>	<b>Separator, oversized, 2 mm/0.079 in thick</b>	<b>Separator, oversized, 2 mm/0.079 in thick</b>
orange 280-311 100 (4 x 25) grey 280-310 100 (4 x 25) light grey 280-357 100 (4 x 25)	orange 280-346 100 (4 x 25) grey 280-344 100 (4 x 25) light grey 280-359 100 (4 x 25)	orange 280-335 100 (4 x 25) grey 280-334 100 (4 x 25) light grey 280-353 100 (4 x 25)
<b>Insulation stop ③, 5 pcs/strip</b>	<b>Insulation stop ③, 5 pcs/strip</b>	<b>Insulation stop ③, 5 pcs/strip</b>
white 280-470 200 strips light grey 280-471 200 strips dark grey 280-472 200 strips	white 280-470 200 strips light grey 280-471 200 strips dark grey 280-472 200 strips	white 280-470 200 strips light grey 280-471 200 strips dark grey 280-472 200 strips
<b>Adjacent jumper, insulated, I<sub>N</sub> 24 A, ④ 23 A</b>	<b>Adjacent jumper, insulated, I<sub>N</sub> 24 A, ④ 22 A</b>	<b>Adjacent jumper, insulated, I<sub>N</sub> 24 A, ④ 20 A</b>
grey 280-402 200 (8 x 25) yell.-green 280-422 200 (8 x 25)	grey 280-402 200 (8 x 25) yell.-green 280-422 200 (8 x 25)	grey 280-402 200 (8 x 25) yell.-green 280-422 200 (8 x 25)
<b>Staggered jumper ⑤, insulated, I<sub>N</sub> 24 A, ④ 23 A</b> width 5 mm / 0.197 in	<b>Staggered jumper ⑤, insulated, I<sub>N</sub> 24 A, ④ 22 A</b> width 5 mm / 0.197 in	<b>Staggered jumper ⑤, insulated, I<sub>N</sub> 24 A, ④ 20 A</b> width 5 mm / 0.197 in
from 1 to 2 780-452 100 (4 x 25) from 1 to 3 780-453 100 (4 x 25) from 1 to 4 780-454 100 (4 x 25) from 1 to 5 780-455 50 (2 x 25) : : from 1 to 8 780-458 50 (2 x 25)	from 1 to 2 780-452 100 (4 x 25) from 1 to 3 780-453 100 (4 x 25) from 1 to 4 780-454 100 (4 x 25) from 1 to 5 780-455 50 (2 x 25) : : from 1 to 8 780-458 50 (2 x 25)	from 1 to 2 780-452 100 (4 x 25) from 1 to 3 780-453 100 (4 x 25) from 1 to 4 780-454 100 (4 x 25) from 1 to 5 780-455 50 (2 x 25) : : from 1 to 8 780-458 50 (2 x 25)
<b>Protective warning marker, comp type jumper bar, test plug adapter, etc. (see page 2.13)</b>	<b>Protective warning marker, comp type jumper bar, test plug adapter, etc. (see page 2.13)</b>	<b>Protective warning marker, comp type jumper bar, test plug adapter, etc. (see page 2.13)</b>

\* For further approvals with corresponding ratings see section 15.

# Double Potential Terminal Blocks

## 2.5 mm<sup>2</sup> / AWG 12, Series 280



2  
11

2

0.08 – 2.5 mm<sup>2</sup> | AWG 28 – 12  
800 V/8 kV/3 ① | 600 V, 20 A ②  
20 A | 600 V, 25 A ③

Terminal block width 5 mm / 0.197 in  
8 – 9 mm / 0.33 in

\* ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿

0.08 – 2.5 mm<sup>2</sup> | AWG 28 – 12  
800 V/8 kV/3 ① | 600 V, 15 A ②  
24 A | 600 V, 15 A ③

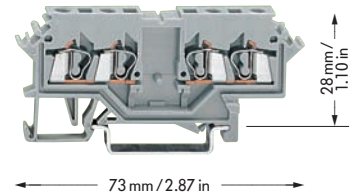
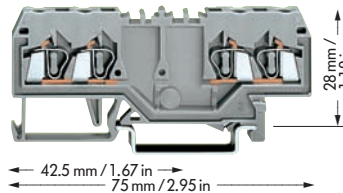
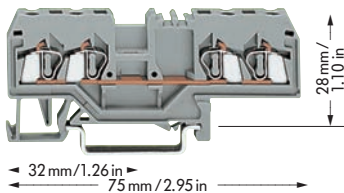
Terminal block width 5 mm / 0.197 in  
8 – 9 mm / 0.33 in

\* ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿

0.08 – 2.5 mm<sup>2</sup> | AWG 28 – 12  
800 V/8 kV/3 ① | 600 V, 15 A ②  
24 A | 600 V, 20 A ③

Terminal block width 5 mm / 0.197 in  
8 – 9 mm / 0.33 in

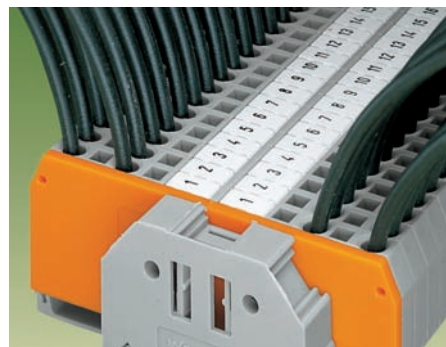
\* ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿



Item No.	Pack. unit pcs
<b>4-conductor through terminal blocks</b>	
grey <b>280-633</b> ①	100
blue <b>280-634</b> ②	100
orange <b>280-603</b> ③	100
<b>4-conductor ground (earth) terminal blocks</b>	
light grey ④ <b>280-999</b> ⑤	100
green-yellow <b>280-677</b> ⑥	100
green-yellow ④ <b>280-677/999-950</b> ⑦	100
<b>4-conductor shield (screen) terminal block</b>	
white <b>280-678</b> ⑧	100
<b>Other terminal blocks with the same shape</b>	
double potential <b>280-626</b>	page 2.11
disconnect <b>280-685</b>	page 7.11
disc., test a. meas. <b>280-649</b>	page 7.11
carrier term. block <b>280-686</b>	page 7.35
diode <b>280-655/...-...</b>	page 7.57
LED <b>280-658/...-...</b>	page 7.61

Item No.	Pack. unit pcs
<b>Double potential terminal blocks, with double marker receptacle in the center of the terminal block</b>	
grey <b>280-826</b> ①	100
light grey ④ <b>280-995</b> ⑤	100
<b>Attention! These double potential terminal blocks cannot be commoned with adjacent jumpers!</b>	

Item No.	Pack. unit pcs
<b>Double potential terminal blocks, with marker receptacle on the side of the terminal block</b>	
grey <b>280-626</b> ①	100
light grey ④ <b>280-989</b> ⑤	100
<b>Attention! These double potential terminal blocks cannot be commoned with adjacent jumpers!</b>	



Terminal block marking directly on the terminal block either with WSB or WMB markers.

- ① 800 V = rated voltage  
8 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② Suitable for Ex i applications
- ④ Suitable for Ex e II applications  
0.2 – 2.5 mm<sup>2</sup> AWG 24 – 12  
550 V, 20 A  
(see also section 13)  
When using staggered jumpers the max. rated voltage will be reduced to 275 V.  
Ex e/Ex i separator see page 2.13
- ⑤ See application notes on pages 2.38 – 2.45

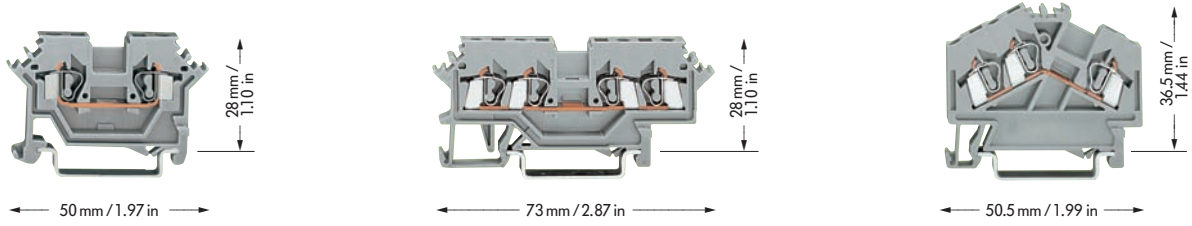
<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>	
orange <b>280-315</b> 100 (4 x 25)	
grey <b>280-314</b> 100 (4 x 25)	
light grey <b>280-352</b> 100 (4 x 25)	
<b>Separator, oversized, 2 mm/0.079 in thick</b>	
orange <b>280-335</b> 100 (4 x 25)	
grey <b>280-334</b> 100 (4 x 25)	
light grey <b>280-353</b> 100 (4 x 25)	
<b>Insulation stop ③, 5 pcs/strip</b>	
white <b>280-470</b> 200 strips	
light grey <b>280-471</b> 200 strips	
dark grey <b>280-472</b> 200 strips	
<b>Adjacent jumper, insulated, I<sub>N</sub> 24 A, ④ 20 A</b>	
grey <b>280-402</b> 200 (8 x 25)	
yell.-green <b>280-422</b> 200 (8 x 25)	
<b>Staggered jumper ⑤, insulated, I<sub>N</sub> 24 A, ④ 20 A</b> width 5 mm / 0.197 in	
from 1 to 2 <b>780-452</b> 100 (4 x 25)	
from 1 to 3 <b>780-453</b> 100 (4 x 25)	
from 1 to 4 <b>780-454</b> 100 (4 x 25)	
from 1 to 5 <b>780-455</b> 50 (2 x 25)	
:	:
from 1 to 8 <b>780-458</b> 50 (2 x 25)	
<b>Protective warning marker, comb type jumper bar, test plug adapter, etc. (see page 2.13)</b>	

<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>	
orange <b>280-315</b> 100 (4 x 25)	
grey <b>280-314</b> 100 (4 x 25)	
light grey <b>280-352</b> 100 (4 x 25)	
<b>Separator, oversized, 2 mm/0.079 in thick</b>	
orange <b>280-335</b> 100 (4 x 25)	
grey <b>280-334</b> 100 (4 x 25)	
light grey <b>280-353</b> 100 (4 x 25)	
<b>Insulation stop ③, 5 pcs/strip</b>	
white <b>280-470</b> 200 strips	
light grey <b>280-471</b> 200 strips	
dark grey <b>280-472</b> 200 strips	
<b>Comb type jumper bar ③, insulated, I<sub>N</sub> = I<sub>N</sub> of terminal block</b>	
2-way <b>280-482</b> 200 (8 x 25)	
3-way <b>280-483</b> 200 (8 x 25)	
<b>Alternate comb type jumper bar, insulated, I<sub>N</sub> = I<sub>N</sub> of terminal block</b>	
2-way <b>280-492</b> 200 (8 x 25)	
<b>Operating tool, insulated</b>	
2-way <b>280-432</b> 1	
3-way <b>280-433</b> 1	

<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>	
orange <b>280-317</b> 100 (4 x 25)	
grey <b>280-316</b> 100 (4 x 25)	
light grey <b>280-364</b> 100 (4 x 25)	
<b>Separator, oversized, 2 mm/0.079 in thick</b>	
orange <b>280-327</b> 100 (4 x 25)	
grey <b>280-337</b> 100 (4 x 25)	
light grey <b>280-365</b> 100 (4 x 25)	
<b>Insulation stop ③, 5 pcs/strip</b>	
white <b>280-470</b> 200 strips	
light grey <b>280-471</b> 200 strips	
dark grey <b>280-472</b> 200 strips	
<b>Comb type jumper bar ③, insulated, I<sub>N</sub> = I<sub>N</sub> of terminal block</b>	
2-way <b>280-482</b> 200 (8 x 25)	
3-way <b>280-483</b> 200 (8 x 25)	
<b>Alternate comb type jumper bar, insulated, I<sub>N</sub> = I<sub>N</sub> of terminal block</b>	
2-way <b>280-492</b> 200 (8 x 25)	
<b>Operating tool, insulated</b>	
2-way <b>280-432</b> 1	
3-way <b>280-433</b> 1	

# Through/Ground (Earth) Conductor/Shield (Screen) and Terminal Blocks 2.5 mm<sup>2</sup> / AWG 12, Series 280

<p>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 12 800 V/8 kV/3 ①   600 V, 20 A ② 24 A   600 V, 25 A ③</p> <p>Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in</p> <p>* ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿</p>	<p>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 12 800 V/8 kV/3 ①   600 V, 15 A ② 24 A   600 V, 15 A ③</p> <p>Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in</p> <p>* ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿</p>	<p>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 12 800 V/8 kV/3 ①   600 V, 20 A ② 24 A   600 V, 25 A ③</p> <p>Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in</p> <p>* ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿</p>
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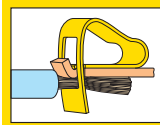
Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>2-conductor through terminal blocks</b>		<b>4-conductor through terminal blocks</b>		<b>3-conductor through terminal blocks</b>	
grey 280-601 ①	100	grey 280-621 ①	100	grey 280-641 ①	100
blue 280-602 ②	100	blue 280-604 ②	100	blue 280-651 ②	100
light grey ④ 280-691 ④	100	light grey ④ 280-990 ④	100	orange 280-654 ③	100
<b>2-conductor ground (earth) terminal blocks</b>		<b>Other terminal blocks with the same shape</b>		<b>3-conductor ground (earth) terminal blocks</b>	
green-yellow 280-607 ⑤	100	disconnect 280-612	page 7.11	green-yellow 280-637 ⑤	100
green-yellow ④ 280-607/999-950 ⑤	100	carrier term. block 280-616	page 7.35	green-yellow ④ 280-637/999-950 ⑤	100
<b>Other terminal blocks with the same shape</b>		<b>Other terminal blocks with the same shape</b>		<b>3-conductor shield (screen) terminal block</b>	
diode 280-618	W4, vol. 3	double potential 280-626	page 2.11	white 280-640 ①	100
diode 280-613/...-...	page 7.57	disc. test a. meas. 280-622	page 7.11	<b>Other terminal blocks with the same shape</b>	
variable transistor 280-615/...-...	page 7.58	disc., test a. meas. 280-627	page 7.11	spacer 280-654/056-000	
		carrier term. block 280-606	page 7.35		
		term. bl. f. pl. mod. 280-608	W4, vol. 3		
		diode 280-623/...-...	page 7.57		
		LED 280-624/...-...	page 7.60		

## Accessories Series 280

Appropriate marking system **WMB/WSB/WFB** (see section 14)

End and intermediate plate, 2.5 mm/0.098 in thick	End and intermediate plate, 2.5 mm/0.098 in thick	End and intermediate plate, 2.5 mm/0.098 in thick
orange 280-331 100 (4 x 25)	orange 280-317 100 (4 x 25)	orange 280-313 100 (4 x 25)
grey 280-330 100 (4 x 25)	grey 280-316 100 (4 x 25)	grey 280-312 100 (4 x 25)
light grey 280-362 100 (4 x 25)	light grey 280-364 100 (4 x 25)	light grey 280-354 100 (4 x 25)
<b>Separator, oversized, 2 mm/0.079 in thick</b>	<b>Separator, oversized, 2 mm/0.079 in thick</b>	<b>Separator, oversized, 2.5 mm/0.098 in thick</b>
orange 280-328 100 (4 x 25)	orange 280-327 100 (4 x 25)	orange 280-318 100 (4 x 25)
grey 280-338 100 (4 x 25)	grey 280-337 100 (4 x 25)	grey 280-348 100 (4 x 25)
light grey 280-363 100 (4 x 25)	light grey 280-365 100 (4 x 25)	light grey 280-355 100 (4 x 25)
<b>Insulation stop ③, 5 pcs/strip</b>	<b>Insulation stop ③, 5 pcs/strip</b>	<b>Insulation stop ③, 5 pcs/strip</b>
white 280-470 200 strips	white 280-470 200 strips	white 280-470 200 strips
light grey 280-471 200 strips	light grey 280-471 200 strips	light grey 280-471 200 strips
dark grey 280-472 200 strips	dark grey 280-472 200 strips	dark grey 280-472 200 strips
<b>Adjacent jumper, insulated, I<sub>N</sub> 24 A, ④ 23 A</b>	<b>Adjacent jumper, insulated, I<sub>N</sub> 24 A, ④ 22 A</b>	<b>Adjacent jumper, insulated, I<sub>N</sub> 24 A, ④ 23 A</b>
grey 280-402 200 (8 x 25)	grey 280-402 200 (8 x 25)	grey 280-402 200 (8 x 25)
yell.-green 280-422 200 (8 x 25)	yell.-green 280-422 200 (8 x 25)	yell.-green 280-422 200 (8 x 25)
<b>Staggered jumper ⑤, insulated, I<sub>N</sub> 24 A, ④ 23 A</b>	<b>Staggered jumper ⑤, insulated, I<sub>N</sub> 24 A, ④ 22 A</b>	<b>Staggered jumper ⑤, insulated, I<sub>N</sub> 24 A, ④ 23 A</b>
width 5 mm / 0.197 in	width 5 mm / 0.197 in	width 5 mm / 0.197 in
from 1 to 2 780-452 100 (4 x 25)	from 1 to 2 780-452 100 (4 x 25)	from 1 to 2 780-452 100 (4 x 25)
from 1 to 3 780-453 100 (4 x 25)	from 1 to 3 780-453 100 (4 x 25)	from 1 to 3 780-453 100 (4 x 25)
from 1 to 4 780-454 100 (4 x 25)	from 1 to 4 780-454 100 (4 x 25)	from 1 to 4 780-454 100 (4 x 25)
from 1 to 5 780-455 50 (2 x 25)	from 1 to 5 780-455 50 (2 x 25)	from 1 to 5 780-455 50 (2 x 25)
:	:	:
from 1 to 8 780-458 50 (2 x 25)	from 1 to 8 780-458 50 (2 x 25)	from 1 to 8 780-458 50 (2 x 25)
<b>Protective warning marker, comp type jumper bar, test plug adapter, etc. (see right page)</b>	<b>Protective warning marker, comp type jumper bar, test plug adapter, etc. (see right page)</b>	<b>Protective warning marker, comp type jumper bar, test plug adapter, etc. (see right page)</b>

\* For further approvals with corresponding ratings see section 15.

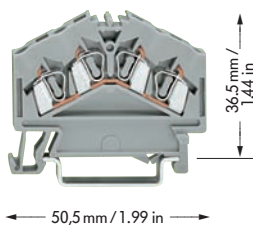


0.08 – 2.5 mm<sup>2</sup> | AWG 28 – 12  
 800 V/8 kV/3 ① | 600 V, 20 A ②  
 24 A | 600 V, 25 A ③

Terminal block width 5 mm / 0.197 in  
 8 – 9 mm / 0.33 in

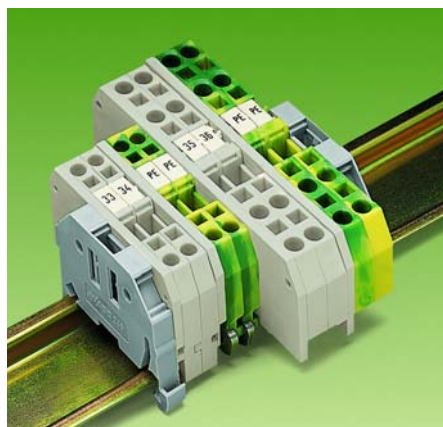
\*

Accessories Series 280



- ① 800 V = rated voltage  
 8 kV = rated surge voltage  
 3 = pollution degree  
 (see also section 15)
- ② Suitable for Ex i applications
- ③ Suitable for Ex e II applications  
 0.2 – 2.5 mm<sup>2</sup> AWG 24 – 12  
 550 V, 20 A  
 (see also section 13)  
 When using staggered jumpers the max. rated voltage will be reduced to 275 V.
- ④ See application notes on pages 2.38 – 2.45

Item No.	Pack. unit pcs
<b>4-conductor through terminal blocks</b>	
grey <b>280-646</b>	100
blue <b>280-656</b>	100
orange <b>280-946</b>	100
light grey <b>280-996</b>	100
<b>Attention! These terminal blocks cannot be commoned with adjacent jumpers!</b>	



In order to meet the air and creepage distances specified for Ex e applications it is necessary to insert an end or intermediate plate between a through and a ground (earth) conductor terminal block.

<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>	
orange <b>280-313</b>	100 (4 x 25)
grey <b>280-312</b>	100 (4 x 25)
light grey <b>280-354</b>	100 (4 x 25)
<b>Separator, oversized, 2.5 mm/0.098 in thick</b>	
orange <b>280-318</b>	100 (4 x 25)
grey <b>280-348</b>	100 (4 x 25)
light grey <b>280-355</b>	100 (4 x 25)
<b>Insulation stop ⑤, 5 pcs/strip</b>	
white <b>280-470</b>	200 strips
light grey <b>280-471</b>	200 strips
dark grey <b>280-472</b>	200 strips
<b>Comb type jumper bar ⑥, insulated, I<sub>N</sub> = I<sub>N</sub> of terminal block</b>	
2-way <b>280-482</b>	200 (8 x 25)
3-way <b>280-483</b>	200 (8 x 25)
<b>Alternate comb type jumper bar, insulated, I<sub>N</sub> = I<sub>N</sub> of terminal block</b>	
2-way <b>280-492</b>	200 (8 x 25)
<b>Operating tool, insulated</b>	
2-way <b>280-432</b>	1
3-way <b>280-433</b>	1
<b>Test plug module, testing using conductor entry holes see page 2.38</b>	

<b>Ex e/Ex i separator, 3 mm/0.118 in thick, orange</b>	
90 mm wide <b>209-190</b>	50 (2 x 25)
120 mm w. <b>209-191</b>	50 (2 x 25)



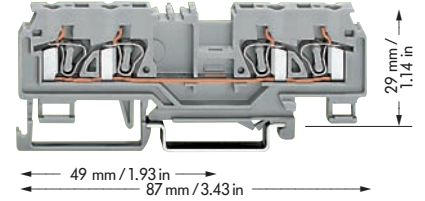
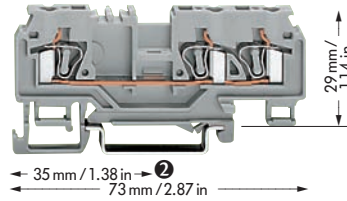
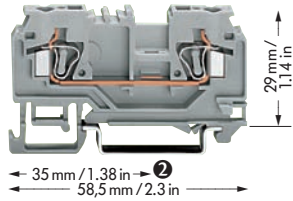
**Separator for Ex e/Ex i applications**  
 According to EN 50020 a minimum distance of 50 mm must be kept between live parts of Ex e and Ex i circuits. When mounting Ex e and Ex i rail-mounted terminal blocks together on a common rail WAGO offers a space saving solution to the problem by using the Ex e/Ex i separators.  
 Suitable for series 279 to 282.  
 209-190 for 2-conductor terminal blocks.  
 209-191 for 2-, 3-, 4-conductor terminal blocks.

Item No.	Pack. unit pcs
<b>Insulation stop ⑤, 5 pcs/strip</b>	
white <b>280-470</b>	200 strips
light grey <b>280-471</b>	200 strips
dark grey <b>280-472</b>	200 strips
<b>Adjacent jumper, insulated, I<sub>N</sub> 24 A, ⑥ 20 A</b>	
grey <b>280-402</b>	200 (8 x 25)
yell.-green <b>280-422</b>	200 (8 x 25)
<b>Alternate jumper, insulated, I<sub>N</sub> 24 A, ⑥ 20 A</b>	
grey <b>280-409</b>	100 (4 x 25)
<b>Staggered jumper ⑥, insulated, I<sub>N</sub> 24 A, ⑥ 20 A</b>	
width 5 mm / 0.197 in	
from 1 to 2 <b>780-452</b>	100 (4 x 25)
from 1 to 3 <b>780-453</b>	100 (4 x 25)
from 1 to 4 <b>780-454</b>	100 (4 x 25)
from 1 to 5 <b>780-455</b>	50 (2 x 25)
:	:
from 1 to 8 <b>780-458</b>	50 (2 x 25)
<b>Push-in type wire jumper ⑥, insulated, I<sub>N</sub> 9 A</b>	
L = 60 mm <b>249-125</b>	10
L = 110 mm <b>249-126</b>	10
L = 250 mm <b>249-127</b>	10
<b>Protective warning marker, for 5 terminal blocks, fits into screwdriver slot</b>	
yellow <b>280-415</b>	100 (4 x 25)
<b>Comb type jumper bar ⑥, insulated, I<sub>N</sub> = I<sub>N</sub> of terminal block</b>	
2-way <b>280-482</b>	200 (8 x 25)
3-way <b>280-483</b>	200 (8 x 25)
<b>Alternate comb type jumper bar, insulated, I<sub>N</sub> = I<sub>N</sub> of terminal block</b>	
2-way <b>280-492</b>	200 (8 x 25)
<b>Operating tool, insulated</b>	
2-way <b>280-432</b>	1
3-way <b>280-433</b>	1
<b>Test plug module ⑥, testing using jumper contact slots or conductor entry holes</b>	
<b>Test plug, with cable 500 mm/17.7"</b>	
2 mm Ø, red <b>210-136</b>	50 (5 x 10)
2.3 mm Ø, yel. <b>210-137</b>	50 (5 x 10)
<b>Test plug adapter, suitable f. term. bl. 1.5 mm<sup>2</sup> – 4 mm<sup>2</sup>, 5 mm / 0.197 in wide</b>	
<b>280-404</b>	100 (4 x 25)
for test plug 210-137 (2.3 mm Ø)	
<b>Test plug adapter, suitable f. term. bl. 1.5 mm<sup>2</sup> – 10 mm<sup>2</sup>, 8 mm / 0.315 in wide</b>	
<b>209-170</b>	50 (2 x 25)
for test plug 4 mm / 0.157 in Ø	
<b>Test plug, 6 mm/0.236 in wide, with CAGE CLAMP® for 0.08 mm<sup>2</sup> – 2.5 mm<sup>2</sup>/AWG 28 – 14</b>	
I <sub>N</sub> 24 A <b>281-407</b>	100 (4 x 25)
<b>Banana plugs, 4 mm/0.157 in Ø, color mixed see page 2.42</b>	



# Through and Ground (Earth) Conductor Terminal Blocks, Terminal Block Width 5 mm / 0.197 in, 4 mm<sup>2</sup> / AWG 12 Series 880

<p>0.08 – 4 mm<sup>2</sup>** 800 V/8 kV/3 ① 25 A</p> <p>Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in</p> <p>*  CCA/KECH/ GL BV LR</p>	<p>AWG 28 – 12  ①</p>	<p>0.08 – 4 mm<sup>2</sup>** 800 V/8 kV/3 ① 25 A</p> <p>Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in</p> <p>*  CCA/KECH/ GL BV LR</p>	<p>AWG 28 – 12  ①</p>	<p>0.08 – 4 mm<sup>2</sup>** 800 V/8 kV/3 ① 20 A</p> <p>Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in</p> <p>* </p>	<p>AWG 28 – 12  ①</p>
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Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Through terminal block without/with shield (screen) contact and test slot for test plug</b> Ø 2 mm / 0.079 in and Ø 2.3 mm / 0.091 in, for DIN 35 rail		<b>Through terminal block without/with shield (screen) contact and test slot for test plug</b> Ø 2 mm / 0.079 in and Ø 2.3 mm / 0.091 in, for DIN 35 rail		<b>Through terminal block without/with shield (screen) contact and test slot for test plug</b> Ø 2 mm / 0.079 in and Ø 2.3 mm / 0.091 in, for DIN 35 rail	
<b>2-conductor through terminal blocks without shield (screen) contact</b>		<b>3-conductor through terminal blocks without shield (screen) contact</b>		<b>4-conductor through terminal blocks without shield (screen) contact</b>	
grey <b>880-901</b>	100	grey <b>880-681</b>	100	grey <b>880-831</b>	100
blue <b>880-904</b>	100	blue <b>880-684</b>	100	blue <b>880-834</b>	100
orange <b>880-902</b>	100	orange <b>880-682</b>	100	orange <b>880-832</b>	100
<b>2-conductor through terminal blocks with shield (screen) contact</b> – please contact factory		<b>3-conductor through terminal blocks with shield (screen) contact</b> – please contact factory			
<b>2-conductor ground (earth) terminal block</b> green-yellow <b>880-907</b>		<b>3-conductor ground (earth) terminal block</b> green-yellow <b>880-687</b>		<b>4-conductor ground (earth) terminal block</b> green-yellow <b>880-837</b>	

## Accessories Series 880

Appropriate marking system **WMB/WSB** oder **Mini-WSB** (see section 14)

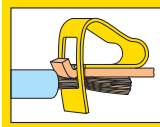
<p><b>End and intermediate plate, 2.5 mm/0.098 in thick</b></p> <p>orange <b>880-328</b> 100 (4 x 25)</p> <p>grey <b>880-325</b> 100 (4 x 25)</p>	<p><b>End and intermediate plate, 2.5 mm/0.098 in thick</b></p> <p>orange <b>880-339</b> 100 (4 x 25)</p> <p>grey <b>880-308</b> 100 (4 x 25)</p>	<p><b>End and intermediate plate, 2.5 mm/0.098 in thick</b></p> <p>orange <b>880-346</b> 100 (4 x 25)</p> <p>grey <b>880-344</b> 100 (4 x 25)</p>
<p><b>Separator, oversized, 2 mm/0.079 in thick</b></p> <p>orange <b>880-329</b> 100 (4 x 25)</p> <p>grey <b>880-326</b> 100 (4 x 25)</p>	<p><b>Separator, oversized, 2 mm/0.079 in thick</b></p> <p>orange <b>880-340</b> 100 (4 x 25)</p> <p>grey <b>880-309</b> 100 (4 x 25)</p>	<p><b>Separator, oversized, 2 mm/0.079 in thick</b></p> <p>orange <b>880-347</b> 100 (4 x 25)</p> <p>grey <b>880-345</b> 100 (4 x 25)</p>
<p><b>Insulation stop</b>  ④, 5 pcs/strip</p> <p>white <b>280-470</b> 200 strips</p> <p>light grey <b>280-471</b> 200 strips</p> <p>dark grey <b>280-472</b> 200 strips</p>	<p><b>Insulation stop</b>  ④, 5 pcs/strip</p> <p>white <b>280-470</b> 200 strips</p> <p>light grey <b>280-471</b> 200 strips</p> <p>dark grey <b>280-472</b> 200 strips</p>	<p><b>Insulation stop</b>  ④, 5 pcs/strip</p> <p>white <b>280-470</b> 200 strips</p> <p>light grey <b>280-471</b> 200 strips</p> <p>dark grey <b>280-472</b> 200 strips</p>
<p><b>Adjacent jumper, insulated, I<sub>N</sub> 24 A</b></p> <p>grey <b>280-402</b> 200 (8 x 25)</p> <p>yell.-green <b>280-422</b> 200 (8 x 25)</p>	<p><b>Adjacent jumper, insulated, I<sub>N</sub> 24 A</b></p> <p>grey <b>280-402</b> 200 (8 x 25)</p> <p>yell.-green <b>280-422</b> 200 (8 x 25)</p>	<p><b>Adjacent jumper, insulated, I<sub>N</sub> 24 A</b></p> <p>grey <b>280-402</b> 200 (8 x 25)</p> <p>yell.-green <b>280-422</b> 200 (8 x 25)</p>
<p><b>Staggered jumper</b>  ④, insulated, I<sub>N</sub> 24 A width 5 mm / 0.197 in</p> <p>from 1 to 2 <b>780-452</b> 100 (4 x 25)</p> <p>from 1 to 3 <b>780-453</b> 100 (4 x 25)</p> <p>from 1 to 4 <b>780-454</b> 100 (4 x 25)</p> <p>from 1 to 5 <b>780-455</b> 50 (2 x 25)</p> <p>: :</p> <p>from 1 to 8 <b>780-458</b> 50 (2 x 25)</p>	<p><b>Staggered jumper</b>  ④, insulated, I<sub>N</sub> 24 A width 5 mm / 0.197 in</p> <p>from 1 to 2 <b>780-452</b> 100 (4 x 25)</p> <p>from 1 to 3 <b>780-453</b> 100 (4 x 25)</p> <p>from 1 to 4 <b>780-454</b> 100 (4 x 25)</p> <p>from 1 to 5 <b>780-455</b> 50 (2 x 25)</p> <p>: :</p> <p>from 1 to 8 <b>780-458</b> 50 (2 x 25)</p>	<p><b>Staggered jumper</b>  ④, insulated, I<sub>N</sub> 24 A width 5 mm / 0.197 in</p> <p>from 1 to 2 <b>780-452</b> 100 (4 x 25)</p> <p>from 1 to 3 <b>780-453</b> 100 (4 x 25)</p> <p>from 1 to 4 <b>780-454</b> 100 (4 x 25)</p> <p>from 1 to 5 <b>780-455</b> 50 (2 x 25)</p> <p>: :</p> <p>from 1 to 8 <b>780-458</b> 50 (2 x 25)</p>
<p><b>Push-in type wire jumper</b>  ④, insulated, I<sub>N</sub> 9 A</p> <p>L = 60 mm <b>249-125</b> 10</p> <p>L = 110 mm <b>249-126</b> 10</p> <p>L = 250 mm <b>249-127</b> 10</p>	<p><b>Push-in type wire jumper</b>  ④, insulated, I<sub>N</sub> 9 A</p> <p>L = 60 mm <b>249-125</b> 10</p> <p>L = 110 mm <b>249-126</b> 10</p> <p>L = 250 mm <b>249-127</b> 10</p>	<p><b>Push-in type wire jumper</b>  ④, insulated, I<sub>N</sub> 9 A</p> <p>L = 60 mm <b>249-125</b> 10</p> <p>L = 110 mm <b>249-126</b> 10</p> <p>L = 250 mm <b>249-127</b> 10</p>
<p><b>Protective warning marker, comp type jumper bar, test plug adapter, etc. (see page 2.13)</b></p>	<p><b>Protective warning marker, comp type jumper bar, test plug adapter, etc. (see page 2.13)</b></p>	<p><b>Protective warning marker, comp type jumper bar, test plug adapter, etc. (see page 2.13)</b></p>

\* For further approvals with corresponding ratings see section 15.

\*\* Max. diameter of insulation: 4.4 mm / 0.173 in

# Through and Ground (Earth) Conductor Terminal Blocks f. Special Cables, Terminal Block Width 5 mm / 0.197 in, 4 mm<sup>2</sup> / AWG 12 Series 880

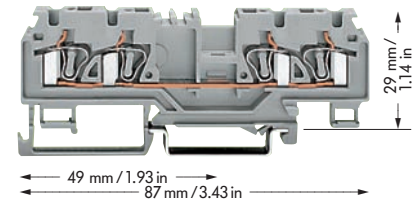
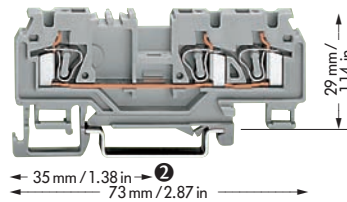
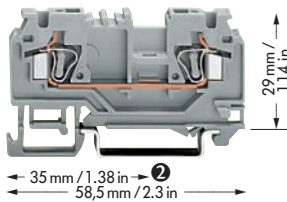
(AWG 12 with ferrule item no. 216-206)



2  
15

<b>0.08 – 4 mm<sup>2</sup></b> <b>800 V/8 kV/3 ①</b> <b>25 A</b> <b>Terminal block width 5 mm / 0.197 in</b> <b>8 – 9 mm / 0.33 in</b> *	<b>AWG 28 – 12</b> 	<b>0.08 – 4 mm<sup>2</sup></b> <b>800 V/8 kV/3 ①</b> <b>25 A</b> <b>Terminal block width 5 mm / 0.197 in</b> <b>8 – 9 mm / 0.33 in</b> *	<b>AWG 28 – 12</b> 	<b>0.08 – 4 mm<sup>2</sup></b> <b>800 V/8 kV/3 ①</b> <b>20 A</b> <b>Terminal block width 5 mm / 0.197 in</b> <b>8 – 9 mm / 0.33 in</b> *	<b>AWG 28 – 12</b> 
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2



Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Through terminal block without/with shield (screen) contact and test slot for test plug</b>		<b>Through terminal block without/with shield (screen) contact and test slot for test plug</b>		<b>Through terminal block without/with shield (screen) contact and test slot for test plug</b>	
Ø 2 mm / 0.079 in and Ø 2.3 mm / 0.091 in, for DIN 35 rail		Ø 2 mm / 0.079 in and Ø 2.3 mm / 0.091 in, for DIN 35 rail		Ø 2 mm / 0.079 in and Ø 2.3 mm / 0.091 in, for DIN 35 rail	
<b>2-conductor through terminal blocks without shield (screen) contact</b>		<b>3-conductor through terminal blocks without shield (screen) contact</b>		<b>4-conductor through terminal blocks without shield (screen) contact</b>	
grey	880-901/999-940 ① 100	grey	880-681/999-940 ① 100	grey	880-831/999-940 ① 100
blue	880-904/999-940 ② 100	blue	880-684/999-940 ② 100	blue	880-834/999-940 ② 100
orange	880-902/999-940 ③ 100	orange	880-682/999-940 ③ 100	orange	880-832/999-940 ③ 100
<b>2-conductor through terminal blocks with shield (screen) contact – please contact factory</b>		<b>3-conductor through terminal blocks with shield (screen) contact – please contact factory</b>			
<b>2-conductor ground (earth) terminal block</b>		<b>3-conductor ground (earth) terminal block</b>		<b>4-conductor ground (earth) terminal block</b>	
green-yellow	880-907/999-940 ④ 100	green-yellow	880-687/999-940 ④ 100	green-yellow	880-837/999-940 ④ 100

## Accessories (see left page, except insulation stop)

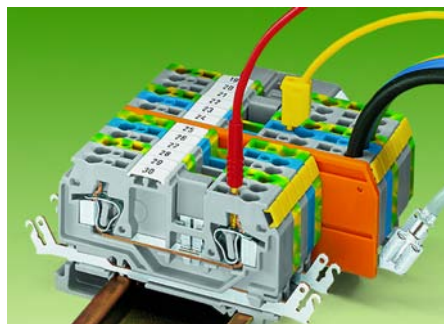
### Insulation stop, 5 pcs / strip



white	0.08 – 0.2 mm <sup>2</sup> ⑤ / AWG 28 – 24	769-470	200 strips	⑤ 0.2 mm <sup>2</sup> / AWG 24 "s" (0.14 mm <sup>2</sup> / AWG 26 "f-str")
light grey	0.25 – 0.5 mm <sup>2</sup> / AWG 22 – 20	769-471	200 strips	
dark grey	0.75 – 1 mm <sup>2</sup> / AWG 18	769-472	200 strips	

## Features

- 2-, 3- or 4-conductor terminal blocks, 5 mm / 0.197 in wide
- Cross section of the conductor up to 4 mm<sup>2</sup>/AWG 12 (acc. to VDE 0281) or 2.5 mm<sup>2</sup>/AWG 14 with rubber-insulated conductors having a diameter up to 4.4 mm/0.173 in
- Shield (screen) connection, solder contact/quick-connect contact 6.3 (2 x 2.8) mm
- Test plug, red, 2 mm/0.079 in Ø
- Test plug, yellow, 2.3 mm/0.091 in Ø
- Marking with WMB/WSB system
- Marking with miniature WSB system on both sides
- Commoning with standard WAGO jumper system



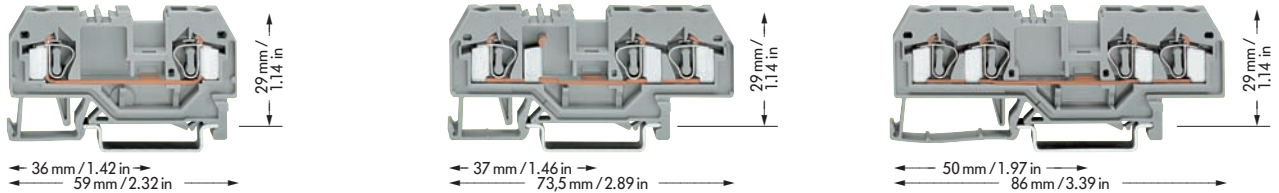
- ① 800 V = rated voltage  
8 kV = rated surge voltage  
3 = pollution degree  
 600 V/20 A with shield (screen) contact 400 V/6 kV/3  
 300 V/10 A (see also section 15)

- ② Dimensions with shield (screen) contact  
2-conductor terminal blocks  
← 45 mm / 1.77 in →  
← 79 mm / 3.11 in →  
3-conductor terminal blocks  
← 45 mm / 1.77 in →  
← 92.5 mm / 3.64 in →
- ③ Suitable for Ex i applications
- ④ See application notes on pages 2.38 – 2.45

Using a cable AWG 12 with ferrule Item No. 216-206

# Through/Ground (Earth) Conductor/Shield (Screen) and Terminal Blocks 4 mm<sup>2</sup> / AWG 12, Series 281

<p>0.08 – 4 mm<sup>2</sup> 800 V/8 kV/3 ① 32 A</p> <p>Terminal block width 6 mm / 0.236 in 9 – 10 mm / 0.37 in</p>	<p>AWG 28 – 12 600 V, 20 A ② 600 V, 15 A ③</p>	<p>0.08 – 4 mm<sup>2</sup> 800 V/8 kV/3 ① 32 A</p> <p>Terminal block width 6 mm / 0.236 in 9 – 10 mm / 0.37 in</p>	<p>AWG 28 – 12 600 V, 20 A ② 600 V, 15 A ③</p>	<p>0.08 – 4 mm<sup>2</sup> 800 V/8 kV/3 ① 26 A</p> <p>Terminal block width 6 mm / 0.236 in 9 – 10 mm / 0.37 in</p>	<p>AWG 28 – 12 600 V, 20 A ② 600 V, 15 A ③</p>
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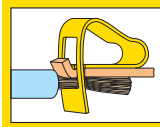
Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>2-conductor through terminal blocks</b>		<b>3-conductor through terminal blocks</b>		<b>4-conductor through terminal blocks</b>	
grey 281-901	50	grey 281-681	50	grey 281-652	50
blue 281-904	50	blue 281-684	50	blue 281-654	50
orange 281-902	50	orange 281-678	50	orange 281-653	50
red 281-903	50	red 281-679	50	red 281-663	50
black 281-905	50	black 281-685	50	black 281-664	50
yellow 281-906	50	yellow 281-686	50	yellow 281-668	50
light grey 281-992	50	light grey 281-993	50	light grey 281-994	50
<b>2-conductor ground (earth) terminal blocks</b>		<b>3-conductor ground (earth) terminal blocks</b>		<b>4-conductor ground (earth) terminal blocks</b>	
green-yellow 281-907	50	green-yellow 281-687	50	green-yellow 281-657	50
green-yellow 281-907/999-950	50	green-yellow 281-687/999-950	50	green-yellow 281-657/999-950	50
<b>Other terminal blocks with the same shape</b>		<b>Other terminal blocks with the same shape</b>		<b>Other terminal blocks with the same shape</b>	
disconnect 281-912	page 7.12	disconnect 281-683	page 7.12	disconnect 281-659	page 7.12
carrier term. block 281-916	page 7.34	carrier term. block 281-610	page 7.34	disc., test a. meas. 281-666	page 7.10
diode 281-915/...-...	page 7.58	diode 281-673/...-...	page 7.58	carrier term. block 281-656	page 7.34
				diode 281-665/...-...	page 7.58
				4-conductor shield (screen) terminal block	
				white 281-658	50

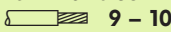
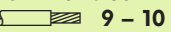
## Accessories Series 281

Appropriate marking system **WMB/WSB/WFB** (see section 14)

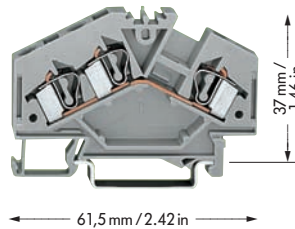
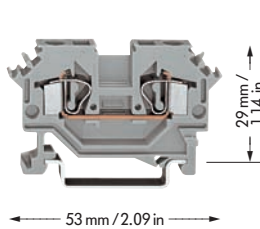
End and intermediate plate, 2.5 mm/0.098 in thick	End and intermediate plate, 2.5 mm/0.098 in thick	End and intermediate plate, 2.5 mm/0.098 in thick
orange 281-329 100 (4 x 25)	orange 281-326 100 (4 x 25)	orange 281-335 100 (4 x 25)
grey 281-328 100 (4 x 25)	grey 281-324 100 (4 x 25)	grey 281-334 100 (4 x 25)
light grey 281-349 100 (4 x 25)	light grey 281-355 100 (4 x 25)	light grey 281-345 100 (4 x 25)
<b>Separator, oversized, 2 mm/0.079 in thick</b>	<b>Separator, oversized, 2 mm/0.079 in thick</b>	<b>Separator, oversized, 2 mm/0.079 in thick</b>
orange 281-331 100 (4 x 25)	orange 281-346 100 (4 x 25)	orange 281-339 100 (4 x 25)
grey 281-330 100 (4 x 25)	grey 281-344 100 (4 x 25)	grey 281-338 100 (4 x 25)
light grey 281-350 100 (4 x 25)	light grey 281-356 100 (4 x 25)	light grey 281-347 100 (4 x 25)
<b>Insulation stop ③, 5 pcs/strip</b>	<b>Insulation stop ③, 5 pcs/strip</b>	<b>Insulation stop ③, 5 pcs/strip</b>
white 281-470 200 strips	white 281-470 200 strips	white 281-470 200 strips
light grey 281-471 200 strips	light grey 281-471 200 strips	light grey 281-471 200 strips
dark grey 281-472 200 strips	dark grey 281-472 200 strips	dark grey 281-472 200 strips
<b>Adjacent jumper, insulated, I<sub>N</sub> 32 A, ② 26 A</b>	<b>Adjacent jumper, insulated, I<sub>N</sub> 32 A, ② 26 A</b>	<b>Adjacent jumper, insulated, I<sub>N</sub> 32 A, ② 26 A</b>
grey 281-402 200 (8 x 25)	grey 281-402 200 (8 x 25)	grey 281-402 200 (8 x 25)
yell.-green 281-422 200 (8 x 25)	yell.-green 281-422 200 (8 x 25)	yell.-green 281-422 200 (8 x 25)
<b>Staggered jumper ②, insulated, I<sub>N</sub> 32 A, ② 26 A</b>	<b>Staggered jumper ②, insulated, I<sub>N</sub> 32 A, ② 26 A</b>	<b>Staggered jumper ②, insulated, I<sub>N</sub> 32 A, ② 26 A</b>
width 6 mm/0.236 in	width 6 mm/0.236 in	width 6 mm/0.236 in
from 1 to 2 781-452 100 (4 x 25)	from 1 to 2 781-452 100 (4 x 25)	from 1 to 2 781-452 100 (4 x 25)
from 1 to 3 781-453 100 (4 x 25)	from 1 to 3 781-453 100 (4 x 25)	from 1 to 3 781-453 100 (4 x 25)
from 1 to 4 781-454 100 (4 x 25)	from 1 to 4 781-454 100 (4 x 25)	from 1 to 4 781-454 100 (4 x 25)
from 1 to 5 781-455 50 (2 x 25)	from 1 to 5 781-455 50 (2 x 25)	from 1 to 5 781-455 50 (2 x 25)
from 1 to 6 781-456 50 (2 x 25)	from 1 to 6 781-456 50 (2 x 25)	from 1 to 6 781-456 50 (2 x 25)
<b>Protective warning marker, comp type jumper bar, test plug adapter, etc. (see right page)</b>	<b>Protective warning marker, comp type jumper bar, test plug adapter, etc. (see right page)</b>	<b>Protective warning marker, comp type jumper bar, test plug adapter, etc. (see right page)</b>

\* For further approvals with corresponding ratings see section 15.



























<b>0.08 – 4 mm<sup>2</sup></b> <b>800 V/8 kV/3 ①</b> <b>32 A</b> <b>Terminal block width 6 mm / 0.236 in</b>  <b>9 – 10 mm / 0.37 in</b> <small>* </small>	<b>AWG 28 – 12</b> <b>600 V, 20 A </b> <b>600 V, 15 A </b>	<b>0.08 – 4 mm<sup>2</sup></b> <b>800 V/8 kV/3 ①</b> <b>32 A</b> <b>Terminal block width 6 mm / 0.236 in</b>  <b>9 – 10 mm / 0.37 in</b> <small>* </small>	<b>AWG 28 – 12</b> <b>600 V, 20 A </b> <b>600 V, 15 A </b>
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**Accessories Series 281**



Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>2-conductor through terminal blocks</b>		<b>3-conductor through terminal blocks</b>	
grey <b>281-601</b>	50	grey <b>281-631</b>	100
blue <b>281-604</b>	50	blue <b>281-651</b>	100
light grey	50	light grey	100
<b>2-conductor ground (earth) terminal blocks</b>		<b>3-conductor ground (earth) terminal blocks</b>	
green-yellow <b>281-607</b>	50	green-yellow <b>281-637</b>	100
green-yellow	50	green-yellow	100
<p>① 800 V = rated voltage 8 kV = rated surge voltage 3 = pollution degree (see also section 15)</p> <p>② Suitable for Ex i applications</p> <p> Suitable for Ex e II applications 0.2 – 4 mm<sup>2</sup> AWG 24 – 12 550 V, 30 A (see also section 13) When using staggered jumpers the max. rated voltage will be reduced to 275 V. Ex e/Ex i separator see page 2.13</p> <p>③ See application notes on pages 2.38 – 2.45</p>			
<b>Other terminal blocks with the same shape</b>			
diode <b>281-603/...-...</b>	page 7.58		

Appropriate marking system **WMB/WSB/WFB** (see section 14)

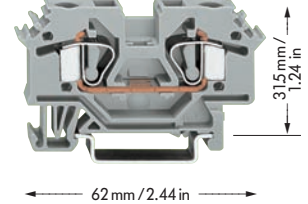
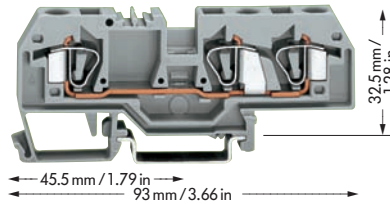
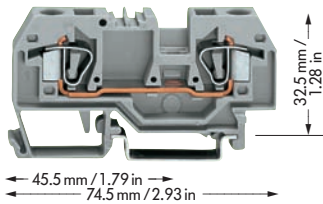
<b>End and intermediate plate, 3 mm/0.118 in thick</b>  orange <b>281-317</b> 100 (4 x 25)  grey <b>281-316</b> 100 (4 x 25)  light grey <b>281-353</b> 100 (4 x 25)	<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>  orange <b>281-313</b> 100 (4 x 25)  grey <b>281-312</b> 100 (4 x 25)  light grey <b>281-357</b> 100 (4 x 25)
<b>Separator, oversized, 2 mm/0.079 in thick</b>  orange <b>281-327</b> 100 (4 x 25)  grey <b>281-337</b> 100 (4 x 25)  light grey <b>281-354</b> 100 (4 x 25)	<b>Separator, oversized, 2 mm/0.079 in thick</b>  orange <b>281-318</b> 100 (4 x 25)  grey <b>281-348</b> 100 (4 x 25)  light grey <b>281-358</b> 100 (4 x 25)
<b>Insulation stop ③, 5 pcs/strip</b>  white <b>281-470</b> 200 strips  light grey <b>281-471</b> 200 strips  dark grey <b>281-472</b> 200 strips	<b>Insulation stop ③, 5 pcs/strip</b>  white <b>281-470</b> 200 strips  light grey <b>281-471</b> 200 strips  dark grey <b>281-472</b> 200 strips
<b>Adjacent jumper, insulated, I<sub>N</sub> 32 A, </b> 26 A  grey <b>281-402</b> 200 (8 x 25)  yell.-green <b>281-422</b> 200 (8 x 25)	<b>Adjacent jumper, insulated, I<sub>N</sub> 32 A, </b> 26 A  grey <b>281-402</b> 200 (8 x 25)  yell.-green <b>281-422</b> 200 (8 x 25)
<b>Staggered jumper ③, insulated, I<sub>N</sub> 32 A, </b> 26 A  width 6 mm/0.236 in from 1 to 2 <b>781-452</b> 100 (4 x 25) from 1 to 3 <b>781-453</b> 100 (4 x 25) from 1 to 4 <b>781-454</b> 100 (4 x 25) from 1 to 5 <b>781-455</b> 50 (2 x 25) from 1 to 6 <b>781-456</b> 50 (2 x 25)	<b>Staggered jumper ③, insulated, I<sub>N</sub> 32 A, </b> 26 A  width 6 mm/0.236 in from 1 to 2 <b>781-452</b> 100 (4 x 25) from 1 to 3 <b>781-453</b> 100 (4 x 25) from 1 to 4 <b>781-454</b> 100 (4 x 25) from 1 to 5 <b>781-455</b> 50 (2 x 25) from 1 to 6 <b>781-456</b> 50 (2 x 25)
<b>Protective warning marker, comp type jumper bar, test plug adapter, etc. (see righthand side of the page)</b>	<b>Protective warning marker, comp type jumper bar, test plug adapter, etc. (see righthand side of the page)</b>

Item No.	Pack. unit pcs
<b>Insulation stop ③, 5 pcs/strip</b>	
 white <b>281-470</b> 200 strips	
light grey <b>281-471</b> 200 strips	
dark grey <b>281-472</b> 200 strips	
<b>Adjacent jumper, insulated, I<sub>N</sub> 32 A, </b> 26 A	
 grey <b>281-402</b> 200 (8 x 25)	
yell.-green <b>281-422</b> 200 (8 x 25)	
<b>Alternate jumper, insulated, I<sub>N</sub> 32 A, </b> 26 A	
 grey <b>281-409</b> 100 (4 x 25)	
<b>Staggered jumper ③, insulated, I<sub>N</sub> 32 A, </b> 26 A	
 width 6 mm/0.236 in	
from 1 to 2 <b>781-452</b> 100 (4 x 25)	
from 1 to 3 <b>781-453</b> 100 (4 x 25)	
from 1 to 4 <b>781-454</b> 100 (4 x 25)	
from 1 to 5 <b>781-455</b> 50 (2 x 25)	
from 1 to 6 <b>781-456</b> 50 (2 x 25)	
<b>Push-in type wire jumper ③, insulated, I<sub>N</sub> 9 A</b>	
L = 60 mm <b>249-125</b> 10	
L = 110 mm <b>249-126</b> 10	
L = 250 mm <b>249-127</b> 10	
<b>Protective warning marker, for 5 terminal blocks, fits into screwdriver slot</b>	
 yellow <b>281-415</b> 100 (4 x 25)	
<b>Comb type jumper bar ③, insulated, I<sub>N</sub> = I<sub>N</sub> of terminal block</b>	
2-way <b>281-482</b> 100 (4 x 25)	
3-way <b>281-483</b> 100 (4 x 25)	
<b>Alternate comb type jumper bar, insulated, I<sub>N</sub> = I<sub>N</sub> of terminal block</b>	
2-way <b>281-492</b> 100 (4 x 25)	
<b>Operating tool, insulated</b>	
 2-way <b>280-432</b> 1	
3-way <b>280-433</b> 1	
<b>Test plug module ③,</b>	
 testing using jumper contact slots or conductor entry holes	
<b>Test plug, with cable 500 mm/17.7"</b>	
 2 mm Ø, red <b>210-136</b> 50 (5 x 10)	
2.3 mm Ø, yel. <b>210-137</b> 50 (5 x 10)	
<b>Test plug adapter, suitable f. term. bl. 1.5 mm<sup>2</sup> – 4 mm<sup>2</sup>, 5 mm / 0.197 in wide</b>	
 <b>280-404</b> 100 (4 x 25)	
for test plug 210-137 (2.3 mm Ø)	
<b>Test plug adapter, suitable f. term. bl. 1.5 mm<sup>2</sup> – 10 mm<sup>2</sup>, 8 mm / 0.315 in wide</b>	
 <b>209-170</b> 50 (2 x 25)	
for test plug 4 mm / 0.157 in Ø	
<b>Test plug, 6 mm/0.236 in wide, with CAGE CLAMP® for 0.08 mm<sup>2</sup> – 2.5 mm<sup>2</sup>/AWG 28 – 14 I<sub>N</sub> 24 A <b>281-407</b> 100 (4 x 25)</b>	
	
<b>Banana plugs, 4 mm/0.157 in Ø, color mixed see page 2.42</b>	



# Through/Ground (Earth) Conductor and Terminal Blocks 6 mm<sup>2</sup> / AWG 10, Series 282

<p>0.2 – 6 mm<sup>2</sup> 800 V/8 kV/3 ① 41 A</p> <p>Terminal block width 8 mm / 0.315 in 12 – 13 mm / 0.49 in</p> <p>* </p>	<p>AWG 24 – 10 600 V, 30 A  600 V, 40 A </p>	<p>0.2 – 6 mm<sup>2</sup> 800 V/8 kV/3 ① 41 A</p> <p>Terminal block width 8 mm / 0.315 in 12 – 13 mm / 0.49 in</p> <p>* </p>	<p>AWG 24 – 10 600 V, 30 A  600 V, 40 A </p>	<p>0.2 – 6 mm<sup>2</sup> 800 V/8 kV/3 ① 41 A</p> <p>Terminal block width 8 mm / 0.315 in 12 – 13 mm / 0.49 in</p> <p>* </p>	<p>AWG 24 – 10 600 V, 30 A  600 V, 40 A </p>
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Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>2-conductor through terminal blocks</b>		<b>3-conductor through terminal blocks</b>		<b>2-conductor through terminal blocks</b>	
grey <b>282-901</b>	50	grey <b>282-681</b>	25	grey <b>282-601</b>	50
blue <b>282-904</b>	50	blue <b>282-684</b>	25	blue <b>282-604</b>	50
orange <b>282-902</b>	50	orange <b>282-682</b>	25	orange <b>282-602</b>	50
light grey <b>282-992</b>	50	light grey <b>282-993</b>	25	light grey <b>282-691</b>	50
<b>2-conductor ground (earth) terminal blocks</b>		<b>3-conductor ground (earth) terminal blocks</b>		<b>2-conductor ground (earth) terminal blocks</b>	
green-yellow <b>282-907</b>	50	green-yellow <b>282-687</b>	25	green-yellow <b>282-607</b>	50
green-yellow <b>282-907/999-950</b>	50	green-yellow <b>282-687/999-950</b>	25	green-yellow <b>282-607/999-950</b>	50

- ① 800 V = rated voltage  
8 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- Suitable for Ex i applications

- Suitable for Ex e II applications  
0.5 – 6 mm<sup>2</sup> AWG 20 – 10  
550 V, 39 A jumper 35 A  
(see also section 13)  
Ex e/Ex i separator see page 2.13

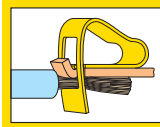
## Accessories Series 282

Appropriate marking system **WMB/WSB/WFB** (see section 14)

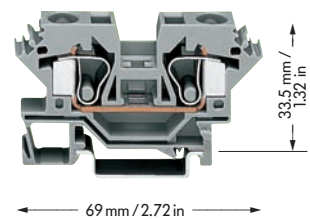
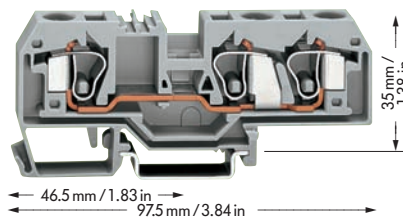
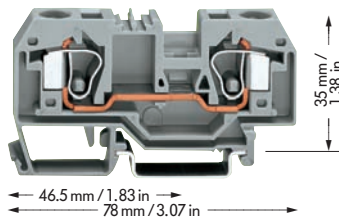
<p><b>End and intermediate plate</b>, 2.5 mm/0.098 in thick</p> <p>orange <b>282-328</b> 100 (4 x 25) grey <b>282-325</b> 100 (4 x 25) light grey <b>282-330</b> 100 (4 x 25)</p> <p></p>	<p><b>End and intermediate plate</b>, 2.5 mm/0.098 in thick</p> <p>orange <b>282-339</b> 100 (4 x 25) grey <b>282-308</b> 100 (4 x 25) light grey <b>282-341</b> 100 (4 x 25)</p> <p></p>	<p><b>End and intermediate plate</b>, 4 mm/0.157 in thick</p> <p>orange <b>282-317</b> 100 (4 x 25) grey <b>282-316</b> 100 (4 x 25) light grey <b>282-318</b> 100 (4 x 25)</p> <p></p>
<p><b>Separator</b>, oversized, 2 mm/0.079 in thick</p> <p>orange <b>282-329</b> 100 (4 x 25) grey <b>282-326</b> 100 (4 x 25) light grey <b>282-331</b> 100 (4 x 25)</p> <p></p>	<p><b>Separator</b>, oversized, 2 mm/0.079 in thick</p> <p>orange <b>282-340</b> 100 (4 x 25) grey <b>282-309</b> 100 (4 x 25) light grey <b>282-342</b> 100 (4 x 25)</p> <p></p>	<p><b>Separator</b>, oversized, 2 mm/0.079 in thick</p> <p>orange <b>282-327</b> 100 (4 x 25) grey <b>282-337</b> 100 (4 x 25) light grey <b>282-338</b> 100 (4 x 25)</p> <p></p>
<p><b>Adjacent jumper</b>, insulated, I<sub>N</sub> 41 A,  35 A</p> <p>grey <b>282-402</b> 100 (4 x 25) yell.-green <b>282-422</b> 100 (4 x 25)</p> <p></p>	<p><b>Adjacent jumper</b>, insulated, I<sub>N</sub> 41 A,  35 A</p> <p>grey <b>282-402</b> 100 (4 x 25) yell.-green <b>282-422</b> 100 (4 x 25)</p> <p></p>	<p><b>Adjacent jumper</b>, insulated, I<sub>N</sub> 41 A,  35 A</p> <p>grey <b>282-402</b> 100 (4 x 25) yell.-green <b>282-422</b> 100 (4 x 25)</p> <p></p>
<p><b>Alternate jumper</b>, insulated, I<sub>N</sub> 41 A,  35 A</p> <p>grey <b>282-409</b> 100 (4 x 25)</p> <p></p>	<p><b>Alternate jumper</b>, insulated, I<sub>N</sub> 41 A,  35 A</p> <p>grey <b>282-409</b> 100 (4 x 25)</p> <p></p>	<p><b>Alternate jumper</b>, insulated, I<sub>N</sub> 41 A,  35 A</p> <p>grey <b>282-409</b> 100 (4 x 25)</p> <p></p>
<p><b>Protective warning marker</b>, for 5 terminal blocks, fits into screwdriver slot</p> <p>yellow <b>282-415</b> 100 (4 x 25)</p> <p></p>	<p><b>Protective warning marker</b>, for 5 terminal blocks, fits into screwdriver slot</p> <p>yellow <b>282-415</b> 100 (4 x 25)</p> <p></p>	<p><b>Protective warning marker</b>, for 5 terminal blocks, fits into screwdriver slot</p> <p>yellow <b>282-415</b> 100 (4 x 25)</p> <p></p>
<p><b>Test plug adapter</b>, suitable f. term. bl. 1.5 mm<sup>2</sup> – 10 mm<sup>2</sup>, 8 mm/0.315 in wide</p> <p><b>209-170</b> 50 (2 x 25) for test plug 4 mm/0.157 in Ø</p> <p></p>	<p><b>Test plug adapter</b>, suitable f. term. bl. 1.5 mm<sup>2</sup> – 10 mm<sup>2</sup>, 8 mm/0.315 in wide</p> <p><b>209-170</b> 50 (2 x 25) for test plug 4 mm/0.157 in Ø</p> <p></p>	<p><b>Test plug adapter</b>, suitable f. term. bl. 1.5 mm<sup>2</sup> – 10 mm<sup>2</sup>, 8 mm/0.315 in wide</p> <p><b>209-170</b> 50 (2 x 25) for test plug 4 mm/0.157 in Ø</p> <p></p>
<p><b>Test plug module and spacer</b>, suitable for term. blocks 0.2 mm<sup>2</sup> – 6 mm<sup>2</sup>/AWG 24-10, 8 mm/0.315 in wide</p> <p>see page 2.41</p> <p></p>	<p><b>Test plug module and spacer</b>, suitable for term. blocks 0.2 mm<sup>2</sup> – 6 mm<sup>2</sup>/AWG 24-10, 8 mm/0.315 in wide</p> <p>see page 2.41</p> <p></p>	<p><b>Test plug module and spacer</b>, suitable for term. blocks 0.2 mm<sup>2</sup> – 6 mm<sup>2</sup>/AWG 24-10, 8 mm/0.315 in wide</p> <p>see page 2.41</p> <p></p>
<p><b>Step down jumper and cover plate</b> see pages 2.26 – 2.27</p>	<p><b>Step down jumper and cover plate</b> see pages 2.26 – 2.27</p>	<p><b>Step down jumper and cover plate</b> see pages 2.26 – 2.27</p>

\* For further approvals with corresponding ratings see section 15.

# Through/Ground (Earth) Conductor and Terminal Blocks 10 mm<sup>2</sup> / AWG 8, Series 284



<b>0.2 – 10 mm<sup>2</sup></b> <b>800 V/8 kV/3</b> <b>57 A</b>	<b>AWG 24 – 8</b> <b>600 V, 50 A</b> <b>600 V, 54 A</b>	<b>0.2 – 10 mm<sup>2</sup></b> <b>800 V/8 kV/3</b> <b>57 A</b>	<b>AWG 24 – 8</b> <b>600 V, 50 A</b> <b>600 V, 54 A</b>	<b>0.2 – 10 mm<sup>2</sup></b> <b>800 V/8 kV/3</b> <b>57 A</b>	<b>AWG 24 – 8</b> <b>600 V, 50 A</b> <b>600 V, 65 A</b>
<b>Terminal block width 10 mm / 0.394 in</b> <b>12 – 13 mm / 0.49 in</b>		<b>Terminal block width 10 mm / 0.394 in</b> <b>12 – 13 mm / 0.49 in</b>		<b>Terminal block width 10 mm / 0.394 in</b> <b>12 – 13 mm / 0.49 in</b>	
*		*		*	



Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>2-conductor through terminal blocks</b>		<b>3-conductor through terminal blocks</b>		<b>2-conductor through terminal blocks</b>	
grey <b>284-901</b>	25	grey <b>284-681</b>	25	grey <b>284-601</b>	25
blue <b>284-904</b>	25	blue <b>284-684</b>	25	blue <b>284-604</b>	25
orange <b>284-902</b>	25	orange <b>284-682</b>	25	orange <b>284-602</b>	25
light grey <b>284-992</b>	25	light grey <b>284-993</b>	25	light grey <b>284-691</b>	25
<b>2-conductor ground (earth) terminal blocks</b>		<b>3-conductor ground (earth) terminal blocks</b>		<b>2-conductor ground (earth) terminal blocks</b>	
green-yellow <b>284-907</b>	25	green-yellow <b>284-687</b>	25	green-yellow <b>284-607</b>	25
green-yellow <b>284-907/999-950</b>	25	green-yellow <b>284-687/999-950</b>	25	green-yellow <b>284-607/999-950</b>	25

800 V = rated voltage  
 8 kV = rated surge voltage  
 3 = pollution degree  
 (see also section 15)

Suitable for Ex e II applications  
 0.5 – 10 mm<sup>2</sup> AWG 20 – 8  
 550 V, 53 A  
 (see also section 13)

## Accessories Series 284

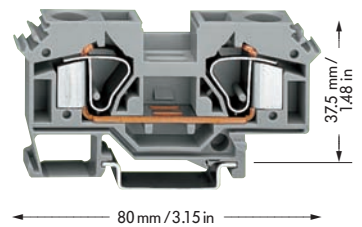
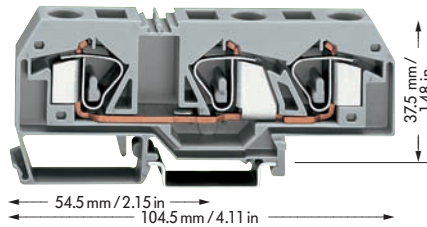
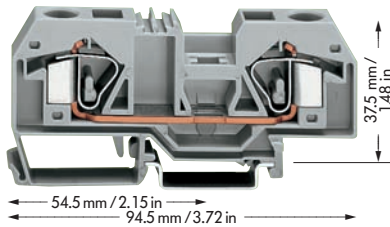
Appropriate marking system **WMB/WSB/WFB** (see section 14)

Accessories Series 284	Accessories Series 284	Accessories Series 284
<b>End and intermediate plate, 2.5 mm/0.098 in thick</b> <ul style="list-style-type: none"> <li>orange <b>284-328</b> 100 (4 x 25)</li> <li>grey <b>284-325</b> 100 (4 x 25)</li> <li>light grey <b>284-330</b> 100 (4 x 25)</li> </ul>	<b>End and intermediate plate, 2.5 mm/0.098 in thick</b> <ul style="list-style-type: none"> <li>orange <b>284-339</b> 100 (4 x 25)</li> <li>grey <b>284-308</b> 100 (4 x 25)</li> <li>light grey <b>284-341</b> 100 (4 x 25)</li> </ul>	<b>End and intermediate plate, 2.5 mm/0.098 in thick</b> <ul style="list-style-type: none"> <li>orange <b>284-317</b> 100 (4 x 25)</li> <li>grey <b>284-316</b> 100 (4 x 25)</li> <li>light grey <b>284-318</b> 100 (4 x 25)</li> </ul>
<b>Separator, oversized, 2 mm/0.079 in thick</b> <ul style="list-style-type: none"> <li>orange <b>284-329</b> 100 (4 x 25)</li> <li>grey <b>284-326</b> 100 (4 x 25)</li> <li>light grey <b>284-331</b> 100 (4 x 25)</li> </ul>	<b>Separator, oversized, 2 mm/0.079 in thick</b> <ul style="list-style-type: none"> <li>orange <b>284-340</b> 100 (4 x 25)</li> <li>grey <b>284-309</b> 100 (4 x 25)</li> <li>light grey <b>284-342</b> 100 (4 x 25)</li> </ul>	<b>Separator, oversized, 2 mm/0.079 in thick</b> <ul style="list-style-type: none"> <li>orange <b>284-327</b> 100 (4 x 25)</li> <li>grey <b>284-337</b> 100 (4 x 25)</li> <li>light grey <b>284-338</b> 100 (4 x 25)</li> </ul>
<b>Adjacent jumper, insulated, I<sub>N</sub> 57 A,  53 A</b> <ul style="list-style-type: none"> <li>grey <b>284-402</b> 100 (4 x 25)</li> <li>yell.-green <b>284-422</b> 100 (4 x 25)</li> </ul>	<b>Adjacent jumper, insulated, I<sub>N</sub> 57 A,  53 A</b> <ul style="list-style-type: none"> <li>grey <b>284-402</b> 100 (4 x 25)</li> <li>yell.-green <b>284-422</b> 100 (4 x 25)</li> </ul>	<b>Adjacent jumper, insulated, I<sub>N</sub> 57 A,  53 A</b> <ul style="list-style-type: none"> <li>grey <b>284-402</b> 100 (4 x 25)</li> <li>yell.-green <b>284-422</b> 100 (4 x 25)</li> </ul>
<b>Alternate jumper, insulated, I<sub>N</sub> 57 A,  53 A</b> <ul style="list-style-type: none"> <li>grey <b>284-409</b> 50 (2 x 25)</li> </ul>	<b>Alternate jumper, insulated, I<sub>N</sub> 57 A,  53 A</b> <ul style="list-style-type: none"> <li>grey <b>284-409</b> 50 (2 x 25)</li> </ul>	<b>Alternate jumper, insulated, I<sub>N</sub> 57 A,  53 A</b> <ul style="list-style-type: none"> <li>grey <b>284-409</b> 50 (2 x 25)</li> </ul>
<b>Protective warning marker, for 5 terminal blocks, fits into screwdriver slot</b> <ul style="list-style-type: none"> <li>yellow <b>284-415</b> 50 (2 x 25)</li> </ul>	<b>Protective warning marker, for 5 terminal blocks, fits into screwdriver slot</b> <ul style="list-style-type: none"> <li>yellow <b>284-415</b> 50 (2 x 25)</li> </ul>	<b>Protective warning marker, for 5 terminal blocks, fits into screwdriver slot</b> <ul style="list-style-type: none"> <li>yellow <b>284-415</b> 50 (2 x 25)</li> </ul>
<b>Test plug adapter, suitable f. term. bl. 1.5 mm<sup>2</sup> – 10 mm<sup>2</sup>, 8 mm/0.315 in wide</b> <ul style="list-style-type: none"> <li><b>209-170</b> 50 (2 x 25)</li> <li>see also page 2.41</li> </ul>	<b>Test plug adapter, suitable f. term. bl. 1.5 mm<sup>2</sup> – 10 mm<sup>2</sup>, 8 mm/0.315 in wide</b> <ul style="list-style-type: none"> <li><b>209-170</b> 50 (2 x 25)</li> <li>see also page 2.41</li> </ul>	<b>Test plug adapter, suitable f. term. bl. 1.5 mm<sup>2</sup> – 10 mm<sup>2</sup>, 8 mm/0.315 in wide</b> <ul style="list-style-type: none"> <li><b>209-170</b> 50 (2 x 25)</li> <li>see also page 2.41</li> </ul>
<b>Finger guard cover,</b> <ul style="list-style-type: none"> <li>serves as touchproof protection for unused clamping units</li> <li>yellow <b>284-400</b> 100 (4 x 25)</li> </ul>	<b>Finger guard cover,</b> <ul style="list-style-type: none"> <li>serves as touchproof protection for unused clamping units</li> <li>yellow <b>284-400</b> 100 (4 x 25)</li> </ul>	<b>Finger guard cover,</b> <ul style="list-style-type: none"> <li>serves as touchproof protection for unused clamping units</li> <li>yellow <b>284-400</b> 100 (4 x 25)</li> </ul>
<b>Step down jumper and cover plate</b> see pages 2.26 – 2.27	<b>Step down jumper and cover plate</b> see pages 2.26 – 2.27	<b>Step down jumper and cover plate</b> see pages 2.26 – 2.27

\* For further approvals with corresponding ratings see section 15.

# Through/Ground (Earth) Conductor and Terminal Blocks 16 mm<sup>2</sup> / AWG 6, Series 283

<p>0.2 – 16 mm<sup>2</sup> 800 V/8 kV/3 ① 76 A</p> <p>Terminal block width 12 mm / 0.472 in 16 – 17 mm / 0.65 in</p>	<p>AWG 24 – 6 600 V, 65 A ② 600 V, 70 A ③</p>	<p>0.2 – 16 mm<sup>2</sup> 800 V/8 kV/3 ① 76 A</p> <p>Terminal block width 12 mm / 0.472 in 16 – 17 mm / 0.65 in</p>	<p>AWG 24 – 6 600 V, 65 A ② 600 V, 70 A ③</p>	<p>0.2 – 16 mm<sup>2</sup> 800 V/8 kV/3 ① 76 A</p> <p>Terminal block width 12 mm / 0.472 in 16 – 17 mm / 0.65 in</p>	<p>AWG 24 – 6 600 V, 65 A ② 600 V, 70 A ③</p>
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Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>2-conductor through terminal blocks</b>		<b>3-conductor through terminal blocks</b>		<b>2-conductor through terminal blocks</b>	
grey <b>283-901</b>	20	grey <b>283-671</b>	20	grey <b>283-601</b>	25
blue <b>283-904</b>	20	blue <b>283-674</b>	20	blue <b>283-604</b>	25
orange <b>283-902</b>	20	orange <b>283-672</b>	20		
light grey <b>283-992</b>	20	light grey <b>283-998</b>	20	light grey <b>283-691</b>	25
<b>2-conductor ground (earth) terminal blocks</b>		<b>3-conductor ground (earth) terminal blocks</b>		<b>2-conductor ground (earth) terminal blocks</b>	
green-yellow <b>283-907</b>	20	green-yellow <b>283-677</b>	20	green-yellow <b>283-607</b>	25
green-yellow <b>283-907/999-950</b>	20	green-yellow <b>283-677/999-950</b>	20	green-yellow <b>283-607/999-950</b>	25
		<b>Attention! These terminal blocks cannot be commoned with adjacent jumpers!</b>			

① 800 V = rated voltage  
8 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)

② Suitable for Ex e II applications  
0.5 – 6 mm<sup>2</sup> AWG 20 – 6  
550 V, 68 A jumper 63 A  
(see also section 13)

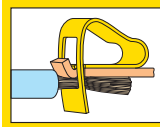
## Accessories Series 283

Appropriate marking system **WMB/WSB/WFB** (see section 14)

End and intermediate plate, 2.5 mm/0.098 in thick	End and intermediate plate, 2.5 mm/0.098 in thick	End and intermediate plate, 4 mm/0.157 in thick
orange <b>283-328</b> 50 (2 x 25)	orange <b>283-352</b> 50 (2 x 25)	orange <b>283-317</b> 50 (2 x 25)
grey <b>283-325</b> 50 (2 x 25)	grey <b>283-350</b> 50 (2 x 25)	grey <b>283-316</b> 50 (2 x 25)
light grey <b>283-330</b> 50 (2 x 25)	light grey <b>283-354</b> 50 (2 x 25)	light grey <b>283-318</b> 50 (2 x 25)
<b>Separator, oversized, 2 mm/0.079 in thick</b>	<b>Separator, oversized, 2 mm/0.079 in thick</b>	<b>Separator, oversized, 2 mm/0.079 in thick</b>
orange <b>283-329</b> 50 (2 x 25)	orange <b>283-353</b> 50 (2 x 25)	orange <b>283-327</b> 50 (2 x 25)
grey <b>283-326</b> 50 (2 x 25)	grey <b>283-351</b> 50 (2 x 25)	grey <b>283-337</b> 50 (2 x 25)
light grey <b>283-331</b> 50 (2 x 25)	light grey <b>283-355</b> 50 (2 x 25)	light grey <b>283-338</b> 50 (2 x 25)
<b>Adjacent jumper, insulated, I<sub>N</sub> 70 A, ② 63 A</b>		<b>Adjacent jumper, insulated, I<sub>N</sub> 70 A, ② 63 A</b>
grey <b>283-402</b> 50 (2 x 25)		grey <b>283-402</b> 50 (2 x 25)
yell.-green <b>283-422</b> 50 (2 x 25)		yell.-green <b>283-422</b> 50 (2 x 25)
<b>Alternate jumper, insulated, I<sub>N</sub> 76 A, ② 63 A</b>		<b>Alternate jumper, insulated, I<sub>N</sub> 76 A, ② 63 A</b>
grey <b>283-409</b> 50 (2 x 25)		grey <b>283-409</b> 50 (2 x 25)
<b>Test plug adapter, suitable f. term. bl. 1.5 mm<sup>2</sup> – 16 mm<sup>2</sup>, 11.6 mm/0.457 in wide</b>		<b>Test plug adapter, suitable f. term. bl. 1.5 mm<sup>2</sup> – 16 mm<sup>2</sup>, 11.6 mm/0.457 in wide</b>
<b>283-404</b> 25		<b>283-404</b> 25
for test plug 4 mm/0.157 in Ø		for test plug 4 mm/0.157 in Ø
<b>Protective warning marker, for 5 terminal blocks, fits into screwdriver slot</b>	<b>Protective warning marker, for 5 terminal blocks, fits into screwdriver slot</b>	<b>Protective warning marker, for 5 terminal blocks, fits into screwdriver slot</b>
yellow <b>283-415</b> 50 (2 x 25)	yellow <b>283-415</b> 50 (2 x 25)	yellow <b>283-415</b> 50 (2 x 25)
<b>Finger guard cover, serves as touchproof protection for unused clamping units</b>	<b>Finger guard cover, serves as touchproof protection for unused clamping units</b>	<b>Finger guard cover, serves as touchproof protection for unused clamping units</b>
yellow <b>283-400</b> 100 (4 x 25)	yellow <b>283-400</b> 100 (4 x 25)	yellow <b>283-400</b> 100 (4 x 25)
<b>Step down jumper and cover plate</b> see pages 2.26 – 2.27	<b>Attention! These terminal blocks cannot be commoned with step down jumpers!</b>	<b>Step down jumper and cover plate</b> see pages 2.26 – 2.27

\* For further approvals with corresponding ratings see section 15.

# High Current Through/Ground (Earth) Conductor and Terminal Blocks 35 mm<sup>2</sup> / AWG 2, Series 285

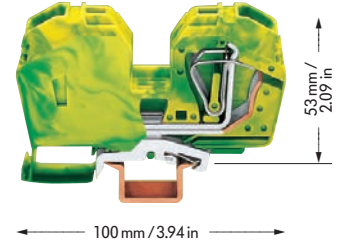
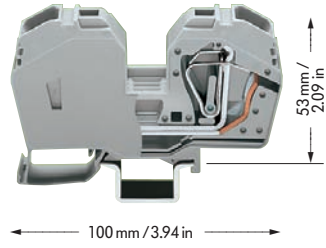


2  
21

	<p>6 – 35 mm<sup>2</sup> 1000 V/8 kV/3 ① 125 A</p> <p>AWG 10 – 2 600 V, 115 A ② 600 V, 140 A ③</p> <p>Terminal block width 16 mm / 0.63 in 23 mm / 0.91 in [16 mm/0.63 in for 35 mm<sup>2</sup> "str."]</p> <p>* ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿</p>	<p>For terminal blocks with larger cross sections, please see Specialty Products Catalog KSK 1.2</p>
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2

- ① 1000 V = rated voltage  
8 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② Suitable for Ex e II applications  
6 – 35 mm<sup>2</sup> AWG 8 – 2  
750 V, 85 A  
6 – 25 mm<sup>2</sup> AWG 8 – 4  
for ground (earth) terminal blocks  
(see also section 13)



Description	Item No.	Pack. unit pcs
<b>Rail-mounted high current terminal blocks, for DIN 35 rail</b>	<b>2-conductor through terminal blocks with integrated end plate</b>	
	grey <b>285-635</b> ●	15
	blue <b>285-634</b> ●	15
	light grey <b>285-992</b> ○	15
	<b>2-conductor ground (earth) terminal blocks with integrated end plate</b>	
	green-yellow <b>285-637</b> ●	15
	green-yellow <b>285-637/999-950</b> ●	15
	<b>not to be used on DIN 35 x 7.5 rail</b>	



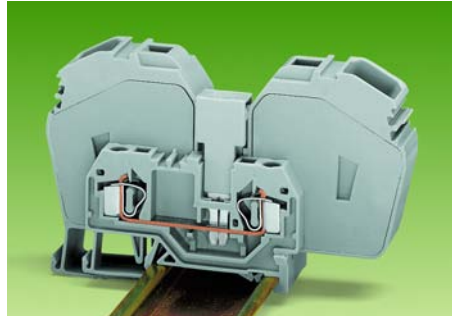
Connection of conductor 35 mm<sup>2</sup>/AWG 2

Accessories Series 285			Appropriate marking system WMB/WSB or Mini-WSB (see section 14)	
	<b>Adjacent jumper, insulated</b>	I <sub>N</sub> 85 A grey	<b>285-435</b>	50 (2 x 25)
	<b>Step-down jumper, insulated</b>	I <sub>N</sub> 32 A grey	<b>283-414</b>	50 (2 x 25)
	<b>Screwless end stop</b>	6 mm / 0.236 in w. <b>249-116</b> 10 mm / 0.394 in w. <b>249-117</b>		100 (4 x 25) 50 (2 x 25)
	<b>Protective warning marker, for 5 terminal blocks, fits into screwdriver slot</b>	yellow	<b>285-416</b>	50 (2 x 25)
	<b>Finger guard cover, serves as touchproof protection for unused clamping units</b>	yellow	<b>285-401</b>	100 (4 x 25)



Protective warning markers in operating slots

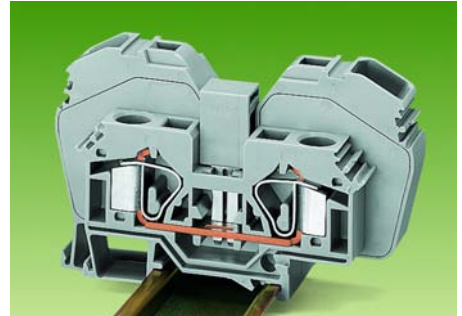
## Application notes



Commoning of a series 285 terminal block (35 mm<sup>2</sup>/AWG 2) with a series 281 terminal block (4 mm<sup>2</sup>/AWG 12) using step-down jumper 283-414



Finger guard cover snapped into unused clamping unit



Terminal blocks of series 285 can be commoned with terminal blocks of series 283: 285-635 and 285-634 with 283-601 and 283-604 resp. jumper required: 285-435. **Please note that the nominal current of the adjacent jumper should not exceed 63 A.**

\* For further approvals with corresponding ratings see section 15.



## 2 95 mm<sup>2</sup>/AWG 4/0 Rail-Mounted High Current Terminal Blocks . . . with POWER CLAMP Connection, Series 285

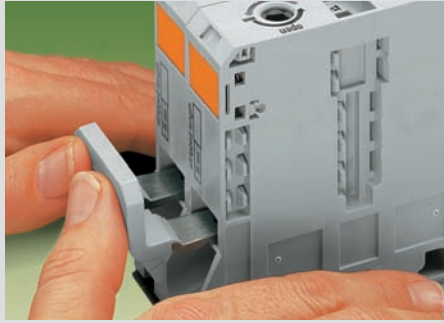
22

### Wire connection



Counter-clockwise rotation using a hex wrench. Hold clamp in open position using the latch.

### Commoning



Commoning with adjacent jumper. Insertion of jumper above the conductor entry hole, without tools. Rated cross section is still 95 mm<sup>2</sup>/AWG 0000.

### Testing



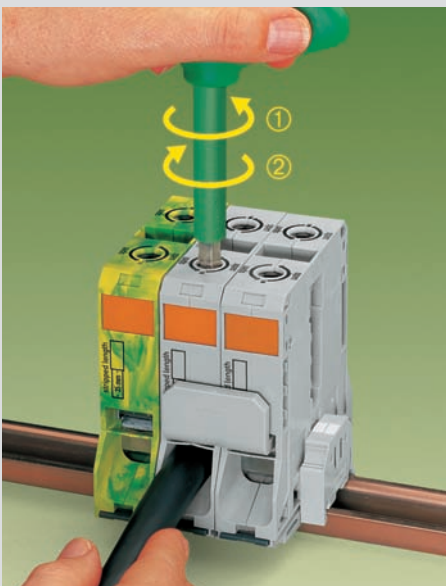
Testing with test plug 4 mm / 0.157 in diameter, protected against accidental contact.

### Wire connection



Introduce stripped wire into the clamping unit up to the stop and hold it in position . . .

### Wire connection

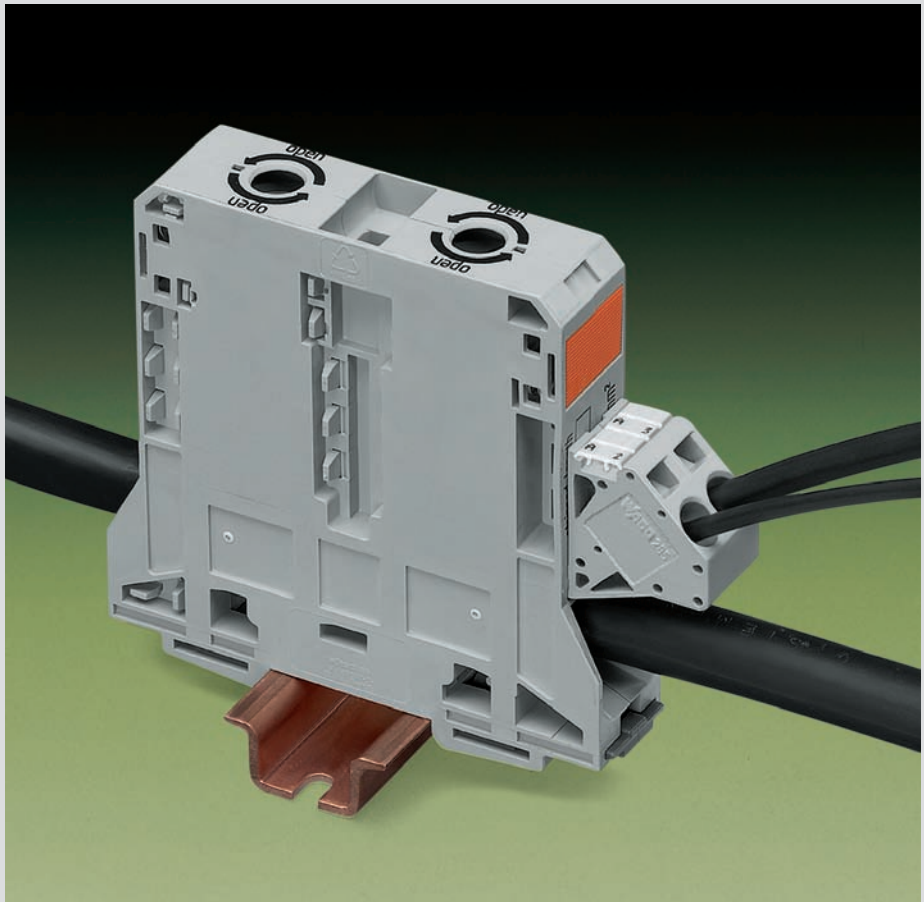


. . . A small counter-clockwise rotation releases the latch ①. Once the operating tool ② has been removed the conductor is safely clamped.



The POWER CLAMP connection clamps the following copper wires:\*

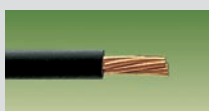
solid



### Assembly



Snapping a terminal block onto the carrier rail. From the left or from the right.



stranded

### Removal



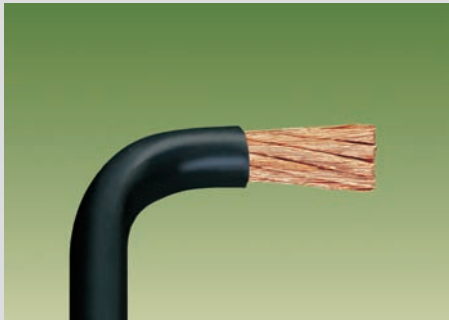
Removing a terminal block from the carrier rail. To the left or to the right.



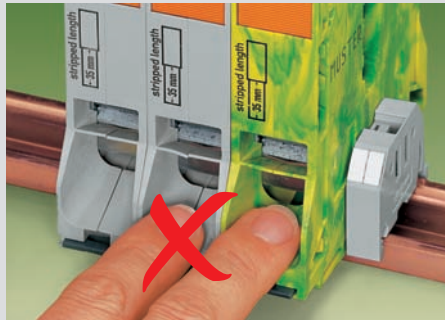
fine-stranded, also with tinned single strands

\* For aluminum wire see notes in section 15!

Safety notices



Bend the conductor before stripping!  
Wire end has to be straight!  
Note: Stripped length 35 mm



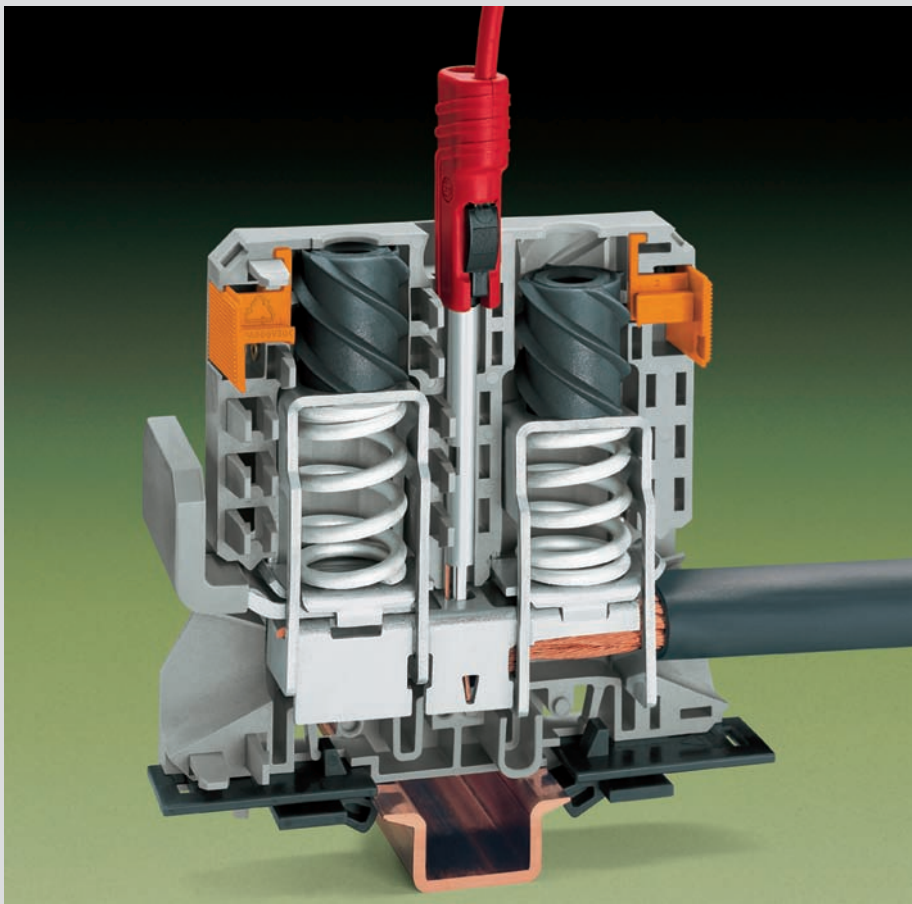
Attention! Health hazard!  
Keep your fingers out of the conductor entry hole!



Protective warning marker may indicate:  
Attention! Voltage may be present despite main circuit being switched off!

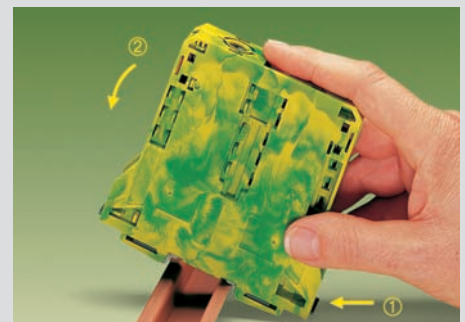
2

Grounding foot



Contact pressure is distributed symmetrically on all defined contact zones.  
Short circuit currents of more than 11,400 A per second are grounded safely.

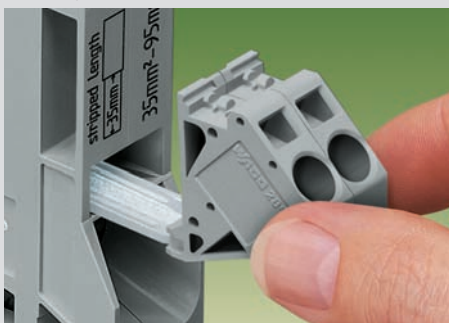
Ground (earth) conductor terminal blocks



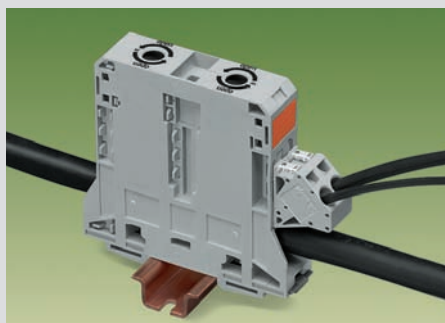
Firmly snap ground (earth) conductor terminal block onto the carrier rail. The grounding foot makes an automatic contact to the rail.

Touch protection cover

Voltage tap



Reliable and simple tap directly onto the power supply. Insert the unwired tap before opening the pressure spring.



Covers provide touchproof safety by closing unused clamping units and jumper contact slots (detach the cover of the jumper contact slot from the touch protection cover of the clamping unit)

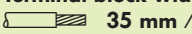







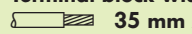







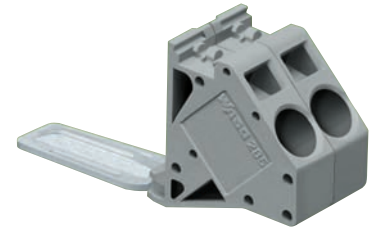
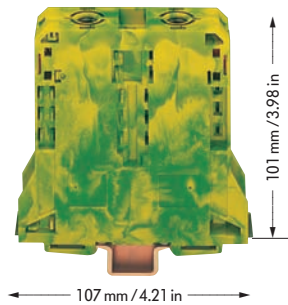
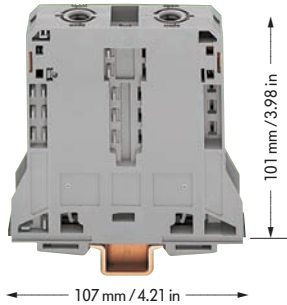
fine-stranded,  
with crimped ferrule  
(gas tight)











## 2 High Current Through/Ground (Earth) Conductor and Terminal Blocks 95 mm<sup>2</sup>/AWG 4/0, Series 285

24 Side-entry

<b>25 – 95 mm<sup>2</sup></b> <b>1000 V/8 kV/3 ①</b> <b>232 A</b> Terminal block width 25 mm / 0.98 in  35 mm / 1.38 in *     	<b>AWG 4 – 4/0</b> <b>600 V, 200 A </b> <b>600 V, 210 A </b>	<b>25 – 95 mm<sup>2</sup></b> <b>AWG 4 – 4/0</b> Terminal block width 25 mm / 0.98 in  35 mm / 1.38 in *     	<b>0.2 – 10/16 mm<sup>2</sup> ②</b>   <b>AWG 24 - 6</b> <b>1000 V/8 kV/3</b> <b>57 A</b> Module width 20 mm / 0.787 in <b>② max. conductor cross section 16 mm<sup>2</sup></b>
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Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>2-conductor through terminal blocks</b>		<b>2-conductor ground (earth) terminal blocks</b>		<b>Voltage tap,</b>	
grey <b>285-195</b> 	5	green-yellow <b>285-197</b> 	5	grey <b>285-407</b> 	5
blue <b>285-194</b> 	5	green-yellow  <b>285-197/999-950</b> 	5		
light grey  <b>285-995</b> 	5				
To be used <b>exclusively</b> on DIN 35 x 15; 2.3 mm / 0.091 in thick		To be used <b>exclusively</b> on DIN 35 x 15; 2.3 mm / 0.091 in thick, Cu			

### Accessories

Appropriate marking system **WSB** (see section 14)

Appropriate marking system **WMB/WSB**

#### Adjacent jumper, insulated,



I<sub>N</sub> 232 A for 1 jumper  
I<sub>N</sub> 192 A for 2 to 4 jumpers  
grey **285-495** 25

#### Adjacent jumper, insulated,



I<sub>N</sub> 232 A for 1 jumper  
I<sub>N</sub> 192 A for 2 to 4 jumpers  
grey **285-495** 25

#### Hex wrench with partially insulated shaft



**285-172** 1

#### Hex wrench with partially insulated shaft



**285-172** 1

#### Protective warning marker,



with high voltage symbol, black  
yellow **285-170** 50 (2 x 25)

#### Protective warning marker,



with high voltage symbol, black  
yellow **285-170** 50 (2 x 25)

#### Touch protection cover, serves as touchproof protection for unused clamping units



yellow **285-169** 25


#### Touch protection cover, serves as touchproof protection for unused clamping units



yellow **285-169** 25

**Test plug, Ø 4 mm / 0.157 in, protected against accidental contact, not offered by WAGO**  
e.g. Fa. Multi-Contact Deutschland GmbH  
Postfach 16 06 · 79551 Weil am Rhein  
Hegenheimerstraße 19 · 79576 Weil am Rhein

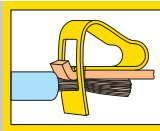
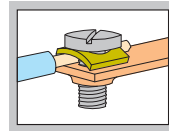
**Test plug, Ø 4 mm / 0.157 in, protected against accidental contact, not offered by WAGO**  
e.g. Fa. Multi-Contact Deutschland GmbH  
Postfach 16 06 · 79551 Weil am Rhein  
Hegenheimerstraße 19 · 79576 Weil am Rhein

- ① 1000 V = rated voltage  
8 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
-  Suitable for Ex e II applications  
25 – 95 mm<sup>2</sup> AWG 4 – 4/0  
750 V, 195 A  
35 – 70 mm<sup>2</sup> AWG 2 – 00  
for ground (earth) terminal blocks  
(see also section 13)

\* For further approvals with corresponding ratings see section 15.


# Distribution Terminal Blocks, Series 284

Front-entry/side-entry



2  
25

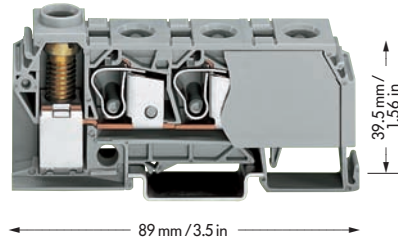
0.2 – 10 mm<sup>2</sup> ① | AWG 24 – 8 ①  
 6.0 – 35 mm<sup>2</sup> ② | AWG 10 – 2 ②  
 800 V/8 kV/3 ③; 125 A | 600 V, 115 A ④




Terminal block width 17.5 mm / 0.689 in  
 12 – 14 mm / 0.51 in

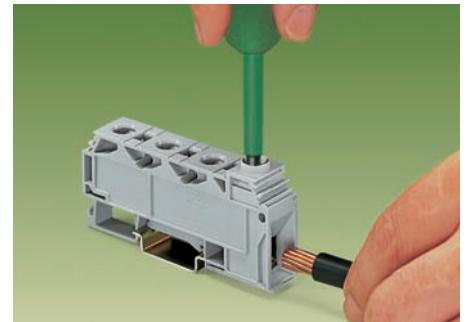
\*      CB GL BV LR NV

2

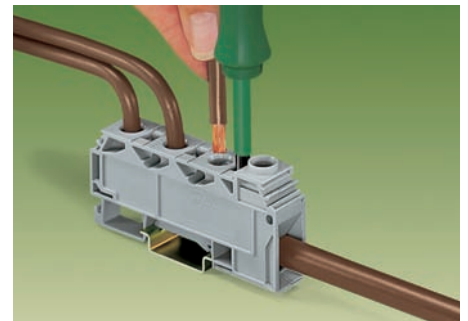
- ① CAGE CLAMP® connection
- ② Screw-clamp connection
- ③ 800 V = rated voltage  
8 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ④ Individual arrangement 125 A  
2 jumpers combined in one clamping unit 100 A



Description	Item No.	Pack. unit pcs
<b>Distribution terminal block</b> , for DIN 35 rail	<b>Distribution terminal blocks</b> , with 3 x CAGE CLAMP® connection ① 10 mm <sup>2</sup> /AWG 8 and 1 x screw-clamp connection ② 35 mm <sup>2</sup> /AWG 2	
	grey <b>284-621</b> 	15
	blue <b>284-624</b> 	15
<b>Accessories</b> Appropriate marking system <b>WMB/WSB</b> (see section 14)		
<b>Comb type jumper bar</b> , insulated,  2-way	I <sub>N</sub> 125 A ④ grey <b>284-412</b>	100 (4 x 25)
<b>Application notes</b>		



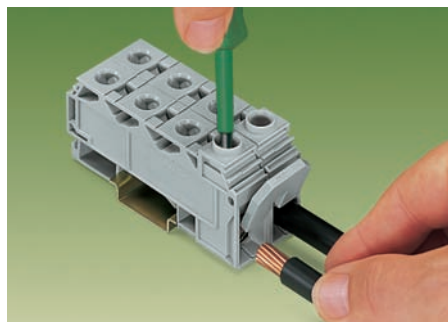
Connection of conductor 35 mm<sup>2</sup>/AWG 2  
Screw-clamp connection, side-entry



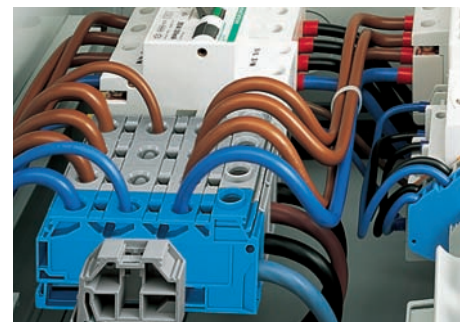
Connection of conductor 10 mm<sup>2</sup>/AWG 8  
CAGE CLAMP® connection, front-entry



Commoning with comb type jumper bar



Connecting a 35 mm<sup>2</sup>/AWG 2 conductor



Rail-mounted distribution terminal block with 35 mm<sup>2</sup>/AWG 2 and 3 x 10 mm<sup>2</sup>/3 x AWG 8 front-entry CAGE CLAMP® connection. To snap onto DIN 35 carrier rails according to EN 60715. The terminal block is closed on both sides, an end or intermediate plate is not necessary.  
**In case of maximum wiring with 3 x 10 mm<sup>2</sup>/3 x AWG 8 on the distribution side the nominal current of 125 A should not be exceeded.**

\* For further approvals with corresponding ratings see section 15.



# Step-Down Jumpers for Front-Entry Through Terminal Blocks up to 16 mm<sup>2</sup> / AWG 6\*

	<b>Step-down jumper commoning term. bl.</b> 10/6 mm <sup>2</sup> / AWG 8/10 → 4/2.5/1.5 mm <sup>2</sup> / AWG 12/14/16 800 V/8 kV/3; 15 A or 10/6 mm <sup>2</sup> / AWG 8/10 → 6/4 mm <sup>2</sup> / AWG 10/12 800 V/8 kV/3; 30 A	<b>Step-down jumper for commoning terminal blocks</b> 16 mm <sup>2</sup> / AWG 6 → 4 mm <sup>2</sup> / AWG 12 800 V/8 kV/3 32 A
--	---	--



- ❶ For use with terminal blocks 279-831; 280-833; 281-652 only
  - ❷ For use with terminal block 280-633 only
- Step-down jumpers cannot be used for commoning front-entry terminal blocks with side-entry terminal blocks

Description	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Step-down jumper, insulated</b>	<b>10/6 mm<sup>2</sup> / AWG 8/10 → 4/2.5/1.5 mm<sup>2</sup> / AWG 12/14/16</b>		<b>16 mm<sup>2</sup> / AWG 6 → 4 mm<sup>2</sup> / AWG 12</b>	
	I <sub>N</sub> 15 A, grey	<b>284-414</b>	I <sub>N</sub> 32 A, grey	<b>283-414</b>
		50 (2 x 25)		50 (2 x 25)
	<b>10/6 mm<sup>2</sup> / AWG 8/10 → 6/4 mm<sup>2</sup> / AWG 10/12</b>			
	I <sub>N</sub> 30 A, grey	<b>284-413</b>		
		50 (2 x 25)		

### Accessories

	<b>Cover plate,</b> for 2-, 3- and 4-conductor terminal blocks	1 mm/0.039 in thick			1 mm/0.039 in thick, for 2-cond. terminal block 283-601				
		grey	<b>284-334</b>	<b>284-336</b> ❶	<b>284-335</b> ❷	25	grey	<b>283-334</b>	25
		orange	<b>284-344</b>	<b>284-346</b> ❶	<b>284-345</b> ❷	25	orange	<b>283-336</b>	25
	<b>Cover plate,</b> for 2-conductor terminal blocks 282-901 and 284-901	1 mm/0.039 in thick series 282 series 284					1 mm/0.039 in thick, for 2-conductor terminal block 283-901		
		grey	<b>282-357</b>	<b>284-357</b>		25	grey	<b>283-357</b>	25
		orange	<b>282-367</b>	<b>284-367</b>		25	orange	<b>283-367</b>	25
	<b>Cover plate,</b> for 3-conductor terminal blocks 282-681 and 284-681	1 mm/0.039 in thick series 282 series 284							
		grey	<b>282-358</b>	<b>284-358</b>		25			
		orange	<b>282-368</b>	<b>284-368</b>		25			

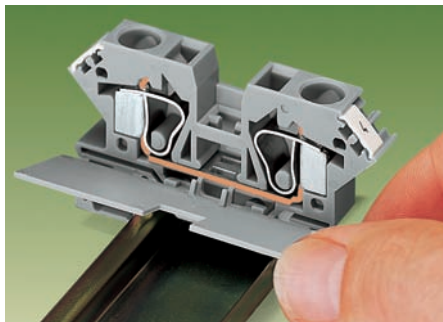
### Application notes

Step-down jumpers may be used for commoning terminal blocks of different sizes, without losing a conductor clamping point. This can be an advantage on long conductor runs where voltage drop can be a problem.

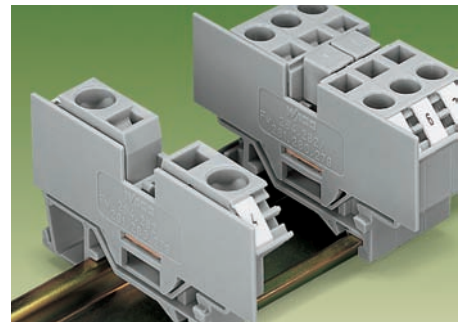
A large conductor can be easily connected to smaller wires at the distribution point.

Step-down jumpers are simply pushed down to full insertion, in the same way as all other push-in jumpers. Commoning may be made in either direction using the special thin end plate to cover the open side. Further terminal blocks of the smaller cross section may be commoned using standard adjacent jumpers. In this case pay attention that:

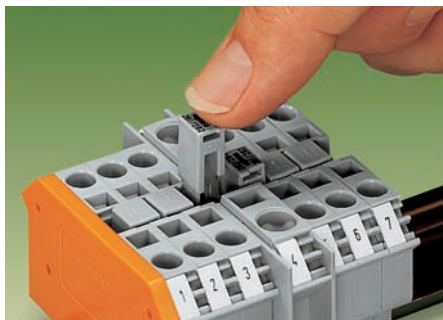
1. **the total current flowing does not exceed the rating of the step-down jumper**
2. the standard or special thin end plate is applied to the open side of the larger block.



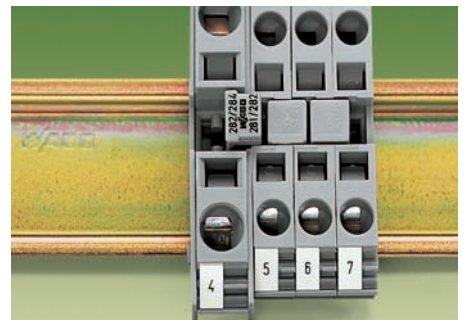
Cover plate snapped onto open side of terminal block



Always use a cover plate also on the other side of the larger terminal block.



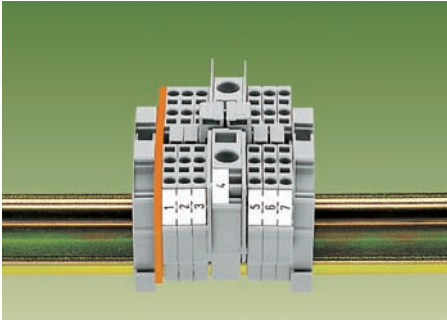
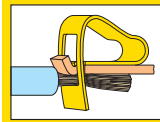
Larger "supply" blocks may be commoned to blocks for smaller wires. Push jumper down FIRMLY until FULLY inserted!



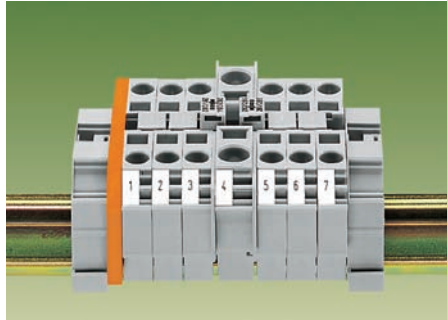
Note: jumpers are marked with suitable terminal block sizes ensuring they are correctly installed.

\* Through terminal blocks 35 mm<sup>2</sup>/AWG 2 see page 2.21

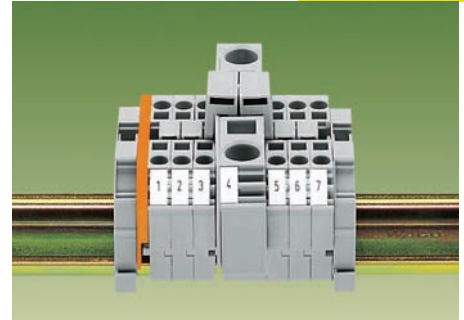
# Examples of Assembly



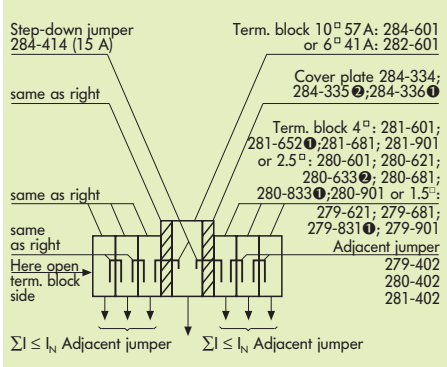
Commoning of front-entry rail-mounted terminal blocks 6 mm<sup>2</sup>/AWG 10 (series 282) with front-entry rail-mounted terminal blocks 1.5 mm<sup>2</sup>/AWG 16 (series 279).



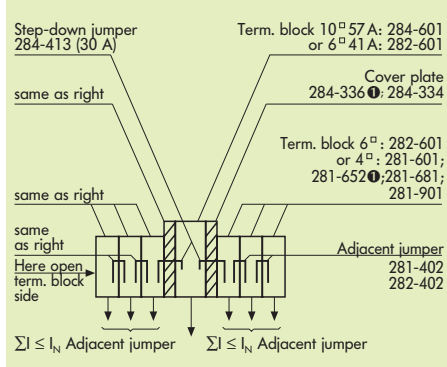
Commoning of front-entry rail-mounted terminal blocks 10 mm<sup>2</sup>/AWG 8 (series 284) with front-entry rail-mounted terminal blocks 6 mm<sup>2</sup>/AWG 10 (series 282).



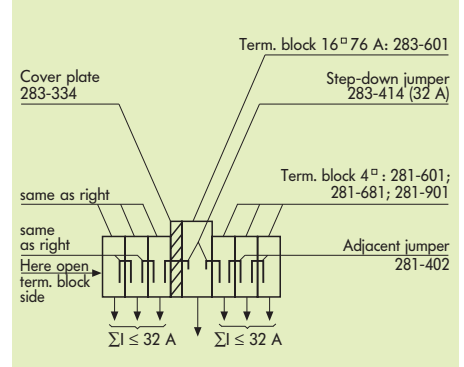
Commoning of front-entry rail-mounted terminal blocks 16 mm<sup>2</sup>/AWG 6 (series 283) with front-entry rail-mounted terminal blocks 4 mm<sup>2</sup>/AWG 12 (series 281).



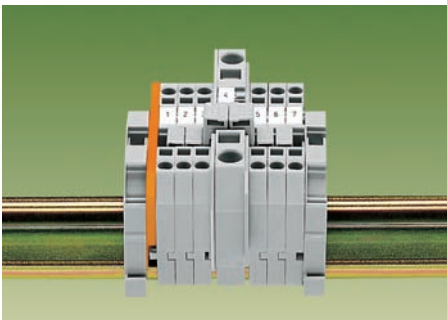
Example of assembly "Commoning of front-entry rail-mounted terminal blocks 10/6 mm<sup>2</sup>/AWG 8/10 with front-entry rail-mounted terminal blocks 4/2.5/1.5 mm<sup>2</sup>/AWG 12/14/16 with step-down jumper 284-414."



Example of assembly "Commoning of front-entry rail-mounted terminal blocks 10/6 mm<sup>2</sup>/AWG 8/10 with front-entry rail-mounted terminal blocks 6/4 mm<sup>2</sup>/AWG 10/12 with step-down jumper 284-413."



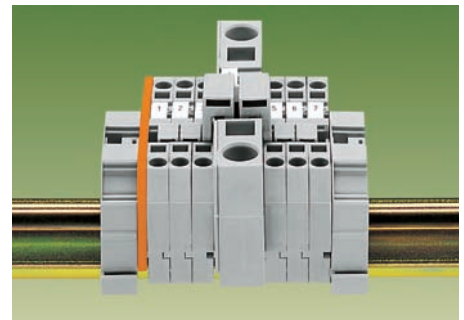
Example of assembly "Commoning of front-entry rail-mounted terminal blocks 16 mm<sup>2</sup>/AWG 6 with front-entry rail-mounted terminal blocks 4 mm<sup>2</sup>/AWG 12 with step-down jumper 283-414."



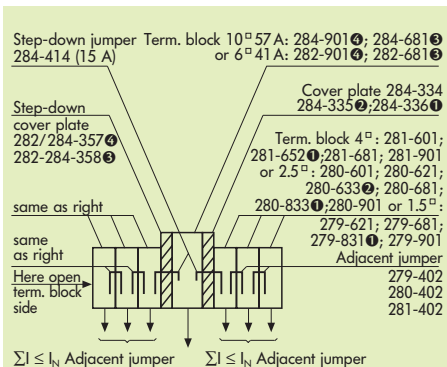
Commoning of front-entry rail-mounted terminal blocks 6 mm<sup>2</sup>/AWG 10 (series 282) with front-entry rail-mounted terminal blocks 1.5 mm<sup>2</sup>/AWG 16 (series 279).



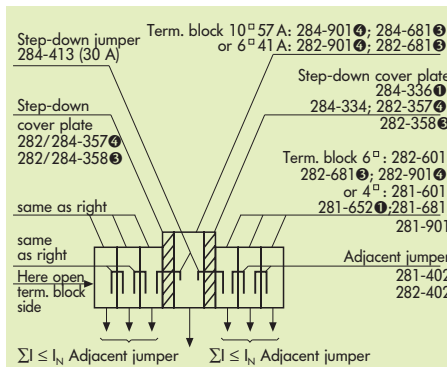
Commoning of front-entry rail-mounted terminal blocks 10 mm<sup>2</sup>/AWG 8 (series 284) with front-entry rail-mounted terminal blocks 6 mm<sup>2</sup>/AWG 10 (series 282).



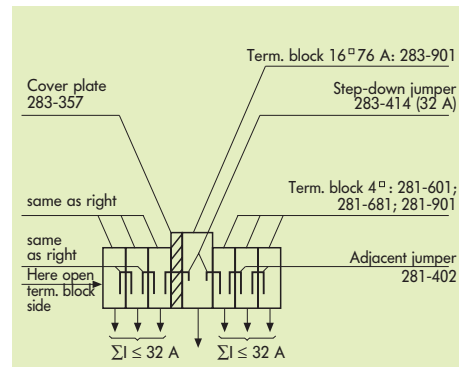
Commoning of front-entry rail-mounted terminal blocks 16 mm<sup>2</sup>/AWG 6 (series 283) with front-entry rail-mounted terminal blocks 4 mm<sup>2</sup>/AWG 12 (series 281).



Example of assembly "Commoning of front-entry rail-mounted terminal blocks 10/6 mm<sup>2</sup>/AWG 8/10 with front-entry rail-mounted terminal blocks 4/2.5/1.5 mm<sup>2</sup>/AWG 12/14/16 with step-down jumper 284-414."



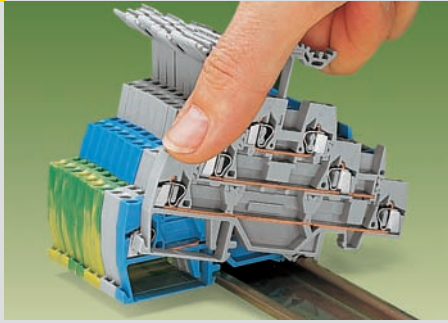
Example of assembly "Commoning of front-entry rail-mounted terminal blocks 10/6 mm<sup>2</sup>/AWG 8/10 with front-entry rail-mounted terminal blocks 6/4 mm<sup>2</sup>/AWG 10/12 with step-down jumper 284-413."



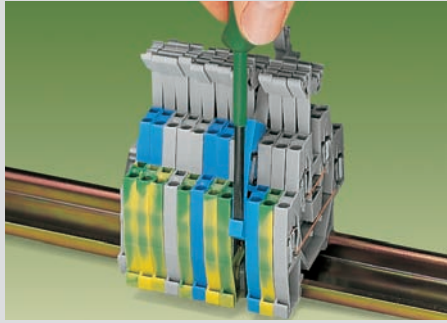
Example of assembly "Commoning of front-entry rail-mounted terminal blocks 16 mm<sup>2</sup>/AWG 6 with front-entry rail-mounted terminal blocks 4 mm<sup>2</sup>/AWG 12 with step-down jumper 283-414."

# Double and Triple Deck Terminal Blocks with CAGE CLAMP® connection

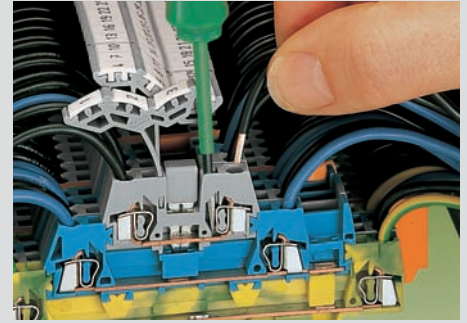
28 Series 279/280 and 281



Assembly of a terminal block on the rail

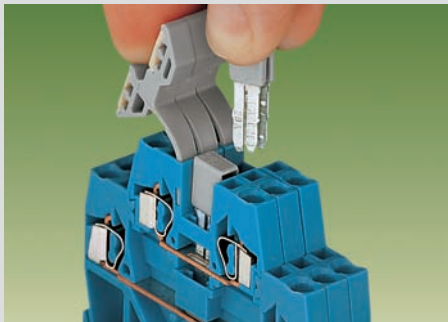


Removal of a terminal block from the assembly



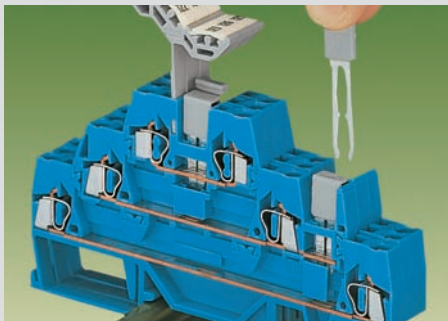
Connection of wires

## Commoning

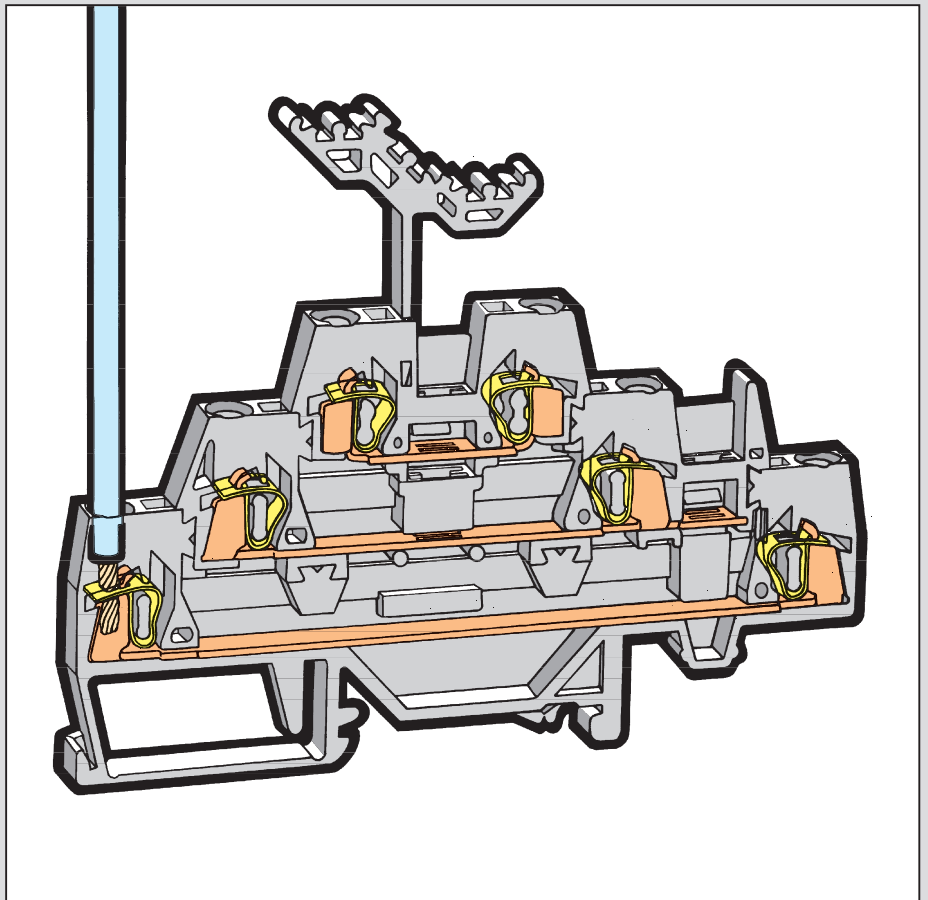


Commoning with adjacent jumpers 280-402. Push jumper down FIRMLY until FULLY inserted!

## Commoning



Combined horizontal and vertical commoning



## Marking



Marking with WMB multi-marking system or WSB quick marking system. For other systems see section 14

CAGE CLAMP® clamps the following copper wires:\*

solid

fine-stranded wire – tip bonded

stranded

fine-stranded wire with crimped ferrule ❶

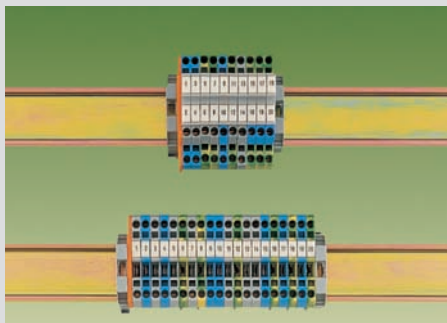
fine-stranded, also with tinned single strands

fine-stranded wire with crimped pin terminal

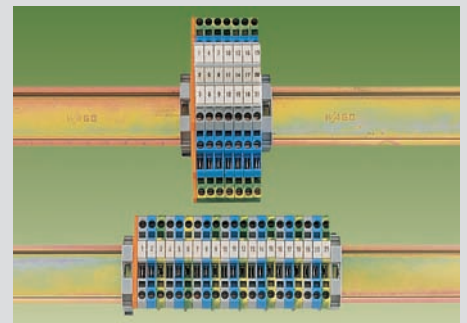
\* For aluminum wire see notes in section 15!

❶ When using wires with ferrules, it is necessary to use a terminal block one size larger than the nominal cross section of the wire.

## Space saving



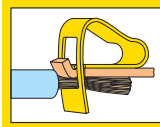
Space saving of 50 % when using double deck terminal blocks



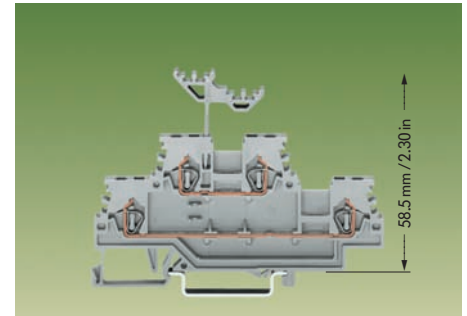
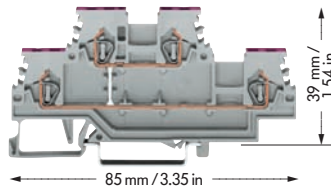
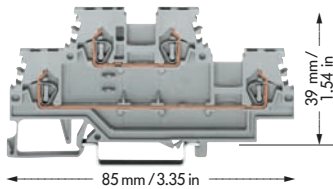
Space saving of 67 % when using triple deck terminal blocks



# Double Deck Terminal Blocks 1.5 mm<sup>2</sup> / AWG 16, Series 279

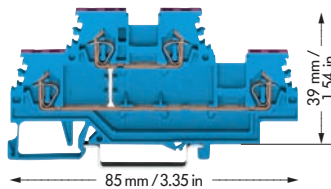
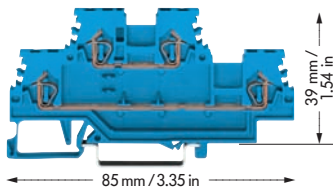


<b>0.08 – 1.5 mm<sup>2</sup></b> <b>500 V/6 kV/3 ①</b> <b>18 A</b> <b>Terminal block width 4 mm / 0.157 in</b> <b>8 - 9 mm / 0.33 in</b>	<b>AWG 28 – 16</b>	<b>0.08 – 1.5 mm<sup>2</sup></b> <b>500 V/6 kV/3 ①</b> <b>18 A</b> <b>Terminal block width 4 mm / 0.157 in</b> <b>8 - 9 mm / 0.33 in</b>	<b>AWG 28 – 16</b>	<b>Accessories</b>

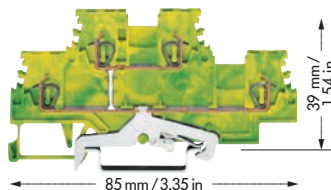
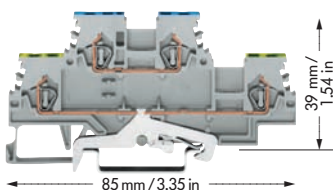


Height including WSB double marker carrier

Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Double deck terminal block, for DIN 35 rail Through/through terminal blocks, housing color grey</b>		<b>Double deck terminal block, for DIN 35 rail 4-conductor through terminal block, internal commoning, housing color grey, conductor entry position colored in violet</b>		<b>End and intermediate plate, 2 mm / 0.079 in thick</b>	
L/L	279-501	50	L	279-508	50
N/L	279-512	50			
L/N	279-513	50			



Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Double deck terminal block, for DIN 35 rail Through/through terminal block, housing color blue</b>		<b>Double deck terminal block, for DIN 35 rail 4-conductor through terminal block, internal commoning, housing color grey, conductor entry position colored in violet</b>		<b>Insulation stop ②, 5 pcs/strip</b>	
N/N	279-504 ③	50	N	279-509 ③	50



Item No.	Pack. unit pcs	Item No.	Pack. unit pcs			
<b>Double deck terminal block, for DIN 35 rail Ground (earth) conductor/through terminal blocks, housing color grey</b>		<b>Double deck terminal block, for DIN 35 rail 4-conductor ground (earth) terminal block, internal commoning, housing color green-yellow</b>		<b>①</b> 500 V = rated voltage 6 kV = rated surge voltage 3 = pollution degree (see also section 15) <b>②</b> See application notes on pages 2.43 – 2.44 <b>③</b> Suitable for Ex i applications		
PE / N	279-517	50	PE		279-507	50
PE / L	279-527	50				

	orange	279-519	100 (4 x 25)
	grey	279-518	100 (4 x 25)

	white	279-470	200 strips
	dark grey	279-471	200 strips

	grey	279-402	200 (8 x 25)
	yell.-green	279-422	200 (8 x 25)

	grey	279-409	100 (4 x 25)
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	2-way	279-482	200 (8 x 25)
	3-way	279-483	200 (8 x 25)
	10-way	279-490	50 (2 x 25)

	2-way	279-492	200 (8 x 25)
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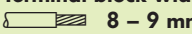
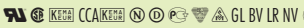


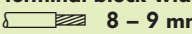
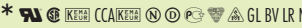


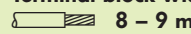
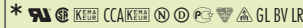


	2-way	279-432	1
	3-way	279-433	1
	10-way	279-440	1

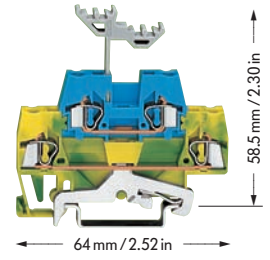
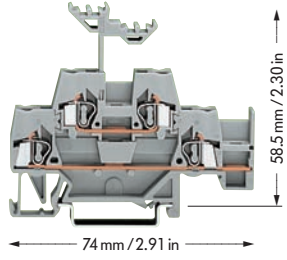
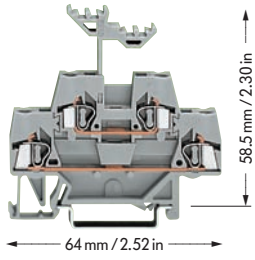
	<b>WMB multi-marking system or WSB quick marking system, 10 strips with 10 markers each</b>		
	see section 14		

	<b>WSB double marker carrier</b>	279-529	50 (2 x 25)
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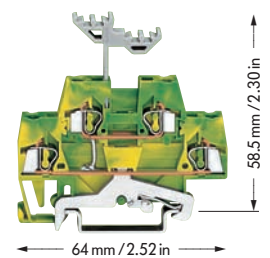
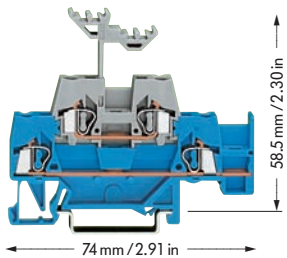
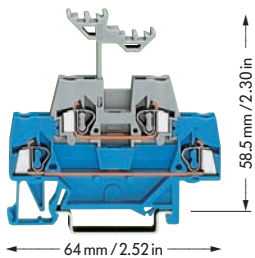


# Double Deck Terminal Blocks 2.5 mm<sup>2</sup> / AWG 12, Series 280



<b>0.08 – 2.5 mm<sup>2</sup></b> <b>500 V/6 kV/3 ①</b> <b>20 A</b> <b>Terminal block width 5 mm / 0.197 in</b>  <b>8 – 9 mm / 0.33 in</b> <small>* </small>	<b>AWG 28 – 12</b> <b>300 V, 15 A </b> <b>300/600 V, 20/5 A </b>	<b>0.08 – 2.5 mm<sup>2</sup></b> <b>500 V/6 kV/3 ①</b> <b>20 A</b> <b>Terminal block width 5 mm / 0.197 in</b>  <b>8 – 9 mm / 0.33 in</b> <small>* </small>	<b>AWG 28 – 12</b> <b>300 V, 15 A </b> <b>300/600 V, 20/5 A </b>	<b>0.08 – 2.5 mm<sup>2</sup></b> <b>500 V/6 kV/3 ①</b> <b>20 A</b> <b>Terminal block width 5 mm / 0.197 in</b>  <b>8 – 9 mm / 0.33 in</b> <small>* </small>	<b>AWG 28 – 12</b> <b>300 V, 15 A </b> <b>300/600 V, 20/5 A </b>
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




Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Double deck terminal block, for DIN 35 rail</b>		<b>Double deck terminal block, for DIN 35 rail</b>		<b>Double deck terminal block, for DIN 35 rail</b>	
<b>Through/through terminal blocks</b>		<b>Through/through terminal blocks</b>		<b>Ground (earth) conductor/through terminal blocks</b>	
grey	<b>280-519</b>	50	grey	<b>280-520</b>	50
blue	<b>280-529</b> ②	50	blue	<b>280-530</b> ②	50
<b>Other terminal blocks with the same shape</b>					
diode/LED	<b>280-9xx/...-...</b>	page 7.62			





Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Double deck terminal block, for DIN 35 rail</b>		<b>Double deck terminal block, for DIN 35 rail</b>		<b>Double deck terminal block, for DIN 35 rail</b>	
<b>Through/through terminal blocks</b>		<b>Through/through terminal blocks</b>		<b>4-conductor ground (earth) terminal block, internal commoning</b>	
blue/grey (shown)	<b>280-523</b>	50	blue/grey (shown)	<b>280-524</b>	50
grey/blue (not shown)	<b>280-533</b>	50	grey/blue (not shown)	<b>280-534</b>	50
<b>4-conductor ground (earth) terminal block, internal commoning</b>				green-yellow <b>280-517</b> 50	


<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>	
	orange <b>280-341</b> 100 (4 x 25)
	grey <b>280-340</b> 100 (4 x 25)





<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>	
	orange <b>280-343</b> 100 (4 x 25)
	grey <b>280-342</b> 100 (4 x 25)

<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>	
	orange <b>280-341</b> 100 (4 x 25)
	grey <b>280-340</b> 100 (4 x 25)

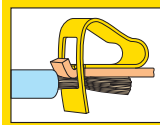
<b>Intermediate plate, 1.1 mm/0.043 in thick</b>	
	orange <b>280-366</b> 100 (4 x 25)

<b>Intermediate plate, 1.1 mm/0.043 in thick</b>	
	orange <b>280-369</b> 100 (4 x 25)

<b>Intermediate plate, 1.1 mm/0.043 in thick</b>	
	orange <b>280-366</b> 100 (4 x 25)

<b>Accessories Series 280</b> , see page 2.13 for a complete overview		Appropriate marking system	<b>WMB/WSB</b> (see section 14)
<b>Adjacent jumper, insulated, I<sub>N</sub> 24 A</b>		<b>Alternate jumper, insulated, I<sub>N</sub> 24 A</b>	<b>Vertical jumper, insulated, I<sub>N</sub> 24 A</b>
	grey <b>280-402</b> 200 (8 x 25) yell.-green <b>280-422</b> 200 (8 x 25)		grey <b>281-421</b> 200 (8 x 25)
<b>Comb type jumper bar ④, ins., I<sub>N</sub> = I<sub>N</sub> of terminal block</b>		<b>Alternate comb type jumper bar, insulated, I<sub>N</sub> = I<sub>N</sub> of terminal block</b>	
	2-way <b>280-482</b> 200 (8 x 25) 3-way <b>280-483</b> 200 (8 x 25) 10-way <b>280-490</b> 50 (2 x 25)		<b>Operating tool, insulated</b>
		2-way <b>280-432</b> 1 3-way <b>280-433</b> 1 10-way <b>280-440</b> 1	

\* For further approvals with corresponding ratings see section 15.



0.08 – 2.5 mm<sup>2</sup> | AWG 28 – 12  
 400 V/6 kV/3 ① ② | 300 V, 10 A ③ ④  
 6.3 A ⑤/10 A | 300/600 V, 20/5 A ⑥

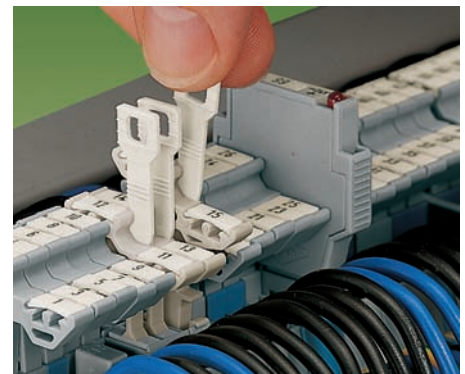
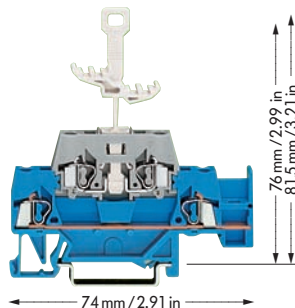
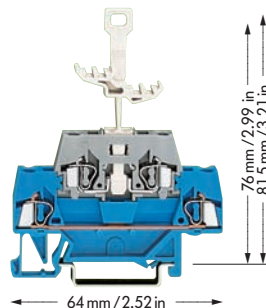
Terminal block width 5 mm / 0.197 in  
 8 – 9 mm / 0.33 in

\* GL BV LR NV

0.08 – 2.5 mm<sup>2</sup> | AWG 28 – 12  
 400 V/6 kV/3 ① ② | 300 V, 10 A ③ ④  
 6.3 A ⑤/10 A | 300/600 V, 20/5 A ⑥

Terminal block width 5 mm / 0.197 in  
 8 – 9 mm / 0.33 in

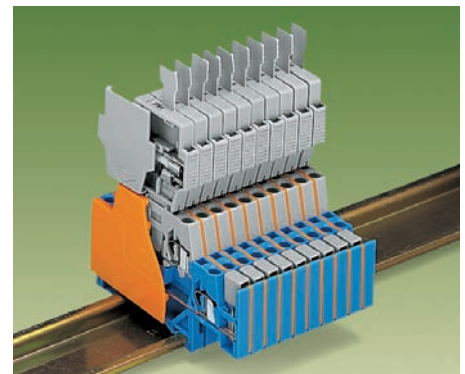
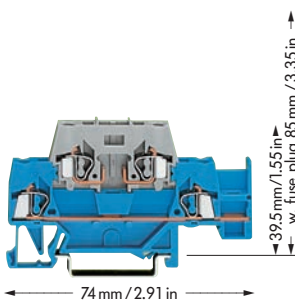
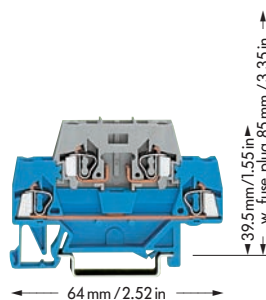
\* GL BV LR NV



Pulling of disconnecting tab

The double deck terminal blocks enable two circuits of different potentials to be contained in one 2-level terminal block. The lower deck is wider than the upper, for ease of wiring. Different circuits can be differentiated by color coding of either level.

Item No.	Pack. unit pcs	Item No.	Pack. unit pcs		
<b>Double deck terminal block, for DIN 35 rail</b>		<b>Double deck terminal block, for DIN 35 rail</b>			
<b>Through/disconnect terminal blocks</b>		<b>Through/disconnect terminal blocks</b>			
grey/grey	280-521	50	grey/grey	280-522	50
blue/grey	280-525	50	blue/grey	280-526	50



Double deck terminal blocks with fuse plugs

When double deck terminal blocks are used with a fuse plug (width 6 mm/0.236 in) in the receptacle (top) level, the extra width can be compensated for the 280 series (width 5 mm/0.197 in) by use of an intermediate plate (thickness 1.1 mm/0.043 in).

This special intermediate plate still allows jumpering on the lower level when required, by use of the push-in jumpers.

Item No.	Pack. unit pcs	Item No.	Pack. unit pcs				
<b>Double deck terminal block, for DIN 35 rail</b>		<b>Double deck terminal block, for DIN 35 rail</b>					
<b>Through/carrier terminal blocks for pluggable fuse modules ③</b>		<b>Through/carrier terminal blocks for pluggable fuse modules ③</b>					
blue/grey (shown)	280-531	50	blue/grey (shown)	280-532	50		
grey/grey (not shown)	280-514	50	grey/grey (not shown)	280-891	50		
<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>		<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>					
	orange	280-341	100 (4 x 25)		orange	280-343	100 (4 x 25)
	grey	280-340	100 (4 x 25)		grey	280-342	100 (4 x 25)
<b>Intermediate plate, 1.1 mm/0.043 in thick</b>		<b>Intermediate plate, 1.1 mm/0.043 in thick</b>					
	orange	280-366	100 (4 x 25)		orange	280-369	100 (4 x 25)

**Accessories Series 280**, see page 2.13      Appropriate marking system      **WMB/WSB** (see section 14)

**Fuse plug**, for miniature metric fuses

5 x 20 mm and 5 x 25 mm  
 6 mm/0.236 in wide with pull-tab  
**281-511** 50

**Fuse plug**, same as above, but with hole for LED (for self-assembly)

6 mm/0.236 in wide with pull-tab  
**281-512** 50

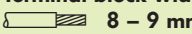



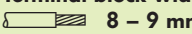



**Fuse plug**, same as on the left,

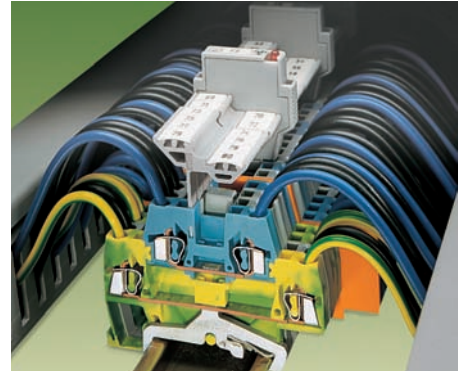
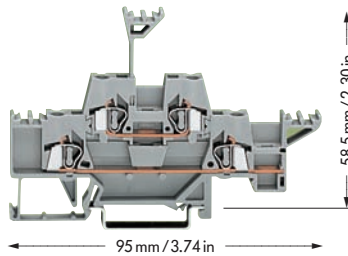
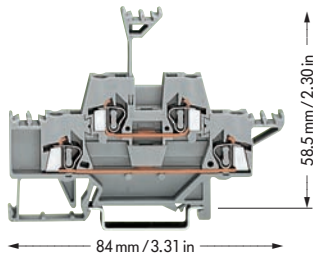
with additional indicator lamp, LED, AC/DC 24 V,  
 Can be used in either polarity direction  
 6 mm/0.236 in wide with pull-tab  
**281-512/281-501** 50

residual current in case of blown fuse LED 5 – 20 mA

- ① 400/500 V = rated voltage  
 6 kV = rated surge voltage  
 3 = pollution degree (see also section 15)
- ② Suitable for Ex i applications
- ③ Electrical ratings are given by the fuse or nominal voltage of the indicator lamp respectively see also pages 7.38 – 7.39
- ④ See application notes on pages 2.43 and 2.44







# Double Deck Terminal Blocks 2.5 mm<sup>2</sup> / AWG 12, Series 280

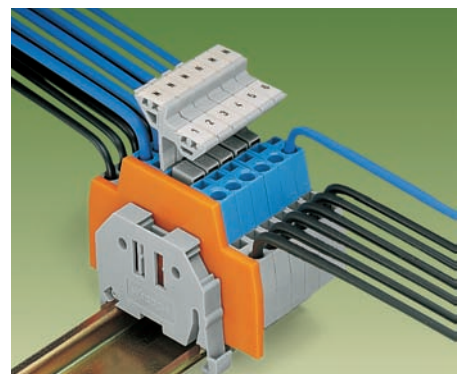
<b>0.08 – 2.5 mm<sup>2</sup></b> <b>500 V/6 kV/3 ①</b> <b>20 A</b> <b>Terminal block width 5 mm / 0.197 in</b>  <b>8 – 9 mm / 0.33 in</b> <small>* </small>	<b>AWG 28 – 12</b> <b>300 V, 15 A </b> <b>300/600 V, 20/5 A </b>	<b>0.08 – 2.5 mm<sup>2</sup></b> <b>500 V/6 kV/3 ①</b> <b>20 A</b> <b>Terminal block width 5 mm / 0.197 in</b>  <b>8 – 9 mm / 0.33 in</b> <small>* </small>	<b>AWG 28 – 12</b> <b>300 V, 15 A </b> <b>300/600 V, 20/5 A </b>
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Example of a mixed assembly with double deck terminal blocks

Standard insulated push-in jumpers can be used for commoning. A vertical jumper allows commoning of upper and lower level, giving a 4-conductor commoned through terminal block in one housing. Two adjacent terminals may be commoned together on the same level using a push-in adjacent jumper.

Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Double deck terminal block, with additional marking possibilities on both sides of the terminal block, for DIN 35 rail Through/through terminal block</b>		<b>Double deck terminal block, with additional marking possibilities on both sides of the terminal block, for DIN 35 rail Through/through terminal block horizontal jumpering on lower level</b>	
grey	<b>280-513</b> 50	grey	<b>280-543</b> 50
<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>		<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>	
 orange	<b>280-341</b> 100 (4 x 25)	 orange	<b>280-343</b> 100 (4 x 25)
 grey	<b>280-340</b> 100 (4 x 25)	 grey	<b>280-342</b> 100 (4 x 25)
<b>Intermediate plate, 1.1 mm/0.043 in thick</b>		<b>Intermediate plate, 1.1 mm/0.043 in thick</b>	
 orange	<b>280-366</b> 100 (4 x 25)	 orange	<b>280-369</b> 100 (4 x 25)



Double deck terminal blocks used as control wire terminals; for ex. for magnetic valves. Upper deck commoned.






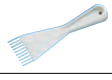
The flexible marker carrier, which is placed above the wiring level, can be pushed aside during the wiring or commoning operation. The marker carrier has two levels for two different markers relating to the two decks of the terminal blocks.

The double deck terminal blocks, series 280, are available with decks of same or different color according to the function. This is an additional visual aid during wiring or in case of possible service and maintenance work.

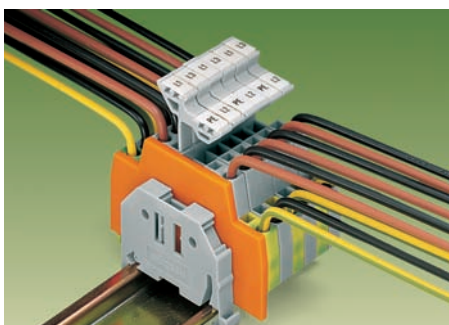
With a terminal block width of only 5 mm/0.197 in, an effective width of only 2.5 mm/0.098 in for terminal blocks of same or different potential can be realized at a cross sectional area of 0.08 mm<sup>2</sup> to 2.5 mm<sup>2</sup>/AWG 28 – 14!

**Accessories Series 280**, see page 2.13 for a complete overview

Appropriate marking system **WMB/WSB** (see section 14)

<b>Adjacent jumper, insulated, I<sub>N</sub> 24 A</b>	<b>Comb type jumper bar ②, ins., I<sub>N</sub> = I<sub>N</sub> of terminal block</b>
 grey <b>280-402</b> 200 (8 x 25)	 2-way <b>280-482</b> 200 (8 x 25)
	3-way <b>280-483</b> 200 (8 x 25)
	10-way <b>280-490</b> 50 (2 x 25)
<b>Alternate jumper, insulated, I<sub>N</sub> 24 A</b>	<b>Alternate comb type jumper bar, insulated, I<sub>N</sub> = I<sub>N</sub> of terminal block</b>
 grey <b>280-409</b> 100 (4 x 25)	 2-way <b>280-492</b> 200 (8 x 25)
<b>Vertical jumper, insulated, I<sub>N</sub> 24 A</b>	<b>Operating tool, insulated</b>
 grey <b>281-421</b> 200 (8 x 25)	 2-way <b>280-432</b> 1
	3-way <b>280-433</b> 1
	10-way <b>280-440</b> 1

## Application notes



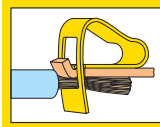
Double deck terminal blocks used for the connection of a three-phase motor

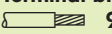

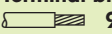

① 500 V = rated voltage  
6 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)

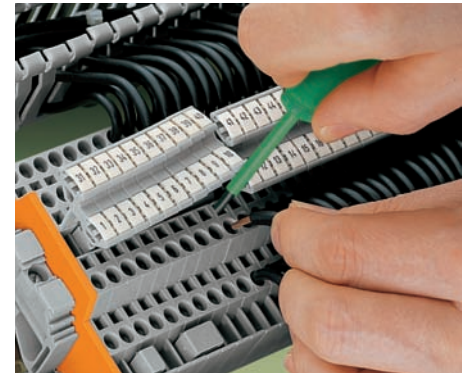
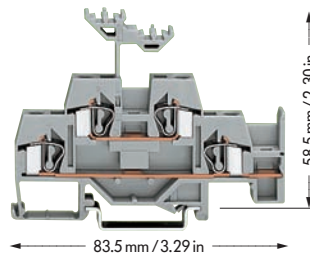
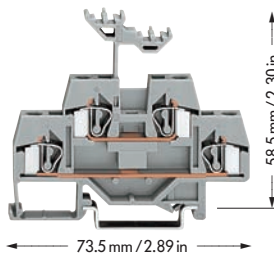
② See application notes on pages 2.43 and 2.44





# Double Deck Terminal Blocks 4 mm<sup>2</sup> / AWG 12, Series 281



<b>0.08 – 4 mm<sup>2</sup></b> <b>500 V/6 kV/3 ①</b> <b>26 A</b> Terminal block width 6 mm / 0.236 in  9 – 10 mm / 0.37 in * 	<b>AWG 28 – 12</b> <b>300 V, 15 A ②</b> <b>600 V, 15 A ③</b>	<b>0.08 – 4 mm<sup>2</sup></b> <b>500 V/6 kV/3 ①</b> <b>26 A</b> Terminal block width 6 mm / 0.236 in  9 – 10 mm / 0.37 in * 	<b>AWG 28 – 12</b> <b>300 V, 15 A ②</b> <b>600 V, 15 A ③</b>
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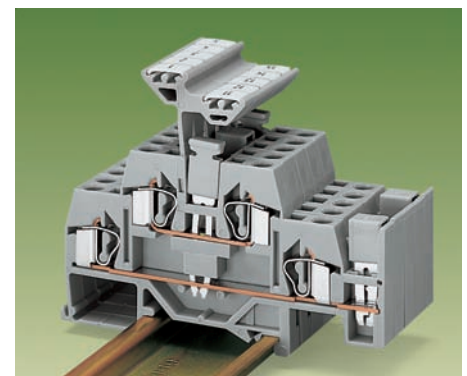
Wiring

Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Double deck terminal block, for DIN 35 rail</b>		<b>Double deck terminal block, for DIN 35 rail</b>	
<b>Through/through terminal blocks</b>		<b>Through/through terminal blocks</b>	
grey	<b>281-619</b> 50	horizontal jumpering on lower level	
blue	<b>281-629</b> ② 50	grey	<b>281-620</b> 50
<b>Other terminal blocks with the same shape</b>		blue	<b>281-630</b> ② 50
diode/LED	<b>281-6xx/...-...</b> page 7.62		
<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>		<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>	
	orange <b>281-341</b> 100 (4 x 25)		orange <b>281-343</b> 100 (4 x 25)
	grey <b>281-340</b> 100 (4 x 25)		grey <b>281-342</b> 100 (4 x 25)

## Accessories Series 281, see page 2.17 for a complete overview

Appropriate marking system **WMB/WSB** (see section 14)

<b>Insulation stop ③, 5 pcs/strip</b>	<b>Insulation stop ③, 5 pcs/strip</b>
 white <b>281-470</b> 200 strips light grey <b>281-471</b> 200 strips dark grey <b>281-472</b> 200 strips	 white <b>281-470</b> 200 strips light grey <b>281-471</b> 200 strips dark grey <b>281-472</b> 200 strips
<b>Adjacent jumper, insulated, I<sub>N</sub> 32 A</b>	<b>Adjacent jumper, insulated, I<sub>N</sub> 32 A</b>
 grey <b>281-402</b> 200 (8 x 25) yell.-green <b>281-422</b> 200 (8 x 25)	 grey <b>281-402</b> 200 (8 x 25) yell.-green <b>281-422</b> 200 (8 x 25)
<b>Alternate jumper, insulated, I<sub>N</sub> 32 A</b>	<b>Alternate jumper, insulated, I<sub>N</sub> 32 A</b>
 grey <b>281-409</b> 100 (4 x 25)	 grey <b>281-409</b> 100 (4 x 25)
<b>Vertical jumper, insulated, I<sub>N</sub> 24 A</b>	<b>Vertical jumper, insulated, I<sub>N</sub> 24 A</b>
 grey <b>281-421</b> 200 (8 x 25)	 grey <b>281-421</b> 200 (8 x 25)
<b>Comb type jumper bar ④, ins., I<sub>N</sub> = I<sub>N</sub> of terminal block</b>	<b>Comb type jumper bar ④, ins., I<sub>N</sub> = I<sub>N</sub> of terminal block</b>
 2-way <b>281-482</b> 100 (4 x 25) 3-way <b>281-483</b> 100 (4 x 25) 10-way <b>281-490</b> 50 (2 x 25)	 2-way <b>281-482</b> 100 (4 x 25) 3-way <b>281-483</b> 100 (4 x 25) 10-way <b>281-490</b> 50 (2 x 25)
<b>Alternate comb type jumper bar, insulated, I<sub>N</sub> = I<sub>N</sub> of terminal block</b>	<b>Alternate comb type jumper bar, insulated, I<sub>N</sub> = I<sub>N</sub> of terminal block</b>
 2-way <b>281-492</b> 100 (4 x 25)	 2-way <b>281-492</b> 100 (4 x 25)
<b>Operating tool, insulated</b>	<b>Operating tool, insulated</b>
 2-way <b>280-432</b> 1 3-way <b>280-433</b> 1 5-way <b>281-440</b> 1	 2-way <b>280-432</b> 1 3-way <b>280-433</b> 1 5-way <b>281-440</b> 1



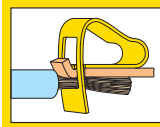
Commoning of double deck terminal blocks

- ① 500 V = rated voltage  
6 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② Suitable for Ex i applications
- ③ See application notes on pages 2.43 and 2.44

\* For further approvals with corresponding ratings see section 15.



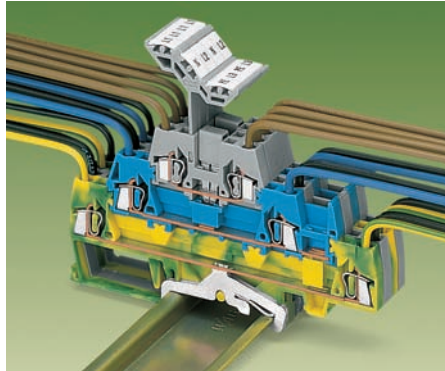
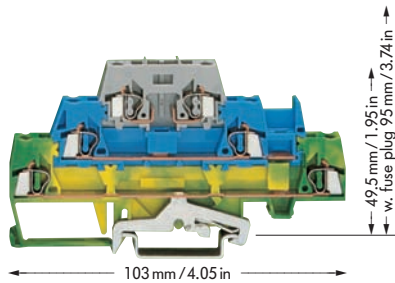




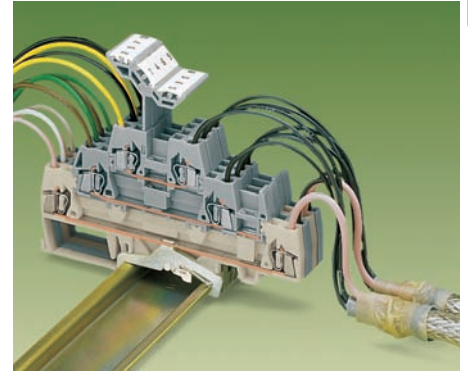
0.08 – 2.5 mm<sup>2</sup> | AWG 28 – 12  
 400 V/6 kV/3 ① ② | 300/600 V, 15/5 A ③  
 6.3 A ② / 20 A

Terminal block width 5 mm / 0.197 in  
 8 – 9 mm / 0.33 in

\* GL BV LR NV

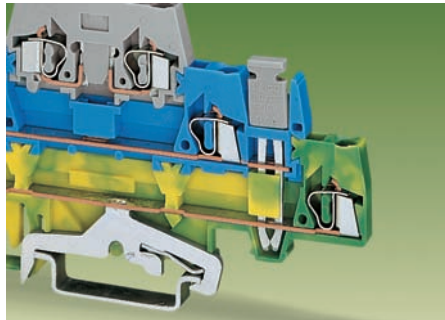


3-wire power circuit with additional branch circuit tapping

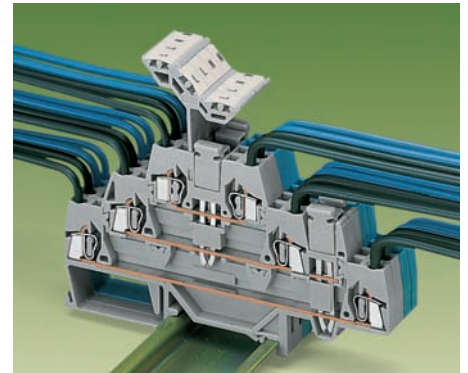


Shielded (screened) twisted pair cable

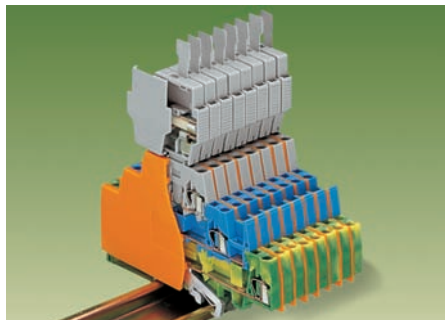
Item No.	Pack. unit pcs
<b>Triple deck terminal block, for DIN 35 rail</b>	
<b>Ground (earth) conductor/through/carrier terminal blocks for pluggable fuse modules</b>	
green-yellow / blue / grey (shown)	<b>280-510</b> 50
grey / grey / grey (not shown)	<b>280-889</b> 50
<b>End and intermediate plate, 2.5 mm / 0.098 in thick</b>	
orange	<b>280-304</b> 100 (4 x 25)
grey	<b>280-303</b> 100 (4 x 25)
<b>Intermediate plate, 1.1 mm / 0.043 in thick</b>	
orange	<b>280-336</b> 100 (4 x 25)
<b>Accessories Series 280, see page 2.13</b>	
Appropriate marking system	<b>WMB/WBS</b> (see section 14)
<b>Adjacent jumper, insulated, I<sub>N</sub> 24 A</b>	
grey	<b>280-402</b> 200 (8 x 25)
yell.-green	<b>280-422</b> 200 (8 x 25)
<b>Alternate jumper, insulated, I<sub>N</sub> 24 A</b>	
grey	<b>280-409</b> 100 (4 x 25)
<b>Vertical jumper, insulated, I<sub>N</sub> 24 A</b>	
grey	<b>281-421</b> 200 (8 x 25)
<b>Fuse plug, for miniature metric fuses</b>	
	5 x 20 mm and 5 x 25 mm 6 mm / 0.236 in wide with pull-tab <b>281-511</b> 50
<b>Fuse plug, same as above, but with hole for LED (for self-assembly)</b>	
	6 mm / 0.236 in wide with pull-tab <b>281-512</b> 50
<b>Fuse plug, same as above,</b>	
	with additional indicator lamp, LED, AC/DC 24 V, Can be used in either polarity direction 6 mm / 0.236 in wide with pull-tab <b>281-512/281-501</b> 50
residual current in case of blown fuse LED 5 – 20 mA	



Grounding (earthing) to carrier rail. Connection of N-level to ground (earth) level by vertical jumper



Commoning with vertical and adjacent jumpers



The greater width of the fuse plugs compared to the terminal blocks has to be compensated by use of an intermediate plate (280-336)

The ground (earth) conductor or screen (shield) terminal blocks have a contact foot in the bottom level, ensuring automatically a direct contact to the carrier rail.

The flexible marker carrier, which is placed above the wiring levels, can be pushed aside during the wiring or commoning operation. The marker carrier has three levels for three different markers relating to the three decks of the terminal blocks.

With a terminal block width of only 5 mm / 0.197 in an effective width of only 1.67 mm / 0.066 in for terminal blocks of same or different potentials can be realized for wire sizes 0.08 – 2.5 mm<sup>2</sup> / AWG 28 – 14.

- ① 400/500 V = rated voltage  
6 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② Electrical ratings are given by the fuse or nominal voltage of the indicator lamp respectively  
see also pages 7.38 – 7.39
- ③ See application notes on pages 2.43 and 2.44

# Rail-Mounted Quadruple Deck Terminal Blocks or Rail-Mounted Terminal Blocks for Wiring of Electric Motors, Series 281

## Description and Handling

In addition to the rail-mounted terminal blocks for electric motor wiring, new versions are now available.

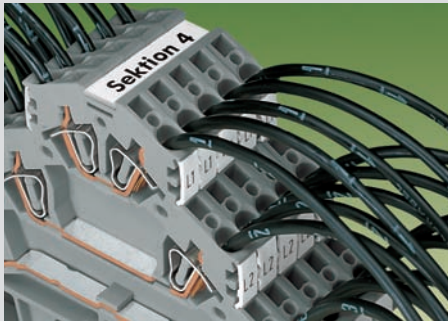
- Terminal block **without** ground (earth) contact and with only **2** potentials.

Especially for additional functions such as engine brakes or temperature probes. Having the same shape, this type can be put next to the appropriate terminal block for electric motor wiring without having to use separator plates. That makes the rail assembly clearer and wiring is easier. Since no clamping unit remains unwired, wiring errors are avoided.

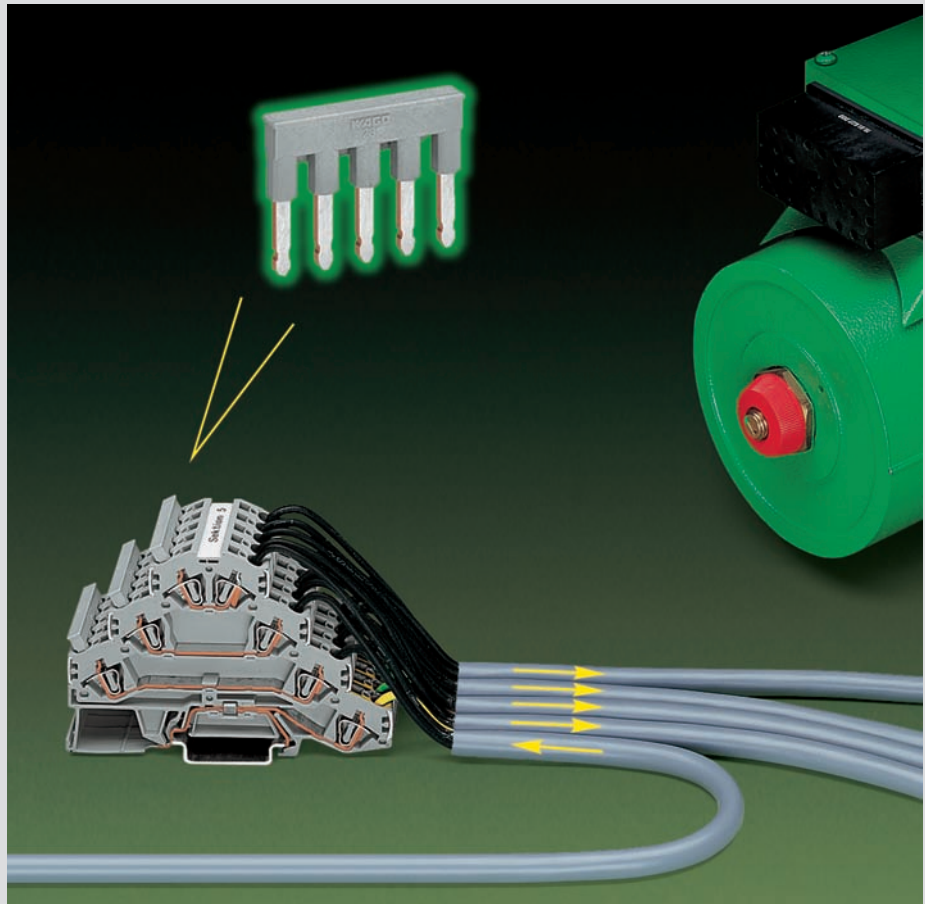
- Terminal block **without** ground (earth) contact and with **3** potentials.

Clear and unambiguous assignment of clamping units is also the main advantage with this type. When using devices with protective insulation for example, there are no open ground (earth) clamping units that could lead to confusion.

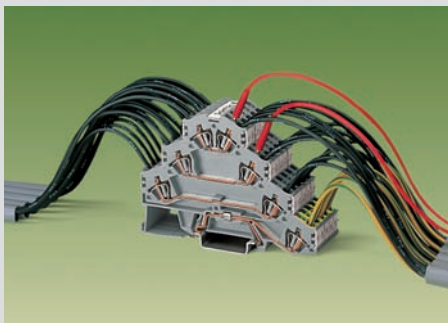
### Marking



Marking clamping units with WMB multi-marking system or WSB quick marking system. (see section 14)  
Group marking with marking strips Item No. 709-196.



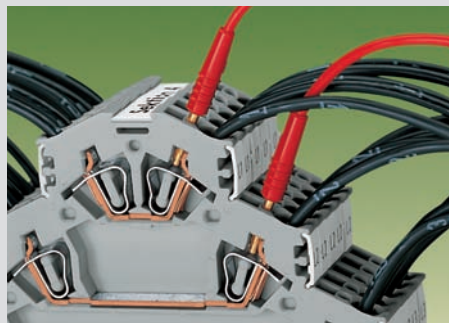
### Testing



3 phases and ground (earth) conductor in one terminal block  
Compact design

**CAGE CLAMP®** clamps the following copper wires:\*

- solid
- fine-stranded wire – tip bonded
- stranded
- fine-stranded wire with crimped ferrule\*\*
- fine-stranded, also with tinned single strands
- fine-stranded wire with crimped pin terminal



Testing with test plug 2 mm /0.079 in Ø

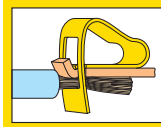
- ① 400 V = rated voltage  
6 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② See application notes on pages 2.43 and 2.44

\* For aluminum wire see notes in section 15!

\*\* When using wires with ferrules, it is necessary to use a terminal block one size larger than the nominal cross section of the wire.

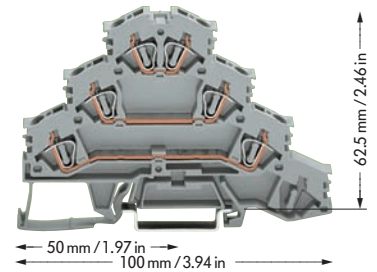
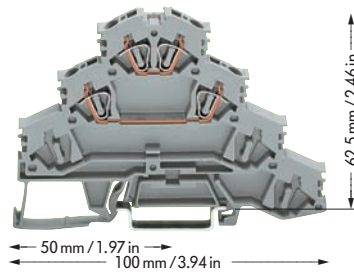
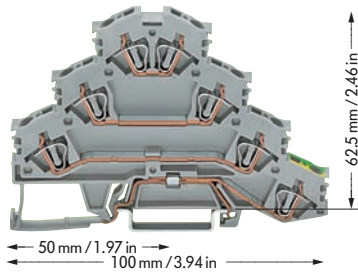


# Rail-Mounted Quadruple Deck Terminal Blocks or Rail-Mounted Terminal Blocks for Wiring of Electric Motors Series 281



<p>0.08 – 4 mm<sup>2</sup> 400 V/6 kV/3 Ⓛ 20 A (2.5 mm<sup>2</sup>) 25 A (4 mm<sup>2</sup>)</p> <p>Terminal block width 6 mm / 0.236 in 8 – 9 mm / 0.33 in</p>	<p>AWG 28 – 12 300 V, 20 A</p>	<p>0.08 – 4 mm<sup>2</sup> 400 V/6 kV/3 Ⓛ 20 A (2.5 mm<sup>2</sup>) 25 A (4 mm<sup>2</sup>)</p> <p>Terminal block width 6 mm / 0.236 in 8 – 9 mm / 0.33 in</p>	<p>AWG 28 – 12</p>	<p>0.08 – 4 mm<sup>2</sup> 400 V/6 kV/3 Ⓛ 20 A (2.5 mm<sup>2</sup>) 25 A (4 mm<sup>2</sup>)</p> <p>Terminal block width 6 mm / 0.236 in 8 – 9 mm / 0.33 in</p>	<p>AWG 28 – 12</p>
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\* .ULus C-UL CCA/KECH GL BV LR NV



Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Rail-mounted terminal block for wiring of electric motors or rail-mounted quadruple deck terminal block, for DIN 35 rail</b> L1 – L2 – L3 – PE grey <b>281-530</b> 50		<b>Rail-mounted terminal block for wiring of electric motors or rail-mounted quadruple deck terminal block, for DIN 35 rail</b> L1 – L2 grey <b>281-531</b> 50		<b>Rail-mounted terminal block for wiring of electric motors or rail-mounted quadruple deck terminal block, for DIN 35 rail</b> L1 – L2 – L3 grey <b>281-532</b> 50	
<b>End and intermediate plate, 1 mm/0.039 in thick</b> orange <b>281-366</b> 100 (4 x 25) grey <b>281-365</b> 100 (4 x 25)		<b>End and intermediate plate, 1 mm/0.039 in thick</b> orange <b>281-366</b> 100 (4 x 25) grey <b>281-365</b> 100 (4 x 25)		<b>End and intermediate plate, 1 mm/0.039 in thick</b> orange <b>281-366</b> 100 (4 x 25) grey <b>281-365</b> 100 (4 x 25)	

## Accessories Series 281

Appropriate marking system **WMB/WSB** (see section 14)

<b>Insulation stop</b> Ⓛ, 5 pcs/strip white <b>281-470</b> 200 strips light grey <b>281-471</b> 200 strips dark grey <b>281-472</b> 200 strips	<b>Insulation stop</b> Ⓛ, 5 pcs/strip white <b>281-470</b> 200 strips light grey <b>281-471</b> 200 strips dark grey <b>281-472</b> 200 strips	<b>Insulation stop</b> Ⓛ, 5 pcs/strip white <b>281-470</b> 200 strips light grey <b>281-471</b> 200 strips dark grey <b>281-472</b> 200 strips
<b>Comb type jumper bar</b> Ⓛ, insulated, I <sub>N</sub> = I <sub>N</sub> of terminal block 2-way <b>281-482</b> 100 (4 x 25) 3-way <b>281-483</b> 100 (4 x 25) 5-way <b>281-485</b> 100 (4 x 25) 10-way <b>281-490</b> 50 (2 x 25)	<b>Comb type jumper bar</b> Ⓛ, insulated, I <sub>N</sub> = I <sub>N</sub> of terminal block 2-way <b>281-482</b> 100 (4 x 25) 3-way <b>281-483</b> 100 (4 x 25) 5-way <b>281-485</b> 100 (4 x 25) 10-way <b>281-490</b> 50 (2 x 25)	<b>Comb type jumper bar</b> Ⓛ, insulated, I <sub>N</sub> = I <sub>N</sub> of terminal block 2-way <b>281-482</b> 100 (4 x 25) 3-way <b>281-483</b> 100 (4 x 25) 5-way <b>281-485</b> 100 (4 x 25) 10-way <b>281-490</b> 50 (2 x 25)
<b>Alternate comb type jumper bar</b> Ⓛ, insulated, I <sub>N</sub> = I <sub>N</sub> of terminal block 2-way <b>281-492</b> 100 (4 x 25)	<b>Alternate comb type jumper bar</b> Ⓛ, insulated, I <sub>N</sub> = I <sub>N</sub> of terminal block 2-way <b>281-492</b> 100 (4 x 25)	<b>Alternate comb type jumper bar</b> Ⓛ, insulated, I <sub>N</sub> = I <sub>N</sub> of terminal block 2-way <b>281-492</b> 100 (4 x 25)
<b>Operating tool, insulated</b> 2-way <b>280-432</b> 1 3-way <b>280-433</b> 1 5-way <b>281-440</b> 1	<b>Operating tool, insulated</b> 2-way <b>280-432</b> 1 3-way <b>280-433</b> 1 5-way <b>281-440</b> 1	<b>Operating tool, insulated</b> 2-way <b>280-432</b> 1 3-way <b>280-433</b> 1 5-way <b>281-440</b> 1
<b>Test plug, with cable 500 mm/17.7"</b> 2 mm Ø, red <b>210-136</b> 50 (5 x 10) 2.3 mm Ø, yel. <b>210-137</b> 50 (5 x 10)	<b>Test plug, with cable 500 mm/17.7"</b> 2 mm Ø, red <b>210-136</b> 50 (5 x 10) 2.3 mm Ø, yel. <b>210-137</b> 50 (5 x 10)	<b>Test plug, with cable 500 mm/17.7"</b> 2 mm Ø, red <b>210-136</b> 50 (5 x 10) 2.3 mm Ø, yel. <b>210-137</b> 50 (5 x 10)
<b>WMB multi-marking system,</b> 10 strips with 10 markers each, white with black printing see section 14	<b>WMB multi-marking system,</b> 10 strips with 10 markers each, white with black printing see section 14	<b>WMB multi-marking system,</b> 10 strips with 10 markers each, white with black printing see section 14
<b>WSB quick marking system,</b> 10 strips with 10 markers each, white with black printing see section 14	<b>WSB quick marking system,</b> 10 strips with 10 markers each, white with black printing see section 14	<b>WSB quick marking system,</b> 10 strips with 10 markers each, white with black printing see section 14
<b>Marker strips, transparent, plain, for central marking</b> – group marking – 1 m / 3'33" long, 7.5 mm / 0.295 in wide on roll 50 m <b>709-177</b> 1 on roll 300 m <b>709-187</b> 1	<b>Marker strips, transparent, plain, for central marking</b> – group marking – 1 m / 3'33" long, 7.5 mm / 0.295 in wide on roll 50 m <b>709-177</b> 1 on roll 300 m <b>709-187</b> 1	<b>Marker strips, transparent, plain, for central marking</b> – group marking – 1 m / 3'33" long, 7.5 mm / 0.295 in wide on roll 50 m <b>709-177</b> 1 on roll 300 m <b>709-187</b> 1



\* For further approvals with corresponding ratings see section 15.

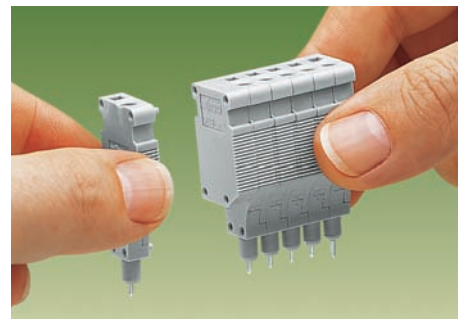


# Test Plug Modules with CAGE CLAMP® for Testing of Rail-Mounted Terminal Blocks 2.5 mm<sup>2</sup>/AWG 14 and 4 mm<sup>2</sup>/AWG 12, Using the Conductor Wire Opening

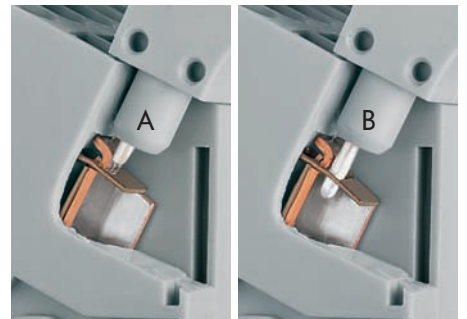
<p>Test plug for rail-mounted terminal blocks of series 280          Module width 5 mm / 0.197 in          Test voltage 630 V          Test current 6 A</p>	<p>Test plug for rail-mounted terminal blocks of series 281          Module width 6 mm / 0.236 in          Test voltage 630 V          Test current 6 A</p>	<p><b>Note:</b>          These test plugs are not suitable for Ex e applications</p>
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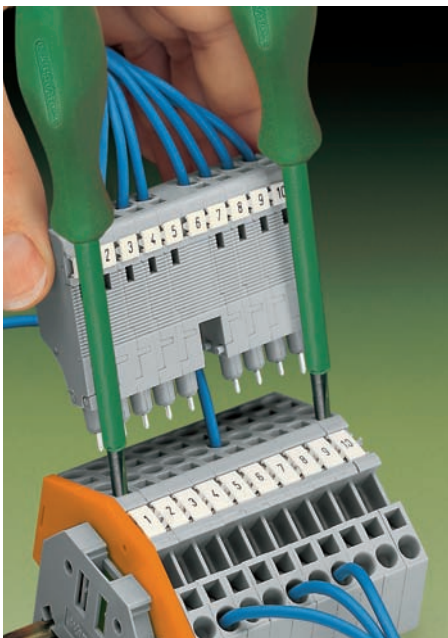
Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Test plug module with spring loaded contact pin with CAGE CLAMP®,</b> center module, grey, module width 5 mm / 0.197 in	249-141 100 (4 x 25)	<b>Test plug module with spring loaded contact pin with CAGE CLAMP®,</b> center module, grey, module width 6 mm / 0.236 in	249-144 100 (4 x 25)
<b>End module with rigid contact pin with CAGE CLAMP®,</b> external module, grey, module width 5 mm / 0.197 in	249-142 100 (4 x 25)	<b>End module with rigid contact pin with CAGE CLAMP®,</b> external module, grey, module width 6 mm / 0.236 in	249-145 100 (4 x 25)
<b>Spacer module,</b> for bridging over wired terminal blocks, grey, module width 5 mm / 0.197 in	249-143 100 (4 x 25)	<b>Spacer module,</b> for bridging over wired terminal blocks, grey, module width 6 mm / 0.236 in	249-146 100 (4 x 25)
<b>Accessories</b>		<b>Accessories</b>	
 <p><b>Miniature WSB quick marking system or WMB multi-marking system,</b> 10 strips with 10 markers each, white with black printing see section 14</p>		 <p><b>Miniature WSB quick marking system or WMB multi-marking system,</b> 10 strips with 10 markers each, white with black printing see section 14</p>	
<b>Application notes</b>			



Snapping together of test plug, end and spacer modules to assemble a multipole test plug strip (10-pole max.)



A = center module with spring loaded contact pin  
 B = external module with rigid contact pin



For simple testing of terminal block assemblies, the test plug modules with CAGE CLAMP® (version for testing using the conductor wire opening) may be used for testing unwired terminal blocks. For testing, the module is assembled with spring loaded pins in the center positions and rigid pin modules at the ends.

The terminal blocks corresponding to the end position modules are opened using screwdrivers (as shown), these rigid pins are then held in place by the CAGE CLAMP®, the intermediate pins are spring loaded and make contact with the current bars, for test currents up to 6 amps.

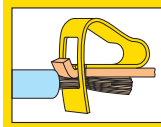
Clamping units which need to remain wired may be skipped over by assembling a spacer in the test plug module.

**Attention!**  
 Mating direction must be observed (see ill.)



CAGE CLAMP®  
 0.08 mm<sup>2</sup> – 1.5 mm<sup>2</sup> (AWG 28 – 16),  
 module width 5 mm / 0.197 in  
 0.08 mm<sup>2</sup> – 2.5 mm<sup>2</sup> (AWG 28 – 14),  
 module width 6 mm / 0.236 in

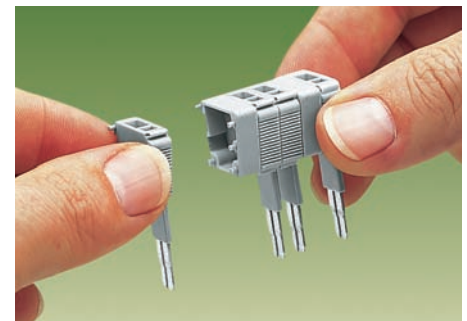
# Test Plug Modules with CAGE CLAMP®, for Testing of Rail-Mounted Terminal Blocks 2.5 mm<sup>2</sup>/AWG 14 and 4 mm<sup>2</sup>/AWG 12, Using Jumper Contact Position in Current Bar



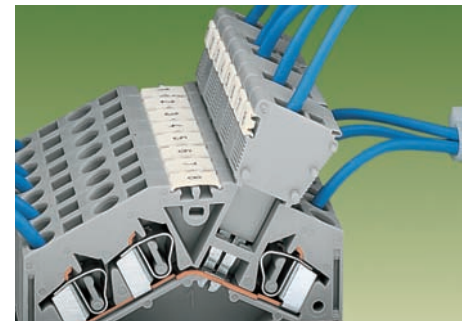
<p>Test plug for rail-mounted terminal blocks of series 280                  Module width 5 mm / 0.197 in                  Test voltage 630 V                  Test current 10 A</p>	<p>Test plug for rail-mounted terminal blocks of series 281                  Module width 6 mm / 0.236 in                  Test voltage 630 V                  Test current 10 A</p>	<p><b>Note:</b>                  These test plugs are not suitable for Ex e applications</p>
--	--	--



Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<p><b>Test plug module with CAGE CLAMP®,</b>                      version using jumper contact position in current bar,                      grey, module width 5 mm / 0.197 in,                      suitable for all rail-mounted terminal blocks series 280                      with jumper contact slots in the current bar</p>		<p><b>Test plug module with CAGE CLAMP®,</b>                      version using jumper contact position in current bar,                      grey, module width 6 mm / 0.236 in, suitable for all rail-mounted terminal blocks series 281 with jumper contact slots in the current bar</p>	
<b>249-106</b>	100 (4 x 25)	<b>249-147</b>	100 (4 x 25)
<p><b>Spacer module,</b>                      for bridging over commoned terminal blocks, grey,                      module width 5 mm / 0.197 in</p>		<p><b>Spacer module,</b>                      for bridging over commoned terminal blocks, grey,                      module width 6 mm / 0.236 in</p>	
<b>249-107</b>	100 (4 x 25)	<b>249-148</b>	100 (4 x 25)
<p><b>Accessories</b></p>			
<p><b>Miniature WSB quick marking system or WMB multi-marking system,</b>                      10 strips with 10 markers each,                      white with black printing                      see section 14</p>		<p><b>Miniature WSB quick marking system or WMB multi-marking system,</b>                      10 strips with 10 markers each,                      white with black printing                      see section 14</p>	
<p><b>Application notes</b></p>			



Snapping together of test plug and spacer modules to assemble multi-pole test plug modules (10-pole max.)

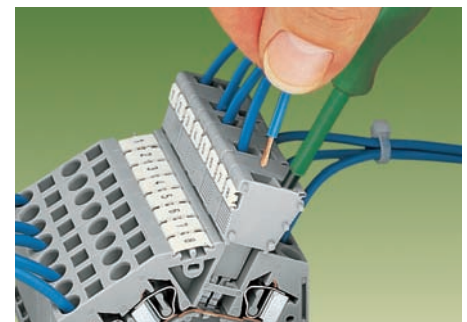


Test plug modules are directly inserted into the jumper contact slots in the current bar



For testing of individual circuits WAGO offers a single-pole test plug accessory with CAGE CLAMP® - up to 2.5 mm<sup>2</sup>/AWG 14 for direct contact with the current bar of a terminal block, or 1-pole test plug adapters for test plugs 4 mm dia.

For serial testing on assembled terminal block assemblies WAGO has developed special multi-pole (max. 10) modular test plug modules. For testing completely wired terminal blocks (even when using horizontal jumpers) the test plug modules with CAGE CLAMP® (version with testing using jumper contact position in current bar) are the ideal solution. For this type of testing, the structure of the testing plug modules is exactly adaptable to that of the terminal block assembly. The test plug modules make direct contact to the jumper contact slot of the terminal blocks to be tested.

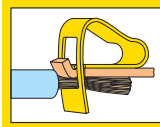


CAGE CLAMP®  
 0.08 mm<sup>2</sup> – 1.5 mm<sup>2</sup> (AWG 28 – 16),  
 module width 5 mm / 0.197 in  
 0.08 mm<sup>2</sup> – 2.5 mm<sup>2</sup> (AWG 28 – 14),  
 module width 6 mm / 0.236 in






# Test Plug Modules with CAGE CLAMP®, for Testing of Rail-Mounted Terminal Blocks 6 mm<sup>2</sup>/AWG 10 and 10 mm<sup>2</sup>/AWG 8, Using Jumper Contact Position in Current Bar



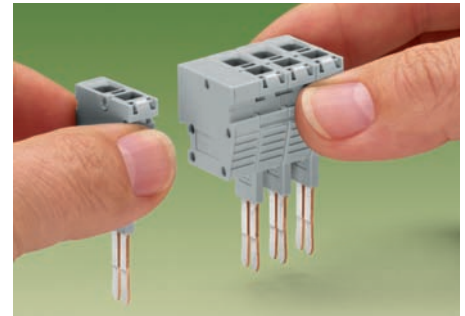
**Test plug module ❶** for rail-mounted terminal blocks of series 282  
0.2 – 6 mm<sup>2</sup> | AWG 24 – 10  
Module width 8 mm / 0.315 in

 12 mm / 0.472 in

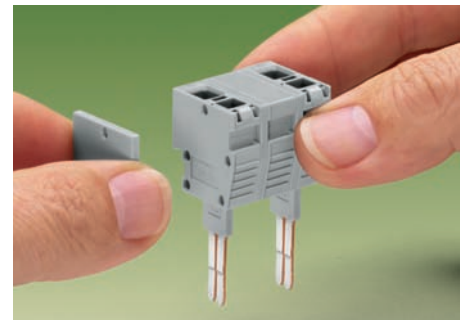
**Spacer plate** for test plug module for testing rail-mounted terminal blocks of series 284  
Module width 2 mm / 0.079 in

**❶ Test voltage 800 V / 8 kV**  
**Test current 32 A**

**Note:**  
These test plugs are not suitable for Ex e applications





Snapping together of test plug and spacer modules to assemble a multipole test plug strip for series 282 (max. 10 poles)



Snapping together of test plug and spacer modules with spacer plates to assemble a multipole test plug strip for series 284 (max. 10 poles)

Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Test plug module with CAGE CLAMP®,</b> version using jumper contact position in current bar, grey, module width 8 mm/0.315 in, suitable for all rail-mounted terminal blocks series 282 with jumper slots in the current bar		<b>Spacer plate,</b> modular, grey, module width 2 mm/0.079 in, snap on test plug modules 709-310 and spacer module 709-311 for testing of rail-mounted terminal blocks series 284	
<b>709-310</b>	100 (4 x 25)	<b>709-312</b>	100 (4 x 25)
<b>Spacer module,</b> for bridging over commoned terminal blocks, grey, module width 8 mm/0.315 in			
<b>709-311</b>	100 (4 x 25)		

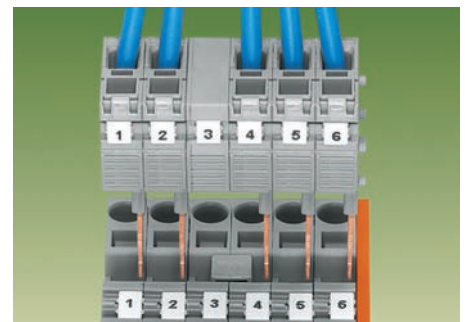
Accessories		Strain relief plate	
	<b>Miniature WSB quick marking system or WMB multi-marking system,</b> 10 strips with 10 markers each, white with black printing see section 14		6 mm <sup>2</sup> 10 mm <sup>2</sup>
			2-way <b>709-332 709-322</b> 4-way <b>709-334 709-324</b> 6-way <b>709-336 709-326</b>

## Application notes

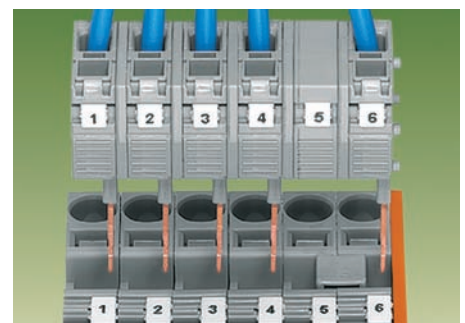


For testing of individual circuits WAGO offers as accessory the single-pole test plugs with CAGE CLAMP® up to 6 mm<sup>2</sup>/AWG 10 for direct contact with the current bar of a terminal block, or single-pole test plug adapters for test plugs 4 mm dia.

For serial testing on assembled terminal strips WAGO has developed special multipole (max. 10) modular test plug strips. For testing completely wired terminal strips (also when using horizontal jumpers) the test plug modules with CAGE CLAMP® (version with testing using jumper contact position in current bar) are the ideal solution. For this type of testing the structure of the testing strips is exactly adapted to that of the terminal strip. The contacting of the test plug modules is made directly in the jumper contact position of the terminal blocks to be tested.






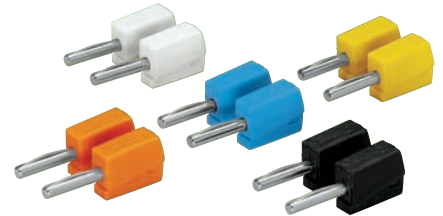
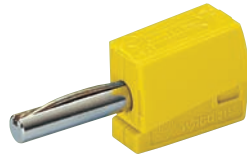
Test plug strips are directly inserted into the jumper contact slots in the current bar (picture shows series 282)



Test plug strip with **spacer plates** for testing of rail-mounted terminal blocks series 284 CAGE CLAMP®  
0.2 mm<sup>2</sup> – 6 mm<sup>2</sup> AWG 24 – 10

# Banana Plugs (Only for Safety Extra-Low Voltage)

For sockets Ø 4 mm / 0.157 in 0.08 – 2.5 mm <sup>2</sup>   AWG 28 – 14 42 V 20 A  9 – 11 mm / 0.39 in	For sockets Ø 4 mm / 0.157 in 0.08 – 2.5 mm <sup>2</sup>   AWG 28 – 14 42 V 20 A  9 – 11 mm / 0.39 in	For sockets Ø 4 mm / 0.157 in 0.08 – 2.5 mm <sup>2</sup>   AWG 28 – 14 42 V 20 A  9 – 11 mm / 0.39 in
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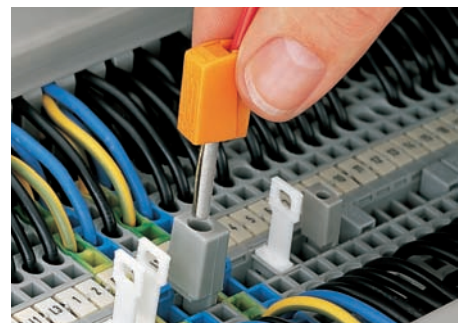


Color	Item No.	Pack. unit pcs	Color	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
Banana plug, for sockets Ø 4 mm/0.157 in orange	215-211	50	Banana plug, for sockets Ø 4 mm/0.157 in yellow	215-511	50	Banana plugs, for sockets Ø 4 mm/0.157 in color mixed	215-111



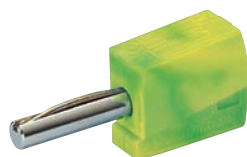
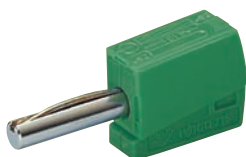
Color	Item No.	Pack. unit pcs	Color	Item No.	Pack. unit pcs
Banana plug, for sockets Ø 4 mm/0.157 in red	215-212	50	Banana plug, for sockets Ø 4 mm/0.157 in blue	215-711	50

To connect: Press button fully and insert stripped conductor into square entry hole and release.

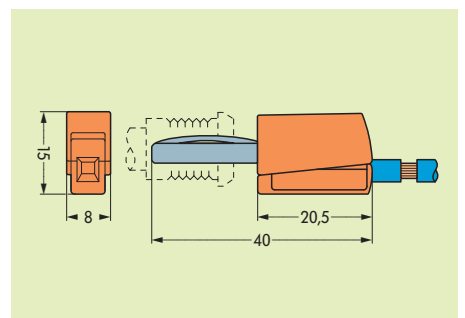


Color	Item No.	Pack. unit pcs	Color	Item No.	Pack. unit pcs
Banana plug, for sockets Ø 4 mm/0.157 in black	215-311	50	Banana plug, for sockets Ø 4 mm/0.157 in grey	215-811	50

Banana plug used as test plug  
Picture shows test adapter 209-170

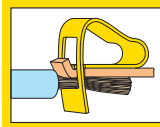


Color	Item No.	Pack. unit pcs	Color	Item No.	Pack. unit pcs
Banana plug, for sockets Ø 4 mm/0.157 in green	215-411	50	Banana plug, for sockets Ø 4 mm/0.157 in green-yellow	215-911	50
white	215-611	50			



# Insulation Stops for Conductors

## 0.08 mm<sup>2</sup> – 1.5 mm<sup>2</sup> / AWG 28 – 16



<p><b>Insulation stop, suitable for all front-entry rail-mounted terminal blocks of series 279</b></p> <p>Terminal block width 4 mm / 0.157 in   8 – 9 mm / 0.33 in</p>	<p><b>Insulation stop, suitable for all front-entry rail-mounted term. blocks of series 280/870 and 880</b></p> <p>Terminal block width 5 mm / 0.197 in   8 – 9 mm / 0.33 in</p>	<p><b>Insulation stop, suitable for all front-entry rail-mounted terminal blocks of series 281</b></p> <p>Terminal block width 6 mm / 0.236 in   9 – 10 mm / 0.37 in</p>
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Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Insulation stop, 5 pcs / strip</b>		<b>Insulation stop, 5 pcs / strip</b>		<b>Insulation stop, 5 pcs / strip</b>	
white <b>279-470</b>	200 strips	white <b>280-470</b>	200 strips	white <b>281-470</b>	200 strips
0.08 – 0.2 mm <sup>2</sup> ① / AWG 28 – 24		0.08 – 0.2 mm <sup>2</sup> ① / AWG 28 – 24		0.08 – 0.2 mm <sup>2</sup> ① / AWG 28 – 24	
		light grey <b>280-471</b>	200 strips	light grey <b>281-471</b>	200 strips
		0.25 – 0.5 mm <sup>2</sup> / AWG 22 – 20		0.25 – 0.5 mm <sup>2</sup> / AWG 22 – 20	
dark grey <b>279-471</b>	200 strips	dark grey <b>280-472</b>	200 strips	dark grey <b>281-472</b>	200 strips
0.25 mm <sup>2</sup> / AWG 22		0.75 – 1 mm <sup>2</sup> / AWG 18		0.75 – 1.5 mm <sup>2</sup> / AWG 18 – 16	
① 0.2 mm <sup>2</sup> / AWG 24 solid 0.14 mm <sup>2</sup> / AWG 26 fine-stranded		① 0.2 mm <sup>2</sup> / AWG 24 solid 0.14 mm <sup>2</sup> / AWG 26 fine-stranded		① 0.2 mm <sup>2</sup> / AWG 24 solid 0.14 mm <sup>2</sup> / AWG 26 fine-stranded	

### Application notes

For the wiring of programmable logic controllers and microprocessor operated control circuits very small cross sections of fine-stranded conductors are frequently used. These small conductors are so flexible that they deform when pushed against the conductor stop in the terminal blocks. As a result, the conductor insulation may be clamped instead of the copper conductor, resulting in no or very intermittent contact. This problem exists with all types of terminal blocks currently offered on the market. Unnecessary time is spent on fault-tracing as a consequence.

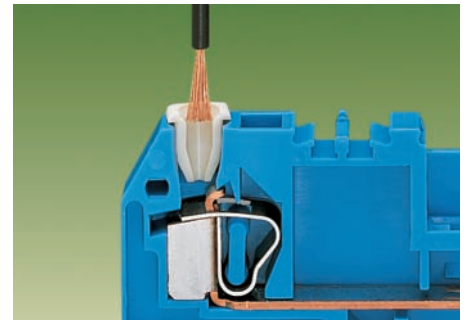
The insulation stop for rail-mounted terminal blocks is the answer to solve these problems. It bundles the cores of fine-stranded conductors automatically when introduced into the clamping unit without any splaying and reduces the conductor entry hole to a defined cross sectional area so that the insulation of these conductors cannot be introduced into the clamping unit.

The insulation stop is available as dividable 5-pole strip for rail-mounted terminal blocks of series 279, 280/870/880 and 281.

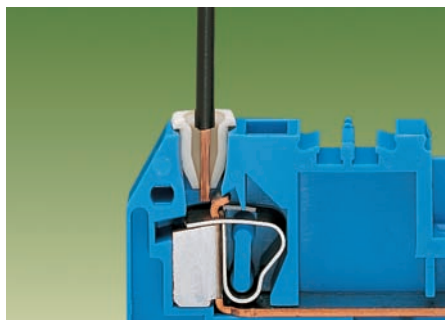
With the use of the insulation stop the conductor stripped lengths related to the respective rail-mounted terminal block, remain unchanged.



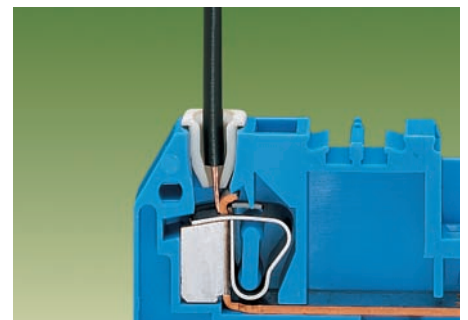
Push insulation stop into the conductor entry holes of front-entry rail-mounted terminal blocks.



Introduce stripped, untwisted conductor into insulation stop . . .



. . . the conductor is bundled . . .



. . . and the conductor insulation is prevented from being pushed into the clamping unit by the positive stop.



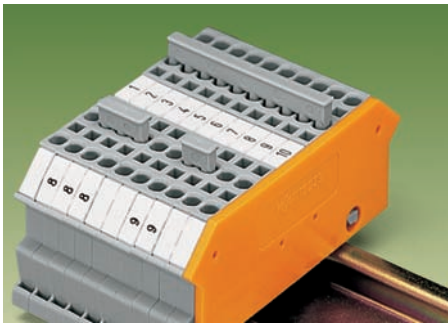
# Comb Type Jumper Bars and Alternate Comb Type Jumper Bars Operating Tools

<p>Comb type jumper bar and alternate comb type jumper bar for series 279 I<sub>N</sub> = I<sub>N</sub> of terminal block</p> <p>Operating tool</p>	<p>Comb type jumper bar and alternate comb type jumper bar for series 280/769/880 I<sub>N</sub> = I<sub>N</sub> of terminal block</p> <p>Operating tool</p>	<p>Comb type jumper bar and alternate comb type jumper bar for series 281 I<sub>N</sub> = I<sub>N</sub> of terminal block</p> <p>Operating tool</p>
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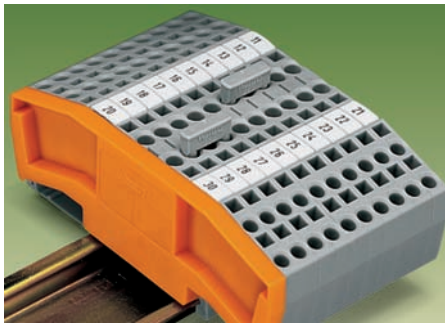


Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Comb type jumper bar, insulated</b>		<b>Comb type jumper bar, insulated</b>		<b>Comb type jumper bar, insulated</b>	
2-way	279-482	200 (8 x 25)	2-way	280-482	200 (8 x 25)
3-way	279-483	200 (8 x 25)	3-way	280-483	200 (8 x 25)
10-way	279-490	50 (2 x 25)	10-way	280-490	50 (2 x 25)
<b>Alternate comb type jumper bar, insulated</b>		<b>Alternate comb type jumper bar, insulated</b>		<b>Alternate comb type jumper bar, insulated</b>	
2-way	279-492	200 (8 x 25)	2-way	280-492	200 (8 x 25)
<b>Operating tool, insulated</b>		<b>Operating tool, insulated</b>		<b>Operating tool, insulated</b>	
2-way	279-432	1	2-way	280-432	1
3-way	279-433	1	3-way	280-433	1
10-way	279-440	1	10-way	280-440	1
see also section 14		see also section 14		see also section 14	

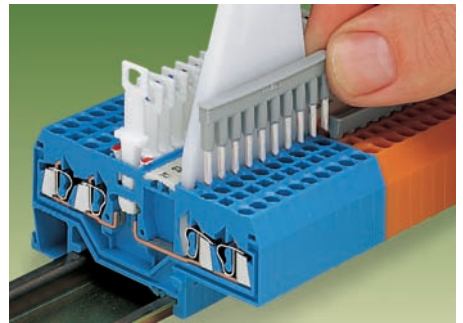
## Applications



Double potential terminal blocks  
2-way, 3-way and 10-way comb type jumper bars



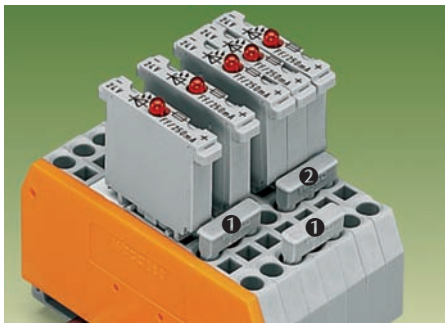
3-conductor double potential terminal blocks  
Alternate comb type jumper bars



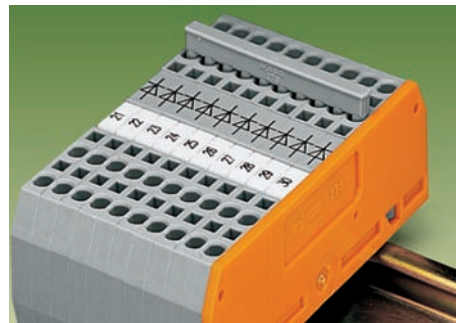
Disconnect terminal blocks for test purposes  
10-way comb type jumper bar



4-conductor through terminal blocks, angled version  
Formation of groups with 3-way comb type jumper bars

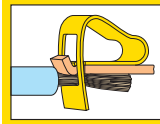


Carrier terminal blocks with component plugs  
1 Alternate comb type jumper bars  
2 3-way comb type jumper bar



Diode terminal blocks  
10-way comb type jumper bar

# Push-in Type Wire Jumpers Staggered Jumpers



<b>Wire jumpers</b> <b>Nominal voltage:</b> 800 V/8 kV/3 <b>Nominal current:</b> 9 A <b>Nominal cross section:</b> 0.75 mm <sup>2</sup> /AWG 18 <b>Conductor lengths:</b> 60/110/250 mm	<b>Staggered jumpers</b> <b>Nominal voltage:</b> 400 V/6 kV/3 ⚡ 275 V	
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Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Push-in type wire jumpers,</b> insulated, grey, conductor cross section 0.75 mm <sup>2</sup> /AWG 18, suitable for rail-mounted terminal blocks series 279 (1.5 mm <sup>2</sup> /AWG 16), 280 (2.5 mm <sup>2</sup> /AWG 14) and 281/769/880 (4 mm <sup>2</sup> /AWG 12)		<b>Staggered jumpers,</b> insulated, for terminal blocks series 280, 769 and 880 I <sub>N</sub> 24 A, ⚡ 23 A – 2-conductor terminal blocks 22 A – 3-conductor terminal blocks 20 A – 4-conductor terminal blocks	
<b>Wire length</b> 60 mm/2.362 in	249-125	10	
<b>Wire length</b> 110 mm/4.331 in	249-126	10	
<b>Wire length</b> 250 mm/9.843 in	249-127	10	
			for terminal blocks series 281 I <sub>N</sub> 32 A, ⚡ 26 A
			from 1 to 2
			from 1 to 3
			from 1 to 4
			from 1 to 5
			from 1 to 6
			from 1 to 7
			from 1 to 8
<b>Note:</b> Push wire jumper down FIRMLY until FULLY inserted!			

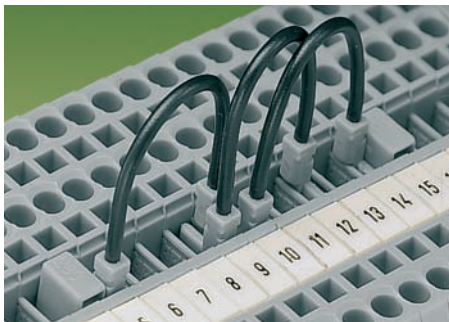
### Wire jumpers

When installing machines or control systems, it is often necessary to make an additional connection between two terminal blocks that are not directly adjacent on the rail. In such cases, the new plug-in, touchproof wire jumper is of great help.

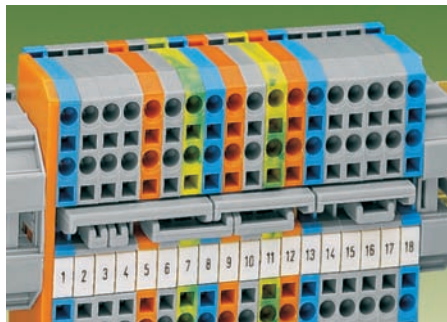
Suitable for rail-mounted terminal blocks series 279 (1.5 mm<sup>2</sup>/AWG 16), 280 (2.5 mm<sup>2</sup>/AWG 14) and 281/769 and 880 (4 mm<sup>2</sup>/AWG 12), this jumper is available in 3 different wire lengths: 60 mm, 110 mm and 250 mm. This allows up to 60 terminal blocks between the two blocks being commoned (see table below).

"n" = number of series 279, 280/769/880 and 281 terminal blocks which can be skipped with a wire jumper.

### Application notes

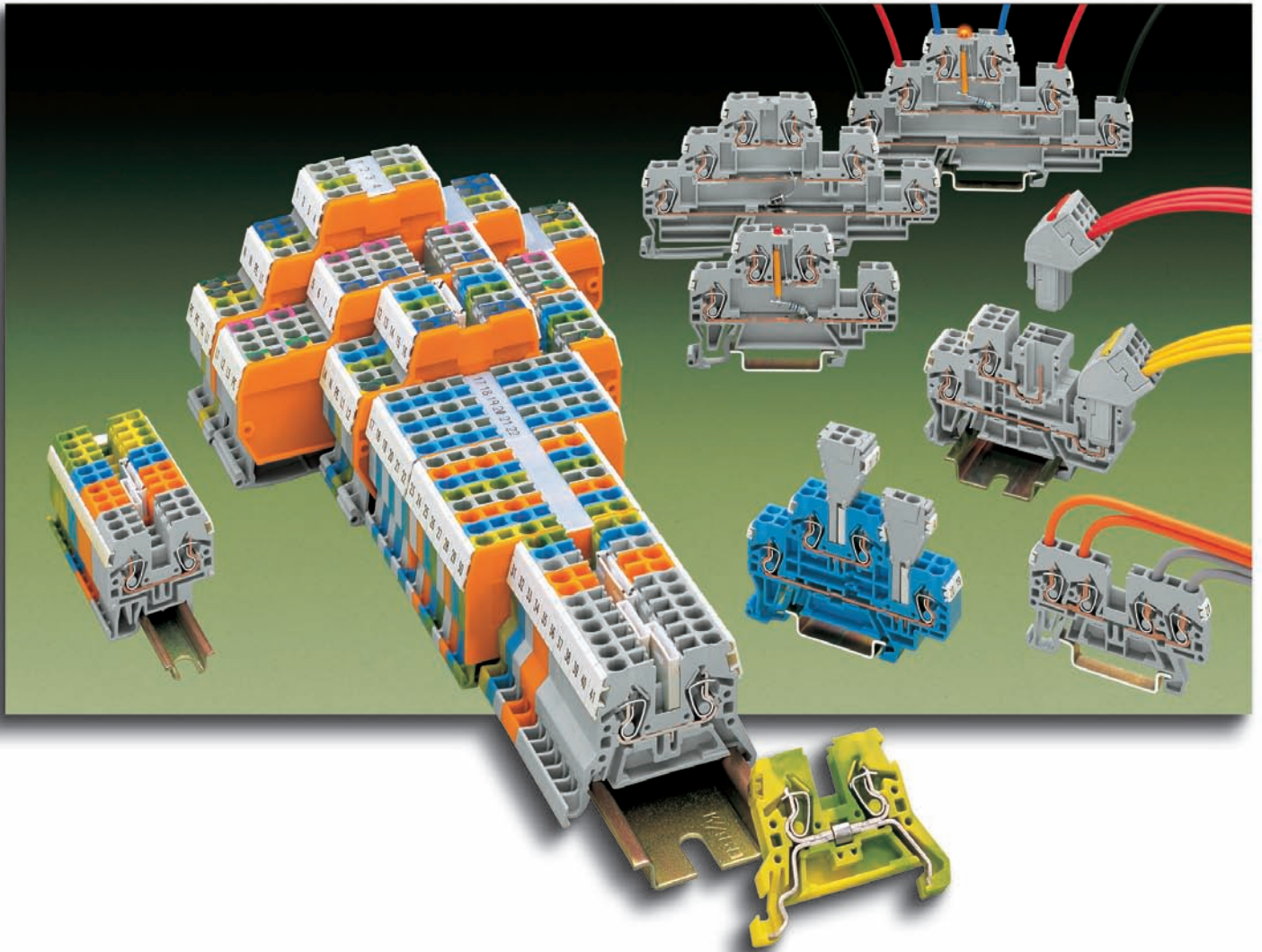


Series 280 and 281 will accept two wire jumpers, so it is possible to bridge several terminal blocks together. Since series 279 will only accept one wire jumper per terminal block, the bridging of several terminal blocks is not possible. Series 280, 769, 281 and 880 permit the introduction of a wire jumper and an adjacent jumper into the same block at the same time.



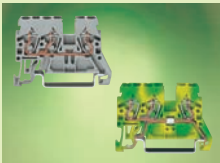
Staggered jumper for sophisticated wiring jobs

Terminal blocks Series	Wire jumpers Item No.	"n"
279 1.5 mm <sup>2</sup> /AWG 16	249-125	13
	249-126	25
	249-127	60
280 2.5 mm <sup>2</sup> /AWG 14 769, 880 4 mm <sup>2</sup> /AWG 12	249-125	10
	249-126	20
	249-127	48
281 4 mm <sup>2</sup> /AWG 12	249-125	9
	249-126	17
	249-127	40



Compact and versatile:  
WAGO front-entry rail-mounted terminal  
blocks of series 870

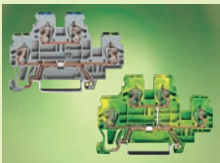




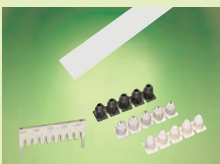
**Through terminal blocks and ground (earth) conductor terminal blocks**  
 – for DIN 35 and DIN 15  
 0.08 mm<sup>2</sup> to 2.5 mm<sup>2</sup>/4 mm<sup>2</sup> / AWG 28 – 12      Series 870 \_\_\_\_\_ 3.6 – 3.7



**Double potential terminal blocks**  
 0.08 mm<sup>2</sup> to 2.5 mm<sup>2</sup>/4 mm<sup>2</sup> / AWG 28 – 12      Series 870 \_\_\_\_\_ 3.7



**Multilevel terminal blocks**  
 – Double deck  
 0.08 mm<sup>2</sup> to 2.5 mm<sup>2</sup>/4 mm<sup>2</sup> / AWG 28 – 12      Series 870 \_\_\_\_\_ 3.8  
 – Triple deck  
 0.08 mm<sup>2</sup> to 2.5 mm<sup>2</sup>/4 mm<sup>2</sup> / AWG 28 – 12      Series 870 \_\_\_\_\_ 3.9



**Accessories**  
 – Insulation stops \_\_\_\_\_ 2.43  
 – Secondary connection modules \_\_\_\_\_ 3.11  
 – Group marker carriers \_\_\_\_\_ 3.11

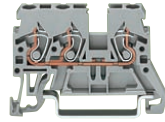
# COMPACT Rail-Mounted Terminal Blocks, Series 870

## – Product Summary –

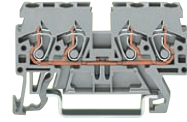
### Series 870 Through terminal blocks for DIN 35 rail



2-conductor terminal block  
mm<sup>2</sup>/AWG | 2.5/4/12  
Page | 3.6

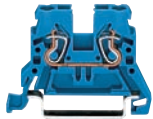


3-conductor terminal block  
mm<sup>2</sup>/AWG | 2.5/4/12  
Page | 3.6

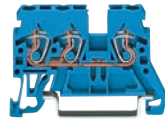


4-conductor terminal block  
mm<sup>2</sup>/AWG | 2.5/4/12  
Page | 3.6

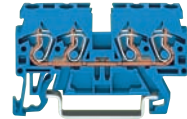
### Series 870 Ex i through terminal blocks for DIN 35 rail



2-conductor terminal block  
mm<sup>2</sup>/AWG | 2.5/4/12  
Page | 3.6

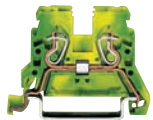


3-conductor terminal block  
mm<sup>2</sup>/AWG | 2.5/4/12  
Page | 3.6



4-conductor terminal block  
mm<sup>2</sup>/AWG | 2.5/4/12  
Page | 3.6

### Series 870 Ground (earth) conductor terminal blocks for DIN 35 rail



2-conductor terminal block  
mm<sup>2</sup>/AWG | 2.5/4/12  
Page | 3.6



3-conductor terminal block  
mm<sup>2</sup>/AWG | 2.5/4/12  
Page | 3.6



4-conductor terminal block  
mm<sup>2</sup>/AWG | 2.5/4/12  
Page | 3.6

### Series 870 Double potential terminal blocks for DIN 35 rail



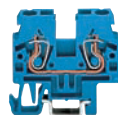
Double potential terminal block  
mm<sup>2</sup>/AWG | 2.5/4/12  
Page | 3.7

### Series 870 Through terminal blocks for DIN 15 rail



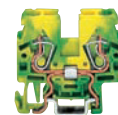
2-conductor terminal block  
mm<sup>2</sup>/AWG | 2.5/4/12  
Page | 3.7

### Series 870 Ex i through terminal blocks for DIN 15 rail

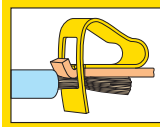


2-conductor terminal block  
mm<sup>2</sup>/AWG | 2.5/4/12  
Page | 3.7

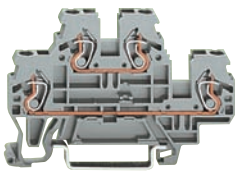
### Series 870 Ground (earth) conductor terminal blocks for DIN 35 rail



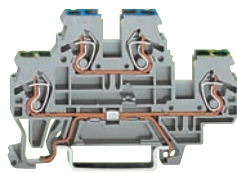
2-conductor terminal block  
mm<sup>2</sup>/AWG | 2.5/4/12  
Page | 3.7



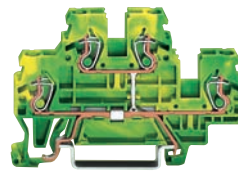
**Series 870 Double deck terminal blocks (selection)**



Through/through connection  
mm<sup>2</sup>/AWG | 2.5/4/12  
Page | 3.8

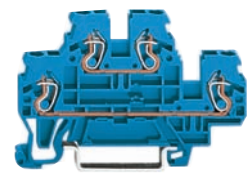


Ground (earth)/through connection  
mm<sup>2</sup>/AWG | 2.5/4/12  
Page | 3.8



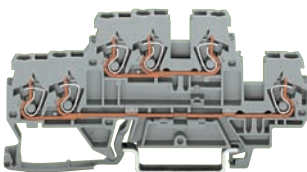
4-conductor terminal block  
mm<sup>2</sup>/AWG | 2.5/4/12  
Page | 3.8

**Series 870 Ex i double deck terminal blocks**

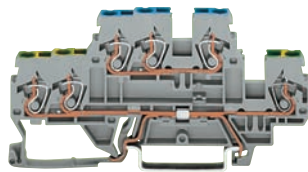


Through/through connection  
mm<sup>2</sup>/AWG | 2.5/4/12  
Page | 3.8

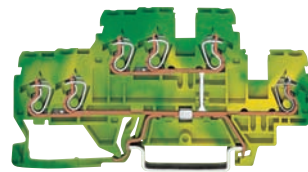
**Series 870 3-conductor double deck terminal blocks (selection)**



Through/through connection  
mm<sup>2</sup>/AWG | 2.5/4/12  
Page | 3.8

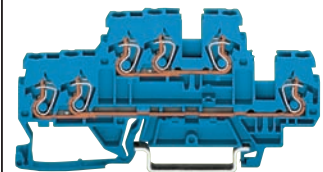


Ground (earth)/through connection  
mm<sup>2</sup>/AWG | 2.5/4/12  
Page | 3.8



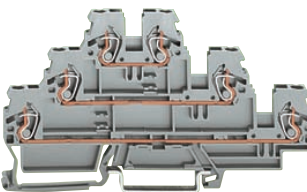
6-conductor terminal block  
mm<sup>2</sup>/AWG | 2.5/4/12  
Page | 3.9

**Series 870 Ex i 3-conductor double deck terminal blocks**

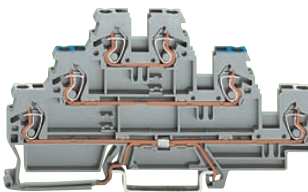


Through/through connection  
mm<sup>2</sup>/AWG | 2.5/4/12  
Page | 3.8

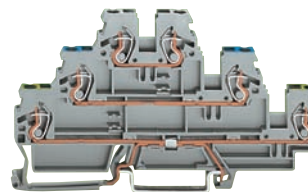
**Series 870 Triple deck terminal blocks (selection)**



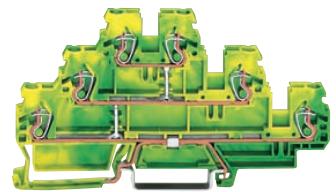
Through/through/through connection  
mm<sup>2</sup>/AWG | 2.5/4/12  
Page | 3.9



Shield (screen)/through/through connection  
mm<sup>2</sup>/AWG | 2.5/4/12  
Page | 3.9



Ground (earth)/through/through connection  
mm<sup>2</sup>/AWG | 2.5/4/12  
Page | 3.9



6-conductor terminal block  
mm<sup>2</sup>/AWG | 2.5/4/12  
Page | 3.9

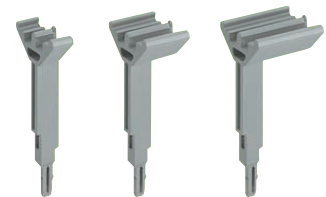
**Accessories (selection)**



Protective warning marker  
Page 3.4



Push-in type jumper bars  
Page 3.6



Group marker carriers  
Page 3.11



Insulation stops  
Page 2.43



Anti-reverse mating removable terminal block  
Page 3.11



Removable terminal block  
Page 3.11

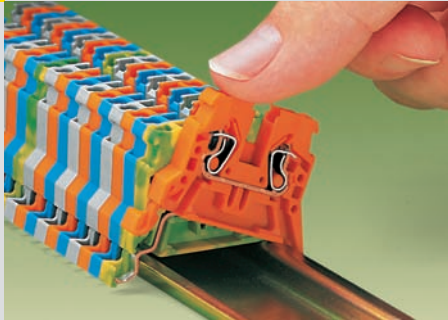


# 3

## COMPACT Rail-Mounted Terminal Blocks with CAGE CLAMP® for DIN 15 and DIN 35 Rails, Series 870 . . .

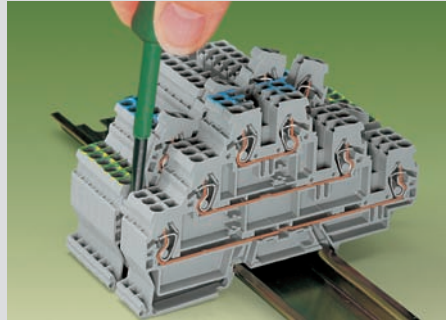
4

### Assembly



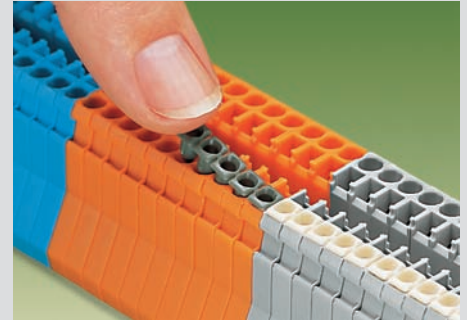
Assembly of a rail-mounted terminal block on the DIN 35 rail

### Removal



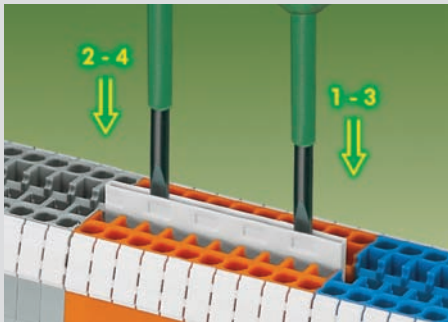
Removal of a terminal block from the assembly

### Insulation stop



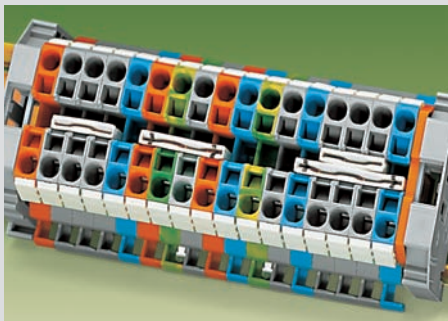
Insertion of insulation stop. (see page 2.43)

### Push-in type jumper bar system

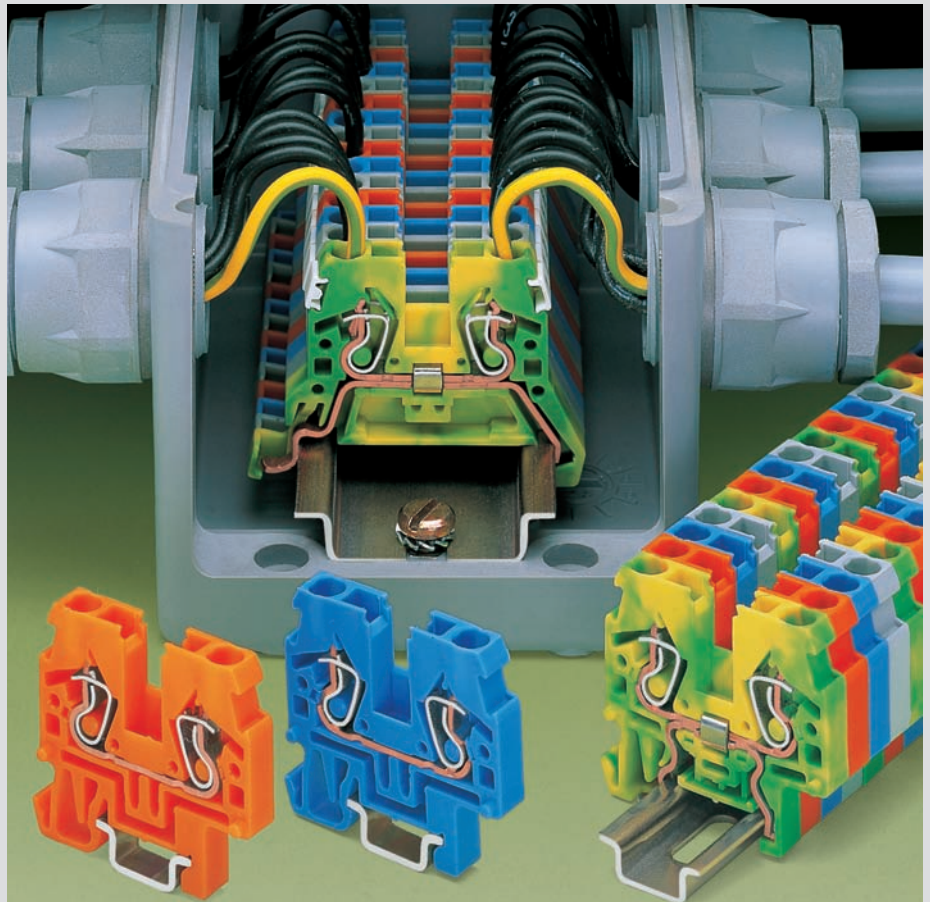


Push jumper bars down firmly until fully inserted! When using multi-pole bars, push alternately on right and then left side, successively until installed. Push-in type jumper bars 1 - 3 - 5 - 7.../1 - - 4 - - 7 upon request

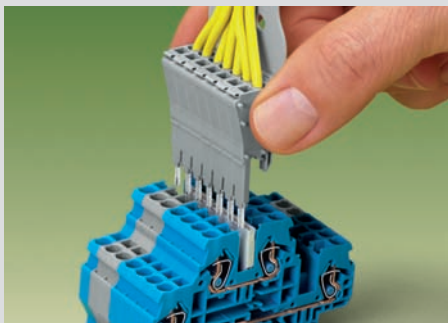
### Push-in type jumper bar system



2 parallel receptacles for jumpers in one terminal block.

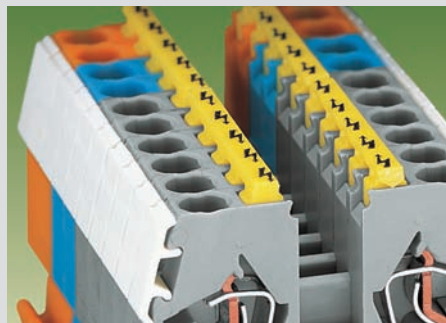


### Testing



Testing is possible using a wired strip in the very same way as test plugs

### Protective warning marker



Protective warning marker for 5 terminal blocks yellow - Item No. 280-405

### Commoning

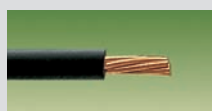


Terminal blocks with larger cross sections can be commoned to term. bl. with smaller cross sections



CAGE CLAMP® clamps the following copper wires: \*

solid



stranded



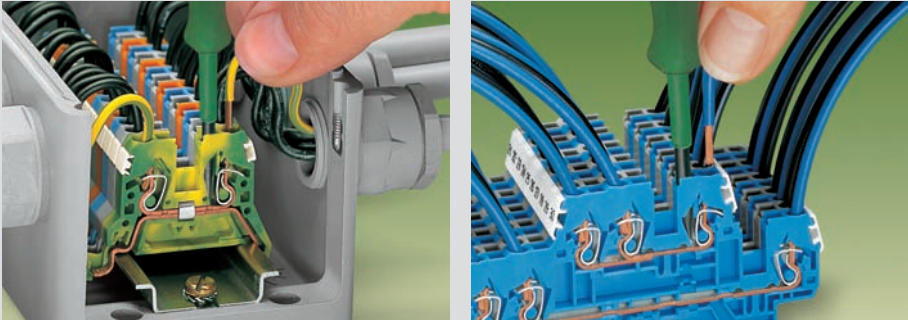
fine stranded, also with tinned single strands

\* For aluminum wire see notes in section 15!



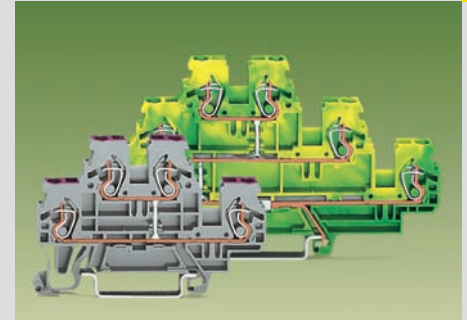
## ... Description and Handling

### CAGE CLAMP® connection



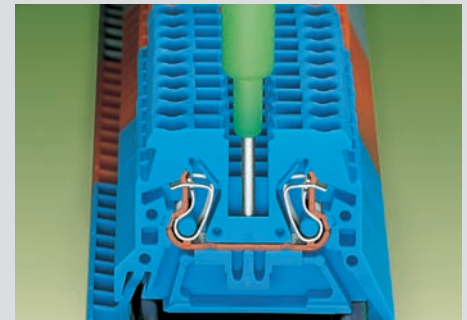
Connection of stranded conductors  
0.08 mm<sup>2</sup> to 4 mm<sup>2</sup> / AWG 28 – 12

### Multi-level and multi-connector terminal blocks



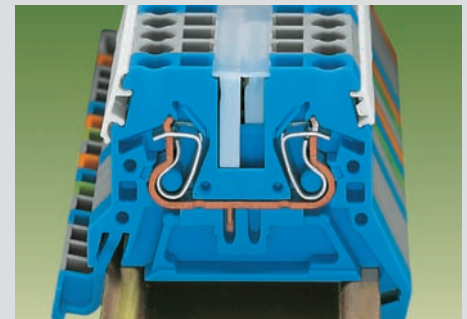
Double and triple deck terminal blocks with internal commoning acting as 4- and 6-conductor terminal blocks

### Testing

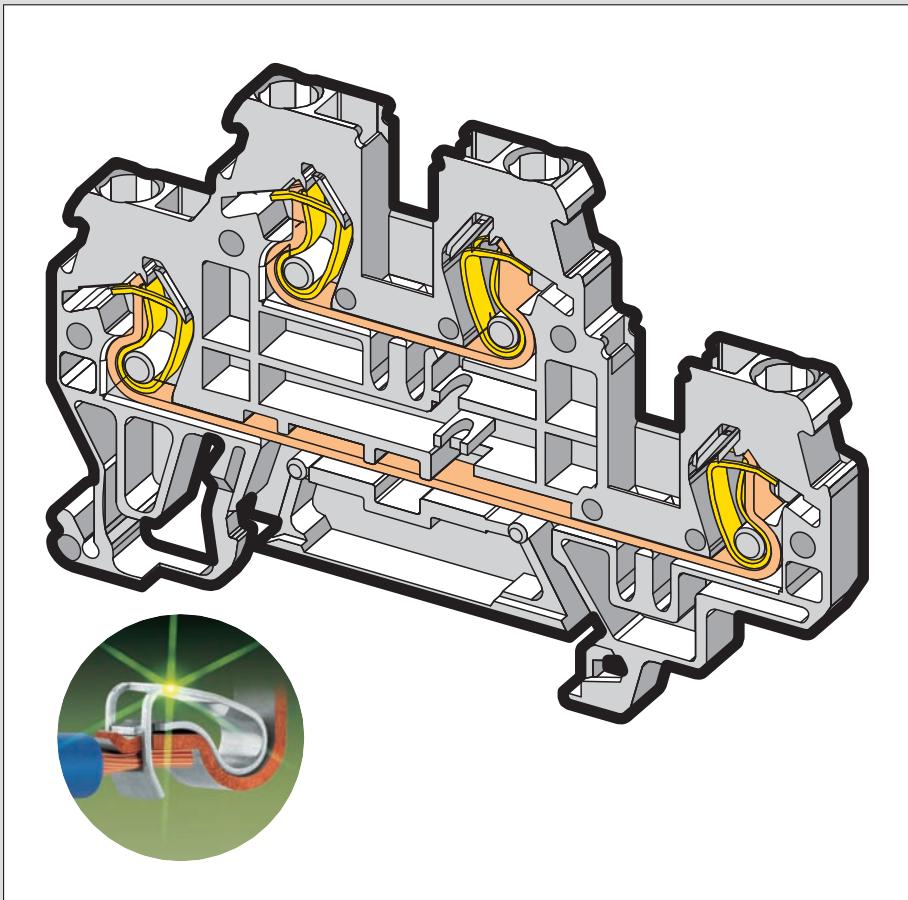


Testing with phase testing device, possible with 1-pole voltage tester too

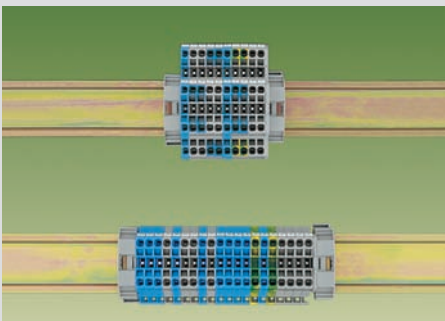
### Marking



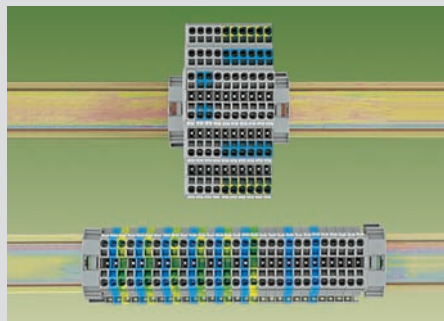
Marking with WMB multi-marking system or miniature WSB quick marking system



### Space saving

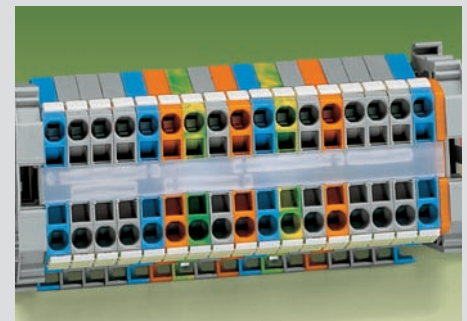


Space saving of 50% when using double deck terminal blocks



Space saving of 67% when using triple deck terminal blocks

### Marker strips



Transparent marker strips (note: jumpers below may be viewed)



fine-stranded wire – tip bonded



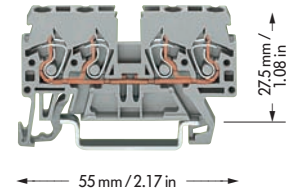
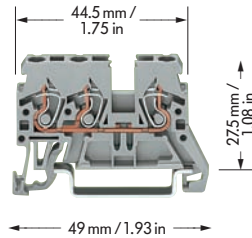
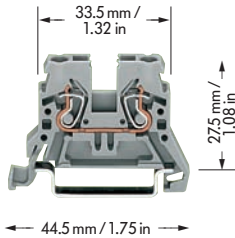
fine-stranded wire with crimped ferrule



fine-stranded wire with crimped pin terminal

# Through/Ground (Earth) Conductor and Double Potential Terminal Blocks 2.5 mm<sup>2</sup>/4 mm<sup>2</sup> / AWG 12 Series 870

<p>0.08–2.5 mm<sup>2</sup>/4 mm<sup>2</sup> ①   AWG 28 – 12 500 V/6 kV/3 ②   300/600 V, 24 A</p> <p>Terminal block width 5 mm / 0.197 in 6 – 7 mm / 0.26 in</p> <p>*  GL LR</p>	<p>0.08–2.5 mm<sup>2</sup>/4 mm<sup>2</sup> ①   AWG 28 – 12 500 V/6 kV/3 ②   300/600 V, 20/5 A**</p> <p>Terminal block width 5 mm / 0.197 in 6 – 7 mm / 0.26 in</p> <p>*  GL LR</p>	<p>0.08–2.5 mm<sup>2</sup>/4 mm<sup>2</sup> ①   AWG 28 – 12 500 V/6 kV/3 ②   300/600 V, 24 A</p> <p>Terminal block width 5 mm / 0.197 in 6 – 7 mm / 0.26 in</p> <p>*  GL LR</p>
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Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>2-conductor through terminal blocks</b> , for DIN 35 rail		<b>3-conductor through terminal blocks</b> , for DIN 35 rail		<b>4-conductor through terminal blocks</b> , for DIN 35 rail	
grey <b>870-901</b>	100	grey <b>870-681</b>	100	grey <b>870-831</b>	100
blue <b>870-904</b>	100	blue <b>870-684</b>	100	blue <b>870-834</b>	100
orange <b>870-902</b>	100	orange <b>870-682</b>	100	orange <b>870-832</b>	100
light grey <b>870-909</b>	100				
<b>2-conductor ground (earth) term. bl.</b> , for DIN 35 rail		<b>3-conductor ground (earth) term. bl.</b> , for DIN 35 rail		<b>4-conductor ground (earth) term. bl.</b> , for DIN 35 rail	
green-yellow <b>870-907</b>	100	green-yellow <b>870-687</b>	100	green-yellow <b>870-837</b>	100
green-yellow <b>870-907/999-950</b>	100				
<b>Attention! These ground (earth) conductor terminal blocks cannot be commoned!</b>		<b>Attention! These ground (earth) conductor terminal block cannot be commoned!</b>		<b>Attention! These ground (earth) conductor terminal block cannot be commoned!</b>	

## Accessories serie 870

Appropriate marking system **WMB/Mini-WSB** (see section 14)

<p><b>End and intermediate plate</b>, 2 mm/0.079 in thick</p> <p>orange <b>870-924</b> 100 (4 x 25)</p> <p>grey <b>870-923</b> 100 (4 x 25)</p>	<p><b>End and intermediate plate</b>, 1 mm/0.039 in thick</p> <p>orange <b>870-934</b> 100 (4 x 25)</p> <p>grey <b>870-933</b> 100 (4 x 25)</p>	<p><b>End and intermediate plate</b>, 1 mm/0.039 in thick</p> <p>orange <b>870-944</b> 100 (4 x 25)</p> <p>grey <b>870-943</b> 100 (4 x 25)</p>
<p><b>Separator</b>, oversized, 2 mm/0.079 in thick</p> <p>orange <b>870-929</b> 100 (4 x 25)</p> <p>grey <b>870-928</b> 100 (4 x 25)</p>	<p><b>Separator</b>, oversized, 1 mm/0.039 in thick</p> <p>orange <b>870-947</b> 100 (4 x 25)</p> <p>grey <b>870-946</b> 100 (4 x 25)</p>	<p><b>Separator</b>, oversized, 1 mm/0.039 in thick</p> <p>orange <b>870-949</b> 100 (4 x 25)</p> <p>grey <b>870-948</b> 100 (4 x 25)</p>
<p><b>Insulation stop</b> ④, 5 pcs/strip</p> <p>white <b>280-470</b> 200 strips</p> <p>light grey <b>280-471</b> 200 strips</p> <p>dark grey <b>280-472</b> 200 strips</p>	<p><b>Insulation stop</b> ④, 5 pcs/strip</p> <p>white <b>280-470</b> 200 strips</p> <p>light grey <b>280-471</b> 200 strips</p> <p>dark grey <b>280-472</b> 200 strips</p>	<p><b>Insulation stop</b> ④, 5 pcs/strip</p> <p>white <b>280-470</b> 200 strips</p> <p>light grey <b>280-471</b> 200 strips</p> <p>dark grey <b>280-472</b> 200 strips</p>
<p><b>Push-in type jumper bars</b>, light grey, insulated,</p> <p>I<sub>N</sub> 18 A</p> <p>2-way <b>870-402</b> 200 (8 x 25)</p> <p>3-way <b>870-403</b> 200 (8 x 25)</p> <p>4-way <b>870-404</b> 200 (8 x 25)</p> <p>5-way <b>870-405</b> 100 (4 x 25)</p> <p>: :</p> <p>10-way <b>870-410</b> 100 (4 x 25)</p>	<p><b>Push-in type jumper bars</b>, light grey, insulated,</p> <p>I<sub>N</sub> 18 A</p> <p>2-way <b>870-402</b> 200 (8 x 25)</p> <p>3-way <b>870-403</b> 200 (8 x 25)</p> <p>4-way <b>870-404</b> 200 (8 x 25)</p> <p>5-way <b>870-405</b> 100 (4 x 25)</p> <p>: :</p> <p>10-way <b>870-410</b> 100 (4 x 25)</p>	<p><b>Push-in type jumper bars</b>, light grey, insulated,</p> <p>I<sub>N</sub> 18 A</p> <p>2-way <b>870-402</b> 200 (8 x 25)</p> <p>3-way <b>870-403</b> 200 (8 x 25)</p> <p>4-way <b>870-404</b> 200 (8 x 25)</p> <p>5-way <b>870-405</b> 100 (4 x 25)</p> <p>: :</p> <p>10-way <b>870-410</b> 100 (4 x 25)</p>
<p><b>Push-in type jumper bars</b>, light grey, insulated,</p> <p>I<sub>N</sub> 18 A</p> <p>from 1 to 3 <b>870-433</b> 200 (8 x 25)</p> <p>from 1 to 4 <b>870-434</b> 200 (8 x 25)</p> <p>from 1 to 5 <b>870-435</b> 100 (4 x 25)</p> <p>: :</p> <p>from 1 to 10 <b>870-440</b> 100 (4 x 25)</p>	<p><b>Push-in type jumper bars</b>, light grey, insulated,</p> <p>I<sub>N</sub> 18 A</p> <p>from 1 to 3 <b>870-433</b> 200 (8 x 25)</p> <p>from 1 to 4 <b>870-434</b> 200 (8 x 25)</p> <p>from 1 to 5 <b>870-435</b> 100 (4 x 25)</p> <p>: :</p> <p>from 1 to 10 <b>870-440</b> 100 (4 x 25)</p>	<p><b>Push-in type jumper bars</b>, light grey, insulated,</p> <p>I<sub>N</sub> 18 A</p> <p>from 1 to 3 <b>870-433</b> 200 (8 x 25)</p> <p>from 1 to 4 <b>870-434</b> 200 (8 x 25)</p> <p>from 1 to 5 <b>870-435</b> 100 (4 x 25)</p> <p>: :</p> <p>from 1 to 10 <b>870-440</b> 100 (4 x 25)</p>
<p><b>Marker strips</b>, transparent, for central marking</p> <p>1 m / 3'33" long;</p> <p>7.5 mm / 0.295 in wide</p> <p>plain <b>709-196</b> 1</p>	<p><b>Marker strips</b>, transparent, for central marking</p> <p>1 m / 3'33" long;</p> <p>7.5 mm / 0.295 in wide</p> <p>plain <b>709-196</b> 1</p>	<p><b>Marker strips</b>, transparent, for central marking</p> <p>1 m / 3'33" long;</p> <p>7.5 mm / 0.295 in wide</p> <p>plain <b>709-196</b> 1</p>

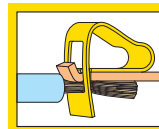
- ① Max. diameter of insulation 4.4 mm/0.173 in
- ② 500 V = rated voltage  
6 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)

- ⊗ Ex e II application in preparation
- ③ Suitable for Ex i applications
- ④ See application notes on page 2.43

\* For further approvals with corresponding ratings see section 15.

\*\* 10 A for push-in type jumper bars with different potentials, placed in parallel





3  
7

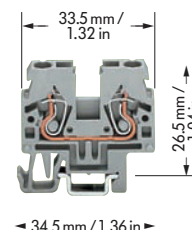
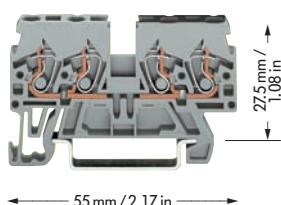
0.08 – 2.5 mm<sup>2</sup>/4 mm<sup>2</sup> ① | AWG 28 – 12  
500 V/6 kV/3 ② | 300 V, 20 A\*\*  
24 A | 300 V, 25 A\*\*

Terminal block width 5 mm / 0.197 in  
6 – 7 mm / 0.26 in

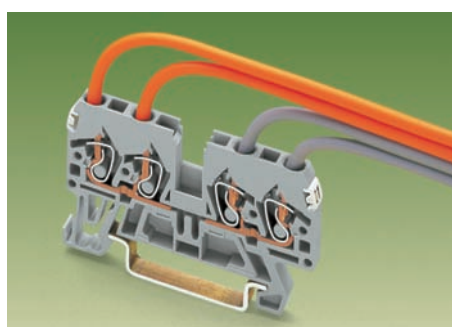
0.08 – 2.5 mm<sup>2</sup>/4 mm<sup>2</sup> ① | AWG 28 – 12  
500 V/6 kV/3 ② | 300/600 V,  
24 A | 20/5 A\*\*

Terminal block width 5 mm / 0.197 in  
6 – 7 mm / 0.26 in

\* .9A<sub>US</sub>

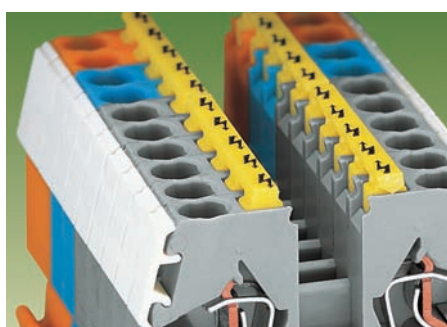


Item No.	Pack. unit pcs		Item No.	Pack. unit pcs
<b>Double potential terminal block, for DIN 35 rail</b>			<b>2-conductor through terminal blocks, for DIN 15 rail</b>	
grey <b>870-826</b> ●	100		grey <b>870-911</b> ●	100
			blue <b>870-914</b> Ⓞ	100
			orange <b>870-912</b> ●	100
			<b>2-conductor ground (earth) term. bl., for DIN 15 rail</b>	
<b>Attention!</b>			green-yellow <b>870-917</b> ●	100
<b>These double potential terminal block cannot be commoned!</b>			<b>Attention! These ground (earth) conductor terminal block cannot be commoned!</b>	
<b>Accessories serie 870</b>		Appropriate marking system <b>WMB/Mini-WSB</b> (see section 14)		
<b>End and intermediate plate, 1 mm/0.039 in thick</b>			<b>End and intermediate plate, 2 mm/0.079 in thick</b>	
orange <b>870-944</b> 100 (4 x 25)			orange <b>870-924</b> 100 (4 x 25)	
grey <b>870-943</b> 100 (4 x 25)			grey <b>870-923</b> 100 (4 x 25)	
<b>Separator, oversized, 1 mm/0.039 in thick</b>			<b>Separator, oversized, 2 mm/0.079 in thick</b>	
orange <b>870-949</b> 100 (4 x 25)			orange <b>870-929</b> 100 (4 x 25)	
grey <b>870-948</b> 100 (4 x 25)			grey <b>870-928</b> 100 (4 x 25)	
<b>Application notes</b>				



Terminal block marking directly on the terminal block either with miniature WSB or WMB markers

WAGO front-entry double potential terminal blocks are space savers. Two independent through terminal blocks are placed in one insulated housing on one level. The width of the housing is only 5 mm/0.197 in. Compared to standard through terminal blocks, the width is only 2.5 mm/0.098 in for a total height of only 27.5 mm/1.08 in from the upper edge of the carrier rail. Input and output contacts of one circuit are placed on the same side of the terminal block. Both circuits can be individually marked according to input and output.



**Protective warning marker for 5 terminal blocks**  
yellow **280-405** 100 (4 x 25)

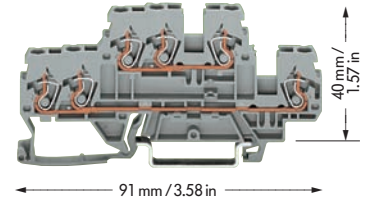
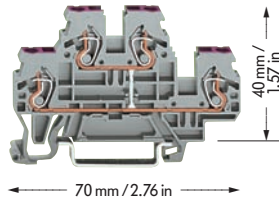
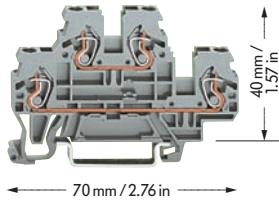


**Assembly**  
Snap individual terminal blocks onto carrier rail DIN 15 and engage.

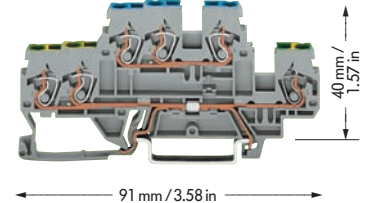
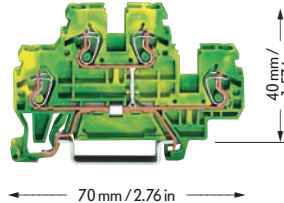
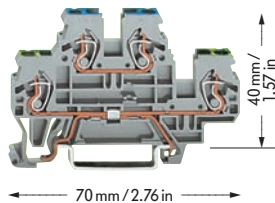
**Removal**  
Open assembly by laterally sliding terminal blocks with a screwdriver and remove them from the rail.

# Double Deck and Triple Deck Terminal Blocks 2.5 mm<sup>2</sup>/4 mm<sup>2</sup>/ AWG 12, Series 870

<p>0.08–2.5 mm<sup>2</sup>/4 mm<sup>2</sup> ① 500 V/6 kV/3 ② 24 A</p> <p>Terminal block width 5 mm / 0.197 in 6–7 mm / 0.26 in</p> <p>*  GL BV LR NV</p>	<p>AWG 28 – 12 300/600 V, 20/5 A**</p>	<p>0.08–2.5 mm<sup>2</sup>/4 mm<sup>2</sup> ① 500 V/6 kV/3 ② 24 A</p> <p>Terminal block width 5 mm / 0.197 in 6–7 mm / 0.26 in</p> <p>*  GL BV LR NV</p>	<p>AWG 28 – 12 300/600 V, 20/5 A**</p>	<p>0.08–2.5 mm<sup>2</sup>/4 mm<sup>2</sup> ① 500 V/6 kV/3 ② 24 A</p> <p>Terminal block width 5 mm / 0.197 in 6–7 mm / 0.26 in</p> <p>*  GL LR</p>	<p>AWG 28 – 12 300/600 V, 20/5 A**</p>
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Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Double deck terminal block, for DIN 35 rail</b>		<b>Double deck terminal block, for DIN 35 rail</b>		<b>3-cond. double deck terminal block, for DIN 35 rail</b>	
<b>Through/through terminal blocks,</b>		<b>4-conductor through terminal block,</b>		<b>Through/through terminal blocks,</b>	
housing color grey		internal commoning, housing color grey,		housing color grey	
L/L	<b>870-501</b>	50	conductor entry position colored in violet	L/L	<b>870-531</b>
N/L	<b>870-502</b>	50		N/L	<b>870-532</b>
L/N	<b>870-503</b>	50		L/N	<b>870-533</b>
housing color blue		<b>4-conductor through terminal block,</b>		housing color blue	
N/N	<b>870-504</b> ③	50	internal commoning, housing color blue,	N/N	<b>870-534</b> ③
housing color light grey		conductor entry position colored in violet			
L/L (Ex)	<b>870-961</b>	50	N	<b>870-509</b> ③	50
<b>Other terminal blocks with the same shape</b>					
diode/LED	<b>870-5xx/...-...</b>	page 7.64			



Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Double deck terminal block, for DIN 35 rail</b>		<b>Double deck terminal block, for DIN 35 rail</b>		<b>3-cond. double deck terminal block, for DIN 35 rail</b>	
<b>Ground (earth) conductor/through terminal blocks,</b>		<b>4-conductor ground (earth) terminal block,</b>		<b>Ground (earth) conductor/through terminal blocks,</b>	
housing color grey		internal commoning, housing color green-yellow		housing color grey	
PE/N	<b>870-517</b>	50	PE	<b>870-507</b>	50
PE/L	<b>870-527</b>	50			
<b>End and intermediate plate, 2 mm / 0.079 in thick</b>		<b>End and intermediate plate, 2 mm / 0.079 in thick</b>		<b>End and intermediate plate, 2 mm / 0.079 in thick</b>	
	orange <b>870-519</b> 100 (4 x 25)		orange <b>870-519</b> 100 (4 x 25)		orange <b>870-574</b> 100 (4 x 25)
	grey <b>870-518</b> 100 (4 x 25)		grey <b>870-518</b> 100 (4 x 25)		grey <b>870-573</b> 100 (4 x 25)

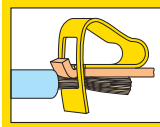
## Accessories serie 870

Appropriate marking system **WMB/Mini-WSB** (see section 14)

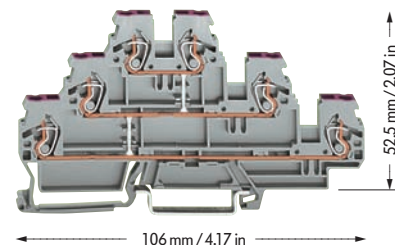
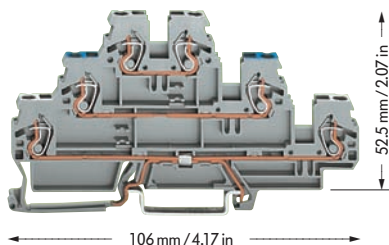
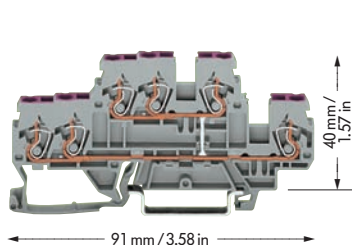
<p><b>Insulation stop</b> ④, 5 pcs/strip</p> <p></p> <p>white <b>280-470</b> 200 strips</p> <p>light grey <b>280-471</b> 200 strips</p> <p>dark grey <b>280-472</b> 200 strips</p>	<p><b>Marker strips</b>, transparent, for central marking</p> <p></p> <p>1 m / 3'33" long;</p> <p>7.5 mm / 0.295 in wide</p> <p>plain <b>709-196</b> 1</p>	<p>① Max. diameter of insulation 4.4 mm / 0.173 in</p> <p>② 500 V = rated voltage 6 kV = rated surge voltage 3 = pollution degree (see also section 15)</p> <p>⑤ Ex e II application in preparation</p> <p>③ Suitable for Ex i applications</p> <p>④ See application notes on page 2.43</p>
<p><b>Push-in type jumper bars</b>, light grey, insulated, I<sub>N</sub> 18 A</p> <p></p> <p>2-way <b>870-402</b> 200 (8 x 25)</p> <p>3-way <b>870-403</b> 200 (8 x 25)</p> <p>4-way <b>870-404</b> 200 (8 x 25)</p> <p>5-way <b>870-405</b> 100 (4 x 25)</p> <p>: :</p> <p>10-way <b>870-410</b> 100 (4 x 25)</p>	<p><b>Push-in type jumper bars</b>, light grey, insulated,</p> <p>I<sub>N</sub> 18 A</p> <p></p> <p>from 1 to 3 <b>870-433</b> 200 (8 x 25)</p> <p>from 1 to 4 <b>870-434</b> 200 (8 x 25)</p> <p>from 1 to 5 <b>870-435</b> 100 (4 x 25)</p> <p>: :</p> <p>from 1 to 10 <b>870-440</b> 100 (4 x 25)</p>	

\* For further approvals with corresponding ratings see section 15.

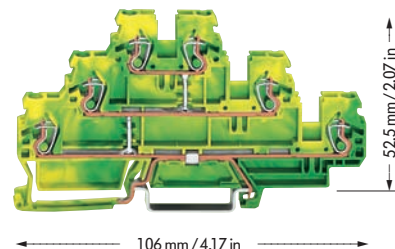
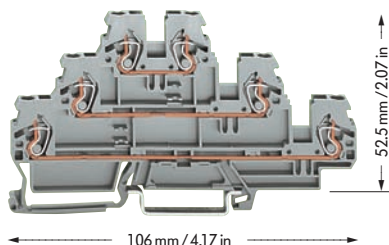
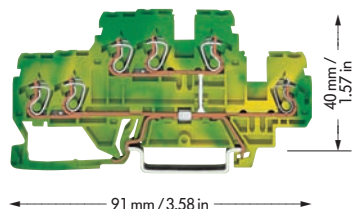
\*\* 10 A for push-in type jumper bars with different potentials, placed in parallel



<p>0.08 – 2.5 mm<sup>2</sup>/4 mm<sup>2</sup> ①   AWG 28 – 12 500 V/6 kV/3 ②   300/600 V, 24 A</p> <p>Terminal block width 5 mm / 0.197 in 6 – 7 mm / 0.26 in</p> <p>*  CCA/KEBA  GL LR</p>	<p>0.08 – 2.5 mm<sup>2</sup>/4 mm<sup>2</sup> ①   AWG 28 – 12 500 V/6 kV/3 ②   300/600 V, 24 A</p> <p>Terminal block width 5 mm / 0.197 in 6 – 7 mm / 0.26 in</p> <p>*  CCA/KEBA  GL BV LR NV</p>	<p>0.08 – 2.5 mm<sup>2</sup>/4 mm<sup>2</sup> ①   AWG 28 – 12 500 V/6 kV/3 ②   300/600 V, 24 A</p> <p>Terminal block width 5 mm / 0.197 in 6 – 7 mm / 0.26 in</p> <p>*  CCA/KEBA  GL BV LR NV</p>
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Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Double deck terminal block, for DIN 35 rail</b>		<b>Triple deck terminal block, for DIN 35 rail</b>		<b>Triple deck terminal block, for DIN 35 rail</b>	
<b>6-conductor through terminal block, internal commoning, housing color grey, conductor entry position colored in violet</b>		<b>Shield (screen)/through/through terminal blocks, housing color grey</b>		<b>6-conductor through terminal block, internal commoning, housing color grey, conductor entry position colored in violet</b>	
L <b>870-538</b>	50	Shield(scr.)/N/L <b>870-558</b>	50	L <b>870-556</b>	50
		Shield(scr.)/L/L <b>870-559</b>	50		
<b>6-conductor through terminal block, internal commoning, housing color blue, conductor entry position colored in violet</b>		<b>Ground (earth)/through/through terminal blocks, housing color grey</b>			
N <b>870-539</b> ③	50	PE/N/L <b>870-567</b>	50		
		PE/L/L <b>870-577</b>	50		
		<b>Other terminal blocks with the same shape</b>			
		diode/LED <b>870-5xx/...-...</b>	page 7.66		



Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Double deck terminal block, for DIN 35 rail</b>		<b>Through/through/through terminal blocks, housing color grey</b>		<b>Triple deck terminal block, for DIN 35 rail</b>	
<b>6-conductor ground (earth) terminal block, internal commoning, housing color green-yellow</b>		L/L/L <b>870-551</b>	50	<b>6-conductor ground (earth) terminal block, internal commoning, housing color green-yellow</b>	
PE <b>870-537</b>	50	L/L/N <b>870-553</b>	50	PE <b>870-557</b>	50
		housing color light grey			
		L/L/L (Ex) <b>870-951</b>	50		
<b>End and intermediate plate, 2 mm / 0.079 in thick</b>		<b>End and intermediate plate, 2 mm / 0.079 in thick</b>		<b>End and intermediate plate, 2 mm / 0.079 in thick</b>	
orange <b>870-574</b>	100 (4 x 25)	orange <b>870-569</b>	50 (2 x 25)	orange <b>870-569</b>	50 (2 x 25)
grey <b>870-573</b>	100 (4 x 25)	grey <b>870-568</b>	50 (2 x 25)	grey <b>870-568</b>	50 (2 x 25)

**Accessories serie 870**

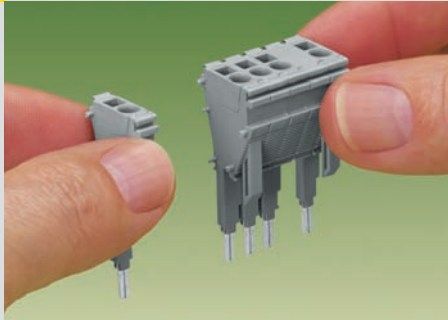
Appropriate marking system **WMB/Mini-WSB** (see section 14)

Insulation stop ④, 5 pcs / strip	Marker strips, transparent, for central marking	<p>① Max. diameter of insulation 4.4 mm / 0.173 in</p> <p>② 500 V = rated voltage 6 kV = rated surge voltage 3 = pollution degree (see also section 15)</p> <p>(Ex) Ex e II application in preparation</p> <p>③ Suitable for Ex i applications</p> <p>④ See application notes on page 2.43</p>
<p>white <b>280-470</b> 200 strips</p> <p>light grey <b>280-471</b> 200 strips</p> <p>dark grey <b>280-472</b> 200 strips</p>	<p>1 m / 3'33" long;</p> <p>7.5 mm / 0.295 in wide</p> <p>plain <b>709-196</b> 1</p>	
<p><b>Push-in type jumper bars, light grey, insulated, I<sub>N</sub> 18 A</b></p> <p>2-way <b>870-402</b> 200 (8 x 25)</p> <p>3-way <b>870-403</b> 200 (8 x 25)</p> <p>4-way <b>870-404</b> 200 (8 x 25)</p> <p>5-way <b>870-405</b> 100 (4 x 25)</p> <p>: :</p> <p>10-way <b>870-410</b> 100 (4 x 25)</p>	<p><b>Push-in type jumper bars, light grey, insulated, I<sub>N</sub> 18 A</b></p> <p>from 1 to 3 <b>870-433</b> 200 (8 x 25)</p> <p>from 1 to 4 <b>870-434</b> 200 (8 x 25)</p> <p>from 1 to 5 <b>870-435</b> 100 (4 x 25)</p> <p>: :</p> <p>from 1 to 10 <b>870-440</b> 100 (4 x 25)</p>	



# Removable Terminal Block Modules with CAGE CLAMP®, Series 870

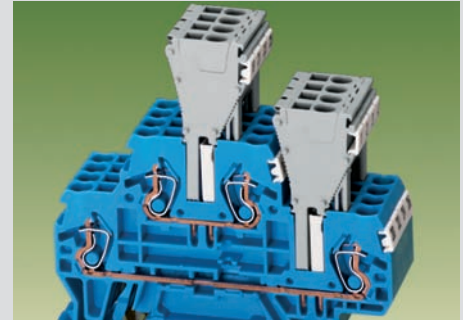
## Description



Snap together individual terminal blocks and spacer modules to create custom removable terminal block modules (10-pole max.)

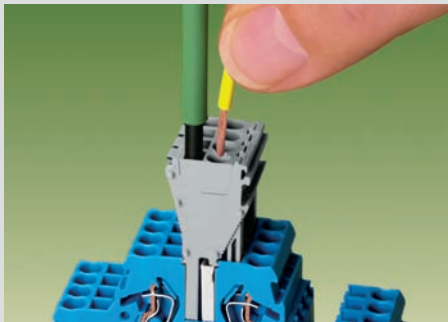


Removable terminal block module with CAGE CLAMP® connection (0.25 mm<sup>2</sup> – 2.5 mm<sup>2</sup> / AWG 24 – 14), with strain relief plate and marker position for miniature WSB or WMB marking.

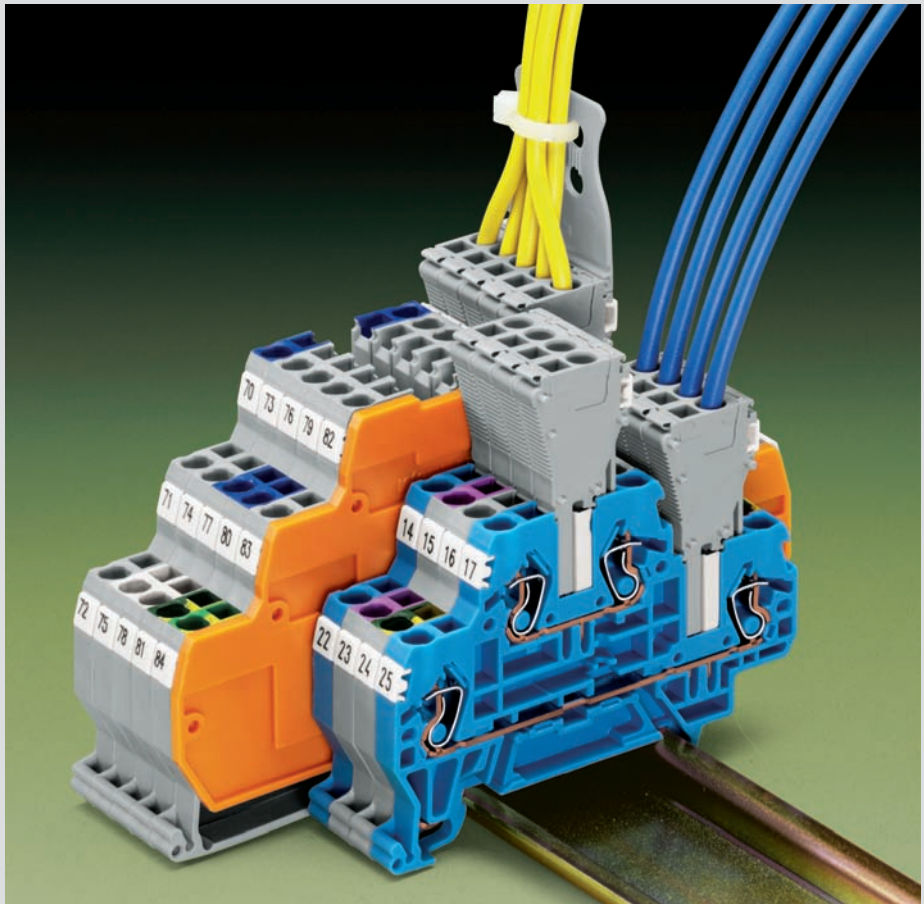


The removable term. bl. modules can be directly inserted into the jumper contact slot in the current bar of the receiving rail-mounted term. block. Term. blocks can also be commoned utilizing a comb style jumper parallel to the jumper contact slot being used by the removable term. bl. module.

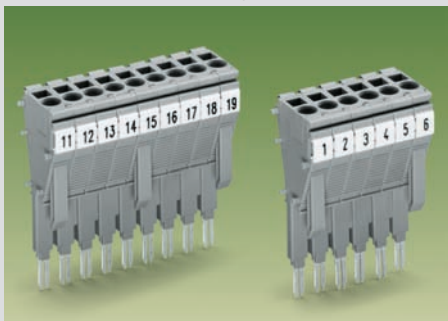
## CAGE CLAMP® connection



These modules are used when additional or removable connections are required (can be used as a permanent connection or a test plug). Wiring of the removable terminal block module is possible whether or not the module is plugged into the rail-mounted terminal block assembly.

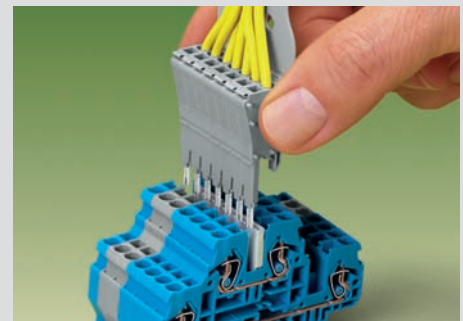


## Anti-reverse mating modules



Use anti-reverse mating modules at both ends of the remov. term. bl. module to prevent reverse mating. Three anti-reverse mating modules are necessary when snapping more than 7 modules together.

## Testing

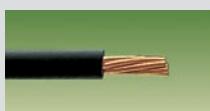


Testing is also possible using a prewired removable terminal block module just like traditional test plugs.



CAGE CLAMP® clamps the following copper wires:\*

solid



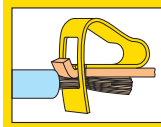
stranded





fine-stranded, also with tinned single strands

\* For aluminum wire see notes in section 15!

# Accessories for Series 870, Removable Terminal Block Modules and Group Marker Carriers



3  
11







0.25 – 2.5 mm <sup>2</sup> 500 V/6 kV/3 18 A Module width 5 mm / 0.197 in  10 mm / 0.38 in	AWG 24 – 14	0.25 – 2.5 mm <sup>2</sup> 500 V/6 kV/3 18 A Module width 5 mm / 0.197 in  10 mm / 0.38 in	AWG 24 – 14	WAGO group marker carriers for terminal blocks series 869, 870  Module width 5 mm / 0.197 in Module width 10 mm / 0.394 in Module width 15 mm / 0.591 in
---	-------------	---	-------------	---



3

Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Anti-reverse mating removable terminal block with CAGE CLAMP<sup>®</sup>,</b> version using jumper contact position in current bar, grey, module width 5 mm/0.197 in, suitable for all rail-mounted terminal blocks series 870 with jumper contact slots in current bar	<b>870-425</b>	100 (4 x 25)	<b>Removable terminal block with CAGE CLAMP<sup>®</sup>,</b> version using jumper contact position in current bar, grey, module width 5 mm/0.197 in, suitable for all rail-mounted terminal blocks series 870 with jumper contact slots in the current bar	<b>870-426</b>	100 (4 x 25)
			<b>Spacer module,</b> for bridging over terminal blocks, grey, module width 5 mm/0.197 in	<b>870-427</b>	100 (4 x 25)
			<b>Group marker carrier,</b> using jumper contact position in current bar		
			5 mm/0.197 in wide <b>870-184</b>		50
			10 mm/0.394 in wide <b>870-183</b>		50
			15 mm/0.591 in wide <b>870-182</b>		50
			<b>Attention!</b> <b>Ground (earth) conductor terminal blocks and double potential terminal blocks have no jumper contact slots!</b>		

## Accessories

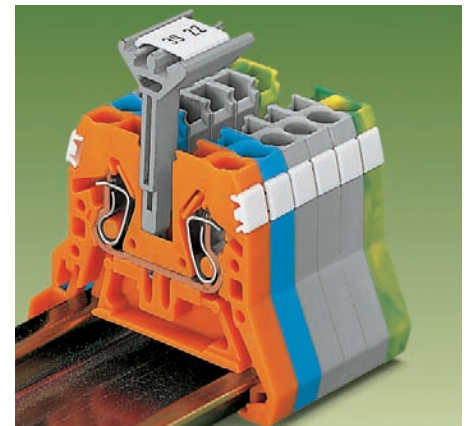
<b>Miniature WSB quick marking card,</b>  10 strips with 10 markers each, white with black printing see section 14 5 mm/0.197 in wide <b>248-5..</b> 5 cards	<b>Miniature WSB quick marking card,</b>  10 strips with 10 markers each, white with black printing see section 14 10 mm/0.394 in wide <b>264-9..</b> 5 cards
<b>WMB multi marking system,</b>  10 strips with 10 markers each, white with black printing see section 14 5 mm/0.197 in wide <b>793-5..</b> 5 cards	<b>WMB multi marking system,</b>  10 strips with 10 markers each, white with black printing see section 14 10 mm/0.394 in wide <b>793-5..</b> 5 cards
<b>Strain relief plate, grey</b>  can be snapped onto secondary connection modules 6 mm/0.236 in wide <b>734-327</b> 100 (4x25)	<b>Strain relief plate, grey</b>  can be snapped onto secondary connection modules 12.5 mm/0.492 in wide <b>734-328</b> 100 (4x25)
25 mm/0.984 in wide <b>734-329</b> 100 (4x25)	25 mm/0.984 in wide <b>734-329</b> 100 (4x25)
35 mm/1.38 in wide <b>734-326</b> 100 (4x25)	35 mm/1.38 in wide <b>734-326</b> 100 (4x25)

## Application notes

For additional-wire connections, as well as serial testing on terminal block assemblies, WAGO has developed special multi-pole modular removable terminal blocks.

The structure of the removable terminal block module can be specifically adapted to the terminal block assembly using spacer modules if necessary (see left page).

The connection of the modules is made directly in the jumper contact positions of the terminal blocks to be tested / tapped, even though a comb style jumper bar is already being used.

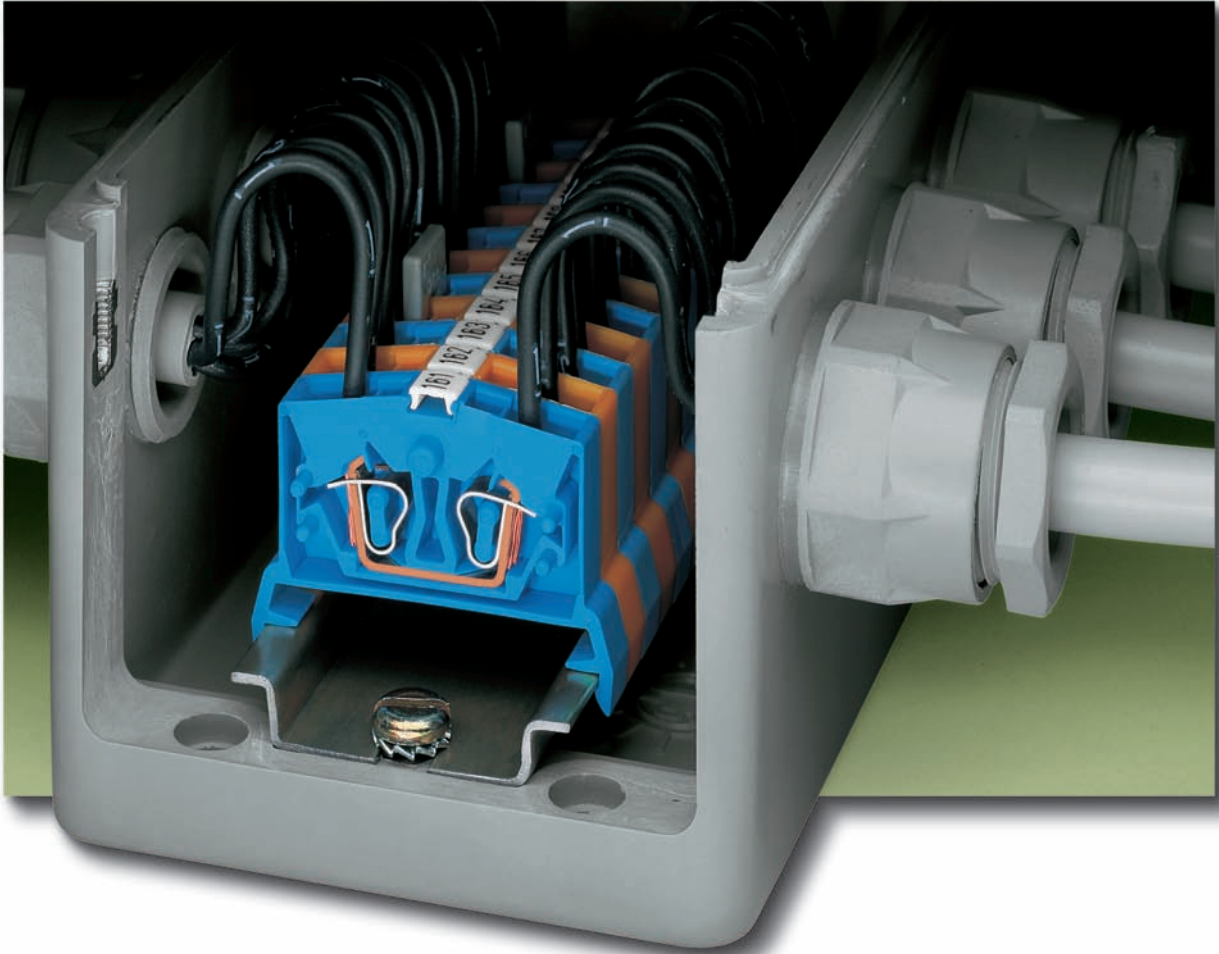


In addition to the plastic marker strips, group marker carriers are now available for the WMB and WSB marking systems. They can be mounted in parallel to a comb style jumper bar using the open jumper contact slot. It is also very useful if the marker receptacles on the side of the terminal block are hidden.

The marker carrier is available in 5 mm/0.197 in, 10 mm/0.394 in and 15 mm/0.591 in widths.

### Attention!

Marker carriers are not suitable for ground (earth) conductor terminal blocks and double potential terminal blocks as they have no jumper contact slots.



Ideal for confined spaces:  
WAGO miniature rail-mounted terminal blocks.





**Through terminal blocks and ground (earth) conductor terminal blocks**  
– for DIN 35 and DIN 15  
0.08 mm<sup>2</sup> to 2.5 mm<sup>2</sup> / AWG 28 – 12

Series 264 ..... 4.4 – 4.5

# Miniature Rail-Mounted Terminal Blocks, Series 264 – Product Summary –

## Series 264 Miniature through terminal blocks for DIN 35 rail



2- and 4-conductor terminal blocks  
mm<sup>2</sup>/AWG | 2.5  
Page | 4.4



2- and 4-conductor terminal blocks  
mm<sup>2</sup>/AWG | 2.5  
Page | 4.4

### Miniature through terminal blocks for DIN 35 rail for hazardous environments Ex i and Ex e II



2- and 4-conductor terminal blocks  
mm<sup>2</sup>/AWG | 2.5  
Page | 4.4

### Miniature ground (earth) conductor terminal blocks for DIN 35 rail



4-conductor terminal block  
mm<sup>2</sup>/AWG | 2.5  
Page | 4.4

## Series 264 Miniature through terminal blocks for DIN 15 rail



2- and 4-conductor terminal blocks  
mm<sup>2</sup>/AWG | 2.5  
Page | 4.5



2- and 4-conductor terminal blocks  
mm<sup>2</sup>/AWG | 2.5  
Page | 4.5

### Miniature through terminal blocks for DIN 15 rail for hazardous environments Ex i and Ex e II



2- and 4-conductor terminal blocks  
mm<sup>2</sup>/AWG | 2.5  
Page | 4.5

### Miniature ground (earth) conductor terminal blocks for DIN 15 rail

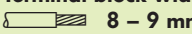
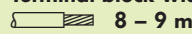


4-conductor terminal block  
mm<sup>2</sup>/AWG | 2.5  
Page | 4.5





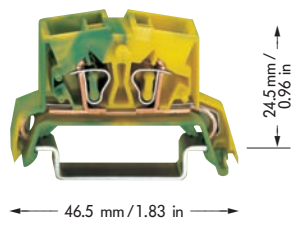
# Miniature Through/Ground (Earth) Conductor and Terminal Blocks 2.5 mm<sup>2</sup>/AWG 12 for DIN 35 Rail, Series 264

<b>0.08 – 2.5 mm<sup>2</sup></b> <b>800 V/8 kV/3 ①</b> <b>24 A</b> <b>Terminal block width 6 mm / 0.236 in</b>  <b>8 – 9 mm / 0.33 in</b> <small>* VDE KEH CCA KEH ① GL BV LR ② ③ ④</small>	<b>AWG 28 – 12</b> <b>600 V, 20 A ⑤</b> <b>600 V, 20 A ⑥</b> <b>Terminal block width 10 mm / 0.394 in</b>  <b>8 – 9 mm / 0.33 in</b> <small>* VDE KEH CCA KEH ① ② ③ ④ GL BV LR NV ⑤ ⑥</small>	<b>Accessories series 264 for DIN 35 rail</b>
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Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>2-conductor through terminal blocks, for DIN 35 rail</b>		<b>4-conductor through terminal blocks, for DIN 35 rail</b>	
grey <b>264-711</b> ①	100	grey <b>264-731</b> ①	100
blue <b>264-714</b> ②	100	blue <b>264-734</b> ②	100
orange <b>264-716</b> ③	100	orange <b>264-736</b> ③	100
light grey (Ex) <b>264-125</b> ④	100	light grey (Ex) <b>264-225</b> ④	100

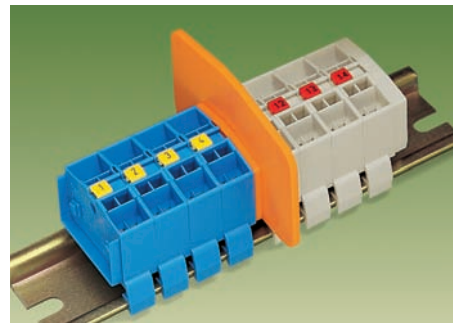
- ① 800 V = rated voltage  
8 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② Suitable for Ex i applications
- ④ Suitable for Ex e II applications  
0.5 – 2.5 mm<sup>2</sup> AWG 20 – 12  
750 V, 23 A  
(see also section 13)
- ③ Test current in case of touch contacting 0.5 A max., 6 A if the test pins are firmly connected in the clamping units.  
Max. test voltage 400 V/800 V only in test equipment, respecting relevant air and creepage distances. In case of touch contacting the max. test voltage must not exceed 48 V, test pins are not touchproof.
- ④ For marking possibilities see section 14.  
Direct printing of assemblies contact factory.



Item No.	Pack. unit pcs
<b>4-conductor ground (earth) term. bl., for DIN 35 rail</b>	
green-yellow <b>264-737</b> ⑤	100
green-yellow (Ex) <b>264-737/999-950</b> ④	100

## Application notes

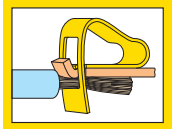
**Separator for Ex e/Ex i applications for miniature terminal blocks**  
 According to EN 50 020 a minimum distance of 50 mm must be kept between live parts of Ex e and Ex i circuits. When mounting Ex e and Ex i rail-mounted terminal blocks together on the same rail, offers a space saving solution to the problem by using the new Ex e/Ex separators. The separators are snapped onto the miniature rail-mounted terminal blocks and therefore cannot be removed independently from the carrier rail.



Item No.	Pack. unit pcs
<b>End and intermediate plate, 4 mm/0.157 in thick</b>	
orange <b>264-369</b>	25
grey <b>264-368</b>	25
light grey <b>264-370</b>	25
<b>Separator for Ex e/Ex i applications,</b>	
4 mm/0.157 in thick	
66 mm/2.598 in wide	
orange <b>264-367</b>	25
<b>Comb type jumper bar, insulated, I<sub>N</sub> 16 A, grey</b>	
2-way <b>264-402</b> 200 (8 x 25)	
reduce wire to 1.5 mm <sup>2</sup> /AWG 16 max.	
<b>Alternate comb type jumper bar, insulated,</b>	
I <sub>N</sub> = I <sub>N</sub> of terminal block	
for 2-conductor terminal blocks	
2-way <b>281-492</b>	100 (4 x 25)
<b>Alternate comb type jumper bar, insulated,</b>	
I <sub>N</sub> = I <sub>N</sub> of terminal block	
for 4-conductor terminal blocks	
2-way <b>280-492</b>	200 (8 x 25)
<b>Test plug modul, modular, see also page 10.15</b>	
test current 0.5 A/6 A ③	
for 2-conductor terminal blocks	
6 mm wide <b>249-136</b>	100 (4 x 25)
test voltage 400 V/48 V ③	
for 4-conductor terminal blocks	
10 mm wide <b>249-139</b>	100 (4 x 25)
test voltage 800 V/48 V ③	
<b>Test plug, with cable 500 mm/17.7"</b>	
2 mm Ø, red <b>210-136</b>	50 (5 x 10)
2.3 mm Ø, yel. <b>210-137</b>	50 (5 x 10)
<b>Operating tool, insulated,</b>	
for comp type jumper bar	
2-way <b>280-432</b>	1
<b>Miniature WSB quick marking card,</b>	
10 strips with 10 markers each,	
white with black printing	
see section 14	
<b>Screwless end stop, for DIN 35 rail</b>	
6 mm wide <b>249-116</b>	100 (4 x 25)
10 mm wide <b>249-117</b>	50 (2 x 25)
<b>Carrier rail DIN 35, 35 x 7.5 mm/1.38 x 0.30 in, 1 mm/0.039 in</b>	
thick, acc. to DIN EN 60715, steel, zinc plated a. yellow chromated, 2 m/6'6" long	
slotted <b>210-112</b>	10
<b>Carrier rail DIN 35, 35 x 7.5 mm/1.38 x 0.30 in, 1 mm/0.039 in</b>	
thick, acc. to DIN EN 60715, steel, zinc plated a. yellow chromated, 2 m/6'6" long	
unslotted <b>210-113</b>	10
<b>Carrier rail DIN 35, 35 x 7.5 mm/1.38 x 0.30 in, 1.5 mm/0.059 in</b>	
thick, acc. to DIN EN 60715, aluminum	
2 m/6'6" long	
unslotted <b>210-196</b>	10

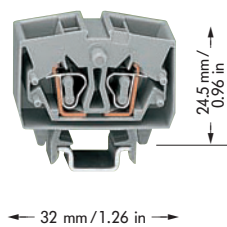
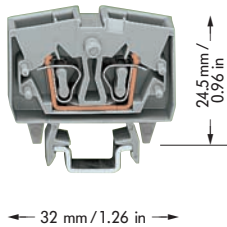
\* For further approvals with corresponding ratings see section 15.

# Miniature Through/Ground (Earth) Conductor and Terminal Blocks 2.5 mm<sup>2</sup>/AWG 12 for DIN 15 Rail, Series 264



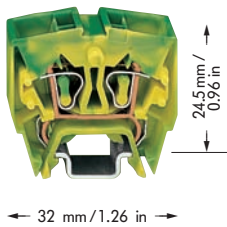
4  
5

<b>0.08 – 2.5 mm<sup>2</sup></b> <b>800 V/8 kV/3 ①</b> <b>24 A</b> <b>Terminal block width 6 mm / 0.236 in</b> <b>8 – 9 mm / 0.33 in</b> <small>* VDE KESHI CCAKEHI N S D P Q R T U V W X Y Z GL BV LR NV O P Q R S T U V W X Y Z</small>	<b>AWG 28 – 12</b> <b>600 V, 20 A ②</b> <b>600 V, 20 A ③</b> <b>Terminal block width 10 mm / 0.394 in</b> <b>8 – 9 mm / 0.33 in</b> <small>* VDE KESHI CCAKEHI N S D P Q R T U V W X Y Z GL BV LR NV O P Q R S T U V W X Y Z</small>	<b>Accessories series 264 for DIN 15 rail</b>
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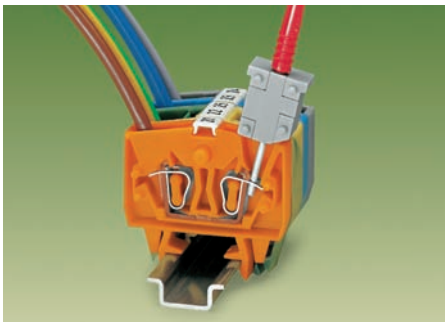
Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>2-conductor through terminal blocks, for DIN 15 rail</b>		<b>4-conductor through terminal blocks, for DIN 15 rail</b>	
grey <b>264-701</b> ●	100	grey <b>264-721</b> ●	100
blue <b>264-704</b> ●	100	blue <b>264-724</b> ●	100
orange <b>264-706</b> ●	100	orange <b>264-726</b> ●	100
light grey <b>264-120</b> ○	100	light grey <b>264-220</b> ○	100

- ① 800 V = rated voltage  
8 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② Suitable for Ex i applications
- ③ Suitable for Ex e II applications  
0.5 – 2.5 mm<sup>2</sup> AWG 20 – 12  
750 V, 23 A  
(see also section 13)
- ④ Test current in case of touch contacting 0.5 A max., 6 A if the test pins are firmly connected in the clamping units.  
Max. test voltage 400V/800V only in test equipment, respecting relevant air and creepage distances. In case of touch contacting the max. test voltage must not exceed 48V, test pins are not touchproof.
- ⑤ For marking possibilities see section 14.  
Direct printing of assemblies contact factory.



Item No.	Pack. unit pcs
<b>4-conductor ground (earth) term. bl., for DIN 15 rail</b>	
green-yellow <b>264-727</b> ●	100
green-yellow <b>264-727/999-950</b> ●	100

## Application notes



Testing using CAGE CLAMP® connection on the current bar – max. nominal current 6 A. The CAGE CLAMP® clamps individual test contacts.



Testing with touch contact at the CAGE CLAMP® connection made of spring steel – limited to a current of 0.5 A max.

Item No.	Pack. unit pcs
<b>End and intermediate plate, 4 mm/0.157 in thick</b>	
orange <b>264-369</b>	25
grey <b>264-368</b>	25
light grey <b>264-370</b>	25
<b>Separator for Ex e/Ex i applications,</b>	
4 mm/0.157 in thick	
66 mm/2.598 in wide	
orange <b>264-367</b>	25
<b>Comb type jumper bar, insulated, I<sub>N</sub> 16 A, grey</b>	
2-way <b>264-402</b> 200 (8 x 25)	
reduce wire to 1.5 mm <sup>2</sup> /AWG 16 max.	
<b>Alternate comb type jumper bar, insulated,</b>	
I <sub>N</sub> = I <sub>N</sub> of terminal block	
for 2-conductor terminal blocks	
2-way <b>281-492</b> 100 (4 x 25)	
<b>Alternate comb type jumper bar, insulated,</b>	
I <sub>N</sub> = I <sub>N</sub> of terminal block	
for 4-conductor terminal blocks	
2-way <b>280-492</b> 200 (8 x 25)	
<b>Test plug modul, modular, see also page 10.15</b>	
test current 0.5 A/6 A ③	
for 2-conductor terminal blocks	
6 mm wide <b>249-136</b> 100 (4 x 25)	
test voltage 400 V/48 V ③	
for 4-conductor terminal blocks	
10 mm wide <b>249-139</b> 100 (4 x 25)	
test voltage 800 V/48 V ③	
<b>Test plug, with cable 500 mm/17.7"</b>	
2 mm Ø, red <b>210-136</b> 50 (5 x 10)	
2.3 mm Ø, yel. <b>210-137</b> 50 (5 x 10)	
<b>Operating tool, insulated,</b>	
for comp type jumper bar	
2-way <b>280-432</b> 1	
<b>Miniature WSB quick marking card,</b>	
10 strips with 10 markers each,	
white with black printing	
see section 14	
<b>Screwless end stop, for DIN 15 rail</b>	
6 mm wide <b>249-101</b> 25	
<b>Carrier rail DIN 15, 15 x 5.5 mm/0.59 x 0.217 in, 1 mm/0.039 in</b>	
thick, acc. to DIN EN 60715, steel, zinc plated a. yellow chromated, 2 m/6'6" long	
slotted <b>210-111</b> 1	
<b>Carrier rail DIN 15, 15 x 5.5 mm/0.59 x 0.217 in, 1 mm/0.039 in</b>	
thick, acc. to DIN EN 60715, steel, zinc plated a. yellow chromated, 2 m/6'6" long	
unslotted <b>210-295</b> 1	
<b>Carrier rail DIN 15, 15 x 5.5 mm/0.59 x 0.217 in/ 1 mm/0.039 in</b>	
thick, acc. to DIN EN 60715, aluminum,	
2 m/6'6" long	
unslotted <b>210-296</b> 1	

\* For further approvals with corresponding ratings see section 15.



**Through terminal blocks**

0.08 mm<sup>2</sup> to 35 mm<sup>2</sup> / AWG 28 – 2

Series 780 – 785

**Ground (earth) conductor terminal blocks**

0.08 mm<sup>2</sup> to 35 mm<sup>2</sup> / AWG 28 – 2

Series 780 – 785

**Shield (screen) terminal blocks**

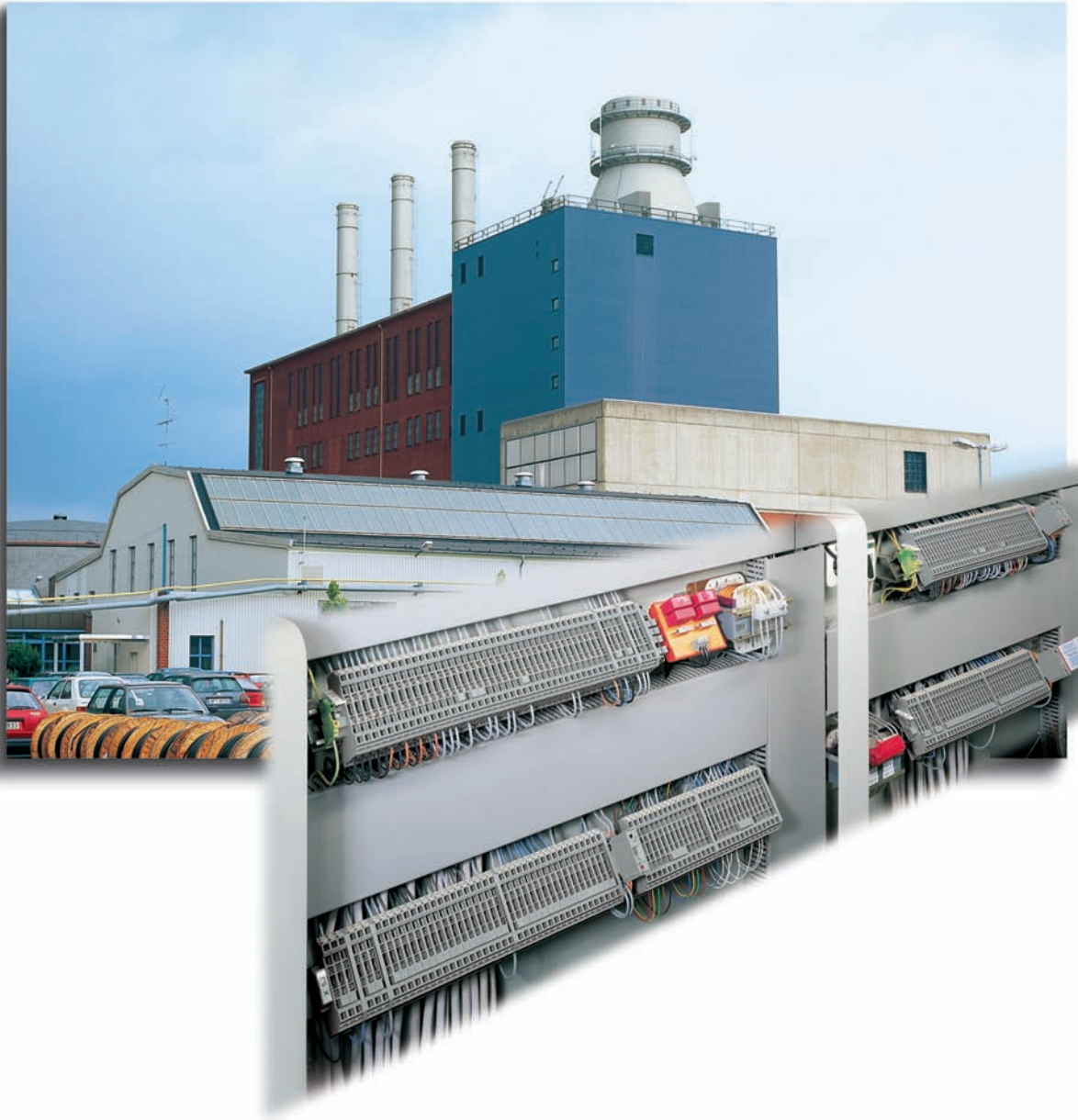
0.08 mm<sup>2</sup> to 2,5 mm<sup>2</sup> / AWG 28 – 12

Series 780

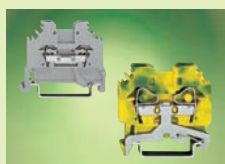


see Full Line Catalog W4, Volume 1, Section 5 (German version)

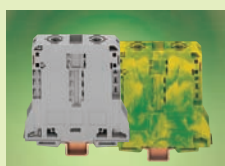




For more than 20 years, the WAGO rail-mounted side-entry terminal blocks (as well as WAGO disconnect terminal blocks for test and measurement) with CAGE CLAMP® connection technology, have been providing safe connections.



**Through terminal blocks and ground (earth) conductor terminal blocks**  
 0.08 mm<sup>2</sup> to 16 mm<sup>2</sup> / AWG 28 – 6                      Series 279 – 283                      6.6 – 6.7



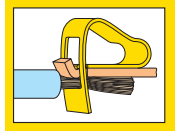
**High current terminal blocks**  
 25 mm<sup>2</sup> – 95 mm<sup>2</sup> / AWG 4 – 000                      Series 285                      2.22 – 2.24



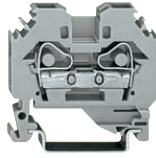
**Accessories**

- Busbar terminal blocks                      11.20 – 11.21
- Comb type jumper bars                      2.44
- Insulation stops                      2.43
- Wire jumpers                      2.45
- Test plug modules                      2.38 – 2.41
- Step-down jumpers for through terminal blocks                      6.3
- Staggered jumpers                      2.45

# 6 Rail-Mounted Terminal Blocks – Product Summary –



## Series 279 – 284 Through terminal blocks



2-conductor terminal blocks						
mm <sup>2</sup> /AWG	1.5/16	2.5/12	4/12	6/10	10/8	16/6
Page	6.	6	6	6	7	7

## Series 279 – 282 Ex i through terminal blocks



2-conductor terminal blocks				
mm <sup>2</sup> /AWG	1.5/16	2.5/12	4/12	6/10
Page	6.	6	6	6

## Series 279 – 284 Ground (earth) conductor terminal blocks



2-conductor terminal blocks					
mm <sup>2</sup> /AWG	2.5/12	4/12	6/10	10/8	16/6
Page	6.	6	6	7	7

## Accessories (selection)



Adjacent jumpers  
Page 6.6



Alternate jumper  
Page 6.6



Protective warning marker  
Page 6.6



Insulation stops  
Page 2.43



Step-down jumper  
Page 6.3



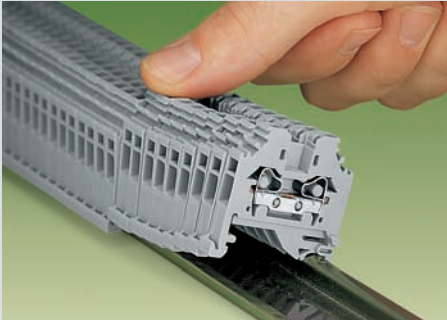
Comb type jumper bar  
Page 2.44



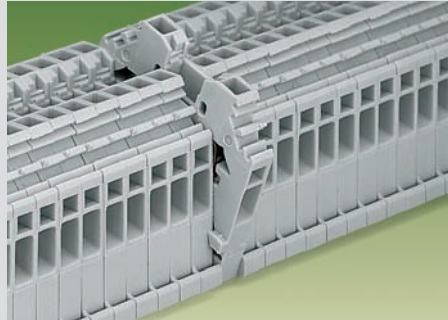
# Rail-Mounted Terminal Blocks with CAGE CLAMP® Series 279 to 283

Continued →

## Assembly

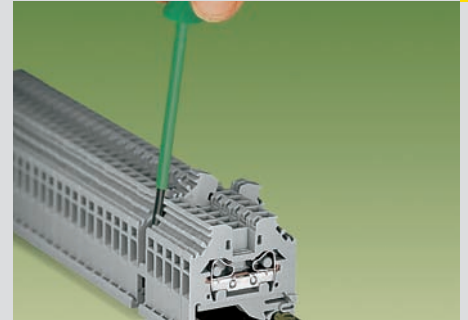


Snapping rail-mounted terminal blocks with side-entry wiring onto the carrier rail

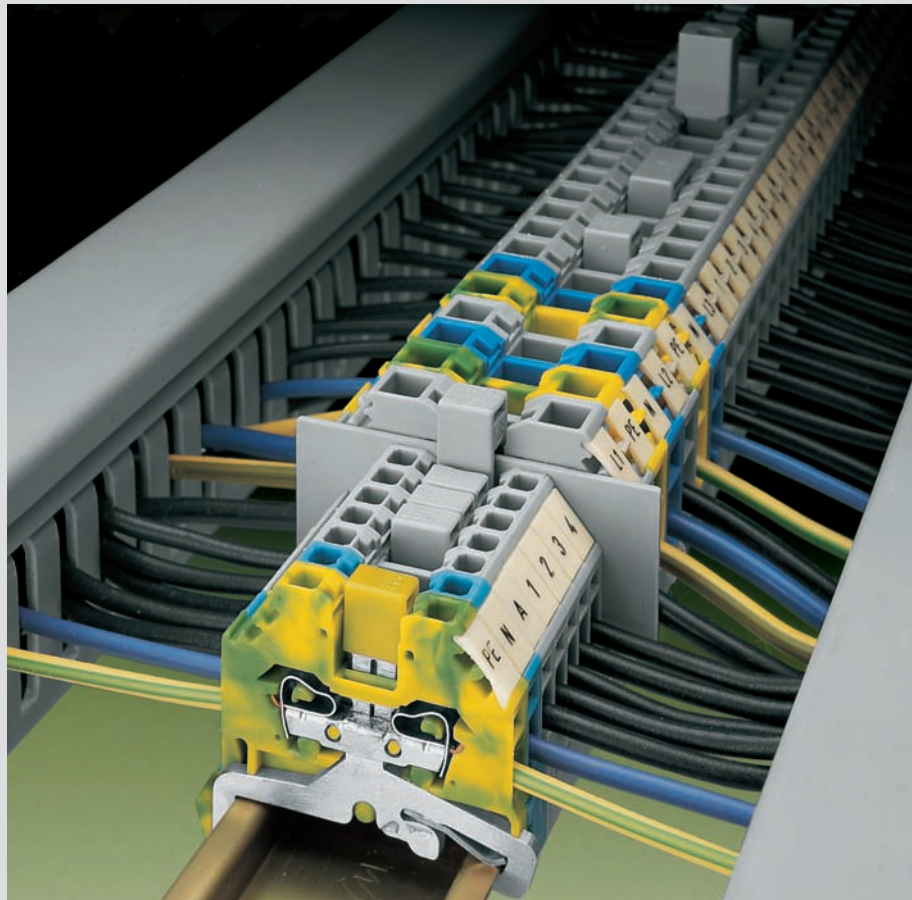


Quick assembly keys prevent reverse mounting

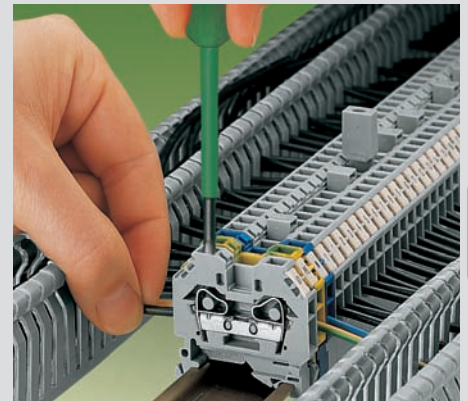
## Removal



Removal from the carrier rail

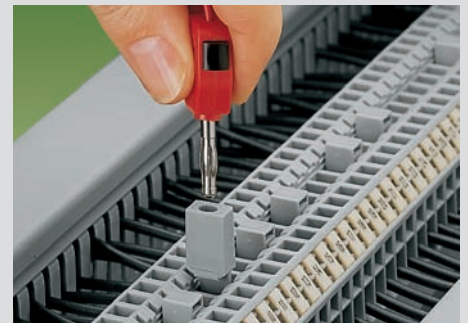


## CAGE CLAMP® connection



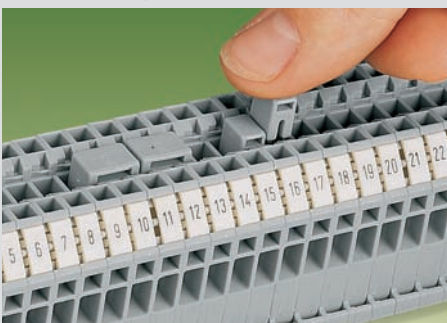
Connection of wires

## Testing



Testing with test plug adapter

## Commoning



Commoning with adjacent jumpers. Push jumper down **FIRMLY** until **FULLY** inserted!

## Commoning with step-down jumpers

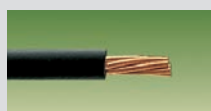


Commoning of side-entry rail-mounted terminal blocks with step-down jumpers



CAGE CLAMP® clamps the following copper wires:\*

solid



stranded

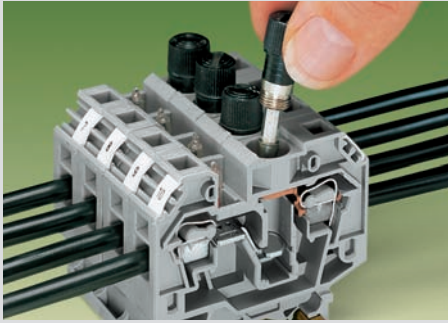


fine stranded, also with tinned single strands

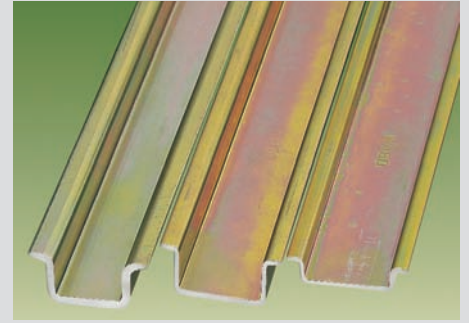
\* For aluminum wire see notes in section 15!

# Rail-Mounted Terminal Blocks with CAGE CLAMP® Series 279 to 283

## Fuse terminal blocks

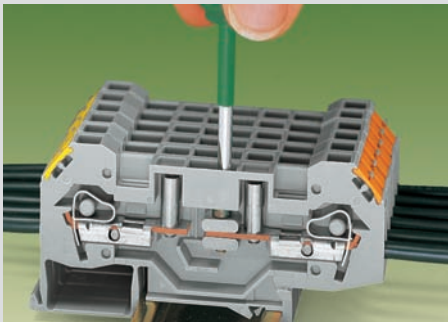


Replacing a fuse

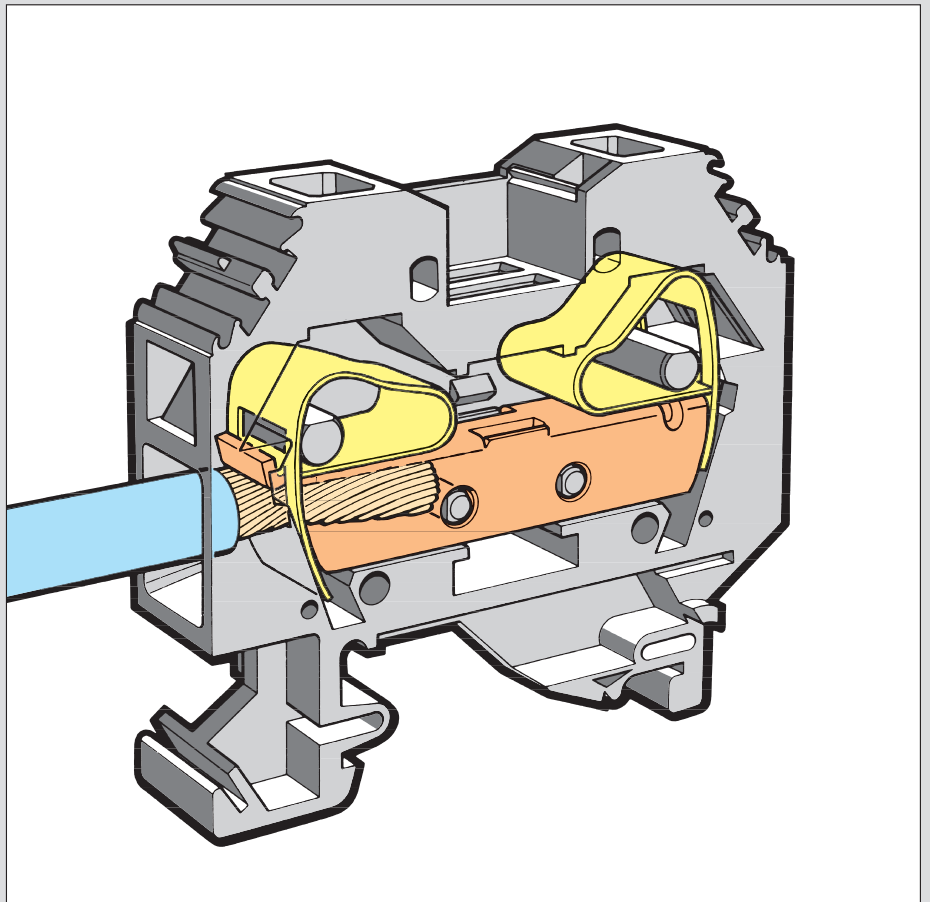


Suitable for all carrier rails DIN 35

## Disconnect terminal blocks for test purposes



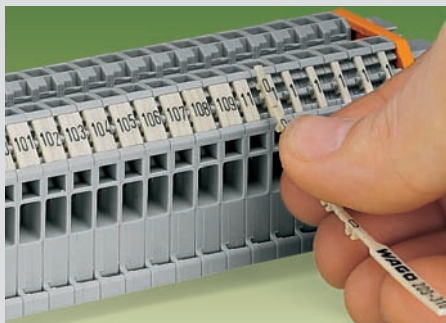
Shifting the disconnect slide link



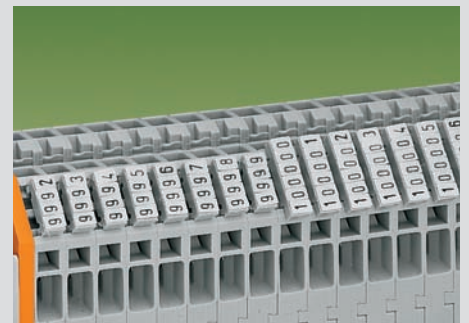
## Marking



Marking with WMB Multi marking system or WSB Quick marking system



Marking with marker branches



Marking with marker carriers and marker tags



**CAGE CLAMP®**  
clamps the following  
copper wires:  
fine-stranded wire –  
tip bonded



fine-stranded wire  
with crimped ferrule ❶

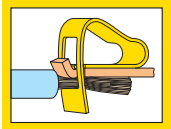


fine-stranded wire  
with crimped pin terminal

❶ When using conductors with ferrules, it is necessary to use a terminal block one size larger than the nominal cross section of the conductor



# Step-Down Jumpers for Through Terminal Blocks, Side-Entry



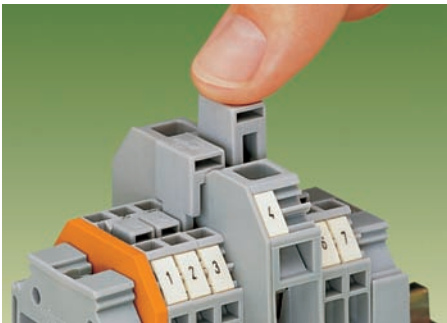
	<p><b>Step-down jumpers f. commoning term. bl.</b>  <b>10/6 mm<sup>2</sup>/AWG 8/10 →</b>  <b>4/2.5/1.5 mm<sup>2</sup>/AWG 12/14/16</b>  <b>800 V/8 kV/3; 15 A or</b>  <b>10/6 mm<sup>2</sup>/AWG 8/10 →</b>  <b>6/4 mm<sup>2</sup>/AWG 10/12</b>  <b>800 V/8 kV/3; 30 A</b></p>	<p><b>Step-down jumper for commoning terminal blocks</b>  <b>16 mm<sup>2</sup>/AWG 6 → 4 mm<sup>2</sup>/AWG 12</b>  <b>800 V/8 kV/3</b>  <b>32 A</b></p>
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Side-entry terminal blocks and front-entry terminal blocks cannot be commoned with step-down jumpers. Commoning front-entry terminal blocks with step-down jumpers see pages 2.26 – 2.27.



Description	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Step-down jumper, insulated</b>	<b>10/6 mm<sup>2</sup>/AWG 8/10 →</b> <b>4/2.5/1.5 mm<sup>2</sup>/AWG 12/14/16</b>		<b>16 mm<sup>2</sup>/AWG 6 → 4 mm<sup>2</sup>/AWG 12</b>	
	$I_N$ 15 A, grey	<b>284-414</b>	$I_N$ 32 A, grey	<b>283-414</b>
		50 (2 x 25)		50 (2 x 25)
	<b>10/6 mm<sup>2</sup>/AWG 8/10 → 6/4 mm<sup>2</sup>/AWG 10/12</b>			
	$I_N$ 30 A, grey	<b>284-413</b>		
		50 (2 x 25)		
<b>Accessories</b>				
	<b>Cover plate</b>	1 mm/0.039 in thick	1 mm/0.039 in thick	
		grey <b>284-333</b>	grey <b>283-333</b>	100 (4 x 25)
		orange <b>284-343</b>	orange <b>283-335</b>	100 (4 x 25)
	<b>Intermediate plate, for terminal blocks 4/2.5/1.5 mm<sup>2</sup>/AWG 12/14/16 only</b>	1 mm/0.039 in thick		
		grey <b>281-333</b>		100 (4 x 25)
		orange <b>281-336</b>		100 (4 x 25)

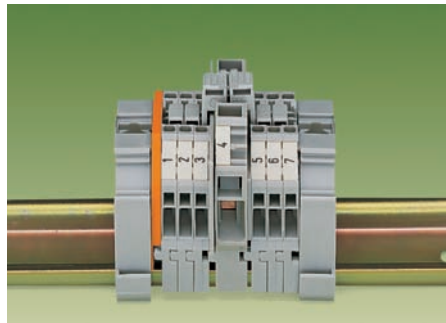
## Application notes



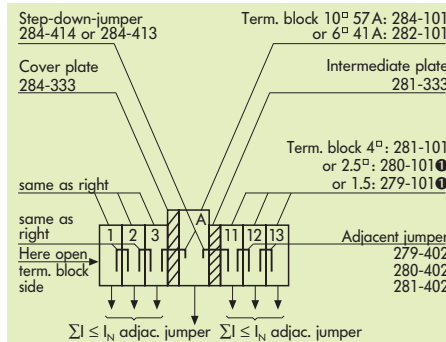
Step-down jumpers may be used for commoning terminal blocks ❶ of different sizes, without losing a conductor clamping point. This can be an advantage on long conductor runs where voltage drop can be a problem. A large conductor can be easily connected to smaller wires at the distribution point.

Step-down jumpers are simply pushed down to full insertion, in the same way as all other push-in jumpers. Commoning may be made in either direction using the special thin end plate to cover the open side. Further terminal blocks of the smaller cross section may be commoned using standard adjacent jumpers. In this case pay attention that:

1. the total current flowing does not exceed the rating of the step-down jumper
2. the standard or special thin end plate is applied to the open side of the larger block.

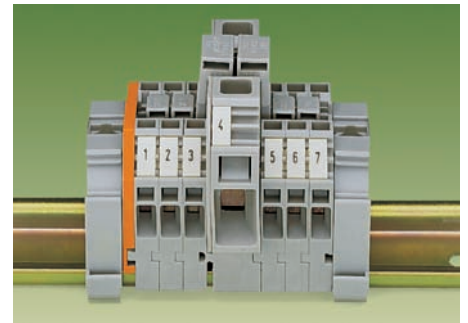


Commoning of rail-mounted terminal blocks 6 mm<sup>2</sup> / AWG 10 (series 282) with rail-mounted terminal blocks 1.5 mm<sup>2</sup>/AWG 16 (series 279).

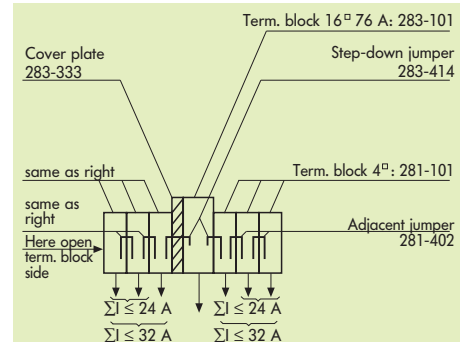


Example of assembly "Commoning of side-entry rail-mounted terminal blocks 10/6 mm<sup>2</sup>/AWG 8/10 with side-entry rail-mounted terminal blocks 4/2.5/1.5 mm<sup>2</sup>/AWG 12/14/16 with step-down jumper 284-414."

❶ Commoning of side-entry rail-mounted terminal blocks 10 mm<sup>2</sup>/AWG 8, item no. 284-101, with 2.5 mm<sup>2</sup>/AWG 14, item no. 280-101, or with 1.5 mm<sup>2</sup>/AWG 16, item no. 279-101, in direction of rear side is not possible (see example: terminal block A with terminal block 11).



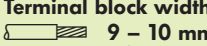


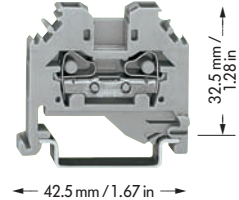
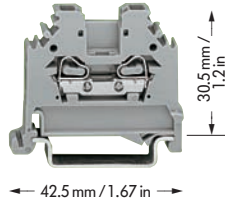
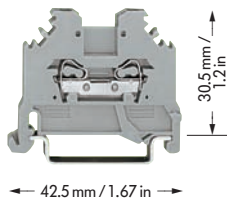
Commoning of rail-mounted terminal blocks 16 mm<sup>2</sup> / AWG 6 (series 283) with rail-mounted terminal blocks 4 mm<sup>2</sup>/AWG 12 (series 281).



Example of assembly "Commoning of rail-mounted terminal blocks 16 mm<sup>2</sup>/AWG 6 with rail-mounted terminal blocks 4 mm<sup>2</sup>/AWG 12 with step-down jumper 283-414."

# Through and Ground (Earth) Conductor Terminal Blocks 1.5 mm<sup>2</sup> to 16 mm<sup>2</sup> / AWG 16 – 6, Series 279 bis 283

<b>0.08 – 1.5 mm<sup>2</sup></b> <b>800 V/8 kV/3 ①</b> <b>18 A</b> <b>Terminal block width 4 mm / 0.157 in</b>  <b>8 – 9 mm / 0.33 in</b> <small>* VDE KEH CCA KEH N SABS ULET GL BV LR NV</small>	<b>AWG 28 – 16</b> <b>600 V, 10 A ②</b> <b>600 V, 10 A ③</b>	<b>0.08 – 2.5 mm<sup>2</sup></b> <b>800 V/8 kV/3 ①</b> <b>24 A</b> <b>Terminal block width 5 mm / 0.197 in</b>  <b>8 – 9 mm / 0.33 in</b> <small>* VDE KEH CCA KEH N SABS ULET GL BV LR NV</small>	<b>AWG 28 – 12</b> <b>600 V, 20 A ②</b> <b>600 V, 20 A ③</b>	<b>0.08 – 4 mm<sup>2</sup></b> <b>800 V/8 kV/3 ①</b> <b>32 A</b> <b>Terminal block width 6 mm / 0.236 in</b>  <b>9 – 10 mm / 0.37 in</b> <small>* VDE KEH CCA KEH N SABS ULET GL BV LR NV</small>	<b>AWG 28 – 12</b> <b>600 V, 20 A ②</b> <b>600 V, 25 A ③</b>
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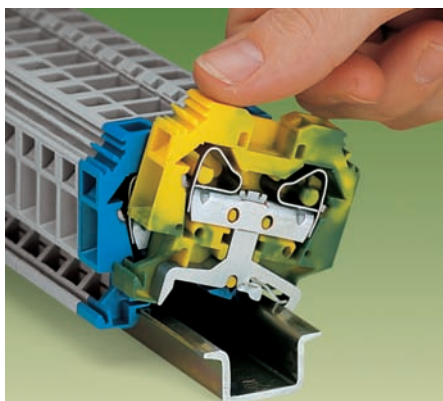
Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>2-conductor through terminal blocks</b>		<b>2-conductor through terminal blocks</b>		<b>2-conductor through terminal blocks</b>	
grey <b>279-101</b> ④	100	grey <b>280-101</b> ④	100	grey <b>281-101</b> ④	100
blue <b>279-104</b> ⑤	100	blue <b>280-104</b> ⑤	100	blue <b>281-104</b> ⑤	100
<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>		<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>		<b>End and intermediate plate, 3 mm/0.118 in thick</b>	
orange <b>280-302</b>	100 (4 x 25)	orange <b>280-302</b>	100 (4 x 25)	orange <b>281-302</b>	100 (4 x 25)
grey <b>280-301</b>	100 (4 x 25)	grey <b>280-301</b>	100 (4 x 25)	grey <b>281-301</b>	100 (4 x 25)
<b>Separator, oversized, 2 mm/0.079 in thick</b>		<b>Separator, oversized, 2 mm/0.079 in thick</b>		<b>Separator, oversized, 2 mm/0.079 in thick</b>	
orange <b>280-322</b>	100 (4 x 25)	orange <b>280-322</b>	100 (4 x 25)	orange <b>281-322</b>	100 (4 x 25)
grey <b>280-332</b>	100 (4 x 25)	grey <b>280-332</b>	100 (4 x 25)	grey <b>281-332</b>	100 (4 x 25)
<b>Accessories</b> Appropriate marking system <b>WMB/WSB</b> (see section 14)					
<b>Adjacent jumper, insulated, I<sub>N</sub> 15 A</b>		<b>Adjacent jumper, insulated, I<sub>N</sub> 24 A</b>		<b>Adjacent jumper, insulated, I<sub>N</sub> 32 A</b>	
grey <b>279-402</b>	200 (8 x 25)	grey <b>280-402</b>	200 (8 x 25)	grey <b>281-402</b>	200 (8 x 25)
yell.-green <b>279-422</b>	200 (8 x 25)	yell.-green <b>280-422</b>	200 (8 x 25)	yell.-green <b>281-422</b>	200 (8 x 25)
<b>Protective warning marker, for 5 terminal blocks, fits into screwdriver slot</b>		<b>Protective warning marker, for 5 terminal blocks, fits into screwdriver slot</b>		<b>Protective warning marker, for 5 terminal blocks, fits into screwdriver slot</b>	
yellow <b>279-415</b>	100 (4 x 25)	yellow <b>280-405</b>	100 (4 x 25)	yellow <b>281-405</b>	100 (4 x 25)
<b>Accessories series 279</b> see page 2.9		<b>Accessories series 280</b> see page 2.13		<b>Accessories series 281</b> see page 2.17	

## Application notes

Carrier rail	Item-No.	Current ⑥ acc. to [A]	mm <sup>2</sup> /AWG Cu
DIN 35 x 7.5 (steel)			
slotted	210-112	76	16/6
unslotted	210-113	76	16/6
DIN 35 x 15 (steel)			
1.5 mm/ 0.059 in thick	210-114	125	35/2
2.3 mm/ 0.091 in thick	210-118	125	35/2
DIN 35 x 7.5 (Alu)			
unslotted	210-196	76	16/6
DIN 35 x 15 (Cu) 2.3 mm/ 0.091 in thick	210-198	309	150/6/0

⑥ applies to rails of 1 m/3'3" length

If it is required to use standard carrier rails as ground (earth) conductor busbars, please refer to the **maximum current capacities** listed above.



Assembly on the carrier rail

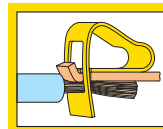
Ground (earth) conductor terminal blocks snap onto the rail like through terminals, but automatically make a direct electrical connection on the rail. Sliding on the rail is not then possible.




**When mounting on the rail, ensure that open sides of terminal blocks face in the same direction.**

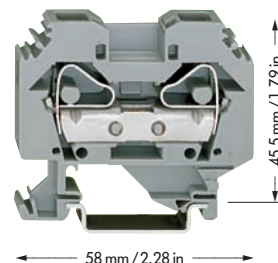
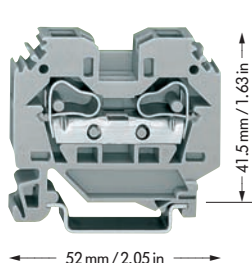
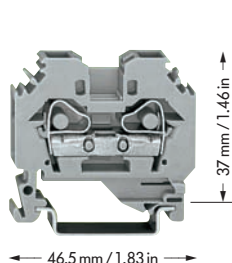
Visual control is possible, that all screwdriver removal slots are on the same side.

\* For further approvals with corresponding ratings see section 15.

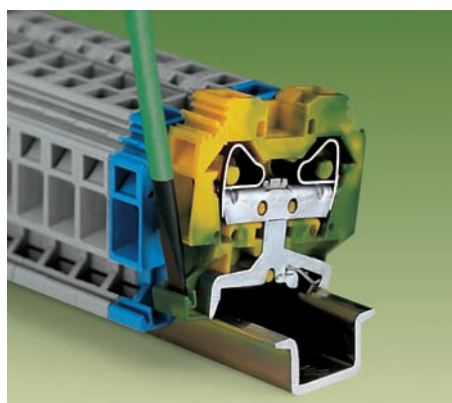




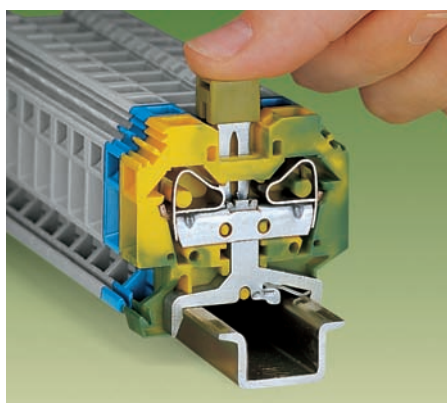
<b>0.2 – 6 mm<sup>2</sup></b> <b>800 V/8 kV/3 ①</b> <b>41 A</b> <b>Terminal block width 8 mm / 0.315 in</b>  <b>12 – 13 mm / 0.49 in</b> <small>* </small>	<b>AWG 24 – 10</b> <b>600 V, 30 A </b> <b>600 V, 40 A </b>	<b>0.2 – 10 mm<sup>2</sup></b> <b>800 V/8 kV/3 ①</b> <b>57 A</b> <b>Terminal block width 10 mm / 0.394 in</b>  <b>12 – 13 mm / 0.49 in</b> <small>* </small>	<b>AWG 24 – 8</b> <b>600 V, 50 A </b> <b>600 V, 65 A </b>	<b>0.2 – 16 mm<sup>2</sup></b> <b>800 V/8 kV/3 ①</b> <b>76 A</b> <b>Terminal block width 12 mm / 0.472 in</b>  <b>16 – 17 mm / 0.65 in</b> <small>* </small>	<b>AWG 24 – 6</b> <b>600 V, 65 A </b> <b>600 V, 90 A </b>
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Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>2-conductor through terminal blocks</b>		<b>2-conductor through terminal blocks</b>		<b>2-conductor through terminal blocks</b>	
grey <b>282-101</b>	50	grey <b>284-101</b>	50	grey <b>283-101</b>	50
blue <b>282-104</b>	50	blue <b>284-104</b>	50	blue <b>283-104</b>	50
<b>2-conductor ground (earth) terminal block</b>		<b>2-conductor ground (earth) terminal block</b>		<b>2-conductor ground (earth) terminal block</b>	
green-yellow <b>282-107</b>	50	green-yellow <b>284-107</b>	50	green-yellow <b>283-107</b>	50
<b>End and intermediate plate, 4 mm/0.157 in thick</b>		<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>		<b>End and intermediate plate, 4 mm/0.157 in thick</b>	
orange <b>282-302</b> 100 (4 x 25)		orange <b>284-302</b> 100 (4 x 25)		orange <b>283-302</b> 50 (2 x 25)	
grey <b>282-301</b> 100 (4 x 25)		grey <b>284-301</b> 100 (4 x 25)		grey <b>283-301</b> 50 (2 x 25)	
<b>Separator, oversized, 2 mm/0.079 in thick</b>		<b>Separator, oversized, 2 mm/0.079 in thick</b>		<b>Separator, oversized, 2 mm/0.079 in thick</b>	
orange <b>282-322</b> 100 (4 x 25)		orange <b>284-322</b> 100 (4 x 25)		orange <b>283-322</b> 50 (2 x 25)	
grey <b>282-332</b> 100 (4 x 25)		grey <b>284-332</b> 100 (4 x 25)		grey <b>283-332</b> 50 (2 x 25)	
Appropriate marking system <b>WMB/WSB</b> (see section 14)					
<b>Adjacent jumper, insulated, I<sub>N</sub> 41 A</b>		<b>Adjacent jumper, insulated, I<sub>N</sub> 57 A</b>		<b>Adjacent jumper, insulated, I<sub>N</sub> 70 A</b>	
grey <b>282-402</b> 100 (4 x 25)		grey <b>284-402</b> 100 (4 x 25)		grey <b>283-402</b> 50 (2 x 25)	
yell.-green <b>282-422</b> 100 (4 x 25)		yell.-green <b>284-422</b> 100 (4 x 25)		yell.-green <b>283-422</b> 50 (2 x 25)	
<b>Protective warning marker, for 5 terminal blocks, fits into screwdriver slot</b>		<b>Protective warning marker, for 5 terminal blocks, fits into screwdriver slot</b>		<b>Protective warning marker, for 5 terminal blocks, fits into screwdriver slot</b>	
yellow <b>282-405</b> 100 (4 x 25)		yellow <b>284-405</b> 50 (2 x 25)		yellow <b>283-405</b> 50 (2 x 25)	
<b>Accessories series 282</b> see page 2.18		<b>Accessories series 284</b> see page 2.19		<b>Accessories series 283</b> see page 2.20	
<b>Step down jumper</b> see page 6.5		<b>Step down jumper</b> see page 6.5		<b>Step down jumper</b> see page 6.5	



Removal from the carrier rail



Push jumper down FIRMLY until FULLY inserted!

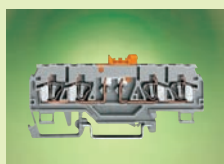
Commoning of ground (earth) conductor terminal blocks with through terminal blocks is possible in one direction only using adjacent jumpers. In addition to the required marking of these terminal blocks we recommend the use of the yellow-green adjacent jumpers to indicate ground (earth) connection.

- ① 800 V = rated voltage  
8 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② Suitable for Ex i applications

According to EN 60947-7-2 [VDE 0611, part 3] steel mounting rails may not be used for ground/earth (PEN) applications.



Withstanding heat and cold:  
WAGO rail-mounted terminal blocks  
up to 35 mm<sup>2</sup>/AWG 2!  
Disconnect terminal blocks for test and  
measurement in current transformer circuits  
and disconnect terminal blocks in outdoor  
distribution cabinets of a power station  
transformer substation.



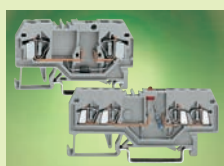
<b>Disconnect terminal blocks for test and measurement with knife disconnect</b>	<b>Series 280</b>	<b>7.8 – 7.9</b>
<b>Disconnect terminal blocks for test and measurement with disconnecting tab</b>	<b>Series 280/281</b>	<b>7.10 – 7.12</b>
<b>Disconnect terminal blocks for test and measurement of transformer circuits</b>	<b>Series 282</b>	<b>7.18 – 7.19</b>
<b>Transverse switching terminal blocks and longitudinal switching disconnect terminal blocks</b>	<b>Series 282</b>	<b>7.20 – 7.21</b>
<b>Ground (earth) conductor disconnect terminal blocks</b>	<b>Series 282</b>	<b>7.23 / 7.27</b>



<b>Fused disconnect terminal blocks with pivoting holder</b>	<b>Series 281</b>	<b>7.28 – 7.33</b>
<b>Fuse plugs for carrier terminal blocks</b>	<b>Series 280/281</b>	<b>7.34 – 7.35</b>
<b>Fuse terminal blocks for mini-automotive blade-type fuses</b>	<b>Series 282</b>	<b>7.24 – 7.25</b>
<b>Fuse terminal blocks (side-entry)</b>	<b>Series 282</b>	<b>7.36 – 7.37</b>
<b>Technical details fuse terminal blocks and pluggable fuse modules</b>		<b>7.38 – 7.39</b>



<b>Sensor and actuator terminal blocks</b>	<b>Series 270</b>	<b>7.41 – 7.43</b>
<b>Sensor and actuator terminal blocks</b>	<b>Series 280</b>	<b>7.46 – 7.55</b>



<b>Diode terminal blocks</b>	<b>Series 279/280/281</b>	<b>7.56 – 7.58</b>
<b>LED terminal blocks</b>	<b>Series 279/280</b>	<b>7.60 – 7.61</b>
<b>Double deck diode and LED terminal blocks</b>	<b>Series 280/281</b>	<b>7.62 – 7.63</b>
<b>Double deck diode and LED terminal blocks</b>	<b>Series 870</b>	<b>7.64 – 7.65</b>
<b>Pluggable modules - diodes, LED and neon indicators</b>	<b>Series 280</b>	<b>7.68 – 7.71</b>

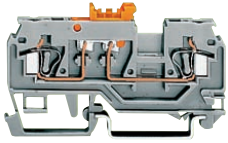


# Function Terminal Blocks

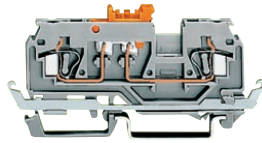
## Disconnect Terminal Blocks with CAGE CLAMP® Connection

### – Product Summary –

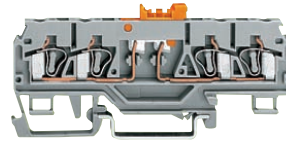
**Series 280** Disconnect terminal blocks for test and measurement, with knife disconnect and integrated test slot



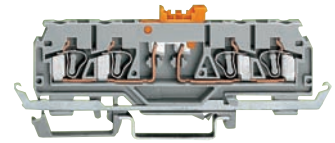
2-conductor terminal block  
mm<sup>2</sup>/AWG | 2.5/12  
Page 7. | 8



with shield (screen) contact  
mm<sup>2</sup>/AWG | 2.5/12  
Page 7. | 8

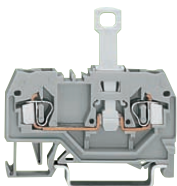


4-conductor terminal block  
mm<sup>2</sup>/AWG | 2.5/12  
Page 7. | 9

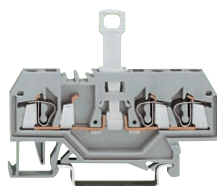


with shield (screen) contact  
mm<sup>2</sup>/AWG | 2.5/12  
Page 7. | 9

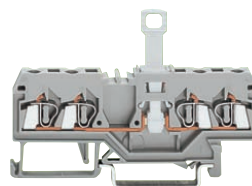
**Series 280/281** Disconnect terminal blocks with disconnect tab



2-conductor terminal blocks  
mm<sup>2</sup>/AWG | 2.5/12 | 4/12  
Page 7. | 10 - 11 | 12



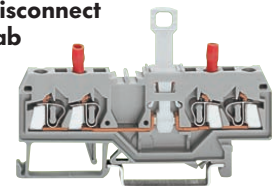
3-conductor terminal blocks  
mm<sup>2</sup>/AWG | 2.5/12 | 4/12  
Page 7. | 10 - 11 | 12



4-conductor terminal blocks  
mm<sup>2</sup>/AWG | 2.5/12 | 4/12  
Page 7. | 10 - 11 | 12

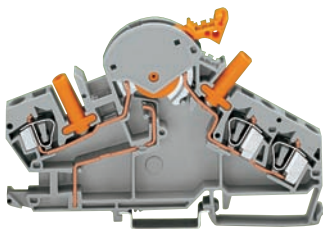
**Series 280/281**

Disconnect term. blocks for test and measurement, with disconnect tab

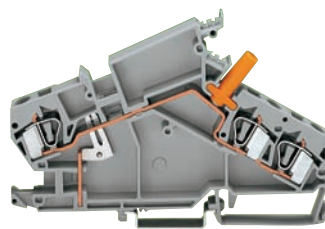


2-conductor terminal blocks  
mm<sup>2</sup>/AWG | 2.5/12 | 4/12  
Page 7. | 10 - 11 | 12

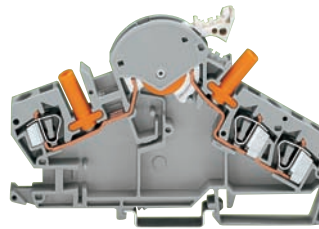
**Series 282** Disconnect terminal blocks for test and measurement, through terminal blocks



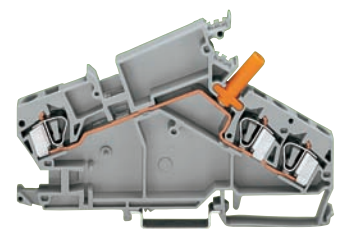
for example for current transformer circuits  
mm<sup>2</sup>/AWG | 6/10  
Page 7. | 18



mm<sup>2</sup>/AWG | 6/10  
Page 7. | 18



for example for voltage transformer circuits  
mm<sup>2</sup>/AWG | 6/10  
Page 7. | 19



mm<sup>2</sup>/AWG | 6/10  
Page 7. | 19

**Series 282** Transverse switching terminal blocks and longitudinal switching disconnect terminal blocks

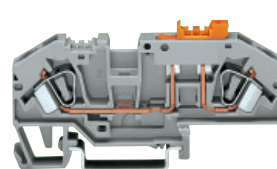


2-conductor transverse switching  
mm<sup>2</sup>/AWG | 6/10 terminal  
Page 7. | 21 blocks

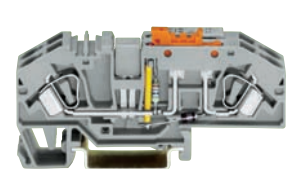


2-cond. longitudinal switching disconnect  
mm<sup>2</sup>/AWG | 6/10 terminal  
Page 7. | 21 blocks

**Series 282** Disconnect terminal blocks Ground (earth) conductor disconnect terminal blocks

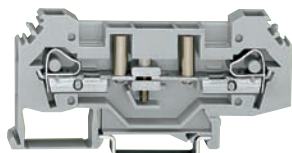


2-conductor terminal blocks  
mm<sup>2</sup>/AWG | 6/10  
Page 7. | 22



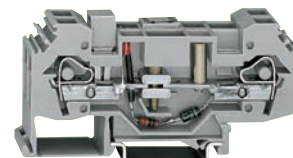
Ground (earth) conductor disconnect  
mm<sup>2</sup>/AWG | 6/10 terminal  
Page 7. | 23 blocks

**Series 282** Disconnect terminal blocks for test purposes



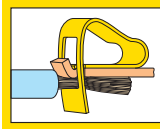
mm<sup>2</sup>/AWG | 6/10  
Page 7. | 26 - 27

**Series 282** Ground (earth) conductor disconnect terminal blocks



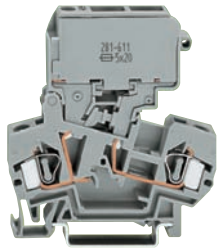
mm<sup>2</sup>/AWG | 6/10  
Page 7. | 27

# Fuse Terminal Blocks with CAGE CLAMP® Connection



7  
3

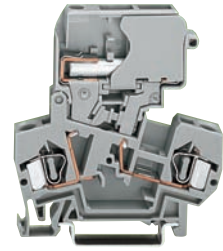
## Series 281 Fused disconnect terminal blocks with pivoting holder



without blown fuse indication  
mm<sup>2</sup>/AWG | 4/12  
Page 7. | 30/32



with blown fuse indication  
mm<sup>2</sup>/AWG | 4/12  
Page 7. | 30 - 33

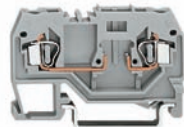


Disconnect terminal block  
mm<sup>2</sup>/AWG | 4/12  
Page 7. | 31

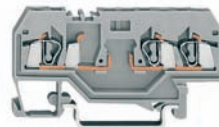
## Series 280/281 Fuse plugs for carrier terminal blocks



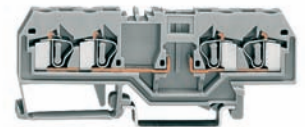
Pages 7.34 and 7.35



2-conductor terminal blocks  
mm<sup>2</sup>/AWG | 2.5/14 | 4/12  
Page 7. | 35 | 34



3-conductor terminal blocks  
mm<sup>2</sup>/AWG | 2.5/14 | 4/12  
Page 7. | 35 | 34



4-conductor terminal blocks  
mm<sup>2</sup>/AWG | 2.5/14 | 4/12  
Page 7. | 35 | 34

## Series 286 Fuse modules on carrier terminal blocks



see volume 3 "ELECTRONIC"

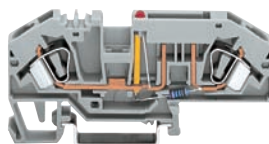


Carrier terminal block  
with 2-conductor terminal blocks  
see volume 3 "ELECTRONIC"

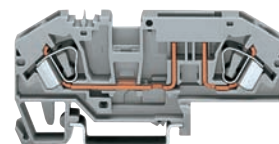


Carrier terminal block  
with 4-conductor terminal blocks  
see volume 3 "ELECTRONIC"

## Series 282 Fuse terminal blocks for mini-automotive blade-type fuses



with blown fuse indication  
mm<sup>2</sup>/AWG | 6/10  
Page 7. | 24



without blown fuse indication  
mm<sup>2</sup>/AWG | 6/10  
Page 7. | 25

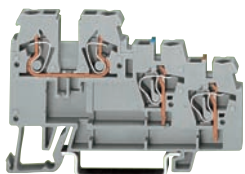
## Series 282 Fuse terminal blocks



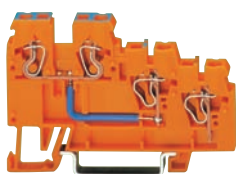
mm<sup>2</sup>/AWG | 6/10  
Page 7. | 36 - 37

7

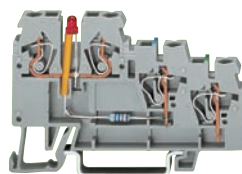
## Series 270 Sensor/actuator terminal blocks



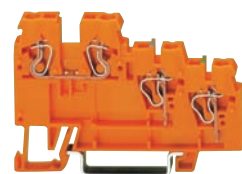
Sensor terminal blocks with/without LED and/or ground (earth)/shield (screen) connection  
Pages 7.41 – 7.42



Sensor supply terminal blocks with/without LED  
Pages 7.41 – 7.42



Actuator terminal blocks with/without LED with ground (earth)/shield (screen) connection  
Page 7.43

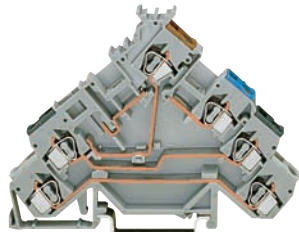


Actuator supply terminal blocks  
Page 7.43

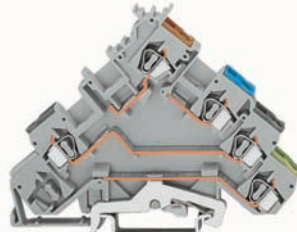
## Series 280 Sensor terminal blocks



for 3-conductor sensors  
mm<sup>2</sup>/AWG | 2.5/12  
Page 7. | 46 – 47



for fuse plugs  
mm<sup>2</sup>/AWG | 2.5/12  
Page 7. | 46

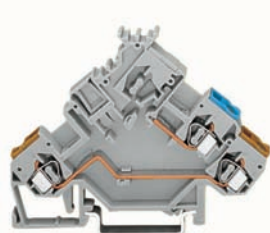


f. 3-conductor sensors w. ground (earth) connection  
mm<sup>2</sup>/AWG | 2.5/12  
Page 7. | 48 – 49

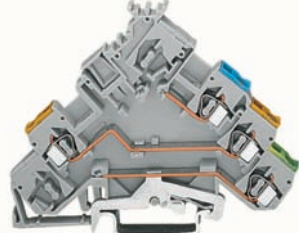


for 4-conductor sensors  
mm<sup>2</sup>/AWG | 2.5/12  
Page 7. | 49 – 50

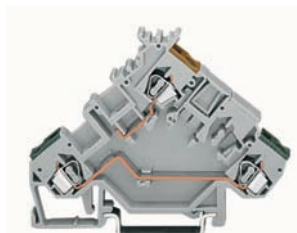
## Series 280 Actuator terminal blocks



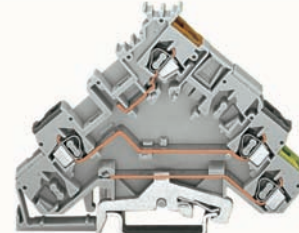
e.g. for magnetic valves etc.  
mm<sup>2</sup>/AWG | 2.5/12  
Page 7. | 54 – 55



e.g. for servomotors w. ground (earth) connection  
mm<sup>2</sup>/AWG | 2.5/12  
Page 7. | 54 – 55



e.g. for pressure switches etc.  
mm<sup>2</sup>/AWG | 2.5/12  
Page 7. | 52



e.g. for thermocouples etc.  
mm<sup>2</sup>/AWG | 2.5/12  
Page 7. | 52 – 53

## Accessories (selection)



Adjacent jumpers



Alternate jumper



Staggered jumper  
Page 2.45



Wire jumper  
Page 2.45



Comb type jumper bar  
Page 2.44



Insulation stops  
Page 2.43



Modular test plug  
Page 2.40



Test plug module  
Page 2.38



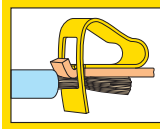
Test plug module  
Page 2.39



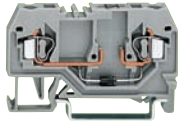
Test plugs  
Page 7.8



# Rail-Mounted Terminal Blocks with Electronic Components and CAGE CLAMP® Connection



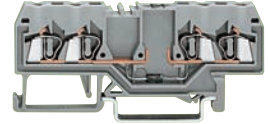
## Series 279 – 281 Diode terminal blocks



2-conductor terminal blocks  
mm<sup>2</sup>/AWG | 1.5/16 | 2.5/14 | 4/12  
Page 7. | 56 | 57 | 58

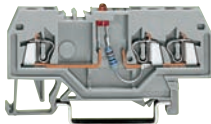


3-conductor terminal blocks  
mm<sup>2</sup>/AWG | 1.5/16 | 2.5/14 | 4/12  
Page 7. | 56 | 57 | 58

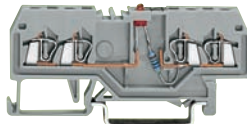


4-conductor terminal blocks  
mm<sup>2</sup>/AWG | 1.5/16 | 2.5/14 | 4/12  
Page 7. | 56 | 57 | 58

## Series 279/280 LED terminal blocks

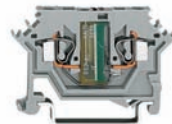


3-conductor terminal blocks  
mm<sup>2</sup>/AWG | 1.5/16  
Page 7. | 60



4-conductor terminal blocks  
mm<sup>2</sup>/AWG | 1.5/16 | 2.5/14  
Page 7. | 60 | 60 - 61

## Series 280 Variable resistor terminal blocks



mm<sup>2</sup>/AWG | 1.5/16  
Page 7. | 61

## Series 280/281 Double deck diode and LED terminal blocks



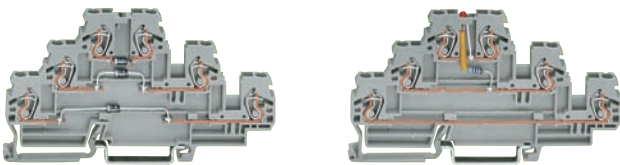
mm<sup>2</sup>/AWG | 2.5/14 | 4/12  
Page 7. | 62 - 63 | 62 - 63

## Series 870 Double deck diode and LED terminal blocks



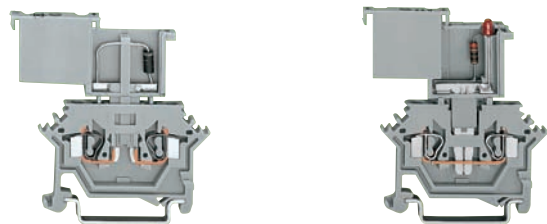
mm<sup>2</sup>/AWG | 2.5/4 "f-st" / 12  
Page 7. | 64 - 65

## Series 870 Triple deck diode and LED terminal blocks



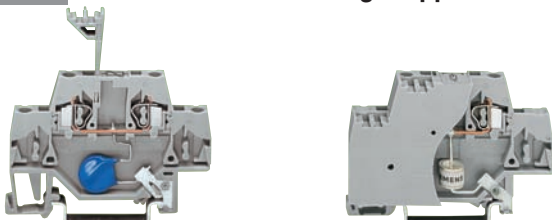
mm<sup>2</sup>/AWG | 2.5/4 "f-st" / 12  
Page 7. | 66 - 67

## Series 280 Pluggable modules - diodes, LED and neon indicators



mm<sup>2</sup>/AWG | 2.5/14  
Page 7. | 68 - 71

## Series 280 Terminal blocks with surge suppression



with varistor  
see volume 3 "ELECTRONIC"

with gas filled surge arrester  
see volume 3 "ELECTRONIC"

## Series 870 Terminal blocks with surge suppression

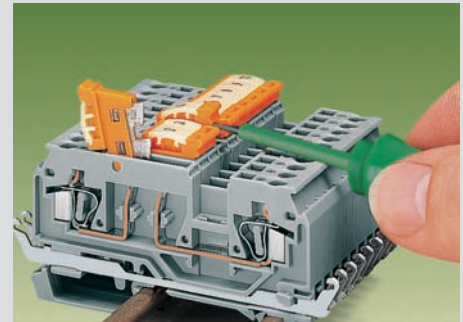
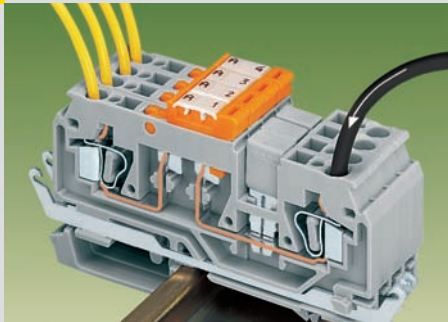


with gas filled surge arrester  
see volume 3 "ELECTRONIC"

with varistor  
see volume 3 "ELECTRONIC"

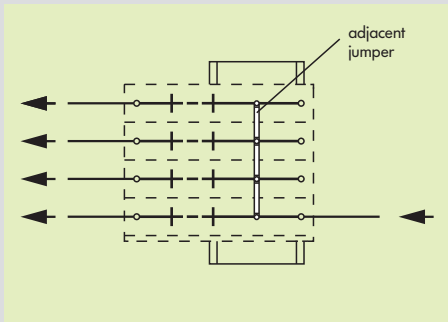
# Disconnect Terminal Blocks for Test and Measurement with CAGE CLAMP® ... Series 280 and 281

... with knife disconnect

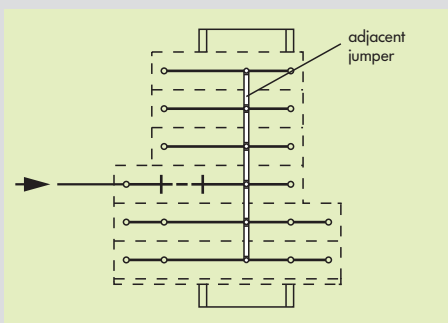
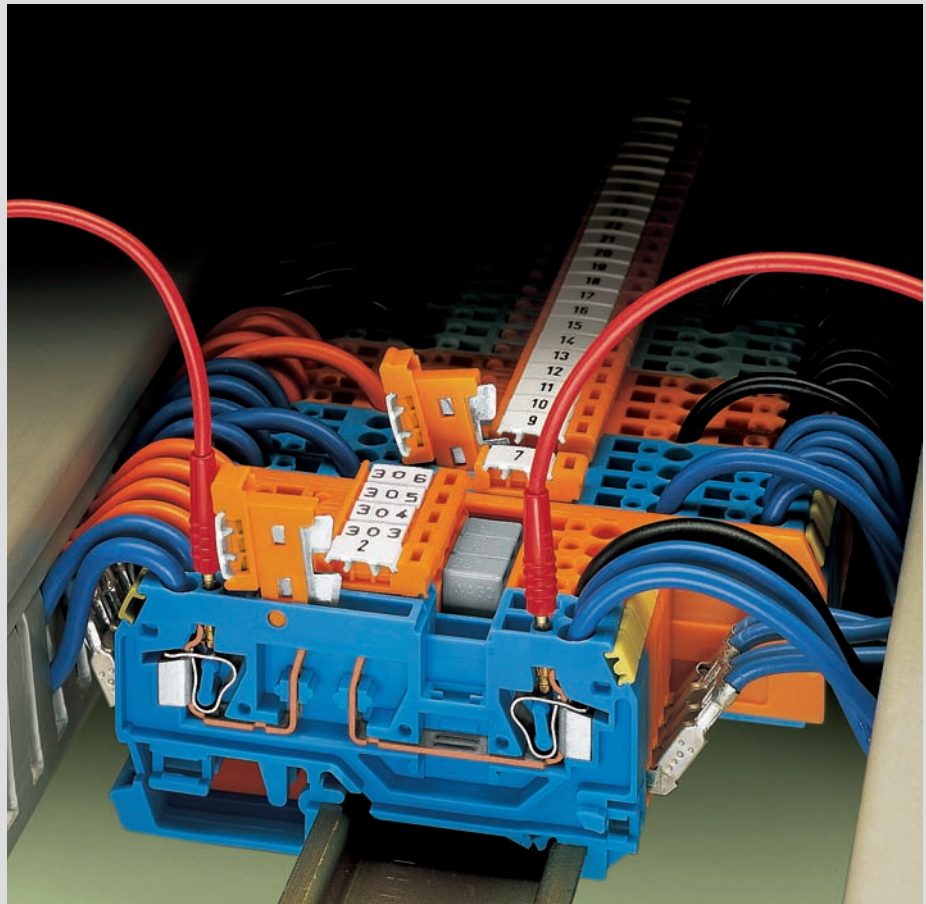


Movable knife disconnect clearly indicates the circuit state ...

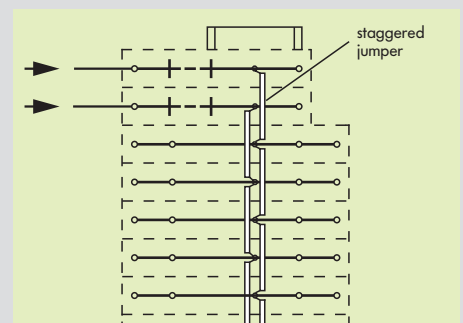
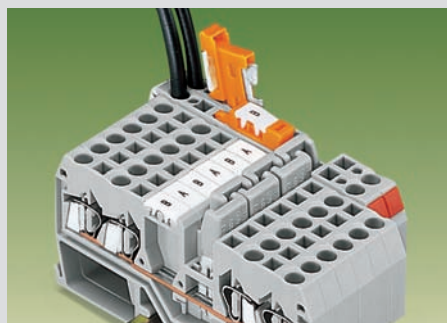
... by defined, notched positions "ON" ↔ "OFF"



Power distribution using commoning jumpers. Knife disconnect used to disconnect individual outputs.



Power distribution using knife disconnect in supply line, disconnection of all outputs.

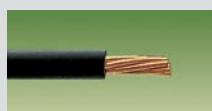


Staggered jumper for sophisticated wiring jobs. Push jumpers down FIRMLY until FULLY inserted.



CAGE CLAMP® clamps the following copper wires:\*

solid



stranded

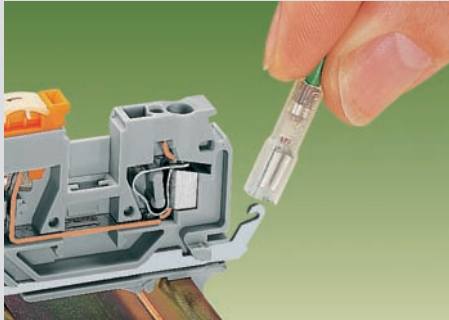


fine stranded, also with tinned single strands

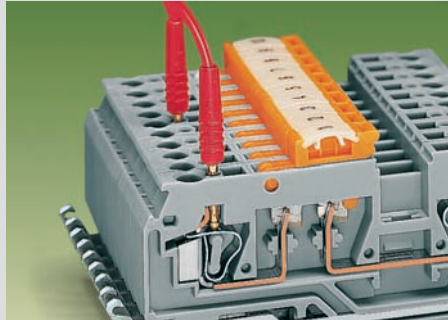
\* For aluminum wire see notes in section 15!



## ... Description and Handling

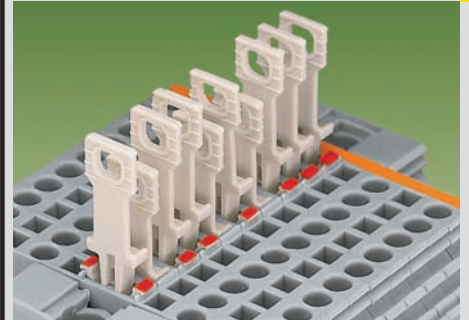


Shield (screen) contact:  
with solder/crimp quick disconnect terminal  
(2.8 x 0.8) mm

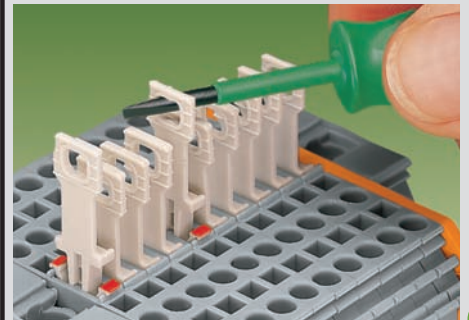
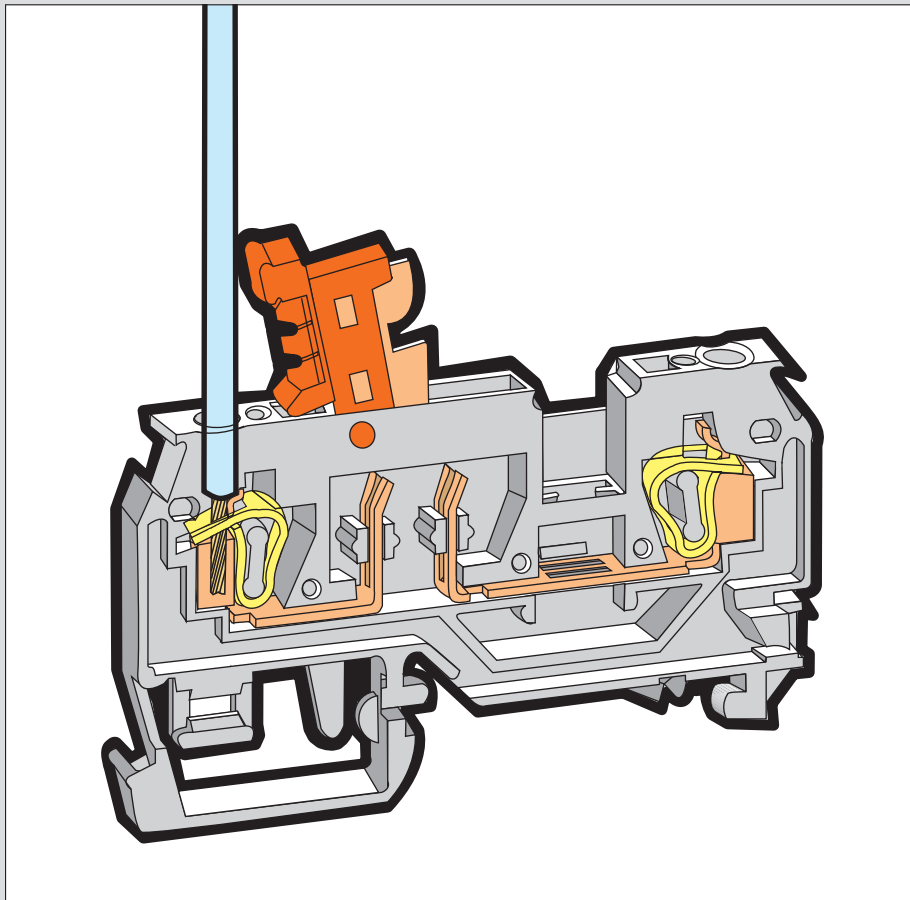


Test slot: for test plug  $\varnothing$  2 mm/0.079 in or  
 $\varnothing$  2.3 mm/0.091 in – with direct contact to  
the current bar

## ... with disconnect tab



Disconnect terminal block with colored tab to  
indicate the switching condition  
(red = disconnected)  
Disconnect lock see page 7.13



Pulling the disconnect tab with screwdriver



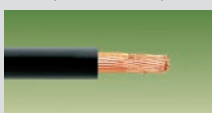
Pulling the disconnect tab by hand



Terminal bl. marking: with WSB Quick marking or  
WCB Combi marking (center position) and Miniature  
WSB (on the sides) – see also section 14 –.



Commoning with comb type jumper bars



fine-stranded wire –  
tip bonded



fine-stranded wire  
with crimped ferrule ❶

















fine-stranded wire  
with crimped pin terminal

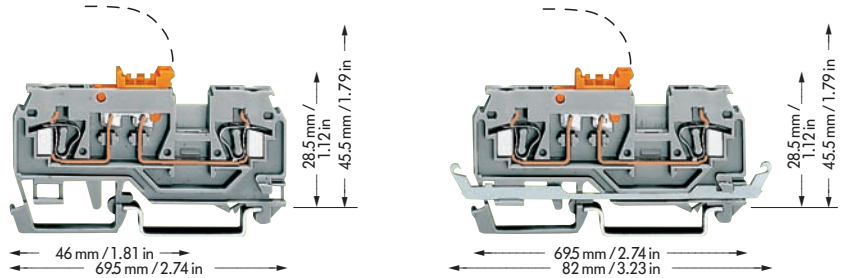
❶ When using wires with ferrules, it is necessary to use a terminal block one size larger than the nominal cross section of the wire.



# Disconnect Terminal Blocks for Test and Measurement with Knife Disconnect 2.5 mm<sup>2</sup> / AWG 12, Series 280

<p><b>0.08 – 2.5 mm<sup>2</sup></b>  <b>400 V/6 kV/3 ①</b>  <b>16 A</b></p> <p><b>AWG 28 – 12</b>  <b>600 V, 15 A ②</b>  <b>300 V, 15 A ③</b></p> <p><b>Terminal block width 5 mm / 0.197 in</b>   <b>8 – 9 mm / 0.33 in</b></p> <p>*      </p>	<p><b>0.08 – 2.5 mm<sup>2</sup></b>  <b>250 V/4 kV/3 ①</b>  <b>16 A</b></p> <p><b>AWG 28 – 12</b>  <b>600 V, 15 A ②</b>  <b>300 V, 15 A ③</b></p> <p><b>Terminal block width 5 mm / 0.197 in</b>   <b>8 – 9 mm / 0.33 in</b></p> <p>*      </p>
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- ① 400/250 V = rated voltage  
 6/4 kV = rated surge voltage  
 3 = pollution degree  
 (see also section 15)
- ② Suitable for Ex i applications
- ③ See application notes on pages 2.38 – 2.45



Description	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs		
<b>Disconnect terminal block for test and measurement with knife disconnect, with test plug Ø 2 mm/0.079 in and Ø 2.3 mm/0.091 in, for DIN 35 rail</b>	<b>2-cond. disc. term. blocks for test and measur.</b>		<b>2-conductor disconnect terminal blocks for test and measurement with shield (screen) connection</b>			
	term. block	knife	term. block	knife		
	housing	disconnect	housing	disconnect		
	grey	orange <b>280-870</b>	100	grey	orange <b>280-871</b>	50
	grey	grey <b>280-868</b>	100	grey	grey <b>280-869</b>	50
blue	orange <b>280-876</b>	100	orange	orange <b>280-880</b>	50	
orange	orange <b>280-879</b>	100				

### Accessories

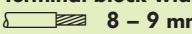








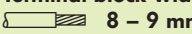









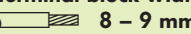



Appropriate marking system **WMB/WSB** or **Miniature WSB** (see section 14)

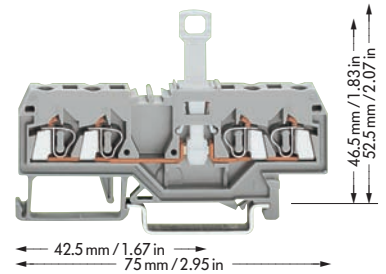
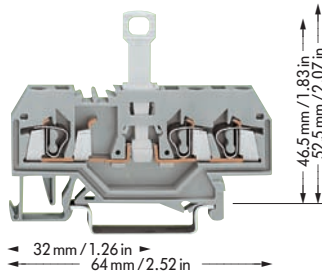
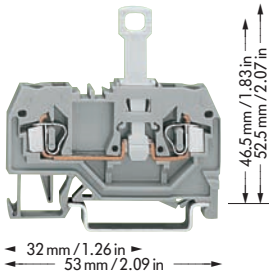
	<b>End and intermediate plate</b>	2.5 mm / 0.098 in thick			2.5 mm / 0.098 in thick			
	orange	<b>280-371</b>	100 (4 x 25)		orange	<b>280-371</b>	100 (4 x 25)	
	grey	<b>280-374</b>	100 (4 x 25)		grey	<b>280-374</b>	100 (4 x 25)	
	<b>Screwless end stop</b>	6 mm / 0.236 in wide	<b>249-116</b>	100 (4 x 25)	6 mm / 0.236 in wide	<b>249-116</b>	100 (4 x 25)	
		10 mm / 0.394 in wide	<b>249-117</b>	50 (2 x 25)	10 mm / 0.394 in wide	<b>249-117</b>	50 (2 x 25)	
	<b>Insulation stop ③</b> , 5 pcs/strip	white	0.08 – 0.2 mm <sup>2</sup>	<b>280-470</b>	200 strips	0.08 – 0.2 mm <sup>2</sup>	<b>280-470</b>	200 strips
		light grey	0.25 – 0.5 mm <sup>2</sup>	<b>280-471</b>	200 strips	0.25 – 0.5 mm <sup>2</sup>	<b>280-471</b>	200 strips
		dark grey	0.75 – 1 mm <sup>2</sup>	<b>280-472</b>	200 strips	0.75 – 1 mm <sup>2</sup>	<b>280-472</b>	200 strips
	<b>Adjacent jumper, insulated</b>	I <sub>N</sub> 24 A			I <sub>N</sub> 24 A			
		grey	<b>280-402</b>	200 (8 x 25)	grey	<b>280-402</b>	200 (8 x 25)	
		yellow-green	<b>280-422</b>	200 (8 x 25)	yellow-green	<b>280-422</b>	200 (8 x 25)	
	<b>Staggered jumper ③</b> , insulated, width 5 mm / 0.197 in	from 1 to 2	I <sub>N</sub> 24 A	<b>780-452</b>	100 (4 x 25)	I <sub>N</sub> 24 A	<b>780-452</b>	100 (4 x 25)
		from 1 to 3		<b>780-453</b>	100 (4 x 25)		<b>780-453</b>	100 (4 x 25)
		from 1 to 4		<b>780-454</b>	100 (4 x 25)		<b>780-454</b>	100 (4 x 25)
		from 1 to 5		<b>780-455</b>	50 (2 x 25)		<b>780-455</b>	50 (2 x 25)
		:		:			:	
	from 1 to 8		<b>780-458</b>	50 (2 x 25)		<b>780-458</b>	50 (2 x 25)	
	<b>Comb type jumper bar ③</b> , insulated, I <sub>N</sub> = I <sub>N</sub> of terminal block	2-way	<b>280-482</b>	200 (8 x 25)	2-way	<b>280-482</b>	200 (8 x 25)	
		3-way	<b>280-483</b>	200 (8 x 25)	3-way	<b>280-483</b>	200 (8 x 25)	
		10-way	<b>280-490</b>	50 (2 x 25)	10-way	<b>280-490</b>	50 (2 x 25)	
	<b>Alternate comb type jumper bar ③</b> , insulated, I <sub>N</sub> = I <sub>N</sub> of terminal block	2-way	<b>280-492</b>	200 (8 x 25)	2-way	<b>280-492</b>	200 (8 x 25)	
	<b>Operating tool, insulated</b>	2-way	<b>280-432</b>	1	2-way	<b>280-432</b>	1	
		3-way	<b>280-433</b>	1	3-way	<b>280-433</b>	1	
		10-way	<b>280-440</b>	1	10-way	<b>280-440</b>	1	
	<b>Protective warning marker, for 5 terminal blocks, fits into screwdriver slot</b>	yellow	<b>280-415</b>	100 (4 x 25)	yellow	<b>280-415</b>	100 (4 x 25)	
	<b>Test plug, w. cable 500 mm / 1.77"</b>	2 mm / 0.079 in Ø	red	<b>210-136</b>	50 (5 x 10)	red	<b>210-136</b>	50 (5 x 10)
		2.3 mm / 0.091 in Ø	yellow	<b>210-137</b>	50 (5 x 10)	yellow	<b>210-137</b>	50 (5 x 10)








\* For further approvals with corresponding ratings see section 15.



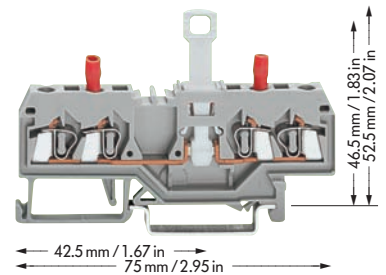
# Disconnect Terminal Blocks for Test and Measurement 2.5 mm<sup>2</sup> / AWG 12, Series 280


<b>0.08 – 2.5 mm<sup>2</sup></b> <b>400 V/6 kV/3 ①</b> <b>10 A</b> <b>Terminal block width 5 mm / 0.197 in</b>  <b>8 – 9 mm / 0.33 in</b> <small>*       </small>	<b>AWG 28 – 12</b> <b>300 V, 15 A </b> <b>300 V, 15 A </b>	<b>0.08 – 2.5 mm<sup>2</sup></b> <b>400 V/6 kV/3 ①</b> <b>10 A</b> <b>Terminal block width 5 mm / 0.197 in</b>  <b>8 – 9 mm / 0.33 in</b> <small>*       </small>	<b>AWG 28 – 12</b> <b>300 V, 15 A </b> <b>600 V, 15 A </b>	<b>0.08 – 2.5 mm<sup>2</sup></b> <b>400 V/6 kV/3 ①</b> <b>10 A</b> <b>Terminal block width 5 mm / 0.197 in</b>  <b>8 – 9 mm / 0.33 in</b> <small>* </small>	<b>AWG 28 – 12</b> <b>300 V, 15 A </b> <b>600 V, 15 A </b>
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Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>2-conductor disconnect terminal blocks</b>		<b>3-conductor disconnect terminal block</b>		<b>4-conductor disconnect terminal blocks</b>	
grey <b>280-912</b> 	50	grey <b>280-683</b> 	50	grey <b>280-836</b> 	50
blue <b>280-914</b> 	50			blue <b>280-839</b> 	50
orange <b>280-913</b> 	50			orange <b>280-805</b> 	50

① 400 V = rated voltage  
 6 kV = rated surge voltage  
 3 = pollution degree  
 (see also section 15)



Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
				<b>2-conductor disconnect terminal block for test and measurement with integrated test sockets</b>	
				grey <b>280-829</b> 	50
<b>Through terminal block with the same shape</b>		<b>Through terminal block with the same shape</b>		<b>Through terminal block with the same shape</b>	
grey <b>280-901</b>	page 2.10	grey <b>280-681</b>	page 2.10	grey <b>280-833</b>	page 2.10

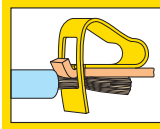
**Accessories Series 280** (see page 713)




















Appropriate marking system **WMB/WSB/WFB** (see section 14)

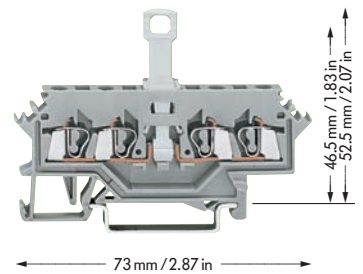
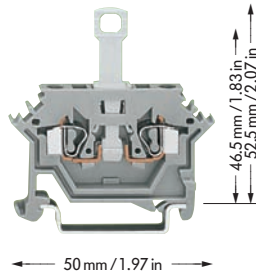
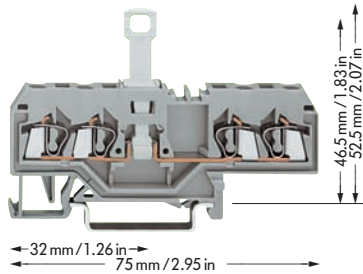
End and intermediate plate, 2.5 mm/0.098 in thick	End and intermediate plate, 2.5 mm/0.098 in thick	End and intermediate plate, 2.5 mm/0.098 in thick
orange <b>280-309</b> 100 (4 x 25)	orange <b>280-326</b> 100 (4 x 25)	orange <b>280-315</b> 100 (4 x 25)
grey <b>280-308</b> 100 (4 x 25)	grey <b>280-324</b> 100 (4 x 25)	grey <b>280-314</b> 100 (4 x 25)
light grey <b>280-356</b> 100 (4 x 25)	light grey <b>280-358</b> 100 (4 x 25)	light grey <b>280-352</b> 100 (4 x 25)
<b>Separator, oversized, 2 mm/0.079 in thick</b>	<b>Separator, oversized, 2 mm/0.079 in thick</b>	<b>Separator, oversized, 2 mm/0.079 in thick</b>
orange <b>280-311</b> 100 (4 x 25)	orange <b>280-346</b> 100 (4 x 25)	orange <b>280-335</b> 100 (4 x 25)
grey <b>280-310</b> 100 (4 x 25)	grey <b>280-344</b> 100 (4 x 25)	grey <b>280-334</b> 100 (4 x 25)
light grey <b>280-357</b> 100 (4 x 25)	light grey <b>280-359</b> 100 (4 x 25)	light grey <b>280-353</b> 100 (4 x 25)

\* For further approvals with corresponding ratings see section 15.

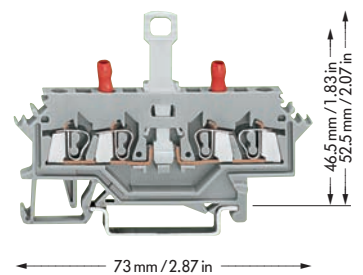
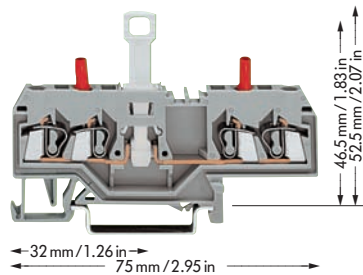




<b>0.08 – 2.5 mm<sup>2</sup></b> <b>400 V/6 kV/3 Ⓢ</b> <b>10 A</b> <b>Terminal block width 5 mm / 0.197 in</b>  <b>8 – 9 mm / 0.33 in</b> <small>*      </small>	<b>0.08 – 2.5 mm<sup>2</sup></b> <b>400 V/6 kV/3 Ⓢ</b> <b>10 A</b> <b>Terminal block width 5 mm / 0.197 in</b>  <b>8 – 9 mm / 0.33 in</b> <small>*     </small>	<b>0.08 – 2.5 mm<sup>2</sup></b> <b>400 V/6 kV/3 Ⓢ</b> <b>10 A</b> <b>Terminal block width 5 mm / 0.197 in</b>  <b>8 – 9 mm / 0.33 in</b> <small>*     </small>
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Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>4-conductor disconnect terminal blocks</b>		<b>2-conductor disconnect terminal blocks</b>		<b>4-conductor disconnect terminal blocks</b>	
grey <b>280-685</b>	50	grey <b>280-612</b>	50	grey <b>280-622</b>	50
blue <b>280-676</b>	50	blue <b>280-614</b>	50	blue <b>280-632</b>	50
orange <b>280-695</b>	50				



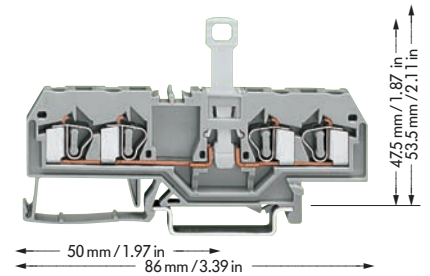
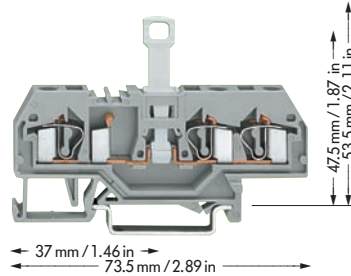
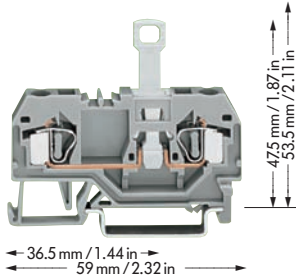
Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>2-conductor disconnect terminal block for test and measurement with integrated test sockets</b>		<b>2-conductor disconnect terminal block for test and measurement with integrated test sockets</b>		<b>2-conductor disconnect terminal block for test and measurement with integrated test sockets</b>	
grey <b>280-649</b>	50			grey <b>280-627</b>	50
<b>Through terminal block with the same shape</b>		<b>Through terminal block with the same shape</b>		<b>Through terminal block with the same shape</b>	
grey <b>280-633</b>	page 2.11	grey <b>280-601</b>	page 2.12	grey <b>280-621</b>	page 2.12

Appropriate marking system **WMB/WSB/WFB** (see section 14)

End and intermediate plate, 2.5 mm/0.098 in thick	End and intermediate plate, 2.5 mm/0.098 in thick	End and intermediate plate, 2.5 mm/0.098 in thick
orange <b>280-315</b> 100 (4 x 25)	orange <b>280-331</b> 100 (4 x 25)	orange <b>280-317</b> 100 (4 x 25)
grey <b>280-314</b> 100 (4 x 25)	grey <b>280-330</b> 100 (4 x 25)	grey <b>280-316</b> 100 (4 x 25)
light grey <b>280-352</b> 100 (4 x 25)	light grey <b>280-362</b> 100 (4 x 25)	light grey <b>280-364</b> 100 (4 x 25)
<b>Separator, oversized, 2 mm/0.079 in thick</b>	<b>Separator, oversized, 2 mm/0.079 in thick</b>	<b>Separator, oversized, 2 mm/0.079 in thick</b>
orange <b>280-335</b> 100 (4 x 25)	orange <b>280-328</b> 100 (4 x 25)	orange <b>280-327</b> 100 (4 x 25)
grey <b>280-334</b> 100 (4 x 25)	grey <b>280-338</b> 100 (4 x 25)	grey <b>280-337</b> 100 (4 x 25)
light grey <b>280-353</b> 100 (4 x 25)	light grey <b>280-363</b> 100 (4 x 25)	light grey <b>280-365</b> 100 (4 x 25)

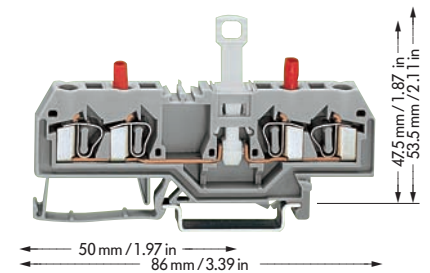
# Disconnect Terminal Blocks for Test and Measurement 4 mm<sup>2</sup> / AWG 12, Serie 281

<p>0.08 – 4 mm<sup>2</sup> 400 V/6 kV/3 ① 10 A</p> <p>Terminal block width 6 mm / 0.236 in 9 – 10 mm / 0.37 in</p>	<p>AWG 28 – 12 300 V, 15 A ② 300 V, 15 A ③</p>	<p>0.08 – 4 mm<sup>2</sup> 400 V/6 kV/3 ① 10 A</p> <p>Terminal block width 6 mm / 0.236 in 9 – 10 mm / 0.37 in</p>	<p>AWG 28 – 12 300 V, 15 A ② 600 V, 15 A ③</p>	<p>0.08 – 4 mm<sup>2</sup> 400 V/6 kV/3 ① 10 A</p> <p>Terminal block width 6 mm / 0.236 in 9 – 10 mm / 0.37 in</p>	<p>AWG 28 – 12 300 V, 15 A ② 600 V, 15 A ③</p>
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Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>2-conductor disconnect terminal block</b>		<b>3-conductor disconnect terminal block</b>		<b>4-conductor disconnect terminal blocks</b>	
grey	<b>281-912</b> ●	50	grey	<b>281-683</b> ●	50
				grey	<b>281-659</b> ●
				blue	<b>281-660</b> ●

① 400 V = rated voltage  
6 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)



Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
				<b>2-conductor disconnect terminal block for test and measurement with integrated test sockets</b>	
				grey	<b>281-666</b> ●
					50
<b>Through terminal block with the same shape</b>		<b>Through terminal block with the same shape</b>		<b>Through terminal block with the same shape</b>	
grey	<b>281-901</b>	page 2.16	grey	<b>281-681</b>	page 2.16
				grey	<b>281-652</b>
					page 2.16

















**Accessories Series 281** (see page 713)

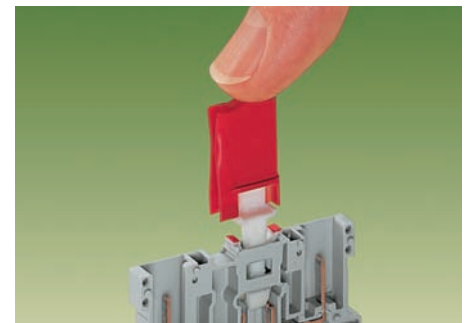
Appropriate marking system **WMB/WSB/WFB** (see section 14)

End and intermediate plate, 2.5 mm/0.098 in thick	End and intermediate plate, 2.5 mm/0.098 in thick	End and intermediate plate, 2.5 mm/0.098 in thick
orange <b>281-329</b> 100 (4 x 25)	orange <b>281-326</b> 100 (4 x 25)	orange <b>281-335</b> 100 (4 x 25)
grey <b>281-328</b> 100 (4 x 25)	grey <b>281-324</b> 100 (4 x 25)	grey <b>281-334</b> 100 (4 x 25)
light grey <b>281-349</b> 100 (4 x 25)	light grey <b>281-355</b> 100 (4 x 25)	light grey <b>281-345</b> 100 (4 x 25)
<b>Separator, oversized, 2 mm/0.079 in thick</b>	<b>Separator, oversized, 2 mm/0.079 in thick</b>	<b>Separator, oversized, 2 mm/0.079 in thick</b>
orange <b>281-331</b> 100 (4 x 25)	orange <b>281-346</b> 100 (4 x 25)	orange <b>281-339</b> 100 (4 x 25)
grey <b>281-330</b> 100 (4 x 25)	grey <b>281-344</b> 100 (4 x 25)	grey <b>281-338</b> 100 (4 x 25)
light grey <b>281-350</b> 100 (4 x 25)	light grey <b>281-356</b> 100 (4 x 25)	light grey <b>281-347</b> 100 (4 x 25)

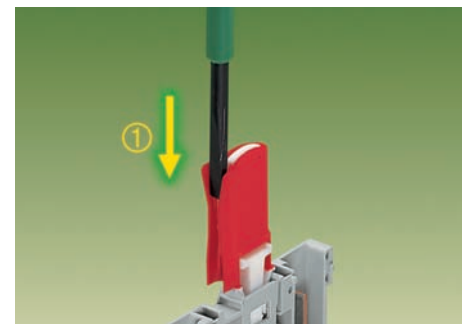
\* For further approvals with corresponding ratings see section 15.

<b>Accessories series 280</b> see also pages 2.43 and 2.44	<b>Accessories series 281</b> see also pages 2.43 and 2.44	<b>Application notes</b>
---	---	--------------------------

Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Insulation stop, 5 pcs/strip</b> 		<b>Insulation stop, 5 pcs/strip</b> 	
white	<b>280-470</b> 200 strips	white	<b>281-470</b> 200 strips
light grey	<b>280-471</b> 200 strips	light grey	<b>281-471</b> 200 strips
dark grey	<b>280-472</b> 200 strips	dark grey	<b>281-472</b> 200 strips
<b>Comb type jumper bar, insulated,</b> $I_N = I_N$ of terminal block 		<b>Comb type jumper bar, insulated,</b> $I_N = I_N$ of terminal block 	
2-way	<b>280-482</b> 200 (8 x 25)	2-way	<b>281-482</b> 100 (4 x 25)
3-way	<b>280-483</b> 200 (8 x 25)	3-way	<b>281-483</b> 100 (4 x 25)
5-way	<b>280-485</b> 50 (2 x 25)	5-way	<b>281-485</b> 50 (2 x 25)
10-way	<b>280-490</b> 50 (2 x 25)	10-way	<b>281-490</b> 50 (2 x 25)
<b>Alternate comb type jumper bar, insulated,</b> $I_N = I_N$ of terminal block 		<b>Alternate comb type jumper bar, insulated,</b> $I_N = I_N$ of terminal block 	
2-way	<b>280-492</b> 200 (8 x 25)	2-way	<b>281-492</b> 100 (4 x 25)
<b>Operating tool, insulated</b> 		<b>Operating tool, insulated</b> 	
2-way	<b>280-432</b> 1	2-way	<b>280-432</b> 1
3-way	<b>280-433</b> 1	3-way	<b>280-433</b> 1
10-way	<b>280-440</b> 1	5-way	<b>281-440</b> 1
<b>Protective warning marker, for 5 terminal blocks,</b> fits into screwdriver slot 		<b>Protective warning marker, for 5 terminal blocks,</b> fits into screwdriver slot 	
yellow	<b>280-415</b> 100 (4 x 25)	yellow	<b>281-415</b> 100 (4 x 25)
<b>Test socket, insulated</b> 		<b>Test socket, insulated</b> 	
2 mm Ø, red	<b>209-107</b> 100 (2 x 50)	2 mm Ø, red	<b>209-107</b> 100 (2 x 50)
2.3 mm Ø, yel.	<b>209-108</b> 100 (2 x 50)	2.3 mm Ø, yel.	<b>209-108</b> 100 (2 x 50)
<b>Test plug, with cable 500 mm /17.7"</b> 		<b>Test plug, with cable 500 mm /17.7"</b> 	
2 mm Ø, red	<b>210-136</b> 50 (5 x 10)	2 mm Ø, red	<b>210-136</b> 50 (5 x 10)
2.3 mm Ø, yel.	<b>210-137</b> 50 (5 x 10)	2.3 mm Ø, yel.	<b>210-137</b> 50 (5 x 10)
<b>Disconnect lock, for disconnect tab of series</b> 		<b>Disconnect lock, for disconnect tab of series</b> 	
280/281 disconnect terminal blocks		280/281 disconnect terminal blocks	
red	<b>709-170</b> 200 (8 x 25)	red	<b>709-170</b> 200 (8 x 25)



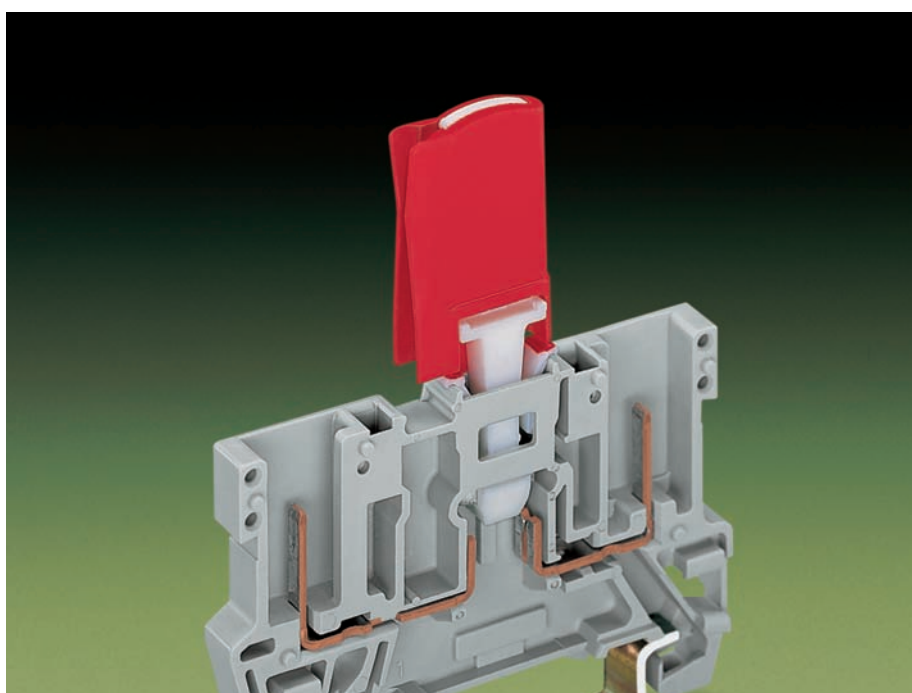
The lock is put on the disconnect tab of the disconnect terminal block (the picture shows a 2-pin base receptacle block series 769)



① Unlocking of disconnect lock



② Removing of disconnect lock



## Double safety

The disconnect tab has been designed to provide maximum operational safety.

As soon as the disconnect tab is in the disconnect position, it can be further protected against unintentional reconnection by using the disconnect lock.

Only by means of a conscious act, and the use of a tool, can the disconnect lock be removed, and the circuit reconnected.

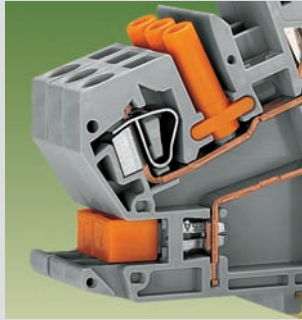
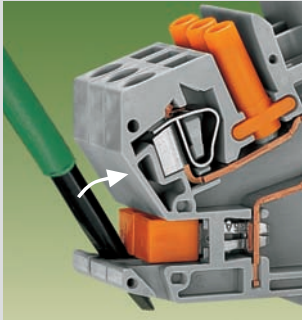
### Features/Benefits:

- Easy handling
- The disconnect lock can be easily installed
- Clear identification with the position of the disconnect tab
- Increases safety
- Reconnecting the circuit requires a conscious act



# Disconnect Terminal Blocks for Test and Measurement of Transformer Circuits, with CAGE CLAMP®, Series 282 . . .

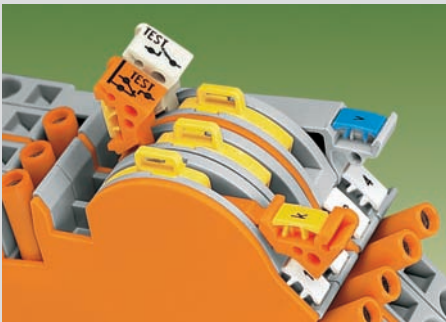
## 14 Preparing the shorting path for the current transformer



Insertion of insulated, touchproof adjacent jumpers into the protected shorting position

Terminal strip permanently prepared for current transformer circuits

### Positive action

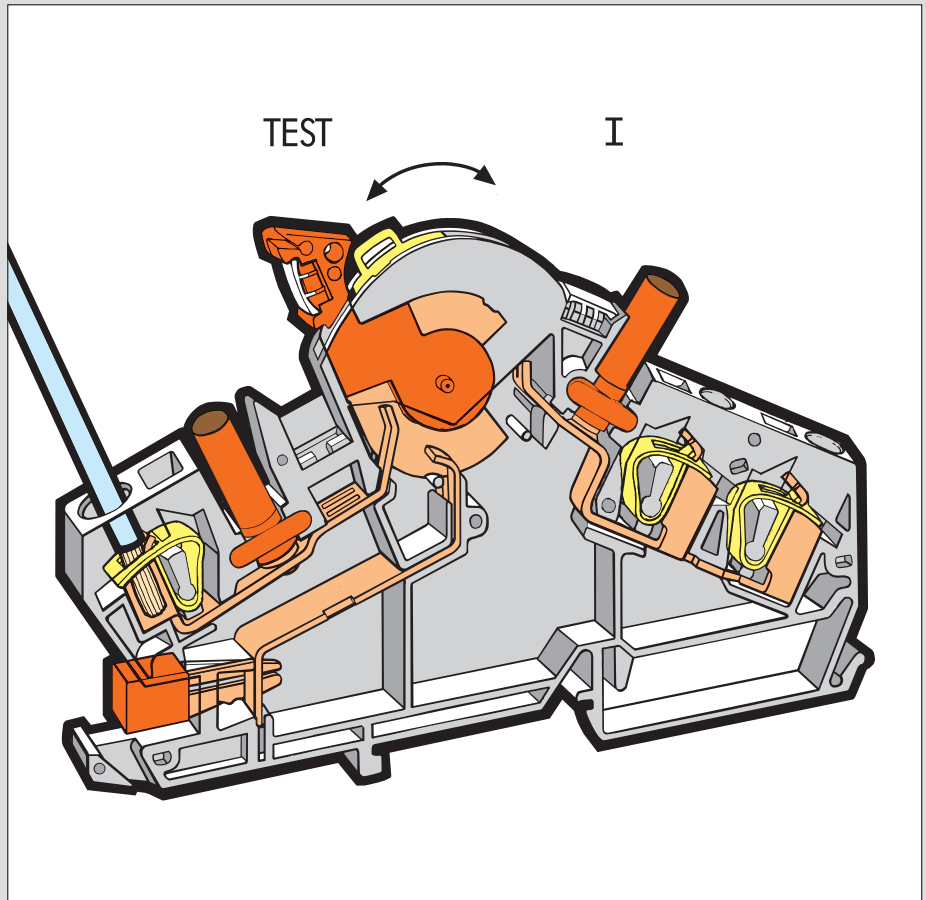


Lock-out has "snap" action into two notched positions preventing accidental operation of the disconnect link

### Locking cover for disconnect links



Transparent locking cover for 1-4 disconnect links can be snapped on  
a) for mechanical interlocking for multipole switching  
b) for protecting markers

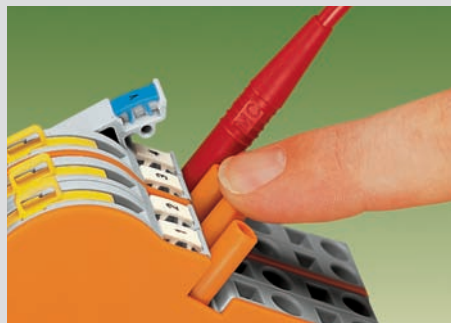


### Interlocking link



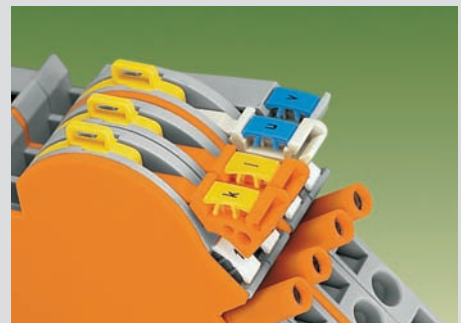
Interlocking link for mechanical interlocking of several links for multipole switching

### Touchproof test sockets



For touchproof test plugs Ø 4 mm (for example mfd by Multi-Contact)

### Marking



Marking with WMB Multi marking system, WSB Quick marking system or WCB Combi marking system.



CAGE CLAMP® clamps the following copper wires: \*

solid



stranded

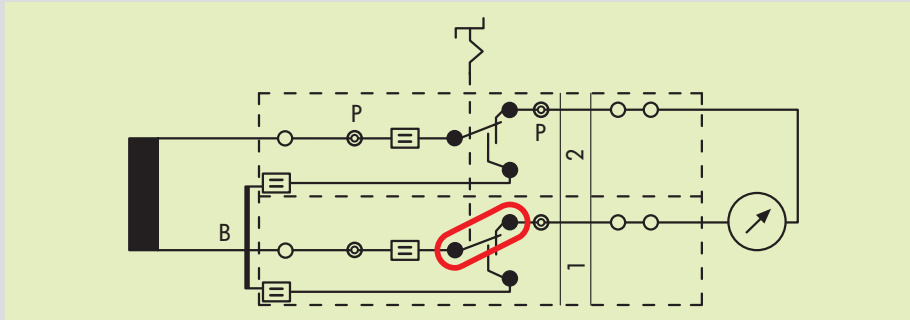


fine stranded, also with tinned single strands

\* For aluminum wire see notes in section 15!

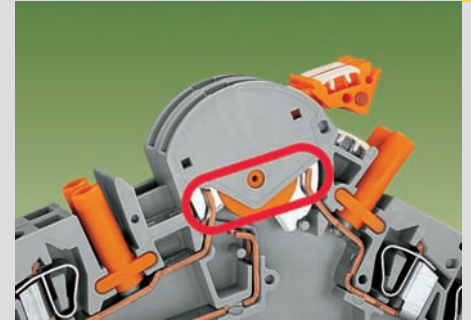
## ... Description and Handling

### Disconnect link in notched position "I" (terminal blocks 1+2)

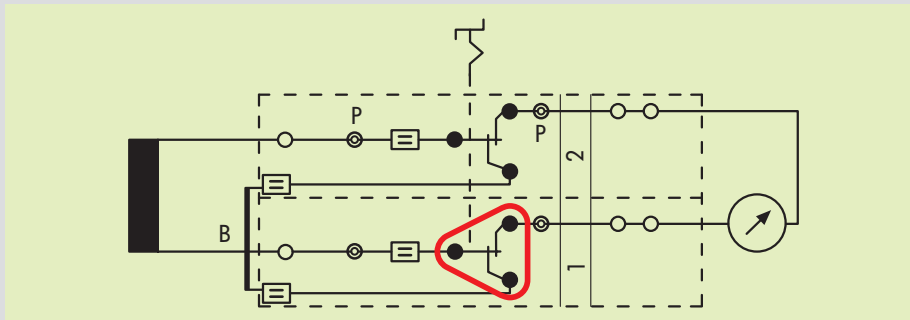


In position "I" the measuring instrument is connected to the transformer secondary

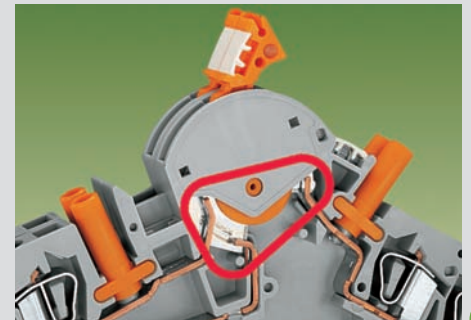
B = shunting jumper, P = test socket



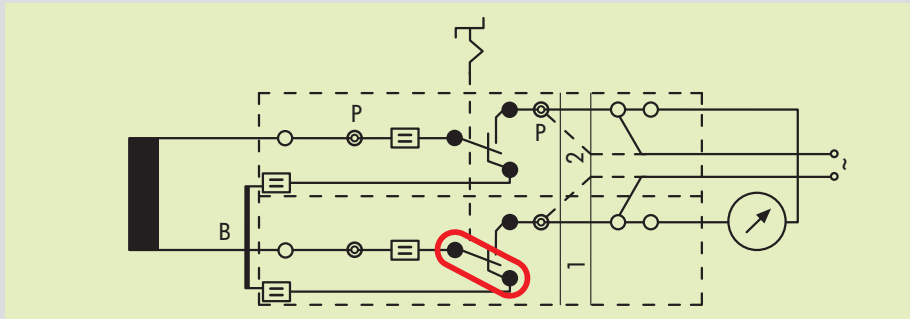
### Disconnect link in transition from "I" → "TEST" (terminal blocks 1+2)



By moving the interlocked disconnect links from "I" to "TEST" the shorting path is activated without disconnection of the measuring instrument yet.

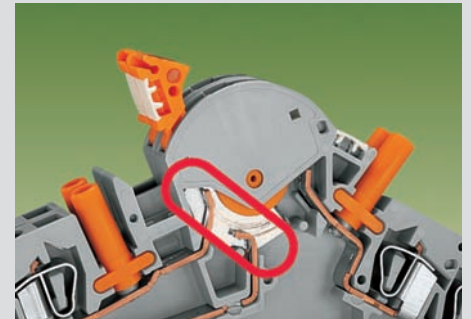


### Disconnect link in notched position "TEST" (terminal blocks 1+2)

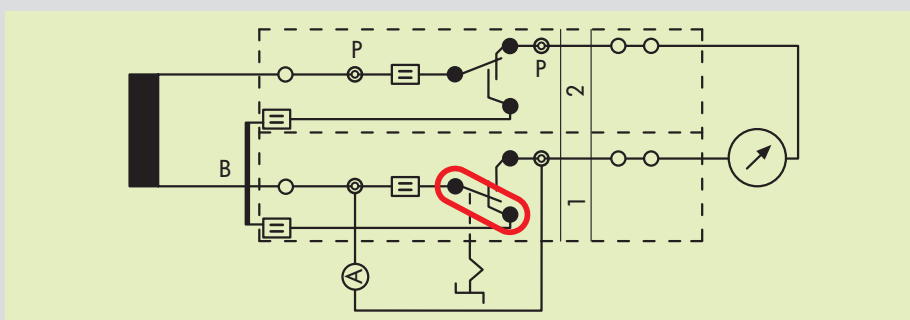


The measuring instrument is electrically disconnected from the transformer.

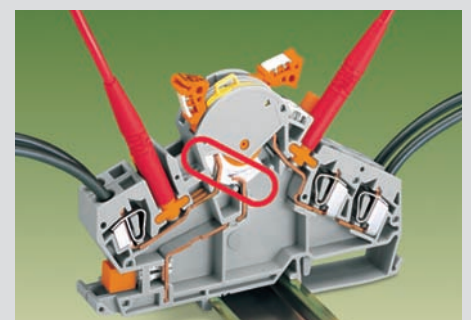
In this position, if necessary, an external voltage can be applied via the sockets or the 2<sup>nd</sup> CAGE CLAMP® connection for relay testing in transformer protection circuits



### Disconnect link in notched position "I" (terminal block 2) Disconnect link in notched position "TEST" (terminal block 1)



Measured value test. Before moving the disconnect link of terminal block 1 into the notched position "TEST" the reference current meter must be inserted into the test socket of terminal block 1!



fine-stranded wire – tip bonded



fine-stranded wire with crimped ferrule ❶



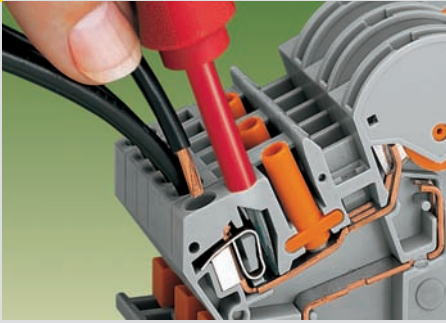
fine-stranded wire with crimped pin terminal

❶ When using wires with ferrules, it is necessary to use a terminal block one size larger than the nominal cross section of the wire.

# 7 Examples of Circuit Configuration

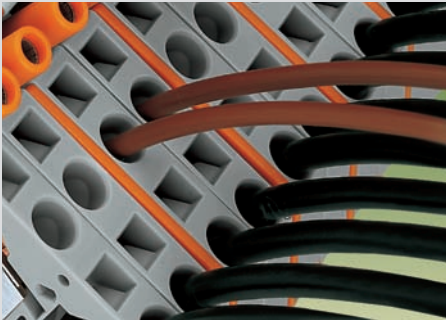
16

## CAGE CLAMP® connection



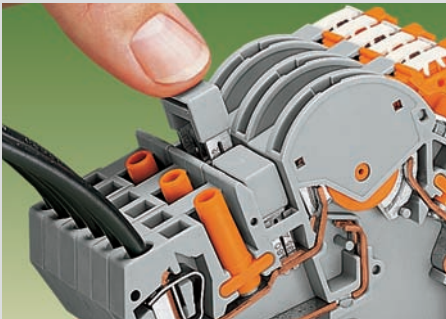
Connection of conductors with screwdriver (5.5 x 0.8) mm

## Additional CAGE CLAMP® connection



Additional CAGE CLAMP® connection on the side of the measuring instrument  
For example: connecting wire commoning chains or applying an external voltage

## Commoning



Additional commoning possibility with adjacent jumper.  
For example: 'Y'  $\Delta$  star point

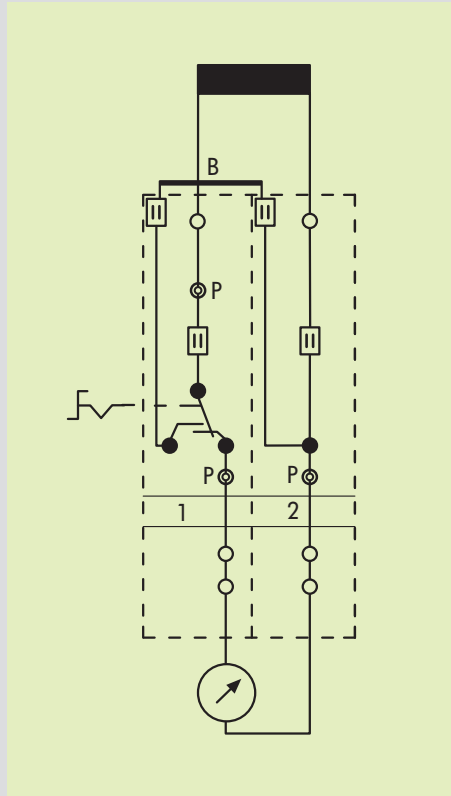
## Lock-out seal



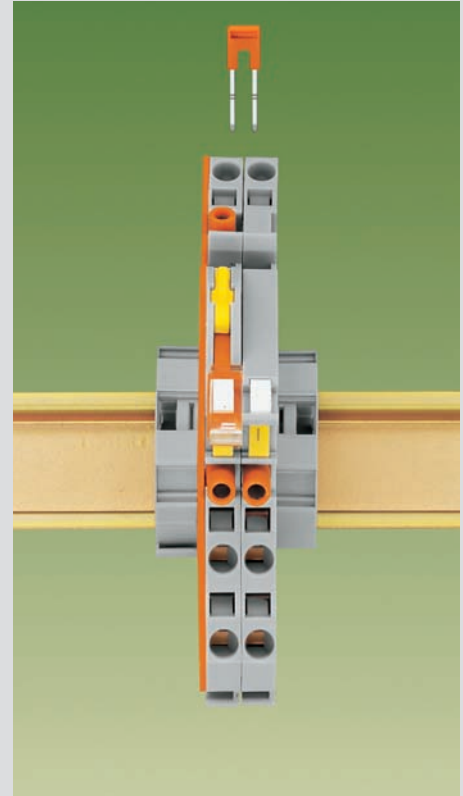
A lock-out seal can be used on the disconnect link in notched position "I"

## Measuring set for a single-phase current transformer

(without testing facility for measured value test)



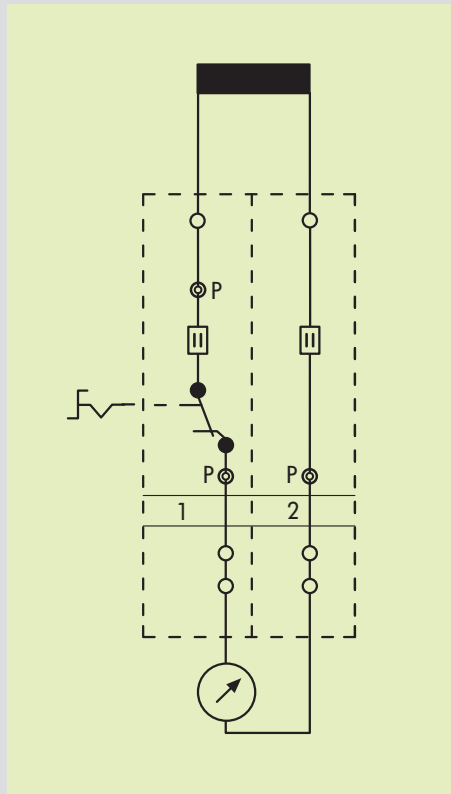
Terminal blocks required:



- 1 x disconnect/test terminal block
- 1 x through terminal block
- 1 x jumper, orange
- 1 x end plate, orange
- in addition locking cover, lock-out

282-870  
282-865  
282-424  
282-386

## Measuring set for a single-phase voltage transformer



Terminal blocks required:

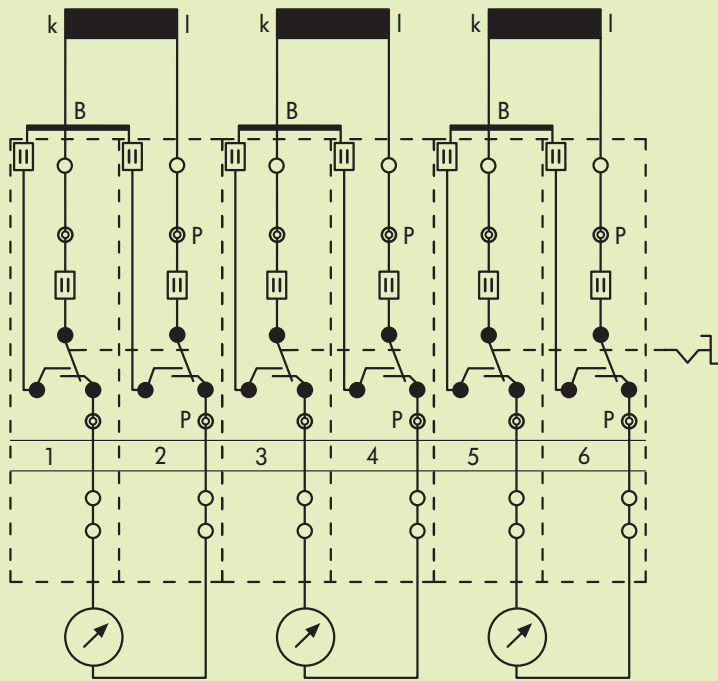


- 1 x disconnect/test terminal block
- 1 x through terminal block
- 1 x end plate, orange
- in addition locking cover, lock-out

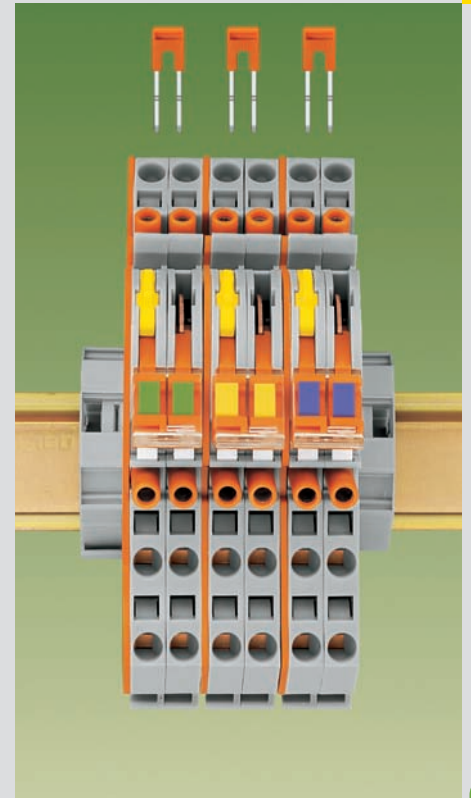
282-860  
282-866  
282-386



### Measuring set for a 3-phase current transformer

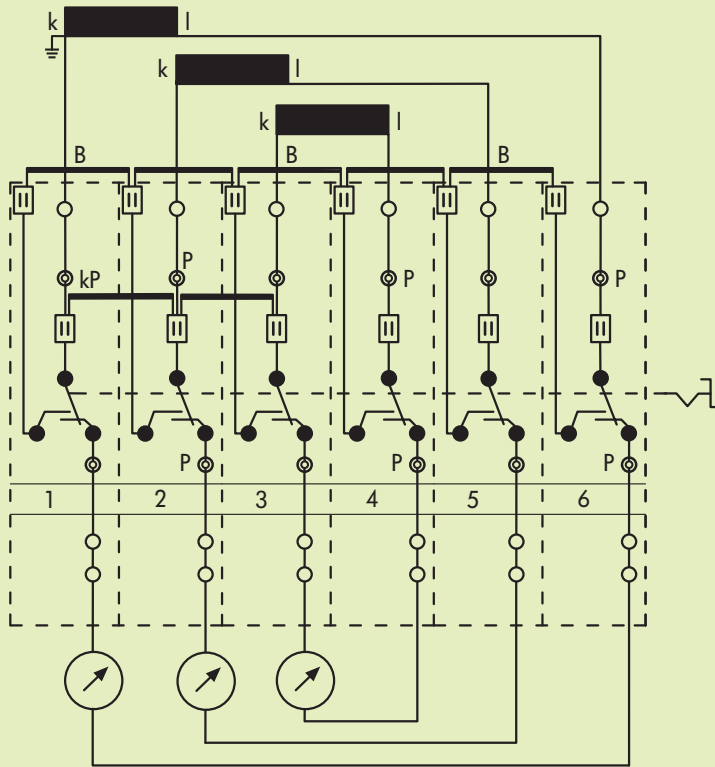


Pairs of disconnect links are interlocked by means of the locking covers. Terminal blocks required:  
After the interlocking has been released testing of the measured value is also possible.  
B = shorting jumper, P = test socket

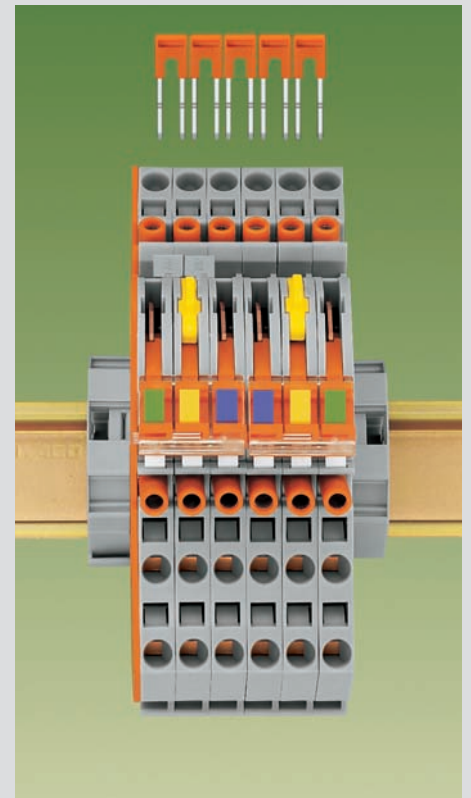


6 x disconnect/test terminal block 282-870  
3 x jumper, orange 282-424  
3 x end plate, orange 282-386  
in addition locking links, locking covers, lock-outs

### Measuring set for a 3-phase current transformer with 'Y' point

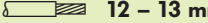










All 6 disconnect links are interlocked by means of the interlocking link. Terminal blocks required:  
kP = 'Y' point jumpers

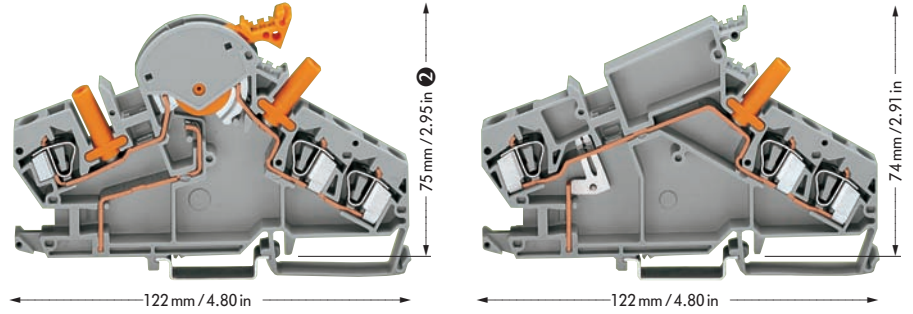














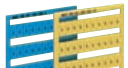
6 x disconnect/test terminal block 282-870  
5 x through terminal block, orange 282-424  
2 x jumper, grey 282-402  
1 x end plate, orange 282-386  
in addition locking links, locking covers, lock-outs

# Disconnect/Test Terminal Blocks 6 mm<sup>2</sup> (AWG 10)/30 A, Through Terminal Blocks, Series 282 for Example for Current Transformer Circuits

<b>0.2 – 6 mm<sup>2</sup></b> <b>500 V/6 kV/3 ①</b> <b>30 A</b>  <b>Terminal block width 8 mm / 0.315 in</b>  <b>12 – 13 mm / 0.49 in</b>  <small>*   </small>	<b>AWG 24 – 10</b> <b>600 V, 30 A </b>  <b>Terminal block width 8 mm / 0.315 in</b>  <b>12 – 13 mm / 0.49 in</b>  <small>*   </small>
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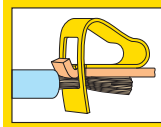
- ① 500 V = rated voltage  
6 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② max. height when rotating disconnect,  
incl. locking cover, is 92 mm / 3.62 in.














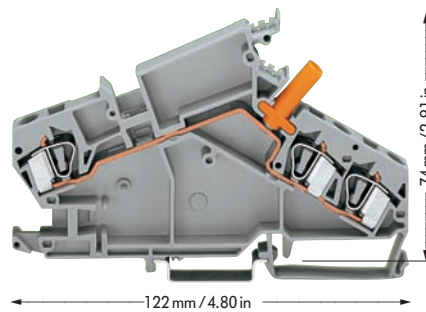
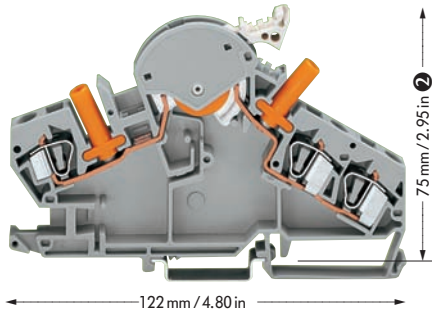
Description	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Disconnect/test terminal block and Through terminal block, for DIN 35 rail</b>	<b>Disconnect/test terminal block, example for current transformer circuits with touch-proof test plug 4 mm / 0.157 in Ø, disconnect link orange</b>		<b>Through terminal block, example for current transformer circuits with touch-proof test plug 4 mm / 0.157 in Ø,</b>	
	grey <b>282-870</b>	20	grey <b>282-865</b>	20
<b>Accessories</b>	Appropriate marking system <b>WMB/WSB/WCB</b> (see section 14)			
	<b>End and intermediate plate, without use of lock-out seal</b>	1.5 mm / 0.059 in thick		
	orange <b>282-386</b>	50 (5 x 10)		
	grey <b>282-391</b>	50 (5 x 10)		
	<b>End and intermediate plate, for use of lock-out seal</b>	1.5 mm / 0.059 in thick		
	orange <b>282-387</b>	50 (5 x 10)		
	grey <b>282-392</b>	50 (5 x 10)		
	<b>End and intermediate plate</b>		1.5 mm / 0.059 in thick	
			orange <b>282-385</b>	50 (5 x 10)
			grey <b>282-390</b>	50 (5 x 10)
	<b>Lock-out, for disconnect link</b>	yellow	<b>282-384</b>	100 (5 x 20)
	<b>Locking cover, for mechanical locking of several links</b>	transparent		
	1-pole <b>282-881</b>	50 (5 x 10)		
	2-pole <b>282-882</b>	50 (5 x 10)		
	3-pole <b>282-883</b>	20 (2 x 10)		
	4-pole <b>282-884</b>	20 (2 x 10)		
	<b>Interlocking link, for mechanical locking of several links</b>	1 m / 3'3" long	transparent <b>210-254</b>	1
	<b>Adjacent jumper, insulated</b>	I <sub>N</sub> 41 A		
	grey <b>282-402</b>	100 (4 x 25)	I <sub>N</sub> 41 A	
	orange <b>282-424</b>	100 (4 x 25)	grey <b>282-402</b>	100 (4 x 25)
	<b>Alternate jumper, insulated</b>	I <sub>N</sub> 41 A		
	grey <b>282-409</b>	100 (4 x 25)	I <sub>N</sub> 41 A	
			grey <b>282-409</b>	100 (4 x 25)
	<b>Wire commoning chain, insulated, black, 4 connections, 24 A, 2.5 mm<sup>2</sup></b>	spacing		
		3 x 80 mm / 3.15 in <b>709-110</b>	spacing	
		1	3 x 80 mm / 3.15 in <b>709-110</b>	1
	<b>Wire commoning chain, insulated, black, 3 connections, 24 A, 2.5 mm<sup>2</sup></b>	spacing		
		2 x 90 mm / 3.54 in <b>709-111</b>	spacing	
		1	2 x 90 mm / 3.54 in <b>709-111</b>	1
		2 x 150 mm / 5.91 in <b>709-112</b>	2 x 150 mm / 5.91 in <b>709-112</b>	1
	<b>Protective warning marker, for 5 terminal blocks, fits into screwdriver slot</b>	yellow	<b>282-415</b>	100 (4 x 25)
	<b>Test plug, 4 mm / 0.157 in Ø, touch-proof,</b>			
		for ex. mfd by Multi-Contact Deutschland GmbH		
		not offered by WAGO		
	<b>WSB Marker card, 10 strips with 10 markers each, with printing</b>	yellow		
		k/l (50 each) <b>249-553/000-002</b>	yellow	
		1 card	k/l (50 each) <b>249-553/000-002</b>	1 card
	<b>Operating sticker</b>	<b>210-412</b>	<b>210-415</b>	100

\* For further approvals with corresponding ratings see section 15.

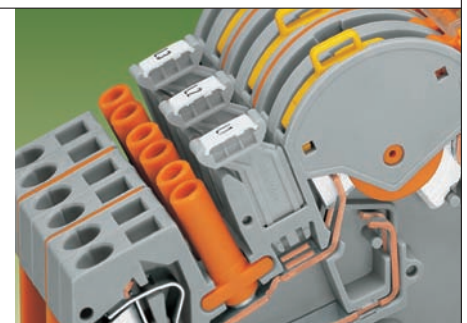
# Disconnect/Test Terminal Blocks 6 mm<sup>2</sup> (AWG 10)/30 A, Through Terminal Blocks, Angled Type; Series 282 for Example for Voltage Transformer Circuits



<b>0.2 – 6 mm<sup>2</sup></b> <b>500 V/6 kV/3 ①</b> <b>30 A</b> <b>Terminal block width 8 mm / 0.315 in</b>  <b>12 – 13 mm / 0.49 in</b> <small>*    </small>	<b>AWG 24 – 10</b> <b>600 V, 30 A </b> <b>Terminal block width 8 mm / 0.315 in</b>  <b>12 – 13 mm / 0.49 in</b> <small>*    </small>	<b>Colored marker cards</b> <b>vertical/horizontal marking</b> <b>for terminal block width &gt; 5 mm/0.197 in</b>
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Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Color	Item No.
<b>Disconnect/test terminal block,</b> example for voltage transformer circuits with touchproof test plug 4 mm/0.157 in Ø, disconnect link light grey		<b>Through terminal block,</b> example for voltage transformer circuits with touchproof test plug 4 mm/0.157 in Ø,		<b>Colored Marker cards</b> All markings in section 14 are also available with black printing on colored marker cards.	
grey	<b>282-860</b> 20	grey	<b>282-866</b> 20		
Appropriate marking system <b>WMB/WSB/WCB</b> (see section 14)					
1.5 mm/0.059 in thick		1.5 mm/0.059 in thick		Add. item nos. for colored marker cards	
orange	<b>282-386</b> 50 (5 x 10)	orange	<b>282-385</b> 50 (5 x 10)	yellow	.../000-002
grey	<b>282-391</b> 50 (5 x 10)	grey	<b>282-390</b> 50 (5 x 10)	red	.../000-005
1.5 mm/0.059 in thick				blue	.../000-006
orange	<b>282-387</b> 50 (5 x 10)			grey	.../000-007
grey	<b>282-392</b> 50 (5 x 10)			orange	.../000-012
				green	.../000-023
				violet	.../000-024
yellow				Ordering example	
<b>282-384</b> 100 (5 x 20)				Marking 1 ... 50 on red card	
				<b>209-566/000-005</b>	
transparent				<b>Note:</b>	
1-pole	<b>282-881</b> 50 (5 x 10)			Please note that colored marker cards are normally on longer delivery and more expensive than standard cards.	
2-pole	<b>282-882</b> 50 (5 x 10)				
3-pole	<b>282-883</b> 20 (2 x 10)				
4-pole	<b>282-884</b> 20 (2 x 10)				
1 m/3'3" long					
transparent	<b>210-254</b> 1				
I <sub>N</sub> 41 A		I <sub>N</sub> 41 A			
grey	<b>282-402</b> 100 (4 x 25)	grey	<b>282-402</b> 100 (4 x 25)		
I <sub>N</sub> 41 A		I <sub>N</sub> 41 A			
grey	<b>282-409</b> 100 (4 x 25)	grey	<b>282-409</b> 100 (4 x 25)		
spacing		spacing			
3 x 80 mm/3.15 in	<b>709-110</b> 1	3 x 80 mm/3.15 in	<b>709-110</b> 1		
spacing		spacing			
2 x 90 mm/3.54 in	<b>709-111</b> 1	2 x 90 mm/3.54 in	<b>709-111</b> 1		
2 x 150 mm/5.91 in	<b>709-112</b> 1	2 x 150 mm/5.91 in	<b>709-112</b> 1		
yellow	<b>282-415</b> 100 (4 x 25)	yellow	<b>282-415</b> 100 (4 x 25)		
for ex. mfd by Multi-Contact Deutschland GmbH not offered by WAGO		for ex. mfd by Multi-Contact Deutschland GmbH not offered by WAGO			
blue		blue			
U/V (50 each)	<b>249-554/000-006</b> 1 card	U/V (50 each)	<b>249-554/000-006</b> 1 card		
	<b>210-414</b> 100		<b>210-413</b> 100		



**Group marker carriers**  
– angled  
**209-144** Pack.-unit 50  
The group marker carriers make it possible to mark subgroups in confined places. They can be snapped into the jumper contact positions of the terminal block housing. The marking can be done with either the WAGO WSB Quick marking system, WAGO WMB Multi marking system or the WAGO WCB Combi marking system.



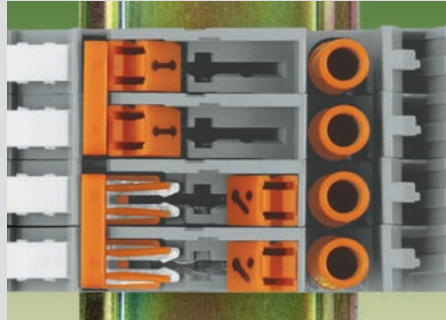
# Transverse Switching Terminal Blocks and Longitudinal Switching Disconnect Terminal Blocks with CAGE CLAMP®, Series 282 – Description

## Commoning



Transverse switching terminal blocks  
 ① Adjacent jumper for commoning of switching level  
 ② Commoning with orange jumper

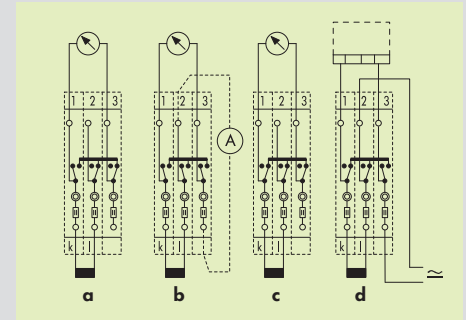
## Switch positions



closed

open

## Current transformer circuit with transverse switching term. blocks

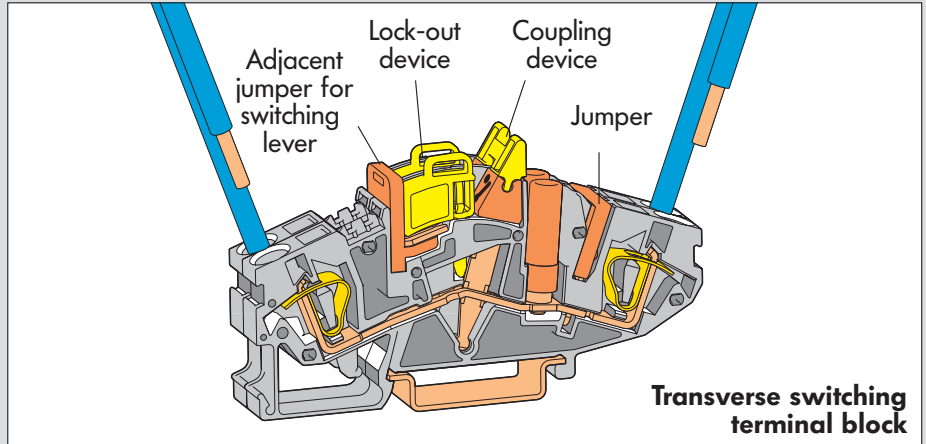


a = Normal operation    b = Measured value test  
 c = Transformer short-circuit    d = Relay test

## Testing



Testing with touchproof test plug 4 mm/0.157 in Ø

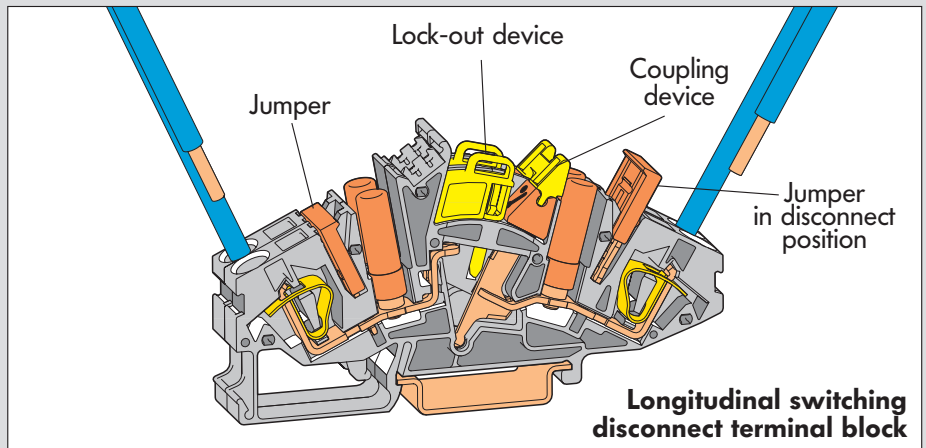


Transverse switching terminal block

## CAGE CLAMP® connection

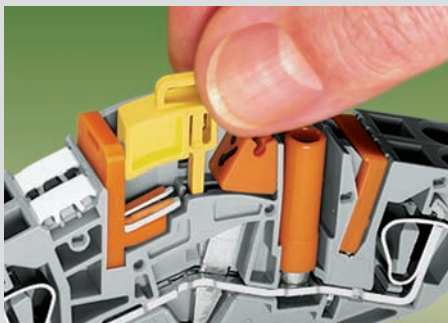


Connecting wire



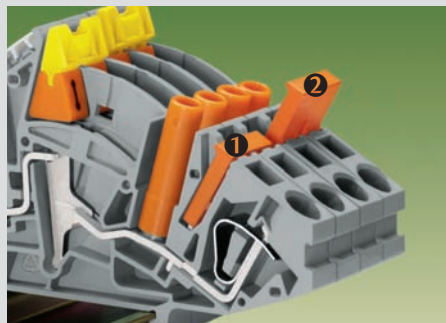
Longitudinal switching disconnect terminal block

## Switching lock-out



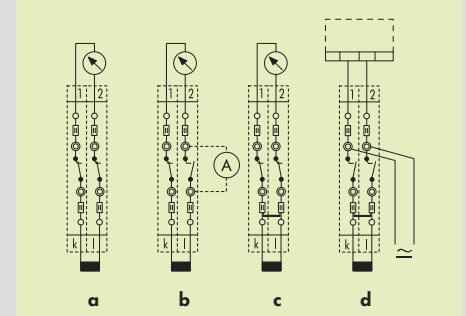
Inserting lock-out device

## Commoning



Longitudinal switching disconnect terminal blocks with jumper ① in connected and ② in disconnect position

## Current transformer circuit with longitudinal switching disconnect terminal blocks

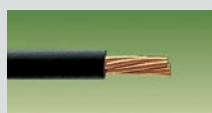


a = Normal operation    b = Measured value test  
 c = Transformer short-circuit    d = Relay test



CAGE CLAMP® clamps the following copper wires: \*

solid



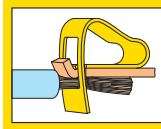
stranded



fine stranded, also with tinned single strands

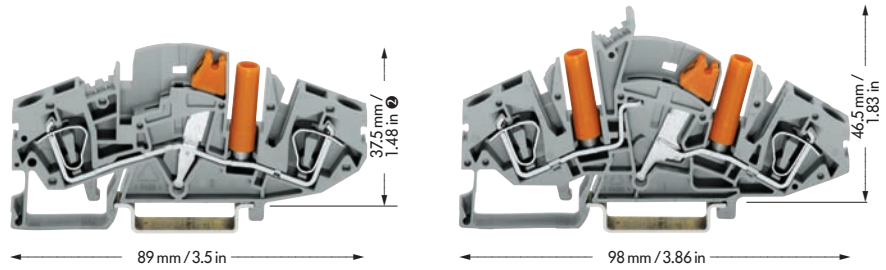
\* For aluminum wire see notes in section 15!

# Transverse Switching Terminal Blocks and Longitudinal Switching Disconnect Terminal Blocks, 6 mm<sup>2</sup> / AWG 10, Series 282 for Example for Current Transformer Circuits



<p><b>0.2 – 6 mm<sup>2</sup></b>  <b>500 V/6 kV/3 ①</b>  <b>30 A</b></p> <p><b>Terminal block width 8 mm / 0.315 in</b>  <b>12 – 13 mm / 0.49 in</b></p> <p><small>*    </small></p>	<p><b>AWG 24 – 10</b>  <b>600 V, 30 A </b></p>	<p><b>0.2 – 6 mm<sup>2</sup></b>  <b>500 V/6 kV/3 ①</b>  <b>30 A</b></p> <p><b>Terminal block width 8 mm / 0.315 in</b>  <b>12 – 13 mm / 0.49 in</b></p> <p><small>*    </small></p>	<p><b>AWG 24 – 10</b>  <b>600 V, 30 A </b></p>
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- ① 500 V = rated voltage  
 6 kV = rated surge voltage  
 3 = pollution degree  
 (see also section 15)
- ② max. height when rotating disconnect, incl. coupling device, 45 mm/1.77 in



Description	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Transverse switching terminal block and longitudinal switching disconnect terminal block, for DIN 35 rail</b>	<b>2-conductor transverse switching terminal block, with (orange) touchproof test plug 4 mm/0.157 in Ø grey</b>	<b>282-811</b> 20	<b>2-conductor longitudinal switching disconnect terminal block, with (orange) touchproof test plugs 4 mm/0.157 in Ø grey</b>	<b>282-821</b> 20

**Accessories** Appropriate marking system **WMB/WSB/WCB/Miniature WSB** (see section 14)

	<b>End and intermediate plate, for 2-conductor transverse switching terminal blocks</b>	1.5 mm/0.059 in thick orange <b>282-366</b> grey <b>282-361</b>	50 (5 x 10) 50 (5 x 10)	
	<b>End and intermediate plate, for 2-cond. longitudinal switching disconnect terminal blocks</b>	1.5 mm/0.059 in thick orange <b>282-365</b> grey <b>282-360</b>	50 (5 x 10) 50 (5 x 10)	
	<b>Lock-out device, for switching lever</b>	yellow <b>282-370</b>	100 (4 x 25)	yellow <b>282-370</b> 100 (4 x 25)
	<b>Coupling device, yellow, to couple several switching levers</b>	2-way <b>282-372</b> 3-way <b>282-373</b> 4-way <b>282-374</b>	50 (5 x 10) 50 (5 x 10) 50 (5 x 10)	2-way <b>282-372</b> 3-way <b>282-373</b> 4-way <b>282-374</b> 50 (5 x 10) 50 (5 x 10) 50 (5 x 10)
	<b>Jumper, orange, I<sub>N</sub> 30 A insulated</b>	2-way <b>282-432</b> 3-way <b>282-433</b>	50 (5 x 10) 50 (5 x 10)	2-way <b>282-432</b> 3-way <b>282-433</b> 50 (5 x 10) 50 (5 x 10)
	<b>Jumper, special design for ex. 3-way (1-3-5) please contact factory</b>	4-way <b>282-434</b> 5-way <b>282-435</b> :	50 (5 x 10) 50 (5 x 10)	4-way <b>282-434</b> 5-way <b>282-435</b> :
		10-way <b>282-440</b>	50 (5 x 10)	10-way <b>282-440</b> 50 (5 x 10)
	<b>Adjacent jumper for switching lever, orange, I<sub>N</sub> 30 A, for trans. switching term. blocks, insulated</b>	2-way <b>282-442</b> 3-way <b>282-443</b> 4-way <b>282-444</b>	50 (5 x 10) 50 (5 x 10) 50 (5 x 10)	
	<b>Protective warning marker, for 5 terminal blocks, fits into screwdriver slot</b>	yellow <b>282-415</b>	100 (4 x 25)	yellow <b>282-415</b> 100 (4 x 25)
	<b>Test plug, 4 mm/0.157 in Ø, touch-proof, not offered by WAGO</b>	for ex. mfd by Multi-Contact Deutschland GmbH		for ex. mfd by Multi-Contact Deutschland GmbH
	<b>WMB Marker card, 10 strips with 10 markers each, with printing</b>	blue U/V (50 each) <b>794-554/000-006</b> yellow k/I (50 each) <b>794-553/000-002</b>	1 card 1 card	U/V (50 each) <b>794-554/000-006</b> k/I (50 each) <b>794-553/000-002</b> 1 card 1 card
	<b>Collective carrier for jumpers, see page 14.37</b>	<b>282-369</b>	25	<b>282-369</b> 25
	<b>Operating sticker</b>	<b>210-424</b>	100	<b>210-423</b> 100



fine-stranded wire – tip bonded



fine-stranded wire with crimped ferrule ③



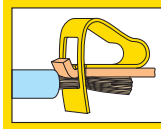
fine-stranded wire with crimped pin terminal

\* For further approvals with corresponding ratings see section 15.  
 ③ When using wires with ferrules, it is necessary to use a terminal block one size larger than the nominal cross section of the wire.

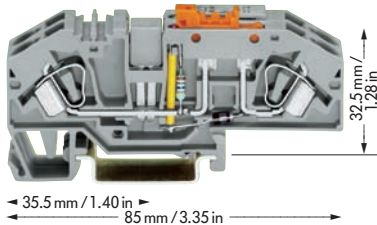




# Ground (Earth) Conductor Disconnect Terminal Blocks 6 mm<sup>2</sup> (AWG 10)/30 A Series 282



<b>0.2 – 6 mm<sup>2</sup></b> <b>400 V/6 kV/3 Ⓢ</b> <b>30 A</b>  <b>Terminal block width 16 mm / 0.630 in</b> <b>12 – 13 mm / 0.49 in</b>	<b>AWG 24 – 10</b>	
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Ground (earth) conductor disconnect terminal block

Item No.	Pack. unit pcs
<b>Ground (earth) cond. disconnect term. blocks, grey</b>	
f. AC/DC 24 V	<b>282-640</b> 12
f. AC/DC 48 V	<b>282-641</b> 12
f. AC/DC 120 V	<b>282-638</b> 12
f. AC/DC 230 V	<b>282-639</b> 12
Appropriate marking system	<b>WMB/WSB</b> (see section 14)
2 mm / 0.079 in thick	
orange	<b>282-333</b> 100 (4 x 25)
grey	<b>282-334</b> 100 (4 x 25)
I <sub>N</sub> 41 A	
grey	<b>282-402</b> 100 (4 x 25)
I <sub>N</sub> 41 A	
grey	<b>282-409</b> 100 (4 x 25)
8 mm / 0.315 in wide	
	<b>209-170</b> 50 (2 x 25)
for test plug 4 mm / 0.157 in Ø	

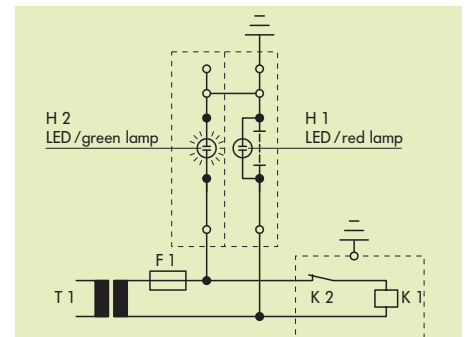
IEC 204-1:1992 "Electrical equipment of industrial machines, part 1: General requirements" 9.4.3.1

Earth faults on control circuits shall not cause unintentional starting, hazardous movements, or prevent stopping of the machine.

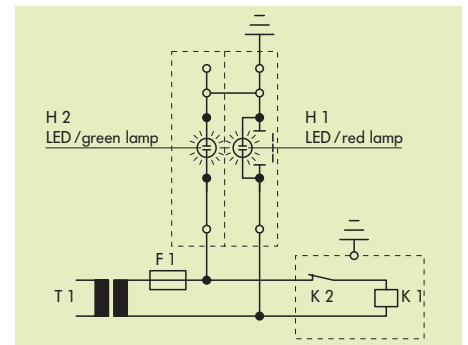
In order to fulfill this requirement, bonding to the protective bonding circuit shall be provided in accordance with 8.2 and the devices shall be connected as described in 9.1.4. Control circuits fed from a transformer and not connected to the protective bonding circuit shall be provided with an insulation monitoring device (e. g. residual current device) which either indicates an earth fault or interrupts the circuit automatically after an earth fault.

In the case of electronic circuits, the connection of one side of the control circuit to the protective bonding circuit in accordance with 9.1.4 can prevent unintentional operation. When this does not help, or if due to other reasons electronic circuits cannot be connected to the protective bonding circuit, other measures shall be taken to achieve the same level of safety.

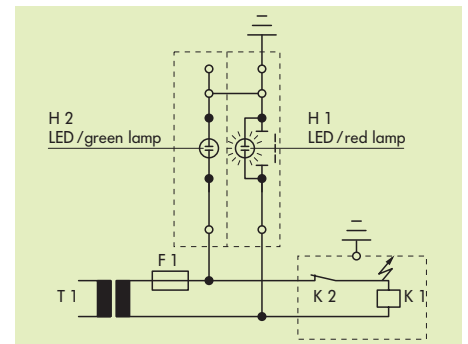
Where the control circuit is directly connected between the phase conductors of the supply or between a phase conductor and a neutral conductor which is either not earthed or earthed through a high impedance, multi-pole control switches which interrupt all live conductors shall be used for start or stop of those machine functions which can cause a hazardous condition or damage to the machine or to the work in progress, in the event of unintentional starting or failure to stop.



**Operating condition**  
slide link closed, auxiliary circuit grounded (earthed), green lamp lights.










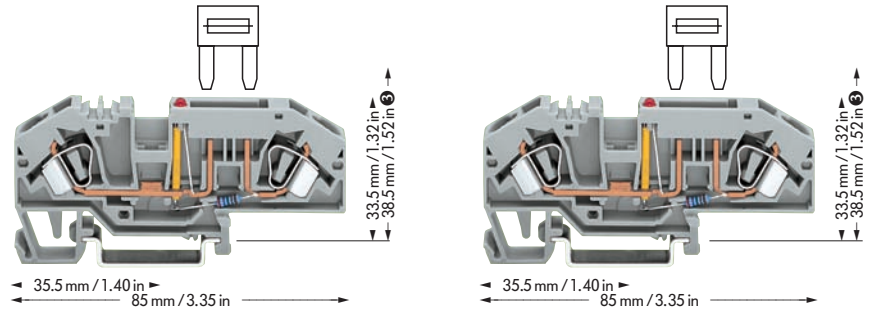
**Test condition – no grounding (earthing)**  
slide link open, auxiliary circuit not grounded (earthed).



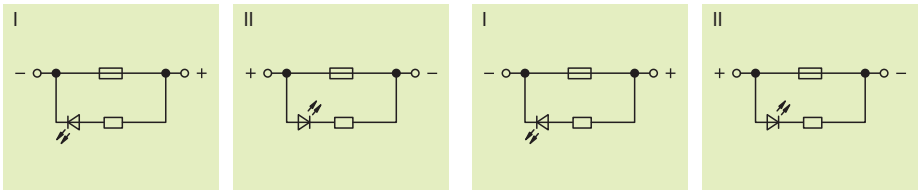
**Fault condition – grounding (earthing)**  
slide link open, auxiliary circuit not grounded (earthed), red lamp lights.

# Fuse Terminal Blocks for Mini-Automotive Blade-Type Fuses, 6 mm<sup>2</sup> /AWG 10 Series 282







<p><b>0.2 – 6 mm<sup>2</sup></b>  <b>400 V/6 kV/3 ① ②</b>  <b>25/30 A ② ③</b></p> <p><b>Terminal block width 8 mm / 0.315 in</b>   <b>12 – 13 mm / 0.49 in</b></p> <p>*  </p>	<p><b>AWG 24 – 10</b>  <b>12 V, 30 A </b></p>	<p><b>0.2 – 6 mm<sup>2</sup></b>  <b>400 V/6 kV/3 ① ②</b>  <b>25/30 A ② ③</b></p> <p><b>Terminal block width 8 mm / 0.315 in</b>   <b>12 – 13 mm / 0.49 in</b></p> <p>* </p>	<p><b>AWG 24 – 10</b>  <b>24 V, 30 A </b></p>
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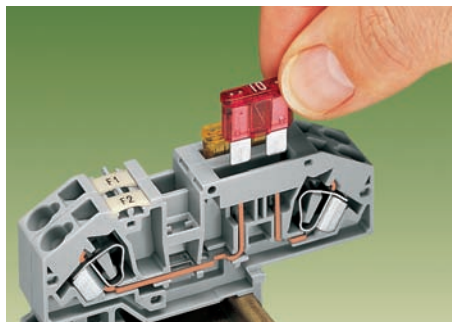
- ① 400 V = rated voltage  
 6 kV = rated surge voltage  
 3 = pollution degree  
 (see also section 15)
- ② Electrical data are determined by the fuse.  
 (Blade-type cartridges, for 42 V and more touch-proof protection)  
 Current consumption LED 4.8 mA
- ③ with inserted fuse



Description	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Terminal block for mini-autom. blade-type fuses,</b> for DIN 35 rail	<b>2-cond. fuse term. bl. for mini-automotive fuses,</b> <b>12 V,</b> with blown fuse indication by LED, with testing facility		<b>2-cond. fuse term. bl. for mini-automotive fuses,</b> <b>24 V,</b> with blown fuse indication by LED, with testing facility	
	Circuit I, grey	<b>282-698/281-429</b> 25	Circuit I, grey	<b>282-698/281-413</b> 25
	Circuit II, grey	<b>282-698/281-449</b> 25	Circuit II, grey	<b>282-698/281-434</b> 25

Accessories		Appropriate marking system <b>WMB/WSB</b> (see section 14)				
	<b>End plate</b>	2 mm / 0.079 in thick			2 mm / 0.079 in thick	
		orange	<b>282-333</b>	100 (4 x 25)	orange	<b>282-333</b> 100 (4 x 25)
		grey	<b>282-334</b>	100 (4 x 25)	grey	<b>282-334</b> 100 (4 x 25)
	<b>Adjacent jumper,</b> insulated	I <sub>N</sub> 41 A			I <sub>N</sub> 41 A	
		grey	<b>282-402</b>	100 (4 x 25)	grey	<b>282-402</b> 100 (4 x 25)
	<b>Alternate jumper,</b> insulated	I <sub>N</sub> 41 A			I <sub>N</sub> 41 A	
		grey	<b>282-409</b>	100 (4 x 25)	grey	<b>282-409</b> 100 (4 x 25)
	<b>Test plug adapter,</b> suitable for terminal blocks 1.5 mm <sup>2</sup> – 10 mm <sup>2</sup> /AWG 16 – 8	8 mm / 0.315 in wide	<b>209-170</b>	50 (2 x 25)	8 mm / 0.315 in wide	<b>209-170</b> 50 (2 x 25)
		for test plug 4 mm / 0.157 in Ø			for test plug 4 mm / 0.157 in Ø	
	<b>Blade-type fuse cartridges,</b> acc. to DIN 72 581-3c/ISO 8820	not offered by WAGO			not offered by WAGO	
	<b>Excess-current circuit-breaker,</b> thermal, mfd by ETA	not offered by WAGO. Recommended excess-current circuit-breakers of ETA Types 1170-02, 1610-21 or 1610-22, individual or block arrangement up to 25 A for conductor cross section 4 mm <sup>2</sup> /AWG 12				

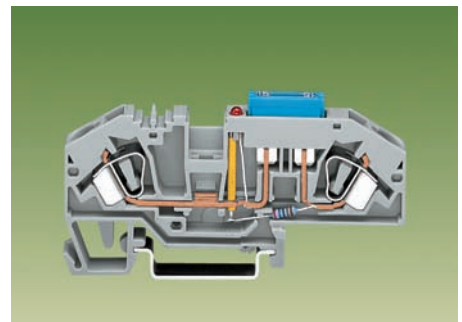
## Application notes



Insertion of a fuse.

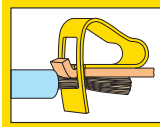


Blown fuse indication by LED.



2-conductor fuse terminal block with mini-automotive blade-type fuse.

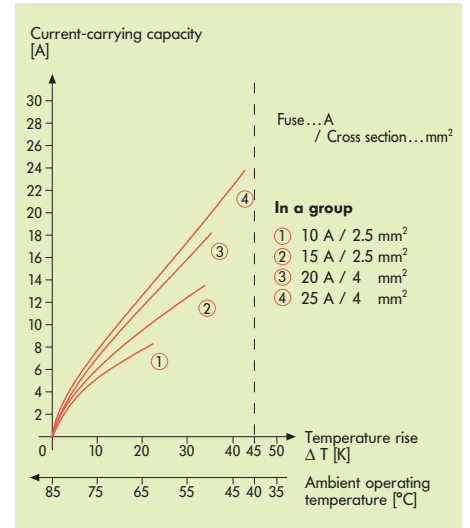
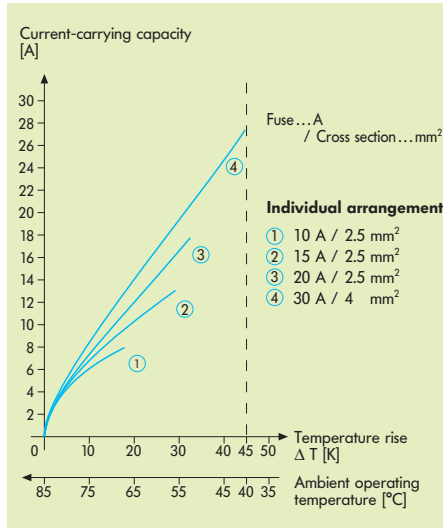
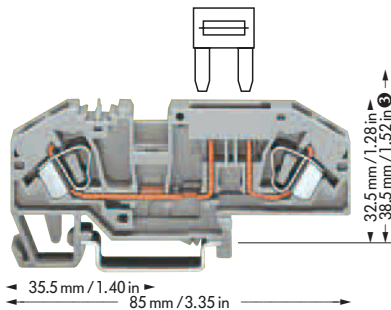
\* For further approvals with corresponding ratings see section 15.



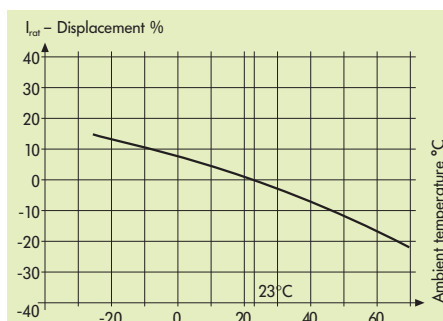
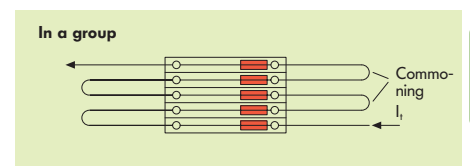
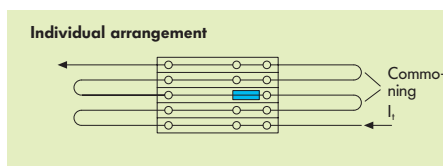
0.2 – 6 mm<sup>2</sup> | AWG 24 – 10  
 400 V/6 kV/3 ① ② | 600 V, 30 A ③ ④  
 25/30 A ② ④ | 24 V, 30 A ③ ④  
 Terminal block width 8 mm / 0.315 in  
 12 – 13 mm / 0.49 in

\* ③ ④

④ Higher ambient temperatures ( $T_{amb}$ ) are an additional burden on fuse cartridges. Therefore, the reduction of the rated current according to the following diagrams and tables (see factor  $F_T$ ) should be taken into account in such applications:



Item No.	Pack. unit pcs
<b>2-cond. fuse term. bl. for mini-automotive fuses,</b>	
without blown-fuse indication,	
with testing facility	
grey	282-696 25
Appropriate marking system <b>WMB/WSB</b> (see section 14)	
2 mm / 0.079 in thick	
orange	282-333 100 (4 x 25)
grey	282-334 100 (4 x 25)
$I_N$ 41 A	
grey	282-402 100 (4 x 25)
$I_N$ 41 A	
grey	282-409 100 (4 x 25)
8 mm / 0.315 in wide	
	209-170 50 (2 x 25)
for test plug 4 mm / 0.157 in $\varnothing$	
not offered by WAGO	
not offered by WAGO.	
Recommended excess-current circuit-breakers of ETA	



**Information from the mini-automotive blade-type fuse manufacturers**

Derating $T_{amb}/^{\circ}C$	%	$F_T$
- 25	14	0.877
- 20	13	0.885
- 15	12	0.893
- 10	11	0.901
- 5	10	0.909
0	9	0.917
5	8	0.926
10	6	0.943
15	4	0.962
20	2	0.980
23	0	1.000
30	- 2	1.020
35	- 4	1.042
40	- 6	1.064
45	- 8	1.087
50	- 10	1.111
55	- 13	1.149
60	- 16	1.190
65	- 19	1.235
70	- 22	1.282

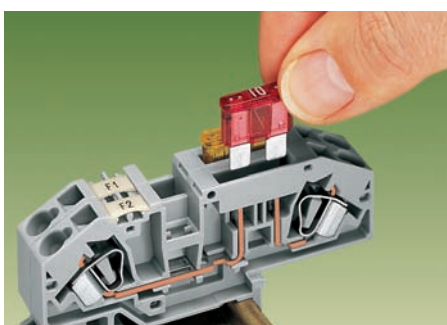
The rated currents of the fuse cartridges are defined differently in international standards.

Due to the different current rating definitions, the recommended current-carrying permanent capacity of the fuses is max. 80% of their rated current according to DIN 72581 part 3 (for an ambient operating temperature of 23°C).

Selecting the correct fuse cartridge is important for product safety within applications as well as the service life/operational reliability of the fuse cartridges. Fuse cartridges can operate perfectly as protection (break-off point) if they are properly selected and are used in accordance with the manufacturers specifications.

In general it is necessary to test fuse cartridges under normal conditions and operational failures within your application.

**With regard to the product safety, it is in general necessary to test the fuse in the appliance under normal conditions and operational failures.**



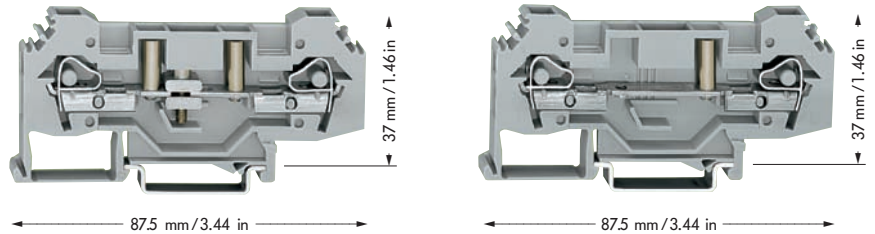
Insertion of a fuse.



# Disconnect Terminal Blocks for Test Purposes, Ground (Earth) Conductor Disconnect Terminal Blocks 6 mm<sup>2</sup>, Series 282

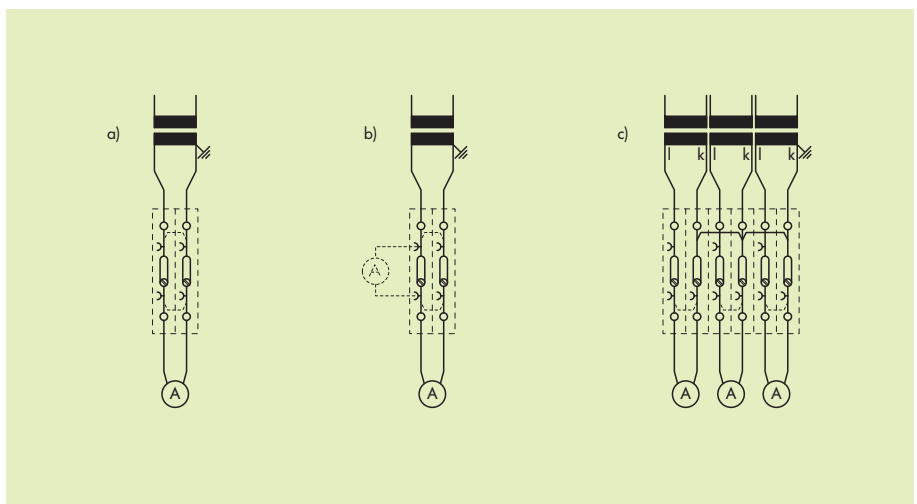
<p><b>0.2 – 6 mm<sup>2</sup></b> 400 V/6 kV/3 ① 41 A</p> <p><b>AWG 24 – 10</b> 300 V, 30 A ② 300 V, 40 A ③</p> <p>Terminal block width 8 mm / 0.315 in 12 – 13 mm / 0.49 in</p> <p>* ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿</p>	<p><b>0.2 – 6 mm<sup>2</sup></b> 400 V/6 kV/3 ① 41 A</p> <p><b>AWG 24 – 10</b> 300 V, 30 A ② 300 V, 40 A ③</p> <p>Terminal block width 8 mm / 0.315 in 12 – 13 mm / 0.49 in</p> <p>* ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿</p>
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① 400 V = rated voltage  
6 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)



Description	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Disconnect terminal block for test purposes, for DIN 35 rail</b>	<b>Disconnect terminal block for test purposes</b>			
	with test sockets 4 mm / 0.157 in Ø			
	grey	<b>282-131</b>	25	
<b>Through terminal block, for DIN 35 rail</b>	<b>Through terminal block</b>			
	grey	<b>282-133</b>	25	
<b>Accessories</b> Appropriate marking system <b>WMB/WSB</b> (see section 14)				
	<b>End and intermediate plate</b>	4 mm / 0.157 in thick		4 mm / 0.157 in thick
		orange	<b>282-315</b>	50 (2 x 25)
		grey	<b>282-314</b>	50 (2 x 25)
	<b>Screwless end stop</b>	6 mm / 0.236 in wide	<b>249-116</b>	100 (4 x 25)
		10 mm / 0.394 in wide	<b>249-117</b>	50 (2 x 25)
	<b>Adjacent jumper, insulated</b>	I <sub>N</sub> 41 A		I <sub>N</sub> 41 A
		grey	<b>282-402</b>	100 (4 x 25)
	<b>Alternate jumper, insulated</b>	I <sub>N</sub> 41 A		I <sub>N</sub> 41 A
		grey	<b>282-409</b>	100 (4 x 25)
	<b>Test plug adapter, suitable for terminal blocks 1.5 mm<sup>2</sup> – 10 mm<sup>2</sup>/AWG 16 – 8</b>	8 mm / 0.315 in wide	<b>209-170</b>	50 (2 x 25)
		for test plug 4 mm / 0.157 in Ø		for test plug 4 mm / 0.157 in Ø
	<b>Lock-out, snap-in type, to prevent reclosing of slide link</b>	orange	<b>282-137</b>	100 (4 x 25)
<b>Examples of circuit configuration</b>				

- a) Current transformer circuit with current path separation and commoning possibility.
- b) Current transformer circuit with the connection of a second test unit through test sockets.
- c) Transformer test circuit, K-conductors of the transformers connected.



\* For further approvals with corresponding ratings see section 15.



# Fused Disconnect Terminal Blocks for Miniature Fuses with CAGE CLAMP® connection, Series 281 . . .

## Blown fuse indication

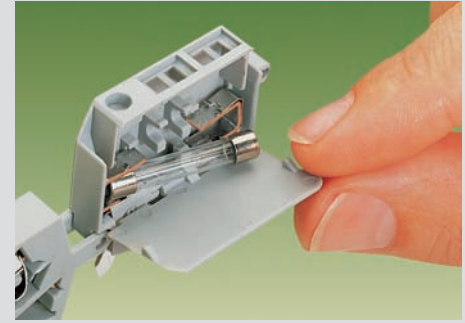


Blown fuse indication by LED or neon lamp

## Exchange of fuse

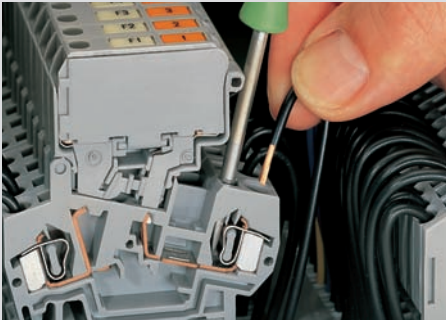


Before exchanging the fuse, pivot the fuse holder in the locked open position



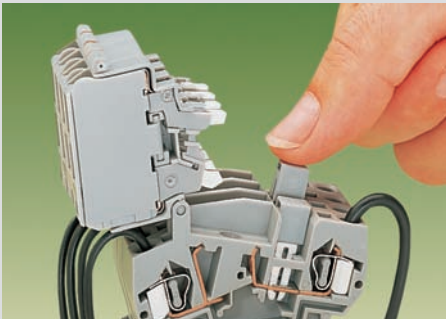
One end of the fuse is automatically ejected from the holder when opening the cover . . .

## CAGE CLAMP® connection

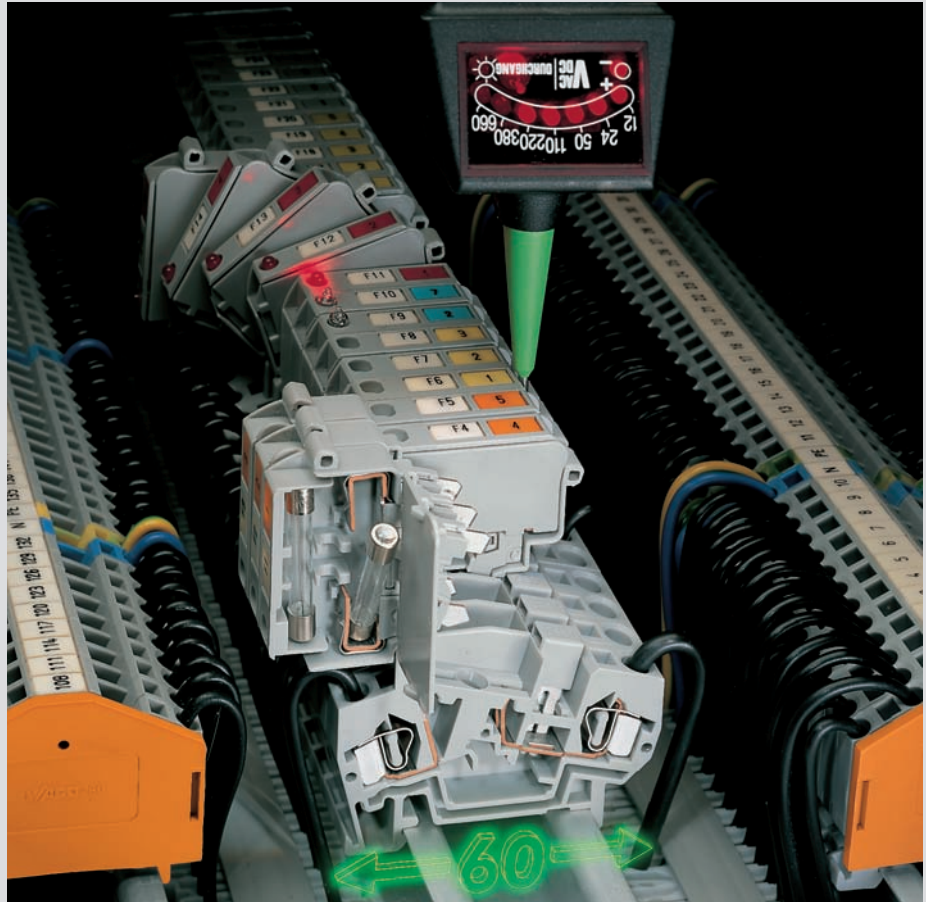


Connection of conductors  
Front-entry

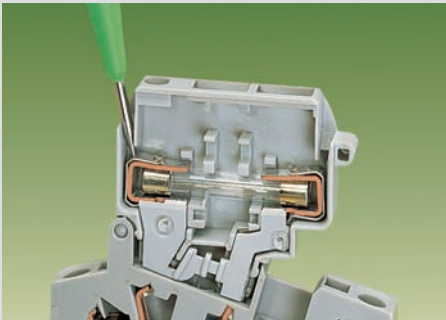
## Commoning



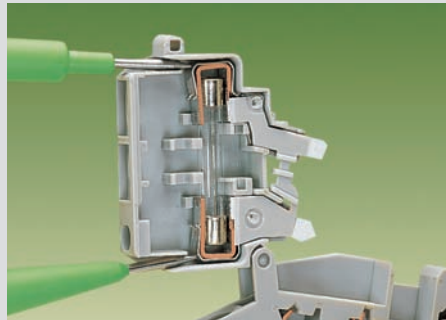
Distribution of current to several fuse protected circuits by using insulated touchproof jumpers



## Testing



Voltage test, either at input or output with fuse holder in closed position (live)



Through test with fuse holder in open position (no voltage)

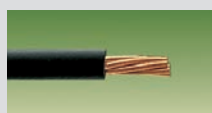


Voltage test at input in the test slot of the current bar



CAGE CLAMP® clamps the following copper wires: \*

solid



stranded



fine stranded, also with tinned single strands

\* For aluminum wire see notes in section 15!

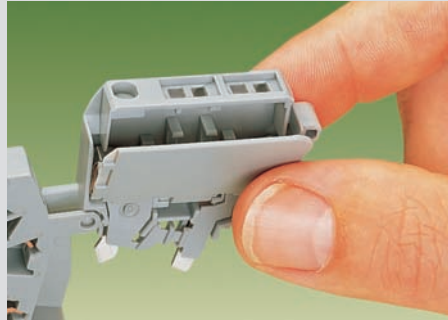


## ... Description and Handling

### Exchange of fuse (continued)

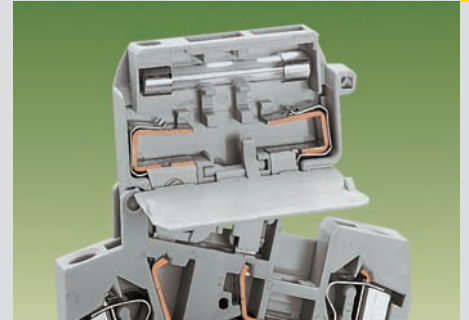


... and can be easily removed by hand.  
Insert new fuse ...



... and snap the cover closed

### Spare fuse



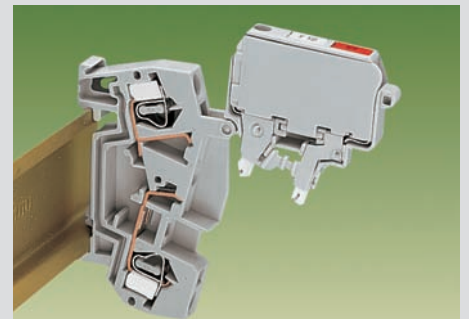
Storage of spare fuse  
(fuse holder without blown fuse indication)

### Touchproof protection

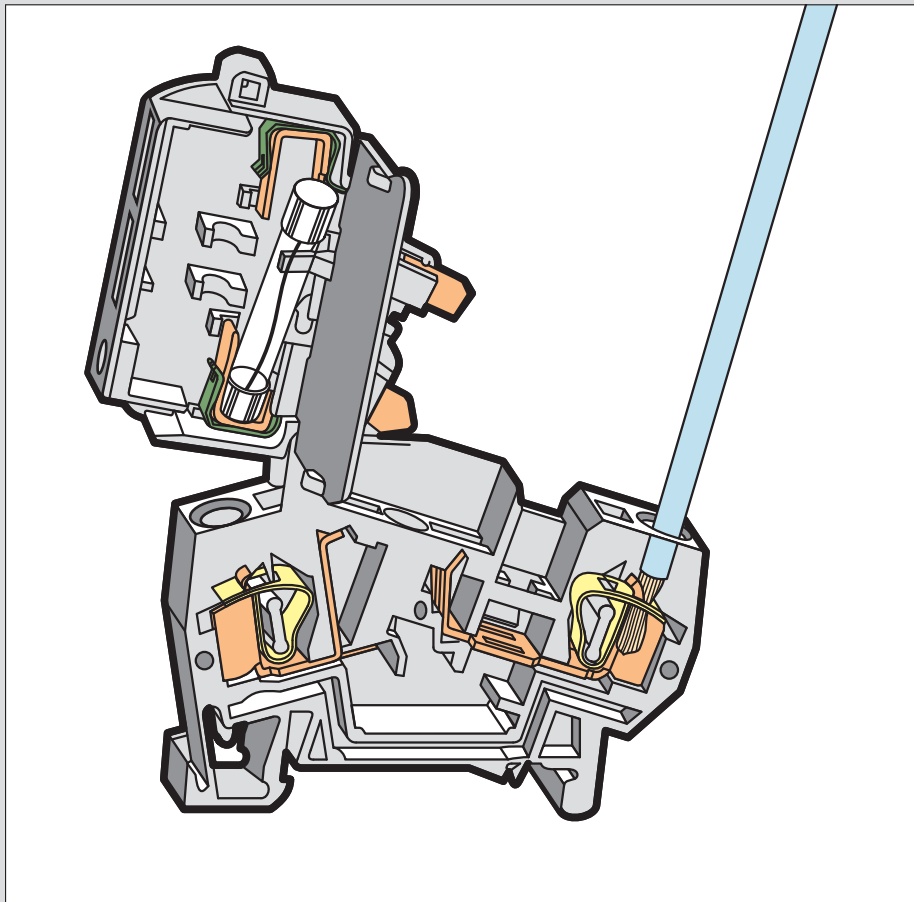


"Touchproof" protection in all positions  
of the fuse holder

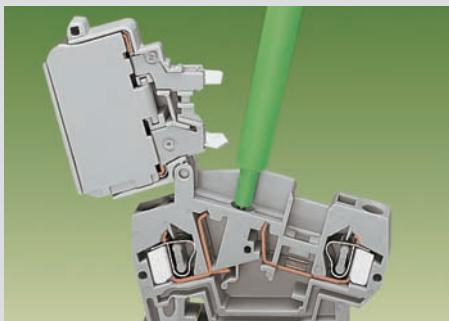
### Locked position



Also in vertical assembly of the fused blocks safe  
locking of the fuse holder in pivoted open position



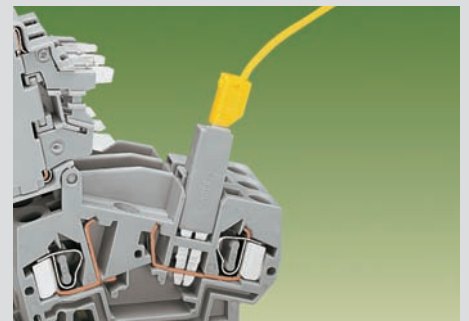
### Testing (continued)



Testing of voltage at the output  
through separate test slot



Current measuring between jumper slot and  
separate test slot



Voltage testing at input with test plug adapter  
280-404 (shown) or test plug 281-407



fine-stranded wire –  
tip bonded












fine-stranded wire  
with crimped ferrule ①



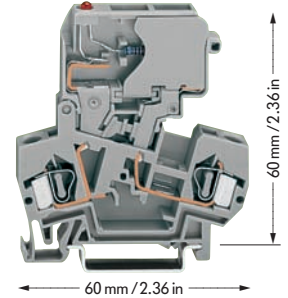
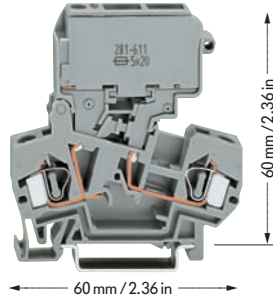
fine-stranded wire  
with crimped pin terminal

① When using wires with ferrules, it is necessary to use a terminal block one size larger than the nominal cross section of the wire.

# Fused Disconnect Terminal Blocks 4 mm<sup>2</sup> / AWG 12, for Miniature Metric Fuses 5 x 20 mm, 5 x 25 mm, 5 x 30 mm Series 281

<p><b>0.08 – 4 mm<sup>2</sup></b>   <b>AWG 28 – 12</b>  <b>800 V/8 kV/3 ① ②</b>   <b>600 V, 10 A ② ③</b>  <b>10 A max. ②</b></p> <p><b>Terminal block width 8 mm / 0.315 in</b>   <b>9 – 10 mm / 0.37 in</b></p> <p>*    </p>	<p><b>0.08 – 4 mm<sup>2</sup></b>   <b>AWG 28 – 12</b>  <b>800 V/8 kV/3 ① ②</b>   <b>30/65 V, 10 A ② ③</b>  <b>10 A max. ②</b></p> <p><b>Terminal block width 8 mm / 0.315 in</b>   <b>9 – 10 mm / 0.37 in</b></p> <p>*   </p>
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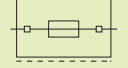
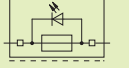
- ① 800 V = rated voltage  
8 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② Nominal voltage and current are given by the LED or fuse  
Technical details see pages 7.38 – 7.39
- ③ Leakage current in case of blown fuse:  
LED 6 mA, neon lamp < 0.4 mA



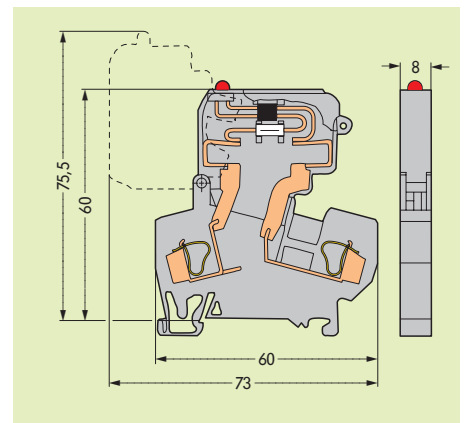
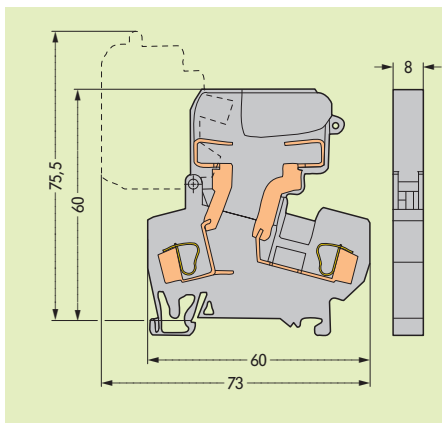
Description	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Fused disconnect terminal block with pivotable fuse holder, for DIN 35 rail, for miniature metric fuses</b>	<b>without blown fuse indication</b>		<b>with blown fuse indication by LED</b>	
5 x 20 mm	grey	<b>281-611</b>	50	grey 15 – 30 V ≈ ③ <b>281-611/281-541</b>
5 x 20 mm	orange	<b>281-616</b>	50	grey 30 – 65 V ≈ ③ <b>281-611/281-542</b>
5 x 25 mm	grey	<b>281-612</b>	50	grey 15 – 30 V ≈ ③ <b>281-612/281-541</b>
5 x 25 mm				grey 30 – 65 V ≈ ③ <b>281-612/281-542</b>
5 x 30 mm	grey	<b>281-622</b>	50	grey 15 – 30 V ≈ ③ <b>281-622/281-541</b>
5 x 30 mm				grey 30 – 65 V ≈ ③ <b>281-622/281-542</b>

### Accessories

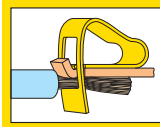
Appropriate marking system **WMB/WSB** (see section 14)

	<b>End and intermediate plate</b>	2.5 mm / 0.098 in thick		2.5 mm / 0.098 in thick	
	orange	<b>281-309</b>	100 (4 x 25)	orange	<b>281-309</b>
	grey	<b>281-311</b>	100 (4 x 25)	grey	<b>281-311</b>
	<b>Adjacent jumper, insulated</b>	I <sub>N</sub> 32 A		I <sub>N</sub> 32 A	
	grey	<b>281-402</b>	200 (8 x 25)	grey	<b>281-402</b>
	<b>Test plug adapter, suitable for terminal blocks 1.5 mm<sup>2</sup> – 4 mm<sup>2</sup>/AWG 16 – 12</b>	5 mm / 0.197 in wide		5 mm / 0.197 in wide	
	for test plug 210-137 (2.3 mm / 0.091 in Ø)	<b>280-404</b>	100 (4 x 25)	<b>280-404</b>	100 (4 x 25)
	<b>Test plug, 6 mm / 0.236 in wide, with CAGE CLAMP® for 0.08 mm<sup>2</sup> – 2.5 mm<sup>2</sup>/AWG 28-14</b>	I <sub>N</sub> 24 A		I <sub>N</sub> 24 A	
		<b>281-407</b>	100 (4 x 25)	<b>281-407</b>	100 (4 x 25)
	<b>Connecting strip, for ganging several fuse holders, length 1 m / 3'3"</b>	transparent	<b>210-254</b>	1	transparent
	<b>Miniature metric fuse</b>		<b>contact factory</b>		<b>contact factory</b>

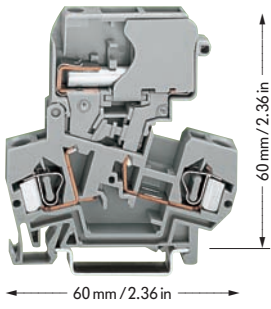
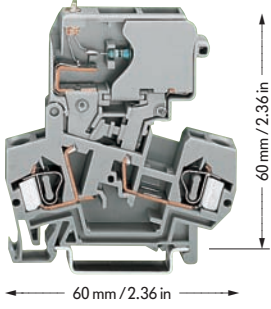
### Dimensions (in mm)



\* For further approvals with corresponding ratings see section 15.



<p>0.08 – 4 mm<sup>2</sup>   AWG 28 – 12 800 V/8 kV/3 ① ②   110/220V, 10 A ② ③ ④ ⑤ 10 A max. ②</p> <p>Terminal block width 8 mm / 0.315 in 9 – 10 mm / 0.37 in</p> <p>* ① ② ③ ④ ⑤</p>	<p>0.08 – 4 mm<sup>2</sup>   AWG 28 – 12 800 V/8 kV/3 ①   600 V, 10 A ③ ④ 16 A</p> <p>Terminal block width 8 mm / 0.315 in 9 – 10 mm / 0.37 in</p> <p>* ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿</p>	<p><b>Application notes</b></p>
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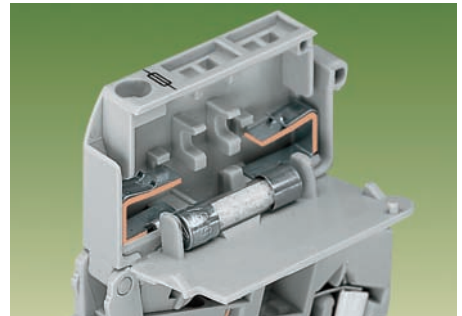
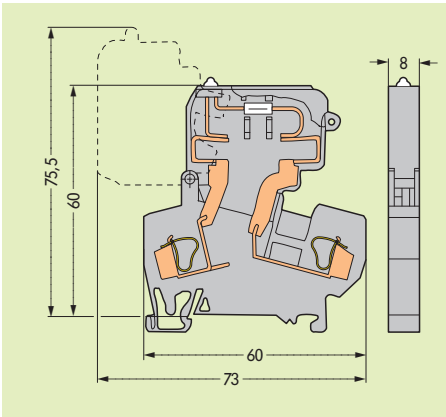
Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>with blown fuse indication by neon lamp</b>		<b>Disconnect terminal blocks with "knife" disconnect</b>	
		grey	<b>281-624</b> 50
		orange	<b>281-672</b> 50
grey 230 V ≈ ③	<b>281-611/281-417</b> 50		
grey 120 V ≈ ③	<b>281-611/281-418</b> 50		
grey 230 V ≈ ③	<b>281-612/281-417</b> 50		
grey 120 V ≈ ③	<b>281-612/281-418</b> 50		
grey 230 V ≈ ③	<b>281-622/281-417</b> 50		
grey 120 V ≈ ③	<b>281-622/281-418</b> 50		
Appropriate marking system <b>WMB/WSB</b> (see section 14)			
2.5 mm / 0.098 in thick		2.5 mm / 0.098 in thick	
orange	<b>281-309</b> 100 (4 x 25)	orange	<b>281-309</b> 100 (4 x 25)
grey	<b>281-311</b> 100 (4 x 25)	grey	<b>281-311</b> 100 (4 x 25)
I <sub>N</sub> 32 A		I <sub>N</sub> 32 A	
grey	<b>281-402</b> 200 (8 x 25)	grey	<b>281-402</b> 200 (8 x 25)
5 mm / 0.197 in wide		5 mm / 0.197 in wide	
	<b>280-404</b> 100 (4 x 25)		<b>280-404</b> 100 (4 x 25)
for test plug 210-137 (2.3 mm / 0.091 in Ø)		for test plug 210-137 (2.3 mm / 0.091 in Ø)	
I <sub>N</sub> 24 A		I <sub>N</sub> 24 A	
	<b>281-407</b> 100 (4 x 25)		<b>281-407</b> 100 (4 x 25)
transparent	<b>210-254</b> 1	transparent	<b>210-254</b> 1
<b>contact factory</b>			



Fused or fused disconnect terminal blocks with a width of 8 mm/0.315 in can be assembled adjacent to each other. At the end of an assembly, if there is **no** adjacent fused or fused disconnect terminal block, an end or intermediate plate must be used.



Fuse holders are printed with correct fuse size and . . .



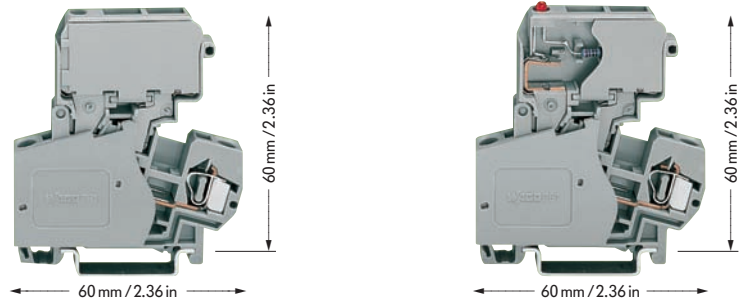
. . . are fitted with stops on the inside of the cover. For types 5 x 20 mm, 5 x 25 mm and 1/4" x 1"



# Fused Disconnect Terminal Blocks 4 mm<sup>2</sup> / AWG 12, for Miniature Metric Fuses 1/4" x 1", 1/4" x 1 1/4", Series 281

<p>0.08 – 4 mm<sup>2</sup>   AWG 28 – 12 800 V/8 kV/3 ①②   600 V, 10 A ③ </p> <p>Terminal block width 10 mm / 0.394 in  9 – 10 mm / 0.37 in</p> <p>* </p>	<p>0.08 – 4 mm<sup>2</sup>   AWG 28 – 12 800 V/8 kV/3 ①②   30/65 V, 10 A ③ </p> <p>Terminal block width 10 mm / 0.394 in  9 – 10 mm / 0.37 in</p> <p>* </p>
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- ① 800 V = rated voltage  
8 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② Nominal voltage and current are given by the LED or fuse  
Technical details see pages 7.38 – 7.39
- ③ Leakage current in case of blown fuse:  
LED 6 mA, neon lamp < 0.4 mA



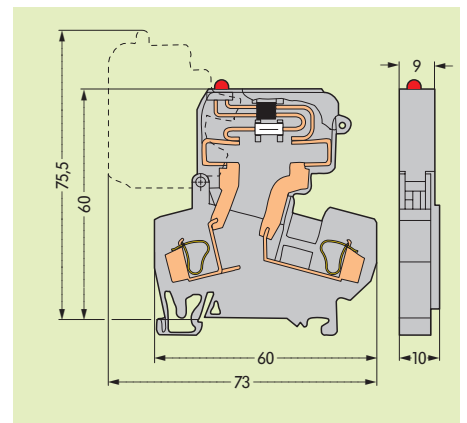
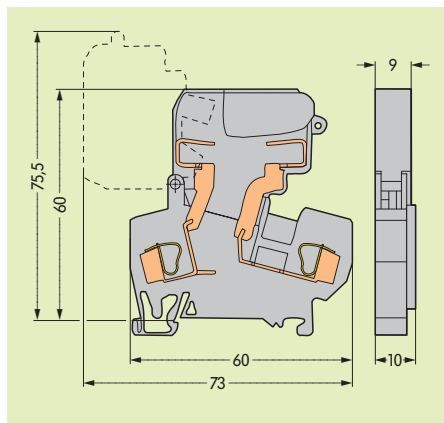
Description	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Fused disconnect terminal block, with pivotable fuse holder,</b>	<b>without blown fuse indication</b>		<b>with blown fuse indication by LED</b>	
for DIN 35 rail, 1/4" x 1"	grey	<b>281-613</b>	50	grey 15 – 30 V≈ ③ <b>281-613/281-541</b>
for miniature fuses 1/4" x 1"				grey 30 – 65 V≈ ③ <b>281-613/281-542</b>
	grey	<b>281-623</b>	50	grey 15 – 30 V≈ ③ <b>281-623/281-541</b>
				grey 30 – 65 V≈ ③ <b>281-623/281-542</b>

## Accessories

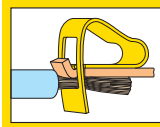
Appropriate marking system **WMB/WSB** (see section 14)

	<b>End and intermediate plate</b>	2.5 mm / 0.098 in thick		2.5 mm / 0.098 in thick	
		orange	<b>281-309</b>	orange	<b>281-309</b>
		grey	<b>281-311</b>	grey	<b>281-311</b>
	<b>Adjacent jumper, insulated</b>	I <sub>N</sub> 32 A		I <sub>N</sub> 32 A	
		grey	<b>281-402</b>	grey	<b>281-402</b>
	<b>Test plug adapter,</b> suitable for terminal blocks 1.5 mm <sup>2</sup> – 4 mm <sup>2</sup> /AWG 16 – 12	5 mm / 0.197 in wide		5 mm / 0.197 in wide	
		for test plug 210-137 (2.3 mm / 0.091 in Ø)	<b>280-404</b>	for test plug 210-137 (2.3 mm / 0.091 in Ø)	<b>280-404</b>
	<b>Test plug,</b> 6 mm / 0.236 in wide, with CAGE CLAMP® for 0.08 mm <sup>2</sup> – 2.5 mm <sup>2</sup> /AWG 28-14	I <sub>N</sub> 24 A		I <sub>N</sub> 24 A	
			<b>281-407</b>		<b>281-407</b>
	<b>Connecting strip,</b> for ganging several fuse holders, length 1 m / 3'3"	transparent	<b>210-254</b>	transparent	<b>210-254</b>
	<b>Miniature metric fuse</b>		<b>contact factory</b>		<b>contact factory</b>

## Dimensions (in mm)

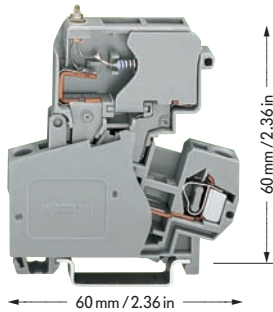


\* For further approvals with corresponding ratings see section 15.



0.08 – 4 mm<sup>2</sup> | AWG 28 – 12  
 800 V/8 kV/3 ①② | 110/220 V, 10 A ②   
 10 A max. ②  
 Terminal block width 10 mm / 0.394 in  
 9 – 10 mm / 0.37 in  
 \*

Application notes



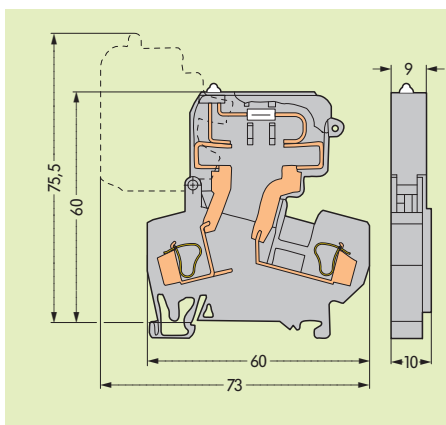
Item No.	Pack. unit pcs	
<b>with blown fuse indication by neon lamp</b>		
grey 230 V ≈	<b>281-613/281-417</b>	50
grey 120 V ≈	<b>281-613/281-418</b>	50
grey 230 V ≈	<b>281-623/281-417</b>	50
grey 120 V ≈	<b>281-623/281-418</b>	50
Appropriate marking system <b>WMB/WSB</b> (see section 14)		
2.5 mm / 0.098 in thick		
orange	<b>281-309</b>	100 (4 x 25)
grey	<b>281-311</b>	100 (4 x 25)
I <sub>N</sub> 32 A		
grey	<b>281-402</b>	200 (8 x 25)
5 mm / 0.197 in wide		
	<b>280-404</b>	100 (4 x 25)
for test plug 210-137 (2.3 mm / 0.091 in Ø)		
I <sub>N</sub> 24 A		
	<b>281-407</b>	100 (4 x 25)
transparent	<b>210-254</b>	1
	<b>contact factory</b>	



In case of 10 mm / 0.394 in wide terminal blocks a spacer is part of the terminal block and will be supplied as a standard.  
 At the end of an assembly or if there is **no** adjacent fused terminal block, an end or intermediate plate must be used.



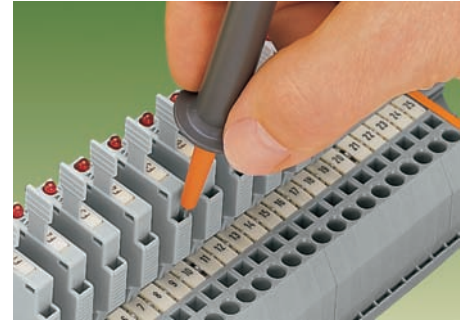
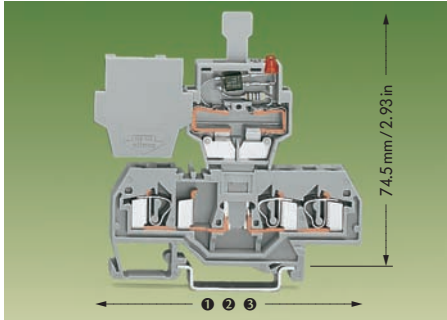
2 marker receptacles each per fuse holder for individual WMB Multi marking or WSB Quick marking (example: 8 mm / 0.315 in terminal blocks)



Gangung of several fuse holders with a connecting strip (example: 8 mm / 0.315 in terminal blocks)

# Pluggable Fuse Modules for Replaceable Miniature Fuses 4 mm<sup>2</sup> /AWG 12, Series 281

<p><b>Pluggable fuse modules on terminal blocks for pluggable modules</b> Item No. 286-890 see W4, Volume 3</p>	<p><b>250 V max.*</b> <b>6.3 max.</b></p>	<p>* Electrical ratings are given by the fuse or nominal voltage of the indicator lamp respectively. Technical details see pages 7.38 – 7.39.</p>
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open side of terminal	Description	Item No.	Pack. unit pcs
	<b>Fuse plug</b> , for miniature metric fuses 5 x 20 mm and 5 x 25 mm	6 mm / 0.236 in wide with pull-tab <b>281-511</b>	50
	<b>Fuse plug</b> , same as above, with hole for one LED (for self-assembly)	6 mm / 0.236 in wide with pull-tab <b>281-512</b>	50
	<b>Fuse plug</b> , same as above, with additional indicator lamp, LED, AC/DC 24 V, can be used in both switching directions	6 mm / 0.236 in wide with pull-tab <b>281-512/281-501</b>	50
	Neon lamp AC/DC 120 V AC/DC 230 V	6 mm / 0.236 in wide with pull-tab <b>281-512/281-418</b> <b>281-512/281-417</b>	50 50
<b>Terminal blocks and accessories</b>		Appropriate marking system Plug T. bl. <b>WSB</b> 4 mm / 0.157 in wide <b>WMB/WSB</b>	
	<b>2-cond. carrier term. block ①</b> , 0.08 – 4 mm <sup>2</sup> /AWG 28 – 12 stripped length 9 – 10 mm / 0.37 in	Terminal block width 6 mm / 0.236 in grey <b>281-916</b>	50
	<b>End and intermediate plate</b> , for 2-conductor carrier terminal block	2.5 mm / 0.098 in thick orange <b>281-329</b> grey <b>281-328</b>	100 (4 x 25) 100 (4 x 25)
	<b>3-cond. carrier term. block ②</b> , 0.08 – 4 mm <sup>2</sup> /AWG 28 – 12 stripped length 9 – 10 mm / 0.37 in	Terminal block width 6 mm / 0.236 in grey <b>281-610</b>	50
	<b>End and intermediate plate</b> , for 3-conductor carrier terminal block	2.5 mm / 0.098 in thick orange <b>281-326</b> grey <b>281-324</b>	100 (4 x 25) 100 (4 x 25)
	<b>4-cond. carrier term. block ③</b> , 0.08 – 4 mm <sup>2</sup> /AWG 28 – 12 stripped length 9 – 10 mm / 0.37 in	Terminal block width 6 mm / 0.236 in grey <b>281-656</b>	50
	<b>End and intermediate plate</b> , for 4-conductor carrier terminal block	2.5 mm / 0.098 in thick orange <b>281-335</b> grey <b>281-334</b>	100 (4 x 25) 100 (4 x 25)
	<b>Comb type jumper bar</b> , insulated, see also page 2.44	2-way <b>281-482</b> 3-way <b>281-483</b> 5-way <b>281-485</b>	100 (4 x 25) 100 (4 x 25) 100 (4 x 25)
	<b>Alternate comb type jumper bar</b> , insulated, I <sub>N</sub> 32 A	2-way <b>281-492</b>	100 (4 x 25)
	<b>Operating tool</b> , insulated	2-way <b>280-432</b> 3-way <b>280-433</b> 5-way <b>281-440</b>	1 1 1
	<b>Wire commoning chain</b> , insulated, 50 connections, 8 A	Max. commoning distance 120 mm / 4.724 in black <b>210-103</b> blue <b>210-123</b>	1 1
	<b>Shorting link</b> , 5 x 20 mm / 0.20 x 0.79 in, 6.3 A, if the fuse plug is used as disconnect plug	<b>281-503</b>	250 (10 x 25)

The use of pluggable fuse holders with rail mounted terminal blocks for protection of control circuits offers many advantages to the user since the function and the wiring are accomplished by two separate parts:

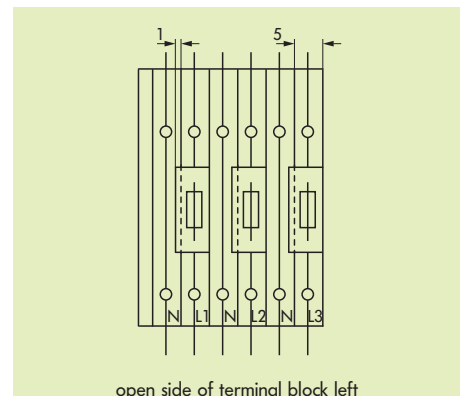
- no additional cost for assembly and wiring
- no risk of accidental contact with live parts during disconnection of fuse plug
- in case of exchanging a defective fuse the fuse plug is completely separated from the carrier terminal block
- therefore safe exchange of the fuse away from current carrying parts
- the fuse plug can be taken away by the serviceman avoiding unintentional reclosing of the circuit by another person
- quick exchange of a fuse by using a prepared "stand-by plug."

Further advantages:

- optional LED indicates blown fuse
- marking facility on the fuse plug for clear coordination to the correct carrier terminal block (WSB-Quick Marking System 4 mm / 0.157 in)
- two touchproof test slots
- high density with only 6 mm / 0.236 in width of terminal block/fuse plug
- instead of a fuse, a shorting link may be used as a disconnect plug.

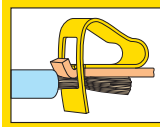
When corresponding Neutral-circuit is adjacent to a fuse plug, a 5 mm / 0.197 in. wide space saving terminal block may be used, as a 6 mm / 0.236 in. fuse plug may overlap the terminal block. See right page for 5 mm / 0.197 in wide carrier terminal blocks (can be used with end plate, for example).

- ① 59 mm / 2.32 in
- ② 73.5 mm / 2.89 in
- ③ 86 mm / 3.39 in

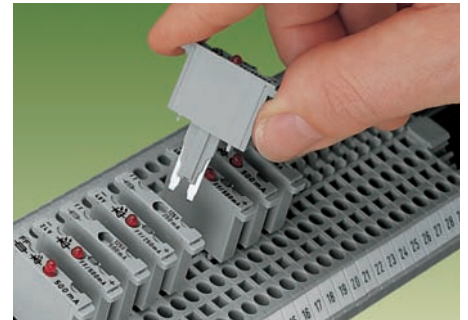
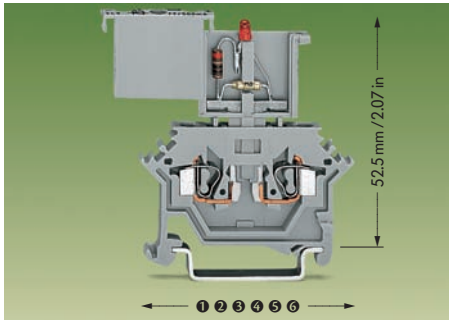




# Pluggable Fuse Modules for Replaceable Miniature Fuses 2.5 mm<sup>2</sup> /AWG 14, Series 280



	<b>125 V max.*</b> <b>5 A*</b>	* Electrical ratings are given by the fuse or nominal voltage of the indicator lamp respectively. Technical details see pages 7.38 – 7.39.
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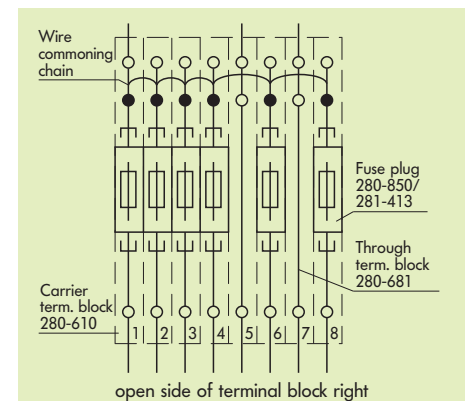
open side of terminal	Description		Item No.	Pack. unit pcs
	<b>Fuse plug</b> , 5 mm / 0.197 in wide, with soldered miniature fuse	250 mA FF 500 mA FF	<b>280-850</b> <b>280-852</b>	100 100
		1 A FF 2 A FF	<b>280-854</b> <b>280-856</b>	100 100
	<b>Fuse plug</b> , same as above, with additional indicator lamp, LED, DC 15 – 30 V	250 mA FF 500 mA FF	<b>280-850/281-413</b> <b>280-852/281-413</b>	100 100
residual current in case of blown fuse LED 5 – 20 mA		1 A FF 2 A FF	<b>280-854/281-413</b> <b>280-856/281-413</b>	100 100
<b>Terminal blocks and accessories</b>		Appropriate marking system	<b>WMB/WSB</b> (see section 14)	
	<b>2-cond. carrier term. block</b> , 0.08 – 2.5 mm <sup>2</sup> /AWG 28 – 14 stripped length 8 – 9 mm / 0.33 in	Terminal block width 5 mm / 0.197 in grey	<b>280-916</b> ①	100
	<b>End and intermediate plate</b> , for 2-conductor carrier terminal block 280-916	2.5 mm / 0.098 in thick orange grey	<b>280-309</b> <b>280-308</b>	100 (4 x 25) 100 (4 x 25)
	<b>2-cond. carrier term. block</b> , 0.08 – 2.5 mm <sup>2</sup> /AWG 28 – 14 stripped length 8 – 9 mm / 0.33 in	Terminal block width 5 mm / 0.197 in grey	<b>280-616</b> ②	100
	<b>End and intermediate plate</b> , for 2-conductor carrier terminal block 280-616	2.5 mm / 0.098 in thick orange grey	<b>280-331</b> <b>280-330</b>	100 (4 x 25) 100 (4 x 25)
	<b>3-cond. carrier term. block</b> , 0.08 – 2.5 mm <sup>2</sup> /AWG 28 – 14 stripped length 8 – 9 mm / 0.33 in	Terminal block width 5 mm / 0.197 in grey	<b>280-610</b> ③	100
	<b>End and intermediate plate</b> , for 3-conductor carrier terminal block 280-610	2.5 mm / 0.098 in thick orange grey	<b>280-326</b> <b>280-324</b>	100 (4 x 25) 100 (4 x 25)
	<b>4-cond. carrier term. block</b> , 0.08 – 2.5 mm <sup>2</sup> /AWG 28 – 14 stripped length 8 – 9 mm / 0.33 in	Terminal block width 5 mm / 0.197 in grey	<b>280-816</b> ⑤ <b>280-686</b> ④	100 100
	<b>End and intermediate plate</b> , for 4-conductor carrier terminal blocks	2.5 mm / 0.098 in thick orange grey	<b>280-315</b> <b>280-314</b>	100 (4 x 25) 100 (4 x 25)
	<b>4-cond. carrier term. block</b> , 0.08 – 2.5 mm <sup>2</sup> /AWG 28 – 14 stripped length 8 – 9 mm / 0.33 in	Terminal block width 5 mm / 0.197 in grey	<b>280-606</b> ⑥	100
	<b>End and intermediate plate</b> , for 4-conductor carrier terminal block 280-606	2.5 mm / 0.098 in thick orange grey	<b>280-317</b> <b>280-316</b>	100 (4 x 25) 100 (4 x 25)
	<b>Comb type jumper bar</b> , insulated, see also page 2.44	2-way 3-way 10-way	<b>280-482</b> <b>280-483</b> <b>280-490</b>	200 200 50
	<b>Operating tool</b> , insulated	2-way 3-way 10-way	<b>280-432</b> <b>280-433</b> <b>280-440</b>	1 1 1
	<b>Wire commoning chain</b> , insulated, 50 connections, 8 A	Max. commoning distance 120 mm / 4.724 in	black blue	1 1

The use of pluggable fuse holders with rail mounted terminal blocks for protection of control circuits offers many advantages to the user since the function and the wiring are accomplished by two separate parts:

- no additional cost for assembly and wiring
- no risk of accidental contact with live parts during disconnection
- quick exchange of fuse plug in case of blown fuse
- the fuse plug can be taken away by the serviceman avoiding unintentional reclosing of the circuit by another person

Further advantages

- extremely high density with only 5 mm / 0.197 in width of terminal block/fuse plug
- optional LED indicates blown fuse











Terminal block width

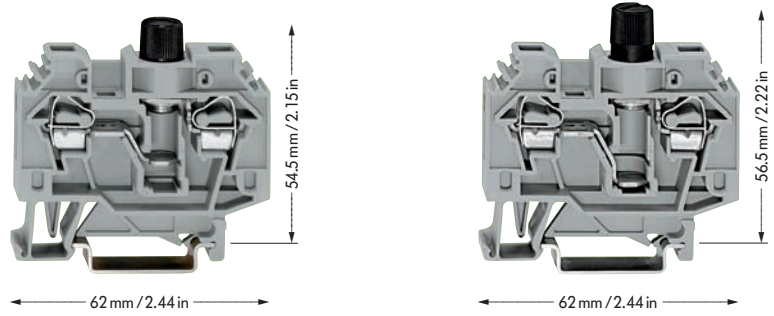
- ① 53 mm / 2.09 in
- ② 50 mm / 1.97 in
- ③ 64 mm / 2.52 in
- ④ Terminal block marking in center position right 75 mm / 2.95 in
- ⑤ Terminal block marking in center position left 75 mm / 2.95 in
- ⑥ Terminal block marking on both sides 73 mm / 2.87 in

# 7 Fuse Terminal Blocks 6 mm<sup>2</sup> /AWG 10, Series 282

36

<p><b>0.2 – 6 mm<sup>2</sup></b>  <b>500 V/6 kV/3 max. ①</b>  <b>10 A max. ①</b></p> <p><b>Terminal block width 13 mm / 0.512 in</b>   <b>12 – 13 mm / 0.49 in</b></p> <p>* </p>	<p><b>AWG 24 – 10</b>  <b>600 V, 10 A ①</b>   <b>250 V, 10 A ①</b> </p>	<p><b>0.2 – 6 mm<sup>2</sup></b>  <b>500 V/6 kV/3 max. ①</b>  <b>10 A max. ①</b></p> <p><b>Terminal block width 13 mm / 0.512 in</b>   <b>12 – 13 mm / 0.49 in</b></p> <p>* </p>	<p><b>AWG 24 – 10</b>  <b>600 V, 10 A ①</b>   <b>250 V, 10 A ①</b> </p>
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① 500 V = rated voltage  
 6 kV = rated surge voltage  
 3 = pollution degree  
 (see also section 15)  
 Nominal voltage and current are given by the LED or fuse  
 Technical details see pages 7.38 – 7.39



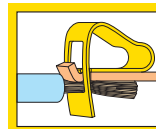
Description	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Fuse terminal block</b> , for DIN 35 rail, for cartridges	<b>Fuse terminal block</b> , without indicator grey, 5 x 20 mm	<b>282-122</b> 40	<b>Fuse terminal blocks</b> , without indicator grey, 1/4" x 1" grey, 1/4" x 1 1/4"	<b>282-120</b> 40 <b>282-128</b> 40

## Accessories

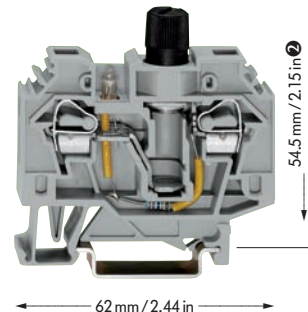
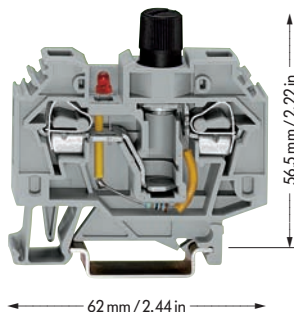
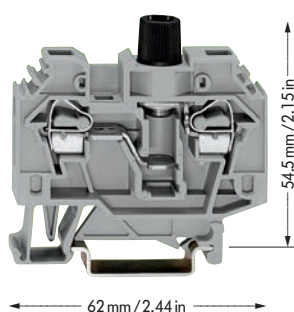
Appropriate marking system **WMB/WSB** (see section 14)

	<b>End and intermediate plate</b> orange grey	4 mm / 0.157 in thick orange grey	<b>282-312</b> <b>282-311</b>	50 (2 x 25) 50 (2 x 25)	4 mm / 0.157 in thick orange grey	<b>282-312</b> <b>282-311</b>	50 (2 x 25) 50 (2 x 25)
	<b>Screwless end stop</b> , for DIN 35 rail	6 mm / 0.236 in wide 10 mm / 0.394 in wide	<b>249-116</b> <b>249-117</b>	100 (4 x 25) 50 (2 x 25)	6 mm / 0.236 in wide 10 mm / 0.394 in wide	<b>249-116</b> <b>249-117</b>	100 (4 x 25) 50 (2 x 25)
	<b>Adjacent jumper</b> , insulated	I <sub>N</sub> 41 A grey	<b>282-402</b>	100 (4 x 25)	I <sub>N</sub> 41 A grey	<b>282-402</b>	100 (4 x 25)
	<b>Test plug adapter</b> , suitable for terminal blocks 1.5 mm <sup>2</sup> – 10 mm <sup>2</sup> /AWG 16 – 8	8 mm / 0.315 in wide for test plug 4 mm / 0.157 in Ø	<b>209-170</b>	50 (2 x 25)	8 mm / 0.315 in wide for test plug 4 mm / 0.157 in Ø	<b>209-170</b>	50 (2 x 25)
	<b>Test plug</b> , 6 mm / 0.236 in wide, with CAGE CLAMP® for 0.08 mm <sup>2</sup> - 2.5 mm <sup>2</sup> /AWG 28 - 14	I <sub>N</sub> 24 A	<b>281-407</b>	100 (4 x 25)	I <sub>N</sub> 24 A	<b>281-407</b>	100 (4 x 25)
	<b>Miniature metric fuse</b> , 5 x 20 mm, without indicator, 6.3 A / 250 V, medium slow		<b>282-451</b>	200 (20 x 10)			
	<b>Miniature metric fuse</b> , 5 x 25 mm, with indicator, 6.3 A / 250 V, medium slow						
	<b>Miniature metric fuse</b> , 5 x 25 mm, with indicator, 10 A / 450 V, quick acting						
	<b>Miniature fuse</b> , 1/4" x 1", without indicator, 10 A / 240 V, acc. to BS 1362					<b>282-458</b>	200 (20 x 10)
	<b>Miniature fuse</b> , 1/4" x 1 1/4", without indicator, 10 A / 250 V, medium slow					<b>282-457</b>	200 (20 x 10)
	<b>Miniature fuse</b> , 1/4" x 1 1/4", without indicator, 10 A / 500 V, very quick acting					<b>282-454</b>	200 (20 x 10)

\* For further approvals with corresponding ratings see section 15.



<p>0.2 – 6 mm<sup>2</sup> 500 V/6 kV/3 max. ① 10 A max. ①</p> <p>Terminal block width 13 mm / 0.512 in 12 – 13 mm / 0.49 in</p> <p>*  GL</p>	<p>AWG 24 – 10 600 V, 10 A ①  250 V, 10 A ① </p>	<p>0.2 – 6 mm<sup>2</sup> 120 V ≈ 10 A max. ①</p> <p>Terminal block width 13 mm / 0.512 in 12 – 13 mm / 0.49 in</p> <p>* </p>	<p>AWG 24 – 10 24/110 V, 10 A ①  24/110 V, 10 A ① </p>	<p>0.2 – 6 mm<sup>2</sup> 250 V ≈ 10 A max. ①</p> <p>Terminal block width 13 mm / 0.512 in 12 – 13 mm / 0.49 in</p> <p>* </p>	<p>AWG 24 – 10 250 V, 10 A ①  220 V, 10 A ① </p>
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Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Fuse terminal block, with indicator</b> grey, 5 x 25 mm	<b>282-126</b> 40	<b>Fuse terminal blocks,</b> with neon lamp AC/DC 120 V		<b>Fuse terminal blocks,</b> with neon lamp AC 250 V/DC 220 V	
		grey, 1/4" x 1 1/4"	<b>282-128/281-418</b> 40	grey, 5 x 20 mm	<b>282-124</b> 40
		with LED DC 24 V		grey, 1/4" x 1 1/4"	<b>282-128/281-417</b> 40
		grey, 1/4" x 1 1/4"	<b>282-128/281-413</b> 40		
Appropriate marking system <b>WMB/WSB</b> (see section 14)					
4 mm / 0.157 in thick		4 mm / 0.157 in thick		4 mm / 0.157 in thick	
orange	<b>282-312</b> 50 (2 x 25)	orange	<b>282-312</b> 50 (2 x 25)	orange	<b>282-312</b> 50 (2 x 25)
grey	<b>282-311</b> 50 (2 x 25)	grey	<b>282-311</b> 50 (2 x 25)	grey	<b>282-311</b> 50 (2 x 25)
6 mm / 0.236 in wide	<b>249-116</b> 100 (4 x 25)	6 mm / 0.236 in wide	<b>249-116</b> 100 (4 x 25)	6 mm / 0.236 in wide	<b>249-116</b> 100 (4 x 25)
10 mm / 0.394 in wide	<b>249-117</b> 50 (2 x 25)	10 mm / 0.394 in wide	<b>249-117</b> 50 (2 x 25)	10 mm / 0.394 in wide	<b>249-117</b> 50 (2 x 25)
I <sub>N</sub> 41 A		I <sub>N</sub> 41 A		I <sub>N</sub> 41 A	
grey	<b>282-402</b> 100 (4 x 25)	grey	<b>282-402</b> 100 (4 x 25)	grey	<b>282-402</b> 100 (4 x 25)
8 mm / 0.315 in wide		8 mm / 0.315 in wide		8 mm / 0.315 in wide	
<b>209-170</b> 50 (2 x 25)		<b>209-170</b> 50 (2 x 25)		<b>209-170</b> 50 (2 x 25)	
for test plug 4 mm / 0.157 in Ø		for test plug 4 mm / 0.157 in Ø		for test plug 4 mm / 0.157 in Ø	
I <sub>N</sub> 24 A		I <sub>N</sub> 24 A		I <sub>N</sub> 24 A	
<b>281-407</b> 100 (4 x 25)		<b>281-407</b> 100 (4 x 25)		<b>281-407</b> 100 (4 x 25)	
				<b>282-451</b> 200 (20 x 10)	
<b>282-452</b> 200 (20 x 10)					
<b>282-453</b> 200 (20 x 10)					
				<b>282-457</b> 200 (20 x 10)	<b>282-457</b> 200 (20 x 10)
				<b>282-454</b> 200 (20 x 10)	<b>282-454</b> 200 (20 x 10)



## Notes on the Use of Terminal Blocks for Miniature Metric Fuses

### Terminal blocks for miniature metric fuses tested acc. to IEC or EN 60947-7-3/VDE 0611-6

When selecting miniature metric fuses, the maximum power loss listed below should not be exceeded.

The power loss is determined according to IEC or EN 60947-7-3/VDE 0611-6 at 23°C.

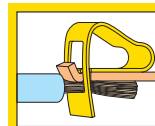
The temperature rise of the terminal blocks must be checked according their application and mounting.

Higher ambient temperatures represent an additional impact on miniature metric fuses. Therefore, in such applications the rated current must be reduced if necessary.

More details from the manufacturer.

### Miniature metric fuses 5 x 20

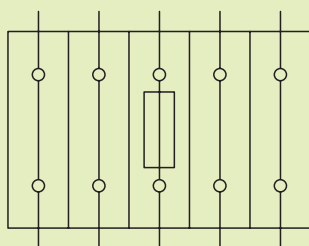
Series Item No.	Overload and short circuit protection		Short circuit protection only	
	Individual arrangement	In a group	Individual arrangement	In a group
Fuse terminal blocks (with screw cap) front-entry (5 x 20 mm)				
<b>282-122</b> <b>282-124</b>	2.5 W	2.5 W	4 W	4 W
Fused disconnect terminal blocks for miniature metric fuses (5 x 20 mm)				
<b>281-611</b> <b>281-616</b> <b>281-611/281-541</b> <b>281-611/281-542</b> <b>281-611/281-417</b> <b>281-611/281-418</b>	2.5 W	1.6 W	4 W	4 W
Pluggable fuse modules for miniature metric fuses (5 x 20 mm)				
<b>281-511</b> <b>281-512</b> <b>281-512/281-501</b> <b>281-512/281-418</b> <b>281-512/281-417</b>	2.5 W	1.6 W	4 W	4 W



### Miniature metric fuses 6.3 x 32

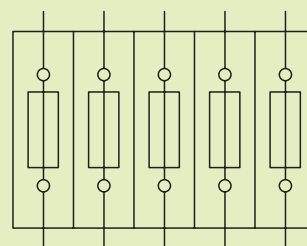
Series Item No.	Overload and short circuit protection		Short circuit protection only	
	Individual arrangement	In a group	Individual arrangement	In a group
Fuse terminal blocks (with screw cap) front-entry ( $\frac{1}{4}'' \times 1\frac{1}{4}'' \approx 6.3 \times 32 \text{ mm}$ )				
<b>282-128</b> <b>282-128/281-418</b> <b>282-128/281-413</b> <b>282-128/281-417</b>	2.5 W	2.5 W	4 W	4 W
Fused disconnect terminal blocks for miniature metric fuses ( $\frac{1}{4}'' \times 1\frac{1}{4}'' \approx 6.3 \times 32 \text{ mm}$ )				
<b>281-623</b> <b>281-623/281-541</b> <b>281-623/281-542</b> <b>281-623/281-417</b> <b>281-623/281-418</b>	2.5 W	1.6 W	4 W	2,5 W

Fuse terminal block in individual arrangement



Terminal block assembly including one fuse terminal block and 4 through terminal blocks

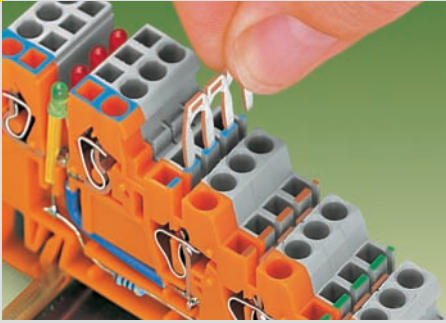
Fuse terminal blocks in a group



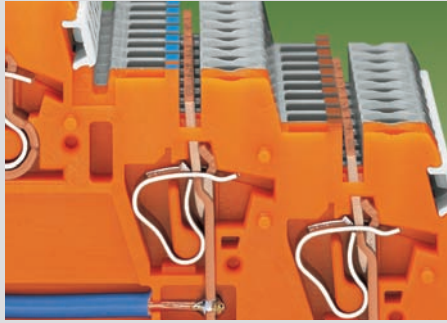
Terminal block assembly including 5 fuse terminal blocks

# Sensor Terminal Blocks and Actuator Terminal Blocks with CAGE CLAMP®, Description and Handling, Series 270

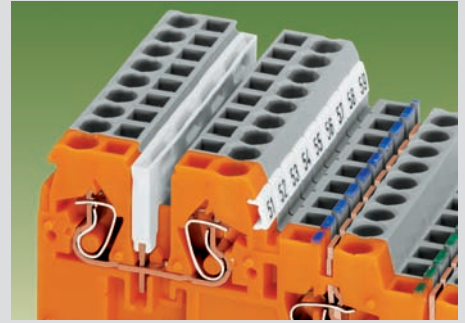
## Commoning



Insertion of a jumper

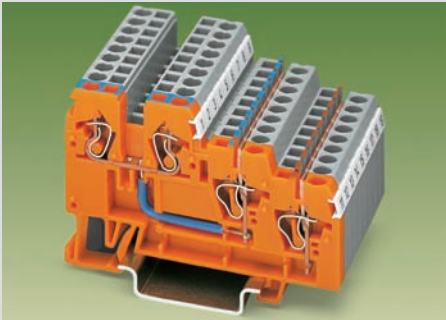


Commoning of supply voltage using uninsulated push-in type jumper bars, 2- to 9-way or 17-way (2 x 8 bits), depending on application



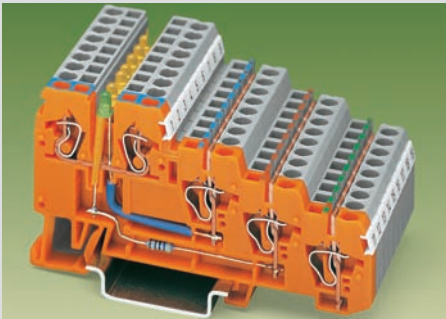
Commoning of signal level voltage using insulated push-in type jumper bars – series 870, 2- to 9-way, depending on application  
Sensor LED terminal blocks cannot be commoned on the signal level!

### Sensor terminal blocks

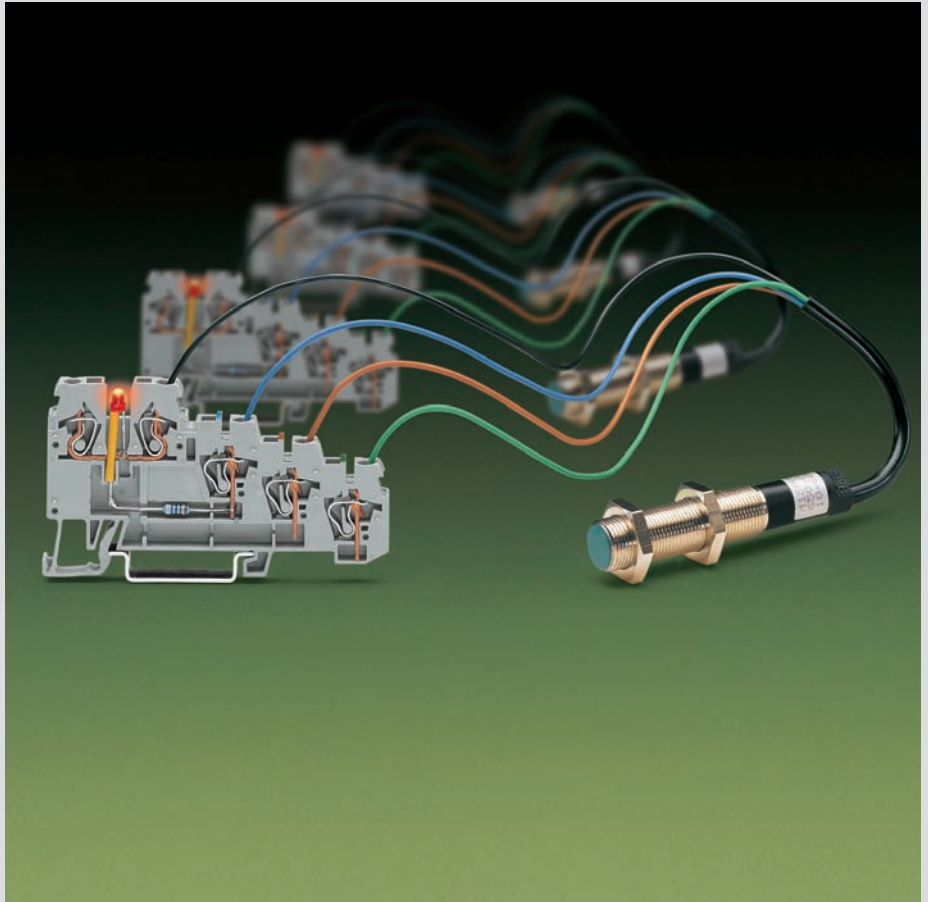


Terminal block assembly  
Sensor terminal blocks

### Sensor LED terminal blocks



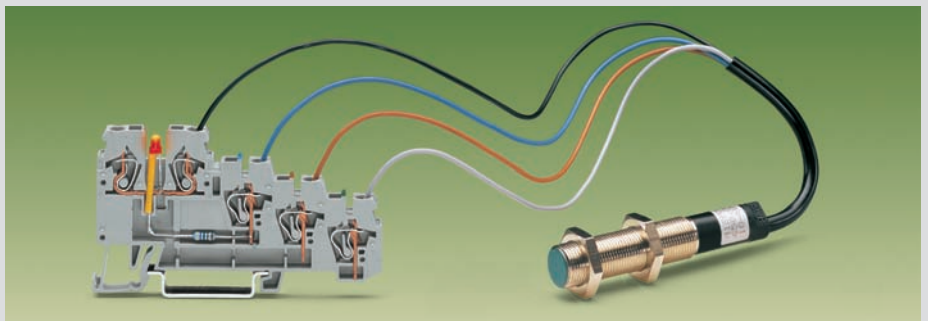
Terminal block assembly  
Sensor LED terminal blocks



### Actuator LED terminal blocks



Terminal block assembly  
Actuator LED terminal blocks



Sensor-LED terminal block

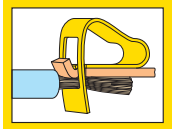
CAGE CLAMP® clamps the following copper wires:\*

- solid
- stranded
- fine-stranded, also with tinned single strands
- fine-stranded wire – tip bonded
- fine-stranded wire with crimped ferrule ❶
- fine-stranded wire with crimped pin terminal

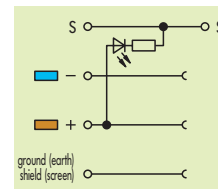
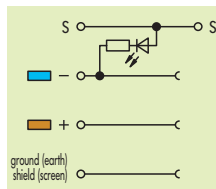
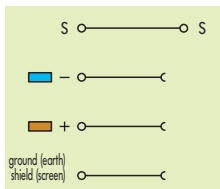
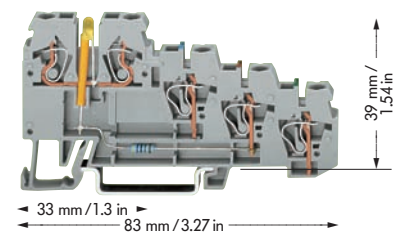
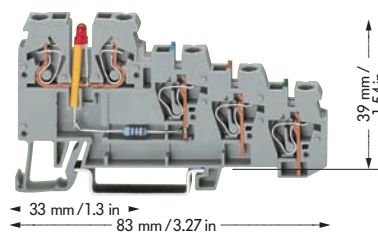
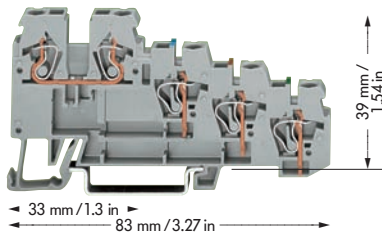
\* For aluminum wire see notes in section 15!

❶ When using wires with ferrules, it is necessary to use a terminal block one size larger than the nominal cross section of the wire.

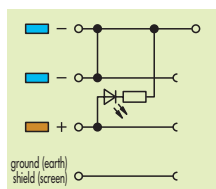
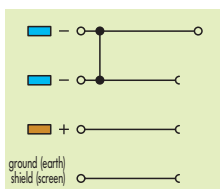
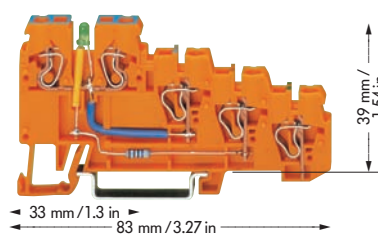
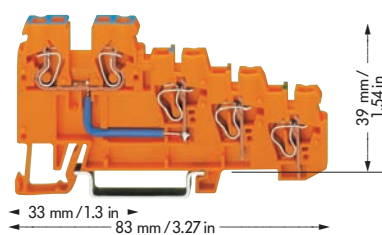
# Sensor Terminal Blocks, for 4-Conductor Sensors and Sensor LED Terminal Blocks, for 4-Conductor Sensors, Series 270



<b>0.08 – 2.5 mm<sup>2</sup></b> <b>250 V/4 kV/3 ①</b> <b>18 A ②</b>  <b>Terminal block width 5 mm / 0.197 in</b> <b>6 – 7 mm / 0.26 in</b>  <small>* CCA</small>	<b>AWG 28 – 12</b> <b>300 V, 10 A</b>  <b>Terminal block width 5 mm / 0.197 in</b> <b>6 – 7 mm / 0.26 in</b>  <small>* CCA</small>	<b>0.08 – 2.5 mm<sup>2</sup></b> <b>DC 24 V ③</b>  <b>Terminal block width 5 mm / 0.197 in</b> <b>6 – 7 mm / 0.26 in</b>  <small>* CCA</small>	<b>AWG 28 – 12</b>  <b>Terminal block width 5 mm / 0.197 in</b> <b>6 – 7 mm / 0.26 in</b>  <small>* CCA</small>
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Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>4-conductor sensor terminal block, for DIN 35 rail</b>		<b>4-cond. sensor LED terminal block, for DIN 35 rail</b>		<b>4-cond. sensor LED terminal block, for DIN 35 rail</b>	
<b>270-570</b>	50	for PNP (positive) switching sensors		for NPN (negative) switching sensors	
		LED red <b>270-570/281-434</b>	50	LED yellow <b>270-570/281-507</b>	50
① 250 V = rated voltage 4 kV = rated surge voltage 3 = pollution degree (see also section 15)		③ Other voltages – contact factory Power consumption LED: 4.8 mA		③ Other voltages – contact factory Power consumption LED: 4.8 mA	



Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>4-conductor sensor supply terminal block, for DIN 35 rail</b>		<b>4-conductor sensor LED supply terminal block, for DIN 35 rail</b>	
<b>270-574</b>	10	LED green <b>270-574/281-483</b>	10
② Internal commonig 9 A			

### Accessories for 4-conductor terminal blocks

Appropriate marking system **WMB/Mini-WSB** (see section 14)

**End and intermediate plate, 1 mm / 0.039 in thick**

orange	<b>270-322</b>	100 (4 x 25)
grey	<b>270-320</b>	100 (4 x 25)

**Insulation stop, 5 pcs/strip** see page 2.43

white	<b>280-470</b>	200 strips
light grey	<b>280-471</b>	200 strips
dark grey	<b>280-472</b>	200 strips

**Push-in type jumper bars, uninsulated, I<sub>N</sub> 18 A**

9-way	<b>270-409</b>	100 (4 x 25)
17-way	<b>270-417</b>	100 (4 x 25)
80-way	<b>270-480</b>	10

Jumpers can be cut using side cutting pliers.

**Push-in type jumper bars, light grey, insulated, I<sub>N</sub> 18 A**

2-way	<b>870-402</b>	200 (8 x 25)
3-way	<b>870-403</b>	200 (8 x 25)
4-way	<b>870-404</b>	200 (8 x 25)
5-way	<b>870-405</b>	100 (4 x 25)
:	:	:
9-way	<b>870-409</b>	100 (4 x 25)

Sensor LED term. bl. cannot be commoned on the signal level!

**Screwdriver with partially insulated shaft, (3.5 x 0.5) mm**

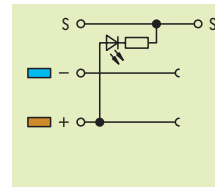
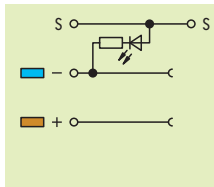
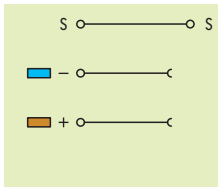
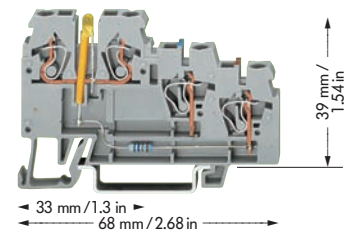
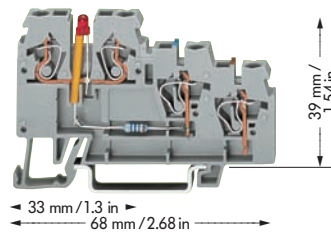
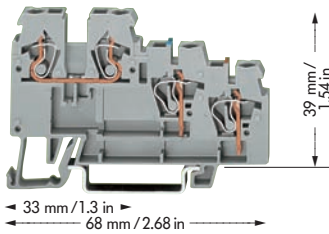
<b>210-620</b>	1
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\* For further approvals with corresponding ratings see section 15.

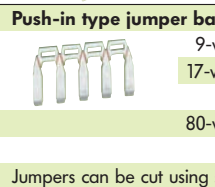
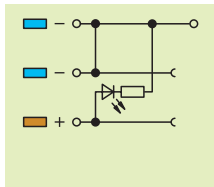
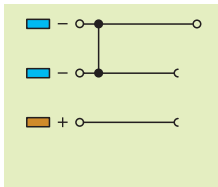
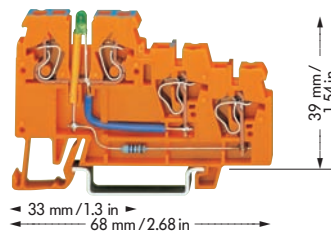
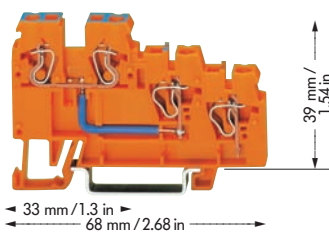


# Sensor Terminal Blocks, for 3-Conductor Sensors and Sensor LED Terminal Blocks, for 3-Conductor Sensors, Series 270

<p>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 12 250 V/4 kV/3 ① 18 A ②</p> <p>Terminal block width 5 mm / 0.197 in 6 – 7 mm / 0.26 in</p> <p>* </p>	<p>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 12 DC 24 V ③</p> <p>Terminal block width 5 mm / 0.197 in 6 – 7 mm / 0.26 in</p> <p>* </p>	<p>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 12 DC 24 V ③</p> <p>Terminal block width 5 mm / 0.197 in 6 – 7 mm / 0.26 in</p> <p>* </p>
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Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>3-conductor sensor terminal block</b> , for DIN 35 rail <b>270-560</b>	50	<b>3-cond. sensor LED terminal block</b> , for DIN 35 rail for PNP (positive) switching sensors LED red <b>270-560/281-434</b>	50	<b>3-cond. sensor LED terminal block</b> , for DIN 35 rail for NPN (negative) switching sensors LED yellow <b>270-560/281-507</b>	50
① 250 V = rated voltage 4 kV = rated surge voltage 3 = pollution degree (see also section 15)		③ Other voltages – contact factory Power consumption LED: 4.8 mA		③ Other voltages – contact factory Power consumption LED: 4.8 mA	



Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>3-conductor sensor supply terminal block</b> , for DIN 35 rail <b>270-564</b>	10	<b>3-conductor sensor LED supply terminal block</b> , for DIN 35 rail LED green <b>270-564/281-483</b>	10
② Internal commonig 9 A			

### Accessories for 3-conductor terminal blocks

Appropriate marking system **WMB/Mini-WSB** (see section 14)

**End and intermediate plate**, 1 mm / 0.039 in thick

orange	<b>270-321</b>	100 (4 x 25)
grey	<b>270-319</b>	100 (4 x 25)

**Insulation stop**, 5 pcs/strip see page 2.43

white	<b>280-470</b>	200 strips
light grey	<b>280-471</b>	200 strips
dark grey	<b>280-472</b>	200 strips

**Push-in type jumper bars**, uninsulated, I<sub>N</sub> 18 A

9-way	<b>270-409</b>	100 (4 x 25)
17-way	<b>270-417</b>	100 (4 x 25)
80-way	<b>270-480</b>	10

Jumpers can be cut using side cutting pliers.

**Push-in type jumper bars**, light grey, insulated, I<sub>N</sub> 18 A

2-way	<b>870-402</b>	200 (8 x 25)
3-way	<b>870-403</b>	200 (8 x 25)
4-way	<b>870-404</b>	200 (8 x 25)
5-way	<b>870-405</b>	100 (4 x 25)
:	:	:
9-way	<b>870-409</b>	100 (4 x 25)

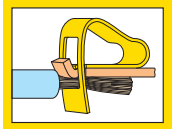
Sensor LED terminal blocks **cannot** be commoned!

**Screwdriver with partially insulated shaft**, (3.5 x 0.5) mm

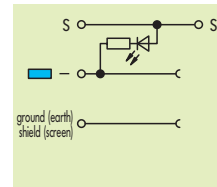
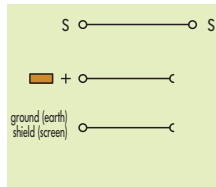
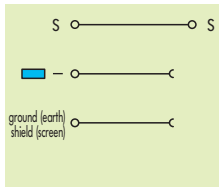
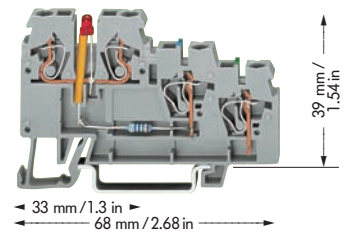
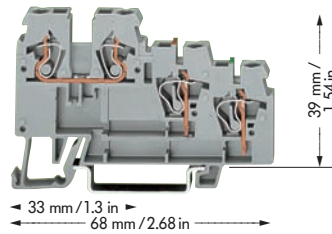
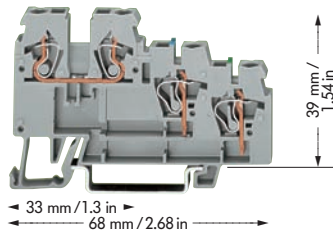
<b>210-620</b>	1
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\* For further approvals with corresponding ratings see section 15.

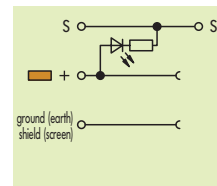
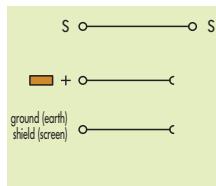
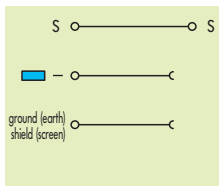
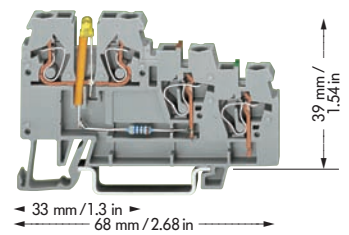
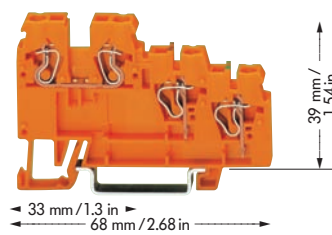
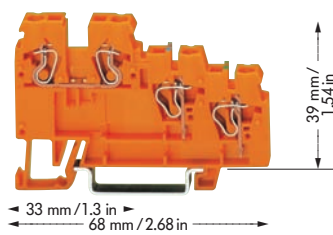
# 3-Conductor Actuator Terminal Blocks and 3-Conductor Actuator LED Terminal Blocks, Series 270



<p>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 12 250 V/4 kV/3 ①   300 V, 10 A 18 A</p> <p>Terminal block width 5 mm / 0.197 in 6 – 7 mm / 0.26 in</p> <p>* </p>	<p>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 12 250 V/4 kV/3 ①   300 V, 10 A 18 A</p> <p>Terminal block width 5 mm / 0.197 in 6 – 7 mm / 0.26 in</p> <p>* </p>	<p>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 12 DC 24 V ②</p> <p>Terminal block width 5 mm / 0.197 in 6 – 7 mm / 0.26 in</p> <p>* </p>
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Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>3-conductor actuator terminal block, for DIN 35 rail</b> <b>270-572</b>	50	<b>3-conductor actuator terminal block, for DIN 35 rail</b> <b>270-585</b>	50	<b>3-conductor actuator LED terminal block, for DIN 35 rail, for PNP (positive) switching actuators</b> LED red <b>270-572/281-434</b>	50
<p>① 250 V = rated voltage 4 kV = rated surge voltage 3 = pollution degree (see also section 15)</p>			<p><b>3-cond. actuator supply term. block, for DIN 35 rail</b> <b>270-577</b> 10</p> <p>② Other voltages – contact factory Power consumption LED: 4.8 mA</p>		

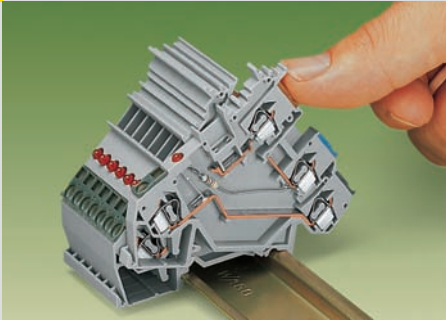


Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>3-conductor actuator supply terminal block, for DIN 35 rail</b> <b>270-577</b>	10	<b>3-conductor actuator supply terminal block, for DIN 35 rail</b> <b>270-586</b>	10	<b>3-conductor actuator LED terminal block, for DIN 35 rail, for NPN (negative) switching actuators</b> LED yellow <b>270-585/281-507</b>	50
			<p><b>3-cond. actuator supply term. block, for DIN 35 rail</b> <b>270-586</b> 10</p> <p>② Other voltages – contact factory Power consumption LED: 4.8 mA</p>		

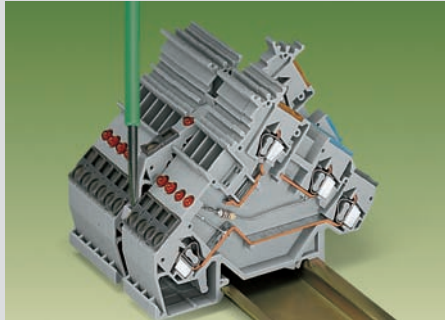
\* For further approvals with corresponding ratings see section 15.

## Assembly

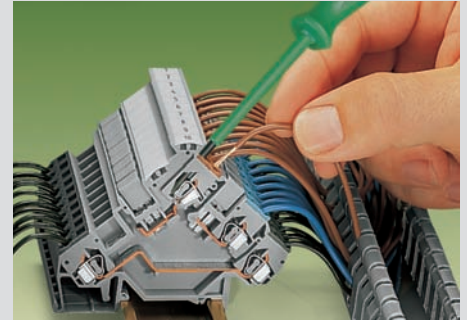
## CAGE CLAMP® connection



Assembly on the carrier rail. Terminal blocks with ground (earth) connection automatically establish a direct contact to the rail.

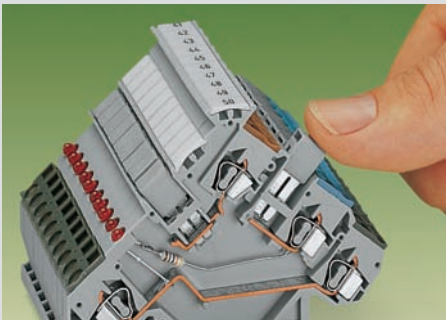


Removal from the carrier rail. Attention - remove jumper contacts first!

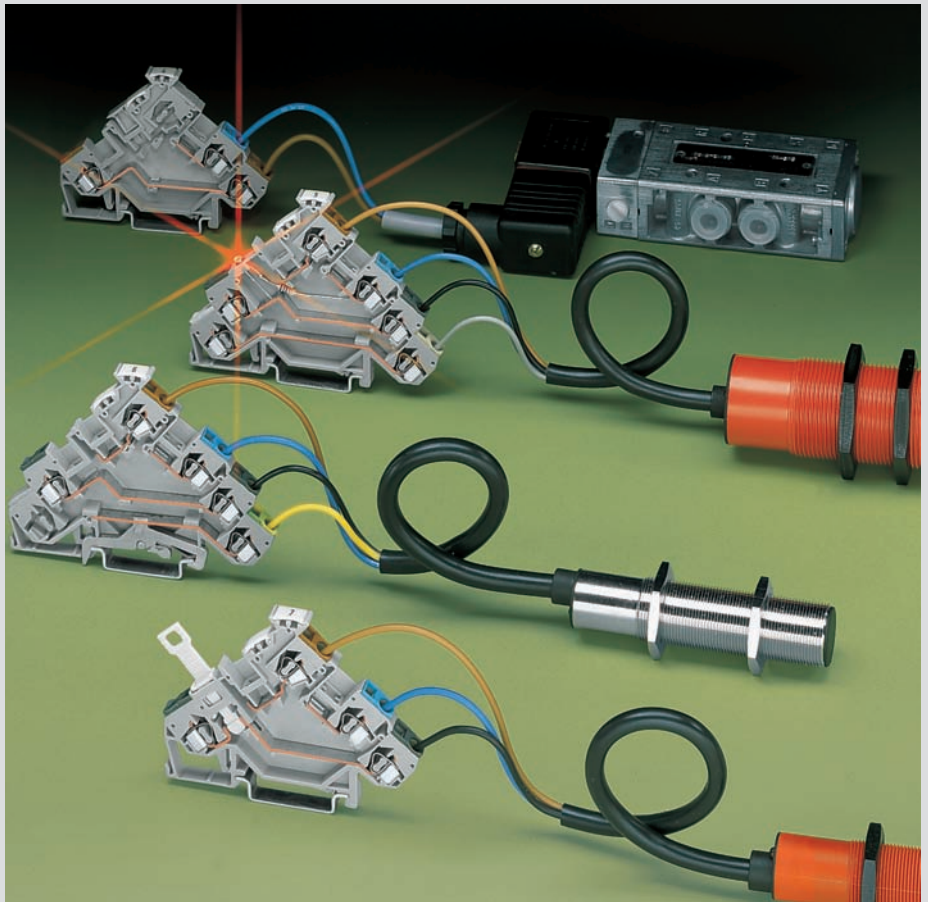


Connection of conductors with straight screwdriver 210-120

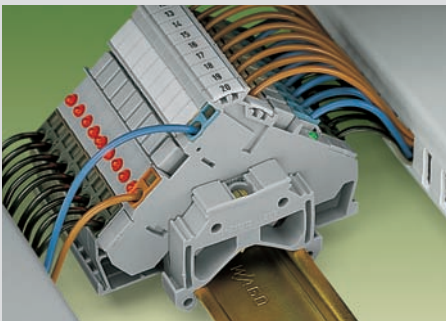
## Commoning



Commoning with adjacent jumpers. Push jumper down FIRMLY until FULLY inserted!

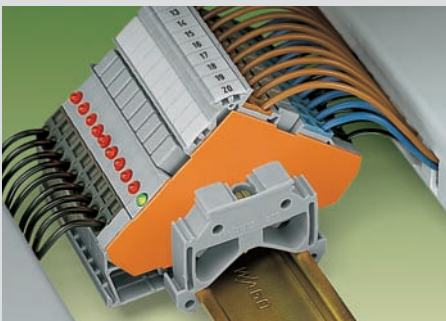


## Voltage supply to assembly

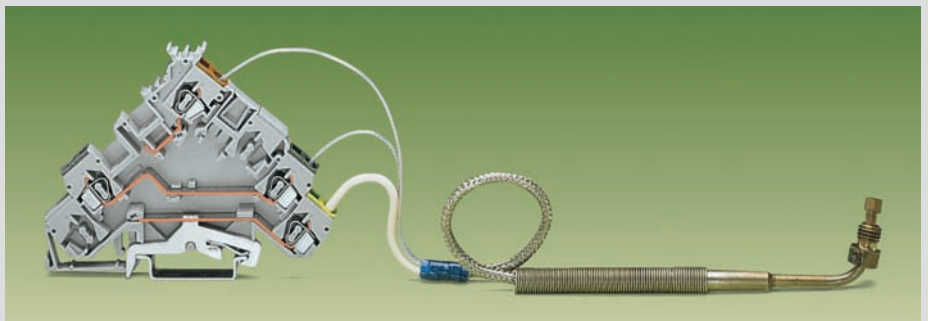


Sensor terminal blocks. Voltage supply from control panel side

## Voltage supply to assembly



Sensor terminal blocks. Voltage supply from sensor side

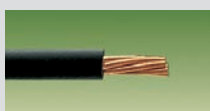


Actuator terminal blocks and a thermocouple and shield (screen) connection



CAGE CLAMP® clamps the following copper wires:\*

solid



stranded

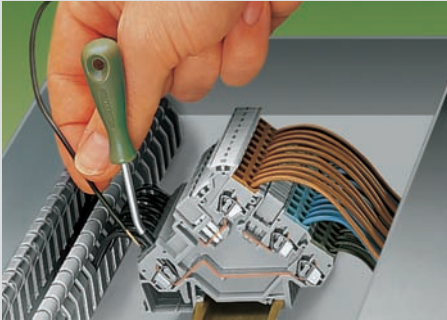


fine stranded, also with tinned single strands

\* For aluminum wire see notes in section 15!



Marking

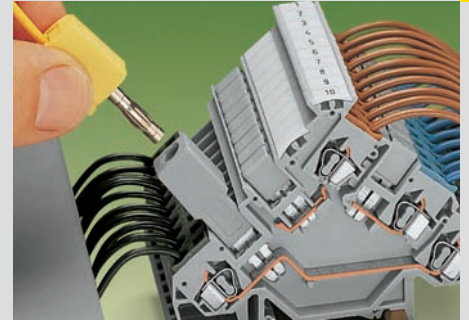


Connection of conductors with angled screwdriver 210-258



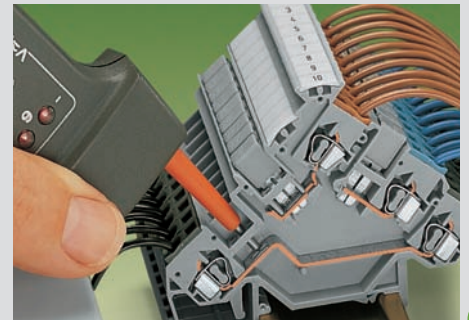
Marking with WMB Multi marking system or WSB Quick marking system. For other systems see section 14.

Testing

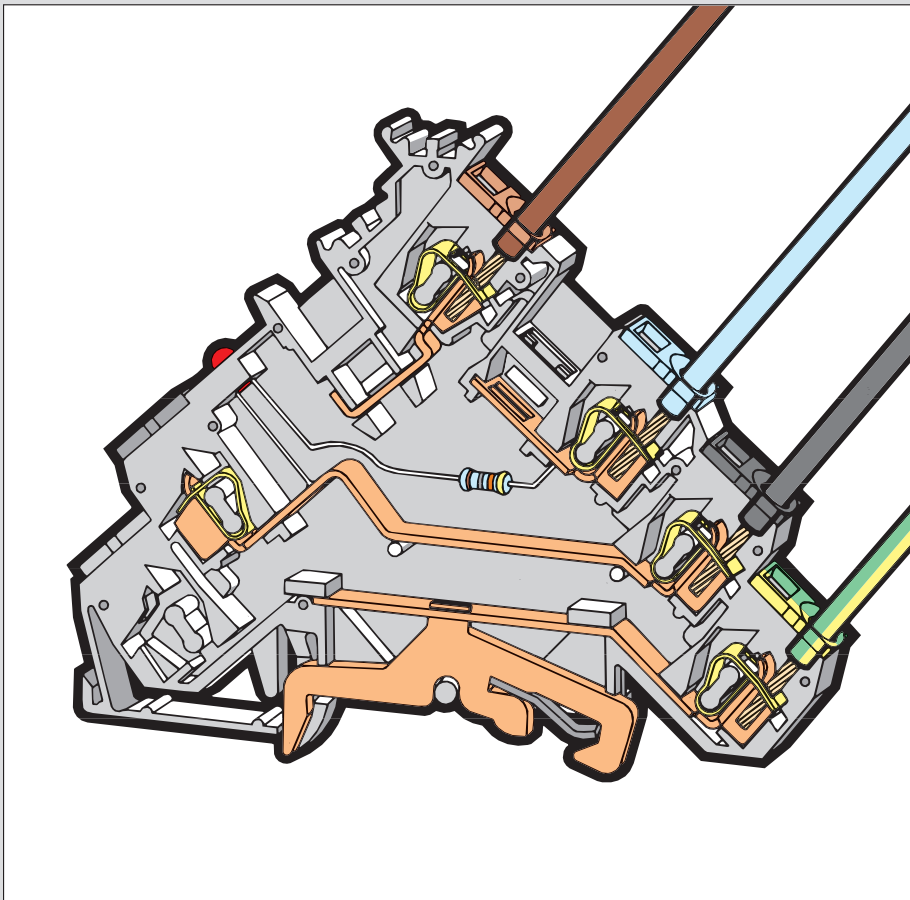


Testing with banana plug and adapter 209-170

Testing



Testing with voltage tester directly on the current bar

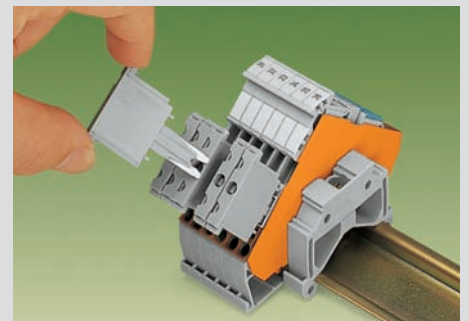


Fuse plugs



Actuator terminal blocks with fuse plugs 281-511 (requires additional intermediate plates)

Component plugs



Actuator terminal blocks with component plugs 280-801



Actuator terminal block with thermocouple



fine-stranded wire – tip bonded



fine-stranded wire with crimped ferrule ❶



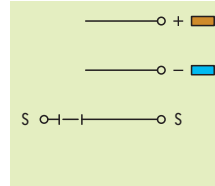
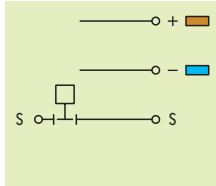
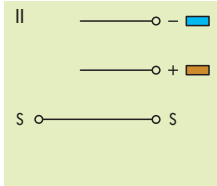
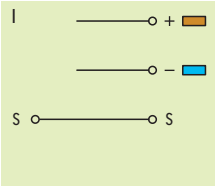
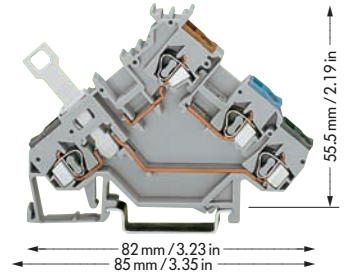
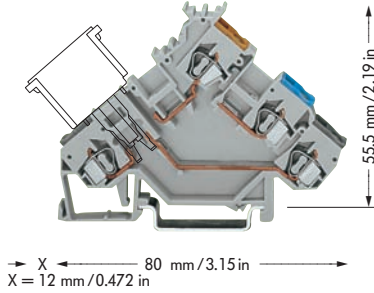
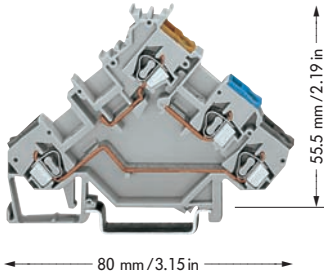
fine-stranded wire with crimped pin terminal

❶ When using wires with ferrules, it is necessary to use a terminal block one size larger than the nominal cross section of the wire.

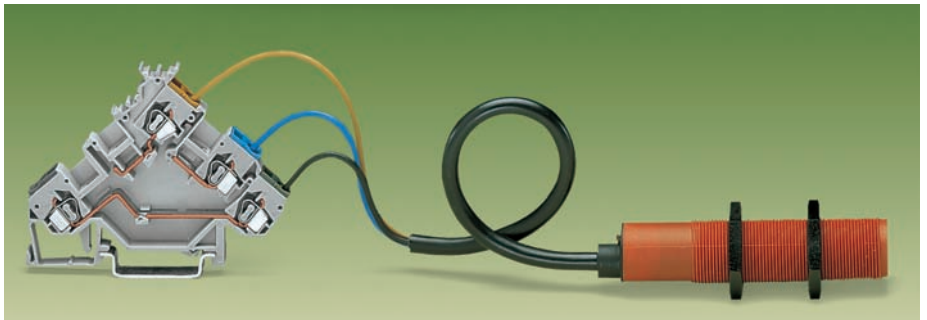
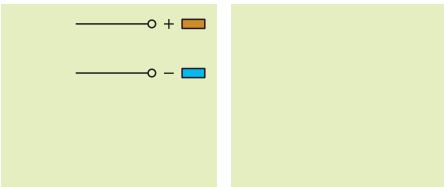
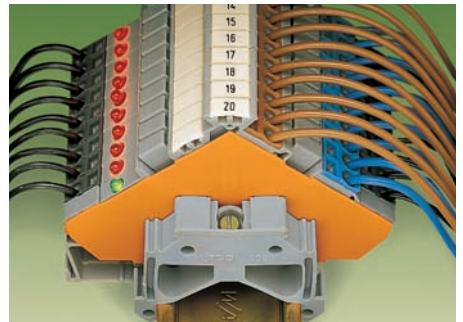
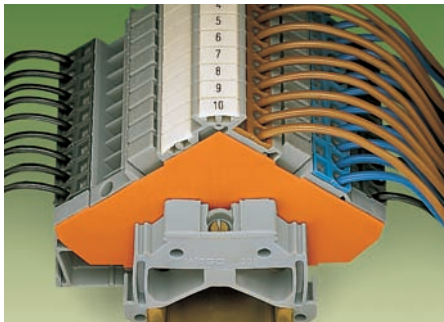
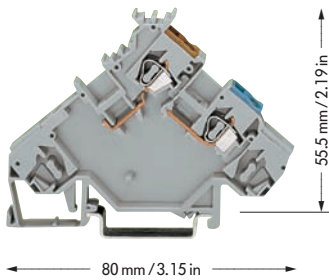


# Sensor Terminal Blocks 2.5 mm<sup>2</sup> / AWG 12, for 3-Conductor Sensors Series 280

<p>0.08 – 2.5 mm<sup>2</sup> 400 V/6 kV/3 ① 20 A</p> <p>Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in</p> <p>*  BV</p>	<p>AWG 28 – 12 300 V, 15 A </p> <p>300 V, 15 A </p>	<p>0.08 – 2.5 mm<sup>2</sup> 250 V/4 kV/3 ① ② 6 A ②</p> <p>Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in</p> <p>*  BV</p>	<p>AWG 28 – 12 300 V, 6 A </p> <p>300 V, 15 A </p>	<p>0.08 – 2.5 mm<sup>2</sup> 400 V/6 kV/3 ① 10 A</p> <p>Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in</p> <p>*  BV</p>	<p>AWG 28 – 12 300 V, 10 A </p> <p>300 V, 15 A </p>
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Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	
<b>Sensor terminal blocks</b>		<b>Sensor terminal block, for component plugs</b>		<b>Sensor disconnect terminal block, for signal interruption</b>		
I	280-560	50	280-561	50	280-563	50
II	280-553	50	Empty component plug housing see W4, volume 3			
		Fuse plug see page 735				
Appropriate marking system <b>WMB/WSB</b> (see section 14)						

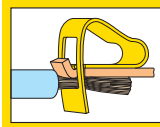


Item No.	Pack. unit pcs
<b>Sensor supply terminal block, voltage supply from sensor side</b>	
280-564	10
<b>Accessories Series 280</b>	
<b>End and intermediate plate, 1 mm/0.039 in thick for triple deck terminal blocks</b>	
orange	280-321 100 (4 x 25)
grey	280-319 100 (4 x 25)

Insulation stop, 5 pcs/strip	see page 2.43
white	280-470 200 strips
light grey	280-471 200 strips
dark grey	280-472 200 strips

Adjacent jumper, insulated, I <sub>N</sub> 24 A	
grey	280-402 200 (8 x 25)

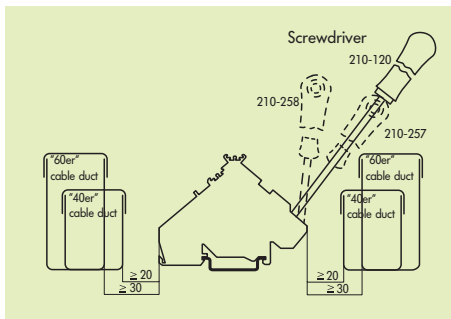
\* For further approvals with corresponding ratings see section 15.



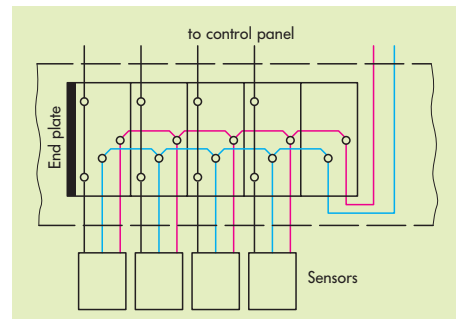
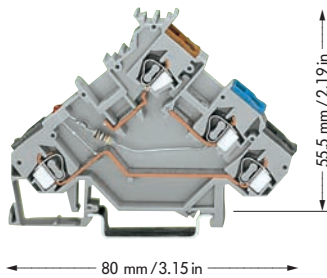
0.08 – 2.5 mm<sup>2</sup> | AWG 28 – 12  
 400 V/6 kV/3 ① | 300 V, 15 A ②  
 20 A | 300 V, 15 A ③  
**Terminal block width**  
**with end plate 6 mm / 0.236 in**  
 8 – 9 mm / 0.33 in  
 \* ① ② ③ BV

0.08 – 2.5 mm<sup>2</sup> | AWG 28 – 12  
 DC 24 V ④ | 24 V, 15 A ②  
 20 A | 300 V, 15 A ③  
**Terminal block width 5 mm / 0.197 in**  
 8 – 9 mm / 0.33 in  
 \* ② ③ ④

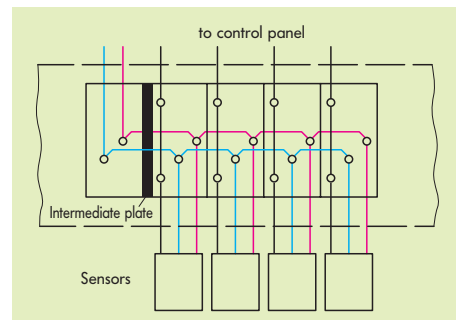
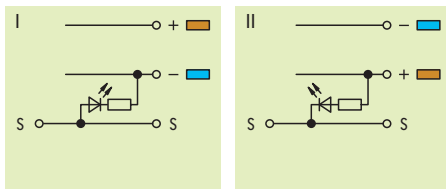
**Spacer**  
**Spacer width 5 mm / 0.197 in**  
 \* ② ③ BV



Min. mounting distance – terminal blocks to cable duct



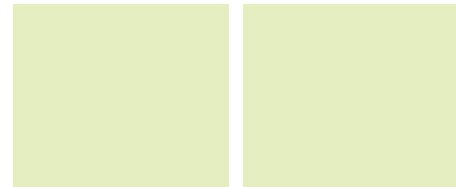
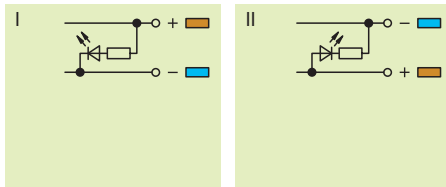
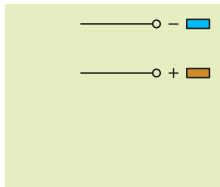
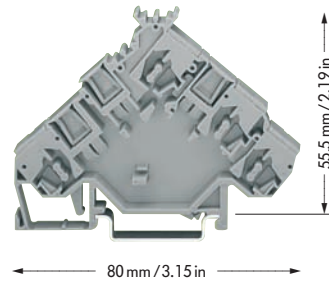
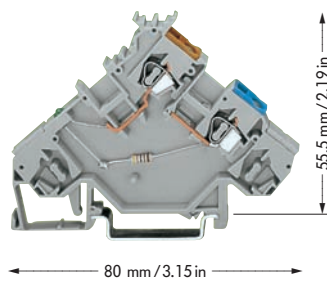
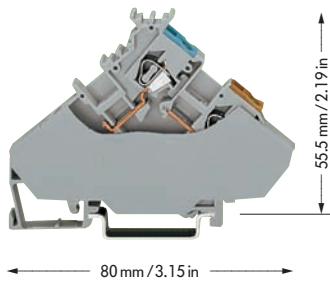
Voltage supply from sensor side



Voltage supply from control panel side

- ① 400/250 V = rated voltage  
6/4 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② Electrical ratings are given by the fuse or components used in the component plug  
(see also page 7.35 and Full Line Catalog W4, volume 3)
- ③ Other voltages – contact factory
- ④ Power consumption LED: 4.8 mA

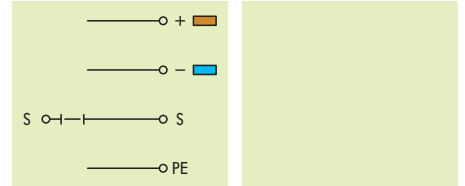
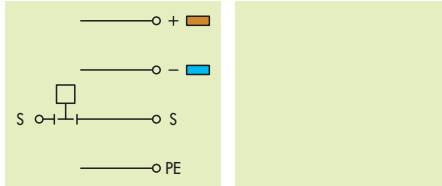
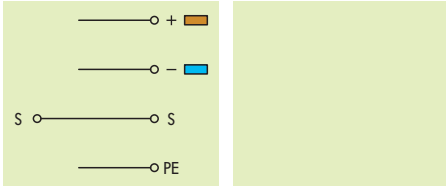
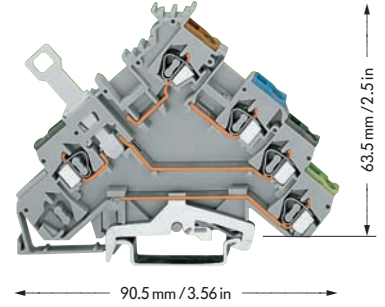
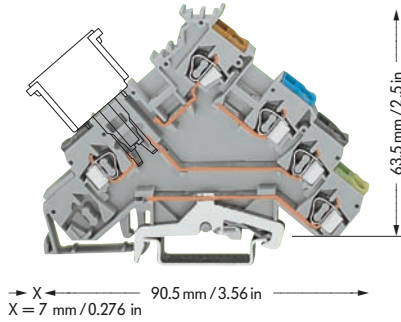
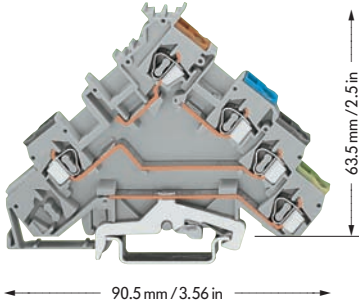
Item No.	Pack. unit pcs
<b>Sensor-LED terminal blocks,</b>	
DC 24 V, for PNP (positive) switching sensors	
I LED red ④	280-560/281-434 50
DC 24 V, for NPN (negative) switching sensors	
II LED red ④	280-561/281-413 50



Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Sensor supply terminal block,</b>		<b>Sensor-LED supply terminal blocks,</b>		<b>Spacer, same shape as</b>	
voltage supply from control panel side,		voltage supply from sensor side,		3-conductor sensor or actuator	
with end plate		DC 24 V, for PNP (positive) switching sensors		terminal blocks	
280-567	20	I LED green ④	280-564/281-483 10	280-559	50
		voltage supply from sensor side,		Spacers allow clear separation of groups of	
		DC 24 V, for NPN (negative) switching sensors		sensors or actuators, especially if they are supplied	
		II LED green ④	280-566/281-496 10	from different voltage sources.	

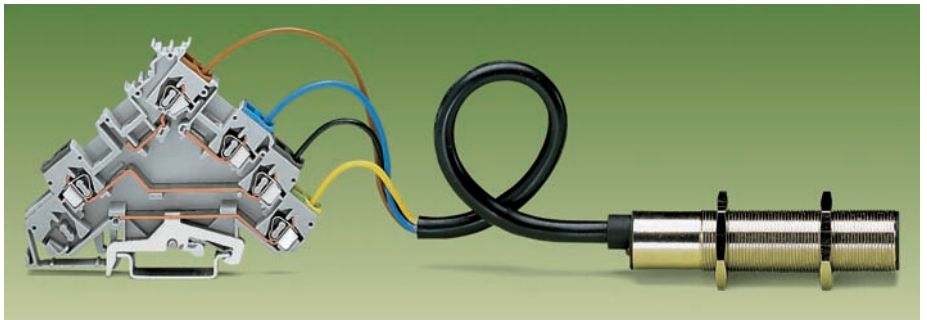
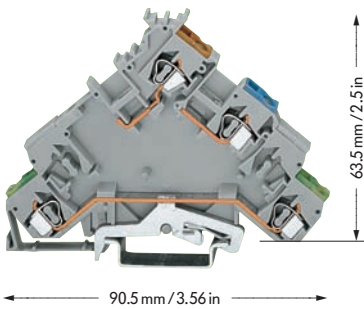
# Sensor Terminal Blocks 2.5 mm<sup>2</sup> / AWG 12, for 3-Conductor Sensors with Ground (Earth) Connection Series 280

<p>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 12 400 V/6 kV/3 ① 20 A Terminal block width 5 mm / 0.197 in (with end plate 6 mm / 0.236 in) 8 – 9 mm / 0.33 in</p> <p>* </p>	<p>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 12 250 V/4 kV/3 ① ② 6 A ② Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in</p> <p>* </p>	<p>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 12 400 V/6 kV/3 ① 10 A Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in</p> <p>* </p>
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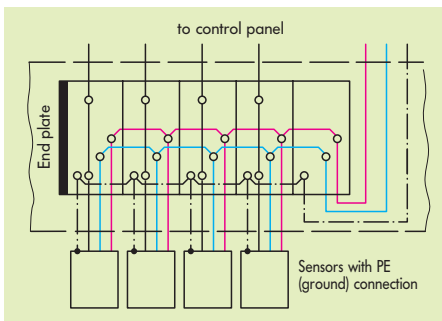
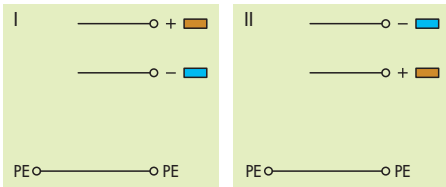


Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Sensor terminal block with ground (earth) connection</b>		<b>Sensor terminal block with ground (earth) connection, for component plugs</b>		<b>Sensor disconnect terminal block with ground (earth) connection, plus signal interruption</b>	
<b>280-570</b>	50	<b>280-571</b>	50	<b>280-573</b>	50
		Empty component plug housing see W4, volume 3			
		Fuse plug see page 735			

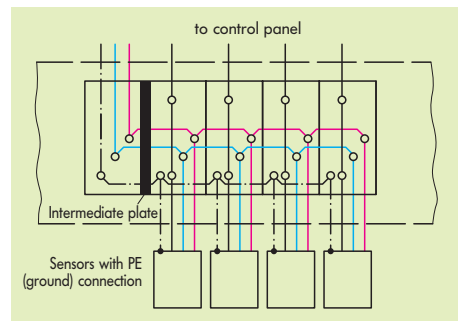
Appropriate marking system **WMB/WSB** (see section 14)



Sensor terminal block, with 3-conductor sensor with ground (earth) connection



Voltage supply from sensor side



Voltage supply from control panel side

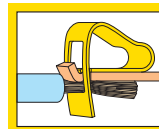
Item No.	Pack. unit pcs
<b>Sensor supply terminal block with ground (earth) connection, voltage supply from sensor side</b>	
<b>280-574</b>	10
<b>Sensor supply terminal block with ground (earth) connection, voltage supply from control panel side, with end plate</b>	
<b>280-577</b>	20
<b>Accessories</b>	see page 751 Insulation stop and jumper

① 400/250 V = rated voltage  
6/4 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)

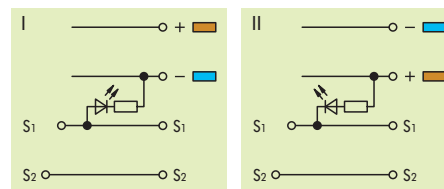
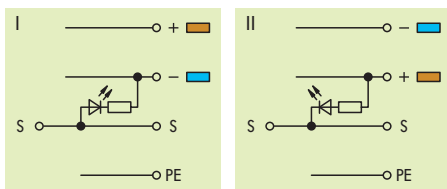
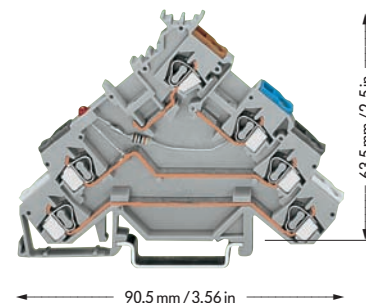
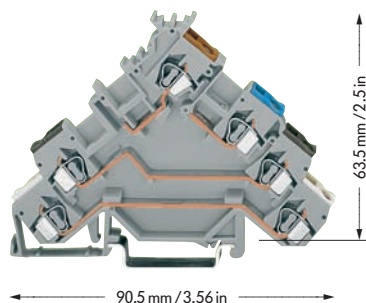
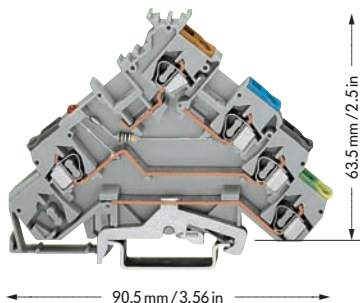
② Electrical ratings are given by the fuse or components used in the component plug (see also page 735 and Full Line Catalog W4, volume 3)  
③ Other voltages – contact factory  
④ Power consumption LED: 4.8 mA

\* For further approvals with corresponding ratings see section 15.

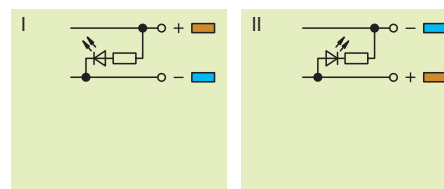
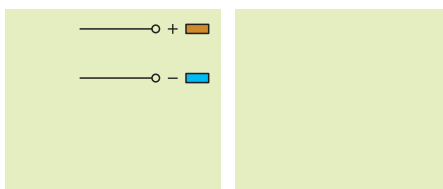
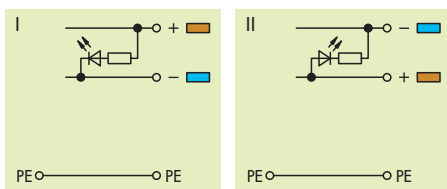
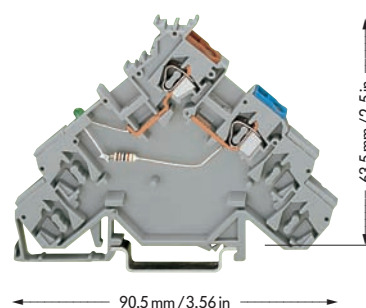
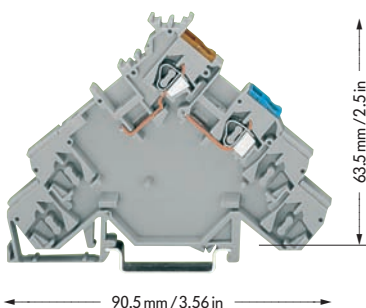
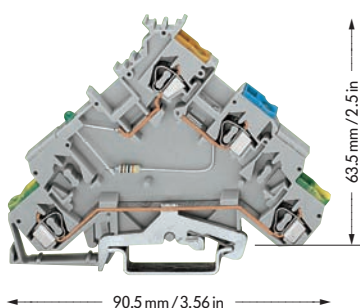
# Sensor Terminal Blocks 2.5 mm<sup>2</sup> / AWG 12, for 4-Conductor Sensors Series 280



<p>0.08 – 2.5 mm<sup>2</sup> DC 24 V Ⓢ 20 A</p> <p>Terminal block width 5 mm / 0.197 in (with end plate 6 mm / 0.236 in)</p> <p> 8 – 9 mm / 0.33 in</p> <p>*   </p>	<p>AWG 28 – 12 24 V, 15 A  300 V, 15 A Ⓢ</p> <p>Terminal block width 5 mm / 0.197 in (with end plate 6 mm / 0.236 in)</p> <p> 8 – 9 mm / 0.33 in</p> <p>*   </p>	<p>0.08 – 2.5 mm<sup>2</sup> DC 24 V Ⓢ 20 A</p> <p>Terminal block width 5 mm / 0.197 in (with end plate 6 mm / 0.236 in)</p> <p> 8 – 9 mm / 0.33 in</p> <p>*   </p>	<p>AWG 28 – 12 24 V, 15 A  300 V, 15 A Ⓢ</p> <p>Terminal block width 5 mm / 0.197 in (with end plate 6 mm / 0.236 in)</p> <p> 8 – 9 mm / 0.33 in</p> <p>*   </p>
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












Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Sensor-LED terminal blocks,</b>		<b>Sensor terminal block</b>		<b>Sensor LED terminal blocks,</b>	
DC 24 V, for PNP (positive) switching sensors		<b>280-580</b> 50	50	DC 24 V, for PNP (positive) switching sensors	
I LED red	<b>280-570/281-434</b> 50			I LED red	<b>280-580/281-434</b> 50
DC 24 V, for NPN (negative) switching sensors		<b>End and intermediate plate, 1 mm/0.039 in thick</b>		DC 24 V, for NPN (negative) switching sensors	
II LED red	<b>280-571/281-413</b> 50	for quadruple deck terminal blocks		II LED red	<b>280-581/281-413</b> 50
		orange <b>280-323</b> 100 (4x25)			
		grey <b>280-320</b> 100 (4x25)			

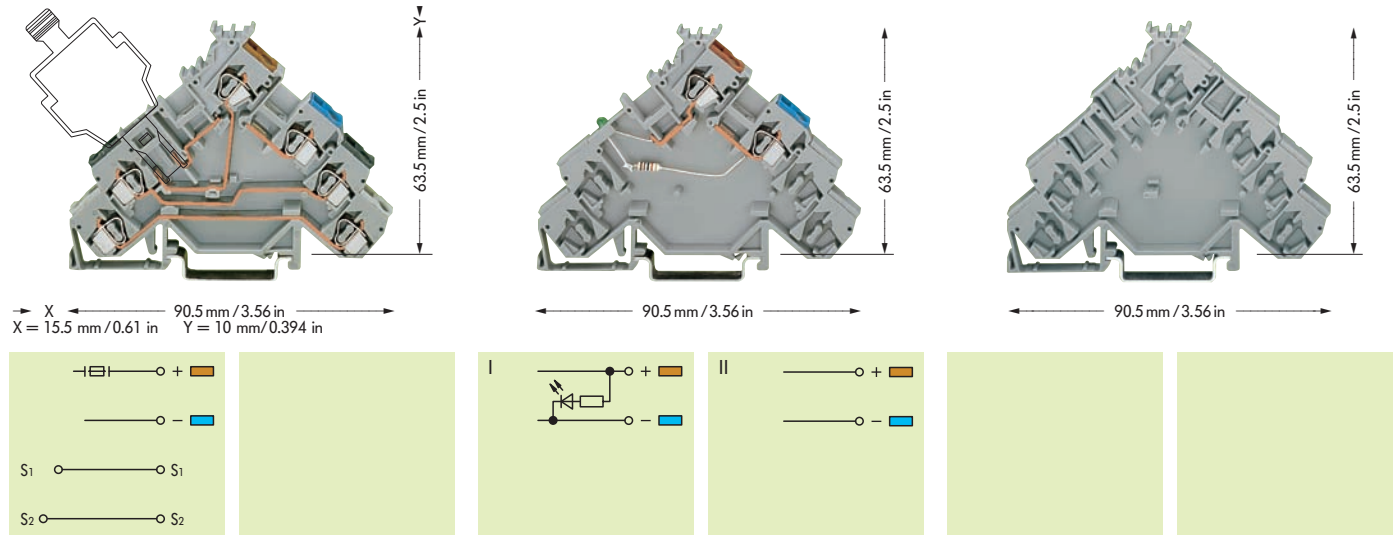



Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Sensor-LED supply terminal blocks with ground (earth) connection,</b> voltage supply from sensor side,		<b>Sensor supply terminal blocks,</b>		<b>Sensor LED supply terminal blocks,</b>	
DC 24 V, for PNP (positive) switching sensors		voltage supply from sensor side,		voltage supply from sensor side,	
I LED green	<b>280-574/281-483</b> 10	without end plate <b>280-584</b> 10		DC 24 V, for PNP (positive) switching sensors	
DC 24 V, for NPN (negative) switching sensors		voltage supply from control panel side,		I LED green	
II LED green	<b>280-576/281-496</b> 10	with end plate <b>280-587</b> 20		<b>280-584/281-483</b> 10	
Voltage supply from control panel side,				DC 24 V, for NPN (negative) switching sensors	
DC 24 V, for PNP (positive) switching sensors				II LED green	
I LED green	<b>280-577/281-496</b> 20			<b>280-586/281-496</b> 10	

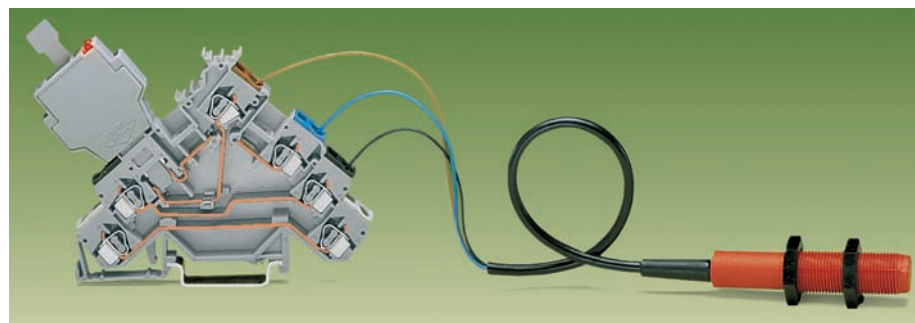


# Sensor Terminal Blocks 2.5 mm<sup>2</sup> / AWG 12, for Fuse Plugs for 3- and 4-Conductor Sensors Series 280

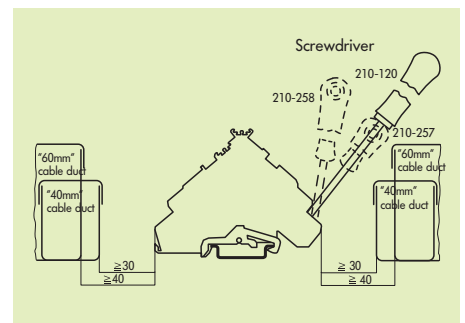
<p>0.08 – 2.5 mm<sup>2</sup> 125 V/5 A ①</p> <p>Terminal block width 5 mm / 0.197 in (with end plate 6 mm / 0.236 in)</p> <p> 8 – 9 mm / 0.33 in</p> <p>*  BV</p>	<p>AWG 28 – 12 250 V; 6,3 A   </p> <p>300 V, 15 A </p>	<p>0.08 – 2.5 mm<sup>2</sup> DC 24 V ②</p> <p>Terminal block width 5 mm / 0.197 in (with end plate 6 mm / 0.236 in)</p> <p> 8 – 9 mm / 0.33 in</p> <p>*  BV</p>	<p>AWG 28 – 12 300/24 V, 15 A   </p> <p>300 V, 15 A </p>	<p><b>Spacer</b></p> <p>Spacer width 5 mm / 0.197 in</p> <p>*  BV</p>
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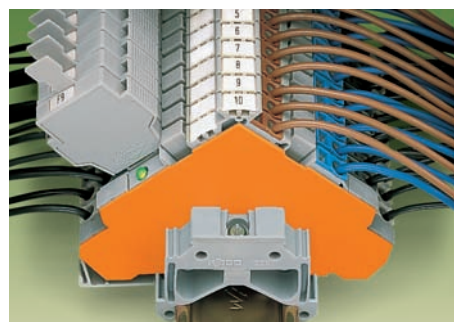
Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Sensor terminal blocks, for fuse plugs, for PNP (positive) switching sensors without end plate</b>		<b>Sensor-LED supply terminal block, voltage supply from sensor side, DC 24 V, for PNP (positive) switching sensors</b>		<b>Spacer, same shape as 4-conductor sensor terminal blocks, 3-conductor sensor terminal blocks with ground (earth) connection or the corresponding actuator terminal blocks</b>	
280-588	50	I LED green  <b>280-584/281-483</b>	10	<b>280-582</b>	50
<b>with end plate</b>		<b>Sensor supply terminal block, (see ill. page 7.49) voltage supply from sensor side,</b>			
grey	280-588/280-320	50	II 300 V <b>280-584</b>		
orange	280-588/280-323	50	<b>Sensor supply terminal block, (see ill. page 7.49) voltage supply from control panel side,</b>		
			II with end plate <b>280-587</b>		
			20		



Sensor terminal block, with fuse plug, with 3-conductor sensor

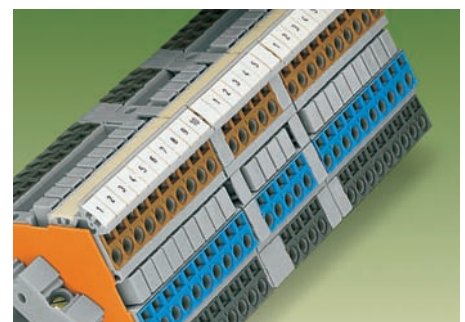


Min. mounting distance – terminal blocks to cable duct



The fuse plug is 1 mm/0.039 in wider than the terminal block. This means an intermediate plate has to be fitted.

- ① Electrical ratings are given by the fuse or components used in the component plug (see also pages 7.34 and 7.35 Full Line Catalog W4, volume 3)
- ② Other voltages – contact factory
- ③ Power consumption LED: 4.8 mA

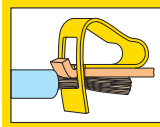




Spacers allow clear separation of groups of sensors or actuators, especially if they are supplied from different voltage sources.

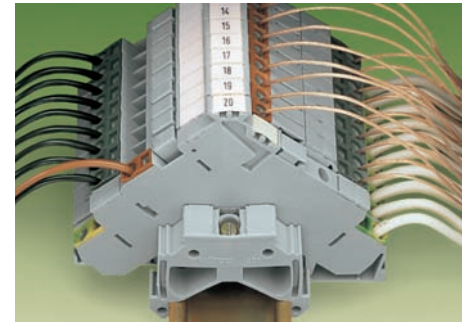
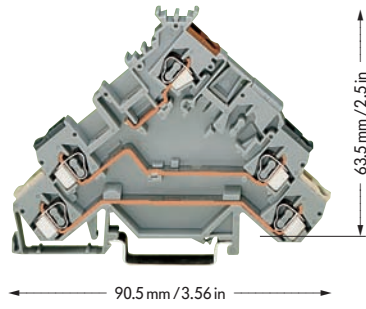
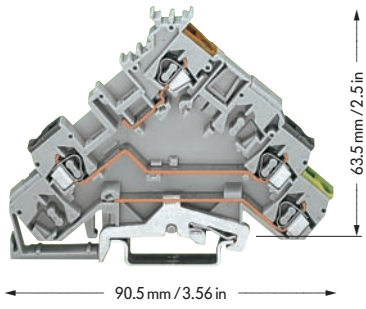
<b>Accessories</b> see page 7.51 Insulation stop and jumper	Appropriate marking system	<b>WMB/WSB</b> (see section 14)
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\* For further approvals with corresponding ratings see section 15.

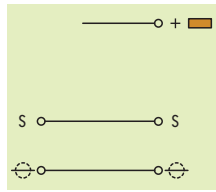
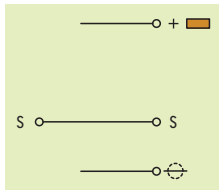
# Actuator Terminal Blocks 2.5 mm<sup>2</sup> / AWG 12, for Actuators with Shield (Screen) Connection and for Actuators with Shield (Screen) Conductor Through Contact Series 280



<p>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 12                  400 V/6 kV/3 ①   300 V, 15 A ②                  20 A   300 V, 15 A ③                  Terminal block width 5 mm / 0.197 in                  (with end plate 6 mm / 0.236 in)   8 – 9 mm / 0.33 in</p> <p>* ② ③ ④ BV</p>	<p>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 12                  400 V/6 kV/3 ①   300 V, 15 A ②                  20 A   300 V, 15 A ③                  Terminal block width 5 mm / 0.197 in                  (with end plate 6 mm / 0.236 in)   8 – 9 mm / 0.33 in</p> <p>* ② ③ ④ BV</p>
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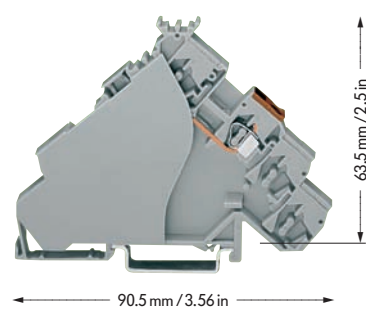
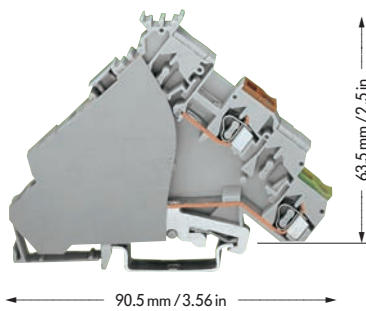


Green-yellow clamping unit = shield (screen) connection

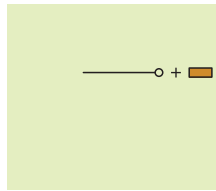
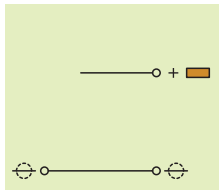


- ① 400 V = rated voltage  
 6 kV = rated surge voltage  
 3 = pollution degree  
 (see also section 15)

Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Actuator terminal block with shield (screen) connection</b>		<b>Actuator terminal block with shield (screen) conductor through contact</b>	
<b>280-585</b>	50	<b>280-583</b>	50






White clamping unit = shield (screen) conductor through contact



Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Actuator supply terminal block with shield (screen) connection, voltage supply from control panel side, with end plate</b>		<b>Actuator supply terminal block, voltage supply from control panel side, with end plate</b>	
<b>280-586</b>	20	<b>280-515</b>	20

### Accessories Series 280

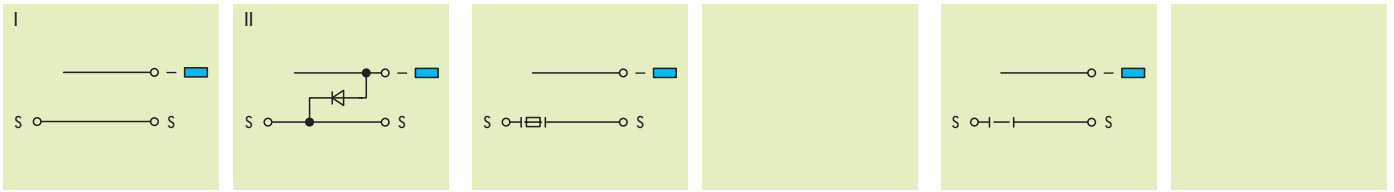
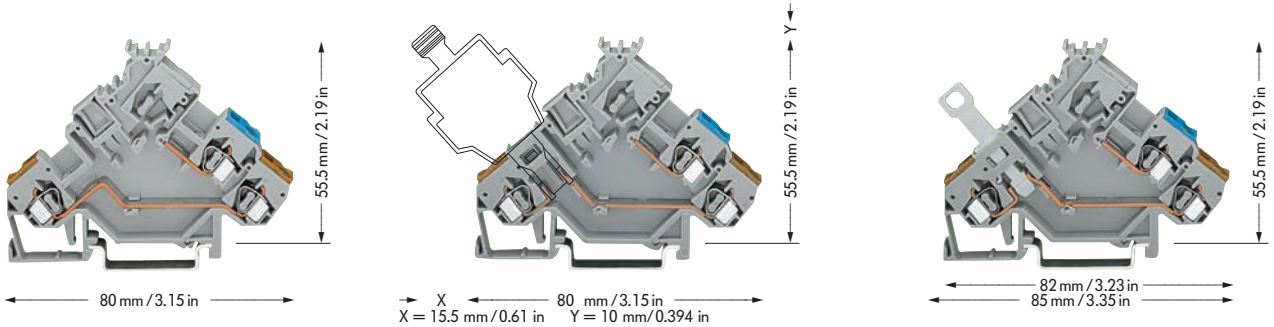
Appropriate marking system **WMB/WSB** (see section 14)

<p><b>End and intermediate plate, 1 mm/0.039 in thick</b>                  for quadruple deck terminal blocks                  orange <b>280-323</b> 100 (4 x 25)                  grey <b>280-320</b> 100 (4 x 25)</p> 	<p><b>Insulation stop, 5 pcs/strip</b> see page 2.43                  white <b>280-470</b> 200 strips                  light grey <b>280-471</b> 200 strips                  dark grey <b>280-472</b> 200 strips</p> 	<p><b>Adjacent jumper, insulated, I<sub>N</sub> 24 A</b>                  grey <b>280-402</b> 200 (8 x 25)</p> 
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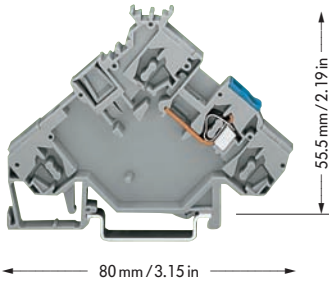
\* For further approvals with corresponding ratings see section 15.

# Actuator Terminal Blocks 2.5 mm<sup>2</sup> / AWG 12, (for Pressure Switches, Thermocouples etc.) Series 280

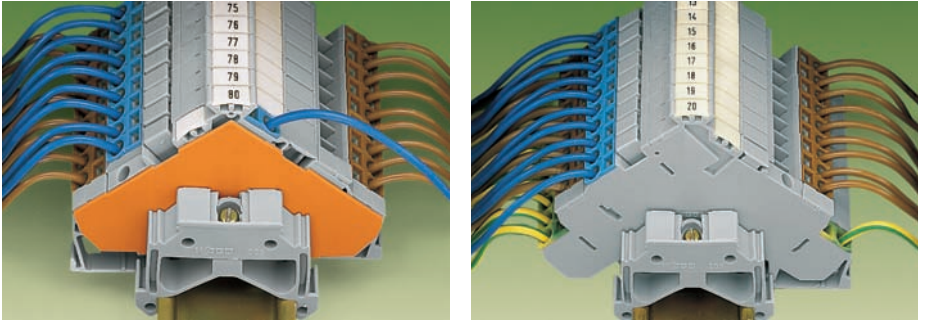
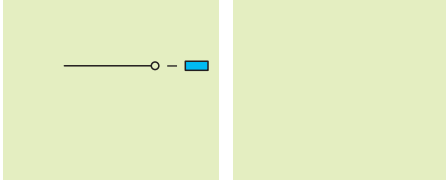
<p>0.08 – 2.5 mm<sup>2</sup> 400 V/6 kV/3, 20 A ① 250 V/4 kV/3, 20 A ① ②</p> <p>Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in</p> <p>* </p>	<p>AWG 28 – 12 300 V, 15 A </p> <p>300 V, 15 A </p>	<p>0.08 – 2.5 mm<sup>2</sup> 125 V/5 A ③ 250 V/6.3 A ④</p> <p>Terminal block width 5 mm / 0.197 in (with end plate 6 mm / 0.236 in) 8 – 9 mm / 0.33 in</p> <p>* </p>	<p>AWG 28 – 12 250 V; 6.3 A </p> <p>300 V, 15 A </p>	<p>0.08 – 2.5 mm<sup>2</sup> 400 V/6 kV/3 ① 10 A</p> <p>Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in</p> <p>* </p>	<p>AWG 28 – 12 300 V, 10 A </p> <p>300 V, 15 A </p>
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Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Actuator terminal block</b>		<b>Actuator terminal blocks, for fuse plugs ④,</b>		<b>Actuator disconnect terminal block,</b>	
I	280-562	50	for fuse protection of line voltage,		
			without end plate	280-565	50
			with end plate		
			grey	280-565/280-319	50
II	280-562/281-411	50	orange	280-565/280-321	50
Appropriate marking system <b>WMB/WSB</b> (see section 14)					



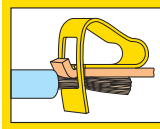
Actuator terminal block, here with a magnetic valve















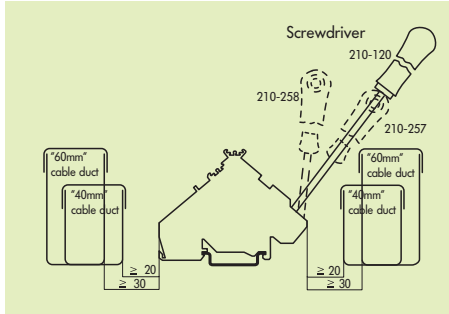
Item No.	Pack. unit pcs
<b>Actuator supply terminal block,</b>	
voltage supply from actuator side	
280-592	10
<b>Accessories</b> see page 7.53 Insulation stop and jumper	

\* For further approvals with corresponding ratings see section 15.

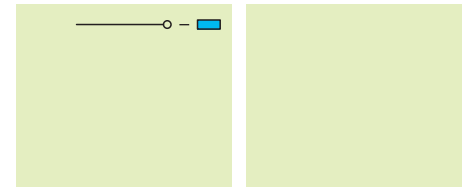
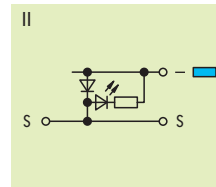
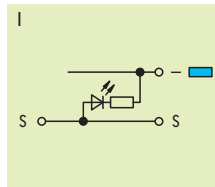
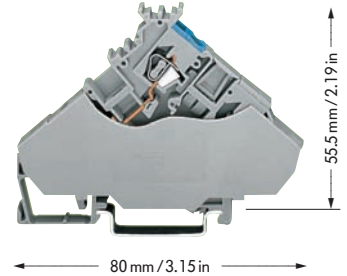
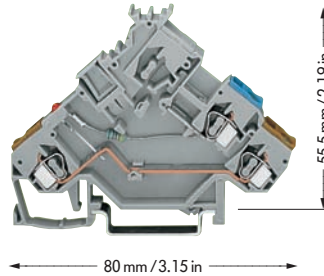




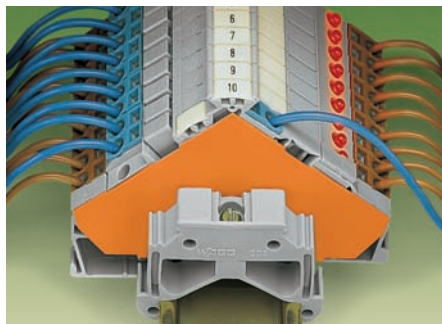
<b>0.08 – 2.5 mm<sup>2</sup></b> <b>DC 24 V ⑥</b> <b>20 A</b>  <b>Terminal block width 5 mm / 0.197 in</b>  <b>8 – 9 mm / 0.33 in</b> *   	<b>AWG 28 – 12</b> <b>24 V, 15 A </b> <b>300 V, 15 A </b>	<b>0.08 – 2.5 mm<sup>2</sup></b> <b>400 V/6 kV/3 ①</b> <b>20 A</b>  <b>Terminal block width with end plate 6 mm / 0.236 in</b>  <b>8 – 9 mm / 0.33 in</b> *   	<b>AWG 28 – 12</b> <b>300 V, 15 A </b> <b>300 V, 15 A </b>
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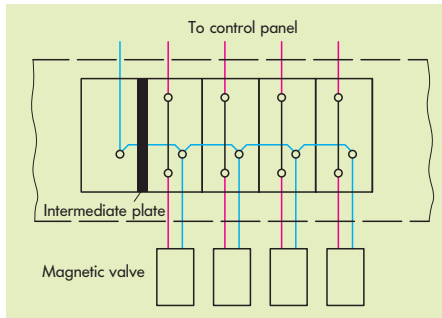
Min. mounting distance – terminal blocks to cable duct



	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
	<b>Actuator LED terminal block, DC 24 V</b>		<b>Actuator supply terminal block, voltage supply from control panel side, with end plate</b>	
	I LED red ⑥	280-562/281-434 50	280-568	20
	<b>Actuator LED terminal block, DC 24 V, with recovery diode 1 N 4007</b>			
	II LED red ⑥	280-562/281-420 50		



- ① 400/250 V = rated voltage  
6/4 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② with recovery diode
- ③ Electrical ratings are given by the fuse or components used in the component plug  
(see also pages 7.34 and 7.35 and Full Line Catalog W4, volume 3)
- ④ The fuse plug is 1 mm/0.039 in wider than the terminal block. This means an intermediate plate has to be fitted.
- ⑤ Other voltages – contact factory
- ⑥ Power consumption LED: 4.8 mA



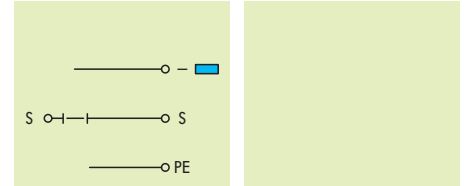
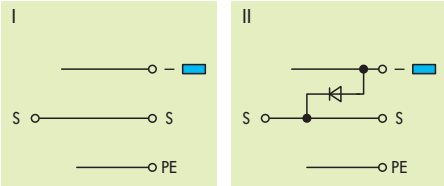
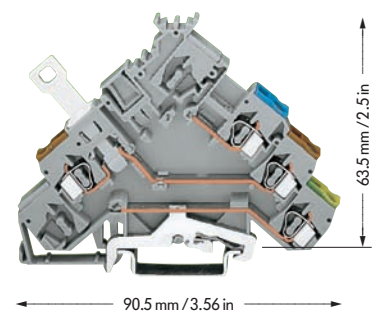
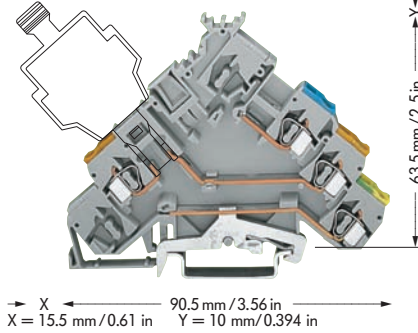
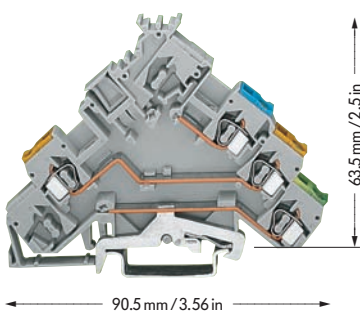
◀ Voltage supply from control panel side

Accessories Series 280		Appropriate marking system WMB/WSB (see section 14)	
<b>End and intermediate plate, 1 mm/0.039 in thick</b> for triple deck terminal blocks orange 280-321 100 (4 x 25) grey 280-319 100 (4 x 25)	<b>Insulation stop, 5 pcs/strip</b> white 280-470 200 strips light grey 280-471 200 strips dark grey 280-472 200 strips	<b>Adjacent jumper, insulated, I<sub>N</sub> 24 A</b> grey 280-402 200 (8 x 25)	

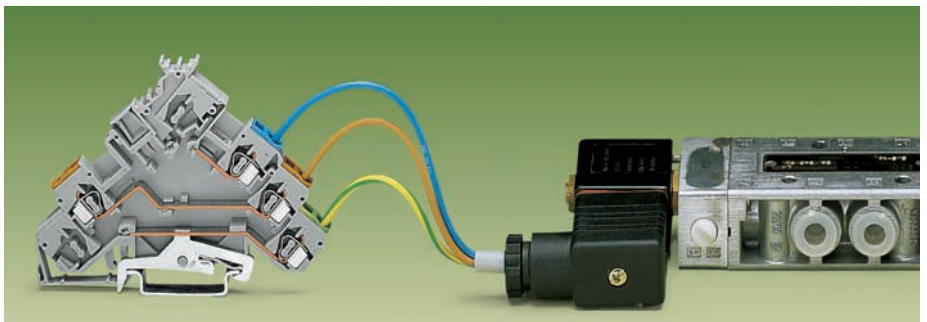
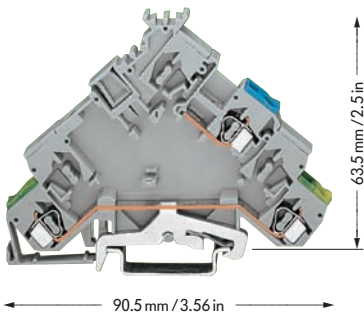


# Actuator Terminal Blocks with Ground (Earth) Connection 2.5 mm<sup>2</sup> / AWG 12, (for Magnetic Valves, Servomotors etc.) Series 280

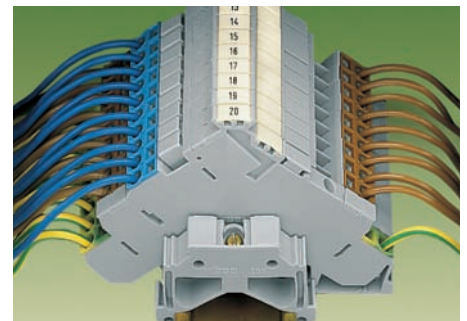
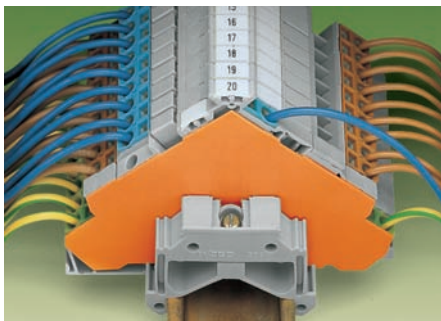
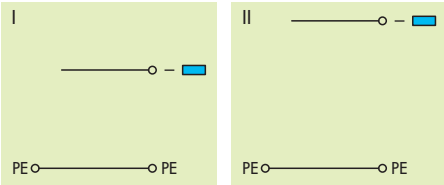
<p>0.08 – 2.5 mm<sup>2</sup> 400 V/6 kV/3, 20 A ① 250 V/4 kV/3, 20 A ① ② Terminal block width 5 mm / 0.197 in (with end plate 6 mm / 0.236 in) 8 – 9 mm / 0.33 in</p> <p>*  BV</p>	<p>AWG 28 – 12 300 V, 15 A  300 V, 15 A </p>	<p>0.08 – 2.5 mm<sup>2</sup> 125 V/5 A ③ 250 V/6.3 A ④ Terminal block width 5 mm / 0.197 in (with end plate 6 mm / 0.236 in) 8 – 9 mm / 0.33 in</p> <p>* </p>	<p>AWG 28 – 12 250 V; 6.3 A  300 V, 15 A </p>	<p>0.08 – 2.5 mm<sup>2</sup> 400 V/6 kV/3 ① 10 A Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in</p> <p>*  BV</p>	<p>AWG 28 – 12 300 V, 10 A  300 V, 15 A </p>
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Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Actuator terminal blocks with ground (earth) connection, I</b>	50	<b>Actuator terminal blocks with ground (earth) connection, without end plate</b>	50	<b>Actuator disconnect terminal block with ground (earth) connection, for interruption of line</b>	50
<b>280-572</b>		<b>280-575</b>		<b>280-576</b>	
and recovery diode 1 N 4007					
<b>II</b>	50	<b>with end plate</b>			
		grey	<b>280-575/280-320</b>	50	
		orange	<b>280-575/280-323</b>	50	

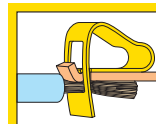


Actuator terminal block, here with a magnetic valve with ground (earth) connection

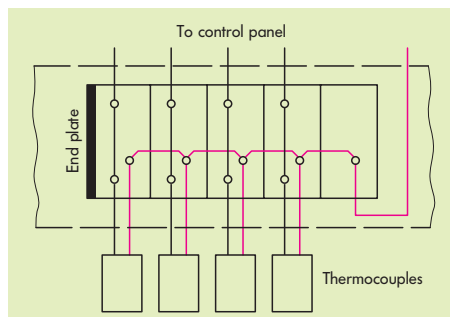


Item No.	Pack. unit pcs
<b>Actuator disconnect terminal blocks with ground (earth) connection, voltage supply from the actuator side</b>	10
<b>I</b>	
voltage supply from the control panel side, with end plate	
<b>II</b>	20
<b>Accessories</b> see page 7.55 Insulation stop and jumper	

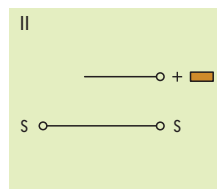
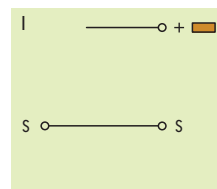
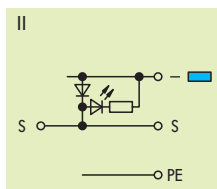
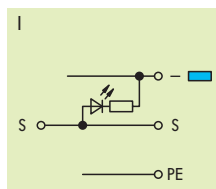
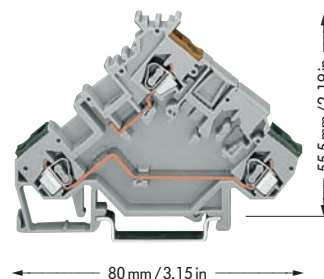
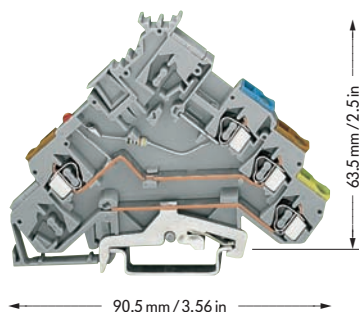
\* For further approvals with corresponding ratings see section 15.



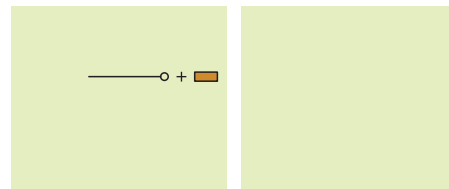
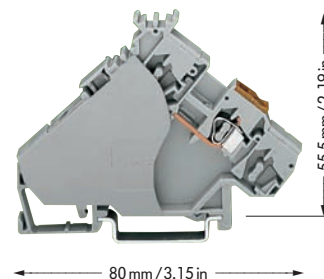
<b>0.08 – 2.5 mm<sup>2</sup></b> <b>DC 24 V ③</b> <b>20 A</b>	<b>AWG 28 – 12</b> <b>24 V, 15 A ④</b> <b>300 V, 15 A ④</b>	<b>0.08 – 2.5 mm<sup>2</sup></b> <b>400 V/6 kV/3 ②</b> <b>20 A</b>	<b>AWG 28 – 12</b> <b>300 V, 15 A ④</b> <b>300 V, 15 A ④</b>
<b>Terminal block width 5 mm / 0.197 in</b> <b>8 – 9 mm / 0.33 in</b>		<b>Terminal block width 5 mm / 0.197 in</b> <b>(with end plate 6 mm / 0.236 in)</b> <b>8 – 9 mm / 0.33 in</b>	
*		*	



Voltage supply from actuator side















Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>End and intermediate plate, 1 mm/0.039 in thick</b>		<b>Actuator LED terminal blocks</b>		<b>Actuator terminal block</b>	
for triple deck terminal blocks		<b>with ground (earth) connection, DC 24 V</b>		I <b>280-555</b>	50
orange <b>280-321</b>	100 (4 x 25)	I LED red ④ <b>280-572/281-434</b>	50	<b>Actuator terminal block, not shown</b>	
grey <b>280-319</b>	100 (4 x 25)	with recovery diode 1 N 4007		II <b>280-554</b>	50
<b>End and intermediate plate, 1 mm/0.039 in thick</b>		II LED red ④ <b>280-572/281-420</b>	50		
for quadruple deck terminal blocks					
orange <b>280-323</b>	100 (4 x 25)				
grey <b>280-320</b>	100 (4 x 25)				
<b>Insulation stop, 5 pcs/strip</b>	see page 2.43				
white <b>280-470</b>	200 strips				
light grey <b>280-471</b>	200 strips				
dark grey <b>280-472</b>	200 strips				
<b>Adjacent jumper, insulated, I<sub>N</sub> 24 A</b>					
grey <b>280-402</b>	200 (8 x 25)				
Appropriate marking system	<b>WMB/WSB</b> (see section 14)				

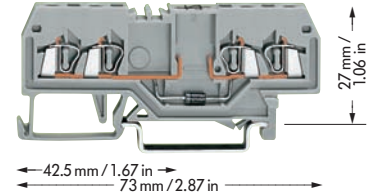
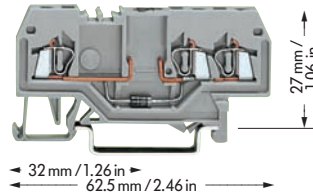
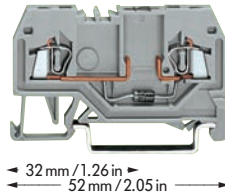








- ① 400/250 V = rated voltage  
6/4 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② with recovery diode
- ③ Electrical ratings are given by the fuse or components used in the component plug  
(see also pages 7.34 and 7.35 and Full Line Catalog W4, volume 3)
- ④ The fuse plug is 1 mm/0.039 in wider than the terminal block. This means an intermediate plate has to be fitted.

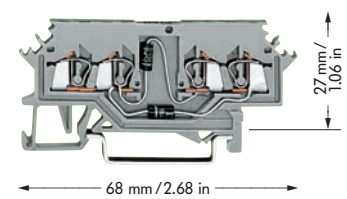
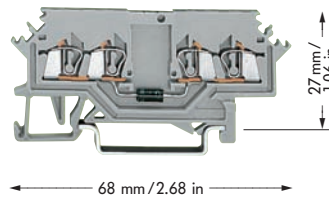
Item No.	Pack. unit pcs
<b>Actuator supply terminal block, in connection with:</b>	
280-555 → voltage supply from control panel side	
280-554 → voltage supply from actuator side	
with end plate <b>280-556</b>	20





# Diode Terminal Blocks 1.5 mm<sup>2</sup> / AWG 16, Series 279

<p>0.08 – 1.5 mm<sup>2</sup>   AWG 28 – 16                  U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V                  1 N 4007 – 0.5 A continuous current                  Terminal block width 4 mm / 0.157 in   8 – 9 mm / 0.33 in</p>	<p>0.08 – 1.5 mm<sup>2</sup>   AWG 28 – 16                  U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V                  1 N 4007 – 0.5 A continuous current                  Terminal block width 4 mm / 0.157 in   8 – 9 mm / 0.33 in</p>	<p>0.08 – 1.5 mm<sup>2</sup>   AWG 28 – 16                  U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V                  1 N 4007 – 0.5 A continuous current                  Terminal block width 4 mm / 0.157 in   8 – 9 mm / 0.33 in</p>
<p>*        BV NV  </p>		



Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>2-conductor diode terminal blocks with diode 1 N 4007</b>		<b>3-conductor diode terminal blocks with diode 1 N 4007</b>		<b>4-conductor diode terminal blocks with diode 1 N 4007</b>	
Circuit I, grey	<b>279-915/281-410</b> 100	Circuit I, grey	<b>279-673/281-410</b> 100	Circuit I, grey	<b>279-815/281-410</b> 100
Circuit II, grey	<b>279-915/281-411</b> 100	Circuit II, grey	<b>279-673/281-411</b> 100	Circuit II, grey	<b>279-815/281-411</b> 100
Examples of circuit configuration see page 7.59		Examples of circuit configuration see page 7.59		Examples of circuit configuration see page 7.59	
<b>Through terminal block with the same shape</b>		<b>Through terminal block with the same shape</b>		<b>Through terminal block with the same shape</b>	
grey	<b>279-901</b> page 2.8	grey	<b>279-681</b> page 2.8	grey	<b>279-831</b> page 2.8
Appropriate marking system <b>WMB/WSB</b> (see section 14) Marker width 4 mm/0.157 in					
<b>End and intermediate plate, 2 mm/0.079 in thick</b>		<b>End and intermediate plate, 2 mm/0.079 in thick</b>		<b>End and intermediate plate, 2 mm/0.079 in thick</b>	
 orange	<b>279-328</b> 100 (4 x 25)	 orange	<b>279-339</b> 100 (4 x 25)	 orange	<b>279-346</b> 100 (4 x 25)
 grey	<b>279-325</b> 100 (4 x 25)	 grey	<b>279-308</b> 100 (4 x 25)	 grey	<b>279-344</b> 100 (4 x 25)

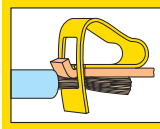


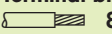

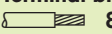



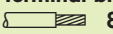

Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>4-conductor diode terminal blocks with diode 1 N 4007</b>		<b>4-conductor diode terminal block with 2 diodes 1 N 4007</b>	
Circuit I, grey	<b>279-623/281-410</b> 100	grey	<b>279-620/281-408</b> 100
Circuit II, grey	<b>279-623/281-411</b> 100	(for lamp test circuits up to 60 V)	
Examples of circuit configuration see page 7.59			
<b>Through terminal block with the same shape</b>		<b>Through terminal block with the same shape</b>	
grey	<b>279-621</b> page 2.9	grey	<b>279-621</b> page 2.9
Appropriate marking system <b>WMB/WSB</b> (see section 14) Marker width 4 mm/0.157 in			
<b>End and intermediate plate, 2 mm/0.079 in thick</b>		<b>End and intermediate plate, 2 mm/0.079 in thick</b>	
 orange	<b>279-317</b> 100 (4 x 25)	 orange	<b>279-317</b> 100 (4 x 25)
 grey	<b>279-316</b> 100 (4 x 25)	 grey	<b>279-316</b> 100 (4 x 25)

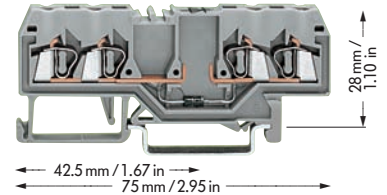
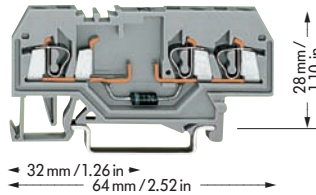
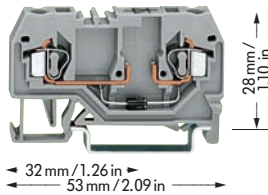
**Accessories Series 279**, see page 7.59




\* For further approvals with corresponding ratings see section 15.

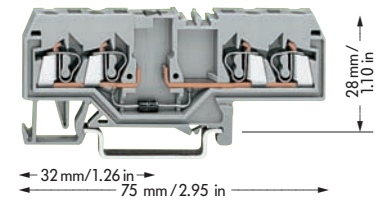
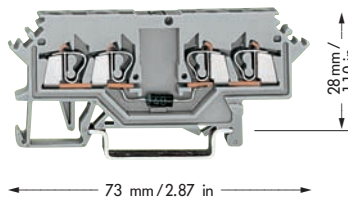
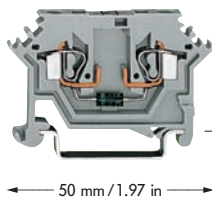
# Diode Terminal Blocks 2.5 mm<sup>2</sup> / AWG 12, Series 280






<p>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 12                  U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V                  1 N 4007 – 0.5 A continuous current</p> <p>Terminal block width 5 mm / 0.197 in   8 – 9 mm / 0.33 in</p> <p>* </p>	<p>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 12                  U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V                  1 N 4007 – 0.5 A continuous current</p> <p>Terminal block width 5 mm / 0.197 in   8 – 9 mm / 0.33 in</p> <p>*   </p>	<p>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 12                  U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V                  1 N 4007 – 0.5 A continuous current</p> <p>Terminal block width 5 mm / 0.197 in   8 – 9 mm / 0.33 in</p> <p>* </p>
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Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>2-conductor diode terminal blocks with diode 1 N 4007</b>		<b>3-conductor diode terminal blocks with diode 1 N 4007</b>		<b>4-conductor diode terminal blocks with diode 1 N 4007</b>	
Circuit I, grey	<b>280-915/281-410</b> 100	Circuit I, grey	<b>280-673/281-410</b> 100	Circuit I, grey	<b>280-815/281-410</b> 100
Circuit II, grey	<b>280-915/281-411</b> 100	Circuit II, grey	<b>280-673/281-411</b> 100	Circuit II, grey	<b>280-815/281-411</b> 100
Examples of circuit configuration see page 7.59		Examples of circuit configuration see page 7.59		Examples of circuit configuration see page 7.59	
<b>Through terminal block with the same shape</b>		<b>Through terminal block with the same shape</b>		<b>Through terminal block with the same shape</b>	
grey	<b>280-901</b> page 2.10	grey	<b>280-681</b> page 2.10	grey	<b>280-833</b> page 2.10
Appropriate marking system <b>WMB/WSB</b> (see section 14) Marker width 5 mm/0.197 in					
<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>		<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>		<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>	
	orange <b>280-309</b> 100 (4 x 25)		orange <b>280-326</b> 100 (4 x 25)		orange <b>280-315</b> 100 (4 x 25)
	grey <b>280-308</b> 100 (4 x 25)		grey <b>280-324</b> 100 (4 x 25)		grey <b>280-314</b> 100 (4 x 25)















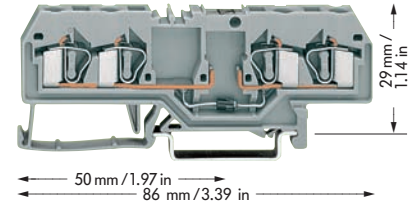
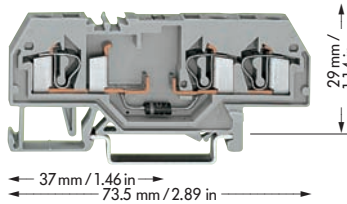
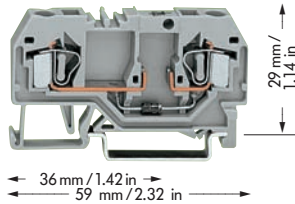
Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>2-conductor diode terminal blocks with diode 1 N 4007</b>		<b>4-conductor diode terminal blocks with diode 1 N 4007</b>		<b>4-conductor diode terminal blocks with diode 1 N 4007</b>	
Circuit I, grey	<b>280-613/281-410</b> 100	Circuit I, grey	<b>280-623/281-410</b> 100	Circuit I, grey	<b>280-655/281-410</b> 100
Circuit II, grey	<b>280-613/281-411</b> 100	Circuit II, grey	<b>280-623/281-411</b> 100	Circuit II, grey	<b>280-655/281-411</b> 100
Examples of circuit configuration see page 7.59		Examples of circuit configuration see page 7.59		Examples of circuit configuration see page 7.59	
<b>Through terminal block with the same shape</b>		<b>Through terminal block with the same shape</b>		<b>Through terminal block with the same shape</b>	
grey	<b>280-601</b> page 2.12	grey	<b>280-621</b> page 2.12	grey	<b>280-633</b> page 2.11
Appropriate marking system <b>WMB/WSB</b> (see section 14) Marker width 5 mm/0.197 in					
<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>		<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>		<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>	
	orange <b>280-331</b> 100 (4 x 25)		orange <b>280-317</b> 100 (4 x 25)		orange <b>280-315</b> 100 (4 x 25)
	grey <b>280-330</b> 100 (4 x 25)		grey <b>280-316</b> 100 (4 x 25)		grey <b>280-314</b> 100 (4 x 25)
<b>Accessories Series 280, see page 7.59</b>					







\* For further approvals with corresponding ratings see section 15.

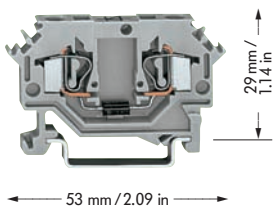


# Diode Terminal Blocks 4 mm<sup>2</sup> / AWG 12 and Variable Resistor Terminal Blocks 2.5 mm<sup>2</sup> / AWG 12, Series 281 and Series 280

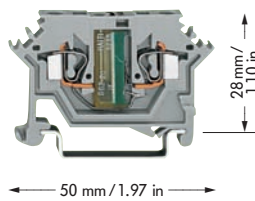
<p>0.08 – 4 mm<sup>2</sup>   AWG 28 – 12                  U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V                  1 N 4007 – 0.5 A continuous current                  1 N 5408 – 1.5 A continuous current                  Terminal block width 6 mm / 0.236 in   9 – 10 mm / 0.37 in</p> <p>*   </p>	<p>0.08 – 4 mm<sup>2</sup>   AWG 28 – 12                  U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V                  1 N 4007 – 0.5 A continuous current                  1 N 5408 – 1.5 A continuous current                  Terminal block width 6 mm / 0.236 in   9 – 10 mm / 0.37 in</p> <p>*   </p>	<p>0.08 – 4 mm<sup>2</sup>   AWG 28 – 12                  U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V                  1 N 4007 – 0.5 A continuous current                  1 N 5408 – 1.5 A continuous current                  Terminal block width 6 mm / 0.236 in   9 – 10 mm / 0.37 in</p> <p>*   </p>
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
Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>2-conductor diode terminal blocks with diode 1 N 4007</b>		<b>3-conductor diode terminal blocks with diode 1 N 4007</b>		<b>4-conductor diode terminal blocks with diode 1 N 4007</b>	
Circuit I, grey	281-915/281-410 50	Circuit I, grey	281-673/281-410 50	Circuit I, grey	281-665/281-410 50
Circuit II, grey	281-915/281-411 50	Circuit II, grey	281-673/281-411 50	Circuit II, grey	281-665/281-411 50
<b>2-conductor diode terminal blocks with diode 1 N 5408</b>		<b>3-conductor diode terminal blocks with diode 1 N 5408</b>		<b>4-conductor diode terminal blocks with diode 1 N 5408</b>	
Circuit I, grey	281-915/281-400 50	Circuit I, grey	281-673/281-400 50	Circuit I, grey	281-665/281-400 50
Circuit II, grey	281-915/281-401 50	Circuit II, grey	281-673/281-401 50	Circuit II, grey	281-665/281-401 50
<b>Through terminal block with the same shape</b>		<b>Through terminal block with the same shape</b>		<b>Through terminal block with the same shape</b>	
grey	281-901 page 2.16	grey	281-681 page 2.16	grey	281-652 page 2.16
Appropriate marking system <b>WMB/WSB</b> (see section 14) Marker width 5 mm/0.197 in					
<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>		<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>		<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>	
 orange	281-329 100 (4 x 25)	 orange	281-326 100 (4 x 25)	 orange	281-335 100 (4 x 25)
 grey	281-328 100 (4 x 25)	 grey	281-324 100 (4 x 25)	 grey	281-334 100 (4 x 25)







## Variable Resistor Terminal Blocks 2.5 mm<sup>2</sup> / AWG 14, Series 280

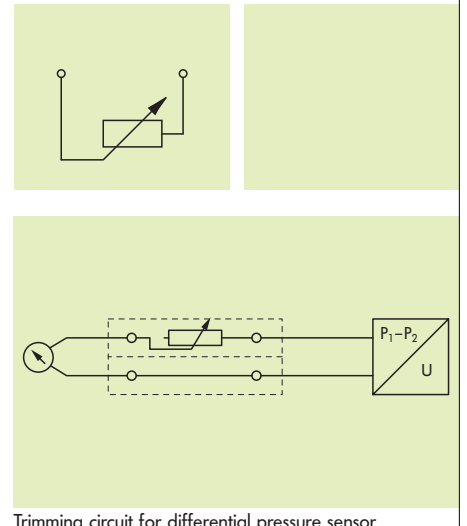


0.08 – 2.5 mm<sup>2</sup> | AWG 28 – 14  
250 V

Terminal block width 5 mm / 0.197 in  
 8 – 9 mm / 0.33 in

- ❶ For other resistor values – contact factory
- ❷ If used with intermediate plate 280-331 also suitable for Ex i-applications

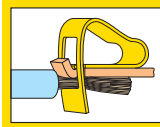
Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>2-conductor diode terminal blocks with diode 1 N 4007</b>		<b>Variable resistor term. block, w. balancing resistance 0.5 Ω – 20 Ω, 0.75 W ❶</b>	
Circuit I, grey	281-603/281-410 100	grey	280-615/281-412 100
Circuit II, grey	281-603/281-411 100	<b>Variable resistor term. block, w. balancing resistance 0.5 Ω – 20 Ω, 0.75 W ❶</b>	
<b>2-conductor diode terminal blocks with diode 1 N 5408</b>		blue	280-645/281-412 ❷100
Circuit I, grey	281-603/281-400 100	<b>Variable resistor term. block, w. balancing resistance 20 Ω – 1 kΩ, 0.75 W ❶</b>	
Circuit II, grey	281-603/281-401 100	grey	280-615/281-428 100
<b>Through terminal block with the same shape</b>		<b>Through terminal block with the same shape</b>	
grey	281-601 page 1.23	grey 281-601 page 1.23	
Appropriate marking system <b>WMB/WSB</b> (see section 14) Marker width 5 mm/0.197 in			
<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>		<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>	
 orange	281-317 100 (4 x 25)	 orange	280-331 100 (4 x 25)
 grey	281-316 100 (4 x 25)	 grey	280-330 100 (4 x 25)
<b>Accessories Series 281</b> , see page 7.59		<b>Accessories Series 280</b> , see page 7.59	














\* For further approvals with corresponding ratings see section 15.

# Accessories and Examples of Circuit Configuration

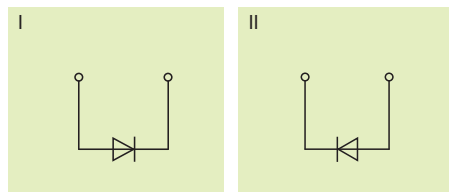
## Diode Terminal Blocks, Series 279/280/281



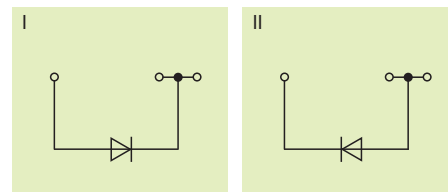
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Accessories Series 279			Accessories Series 280			Accessories Series 281		
Item No.	Pack. unit pcs		Item No.	Pack. unit pcs		Item No.	Pack. unit pcs	
<b>Comb type jumper bar</b> , insulated, see page 2.44 $I_N = I_N$ of terminal block 			<b>Comb type jumper bar</b> , insulated, see page 2.44 $I_N = I_N$ of terminal block 			<b>Comb type jumper bar</b> , insulated, see page 2.44 $I_N = I_N$ of terminal block 		
2-way	279-482	200 (8 x 25)	2-way	280-482	200 (8 x 25)	2-way	281-482	100 (4 x 25)
3-way	279-483	200 (8 x 25)	3-way	280-483	200 (8 x 25)	3-way	281-483	100 (4 x 25)
10-way	279-490	50 (2 x 25)	10-way	280-490	50 (2 x 25)	10-way	281-490	50 (2 x 25)
<b>Alternate comb type jumper bar</b> , insulated, $I_N = I_N$ of terminal block 			<b>Alternate comb type jumper bar</b> , insulated, $I_N = I_N$ of terminal block 			<b>Alternate comb type jumper bar</b> , insulated, $I_N = I_N$ of terminal block 		
2-way	279-492	200 (8 x 25)	2-way	280-492	200 (8 x 25)	2-way	281-492	100 (4 x 25)
<b>Operating tool</b> , insulated 			<b>Operating tool</b> , insulated 			<b>Operating tool</b> , insulated 		
2-way	279-432	1	2-way	280-432	1	2-way	280-432	1
3-way	279-433	1	3-way	280-433	1	3-way	280-433	1
10-way	279-440	1	10-way	280-440	1	5-way	281-440	1
<b>Wire commoning chain</b> , insulated, 50 connections, 8 A 			<b>Wire commoning chain</b> , insulated, 50 connections, 8 A 					
			black	210-103	1	black	210-103	1
			blue	210-123	1	blue	210-123	1

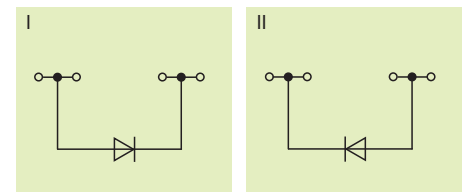
### 2-conductor diode terminal block



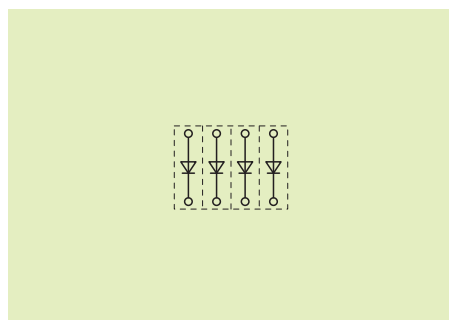
### 3-conductor diode terminal block



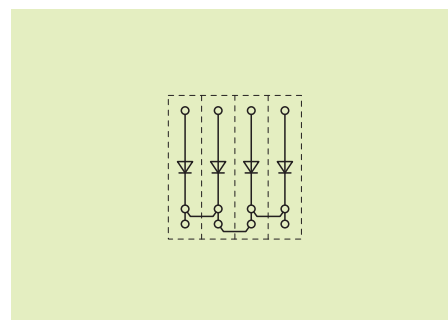
### 4-conductor diode terminal block



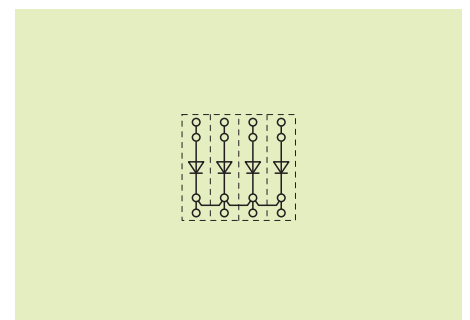
Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs			
Circuit I	279-915/281-410	100	Circuit I	279-673/281-410	100	Circuit I	279-815/281-410	100
Circuit II	279-915/281-411	100	Circuit II	279-673/281-411	100	Circuit II	279-815/281-411	100
Circuit I	280-915/281-410	100	Circuit I	280-673/281-410	100	Circuit I	279-623/281-410	100
Circuit II	280-915/281-411	100	Circuit II	280-673/281-411	100	Circuit II	279-623/281-411	100
Circuit I	280-613/281-410	100				Circuit I	280-815/281-410	100
Circuit II	280-613/281-411	100				Circuit II	280-815/281-411	100
						Circuit I	280-655/281-410	100
						Circuit II	280-655/281-411	100
						Circuit I	280-623/281-410	100
						Circuit II	280-623/281-411	100
Circuit I	281-915/281-410	50	Circuit I	281-673/281-410	50	Circuit I	281-665/281-410	50
Circuit II	281-915/281-411	50	Circuit II	281-673/281-411	50	Circuit II	281-665/281-411	50
Circuit I	281-915/281-400	50	Circuit I	281-673/281-400	50	Circuit I	281-665/281-400	50
Circuit II	281-915/281-401	50	Circuit II	281-673/281-401	50	Circuit II	281-665/281-401	50



Open diode gate
















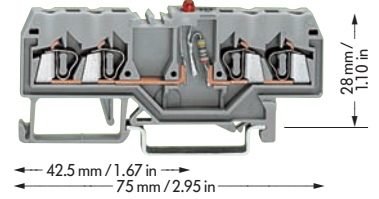
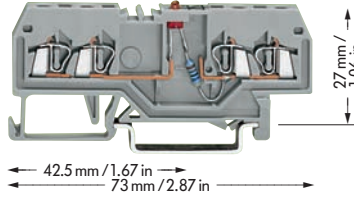
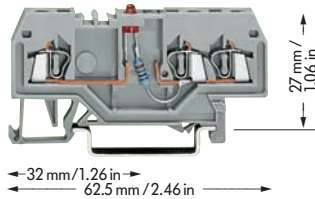
Polarized diode gate, common cathode









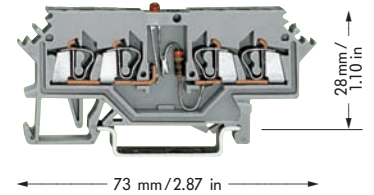
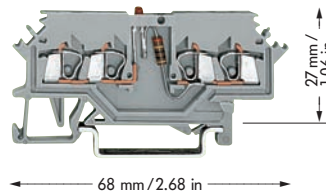
Polarized diode gate, common cathode





# LED Terminal Blocks 1.5 mm<sup>2</sup> / AWG 16 and 2.5 mm<sup>2</sup> / AWG 12, Series 279 and 280

<p>0.08 – 1.5 mm<sup>2</sup>   AWG 28 – 16 DC 24 V I<sub>F</sub> 25 mA max. Terminal block width 4 mm / 0.157 in  8 – 9 mm / 0.33 in</p>	<p>0.08 – 1.5 mm<sup>2</sup>   AWG 28 – 16 DC 24 V I<sub>F</sub> 25 mA max. Terminal block width 4 mm / 0.157 in  8 – 9 mm / 0.33 in</p> <p><small>*         BV LR NV </small></p>	<p>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 12 DC 24 V I<sub>F</sub> 25 mA max. Terminal block width 5 mm / 0.197 in  8 – 9 mm / 0.33 in</p> <p><small>* </small></p>
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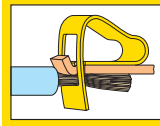
Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>3-conductor LED terminal blocks with red LED, DC 24 V</b>		<b>4-conductor LED terminal blocks with red LED, DC 24 V</b>		<b>4-conductor LED terminal blocks with red LED, DC 24 V</b>	
Circuit I, grey	<b>279-674/281-434</b> 100	Circuit I, grey	<b>279-809/281-434</b> 100	Circuit I, grey	<b>280-809/281-434</b> 100
Circuit II, grey	<b>279-674/281-413</b> 100	Circuit II, grey	<b>279-809/281-413</b> 100	Circuit II, grey	<b>280-809/281-413</b> 100
Examples of circuit configuration see page 7.61		Examples of circuit configuration see page 7.61		Examples of circuit configuration see page 7.61	
<b>Through terminal block with the same shape</b>		<b>Through terminal block with the same shape</b>		<b>Through terminal block with the same shape</b>	
grey	<b>279-681</b> page 2.8	grey	<b>279-831</b> page 2.8	grey	<b>280-833</b> page 2.10
Appropriate marking system <b>WMB/WSB</b> (see section 14) Marker width 4 mm/0.157 in			Appropriate marking system <b>WMB/WSB</b> (see section 14) Marker width 5 mm/0.197 in		
<b>End and intermediate plate, 2 mm/0.079 in thick</b>		<b>End and intermediate plate, 2 mm/0.079 in thick</b>		<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>	
 orange	<b>279-339</b> 100 (4 x 25)	 orange	<b>279-346</b> 100 (4 x 25)	 orange	<b>280-315</b> 100 (4 x 25)
 grey	<b>279-308</b> 100 (4 x 25)	 grey	<b>279-344</b> 100 (4 x 25)	 grey	<b>280-314</b> 100 (4 x 25)



Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>4-conductor LED terminal blocks with red LED, DC 24 V</b>		<b>4-conductor LED terminal blocks with red LED, DC 24 V</b>	
Circuit I, grey	<b>279-624/281-434</b> 100	Circuit I, grey	<b>280-624/281-434</b> 100
Circuit II, grey	<b>279-624/281-413</b> 100	Circuit II, grey	<b>280-624/281-413</b> 100
Examples of circuit configuration see page 7.61		Examples of circuit configuration see page 7.61	
<b>Through terminal block with the same shape</b>		<b>Through terminal block with the same shape</b>	
grey	<b>279-621</b> page 2.9	grey	<b>280-621</b> page 2.12
Appropriate marking system <b>WMB/WSB</b> (see section 14) Marker width 4 mm/0.157 in		Appropriate marking system <b>WMB/WSB</b> (see section 14) Marker width 5 mm/0.197 in	
<b>End and intermediate plate, 2 mm/0.079 in thick</b>		<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>	
 orange	<b>279-317</b> 100 (4 x 25)	 orange	<b>280-317</b> 100 (4 x 25)
 grey	<b>279-316</b> 100 (4 x 25)	 grey	<b>280-316</b> 100 (4 x 25)
<b>Accessories Series 279</b> , see page 7.61		<b>Accessories Series 280</b> , see page 7.61	

\* For further approvals with corresponding ratings see section 15.

# Accessories and Examples of Circuit Configuration LED Terminal Blocks, Series 279 and 280

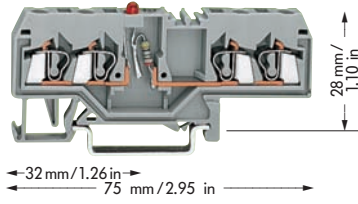


0.08 – 2.5 mm<sup>2</sup> | AWG 28 – 14  
DC 24 V  
I<sub>f</sub> 25 mA max.  
Terminal block width 5 mm / 0.197 in  
8 – 9 mm / 0.33 in

\*

**Accessories Series 279**

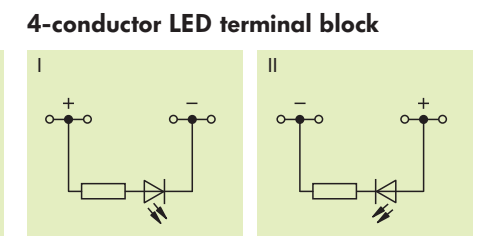
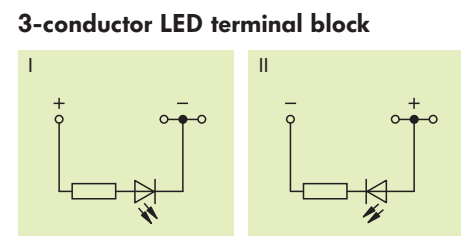
**Accessories Series 280**



Item No.	Pack. unit pcs
<b>4-conductor LED terminal blocks with red LED, DC 24 V</b>	
Circuit I, grey	<b>280-658/281-434</b> 100
Circuit II, grey	<b>280-658/281-413</b> 100
Examples of circuit configuration see page 7.61	
<b>Through terminal block with the same shape</b>	
grey	<b>280-633</b> page 2.11
Appropriate marking system <b>WMB/WSB</b> (see section 14) Marker width 5 mm/0.197 in	
<b>End and intermediate plate, 2.5 mm/0.098 in thick</b>	
orange	<b>280-315</b> 100 (4 x 25)
grey	<b>280-314</b> 100 (4 x 25)

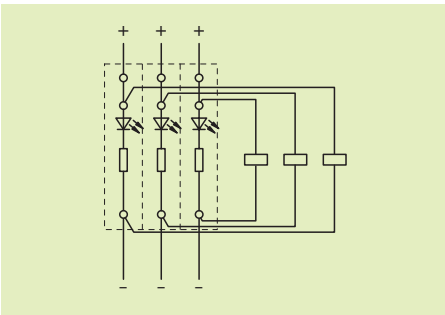
Item No.	Pack. unit pcs
<b>Comb type jumper bar, insulated,</b> see page 2.44 I <sub>N</sub> = I <sub>N</sub> of terminal block	
2-way	<b>279-482</b> 200 (8 x 25)
3-way	<b>279-483</b> 200 (8 x 25)
10-way	<b>279-490</b> 50 (2 x 25)
<b>Alternate comb type jumper bar, insulated,</b> I <sub>N</sub> = I <sub>N</sub> of terminal block	
2-way	<b>279-492</b> 200 (8 x 25)
<b>Operating tool, insulated</b>	
2-way	<b>279-432</b> 1
3-way	<b>279-433</b> 1
10-way	<b>279-440</b> 1

Item No.	Pack. unit pcs
<b>Comb type jumper bar, insulated,</b> see page 2.44 I <sub>N</sub> = I <sub>N</sub> of terminal block	
2-way	<b>280-482</b> 200 (8 x 25)
3-way	<b>280-483</b> 200 (8 x 25)
10-way	<b>280-490</b> 50 (2 x 25)
<b>Alternate comb type jumper bar, insulated,</b> I <sub>N</sub> = I <sub>N</sub> of terminal block	
2-way	<b>280-492</b> 200 (8 x 25)
<b>Operating tool, insulated</b>	
2-way	<b>280-432</b> 1
3-way	<b>280-433</b> 1
10-way	<b>280-440</b> 1
<b>Wire commoning chain, insulated, 50 connections, 8 A</b>	
black	<b>210-103</b> 1
blue	<b>210-123</b> 1

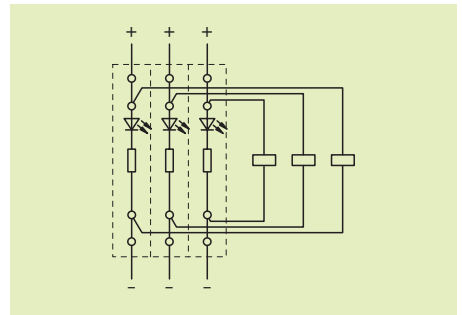


Item No.	Pack. unit pcs
Circuit I	<b>279-674/281-434</b> 100
Circuit II	<b>279-674/281-413</b> 100

Item No.	Pack. unit pcs
Circuit I	<b>279-674/281-434</b> 100
Circuit II	<b>279-674/281-413</b> 100
Circuit I	<b>279-624/281-434</b> 100
Circuit II	<b>279-624/281-413</b> 100
Circuit I	<b>280-809/281-434</b> 100
Circuit II	<b>280-809/281-413</b> 100
Circuit I	<b>280-658/281-434</b> 100
Circuit II	<b>280-658/281-413</b> 100
Circuit I	<b>280-624/281-434</b> 100
Circuit II	<b>280-624/281-413</b> 100



Voltage indication

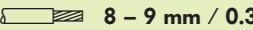





Voltage indication

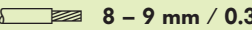





# Double Deck Diode Terminal Blocks

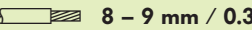
## Double Deck LED Terminal Blocks 2.5 mm<sup>2</sup> / AWG 14 and 4 mm<sup>2</sup> / AWG 12 Series 280 and 281

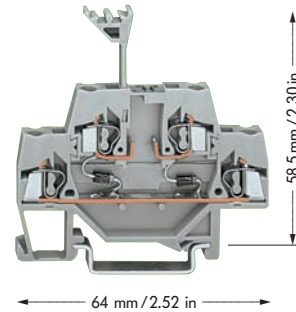
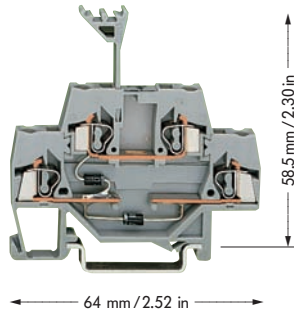
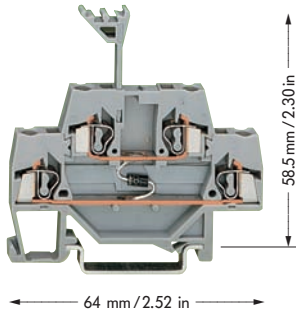
0.08 – 2.5 mm<sup>2</sup> | AWG 28 – 14  
 U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V  
 1 N 4007 – 0.5 A continuous current  
 Terminal block width 5 mm / 0.197 in  
 8 – 9 mm / 0.33 in

\*   

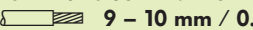
0.08 – 2.5 mm<sup>2</sup> | AWG 28 – 14  
 U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V  
 1 N 4007 – 0.5 A continuous current  
 Terminal block width 5 mm / 0.197 in  
 8 – 9 mm / 0.33 in




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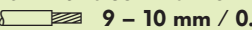
0.08 – 2.5 mm<sup>2</sup> | AWG 28 – 14  
 U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V  
 1 N 4007 – 0.5 A continuous current  
 Terminal block width 5 mm / 0.197 in  
 8 – 9 mm / 0.33 in






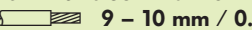
Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Double deck diode terminal blocks with diode 1 N 4007</b>		<b>Double deck diode terminal blocks with 2 diodes 1 N 4007</b>		<b>Double deck diode terminal blocks with 2 diodes 1 N 4007</b>	
Circuit I, grey	280-940/281-410 50	Circuit I, grey	280-941/281-492 50	Circuit I, grey	280-942/281-487 50
Circuit II, grey	280-940/281-411 50	Circuit II, grey	280-941/281-491 50	Circuit II, grey	280-942/281-488 50
<b>Through terminal blocks with the same shape and accessories</b>		<b>Through terminal blocks with the same shape and accessories</b>		<b>Through terminal blocks with the same shape and accessories</b>	
grey	280-519 page 2.30	grey	280-519 page 2.30	grey	280-519 page 2.30




0.08 – 4 mm<sup>2</sup> | AWG 28 – 12  
 U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V  
 1 N 4007 – 0.5 A continuous current  
 Terminal block width 6 mm / 0.236 in  
 9 – 10 mm / 0.37 in

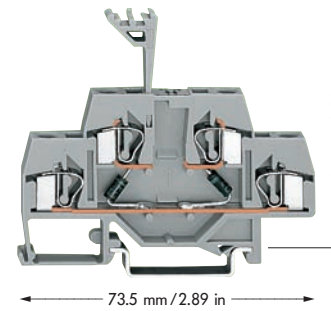
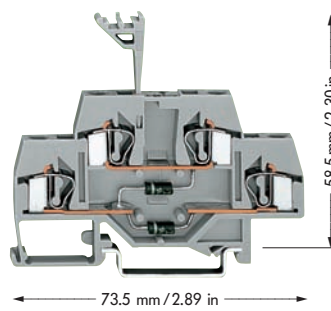
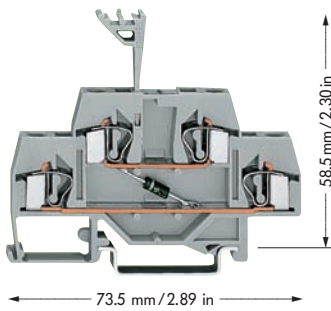
\*   

0.08 – 4 mm<sup>2</sup> | AWG 28 – 12  
 U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V  
 1 N 4007 – 0.5 A continuous current  
 Terminal block width 6 mm / 0.236 in  
 9 – 10 mm / 0.37 in

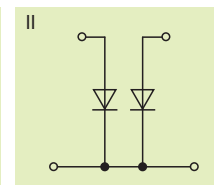
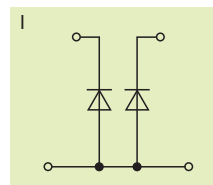
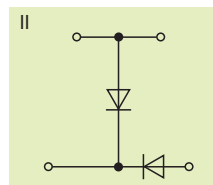
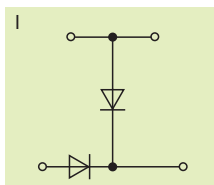
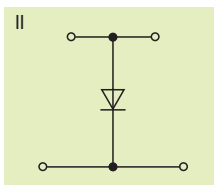
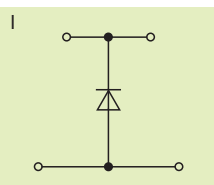
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0.08 – 4 mm<sup>2</sup> | AWG 28 – 12  
 U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V  
 1 N 4007 – 0.5 A continuous current  
 Terminal block width 6 mm / 0.236 in  
 9 – 10 mm / 0.37 in

\*   

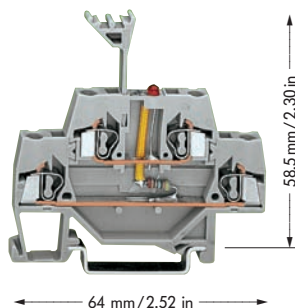
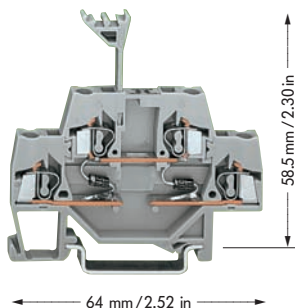


Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Double deck diode terminal blocks with diode 1 N 4007</b>		<b>Double deck diode terminal blocks with 2 diodes 1 N 4007</b>		<b>Double deck diode terminal blocks with 2 diodes 1 N 4007</b>	
Circuit I, grey	281-633/281-410 50	Circuit I, grey	281-635/281-492 50	Circuit I, grey	281-636/281-487 50
Circuit II, grey	281-633/281-411 50	Circuit II, grey	281-635/281-491 50	Circuit II, grey	281-636/281-488 50
<b>Through terminal blocks with the same shape and accessories</b>		<b>Through terminal blocks with the same shape and accessories</b>		<b>Through terminal blocks with the same shape and accessories</b>	
grey	281-619 page 2.33	grey	281-619 page 2.33	grey	281-619 page 2.33



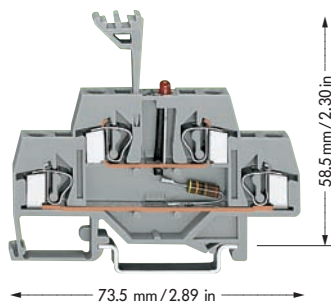
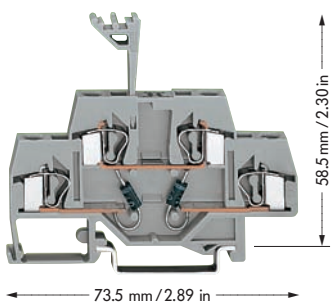
\* For further approvals with corresponding ratings see section 15.

<b>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 14</b> <b>U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V</b> <b>1 N 4007 – 0.5 A continuous current</b> <b>Terminal block width 5 mm / 0.197 in</b> 8 – 9 mm / 0.33 in	<b>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 14</b> <b>DC 24 V</b> <b>I<sub>F</sub> 25 mA max.</b> <b>Terminal block width 5 mm / 0.197 in</b> 8 – 9 mm / 0.33 in <small>* CCA KEECH BV LR NV</small>
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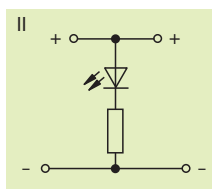
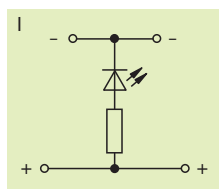
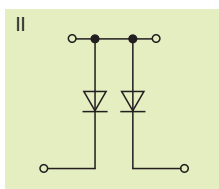
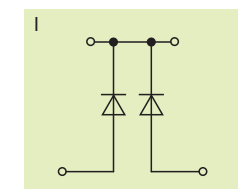
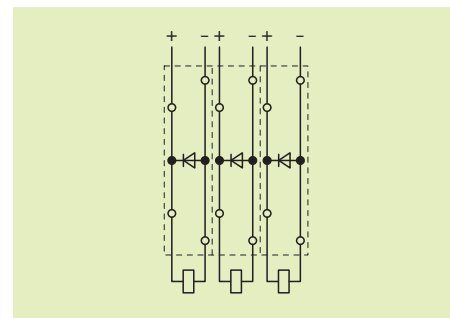


Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Double deck diode terminal blocks with 2 diodes 1 N 4007</b>		<b>Double deck LED terminal blocks with red LED, DC 24 V</b>	
Circuit I, grey	280-941/281-489 50	Circuit I, grey	280-943/281-434 50
Circuit II, grey	280-941/281-490 50	Circuit II, grey	280-943/281-413 50
<b>Through terminal blocks with the same shape and accessories</b>		<b>Through terminal blocks with the same shape and accessories</b>	
grey	280-519 page 2.30	grey	280-519 page 2.30

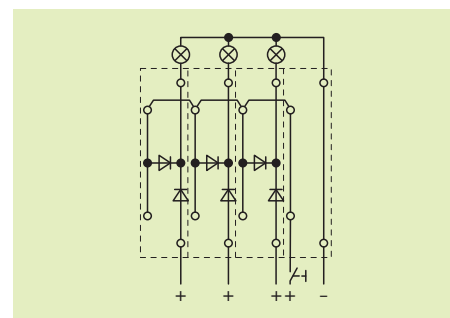
<b>0.08 – 4 mm<sup>2</sup>   AWG 28 – 12</b> <b>U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V</b> <b>1 N 4007 – 0.5 A continuous current</b> <b>Terminal block width 6 mm / 0.236 in</b> 9 – 10 mm / 0.37 in <small>* CCA KEECH BV LR NV</small>	<b>0.08 – 4 mm<sup>2</sup>   AWG 28 – 12</b> <b>DC 24 V</b> <b>I<sub>F</sub> 25 mA max.</b> <b>Terminal block width 6 mm / 0.236 in</b> 9 – 10 mm / 0.37 in <small>* CCA KEECH BV LR NV</small>
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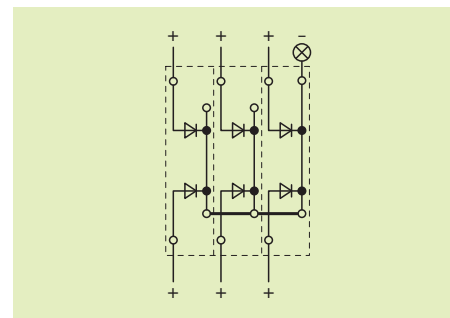
Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Double deck diode terminal blocks with 2 diodes 1 N 4007</b>		<b>Double deck LED terminal blocks with red LED, DC 24 V</b>	
Circuit I, grey	281-635/281-489 50	Circuit I, grey	281-634/281-434 50
Circuit II, grey	281-635/281-490 50	Circuit II, grey	281-634/281-413 50
<b>Through terminal blocks with the same shape and accessories</b>		<b>Through terminal blocks with the same shape and accessories</b>	
grey	281-619 page 2.33	grey	281-619 page 2.33


**Examples of circuit configuration**


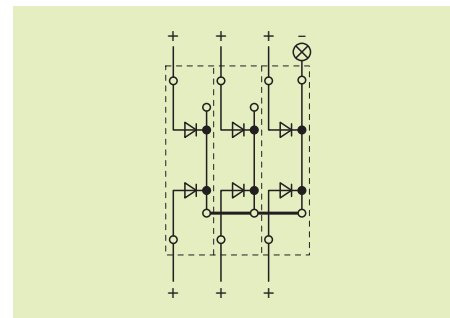
Used as recovery diodes



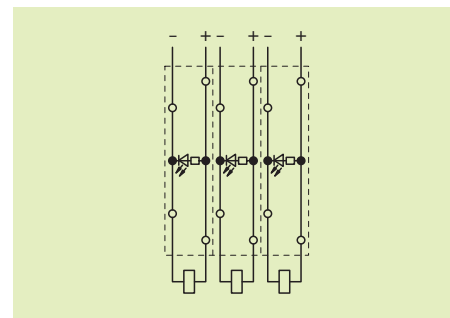
Used in lamp test circuit



Used in lamp test circuit



Used as collective fault indication



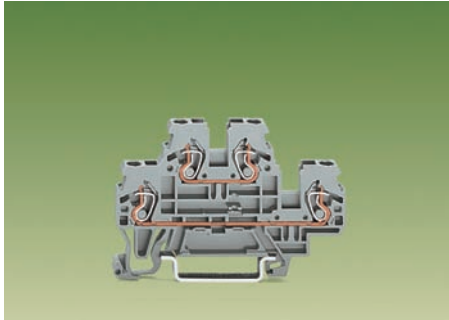
Voltage indication

# Double Deck Diode Terminal Blocks

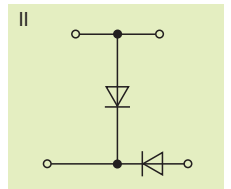
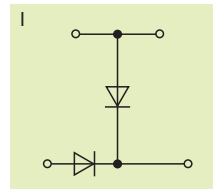
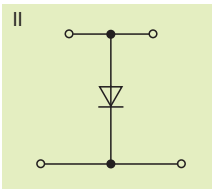
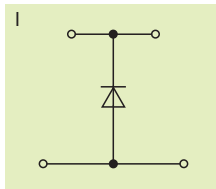
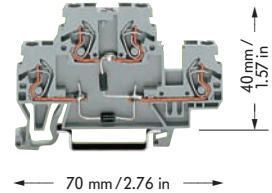
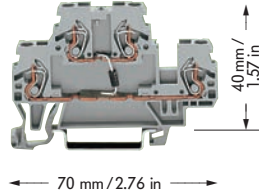
## Double Deck LED Terminal Blocks 2.5 mm<sup>2</sup>/4 mm<sup>2</sup> / AWG 12

### Series 870

	<p>0.08–2.5 mm<sup>2</sup>/4 mm<sup>2</sup> "f-st" ①   AWG 28 – 12                  U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V                  1 N 4007 – 0.5 A continuous current                  Terminal block width 5 mm / 0.197 in   6 – 7 mm / 0.26 in</p>	<p>0.08–2.5 mm<sup>2</sup>/4 mm<sup>2</sup> "f-st" ①   AWG 28 – 12                  U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V                  1 N 4007 – 0.5 A continuous current                  Terminal block width 5 mm / 0.197 in   6 – 7 mm / 0.26 in</p>
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Through terminal blocks with the same shape see page 3.8



① Max. diameter of insulation: 4.4 mm / 0.173 in

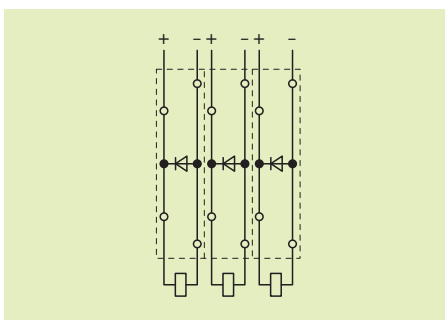
Description	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Double deck diode terminal block</b>	<b>Double deck diode terminal blocks</b>		<b>Double deck diode terminal blocks</b>	
and	<b>with diode 1 N 4007</b>		<b>with 2 diodes 1 N 4007</b>	
<b>double deck LED terminal block, for DIN 35 rail</b>	Circuit I, grey	<b>870-540/281-410</b> 50	Circuit I, grey	<b>870-541/281-492</b> 50
	Circuit II, grey	<b>870-540/281-411</b> 50	Circuit II, grey	<b>870-541/281-491</b> 50

#### Accessories

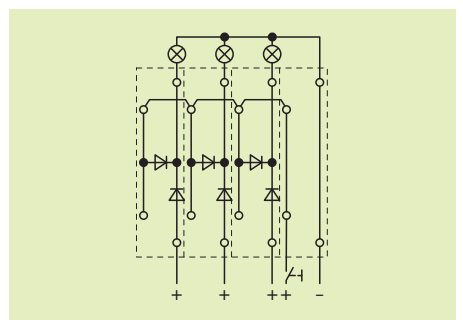
Appropriate marking system **WMB/Mini-WSB** (see section 14)

	2 mm / 0.079 in thick		2 mm / 0.079 in thick
	<b>End and intermediate plate</b>		
	grey	<b>870-518</b> 100 (4 x 25)	grey <b>870-518</b> 100 (4 x 25)
	orange	<b>870-519</b> 100 (4 x 25)	orange <b>870-519</b> 100 (4 x 25)
	<b>Push-in type jumper bars,</b>		
	light grey, insulated,	2-way <b>870-402</b> 200 (8 x 25)	2-way <b>870-402</b> 200 (8 x 25)
	I <sub>N</sub> 18 A	3-way <b>870-403</b> 200 (8 x 25)	3-way <b>870-403</b> 200 (8 x 25)
		4-way <b>870-404</b> 200 (8 x 25)	4-way <b>870-404</b> 200 (8 x 25)
		5-way <b>870-405</b> 100 (4 x 25)	5-way <b>870-405</b> 100 (4 x 25)
		: 10-way <b>870-410</b> 100 (4 x 25)	: 10-way <b>870-410</b> 100 (4 x 25)
	<b>Push-in type jumper bars,</b>		
	light grey, insulated,	from 1 to 3 <b>870-433</b> 200 (8 x 25)	from 1 to 3 <b>870-433</b> 200 (8 x 25)
	I <sub>N</sub> 18 A	from 1 to 4 <b>870-434</b> 200 (8 x 25)	from 1 to 4 <b>870-434</b> 200 (8 x 25)
		from 1 to 5 <b>870-435</b> 100 (4 x 25)	from 1 to 5 <b>870-435</b> 100 (4 x 25)
		: from 1 to 10 <b>870-440</b> 100 (4 x 25)	: from 1 to 10 <b>870-440</b> 100 (4 x 25)




#### Exemples of circuit configuration

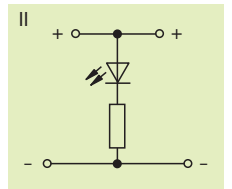
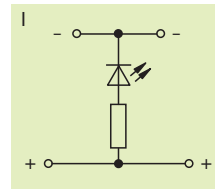
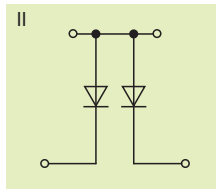
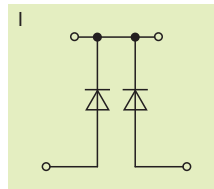
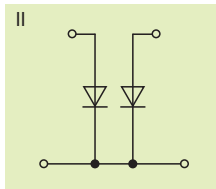
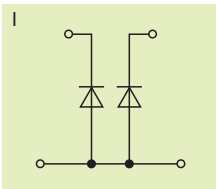
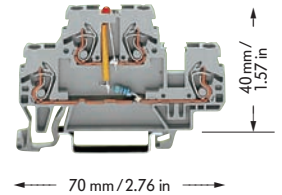
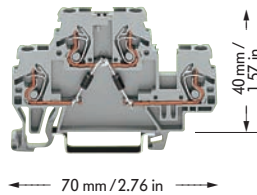
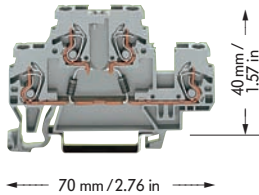


Used as recovery diodes



Used in lamp test circuit

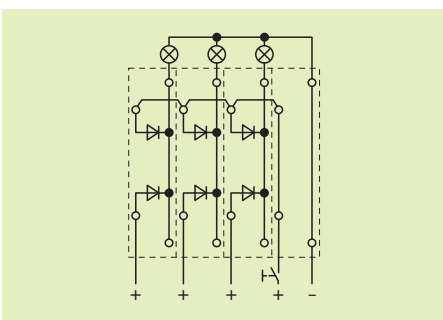
<p>0.08–2.5 mm<sup>2</sup>/4 mm<sup>2</sup>"f-st"Ⓢ   AWG 28 – 12          U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V          1 N 4007 – 0.5 A continuous current          Terminal block width 5 mm / 0.197 in   6 – 7 mm / 0.26 in</p>	<p>0.08–2.5 mm<sup>2</sup>/4 mm<sup>2</sup>"f-st"Ⓢ   AWG 28 – 12          U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V          1 N 4007 – 0.5 A continuous current          Terminal block width 5 mm / 0.197 in   6 – 7 mm / 0.26 in</p>	<p>0.08–2.5 mm<sup>2</sup>/4 mm<sup>2</sup>"f-st"Ⓢ   AWG 28 – 12          DC 24 V          I<sub>f</sub> 25 mA max.          Terminal block width 5 mm / 0.197 in   6 – 7 mm / 0.26 in</p>
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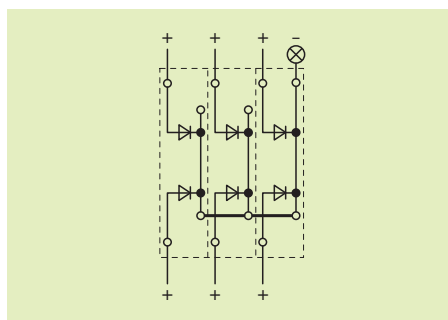
Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Double deck diode terminal blocks with 2 diodes 1 N 4007</b>		<b>Double deck diode terminal blocks with 2 diodes 1 N 4007</b>		<b>Double deck LED terminal blocks with red LED, DC 24 V</b>	
Circuit I, grey	<b>870-542/281-487</b> 50	Circuit I, grey	<b>870-541/281-489</b> 50	Circuit I, grey	<b>870-543/281-434</b> 50
Circuit II, grey	<b>870-542/281-488</b> 50	Circuit II, grey	<b>870-541/281-490</b> 50	Circuit II, grey	<b>870-543/281-413</b> 50

Appropriate marking system **WMB/Mini-WSB** (see section 14)

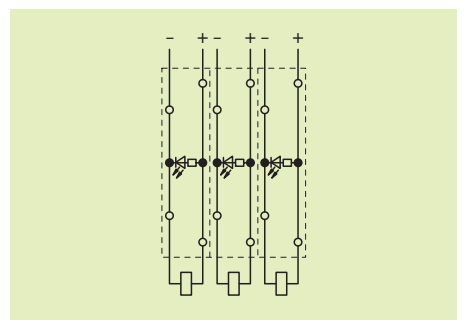
2 mm / 0.079 in thick			2 mm / 0.079 in thick			2 mm / 0.079 in thick		
grey	<b>870-518</b>	100 (4 x 25)	grey	<b>870-518</b>	100 (4 x 25)	grey	<b>870-518</b>	100 (4 x 25)
orange	<b>870-519</b>	100 (4 x 25)	orange	<b>870-519</b>	100 (4 x 25)	orange	<b>870-519</b>	100 (4 x 25)
2-way	<b>870-402</b>	200 (8 x 25)	2-way	<b>870-402</b>	200 (8 x 25)	2-way	<b>870-402</b>	200 (8 x 25)
3-way	<b>870-403</b>	200 (8 x 25)	3-way	<b>870-403</b>	200 (8 x 25)	3-way	<b>870-403</b>	200 (8 x 25)
4-way	<b>870-404</b>	200 (8 x 25)	4-way	<b>870-404</b>	200 (8 x 25)	4-way	<b>870-404</b>	200 (8 x 25)
5-way	<b>870-405</b>	100 (4 x 25)	5-way	<b>870-405</b>	100 (4 x 25)	5-way	<b>870-405</b>	100 (4 x 25)
:	:		:	:		:	:	
10-way	<b>870-410</b>	100 (4 x 25)	10-way	<b>870-410</b>	100 (4 x 25)	10-way	<b>870-410</b>	100 (4 x 25)
from 1 to 3	<b>870-433</b>	200 (8 x 25)	from 1 to 3	<b>870-433</b>	200 (8 x 25)	from 1 to 3	<b>870-433</b>	200 (8 x 25)
from 1 to 4	<b>870-434</b>	200 (8 x 25)	from 1 to 4	<b>870-434</b>	200 (8 x 25)	from 1 to 4	<b>870-434</b>	200 (8 x 25)
from 1 to 5	<b>870-435</b>	100 (4 x 25)	from 1 to 5	<b>870-435</b>	100 (4 x 25)	from 1 to 5	<b>870-435</b>	100 (4 x 25)
:	:		:	:		:	:	
from 1 to 10	<b>870-440</b>	100 (4 x 25)	from 1 to 10	<b>870-440</b>	100 (4 x 25)	from 1 to 10	<b>870-440</b>	100 (4 x 25)



Used in lamp test circuit



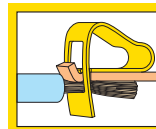
Used for collective fault indication





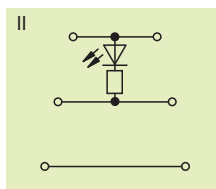
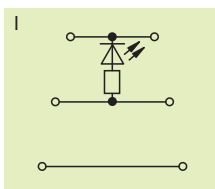
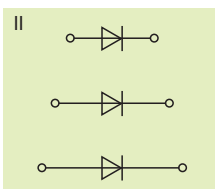
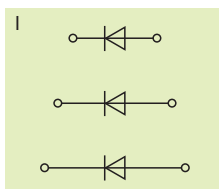
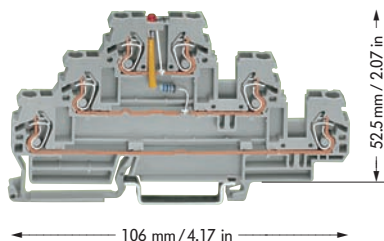
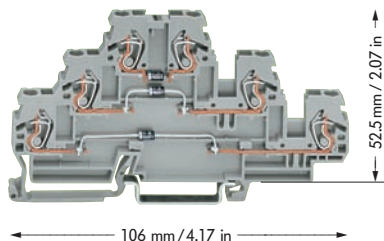
Used for voltage indication







<p>0.08 – 2.5 mm<sup>2</sup>/4 mm<sup>2</sup>"f-st"①   AWG 28 – 12          U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V          1 N 4007 – 0.5 A continuous current          Terminal block width 5 mm / 0.197 in   6 – 7 mm / 0.26 in</p>	<p>0.08 – 2.5 mm<sup>2</sup>/4 mm<sup>2</sup>"f-st"①   AWG 28 – 12          DC 24 V          I<sub>F</sub> 25 mA max.          Terminal block width 5 mm / 0.197 in   6 – 7 mm / 0.26 in</p>
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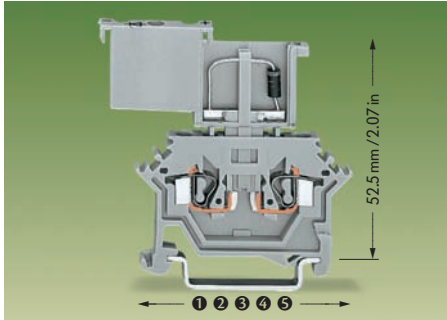
Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>Triple deck diode terminal blocks with 3 diodes 1 N 4007</b>		<b>Triple deck LED terminal blocks with red LED, DC 24 V</b>	
Circuit I, grey	<b>870-596/281-673</b> 50	Circuit I, grey	<b>870-593/281-434</b> 50
Circuit II, grey	<b>870-596/281-674</b> 50	Circuit II, grey	<b>870-593/281-413</b> 50

Appropriate marking system **WMB/Mini-WSB** (see section 14)

2 mm / 0.079 in thick		2 mm / 0.079 in thick	
grey	<b>870-568</b> 100 (4 x 25)	grey	<b>870-568</b> 100 (4 x 25)
orange	<b>870-569</b> 100 (4 x 25)	orange	<b>870-569</b> 100 (4 x 25)
2-way	<b>870-402</b> 200 (8 x 25)	2-way	<b>870-402</b> 200 (8 x 25)
3-way	<b>870-403</b> 200 (8 x 25)	3-way	<b>870-403</b> 200 (8 x 25)
4-way	<b>870-404</b> 200 (8 x 25)	4-way	<b>870-404</b> 200 (8 x 25)
5-way	<b>870-405</b> 100 (4 x 25)	5-way	<b>870-405</b> 100 (4 x 25)
:	:	:	:
10-way	<b>870-410</b> 100 (4 x 25)	10-way	<b>870-410</b> 100 (4 x 25)
from 1 to 3	<b>870-433</b> 200 (8 x 25)	from 1 to 3	<b>870-433</b> 200 (8 x 25)
from 1 to 4	<b>870-434</b> 200 (8 x 25)	from 1 to 4	<b>870-434</b> 200 (8 x 25)
from 1 to 5	<b>870-435</b> 100 (4 x 25)	from 1 to 5	<b>870-435</b> 100 (4 x 25)
:	:	:	:
from 1 to 10	<b>870-440</b> 100 (4 x 25)	from 1 to 10	<b>870-440</b> 100 (4 x 25)

# Pluggable Modules – Diodes on Carrier Terminal Blocks 2.5 mm<sup>2</sup> / AWG 14, Series 280

	<b>Diode module: diode 1 N 4007</b> $V_N$ 250 V; $V_{RM}$ 1000 V; 1 A max. LED $I_f$ 25 mA	
<b>Module width 5 mm / 0.197 in</b>		



open side of term. block	Description	Item No.	Pack. unit pcs
	<b>Diode module,</b> 5 mm / 0.197 in wide, diode 1 N 4007	<b>280-801/281-411</b>	100
	<b>Diode module,</b> 5 mm / 0.197 in wide, diode 1 N 4007 as free-wheeling diode and LED	DC 24 V <b>280-801/281-420</b> DC 48 V <b>280-801/281-421</b>	100

These diode modules, specially designed for the individual construction of, for example, lamp test circuits or collective fault indicating systems, offer the following advantages to the user:

- Separation into functional and wiring layer
- Polarized direction of switching
- High density with only 5 mm / 0.197 in width of terminal block and module.
- Quick and easy exchange of modules

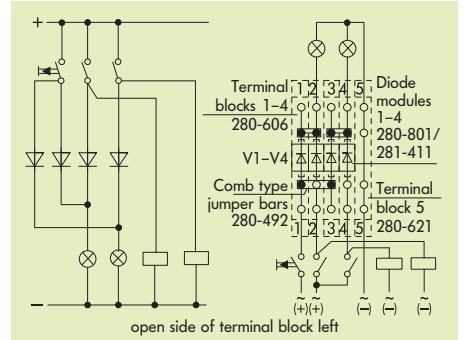
## Carrier terminal blocks for pluggable modules and accessories (Marking accessories see section 14)

	<b>2-cond. carrier term. block,</b> 0.08 – 2.5 mm <sup>2</sup> /AWG 28 – 14 stripped length 8 – 9 mm / 0.33 in	Terminal block width 5 mm / 0.197 in grey	<b>280-916</b> ①	100
	<b>End and intermediate plate,</b> for 2-conductor carrier terminal block 280-916	2.5 mm / 0.098 in thick orange	<b>280-309</b>	100 (4 x 25)
	<b>2-cond. carrier term. block,</b> 0.08 – 2.5 mm <sup>2</sup> /AWG 28 – 14 stripped length 8 – 9 mm / 0.33 in	Terminal block width 5 mm / 0.197 in grey	<b>280-616</b> ②	100
	<b>End and intermediate plate,</b> for 2-conductor carrier terminal block 280-616	2.5 mm / 0.098 in thick orange	<b>280-331</b>	100 (4 x 25)
		grey	<b>280-330</b>	100 (4 x 25)
	<b>3-cond. carrier term. block,</b> 0.08 – 2.5 mm <sup>2</sup> /AWG 28 – 14 stripped length 8 – 9 mm / 0.33 in	Terminal block width 5 mm / 0.197 in grey	<b>280-610</b> ③	100
	<b>End and intermediate plate,</b> for 3-conductor carrier terminal block 280-610	2.5 mm / 0.098 in thick orange	<b>280-326</b>	100 (4 x 25)
		grey	<b>280-324</b>	100 (4 x 25)
	<b>4-cond. carrier term. block,</b> 0.08 – 2.5 mm <sup>2</sup> /AWG 28 – 14 stripped length 8 – 9 mm / 0.33 in	Terminal block width 5 mm / 0.197 in grey	<b>280-606</b> ④	<b>280-686</b> ⑤
	<b>End and intermediate plate,</b> for 4-conductor carrier terminal blocks	2.5 mm / 0.098 in thick orange	<b>280-317</b>	<b>280-315</b>
		grey	<b>280-316</b>	<b>280-314</b>
	<b>Comb type jumper bar,</b> insulated, see page 2.44 $I_N = I_N$ of terminal block	2-way 3-way 10-way	<b>280-482</b> <b>280-483</b> <b>280-490</b>	200 (8 x 25) 200 (8 x 25) 50 (2 x 25)
	<b>Alternate comb type jumper bar,</b> insulated, $I_N = I_N$ of terminal block	2-way	<b>280-492</b>	200 (8 x 25)
	<b>Operating tool,</b> insulated	2-way 3-way 10-way	<b>280-432</b> <b>280-433</b> <b>280-440</b>	1 1 1
	<b>Wire commoning chain,</b> insulated, 50 connections, 8 A	Commoning distance max. 120 mm / 4.72 in black blue	<b>210-103</b> <b>210-123</b>	1 1

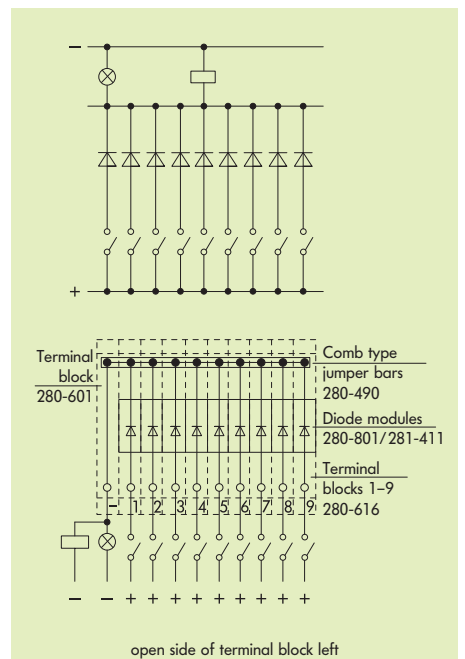
- ① 53 mm / 2.09 in
- ② 50 mm / 1.97 in
- ③ 64 mm / 2.52 in

- ④ Term. block marking on both sides 73 mm / 2.87 in
- ⑤ Terminal block marking in center position 75 mm / 2.95 in

## Examples of circuit configuration

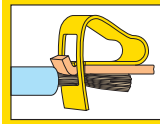


Lamp test circuit with blocking diodes

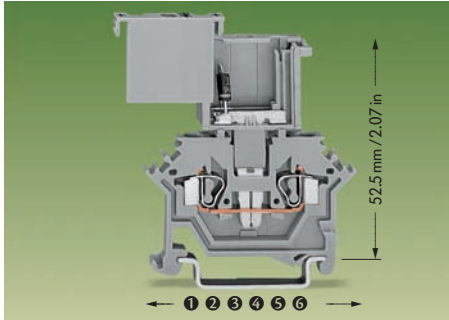


Diode gate for collective fault indication

# Pluggable Modules – Diodes on Through Terminal Blocks 2.5 mm<sup>2</sup> / AWG 14, Series 280



	<b>Diode module: diode 1 N 4007</b> $V_N$ 250 V; $V_{RM}$ 1000 V; 1 A max.	
	<b>Module width 10 mm / 0.394 in</b>	



Description	Item No.	Pack. unit pcs
<b>Diode module, 10 mm / 0.394 in wide, diode 1 N 4007 as free-wheeling diode</b>	<b>280-803/281-411</b>	50
<b>Diode module, 10 mm / 0.394 in wide, diode 1 N 4007 as free-wheeling diode and LED</b>	DC 24 V <b>280-803/281-420</b> DC 48 V <b>280-803/281-421</b>	50

These diode modules are simply pushed into the contact slots of the current bars of two adjacent through terminal blocks like a push-in jumper.

This offers the following advantages to the user:

- The modules are suitable for **all** through terminal blocks of series 280.
- Existing terminal block assemblies can be refitted with diode modules without any problem.

Further advantages:

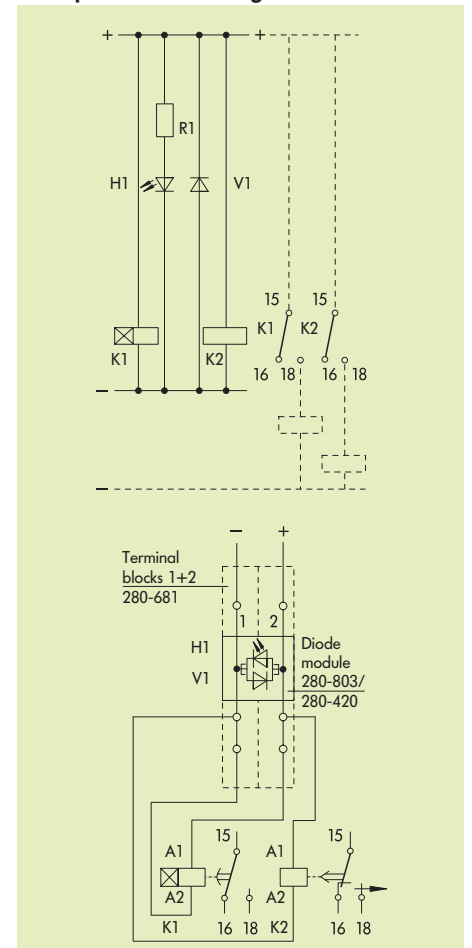
- Separation into functional and wiring layer.
- Modules can be replaced quick by other types of modules

## Through terminal blocks for pluggable modules and accessories (Marking accessories see section 14)

	<b>Front-entry 2-cond. term. block,</b> 0.08 – 2.5 mm <sup>2</sup> /AWG 28 – 12 stripped length 8 – 9 mm / 0.33 in	Terminal block width 5 mm / 0.197 in grey	<b>280-601 ①</b>	<b>280-901 ②</b>	100
	<b>End and intermediate plate,</b> for 2-conductor terminal blocks	2.5 mm / 0.098 in thick orange grey	<b>280-331</b>	<b>280-309</b>	100 (4 x 25)
	<b>Front-entry 3-cond. term. block,</b> 0.08 – 2.5 mm <sup>2</sup> /AWG 28 – 12 stripped length 8 – 9 mm / 0.33 in	Terminal block width 5 mm / 0.197 in grey	<b>280-681 ③</b>		100
	<b>End and intermediate plate,</b> for 3-conductor terminal block 280-681	2.5 mm / 0.098 in thick orange grey	<b>280-326</b>	<b>280-324</b>	100 (4 x 25)
	<b>Front-entry 4-cond. term. block,</b> 0.08 – 2.5 mm <sup>2</sup> /AWG 28 – 12 stripped length 8 – 9 mm / 0.33 in	Terminal block width 5 mm / 0.197 in grey	<b>280-621 ④</b>	<b>280-833 ⑤</b>	100
	<b>End and intermediate plate,</b> for 4-conductor terminal blocks	2.5 mm / 0.098 in thick orange grey	<b>280-317</b>	<b>280-315</b>	100 (4 x 25)
	<b>Side-entry terminal block,</b> 0.08 – 2.5 mm <sup>2</sup> /AWG 28 – 12 stripped length 8 – 9 mm / 0.33 in	Terminal block width 5 mm / 0.197 in grey	<b>280-101 ⑥</b>		100
	<b>End and intermediate plate,</b> for side-entry terminal block 280-101	2.5 mm / 0.098 in thick orange grey	<b>280-302</b>	<b>280-301</b>	100 (4 x 25)
	<b>Adjacent jumper,</b> insulated	$I_N$ 24 A grey	<b>280-402</b>		200 (8 x 25)
	<b>Wire commoning chain,</b> insulated, 50 connections, 8 A	Commoning distance max. 120 mm / 4.72 in	black <b>210-103</b>	blue <b>210-123</b>	1

- ① Term. block marking on both sides 50 mm / 1.97 in
- ② Terminal block marking in center position 53 mm / 2.09 in
- ③ Terminal block marking in center position 64 mm / 2.52 in
- ④ Term. block marking on both sides 73 mm / 2.87 in
- ⑤ Terminal block marking in center position 75 mm / 2.95 in
- ⑥ Term. bl. marking on both sides 42.5 mm / 1.67 in

## Example of circuit configuration



Free-wheeling diode and voltage check

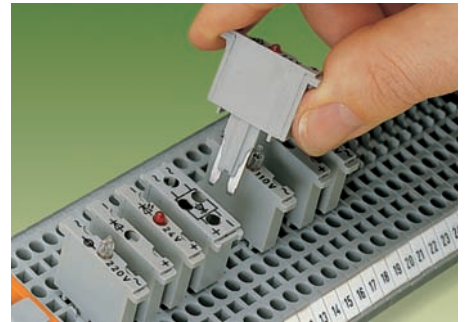
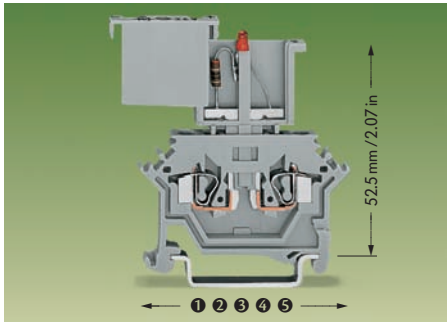


# Pluggable Modules – LED and Neon Indicators on Carrier Terminal Blocks 2.5 mm<sup>2</sup> / AWG 14, Series 280

**LED module:**  
I<sub>N</sub> ≤ 5.6 mA; I<sub>F</sub> ≤ 25 mA

**Neon indicator module:**  
I<sub>N</sub> ≤ 0.5 mA

**Module width 5 mm / 0.197 in**



open side of term. block	Description		Item No.	Pack. unit pcs
	<b>LED module,</b> 5 mm / 0.197 in wide, with red LED	DC 24 V	<b>280-801/281-413</b>	100
		DC 48 V	<b>280-801/281-414</b>	100
	<b>LED module,</b> 5 mm / 0.197 in wide, with red LED	AC/DC 24 V	<b>280-801/281-415</b>	100
		AC/DC 48 V	<b>280-801/281-416</b>	100
	<b>Neon indicator module,</b> 5 mm / 0.197 in wide	AC/DC 110 V	<b>280-801/281-418</b>	100
		AC/DC 230 V	<b>280-801/281-417</b>	100

The monitoring of control and operating current circuits with LED and neon indicator modules on rail-mounted terminal blocks offers various advantages to the user:

- No additional time and material cost
- Separation into functional and wiring layer
- Modules can be replaced quick and easily by other types of modules.

Further advantages:

- Polarized direction of switching
- High density with only 5 mm / 0.197 in width of terminal block/fuse module.

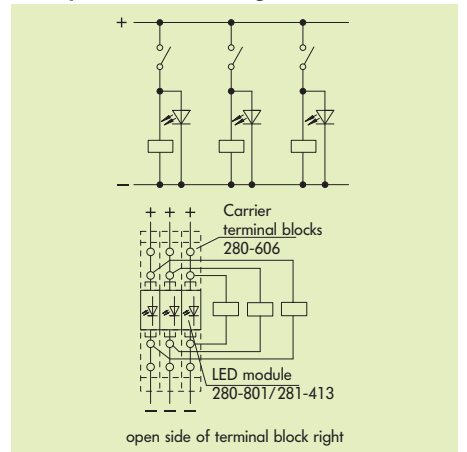
## Carrier terminal blocks for pluggable modules and accessories (Marking accessories see section 14)

	<b>2-cond. carrier term. block,</b> 0.08 – 2.5 mm <sup>2</sup> /AWG 28 – 14 stripped length 8 – 9 mm / 0.33 in	Terminal block width 5 mm / 0.197 in grey	<b>280-916</b> ①	100
	<b>End and intermediate plate,</b> for 2-conductor carrier terminal block 280-916	2.5 mm / 0.098 in thick orange grey	<b>280-309</b> <b>280-308</b>	100 (4 x 25) 100 (4 x 25)
	<b>2-cond. carrier term. block,</b> 0.08 – 2.5 mm <sup>2</sup> /AWG 28 – 14 stripped length 8 – 9 mm / 0.33 in	Terminal block width 5 mm / 0.197 in grey	<b>280-616</b> ②	100
	<b>End and intermediate plate,</b> for 2-conductor carrier terminal block 280-616	2.5 mm / 0.098 in thick orange grey	<b>280-331</b> <b>280-330</b>	100 (4 x 25) 100 (4 x 25)
	<b>3-cond. carrier term. block,</b> 0.08 – 2.5 mm <sup>2</sup> /AWG 28 – 14 stripped length 8 – 9 mm / 0.33 in	Terminal block width 5 mm / 0.197 in grey	<b>280-610</b> ③	100
	<b>End and intermediate plate,</b> for 3-conductor carrier terminal block 280-610	2.5 mm / 0.098 in thick orange grey	<b>280-326</b> <b>280-324</b>	100 (4 x 25) 100 (4 x 25)
	<b>4-cond. carrier term. block,</b> 0.08 – 2.5 mm <sup>2</sup> /AWG 28 – 14 stripped length 8 – 9 mm / 0.33 in	Terminal block width 5 mm / 0.197 in grey	<b>280-606</b> ④ <b>280-686</b> ⑤	100
	<b>End and intermediate plate,</b> for 4-conductor carrier terminal blocks	2.5 mm / 0.098 in thick orange grey	<b>280-317</b> <b>280-316</b>	<b>280-315</b> <b>280-314</b>
	<b>Comb type jumper bar,</b> insulated, see page 2.44	2-way 3-way 10-way	<b>280-482</b> <b>280-483</b> <b>280-490</b>	200 (8 x 25) 200 (8 x 25) 50 (2 x 25)
	<b>Alternate comb type jumper bar, insulated,</b> I <sub>N</sub> = I <sub>N</sub> of terminal block	2-way	<b>280-492</b>	200 (8 x 25)
	<b>Operating tool,</b> insulated	2-way 3-way 10-way	<b>280-432</b> <b>280-433</b> <b>280-440</b>	1 1 1
	<b>Wire commoning chain,</b> insulated, 50 connections, 8 A	Commoning distance max. 120 mm / 4.72 in black blue	<b>210-103</b> <b>210-123</b>	1 1

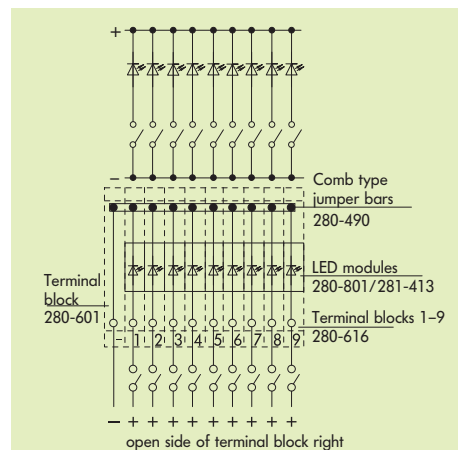
- ① 53 mm / 2.09 in
- ② 50 mm / 1.97 in
- ③ 64 mm / 2.52 in

- ④ Term. block marking on both sides 73 mm / 2.87 in
- ⑤ Terminal block marking in center position 75 mm / 2.95 in

## Examples of circuit configuration

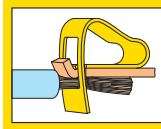


Voltage control refers to current circuits

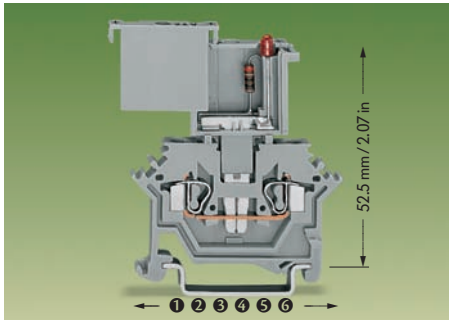


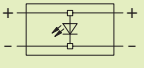
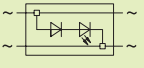
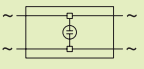
LED gate for collect. fault indication – individual display

# Pluggable Modules – LED and Neon Indicators on Through Terminal Blocks 2.5 mm<sup>2</sup> / AWG 14, Series 280



	<b>LED module:</b> $I_N \leq 5.6 \text{ mA}; I_f \leq 25 \text{ mA}$  <b>Neon indicator module:</b> $I_N \leq 0.5 \text{ mA}$  <b>Module width 10 mm / 0.394 in</b>
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Description	Item No.	Pack. unit pcs
 <b>LED module,</b> 10 mm / 0.394 in wide, with red LED	DC 24 V <b>280-803/281-413</b> DC 48 V <b>280-803/281-414</b>	50
 <b>LED module,</b> 10 mm / 0.394 in wide, with red LED	AC/DC 24 V <b>280-803/281-415</b> AC/DC 48 V <b>280-803/281-416</b>	50
 <b>Neon indicator module,</b> 10 mm / 0.394 in wide	AC/DC 110 V <b>280-803/281-418</b> AC/DC 230 V <b>280-803/281-417</b>	50

These LED and neon indicator modules are simply pushed into the contact slots of the current bars of two adjacent through terminal blocks like a push-in jumper.











This offers the following advantages to the user:

- The modules are suitable for **all** through terminal blocks of series 280.
- Existing terminal block assemblies can be refitted with diode modules without any problem.

Further advantages:

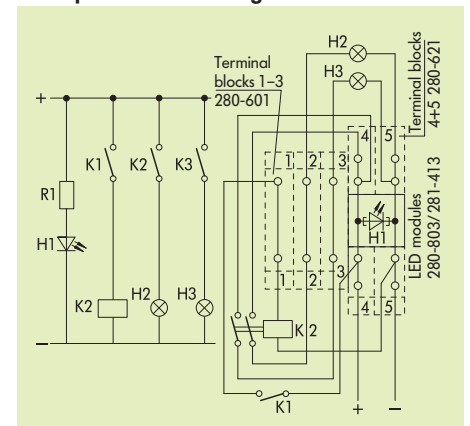
- Separation into functional and wiring level.
- Modules can be replaced quick by other types of modules.

## Carrier terminal blocks for pluggable modules and accessories (Marking accessories see section 14)

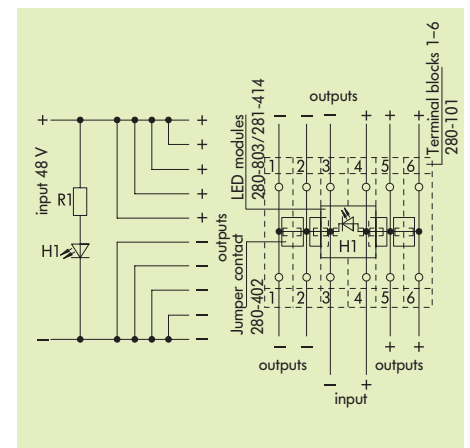
 <b>Front-entry 2-cond. term. block,</b> 0.08 – 2.5 mm <sup>2</sup> /AWG 28 – 12 stripped length 8 – 9 mm / 0.33 in	Terminal block width 5 mm / 0.197 in grey <b>280-601 ①</b> <b>280-901 ②</b>	100
 <b>End and intermediate plate,</b> for 2-conductor terminal blocks	2.5 mm / 0.098 in thick orange <b>280-331</b> <b>280-309</b> grey <b>280-330</b> <b>280-308</b>	100 (4 x 25)
 <b>Front-entry 3-cond. term. block,</b> 0.08 – 2.5 mm <sup>2</sup> /AWG 28 – 12 stripped length 8 – 9 mm / 0.33 in	Terminal block width 5 mm / 0.197 in grey <b>280-681 ③</b>	100
 <b>End and intermediate plate,</b> for 3-conductor terminal block	2.5 mm / 0.098 in thick orange <b>280-326</b> grey <b>280-324</b>	100 (4 x 25)
 <b>Front-entry 4-cond. term. block,</b> 0.08 – 2.5 mm <sup>2</sup> /AWG 28 – 12 stripped length 8 – 9 mm / 0.33 in	Terminal block width 5 mm / 0.197 in grey <b>280-621 ④</b> <b>280-833 ⑤</b>	100
 <b>End and intermediate plate,</b> for 4-conductor terminal blocks	2.5 mm / 0.098 in thick orange <b>280-317</b> <b>280-315</b> grey <b>280-316</b> <b>280-314</b>	100 (4 x 25)
 <b>Side-entry terminal block,</b> 0.08 – 2.5 mm <sup>2</sup> /AWG 28 – 12 stripped length 8 – 9 mm / 0.33 in	Terminal block width 5 mm / 0.197 in grey <b>280-101 ⑥</b>	100
 <b>End and intermediate plate,</b> for side-entry terminal block	2.5 mm / 0.098 in thick orange <b>280-302</b> grey <b>280-301</b>	100 (4 x 25)
 <b>Adjacent jumper,</b> insulated	$I_N$ 24 A grey <b>280-402</b>	200 (8 x 25)
 <b>Wire commoning chain,</b> insulated,	Commoning distance max. 120 mm / 4.72 in black <b>210-103</b> blue <b>210-123</b>	1

- ① Term. block marking on both sides 50 mm / 1.97 in
- ② Terminal block marking in center position 53 mm / 2.09 in
- ③ Terminal block marking in center position 64 mm / 2.52 in
- ④ Term. block marking on both sides 73 mm / 2.87 in
- ⑤ Terminal block marking in center position 75 mm / 2.95 in
- ⑥ Term. bl. marking on both sides 42.5 mm / 1.67 in

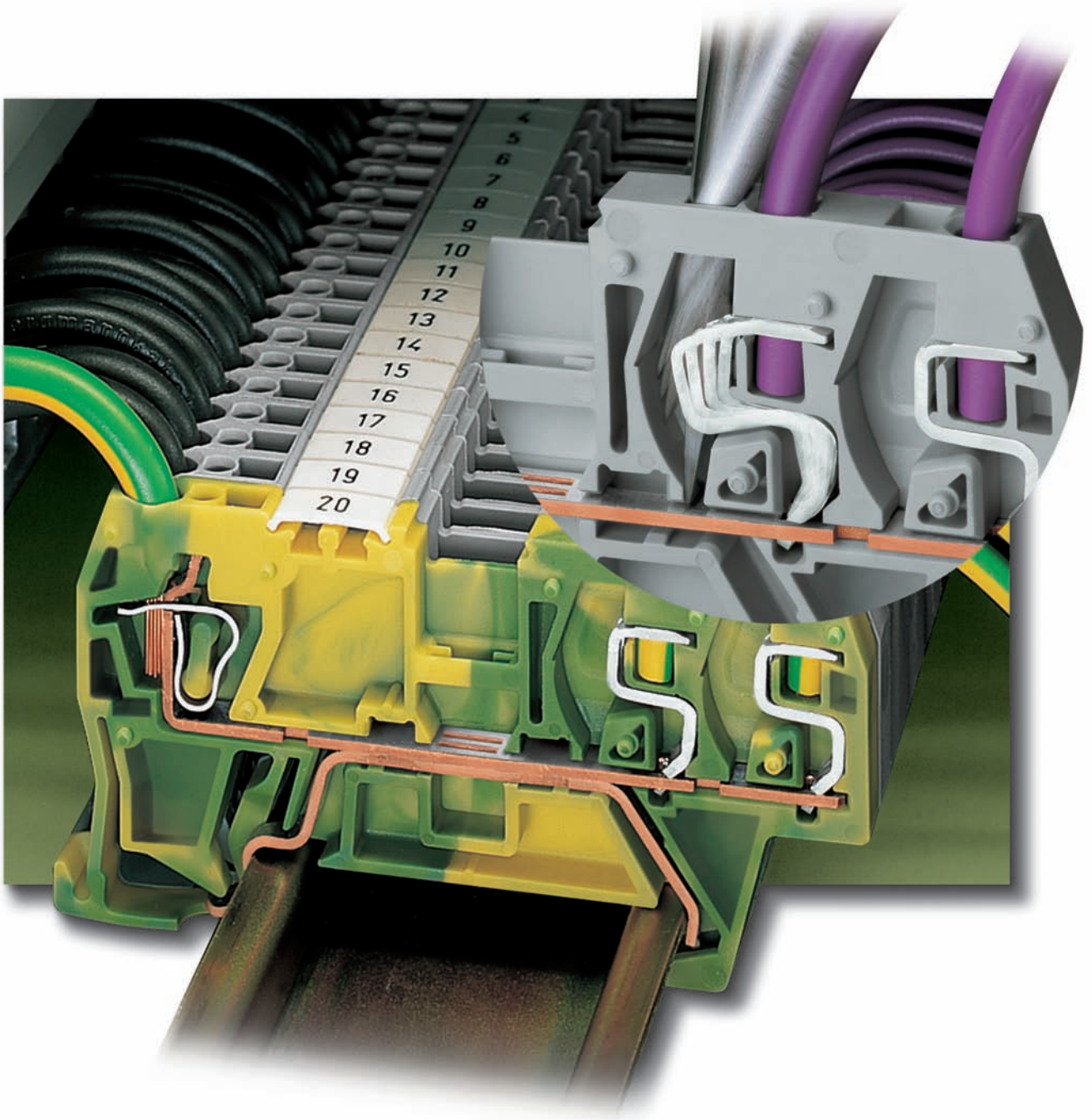
## Example of circuit configuration



Control unit



Multiple outputs with illuminated indicator



Unique combination of connection technologies:  
WAGO rail-mounted terminal blocks with  
FIT CLAMP connection for the factory wiring and  
CAGE CLAMP® connection for the "field wiring".



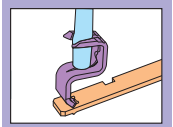
<b>Through terminal blocks and ground (earth) conductor terminal blocks with CAGE CLAMP®/FIT CLAMP connection</b>	<b>Series 290</b>	<b>8.7</b>
<b>with FIT CLAMP connection</b>	<b>Series 290</b>	<b>8.6</b>



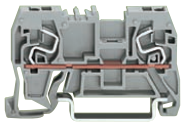
<b>Accessories</b>		
- Banana plugs		2.42
- Busbar terminal blocks		11.20 – 11.21
- Comb type jumper bars		2.44
- Insulations stops		2.43
- Wire jumpers		2.45
- Test plug modules		2.38 – 2.41
- Staggered jumpers		2.45



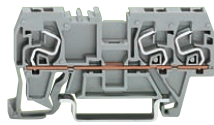
# Rail-Mounted Terminal Blocks with IDC-Connection (FIT CLAMP) – Product Summary –



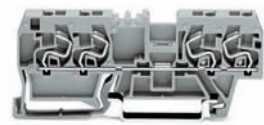
**Series 290** Through terminal blocks AWG 22 - 18 (0.31 mm<sup>2</sup> - 1.0 mm<sup>2</sup>) "s"/ AWG 22 - 16 (0.34 mm<sup>2</sup> - 1.5 mm<sup>2</sup>) "f-st"



2-conductor terminal block  
1 x FIT CLAMP/1 x FIT CLAMP  
Page 8.6

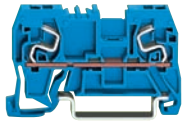


3-conductor terminal block  
1 x FIT CLAMP/2 x FIT CLAMP  
Page 8.6

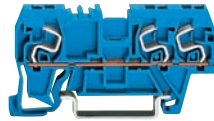


4-conductor terminal block  
2 x FIT CLAMP/2 x FIT CLAMP  
Page 8.6

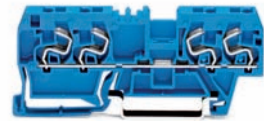
**Ex i** Through terminal blocks AWG 22 - 18 (0.31 mm<sup>2</sup> - 1.0 mm<sup>2</sup>) "s"/ AWG 22 - 16 (0.34 mm<sup>2</sup> - 1.5 mm<sup>2</sup>) "f-st"



2-conductor terminal block  
1 x FIT CLAMP/1 x FIT CLAMP  
Page 8.6

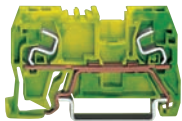


3-conductor terminal block  
1 x FIT CLAMP/2 x FIT CLAMP  
Page 8.6



4-conductor terminal block  
2 x FIT CLAMP/2 x FIT CLAMP  
Page 8.6

**Ground (earth) conductor terminal blocks** AWG 22 - 18 (0.31 mm<sup>2</sup> - 1.0 mm<sup>2</sup>) "s"/ AWG 22 - 16 (0.34 mm<sup>2</sup> - 1.5 mm<sup>2</sup>) "f-st"



2-conductor terminal block  
1 x FIT CLAMP/1 x FIT CLAMP  
Page 8.6



3-conductor terminal block  
1 x FIT CLAMP/2 x FIT CLAMP  
Page 8.6



4-conductor terminal block  
2 x FIT CLAMP/2 x FIT CLAMP  
Page 8.6

## Accessories (selection)



Adjacent jumpers  
Page 8.6



Alternate jumper  
Page 2.13



Staggered jumper  
Page 2.45

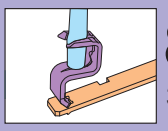
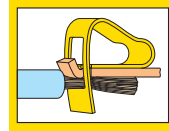


Wire jumper  
Page 2.45

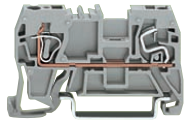


Comb type jumper bar  
Page 2.44

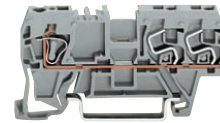
# Rail-Mounted Terminal Blocks with CAGE CLAMP®/IDC-Connection (FIT CLAMP)



**Series 290** Through terminal blocks AWG 22 - 18 (0.31 mm<sup>2</sup> - 1.0 mm<sup>2</sup>) "s"/ AWG 22 - 16 (0.34 mm<sup>2</sup> - 1.5 mm<sup>2</sup>) "f-st"

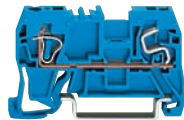


2-conductor terminal block  
1 x CAGE CLAMP®/1 x FIT CLAMP  
Page 8.7

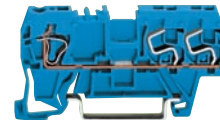


3-conductor terminal block  
1 x CAGE CLAMP®/2 x FIT CLAMP  
Page 8.7

**Ex i** Through terminal blocks AWG 22 - 18 (0.31 mm<sup>2</sup> - 1.0 mm<sup>2</sup>) "s"/ AWG 22 - 16 (0.34 mm<sup>2</sup> - 1.5 mm<sup>2</sup>) "f-st"



2-conductor terminal block  
1 x CAGE CLAMP®/1 x FIT CLAMP  
Page 8.7



3-conductor terminal block  
1 x CAGE CLAMP®/2 x FIT CLAMP  
Page 8.7

**Ground (earth) conductor terminal blocks** AWG 22 - 18 (0.31 mm<sup>2</sup> - 1.0 mm<sup>2</sup>) "s"/ AWG 22 - 16 (0.34 mm<sup>2</sup> - 1.5 mm<sup>2</sup>) "f-st"



2-conductor terminal block  
1 x CAGE CLAMP®/1 x FIT CLAMP  
Page 8.7



3-conductor terminal block  
1 x CAGE CLAMP®/2 x FIT CLAMP  
Page 8.7

## Accessories (selection)



Protetice warning marker  
Page 8.7



Insulation stops  
Page 2.43



Test plug modules  
Page 2.40



Test plug modules  
using cond. wire opening  
Page 2.38



Test plug modules  
using jumper contact position  
Page 2.39



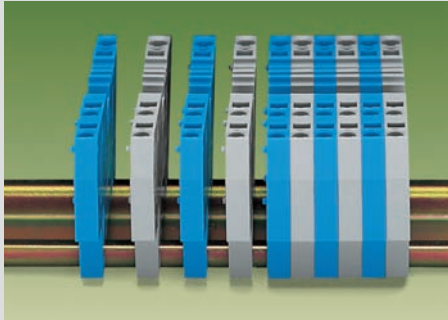
Test plugs  
Page 2.40

# 8

## Rail-Mounted Terminal Blocks with FIT CLAMP Connection, Series 290 . . .

4

### Mounting



Snap individual terminal blocks onto carrier rail and slide to adjacent terminal block

### Removal



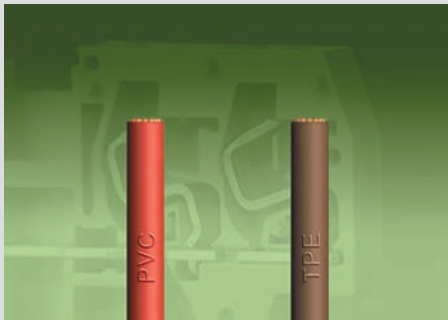
Unlock assembly with screwdriver – remove terminal block from the rail

### FIT CLAMP connection



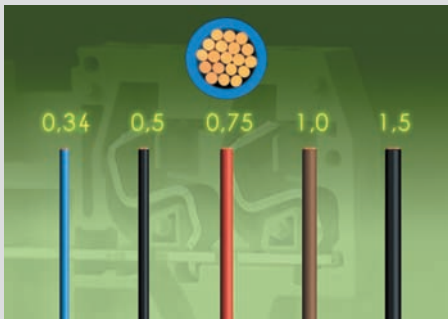
FIT CLAMP connection without stripping

### Types of conductors



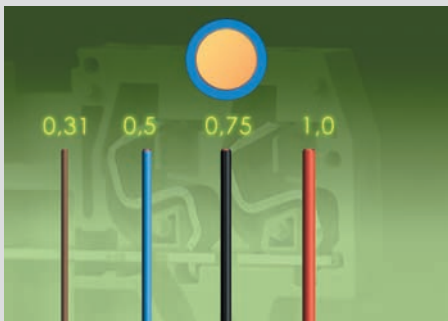
Conductors of PVC (e.g. H05V) or TPE (e.g. H05Z) will be safely connected, other conductors upon request

### Types of conductors



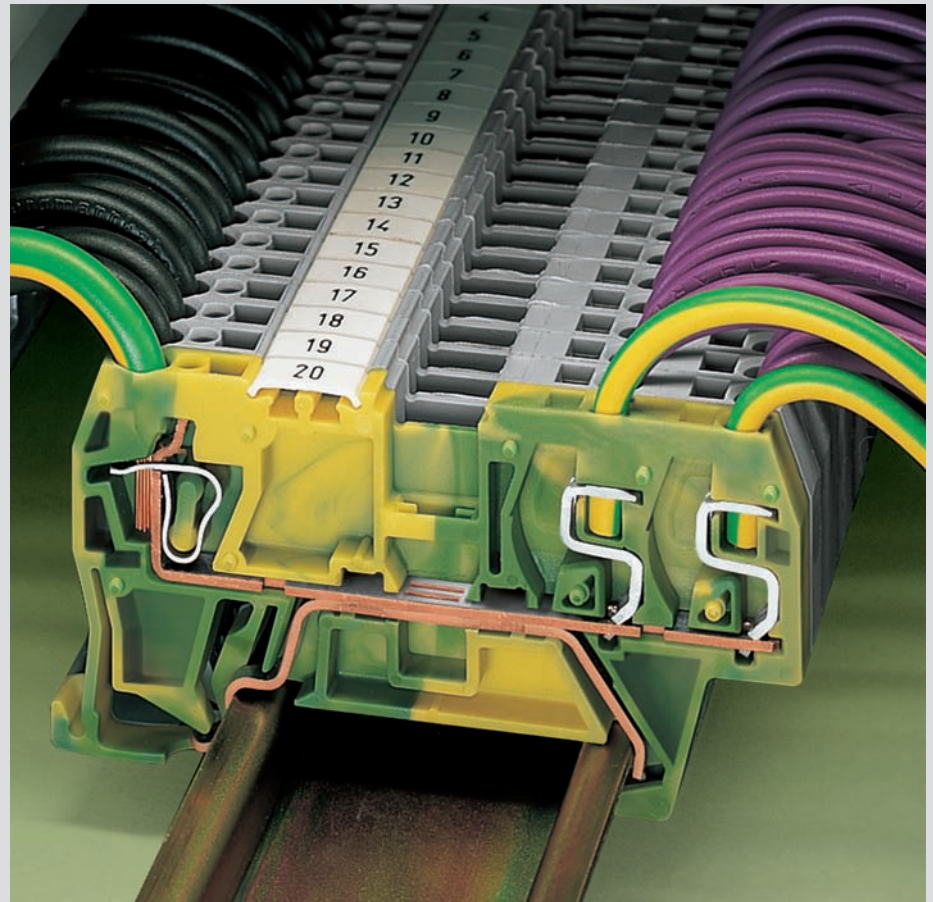
Fine-stranded conductors from 0.34 mm<sup>2</sup> / AWG 22 up to 1.5 mm<sup>2</sup> / AWG 16 can be used

### Types of conductors

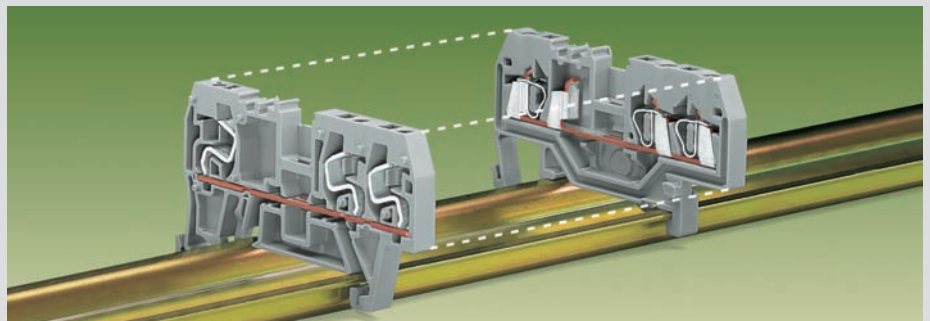


Solid conductors from 0.31 mm<sup>2</sup> / AWG 22 up to 1.0 mm<sup>2</sup> / AWG 18 can be used

With FIT CLAMP connection the following copper wires can be connected:



### Dimension



Terminal blocks with FIT CLAMP connection of series 290 have the same dimensions as terminal blocks with CAGE CLAMP® connection of series 280. They have the same terminal block width: 5 mm / 0.197 in!

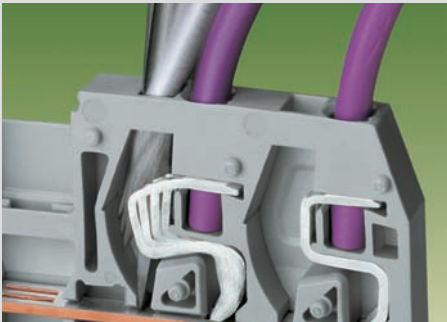


solid

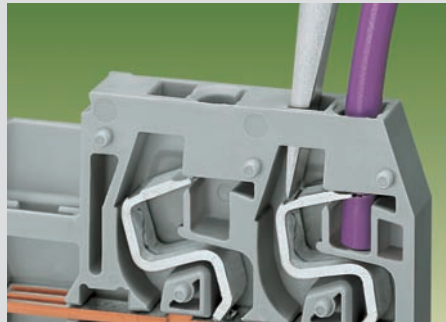


fine-stranded





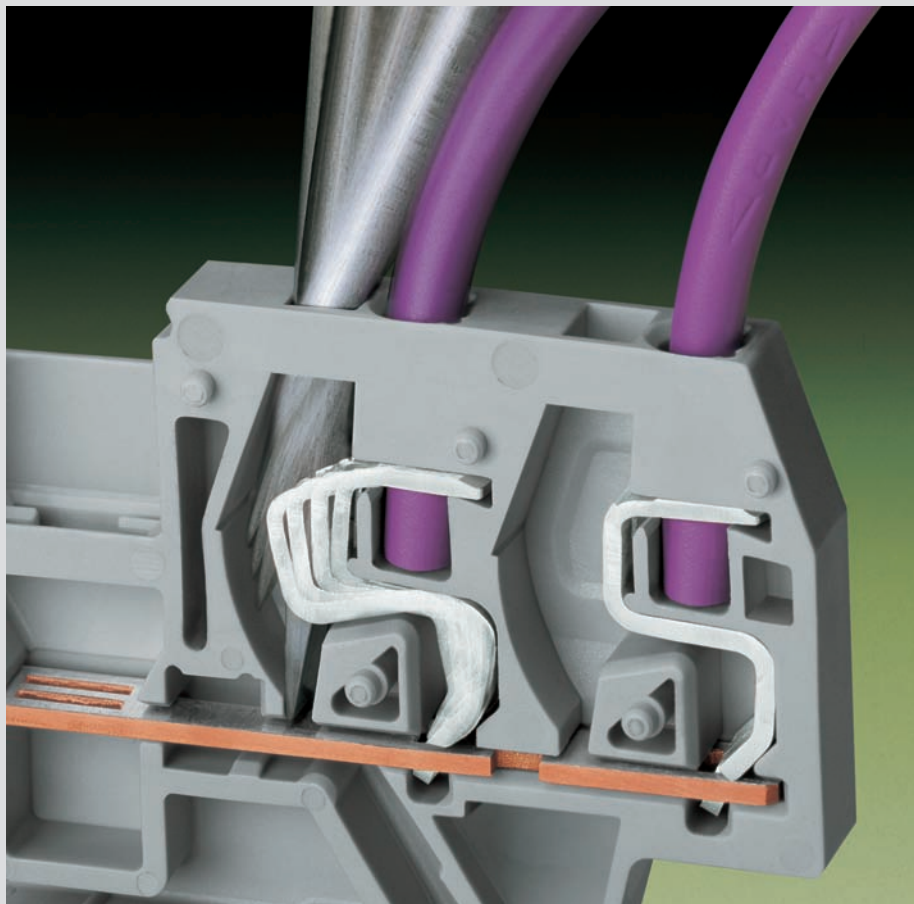
**Connecting conductors.**  
Introduce the conductor into the clamping unit until it is fully inserted. Then insert a 3.5 mm/0.138 in screwdriver into the operating slot, aiming the blade away from the conductor, and slide it until fully inserted



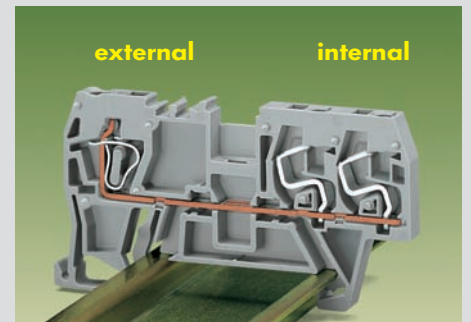
**Disconnecting conductors.**  
Insert the screwdriver into the operating slot, aiming the blade towards the conductor until it makes contact with the FIT CLAMP. Then press on the FIT contact and pivot the screwdriver towards the conductor



If the connected conductor is to be re-used, the conductor end should be cut square. To re-connect use only the same type of conductors with the same cross section



**Mixed assembly**



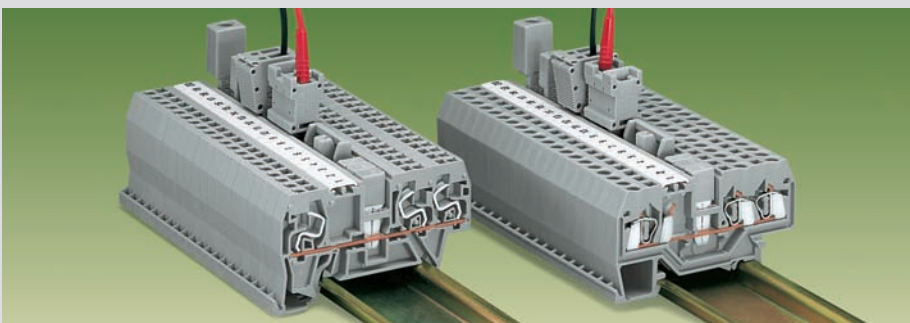
Internal = FIT CLAMP connection (factory wiring)  
External = CAGE CLAMP® connection

**Mixed assembly**



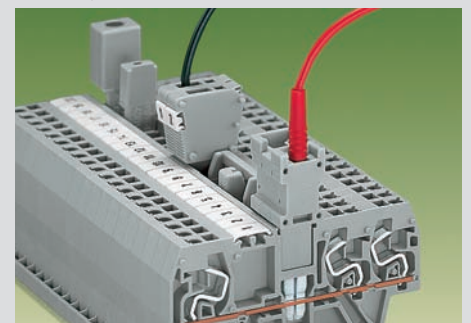
Depending on the connection system there are different conductor entry holes

**Accessories**



Accessories as for instance jumper contacts and test plug adapters of series 280 can be used

**Testing**

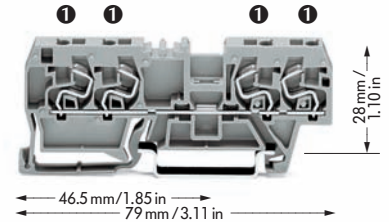
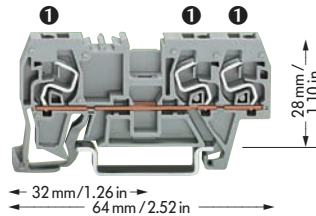
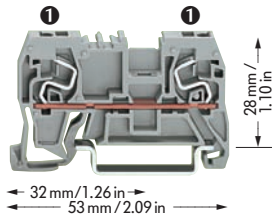


Testing with accessories of series 280



# Through and Ground (Earth) Conductor Terminal Blocks with FIT CLAMP Connection, Series 290

<p>0.34 – 1.5 mm<sup>2</sup> "f-st" ① 0.31 – 1.0 mm<sup>2</sup> "s" ①</p> <p>AWG 22 – 16 "str." ① AWG 22 – 18 "sol." ①</p> <p>500 V/6 kV/3 ③ 13.5 A ①</p> <p>Terminal block width 5 mm / 0.197 in</p> <p>*     </p>	<p>0.34 – 1.5 mm<sup>2</sup> "f-st" ① 0.31 – 1.0 mm<sup>2</sup> "s" ①</p> <p>AWG 22 – 16 "str." ① AWG 22 – 18 "sol." ①</p> <p>500 V/6 kV/3 ③ 13.5 A ①</p> <p>Terminal block width 5 mm / 0.197 in</p> <p>*     </p>	<p>0.34 – 1.5 mm<sup>2</sup> "f-st" ① 0.31 – 1.0 mm<sup>2</sup> "s" ①</p> <p>AWG 22 – 16 "str." ① AWG 22 – 18 "sol." ①</p> <p>500 V/6 kV/3 ③ 13.5 A ①</p> <p>Terminal block width 5 mm / 0.197 in</p> <p>*     </p>
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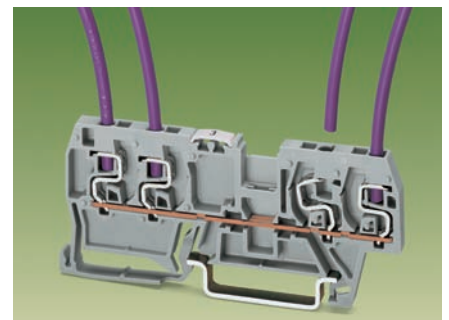


Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>1 FIT CLAMP/ 1 FIT CLAMP</b>		<b>1 FIT CLAMP/ 2 FIT CLAMP</b>		<b>2 FIT CLAMP/ 2 FIT CLAMP</b>	
<b>Through terminal blocks</b>		<b>Through terminal blocks</b>		<b>Through terminal blocks</b>	
grey 290-961	100	grey 290-661	100	grey 290-861	100
blue 290-964	100	blue 290-664	100	blue 290-864	100
<b>Ground (earth) terminal block</b>		<b>Ground (earth) terminal block</b>		<b>Ground (earth) terminal block</b>	
green-yellow 290-967	100	green-yellow 290-667	100	green-yellow 290-867	100
④ Suitable for Ex i applications		④ Suitable for Ex i applications		④ Suitable for Ex i applications	

**Accessories**, see also series 280 page 2.13 Appropriate marking system **WMB/WSB/WFB** (see section 14)

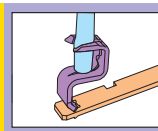
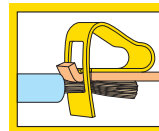
<p><b>End and intermediate plate</b>, 1.1 mm / 0.043 in thick</p> <p>orange 290-306 100 (4 x 25)</p> <p>grey 290-305 100 (4 x 25)</p>	<p><b>End and intermediate plate</b>, 1.1 mm / 0.043 in thick</p> <p>orange 290-302 100 (4 x 25)</p> <p>grey 290-301 100 (4 x 25)</p>	<p><b>End and intermediate plate</b>, 1.1 mm / 0.043 in thick</p> <p>orange 290-310 100 (4 x 25)</p> <p>grey 290-309 100 (4 x 25)</p>
<p><b>Adjacent jumper</b>, insulated, I<sub>N</sub> 24 A</p> <p>grey 280-402 200 (8 x 25)</p> <p>yell.-green 280-422 200 (8 x 25)</p>	<p><b>Adjacent jumper</b>, insulated, I<sub>N</sub> 24 A</p> <p>grey 280-402 200 (8 x 25)</p> <p>yell.-green 280-422 200 (8 x 25)</p>	<p><b>Adjacent jumper</b>, insulated, I<sub>N</sub> 24 A</p> <p>grey 280-402 200 (8 x 25)</p> <p>yell.-green 280-422 200 (8 x 25)</p>
<p><b>Staggered jumper</b> ⑤, insulated, I<sub>N</sub> 24 A</p> <p>width 5 mm / 0.197 in</p> <p>from 1 to 2 780-452 100 (4 x 25)</p> <p>from 1 to 3 780-453 100 (4 x 25)</p> <p>from 1 to 4 780-454 100 (4 x 25)</p> <p>from 1 to 5 780-455 50 (2 x 25)</p> <p>: :</p> <p>from 1 to 8 780-458 50 (2 x 25)</p>	<p><b>Staggered jumper</b> ⑤, insulated, I<sub>N</sub> 24 A</p> <p>width 5 mm / 0.197 in</p> <p>from 1 to 2 780-452 100 (4 x 25)</p> <p>from 1 to 3 780-453 100 (4 x 25)</p> <p>from 1 to 4 780-454 100 (4 x 25)</p> <p>from 1 to 5 780-455 50 (2 x 25)</p> <p>: :</p> <p>from 1 to 8 780-458 50 (2 x 25)</p>	<p><b>Staggered jumper</b> ⑤, insulated, I<sub>N</sub> 24 A</p> <p>width 5 mm / 0.197 in</p> <p>from 1 to 2 780-452 100 (4 x 25)</p> <p>from 1 to 3 780-453 100 (4 x 25)</p> <p>from 1 to 4 780-454 100 (4 x 25)</p> <p>from 1 to 5 780-455 50 (2 x 25)</p> <p>: :</p> <p>from 1 to 8 780-458 50 (2 x 25)</p>
<p>All test plug modules and test plugs</p> <p>for testing using jumper contact slots or conductor entry holes, item nos and application notes</p> <p>see pages 2.39 – 2.40</p>	<p>All test plug modules and test plugs</p> <p>for testing using jumper contact slots or conductor entry holes, item nos and application notes</p> <p>see pages 2.39 – 2.40</p>	<p>All test plug modules and test plugs</p> <p>for testing using jumper contact slots or conductor entry holes, item nos and application notes</p> <p>see pages 2.39 – 2.40</p>

- ① FIT CLAMP connection only with standard EN harmonized PVC or PE insulation for factory wiring
- ② CAGE CLAMP® connection for external wiring
- ③ 500 V = rated voltage  
6 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ⑤ See application notes on pages 2.43 – 2.45

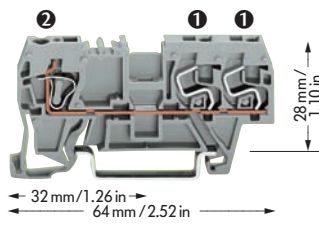
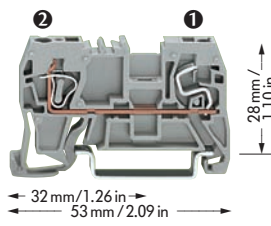


\* For further approvals with corresponding ratings see section 15.

# Through and Ground (Earth) Conductor Terminal Blocks with CAGE CLAMP® / FIT CLAMP Connection, Series 290



0.34 – 1.5 mm <sup>2</sup> "f-st" ① 0.31 – 1.0 mm <sup>2</sup> "s" ① 0.08 – 2.5 mm <sup>2</sup> ② 500 V/6 kV/3 ③ 13.5 A ①/24 A ② Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in ②	AWG 22–16 "str." ① AWG 22–18 "sol." ① AWG 28–12 ② 300 V, 10 A cULus*	0.34 – 1.5 mm <sup>2</sup> "f-st" ① 0.31 – 1.0 mm <sup>2</sup> "s" ① 0.08 – 2.5 mm <sup>2</sup> ② 500 V/6 kV/3 ③ 13.5 A ①/24 A ② Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in ②	AWG 22–16 "str." ① AWG 22–18 "sol." ① AWG 28–12 ② 300 V, 10 A cULus*	<b>Application criteria</b> For the WAGO FIT CLAMP connection
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A special series of rail-mounted terminal blocks combines FIT CLAMP and CAGE CLAMP® connections. The CAGE CLAMP® connection is made for external wiring, the FIT CLAMP connection is made for factory wiring (note: both CAGE CLAMP® and FIT CLAMP are UL, CSA rated for factory and field wiring). As conductors do not have to be stripped, considerable time can be saved.

Item No.	Pack. unit pcs	Item No.	Pack. unit pcs		
<b>1 CAGE CLAMP® / 1 FIT CLAMP</b>		<b>1 CAGE CLAMP® / 2 FIT CLAMP</b>			
<b>Through terminal blocks</b>					
grey	290-901	100	grey	290-681	100
blue	290-904	100	blue	290-684	100
<b>Ground (earth) terminal block</b>					
green-yellow	290-907	100	green-yellow	290-687	100
④ Suitable for Ex i applications		④ Suitable for Ex i applications			
Appropriate marking system <b>WMB/WBS/WFB</b> (see section 14)					
<b>End and intermediate plate</b> , 1.1 mm / 0.043 in thick		<b>End and intermediate plate</b> , 1.1 mm / 0.043 in thick			
orange	290-306	100 (4 x 25)	orange	290-302	100 (4 x 25)
grey	290-305	100 (4 x 25)	grey	290-301	100 (4 x 25)
<b>Insulation stop</b> ⑤, 5 pcs / strip		<b>Insulation stop</b> ⑤, 5 pcs / strip			
white	280-470	200 strips	white	280-470	200 strips
light grey	280-471	200 strips	light grey	280-471	200 strips
dark grey	280-472	200 strips	dark grey	280-472	200 strips
<b>Adjacent jumper</b> , insulated, I <sub>N</sub> 24 A		<b>Adjacent jumper</b> , insulated, I <sub>N</sub> 24 A			
grey	280-402	200 (8 x 25)	grey	280-402	200 (8 x 25)
yell.-green	280-422	200 (8 x 25)	yell.-green	280-422	200 (8 x 25)
<b>Staggered jumper</b> ⑤, insulated, I <sub>N</sub> 24 A		<b>Staggered jumper</b> ⑤, insulated, I <sub>N</sub> 24 A			
width 5 mm / 0.197 in		width 5 mm / 0.197 in			
from 1 to 2	780-452	100 (4 x 25)	from 1 to 2	780-452	100 (4 x 25)
from 1 to 3	780-453	100 (4 x 25)	from 1 to 3	780-453	100 (4 x 25)
from 1 to 4	780-454	100 (4 x 25)	from 1 to 4	780-454	100 (4 x 25)
from 1 to 5	780-455	50 (2 x 25)	from 1 to 5	780-455	50 (2 x 25)
:	:	:	:	:	:
from 1 to 8	780-458	50 (2 x 25)	from 1 to 8	780-458	50 (2 x 25)
<b>Protective warning marker</b> , for 5 terminal blocks, fits into screwdriver slot		<b>Protective warning marker</b> , for 5 terminal blocks, fits into screwdriver slot			
yellow	280-415	100 (4 x 25)	yellow	280-415	100 (4 x 25)
All test plug modules and test plugs for testing using jumper contact slots or conductor entry holes, item nos and application notes		All test plug modules and test plugs for testing using jumper contact slots or conductor entry holes, item nos and application notes			
see pages 2.38 – 2.40		see pages 2.38 – 2.40			

Nominal cross section	Types of conductors and reduced rated currents		Overall diameter of the conductor insulation up to
	s	f-st	
mm <sup>2</sup>			mm
0.31	4.0 A	–	2.0
0.34	–	2.0 A	2.0
0.5	6.0 A	4.0 A	2.3
0.75	9.0 A	6.0 A	2.5
1.0	13.5 A	9.0 A	2.6
1.5	–	13.5 A	3.0

AWG	sol.	str.	in / mm
22	4.0 A	2.0 A	0.67/1.7 ⑥
20	6.0 A	4.0 A	0.75/1.9 ⑥
18	9.0 A	6.0 A	0.87/2.2 ⑥
16	–	9.0 A	0.98/2.5 ⑥

⑥ max. overall diameter of conductor insulation 0.017 in / 43 mm

**Conductors used:**  
**PVC** insulated wires (e.g. H05V, UL Style 1007/1569.1061)  
**TPE** insulated wires (e.g. H05Z, UL Style 3199.3265.3266)  
**AWG wires** stranded ≤ 26 individual cores

Conductor: **PVC** insulation ^DIN/VDE 0281/HD 21.1 S3  
**TPE** insulation ^DIN/VDE 0282/HD 22.1 S3  
 Shore hardness A (standard value): 70 – 90  
 Temperature range for the conductor connection: 10 – 40 °C

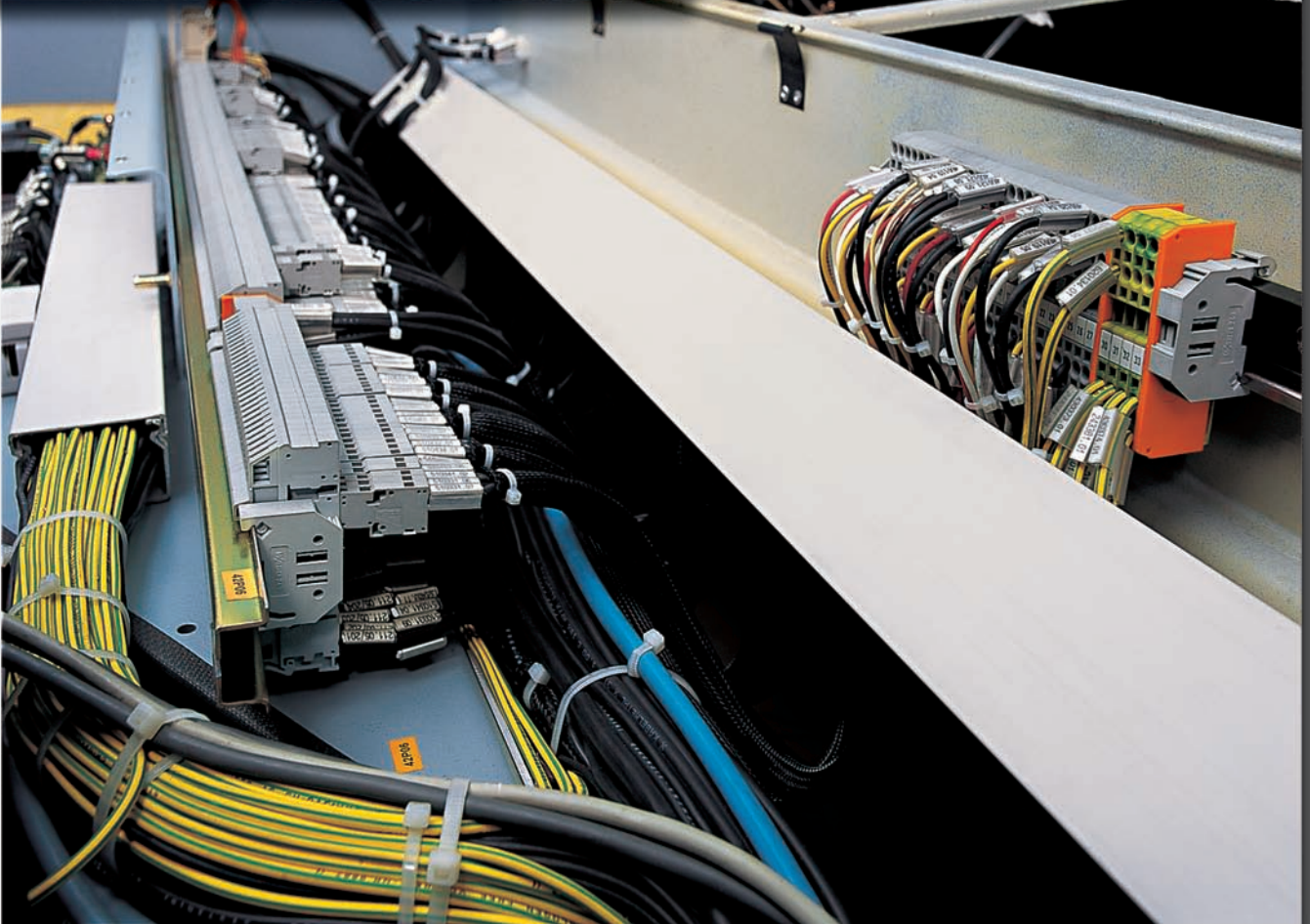
**In accordance with test specification DIN EN 60998-2-3, to re-connect use only the same type of conductors with the same cross section within the rated cross section range.**

The terminal block profile is similar to that of the 280 series WAGO rail-mounted terminal blocks with CAGE CLAMP® connection up to 2.5 mm / AWG 12. Accessories for the 280 series, including the jumpers, can also be used for the 290 series FIT CLAMP.

The FIT CLAMP connection is designed to be factory-wired but is also approved for field wiring by UL and CSA. In order to achieve a terminal block width of only 5 mm, there is a small reduction of the rated current of the respective wire cross section (see table).



Exposed to constant vibrations:  
WAGO rail-mounted terminal blocks  
and the **WAGO X-COM<sup>®</sup>-SYSTEM**  
in an electric locomotive.



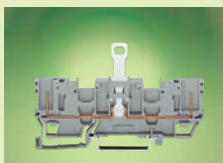


**Current-carrying capacity curves (derating curves)**  
 – Receptacle terminal blocks and female plugs \_\_\_\_\_ 9.48 – 9.49  
 – Headers, male connectors and female plugs \_\_\_\_\_ 9.50 – 9.51



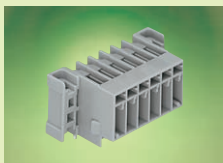
**Diode and LED receptacle terminal blocks**  
 – 1-conductor/1-pin \_\_\_\_\_ 9.24  
 – 2-pin \_\_\_\_\_ 9.24

**Diode and LED receptacle terminal blocks with 2 jumper positions**  
 – 1-conductor/1-pin \_\_\_\_\_ 9.25  
 – 2-pin \_\_\_\_\_ 9.25



**Disconnect receptacle terminal blocks with/without shield (screen) contact**  
 – 1-conductor/1-pin \_\_\_\_\_ 9.22  
 – 2-pin \_\_\_\_\_ 9.22

**Disconnect receptacle terminal blocks with/without shield (screen) contact with 2 jumper positions**  
 – 1-conductor/1-pin \_\_\_\_\_ 9.23  
 – 2-pin \_\_\_\_\_ 9.23



**Double deck terminal blocks**  
 – 1-conductor/1-pin \_\_\_\_\_ 9.34 – 9.35  
 – 2-conductor/2-pin \_\_\_\_\_ 9.34 – 9.35

**Female plugs**  
 – 1-conductor, straight \_\_\_\_\_ 9.44  
 – 1-conductor, with locking levers \_\_\_\_\_ 9.44  
 – 1-conductor, angled \_\_\_\_\_ 9.46  
 – 2-conductor \_\_\_\_\_ 9.45



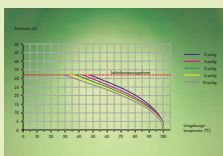
**Headers with solder pins** \_\_\_\_\_ 9.40  
 – with fixing flanges \_\_\_\_\_ 9.41  
 – with fixing flanges for feedthrough application \_\_\_\_\_ 9.42

**Male connectors with CAGE CLAMP® connection**  
 – for flying leads \_\_\_\_\_ 9.38  
 – with fixing flanges \_\_\_\_\_ 9.38  
 – with fixing flanges for feedthrough application \_\_\_\_\_ 9.39  
 – with snap-in mounting feet \_\_\_\_\_ 9.38  
 – with snap-in flanges \_\_\_\_\_ 9.39



**Operating tool – Handling –** \_\_\_\_\_ 9.36

**Receptacle terminal blocks**  
 – 1-conductor/1-pin \_\_\_\_\_ 9.12 – 9.13  
 – 2-pin \_\_\_\_\_ 9.14 – 9.15  
 – 2-conductor/2-pin \_\_\_\_\_ 9.16 – 9.17  
 – 4-pin \_\_\_\_\_ 9.18 – 9.19



**Receptacle terminal blocks for pluggable modules with 2 jumper positions**  
 – 1-conductor/1-pin \_\_\_\_\_ 9.28 / 9.30  
 – 2-pin \_\_\_\_\_ 9.28 / 9.30  
 – 2-conductor \_\_\_\_\_ 9.32

**Receptacle terminal blocks with 3 jumper positions**  
 – 1-conductor/1-pin \_\_\_\_\_ 9.20 – 9.21

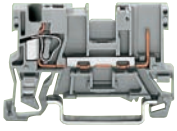
**Snap-on type strain relief housings** \_\_\_\_\_ 9.47

**Note** other connectors with pin spacings  
 5.08 mm / 0.2 in; 7.5 mm / 0.295 in or 7.62 mm / 0.3 in  
 see MULTI CONNECTION SYSTEM Volume 2 – section 4 to 7



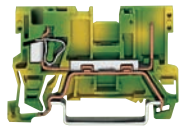
# 9 Product Summary X-COM®-SYSTEM – 2 ... Receptacle Terminal Blocks

## Series 769 1-conductor/1-pin ...



without /with shield (screen) contact

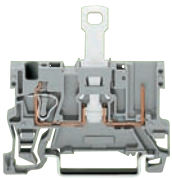
Page 9.12



Ground (earth) terminal block

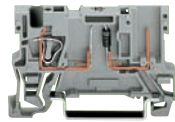
Page 9.12

### 1-conductor/1-pin ...



Disconnect Disconnect shield (screen)

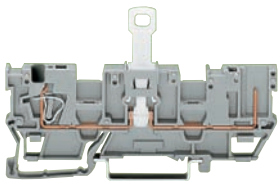
Page 9.22



Diode LED

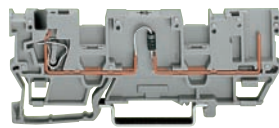
Page 9.24

### 1-conductor/1-pin ... ... with 2 jumper positions



Disconnect Disconnect shield (screen)

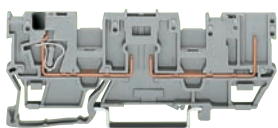
Page 9.23



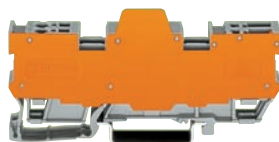
Diode LED

Page 9.25

### 1-conductor/1-pin ... ... with 2 jumper positions

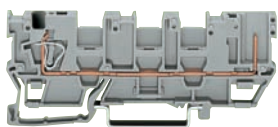


for 5 mm /0.197 in wide plugs  
with electronic components  
Page 9.28



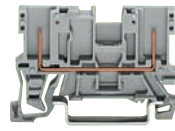
for plugs with electronic components  
10 mm /0.394 in, 15 mm /0.591 in,  
20 mm /0.787 in, 25 mm /0.984 in wide  
Page 9.30

### 1-conductor/1-pin ... ... with 3 jumper positions



Page 9.20

## Series 769 2-pin ...



without /with shield (screen) contact

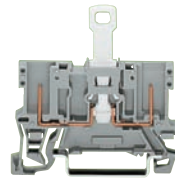
Page 9.14



Ground (earth) terminal block

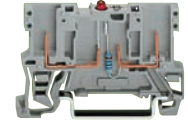
Page 9.14

### 2-pin ...



Disconnect Disconnect shield (screen)

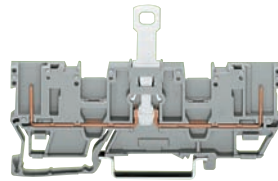
Page 9.22



Diode LED

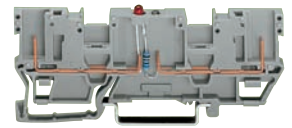
Page 9.24

### 2-pin ... ... with 2 jumper positions



Disconnect Disconnect shield (screen)

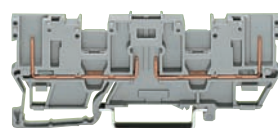
Page 9.23



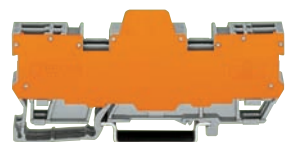
Diode LED

Page 9.25

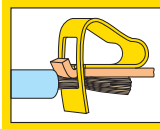
### 2-pin ... ... with 2 jumper positions



for 5 mm /0.197 in wide plugs  
with electronic components  
Page 9.28

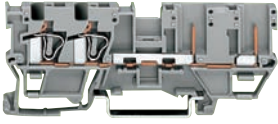


for plugs with electronic components  
10 mm /0.394 in, 15 mm /0.591 in,  
20 mm /0.787 in, 25 mm /0.984 in wide  
Page 9.30



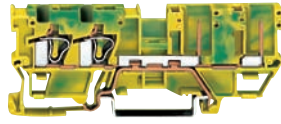
## ... Receptacle Terminal Blocks

### Series 769 2-conductor/2-pin ...



without /with shield (screen) contact

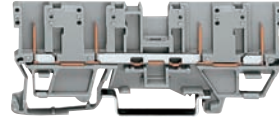
Page 9.16



Ground (earth) terminal block

Page 9.16

### Series 769 4-pin ...



without /with shield (screen) contact

Page 9.18



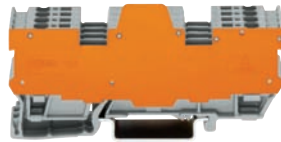
Ground (earth) terminal block

Page 9.18

### Series 769 2-conductor ...



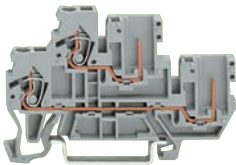
for 5 mm /0.197 in wide plugs  
with electronic components  
Page 9.32



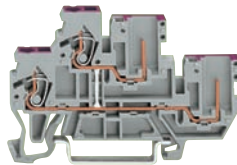
for plugs with electronic components  
10 mm /0.394 in, 15 mm /0.591 in,  
20 mm /0.787 in, 25 mm /0.984 in wide  
Page 9.32

## ... Double Deck Receptacle Terminal Blocks

### Series 870 1-conductor/1-pin ...

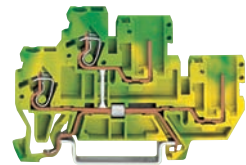


Page 9.34



internal commoning

Page 9.34



internal commoning

Page 9.35

# 9 X-COM®-SYSTEM

## 4 ... Headers and Male Connectors

### Series 769 Headers with straight solder pins



Page 9.40



with fixing flanges

Page 9.41



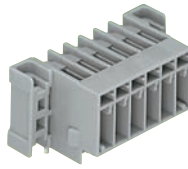
with fixing flanges  
for feedthrough applications

Page 9.42

### Series 769 Headers with right angle solder pins

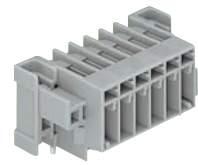


Page 9.40



with fixing flanges

Page 9.41



with fixing flanges  
for feedthrough applications

Page 9.42

## ... Male Connectors with CAGE CLAMP® Connection

### Series 769 Male connectors with CAGE CLAMP® connection



Page 9.38



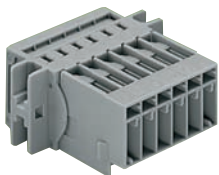
with snap-in mounting feet

Page 9.38



with snap-in flanges

Page 9.39



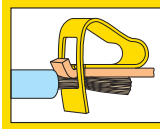
with fixing flanges

Page 9.38



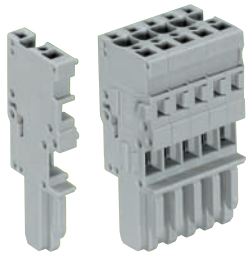
with fixing flanges  
for feedthrough applications

Page 9.39

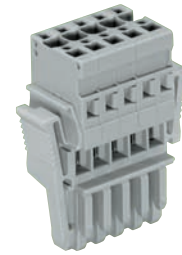


## ... Female Plugs

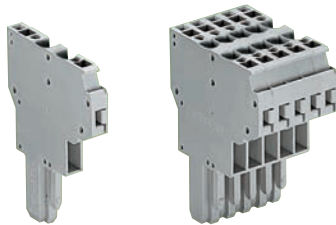
### Series 769 Female plugs with CAGE CLAMP® connection



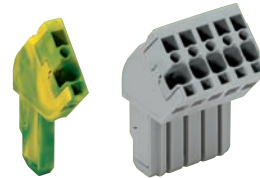
1-conductor  
Page 9.44



1-conductor  
with lateral locking levers  
Page 9.44

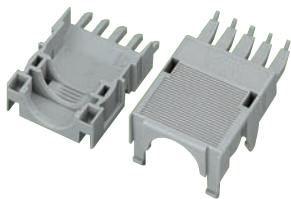


2-conductor  
Page 9.45

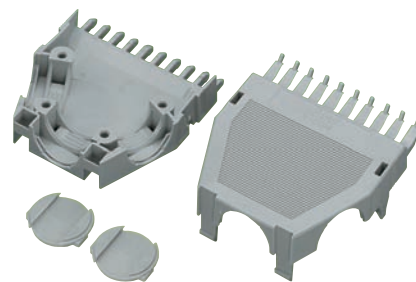


1-conductor  
angled  
Page 9.46

## ... Accessories



Snap-on type strain relief housings  
Page 9.47



Operating tool  
Page 9.36



# WAGO X-COM<sup>®</sup>-SYSTEM

## COM-bination of Connectors and Rail-Mounted Terminal Blocks

The WAGO X-COM<sup>®</sup>-SYSTEM is mostly used in switchgear and control applications.

It is designed for a **rated current up to 16/32 A at U<sub>N</sub> 500 V and AWG 12 / 4 mm<sup>2</sup> rated cross section (up to 600 V, 10 A, and 12 AWG UL)** offering an alternative to heavy duty rectangular and circular connectors used in power wiring applications where electrical compliance is more important than a high degree of protection.

Pre-assembly of connector systems offers the following advantages to the user:

- During manufacturing: Pre-assembled part or function assemblies can be tested before assembly.
- During assembly: Pre-assembled pluggable cable harnesses help solve time and space issues on site. Connector systems with protection against mismatching can be handled by persons of all skill levels.
- During servicing: Sub-assemblies can be replaced very quickly and without failures.

The X-COM<sup>®</sup>-SYSTEM consists of base receptacle rail-mounted terminal blocks, male connectors and female plugs with different types of mounting systems as well as headers with solder pins. Pin spacing is generally 5 mm/0.197 in.

### Protection against mismatching and accidental contact

The WAGO X-COM<sup>®</sup>-SYSTEM is **fully protected against accidental contact - even when plugs are disconnected**. As a result, considerations on how to plan the power distribution become easier. Furthermore, the whole system is **100 % protected against mismatching**. Coded, without the loss of any poles, prevents mismatching of male connectors and female plugs having the same number of poles.

### Base receptacle terminal blocks

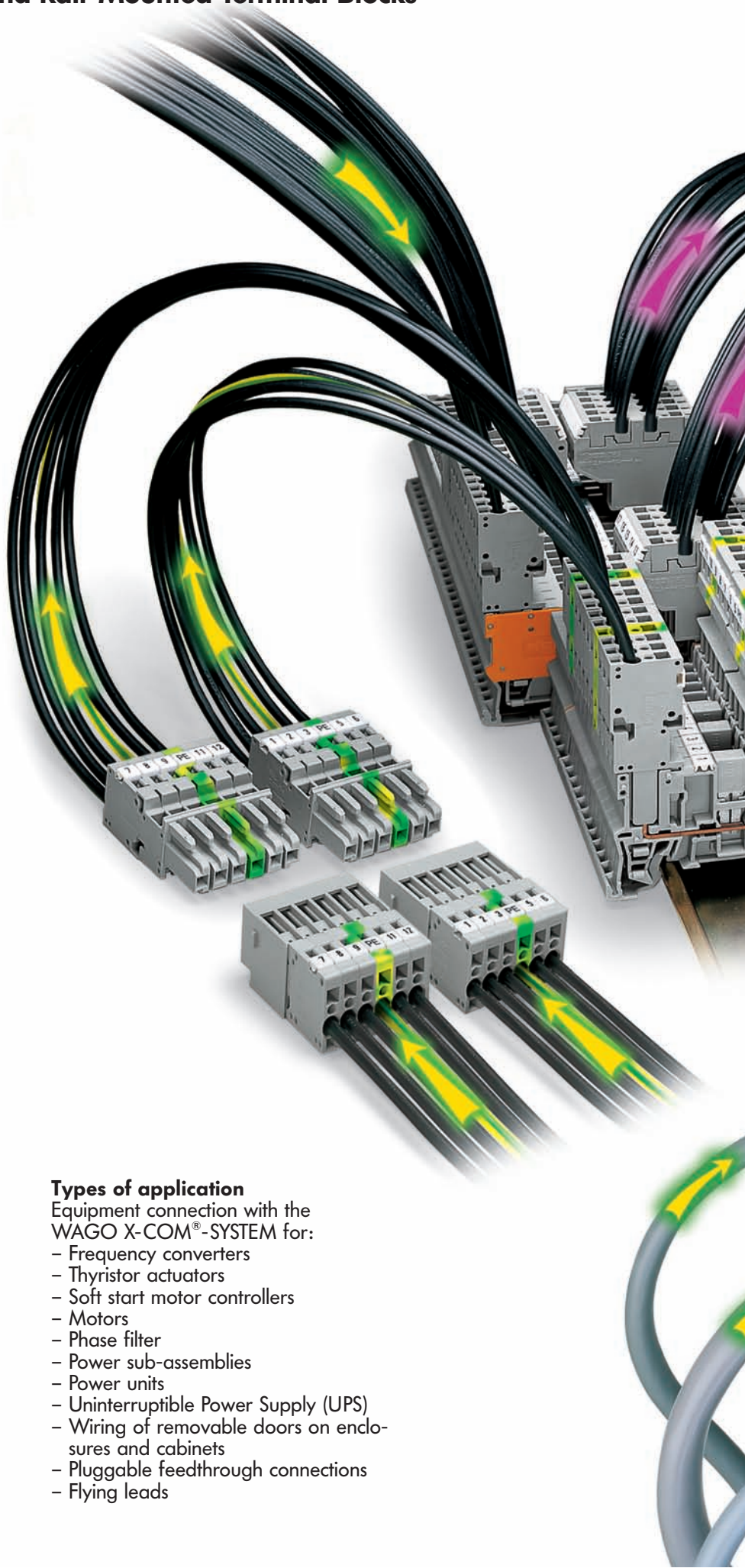
Base receptacle terminal blocks are available as through terminal blocks, double deck terminal blocks as well as ground (earth) conductor terminal blocks with automatic contact to the carrier rail. Base receptacle terminal blocks with special functions are available in disconnect, diode and LED versions. To use all the functions of **pluggable electronic modules** which include a wide range of relays, optocoupler modules and converters, etc., some base receptacle terminal blocks have an additional plug-in slot.

Depending on the type of terminal block, the base receptacle terminal blocks are equipped with one to three jumper positions for commoning of signals using insulated plug-in jumpers.

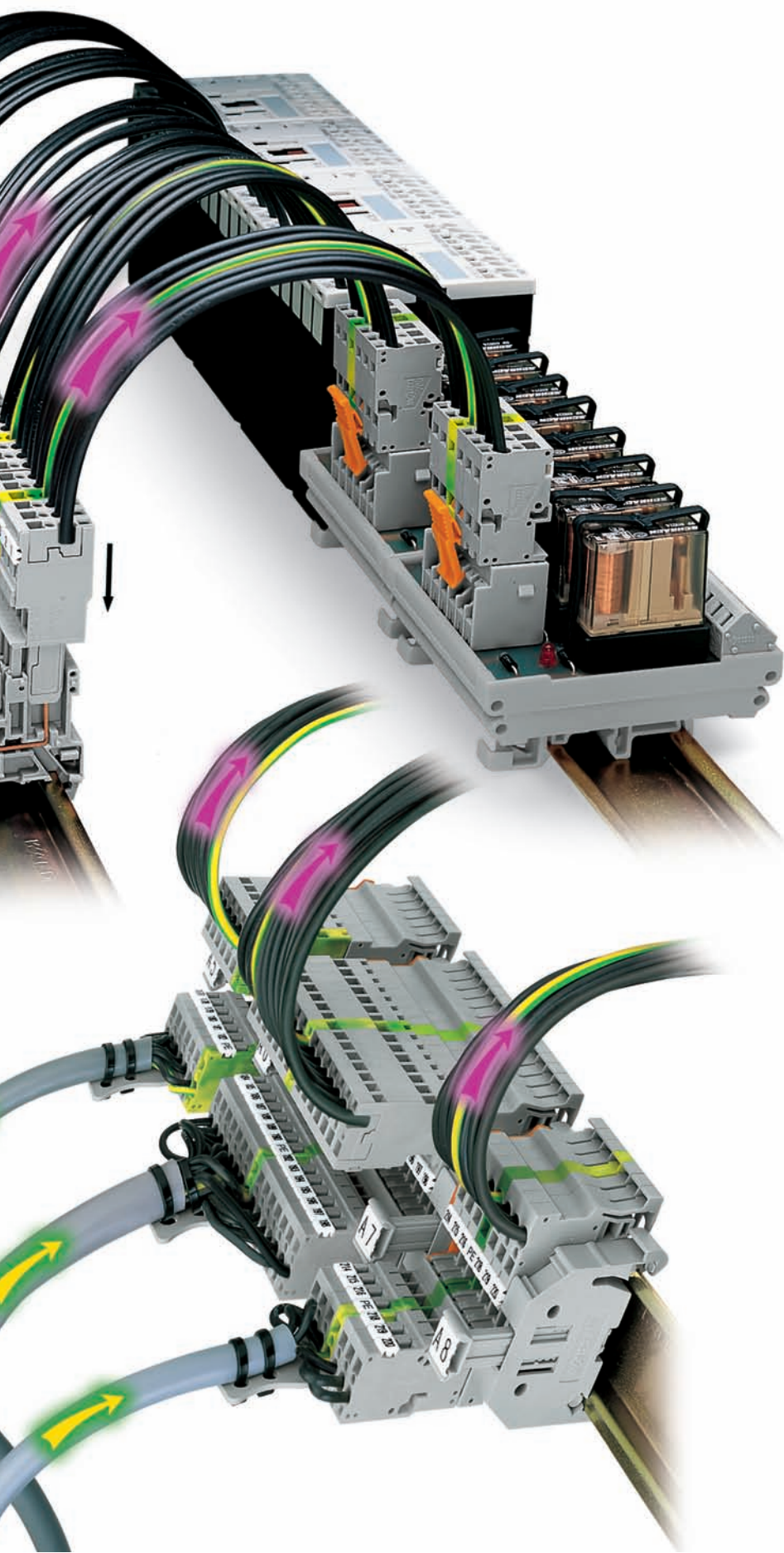
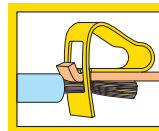
### Types of application

Equipment connection with the WAGO X-COM<sup>®</sup>-SYSTEM for:

- Frequency converters
- Thyristor actuators
- Soft start motor controllers
- Motors
- Phase filter
- Power sub-assemblies
- Power units
- Uninterruptible Power Supply (UPS)
- Wiring of removable doors on enclosures and cabinets
- Pluggable feedthrough connections
- Flying leads







### Female plugs

The mating half of the base receptacle terminal blocks are modular 1- to 15-pole, 1-conductor and 2-conductor straight or angled female plugs. Angled female plugs combined with **double density wiring** and a reduced overall terminal block height. Using the jumper slot, the distribution of a potential is made simple - even on the female plugs. This makes the commoning of supply lines particularly interesting as the voltage supply of downstream sub-assemblies is maintained even after female plugs have been removed.

### 1-pole female plugs

Special 1-pole female plugs can carry the full rated current of the terminal blocks allowing many different applications:

- as test adapters,
- as connectors for motor lead tests,
- for all types of patchboard applications,
- for the creation of multi-pole prototypes,
- for phase selection in a three-phase network without interfering with the wiring or
- for one-pole voltage supply in commercial vehicles. The grounding of all electrical components is connected through the chassis.

### Male connectors

Additional male connectors are available with mounting feet for surface mounting, with fixing flanges for feed-through applications or without mounting elements for flying leads. Strain relief plates are available as accessories. Sub-assemblies on printed circuit boards can be integrated into the system wiring using headers with solder pins. As a result, parts can be exchanged quickly without wiring failures.

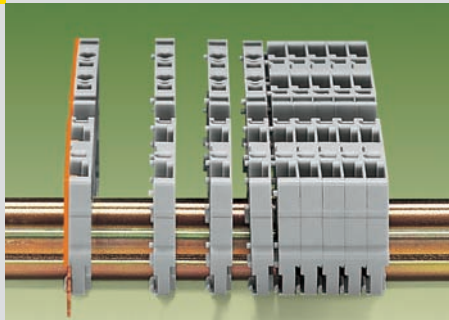
### Protection degree

mated: IP 20  
unmated: IP 20  
Temperature range  
-35°C to +100°C



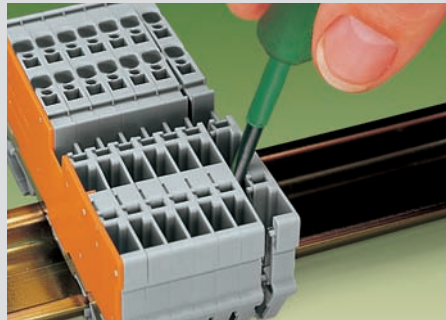
# X-COM®-SYSTEM Receptacle Terminal Blocks and Female Plugs Series 769 . . .

## Assembly



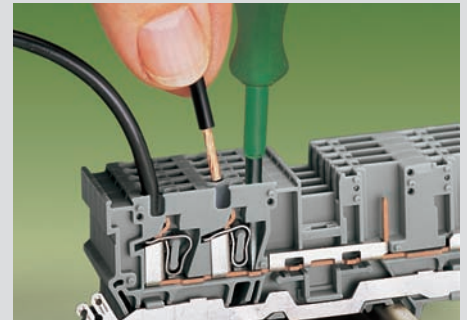
Snap individual base receptacle terminal blocks onto carrier rail

## Removal



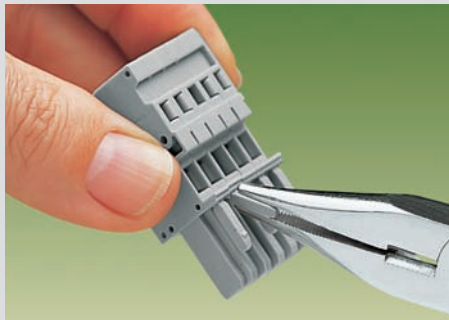
Unlock assembly with screwdriver (3.5 x 0.5) mm and remove terminal block via release lever

## CAGE CLAMP® connection



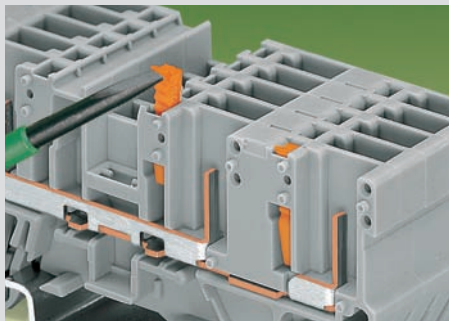
Receptacle terminal block: connection/removal of conductor with screwdriver (3.5 x 0.5) mm

## Coding

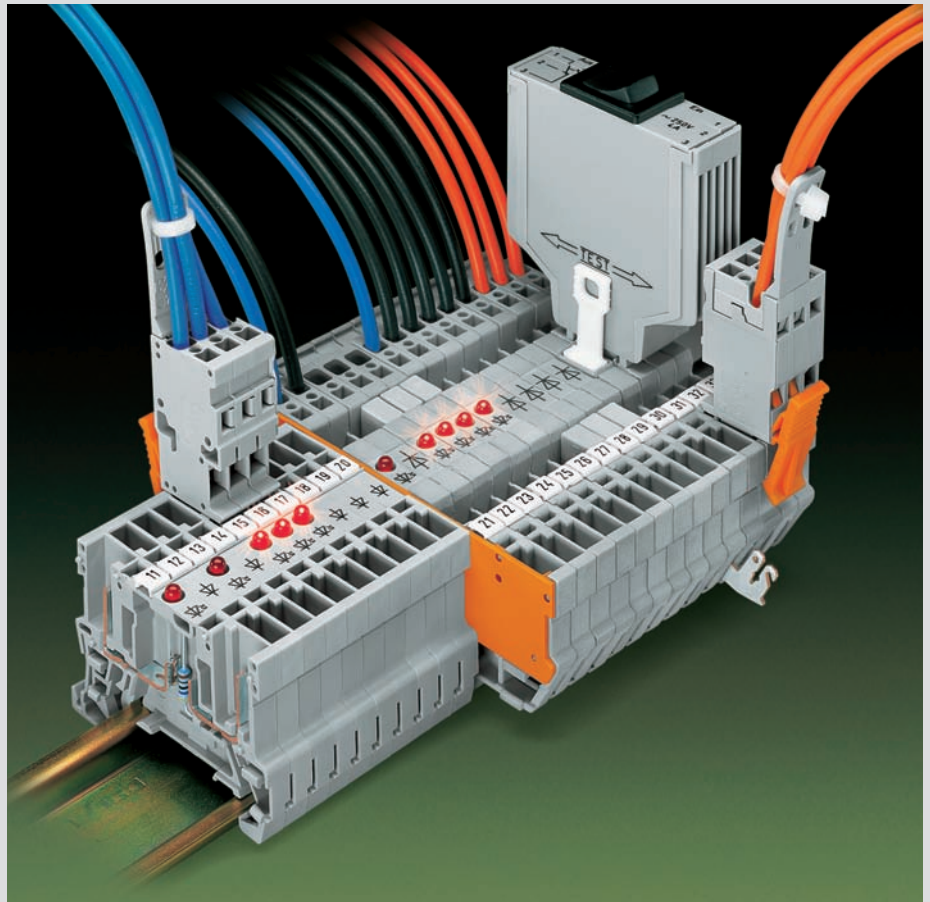


Coding a female plug - removal of coding finger(s). Do not break off the first and last latch position coding finger!

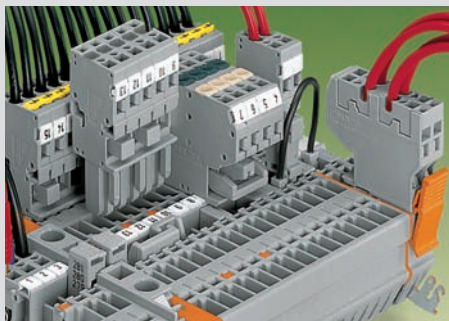
## Coding



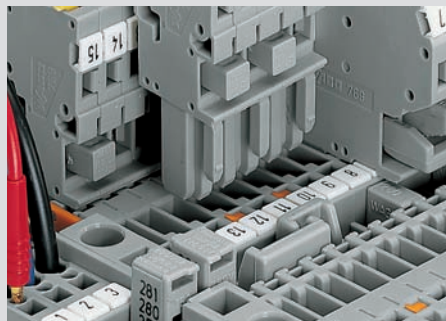
Snap coding pin in proper direction on receptacle terminal block. Removal of a coding pin from receptacle terminal block



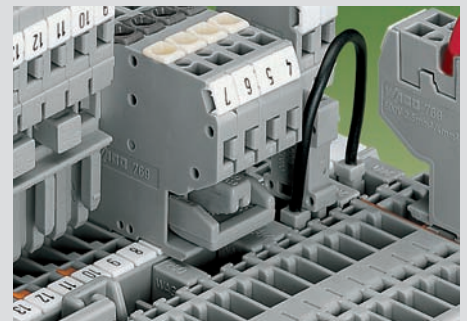
## Commoning



Commoning with adjacent jumper, or alternatively with staggered jumper. Push jumper down FIRMLY until FULLY inserted!



Commoning of receptacle terminal block with staggered jumper

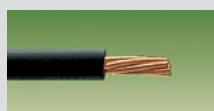


Commoning of 2-conductor female plug with staggered jumper and commoning of receptacle terminal block with adjacent jumper



**CAGE CLAMP®** connects the following copper wires:\*

solid



stranded



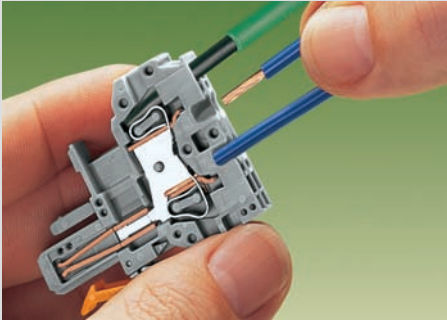
fine stranded, also with tinned single strands

\* For aluminum wire see notes in section 15!

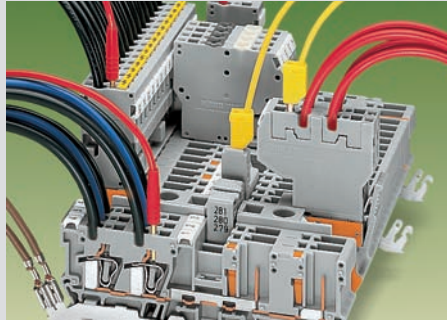


# ... Description and Handling

## Testing

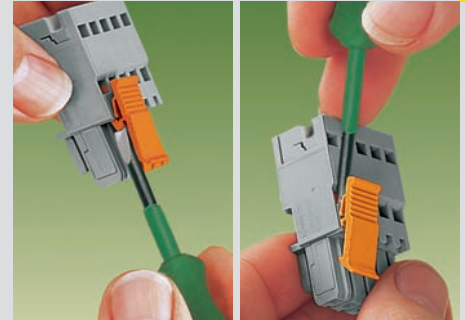


Female plug: connection /removal of conductor. Operation 90° to wire also possible



Testing with test plug Ø 2 mm/0.079 in (red) or Ø 2.3 mm/0.091 in (yellow)

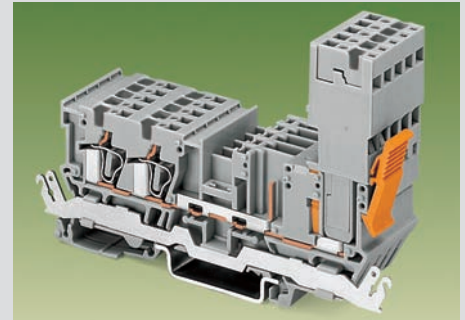
## Locking lever



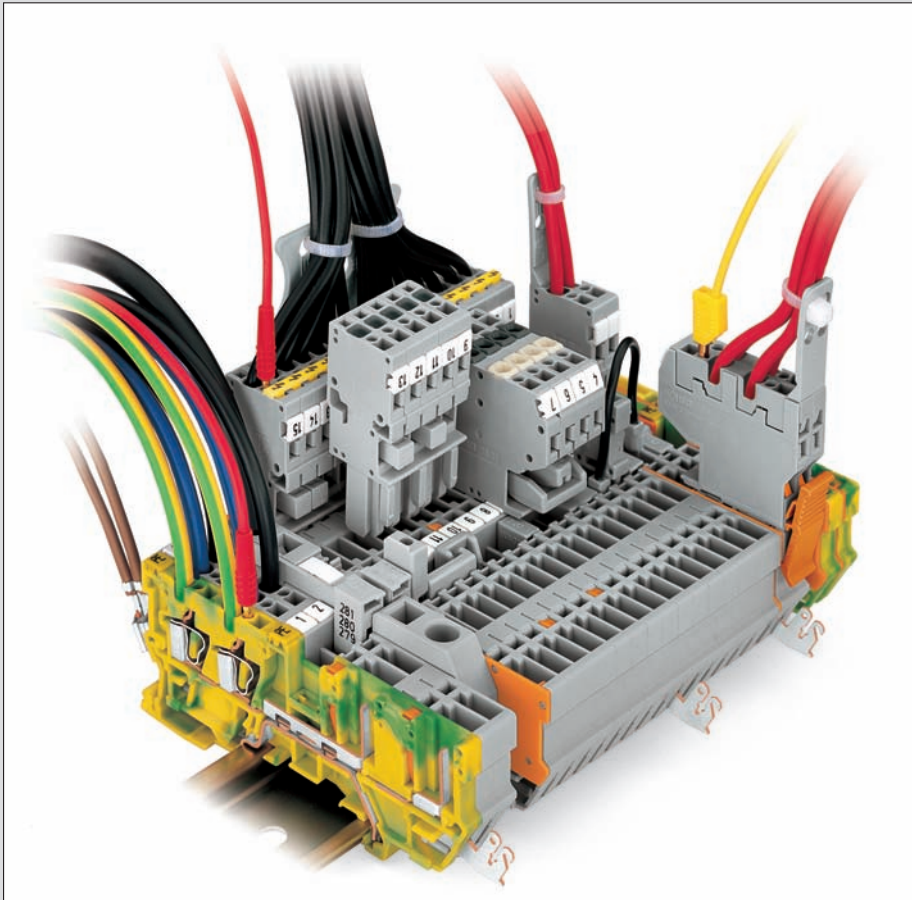
Snapping in /removal of locking lever

**Note:** Connectors used according to the regulations should not be connected or disconnected under load.

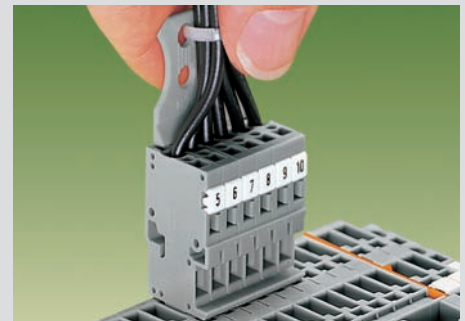
## Locking lever



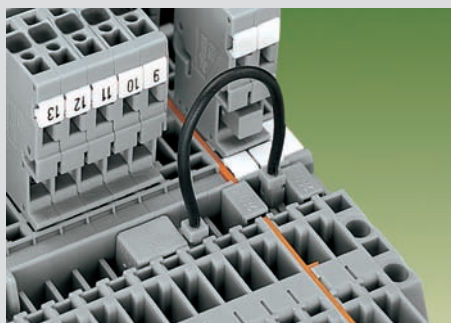
Female plug secured with locking lever in external area of receptacle terminal block



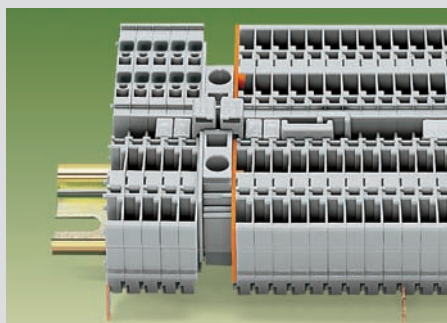
## Strain relief



Removal of female plug, wires provided with strain relief plate



Commoning of receptacle terminal blocks with push-in type wire, or adjacent jumpers, also over the intermediate plate



Step-down jumper used for commoning terminal blocks of different sizes (max. 10 mm<sup>2</sup>/AWG 8)



Commoning of 1-conductor female plugs with miniature adjacent jumpers



fine-stranded wire – tip bonded



fine-stranded wire with crimped ferrule ①



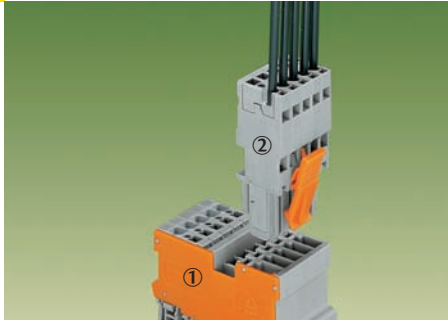
fine-stranded wire with crimped pin terminal

① When using wires with ferrules, it is necessary to use a terminal block one size larger than the nominal cross section of the wire.

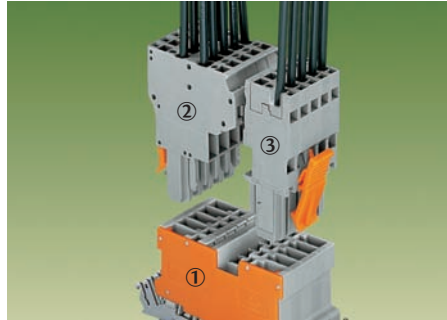


# X-COM®-SYSTEM, Series 769, Product Summary

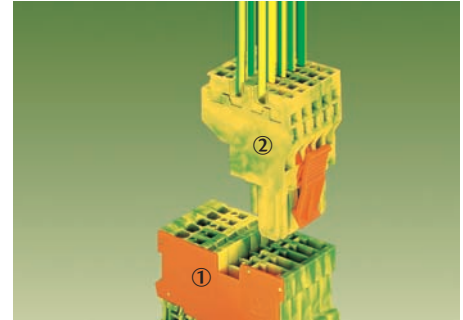
## Receptacle Terminal Blocks and Female Connectors



① 1-conductor/1-pin receptacle terminal block  
② 1-conductor female plug, straight\*

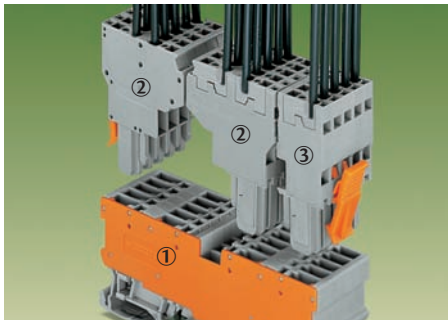


① 2-pin shield (screen) receptacle terminal block  
② 2-conductor female plug  
③ 1-conductor female plug, straight\*

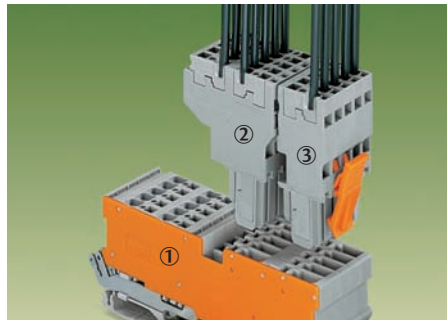


① 1-conductor/1-pin ground (earth) receptacle terminal block  
② 2-conductor female plug

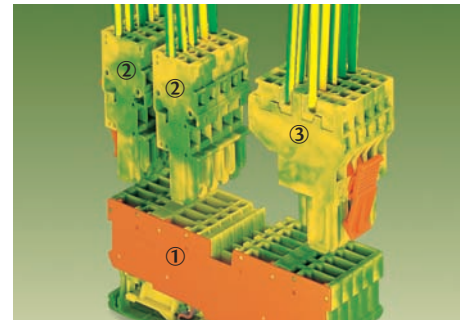
\* or 1-conductor female plug, angled



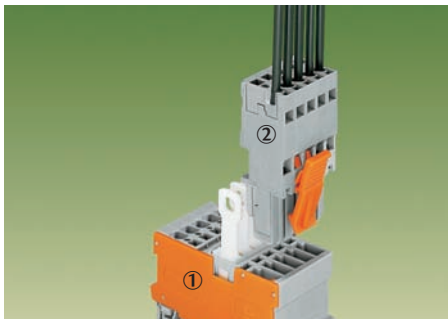
① 4-pin receptacle terminal block  
② 2-conductor female plugs  
③ 1-conductor female plug, straight



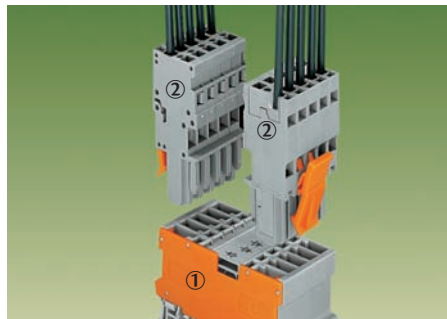
① 2-conductor/2-pin shield (screen) receptacle terminal block  
② 2-conductor female plug  
③ 1-conductor female plug, straight



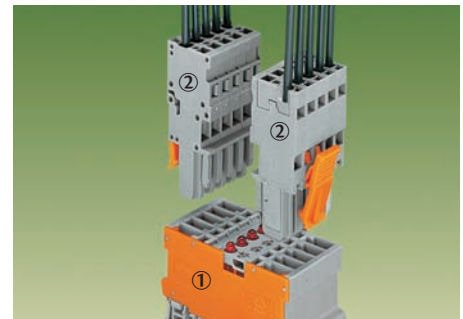
① 4-pin ground (earth) receptacle terminal block  
② 1-conductor female plugs  
③ 2-conductor female plug



① 1-conductor/1-pin disconnect receptacle terminal block  
② 1-conductor female plug, straight\*

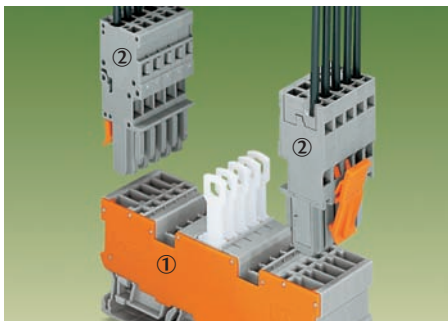


① 2-pin diode receptacle terminal block  
② 1-conductor female plugs, straight\*

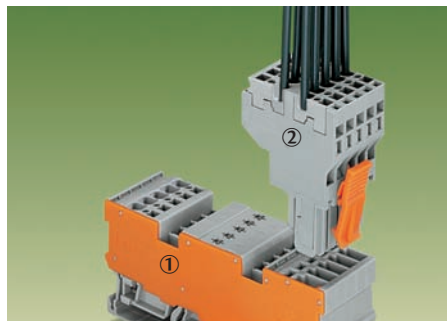


① 2-pin LED receptacle terminal block  
② 1-conductor female plugs, straight\*

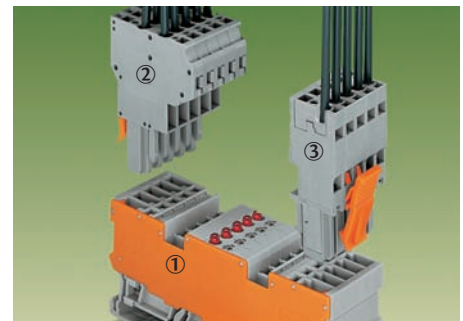
\* or 1-conductor female plug, angled



① 2-pin disconnect receptacle terminal block with 2 jumper positions  
② 1-conductor female plugs, straight\*

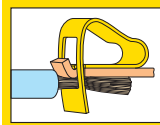


① 1-conductor/1-pin diode receptacle terminal block with 2 jumper positions  
② 2-conductor female plug

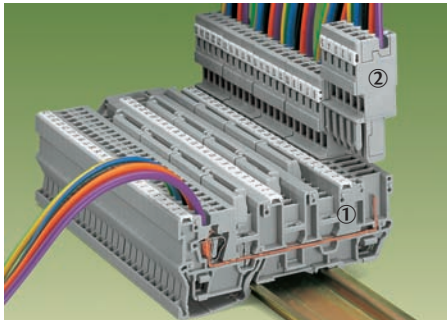


① 2-pin LED receptacle terminal block with 2 jumper positions  
② 2-conductor female plug  
③ 1-conductor female plug, straight\*

\* or 1-conductor female plug, angled

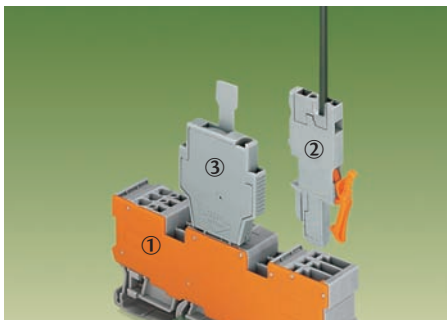


## Headers and Male Connectors



- ① 1-conductor/1-pin receptacle terminal block with 3 jumper positions
- ② 1-conductor female plug, straight\*

\* or 1-conductor female plug, angled



- ① 1-conductor/1-pin receptacle terminal block with 2 jumper positions
- ② 1-conductor female plug, straight\*
- ③ Fuse plug, 6 mm / 0.236 in wide (every other terminal block)

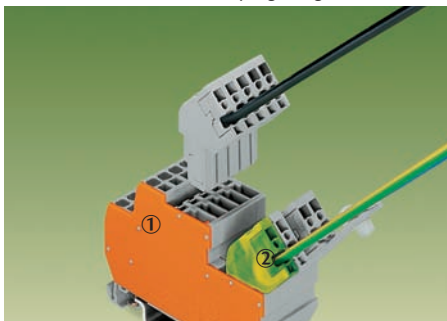
\* or 1-conductor female plug, angled



- ① 2-pin terminal block for pluggable modules\* with 2 jumper positions
- ② 1-conductor female plugs, straight\*\*
- ③ Relay plug 25 mm / 0.9843 in wide

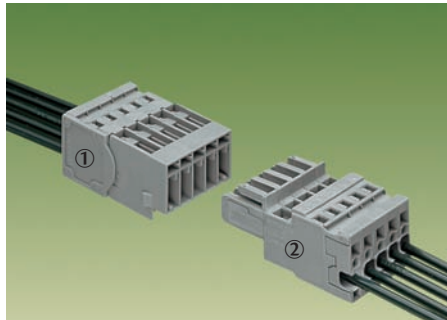
\* with separator plate

\*\* or 1-conductor female plug, angled

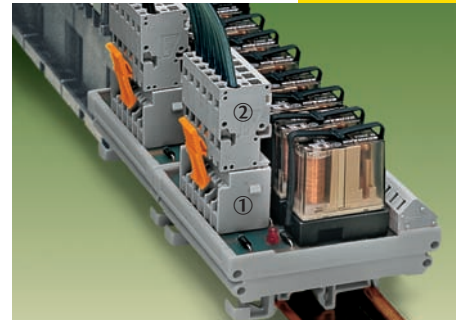


- ① 1 conductor/1 pin double deck terminal block
- ② 1 conductor female plug, angled\*

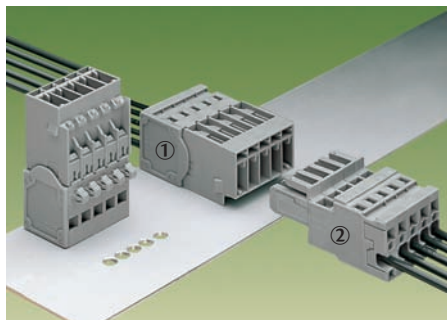
\* or 1-conductor female plug, straight



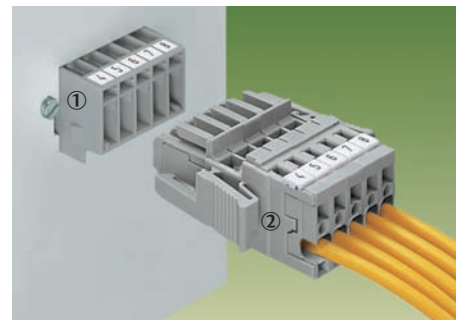
- ① Male connector with CAGE CLAMP® connection
- ② 1-conductor female plug



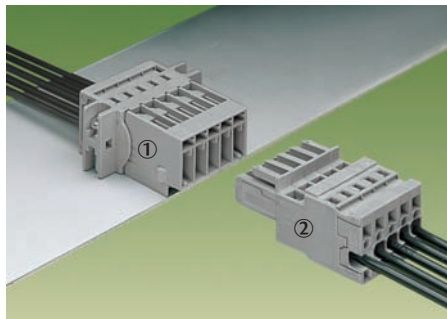
- ① Header with straight solder pins
- ② 1-conductor female plug



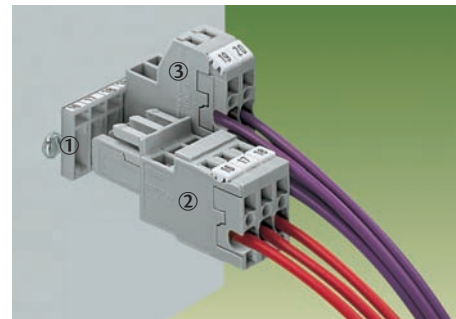
- ① Male connector with CAGE CLAMP® connection and mounting feet
- ② 1-conductor female plug



- ① Header with straight or angled solder pins and fixing flanges
- ② 1-conductor female plug straight with locking levers

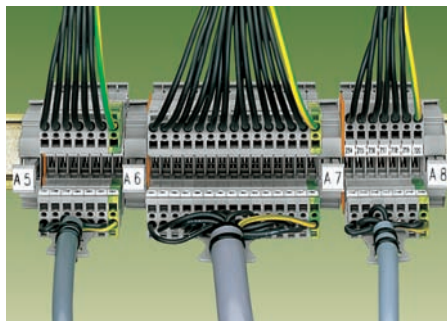


- ① Male connector with CAGE CLAMP® connection and fixing flanges
- ② 1-conductor female plug



- ① Header with straight or angled solder pins and fixing flanges for feedthrough applications
- ② 1-conductor female plug
- ③ 2-conductor female plug

**Example of application: cost-efficient alternative to heavy connectors**

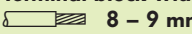



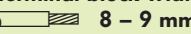





Introduction of the cables in the switchboard cabinet. The cables are introduced in the switchboard cabinet **with** the connected female plugs and are directly plugged in the receptacle terminal blocks.

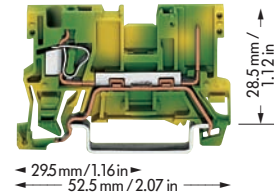
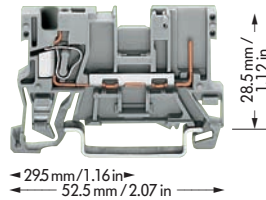







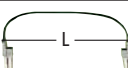







Cable entry in the base of the switchgear cabinet, with separate strain relief, movable IP 54 bottom plates sealed with sponge rubber (e.g. by Rittal)

# X-COM®-SYSTEM 1-Conductor/1-Pin Receptacle Terminal Blocks

<p><b>0.08 – 4 mm<sup>2</sup></b>  <b>500 V/6 kV/3 ①</b>  <b>250 V/4 kV/3 ①</b>  <b>32 A**</b>  <b>Terminal block width 5 mm / 0.197 in</b>   <b>8 – 9 mm / 0.33 in</b></p> <p><b>AWG 28 – 12</b>  <b>300/600 V, 10/5 A ②</b>  <b>300 V, 10 A ③</b></p> <p>*   </p>	<p><b>0.08 – 4 mm<sup>2</sup></b>   <b>AWG 28 – 12</b></p> <p><b>Terminal block width 5 mm / 0.197 in</b>   <b>8 – 9 mm / 0.33 in</b></p> <p>*   </p>
---	---

- ① 500 V = rated voltage  
 6 kV = rated surge voltage  
 3 = pollution degree  
 250 V/4 kV/3 = rated voltage with shield (screen) contact (see also section 15)
- ② See application notes on pages 2.43 – 2.45



Description	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>1-conductor/1-pin receptacle terminal block,</b> suitable for DIN 35 rail acc. to EN 60715	<b>1-conductor/1-pin receptacle terminal block</b>		<b>1-conductor/1-pin ground (earth) receptacle terminal block</b>	
grey	<b>769-176</b>	100	green-yellow	<b>769-237</b>
	<b>1-conductor/1-pin receptacle terminal block with shield (screen) contact, (no picture)</b>			100
grey	<b>769-231</b>	50		
<b>Accessories</b> Appropriate marking system <b>Mini-WSB</b> (see section 14)				
	<b>End and intermediate plate</b>	1.1 mm / 0.043 in thick	1.1 mm / 0.043 in thick	
	grey	<b>769-307</b>	grey	<b>769-307</b>
	orange	<b>769-308</b>	orange	<b>769-308</b>
	<b>Screwless end stop</b>	6 mm / 0.236 in wide <b>249-116</b>	6 mm / 0.236 in wide <b>249-116</b>	100 (4 x 25)
		10 mm / 0.394 in wide <b>249-117</b>	10 mm / 0.394 in wide <b>249-117</b>	50 (2 x 25)
	<b>Insulation stop</b> ②, white	0.08 – 0.2 mm <sup>2</sup> <b>769-470</b>	0.08 – 0.2 mm <sup>2</sup> <b>769-470</b>	200 strips
	5 pcs/strip light grey	0.25 – 0.5 mm <sup>2</sup> <b>769-471</b>	0.25 – 0.5 mm <sup>2</sup> <b>769-471</b>	200 strips
	dark grey	0.75 – 1 mm <sup>2</sup> <b>769-472</b>	0.75 – 1 mm <sup>2</sup> <b>769-472</b>	200 strips
	<b>Adjacent jumper,</b> I <sub>N</sub> 24 A	grey <b>280-402</b>	grey <b>280-402</b>	200 (8 x 25)
	insulated			
	<b>Alternate jumper</b>	grey <b>280-409</b>	grey <b>280-409</b>	100 (4 x 25)
	<b>Staggered jumper</b> ②, from 1 to 2	I <sub>N</sub> 24 A <b>780-452</b>	I <sub>N</sub> 24 A <b>780-452</b>	100 (4 x 25)
	insulated, from 1 to 3	<b>780-453</b>	<b>780-453</b>	100 (4 x 25)
	width 5 mm / 0.197 in from 1 to 4	<b>780-454</b>	<b>780-454</b>	100 (4 x 25)
	from 1 to 5	<b>780-455</b>	<b>780-455</b>	50 (2 x 25)
	:	:	:	
	from 1 to 8	<b>780-458</b>	<b>780-458</b>	50 (2 x 25)
	<b>Push-in type wire jumper</b> ②, insulated, 9 A – conductor	L = 60 mm / 2.362 in <b>249-125</b>	L = 60 mm / 2.362 in <b>249-125</b>	10
		L = 110 mm / 4.331 in <b>249-126</b>	L = 110 mm / 4.331 in <b>249-126</b>	10
	cross section 0.75 mm <sup>2</sup> / AWG 18	L = 250 mm / 9.843 in <b>249-127</b>	L = 250 mm / 9.843 in <b>249-127</b>	10
	<b>Coding pin,</b> for coding of female plugs	orange <b>769-435</b>	orange <b>769-435</b>	100 (4 x 25)
	<b>Protective warning marker,</b> for 5 terminal blocks, fits into screwdriver slot	yellow <b>280-415</b>		100 (4 x 25)
	<b>Test plug,</b> w. cable 500 mm / 1.77" 2 mm / 0.079 in Ø	red <b>210-136</b>	red <b>210-136</b>	50 (5 x 10)
	2.3 mm / 0.091 in Ø	yellow <b>210-137</b>	yellow <b>210-137</b>	50 (5 x 10)
	<b>Test plug module,</b> for test using jumper position in current bar or cond. wire opening	Application notes and part numbers see pages 2.38 – 2.40	Application notes and part numbers see pages 2.38 – 2.40	
	<b>Test plug adapter,</b> see also pages 2.38 – 2.40	5 mm / 0.197 in wide <b>280-404</b>	5 mm / 0.197 in wide <b>280-404</b>	100 (4 x 25)
		or test plug 210-137 (2.3 mm / 0.091 in Ø)	or test plug 210-137 (2.3 mm / 0.091 in Ø)	
	<b>1-conductor female plug,</b> straight or angled	see pages 9.44/9.46	see pages 9.44/9.46	
	<b>2-conductor female plug</b>	see page 9.45	see page 9.45	

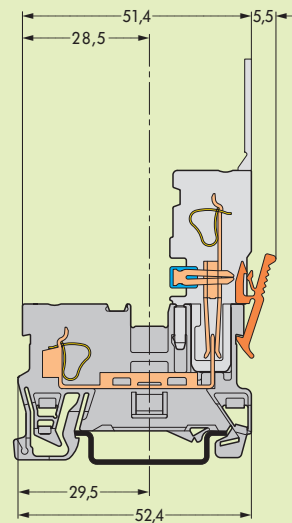
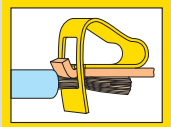
\* For further approvals with corresponding ratings see section 15.

\*\* Current-carrying capacity curve see page 9.48 and www.wago.com

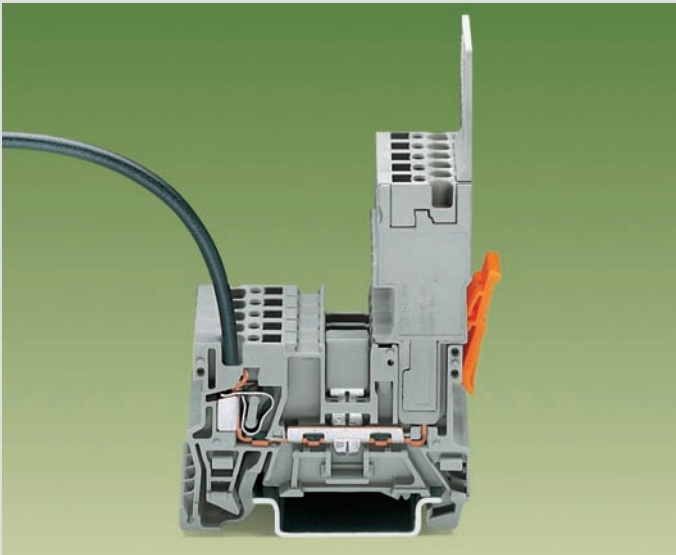


# Types of Assembly

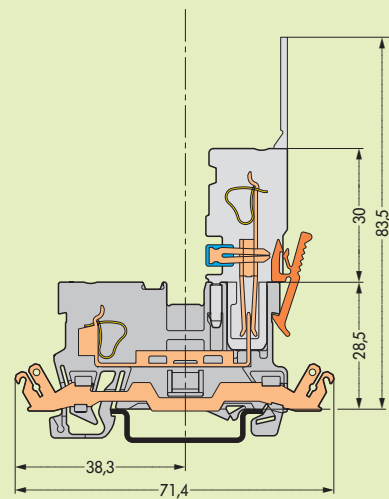
## 1-Conductor/1-Pin Receptacle Terminal Blocks and 1-/2-Conductor Female Plugs



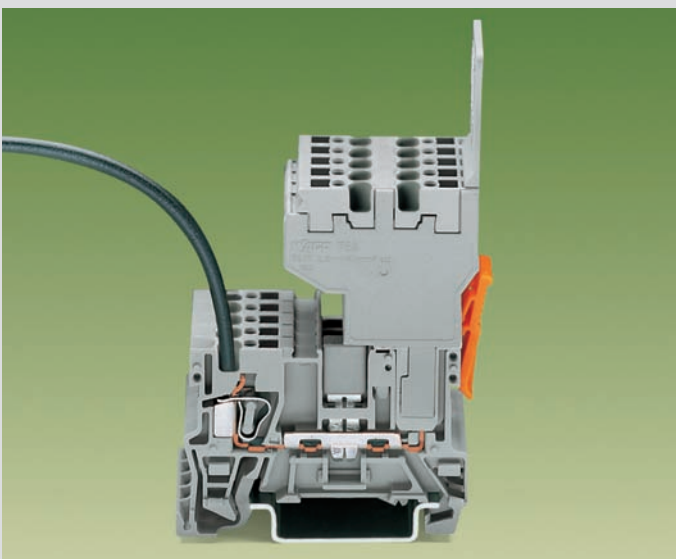
Receptacle terminal block



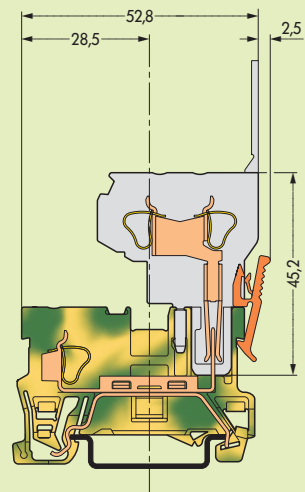
1-conductor female plug  
Commoning possibility of receptacle terminal blocks with jumper contact systems, series 280 and 780, and testing possibility with test plug adapter 280-4..



Receptacle terminal block with shield (screen) contact



2-conductor female plug  
Commoning possibility of receptacle terminal blocks only with adjacent jumpers and alternate jumpers, series 280



Ground (earth) receptacle terminal block

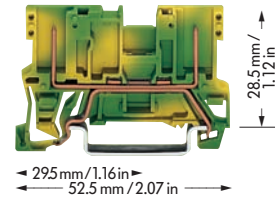
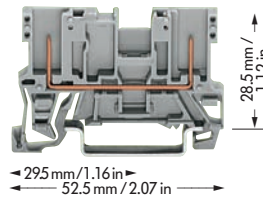






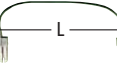
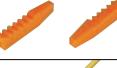






# 9 X-COM®-SYSTEM

## 14 2-Pin Receptacle Terminal Blocks

<b>500 V/6 kV/3 ①</b> <b>250 V/4 kV/3 ①</b> <b>32 A**</b> <b>Terminal block width 5 mm / 0.197 in</b> <small>*   </small>	<b>300/600 V, 10/5 A </b> <b>300 V, 10 A </b> <b>Terminal block width 5 mm / 0.197 in</b> <small>*   </small>
---	--

- ① 500 V = rated voltage  
6 kV = rated surge voltage  
3 = pollution degree  
250 V/4 kV/3 = rated voltage with shield (screen) contact (see also section 15)
- ② See application notes on page 2.45

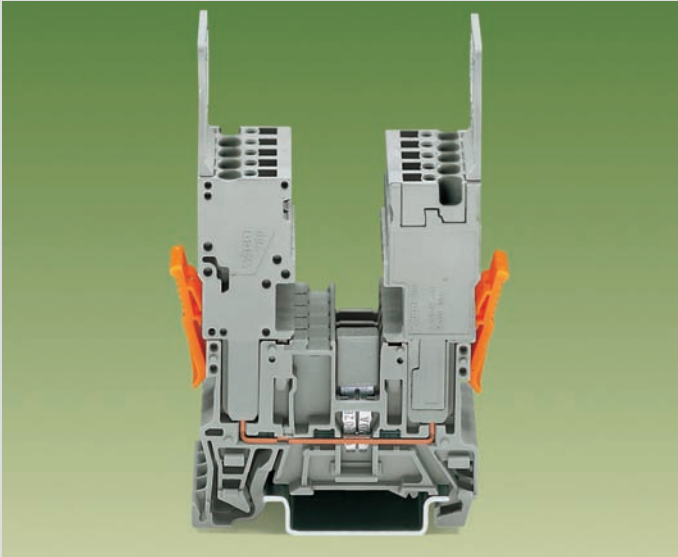
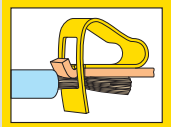


Description	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>2-pin receptacle terminal block,</b> suitable for DIN 35 rail acc. to EN 60715	<b>2-pin receptacle terminal block</b> grey <b>769-156</b>	100	<b>2-pin ground (earth) receptacle terminal block</b> green-yellow <b>769-227</b>	100
	<b>2-pin receptacle terminal block with shield (screen) contact, (no picture)</b> grey <b>769-221</b>	50		
<b>Accessories</b>	Appropriate marking system <b>Mini-WSB</b> (see section 14)			
	<b>End and intermediate plate</b> grey <b>769-305</b> orange <b>769-306</b>	100 (4 x 25) 100 (4 x 25)	1.1 mm / 0.043 in thick grey <b>769-305</b> orange <b>769-306</b>	100 (4 x 25) 100 (4 x 25)
	<b>Screwless end stop</b> 6 mm / 0.236 in wide <b>249-116</b> 10 mm / 0.394 in wide <b>249-117</b>	100 (4 x 25) 50 (2 x 25)	6 mm / 0.236 in wide <b>249-116</b> 10 mm / 0.394 in wide <b>249-117</b>	100 (4 x 25) 50 (2 x 25)
	<b>Adjacent jumper, I<sub>N</sub> 24 A</b> insulated grey <b>280-402</b>	200 (8 x 25)	grey <b>280-402</b>	200 (8 x 25)
	<b>Alternate jumper</b> grey <b>280-409</b>	100 (4 x 25)	grey <b>280-409</b>	100 (4 x 25)
	<b>Staggered jumper ②, from 1 to 2</b> insulated, from 1 to 3 width 5 mm / 0.197 in from 1 to 4 from 1 to 5 : from 1 to 8	I <sub>N</sub> 24 A <b>780-452</b> <b>780-453</b> <b>780-454</b> <b>780-455</b> : <b>780-458</b>	100 (4 x 25) 100 (4 x 25) 100 (4 x 25) 50 (2 x 25) : 50 (2 x 25)	I <sub>N</sub> 24 A <b>780-452</b> <b>780-453</b> <b>780-454</b> <b>780-455</b> : <b>780-458</b>
	<b>Push-in type wire jumper ②,</b> insulated, 9 A – conductor cross section 0.75 mm <sup>2</sup> /AWG 18	L = 60 mm / 2.362 in <b>249-125</b> L = 110 mm / 4.331 in <b>249-126</b> L = 250 mm / 9.843 in <b>249-127</b>	L = 60 mm / 2.362 in <b>249-125</b> L = 110 mm / 4.331 in <b>249-126</b> L = 250 mm / 9.843 in <b>249-127</b>	10 10 10
	<b>Coding pin,</b> for coding of female plugs orange <b>769-435</b>	100 (4 x 25)	orange <b>769-435</b>	100 (4 x 25)
	<b>Test plug,</b> with cable 500 mm / 1'7.7" 2.3 mm / 0.091 in Ø yellow <b>210-137</b>	50 (5 x 10)	yellow <b>210-137</b>	50 (5 x 10)
	<b>Test plug module,</b> for test using jumper position in current bar or cond. wire opening	Application notes and part numbers see pages 2.39 – 2.40	Application notes and part numbers see pages 2.39 – 2.40	
	<b>Test plug adapter,</b> see also pages 2.39 – 2.40 5 mm / 0.197 in wide <b>280-404</b>	100 (4 x 25)	5 mm / 0.197 in wide <b>280-404</b>	100 (4 x 25)
	or test plug 210-137 (2.3 mm / 0.091 in Ø)		or test plug 210-137 (2.3 mm / 0.091 in Ø)	
	<b>1-conductor female plug,</b> straight see page 9.44		see page 9.44	
	<b>1-conductor female plug,</b> angled see page 9.46		see page 9.46	
	<b>2-conductor female plug</b> see page 9.45		see page 9.45	

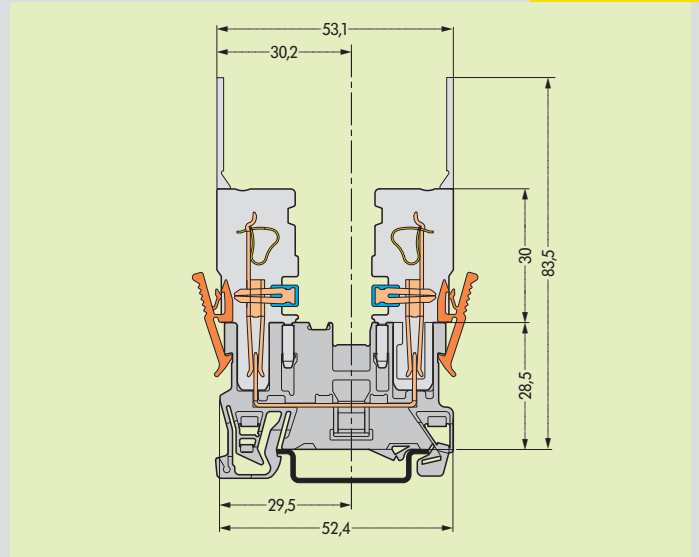
\* For further approvals with corresponding ratings see section 15.

\*\* Current-carrying capacity curve see page 9.48 and www.wago.com

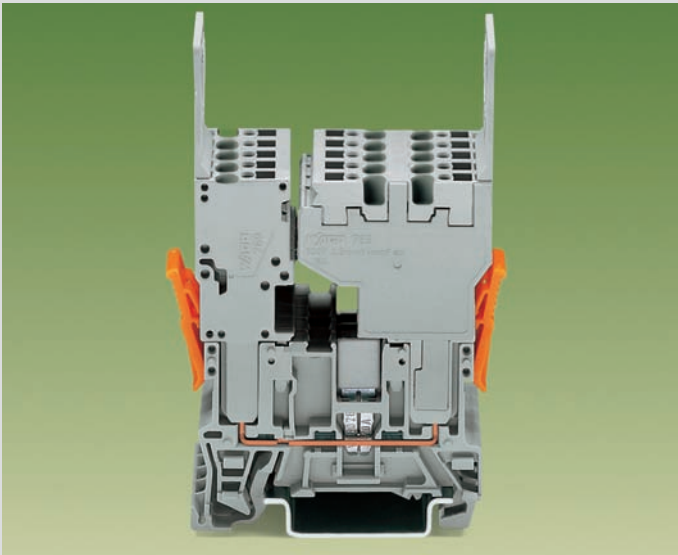
# Types of Assembly 2-Pin Receptacle Terminal Blocks and 1-/2-Conductor Female Plugs



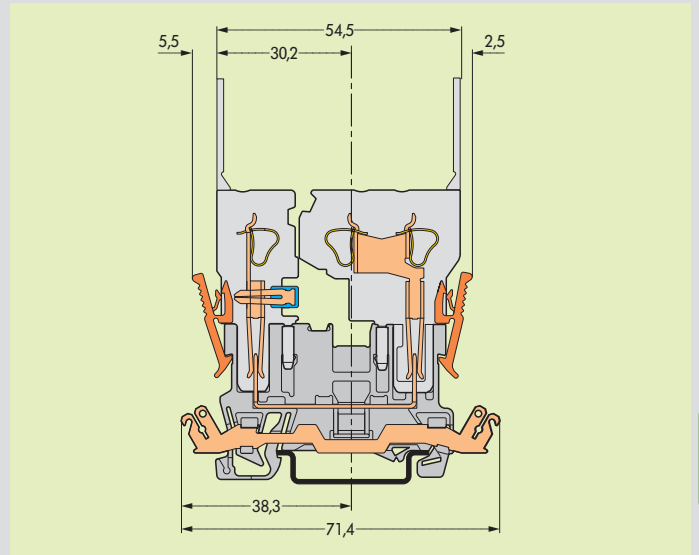
2 x 1-conductor female plugs  
Commoning possibility of receptacle terminal blocks with jumper contact systems, series 280 and 780, and testing possibility with test plug adapter 280-4..



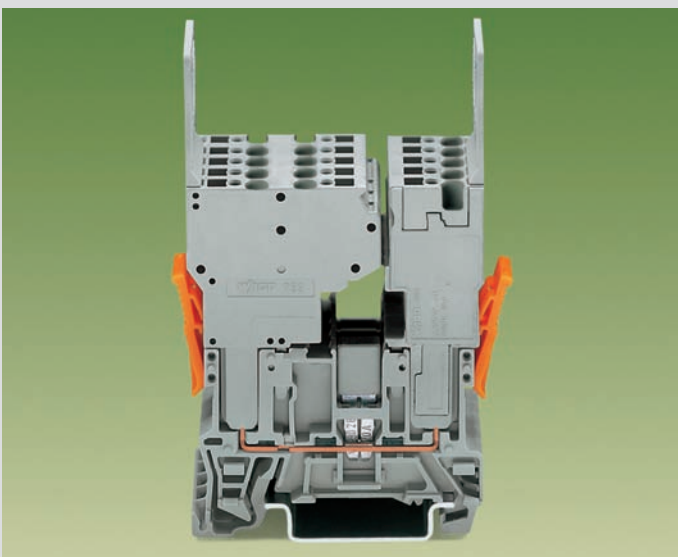
Receptacle terminal block



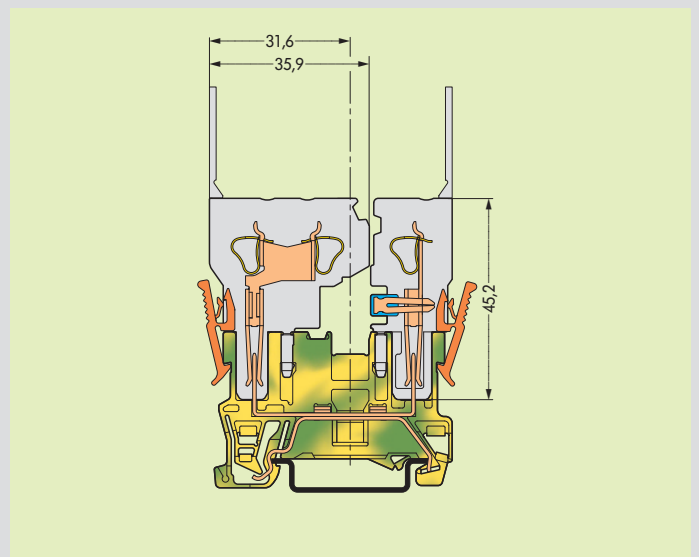
1-conductor female plug left  
2-conductor female plug right  
Commoning possibility of receptacle terminal blocks only with adjacent jumpers and alternate jumpers, series 280



Receptacle terminal block with shield (screen) contact



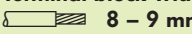





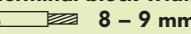





2-conductor female plug left  
1-conductor female plug right  
Commoning possibility of receptacle terminal blocks with jumper contact systems, series 280 and 780, and testing possibility with test plug adapter 280-4..



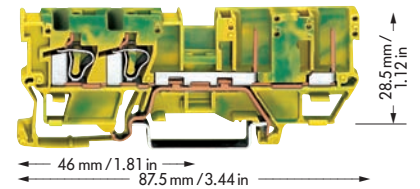
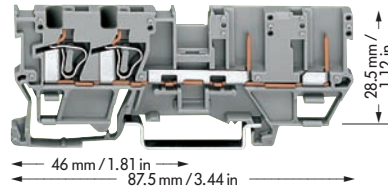
Ground (earth) receptacle terminal block



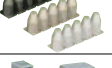

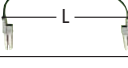







# X-COM®-SYSTEM

## 2-Conductor/2-Pin Receptacle Terminal Blocks

<p><b>0.08 – 4 mm<sup>2</sup></b>  <b>500 V/6 kV/3 ①</b>  <b>250 V/4 kV/3 ①</b>  <b>32 A**</b>  <b>Terminal block width 5 mm / 0.197 in</b>   <b>8 – 9 mm / 0.33 in</b></p> <p>*     </p>	<p><b>AWG 28 – 12</b>  <b>300/600 V, 10/5 A ②</b>  <b>300 V, 10 A ③</b></p> <p><b>0.08 – 4 mm<sup>2</sup></b>   <b>AWG 28 – 12</b>  <b>Terminal block width 5 mm / 0.197 in</b>   <b>8 – 9 mm / 0.33 in</b></p> <p>*     </p>
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- ① 500 V = rated voltage  
 6 kV = rated surge voltage  
 3 = pollution degree  
 250 V/4 kV/3 = rated voltage with shield (screen) contact (see also section 15)
- ② See application notes on pages 2.43 – 2.45



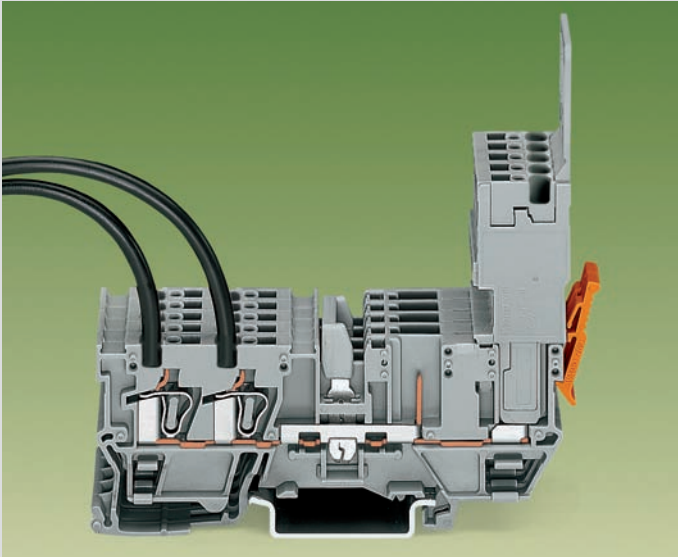
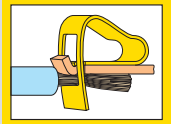
Description	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>2-conductor/2-pin receptacle terminal block,</b> suitable for DIN 35 rail acc. to EN 60715	<b>2-conductor/2-pin receptacle terminal block</b>		<b>2-conductor/2-pin ground (earth) receptacle terminal block</b>	
grey	<b>769-171</b>	50	green-yellow	<b>769-217</b> 50
	<b>2-conductor/2-pin receptacle terminal block with shield (screen) contact, (no picture)</b>			
grey	<b>769-211</b>	50		
<b>Accessories</b> Appropriate marking system <b>Mini-WSB</b> (see section 14)				
	<b>End and intermediate plate</b>	1.1 mm / 0.043 in thick	1.1 mm / 0.043 in thick	
	grey	<b>769-303</b>	grey	<b>769-303</b> 100 (4 x 25)
	orange	<b>769-304</b>	orange	<b>769-304</b> 100 (4 x 25)
	<b>Screwless end stop</b>	6 mm / 0.236 in wide <b>249-116</b>	6 mm / 0.236 in wide <b>249-116</b>	100 (4 x 25)
		10 mm / 0.394 in wide <b>249-117</b>	10 mm / 0.394 in wide <b>249-117</b>	50 (2 x 25)
	<b>Insulation stop ②,</b> white	0.08 – 0.2 mm <sup>2</sup> <b>769-470</b>	0.08 – 0.2 mm <sup>2</sup> <b>769-470</b>	200 strips
	5 pcs/strip light grey	0.25 – 0.5 mm <sup>2</sup> <b>769-471</b>	0.25 – 0.5 mm <sup>2</sup> <b>769-471</b>	200 strips
	dark grey	0.75 – 1 mm <sup>2</sup> <b>769-472</b>	0.75 – 1 mm <sup>2</sup> <b>769-472</b>	200 strips
	<b>Adjacent jumper,</b> I <sub>N</sub> 24 A	grey <b>280-402</b>	grey <b>280-402</b>	200 (8 x 25)
	insulated			
	<b>Alternate jumper</b>	grey <b>280-409</b>	grey <b>280-409</b>	100 (4 x 25)
	<b>Staggered jumper ②,</b> from 1 to 2	I <sub>N</sub> 24 A <b>780-452</b>	I <sub>N</sub> 24 A <b>780-452</b>	100 (4 x 25)
	insulated, from 1 to 3	<b>780-453</b>	<b>780-453</b>	100 (4 x 25)
	width 5 mm / 0.197 in from 1 to 4	<b>780-454</b>	<b>780-454</b>	100 (4 x 25)
	from 1 to 5	<b>780-455</b>	<b>780-455</b>	50 (2 x 25)
	:	:	:	
	from 1 to 8	<b>780-458</b>	<b>780-458</b>	50 (2 x 25)
	<b>Push-in type wire jumper ②,</b>	L = 60 mm / 2.362 in <b>249-125</b>	L = 60 mm / 2.362 in <b>249-125</b>	10
	insulated, 9 A – conductor	L = 110 mm / 4.331 in <b>249-126</b>	L = 110 mm / 4.331 in <b>249-126</b>	10
	cross section 0.75 mm <sup>2</sup> / AWG 18	L = 250 mm / 9.843 in <b>249-127</b>	L = 250 mm / 9.843 in <b>249-127</b>	10
	<b>Coding pin,</b>			
	for coding of female plugs	orange <b>769-435</b>	orange <b>769-435</b>	100 (4 x 25)
	<b>Protective warning marker,</b>			
	for 5 terminal blocks, fits into screwdriver slot	yellow <b>280-415</b>		100 (4 x 25)
	<b>Test plug, w. cable 500 mm / 1.77"</b>			
	2 mm / 0.079 in Ø	red <b>210-136</b>	red <b>210-136</b>	50 (5 x 10)
	2.3 mm / 0.091 in Ø	yellow <b>210-137</b>	yellow <b>210-137</b>	50 (5 x 10)
	<b>Test plug module,</b>	Application notes and part numbers	Application notes and part numbers	
	for test using jumper position in current bar or cond. wire opening	see pages 2.38 – 2.40	see pages 2.38 – 2.40	
	<b>Test plug adapter,</b>	5 mm / 0.197 in wide	5 mm / 0.197 in wide	
	see also pages 2.38 – 2.40	<b>280-404</b>	<b>280-404</b>	100 (4 x 25)
		or test plug 210-137 (2.3 mm / 0.091 in Ø)	or test plug 210-137 (2.3 mm / 0.091 in Ø)	
	<b>1-conductor female plug,</b>			
	straight	see page 9.44	see page 9.44	
		angled – cannot be used	angled – cannot be used	
	<b>2-conductor female plug</b>	see page 9.45	see page 9.45	

\* For further approvals with corresponding ratings see section 15.

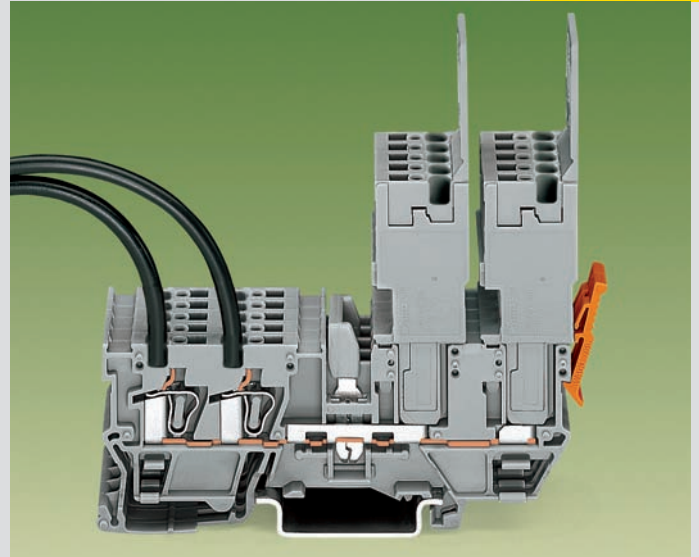
\*\* Current-carrying capacity curve see page 9.49 and www.wago.com

# Types of Assembly

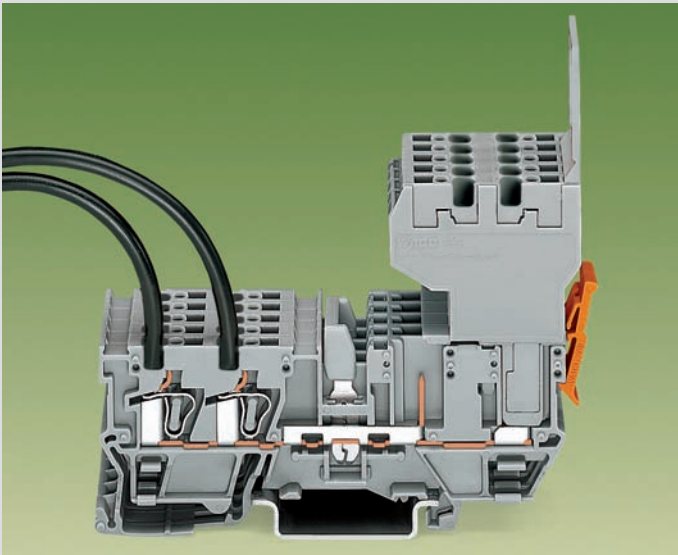
## 2-Conductor/2-Pin Receptacle Terminal Blocks and 1-/2-Conductor Female Plugs



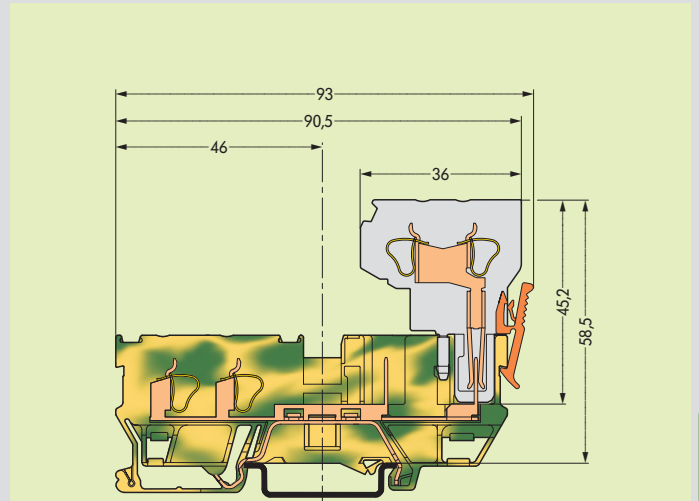
1-conductor female plug  
Commoning possibility of receptacle terminal blocks with jumper contact systems, series 280 and 780, and testing possibility with test plug adapter 280-4..



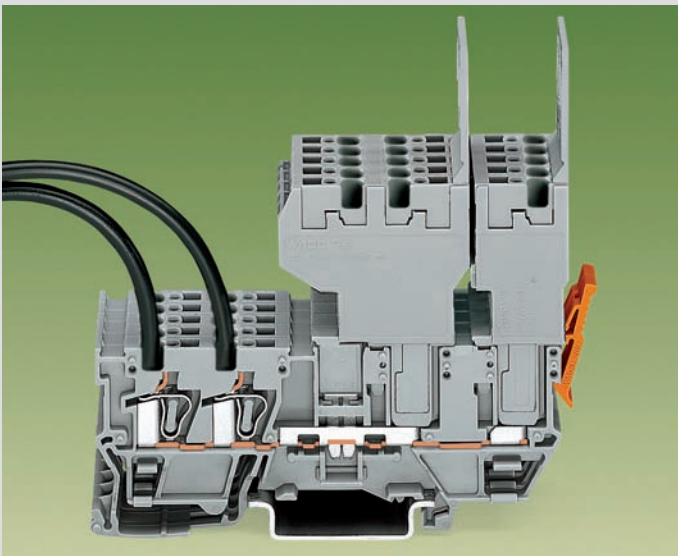
2 x 1-conductor female plugs  
Commoning possibility of receptacle terminal blocks with jumper contact systems, series 280 and 780, and testing possibility with test plug adapter 280-4..



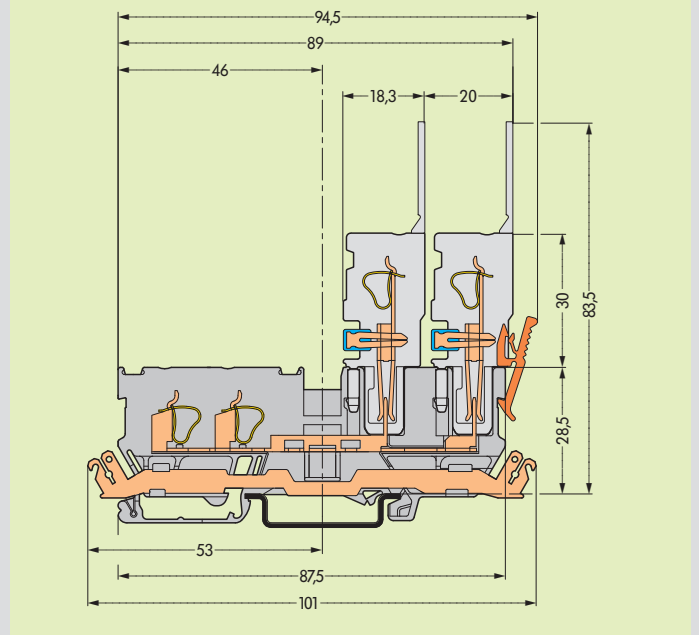
2-conductor female plug  
Commoning possibility of receptacle terminal blocks with jumper contact systems, series 280 and 780, and testing possibility with test plug adapter 280-4..



Ground (earth) receptacle terminal block



1-conductor female plug and 2-conductor female plug  
Commoning possibility of receptacle terminal blocks only with adjacent jumpers and alternate jumpers, series 280



Receptacle terminal block with shield (screen) contact

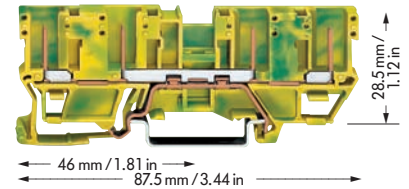
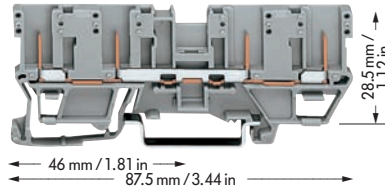


# 9 X-COM®-SYSTEM

## 18 4-Pin Receptacle Terminal Blocks

	<b>500 V/6 kV/3 ①</b>   <b>300/600 V, 10/5 A ②</b> <b>250 V/4 kV/3 ①</b>   <b>300 V, 10 A ③</b> <b>32 A**</b> <b>Terminal block width 5 mm / 0.197 in</b>	<b>Terminal block width 5 mm / 0.197 in</b>
	*	*

- ① 500 V = rated voltage  
 6 kV = rated surge voltage  
 3 = pollution degree  
 250 V/4 kV/3 = rated voltage with shield (screen) contact (see also section 15)  
 ② See application notes on page 2.45

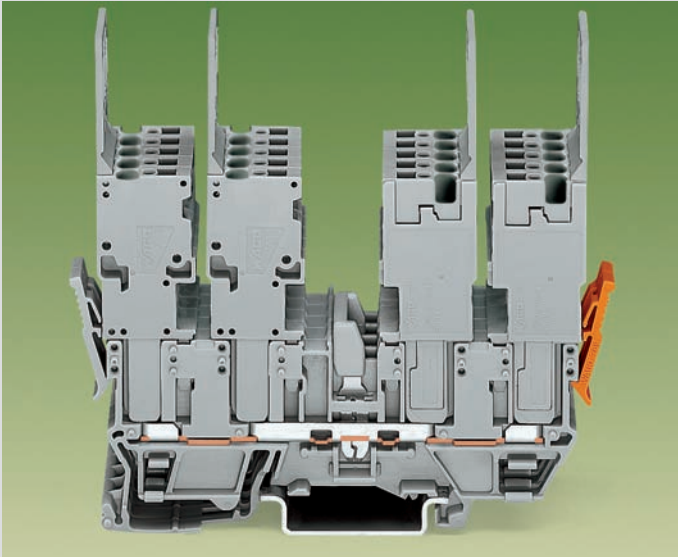
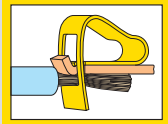


Description	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>4-pin receptacle terminal block,</b> suitable for DIN 35 rail acc. to EN 60715	<b>4-pin receptacle terminal block</b> grey <b>769-151</b>	50	<b>4-pin ground (earth) receptacle terminal block</b> green-yellow <b>769-207</b>	50
	<b>4-pin receptacle terminal block with shield (screen) contact, (no picture)</b> grey <b>769-201</b>	50		
<b>Accessories</b>	Appropriate marking system <b>Mini-WSB</b> (see section 14)			
<b>End and intermediate plate</b>	1.1 mm / 0.043 in thick		1.1 mm / 0.043 in thick	
	grey <b>769-301</b>	100 (4 x 25)	grey <b>769-301</b>	100 (4 x 25)
	orange <b>769-302</b>	100 (4 x 25)	orange <b>769-302</b>	100 (4 x 25)
<b>Screwless end stop</b>	6 mm / 0.236 in wide <b>249-116</b>	100 (4 x 25)	6 mm / 0.236 in wide <b>249-116</b>	100 (4 x 25)
	10 mm / 0.394 in wide <b>249-117</b>	50 (2 x 25)	10 mm / 0.394 in wide <b>249-117</b>	50 (2 x 25)
<b>Adjacent jumper,</b> I <sub>N</sub> 24 A insulated	grey <b>280-402</b>	200 (8 x 25)	grey <b>280-402</b>	200 (8 x 25)
<b>Alternate jumper</b>	grey <b>280-409</b>	100 (4 x 25)	grey <b>280-409</b>	100 (4 x 25)
<b>Staggered jumper</b> ②, from 1 to 2 insulated, from 1 to 3 width 5 mm / 0.197 in from 1 to 4 from 1 to 5 :	I <sub>N</sub> 24 A <b>780-452</b>	100 (4 x 25)	I <sub>N</sub> 24 A <b>780-452</b>	100 (4 x 25)
	<b>780-453</b>	100 (4 x 25)	<b>780-453</b>	100 (4 x 25)
	<b>780-454</b>	100 (4 x 25)	<b>780-454</b>	100 (4 x 25)
	<b>780-455</b>	50 (2 x 25)	<b>780-455</b>	50 (2 x 25)
	<b>780-458</b>	50 (2 x 25)	<b>780-458</b>	50 (2 x 25)
<b>Push-in type wire jumper</b> ②, insulated, 9 A – conductor cross section 0.75 mm <sup>2</sup> /AWG 18	L = 60 mm / 2.362 in <b>249-125</b>	10	L = 60 mm / 2.362 in <b>249-125</b>	10
	L = 110 mm / 4.331 in <b>249-126</b>	10	L = 110 mm / 4.331 in <b>249-126</b>	10
	L = 250 mm / 9.843 in <b>249-127</b>	10	L = 250 mm / 9.843 in <b>249-127</b>	10
<b>Coding pin,</b> for coding of female plugs	orange <b>769-435</b>	100 (4 x 25)	orange <b>769-435</b>	100 (4 x 25)
<b>Test plug,</b> with cable 500 mm / 1.77" 2.3 mm / 0.091 in Ø	yellow <b>210-137</b>	50 (5 x 10)	yellow <b>210-137</b>	50 (5 x 10)
<b>Test plug module,</b> for test using jumper position in current bar or cond. wire opening	Application notes and part numbers see pages 2.39 – 2.40		Application notes and part numbers see pages 2.39 – 2.40	
<b>Test plug adapter,</b> see also pages 2.39 – 2.40	5 mm / 0.197 in wide <b>280-404</b>	100 (4 x 25)	5 mm / 0.197 in wide <b>280-404</b>	100 (4 x 25)
	or test plug 210-137 (2.3 mm / 0.091 in Ø)		or test plug 210-137 (2.3 mm / 0.091 in Ø)	
<b>1-conductor female plug,</b> straight	see page 9.44		see page 9.44	
	angled – cannot be used		angled – cannot be used	
<b>2-conductor female plug</b>	see page 9.45		see page 9.45	

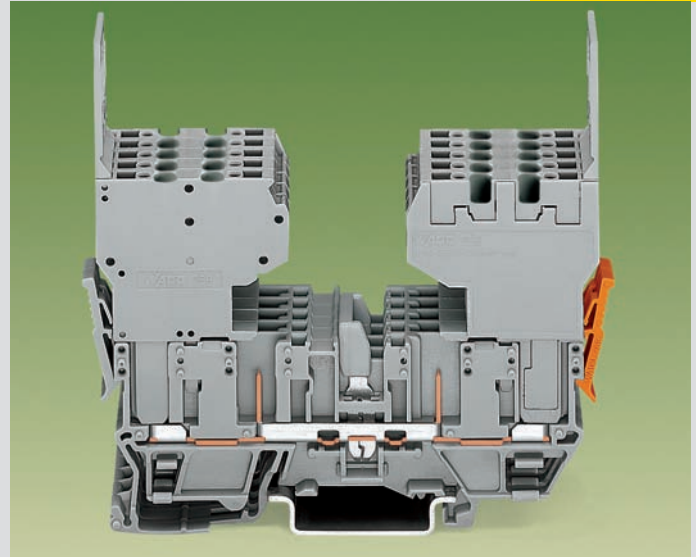
\* For further approvals with corresponding ratings see section 15.

\*\* Current-carrying capacity curve see page 9.49 and www.wago.com

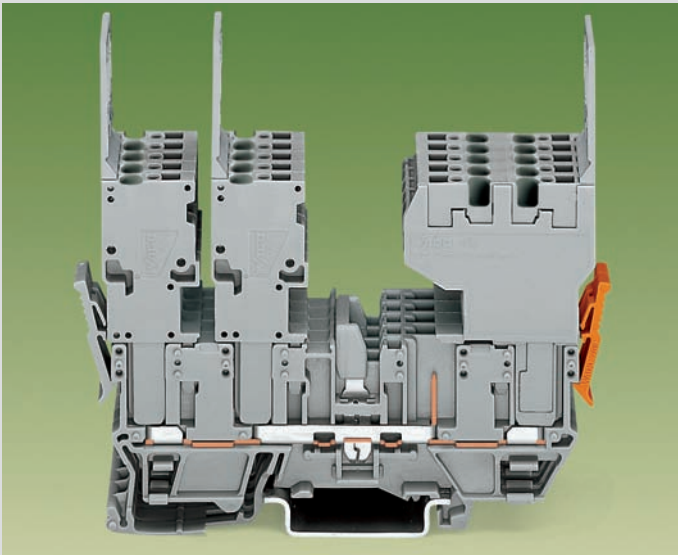
# Types of Assembly 4-Pin Receptacle Terminal Blocks and 1-/2-Conductor Female Plugs



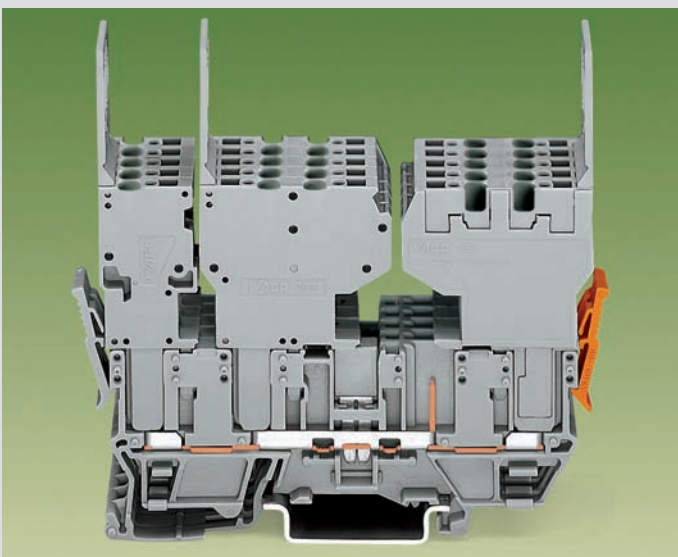
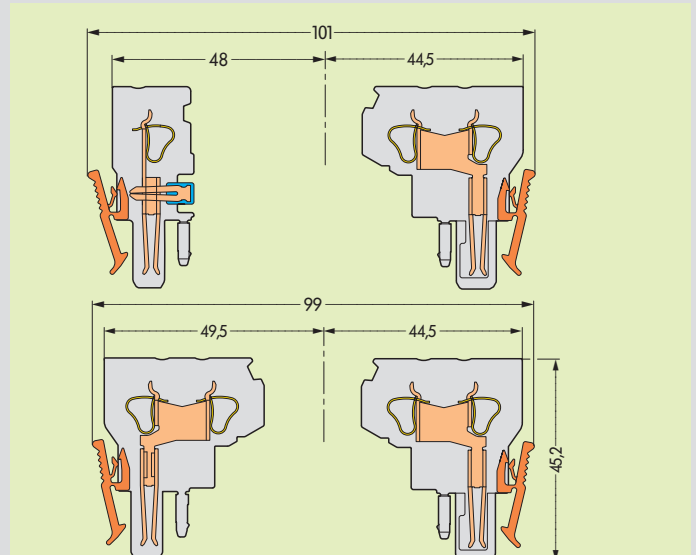
4 x 1-conductor female plugs  
Commoning possibility of receptacle terminal blocks with jumper contact systems, series 280 and 780, and testing possibility with test plug adapter 280-4..



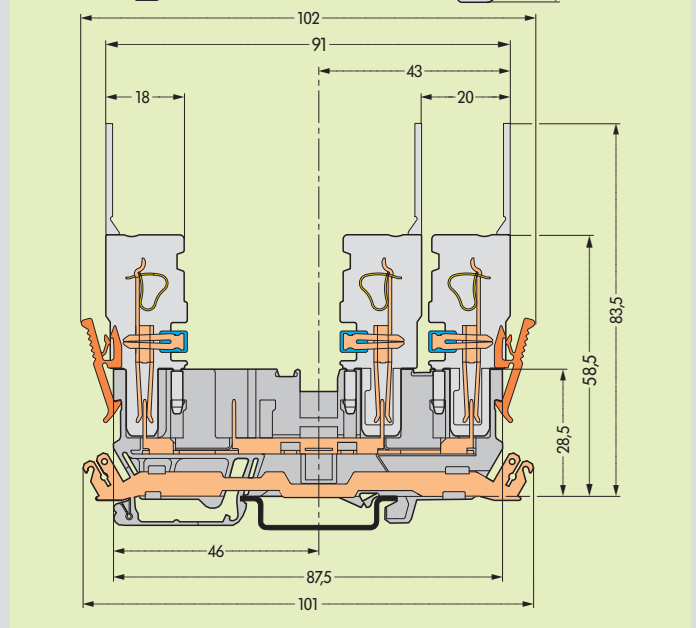
2 x 2-conductor female plugs  
Commoning possibility of receptacle terminal blocks with jumper contact systems, series 280 and 780, and testing possibility with test plug adapter 280-4..



2 x 1-cond. fem. plugs left  
1 x 2-cond. female plug right  
Commoning possibility of receptacle terminal blocks w. jumper contact systems, series 280 a. 780. Also possible the other way round a. testing possibility w. test plug adapter 280-4..







1-conductor and 2-conductor female plugs left  
2-conductor female plug right  
Commoning possibility of receptacle terminal blocks only with adjacent jumpers and alternate jumpers, series 280. Also possible the other way round



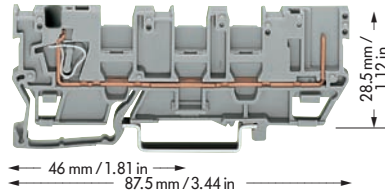
Receptacle terminal block with shield (screen) contact

# X-COM® -SYSTEM






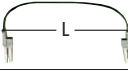







## 1-Conductor/1-Pin Receptacle Terminal Blocks with 3 Jumper Positions

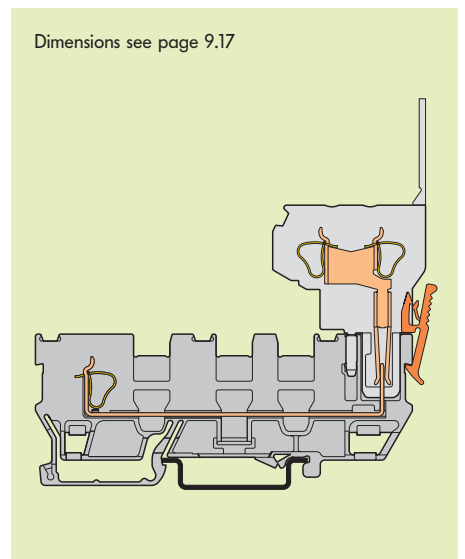
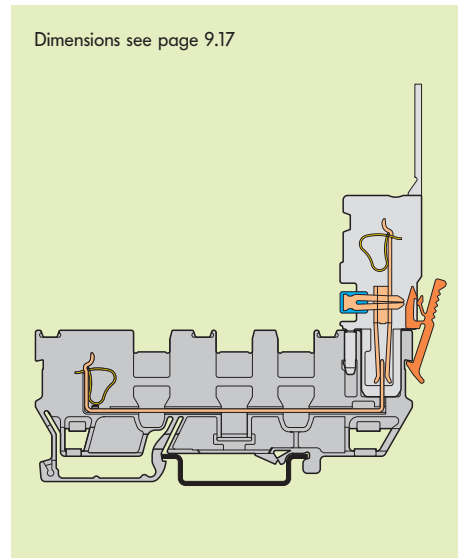
	<b>0.08 – 4 mm<sup>2</sup></b> <b>500 V/6 kV/3 ①</b> <b>32 A**</b>	<b>AWG 28 – 12</b> <b>300/600 V, 10/5 A ②</b> <b>300 V, 10 A ③</b>	<b>Types of assembly</b> <b>with 1-/2-conductor female plugs</b>
	<b>Terminal block width 5 mm / 0.197 in</b>  <b>8 – 9 mm / 0.33 in</b>		
	*   		

- ① 500 V = rated voltage  
6 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② See application notes on pages 2.43 – 2.45



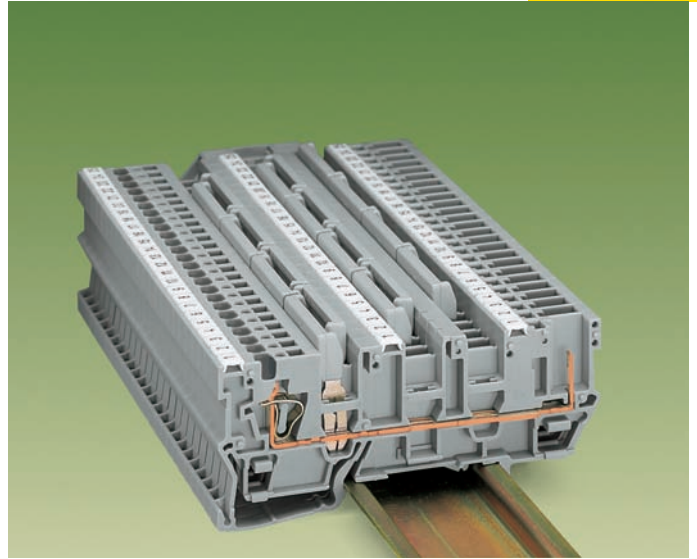
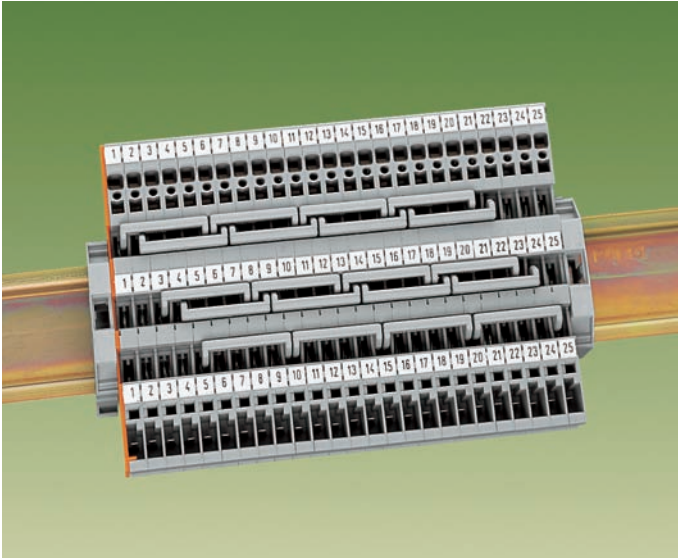
Description	Item No.	Pack. unit pcs
<b>1-conductor/1-pin receptacle terminal block with 3 jumper positions, suitable for DIN 35 rail acc. to EN 60715</b>	<b>1-conductor/1-pin receptacle terminal block with 3 jumper positions</b> grey <b>769-214</b>	50

Accessories		Appropriate marking system <b>Mini-WSB</b> (see section 14)	
	<b>End and intermediate plate</b>	1.1 mm / 0.043 in thick	
		grey <b>769-315</b>	100 (4 x 25)
		orange <b>769-316</b>	100 (4 x 25)
	<b>Screwless end stop</b>	6 mm / 0.236 in wide <b>249-116</b>	100 (4 x 25)
		10 mm / 0.394 in wide <b>249-117</b>	50 (2 x 25)
	<b>Insulation stop ②</b> , white	0.08 – 0.2 mm <sup>2</sup> <b>769-470</b>	200 strips
	5 pcs/strip light grey	0.25 – 0.5 mm <sup>2</sup> <b>769-471</b>	200 strips
	dark grey	0.75 – 1 mm <sup>2</sup> <b>769-472</b>	200 strips
	<b>Adjacent jumper, I<sub>N</sub> 24 A</b>	grey <b>280-402</b>	200 (8 x 25)
	insulated		
	<b>Alternate jumper</b>	grey <b>280-409</b>	100 (4 x 25)
	<b>Staggered jumper ②</b> , from 1 to 2	I <sub>N</sub> 24 A <b>780-452</b>	100 (4 x 25)
	insulated, from 1 to 3	<b>780-453</b>	100 (4 x 25)
	width 5 mm / 0.197 in from 1 to 4	<b>780-454</b>	100 (4 x 25)
	from 1 to 5	<b>780-455</b>	50 (2 x 25)
	:	:	:
	from 1 to 8	<b>780-458</b>	50 (2 x 25)
	<b>Push-in type wire jumper ②</b> , L = 60 mm / 2.362 in <b>249-125</b>		10
	insulated, 9 A – conductor L = 110 mm / 4.331 in <b>249-126</b>		10
	cross section 0.75 mm <sup>2</sup> / AWG 18 L = 250 mm / 9.843 in <b>249-127</b>		10
	<b>Coding pin, for coding of female plugs</b>	orange <b>769-435</b>	100 (4 x 25)
	<b>Protective warning marker, for 5 terminal blocks, fits into screwdriver slot</b>	yellow <b>280-415</b>	100 (4 x 25)
	<b>Test plug, w. cable 500 mm / 1'7.7"</b>		
	2 mm / 0.079 in Ø red <b>210-136</b>		50 (5 x 10)
	2.3 mm / 0.091 in Ø yellow <b>210-137</b>		50 (5 x 10)
	<b>Test plug module, for test using jumper position in current bar or cond. wire opening</b>	Application notes and part numbers see pages 2.38 – 2.40	
	<b>Test plug adapter, 5 mm / 0.197 in wide</b>	<b>280-404</b>	100 (4 x 25)
	see also pages 2.38 – 2.40	or test plug 210-137 (2.3 mm / 0.091 in Ø)	
	<b>1-conductor female plug, straight or angled</b>	see pages 9.44/9.46	
	<b>2-conductor female plug</b>	see page 9.45	



\* For further approvals with corresponding ratings see section 15.

\*\* Current-carrying capacity curve see www.wago.com



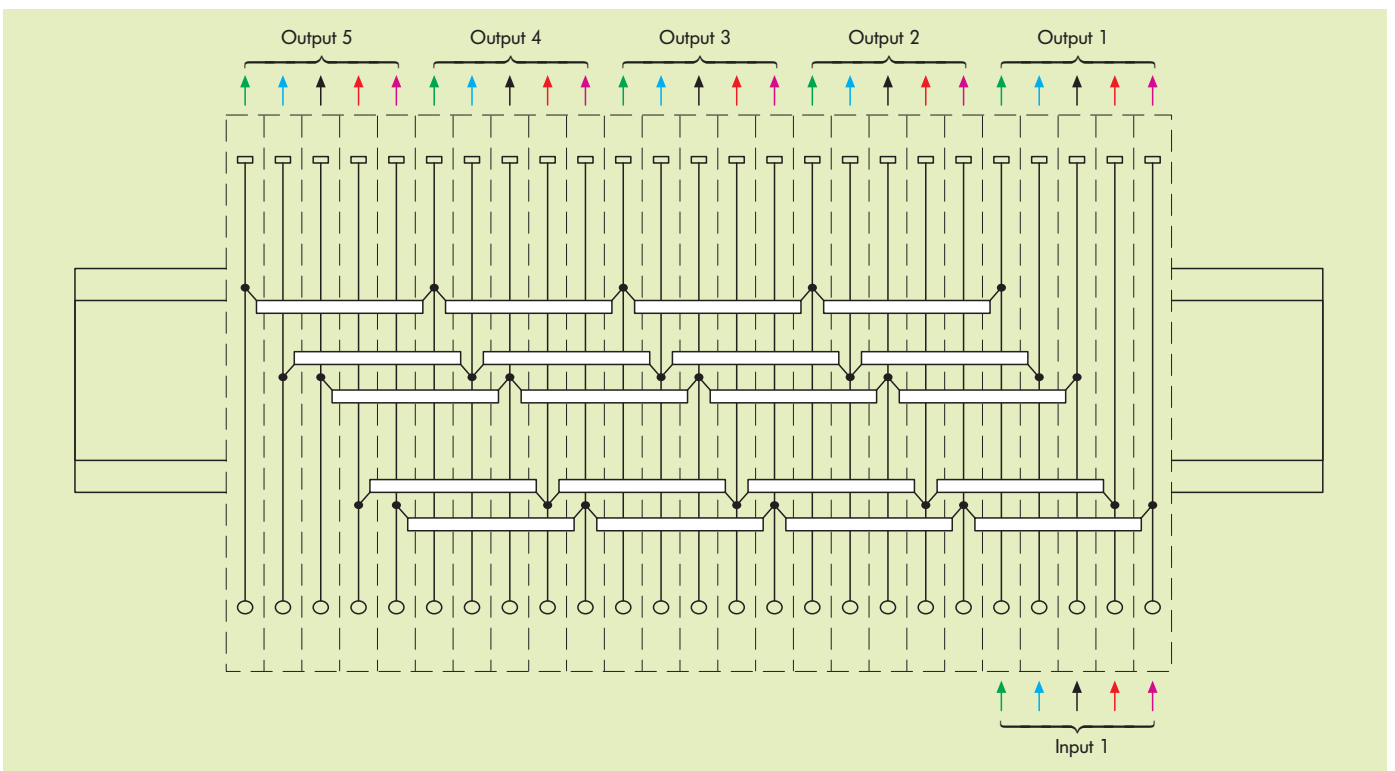
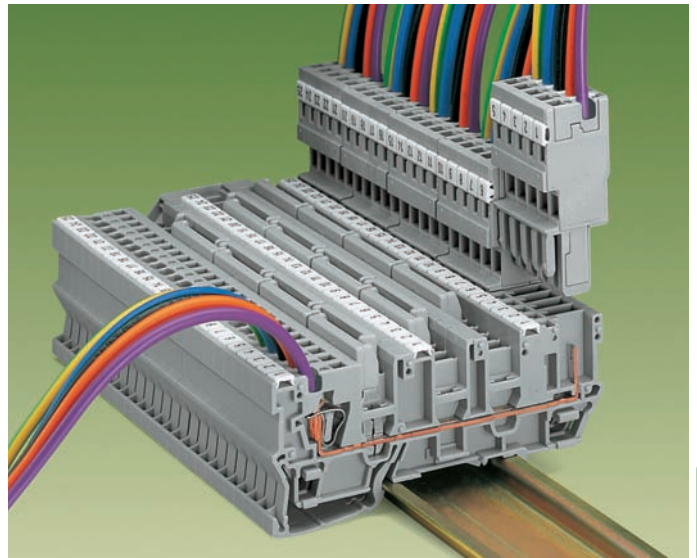
### 1-conductor/1-pin receptacle terminal blocks with 3 jumper positions

The 3 jumper positions allow up to six jumpering possibilities for staggered jumpers.

The pictures opposite and the wiring scheme demonstrate the supply of a 5-wire input to 5 identical pluggable outputs.

Application examples:

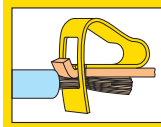
- Multiplication of three-phase circuits L1-L2-L3-N-PE with pluggable outputs; for example, use with motors, frequency converters, power units, etc.
- voltage supplies to multiple locations  
± 15 V, 0 V, + 5 V, + 12 V, + 24 V
- Various wire-to-wire interfacing possibilities

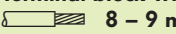




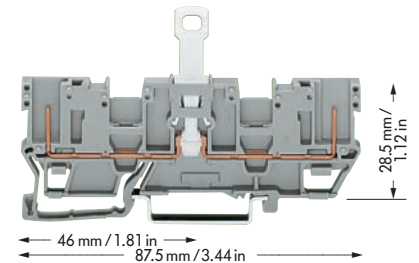
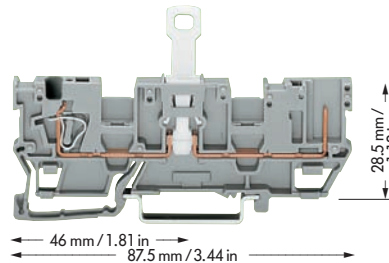














# 1-Conductor/1-Pin and 2-Pin Disconnect Receptacle Terminal Blocks with 2 Jumper Positions



<p><b>0.08 – 4 mm<sup>2</sup></b>  <b>400 V/6 kV/3 ①</b>  <b>250 V/4 kV/3 ①</b>  <b>16 A**</b>  <b>Terminal block width 5 mm / 0.197 in</b>   <b>8 – 9 mm / 0.33 in</b></p> <p><b>AWG 28 – 12</b>  <b>300/600 V, 10/5 A ②</b>  <b>300 V, 10 A ③</b></p> <p><b>* ② CCA ③ LR</b></p>	<p><b>400 V/6 kV/3 ①</b>   <b>300/600 V, 10/5 A ②</b>  <b>250 V/4 kV/3 ①</b>   <b>300 V, 10 A ③</b>  <b>16 A**</b>  <b>Terminal block width 5 mm / 0.197 in</b></p> <p><b>* ② CCA ③ LR</b></p>
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- ① 400 V = rated voltage  
 6 kV = rated surge voltage  
 3 = pollution degree  
 250 V/4 kV/3 = rated voltage with shield (screen) contact (see also section 15)
- ② See application notes on pages 2.43 – 2.45



Description	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>1-conductor/1-pin and 2-pin disconnect receptacle terminal block</b>	<b>1-cond./1-pin disconnect receptacle term. block</b>		<b>2-pin disconnect receptacle terminal block</b>	
grey	<b>769-212</b>	50	grey	<b>769-202</b>
<b>without/with shield (screen) contact,</b>	<b>1-conductor/1-pin disconnect receptacle terminal block with shield (screen) contact (no picture)</b>		<b>2-pin disconnect receptacle terminal block with shield (screen) contact (no picture)</b>	
suitable for DIN 35 rail acc. to EN 60715	grey	<b>769-213</b>	grey	<b>769-203</b>
		50		50
<b>Accessories</b>	Appropriate marking system <b>Mini-WSB</b> (see section 14)			
	<b>End and intermediate plate</b>	1.1 mm / 0.043 in thick	1.1 mm / 0.043 in thick	
	grey	<b>769-311</b>	grey	<b>769-309</b>
	orange	<b>769-312</b>	orange	<b>769-310</b>
		100 (4 x 25)		100 (4 x 25)
	<b>Separator plate, oversized</b>	1.1 mm / 0.043 in thick	1.1 mm / 0.043 in thick	
	orange	<b>769-314</b>	orange	<b>769-313</b>
		100 (4 x 25)		100 (4 x 25)
	<b>Screwless end stop</b>	6 mm / 0.236 in wide	6 mm / 0.236 in wide	
		<b>249-116</b>	<b>249-116</b>	100 (4 x 25)
		10 mm / 0.394 in wide	10 mm / 0.394 in wide	
		<b>249-117</b>	<b>249-117</b>	50 (2 x 25)
	<b>Insulation stop</b> ②, white	0.08 – 0.2 mm <sup>2</sup>		
	5 pcs/strip light grey	0.25 – 0.5 mm <sup>2</sup>		
	dark grey	0.75 – 1 mm <sup>2</sup>		
		<b>769-470</b>		200 strips
		<b>769-471</b>		200 strips
		<b>769-472</b>		200 strips
	<b>Adjacent jumper,</b> I <sub>N</sub> 24 A	grey	grey	<b>280-402</b>
	insulated			200 (8 x 25)
	<b>Alternate jumper</b>	grey	grey	<b>280-409</b>
				100 (4 x 25)
	<b>Staggered jumper</b> ②, from 1 to 2	I <sub>N</sub> 24 A	I <sub>N</sub> 24 A	<b>780-452</b>
	insulated, from 1 to 3			<b>780-453</b>
	width 5 mm / 0.197 in from 1 to 4			<b>780-454</b>
	from 1 to 5			<b>780-455</b>
	:	:	:	50 (2 x 25)
	from 1 to 8	<b>780-458</b>	<b>780-458</b>	50 (2 x 25)
	<b>Coding pin,</b>	orange	orange	<b>769-435</b>
	for coding of female plugs			100 (4 x 25)
	<b>Protective warning marker,</b>	yellow		
	for 5 terminal blocks, fits into screwdriver slot			<b>280-415</b>
				100 (4 x 25)
	<b>Test plug,</b> w. cable 500 mm / 1'7.7"			
	2 mm / 0.079 in Ø	red		<b>210-136</b>
	2.3 mm / 0.091 in Ø	yellow	yellow	<b>210-137</b>
				50 (5 x 10)
	<b>Test plug module,</b>	5 mm / 0.197 in wide	5 mm / 0.197 in wide	
	see also pages 2.38 – 2.40	<b>280-404</b>	<b>280-404</b>	100 (4 x 25)
		or test plug 210-137 (2.3 mm / 0.091 in Ø)	or test plug 210-137 (2.3 mm / 0.091 in Ø)	
	<b>1-conductor female plug,</b>	see pages 9.44/9.46	see pages 9.44/9.46	
	straight or angled			
	<b>2-conductor female plug</b>	see page 9.45	see page 9.45	
	<b>Disconnect lock,</b> for disconnecting tab of disconnect term. blocks	see also page 7.13	see also page 7.13	
		red	red	<b>709-170</b>
				200 (8 x 25)
<b>Dimensions and types of assembly</b> (see page 9.27)				

\*For further approvals with corresponding ratings see section 15.

\*\*16 A, temperature limit of 85°C

# X-COM®-SYSTEM

## 1-Conductor/1-Pin and 2-Pin Diode and LED Receptacle Terminal Blocks

	<b>0.08 – 4 mm<sup>2</sup>   AWG 28 – 12</b>  <b>Terminal block width 5 mm / 0.197 in</b> <b>8 – 9 mm / 0.33 in</b> *	<b>Terminal block width 5 mm / 0.197 in</b>  *
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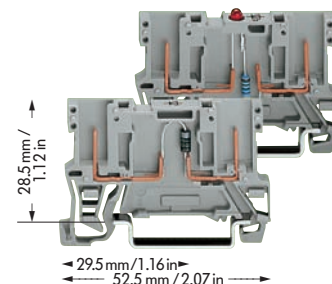
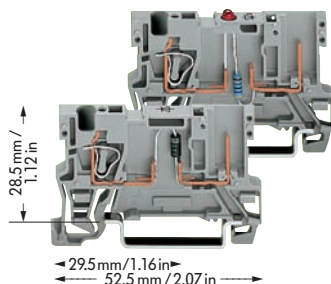
### Technical data

#### Diode

U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V 300/600 V, 10/5 A   
 1 N 4007 – 0.5 A constant current 300 V, 10 A

#### LED

DC 24 V 300/600 V, 10/5 A   
 IF 25 mA max. 300 V, 10 A



① For information on use of insulation stops and wire range, see page 2.43

Description	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>1-conductor/1-pin diode receptacle terminal block,</b>	<b>1-cond./1-pin diode receptacle term. blocks, grey</b>		<b>2-pin diode receptacle terminal blocks, grey</b>	
<b>2-pin diode receptacle terminal block,</b>	Anode left <b>769-238/281-410</b>	100	Anode left <b>769-228/281-410</b>	100
	Anode right <b>769-238/281-411</b>	100	Anode right <b>769-228/281-411</b>	100
<b>1-conductor/1-pin LED receptacle terminal block,</b>	<b>1-cond./1-pin LED receptacle term. blocks, grey</b>		<b>2-pin LED receptacle terminal blocks, grey</b>	
<b>2-pin LED receptacle terminal block</b>	Anode right <b>769-239/281-413</b>	100	Anode right <b>769-229/281-413</b>	100
	Anode left <b>769-239/281-434</b>	100	Anode left <b>769-229/281-434</b>	100
suitable for DIN 35 rail acc. to EN 60715				

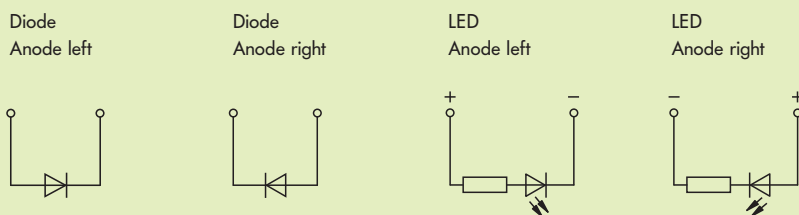
### Accessories

Appropriate marking system **Mini-WSB** (see section 14)

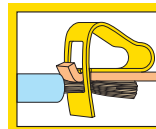
	<b>End and intermediate plate</b>	1.1 mm / 0.043 in thick grey <b>769-307</b> 100 (4 x 25) orange <b>769-308</b> 100 (4 x 25)	1.1 mm / 0.043 in thick grey <b>769-305</b> 100 (4 x 25) orange <b>769-306</b> 100 (4 x 25)
	<b>Screwless end stop</b>	6 mm / 0.236 in wide <b>249-116</b> 100 (4 x 25) 10 mm / 0.394 in wide <b>249-117</b> 50 (2 x 25)	6 mm / 0.236 in wide <b>249-116</b> 100 (4 x 25) 10 mm / 0.394 in wide <b>249-117</b> 50 (2 x 25)
	<b>Insulation stop</b> ①, 5 pcs/strip	white 0.08 – 0.2 mm <sup>2</sup> <b>769-470</b> 200 strips light grey 0.25 – 0.5 mm <sup>2</sup> <b>769-471</b> 200 strips dark grey 0.75 – 1 mm <sup>2</sup> <b>769-472</b> 200 strips	
	<b>Coding pin,</b> for coding of female plugs	orange <b>769-435</b> 100 (4 x 25)	orange <b>769-435</b> 100 (4 x 25)
	<b>Protective warning marker,</b> for 5 terminal blocks, fits into screwdriver slot	yellow <b>280-415</b> 100 (4 x 25)	
	<b>Test plug,</b> w. cable 500 mm / 1.77"	2 mm / 0.079 in Ø red <b>210-136</b> 50 (5 x 10) 2.3 mm / 0.091 in Ø yellow <b>210-137</b> 50 (5 x 10)	yellow <b>210-137</b> 50 (5 x 10)
	<b>1-conductor female plug,</b> straight or angled	see pages 9.44/9.46	see pages 9.44/9.46
	<b>2-conductor female plug</b>	cannot be used	cannot be used

### Dimensions and types of assembly (see page 9.26)

### Connection schemes



\* For further approvals with corresponding ratings see section 15.



# 1-Conductor/1-Pin and 2-Pin Diode and LED Receptacle Terminal Blocks with 2 Jumper Positions

	<b>0.08 – 4 mm<sup>2</sup>   AWG 28 – 12</b>  <b>Terminal block width 5 mm / 0.197 in</b> <b>8 – 9 mm / 0.33 in</b>  *	<b>Terminal block width 5 mm / 0.197 in</b>  *
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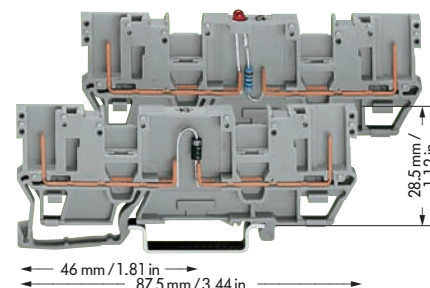
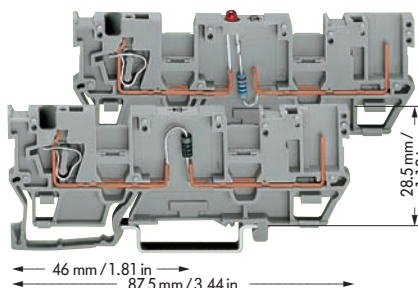
## Technical data

### Diode

U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V 300/600 V, 10/5 A   
 1 N 4007 – 0.5 A constant current 300 V, 10 A

### LED

DC 24 V 300/600 V, 10/5 A   
 IF 25 mA max. 300 V, 10 A



① See application notes on pages 2.43 – 2.45

Description	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>1-conductor/1-pin diode receptacle terminal block, 2-pin diode receptacle terminal block,</b>	<b>1-cond./1-pin diode receptacle term. blocks, grey</b>		<b>2-pin diode receptacle terminal blocks, grey</b>	
	Anode left <b>769-218/281-410</b>	50	Anode left <b>769-208/281-410</b>	50
	Anode right <b>769-218/281-411</b>	50	Anode right <b>769-208/281-411</b>	50
<b>1-conductor/1-pin LED receptacle terminal block, 2-pin LED receptacle terminal block</b>	<b>1-cond./1-pin LED receptacle term. blocks, grey</b>		<b>2-pin LED receptacle terminal blocks, grey</b>	
	Anode right <b>769-219/281-413</b>	50	Anode right <b>769-209/281-413</b>	50
	Anode left <b>769-219/281-434</b>	50	Anode left <b>769-209/281-434</b>	50
suitable for DIN 35 rail acc. to EN 60715				
<b>Accessories</b> Appropriate marking system <b>Mini-WSB</b> (see section 14)				
	<b>End and intermediate plate</b>	1.1 mm / 0.043 in thick	1.1 mm / 0.043 in thick	
		grey <b>769-311</b> 100 (4 x 25) orange <b>769-312</b> 100 (4 x 25)	grey <b>769-309</b> 100 (4 x 25) orange <b>769-310</b> 100 (4 x 25)	
	<b>Separator plate, oversized</b>	1.1 mm / 0.043 in thick	1.1 mm / 0.043 in thick	
		orange <b>769-314</b> 100 (4 x 25)	orange <b>769-313</b> 100 (4 x 25)	
	<b>Screwless end stop</b>	6 mm / 0.236 in wide <b>249-116</b> 100 (4 x 25) 10 mm / 0.394 in wide <b>249-117</b> 50 (2 x 25)	6 mm / 0.236 in wide <b>249-116</b> 100 (4 x 25) 10 mm / 0.394 in wide <b>249-117</b> 50 (2 x 25)	
	<b>Insulation stop</b> , white 0.08 – 0.2 mm <sup>2</sup> <b>769-470</b> 200 strips 5 pcs/strip light grey 0.25 – 0.5 mm <sup>2</sup> <b>769-471</b> 200 strips dark grey 0.75 – 1 mm <sup>2</sup> <b>769-472</b> 200 strips			
	<b>Adjacent jumper</b> , I <sub>N</sub> 24 A insulated	grey <b>280-402</b> 200 (8 x 25)	grey <b>280-402</b> 200 (8 x 25)	
	<b>Alternate jumper</b>	grey <b>280-409</b> 100 (4 x 25)	grey <b>280-409</b> 100 (4 x 25)	
	<b>Staggered jumper</b> , from 1 to 2 insulated, from 1 to 3 width 5 mm / 0.197 in from 1 to 4 from 1 to 5 :	I <sub>N</sub> 24 A <b>780-452</b> 100 (4 x 25) <b>780-453</b> 100 (4 x 25) <b>780-454</b> 100 (4 x 25) <b>780-455</b> 50 (2 x 25) :	I <sub>N</sub> 24 A <b>780-452</b> 100 (4 x 25) <b>780-453</b> 100 (4 x 25) <b>780-454</b> 100 (4 x 25) <b>780-455</b> 50 (2 x 25) :	
	from 1 to 8	<b>780-458</b> 50 (2 x 25)	<b>780-458</b> 50 (2 x 25)	
	<b>Coding pin</b> , for coding of female plugs	orange <b>769-435</b> 100 (4 x 25)	orange <b>769-435</b> 100 (4 x 25)	
	<b>Protective warning marker</b> , for 5 terminal blocks, fits into screwdriver slot	yellow <b>280-415</b> 100 (4 x 25)		
	<b>Test plug</b> , w. cable 500 mm / 1.77" 2 mm / 0.079 in Ø 2.3 mm / 0.091 in Ø	red <b>210-136</b> 50 (5 x 10) yellow <b>210-137</b> 50 (5 x 10)		yellow <b>210-137</b> 50 (5 x 10)
<b>Test plug adapter</b> , see pages 2.38 – 2.40	5 mm / 0.197 in wide <b>280-404</b> 100 (4 x 25) or test plug 210-137 (2.3 mm / 0.091 in Ø)		5 mm / 0.197 in wide <b>280-404</b> 100 (4 x 25) or test plug 210-137 (2.3 mm / 0.091 in Ø)	
<b>1-conductor female plug</b> , straight or angled	see pages 9.44/9.46		see pages 9.44/9.46	
<b>2-conductor female plug</b>	see page 9.45		see page 9.45	

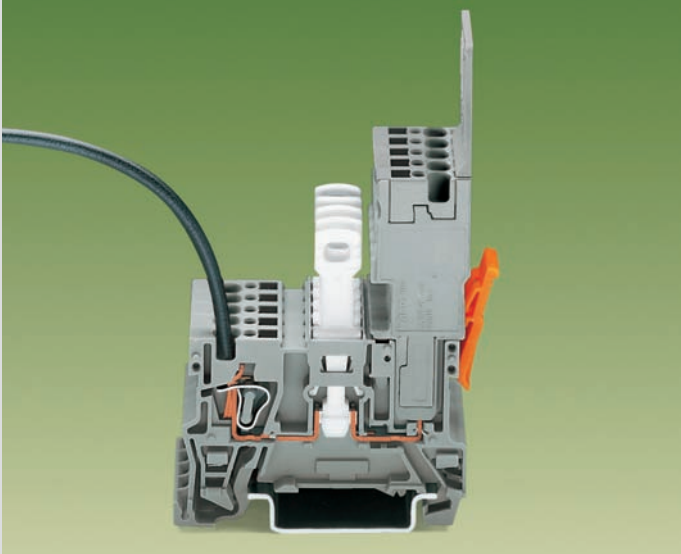
## Dimensions and types of assembly (see page 9.27)

\* For further approvals with corresponding ratings see section 15.



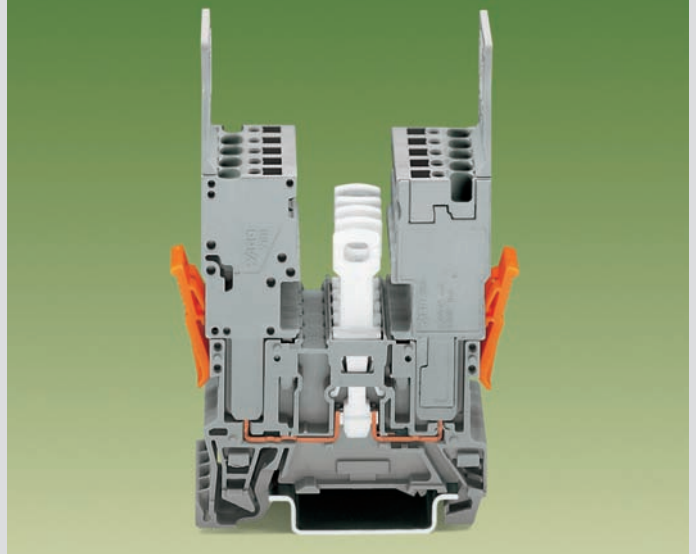
# Types of Assembly

## 1-Conductor/1-Pin and 2-Pin Receptacle Terminal Blocks and 1-Conductor Female Plugs



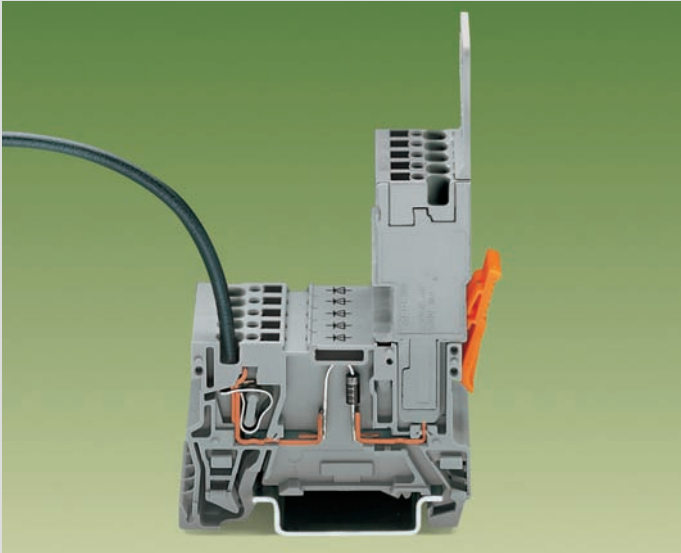
1-conductor female plug

The commoning of disconnect receptacle terminal blocks is not possible



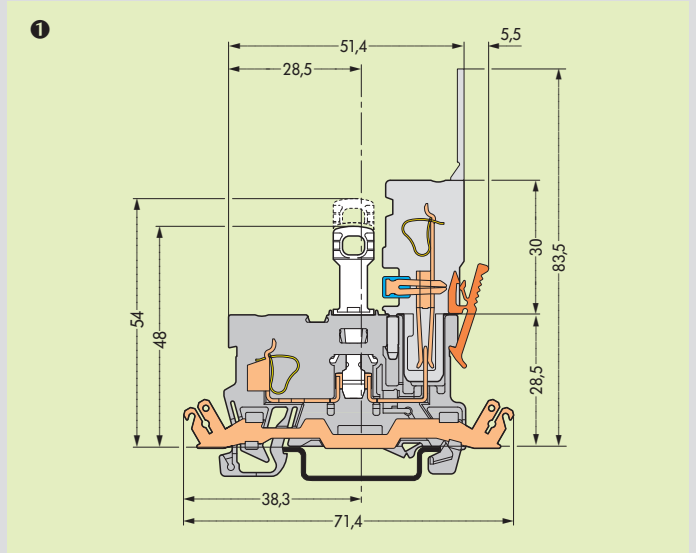
2 x 1-conductor female plugs

The commoning of disconnect receptacle terminal blocks is not possible



1-conductor female plug

The commoning of diode receptacle terminal blocks is not possible



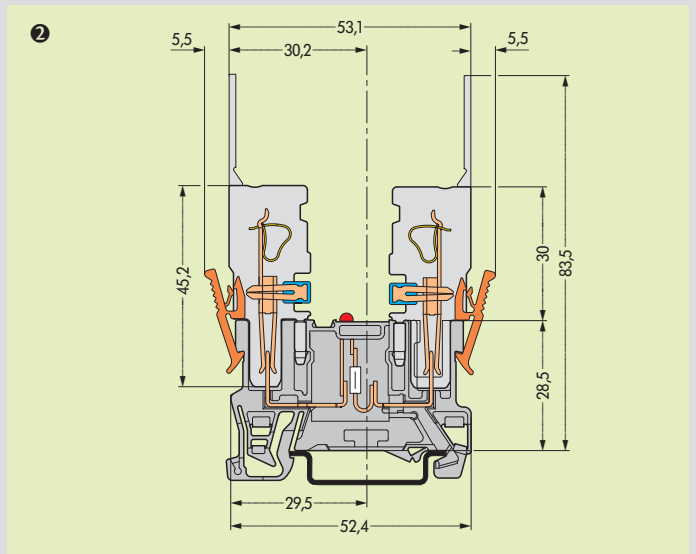
Disconnect receptacle terminal block with shield (screen) contact

① Please see also page 9.13 for further dimensions.



2 x 1-conductor female plugs

The commoning of LED receptacle terminal blocks is not possible

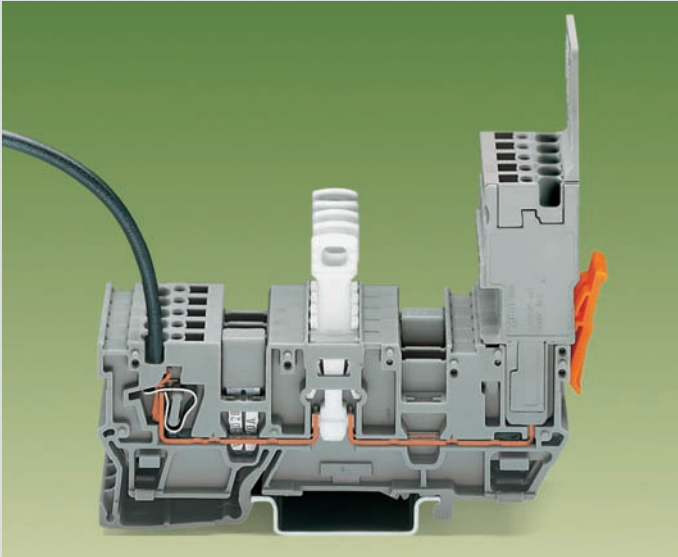
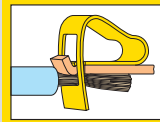


LED receptacle terminal block

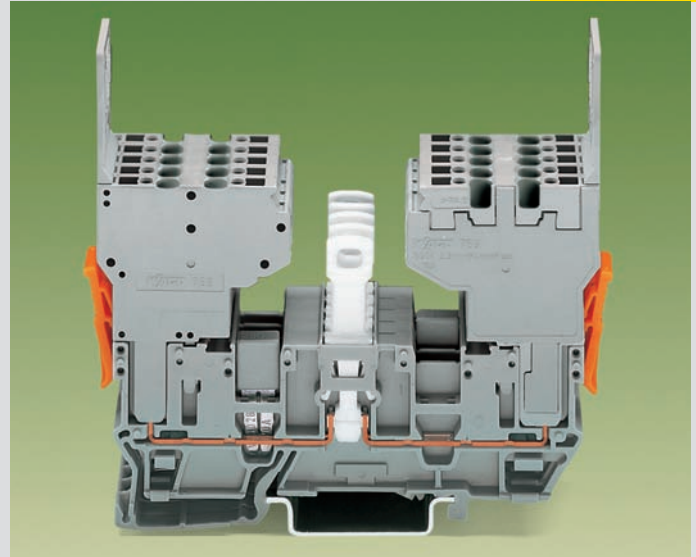
② Please see also page 9.15 for further dimensions

# Types of Assembly

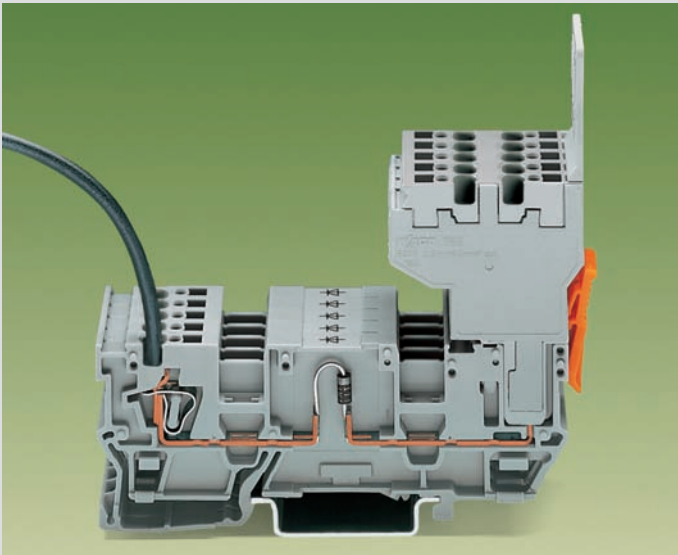
## 1-Conductor/1-Pin and 2-Pin Receptacle Terminal Blocks with 2 Jumper Positions and 1-/2-Conductor Female Plugs



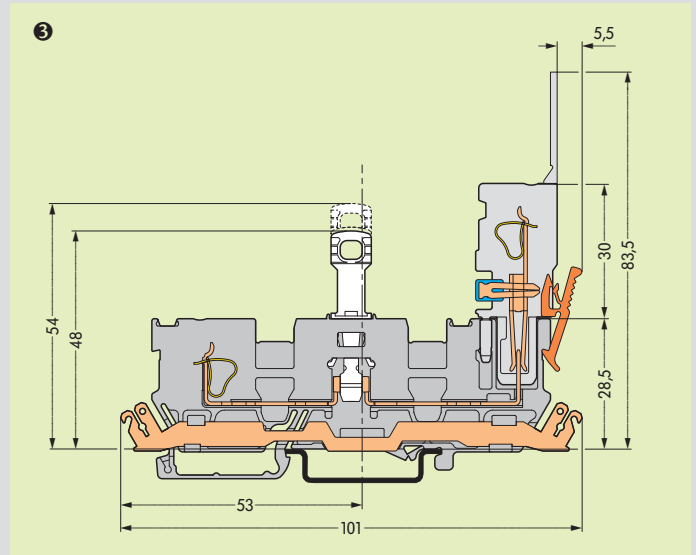
**1-conductor female plug** Commoning possibility of disconnect receptacle terminal block with jumper contact systems, series 280 and 780, and testing possibility with test plug adapter 280-4..



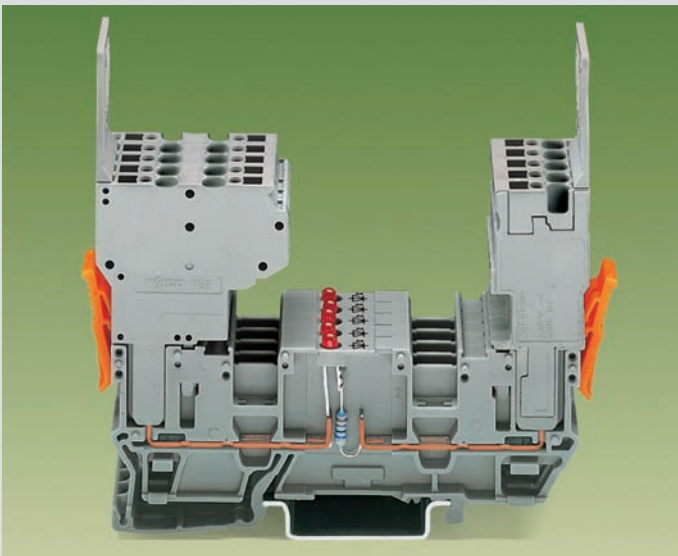
**2-conductor female plug, left  
2-conductor female plug, right** Commoning possibility of disconnect receptacle terminal blocks with jumper contact systems, series 280 and 780



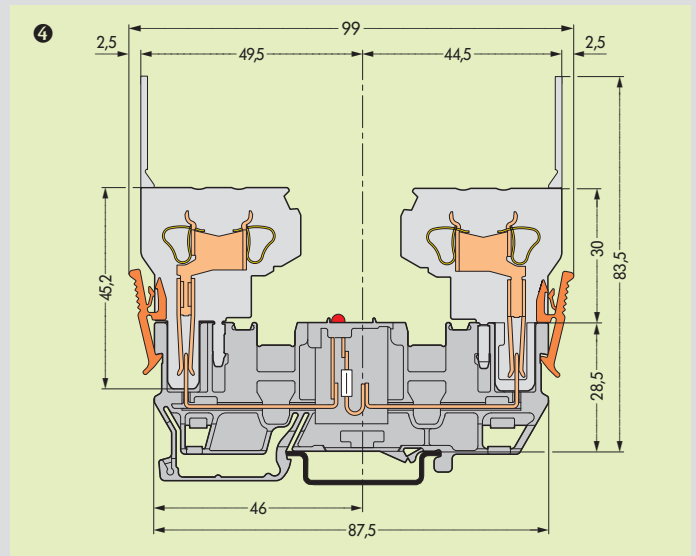
**2-conductor female plug** Commoning possibility of disconnect receptacle terminal blocks with jumper contact systems, series 280 and 780, and testing possibility with test plug adapter 280-4..



**Disconnect receptacle terminal block with shield (screen) contact**  
③ Please see also page 9.17 for further dimensions.














**2-conductor female plug, left  
1-conductor female plug, right** Vice versa possible too  
Commoning possibility of LED receptacle terminal block with jumper contact systems, series 280 and 780, and testing possibility w. test plug adapter 280-4..



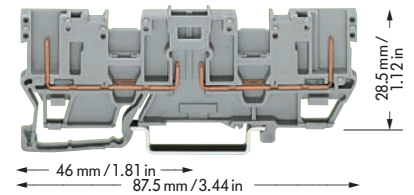
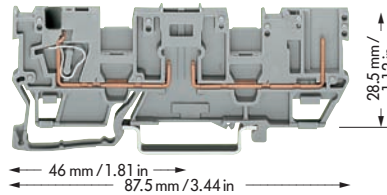
**LED receptacle terminal block**  
④ Please see also page 9.19 for further dimensions

# X-COM®-SYSTEM

## Receptacle Terminal Blocks with 2 Jumper Positions Used for Pluggable Modules, Series 280 and 281

<b>0.08 – 4 mm<sup>2</sup></b> <b>400 V/6 kV/3 ①</b> <b>16 A**</b> <b>Terminal block width 5 mm / 0.197 in</b>  <b>8 – 9 mm / 0.33 in</b> <small>*   </small>	<b>AWG 28 – 12</b> <b>300/600 V, 10/5 A </b> <b>300 V, 10 A </b>	<b>400 V/6 kV/3 ①</b>   <b>300/600 V, 10/5 A </b> <b>16 A**</b>   <b>300 V, 10 A </b> <b>Terminal block width 5 mm / 0.197 in</b> <small>*   </small>
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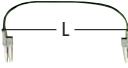






- ① 400 V = rated voltage  
6 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② See application notes on pages 2.43 – 2.45



Description	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>1-conductor/1-pin receptacle terminal block and 2-pin receptacle terminal block, suitable for DIN 35 rail acc. to EN 60715</b>	<b>1-conductor/1-pin receptacle terminal block, grey 2 poles</b> <b>769-181</b>	50	<b>2-pin receptacle terminal block, grey 2 poles</b> <b>769-161</b>	50

### Accessories

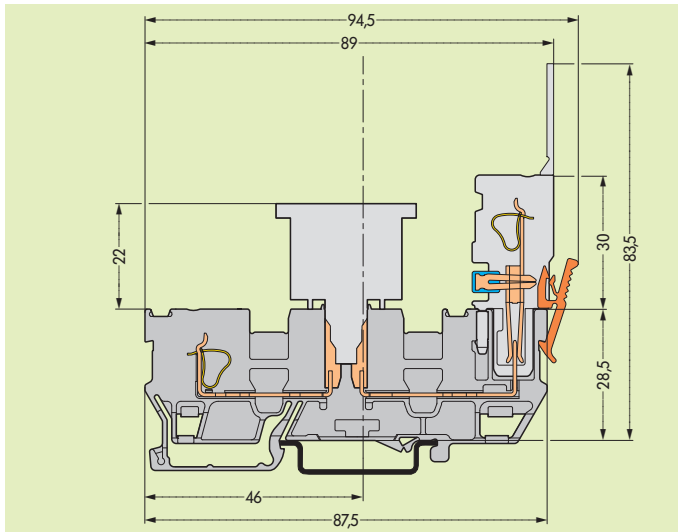
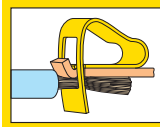
Appropriate marking system **Mini-WSB** (see section 14)

	<b>End and intermediate plate</b>	1.1 mm / 0.043 in thick grey <b>769-311</b> orange <b>769-312</b>	100 (4 x 25) 100 (4 x 25)	1.1 mm / 0.043 in thick grey <b>769-309</b> orange <b>769-310</b>	100 (4 x 25) 100 (4 x 25)
	<b>Separator plate, oversized</b>	1.1 mm / 0.043 in thick orange <b>769-314</b>	100 (4 x 25)	1.1 mm / 0.043 in thick orange <b>769-313</b>	100 (4 x 25)
	<b>Screwless end stop</b>	6 mm / 0.236 in wide <b>249-116</b> 10 mm / 0.394 in wide <b>249-117</b>	100 (4 x 25) 50 (2 x 25)	6 mm / 0.236 in wide <b>249-116</b> 10 mm / 0.394 in wide <b>249-117</b>	100 (4 x 25) 50 (2 x 25)
	<b>Insulation stop</b> ②, white 5 pcs/strip light grey dark grey	0.08 – 0.2 mm <sup>2</sup> <b>769-470</b> 0.25 – 0.5 mm <sup>2</sup> <b>769-471</b> 0.75 – 1 mm <sup>2</sup> <b>769-472</b>	200 strips 200 strips 200 strips		
	<b>Adjacent jumper, insulated</b> , I <sub>N</sub> 24 A	grey <b>280-402</b>	200 (8 x 25)	grey <b>280-402</b>	200 (8 x 25)
	<b>Alternate jumper</b>	grey <b>280-409</b>	100 (4 x 25)	grey <b>280-409</b>	100 (4 x 25)
	<b>Staggered jumper</b> ②, from 1 to 2 insulated, from 1 to 3 width 5 mm / 0.197 in from 1 to 4 from 1 to 5 : from 1 to 8	I <sub>N</sub> 24 A <b>780-452</b> <b>780-453</b> <b>780-454</b> <b>780-455</b> : <b>780-458</b>	100 (4 x 25) 100 (4 x 25) 100 (4 x 25) 50 (2 x 25) : 50 (2 x 25)	I <sub>N</sub> 24 A <b>780-452</b> <b>780-453</b> <b>780-454</b> <b>780-455</b> : <b>780-458</b>	100 (4 x 25) 100 (4 x 25) 100 (4 x 25) 50 (2 x 25) : 50 (2 x 25)
	<b>Push-in type wire jumper</b> ②, insulated, 9 A – conductor cross section 0.75 mm <sup>2</sup> /AWG 18	L = 60 mm / 2.362 in <b>249-125</b> L = 110 mm / 4.331 in <b>249-126</b> L = 250 mm / 9.843 in <b>249-127</b>	10 10 10	L = 60 mm / 2.362 in <b>249-125</b> L = 110 mm / 4.331 in <b>249-126</b> L = 250 mm / 9.843 in <b>249-127</b>	10 10 10
	<b>Coding pin, for coding of female plugs</b>	orange <b>769-435</b>	100 (4 x 25)	orange <b>769-435</b>	100 (4 x 25)
	<b>Protective warning marker, for 5 terminal blocks, fits into screwdriver slot</b>	yellow <b>280-415</b>	100 (4 x 25)		
	<b>Test plug, w. cable 500 mm / 1.77"</b> 2 mm / 0.079 in Ø 2.3 mm / 0.091 in Ø	red <b>210-136</b> yellow <b>210-137</b>	50 (5 x 10) 50 (5 x 10)	yellow <b>210-137</b>	50 (5 x 10)
	<b>1-conductor female plug, straight</b>	see page 9.44		see page 9.44	
	<b>1-conductor female plug, angled</b>	see page 9.46		see page 9.46	
	<b>2-conductor female plug</b>	cannot be used		cannot be used	

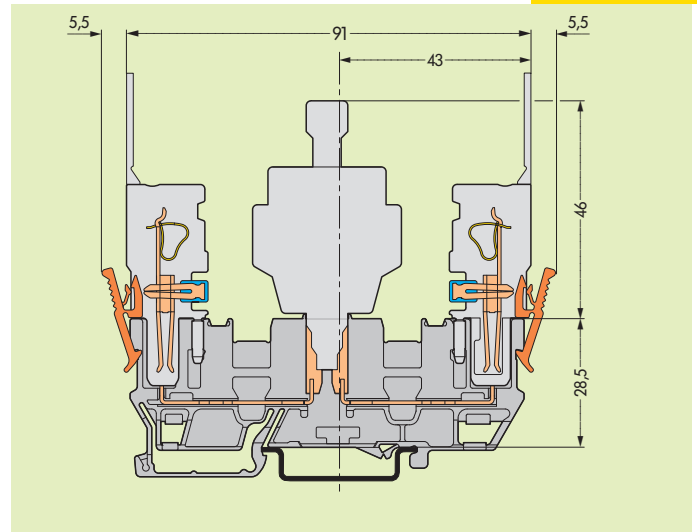
\* For further approvals with corresponding ratings see section 15.

\*\*16 A, temperature limit of 85°C

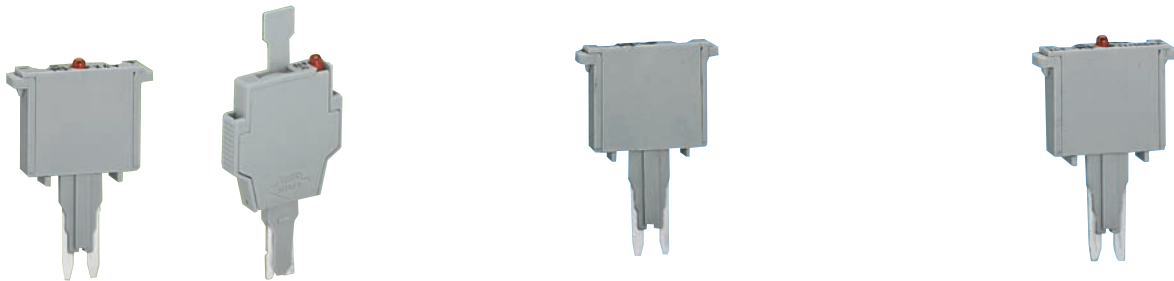
# Types of Assembly with 1-Conductor Female Plugs and Selection of Pluggable Modules (see also Full Line Catalog W4, Volume 3)



See also page 9.17 for dimensions

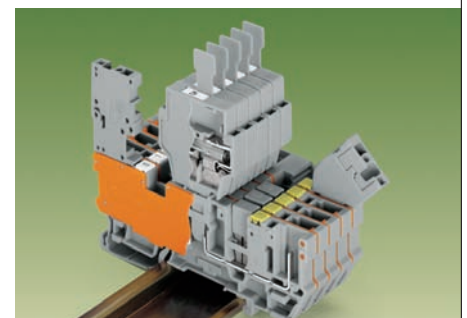


See also page 9.19 for dimensions



Open side of term. block	Item No.	Pack. unit pcs	Open side of term. block	Item No.	Pack. unit pcs	Open side of term. block	Item No.	Pack. unit pcs
	<b>Fuse plug, 5 mm / 0.197 in wide,</b> with soldered miniature fuse			<b>Diode module, 5 mm / 0.197 in wide,</b> Diode 1N4007 <b>280-801/281-411</b>	100		<b>LED modules, 5 mm / 0.197 in wide,</b> with red LED	
250 mA FF	<b>280-850</b>	100				DC 24 V	<b>280-801/281-413</b>	100
500 mA FF	<b>280-852</b>	100				DC 48 V	<b>280-801/281-414</b>	100
1 A FF	<b>280-854</b>	100						
2 A FF	<b>280-856</b>	100						
	<b>Fuse plug, 5 mm / 0.197 in wide,</b> additionally with LED, DC 15 – 30 V			<b>Diode module, 5 mm / 0.197 in wide,</b> Diode 1N4007, as a recovery diode, LED additionally			<b>LED modules, 5 mm / 0.197 in wide,</b> with red LED	
Residual current in case of defective fuse LED 5 – 20 mA			DC 24 V	<b>280-801/281-420</b>	100	AC/DC 24 V	<b>280-801/281-415</b>	100
250 mA FF	<b>280-850/281-413</b>	100	DC 48 V	<b>280-801/281-421</b>	100	AC/DC 48 V	<b>280-801/281-416</b>	100
500 mA FF	<b>280-852/281-413</b>	100						
1 A FF	<b>280-854/281-413</b>	100						
2 A FF	<b>280-856/281-413</b>	100						
	<b>Fuse plug with pull-tab, 6 mm / 0.236 in wide,</b> for miniature metric fuse 5 x 20 mm and 5 x 25 mm						<b>Neon lamp modules, 5 mm / 0.197 in wide,</b>	
	<b>281-511</b>	50						
	LED (self assembly)					AC/DC 120 V	<b>280-801/281-418</b>	100
	<b>281-512</b>	50				AC/DC 230 V	<b>280-801/281-417</b>	100
	<b>Fuse plug with pull-tab, 6 mm / 0.236 in wide,</b> additionally with LED							
	AC/DC 24 V							
	<b>281-512/281-501</b>	50						
Residual current in case of defective fuse LED 5 – 20 mA, neon lamp < 0.4 mA	Use in both switching directions							
	Neon lamps							
	AC/DC 120 V							
	<b>281-512/281-418</b>	50						
	AC/DC 230 V							
	<b>281-512/281-417</b>	50						

Adjacent assembly of receptacle terminal blocks for fuse plugs requires that the width of the fuse plugs (6 mm/0.236 in) compared to that of the terminal blocks (5 mm/0.197 in) be compensated for by using intermediate plates (1.1 mm/0.043 in). The use of intermediate plates requires adjacent jumpers from series 280 to be used when commoning adjacent terminal blocks.













Electrical data are determined by the electronic components.

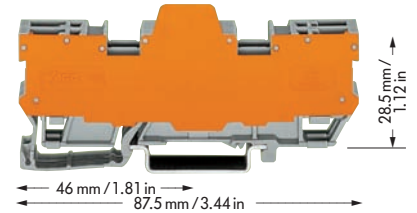
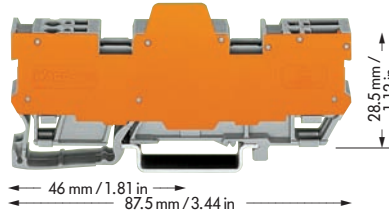


# X-COM®-SYSTEM

## Receptacle Terminal Blocks with 2 Jumper Positions for Pluggable Modules, Series 286 (Relay Modules, Optocoupler Modules etc.)

<b>0.08 – 4 mm<sup>2</sup></b> <b>400 V/6 kV/3 ①</b> <b>16 A**</b> <b>Terminal block width 5 mm / 0.197 in</b>  <b>8 – 9 mm / 0.33 in</b> *  	<b>AWG 28 – 12</b> <b>300/600 V, 10/5 A </b> <b>300 V, 10 A </b>	<b>400 V/6 kV/3 ①</b>   <b>300/600 V, 10/5 A </b> <b>16 A**</b>   <b>300 V, 10 A </b> <b>Terminal block width 5 mm / 0.197 in</b> *   
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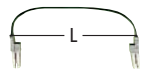





- ① 400 V = rated voltage  
6 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② See application notes on pages 2.43 – 2.45



Description	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>1-conductor /1-pin receptacle terminal block</b>	<b>1-cond./1-pin receptacle terminal blocks, grey</b>		<b>2-pin receptacle terminal blocks, grey</b>	
<b>and</b> width	<b>with orange separator plate</b>		<b>with orange separator plate</b>	
<b>2-pin receptacle terminal block,</b> 11.1 mm	4 poles	<b>769-182/769-314</b> 10	4 poles	<b>769-162/769-313</b> 10
suitable for DIN 35 rail acc. to EN 60715 16.1 mm	6 poles	<b>769-183/769-314</b> 5	6 poles	<b>769-163/769-313</b> 5
21.1 mm	8 poles	<b>769-184/769-314</b> 5	8 poles	<b>769-164/769-313</b> 5
26.1 mm	10 poles	<b>769-185/769-314</b> 5	10 poles	<b>769-165/769-313</b> 5

### Accessories

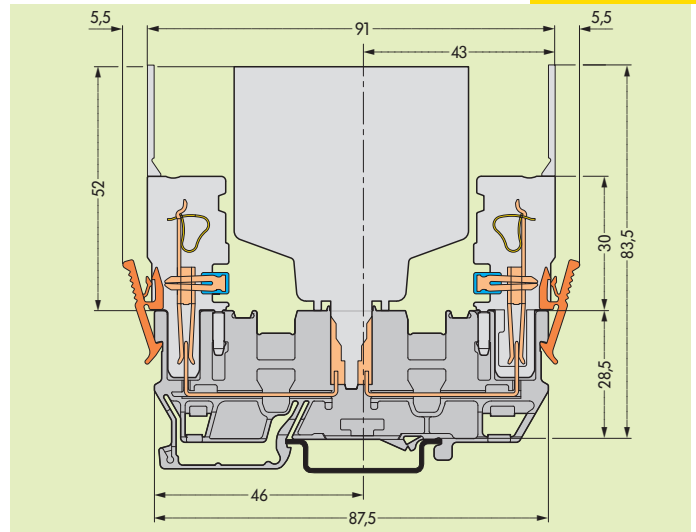
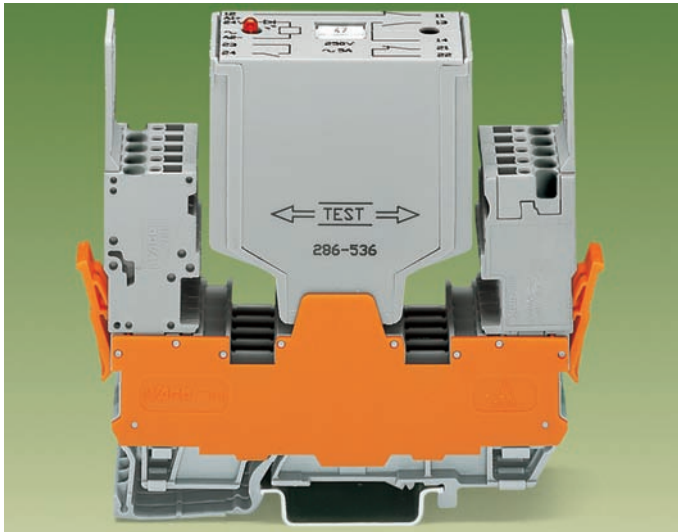
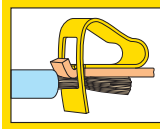
Appropriate marking system **Mini-WSB** (see section 14)

	<b>End and intermediate plate</b>	1.1 mm / 0.043 in thick grey <b>769-311</b>	100 (4 x 25)	1.1 mm / 0.043 in thick grey <b>769-309</b>	100 (4 x 25)
	<b>Separator plate, oversized</b>	1.1 mm / 0.043 in thick orange <b>769-314</b>	100 (4 x 25)	1.1 mm / 0.043 in thick orange <b>769-310</b>	100 (4 x 25)
	<b>Screwless end stop</b>	6 mm / 0.236 in wide 10 mm / 0.394 in wide <b>249-116</b> <b>249-117</b>	100 (4 x 25) 50 (2 x 25)	6 mm / 0.236 in wide 10 mm / 0.394 in wide <b>249-116</b> <b>249-117</b>	100 (4 x 25) 50 (2 x 25)
	<b>Insulation stop</b> ②, white 5 pcs/strip light grey dark grey	0.08 – 0.2 mm <sup>2</sup> <b>769-470</b> 0.25 – 0.5 mm <sup>2</sup> <b>769-471</b> 0.75 – 1 mm <sup>2</sup> <b>769-472</b>	200 strips 200 strips 200 strips		
	<b>Adjacent jumper,</b> I <sub>N</sub> 24 A insulated	grey <b>280-402</b>	200 (8 x 25)	grey <b>280-402</b>	200 (8 x 25)
	<b>Alternate jumper</b>	grey <b>280-409</b>	100 (4 x 25)	grey <b>280-409</b>	100 (4 x 25)
	<b>Staggered jumper</b> ②, from 1 to 2 insulated, from 1 to 3 width 5 mm / 0.197 in from 1 to 4 from 1 to 5 : from 1 to 8	I <sub>N</sub> 24 A <b>780-452</b> <b>780-453</b> <b>780-454</b> <b>780-455</b> : <b>780-458</b>	100 (4 x 25) 100 (4 x 25) 100 (4 x 25) 50 (2 x 25) : 50 (2 x 25)	I <sub>N</sub> 24 A <b>780-452</b> <b>780-453</b> <b>780-454</b> <b>780-455</b> : <b>780-458</b>	100 (4 x 25) 100 (4 x 25) 100 (4 x 25) 50 (2 x 25) : 50 (2 x 25)
	<b>Push-in type wire jumper</b> ②, insulated, 9 A – conductor cross section 0.75 mm <sup>2</sup> /AWG 18	L = 60 mm / 2.362 in <b>249-125</b> L = 110 mm / 4.331 in <b>249-126</b> L = 250 mm / 9.843 in <b>249-127</b>	10 10 10	L = 60 mm / 2.362 in <b>249-125</b> L = 110 mm / 4.331 in <b>249-126</b> L = 250 mm / 9.843 in <b>249-127</b>	10 10 10
	<b>Coding pin,</b> for coding of female plugs	orange <b>769-435</b>	100 (4 x 25)	orange <b>769-435</b>	100 (4 x 25)
	<b>Protective warning marker,</b> for 5 terminal blocks, fits into screwdriver slot	yellow <b>280-415</b>	100 (4 x 25)		
	<b>Test plug,</b> w. cable 500 mm / 1.77" 2 mm / 0.079 in Ø 2.3 mm / 0.091 in Ø	red <b>210-136</b> yellow <b>210-137</b>	50 (5 x 10) 50 (5 x 10)	yellow <b>210-137</b>	50 (5 x 10)
	<b>1-conductor female plug,</b> straight or angled	see pages 9.44/9.46		see pages 9.44/9.46	
	<b>2-conductor female plug</b>	cannot be used		cannot be used	

\* For further approvals with corresponding ratings see section 15.

\*\*16 A, temperature limit of 85°C

# Types of Assembly with 1-Conductor Female Plugs and Selection of Pluggable Modules (see also Full Line Catalog W4, Volume 3)



See also pages 9.17 and 9.19 for dimensions



	Item No.	Pack. unit pcs		Item No.	Pack. unit pcs		Item No.	Pack. unit pcs
	<b>Switching relay module</b> <b>286-364</b>	1		<b>Pulse relay modules,</b> <b>286-570</b> 230 V AC 1			<b>Optocoupler module</b> Input 24 V DC, Output 24 V DC / 500 mA <b>286-752</b>	1
	24 V DC, 1 make contact Module width 10 mm			<b>286-571</b> 24 V DC 1	1		24 V DC / 500 mA Module width 15 mm	
	<b>Switching relay module</b> <b>286-304</b>	1					<b>Optocoupler module</b> Input 24 V DC, Output 24 V DC / 4 A <b>286-723</b>	1
	24 V DC, 1 change-over contact Module width 15 mm						24 V DC / 4 A Module width 15 mm	
	<b>Switching relay module</b> <b>286-508</b>	1		<b>Current flow monitoring module</b> 24 V AC 80 mA – 6 A <b>286-661</b>	1		<b>Optocoupler module</b> Input 24 V DC, Output 230 V AC / 50 mA-1A <b>286-734</b>	1
	230 V AC/DC, 1 change-over contact Module width 15 mm			24 V AC 80 mA – 6 A Module width 20 mm			230 V AC / 50 mA-1A Module width 15 mm	
	<b>Switching relay module</b> <b>286-312</b>	1		<b>Transient suppression module</b> 230 V DC ± 10 % <b>286-842</b>	1		<b>Temperature transducer modules with wire break controlling (4-20 mA),</b> Thermocouple J: 0-750 °C <b>286-867</b>	1
	24 V DC, 2 change-over contacts Module width 20 mm			230 V DC ± 10 % Module width 25 mm			Thermocouple K: 0-1000 °C <b>286-868</b>	1
	<b>Switching relay module</b> <b>286-516</b>	1		<b>Transient suppression module</b> 230 V AC <b>286-835</b>	1		<b>Temperature transducer modules</b> from -30 °C to +150 °C (PT 100) <b>286-862/150-030</b>	1
	230 V AC, 2 change-over contacts Module width 20 mm			230 V AC Module width 15 mm completely with special receptacle terminal block			from 0 °C to + 300 °C (PT 100) <b>286-862/000-300</b>	1
	<b>Switching relay module</b> <b>286-336</b>	1					from 0 °C to + 100 °C (PT 1000) <b>286-875</b>	1
	24 V DC, 2 break contacts and 2 make contacts Module width 25 mm						Module width 20 mm	
	<b>Switching relay module</b> <b>286-375</b>	1						
	24 V DC 1							
	<b>Switching relay module</b> <b>286-578</b>	1						
	110/120 VAC 1							
	<b>Switching relay module</b> <b>286-579</b>	1						
	230 V AC 1							
	4 change-over contacts Module width 35 mm							

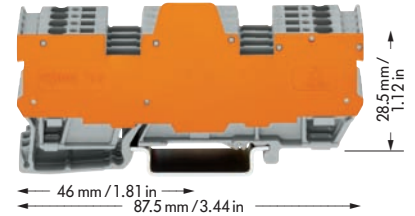
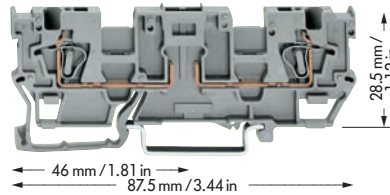
Electrical data are determined by the electronic components.

# X-COM®-SYSTEM

## 1-Conductor/1-Conductor Receptacle Terminal Blocks with 2 Jumper Positions for Pluggable Modules (Fuse Plugs, Relay Modules, Optocoupler Modules etc.)

<p>0.08 – 4 mm<sup>2</sup>   AWG 28 – 12 400 V/6 kV/3 ①   300/600 V, 10/5 A ② 16 A**</p> <p>Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in</p> <p>* ②</p>	<p>0.08 – 4 mm<sup>2</sup>   AWG 28 – 12 400 V/6 kV/3 ①   300/600 V, 10/5 A ② 16 A**</p> <p>Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in</p> <p>* ②</p>
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- ① 400 V = rated voltage  
6 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② See application notes on pages 2.43 – 2.45



Description	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
<b>1-conductor/1-conductor receptacle terminal block and 1-conductor/1-conductor receptacle terminal block for pluggable modules,</b> suitable for DIN 35 rail acc. to EN 60715	<b>1-conductor/1-conductor receptacle terminal block, grey</b> 2 poles <b>769-191</b>	50	<b>1-conductor/1-conductor receptacle terminal blocks for pluggable modules, grey with orange separator plate</b> 4 poles, 11.1 mm <b>769-192/769-319</b> 6 poles, 16.1 mm <b>769-193/769-319</b> 8 poles, 21.1 mm <b>769-194/769-319</b> 10 poles, 26.1 mm <b>769-195/769-319</b>	10 5 5 5

### Accessories

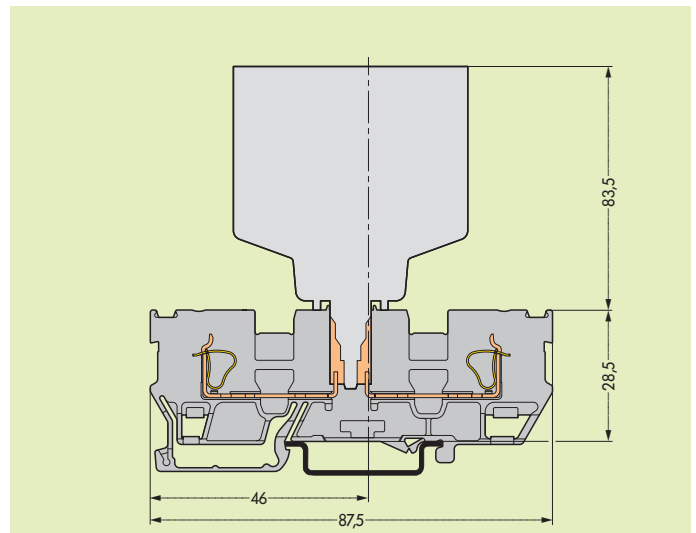
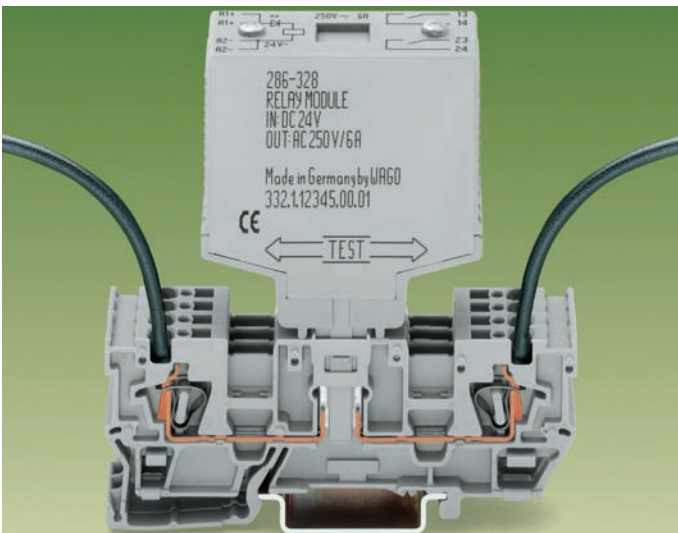
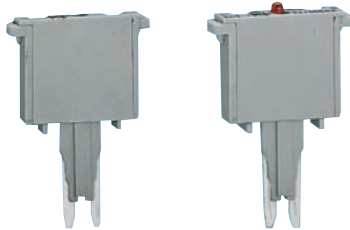
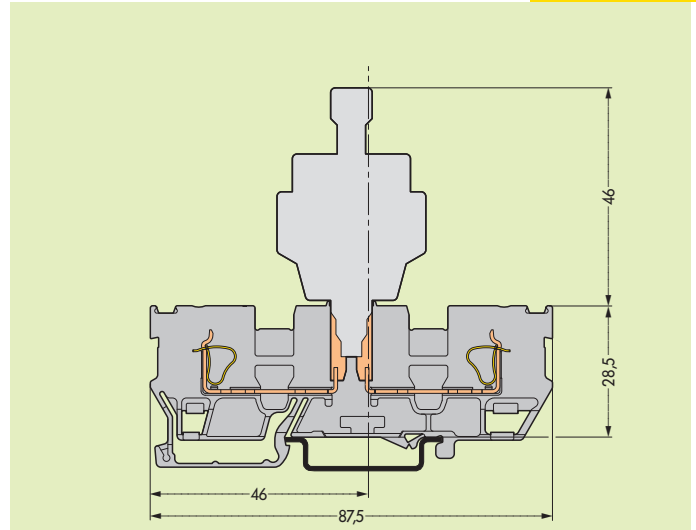
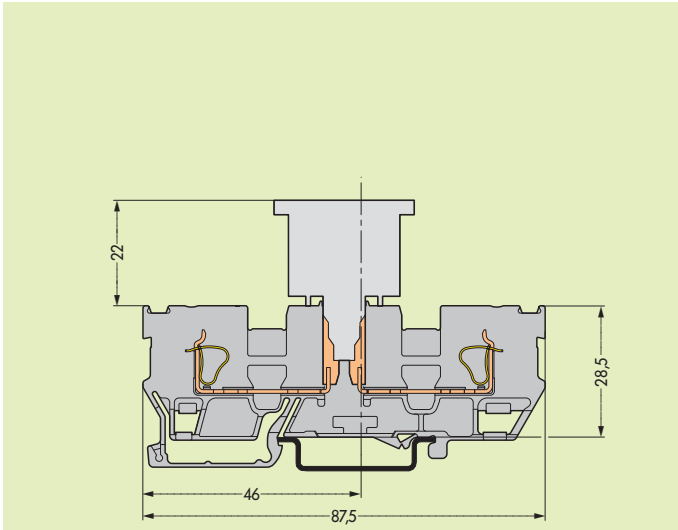
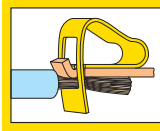
Appropriate marking system **Mini-WSB** (see section 14)

	<b>End and intermediate plate</b> 1.1 mm / 0.043 in thick grey <b>769-317</b> orange <b>769-318</b>	100 (4 x 25) 100 (4 x 25)	1.1 mm / 0.043 in thick grey <b>769-317</b> orange <b>769-318</b>	100 (4 x 25) 100 (4 x 25)
	<b>Separator plate, oversized</b> 1.1 mm / 0.043 in thick orange <b>769-319</b>	100 (4 x 25)	1.1 mm / 0.043 in thick orange <b>769-319</b>	100 (4 x 25)
	<b>Screwless end stop</b> 6 mm / 0.236 in wide <b>249-116</b> 10 mm / 0.394 in wide <b>249-117</b>	100 (4 x 25) 50 (2 x 25)	6 mm / 0.236 in wide <b>249-116</b> 10 mm / 0.394 in wide <b>249-117</b>	100 (4 x 25) 50 (2 x 25)
	<b>Insulation stop</b> ②, white 5 pcs/strip light grey dark grey	200 strips 200 strips 200 strips	0.08 – 0.2 mm <sup>2</sup> <b>769-470</b> 0.25 – 0.5 mm <sup>2</sup> <b>769-471</b> 0.75 – 1 mm <sup>2</sup> <b>769-472</b>	200 strips 200 strips 200 strips
	<b>Adjacent jumper, insulated</b> I <sub>N</sub> 24 A grey <b>280-402</b>	200 (8 x 25)	grey <b>280-402</b>	200 (8 x 25)
	<b>Alternate jumper</b> grey <b>280-409</b>	100 (4 x 25)	grey <b>280-409</b>	100 (4 x 25)
	<b>Staggered jumper</b> ②, from 1 to 2 insulated, from 1 to 3 width 5 mm / 0.197 in from 1 to 4 from 1 to 5 : from 1 to 8	I <sub>N</sub> 24 A <b>780-452</b> <b>780-453</b> <b>780-454</b> <b>780-455</b> : <b>780-458</b>	100 (4 x 25) 100 (4 x 25) 100 (4 x 25) 50 (2 x 25) : 50 (2 x 25)	I <sub>N</sub> 24 A <b>780-452</b> <b>780-453</b> <b>780-454</b> <b>780-455</b> : <b>780-458</b>
	<b>Push-in type wire jumper</b> ②, insulated, 9 A – conductor cross section 0.75 mm <sup>2</sup> /AWG 18	L = 60 mm / 2.362 in <b>249-125</b> L = 110 mm / 4.331 in <b>249-126</b> L = 250 mm / 9.843 in <b>249-127</b>	10 10 10	L = 60 mm / 2.362 in <b>249-125</b> L = 110 mm / 4.331 in <b>249-126</b> L = 250 mm / 9.843 in <b>249-127</b>
	<b>Protective warning marker, for 5 terminal blocks,</b> fits into screwdriver slot yellow <b>280-415</b>	100 (4 x 25)	yellow <b>280-415</b>	100 (4 x 25)
	<b>Test plug, w. cable 500 mm / 1'7.7"</b> 2 mm / 0.079 in Ø red <b>210-136</b> 2.3 mm / 0.091 in Ø yellow <b>210-137</b>	50 (5 x 10) 50 (5 x 10)	red <b>210-136</b> yellow <b>210-137</b>	50 (5 x 10) 50 (5 x 10)

\* For further approvals with corresponding ratings see section 15.

\*\*16 A, temperature limit of 85°C

# Types of Assembly with Selection of Pluggable Modules (see also Full Line Catalog W4, Volume 3)



Electrical data are determined by the electronic components.



# X-COM®-SYSTEM

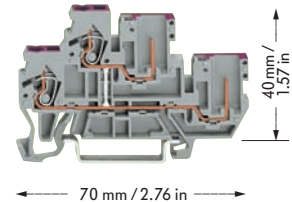
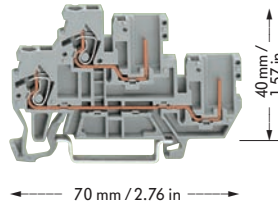
## 1-Conductor/1-Pin Double Deck Receptacle Terminal Blocks

### Series 870

<p>0.08 – 2.5 mm<sup>2</sup>/4 mm<sup>2</sup>"f-st" 500 V/6 kV/3 ① 16 A</p> <p>Terminal block width 5 mm / 0.197 in 6 – 7 mm / 0.26 in</p> <p>*  CCA  GL LR</p>	<p>AWG 28 – 12 300/600 V, 20/5 A</p>	<p>0.08 – 2.5 mm<sup>2</sup>/4 mm<sup>2</sup>"f-st" 500 V/6 kV/3 ① 16 A</p> <p>Terminal block width 5 mm / 0.197 in 6 – 7 mm / 0.26 in</p> <p>*  CCA  GL LR</p>	<p>AWG 28 – 12 300/600 V, 20/5 A</p>
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You can find double deck terminal blocks of series 870 in section 3

- ① 500 V = rated voltage  
6 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② Suitable for Ex i applications
- ③ See application notes on page 2.43



Description	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	
<b>1-cond./1-pin double deck receptacle terminal block,</b> suitable for DIN 35 rail Printing 1 <sup>st</sup> lev. 2 <sup>nd</sup> lev.	<b>Through/through terminal blocks,</b> housing color grey		<b>2-conductor/2-pin through terminal block,</b> internal commoning, housing color grey, conductor entry position colored in violet		
	–	L/L	<b>870-101</b>	50	
	blue	N/L	<b>870-102</b>	50	
	–	L/N	<b>870-103</b>	50	
–	–	N/N	<b>870-104</b> ②	50	
–	housing color blue		<b>2-conductor/2-pin through terminal block,</b> internal commoning, housing color blue, conductor entry position colored in violet		
–	N/N	<b>870-104</b> ②	N	<b>870-109</b>	50

### Accessories

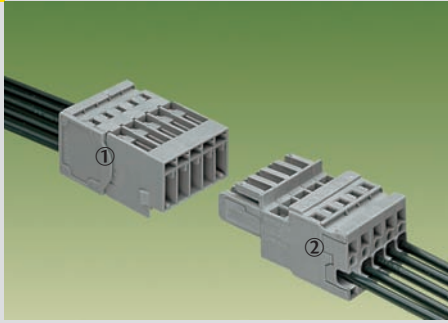
Appropriate marking system **WMB/Mini-WSB** (see section 14)

	<b>End and intermediate plate</b>	1 mm/0.039 in thick		1 mm/0.039 in thick			
		grey	<b>870-118</b>	100 (4 x 25)	grey	<b>870-118</b>	100 (4 x 25)
	<b>Insulation stop</b> ③, 5 pcs/strip	white	0.08 – 0.2 mm <sup>2</sup>	<b>280-470</b>	200 strips		
		light grey	0.25 – 0.5 mm <sup>2</sup>	<b>280-471</b>	200 strips		
		dark grey	0.75 – 1 mm <sup>2</sup>	<b>280-472</b>	200 strips		
	<b>Push-in type jumper bars,</b> light grey, insulated, I <sub>N</sub> 18 A	2-way	<b>870-402</b>	200 (8 x 25)	2-way	<b>870-402</b>	200 (8 x 25)
		3-way	<b>870-403</b>	200 (8 x 25)	3-way	<b>870-403</b>	200 (8 x 25)
		4-way	<b>870-404</b>	200 (8 x 25)	4-way	<b>870-404</b>	200 (8 x 25)
		5-way	<b>870-405</b>	100 (4 x 25)	5-way	<b>870-405</b>	100 (4 x 25)
		:	:	:	:		
		10-way	<b>870-410</b>	100 (4 x 25)	10-way	<b>870-410</b>	100 (4 x 25)
	<b>Push-in type jumper bars,</b> light grey, insulated, I <sub>N</sub> 18 A	from 1 to 3	<b>870-433</b>	200 (8 x 25)	from 1 to 3	<b>870-433</b>	200 (8 x 25)
		from 1 to 4	<b>870-434</b>	200 (8 x 25)	from 1 to 4	<b>870-434</b>	200 (8 x 25)
		from 1 to 5	<b>870-435</b>	100 (4 x 25)	from 1 to 5	<b>870-435</b>	100 (4 x 25)
		:	:	:	:		
		from 1 to 10	<b>870-440</b>	100 (4 x 25)	from 1 to 10	<b>870-440</b>	100 (4 x 25)
	<b>WAGO WMB multi-marking system,</b> fits in all miniature WSB receptacles	see section 14		see section 14			
	<b>Miniature WSB quick marking card,</b> 10 strips with 10 markers each, white with black printing	see section 14		see section 14			
	<b>1-connector female plug,</b> straight	see page 9.44		see page 9.44			
	<b>1-connector female plug,</b> angled	see page 9.46		see page 9.46			
	<b>2-connector female plug</b>	cannot be used		cannot be used			

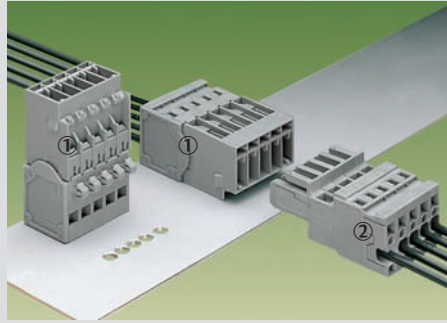
\* For further approvals with corresponding ratings see section 15.



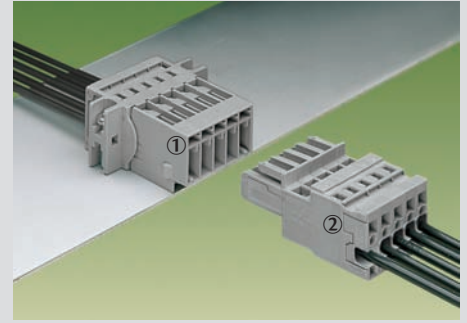
## Male connectors with CAGE CLAMP® connection



① Male connector with CAGE CLAMP® connection  
② 1-conductor female plug



① Male connector with CAGE CLAMP® connection and mounting feet  
② 1-conductor female plug



① Male connector with CAGE CLAMP® connection and fixing flanges  
② 1-conductor female plug

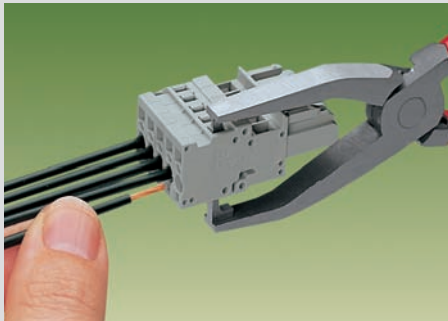
## Male connectors with CAGE CLAMP® connection and snap-in flanges



Snap-in mounting without tools:  
Male connectors with snap-in flanges

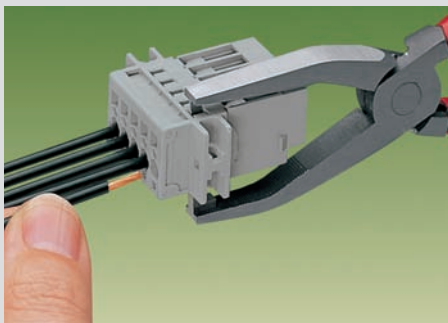


## Operating tool

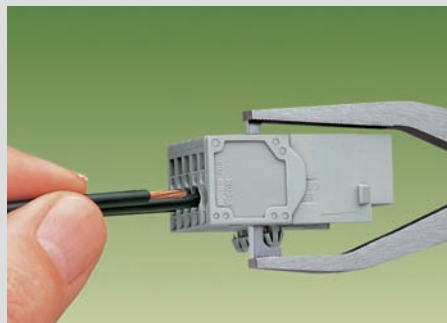


Connection of the conductor – lateral wiring  
with operating tool

## Operating tool



Connection of the conductor with operating tool  
Item No. 210-490



Connection of the conductor with operating tool  
(which can also be used with male connectors with  
CAGE CLAMP® connection and mounting feet)



CAGE CLAMP® connects the following copper wires:\*

solid



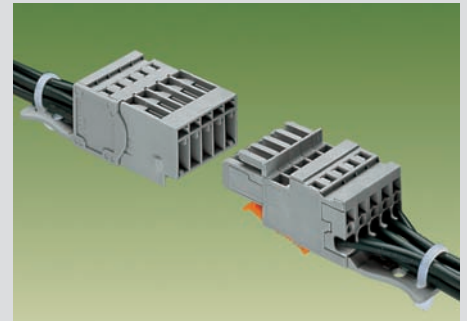
stranded



fine stranded,  
also with tinned  
single strands

\* For aluminum wire see notes in section 15!

## Strain relief plates



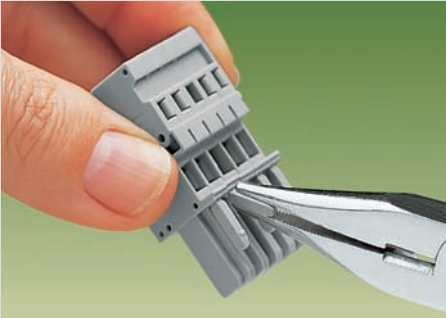
Strain relief plates, can be snapped in male  
connectors with CAGE CLAMP® connection

1 pole	<b>769-410</b>	100 (4 x 25)
2 to 3 poles	<b>769-411</b>	100 (4 x 25)
4 to 5 poles	<b>769-412</b>	100 (4 x 25)
6 to 9 poles	<b>769-413</b>	100 (4 x 25)
10 to 15 poles	<b>769-414</b>	100 (4 x 25)



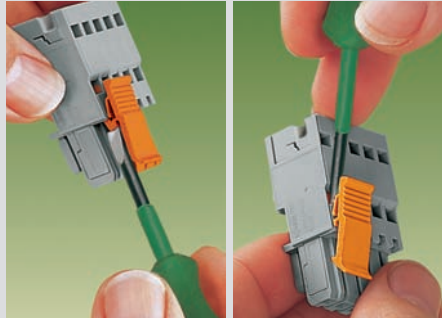
# ... Description and Handling

## Coding



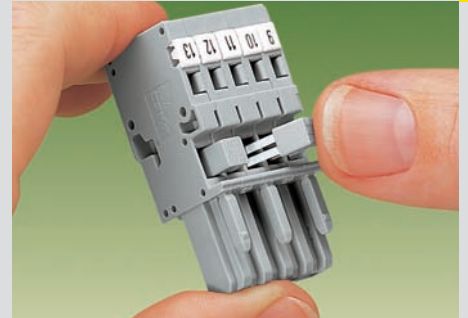
Coding a female plug – removal of coding finger(s). Do **not** break off the first and last latch position coding finger! (see also page 9.8)

## Locking lever



Snapping in /removal of locking lever

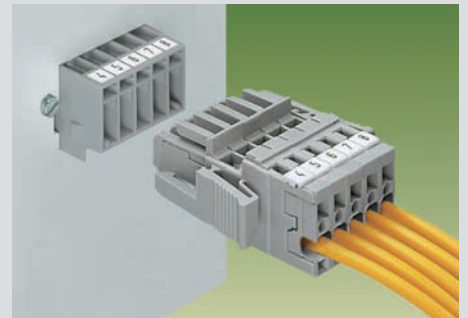
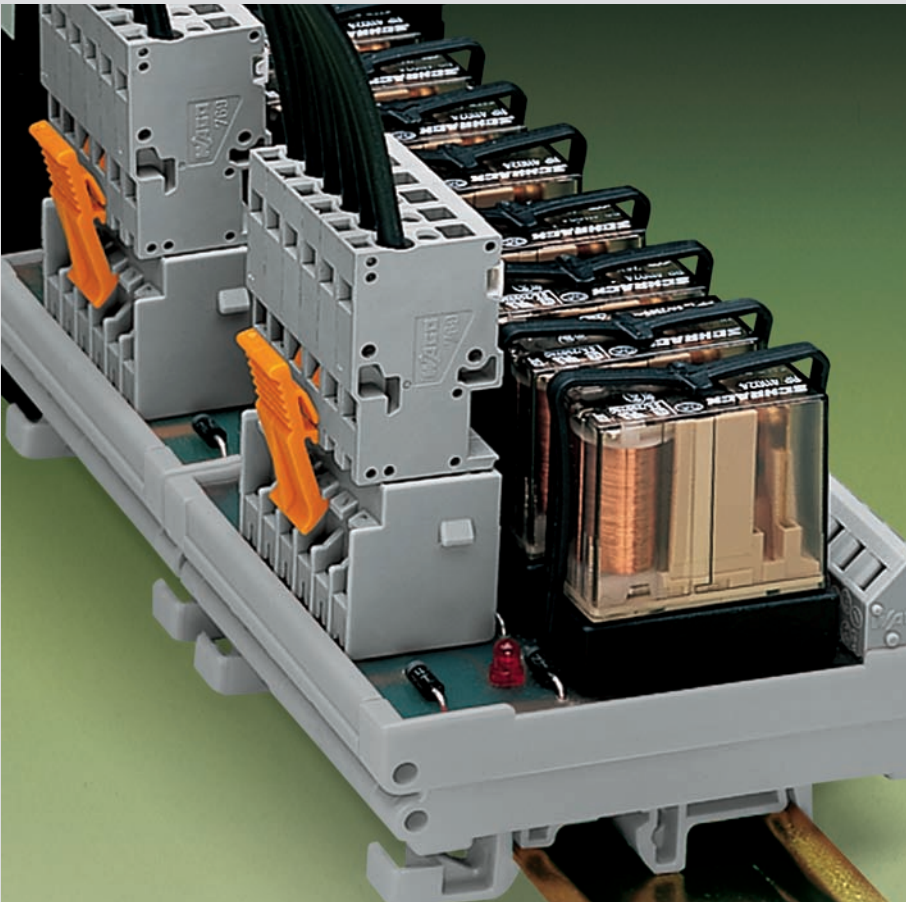
## Commoning



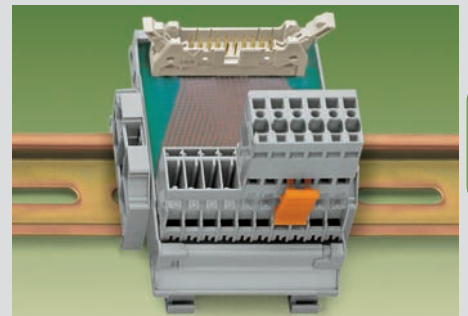
Commoning of 1-conductor female plugs with miniature adjacent jumpers

**Note:** Connectors used according to the regulations should not be connected or disconnected under load.

## Connection of a female plug

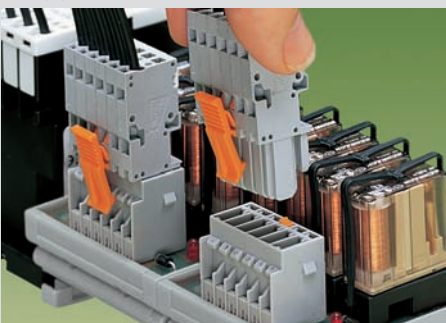


Header and 1-conductor female plug with lateral locking levers

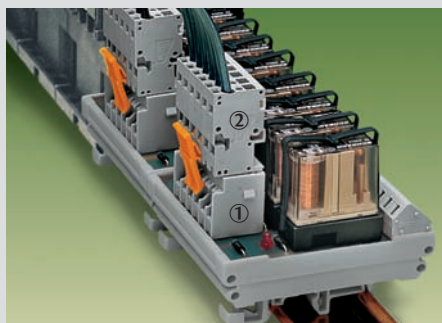


Headers with solder pins for printed circuit boards

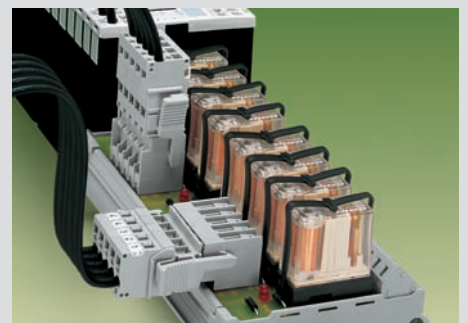
## Pluggable PCB connection



Connection to a relay module inside the switchgear cabinet



Example of application using a relay module  
① Headers with straight solder pins  
② 1-conductor female plugs



Headers with solder pins: Integration of PCB sub-assemblies into the system wiring



fine-stranded wire – tip bonded



fine-stranded wire with crimped ferrule ①



fine-stranded wire with crimped pin terminal

① When using wires with ferrules, it is necessary to use a terminal block one size larger than the nominal cross section of the wire.



# X-COM<sup>®</sup>-SYSTEM

## Male Connectors with CAGE CLAMP<sup>®</sup> Connection

### Pin Spacing 5 mm / 0.197 in

<p>Pin spacing 5 mm / 0.197 in, grey 0.08 – 4 mm<sup>2</sup>   AWG 28 – 12 500 V / 6 kV/3   300/600V, 10/5 A   32 A**</p> <p> 8 – 9 mm / 0.33 in</p> <p>*  </p>	<p>Pin spacing 5 mm / 0.197 in, grey 0.08 – 4 mm<sup>2</sup>   AWG 28 – 12 500 V / 6 kV/3   300/600V, 10/5 A   32 A**</p> <p> 8 – 9 mm / 0.33 in</p> <p>*  </p>	<p>Pin spacing 5 mm / 0.197 in, grey 0.08 – 4 mm<sup>2</sup>   AWG 28 – 12 500 V / 6 kV/3   300/600V, 10/5 A   32 A**</p> <p> 8 – 9 mm / 0.33 in</p> <p>*  </p>
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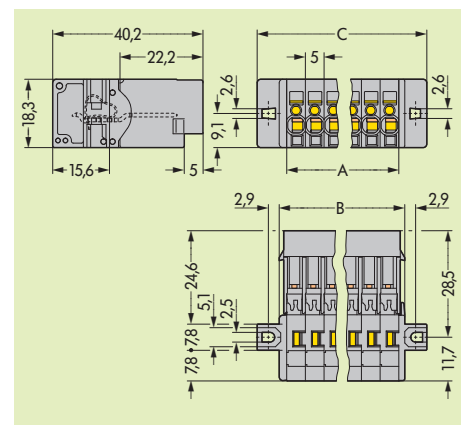
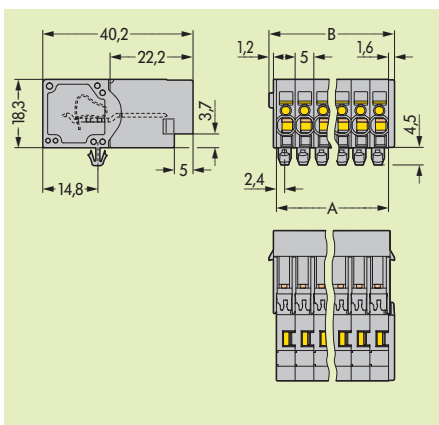
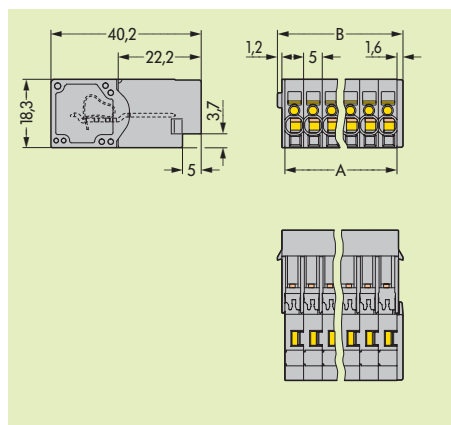
No. of poles	Item No.	Pack.-unit pcs	No. of poles	Item No.	Pack.-unit pcs	No. of poles	Item No.	Pack.-unit pcs
Male connectors with CAGE CLAMP <sup>®</sup> connection, grey			Male connectors with CAGE CLAMP <sup>®</sup> connection and snap-in mounting feet, f. plate thickness 0.6 – 1.2 mm, fixing hole Ø 3.5 mm, w. mounting adapter 209-137			Male connectors with CAGE CLAMP <sup>®</sup> connection and fixing flanges, for screw or similar types of fixing, for vertical or horizontal fixing, grey		
2	769-602	100	2	769-602/001-000	100	2	769-602/002-000	100
3	769-603	100	3	769-603/001-000	100	3	769-603/002-000	50
4	769-604	100	4	769-604/001-000	100	4	769-604/002-000	50
5	769-605	50	5	769-605/001-000	50	5	769-605/002-000	50
6	769-606	50	6	769-606/001-000	50	6	769-606/002-000	50
7	769-607	25	7	769-607/001-000	25	7	769-607/002-000	25
8	769-608	25	8	769-608/001-000	25	8	769-608/002-000	25
9	769-609	25	9	769-609/001-000	25	9	769-609/002-000	25
10	769-610	25	10	769-610/001-000	25	10	769-610/002-000	25
11	769-611	25	11	769-611/001-000	25	11	769-611/002-000	25
12	769-612	25	12	769-612/001-000	25	12	769-612/002-000	25
13	769-613	15	13	769-613/001-000	15	13	769-613/002-000	15
14	769-614	15	14	769-614/001-000	15	14	769-614/002-000	10
15	769-615	10	15	769-615/001-000	10	15	769-615/002-000	10

### Accessories

Appropriate marking system **Mini-WSB** (see section 14)

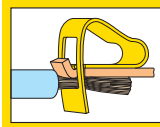
<p><b>For female plugs</b> see pages 9.44 – 9.46</p>	<p><b>For female plugs</b> see pages 9.44 – 9.46</p>	<p><b>For female plugs</b> see pages 9.44 – 9.46</p>
<p><b>Code pin, orange,</b> for coding the female plugs <b>769-435</b> 100 (4 x 25)</p>	<p><b>Code pin, orange,</b> for coding the female plugs <b>769-435</b> 100 (4 x 25)</p>	<p><b>Code pin, orange,</b> for coding the female plugs <b>769-435</b> 100 (4 x 25)</p>
<p><b>Operating tool</b> <b>210-490</b> 1</p>	<p><b>Operating tool</b> <b>210-490</b> 1</p>	<p><b>Operating tool</b> <b>210-490</b> 1</p>
<p><b>Strain relief plate</b> see page 9.36</p>	<p><b>Mounting adapter for DIN 35 rail, width 6.5 mm</b> <b>209-137</b> 25</p>	<p><b>Fixing screw, M 2.5 x 16 and hexagon nut M 2.5</b> <b>769-499</b> 100 (4 x 25)</p>

### Dimensions (in mm)



\* For further approvals with corresponding ratings see section 15.

\*\* See current-carrying capacity curve page 9.51 and [www.wago.com](http://www.wago.com)



**Pin spacing 5 mm / 0.197 in, grey**  
 0.08 – 4 mm<sup>2</sup> | AWG 28 – 12  
 500 V/6 kV/3 | 300/600V, 10/5 A   
 32 A\*\* | 300 V, 10 A

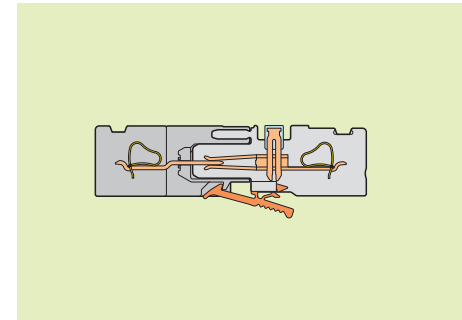
8 – 9 mm / 0.33 in

\*

**Pin spacing 5 mm / 0.197 in, grey**  
 0.08 – 4 mm<sup>2</sup> | AWG 28 – 12  
 500 V/6 kV/3 | 300/600V, 10/5 A   
 32 A\*\* | 300 V, 10 A

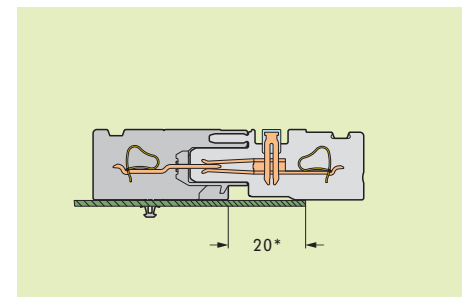
8 – 9 mm / 0.33 in

**Male connectors with CAGE CLAMP® connection**



No. of poles	Item No.	Pack.-unit pcs	No. of poles	Item No.	Pack.-unit pcs
<b>Male connectors with CAGE CLAMP® connection for feedthrough applications, for screw or similar types of fixing, for vertical or horizontal fixing, grey</b>			<b>Male connectors with CAGE CLAMP® connection and snap-in flanges, for mounting without tools, grey</b>		
2	769-602/004-000	100	2	769-602/005-000	50
3	769-603/004-000	50	3	769-603/005-000	50
4	769-604/004-000	25	4	769-604/005-000	25
5	769-605/004-000	25	5	769-605/005-000	25
6	769-606/004-000	25	6	769-606/005-000	25
7	769-607/004-000	25	7	769-607/005-000	25
8	769-608/004-000	25	8	769-608/005-000	20
9	769-609/004-000	25	9	769-609/005-000	20
10	769-610/004-000	25	10	769-610/005-000	20
11	769-611/004-000	25	11	769-611/005-000	15
12	769-612/004-000	15	12	769-612/005-000	15
13	769-613/004-000	15	13	769-613/005-000	15
14	769-614/004-000	10	14	769-614/005-000	10
15	769-615/004-000	10	15	769-615/005-000	10

**Male connectors with CAGE CLAMP® connection and mounting feet**

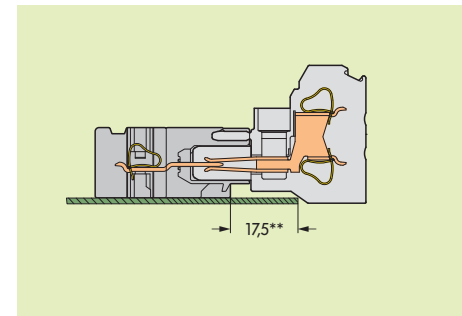


Appropriate marking system **Mini-WSB** (see section 14)

	<b>For female plugs</b> see pages 9.44 – 9.46		<b>For female plugs</b> see pages 9.44 – 9.46
	<b>Code pin, orange,</b> for coding the female plugs <b>769-435</b> 100 (4 x 25)		<b>Code pin, orange,</b> for coding the female plugs <b>769-435</b> 100 (4 x 25)
	<b>Operating tool</b> <b>210-490</b> 1		<b>Operating tool</b> <b>210-490</b> 1

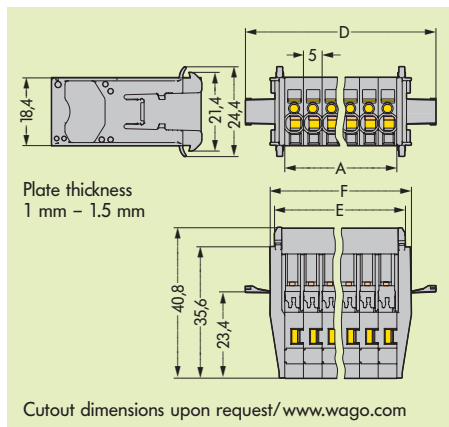
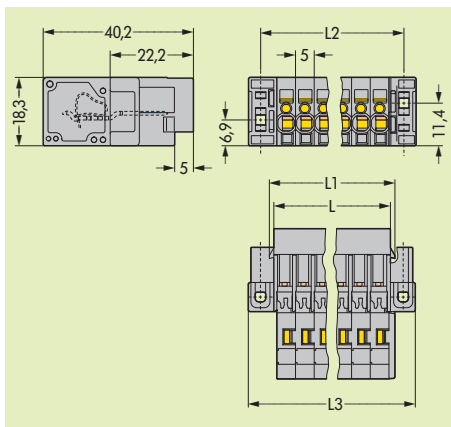
\* Maximum dimensions when using 1-conductor female plugs

**Male connectors with CAGE CLAMP® connection and fixing flanges**



\*\* Maximum dimensions when using 2-conductor female plugs

- A = No. of poles x pin spacing
- B = A + 3.6 mm
- C = A + 15.4 mm
- D = A + 21.3 mm
- E = A + 4.9 mm
- F = A + 8.1 mm
- L = (No. of poles - 1) x pin spacing + 6.2 mm
- L1 = L + 2.4 mm
- L2 = L + 7 mm
- L3 = L + 13.5 mm



# X-COM®-SYSTEM

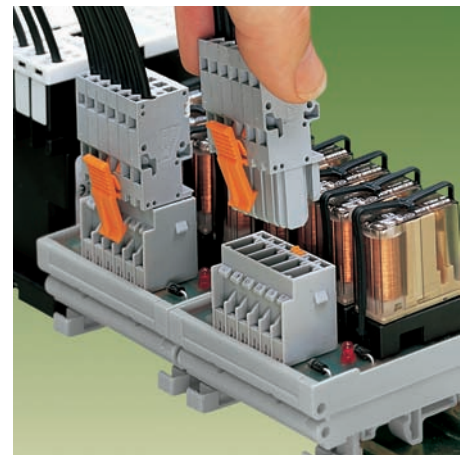
## Headers with Solder Pins

### Pin Spacing 5 mm / 0.197 in

<b>Pin spacing 5 mm / 0.197 in, grey</b> 250 V/4 kV/3   300/600V, 10/5 A 500 V/4 kV/2   300 V, 10 A 32 A**		<b>Pin spacing 5 mm / 0.197 in, grey</b> 250 V/4 kV/3   300/600V, 10/5 A 500 V/4 kV/2   300 V, 10 A 32 A**	
*		*	

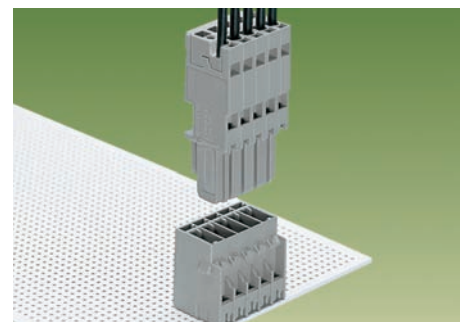


No. of poles	Item No.	Pack. unit pcs	No. of poles	Item No.	Pack. unit pcs
<b>Headers with straight solder pins, grey, solder pin</b>			<b>Headers with right angle solder pins, grey, solder pin</b>		
	1 x 1 mm			1 x 1 mm	
2	769-632	200	2	769-662	200
3	769-633	100	3	769-663	100
4	769-634	50	4	769-664	50
5	769-635	50	5	769-665	50
6	769-636	50	6	769-666	50
7	769-637	50	7	769-667	50
8	769-638	25	8	769-668	25
9	769-639	25	9	769-669	25
10	769-640	25	10	769-670	25
11	769-641	25	11	769-671	25
12	769-642	25	12	769-672	25
13	769-643	25	13	769-673	25
14	769-644	25	14	769-674	25
15	769-645	25	15	769-675	25

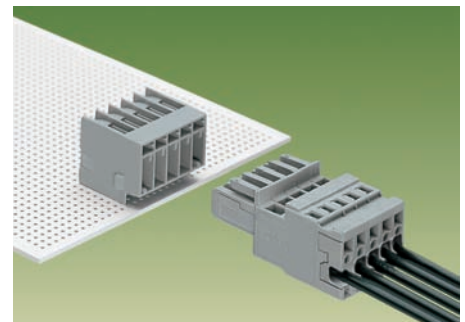
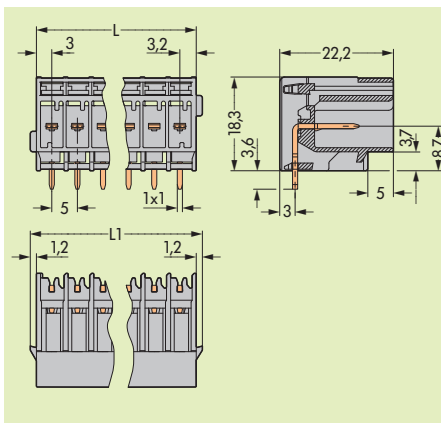
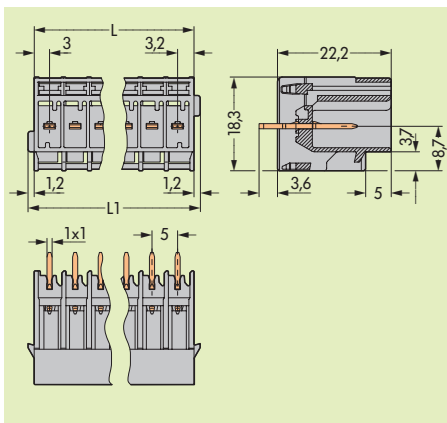


Connection to a relay module inside the switchgear cabinet

Accessories	
<b>For female plugs</b> see pages 9.44 – 9.46	<b>For female plugs</b> see pages 9.44 – 9.46
<b>Code pin, orange,</b> for coding the female plugs 769-435 100 (4 x 25)	<b>Code pin, orange,</b> for coding the female plugs 769-435 100 (4 x 25)
<b>Dimensions (in mm)</b> Diameter of drilled hole: 1.4 <sup>+0.1</sup> mm	



$L = (\text{No. of poles} - 1) \times \text{pin spacing} + 6.2 \text{ mm}$   
 $L1 = L + 2.4 \text{ mm}$



\* For further approvals with corresponding ratings see section 15.

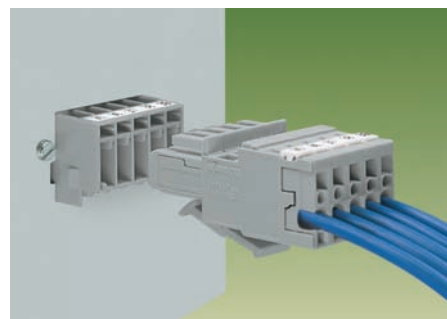
\*\* See current-carrying capacity curves page 9.50 and [www.wago.com](http://www.wago.com)

# Headers with Solder Pins and Fixing Flanges Pin Spacing 5 mm / 0.197 in

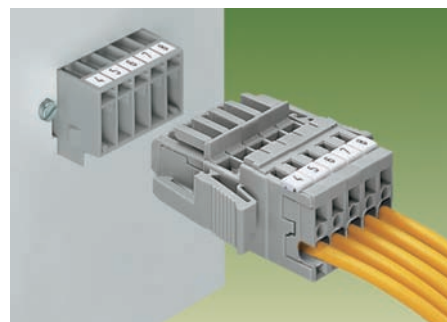
<b>Pin spacing 5 mm / 0.197 in, grey</b> 250 V/4 kV/3   300/600V, 10/5 A 500 V/4 kV/2   300 V, 10 A 32 A**		<b>Pin spacing 5 mm / 0.197 in, grey</b> 250 V/4 kV/3   300/600V, 10/5 A 500 V/4 kV/2   300 V, 10 A 32 A**		<b>Examples of application</b>
*		*		



No. of poles	Item No.	Pack. unit pcs	No. of poles	Item No.	Pack. unit pcs
<b>Headers with straight solder pins with fixing flanges, grey, solder pin 1 x 1 mm</b>			<b>Headers with right angle solder pins with fixing flanges, grey, solder pin 1 x 1 mm</b>		
2	769-632/003-000	100	2	769-662/003-000	100
3	769-633/003-000	100	3	769-663/003-000	100
4	769-634/003-000	50	4	769-664/003-000	50
5	769-635/003-000	50	5	769-665/003-000	50
6	769-636/003-000	25	6	769-666/003-000	25
7	769-637/003-000	25	7	769-667/003-000	25
8	769-638/003-000	25	8	769-668/003-000	25
9	769-639/003-000	25	9	769-669/003-000	25
10	769-640/003-000	25	10	769-670/003-000	25
11	769-641/003-000	25	11	769-671/003-000	25
12	769-642/003-000	25	12	769-672/003-000	25
13	769-643/003-000	15	13	769-673/003-000	15
14	769-644/003-000	15	14	769-674/003-000	15
15	769-645/003-000	15	15	769-675/003-000	15



Header and 1-conductor female plug with locking levers

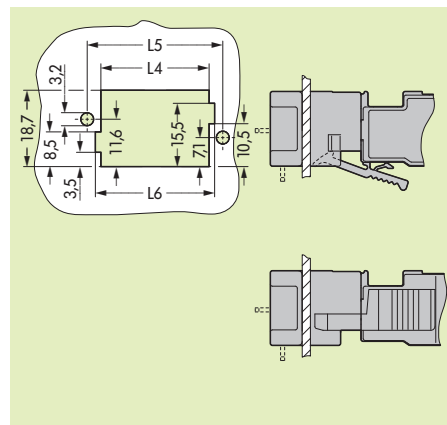
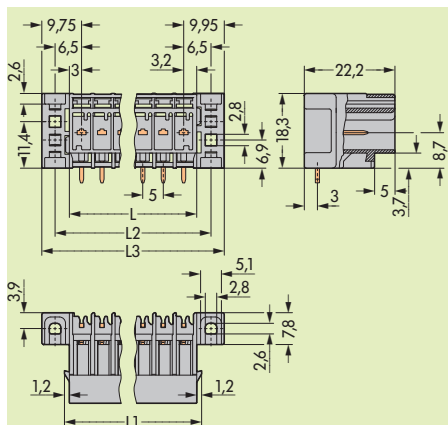
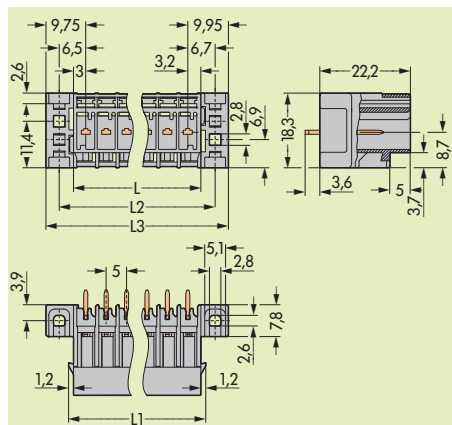


Header and 1-conductor female plug with lateral locking levers

Accessories	
<b>For female plugs</b> see pages 9.44 – 9.46	<b>For female plugs</b> see pages 9.44 – 9.46
<b>Code pin, orange,</b> for coding the female plugs <b>769-435</b> 100 (4 x 25)	<b>Code pin, orange,</b> for coding the female plugs <b>769-435</b> 100 (4 x 25)
<b>Dimensions (in mm) Diameter of drilled hole: 1.4<sup>+0.1</sup> mm</b>	

$L = (\text{No. of poles} - 1) \times \text{pin spacing} + 6.2 \text{ mm}$   
 $L1 = L + 2.4 \text{ mm}$   
 $L2 = L + 7 \text{ mm}$   
 $L3 = L + 13.5 \text{ mm}$

$L4 = \text{No. of poles} \times \text{pin spacing} + 1.7 \text{ mm}$   
 $L5 = L4 + 6.6 \text{ mm}$   
 $L6 = L4 + 2.6 \text{ mm}$



\* For further approvals with corresponding ratings see section 15.

\*\* See current-carrying capacity curves page 9.50 and [www.wago.com](http://www.wago.com)

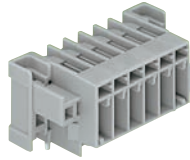


# X-COM®-SYSTEM

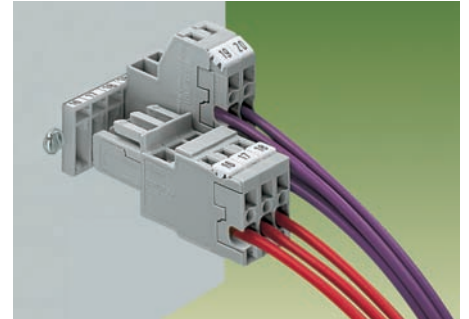
## Headers with Solder Pins and Fixing Flanges for Feedthrough Applications

### Pin Spacing 5 mm / 0.197 in

<b>Pin spacing 5 mm / 0.197 in, grey</b> 250 V/4 kV/3 500 V/4 kV/2 32 A**	<b>Pin spacing 5 mm / 0.197 in, grey</b> 300/600V, 10/5 A 300 V, 10 A	<b>Pin spacing 5 mm / 0.197 in, grey</b> 250 V/4 kV/3 500 V/4 kV/2 32 A**	<b>Pin spacing 5 mm / 0.197 in, grey</b> 300/600V, 10/5 A 300 V, 10 A	Examples of application
*		*		



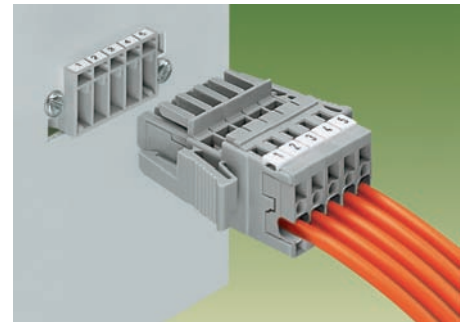
No. of poles	Item No.	Pack. unit pcs	No. of poles	Item No.	Pack. unit pcs
<b>Headers with straight solder pins with fixing flanges for feedthrough applications, grey, solder pin 1 x 1 mm</b>			<b>Headers with right angle solder pins with fixing flanges for feedthrough applications, grey, solder pin 1 x 1 mm</b>		
2	769-632/004-000	100	2	769-662/004-000	100
3	769-633/004-000	100	3	769-663/004-000	100
4	769-634/004-000	50	4	769-664/004-000	50
5	769-635/004-000	50	5	769-665/004-000	50
6	769-636/004-000	25	6	769-666/004-000	25
7	769-637/004-000	25	7	769-667/004-000	25
8	769-638/004-000	25	8	769-668/004-000	25
9	769-639/004-000	25	9	769-669/004-000	25
10	769-640/004-000	25	10	769-670/004-000	25
11	769-641/004-000	25	11	769-671/004-000	25
12	769-642/004-000	25	12	769-672/004-000	25
13	769-643/004-000	15	13	769-673/004-000	15
14	769-644/004-000	15	14	769-674/004-000	15
15	769-645/004-000	15	15	769-675/004-000	15



Header and 1-and 2-conductor female plugs

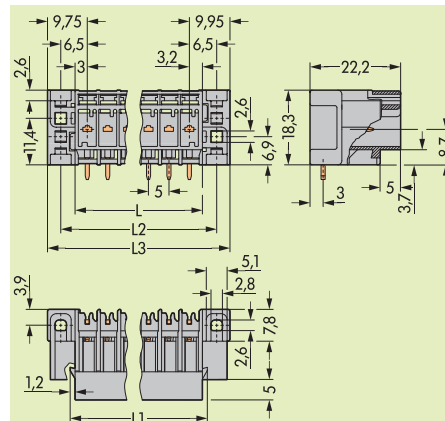
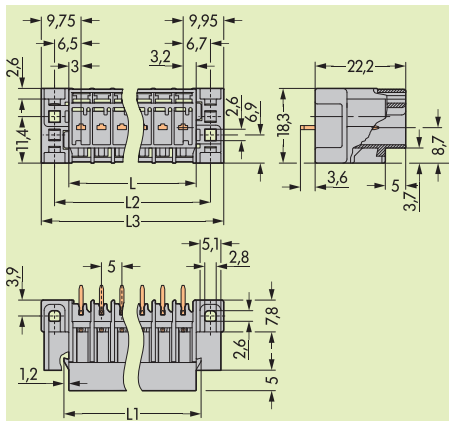
#### Accessories

<b>For female plugs</b> see pages 9.44 – 9.46	<b>For female plugs</b> see pages 9.44 – 9.46
<b>Code pin, orange,</b> for coding the female plugs <b>769-435</b> 100 (4 x 25)	<b>Code pin, orange,</b> for coding the female plugs <b>769-435</b> 100 (4 x 25)



Header and 1-conductor female plug with lateral locking levers

<b>Dimensions (in mm)</b>	<b>Diameter of drilled hole: 1.4<sup>+0.1</sup> mm</b>
---------------------------	--



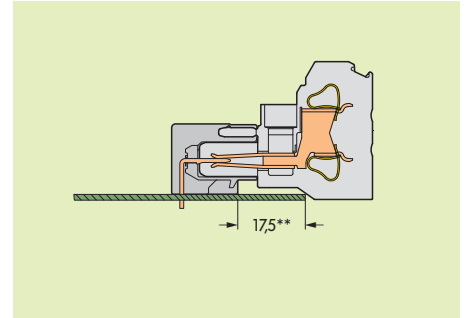
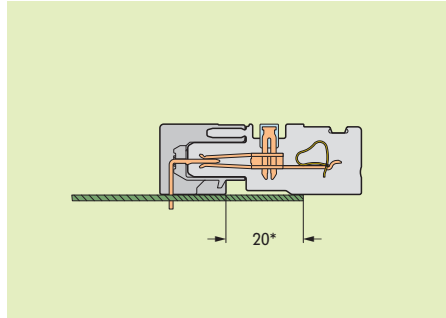
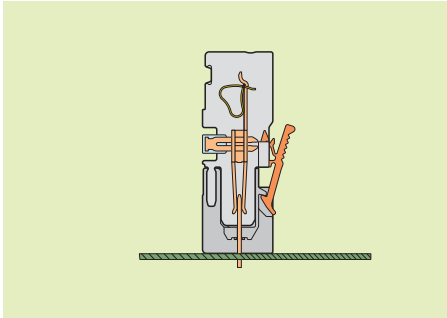
$L = (\text{No. of poles} - 1) \times \text{pin spacing} + 6.2 \text{ mm}$   
 $L1 = L + 2.4 \text{ mm}$   
 $L2 = L + 7 \text{ mm}$   
 $L3 = L + 13.5 \text{ mm}$

\* For further approvals with corresponding ratings see section 15.

\*\* See current-carrying capacity curves page 9.50 and [www.wago.com](http://www.wago.com)

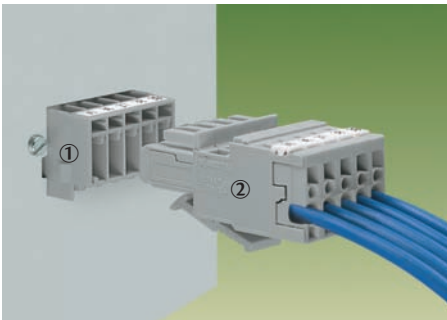
# Types of Application Headers with Solder Pins with 1-/2-Conductor Female Plugs

Headers with straight solder pins	Headers with right angle solder pins	Headers with right angle solder pins
-----------------------------------	--------------------------------------	--------------------------------------

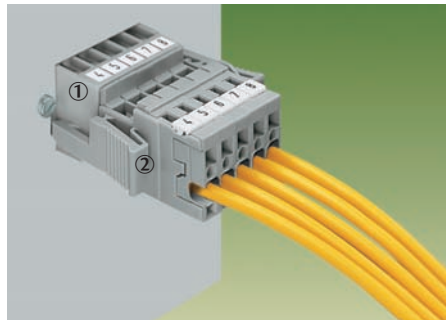


\* Maximum dimension when using 1-conductor female plugs

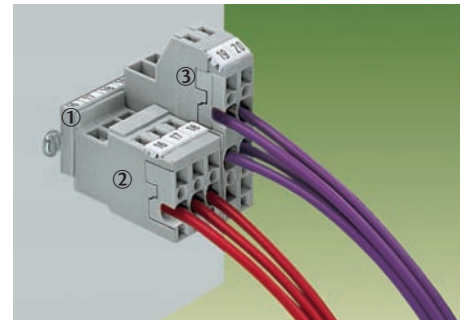
\*\* Maximum dimension when using 2-conductor female plugs



① Header with fixing flanges  
② 1-conductor female plug with **bottom-mounted** locking levers



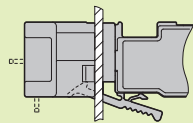
① Header with fixing flanges  
② 1-conductor female plug with **lateral** locking levers



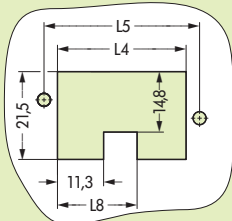
① Header with fixing flanges for feedthrough application  
② 1-conductor female plug  
③ 2-conductor female plug

## Dimensions (in mm) Cutouts for headers with fixing flanges for feedthrough applications and locking levers

### Female plugs with **bottom-mounted** locking levers

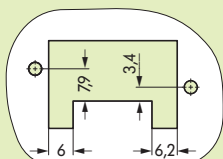


Cutouts for **2-pole** locking levers (2- to 15-pole female plugs)

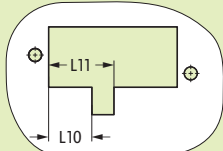
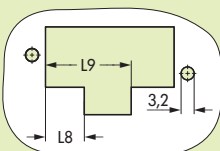


Layout for locking levers outer ...

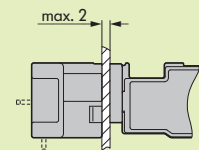
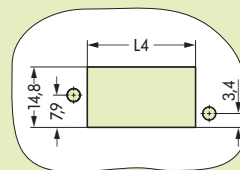
Cutouts for **single pole** locking levers



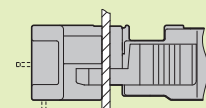
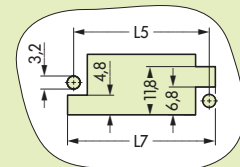
... inner



### Female plug **without** locking levers



### Female plug with **lateral** locking levers



- L 4 = No. of poles x pin spacing + 1.7 mm
  - L 5 = L4 + 6.6
  - L 7 = L4 + 9.4
  - L 8 = No. of poles V x pin spacing - 0.3 mm
  - L 9 = L8 + 11.6
  - L10 = No. of poles V x pin spacing + 0.6 mm
  - L11 = L10 + 5.4 mm
- No. of poles V: Number of poles before the pole with the locking lever attached

# X-COM®-SYSTEM 1-Conductor Female Plugs

# Female Plugs with Locking Levers

<p><b>0.08 – 4 mm<sup>2</sup></b> 500 V/6 kV/3 ① 32 A**</p> <p><b>Module width 5 mm / 0.197 in</b> 8 – 9 mm / 0.33 in</p> <p>* </p>	<p><b>AWG 28 – 12</b> 300/600 V, 10/5 A </p> <p>300 V, 10 A </p>	<p><b>0.08 – 4 mm<sup>2</sup></b> 500 V/6 kV/3 ① 32 A**</p> <p><b>Module width 5 mm / 0.197 in</b> 8 – 9 mm / 0.33 in</p> <p>* </p>	<p><b>AWG 28 – 12</b> 300/600 V, 10/5 A </p> <p>300 V, 10 A </p>
---	--	---	--



- ① 500 V = rated voltage  
6 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② See application notes on page 2.43

Description	No. of poles	Item No.	Pack. unit pcs	No. of poles	Item No.	Pack. unit pcs
<b>1-conductor female plug,</b> to be fixed on receptacle terminal blocks or male connectors	1 pole	<b>769-101</b>	200	<b>1-conductor female plugs with lateral locking levers,</b> with coding fingers, grey, commoning possibility with miniature adjacent jumpers <b>– only to be used for male connectors –</b>		
	2 poles	<b>769-102</b>	100	2 poles	<b>769-102/021-000</b>	50
	3 poles	<b>769-103</b>	50	3 poles	<b>769-103/021-000</b>	25
	:	:		4 poles	<b>769-104/021-000</b>	25
	14 poles	<b>769-114</b>	10	:	:	
	15 poles	<b>769-115</b>	10	9 poles	<b>769-109/021-000</b>	20
<b>1-conductor female plug, green-yellow</b> Higher number of poles and/or mixed (grey/green-yellow) on request	<b>1-conductor female plug,</b> with coding fingers, green-yellow, commoning possibility with miniature adjacent jumpers			:	:	
	1 pole	<b>769-101/000-016</b>	200	14 poles	<b>769-114/021-000</b>	10
				15 poles	<b>769-115/021-000</b>	10

### Accessories

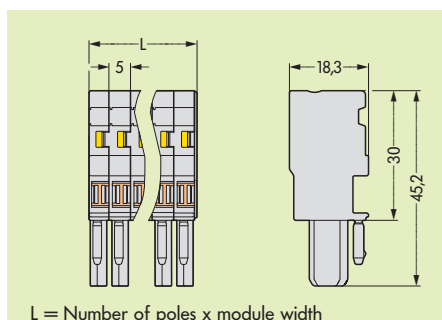
Appropriate marking system **Mini-WSB** (see section 14)

	<b>Insulation stop</b> ②, white	0.08 – 0.2 mm <sup>2</sup>	<b>769-470</b>	200 strips	0.08 – 0.2 mm <sup>2</sup>	<b>769-470</b>	200 strips	
	light grey	0.25 – 0.5 mm <sup>2</sup>	<b>769-471</b>	200 strips	0.25 – 0.5 mm <sup>2</sup>	<b>769-471</b>	200 strips	
	dark grey	0.75 – 1 mm <sup>2</sup>	<b>769-472</b>	200 strips	0.75 – 1 mm <sup>2</sup>	<b>769-472</b>	200 strips	
	<b>Miniature adjacent jumper,</b> insulated, suitable for 1-conductor female plugs	I <sub>N</sub> 24 A	grey	<b>769-402</b>	100 (4 x 25)	grey	<b>769-402</b>	100 (4 x 25)
		<b>Locking levers,</b> can be snapped on female plugs	Female plugs with 1 pole	2 poles and more				
grey		<b>769-428</b>	<b>769-430</b>	100 (4 x 25)				
orange		<b>769-429</b>	<b>769-431</b>	100 (4 x 25)				
	<b>Protective warning marker,</b> for 5 terminal blocks, fits into screwdriver slot	yellow	<b>280-415</b>	100 (4 x 25)	yellow	<b>280-415</b>	100 (4 x 25)	
		<b>Test plug, w. cable 500 mm/1.77"</b>						
2 mm / 0.079 in Ø		red	<b>210-136</b>	50 (5 x 10)	red	<b>210-136</b>	50 (5 x 10)	
2.3 mm / 0.091 in Ø		yellow	<b>210-137</b>	50 (5 x 10)	yellow	<b>210-137</b>	50 (5 x 10)	
	<b>Strain relief plate,</b> snap-on typ, for 1-conductor female plugs	grey			grey			
	1 pole	<b>769-410</b>	100 (4 x 25)	1 pole	<b>769-410</b>	100 (4 x 25)		
	2 to 3 poles	<b>769-411</b>	100 (4 x 25)	2 to 3 poles	<b>769-411</b>	100 (4 x 25)		
	4 to 5 poles	<b>769-412</b>	100 (4 x 25)	4 to 5 poles	<b>769-412</b>	100 (4 x 25)		
	6 to 9 poles	<b>769-413</b>	100 (4 x 25)	6 to 9 poles	<b>769-413</b>	100 (4 x 25)		
	10 to 15 poles	<b>769-414</b>	100 (4 x 25)	10 to 15 poles	<b>769-414</b>	100 (4 x 25)		

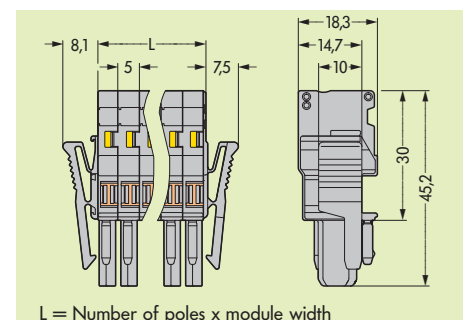
### Dimensions (in mm)

1-pole female plug  
for example

- for phase selection in three-phase network
- as a test plug with rated current capability
- simplified circuit expansion – addition of base circuits requires only female plugs to be plugged in



L = Number of poles x module width







L = Number of poles x module width

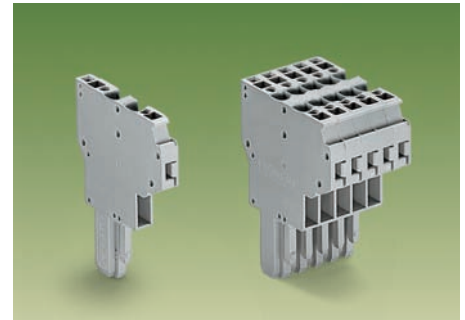
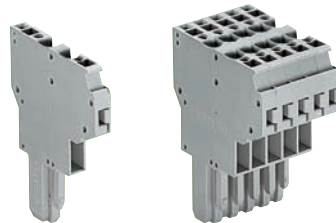
\* For further approvals with corresponding ratings see section 15.

\*\* See current-carrying capacity curves pages 9.48 – 9.51 and [www.wago.com](http://www.wago.com)

# 2-Conductor Female Plugs

	<p><b>0.08 – 4 mm<sup>2</sup></b>   <b>AWG 28 – 12</b>  <b>500 V/6 kV/3 ①</b>   <b>300/600 V, 10/5 A ②</b>  <b>32 A**</b>   <b>300 V, 10 A ③</b></p> <p><b>Module width 5 mm / 0.197 in</b>   <b>8 – 9 mm / 0.33 in</b></p> <p>*   </p>	<p><b>Application notes</b></p> <p><b>Dimensions of the female plugs</b></p>
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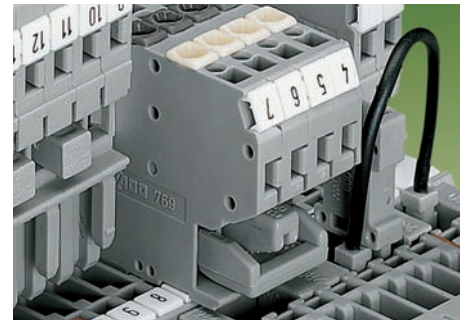
- ① 500 V = rated voltage  
6 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② See application notes on pages 2.43/2.45



### 2-conductor female plugs

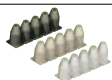






- commoning of signals from one sub-assembly to the other (bus structure)
- use as a T-wire branch tap connection, as for example use in lighting wiring
- higher number of connection possibilities

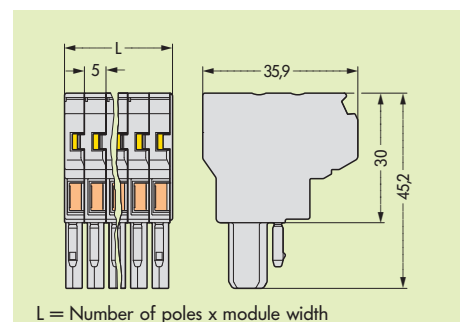
Description	No. of poles	Item No.	Pack. unit pcs
<b>2-conductor female plug,</b> to be fixed on receptacle terminal blocks or male connectors	<b>2-cond. female plugs,</b> with coding fingers, grey, commoning possibility w. adjacent jumpers a. staggered jumpers		
	1 pole	<b>769-121</b>	100
	2 poles	<b>769-122</b>	50
	3 poles	<b>769-123</b>	25
	4 poles	<b>769-124</b>	25
	5 poles	<b>769-125</b>	25
	6 poles	<b>769-126</b>	10
	7 poles	<b>769-127</b>	10
	8 poles	<b>769-128</b>	10
	9 poles	<b>769-129</b>	10
	10 poles	<b>769-130</b>	10
	11 poles	<b>769-131</b>	5
	12 poles	<b>769-132</b>	5
	13 poles	<b>769-133</b>	5
	14 poles	<b>769-134</b>	5
	15 poles	<b>769-135</b>	5
<b>2-conductor female plug, green-yellow</b> Higher number of poles and/or mixed (grey/green-yellow) on request	<b>2-conductor female plug,</b> with coding fingers, green-yellow, commoning possibility with adjacent jumpers and staggered jumpers		
	1 pole	<b>769-121/000-016</b>	100



### Commoning possibility of female plugs

- after de-plugging commoned potentials still remain commoned
- use of the plug jumper instead of additional wired jumpers
- can be used as a "hardware" key for safety lockout
- as a commoning jumper for sensor circuits or machine programming

Accessories	Appropriate marking system <b>Mini-WSB</b> (see section 14)		
	<b>Insulation stop ②,</b> white	0.08 – 0.2 mm <sup>2</sup>	<b>769-470</b> 200 strips
	5 pcs/strip light grey	0.25 – 0.5 mm <sup>2</sup>	<b>769-471</b> 200 strips
	dark grey	0.75 – 1 mm <sup>2</sup>	<b>769-472</b> 200 strips
	<b>Adjacent jumpers,</b> insulated, suitable for 2-conductor female plugs	n 24 A grey	<b>280-402</b> 200 (8 x 25)
		<b>Staggered jumper ②,</b> from 1 to 2 insulated,	I <sub>n</sub> 24 A
from 1 to 3			<b>780-453</b> 100 (4 x 25)
width 5 mm / 0.197 in, from 1 to 4			<b>780-454</b> 100 (4 x 25)
suitable for 2-conduc- from 1 to 5 tor female plugs			<b>780-455</b> 50 (2 x 25)
	<b>Locking levers,</b> can be snapped on female plugs	Female plugs with 1 pole 2 poles and more	
		grey	<b>769-428 769-430</b> 100 (4 x 25)
		orange	<b>769-429 769-431</b> 100 (4 x 25)
	<b>Protective warning marker,</b> for 5 terminal blocks, fits into screwdriver slot	yellow	<b>280-415</b> 100 (4 x 25)
		<b>Test plug,</b> w. cable 500 mm / 1.77" 2 mm / 0.079 in Ø	red
2.3 mm / 0.091 in Ø		yellow	<b>210-137</b> 50 (2 x 25)
	<b>Strain relief plate,</b> snap-on typ, for 2-conductor female plugs	grey	
		1 pole	<b>769-410</b> 100 (4 x 25)
		2 to 3 poles	<b>769-411</b> 100 (4 x 25)
		4 to 5 poles	<b>769-412</b> 100 (4 x 25)
		6 to 9 poles	<b>769-413</b> 100 (4 x 25)
	10 to 15 poles	<b>769-414</b> 100 (4 x 25)	

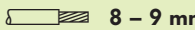


\* For further approvals with corresponding ratings see section 15.

\*\* See current-carrying capacity curves pages 9.48 – 9.51 and www.wago.com



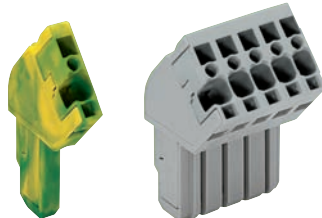
0.08 – 4 mm<sup>2</sup> | AWG 28 – 12  
 500 V/6 kV/3 ① | 300/600 V, 10/5 A ②  
 32 A\*\* | 300 V, 10 A ③

Module width 5 mm / 0.197 in  
 8 – 9 mm / 0.33 in

\*   





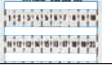
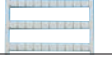
Examples of application

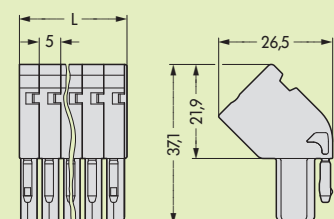
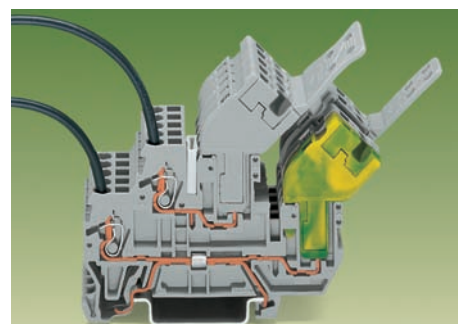
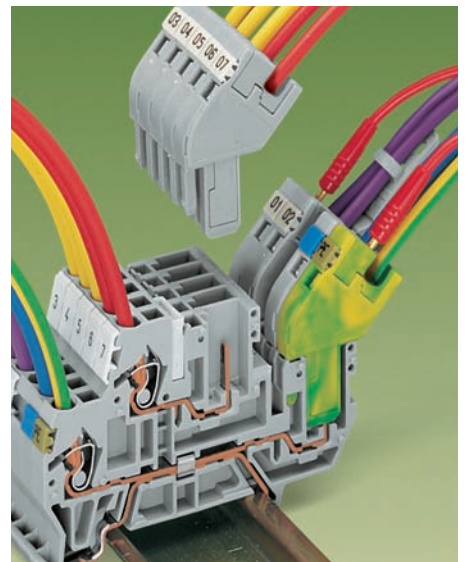
Dimensions of the female plugs



- ① 500 V = rated voltage  
 6 kV = rated surge voltage  
 3 = pollution degree  
 (see also section 15)

- ② See application notes on page 2.43

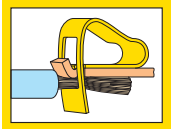
Description	No. of poles	Item No.	Pack. unit pcs
<b>Angled female plug,</b> for use with receptacle terminal blocks of series 769 and 870 or male connectors	<b>1-conductor angled female plugs,</b> with coding fingers, grey		
	1 pole	<b>769-101/022-000</b>	200
	2 poles	<b>769-102/022-000</b>	100
	3 poles	<b>769-103/022-000</b>	50
	4 poles	<b>769-104/022-000</b>	50
	5 poles	<b>769-105/022-000</b>	50
	6 poles	<b>769-106/022-000</b>	25
	7 poles	<b>769-107/022-000</b>	25
	8 poles	<b>769-108/022-000</b>	25
	9 poles	<b>769-109/022-000</b>	25
	10 poles	<b>769-110/022-000</b>	25
	11 poles	<b>769-111/022-000</b>	20
	12 poles	<b>769-112/022-000</b>	20
	13 poles	<b>769-113/022-000</b>	10
	14 poles	<b>769-114/022-000</b>	10
	15 poles	<b>769-115/022-000</b>	10
<b>Angled female plug, green-yellow</b> Higher number of poles and/or mixed (grey/green-yellow) on request	<b>1-conductor angles female plug,</b> with coding fingers, green-yellow		
	1 pole	<b>769-101/022-016</b>	100
<b>Accessories</b> Appropriate marking system <b>Mini-WSB/WMB</b> (see section 14)			
	<b>Insulation stop</b> ②, white	0.08 – 0.2 mm <sup>2</sup>	<b>769-470</b> 200 strips
	5 pcs/strip light grey	0.25 – 0.5 mm <sup>2</sup>	<b>769-471</b> 200 strips
	dark grey	0.75 – 1 mm <sup>2</sup>	<b>769-472</b> 200 strips
	<b>Protective warning marker,</b> for 5 terminal blocks, fits into screwdriver slot	yellow	<b>280-415</b> 100 (4 x 25)
		<b>Test plug, w. cable 500 mm/1'7.7"</b>	
2 mm/0.079 in Ø		red	<b>210-136</b> 50 (5 x 10)
	2.3 mm/0.091 in Ø	yellow	<b>210-137</b> 50 (5 x 10)
	<b>Strain relief plate,</b> snap-on typ, for 1-conductor female plugs	grey	
		1 pole	<b>769-410</b> 100 (4 x 25)
		2 to 3 poles	<b>769-411</b> 100 (4 x 25)
		4 to 5 poles	<b>769-412</b> 100 (4 x 25)
	6 to 9 poles	<b>769-413</b> 100 (4 x 25)	
	10 to 15 poles	<b>769-414</b> 100 (4 x 25)	
	<b>WAGO WMB multi-marking system,</b> fits in all miniature WSB receptacles	see section 14	
	<b>Miniature WSB quick marking card,</b> 10 strips with 10 markers each, white with black printing	see section 14	
Current-carrying capacity curves see <a href="http://www.wago.com">www.wago.com</a>			



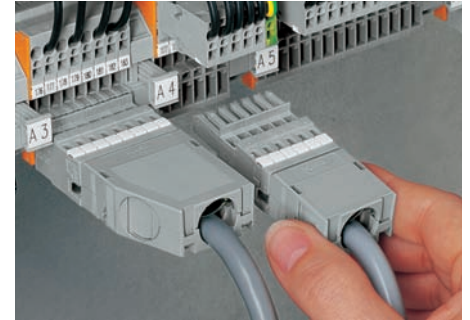
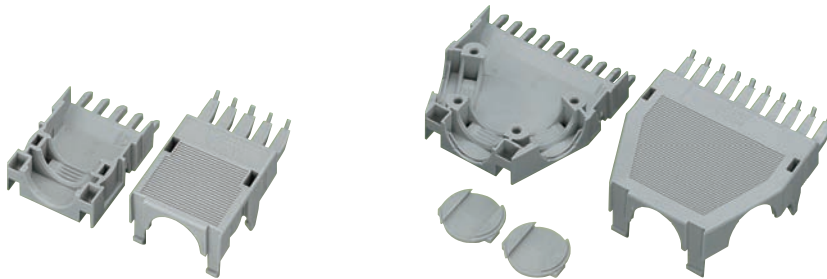
L = Number of poles x module width

\* For further approvals with corresponding ratings see section 15.

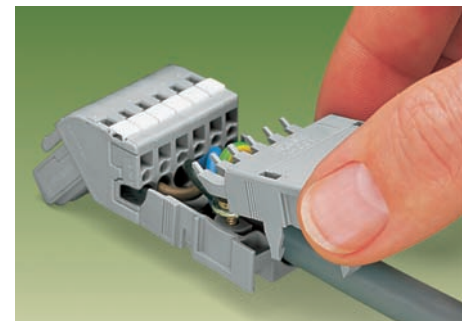
# Snap-on Type Strain Relief Housings for Series 769 Female Plugs and Male Connectors with CAGE CLAMP® Connection



Snap-on type strain relief housings suitable for – straight and angled female plugs with CAGE CLAMP® connection – male connectors with CAGE CLAMP® connection 2 – 5 poles	Snap-on type strain relief housings suitable for – straight and angled female plugs with CAGE CLAMP® connection – male connectors with CAGE CLAMP® connection 6 – 15 poles
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No. of poles	Item No.	Pack. unit pcs	No. of poles	Item No.	Pack. unit pcs
Snap-on type strain relief housings, pin spacing 5 mm/0.197 in, grey consisting of: strain relief support strain relief housing			Snap-on type strain relief housings, pin spacing 5 mm/0.197 in, grey consisting of: strain relief support strain relief housing		
2	769-1602 ①	25	6	769-1606 ①	25
3	769-1603 ①	25	7	769-1607 ①	25
4	769-1604 ①	25	8	769-1608 ②	25
5	769-1605 ①	25	9	769-1609 ②	25
			10	769-1610 ③	25
			11	769-1611 ③	25
			12	769-1612 ③	25
			13	769-1613 ③	25
			14	769-1614 ③	25
			15	769-1615 ③	25
① 1 cable outlet rear, 2- to 5-pole only suitable for cable ties (Fa. Hellermann – not offered by WAGO) not for cable clamp			① 1 cable outlet rear ② 2 cable outlets, 1 cover ③ 3 cable outlets, 2 covers		



Snapping on strain relief housing

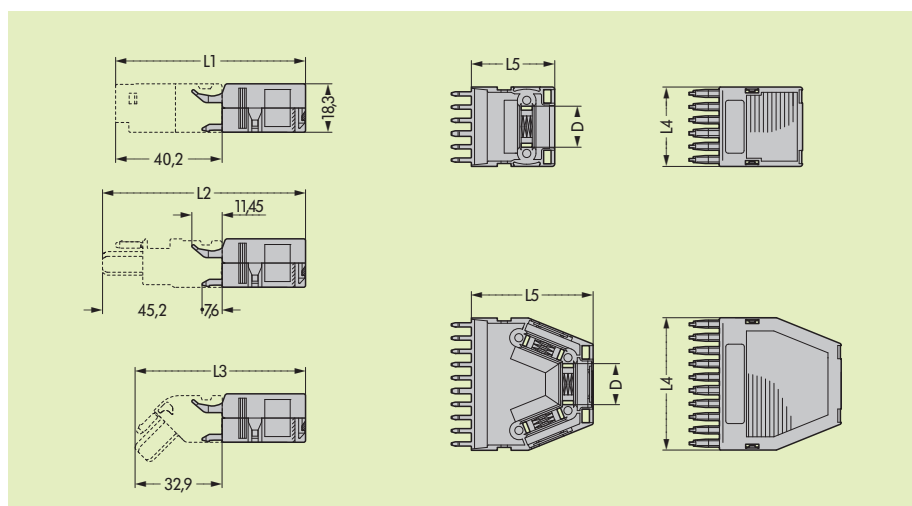
### Accessories (WSB marker cards see section 14)

	<b>Cable clamp, for strain relief</b>	
	<b>209-174</b>	25
	<b>Fixing screws, for cable clamp</b>	
	<b>209-173</b>	50



Female connector with strain relief housing

### Dimensions (in mm)

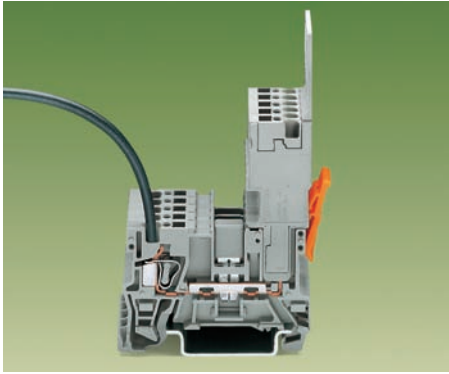
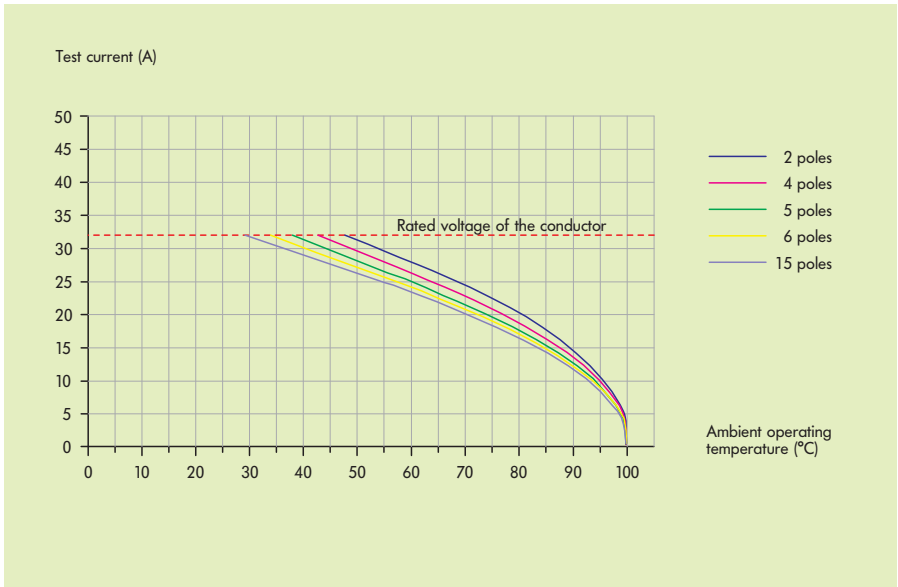


### Dimensions for strain relief housings

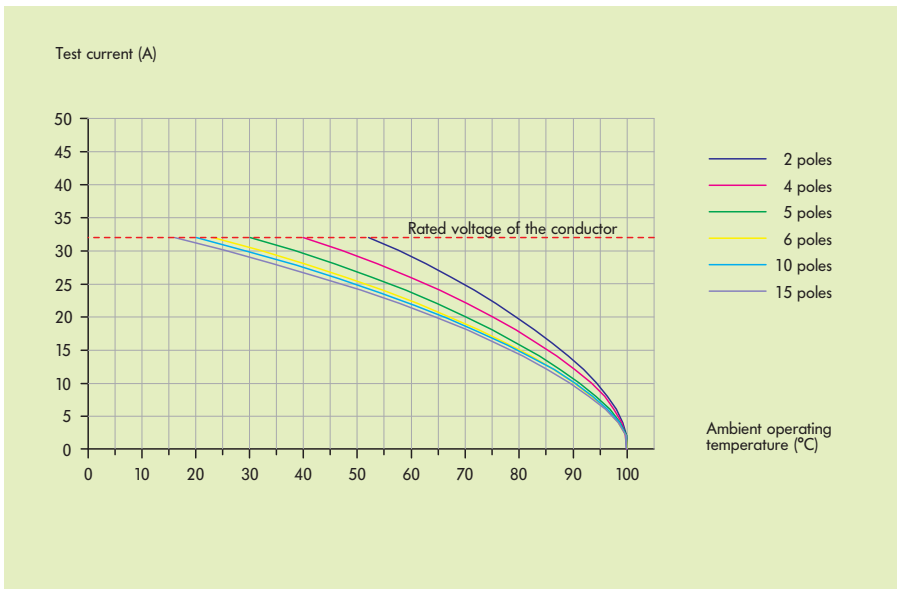
No. of poles	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	D
2	71.7	76.7	64.4	10	31.5	5
3	71.7	76.7	64.4	15	31.5	9.7
4	71.7	76.7	64.4	20	31.5	14
5	71.7	76.7	64.4	25	31.5	14
6	71.7	76.7	64.4	30	31.5	15.5
7	76.7	81.7	69.4	35	36.5	15.5
8	86.2	91.2	78.9	40	46	15.5
9	86.2	91.2	78.9	45	46	15.5
10	86.2	91.2	78.9	50	46	15.5
11	86.2	91.2	78.9	55	46	15.5
12	86.2	91.2	78.9	60	46	15.5
13	86.2	91.2	78.9	65	46	15.5
14	86.2	91.2	78.9	70	46	15.5
15	86.2	91.2	78.9	75	46	15.5

# X-COM®-SYSTEM

## Current-Carrying Capacity Curves for 1-Conductor/1-Pin and 2-Pin Receptacle Terminal Blocks and 1-Conductor Female Plugs

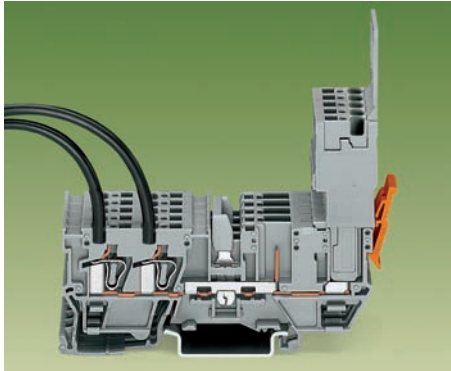
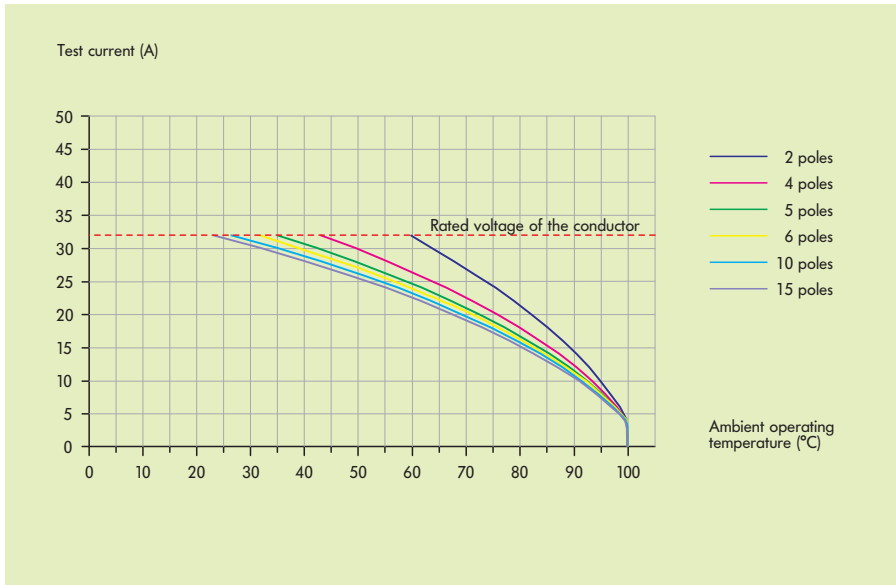
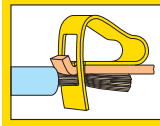


1-conductor/  
1-pin receptacle terminal block 769-176  
Cross section of conductor: 4 mm<sup>2</sup>/AWG 12  
1-conductor female plugs 769-102 to 769-115  
Cross section of conductor: 4 mm<sup>2</sup>/AWG 12  
Length of the conductor: 1 m

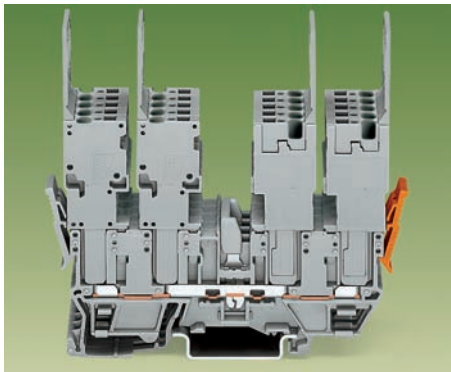
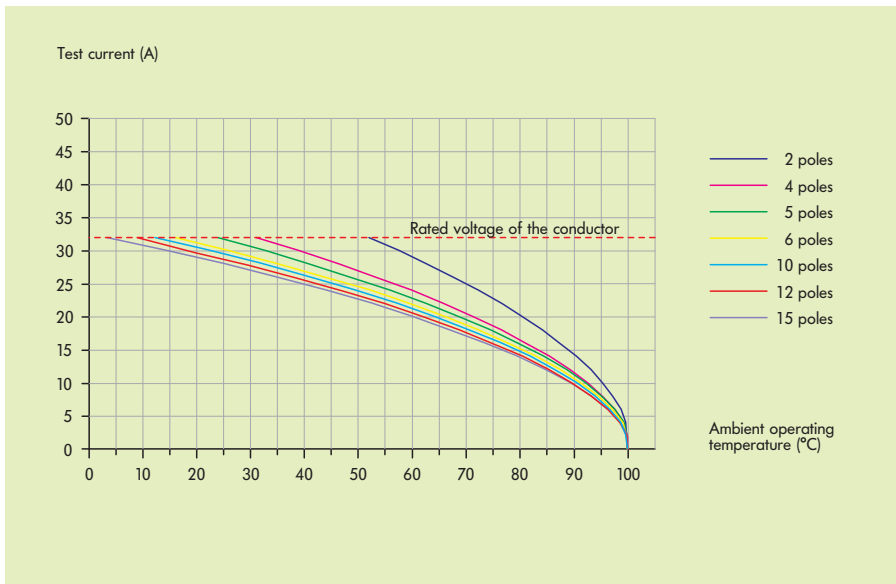


2-pin receptacle terminal block 769-156  
1-conductor female plugs 769-102 to 769-115  
Cross section of conductor: 4 mm<sup>2</sup>/AWG 12  
Length of the conductor: 1 m

# Current-Carrying Capacity Curves for 2-Conductor/2-Pin and 4-Pin Receptacle Terminal Blocks and 1-Conductor Female Plugs



2-conductor/  
2-pin receptacle terminal block 769-171  
Cross section of conductor: 4 mm<sup>2</sup>/AWG 12  
1-conductor female plugs 769-102 to 769-115  
Cross section of conductor: 4 mm<sup>2</sup>/AWG 12  
Length of the conductor: 1 m

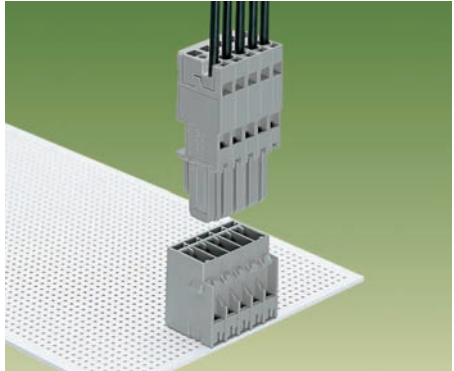
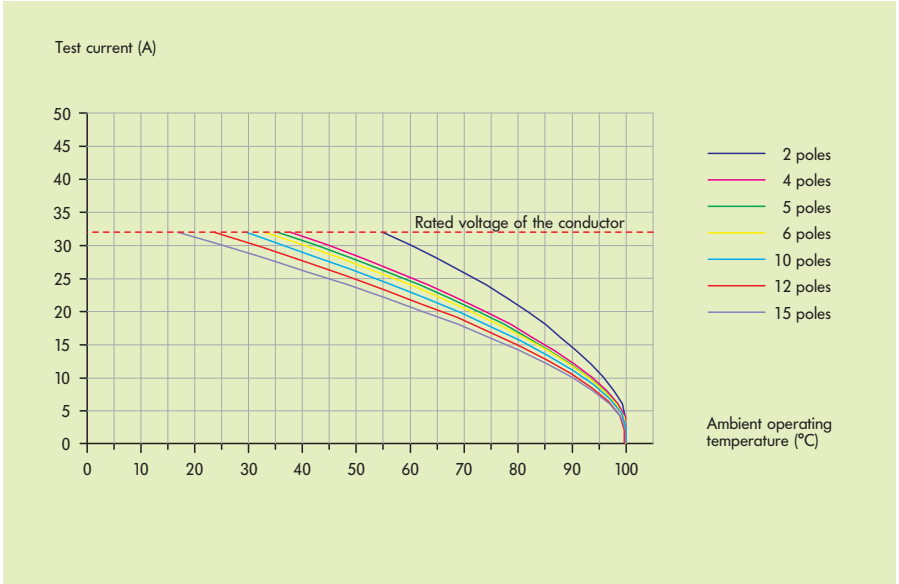


4-pin receptacle terminal block 769-151  
1-conductor female plugs 769-102 to 769-115  
Cross section of conductor: 4 mm<sup>2</sup>/AWG 12  
Length of the conductor: 1 m



# X-COM<sup>®</sup>-SYSTEM

## Current-Carrying Capacity Curves for Headers with Straight and Right Angle Solder Pins and 1-Conductor Female Plugs

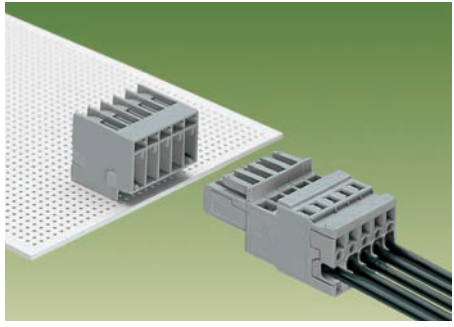
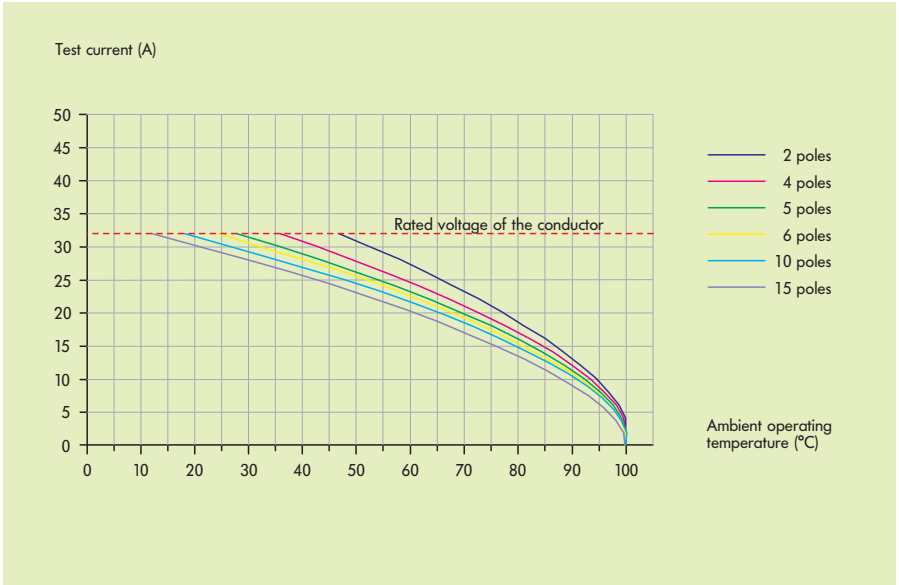


Headers with straight solder pin                      769-632 to 769-645

1-conductor female plugs                      769-102 to 769-115

Cross section of conductor:                      4 mm<sup>2</sup>/AWG 12

Length of the conductor:                      1 m



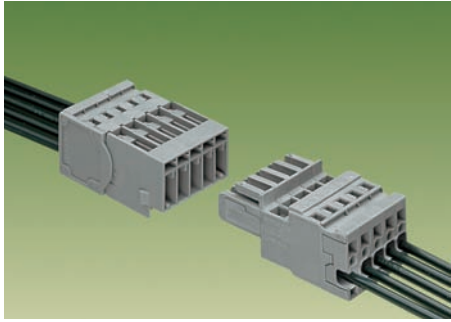
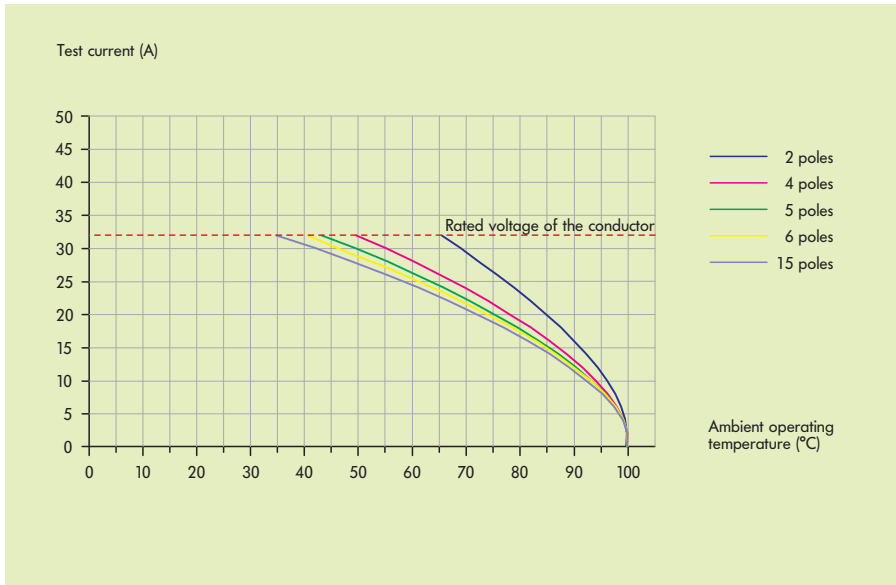
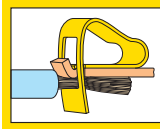
Headers with right angle solder pins                      769-662 to 769-675

1-conductor female plugs                      769-102 to 769-115

Cross section of conductor:                      4 mm<sup>2</sup>/AWG 12

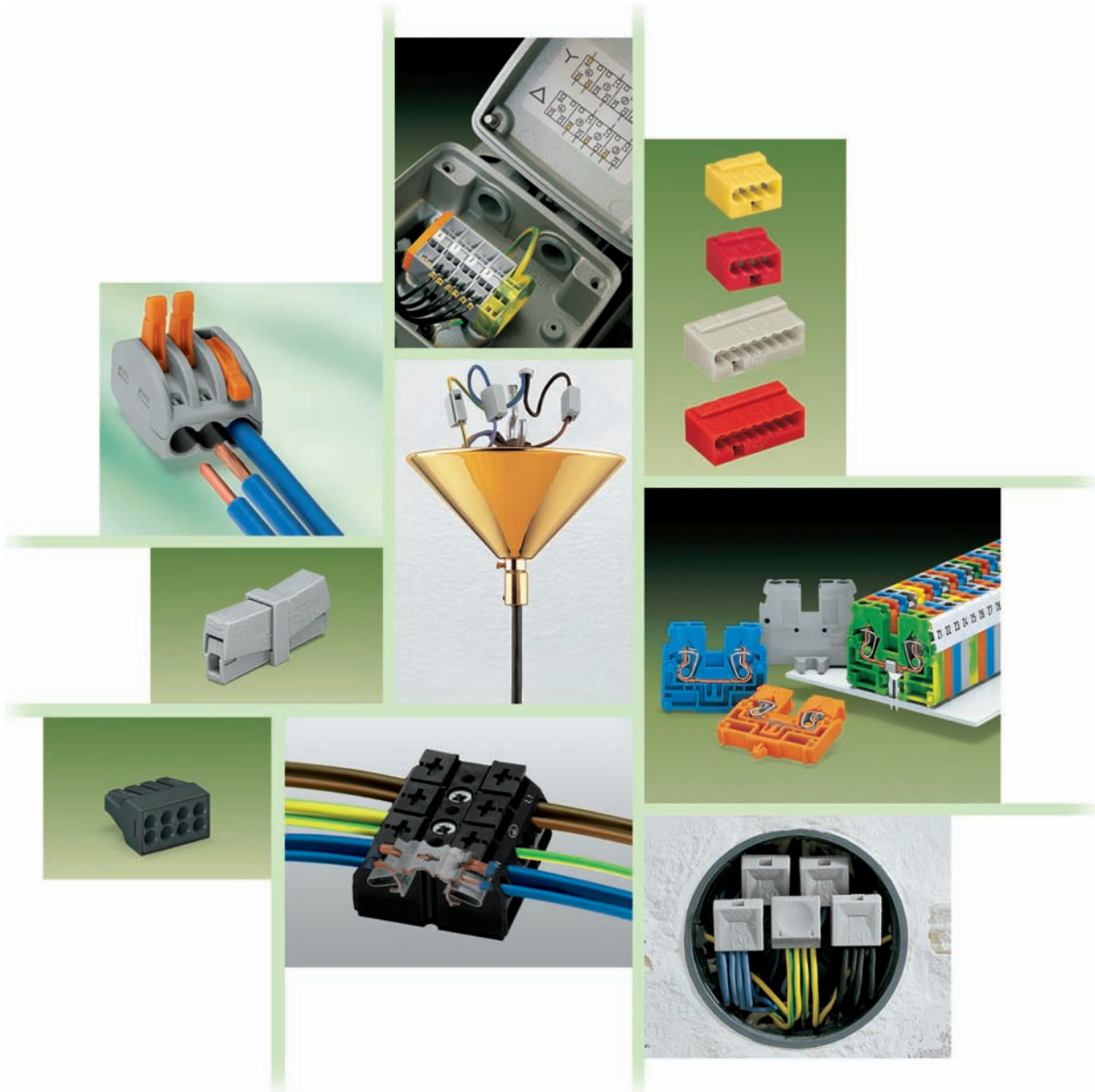
Length of the conductor:                      1 m

# Current-Carrying Capacity Curves for Male Connectors with CAGE CLAMP® Connection and 1-Conductor Female Plugs



Male connectors with CAGE CLAMP® connection  
 Cross section of conductor: 4 mm<sup>2</sup>/AWG 12

1-conductor female plugs  
 Cross section of conductor: 4 mm<sup>2</sup>/AWG 12  
 Length of the conductor: 1 m



For special or standard  
connection applications:  
WAGO terminal strips and  
connectors.



**Terminal strips**  
0.5 mm<sup>2</sup> to 4 mm<sup>2</sup> / AWG 20 – 12

Series 862 \_\_\_\_\_ 10.40 – 10.43



**Modular terminal blocks and terminal strips with CAGE CLAMP® connection, with fixing flanges or snap-in mounting feet,**

**Front-entry wiring,**  
– 2.5 mm<sup>2</sup>/4 mm<sup>2</sup> / AWG 12

Series 869 \_\_\_\_\_ 10.6 – 10.9

– 2.5 mm<sup>2</sup> / AWG 12

Series 264 \_\_\_\_\_ 10.10 – 10.14



– Test plug adapters for terminal strips, series 264

Series 249 \_\_\_\_\_ 10.15



**Side-entry wiring,**  
– 1.5 mm<sup>2</sup> / AWG 16 Series 260      2.5 mm<sup>2</sup> / AWG 14 Series 261  
4 mm<sup>2</sup> / AWG 12 Series 262 \_\_\_\_\_

10.16 – 10.27

– Test plug adapters for terminal strips

Series 260, 261 and 262 \_\_\_\_\_ 10.28



**Lighting connectors, "service" connectors**  
– 2.5 mm<sup>2</sup> / AWG 14

Series 224 \_\_\_\_\_ 10.30 – 10.31



**MICRO push-wire connectors for junction boxes**  
– 0.8 Ø mm / AWG 20

Series 243 \_\_\_\_\_ 10.34 – 10.35

**Push-wire connectors for junction boxes**  
– 1.5 mm<sup>2</sup> + 2.5 mm<sup>2</sup> / AWG 16 + 12

Series 273 and 773 \_\_\_\_\_ 10.36 – 10.37

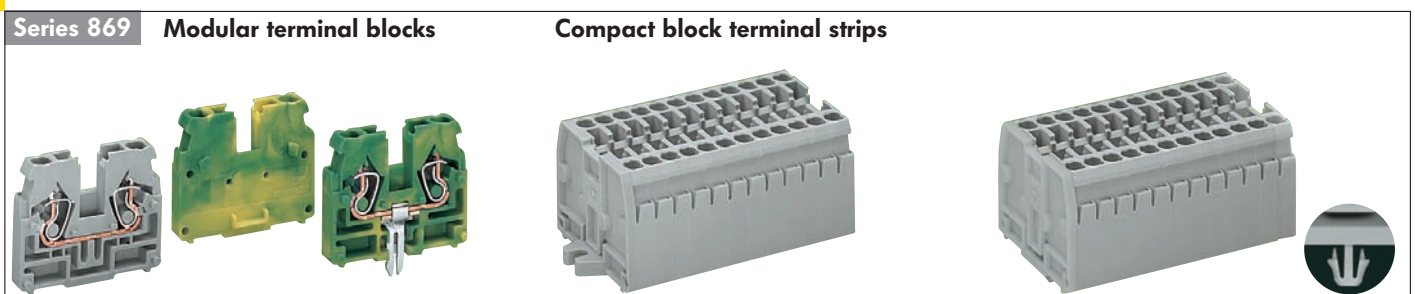


**Compact connectors for flexible conductors**  
– 2.5 mm<sup>2</sup> / AWG 12

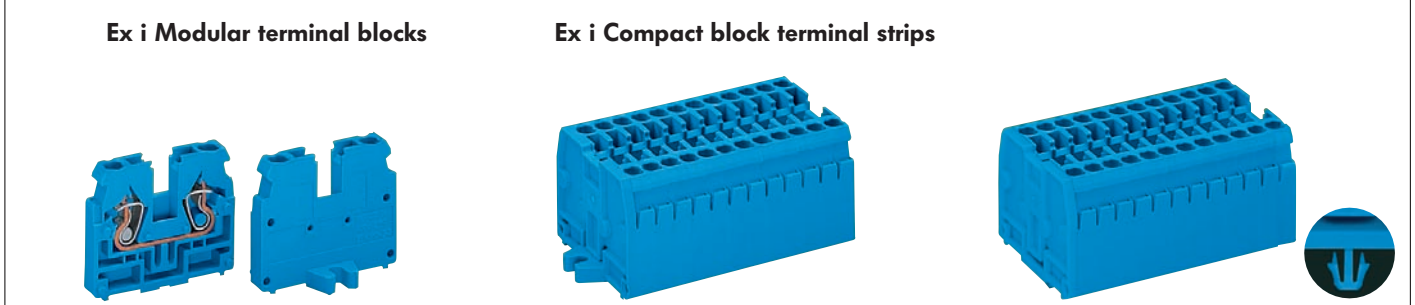
Series 222 \_\_\_\_\_ 10.38 – 10.39



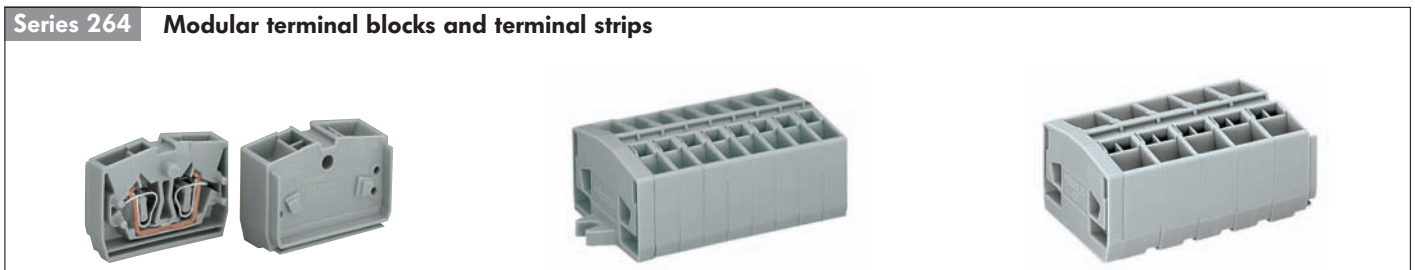
# Modular Terminal Blocks and Terminal Strips – Product Summary –



<b>Series 869</b>		<b>Modular terminal blocks</b>	<b>Compact block terminal strips</b>	
mm <sup>2</sup> /AWG	2.5/14 / 4/12		with fixing flanges	with snap-in mounting feet
Page	10.8 – 10.9		mm <sup>2</sup> /AWG   2.5/14 / 4/12	mm <sup>2</sup> /AWG   2.5/14 / 4/12
			Page   10.7	Page   10.7



<b>Ex i</b>		<b>Modular terminal blocks</b>	<b>Compact block terminal strips</b>	
mm <sup>2</sup> /AWG	2.5/14 / 4/12		with fixing flanges	with snap-in mounting feet
Page	10.8 – 10.9		mm <sup>2</sup> /AWG   2.5/14 / 4/12	mm <sup>2</sup> /AWG   2.5/14 / 4/12
			Page   10.7	Page   10.7



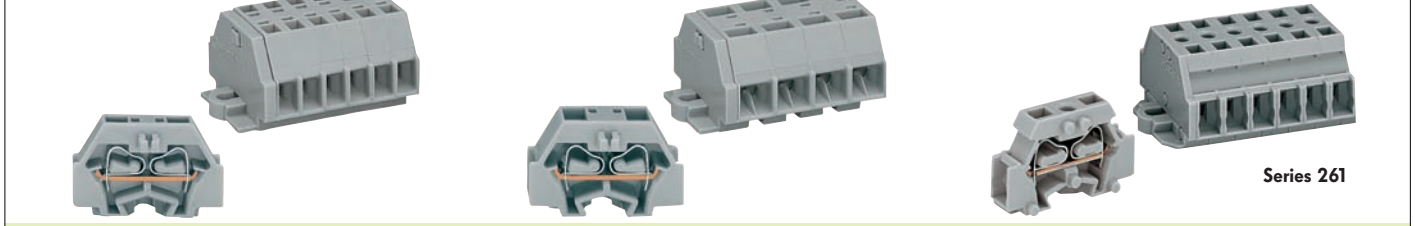
<b>Series 264</b>		<b>Modular terminal blocks and terminal strips</b>		
2- and 4-conductor terminal blocks			with fixing flanges	with snap-in mounting feet
mm <sup>2</sup> /AWG	2.5/14		mm <sup>2</sup> /AWG   2.5/14	mm <sup>2</sup> /AWG   2.5/14
Page	10.12 – 10.13		Page   10.14	Page   10.14

**Ex i** Modular terminal blocks and terminal strips  
**Ex e II** Modular terminal blocks and terminal strips

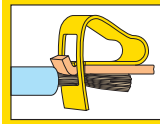


<b>Ex i</b>		<b>Ex e II</b>		
2- and 4-conductor terminal blocks			with fixing flanges	with snap-in mounting feet
mm <sup>2</sup> /AWG	2.5/14		mm <sup>2</sup> /AWG   2.5/14	mm <sup>2</sup> /AWG   2.5/14
Page	10.12 – 10.13		Page   10.14	Page   10.14

**Series 260 – 262** Modular terminal blocks and terminal strips with fixing flanges or snap-in mounting feet with miniature WSB marker receptacle

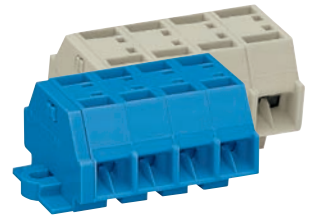
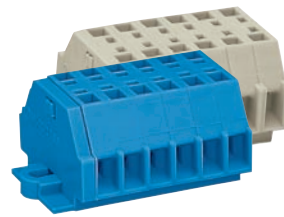
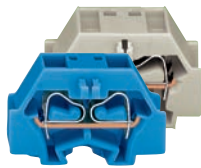


<b>2-conductor modular terminal blocks and terminal strips</b>			<b>4-conductor modular terminal blocks and terminal strips</b>			<b>2-conductor modular terminal blocks and terminal strips</b>	
mm <sup>2</sup> /AWG	1.5/16	2.5/14 / 4/12	mm <sup>2</sup> /AWG	1.5/16	2.5/14 / 4/12	mm <sup>2</sup> /AWG	2.5/14
Page	10.18 – 10.19	10.20 – 10.21 / 10.26 – 10.27	Page	10.18 – 10.19	10.20 – 10.21 / 10.26 – 10.27	Page	10.24 – 10.25



**Series 261 – 262**  
**Series 262**

**Ex i Modular terminal blocks and terminal strips with fixing flanges or snap-in mounting feet**  
**Ex e II Modular terminal blocks and terminal strips with fixing flanges or snap-in mounting feet**



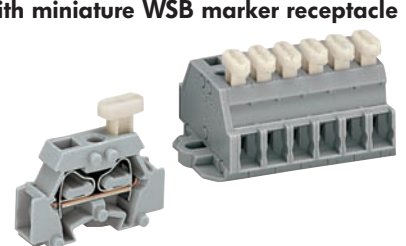
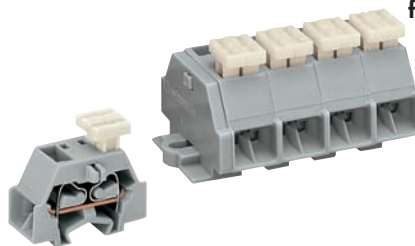
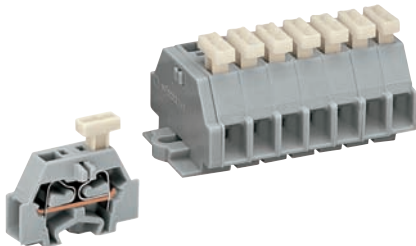
2- and 4-conductor modular terminal blocks  
mm<sup>2</sup>/AWG | 2,5/14 | 4/12  
Page | 10.20 | 10.26

2-conductor terminal strips  
mm<sup>2</sup>/AWG | 2,5/14 | 4/12  
Page | 10.21 | 10.27

4-conductor terminal strips  
mm<sup>2</sup>/AWG | 2,5/14 | 4/12  
Page | 10.21 | 10.27

**Series 261**

**Modular terminal blocks and terminal strips with push buttons on one side, fixing flanges or snap-in mounting feet with miniature WSB marker receptacle**



2-conductor modular terminal blocks and terminal strips  
mm<sup>2</sup>/AWG | 2,5/14  
Page | 10.22 – 10.23

4-conductor modular terminal blocks and terminal strips  
mm<sup>2</sup>/AWG | 2,5/14  
Page | 10.22 – 10.23

2-conductor modular terminal blocks and terminal strips  
mm<sup>2</sup>/AWG | 2,5/14  
Page | 10.22 – 10.23

**Ex i Modular term. blocks and term. strips, with push buttons on one side, fixing flanges or snap-in mounting feet**

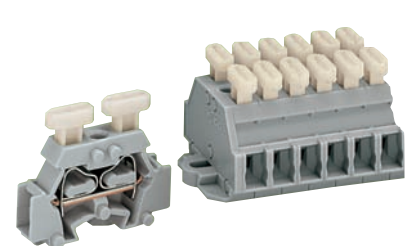
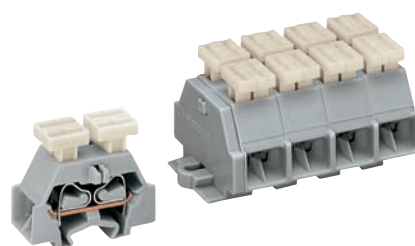
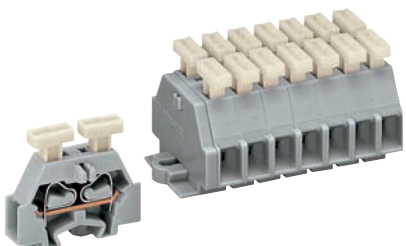


2- and 4-conductor modular terminal blocks  
mm<sup>2</sup>/AWG | 2,5/14  
Page | 10.22

2-conductor terminal strips  
mm<sup>2</sup>/AWG | 2,5/14  
Page | 10.23

4-conductor terminal strips  
mm<sup>2</sup>/AWG | 2,5/14  
Page | 10.23

**Modular terminal blocks and terminal strips, with push buttons on both sides, fixing flanges or snap-in mounting feet with miniature WSB marker receptacle**

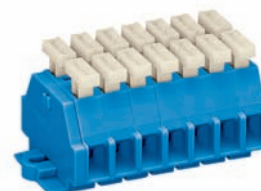


2-conductor modular terminal blocks and terminal strips  
mm<sup>2</sup>/AWG | 2,5/14  
Page | 10.22 – 10.23

4-conductor modular terminal blocks and terminal strips  
mm<sup>2</sup>/AWG | 2,5/14  
Page | 10.22 – 10.23

2-conductor modular terminal blocks and terminal strips  
mm<sup>2</sup>/AWG | 2,5/14  
Page | 10.22 – 10.23

**Ex i Modular term. blocks and term. strips, with push buttons on both sides, fixing flanges or snap-in mounting feet**



2- and 4-conductor modular terminal blocks  
mm<sup>2</sup>/AWG | 2,5/14  
Page | 10.22

2-conductor terminal strips  
mm<sup>2</sup>/AWG | 2,5/14  
Page | 10.23

4-conductor terminal strips  
mm<sup>2</sup>/AWG | 2,5/14  
Page | 10.23




# 10 Lighting connectors

## Push-Wire and MICRO Push-Wire Connectors for Junction Boxes

4 – Product Summary –

**Series 224 Lighting connectors**

**Service connector**




Page 10.31



2-conductor connectors  
Page 10.31

Page 10.31

**Series 243 MICRO push-wire connectors for junction boxes**

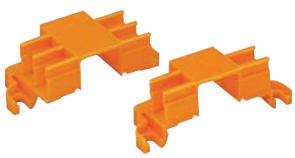


4-conductor connectors  
Page 10.34





8-conductor connectors  
Page 10.34

**Mounting carriers**



Page 10.35

**Series 222 Compact connectors**



for 3-conductor connectors  
Page 10.39

for 5-conductor connectors  
Page 10.39

**Series 273 Push-wire connectors for junction boxes**



for 5-conductor connectors  
Page 10.36



for 8-conductor connectors  
Page 10.36



for 2-conductor connectors  
Page 10.36



for 3-conductor connectors  
Page 10.36



for 4-conductor connectors  
Page 10.36



for 5-conductor connectors  
Page 10.36



for 3-conductor connectors  
Page 10.36

**Fixing carriers**



Page 10.37

**Series 773**

**Push-wire connectors for junction boxes**



Page 10.36

**Series 862**

**4-conductor terminal strips**

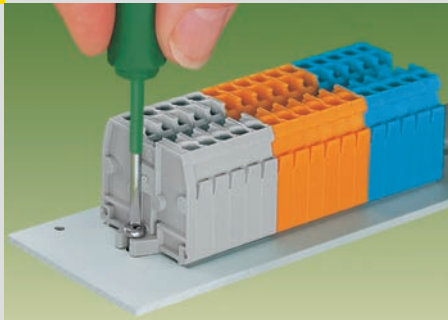


Pages 10.42 – 10.43

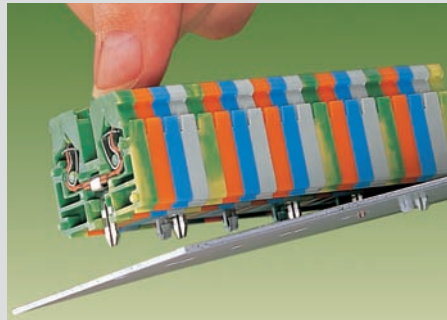


# Compact Terminal Strips with CAGE CLAMP COMPACT Connection Description and Handling – Series 869

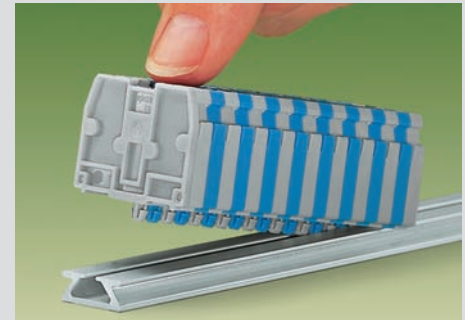
## Fixing



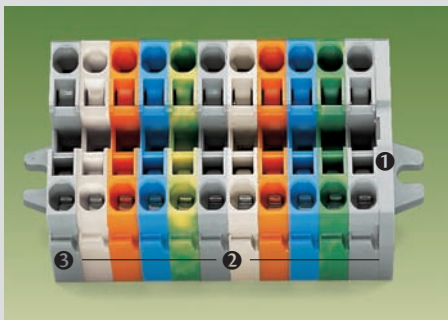
Terminal strip with fixing flange, screw fixing



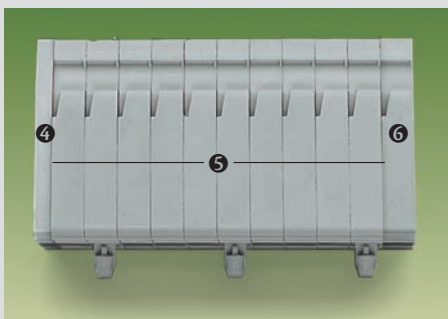
Terminal strip with snap-in mounting feet, fixing in holes



Terminal strip with snap-in mounting feet, assembly onto special aluminum rail



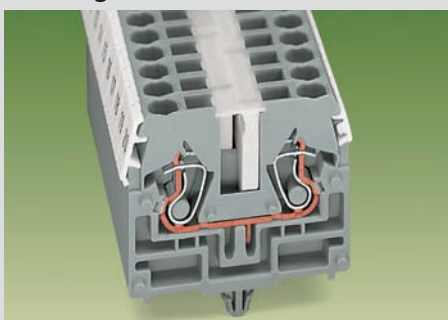
Terminal strip with fixing flanges, consisting of:  
end plate with fixing flange ①  
center terminal blocks ②  
end terminal blocks with fixing flange ③



Terminal strip with mounting feet, consisting of:  
end plate ④ / center terminal blocks with/without snap-in mounting feet ⑤ / end terminal block with/without snap-in mounting foot ⑥



## Marking



WAGO WMB Multi-marking system or WAGO miniature WSB Quick marking system

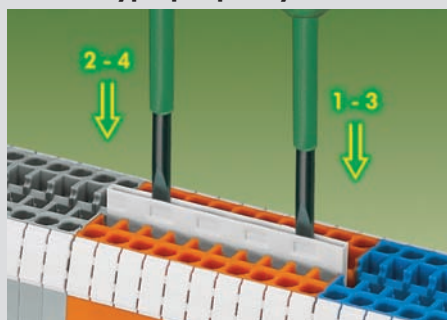
CAGE CLAMP® connects the following copper wires\*:

solid                      stranded

\* For aluminum wire see notes in section 15!

\*\* When using ferrules, the max. conductor cross section which can be accommodated is one size smaller than max. rating of terminal block

## Push-in type jumper system



Push jumper bars down firmly until fully inserted! When using multi-pole bars, push alternately on right and then left side, successively until installed.



Terminal strips assembled by means of assembly device  
Item No. for the device 298-635

fine-stranded, also with tinned single strands

fine-stranded, tip bonded

fine-stranded, with crimped ferrule\*\*

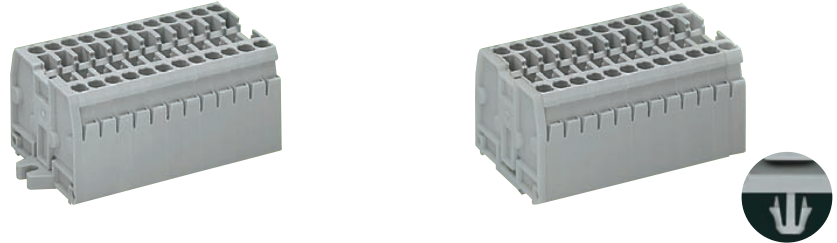
fine-stranded, with crimped pin terminal

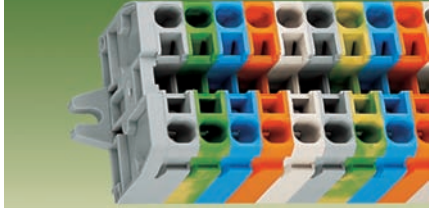

# Compact Terminal Strips 2.5 mm<sup>2</sup>/4 mm<sup>2</sup> / AWG 12 with Fixing Flanges or Snap-in Mounting Feet, Series 869



<p>0.08–2.5 mm<sup>2</sup>/4 mm<sup>2</sup>"f-st" ①   AWG 28 – 12 500 V/6 kV/3 ②   300 /600 V, 24 A</p> <p>Pole width 5 mm / 0.197 in 6 – 7 mm / 0.26 in</p> <p>*  UL KECH CCA KECH NV</p>	<p>0.08–2.5 mm<sup>2</sup>/4 mm<sup>2</sup>"f-st" ①   AWG 28 – 12 500 V/6 kV/3 ②   300 /600 V, 20/5 A**</p> <p>Pole width 5 mm / 0.197 in 6 – 7 mm / 0.26 in</p> <p>*  UL KECH CCA KECH NV</p>
--	--

- ① Max. diameter of insulation 4.4 mm / 0.173 in
- ② 500 V = rated voltage  
6 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ③ For longer strips and/or assemblies of different colors contact factory.
- ④ Suitable for Ex i applications with blue insulating housings



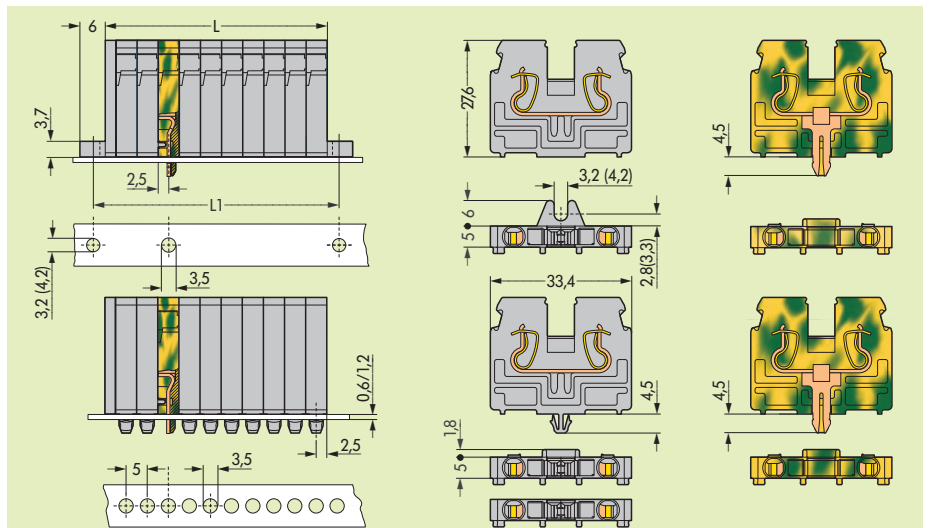
Description	No. of poles	Item No.	Item No.	Pack.-unit pcs	No. of poles	Item No.	Item No.	Pack.-unit pcs
 <p><b>Terminal strips with fixing flanges M3 or M4,</b> for screw fixing or similar methods, fixing hole diameter 3.2 mm Ø flange M3 4.2 mm Ø flange M4</p>	<b>Terminal strips with fixing flanges M3,</b>				<b>Terminal strips with snap-in mounting feet,</b>			
		grey	light grey		grey	light grey		
	2	869-102	869-132	100	2	869-152	869-182	100
	3	869-103	869-133	100	3	869-153	869-183	100
	4	869-104	869-134	100	4	869-154	869-184	100
	5	869-105	869-135	100	5	869-155	869-185	100
	6	869-106	869-136	50	6	869-156	869-186	50
	7	869-107	869-137	50	7	869-157	869-187	50
	8	869-108	869-138	50	8	869-158	869-188	50
	9	869-109	869-139	50	9	869-159	869-189	50
	10	869-110	869-140	25	10	869-160	869-190	25
	11	869-111	869-141	25	11	869-161	869-191	25
12 ③	869-112	869-142	25	12 ③	869-162	869-192	25	
 <p><b>Terminal strips with snap-in mounting feet,</b> for plate thickness 0.6 – 1.2 mm, fixing hole diameter 3.5<sup>+0.1</sup> mm Ø</p>	<b>Terminal strips with fixing flanges M4,</b>							
		grey	light grey					
	2	869-202	869-232	100				
	3	869-203	869-233	100				
	4	869-204	869-234	100				
	5	869-205	869-235	100				
	6	869-206	869-236	50				
	7	869-207	869-237	50				
	8	869-208	869-238	50				
	9	869-209	869-239	50				
	10	869-210	869-240	25				
	11	869-211	869-241	25				
12 ③	869-212	869-242	25					

## Dimensions for terminal strips (in mm)

Modular terminal blocks and terminal strips with fixing flanges  
 $L = (\text{No. of poles} \times \text{pole width}) + 2.5 \text{ mm}$   
 $L_1 = L + 5.6 \text{ mm, with flange M4 } 6.6 \text{ mm}$

Additional item nos. for terminal strips  
 blue .../000-006 ④  
 green-yellow .../000-017 ⑤

Modular terminal blocks and terminal strips with fixing flanges  
 $L = (\text{No. of poles} \times \text{pole width}) + 2.5 \text{ mm}$







\* For further approvals with corresponding ratings see section 15.

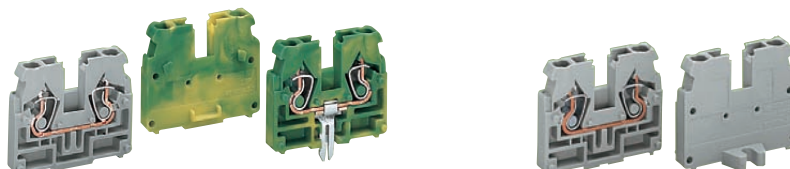
\*\* 10 A for push-in type jumper bars with different potentials, placed in parallel

# Modular Terminal Blocks with Fixing Flange 2.5 mm<sup>2</sup>/4 mm<sup>2</sup> / AWG 12, Series 869










8 Factory-assembled terminal strips, please contact factory for order form

<b>Testing</b> Removable terminal blocks see pages 3.10 – 3.11	0.08–2.5 mm <sup>2</sup> /4 mm <sup>2</sup> "f-st" ①   AWG 28 – 12 500 V/6 kV/3 ②   300 /600 V, 24 A   20/5 A**	0.08–2.5 mm <sup>2</sup> /4 mm <sup>2</sup> "f-st" ①   AWG 28 – 12 500 V/6 kV/3 ②   300 /600 V, 24 A   20/5 A**
	Terminal block width 5 mm / 0.197 in  6 – 7 mm / 0.26 in * 	Terminal block width 5 mm / 0.197 in  6 – 7 mm / 0.26 in * 

- ① Max. diameter of insulation 4.4 mm / 0.173 in
- ② 500 V = rated voltage  
6 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ③ Please see application notes on page 10.29
- ④ Suitable for Ex i applications



Description	Color	Item No.	Pack.-unit pcs	Color	Item No.	Pack.-unit pcs
<b>Center terminal blocks,</b> needed for terminal strips with fixing flanges between end plate and end terminal block	<b>Center terminal blocks</b>			<b>End terminal blocks with fixing flange M 3,</b> 3.2 mm Ø		
	grey	<b>869-321</b> ④	100	grey	<b>869-301</b> ④	100
	blue	<b>869-324</b> ④	100	blue	<b>869-304</b> ④	100
	orange	<b>869-326</b> ④	100	green-yellow	<b>869-307</b> ④	100
	green-yellow	<b>869-327</b> ④	100	light grey	<b>869-309</b> ④	100
	lichtgrau	<b>869-329</b> ④	100			
	<b>Center terminal block with automatic push- connect ground earth contact,</b> diameter of drilled hole: 3.5 <sup>+0.1</sup> mm, terminal blocks <b>cannot</b> be commoned!			<b>End terminal blocks with fixing flange M 4,</b> 4.2 mm Ø		
<b>End terminal blocks with fixing flange M 3 or M 4,</b> for screw fixing or similar methods, fixing hole diameter 3.2 mm Ø (M 3) or 4.2 mm Ø (M 4)	green-yellow	<b>869-328</b> ④	100	grey	<b>869-351</b> ④	100
				blue	<b>869-354</b> ④	100
				green-yellow	<b>869-357</b> ④	100
				light grey	<b>869-359</b> ④	100

Accessories	for modular terminal blocks and terminal strips						Appropriate marking system WMB/Mini-WSB (see section 14)					
 End plate with fixing flange M 3 2.5 mm / 0.098 in thick	grey	<b>869-385</b>	100 (4 x 25)	grey	<b>869-385</b>	100 (4 x 25)						
	blue	<b>869-388</b>	100 (4 x 25)	blue	<b>869-388</b>	100 (4 x 25)						
	green-yellow	<b>869-389</b>	100 (4 x 25)	green-yellow	<b>869-389</b>	100 (4 x 25)						
	light grey	<b>869-387</b>	100 (4 x 25)	light grey	<b>869-387</b>	100 (4 x 25)						
 End plate with fixing flange M 4 2.5 mm / 0.098 in thick	grey	<b>869-395</b>	100 (4 x 25)	grey	<b>869-395</b>	100 (4 x 25)						
	blue	<b>869-398</b>	100 (4 x 25)	blue	<b>869-398</b>	100 (4 x 25)						
	green-yellow	<b>869-399</b>	100 (4 x 25)	green-yellow	<b>869-399</b>	100 (4 x 25)						
	light grey	<b>869-397</b>	100 (4 x 25)	light grey	<b>869-397</b>	100 (4 x 25)						
 Insulation stop ③, white 5 pcs/strip	white	0.08 – 0.2 mm <sup>2</sup>	<b>280-470</b>	200 strips	0.08 – 0.2 mm <sup>2</sup>	<b>280-470</b>	200 strips					
	light grey	0.25 – 0.5 mm <sup>2</sup>	<b>280-471</b>	200 strips	0.25 – 0.5 mm <sup>2</sup>	<b>280-471</b>	200 strips					
	dark grey	0.75 – 1 mm <sup>2</sup>	<b>280-472</b>	200 strips	0.75 – 1 mm <sup>2</sup>	<b>280-472</b>	200 strips					
 Push-in type jumper bar, light grey, insulated,	2-way	<b>870-402</b>	200 (8 x 25)	2-way	<b>870-402</b>	200 (8 x 25)						
	3-way	<b>870-403</b>	200 (8 x 25)	3-way	<b>870-403</b>	200 (8 x 25)						
	4-way	<b>870-404</b>	200 (8 x 25)	4-way	<b>870-404</b>	200 (8 x 25)						
	:	:	:	:	:	:						
	10-way	<b>870-410</b>	100 (4 x 25)	10-way	<b>870-410</b>	100 (4 x 25)						
 Push-in type jumper bar, light grey, insulated,	from 1 to 3	<b>870-433</b>	200 (8 x 25)	from 1 to 3	<b>870-433</b>	200 (8 x 25)						
	from 1 to 4	<b>870-434</b>	200 (8 x 25)	from 1 to 4	<b>870-434</b>	200 (8 x 25)						
	from 1 to 5	<b>870-435</b>	100 (4 x 25)	from 1 to 5	<b>870-435</b>	100 (4 x 25)						
	:	:	:	:	:	:						
 Marker strip, transparent, for central marking – group marking –	1 m / 3'.3" long, 7.5 mm / 0.295 in	plain	<b>709-196</b>	10	1 m / 3'.3" long, 7.5 mm / 0.295 in	plain	<b>709-196</b>	10				
 Group marker carrier, insert in jumper contact slot of current bars	see page 3.11			see page 3.11								
	not suitable for Series 269-328											
 Assembly device, for the assembly of terminal strips	<b>298-635</b>			<b>298-635</b>								
	1			1								
 Protective warning marker, for 5 terminal blocks, fits into screwdriver slot	yellow	<b>280-405</b>	100 (4 x 25)	gelb	<b>280-405</b>	100 (4 x 25)						

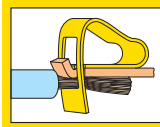
\* For further approvals with corresponding ratings see section 15.

\*\* 10 A for push-in type jumper bars with different potentials, placed in parallel







# Modular Terminal Blocks with Snap-in Mounting Foot 2,5 mm<sup>2</sup>/4 mm<sup>2</sup>, Series 869

Factory-assembled terminal strips, please contact factory for order form



10

9

<b>Testing</b> Removable terminal blocks see pages 3.10 – 3.11	0.08–2.5 mm <sup>2</sup> /4 mm <sup>2</sup> "f-st" ①   AWG 28 – 12 500 V/6 kV/3 ②   300 /600 V, 24 A	0.08–2.5 mm <sup>2</sup> /4 mm <sup>2</sup> "f-st" ①   AWG 28 – 12 500 V/6 kV/3 ②   300 /600 V, 24 A
	Terminal block width 5 mm / 0.197 in  6 – 7 mm / 0.26 in * 	Terminal block width 5 mm / 0.197 in  6 – 7 mm / 0.26 in * 

- ① Max. diameter of insulation 4.4 mm / 0.173 in
- ② 500 V = rated voltage  
6 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ③ Please see application notes on page 10.29
- ④ Suitable for Ex i applications



Description	Color	Item No.	Pack.-unit pcs	Color	Item No.	Pack.-unit pcs
<b>End terminal blocks with/without snap-in mounting foot,</b> for plate thickness 0.6 – 1.2 mm, fixing hole diameter 3.5 <sup>+0.1</sup> mm Ø	<b>End terminal blocks with snap-in mounting foot</b>			<b>Center terminal blocks with snap-in mounting foot</b>		
	grey	<b>869-331</b> ①	100	grey	<b>869-311</b> ①	100
	blue	<b>869-334</b> ④	100	blue	<b>869-314</b> ④	100
	green-yellow	<b>869-337</b> ⑤	100	orange	<b>869-316</b> ⑥	100
	light grey	<b>869-339</b> ⑦	100	green-yellow	<b>869-317</b> ⑤	100
	<b>End terminal blocks without snap-in mounting foot</b>			<b>Center term. blocks without snap-in mounting foot</b>		
	grey	<b>869-341</b> ①	100	grey	<b>869-321</b> ①	100
	blue	<b>869-344</b> ④	100	blue	<b>869-324</b> ④	100
	green-yellow	<b>869-347</b> ⑤	100	orange	<b>869-326</b> ⑥	100
	light grey	<b>869-349</b> ⑦	100	green-yellow	<b>869-327</b> ⑤	100
<b>Center terminal blocks with/without snap-in mounting foot,</b> for plate thickness 0.6 – 1.2 mm, fixing hole diameter 3.5 <sup>+0.1</sup> mm Ø				light grey	<b>869-329</b> ⑦	100
				<b>with automatic push-connect ground (earth) contact, diameter of drilled hole: 3.5<sup>+0.1</sup> mm Ø Terminal blocks cannot be commoned!</b>		
				green-yellow	<b>869-328</b> ⑤	100

Accessories	for modular terminal blocks and terminal strips Appropriate marking system <b>WMB/Mini-WSB</b> (see section 14)					
<b>End plate</b> for terminal blocks with snap-in mounting foot 2.5 mm / 0.098 in thick	grey	<b>869-375</b>	100 (4 x 25)	grey	<b>869-375</b>	100 (4 x 25)
	blue	<b>869-378</b>	100 (4 x 25)	blue	<b>869-378</b>	100 (4 x 25)
	green-yellow	<b>869-379</b>	100 (4 x 25)	green-yellow	<b>869-379</b>	100 (4 x 25)
	light grey	<b>869-377</b>	100 (4 x 25)	light grey	<b>869-377</b>	100 (4 x 25)
<b>Insulation stop</b> ③, 5 pcs/strip	white	0.08 – 0.2 mm <sup>2</sup> <b>280-470</b>	200 strips	0.08 – 0.2 mm <sup>2</sup> <b>280-470</b>	200 strips	200 strips
	light grey	0.25 – 0.5 mm <sup>2</sup> <b>280-471</b>	200 strips	0.25 – 0.5 mm <sup>2</sup> <b>280-471</b>	200 strips	200 strips
	dark grey	0.75 – 1 mm <sup>2</sup> <b>280-472</b>	200 strips	0.75 – 1 mm <sup>2</sup> <b>280-472</b>	200 strips	200 strips
<b>Push-in type jumper bar,</b> I <sub>N</sub> 18 A	2-way	<b>870-402</b>	200 (8 x 25)	2-way	<b>870-402</b>	200 (8 x 25)
	light grey, insulated,	3-way <b>870-403</b>	200 (8 x 25)	3-way <b>870-403</b>	200 (8 x 25)	200 (8 x 25)
	4-way	<b>870-404</b>	200 (8 x 25)	4-way <b>870-404</b>	200 (8 x 25)	200 (8 x 25)
	:	:	:	:	:	:
	10-way	<b>870-410</b>	100 (4 x 25)	10-way <b>870-410</b>	100 (4 x 25)	100 (4 x 25)
<b>Push-in type jumper bar,</b> I <sub>N</sub> 18 A	from 1 to 3	<b>870-433</b>	200 (8 x 25)	from 1 to 3 <b>870-433</b>	200 (8 x 25)	200 (8 x 25)
	from 1 to 4	<b>870-434</b>	200 (8 x 25)	from 1 to 4 <b>870-434</b>	200 (8 x 25)	200 (8 x 25)
	from 1 to 5	<b>870-435</b>	100 (4 x 25)	from 1 to 5 <b>870-435</b>	100 (4 x 25)	100 (4 x 25)
	:	:	:	:	:	:
	from 1 to 10	<b>870-440</b>	100 (4 x 25)	from 1 to 10 <b>870-440</b>	100 (4 x 25)	100 (4 x 25)
<b>Aluminum carrier rail,</b> 1000 mm / 3'3" long, 18 mm / 0.709 in wide, 7 mm / 0.276 in high		<b>210-154</b>	1		<b>210-154</b>	1
<b>Plastic end stop,</b> with WSB marking facility for aluminum rail 210-154	6 mm / 0.236 in wide	grey <b>209-122</b>	25	6 mm / 0.236 in wide	grey <b>209-122</b>	25
<b>Marker strip,</b> transparent, for central marking – group marking –	1 m / 3'3" long, 7.5 mm / 0.295 in	plain <b>709-196</b>	10	1 m / 3'3" long, 7.5 mm / 0.295 in	plain <b>709-196</b>	10
<b>Group marker carrier,</b> insert in jumper contact slot of current bars	see page 3.11			see page 3.11		not suitable for Series 269-328
<b>Assembly device,</b> for the assembly of terminal strips		<b>298-635</b>	1		<b>298-635</b>	1

\* For further approvals with corresponding ratings see section 15.

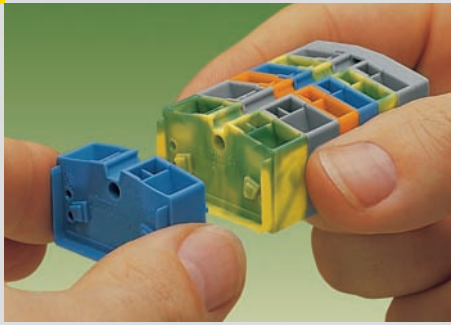
\*\* 10 A for push-in type jumper bars with different potentials, placed in parallel

10

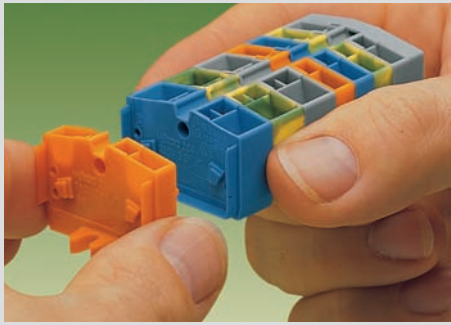


# Modular Terminal Blocks and Terminal Strips with CAGE CLAMP® ... Series 264

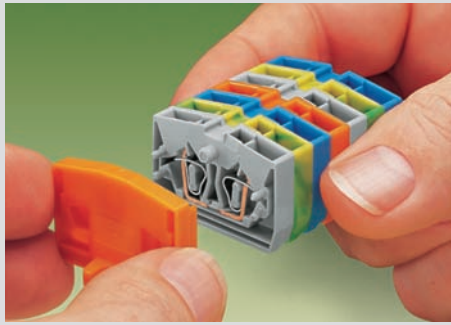
## Assembly



Assembly of modular terminal blocks to terminal strips

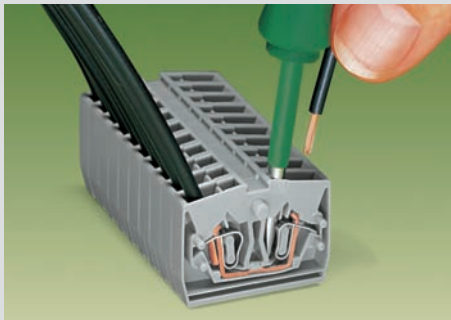


Mounting of an "end terminal block" with fixing flange



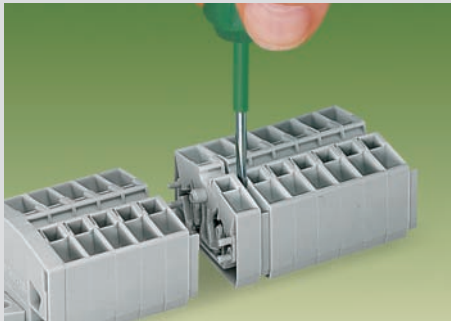
Mounting of an end plate

## CAGE CLAMP® connection

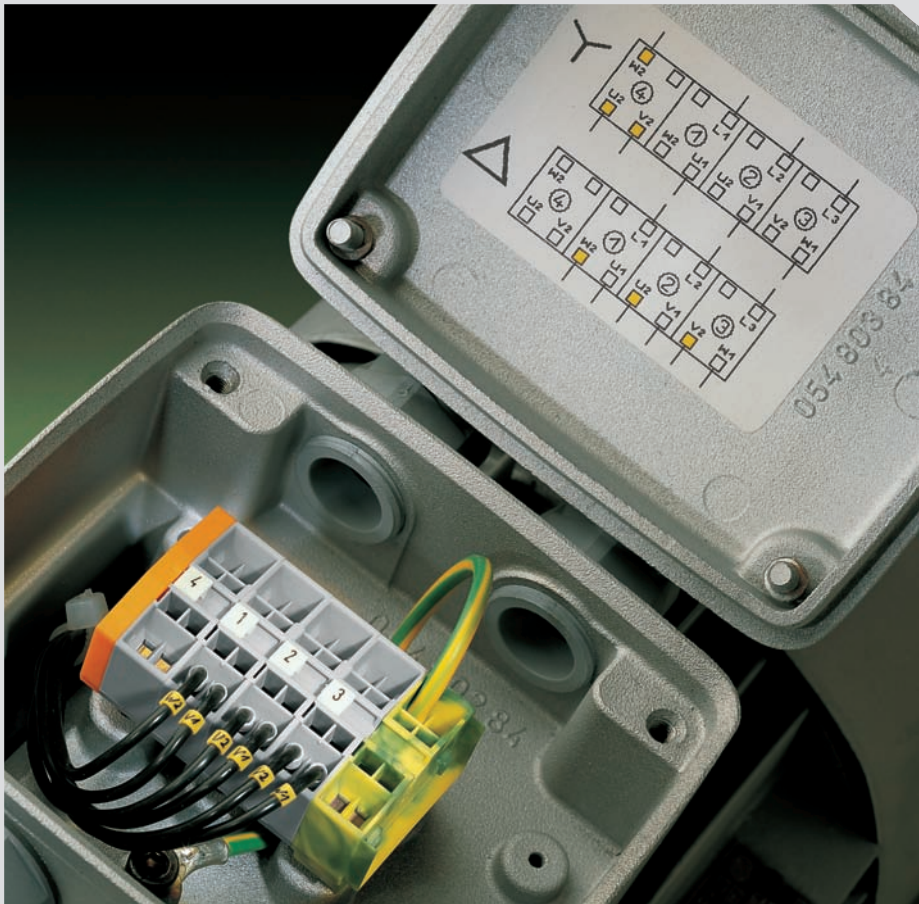


Connection of conductors

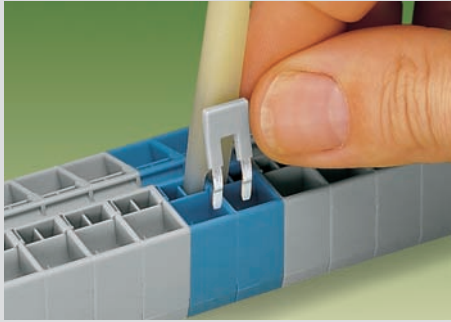
## Removal



Removal of a terminal block

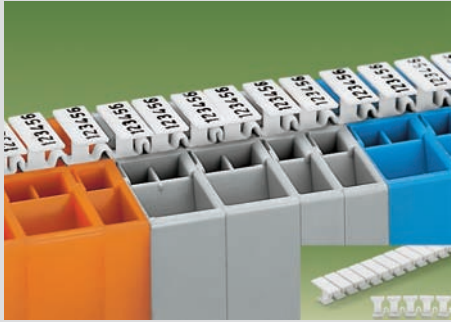


## Commoning

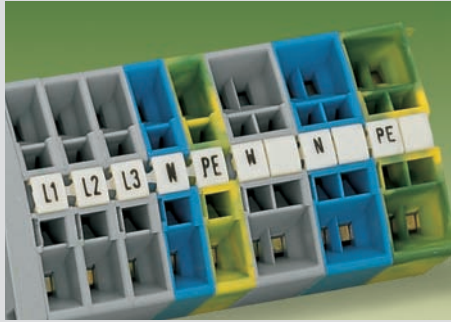


Commoning with a jumper bar

## Marking



T marker tag

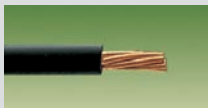


Marking with miniature WSB Quick marking system



CAGE CLAMP® connects the following copper wires:\*

solid



stranded

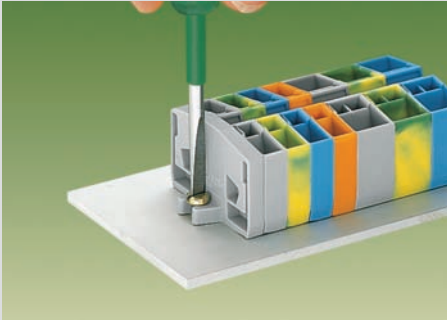


fine stranded, also with tinned single strands

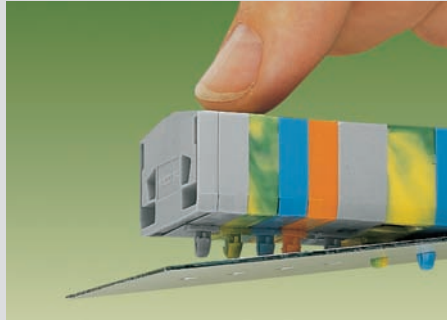
\* For aluminum wire see notes in section 15!

# ... Description and Handling

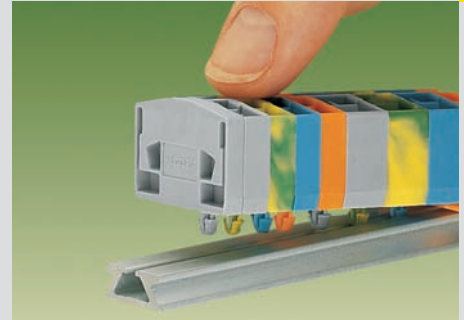
## Fixing



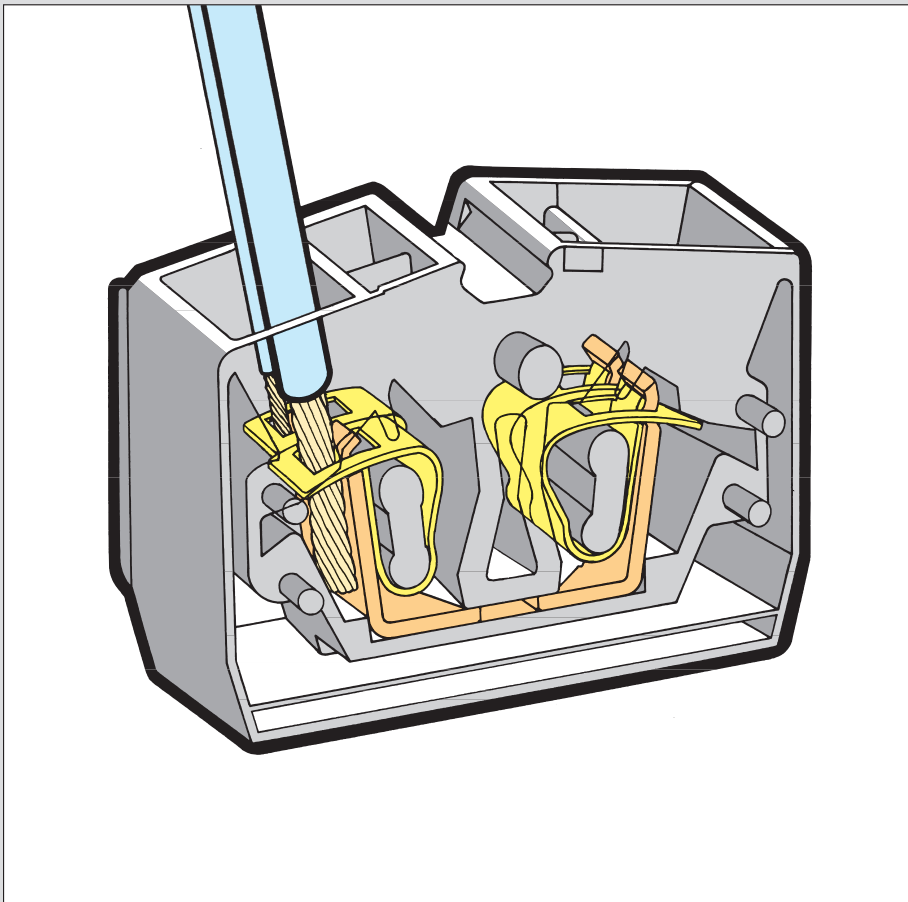
Terminal strip with fixing flange, screw fixing



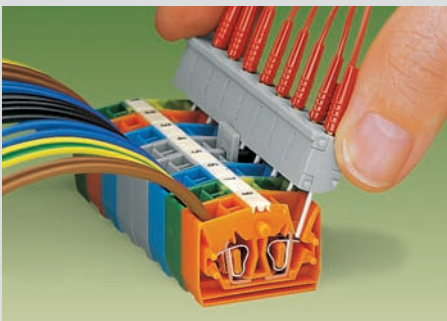
Terminal strip with snap-in mounting feet, fixing in holes



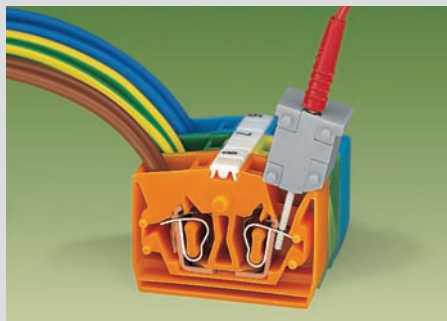
Terminal strip with snap-in mounting feet, assembly onto special aluminum rail



## Testing



Testing with modular test plug adapters - touch contact



Testing with modular test plug adapter - fully clamped by CAGE CLAMP®



fine-stranded wire - tip bonded



fine-stranded wire with crimped ferrule ①



fine-stranded wire with crimped pin terminal

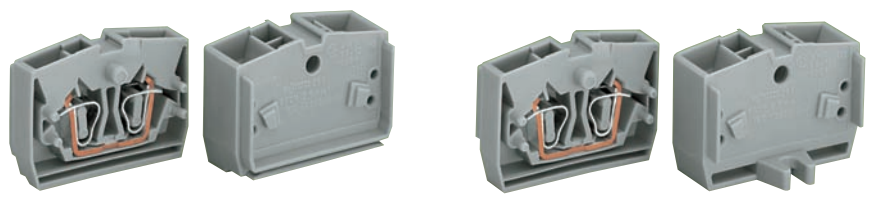
① When using ferrules, the max. conductor cross section which can be accommodated is one size smaller than max. rating of terminal block.



# Modular Terminal Blocks with Fixing Flange 2.5 mm<sup>2</sup> / AWG 12, Series 264

<b>Test plug modules</b> see page 10.15	<b>0.08 – 2.5 mm<sup>2</sup></b> <b>800 V/8 kV/3 ①</b> <b>24 A</b>	<b>AWG 28 – 12</b> <b>600 V, 20 A</b>	<b>0.08 – 2.5 mm<sup>2</sup></b> <b>800 V/8 kV/3 ①</b> <b>24 A</b>	<b>AWG 28 – 12</b> <b>600 V, 20 A</b>
	<b>Term. bl. width 6 (10) mm / 0.236 (0.394) in</b> <b>8 – 9 mm / 0.33 in</b>		<b>Term. bl. width 6 (10) mm / 0.236 (0.394) in</b> <b>8 – 9 mm / 0.33 in</b>	
<small>* VDE CCA KEH N S D P GL BV LR NV</small>		<small>* VDE CCA KEH N S D P GL BV LR NV</small>		

- ① 800 V = rated voltage  
8 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② Please find all marking related item nos. in section 14.  
Direct printing of fully assembled terminal strips upon request
- ③ Suitable for Ex i applications
- ⊕ Suitable for Ex e II applications  
0.5 – 2.5 mm<sup>2</sup> AWG 20 – 12  
750 V, 23 A  
(see also section 13)



Description	Color	Item No.	Pack.-unit pcs	Color	Item No.	Pack.-unit pcs
<b>Center terminal blocks, used between end terminal block and end plate with fixing flanges.</b>  (see also application notes)	<b>2-conductor center terminal blocks</b>			<b>2-conductor end term. blocks with fixing flange</b>		
	6 mm / 0.236 in wide			6 mm / 0.236 in wide		
	grey	<b>264-321</b>	100	grey	<b>264-301</b>	100
	blue	<b>264-324</b>	100	blue	<b>264-304</b>	100
	orange	<b>264-326</b>	100	orange	<b>264-306</b>	100
green-yellow	<b>264-327</b>	100	green-yellow	<b>264-307</b>	100	
light grey ⊕	<b>264-131</b>	100	light grey ⊕	<b>264-130</b>	100	
<b>End terminal blocks with fixing flange, for screw fixing or similar methods, fixing hole diameter 3.2 mm.</b>  (see also application notes)	<b>4-conductor center terminal blocks</b>			<b>4-conductor end term. blocks with fixing flange</b>		
	10 mm / 0.394 in wide			10 mm / 0.394 in wide		
	grey	<b>264-351</b>	100	grey	<b>264-331</b>	100
	blue	<b>264-354</b>	100	blue	<b>264-334</b>	100
	orange	<b>264-356</b>	100	orange	<b>264-336</b>	100
green-yellow	<b>264-357</b>	100	green-yellow	<b>264-337</b>	100	
light grey ⊕	<b>264-231</b>	100	light grey ⊕	<b>264-230</b>	100	

### Accessories for modular terminal blocks and terminal strips Appropriate marking system Mini-WSB (see section 14)

	<b>End plate with fixing flange</b>	grey	<b>264-361</b>	25	grey	<b>264-361</b>	25
		orange	<b>264-364</b>	25	orange	<b>264-364</b>	25
	4 mm / 0.157 in thick	light grey	<b>264-363</b>	25	light grey	<b>264-363</b>	25
	<b>Comb type jumper bar, 2-way, insulated</b>	I <sub>N</sub> 16 A			I <sub>N</sub> 16 A		
		grey	<b>264-402</b>	200 (8 x 25)	grey	<b>264-402</b>	200 (8 x 25)
	<b>Alternate comb type jumper bar, insulated, I<sub>N</sub> = I<sub>N</sub> of terminal block</b>	2-way			2-way		
		for 4-cond. term. bl.	<b>280-492</b>	200 (8 x 25)	for 4-cond. term. bl.	<b>280-492</b>	200 (8 x 25)
	<b>Operating tool, insulated</b>	for 2-cond. term. bl.	<b>281-492</b>	100 (4 x 25)	for 2-cond. term. bl.	<b>281-492</b>	100 (4 x 25)
		2-way	<b>280-432</b>	1	2-way	<b>280-432</b>	1
	<b>Miniature WSB Quick marker card, 10 strips with 10 markers each, white with black printing</b>	for 2-cond. term. bl.	<b>248-5 . . ②</b>	5 cards	for 2-cond. term. bl.	<b>248-5 . . ②</b>	5 cards
		for 4-cond. term. bl.	<b>264-9 . . ②</b>	5 cards	for 4-cond. term. bl.	<b>264-9 . . ②</b>	5 cards
	<b>T marker tag, 6 characters per marker, 30 markers per tag</b>	from 5 mm / 0.197 in to 6 mm / 0.236 in			from 5 mm / 0.197 in to 6 mm / 0.236 in		
		plain	<b>209-290</b>	50	plain	<b>209-290</b>	50
		Pre-printed markers on request			Pre-printed markers on request		

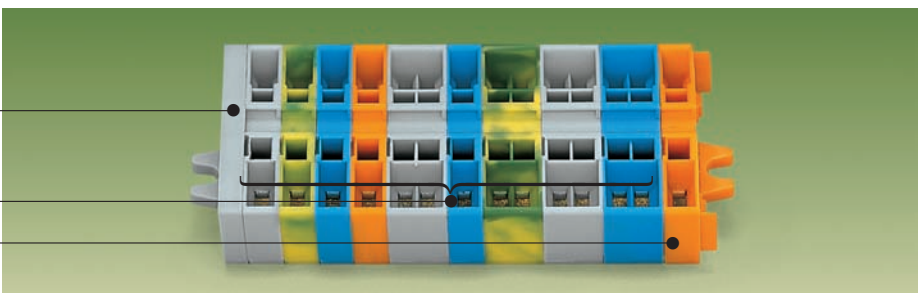
### Application notes (Dimensions see page 10.14)

Complete terminal strips assembly with fixing flanges, consisting of:

End plate with fixing flange

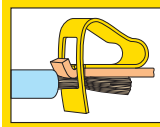
Center terminal blocks

End terminal block with fixing flange



\* For further approvals with corresponding ratings see section 15.

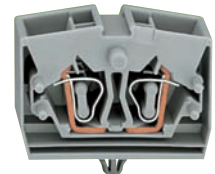
# Modular Terminal Blocks w. Snap-in Mounting Foot 2.5 mm<sup>2</sup> / AWG 12, Series 264



10  
13

<b>Test plug modules</b> see page 10.15	<b>0.08 – 2.5 mm<sup>2</sup></b> <b>800 V/8 kV/3 ①</b> <b>24 A</b>	<b>AWG 28 – 12</b> <b>600 V, 20 A</b>	<b>0.08 – 2.5 mm<sup>2</sup></b> <b>800 V/8 kV/3 ①</b> <b>24 A</b>	<b>AWG 28 – 12</b> <b>600 V, 20 A</b>
	<b>Term. bl. width 6 (10) mm / 0.236 (0.394) in</b> <b>8 – 9 mm / 0.33 in</b>		<b>Term. bl. width 6 (10) mm / 0.236 (0.394) in</b> <b>8 – 9 mm / 0.33 in</b>	
*				

- ① 800 V = rated voltage  
8 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② Please find all marking related item nos. in section 14.  
Direct printing of fully assembled terminal strips upon request
- ③ Suitable for Ex i applications
- ⊗ Suitable for Ex e II applications  
0.5 – 2.5 mm<sup>2</sup> AWG 20 – 12  
750 V, 23 A  
(see also section 13)



Description	Color	Item No.	Pack.-unit pcs	Color	Item No.	Pack.-unit pcs
<b>Terminal blocks with snap-in mounting foot,</b> for plate thickness 0.6 – 1.2 mm, fixing hole diameter 3.5 mm 	<b>2-conductor terminal blocks with snap-in mounting foot, 6 mm/0.236 in wide</b>			<b>4-conductor terminal blocks with snap-in mounting foot, 10 mm/0.394 in wide</b>		
	grey	<b>264-311</b>	100	grey	<b>264-341</b>	100
	blue	<b>264-314</b>	100	blue	<b>264-344</b>	100
	orange	<b>264-316</b>	100	orange	<b>264-346</b>	100
	green-yellow	<b>264-317</b>	100	green-yellow	<b>264-347</b>	100
	light grey ⊗	<b>264-180</b>	100	light grey ⊗	<b>264-280</b>	100

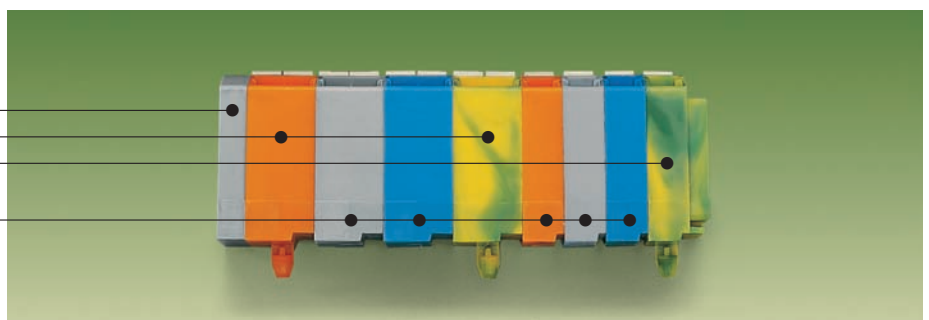
## Accessories for modular terminal blocks and terminal strips Appropriate marking system Mini-WSB (see section 14)

	<b>End plate, for terminal blocks with snap-in mounting foot</b> 4 mm/0.157 in thick	grey	<b>264-371</b>	25	grey	<b>264-371</b>	25
		orange	<b>264-374</b>	25	orange	<b>264-374</b>	25
		light grey	<b>264-373</b>	25	light grey	<b>264-373</b>	25
	<b>Comb type jumper bar,</b> 2-way, insulated	I <sub>N</sub> 16 A			I <sub>N</sub> 16 A		
		grey	<b>264-402</b>	200 (8 x 25)	grey	<b>264-402</b>	200 (8 x 25)
	<b>Alternate comb type jumper bar, insulated,</b> I <sub>N</sub> = I <sub>N</sub> of terminal block	2-way	<b>281-492</b>	100 (4 x 25)	2-way	<b>280-492</b>	200 (8 x 25)
		insulated					
	<b>Operating tool,</b> insulated	2-way	<b>280-432</b>	1	2-way	<b>280-432</b>	1
	<b>Miniature WSB Quick marker card, 10 strips with 10 markers each, white with black printing</b>		<b>248-5 . . ②</b>	5 cards		<b>264-9 . . ②</b>	5 cards
	<b>Aluminum carrier rail,</b> 1000 x 18 x 7 mm 3'3" x 0.709 x 0.276 in		<b>210-154</b>	1		<b>210-154</b>	1
	<b>Plastic end stop,</b> with WSB marking facility, for aluminum rail 210-154	6 mm/0.236 in wide			6 mm/0.236 in wide		
		grey	<b>209-122</b>	25	grey	<b>209-122</b>	25
	<b>T marker tag,</b> 6 characters per marker, 30 markers per tag	from 5 mm/0.197 in to 6 mm/0.236 in			from 5 mm/0.197 in to 6 mm/0.236 in		
		plain	<b>209-290</b>	50	plain	<b>209-290</b>	50
		Pre-printed markers on request			Pre-printed markers on request		

## Application notes (Dimensions see page 10.14)

Complete terminal strip assembly with snap-in mounting feet, consisting of:

- End plate
- 4-conductor term. block with snap-in mounting foot<sup>1)</sup>
- 2-conductor term. block with snap-in mounting foot<sup>1)</sup>
- Center terminal blocks



<sup>1)</sup> at every 4th or 5th terminal block of the strip

\* For further approvals with corresponding ratings see section 15.

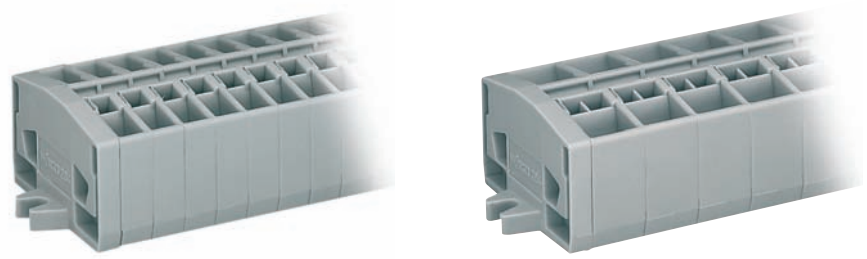
10



# Terminal Strips with Fixing Flanges or Snap-in Mounting Feet 2.5 mm<sup>2</sup>/AWG 12, Series 264

<p><b>0.08 – 2.5 mm<sup>2</sup></b>  <b>800 V/8 kV/3 ①</b>  <b>24 A</b></p> <p><b>Pole width 6 mm / 0.236 in</b>  <b>8 – 9 mm / 0.33 in</b></p> <p><small>*  VDE  CCA  N  S  GL BV LR NV </small></p>	<p><b>AWG 28 – 12</b>  <b>600 V, 20 A </b>  <b>24 A</b></p> <p><b>Pole width 10 mm / 0.394 in</b>  <b>8 – 9 mm / 0.33 in</b></p> <p><small>*  VDE  CCA  N  S  GL BV LR NV </small></p>	<p><b>2 x 0.08 – 2.5 mm<sup>2</sup></b>   <b>2 x AWG 28 – 12</b>  <b>800 V/8 kV/3 ①</b>   <b>600 V, 20 A </b>  <b>24 A</b></p> <p><b>Pole width 10 mm / 0.394 in</b>  <b>8 – 9 mm / 0.33 in</b></p> <p><small>*  VDE  CCA  N  S  GL BV LR NV </small></p>
---	--	---

- ① 800 V = rated voltage  
8 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② For longer strips and/or assemblies of different colors, contact factory.
- ③ Suitable for Ex i applications with blue insulating housings
- ⊕ Suitable for Ex e II applications  
0.5 – 2.5 mm<sup>2</sup> AWG 20 – 12  
750 V, 23 A  
(see also section 13)

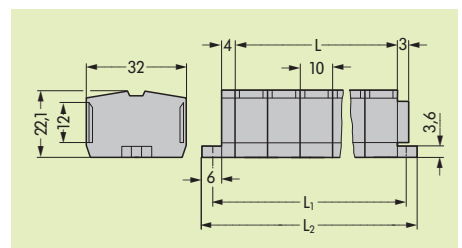
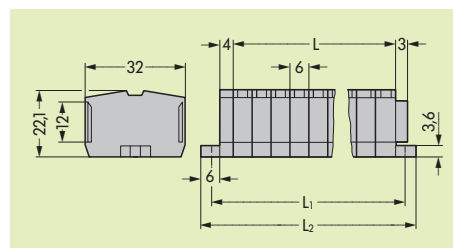


Description	No. of poles	Item No.	Item No.	Pack.-unit pcs	No. of poles	Item No.	Item No.	Pack.-unit pcs
<p><b>Terminal strips with fixing flanges,</b> for screw fixing or similar methods, fixing hole diameter 3.2 mm</p>	<b>2-conductor terminal strips with fixing flanges,</b>				<b>4-conductor terminal strips with fixing flanges,</b>			
		● grey	○ light grey	⊕		● grey	○ light grey	⊕
	2	<b>264-102</b>	<b>264-132</b>	100	2	<b>264-202</b>	<b>264-232</b>	100
	3	<b>264-103</b>	<b>264-133</b>	100	3	<b>264-203</b>	<b>264-233</b>	100
	4	<b>264-104</b>	<b>264-134</b>	100	4	<b>264-204</b>	<b>264-234</b>	100
	5	<b>264-105</b>	<b>264-135</b>	100	5	<b>264-205</b>	<b>264-235</b>	100
	6	<b>264-106</b>	<b>264-136</b>	100	6	<b>264-206</b>	<b>264-236</b>	100
	7	<b>264-107</b>	<b>264-137</b>	100	7	<b>264-207</b>	<b>264-237</b>	100
	8	<b>264-108</b>	<b>264-138</b>	100	8	<b>264-208</b>	<b>264-238</b>	100
	9	<b>264-109</b>	<b>264-139</b>	50	9	<b>264-209</b>	<b>264-239</b>	50
	10	<b>264-110</b>	<b>264-140</b>	50	10	<b>264-210</b>	<b>264-240</b>	50
	11	<b>264-111</b>	<b>264-141</b>	25	11	<b>264-211</b>	<b>264-241</b>	25
12 ②	<b>264-112</b>	<b>264-142</b>	25	12 ②	<b>264-212</b>	<b>264-242</b>	25	
<p><b>Terminal strips with snap-in mounting feet,</b> for plate thickness 0.6 – 1.2 mm, fixing hole diameter 3.5 mm</p>	<b>2-conductor terminal strips with snap-in mounting feet,</b>				<b>4-conductor terminal strips with snap-in mounting feet,</b>			
		● grey	○ light grey	⊕		● grey	○ light grey	⊕
	2	<b>264-152</b>	<b>264-182</b>	100	2	<b>264-252</b>	<b>264-282</b>	100
	3	<b>264-153</b>	<b>264-183</b>	100	3	<b>264-253</b>	<b>264-283</b>	100
	4	<b>264-154</b>	<b>264-184</b>	100	4	<b>264-254</b>	<b>264-284</b>	100
	5	<b>264-155</b>	<b>264-185</b>	100	5	<b>264-255</b>	<b>264-285</b>	100
	6	<b>264-156</b>	<b>264-186</b>	100	6	<b>264-256</b>	<b>264-286</b>	100
	7	<b>264-157</b>	<b>264-187</b>	100	7	<b>264-257</b>	<b>264-287</b>	100
	8	<b>264-158</b>	<b>264-188</b>	100	8	<b>264-258</b>	<b>264-288</b>	50
	9	<b>264-159</b>	<b>264-189</b>	50	9	<b>264-259</b>	<b>264-289</b>	50
	10	<b>264-160</b>	<b>264-190</b>	50	10	<b>264-260</b>	<b>264-290</b>	50
	11	<b>264-161</b>	<b>264-191</b>	25	11	<b>264-261</b>	<b>264-291</b>	25
12 ②	<b>264-162</b>	<b>264-192</b>	25	12 ②	<b>264-262</b>	<b>264-292</b>	25	

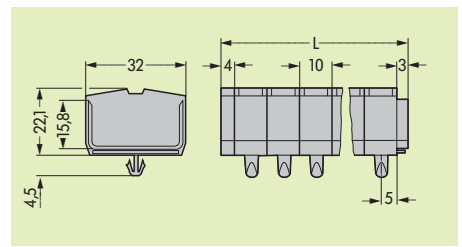
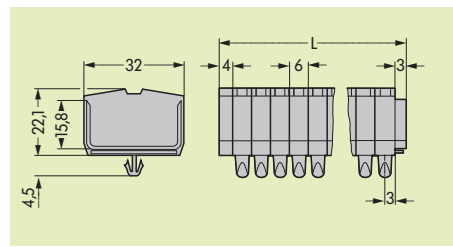
## Dimensions for modular terminal blocks and terminal strips (in mm)

Modular terminal blocks and terminal strips with fixing flanges  
L = No. of poles x pole width  
L<sub>1</sub> = L + 9.6 mm  
L<sub>2</sub> = L + 16 mm

Additional item nos. for colored terminal strips  
blue .../000-006 ③

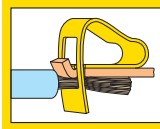


Modular terminal blocks and terminal strips with snap-in mounting feet  
L = (No. of poles x pole width) + 7 mm



\* For further approvals with corresponding ratings see section 15.



# Test Plug Modules for Modular Terminal Blocks and Terminal Strips, Series 264

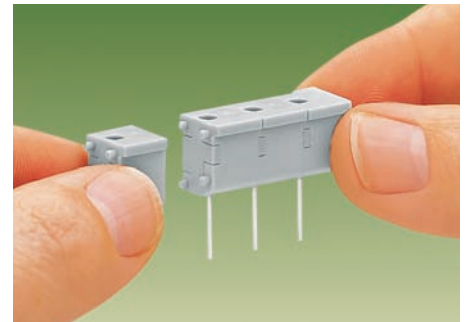


Module width 6 mm / 0.236 in Test voltage 400 V ① / 48 V ② Test current 0.5 A / 6 A ③  Average contact pressure 2.2 N per pin	Module width 10 mm / 0.394 in Test voltage 800 V ① / 48 V ② Test current 0.5 A / 6 A ③  Average contact pressure 2.2 N per pin
---	--

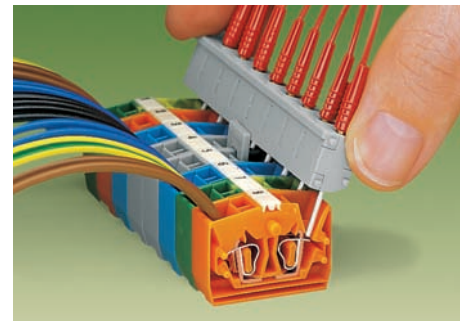


Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
<b>Test plug module,</b> Module width 6 mm / 0.236 in, for 2-conductor terminal blocks grey <b>249-136</b> 100 (4 x 25)		<b>Test plug module,</b> Module width 10 mm / 0.394 in, for 4-conductor terminal blocks grey <b>249-139</b> 100 (4 x 25)	

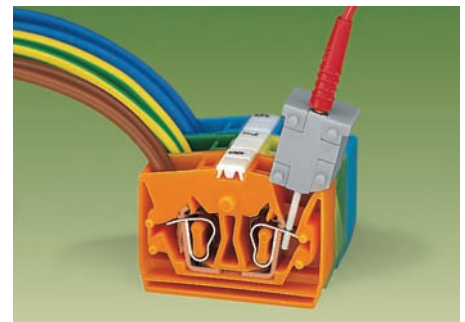
Accessories			
<b>Test plug, with cable 500 mm / 17.7"</b>  2 mm Ø, red <b>210-136</b> 50 (5 x 10) 2.3 mm Ø, yel. <b>210-137</b> 50 (5 x 10)		<b>Test plug, with cable 500 mm / 17.7"</b>  2 mm Ø, red <b>210-136</b> 50 (5 x 10) 2.3 mm Ø, yel. <b>210-137</b> 50 (5 x 10)	



Assembly of multipole test plug module strips



Testing with touch contact at the CAGE CLAMP® connection made of spring steel – limited to a current of 0.5 A max.

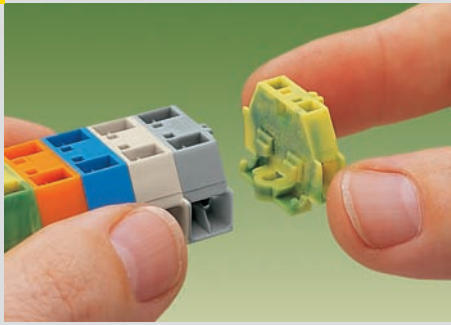


Testing using CAGE CLAMP® connection on the current bar – max. nominal current 6 A. The CAGE CLAMP® clamps individual test contacts.

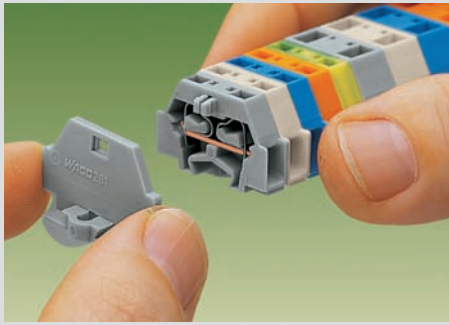
- ① Max. test voltage 400 V / 800 V only in test equipment, respecting the relevant air and creepage distances
- ② In case of touch contacting, the max. test voltage must not exceed 48 V, test pins are not touchproof
- ③ Test current in case of touch contacting 0.5 A max., 6 A if the test pins are firmly connected in the clamping units

# Modular Terminal Blocks and Terminal Strips with CAGE CLAMP® ... Series 260 to 262

## Assembly

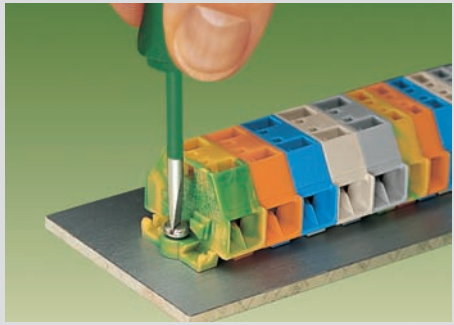


Assembly of modular terminal blocks to terminal strips



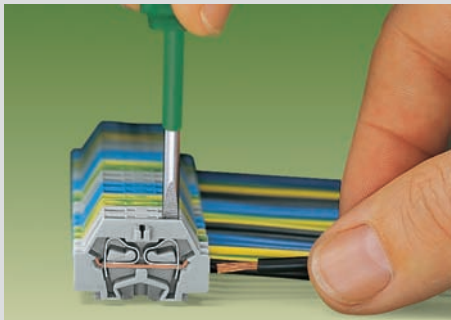
Mounting of an end plate

## Fixing



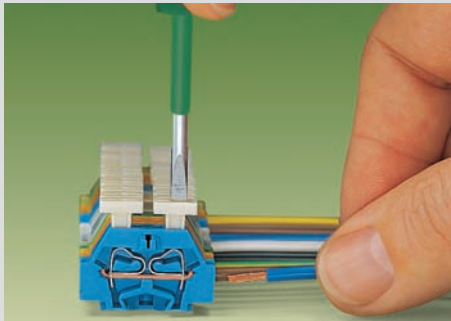
Terminal strip with fixing flange, screw fixing

## CAGE CLAMP® connection

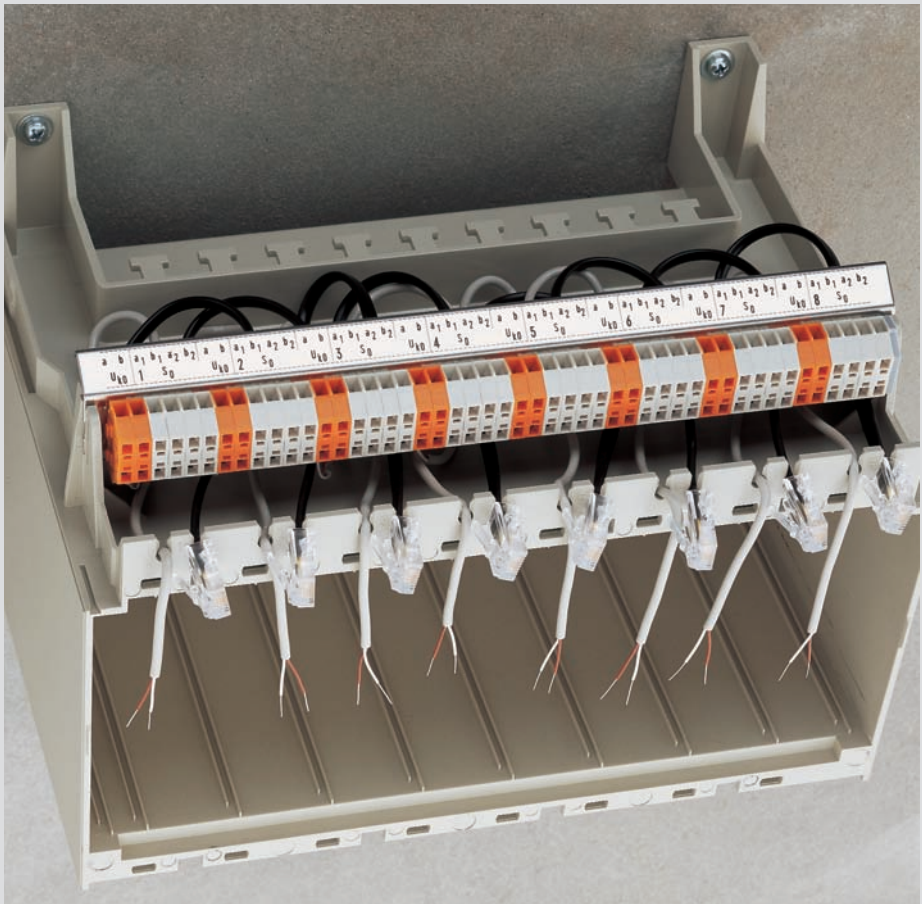


Connection of conductors

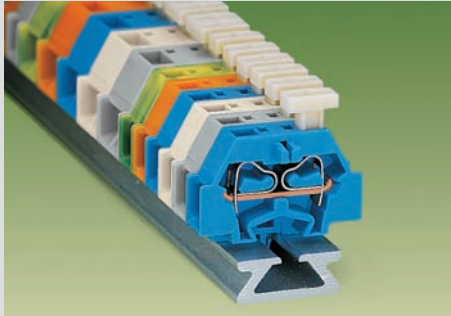
## CAGE CLAMP® connection



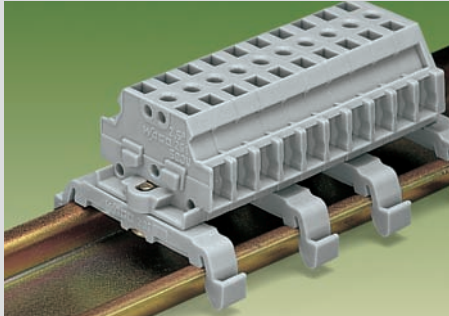
Connection of conductors, with push-buttons



## Types

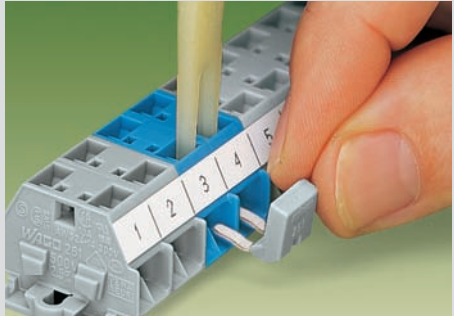


Terminal strip with push-buttons on one side



Terminal strip with marker receptacle for miniature WSB Quick marking system

## Commoning

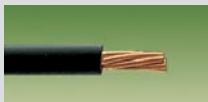


Commoning with jumper bar



CAGE CLAMP® clamps the following copper wires:\*

solid



stranded



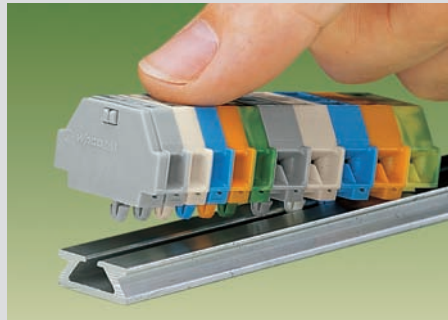
fine stranded, also with tinned single strands

\* For aluminum wire see notes in section 15!





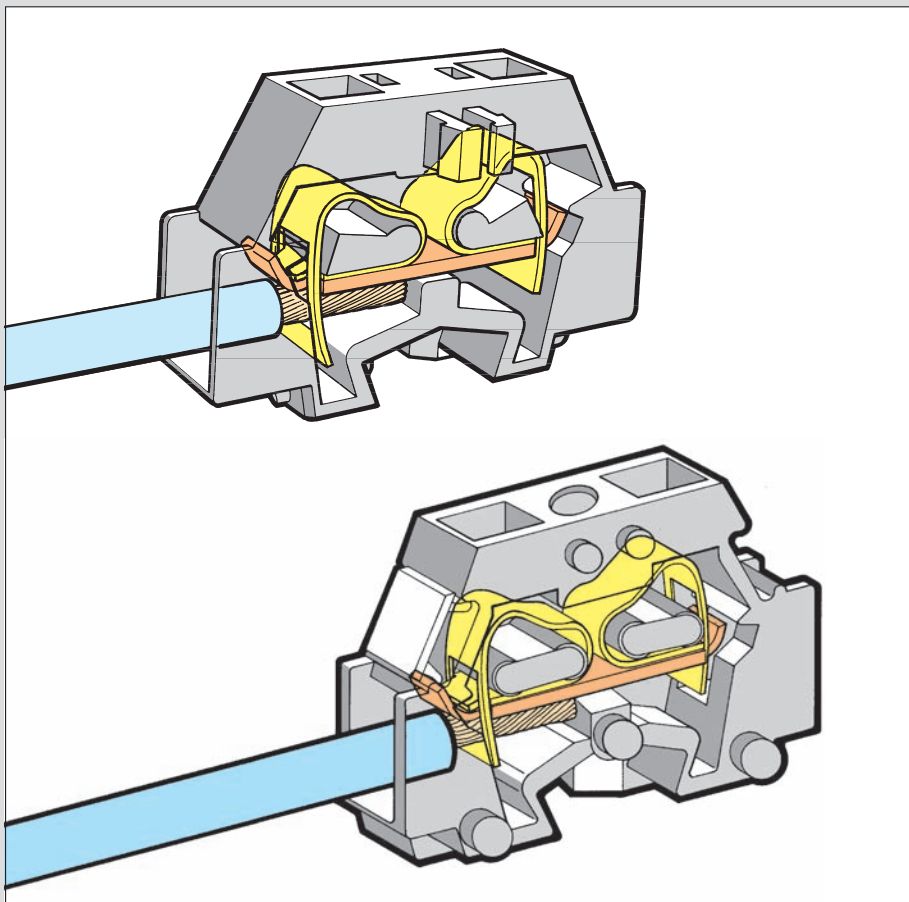
Terminal strip with snap-in mounting feet, fixing in holes



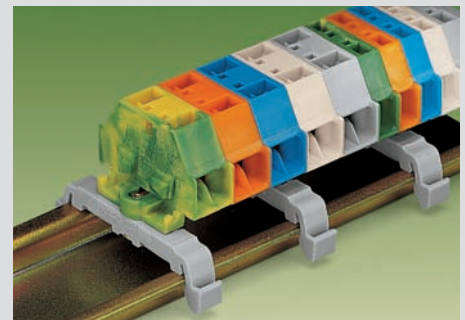
Terminal strip with snap-in mounting feet, on special aluminum rail



Terminal strip with fixing flange, screw fixing of mounting adapter 209-123<sup>1)</sup>



Fixing



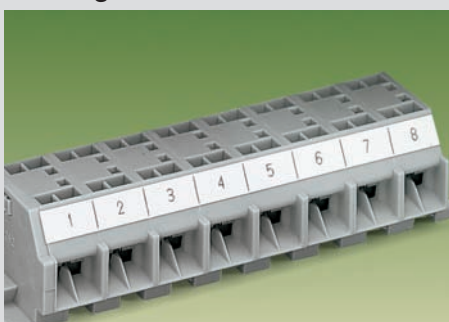
Terminal strip with fixing flange, on DIN 35 rail

Fixing

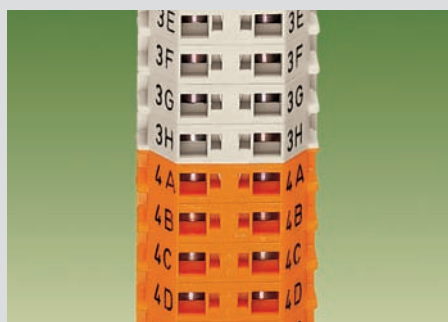


Terminal strip with snap-in mounting feet, assembly of mounting adapter 209-120<sup>1)</sup>  
<sup>1)</sup> The distance between mounting adapters should be 35 - 40 mm / 1.378 - 1.575 in max.

Marking

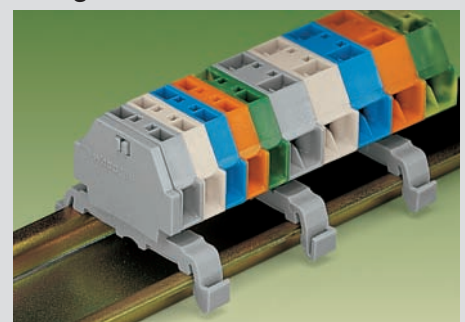


Marking with self-adhesive marker strips



Marking by direct printing

Fixing



Terminal strip with snap-in mounting feet on DIN 35 rail



fine-stranded wire - tip bonded



fine-stranded wire with crimped ferrule ❶

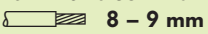
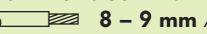


















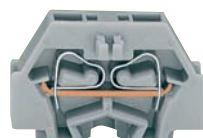
fine-stranded wire with crimped pin terminal

❶ When using conductors with ferrules, it is necessary to use a terminal block one size larger than the nominal cross section of the conductor.






# Modular Terminal Blocks with Fixing Flange or Snap-in Mounting Foot 1.5 mm<sup>2</sup> / AWG 16, Series 260







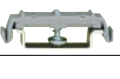

<b>Test plug modules</b> see page 10.28	<b>0.08 – 1.5 mm<sup>2</sup></b> <b>400 V/6 kV/3 ①</b> <b>18 A</b>	<b>AWG 28 – 16</b> <b>300 V, 10 A ②</b> <b>300 V, 15 A ③</b>	<b>2 x 0.08 – 1.5 mm<sup>2</sup></b> <b>400 V/6 kV/3 ①</b> <b>18 A</b>	<b>2 x AWG 28 – 16</b> <b>300 V, 10 A ②</b> <b>300 V, 15 A ③</b>
	<b>Terminal block width 5 mm / 0.197 in</b>  <b>8 – 9 mm / 0.33 in</b>		<b>Terminal block width 8 mm / 0.315 in</b>  <b>8 – 9 mm / 0.33 in</b>	
*        		*        		



① 400 V = rated voltage  
 6 kV = rated surge voltage  
 3 = pollution degree  
 (see also section 15)

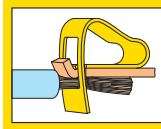
Description	Color	Item No.	Pack.-unit pcs	Color	Item No.	Pack.-unit pcs
<b>Terminal blocks with fixing flange,</b>  for screw fixing or similar methods, fixing hole diameter 3.2 mm (with mounting adapter 209-123 also for DIN 35 rail)	<b>2-conductor terminal blocks</b>			<b>4-conductor terminal blocks</b>		
	grey	<b>260-301</b>	300 (6 x 50)	grey	<b>260-331</b>	300 (6 x 50)
	light grey	<b>260-303</b>	300 (6 x 50)	light grey	<b>260-333</b>	300 (6 x 50)
	blue	<b>260-304</b>	300 (6 x 50)	blue	<b>260-334</b>	300 (6 x 50)
	orange	<b>260-306</b>	300 (6 x 50)	orange	<b>260-336</b>	300 (6 x 50)
<b>Terminal blocks with snap-in mounting foot,</b>  for plate thickness 0.6 – 1.2 mm, fixing hole diameter 3.5 mm (fits aluminum rail 210-154 or with mounting adapter 209-120 for DIN 35 rail)	<b>2-conductor terminal blocks</b>			<b>4-conductor terminal blocks</b>		
	grey	<b>260-311</b>	300 (6 x 50)	grey	<b>260-341</b>	300 (6 x 50)
	light grey	<b>260-313</b>	300 (6 x 50)	light grey	<b>260-343</b>	300 (6 x 50)
	blue	<b>260-314</b>	300 (6 x 50)	blue	<b>260-344</b>	300 (6 x 50)
	orange	<b>260-316</b>	300 (6 x 50)	orange	<b>260-346</b>	300 (6 x 50)
<b>End terminal block ②,</b>  without fixing foot, for terminal strips with snap-in mounting feet (see dimensioned drawings on page 10.19)	<b>2-conductor terminal blocks</b>			<b>4-conductor terminal blocks</b>		
	grey	<b>260-321</b>	300 (6 x 50)	grey	<b>260-351</b>	300 (6 x 50)
	light grey	<b>260-323</b>	300 (6 x 50)	light grey	<b>260-353</b>	300 (6 x 50)
	blue	<b>260-324</b>	300 (6 x 50)	blue	<b>260-354</b>	300 (6 x 50)
	orange	<b>260-326</b>	300 (6 x 50)	orange	<b>260-356</b>	300 (6 x 50)
	green-yellow	<b>260-327</b>	300 (6 x 50)	green-yellow	<b>260-357</b>	300 (6 x 50)

## Accessories for modular terminal blocks and terminal strips (Marking accessories see section 14)

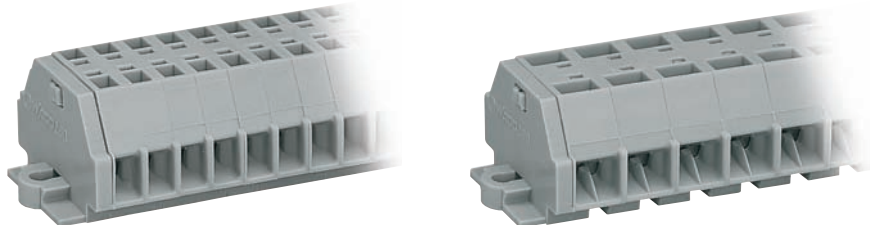
	<b>End plate with fixing flange</b>	grey	<b>260-361</b>	100 (2 x 50)	grey	<b>260-361</b>	100 (2 x 50)
	<b>End plate with snap-in mounting foot</b>	grey	<b>260-371</b>	100 (2 x 50)	grey	<b>260-371</b>	100 (2 x 50)
	<b>Comb type jumper bar,</b> insulated, 2-way	I <sub>N</sub> 10 A			I <sub>N</sub> 10 A		
		grey	<b>260-402</b>	25	grey	<b>260-402</b>	25
		reduce wire to 1 mm <sup>2</sup> /AWG 18 max.			reduce wire to 1 mm <sup>2</sup> /AWG 18 max.		
	<b>Operating tool, insulated,</b> for connecting the comb type jumper bar	2-way	<b>209-132</b>	1	2-way	<b>209-132</b>	1
	<b>Aluminum carrier rail,</b> 1000 x 18 x 7 mm 3'3" x 0.709 x 0.276 in		<b>210-154</b>	1		<b>210-154</b>	1
	<b>Plastic end stop,</b> with WSB marking facility, for aluminum rail 210-154	6 mm / 0.236 in wide			6 mm / 0.236 in wide		
		grey	<b>209-122</b>	25	grey	<b>209-122</b>	25
	<b>Mounting adapter,</b> for terminal blocks with snap-in mounting foot, for DIN 35 rail	6 mm / 0.236 in wide			6 mm / 0.236 in wide		
		grey	<b>209-120</b>	25	grey	<b>209-120</b>	25
	<b>Mounting adapter with screw,</b> for terminal blocks with fixing flange, for DIN 35 rail	6 mm / 0.236 in wide			6 mm / 0.236 in wide		
		grey	<b>209-123</b>	25	grey	<b>209-123</b>	25
	<b>Mounting adapter</b> for DIN 35 rail, can be used as <b>end stop</b>	6.5 mm / 0.256 in wide			6.5 mm / 0.256 in wide		
		grey	<b>209-137</b>	25	grey	<b>209-137</b>	25

\* For further approvals with corresponding ratings see section 15.


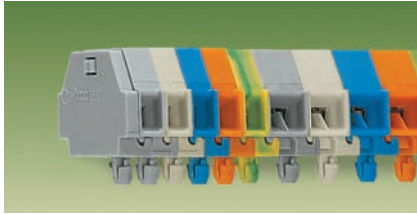
# Terminal Strips with Fixing Flanges or Snap-in Mounting Feet 1.5 mm<sup>2</sup> / AWG 16, Series 260



<b>Test plug modules</b> see page 10.28	<b>0.08 – 1.5 mm<sup>2</sup></b> 400 V/6 kV/3 ① 18 A	AWG 28 – 16 300 V, 10 A ② 300 V, 15 A ③	<b>2 x 0.08 – 1.5 mm<sup>2</sup></b> 400 V/6 kV/3 ① 18 A	2 x AWG 28 – 16 300 V, 10 A ② 300 V, 15 A ③
	Pole width 5 mm / 0.197 in 8 – 9 mm / 0.33 in		Pole width 8 mm / 0.315 in 8 – 9 mm / 0.33 in	
* ① VDE IEC60364 CCA IEC60364 N S SABS GL BV LR NV ② ③		* ① VDE IEC60364 CCA IEC60364 N S SABS GL BV LR NV ② ③		



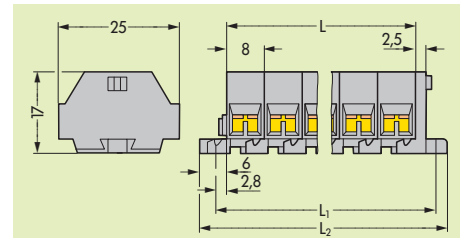
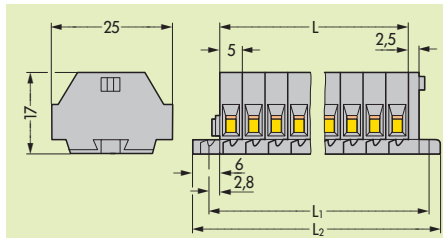
- ① 400 V = rated voltage  
6 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② For longer strips and/or assemblies of different colors, please contact factory

Description	No. of poles	Item No.	Pack.-unit pcs	No. of poles	Item No.	Pack.-unit pcs
 <p><b>Terminal strips with fixing flanges,</b> for screw fixing or similar methods, fixing hole diameter 3.2 mm (with mounting adapter 209-123 also for DIN 35 rail)</p>	<b>2-conductor terminal strips with fixing flanges, grey</b>			<b>4-conductor terminal strips with fixing flanges, grey</b>		
	2	260-102	100	2	260-202	100
	3	260-103	100	3	260-203	100
	4	260-104	100	4	260-204	100
	5	260-105	100	5	260-205	100
	6	260-106	50	6	260-206	50
	7	260-107	50	7	260-207	50
	8	260-108	50	8	260-208	50
	9	260-109	50	9	260-209	50
	10	260-110	25	10	260-210	25
	11	260-111	25	11	260-211	25
	12 ②	260-112	25	12 ②	260-212	25
 <p><b>Terminal strips with snap-in mounting feet,</b> for plate thickness 0.6 – 1.2 mm, fixing hole diameter 3.5 mm (fits aluminum rail 210-154 or with mounting adapter 209-120 for DIN 35 rail)</p>	<b>2-conductor terminal strips with snap-in mounting feet, grey</b>			<b>4-conductor terminal strips with snap-in mounting feet, grey</b>		
	2	260-152	100	2	260-252	100
	3	260-153	100	3	260-253	100
	4	260-154	100	4	260-254	100
	5	260-155	100	5	260-255	100
	6	260-156	50	6	260-256	50
	7	260-157	50	7	260-257	50
	8	260-158	50	8	260-258	50
	9	260-159	50	9	260-259	50
	10	260-160	25	10	260-260	25
	11	260-161	25	11	260-261	25
	12 ②	260-162	25	12 ②	260-262	25

## Dimensions for modular terminal blocks and terminal strips (in mm)

Modular terminal blocks and terminal strips with fixing flanges

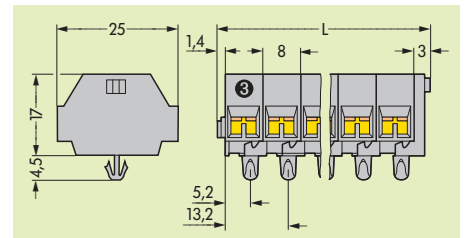
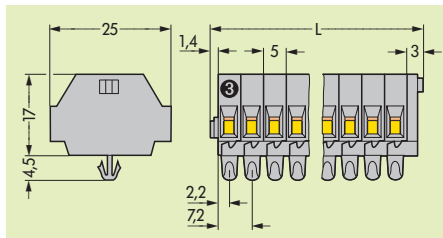
L = No. of poles x pole width  
 L<sub>1</sub> = L + 8.1 mm  
 L<sub>2</sub> = L + 14.5 mm



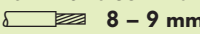
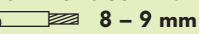
















Modular terminal blocks and terminal strips with snap-in mounting feet

③ End terminal block; see page 10.18

L = (No. of poles x pole width) + 4.4 mm






# Modular Terminal Blocks with Fixing Flange or Snap-in Mounting Foot 2.5 mm<sup>2</sup> / AWG 14, Series 261










<b>Test plug modules</b> see page 10.28	<b>0.08 – 2.5 mm<sup>2</sup></b> <b>500 V/6 kV/3 ①</b> <b>24 A</b>	<b>AWG 28 – 14</b> <b>300/600 V, 15/5 A ②</b> <b>300/600 V, 20/5 A ③</b>	<b>2 x 0.08 – 2.5 mm<sup>2</sup></b> <b>500 V/6 kV/3 ①</b> <b>24 A</b>	<b>2 x AWG 28 – 14</b> <b>300/600 V, 15/5 A ②</b> <b>300/600 V, 20/5 A ③</b>
	<b>Terminal block width 6 mm / 0.236 in</b>  <b>8 – 9 mm / 0.33 in</b>		<b>Terminal block width 10 mm / 0.394 in</b>  <b>8 – 9 mm / 0.33 in</b>	
<small>*        </small>		<small>*        </small>		



- ① 500 V = rated voltage  
6 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② Suitable for Ex i applications

Description	Color	Item No.	Pack.-unit pcs	Color	Item No.	Pack.-unit pcs
 <b>Terminal blocks with fixing flange,</b> for screw fixing or similar methods, fixing hole diameter 3.2 mm (with mounting adapter 209-123 also for DIN 35 rail)	<b>2-conductor terminal blocks</b>			<b>4-conductor terminal blocks</b>		
	grey	<b>261-301</b>	200 (4 x 50)	grey	<b>261-331</b>	200 (4 x 50)
	light grey	<b>261-303</b>	200 (4 x 50)	light grey	<b>261-333</b>	200 (4 x 50)
	blue	<b>261-304</b> ②	200 (4 x 50)	blue	<b>261-334</b> ②	200 (4 x 50)
	orange	<b>261-306</b>	200 (4 x 50)	orange	<b>261-336</b>	200 (4 x 50)
 <b>Terminal blocks with snap-in mounting foot,</b> for plate thickness 0.6 – 1.2 mm, fixing hole diameter 3.5 mm (fits aluminum rail 210-154 or with mounting adapter 209-120 for DIN 35 rail)	<b>2-conductor terminal blocks</b>			<b>4-conductor terminal blocks</b>		
	grey	<b>261-311</b>	200 (4 x 50)	grey	<b>261-341</b>	200 (4 x 50)
	light grey	<b>261-313</b>	200 (4 x 50)	light grey	<b>261-343</b>	200 (4 x 50)
	blue	<b>261-314</b> ②	200 (4 x 50)	blue	<b>261-344</b> ②	200 (4 x 50)
	orange	<b>261-316</b>	200 (4 x 50)	orange	<b>261-346</b>	200 (4 x 50)
 <b>End terminal block ③,</b> without fixing foot, for terminal strips with snap-in mounting feet (see dimensioned drawings on page 10.21)	<b>2-conductor terminal blocks</b>			<b>4-conductor terminal blocks</b>		
	grey	<b>261-321</b>	200 (4 x 50)	grey	<b>261-351</b>	200 (4 x 50)
	light grey	<b>261-323</b>	200 (4 x 50)	light grey	<b>261-353</b>	200 (4 x 50)
	blue	<b>261-324</b> ②	200 (4 x 50)	blue	<b>261-354</b> ②	200 (4 x 50)
	orange	<b>261-326</b>	200 (4 x 50)	orange	<b>261-356</b>	200 (4 x 50)
	green-yellow	<b>261-327</b>	200 (4 x 50)	green-yellow	<b>261-357</b>	200 (4 x 50)

## Accessories for modular terminal blocks and terminal strips (Marking accessories see section 14)

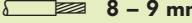
 <b>End plate with fixing flange</b>	grey	<b>261-361</b>	100 (2 x 50)	grey	<b>261-361</b>	100 (2 x 50)
 <b>End plate with snap-in mounting foot</b>	grey	<b>261-371</b>	100 (2 x 50)	grey	<b>261-371</b>	100 (2 x 50)
 <b>Comb type jumper bar,</b> insulated, 2-way	I <sub>N</sub> 16 A			I <sub>N</sub> 16 A		
	grey	<b>261-402</b>	25	grey	<b>261-402</b>	25
 <b>Operating tool, insulated,</b> for connecting the comb type jumper bar	2-way	<b>209-132</b>	1	2-way	<b>209-132</b>	1
 <b>Aluminum carrier rail,</b> 1000 x 18 x 7 mm 3'3" x 0.709 x 0.276 in		<b>210-154</b>	1		<b>210-154</b>	1
 <b>Plastic end stop,</b> with WSB marking facility, for aluminum rail 210-154	6 mm / 0.236 in wide			6 mm / 0.236 in wide		
	grey	<b>209-122</b>	25	grey	<b>209-122</b>	25
 <b>Mounting adapter,</b> for terminal blocks with snap-in mounting foot, for DIN 35 rail	6 mm / 0.236 in wide			6 mm / 0.236 in wide		
	grey	<b>209-120</b>	25	grey	<b>209-120</b>	25
 <b>Mounting adapter with screw,</b> for terminal blocks with fixing flange, for DIN 35 rail	6 mm / 0.236 in wide			6 mm / 0.236 in wide		
	grey	<b>209-123</b>	25	grey	<b>209-123</b>	25
 <b>Mounting adapter</b> for DIN 35 rail, can be used as <b>end stop</b>	6.5 mm / 0.256 in wide			6.5 mm / 0.256 in wide		
	grey	<b>209-137</b>	25	grey	<b>209-137</b>	25

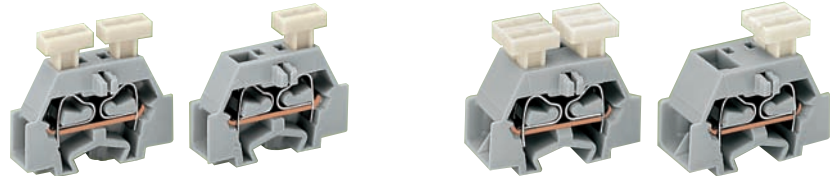
\* For further approvals with corresponding ratings see section 15.






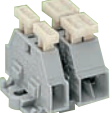
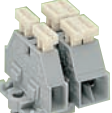



# Modular Terminal Blocks with Push Buttons on One or Both Sides, with Fixing Flange or Snap-in Mounting Foot 2.5 mm<sup>2</sup> / AWG 14, Series 261

<p><b>0.08 – 2.5 mm<sup>2</sup></b>  <b>500 V/6 kV/3 ①</b>  <b>24 A</b></p> <p><b>Terminal block width 6 mm / 0.236 in</b>   <b>8 – 9 mm / 0.33 in</b></p> <p><small>* CCA KEH LR NV</small></p>	<p><b>AWG 28 – 14</b>  <b>300/600 V, 15/5 A ②</b></p>	<p><b>2 x 0.08 – 2.5 mm<sup>2</sup></b>  <b>500 V/6 kV/3 ①</b>  <b>24 A</b></p> <p><b>Terminal block width 10 mm / 0.394 in</b>   <b>8 – 9 mm / 0.33 in</b></p> <p><small>* CCA KEH LR NV</small></p>
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- ① 500 V = rated voltage  
 6 kV = rated surge voltage  
 3 = pollution degree  
 (see also section 15)
- ② Suitable for Ex i applications

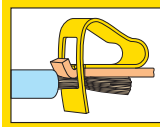
	Color	Item No.	Pack.-unit pcs		Color	Item No.	Pack.-unit pcs
<b>with push button on one side</b>				<b>2-cond. term. block with push button on one side</b>			
<b>Terminal blocks with fixing flange,</b>  <ul style="list-style-type: none"> <li>for screw fixing or similar methods, fixing hole diameter 3.2 mm (with mounting adapter 209-123 also for DIN 35 rail)</li> </ul>	grey	<b>261-301/331-000</b>	200 (4 x 50)	<b>4-cond. term. block with push button on one side</b>	grey	<b>261-331/332-000</b>	200 (4 x 50)
	light grey	<b>261-303/331-000</b>	200 (4 x 50)		light grey	<b>261-333/332-000</b>	200 (4 x 50)
	blue	<b>261-304/331-000</b> ②	200 (4 x 50)		blue	<b>261-334/332-000</b> ②	200 (4 x 50)
	orange	<b>261-306/331-000</b>	200 (4 x 50)		orange	<b>261-336/332-000</b>	200 (4 x 50)
	green-yellow	<b>261-307/331-000</b>	200 (4 x 50)		green-yellow	<b>261-337/332-000</b>	200 (4 x 50)
<b>Terminal blocks with snap-in mounting foot,</b>  <ul style="list-style-type: none"> <li>for plate thickness 0.6 – 1.2 mm, fixing hole diameter 3.5 mm (fits aluminum rail 210-154 or with mounting adapter 209-120 for DIN 35 rail)</li> </ul>	grey	<b>261-311/331-000</b>	200 (4 x 50)	<b>4-cond. term. block with push button on one side</b>	grey	<b>261-341/332-000</b>	200 (4 x 50)
	light grey	<b>261-313/331-000</b>	200 (4 x 50)		light grey	<b>261-343/332-000</b>	200 (4 x 50)
	blue	<b>261-314/331-000</b> ②	200 (4 x 50)		blue	<b>261-344/332-000</b> ②	200 (4 x 50)
	orange	<b>261-316/331-000</b>	200 (4 x 50)		orange	<b>261-346/332-000</b>	200 (4 x 50)
	green-yellow	<b>261-317/331-000</b>	200 (4 x 50)		green-yellow	<b>261-347/332-000</b>	200 (4 x 50)
<b>End terminal block ③,</b>  <ul style="list-style-type: none"> <li>without fixing foot, for terminal strips with snap-in mounting feet (see dimensioned drawings on page 10.23)</li> </ul>	grey	<b>261-321/331-000</b>	200 (4 x 50)	<b>4-cond. term. block with push button on one side</b>	grey	<b>261-351/332-000</b>	200 (4 x 50)
	light grey	<b>261-323/331-000</b>	200 (4 x 50)		light grey	<b>261-353/332-000</b>	200 (4 x 50)
	blue	<b>261-324/331-000</b> ②	200 (4 x 50)		blue	<b>261-354/332-000</b> ②	200 (4 x 50)
	orange	<b>261-326/331-000</b>	200 (4 x 50)		orange	<b>261-356/332-000</b>	200 (4 x 50)
	green-yellow	<b>261-327/331-000</b>	200 (4 x 50)		green-yellow	<b>261-357/332-000</b>	200 (4 x 50)
<b>with push buttons on both sides</b>				<b>2-cond. term. bl. with push buttons on both sides</b>			
<b>Terminal blocks with fixing flange,</b>  <ul style="list-style-type: none"> <li>for screw fixing or similar methods, fixing hole diameter 3.2 mm (with mounting adapter 209-123 also for DIN 35 rail)</li> </ul>	grey	<b>261-301/341-000</b>	200 (4 x 50)	<b>4-cond. term. bl. with push buttons on both sides</b>	grey	<b>261-331/342-000</b>	200 (4 x 50)
	light grey	<b>261-303/341-000</b>	200 (4 x 50)		light grey	<b>261-333/342-000</b>	200 (4 x 50)
	blue	<b>261-304/341-000</b> ②	200 (4 x 50)		blue	<b>261-334/342-000</b> ②	200 (4 x 50)
	orange	<b>261-306/341-000</b>	200 (4 x 50)		orange	<b>261-336/342-000</b>	200 (4 x 50)
	green-yellow	<b>261-307/341-000</b>	200 (4 x 50)		green-yellow	<b>261-337/342-000</b>	200 (4 x 50)
<b>Terminal blocks with snap-in mounting foot,</b>  <ul style="list-style-type: none"> <li>for plate thickness 0.6 – 1.2 mm, fixing hole diameter 3.5 mm (fits aluminum rail 210-154 or with mounting adapter 209-120 for DIN 35 rail)</li> </ul>	grey	<b>261-311/341-000</b>	200 (4 x 50)	<b>4-cond. term. bl. with push buttons on both sides</b>	grey	<b>261-341/342-000</b>	200 (4 x 50)
	light grey	<b>261-313/341-000</b>	200 (4 x 50)		light grey	<b>261-343/342-000</b>	200 (4 x 50)
	blue	<b>261-314/341-000</b> ②	200 (4 x 50)		blue	<b>261-344/342-000</b> ②	200 (4 x 50)
	orange	<b>261-316/341-000</b>	200 (4 x 50)		orange	<b>261-346/342-000</b>	200 (4 x 50)
	green-yellow	<b>261-317/341-000</b>	200 (4 x 50)		green-yellow	<b>261-347/342-000</b>	200 (4 x 50)
<b>End terminal block ③,</b>  <ul style="list-style-type: none"> <li>without fixing foot, for terminal strips with snap-in mounting feet (see dimensioned drawings on page 10.23)</li> </ul>	grey	<b>261-321/341-000</b>	200 (4 x 50)	<b>4-cond. term. bl. with push buttons on both sides</b>	grey	<b>261-351/342-000</b>	200 (4 x 50)
	light grey	<b>261-323/341-000</b>	200 (4 x 50)		light grey	<b>261-353/342-000</b>	200 (4 x 50)
	blue	<b>261-324/341-000</b> ②	200 (4 x 50)		blue	<b>261-354/342-000</b> ②	200 (4 x 50)
	orange	<b>261-326/341-000</b>	200 (4 x 50)		orange	<b>261-356/342-000</b>	200 (4 x 50)
	green-yellow	<b>261-327/341-000</b>	200 (4 x 50)		green-yellow	<b>261-357/342-000</b>	200 (4 x 50)

## Accessories for modular terminal blocks and terminal strips

<b>Mounting accessories</b>	see pages 10.20 and 10.21	see pages 10.20 and 10.21
<b>Marking accessories</b>	see section 14	see section 14

\* For further approvals with corresponding ratings see section 15.

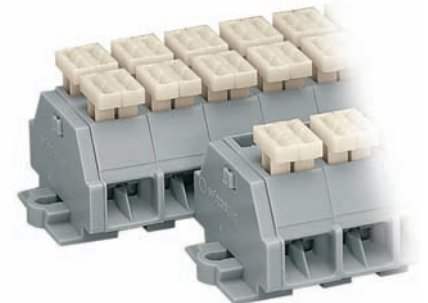
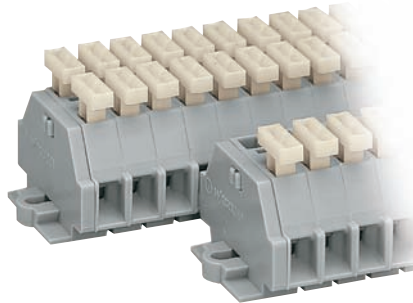
# Terminal Strips with Push Buttons on One or Both Sides, with Fixing Flanges or Snap-in Mounting Feet 2.5 mm<sup>2</sup> / AWG 14, Series 261



10  
23

<p>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 14 500 V/6 kV/3 ①   300/600 V, 15/5 A ② 24 A</p> <p>Pole width 6 mm / 0.236 in 8 – 9 mm / 0.33 in</p> <p>* CCA KEH LR NV</p>	<p>2 x 0.08 – 2.5 mm<sup>2</sup>   2 x AWG 28 – 14 500 V/6 kV/3 ①   300/600 V, 15/5 A ② 24 A</p> <p>Pole width 10 mm / 0.394 in 8 – 9 mm / 0.33 in</p> <p>* CCA KEH LR NV</p>
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- ① 500 V = rated voltage  
6 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② Suitable for Ex i applications with blue insulating housings
- ④ For longer strips and/or assemblies of different colors, please contact factory
- ⑤ For item No. and packing-unit, see page 10.21



Description	No. of poles	Add. item No. for	No. of poles	Add. item No. for
	<b>2-conductor terminal strips with fixing flanges,</b> for screw fixing or similar methods, fixing hole diameter 3.2 mm (with mounting adapter 209-123 also for DIN 35 rail) <b>with push buttons on one side, grey</b>		<b>4-conductor terminal strips with fixing flanges,</b> for screw fixing or similar methods, fixing hole diameter 3.2 mm (with mounting adapter 209-123 also for DIN 35 rail) <b>with push buttons on one side, grey</b>	
	2 – 12 ④	261-.../331-000 ⑤	2 – 12 ④	261-.../332-000 ⑤
	<b>with push buttons on both sides, grey</b>		<b>with push buttons on both sides, grey</b>	
	2 – 12 ④	261-.../341-000 ⑤	2 – 12 ④	261-.../342-000 ⑤
	<b>2-conductor terminal strips with snap-in mounting feet,</b> for plate thickness 0.6 – 1.2 mm, fixing hole diameter 3.5 mm (fits aluminum rail 210-154 or with mounting adapter 209-120 for DIN 35 rail) <b>with push buttons on one side, grey</b>		<b>4-conductor terminal strips with snap-in mounting feet,</b> for plate thickness 0.6 – 1.2 mm, fixing hole diameter 3.5 mm (fits aluminum rail 210-154 or with mounting adapter 209-120 for DIN 35 rail) <b>with push buttons on one side, grey</b>	
	2 – 12 ④	261-.../331-000 ⑤	2 – 12 ④	261-.../332-000 ⑤
	<b>with push buttons on both sides, grey</b>		<b>with push buttons on both sides, grey</b>	
	2 – 12 ④	261-.../341-000 ⑤	2 – 12 ④	261-.../342-000 ⑤

Modular terminal blocks and terminal strips with fixing flanges

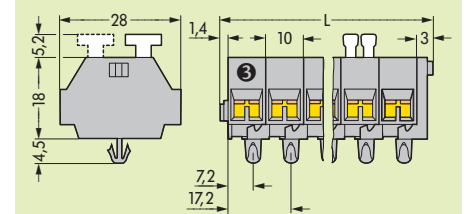
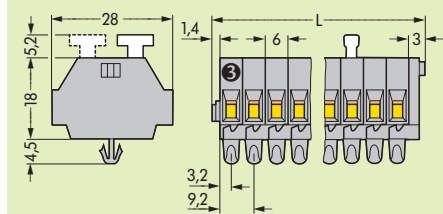
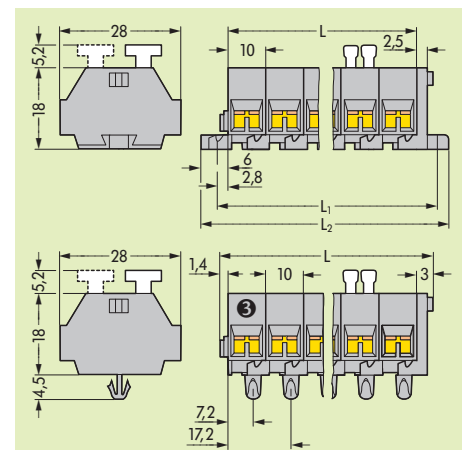
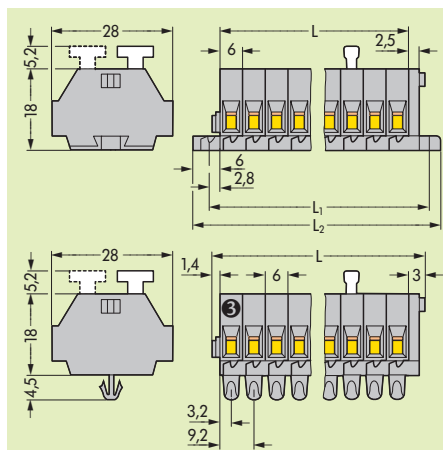
L = No. of poles x pole width  
L<sub>1</sub> = L + 8.1 mm  
L<sub>2</sub> = L + 14.5 mm

Additional item-Nos. for colored terminal strips  
blue .../000-006 ②



Modular terminal blocks and terminal strips with snap-in mounting feet

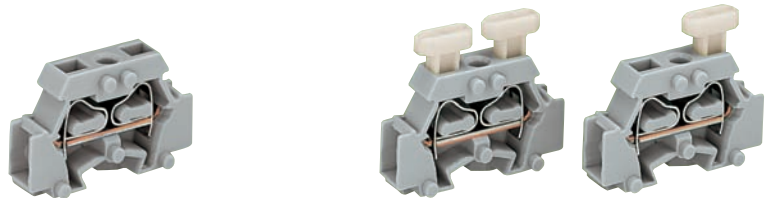
③ End terminal block; see page 10.22

L = (No. of poles x pole width) + 4.4 mm




# Modular Terminal Blocks with Fixing Flange 2.5 mm<sup>2</sup> / AWG 14, with Marker Receptacle for the Miniature WSB Quick Marking System Series 261







	<p>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 14 500 V/6 kV/3 ①   300/600 V, 15/5 A ② 24 A   300/600 V, 20/5 A ③</p> <p>Terminal block width 6 mm / 0.236 in   8 – 9 mm / 0.33 in</p> <p>* ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿</p>	<p>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 14 500 V/6 kV/3 ①   300/600 V, 15/5 A ② 24 A</p> <p>Terminal block width 6 mm / 0.236 in   8 – 9 mm / 0.33 in</p> <p>* ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿</p>
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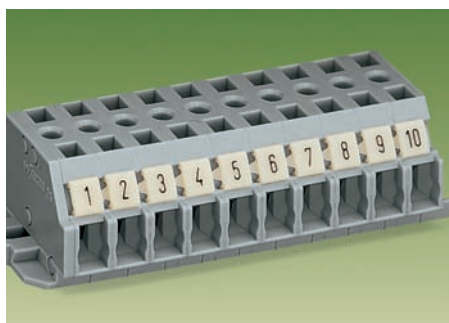
① 500 V = rated voltage  
6 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)

Description	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
 <p><b>Terminal blocks with fixing flange,</b> for screw fixing or similar methods, fixing hole diameter 3.2 mm (with mounting adapter 209-123 also for DIN 35 rail) Lateral marking facility for miniature WSB Quick marking system, test slot</p>	<p><b>2-conductor terminal block, without push button</b> grey <b>261-411</b> 200 (4 x 50)</p>		<p><b>2-conductor terminal block, with push button on one side</b> grey <b>261-411/331-000</b> 200 (4 x 50)</p>	
			<p><b>2-conductor terminal block, with push buttons on both sides</b> grey <b>261-411/341-000</b> 200 (4 x 50)</p>	

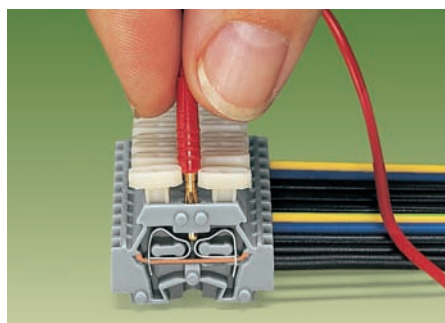
**Accessories for modular terminal blocks and terminal strips** Appropriate marking system **Mini-WSB** (see section 14)

	<b>End plate with fixing flange</b>	grey	<b>261-410</b>	100 (2 x 50)	grey	<b>261-410</b>	100 (2 x 50)
	<b>Comb type jumper bar, insulated, 2-way</b>	I <sub>N</sub> 16 A grey	<b>261-402</b>	25 reduce wire to 1.5 mm <sup>2</sup> /AWG 16 max.	I <sub>N</sub> 16 A grey	<b>261-402</b>	25 reduce wire to 1.5 mm <sup>2</sup> /AWG 16 max.
	<b>Operating tool, insulated, for connecting the comb type jumper bar</b>	2-way	<b>209-132</b>	1	2-way	<b>209-132</b>	1
	<b>Mounting adapter with screw, for terminal blocks with fixing flange, for DIN 35 rail</b>	6 mm / 0.236 in wide grey	<b>209-123</b>	25	6 mm / 0.236 in wide grey	<b>209-123</b>	25
	<b>Mounting adapter for DIN 35 rail, can be used as end stop</b>	6.5 mm / 0.256 in wide grey	<b>209-137</b>	25	6.5 mm / 0.256 in wide grey	<b>209-137</b>	25
	<b>Miniature WSB Quick marker card, 10 strips with 10 markers each, white with black printing</b>	see section 14			see section 14		

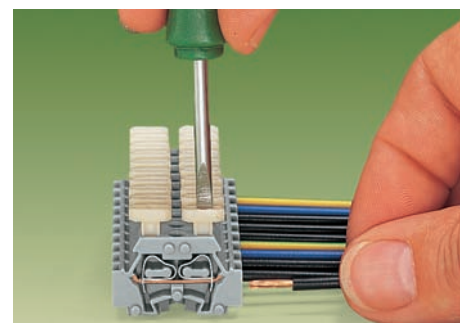
**Application notes**



Marking with miniature WSB Quick marking system



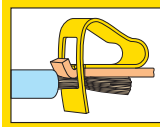
Touch contacting with a 2 mm / 0.079 in test plug



Connection of conductor with push button

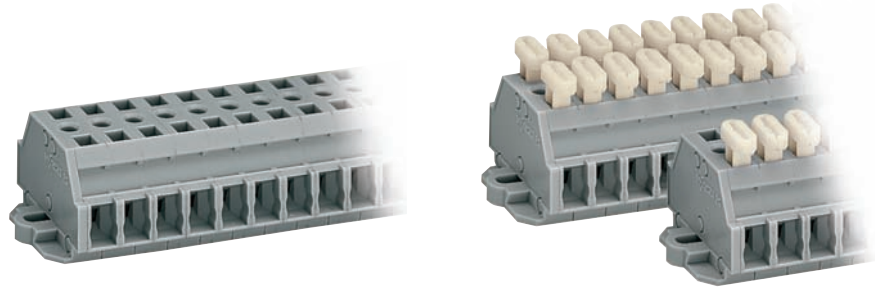
\* For further approvals with corresponding ratings see section 15.

# Terminal Strips with Fixing Flanges 2.5 mm<sup>2</sup> / AWG 14, with Marker Receptacle for the Miniature WSB Quick Marking System Series 261



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25

<p>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 14 500 V/6 kV/3 ①   300/600 V, 15/5 A ② 24 A   300/600 V, 20/5 A ③</p> <p>Pole width 6 mm / 0.236 in 8 – 9 mm / 0.33 in</p> <p>* </p>	<p>0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 14 500 V/6 kV/3 ①   300/600 V, 15/5 A ② 24 A</p> <p>Pole width 6 mm / 0.236 in 8 – 9 mm / 0.33 in</p> <p>* </p>
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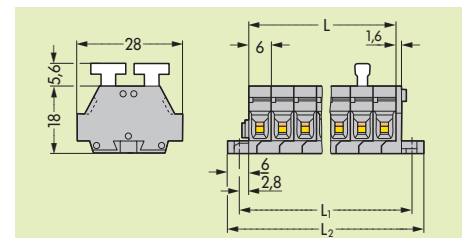
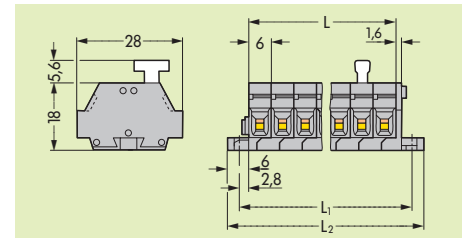
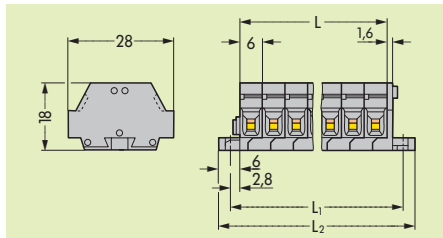
- ① 500 V = rated voltage  
6 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② For longer strips,  
please contact factory

Description	No. of poles	Item No.	Pack.-unit pcs	No. of poles	Item No.	Pack.-unit pcs
<p><b>Terminal strips with fixing flanges,</b> for screw fixing or similar methods, fixing hole diameter 3.2 mm (with mounting adapter 209-123 also for DIN 35 rail)</p>	2-conductor terminal strips with fixing flanges, without push button, grey			2-conductor terminal strips with fixing flanges, with push buttons on one side, grey		
	2	261-422	100	2	261-422/331-000	100
	3	261-423	100	3	261-423/331-000	100
	4	261-424	100	4	261-424/331-000	100
	5	261-425	100	5	261-425/331-000	100
	6	261-426	50	6	261-426/331-000	50
	7	261-427	50	7	261-427/331-000	50
	8	261-428	50	8	261-428/331-000	50
	9	261-429	50	9	261-429/331-000	50
	10	261-430	25	10	261-430/331-000	25
	11	261-431	25	11	261-431/331-000	25
	12 ②	261-432	25	12 ②	261-432/331-000	25
<p><b>Terminal strips with fixing flanges, with push buttons on one or both sides of the strip,</b> for screw fixing or similar methods, fixing hole diameter 3.2 mm (with mounting adapter 209-123 also for DIN 35 rail)</p>	2-conductor terminal strips with fixing flanges, with push buttons on both sides, grey					
	2	261-422/341-000	100	2	261-422/341-000	100
	3	261-423/341-000	100	3	261-423/341-000	100
	4	261-424/341-000	100	4	261-424/341-000	100
	5	261-425/341-000	100	5	261-425/341-000	100
	6	261-426/341-000	50	6	261-426/341-000	50
	7	261-427/341-000	50	7	261-427/341-000	50
	8	261-428/341-000	50	8	261-428/341-000	50
	9	261-429/341-000	50	9	261-429/341-000	50
	10	261-430/341-000	25	10	261-430/341-000	25
	11	261-431/341-000	25	11	261-431/341-000	25
	12 ②	261-432/341-000	25	12 ②	261-432/341-000	25

## Dimensions for modular terminal blocks and terminal strips (in mm)

Modular terminal blocks and terminal strips with fixing flanges

L = No. of poles x pole width  
L<sub>1</sub> = L + 72 mm  
L<sub>2</sub> = L + 13.6 mm

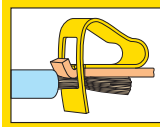


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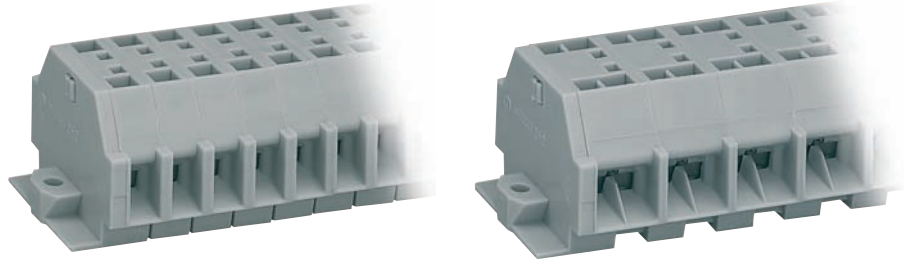
# Terminal Strips with Fixing Flanges or Snap-in Mounting Feet 4 mm<sup>2</sup> / AWG 12, Series 262



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27

<b>Test plug modules</b> see page 10.28	<b>0.08 – 4 mm<sup>2</sup></b> 630 V/8 kV/3 ① 24 A	AWG 28 – 12 300/600 V, 20/5 A ② 300/600 V, 25/5 A ③	<b>2 x 0.08 – 4 mm<sup>2</sup></b> 630 V/8 kV/3 ① 24 A	2 x AWG 28 – 12 300/600 V, 20/5 A ② 300/600 V, 25/5 A ③
	Pole width 7 mm / 0.276 in 9 – 10 mm / 0.37 in		Pole width 12 mm / 0.472 in 9 – 10 mm / 0.37 in	
* ① VDE IEC60364 CCA IEC60364 N S D P R T U GL BV LR NV ② ③				

- ① 630 V = rated voltage  
8 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② Suitable for Ex i applications with blue insulating housings
- ③ Suitable for Ex e II applications  
0.5 – 4 mm<sup>2</sup> AWG 20 – 12  
550 V, 23 A  
(see also section 13)
- ④ For longer strips and/or assemblies of different colors,  
please contact factory



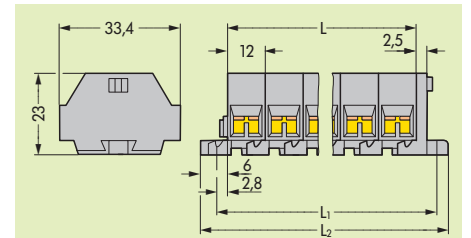
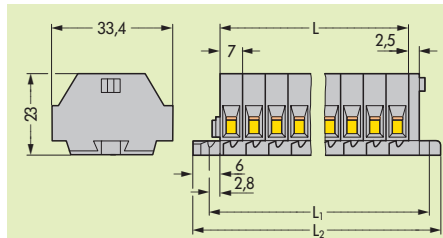
Description	No. of poles	Item-No.	Pack.-unit pcs	No. of poles	Item-No.	Pack.-unit pcs		
<p><b>Terminal strips with fixing flanges,</b> for screw fixing or similar methods, fixing hole diameter 3.2 mm (with mounting adapter 209-123 also for DIN 35 rail)</p>	<b>2-conductor terminal strips with fixing flanges,</b> ● grey ○ light grey ④			<b>4-conductor terminal strips with fixing flanges,</b> ● grey ○ light grey ④				
	2	262-102	262-132	100	2	262-202	262-232	100
	3	262-103	262-133	100	3	262-203	262-233	100
	4	262-104	262-134	100	4	262-204	262-234	100
	5	262-105	262-135	100	5	262-205	262-235	100
	6	262-106	262-136	100	6	262-206	262-236	100
	7	262-107	262-137	100	7	262-207	262-237	100
	8	262-108	262-138	100	8	262-208	262-238	100
	9	262-109	262-139	50	9	262-209	262-239	50
	10	262-110	262-140	50	10	262-210	262-240	50
	11	262-111	262-141	25	11	262-211	262-241	25
	12 ④	262-112	262-142	25	12 ④	262-212	262-242	25
	<p><b>Terminal strips with snap-in mounting feet,</b> for plate thickness 0.6 – 1.2 mm, fixing hole diameter 3.5 mm (fits aluminum rail 210-154 or with mounting adapter 209-120 for DIN 35 rail)</p>	<b>2-cond. terminal strips with snap-in mount. feet,</b> ● grey ○ light grey ④			<b>4-cond. terminal strips with snap-in mount. feet,</b> ● grey ○ light grey ④			
2		262-152	262-182	100	2	262-252	262-282	100
3		262-153	262-183	100	3	262-253	262-283	100
4		262-154	262-184	100	4	262-254	262-284	100
5		262-155	262-185	100	5	262-255	262-285	100
6		262-156	262-186	100	6	262-256	262-286	100
7		262-157	262-187	100	7	262-257	262-287	100
8		262-158	262-188	100	8	262-258	262-288	50
9		262-159	262-189	50	9	262-259	262-289	50
10		262-160	262-190	50	10	262-260	262-290	50
11		262-161	262-191	25	11	262-261	262-291	25
12 ④		262-162	262-192	25	12 ④	262-262	262-292	25

## Dimensions for modular terminal blocks and terminal strips (in mm)

Modular terminal blocks and terminal strips with fixing flanges

L = No. of poles x pole width  
 L<sub>1</sub> = L + 8.1 mm  
 L<sub>2</sub> = L + 14.5 mm

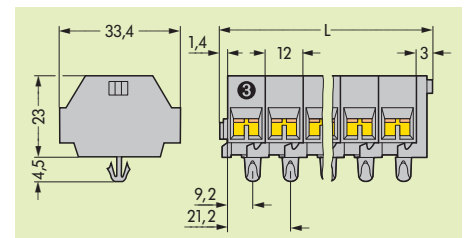
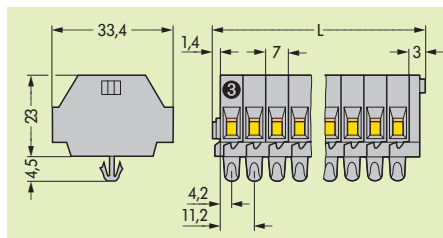
Additional item-Nos. for colored terminal strips  
 blue .../000-006 ②



Modular terminal blocks and terminal strips with snap-in mounting feet

③ End terminal block;  
 see page 10.26

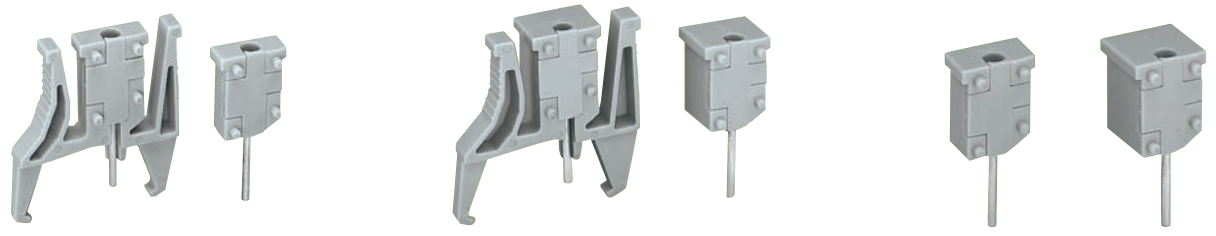
L = (No. of poles x pole width) + 4.4 mm



10

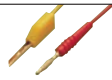
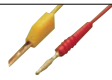
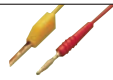
# Test Plug Modules for Terminal Strips without Push Button Series 260, 261 and 262

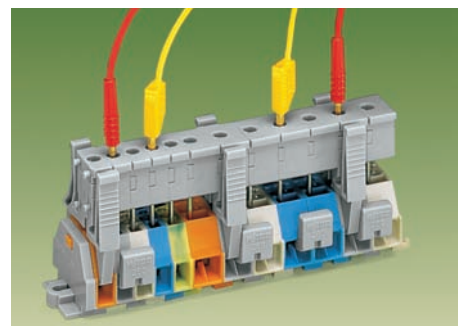
<p>Suitable for series 260  <b>Module width 5 mm / 0.197 in;</b>  <b>8 mm / 0.315 in</b>  <b>Test voltage 250 V / 500 V ①, 48 V ②</b>  <b>Test current 0.5 A / 6 A ③</b>  <b>Average contact pressure 2.2 N per pin</b></p>	<p>Suitable for series 261  <b>Module width 6 mm / 0.236 in;</b>  <b>10 mm / 0.394 in</b>  <b>Test voltage 400 V / 800 V ①, 48 V ②</b>  <b>Test current 0.5 A / 6 A ③</b>  <b>Average contact pressure 2.2 N per pin</b></p>	<p>Suitable for series 262  <b>Module width 7 mm / 0.276 in;</b>  <b>12 mm / 0.472 in</b>  <b>Test voltage 500 V / 800 V ①, 48 V ②</b>  <b>Test current 0.5 A / 6 A ③</b>  <b>Average contact pressure 2.2 N per pin</b></p>
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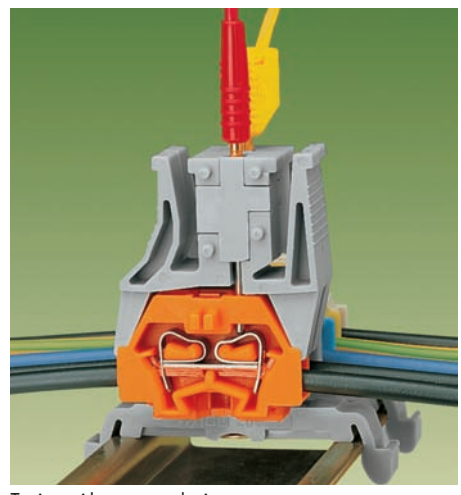
Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
<b>Test plug module without locking device,</b>		<b>Test plug module without locking device,</b>		<b>Test plug module without locking device,</b>	
Module width 5 mm / 0.197 in		Module width 6 mm / 0.236 in		Module width 7 mm / 0.276 in	
for 2-conductor terminal blocks		for 2-conductor terminal blocks		for 2-conductor terminal blocks	
grey	<b>249-135</b>	grey	<b>249-136</b>	grey	<b>249-137</b>
	100 (4 x 25)		100 (4 x 25)		100 (4 x 25)
Module width 8 mm / 0.315 in		Module width 10 mm / 0.394 in		Module width 12 mm / 0.472 in	
for 4-conductor terminal blocks		for 4-conductor terminal blocks		for 4-conductor terminal blocks	
grey	<b>249-138</b>	grey	<b>249-139</b>	grey	<b>249-140</b>
	100 (4 x 25)		100 (4 x 25)		100 (4 x 25)
<b>Test plug module with locking device,</b>		<b>Test plug module without locking device,</b>			
Module width 5 mm / 0.197 in		Module width 6 mm / 0.236 in			
for 2-conductor terminal blocks		for 2-conductor terminal blocks			
grey	<b>260-404</b>	grey	<b>261-404</b>		
	100 (4 x 25)		100 (4 x 25)		
Module width 8 mm / 0.315 in		Module width 10 mm / 0.394 in			
for 4-conductor terminal blocks		for 4-conductor terminal blocks			
grey	<b>260-405</b>	grey	<b>261-405</b>		
	100 (4 x 25)		100 (4 x 25)		

### Accessories

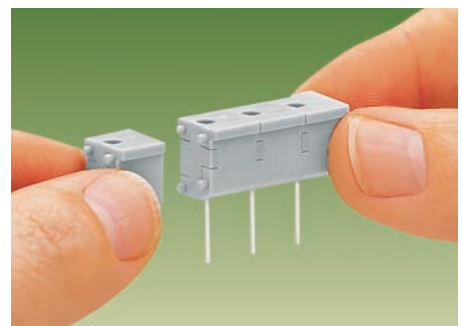
	<p><b>Test plug, w. cable 500 mm / 1'7.7"</b>                  2 mm / 0.079 in Ø, red <b>210-136</b> 50                  2.3 mm / 0.091 in Ø, yel. <b>210-137</b> 50</p>		<p><b>Test plug, w. cable 500 mm / 1'7.7"</b>                  2 mm / 0.079 in Ø, red <b>210-136</b> 50                  2.3 mm / 0.091 in Ø, yel. <b>210-137</b> 50</p>		<p><b>Test plug, w. cable 500 mm / 1'7.7"</b>                  2 mm / 0.079 in Ø, red <b>210-136</b> 50                  2.3 mm / 0.091 in Ø, yel. <b>210-137</b> 50</p>
---	--	---	--	---	--



For the testing procedure, the test plug module strips are snapped onto the terminal strip – wired or unwired. As the contact is established by touch contact at the CAGE CLAMP® spring (spring steel), this kind of testing is limited to 0.5 A max. Distance between locking devices should be 35 – 40 mm / 1.378 – 1.575 in!



Testing with connected wires.




Assembly of multipole test plug module strips

- ① Max. test voltage 250 V to 800 V only in test equipment, considering the air and creepage distances
- ② In case of touch contacting the max. test voltage must not exceed 48 V, test pins are not touchproof.
- ③ Maximum test current in case of touch contacting is 0.5 A; 6 A if the test pins are firmly connected in the clamping units

# Insulation Stops for Terminal Strips of Series 869 for Conductors from 0.08 mm<sup>2</sup> – 1 mm<sup>2</sup> / AWG 28 – 14

Insulation stop,  
suitable for all front-entry compact  
terminal blocks, series 869

Terminal block width 5 mm / 0.197 in  
 8 – 9 mm / 0.33 in



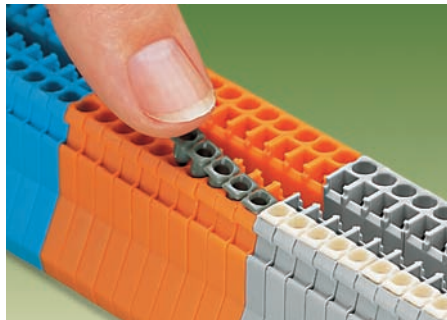
Item No.	Pack.-unit pcs		
<b>Insulation stop, 5 pcs/strip</b>			
white 0.08 – 0.2 mm <sup>2</sup> ① /AWG 28 – 24	200 strips		
light grey 0.25 – 0.5 mm <sup>2</sup> /AWG 22 – 20	200 strips		
dark grey 0.75 – 1 mm <sup>2</sup> /AWG 18	200 strips		
① 0.2 mm <sup>2</sup> /AWG 24 solid 0.14 mm <sup>2</sup> /AWG 26 fine-stranded			
<b>Application notes</b>			

For the wiring of programmable logic controllers and microprocessor operated control circuits very small wire sizes of fine-stranded conductors are frequently used. These small conductors are so flexible that they often deform when pushed against the current bar in the terminal blocks. As a result, the conductor insulation may be clamped instead of the copper conductor, resulting in no or very intermittent contact. This problem exists with all types of terminal blocks currently offered on the market. Consequently, unnecessary time is spent on trouble shooting.

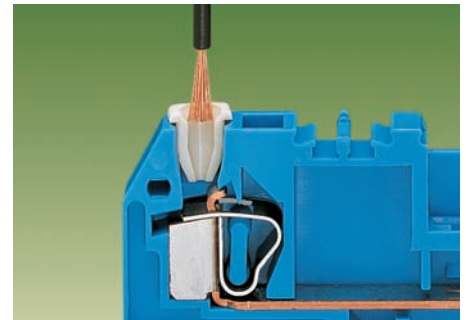
The insulation stop for compact terminal blocks is the answer to solve these problems. It bundles the cores of fine-stranded conductors automatically when introduced into the clamping unit, without any splaying, and reduces the conductor entry hole to a defined cross sectional area so that the insulation of these conductors cannot be introduced into the clamping unit.

The insulation stop is available as a dividable 5-pole strip for rail-mounted terminal strips of series 869.

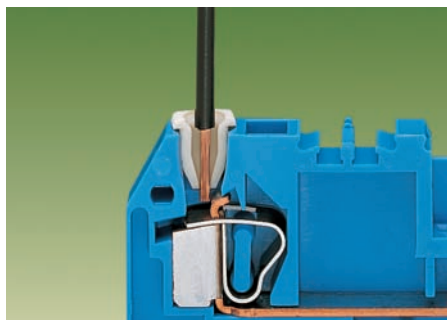
With the use of the insulation stop the conductor stripped lengths related to the respective front-entry rail-mounted terminal strip, remain unchanged.



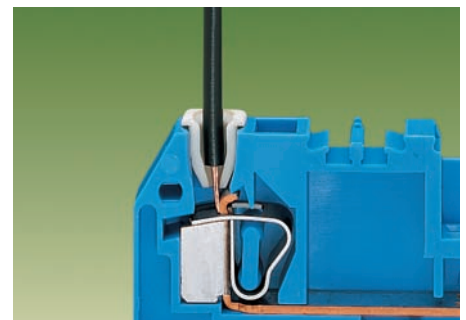
Push insulation stop into the conductor entry holes of front-entry rail-mounted terminal blocks.



\* Introduce stripped, untwisted conductor into insulation stop . . .



\* . . . the conductor is bundled . . .



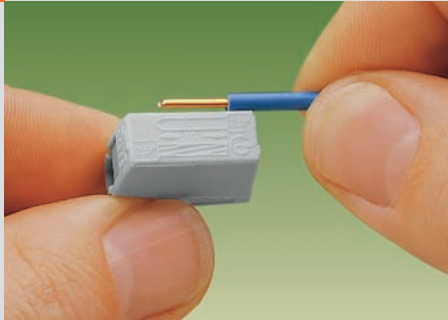
\* . . . and the conductor insulation is prevented from being pushed into the clamping unit by the positive stop.

\* here with front-entry rail-mounted terminal block (section 2)



# Lighting Connectors, Series 224 Description and Handling

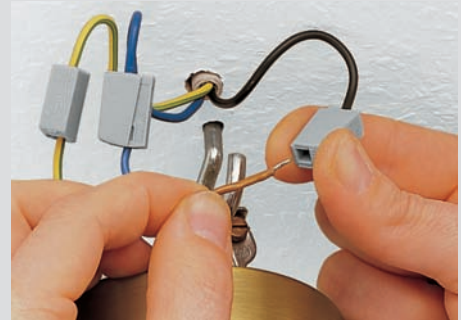
## Lighting (CAGE CLAMP®) side



Strip conductor 9 – 11 mm /0.39 in



To connect: Press button fully and insert stripped conductor into square entry and release



To remove: Press button and withdraw conductor

### CAGE CLAMP® connects the following copper wires:\*



solid



stranded



fine-stranded, also with tinned single strands



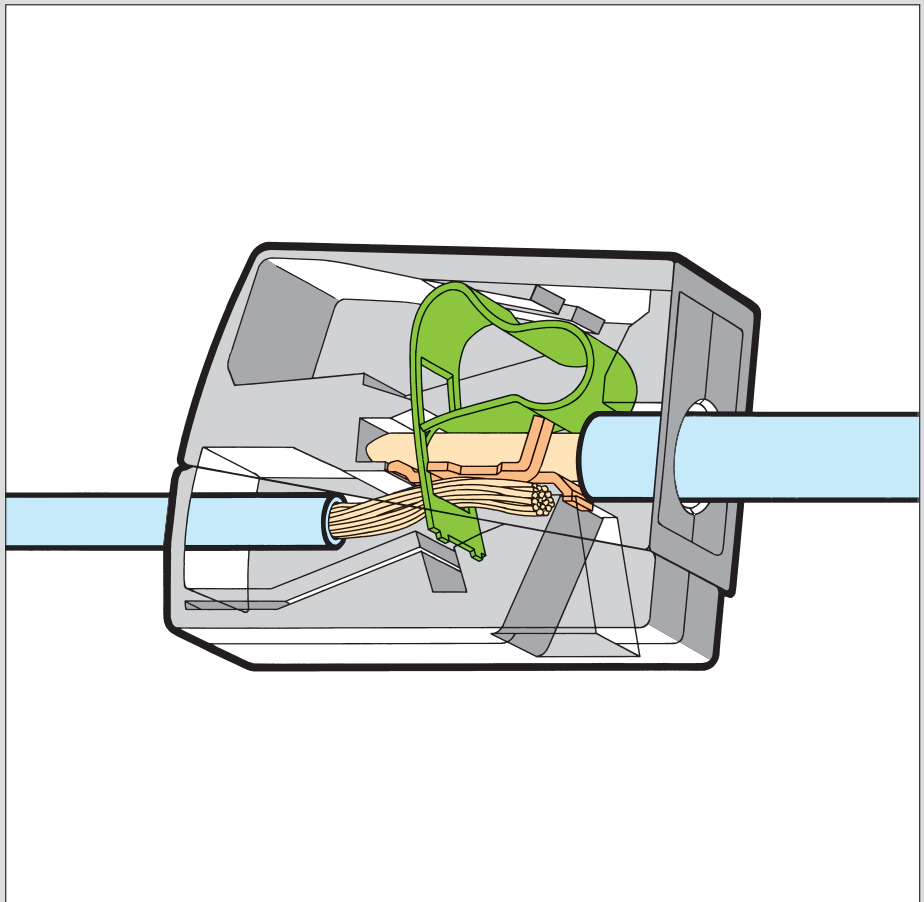
fine-stranded, tinned (up to 1.5 mm<sup>2</sup>/AWG 16)



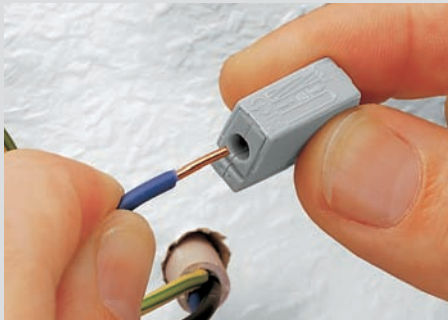
fine-stranded, tip bonded



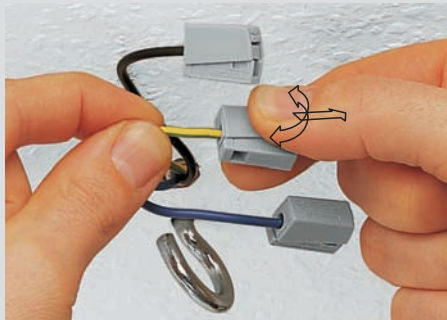
fine-stranded with ferrule (up to 1.5 mm<sup>2</sup>/AWG 16)



## Installation/field (push-wire) side



To connect: Introduce stripped solid conductor into circular entry and push to stop

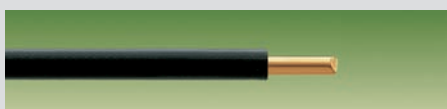


To remove: Hold conductor and twist connector alternately left and right while pulling the conductor



Testing through separate test slot

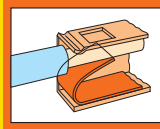
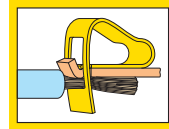
### The push-wire connection connects the following copper wires:\*



solid

\* For aluminum wire see notes in section 15!

# Lighting Connectors "Service" Connectors

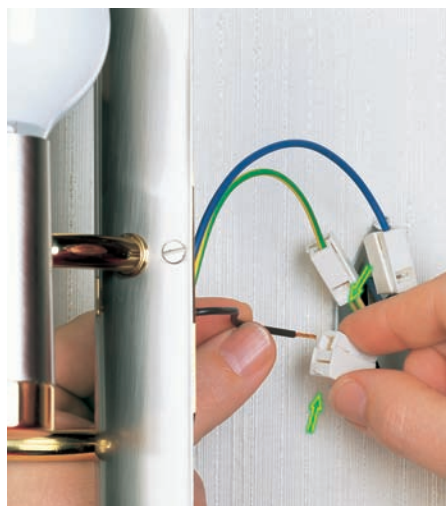
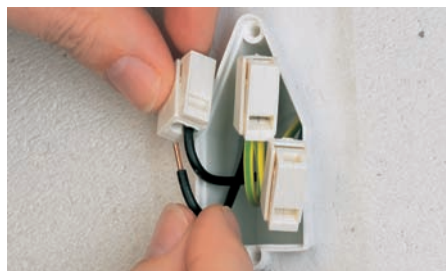
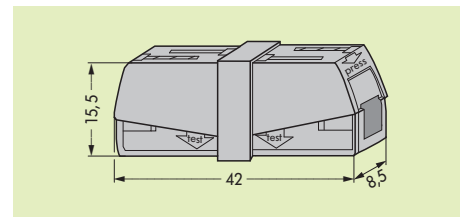
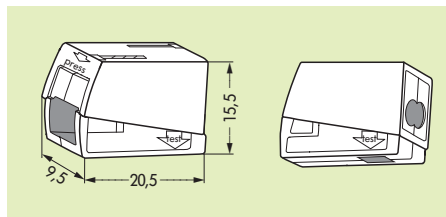
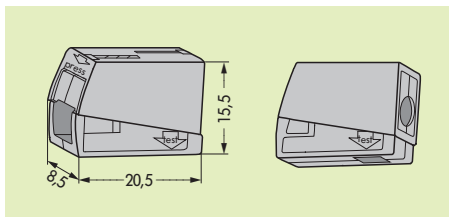


<b>Installation side</b> 1.0 – 2.5 mm <sup>2</sup> solid <b>Lighting side</b> 0.5 – 2.5 mm <sup>2</sup> rig.+ flex 400 V/4 kV/2 ①; 24 A 9 – 11 mm / 0.39 in * ① ② VDE ③ KEH CCAIKESH ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ GL BV	AWG 14 – 12  AWG 20 – 16 300 V, 20 A ① ②	<b>Installation side</b> 1.0 – 2.5 mm <sup>2</sup> solid <b>Lighting side</b> 0.5 – 2.5 mm <sup>2</sup> rig.+ flex 400 V/4 kV/2 ①; 24 A 9 – 11 mm / 0.39 in * ① ② VDE ③ KEH CCAIKESH ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ GL BV	AWG 14 – 12  AWG 20 – 16 300 V, 20 A ① ②	0.5 – 2.5 mm <sup>2</sup> rig.+ flex 400 V/4 kV/2 ① 24 A 9 – 11 mm / 0.39 in * ① ② VDE ③ KEH CCAIKESH ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ GL BV	AWG 20 – 16 300 V, 20 A ① ②
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Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
<b>Lighting connectors,</b>		<b>2-conductor lighting connectors,</b>		<b>"Service" connector</b>	
standard version, continuous		standard version, continuous		grey	
service temperature 105°C,		service temperature 105°C,		224-201	
grey	224-101	1000 (10 x 100)	white	224-112	1000 (10 x 100)
version for increased continuous		version for increased continuous			
service temperature of 120°C,		service temperature of 120°C,			
black	224-104	100	black	224-114	100

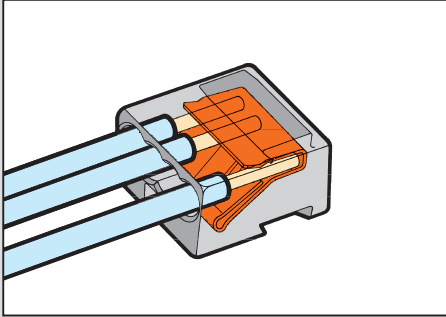
**Dimensions (in mm)** ① in grounded (earthed) supply systems 400 V = rated voltage 4 kV = rated surge voltage 2 = pollution degree (see also section 15)



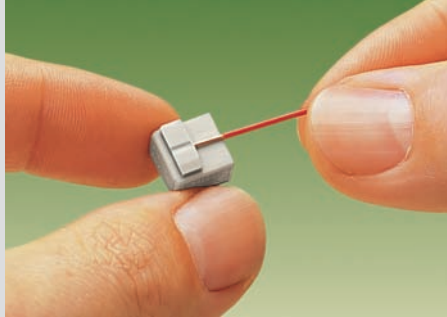
\* For further approvals with corresponding ratings see section 15.



# MICRO Push-Wire Connectors for Junction Boxes,<sup>®</sup> Series 243 Description and Handling

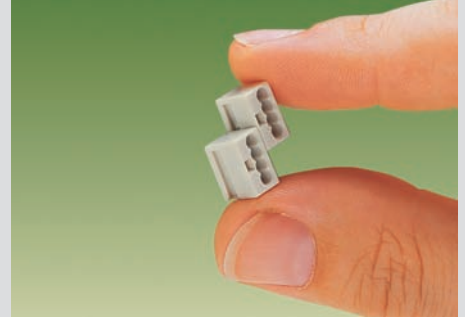


Stripped length



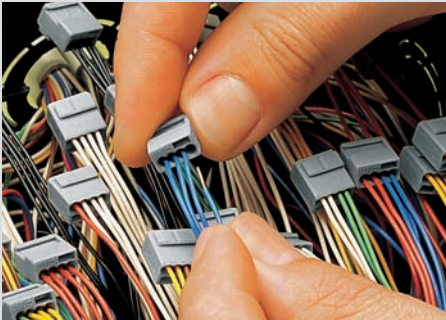
Strip solid wire 5 – 6 mm / 0.22 in

Connector strips



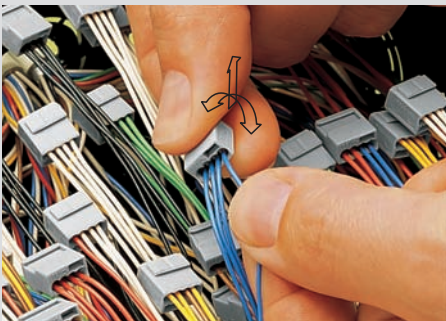
Assembly of modular connectors to connector strips

## Push-wire connection



Connection: Insert stripped conductor FULLY.

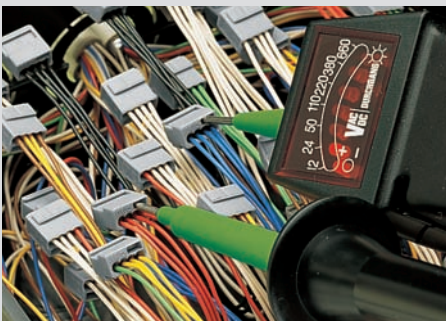
## Push-wire connection



Removal: Hold wire to be removed and twist alternately left and right while pulling the connector

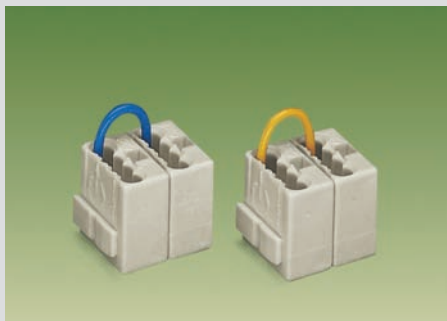


## Testing



Testing

## Commoning



Commoned connector strips

## Packing units



Box for use on site (example)  
Contents series 243: 50 pcs 8-conductor  
or 100 pcs 4-conductor

The push-wire connection connects the following copper wires:



solid

Use contact paste "Alu-Plus" when connecting aluminum wires (see section 15)

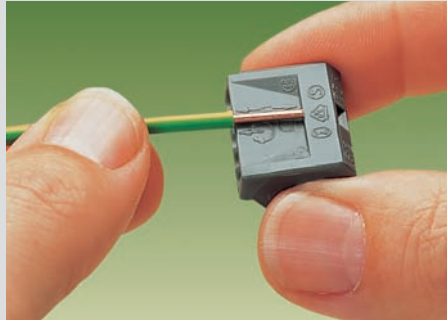
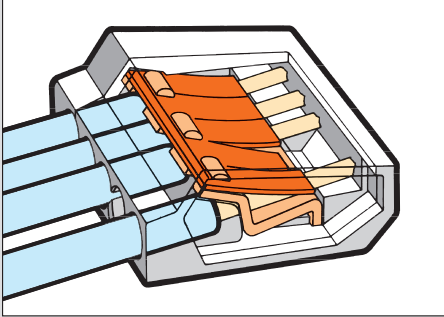
① For distribution connectors for **EIB** (Euro Installation Bus) see Full Line Catalog W4, volume 2, page 2.4



# Push-Wire Connectors for Junction Boxes, Series 273

## Description and Handling

### Stripped length



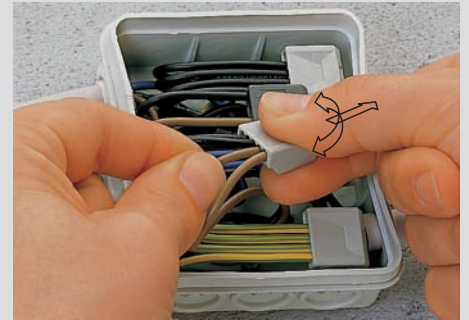
Strip solid conductor 10 mm – 13 mm / 0.45 in

### Push-wire connection

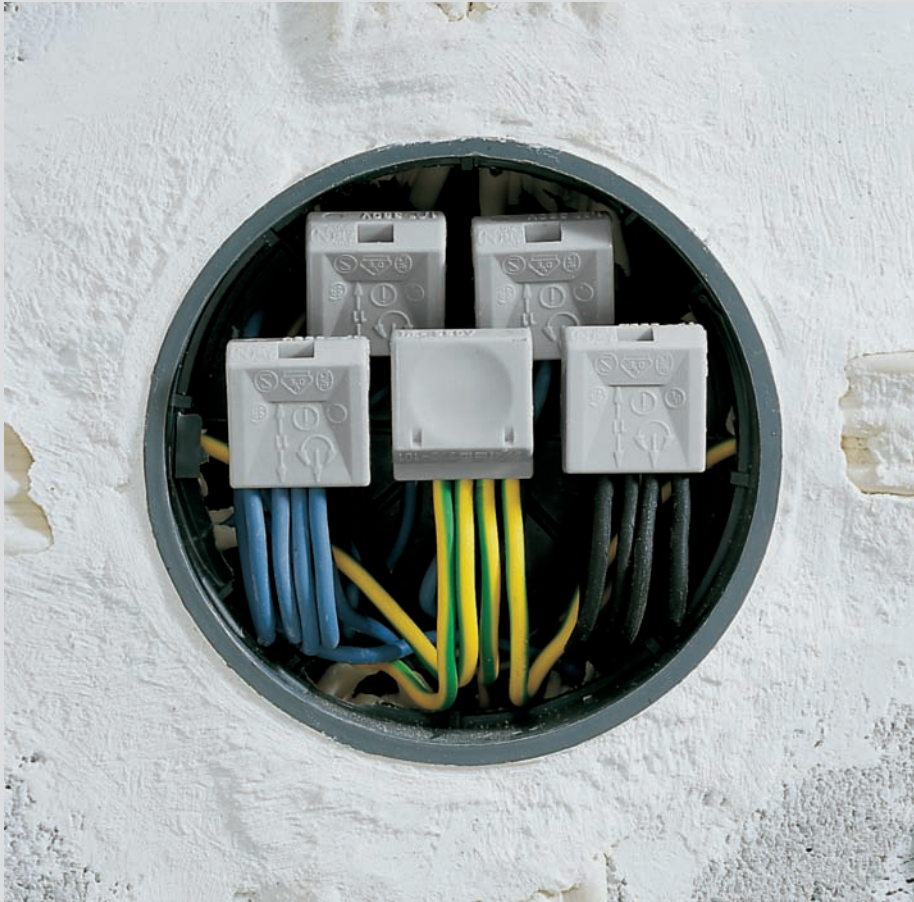


Connection: Insert stripped solid conductor FULLY

### Push-wire connection



Removal: Hold wire to be removed and twist alternately left and right while pulling the connector

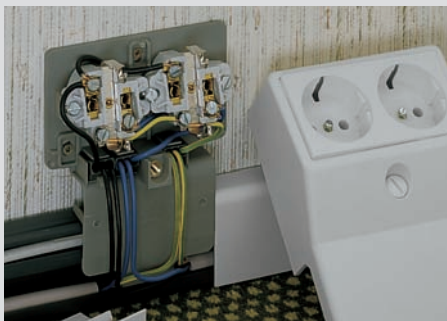


### Testing



Testing

### Applications



Push-wire connectors used in a cable duct with double power outlet



### Packing unit



Wholesaler package with 10 boxes for use on site

The push-wire connection clamps the following copper wires:

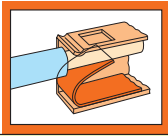


solid

Use contact paste "Alu-Plus" when connecting aluminum wires (see section 15)



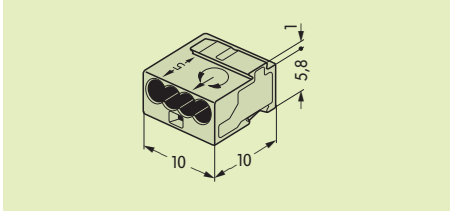
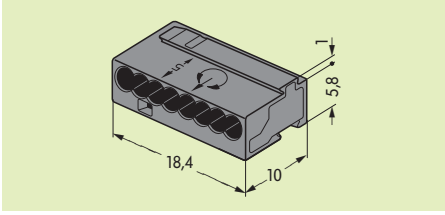
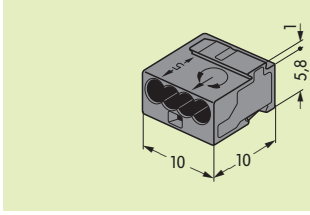
# MICRO Push-Wire Connectors for Junction Boxes Series 243



<p>4 x 0.6 – 0.8 Ø mm "s" **   4 x AWG 22 – 20 "sol." ** 100 V/1.5 kV/2 ①   125 V, 7 A    6 A   150 V, 7 A </p> <p> 5 – 6 mm / 0.22 in</p> <p>*       </p>	<p>8 x 0.6 – 0.8 Ø mm "s" **   8 x AWG 22 – 20 "sol." ** 100 V/1.5 kV/2 ①   125 V, 7 A    6 A   150 V, 7 A </p> <p> 5 – 6 mm / 0.22 in</p> <p>*       </p>	<p>4 x 0.4 – 0.5 Ø mm "s"   4 x AWG 26 – 24 "sol." 100 V/1.5 kV/2 ①   125 V, 7 A    6 A   150 V, 7 A </p> <p> 5 – 6 mm / 0.22 in</p> <p>*       </p>
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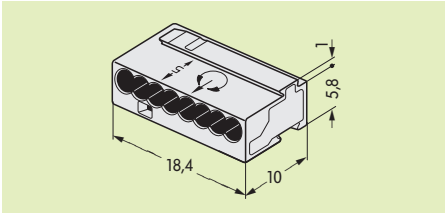
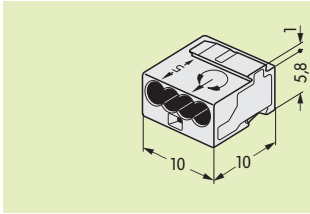
Color	Item No.	Pack.-unit pcs	Color	Item No.	Pack.-unit pcs	Color	Item No.	Pack.-unit pcs
MICRO push-wire connectors for junction boxes, 4-conductor connectors			MICRO push-wire connectors for junction boxes, 8-conductor connectors			MICRO push-wire connector for junction boxes, 4-conductor connectors		
dark grey	243-204	1000 (10 x 100)	dark grey	243-208	500 (10 x 50)	transparent	243-144	1000 (10 x 100)
red	243-804	1000 (10 x 100)	red	243-808	500 (10 x 50)			



<p>4 x 0.6 – 0.8 Ø mm "s" **   4 x AWG 22 – 20 "sol." ** 100 V/1.5 kV/2 ①   125 V, 7 A    6 A   150 V, 7 A </p> <p> 5 – 6 mm / 0.22 in</p> <p>*       </p>	<p>8 x 0.6 – 0.8 Ø mm "s" **   8 x AWG 22 – 20 "sol." ** 100 V/1.5 kV/2 ①   125 V, 7 A    6 A   150 V, 7 A </p> <p> 5 – 6 mm / 0.22 in</p> <p>*       </p>	
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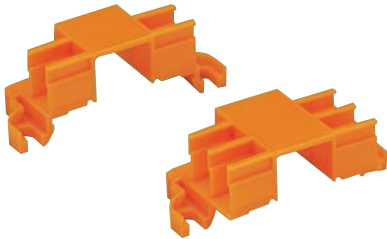
Color	Item No.	Pack.-unit pcs	Color	Item No.	Pack.-unit pcs
MICRO push-wire connectors for junction boxes, 4-conductor connectors			MICRO push-wire connectors for junction boxes, 8-conductor connectors		
light grey	243-304	1000 (10 x 100)	light grey	243-308	500 (10 x 50)
yellow	243-504	1000 (10 x 100)	yellow	243-508	500 (10 x 50)



① 100 V = rated voltage  
1.5 kV = rated surge voltage  
2 = pollution degree  
(see also section 15)

\* For further approvals with corresponding ratings see section 15.  
\*\* When using wires of the same diameter only, 0.5 Ø mm/AWG 24 or 1.0 Ø mm/AWG 18 are also possible.

# Mounting Carrier for MICRO Push-Wire Connectors, for DIN 35 Rail or Screw Fixing, Series 243



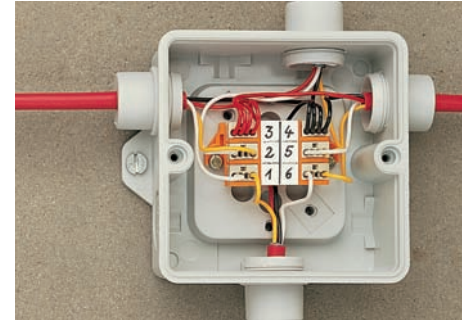
Description	Item No.	Pack.-unit pcs
<b>Mounting carrier</b>		
for 4 push-wire connectors	<b>243-112</b>	50 (5 x 10)
for 6 push-wire connectors	<b>243-113</b>	50 (5 x 10)
<b>Marker strip,</b>		
plain	<b>243-110</b>	1

### Quick fix mounting

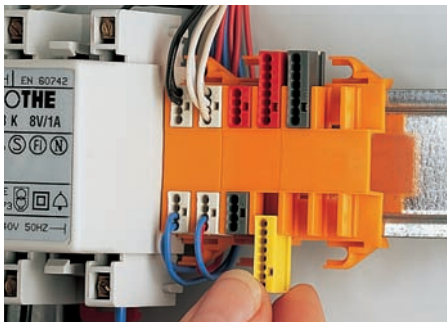
Electrical installers have often expressed a desire to be able to use the features of the MICRO push-wire connectors on DIN rail applications in panels. They have realized that these connectors are just as suitable in distribution panels for easy connection of the smaller wires used in low current applications. They are ideal for the connection of telephone type wire used in the connection of alarms, bells, door sensors, communication systems, etc.

The mounting carrier is the professional solution. It is available with mounting slots for 4 or 5 connectors. The 4- or 8-conductor MICRO push-wire connectors are simply slid into the carrier, but can be easily removed again.

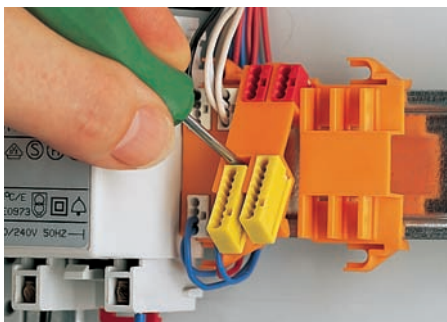
The carrier is designed for easy mounting directly to the DIN 35 rail, or to a panel, via a screw, by use of the fixing flanges provided. A large marking surface is provided for clear circuit identification. This may be directly marked with a fiber tip pen, or by the use of pre-printed self-adhesive marker strips.



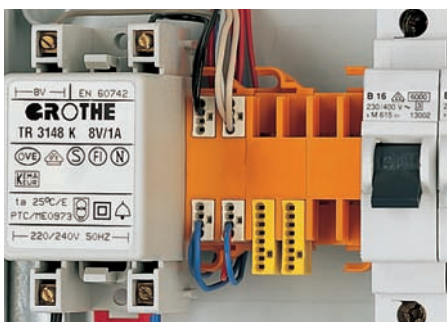
Typical application in a terminal box for burglar alarm system



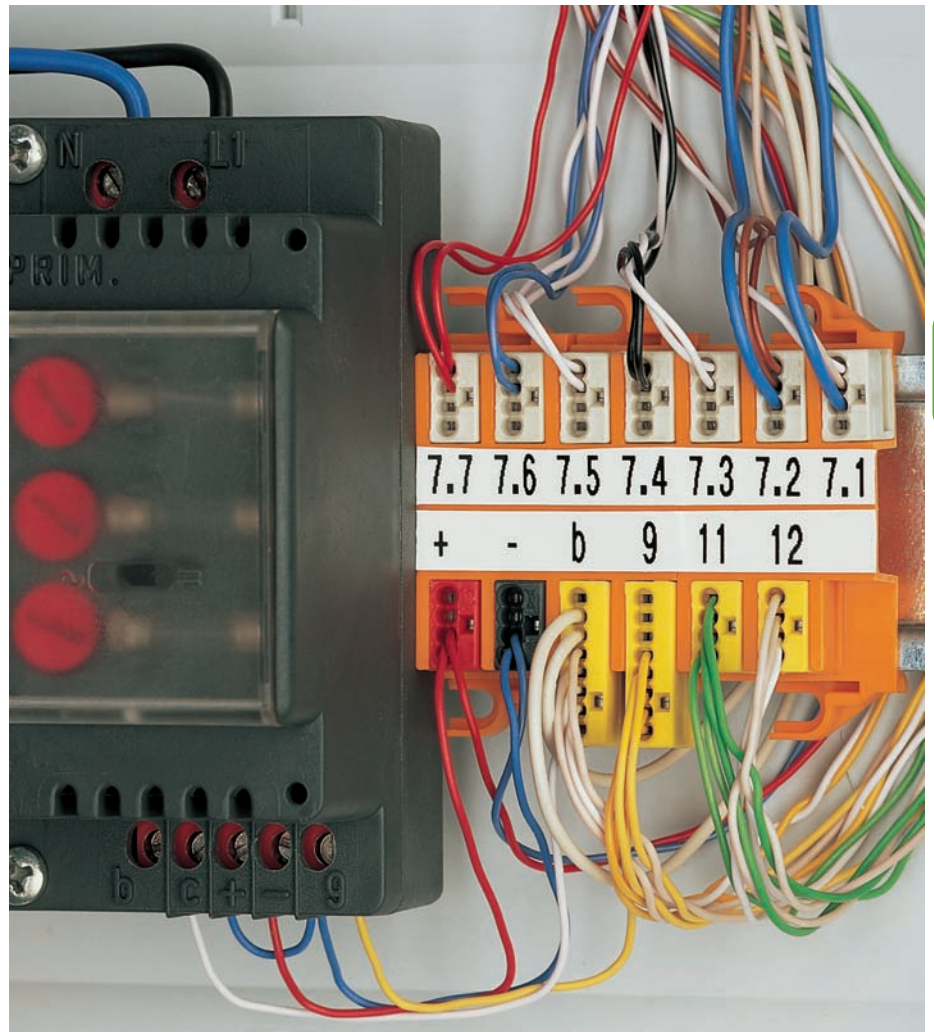
Inserting a MICRO push-wire connector for junction boxes into the carrier



Removal of MICRO push-wire connector from the carrier

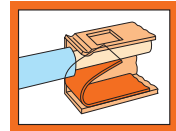


Example of house-bell application - mounted on DIN 35 rail



Example of house communication application

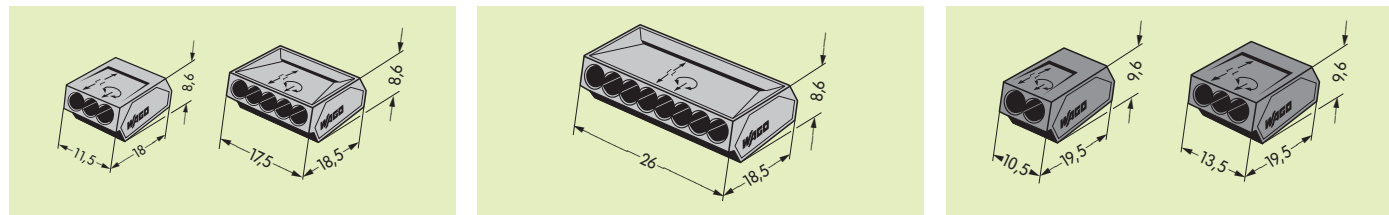
# Push-Wire Connectors for Junction Boxes Series 273 and 773



<p>3 x 0.75 – 1.5 mm<sup>2</sup> "s" ① 5 x 0.75 – 1.5 mm<sup>2</sup> "s" ① 400 V / 4 kV / 2** 18 A</p> <p>10 – 13 mm / 0.45 in</p>	<p>3 x AWG 18 – 16 "sol." 5 x AWG 18 – 16 "sol." 600 V, 10 A ④ 600 V, 10 A ⑤</p>	<p>8 x 0.75 – 1.5 mm<sup>2</sup> "s" ① 400 V / 4 kV / 2** 18 A</p> <p>10 – 13 mm / 0.45 in</p>	<p>8 x AWG 18 – 16 "sol." 600 V, 10 A ④ 600 V, 10 A ⑤</p>	<p>2 x 1 – 2.5 mm<sup>2</sup> "s" ② 3 x 1 – 2.5 mm<sup>2</sup> "s" ② 400 V / 4 kV / 2** 24 A</p> <p>10 – 13 mm / 0.45 in</p>	<p>2 x AWG 18 – 12 "sol." 3 x AWG 18 – 12 "sol." 600 V, 20 A ④ 600 V, 20 A ⑤</p>
* ④ VDE ⑤ KEH CCA KEH N S D F P CB GL BV NV		* ④ VDE ⑤ KEH CCA KEH N S D F P CB GL BV NV		* ④ VDE ⑤ KEH CCA KEH N S D F P CB GL BV NV	



Color	Item No.	Item No.	Pack.-unit pcs	Color	Item No.	Pack.-unit pcs	Color	Item No.	Item No.	Pack.-unit pcs	
<b>Push-wire connectors for junction boxes,</b> 3-cond. con. 5-cond. con.				<b>Push-wire connectors for junction boxes,</b> 8-conductor connectors				<b>Push-wire connectors for junction boxes,</b> 2-cond. con. 3-cond. con.			
grey	273-100	273-101	1000 (10 x 100)	grey	273-108	500 (10 x 50)	dark grey	273-112	273-104	1000 (10 x 100)	
transparent	-	273-155	1000 (10 x 100)	transparent	273-158	500 (10 x 50)	transparent	273-252	273-253	1000 (10 x 100)	

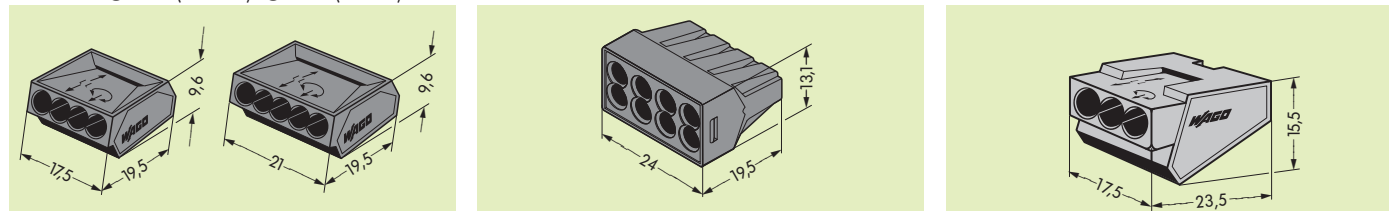


<p>4 x 1 – 2.5 mm<sup>2</sup> "s" ② 5 x 1 – 2.5 mm<sup>2</sup> "s" ② 400 V / 4 kV / 2** 24 A</p> <p>10 – 13 mm / 0.45 in</p>	<p>4 x AWG 18 – 12 "sol." 5 x AWG 18 – 12 "sol." 600 V, 20 A ④ 600 V, 20 A ⑤</p>	<p>8 x 1 – 2.5 mm<sup>2</sup> "s" ② 400 V / 4 kV / 2** 24 A</p> <p>10 – 13 mm / 0.45 in</p>	<p>8 x AWG 18 – 12 "sol." 600 V, 20 A ④ 600 V, 20 A ⑤</p>	<p>3 x 1.5 – 4 mm<sup>2</sup> "s" 400 V / 4 kV / 2** 32 A</p> <p>12 – 15 mm / 0.53 in</p>	<p>3 x AWG 14 – 10 "sol." 600 V, 30 A ④ 600 V, 30 A ⑤</p>
* ④ VDE ⑤ KEH CCA KEH N S D F P CB GL BV NV		* ④ VDE ⑤ KEH CCA KEH N S D F P CB GL BV NV		* ④ VDE ⑤ KEH CCA KEH N S D F P CB GL BV NV	



Color	Item No.	Item No.	Pack.-unit pcs	Color	Item No.	Pack.-unit pcs	Color	Item No.	Pack.-unit pcs		
<b>Push-wire connectors for junction boxes,</b> 4-cond. connectors 5-cond. connectors				<b>Push-wire connectors for junction boxes,</b> 8-conductor connectors				<b>Push-wire connectors for junction boxes,</b> 3-conductor connectors			
dark grey	273-102 ③	273-105 ③		dark grey	773-208	500 (10 x 50)	grey	273-403	500 (10 x 50)		
transparent	273-254 ③	273-255 ④		transparent	773-108	500 (10 x 50)	transparent	273-453	500 (10 x 50)		

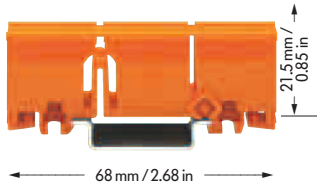
Pack.-unit ③ 1000 (10 x 100) ④ 500 (10 x 50)



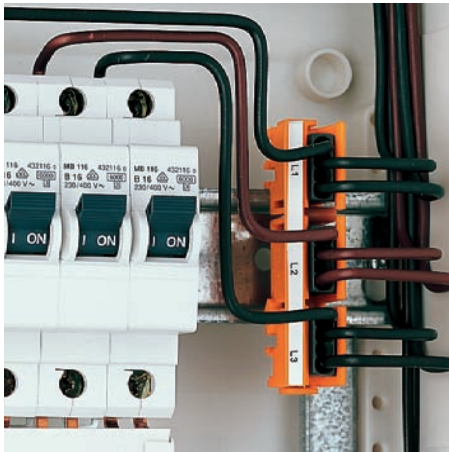
\* For further approvals with corresponding ratings see section 15.  
\*\* in grounded (earthed) supply systems When using wires of the same diameter only, ① 0.5 mm<sup>2</sup>/AWG 20 or ② 0.75 mm<sup>2</sup>/AWG 18 are also possible.



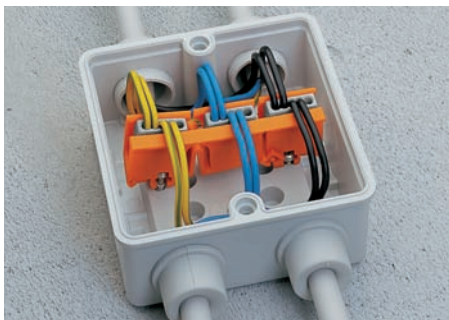
# Mounting Carrier for Push-Wire Connectors for Junction Boxes, for DIN 35 Rail or Screw Fixing, Series 273



Description	Item No.	Pack.-unit pcs
Mounting carrier	273-150	50 (5 x 10)
Marker strips, 48 strips per card, plain	210-334	1 card



FIXED IN POSITION – on a DIN 35 rail

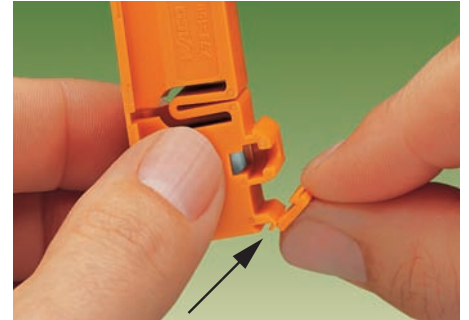


FIXED IN POSITION – screw fixing

One single carrier can hold up to 15 clamping units in a very narrow space. Up to now this has only been possible using rail-mounted terminal blocks.

The advantages for you are:

- the carriers can be fixed quickly and easily: on a DIN 35 rail or with screw fixing.
- a carrier can hold up to three 1.5 mm<sup>2</sup>/AWG 16 or 2.5 mm<sup>2</sup>/AWG 12 connectors of series 273 (excluding the 8 x 2.5 mm<sup>2</sup> version).
- the connectors can be easily exchanged.
- large marking area for self-adhesive marker strips or for direct marking with permanent fibre tip pen.



Snap off cover ...



... and use as end plate.



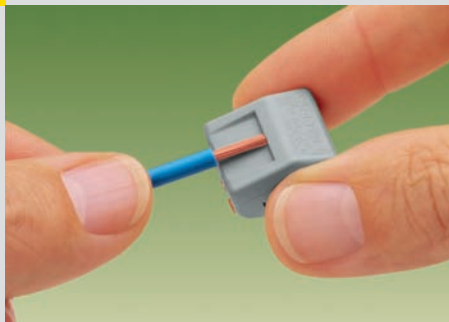
Snapping on to carrier rail



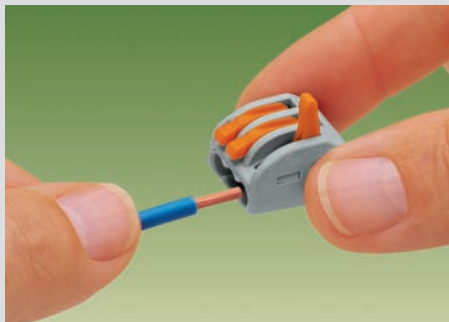
Removing from a carrier rail



# Compact Connector for Flexible Conductors with CAGE CLAMP® COMPACT Connection Description and Handling – Series 222



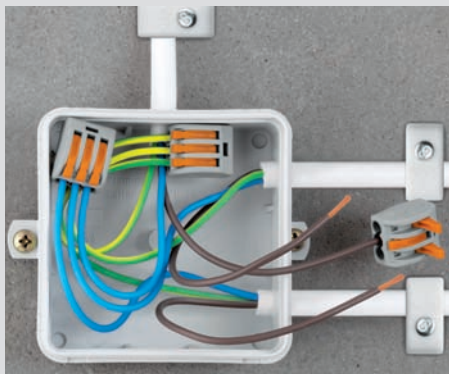
Strip wire 9 – 10 mm/0.37 in



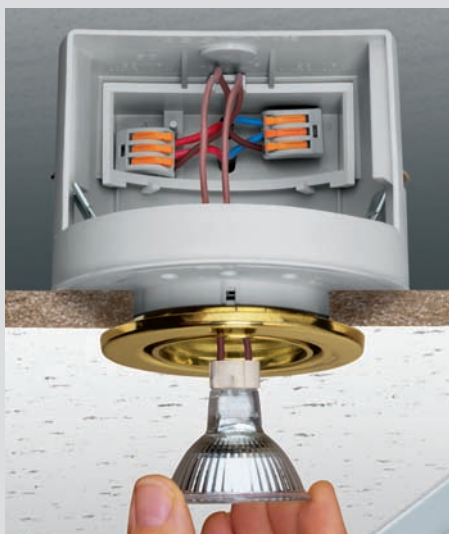
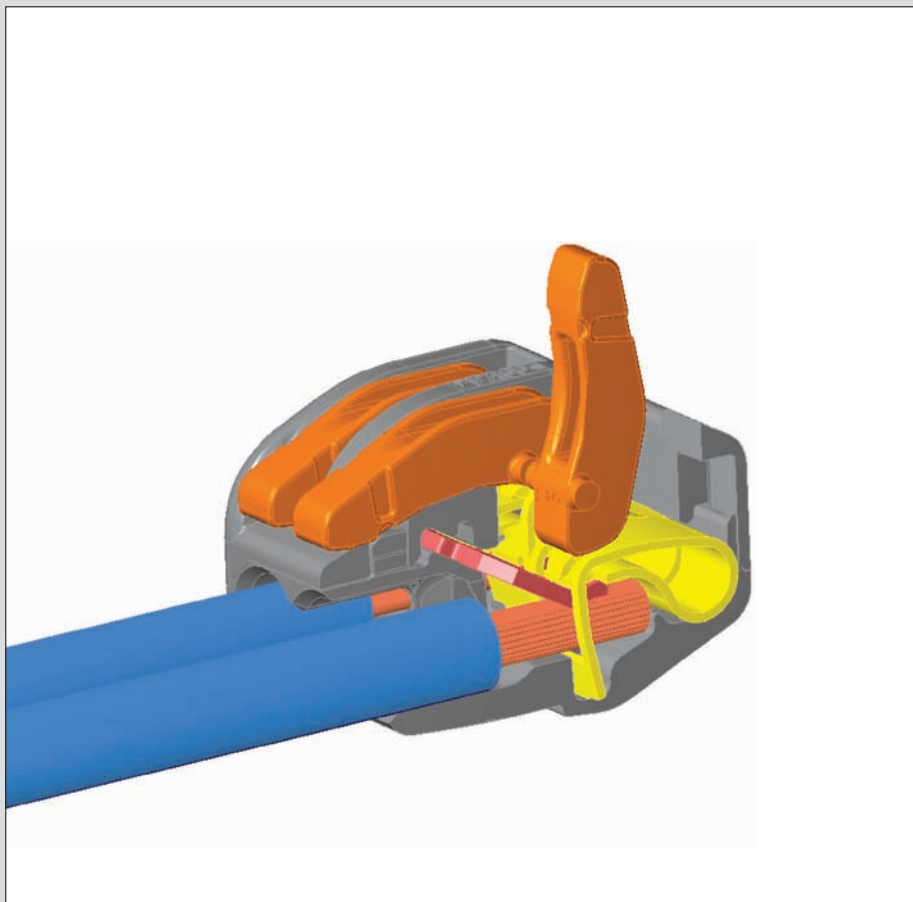
Connection: Push up lever and insert conductor . . .



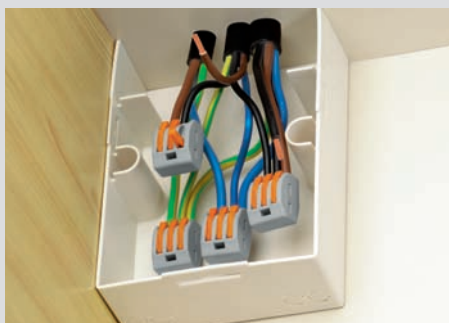
. . . then push down lever to its closed position



Wiring of flexible conductors in a junction box



Individual design of low voltage lighting systems



Connecting pre-wired and pre-fabricated components, for example in mobile homes



Lighting fixture connection with flexible conductors and power feed

**CAGE CLAMP® connects the following copper wires:\***

solid                      stranded

\* For aluminum wire see notes in section 15!

\*\*When using wires with ferrules, it is necessary to use a terminal block one size larger than the nominal cross section of the wire.

fine-stranded, also with tinned single strands

fine-stranded wire – tip bonded

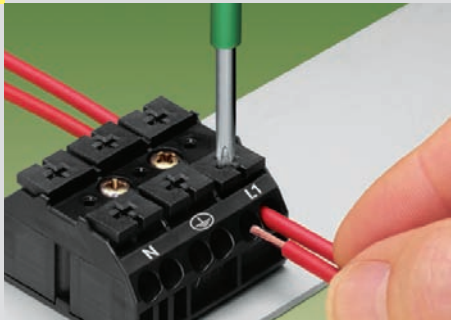
fine-stranded wire with crimped ferrule\*\*

fine-stranded wire with crimped pin terminal



# 4-Conductor Terminal Strips with CAGE CLAMP®S connection . . . Description and Handling – Series 862

## Conductor connection



4 conductors per pole  
- for solid and flexible conductors  
- mixed wiring with solid and flexible  
conductors of different wire sizes

## Marking



Marking  
by direct printing  
and/or marker strips

## Testing

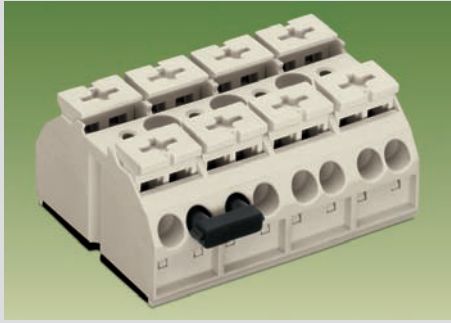


Testing with  
test plug 2 mm / 0.079 in Ø

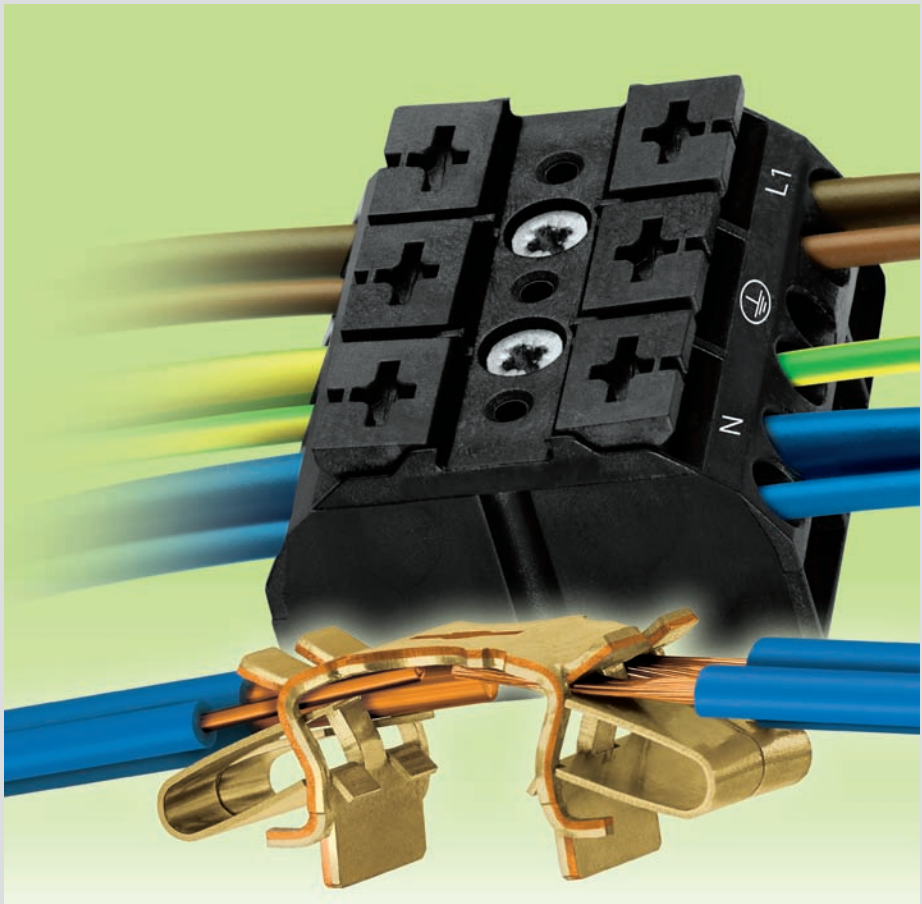


Makes an automatic contact to the mounting  
plate.  
A varnish coating is penetrated automatically.

## Commoning



Commoning with jumper bar



## Features and Advantages

This new connector series has been developed specifically to **minimize the connection costs** of electrical devices. At the same time, the requirement for flexible assembly, for numerous electrical connection options and for easy handling were part of the development.

- The new CAGE CLAMP®S allows the connection of up to four conductors with wire sizes from 0.5 mm<sup>2</sup> to 4 mm<sup>2</sup>/AWG 20 to 12. Different cross sections can be used within one connector.
- For factory wiring, CAGE CLAMP®S allows the direct insertion of solid conductors or flexible conductors with crimped ferrules\* or ultrasonically bonded wire ends from 0.5 mm<sup>2</sup> up to 4 mm<sup>2</sup>/AWG 20 to 12. (Length of bonded wire end min. 7 mm / 0.276 in)
- Automatic grounding contact available as an option.
- Snap-in mounting feet for fast assembly
- Push-buttons for easy handling with a commercially available screwdriver or by hand.
- Direct testing with test plug 2 mm / 0.079 in Ø
- Standard marking per pole or, for large quantities, in accordance with customer's specification.

CAGE CLAMP® connects  
the following copper  
wires:\*

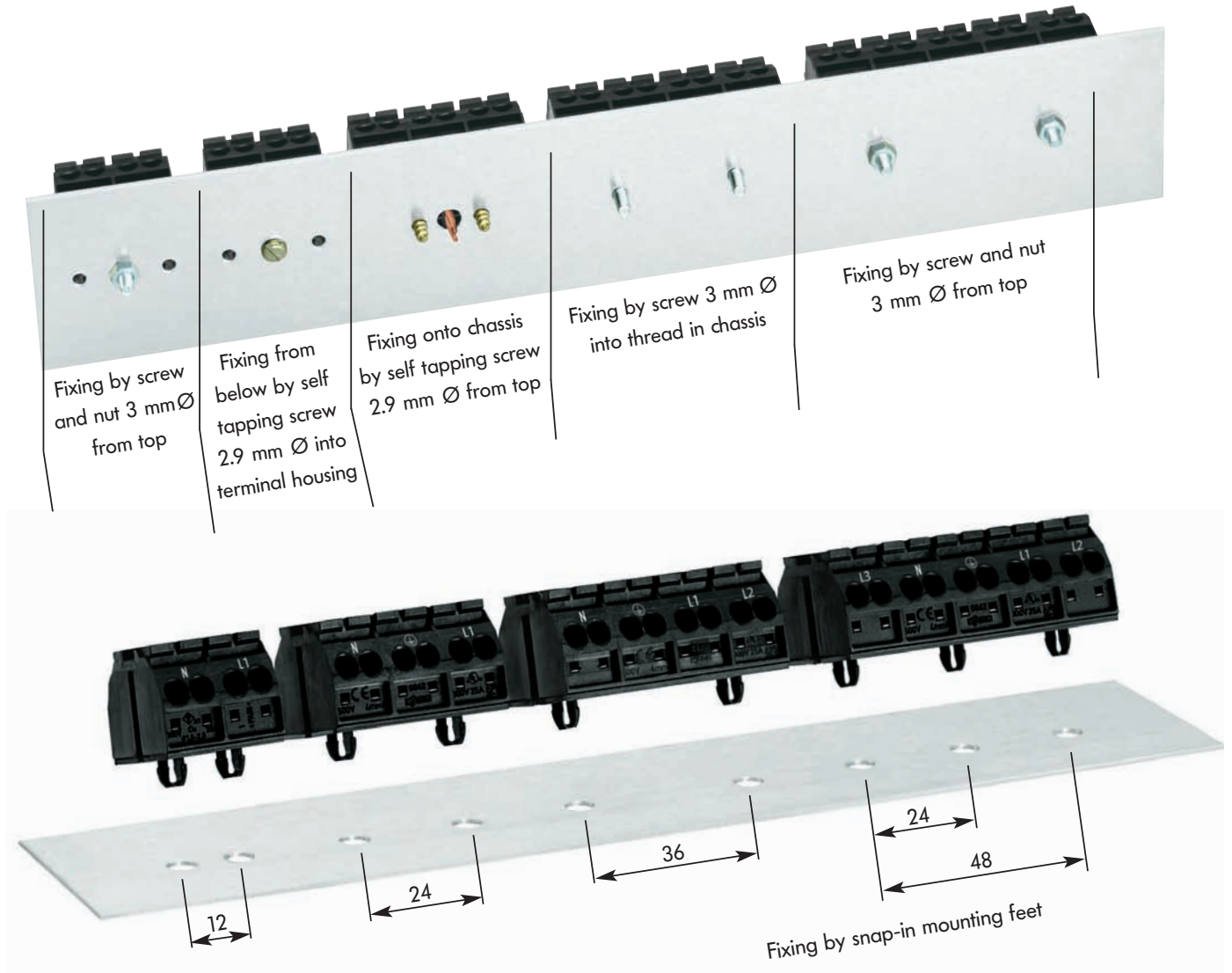
solid	stranded	fine-stranded, also with tinned single strands	fine-stranded wire – tip bonded	fine-stranded wire with crimped ferrule**	fine-stranded wire with crimped pin terminal
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\* For aluminum wire see notes in section 15!

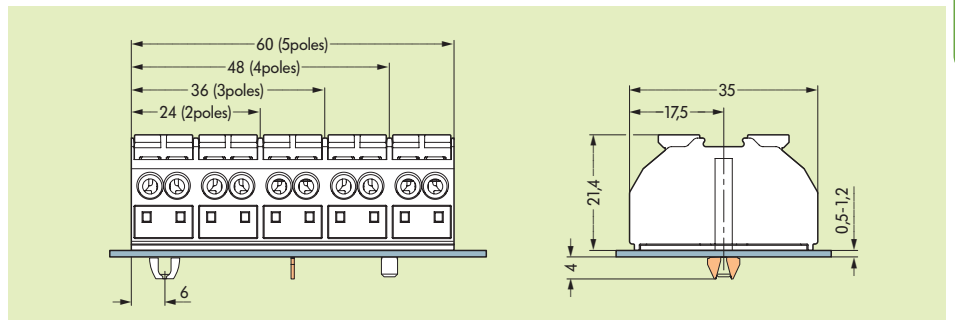
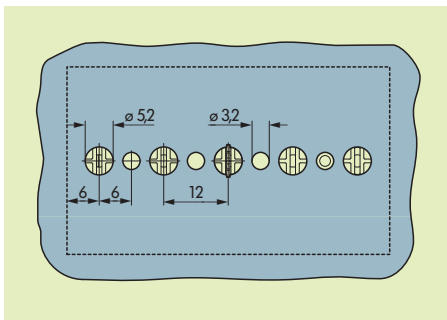
\*\* When using wires with ferrules, it is necessary to use a terminal block one size larger than the nominal cross section of the wire.



# Fixing Options








## Dimensions (in mm)



Ferrules		Sleeve for mm <sup>2</sup>	AWG	Color	Stripped length mm	L	L1	D mm	D1	D2	Item No.	Pack.-unit pcs
	Insulated ferrules	0.5	22	white	12.0	16.0	10.0	3.1	2.6	1.0	<b>216-241</b>	1000
		0.75	20	grey	12.0	16.0	10.0	3.3	2.8	1.2	<b>216-242</b>	1000
		1.0	18	red	12.0	16.0	10.0	3.5	3.0	1.4	<b>216-243</b>	1000
		1.5	16	black	12.0	16.0	10.0	4.0	3.5	1.7	<b>216-244</b>	1000
	Uninsulated ferrules	0.5	22		10	10		2.1		1.0	<b>216-141</b>	1000
		0.75	20		10	10		2.3		1.2	<b>216-142</b>	1000
		1.0	18		10	10		2.5		1.4	<b>216-143</b>	1000
		1.5	16		10	10		2.8		1.7	<b>216-144</b>	1000



# 4-Conductor Device Connectors, 2 and 3 pole, 4 mm<sup>2</sup>/ AWG 12 with Unique Cost-Cutting Features Series 862

<p>4 x 0.5 – 4 mm<sup>2</sup> 500 V/6 kV/3 32 A</p> <p> 10 – 11 mm / 0.41 in</p> <p>*  ENEC</p>	<p>4 x AWG 20 – 12 300/600 V, 20/5 A </p>	<p>4 x 0.5 – 4 mm<sup>2</sup> 500 V/6 kV/3 32 A</p> <p> 10 – 11 mm / 0.41 in</p> <p>*  ENEC</p>
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Available in black or white

2 poles

3 poles

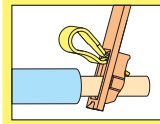
	without ground/earth contact	with ground/earth contact	Item No. black	Item No. white	Pack.-unit pcs	Item No. black	Item No. white	Pack.-unit pcs
<b>for fixing screw 3 mm/0.118 in Ø or f. self tapping screw 2.9 mm/0.114 in Ø from top</b>								
	without marking		862-0552	862-0652	500			
	L1-N		862-1552	862-1652	500			
	N-L1		862-2552	862-2652	500			
<b>f. self tapping screw 2.9 mm/0.114 in Ø from below</b>								
	without marking		862-0562	862-0662	500			
	L1-N		862-1562	862-1662	500			
	N-L1		862-2562	862-2662	500			
<b>1 snap-in foot per pole</b>								
	without marking		862-0532	862-0632	500			
	L1-N		862-1532	862-1632	500			
	N-L1		862-2532	862-2632	500			
<b>for fixing screw 3 mm/0.118 in Ø or f. self tapping screw 2.9 mm/0.114 in Ø from top</b>								
	without marking					862-0503	862-0603	250
	⊕-N-L1					862-1503	862-1603	250
	N-⊕-L1					862-2503	862-2603	250
		N-⊕-L1				862-8503	862-8603	250
		⊕-N-L1				862-9503	862-9603	250
<b>1 snap-in foot per pole</b>								
	without marking					862-0533	862-0633	250
	⊕-N-L1					862-1533	862-1633	250
	N-⊕-L1					862-2533	862-2633	250
		N-⊕-L1				862-8533	862-8633	250
		⊕-N-L1				862-9533	862-9633	250
<b>snap-in feet at pos. 1+3</b>								
	without marking					862-0593	862-0693	250
	⊕-N-L1					862-1593	862-1693	250
	N-⊕-L1					862-2593	862-2693	250
		N-⊕-L1				862-8593	862-8693	250
		⊕-N-L1				862-9593	862-9693	250

**Accessories** DIN rail mounting of 862 Series see accessories page 10.26

<p><b>Comb type jumper bar</b>, can easily be inserted into the wire entry, 32 A</p> <p> <b>862-482</b> 5</p>	<p><b>Test plug</b>, with cable 500 mm/1'77"</p> <p> 2 mm/0.079 in Ø, red</p> <p><b>210-136</b> 50 (5 x 10)</p>	<p><b>Test plug</b>, with cable 500 mm/1'77"</p> <p> 2.3 mm/0.091 in Ø, yellow</p> <p><b>210-137</b> 50 (5 x 10)</p>
<p><b>Screwdriver</b>, with partially insulated shaft (3.5 x 0.5) mm</p> <p> <b>210-620</b> 1</p>	<p><b>Marker strip</b>, white, plain, for central marking; 7.5 mm wide, on roll, 50 m long</p> <p> <b>709-178</b> 1</p>	<p><b>Marker strip</b>, white, plain, for central marking; 7.5 mm wide, on roll, 300 m long</p> <p> <b>709-188</b> 1</p>

\* For further approvals with corresponding ratings see section 15.

# 4-Conductor Device Connectors, 4 and 5 pole, 4 mm<sup>2</sup>/ AWG 12 with Unique Cost-Cutting Features Series 862



10  
43

	<b>4 x 0.5 – 4 mm<sup>2</sup></b> 500 V/6 kV/3 32 A	<b>4 x AWG 20 – 12</b> 300/600 V, 20/5 A	<b>4 x 0.5 – 4 mm<sup>2</sup></b> 500 V/6 kV/3 32 A	<b>4 x AWG 20 – 12</b> 300/600 V, 20/5 A
	10 – 11 mm / 0.41 in		10 – 11 mm / 0.41 in	
	*   ENEC		*   ENEC	



4 poles



5 poles

Available in black or white

	without ground/earth contact	with ground/earth contact	Item No. black	Item No. white	Pack.-unit pcs	Item No. black	Item No. white	Pack.-unit pcs
<b>for fixing screw 3 mm/0.118 in Ø or f. self tapping screw 2.9 mm/0.114 in Ø from top</b>								
	without marking		862-0504	862-0604	200			
	⊕-N-L1-L2		862-1504	862-1604	200			
	N-⊕-L1-L2		862-2504	862-2604	200			
		N-⊕-L1-L2	862-8504	862-8604	200			
		⊕-N-L1-L2	862-9504	862-9604	200			
<b>1 snap-in foot per pole</b>								
	without marking		862-0534	862-0634	200			
	⊕-N-L1-L2		862-1534	862-1634	200			
	N-⊕-L1-L2		862-2534	862-2634	200			
		N-⊕-L1-L2	862-8534	862-8634	200			
		⊕-N-L1-L2	862-9534	862-9634	200			
<b>snap-in feet at pos. 1+4</b>								
	without marking		862-0594	862-0694	200			
	⊕-N-L1-L2		862-1594	862-1694	200			
	N-⊕-L1-L2		862-2594	862-2694	200			
		N-⊕-L1-L2	862-8594	862-8694	200			
		⊕-N-L1-L2	862-9594	862-9694	200			
<b>for fixing screw 3 mm/0.118 in Ø or f. self tapping screw 2.9 mm/0.114 in Ø from top</b>								
	without marking					862-0505	862-0605	200
	⊕-N-L1-L2-L3					862-1505	862-1605	200
	L3-N-⊕-L1-L2					862-2505	862-2605	200
		L3-N-⊕-L1-L2				862-8505	862-8605	200
		⊕-N-L1-L2-L3				862-9505	862-9605	200
<b>1 snap-in foot per pole</b>								
	without marking					862-0525	862-0625	200
	⊕-N-L1-L2-L3					862-1525	862-1625	200
	L3-N-⊕-L1-L2					862-2525	862-2625	200
		L3-N-⊕-L1-L2				862-8525	862-8625	200
		⊕-N-L1-L2-L3				862-9525	862-9625	200
<b>snap-in feet at pos. 1+3+5</b>								
	without marking					862-0515	862-0615	200
	⊕-N-L1-L2-L3					862-1515	862-1615	200
	L3-N-⊕-L1-L2					862-2515	862-2615	200
		L3-N-⊕-L1-L2				862-8515	862-8615	200
		⊕-N-L1-L2-L3				862-9515	862-9615	200

**Accessories** DIN rail mounting of 862 Series see accessories page 10.26

<b>Comb type jumper bar</b> , can easily be inserted into the wire entry, 32 A <b>862-482</b> 5	<b>Test plug</b> , with cable 500 mm/1'77" 2 mm/0.079 in Ø, red <b>210-136</b> 50 (5 x 10)	<b>Test plug</b> , with cable 500 mm/1'77" 2.3 mm/0.091 in Ø, yellow <b>210-137</b> 50 (5 x 10)
<b>Screwdriver</b> , with partially insulated shaft (3.5 x 0.5) mm <b>210-620</b> 1	<b>Marker strip</b> , white, plain, for central marking; 7.5 mm wide, on roll, 50 m long <b>709-178</b> 1	<b>Marker strip</b> , white, plain, for central marking; 7.5 mm wide, on roll, 300 m long <b>709-188</b> 1

\* For further approvals with corresponding ratings see section 15.



Safe patching despite high density wiring:  
WAGO matrix patchboards with CAGE CLAMP® connection



**3-conductor double potential terminal blocks**  
2.5 mm<sup>2</sup> / AWG 12

Series 280 \_\_\_\_\_ 11.19



**Busbar terminal blocks**

Series 812 \_\_\_\_\_ 11.20 – 11.21



**Matrix patchboards**

Series 726 \_\_\_\_\_ 11.6 – 11.8

**Common potential matrix assembly**

Series 726

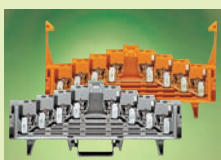
– Marking on the patchboard side \_\_\_\_\_ 11.10

– Marking on the supply side \_\_\_\_\_ 11.11

Decade marker carriers for matrix patchboards \_\_\_\_\_ 11.9

Insulation stop for matrix patchboards \_\_\_\_\_ 11.9

Additional modules for matrix patchboards \_\_\_\_\_ 11.9



**Terminal blocks for matrix patching and same potential terminal blocks**  
1.5 mm<sup>2</sup> / AWG 16

Series 727 \_\_\_\_\_ 11.14 – 11.17

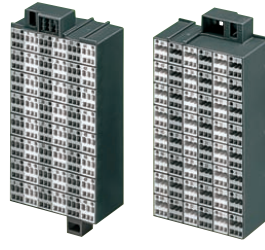


# Patching Systems – Product Summary –

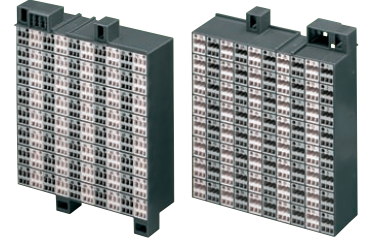
## Series 726 Matrix patchboards



Side 1 3 x 0.08 – 1.5 mm<sup>2</sup>/AWG 28 – 16  
Side 2 3 x 0.08 – 1.5 mm<sup>2</sup>/AWG 28 – 16  
32-, 48- and 80-pole – Pages 11.6 – 11.7



Side 1 3 x 0.08 – 1.5 mm<sup>2</sup>/AWG 28 – 16  
Side 2 2 x 0.08 – 2.5 mm<sup>2</sup>/AWG 28 – 14  
32-, 48- and 80-pole – Pages 11.6 – 11.7



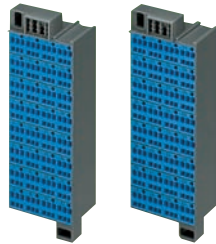
## Series 726 Matrix patchboards

Slim line version  
for 19" racks



2 x 0.08 – 1.5 mm<sup>2</sup>/AWG 28 – 16  
2 x 0.08 – 1.5 mm<sup>2</sup>/AWG 28 – 16  
32-pole – Page 11.8

## Series 726 Ex i Matrix patchboards



Side 1 3 x 0.08 – 1.5 mm<sup>2</sup>/AWG 28 – 16  
Side 2 3 x 0.08 – 1.5 mm<sup>2</sup>/AWG 28 – 16  
32-, 48- and 80-pole – Pages 11.6 – 11.7



Side 1 3 x 0.08 – 1.5 mm<sup>2</sup>/AWG 28 – 16  
Side 2 2 x 0.08 – 2.5 mm<sup>2</sup>/AWG 28 – 14  
32-, 48- and 80-pole – Pages 11.6 – 11.7

Slim line version  
for 19" racks



2 x 0.08 – 1.5 mm<sup>2</sup>/AWG 28 – 16  
2 x 0.08 – 1.5 mm<sup>2</sup>/AWG 28 – 16  
32-pole – Page 11.8

## Series 726 Decade marker carrier



Page 11.9

## Series 726 Additional modules



Page 11.9

## Series 726 Insulation stop

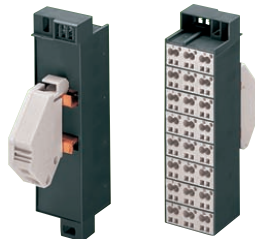


Page 11.9

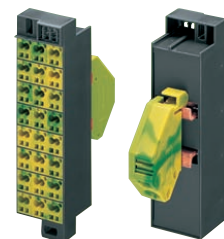
## Series 726 Common potential matrix patchboards



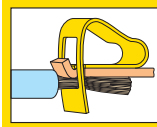
24 x 0.08 – 2.5 mm<sup>2</sup>/AWG 28 – 14  
1/2 x 0.2 – 16 mm<sup>2</sup>/AWG 24 – 6  
Page 11.10



or



1/2 x 0.2 – 16 mm<sup>2</sup>/AWG 24 – 6  
24 x 0.08 – 2.5 mm<sup>2</sup>/AWG 28 – 14  
Page 11.11



**Series 727 Terminal blocks for matrix patching and potential terminal blocks**



4-level terminal blocks

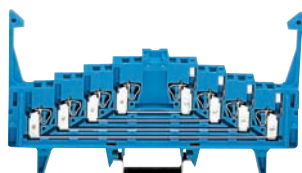
Pages 11.14 – 11.15



8-level terminal blocks

Pages 11.16 – 11.17

**Series 727 Ex i Terminal blocks for matrix patching and potential terminal blocks**



4-level terminal blocks

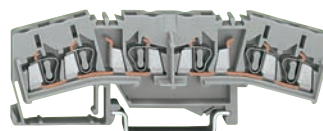
Pages 11.14 – 11.15



8-level terminal blocks

Pages 11.16 – 11.17

**Series 280 3-conductor double potential terminal block/  
Terminal block for matrix patching**



Page 11.19

**Pin modules**



Page 11.19

**Wire harness support**



Page 11.19

**Series 812 Busbar terminal blocks**

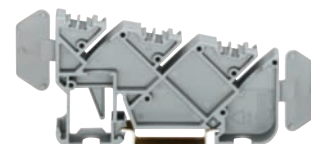


4 mm<sup>2</sup> / AWG 12  
N/L  
Page 11.21



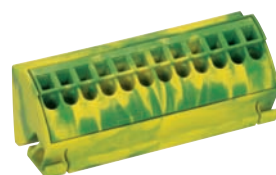
16 mm<sup>2</sup> / AWG 6  
N/L  
Page 11.21

**Insulated busbar carrier**



Page 11.21

**Series 812 Ground (earth) busbar terminal blocks**



4 mm<sup>2</sup> / AWG 12  
N/L  
Page 11.21



16 mm<sup>2</sup> / AWG 6  
N/L  
Page 11.21

**Ground (earth) busbar carrier**

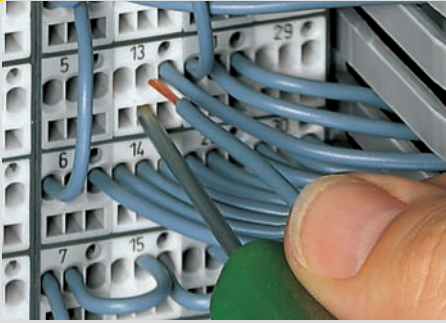


Page 11.21



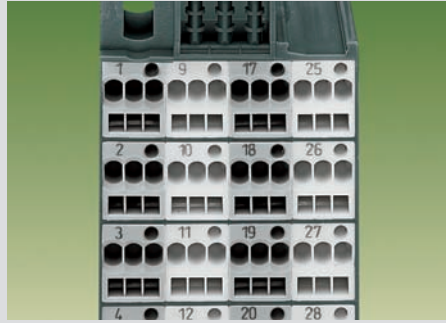
# Matrix Patchboards with CAGE CLAMP® connection . . . Series 726

## CAGE CLAMP® connection



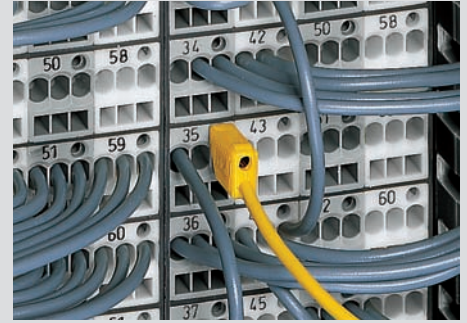
Connection of wires with screwdriver blade size (2.5 x 0.4) mm Item No. 210-119

## Marking of modules



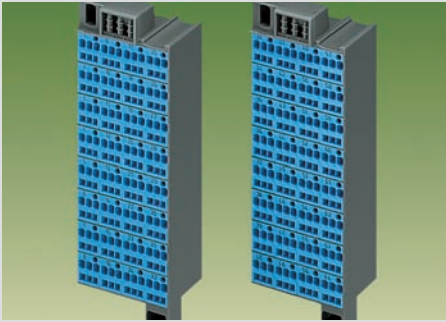
Marking of modules (factory marked) Side 1: 1, 2, 3, 4 . . .

## Testing



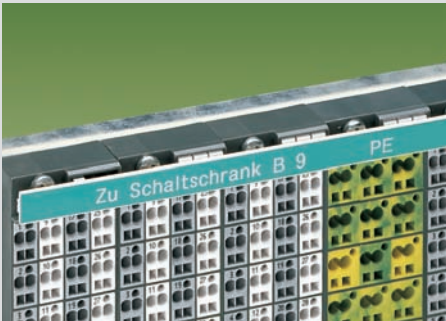
Testing with test plug 2.3 mm/0.091 in Ø Item No. 210-137

## Ex i versions

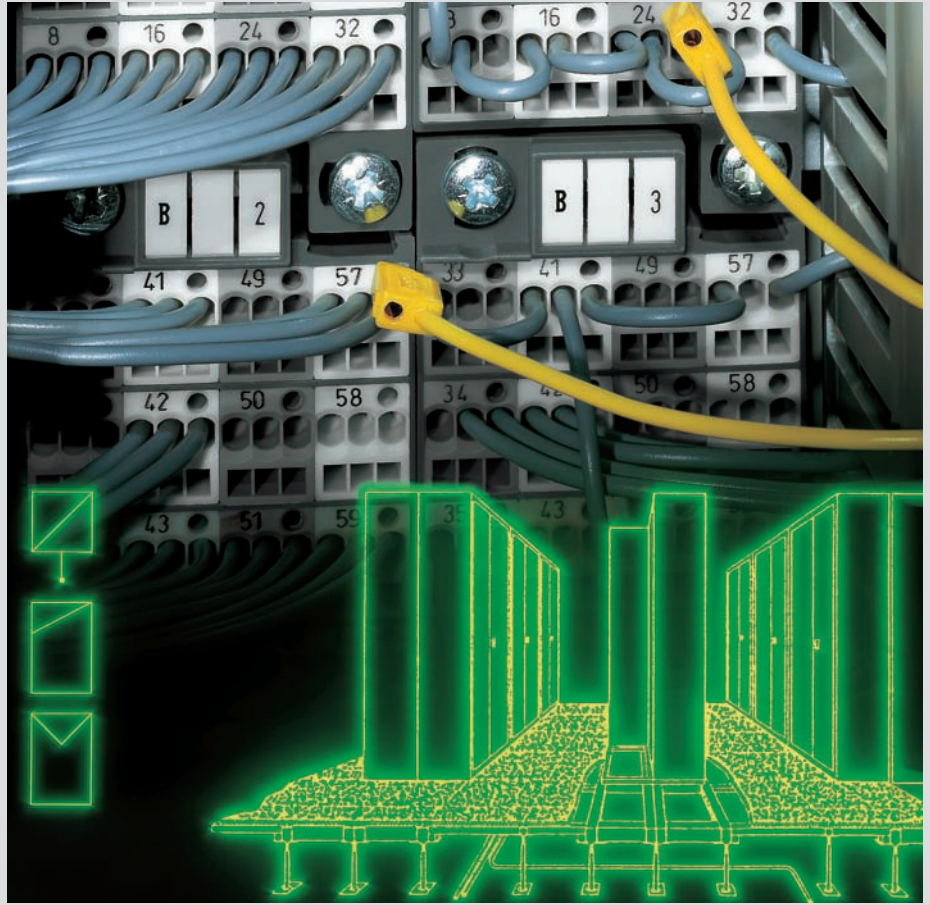


Blue matrix patchboards are suitable for Ex i applications

## Marking



WFB Continuous marking strips. Fits into the marker receptacle and the group marking carrier of the matrix patchboard



## Marking

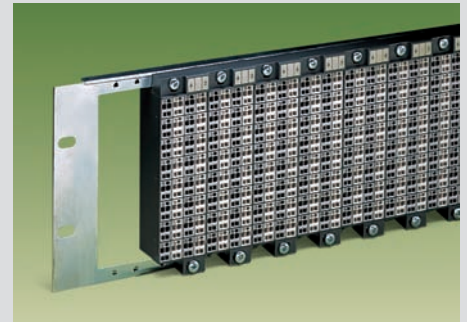


Individual group marking with WSB Quick marking system

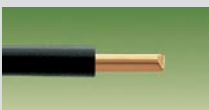
## Examples of installation



Matrix patchboards in a frame

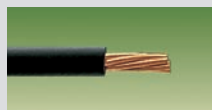


Matrix patchboards in 19" rack

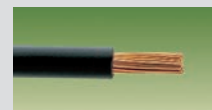


CAGE CLAMP® connects the following copper wires:\*

solid



stranded

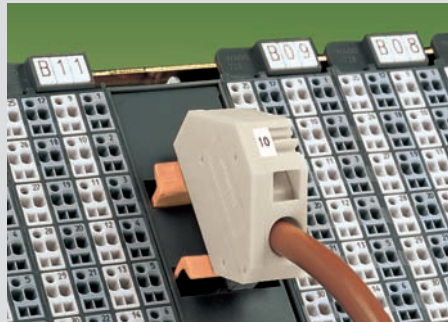


fine stranded, also with tinned single strands

\* For aluminum wire see notes in section 15!



Common potential matrix assembly



Example shown here with (white) supply terminal block

Space Saving



Slim line matrix patchboard (lower right) mounted upside down

Additional module

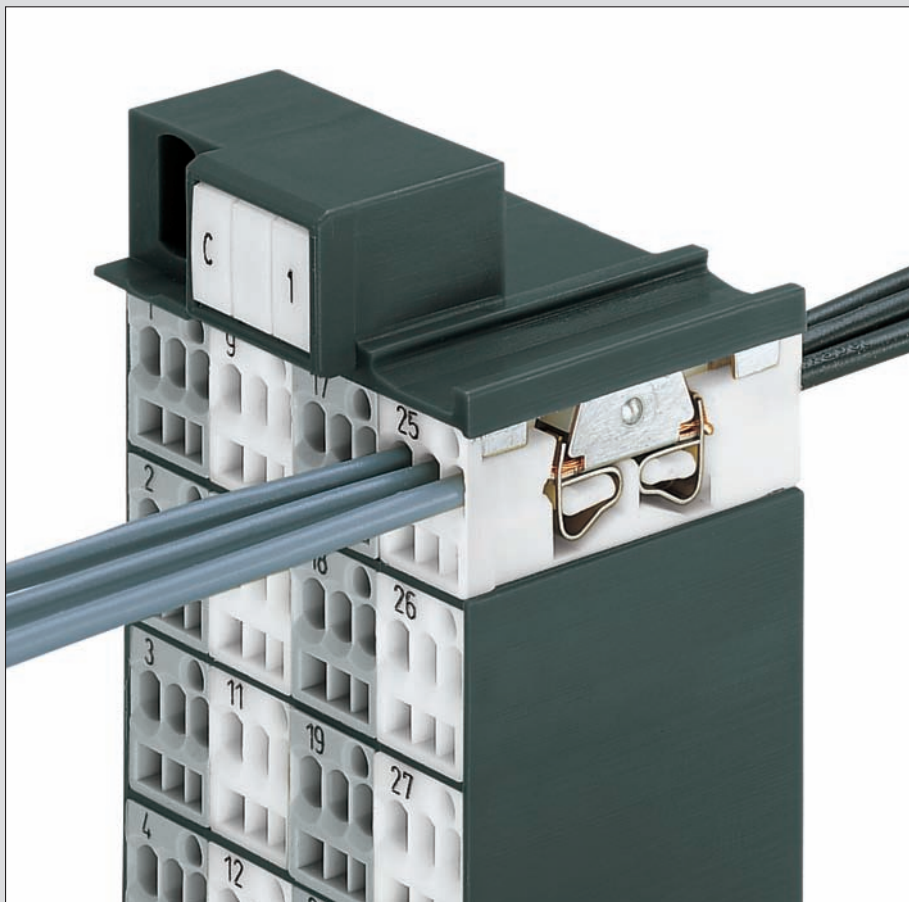


Snapping on an additional module with contact to mounting frame

Additional module



Assembly of a matrix patchboard with additional module snapped on. Direct connection to the mounting frame via contact plate



Ferrules ❶

	Conductor cross section (mm <sup>2</sup> /AWG) without ferrule	Conductor cross section (mm <sup>2</sup> /AWG) with ferrule	
		insulated Item No./Color	uninsulated Item No.
Side 2	1.5/16	0.75/20 <b>216-202</b> /grey	1.0/18 <b>216-123</b>
Side 1	1.5/16	0.75/20 <b>216-202</b> /grey	1.0/18 <b>216-123</b>
Side 2	2.5/14	1.5/16 <b>216-204</b> /black	1.5/16 <b>216-104</b>
Side 1	1.5/16	0.75/20 <b>216-202</b> /grey	1.0/18 <b>216-123</b>



Connection of ferruled wires



fine-stranded wire – tip bonded











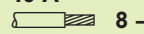



fine-stranded wire with crimped ferrule ❶

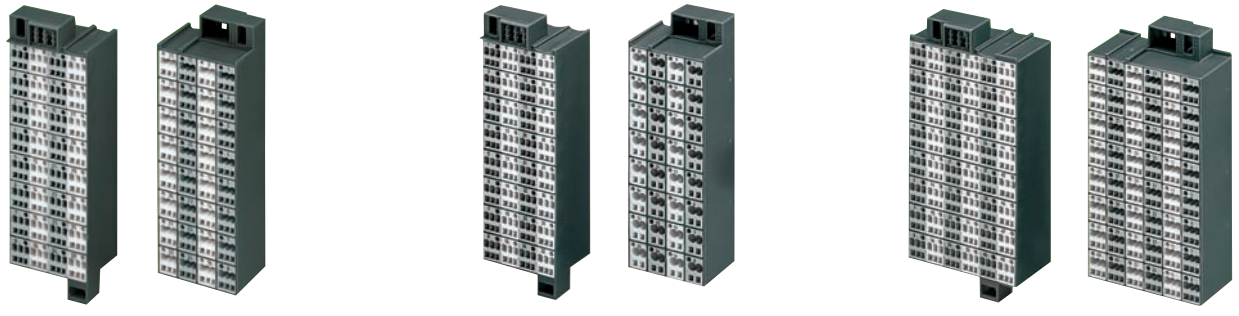









fine-stranded wire with crimped pin terminal












# Matrix Patchboards

Side 1: 3 x 0.08 – 1.5 mm <sup>2</sup> Side 2: 3 x 0.08 – 1.5 mm <sup>2</sup> 500 V/6 kV/3 10 A  8 – 10 mm / 0.35 in * 	AWG 28 – 16 AWG 28 – 16 300 V, 10 A  300 V, 10 A 	Side 1: 3 x 0.08 – 1.5 mm <sup>2</sup> Side 2: 2 x 0.08 – 2.5 mm <sup>2</sup> 500 V/6 kV/3 10 A  8 – 10 mm / 0.35 in * 	AWG 28 – 16 AWG 28 – 14 300 V, 10 A  300 V, 10 A 	Side 1: 3 x 0.08 – 1.5 mm <sup>2</sup> Side 2: 3 x 0.08 – 1.5 mm <sup>2</sup> 500 V/6 kV/3 10 A  8 – 10 mm / 0.35 in * 	AWG 28 – 16 AWG 28 – 16 300 V, 10 A  300 V, 10 A 
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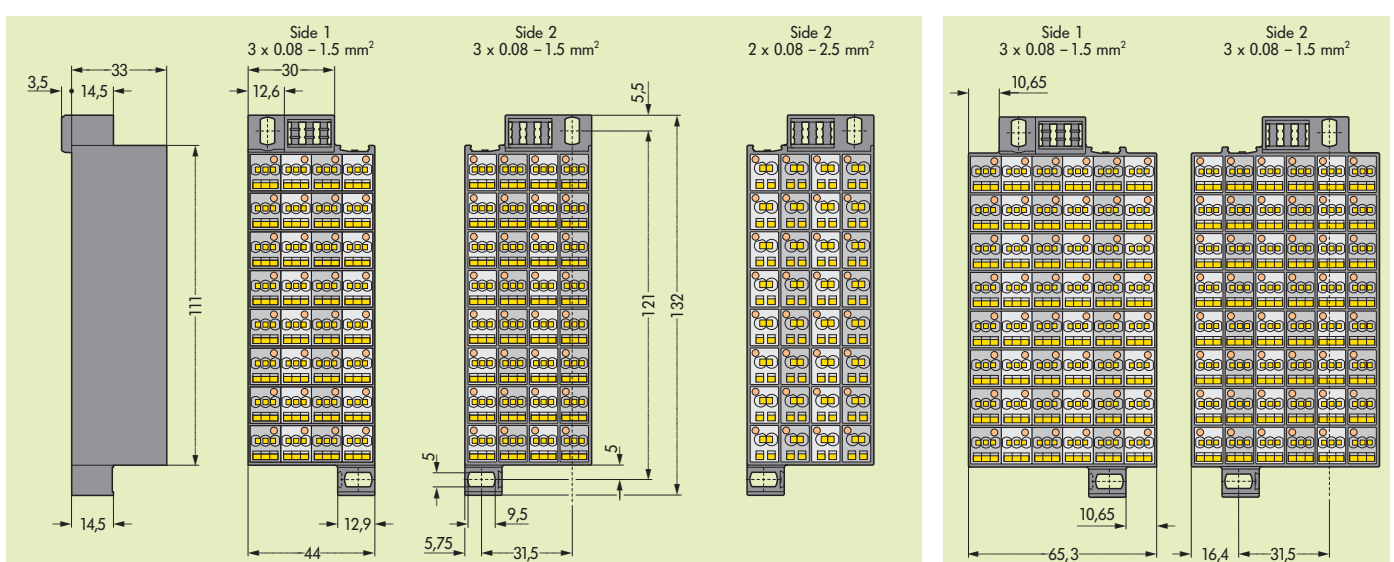


No. of poles	Item No.	Pack.-unit pcs	No. of poles	Item No.	Pack.-unit pcs	No. of poles	Item No.	Pack.-unit pcs	
<b>Matrix patchboards, 32 poles, frame dark grey, colors and numbering of modules on sides 1 and 2 arranged vertically</b>			<b>Matrix patchboards, 32 poles, frame dark grey, colors and numbering of modules on sides 1 and 2 arranged vertically</b>			<b>Matrix patchboards, 48 poles, frame dark grey, colors and numbering of modules on sides 1 and 2 arranged vertically</b>			
Numbering		Colors of modules		Numbering		Colors of modules		Numbering	
	grey	white	grey	white		grey	white	grey	white
( 1 – 32)	1 – 8	9 – 16	17 – 24	25 – 32	( 1 – 32)	1 – 8	9 – 16	17 – 24	25 – 32
(33 – 64)	33 – 40	41 – 48	49 – 56	57 – 64	(33 – 64)	33 – 40	41 – 48	49 – 56	57 – 64
32 ( 1 – 32)	<b>726-121</b>				32 ( 1 – 32)	<b>726-221</b>			
32 (33 – 64)	<b>726-122</b>	20			32 (33 – 64)	<b>726-222</b>	20		
Color of modules blue and numbering of modules on sides 1 and 2 arranged vertically			Color of modules blue and numbering of modules on sides 1 and 2 arranged vertically			Color of modules blue and numbering of modules on sides 1 and 2 arranged vertically			
32 ( 1 – 32)	<b>726-141</b> 	20			32 ( 1 – 32)	<b>726-241</b> 	20		
32 (33 – 64)	<b>726-142</b> 	20			32 (33 – 64)	<b>726-242</b> 	20		
 suitable for Ex i applications			 suitable for Ex i applications			 suitable for Ex i applications			

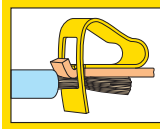
## Accessories (Insulation stop see page 11.9)

	<b>Group marking adapter for side 2</b> 726-902 50		<b>Group marking adapter for side 2</b> 726-902 50		<b>Group marking adapter for side 2</b> 726-902 50
	<b>Test plug, 2.3 mm / 0.091 in Ø</b> yellow <b>210-137</b> 50 (5 x 10) with cable 500 mm / 1'7.7"		<b>Test plug, 2.3 mm / 0.091 in Ø</b> yellow <b>210-137</b> 50 (5 x 10) with cable 500 mm / 1'7.7"		<b>Test plug, 2.3 mm / 0.091 in Ø</b> yellow <b>210-137</b> 50 (5 x 10) with cable 500 mm / 1'7.7"
	<b>Wire comm. chain, insulated, 6 A</b> 31 connections, 0.5 mm <sup>2</sup> , max. 50 V grey <b>709-107</b> 1		<b>Wire comm. chain, insulated, 6 A</b> 31 connections, 0.5 mm <sup>2</sup> , max. 50 V grey <b>709-107</b> 1		<b>Wire comm. chain, insulated, 6 A</b> 31 connections, 0.5 mm <sup>2</sup> , max. 50 V grey <b>709-107</b> 1

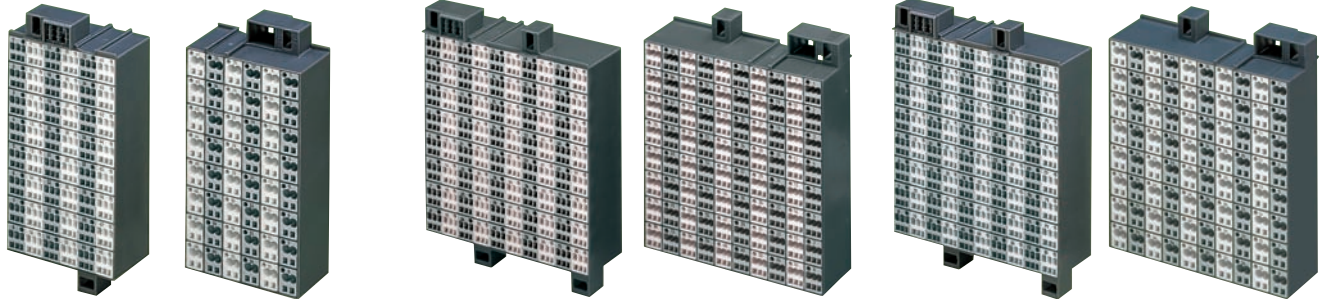
## Dimensions (in mm)



\* For further approvals with corresponding ratings see section 15.



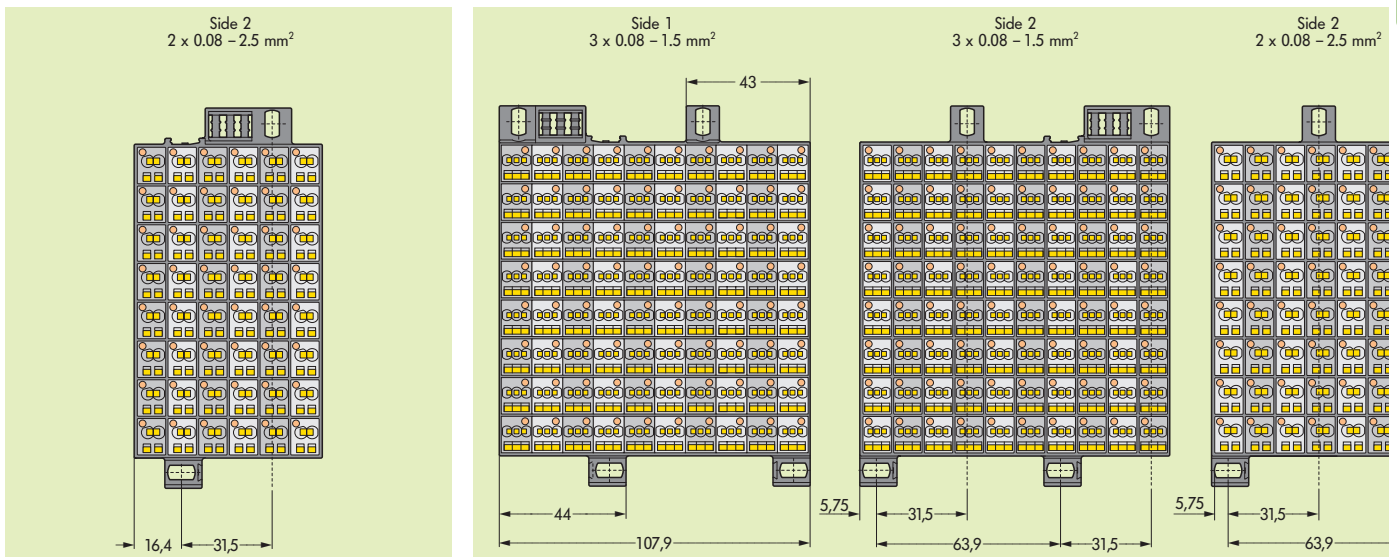
<p>Side 1: 3 x 0.08 – 1.5 mm<sup>2</sup> AWG 28 – 16          Side 2: 2 x 0.08 – 2.5 mm<sup>2</sup> AWG 28 – 14          500 V/6 kV/3          10 A</p> <p> 8 – 10 mm / 0.35 in</p> <p>*    </p>	<p>Side 1: 3 x 0.08 – 1.5 mm<sup>2</sup> AWG 28 – 16          Side 2: 3 x 0.08 – 1.5 mm<sup>2</sup> AWG 28 – 16          500 V/6 kV/3          10 A</p> <p> 8 – 10 mm / 0.35 in</p> <p>*    </p>	<p>Side 1: 3 x 0.08 – 1.5 mm<sup>2</sup> AWG 28 – 16          Side 2: 2 x 0.08 – 2.5 mm<sup>2</sup> AWG 28 – 14          500 V/6 kV/3          10 A</p> <p> 8 – 10 mm / 0.35 in</p> <p>*    </p>
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







No. of poles	Item No.	Pack.-unit pcs	No. of poles	Item No.	Pack.-unit pcs	No. of poles	Item No.	Pack.-unit pcs	
Matrix patchboards, 48 poles, frame dark grey, colors and numbering of modules on sides 1 and 2 arranged vertically			Matrix patchboards, 80 poles, frame dark grey, colors and numbering of modules on sides 1 and 2 arranged vertically			Matrix patchboards, 80 poles, frame dark grey, colors and numbering of modules on sides 1 and 2 arranged vertically			
Numbering	Colors of modules		Numbering	Colors of modules		Numbering	Colors of modules		
	grey	white	grey	white	grey	white	grey	white	
( 1 – 48)	1 – 8	9 – 16	17 – 24	25 – 32	( 1 – 80)	1 – 8	9 – 16	17 – 24	
	33 – 40	41 – 48	49 – 56	57 – 64		33 – 40	41 – 48	49 – 56	
48 ( 1 – 48)	<b>726-521</b>		10		80 ( 1 – 80)	<b>726-721</b>		8	
Color of modules blue and numbering of modules on sides 1 and 2 arranged vertically			Color of modules blue and numbering of modules on sides 1 and 2 arranged vertically			Color of modules blue and numbering of modules on sides 1 and 2 arranged vertically			
48 ( 1 – 48)	<b>726-541</b> ①		10		80 ( 1 – 80)	<b>726-741</b> ①		8	
① suitable for Ex i applications			① suitable for Ex i applications			① suitable for Ex i applications			

(for the group marking the WAGO WSB Quick marking system or WFB Continuous marking strips can be used, see section 14)







	<b>Group marking adapter for side 2</b> 726-902 50		<b>Group marking adapter for side 2</b> 726-902 50		<b>Group marking adapter for side 2</b> 726-902 50
	<b>Test plug</b> , 2.3 mm / 0.091 in Ø yellow 210-137 50 (5 x 10) with cable 500 mm / 1'7.7"		<b>Test plug</b> , 2.3 mm / 0.091 in Ø yellow 210-137 50 (5 x 10) with cable 500 mm / 1'7.7"		<b>Test plug</b> , 2.3 mm / 0.091 in Ø yellow 210-137 50 (5 x 10) with cable 500 mm / 1'7.7"
	<b>Wire comm. chain</b> , insulated, 6 A 31 connections, 0.5 mm <sup>2</sup> , max. 50 V grey 709-107 1		<b>Wire comm. chain</b> , insulated, 6 A 31 connections, 0.5 mm <sup>2</sup> , max. 50 V grey 709-107 1		<b>Wire comm. chain</b> , insulated, 6 A 31 connections, 0.5 mm <sup>2</sup> , max. 50 V grey 709-107 1









# Matrix Patchboards Slim Line Version for 19" Racks

Side 1: 2 x 0.08 – 1.5 mm <sup>2</sup> Side 2: 2 x 0.08 – 1.5 mm <sup>2</sup> 500 V/6 kV/3 10 A  8 – 10 mm / 0.35 in * 	AWG 28 – 16 AWG 28 – 16 300 V, 10 A  300 V, 10 A 	Side 1: 2 x 0.08 – 1.5 mm <sup>2</sup> Side 2: 2 x 0.08 – 1.5 mm <sup>2</sup> 500 V/6 kV/3 10 A  8 – 10 mm / 0.35 in * 	AWG 28 – 16 AWG 28 – 16 300 V, 10 A  300 V, 10 A 
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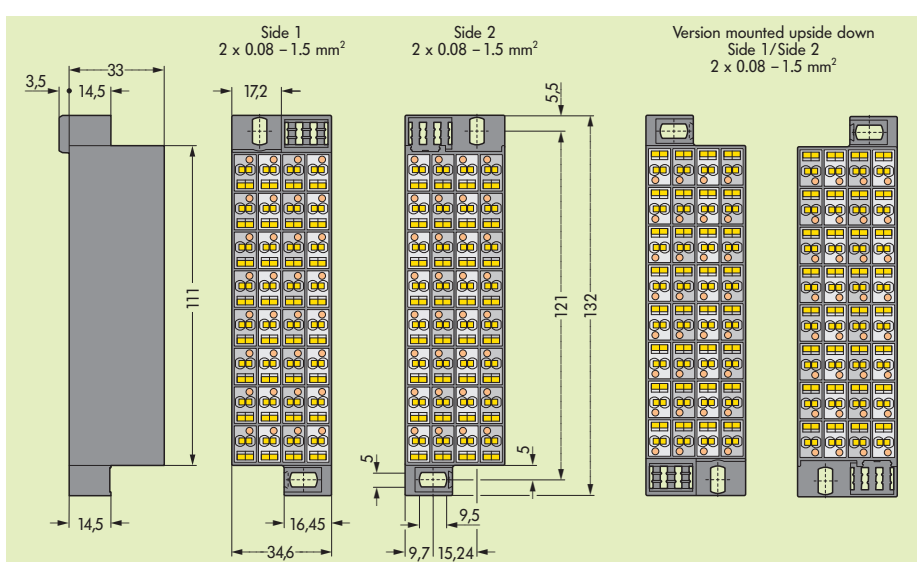


No. of poles	Item No.	Pack.-unit pcs	No. of poles	Item No.	Pack.-unit pcs
<b>Matrix patchboards, 32 poles, frame dark grey, colors and numbering of modules on sides 1 and 2 arranged vertically</b>			<b>Matrix patchboards, 32 poles, mounted upside down, frame dark grey, colors and numbering of modules on sides 1 and 2 arranged vertically</b>		
Numbering		Colors of modules		Numbering	
		grey	white	grey	white
( 1 – 32)	1 – 8 9 – 16 17 – 24 25 – 32			( 1 – 32)	1 – 8 9 – 16 17 – 24 25 – 32
(33 – 64)	33 – 40 41 – 48 49 – 56 57 – 64			(33 – 64)	33 – 40 41 – 48 49 – 56 57 – 64
32 ( 1 – 32)	<b>726-321</b>	24	32 ( 1 – 32)	<b>726-325</b>	24
32 (33 – 64)	<b>726-322</b>	24	32 (33 – 64)	<b>726-326</b>	24
Color of module blue and numbering of modules on sides 1 and 2 arranged vertically			Color of module blue and numbering of modules on sides 1 and 2 arranged vertically		
32 ( 1 – 32)	<b>726-341</b> 	24	32 ( 1 – 32)	<b>726-345</b> 	24
32 (33 – 64)	<b>726-342</b> 	24	32 (33 – 64)	<b>726-346</b> 	24
 suitable for Ex i applications			 suitable for Ex i applications		

### Accessories

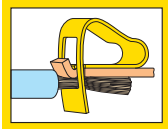
	<b>Group marking adapter for side 2</b> <b>726-902</b> 50		<b>Group marking adapter for side 2</b> <b>726-902</b> 50
	<b>Test plug, 2.3 mm / 0.091 in Ø yellow</b> <b>210-137</b> 50 (5 x 10) with cable 500 mm / 1'7.7"		<b>Test plug, 2.3 mm / 0.091 in Ø yellow</b> <b>210-137</b> 50 (5 x 10) with cable 500 mm / 1'7.7"
	<b>Wire comm. chain, insulated, 6 A</b> 31 connections, 0.5 mm <sup>2</sup> , max. 50 V grey <b>709-107</b> 1		<b>Wire comm. chain, insulated, 6 A</b> 31 connections, 0.5 mm <sup>2</sup> , max. 50 V grey <b>709-107</b> 1

### Dimensions (in mm)



\* For further approvals with corresponding ratings see section 15.

# Additional Modules, Decade Marker Carriers and Insulation Stops for Matrix Patching Series 726



<p>1 x 0.08 – 4 mm<sup>2</sup>   AWG 28 – 12                  1 x 0.08 – 2.5 mm<sup>2</sup>   AWG 28 – 14                  500 V/4 kV/3                  10 A   300 V, 10 A Ⓢ   9 mm / 0.35 in</p>	<p>Insulation stop, suitable for patchboard side 1 matrix patching 3 x 1.5 mm<sup>2</sup>/AWG 16   8 – 10 mm / 0.35 in</p>
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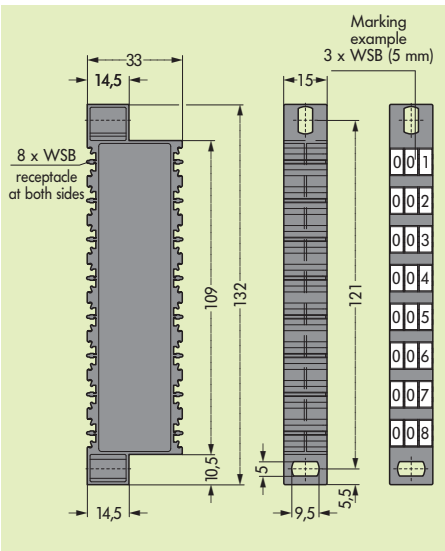
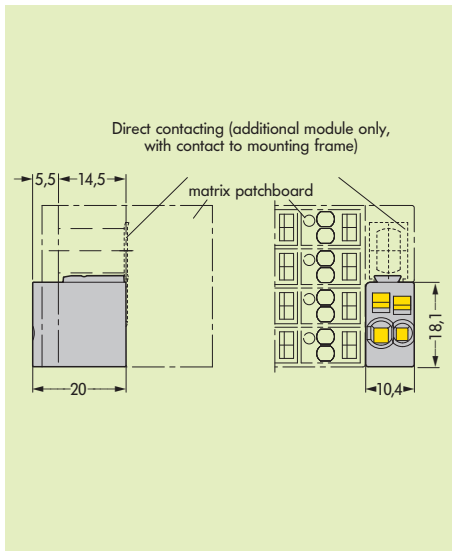


Color	Item No.	Pack.-unit pcs	Color	Item No.	Pack.-unit pcs	Color	Item No.	Pack.-unit pcs
Additional modules, for matrix patchboards, for snap-on fixing to the lower fixing element, with CAGE CLAMP®			Decade marker carrier, for matrix patchboards			Insulation stop, 4 x 3 pcs /strip		
			dark grey	726-905	10	white	726-901	200 strips
						0.08 – 0.2 mm <sup>2</sup> /AWG 28 – 24 "s" (0.08 – 0.14 mm <sup>2</sup> /AWG 28 – 26 "f-st")		
Additional module with contact to mounting frame						light grey	726-906	200 strips
white	726-903	25				0.25 mm <sup>2</sup> /AWG 22 "s" 0.14 – 0.25 mm <sup>2</sup> /AWG 26 – 22 "f-st"		
Additional module, insulated						dark grey	726-907	200 strips
grey	726-904	25				0.25 – 0.5 mm <sup>2</sup> /AWG 22 – 20 "s+f-st"		
						Note: Suitable for patchboard side 1 of matrix patchboards 1.5 mm <sup>2</sup> / AWG 16 (patchboards with different front and back sides)		


**Dimensions (in mm)**



Insert insulation stop into conductor entry holes of matrix patchboard.

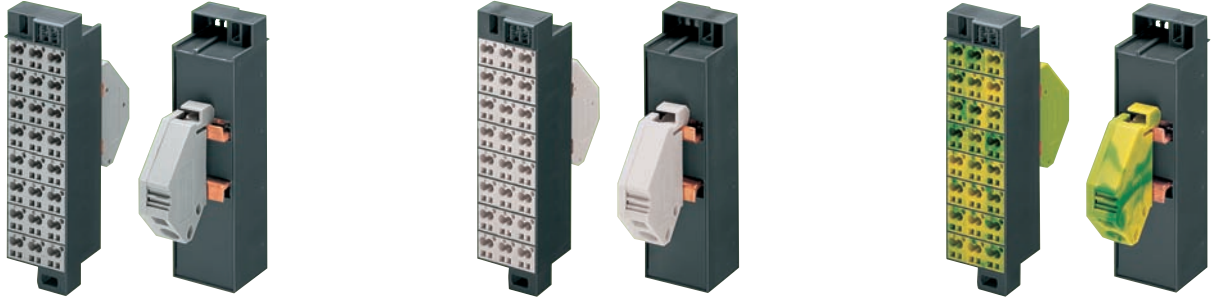


\* For further approvals with corresponding ratings see section 15.



# Common Potential Matrix Patchboards Slime Line Version for 19" Racks

<b>Supply side: 24 A</b> $24 \times 2 \times 0.08 - 2.5 \text{ mm}^2$   AWG 28 - 14 $8 - 10 \text{ mm} / 0.35 \text{ in}$   300 V, 10 A Ⓢ <b>Patchboard side: 76 A</b> $1 \times 0.2 - 16 \text{ mm}^2$   AWG 24 - 6 or $2 \times 0.2 - 16 \text{ mm}^2$   AWG 24 - 6 $16 - 17 \text{ mm} / 0.65 \text{ in}$ *	<b>Supply side: 24 A</b> $24 \times 2 \times 0.08 - 2.5 \text{ mm}^2$   AWG 28 - 14 $8 - 10 \text{ mm} / 0.35 \text{ in}$   300 V, 10 A Ⓢ <b>Patchboard side: 76 A</b> $1 \times 0.2 - 16 \text{ mm}^2$   AWG 24 - 6 or $2 \times 0.2 - 16 \text{ mm}^2$   AWG 24 - 6 $16 - 17 \text{ mm} / 0.65 \text{ in}$ *	<b>Supply side: 24 A</b> $24 \times 2 \times 0.08 - 2.5 \text{ mm}^2$   AWG 28 - 14 $8 - 10 \text{ mm} / 0.35 \text{ in}$   300 V, 10 A Ⓢ <b>Patchboard side: 76 A</b> $1 \times 0.2 - 16 \text{ mm}^2$   AWG 24 - 6 or $2 \times 0.2 - 16 \text{ mm}^2$   AWG 24 - 6 $16 - 17 \text{ mm} / 0.65 \text{ in}$ *
--	--	--

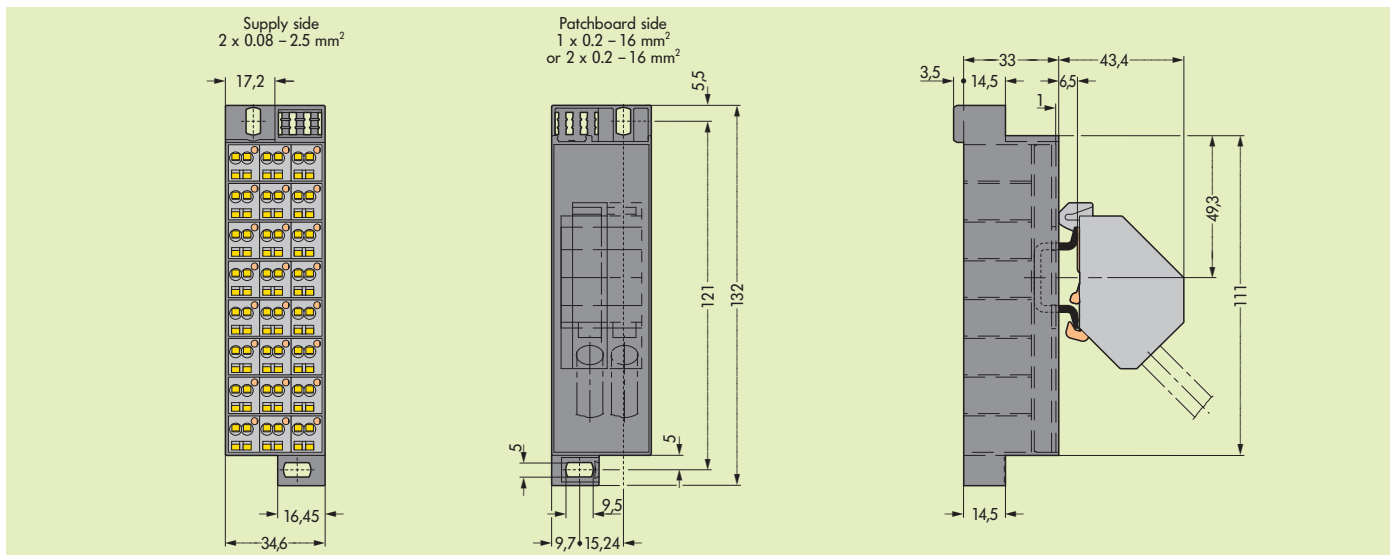


Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
<b>Common potential matrix patchboards, frame dark grey, Supply side:</b>		<b>Common potential matrix patchboards, frame dark grey, Supply side:</b>		<b>Comm. pot. matrix pbd. f. gnd. earth cond., frame dark grey, Supply side:</b>	
24 x 2 connections, numbering of modules arranged vertically (1 - 24), color of module: grey,		24 x 2 connections, numbering of modules arranged vertically (1 - 24), color of module: white,		24 x 2 connections, numbering of modules arranged vertically (1 - 24), color of module: green-yellow,	
<b>Patchboard side:</b>		<b>Patchboard side:</b>		<b>Patchboard side:</b>	
with 1 supply terminal block incl. end plate		with 1 supply terminal block incl. end plate		with 1 supply terminal block incl. end plate	
wire size 0.2 mm <sup>2</sup> to 16 mm <sup>2</sup> /AWG 24-6		wire size 0.2 mm <sup>2</sup> to 16 mm <sup>2</sup> /AWG 24-6		wire size 0.2 mm <sup>2</sup> to 16 mm <sup>2</sup> /AWG 24-6	
grey	<b>726-601</b> 10	white	<b>726-611</b> 10	green-yellow	<b>726-621</b> 10
with 2 supply terminal blocks incl. end plate		with 2 supply terminal blocks incl. end plate		with 2 supply terminal blocks incl. end plate	
wire size 0.2 mm <sup>2</sup> to 16 mm <sup>2</sup> /AWG 24-6		wire size 0.2 mm <sup>2</sup> to 16 mm <sup>2</sup> /AWG 24-6		wire size 0.2 mm <sup>2</sup> to 16 mm <sup>2</sup> /AWG 24-6	
grey	<b>726-602</b> 10	white	<b>726-612</b> 10	green-yellow	<b>726-622</b> 10

**Accessories** (Marking accessories WSB quick marking system see section 14)

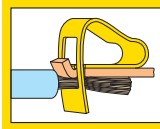
	<b>Group marking adapter for patchboard side</b> <b>726-902</b> 50		<b>Group marking adapter for patchboard side</b> <b>726-902</b> 50		<b>Group marking adapter for patchboard side</b> <b>726-902</b> 50
	<b>Test plug</b> , 2.3 mm / 0.091 in Ø yellow <b>210-137</b> 50 (5 x 10) with cable 500 mm / 1'7.7"		<b>Test plug</b> , 2.3 mm / 0.091 in Ø yellow <b>210-137</b> 50 (5 x 10) with cable 500 mm / 1'7.7"		<b>Test plug</b> , 2.3 mm / 0.091 in Ø yellow <b>210-137</b> 50 (5 x 10) with cable 500 mm / 1'7.7"
	<b>Screwdrivers</b> (2.5x0.4)mm <b>210-119</b> 1 (5.5x0.8)mm <b>210-121</b> 1		<b>Screwdrivers</b> (2.5x0.4)mm <b>210-119</b> 1 (5.5x0.8)mm <b>210-121</b> 1		<b>Screwdrivers</b> (2.5x0.4)mm <b>210-119</b> 1 (5.5x0.8)mm <b>210-121</b> 1
	<b>Additional supply terminal block</b> grey <b>283-611</b> 25		<b>Additional supply terminal block</b> grey <b>283-611</b> 25		<b>Additional supply terminal block</b> green-yellow <b>283-609</b> 25

**Dimensions (in mm)**



\* For further approvals with corresponding ratings see section 15.

# Common Potential Matrix Patchboards Slim Line Version, for 19" Racks, Supply Side/Patchboard Side



<b>Supply side: 76 A</b> 1 x 0.2 – 16 mm <sup>2</sup> or 2 x 0.2 – 16 mm <sup>2</sup> 16 – 17 mm / 0.65 in <b>Patchboard side: 24 A</b> 24 x 2 x 0.08 – 2.5 mm <sup>2</sup> 8 – 10 mm / 0.35 in AWG 24 – 6 AWG 24 – 6 300 V, 10 A	<b>Supply side: 76 A</b> 1 x 0.2 – 16 mm <sup>2</sup> or 2 x 0.2 – 16 mm <sup>2</sup> 16 – 17 mm / 0.65 in <b>Patchboard side: 24 A</b> 24 x 2 x 0.08 – 2.5 mm <sup>2</sup> 8 – 10 mm / 0.35 in AWG 24 – 6 AWG 24 – 6 300 V, 10 A	<b>Supply side: 76 A</b> 1 x 0.2 – 16 mm <sup>2</sup> or 2 x 0.2 – 16 mm <sup>2</sup> 16 – 17 mm / 0.65 in <b>Patchboard side: 24 A</b> 24 x 2 x 0.08 – 2.5 mm <sup>2</sup> 8 – 10 mm / 0.35 in AWG 24 – 6 AWG 24 – 6 300 V, 10 A
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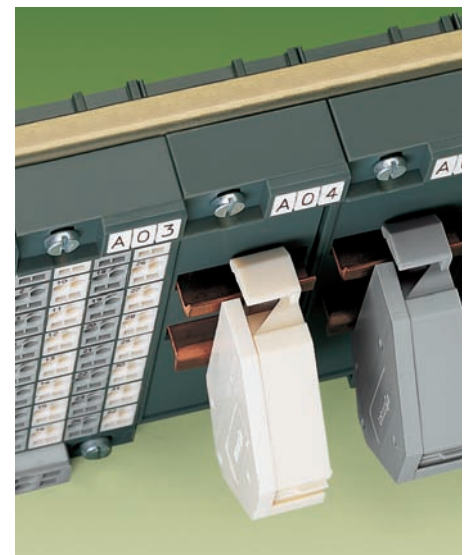
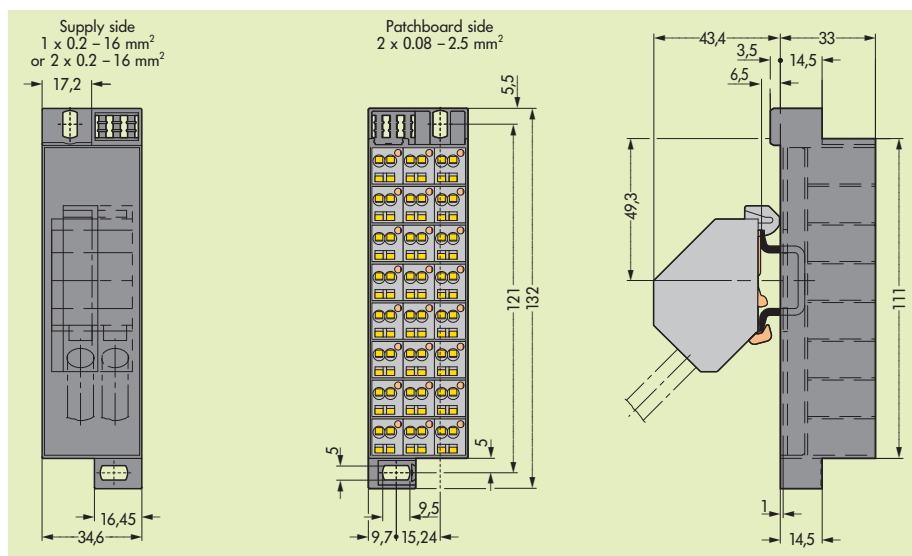


Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
<b>Common potential matrix patchboards, frame dark grey, Supply side:</b>		<b>Common potential matrix patchboards, frame dark grey, Supply side:</b>		<b>Common potential matrix patchboards, frame dark grey, Supply side:</b>	
with 1 terminal block incl. end plate		with 1 terminal block incl. end plate		with 1 terminal block incl. end plate	
wire size 0.2 – 16 mm <sup>2</sup> /AWG 24-6		wire size 0.2 – 16 mm <sup>2</sup> /AWG 24-6		wire size 0.2 – 16 mm <sup>2</sup> /AWG 24-6	
grey	<b>726-651</b> 10	white	<b>726-661</b> 10	green-yellow	<b>726-671</b> 10
with 2 terminal blocks incl. end plate		with 2 terminal blocks incl. end plate		with 2 terminal blocks incl. end plate	
wire size 0.2 – 16 mm <sup>2</sup> /AWG 24-6		wire size 0.2 – 16 mm <sup>2</sup> /AWG 24-6		wire size 0.2 – 16 mm <sup>2</sup> /AWG 24-6	
grey	<b>726-652</b> 10	white	<b>726-662</b> 10	green-yellow	<b>726-672</b> 10
<b>Patchboard side:</b>		<b>Patchboard side:</b>		<b>Patchboard side:</b>	
24 x 2 connections, numbering of modules arranged vertically (1 – 24), color of module: grey		24 x 2 connections, numbering of modules arranged vertically (1 – 24), color of module: white		24 x 2 connections, numbering of modules arranged vertically (1 – 24), color of module: green-yellow	

## Accessories (Marking accessories WSB quick marking system see section 14)

	<b>Group marking adapter for patchboard side</b> <b>726-902</b> 50		<b>Group marking adapter for patchboard side</b> <b>726-902</b> 50		<b>Group marking adapter for patchboard side</b> <b>726-902</b> 50
	<b>Test plug</b> , 2.3 mm / 0.091 in Ø yellow <b>210-137</b> 50 (5 x 10) with cable 500 mm / 1'7.7"		<b>Test plug</b> , 2.3 mm / 0.091 in Ø yellow <b>210-137</b> 50 (5 x 10) with cable 500 mm / 1'7.7"		<b>Test plug</b> , 2.3 mm / 0.091 in Ø yellow <b>210-137</b> 50 (5 x 10) with cable 500 mm / 1'7.7"
	<b>Screwdrivers</b> (2.5x0.4)mm <b>210-119</b> 1 (5.5x0.8)mm <b>210-121</b> 1		<b>Screwdrivers</b> (2.5x0.4)mm <b>210-119</b> 1 (5.5x0.8)mm <b>210-121</b> 1		<b>Screwdrivers</b> (2.5x0.4)mm <b>210-119</b> 1 (5.5x0.8)mm <b>210-121</b> 1
	<b>Additional supply terminal block</b> grey <b>283-611</b> 25		<b>Additional supply terminal block</b> white <b>283-610</b> 25		<b>Additional supply terminal block</b> green-yellow <b>283-609</b> 25

## Dimensions (in mm)

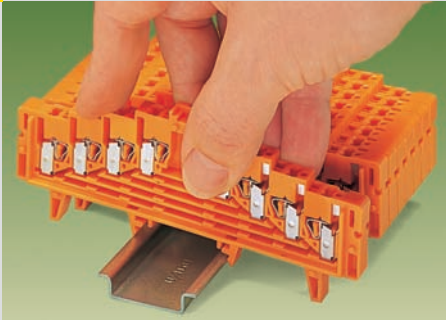


\* For further approvals with corresponding ratings see section 15.

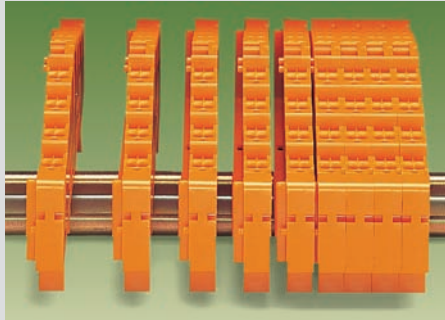


# Terminal Blocks for Matrix Patching and Same Potential Terminal Blocks with CAGE CLAMP® connection, Series 727 . . .

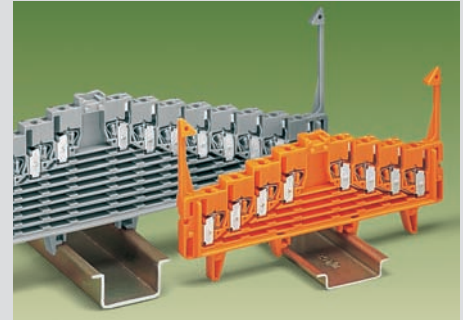
## Assembly



Snap individual 4- or 8-level terminal blocks onto the carrier rail . . .

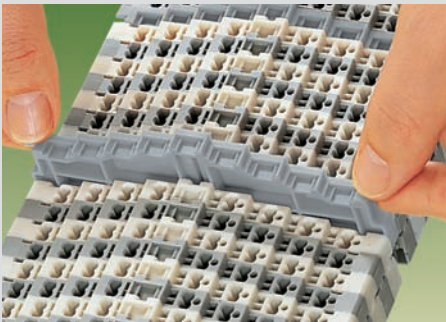


. . . and engage



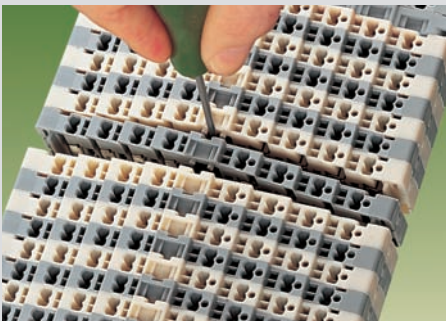
Terminal blocks for DIN 35 x 7.5 mm or DIN 35 x 15 mm high are available

## Assembly / Removal

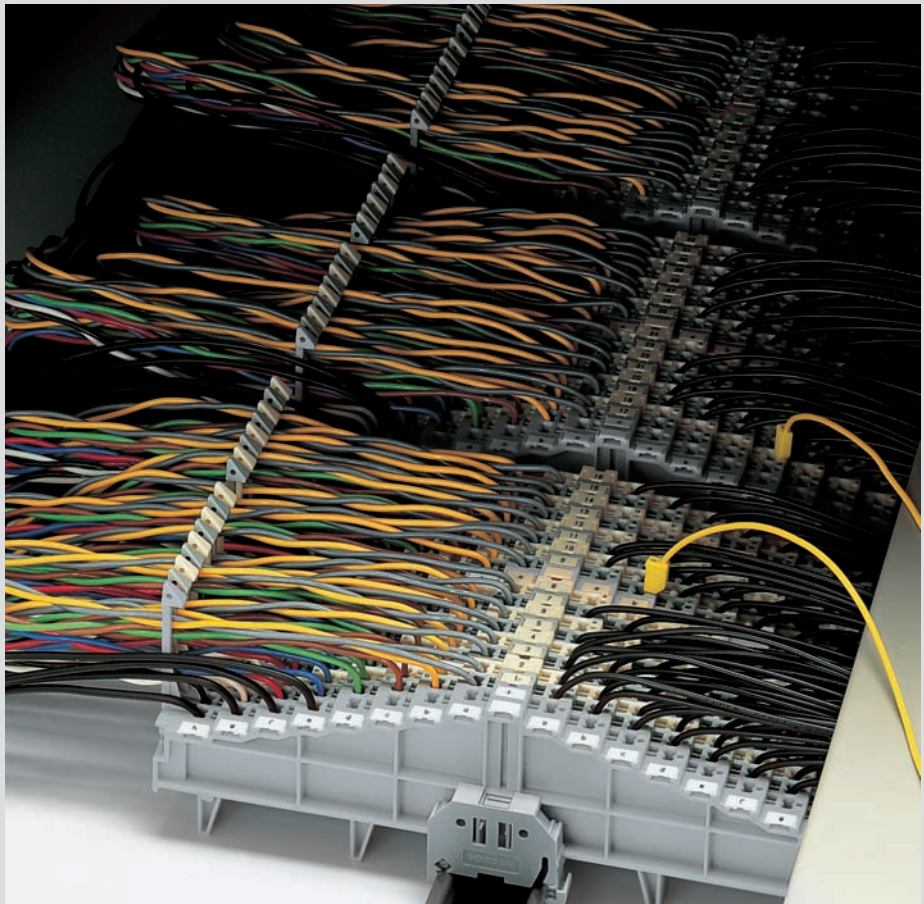


Grip end plate at both sides and  
– push down (assembly)  
– pull up (removal)

## Removal



Open the assembly by laterally sliding a block using a screwdriver (2.5 x 0.4) mm . . .

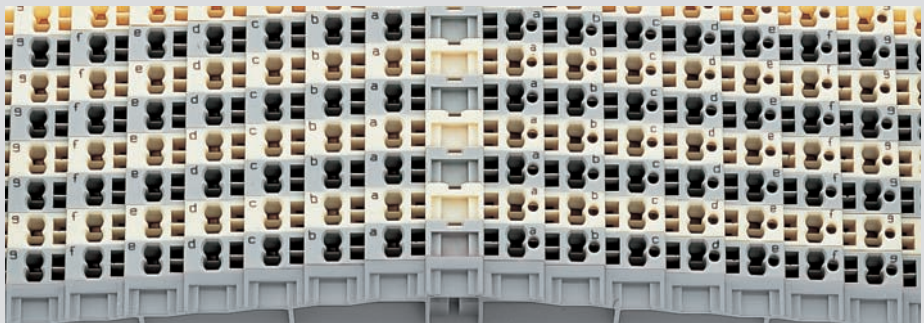


## Removal



. . . move terminal block laterally and remove from the rail with a levering action

## Marking

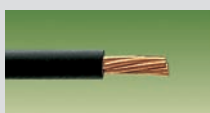


Marking of clamping units by direct printing



CAGE CLAMP® connects the following copper wires:\*

solid



stranded



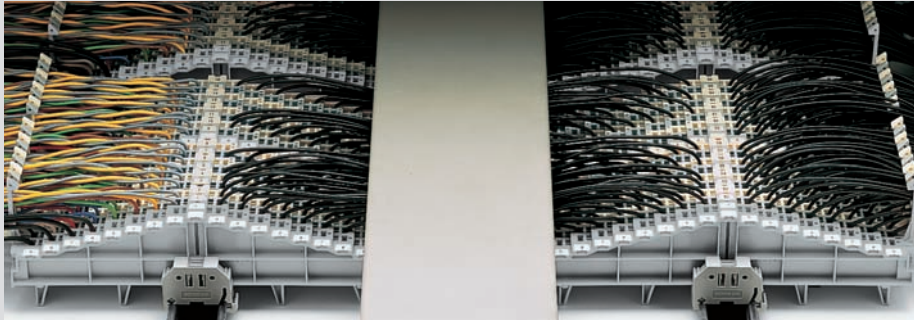
fine stranded, also with tinned single strands

\* For aluminum wire see notes in section 15!



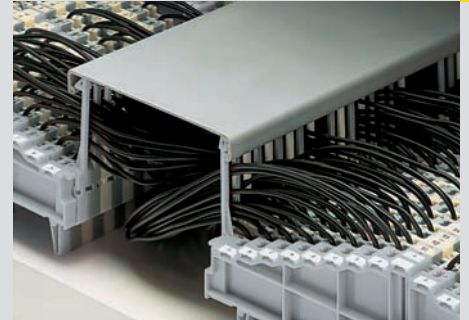
# ... Description and Handling

## Matrix patching assembly



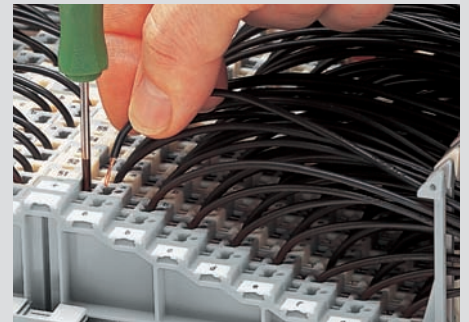
Example left: Main cables fed through locking clips on the field side  
right: Control cables fed between locking clips  
center: Wiring of the patching sides

## Wiring space

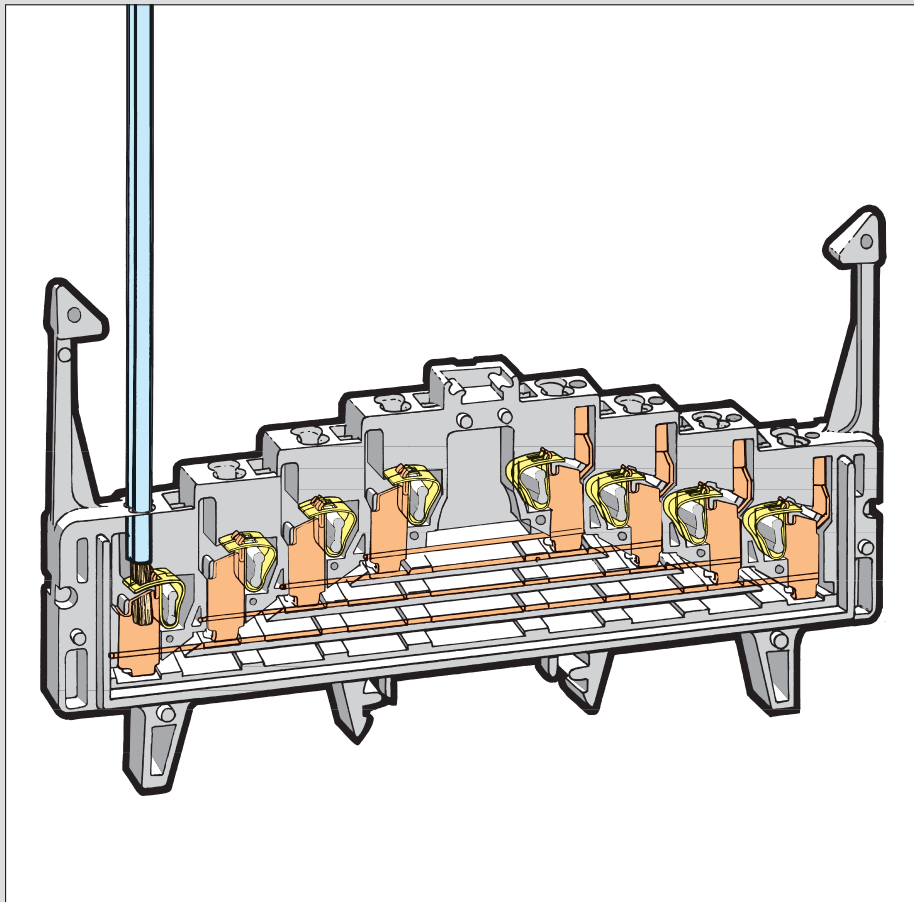


When using terminal blocks with locking clips the wiring space between the terminal strips can be covered with a wiring duct cover\*.  
(\*for suitable suppliers – please contact factory)

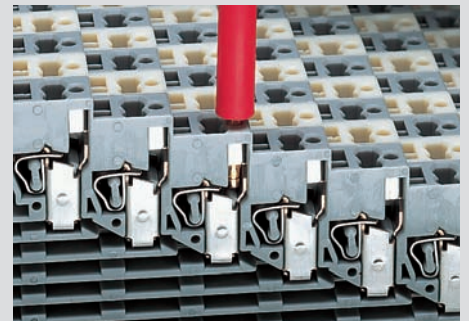
## CAGE CLAMP® connection



Connection/removal of conductors using a screwdriver (2.5 x 0.4) mm

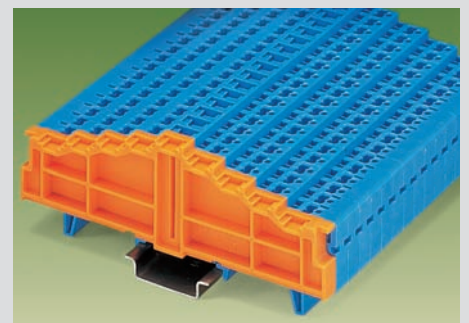


## Testing



Special test contact for test plug 2.3 mm/0.091 in Ø

## Ex i versions



Blue terminal blocks for matrix patching are suitable for Ex i applications



Marking of coordinates with the WMB Multi marking system or WSB Quick marking system



fine-stranded wire – tip bonded



fine-stranded wire with crimped ferrule ①

① Max. cross section for uninsulated ferrules 1 mm<sup>2</sup>/AWG 18, for insulated ferrules 0.75 mm<sup>2</sup>/AWG 20.



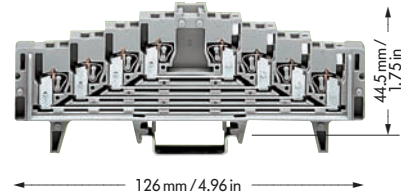
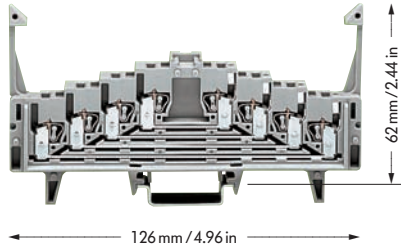
fine-stranded wire with crimped pin terminal



# 4-Level Terminal Blocks for Matrix Patching 1.5 mm<sup>2</sup> / AWG 16, Series 727

<p>2 x 0.08 – 1.5 mm<sup>2</sup>   2 x AWG 28 – 16 250 V/4 kV/3 ①   300 V, 10 A ② 12 A   300 V, 10 A ③</p> <p>Terminal block width 7.62 mm / 0.3 in 8 – 10 mm / 0.35 in</p> <p>* ① ② ③ CCA ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺</p>	<p>2 x 0.08 – 1.5 mm<sup>2</sup>   2 x AWG 28 – 16 250 V/4 kV/3 ①   300 V, 10 A ② 12 A   300 V, 10 A ③</p> <p>Terminal block width 7.62 mm / 0.3 in 8 – 10 mm / 0.35 in</p> <p>* ① ② ③ CCA ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺</p>
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- Ex i\*\* application
- ① 250 V 60 V = peak value  
4 kV ^ table 4, EN 50020  
3  
(see also section 15)
- ② 4 x pairs of contacts on each level
- ③ Suitable for Ex i applications



Description	Item No.	Item No.	Pack.-unit pcs	Item No.	Item No.	Pack.-unit pcs		
4-level terminal block for matrix patching ②, for DIN 35 rail acc. to EN 60715	with locking clips	for DIN 35 x 7.5	for DIN 35 x 15	without locking clips	for DIN 35 x 7.5	for DIN 35 x 15		
	grey	① 727-219 ④	727-229 ④	50	grey	① 727-220 ④	727-230 ④	50
	white	② 727-221 ④	727-231 ④	50	white	② 727-222 ④	727-232 ④	50
	blue	③ 727-223 ④	727-233 ④	50	blue	③ 727-224 ④	727-234 ④	50

### Accessories

Appropriate marking system **WMB/WSB** (see section 14)

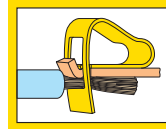
	4-level end plate, without printing	7.62 mm / 0.3 in thick		7.62 mm / 0.3 in thick			
	orange	727-217	25	orange	727-217	25	
	4-level end plate, numeric printing	7.62 mm / 0.3 in thick		7.62 mm / 0.3 in thick			
	orange	727-205	25	orange	727-205	25	
	4-level end plate, alphanumeric printing	7.62 mm / 0.3 in thick		7.62 mm / 0.3 in thick			
	orange	727-206	25	orange	727-206	25	
	4-level end plate, numeric printing	7.62 mm / 0.3 in thick		7.62 mm / 0.3 in thick			
	orange	727-207	25	orange	727-207	25	
	4-level end plate, alphanumeric printing	7.62 mm / 0.3 in thick		7.62 mm / 0.3 in thick			
	orange	727-208	25	orange	727-208	25	
	Wire harness support, see also page 11.19	grey	249-109	50	grey	249-109	50
	WSB Double marker carrier, for I/O markings in the terminal block center	4 mm / 0.157 in wide	209-128	200 (2 x 100)	4 mm / 0.157 in wide	209-128	200 (2 x 100)
	Screwless end stop	6 mm / 0.236 in wide	249-116	100 (4 x 25)	6 mm / 0.236 in wide	249-116	100 (4 x 25)
		10 mm / 0.394 in wide	249-117	50 (2 x 25)	10 mm / 0.394 in wide	249-117	50 (2 x 25)
	Test plug, 2.3 mm / 0.091 in Ø with cable 500 mm / 1'7.7"	yellow	210-137	50 (5 x 10)	yellow	210-137	50 (5 x 10)
	Reducing test plug, from 4 mm / 0.157 in Ø socket to 2.3 mm / 0.091 in Ø plug	red	210-297	100 (4 x 25)	red	210-297	100 (4 x 25)
	Wire commoning chain, insulated, 6 A, 32 connections, 0.5 mm <sup>2</sup> , max. 50 V	grey	709-107	1	grey	709-107	1
	Insulation stop, 8 pcs / strip						
	0.08–0.14 mm <sup>2</sup> "f-st" / 0.08–0.2 mm <sup>2</sup> "s"	white	727-197	200 (8 x 25)	white	727-197	200 (8 x 25)
	0.14–0.25 mm <sup>2</sup> "f-st" / 0.25 mm <sup>2</sup> "s"	light grey	727-198	200 (8 x 25)	light grey	727-198	200 (8 x 25)
	0.25–0.5 mm <sup>2</sup> "s + f-st"	dark grey	727-199	200 (8 x 25)	dark grey	727-199	200 (8 x 25)











④ Additional item no. for terminal blocks with marking	0-1-2-3--3-2-1-0	...-.../021-000
	a-b-c-d--d-c-b-a	...-.../022-000
	3-2-1-0--0-1-2-3	...-.../023-000
	d-c-b-a--a-b-c-d	...-.../024-000

\* For further approvals with corresponding ratings see section 15.

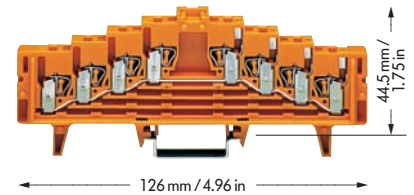
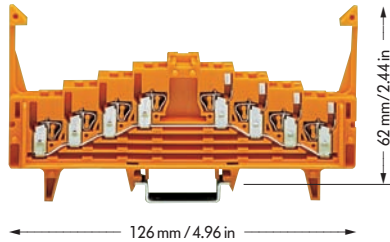
\*\* if approved by the works expert

# 4-Level Same Potential Terminal Blocks 1.5 mm<sup>2</sup> / AWG 16, Series 727



<p><b>2 x 0.08 – 1.5 mm<sup>2</sup></b>   <b>2 x AWG 28 – 16</b>  <b>250 V/4 kV/3 ①</b>   <b>300 V, 10 A ②</b>  <b>18 A</b>   <b>300 V, 10 A ③</b></p> <p><b>Terminal block width 7.62 mm / 0.3 in</b>   <b>8 – 10 mm / 0.35 in</b></p> <p>*    </p>	<p><b>2 x 0.08 – 1.5 mm<sup>2</sup></b>   <b>2 x AWG 28 – 16</b>  <b>250 V/4 kV/3 ①</b>   <b>300 V, 10 A ②</b>  <b>18 A</b>   <b>300 V, 10 A ③</b></p> <p><b>Terminal block width 7.62 mm / 0.3 in</b>   <b>8 – 10 mm / 0.35 in</b></p> <p>*    </p>
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- ① 250 V = rated voltage  
 4 kV = rated surge voltage  
 3 = pollution degree  
 (see also section 15)
- ② All clamping units are connected to the same current bar



Description	Item No.	Item No.	Pack.-unit pcs	Item No.	Item No.	Pack.-unit pcs
<b>4-level same potential terminal block ②,</b> for DIN 35 rail acc. to EN 60715	<b>with</b>	for	for	<b>without</b>	for	for
	<b>locking clips</b>	DIN 35 x 7.5	DIN 35 x 15	<b>locking clips</b>	DIN 35 x 7.5	DIN 35 x 15
	orange	⑦ <b>727-225</b> ⑧	⑦ <b>727-235</b> ⑧	orange	⑦ <b>727-226</b> ⑧	⑦ <b>727-236</b> ⑧
	light grey	⑦ <b>727-227</b> ⑧	⑦ <b>727-237</b> ⑧	light grey	⑦ <b>727-228</b> ⑧	⑦ <b>727-238</b> ⑧
			50			50

### Accessories








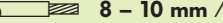




Appropriate marking system **WMB/WSB** (see section 14)

	<b>4-level end plate,</b> without printing	7.62 mm / 0.3 in thick		7.62 mm / 0.3 in thick	
	orange	<b>727-217</b>	25	orange	<b>727-217</b>
	<b>4-level end plate,</b> numeric printing	7.62 mm / 0.3 in thick		7.62 mm / 0.3 in thick	
	orange	<b>727-205</b>	25	orange	<b>727-205</b>
	<b>4-level end plate,</b> alphanumeric printing	7.62 mm / 0.3 in thick		7.62 mm / 0.3 in thick	
	orange	<b>727-206</b>	25	orange	<b>727-206</b>
	<b>4-level end plate,</b> numeric printing	7.62 mm / 0.3 in thick		7.62 mm / 0.3 in thick	
	orange	<b>727-207</b>	25	orange	<b>727-207</b>
	<b>4-level end plate,</b> alphanumeric printing	7.62 mm / 0.3 in thick		7.62 mm / 0.3 in thick	
	orange	<b>727-208</b>	25	orange	<b>727-208</b>
	<b>Wire harness support,</b> see also page 11.19	grey	<b>249-109</b>	grey	<b>249-109</b>
			50		50
	<b>WSB Double marker carrier,</b> for I/O markings in the terminal block center	4 mm / 0.157 in wide	<b>209-128</b>	4 mm / 0.157 in wide	<b>209-128</b>
			200 (2 x 100)		200 (2 x 100)
	<b>Screwless end stop</b>	6 mm / 0.236 in wide	<b>249-116</b>	6 mm / 0.236 in wide	<b>249-116</b>
		10 mm / 0.394 in wide	<b>249-117</b>	10 mm / 0.394 in wide	<b>249-117</b>
			100 (4 x 25)		100 (4 x 25)
			50 (2 x 25)		50 (2 x 25)
	<b>Test plug,</b> 2.3 mm / 0.091 in Ø with cable 500 mm / 1.77"	yellow	<b>210-137</b>	yellow	<b>210-137</b>
			50 (5 x 10)		50 (5 x 10)
	<b>Reducing test plug,</b> from 4 mm / 0.157 in Ø socket to 2.3 mm / 0.091 in Ø plug	red	<b>210-297</b>	red	<b>210-297</b>
			100 (4 x 25)		100 (4 x 25)
	<b>Wire commoning chain,</b> insulated, 6 A, 32 connections, 0.5 mm <sup>2</sup> , max. 50 V	grey	<b>709-107</b>	grey	<b>709-107</b>
			1		1
	<b>Insulation stop,</b> 8 pcs/strip				
	0.08–0.14 mm <sup>2</sup> "f-st" / 0.08–0.2 mm <sup>2</sup> "s"	white	<b>727-197</b>	white	<b>727-197</b>
	0.14–0.25 mm <sup>2</sup> "f-st" / 0.25 mm <sup>2</sup> "s"	light grey	<b>727-198</b>	light grey	<b>727-198</b>
	0.25–0.5 mm <sup>2</sup> "s + f-st"	dark grey	<b>727-199</b>	dark grey	<b>727-199</b>
			200 (8 x 25)		200 (8 x 25)
			200 (8 x 25)		200 (8 x 25)
			200 (8 x 25)		200 (8 x 25)

<b>③ Additional item no. for terminal blocks with marking</b>	0-1-2-3--3-2-1-0	.../021-000
	a-b-c-d--d-c-b-a	.../022-000
	3-2-1-0--0-1-2-3	.../023-000
	d-c-b-a--a-b-c-d	.../024-000

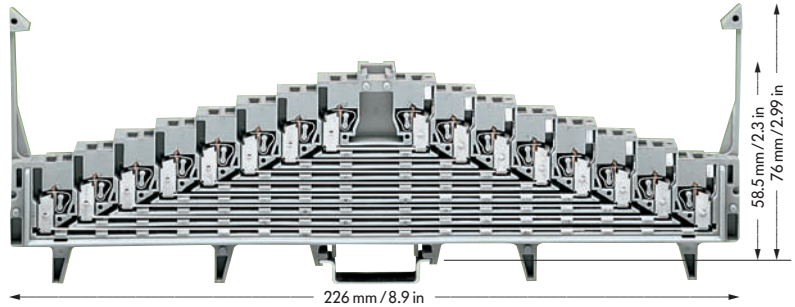
\* For further approvals with corresponding ratings see section 15.

# 8-Level Terminal Blocks for Matrix Patching 1.5 mm<sup>2</sup> / AWG 16, Series 727

<b>2 x 0.08 – 1.5 mm<sup>2</sup></b> <b>250 V/4 kV/3 ①</b> <b>12 A</b> <b>Terminal block width 7.62 mm / 0.3 in</b>  <b>8 – 10 mm / 0.35 in</b> <small>*    </small>	<b>2 x AWG 28 – 16</b> <b>300 V, 10 A </b> <b>300 V, 10 A </b> <b>Terminal block width 7.62 mm / 0.3 in</b>  <b>8 – 10 mm / 0.35 in</b> <small>*    </small>
--	--

**Note:** Only combine terminal blocks and end plates that are colored **grey/white/light grey** or **orange/blue**!














- |                      |   |
|----------------------|---|
|                      | Ex i** application  |
| ① 250 V<br>4 kV<br>3 | 60 V = peak value<br>^ table 4, EN 50020<br>(see also section 15) |
| ②                    | 8 x pairs of contacts on each level                               |
| ③                    | Suitable for Ex i applications                                    |



Description	Item No.	Item No.	Pack.-unit pcs	Item No.	Item No.	Pack.-unit pcs	
<b>8-level terminal block for matrix patching ②,</b> for DIN 35 rail acc. to EN 60715	<b>with</b>	for	for	<b>without</b>	for	for	
	<b>locking clips</b>	DIN 35 x 7.5	DIN 35 x 15	<b>locking clips</b>	DIN 35 x 7.5	DIN 35 x 15	
	grey	① 727-119 ④	727-129 ④	25	grey	① 727-120 ④ 727-130 ④	25
	white	① 727-121 ④	727-131 ④	25	white	① 727-122 ④ 727-132 ④	25
	blue	③ 727-123 ④	727-133 ④	25	blue	③ 727-124 ④ 727-134 ④	25

### Accessories

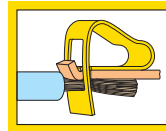
Appropriate marking system **WMB/WSB** (see section 14)

	<b>8-level end plate,</b> without printing	orange	grey	blue	white	light grey		
		7.62 mm / 0.3 in thick						
		<b>727-117</b>	<b>727-113</b>	<b>727-114</b>	<b>727-115</b>	<b>727-116</b>	25	
	numeric printing	7.62 mm / 0.3 in thick 0-1-2-3-4-5-6-7-7-6-5-4-3-2-1-0						
		<b>727-105</b>	<b>727-155</b>	<b>727-159</b>	<b>727-163</b>	<b>727-167</b>	25	
	alphanumeric printing	7.62 mm / 0.3 in thick a-b-c-d-e-f-g-h-h-g-f-e-d-c-b-a						
		<b>727-106</b>	<b>727-156</b>	<b>727-160</b>	<b>727-164</b>	<b>727-168</b>	25	
	numeric printing	7.62 mm / 0.3 in thick 7-6-5-4-3-2-1-0--0-1-2-3-4-5-6-7						
		<b>727-107</b>	<b>727-157</b>	<b>727-161</b>	<b>727-165</b>	<b>727-169</b>	25	
	alphanumeric printing	7.62 mm / 0.3 in thick h-g-f-e-d-c-b-a--a-b-c-d-e-f-g-h						
		<b>727-108</b>	<b>727-158</b>	<b>727-162</b>	<b>727-166</b>	<b>727-170</b>	25	
	<b>Wire harness support,</b> see also page 11.19	grey	<b>249-109</b>	50	grey	<b>249-109</b>	50	
	<b>WSB Double marker carrier,</b> for I/O markings in the terminal block center	4 mm / 0.157 in wide <b>209-128</b>			4 mm / 0.157 in wide <b>209-128</b>			200 (2 x 100)
	<b>WSB Quick marking system,</b> for I/O markings in the terminal block center	<b>209-933</b> to <b>209-992</b>			<b>209-933</b> bis <b>209-992</b>			5 cards 5 cards
		see section 8			see section 8			
	<b>Screwless end stop</b>	6 mm / 0.236 in wide	<b>249-116</b>	100 (4 x 25)	6 mm / 0.236 in wide	<b>249-116</b>	100 (4 x 25)	
		10 mm / 0.394 in wide	<b>249-117</b>	50 (2 x 25)	10 mm / 0.394 in wide	<b>249-117</b>	50 (2 x 25)	
	<b>Test plug,</b> 2.3 mm / 0.091 in Ø with cable 500 mm / 17.7"	yellow	<b>210-137</b>	50 (5 x 10)	yellow	<b>210-137</b>	50 (5 x 10)	
	<b>Reducing test plug,</b> from 4 mm / 0.157 in Ø socket to 2.3 mm / 0.091 in Ø plug	red	<b>210-297</b>	100 (4 x 25)	red	<b>210-297</b>	100 (4 x 25)	
	<b>Wire commoning chain,</b> insulated, 6 A, 32 connections, 0.5 mm <sup>2</sup> , max. 50 V	grey	<b>709-107</b>	1	grey	<b>709-107</b>	1	
	<b>Insulation stop,</b> see right page							
<b>④ Additional item no. for terminal blocks with marking</b>		0-1-2-3-4-5-6-7-7-6-5-4-3-2-1-0			...-.../001-000			
		a-b-c-d-e-f-g-h-h-g-f-e-d-c-b-a			...-.../002-000			
		7-6-5-4-3-2-1-0--0-1-2-3-4-5-6-7			...-.../003-000			
		h-g-f-e-d-c-b-a--a-b-c-d-e-f-g-h			...-.../004-000			

\* For further approvals with corresponding ratings see section 15.

\*\* if approved by the works expert

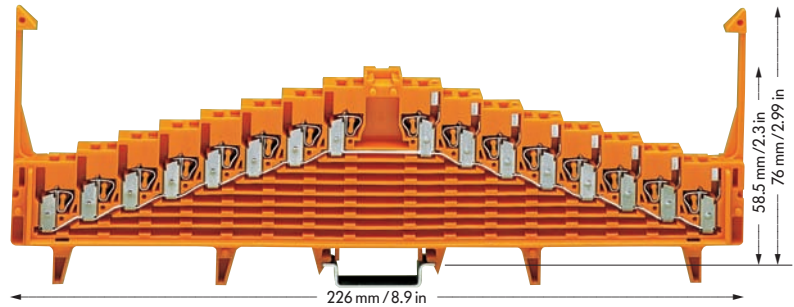
# 8-Level Same Potential Terminal Blocks 1.5 mm<sup>2</sup> / AWG 16, Series 727



<b>2 x 0.08 – 1.5 mm<sup>2</sup></b> <b>250 V/4 kV/3 ①</b> <b>18 A</b> <b>Terminal block width 7.62 mm / 0.3 in</b> <b>8 – 10 mm / 0.35 in</b> *	<b>2 x AWG 28 – 16</b> <b>300 V, 10 A ②</b> <b>300 V, 10 A ③</b> <b>Terminal block width 7.62 mm / 0.3 in</b> <b>8 – 10 mm / 0.35 in</b> *	<b>2 x 0.08 – 1.5 mm<sup>2</sup></b> <b>250 V/4 kV/3 ①</b> <b>18 A</b> <b>Terminal block width 7.62 mm / 0.3 in</b> <b>8 – 10 mm / 0.35 in</b> *	<b>2 x AWG 28 – 16</b> <b>300 V, 10 A ②</b> <b>300 V, 10 A ③</b> <b>Terminal block width 7.62 mm / 0.3 in</b> <b>8 – 10 mm / 0.35 in</b> *
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**Note:** Only combine terminal blocks and end plates that are colored **grey/white/light grey** or **orange/blue**!

- ① 250 V = rated voltage  
4 kV = rated surge voltage  
3 = pollution degree  
(see also section 15)
- ② All clamping units are connected to the same current bar



Description	Item No.	Item No.	Pack.-unit pcs	Item No.	Item No.	Pack.-unit pcs
<b>8-level same potential terminal block ②,</b> for DIN 35 rail acc. to EN 60715	<b>with</b>	for	for	<b>without</b>	for	for
	<b>locking clips</b>	DIN 35 x 7.5	DIN 35 x 15	<b>locking clips</b>	DIN 35 x 7.5	DIN 35 x 15
	orange ●	<b>727-125 ③</b>	<b>727-135 ③</b>	orange ●	<b>727-126 ③</b>	<b>727-136 ③</b>
	light grey ○	<b>727-127 ③</b>	<b>727-137 ③</b>	light grey ○	<b>727-128 ③</b>	<b>727-138 ③</b>
			25			25

### Accessories

Appropriate marking system **WMB/WSB** (see section 14)

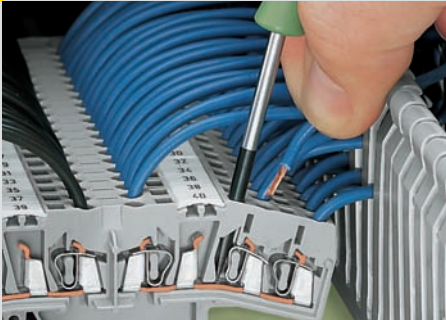
	<b>8-level end plate,</b>	orange	grey	blue	white	light grey	
	without printing	7.62 mm / 0.3 in thick	<b>727-117</b>	<b>727-113</b>	<b>727-114</b>	<b>727-115</b>	<b>727-116</b>
	numeric printing	7.62 mm / 0.3 in thick	0-1-2-3-4-5-6-7-7-6-5-4-3-2-1-0	<b>727-105</b>	<b>727-155</b>	<b>727-159</b>	<b>727-163</b>
	alphanumeric printing	7.62 mm / 0.3 in thick	a-b-c-d-e-f-g-h--h-g-f-e-d-c-b-a	<b>727-106</b>	<b>727-156</b>	<b>727-160</b>	<b>727-164</b>
	numeric printing	7.62 mm / 0.3 in thick	7-6-5-4-3-2-1-0--0-1-2-3-4-5-6-7	<b>727-107</b>	<b>727-157</b>	<b>727-161</b>	<b>727-165</b>
	alphanumeric printing	7.62 mm / 0.3 in thick	h-g-f-e-d-c-b-a--a-b-c-d-e-f-g-h	<b>727-108</b>	<b>727-158</b>	<b>727-162</b>	<b>727-166</b>
	<b>Wire harness support,</b> see also page 11.19	grey	<b>249-109</b>		50	grey	<b>249-109</b>
	<b>WSB Double marker carrier,</b> for I/O markings in the terminal block center	4 mm / 0.157 in wide	<b>209-128</b>		200 (2 x 100)	4 mm / 0.157 in wide	<b>209-128</b>
	<b>Screwless end stop</b>	6 mm / 0.236 in wide	<b>249-116</b>		100 (4 x 25)	6 mm / 0.236 in wide	<b>249-116</b>
		10 mm / 0.394 in wide	<b>249-117</b>		50 (2 x 25)	10 mm / 0.394 in wide	<b>249-117</b>
	<b>Test plug,</b> 2.3 mm / 0.091 in Ø with cable 500 mm / 1.77"	yellow	<b>210-137</b>		50 (5 x 10)	yellow	<b>210-137</b>
	<b>Reducing test plug,</b> from 4 mm / 0.157 in Ø socket to 2.3 mm / 0.091 in Ø plug	red	<b>210-297</b>		100 (4 x 25)	red	<b>210-297</b>
	<b>Wire commoning chain,</b> insulated, 6 A, 32 connections, 0.5 mm <sup>2</sup> , max. 50 V	grey	<b>709-107</b>		1	grey	<b>709-107</b>
	<b>Insulation stop,</b> 8 pcs/strip						
	0.08–0.14 mm <sup>2</sup> "f-st"/0.08–0.2 mm <sup>2</sup> "s"	white	<b>727-197</b>		200 (8 x 25)	white	<b>727-197</b>
	0.14–0.25 mm <sup>2</sup> "f-st"/0.25 mm <sup>2</sup> "s"	light grey	<b>727-198</b>		200 (8 x 25)	light grey	<b>727-198</b>
	0.25–0.5 mm <sup>2</sup> "s + f-st"	dark grey	<b>727-199</b>		200 (8 x 25)	dark grey	<b>727-199</b>

<b>③ Additional item no. for terminal blocks with marking</b>	0-1-2-3-4-5-6-7-7-6-5-4-3-2-1-0	...../001-000
	a-b-c-d-e-f-g-h--h-g-f-e-d-c-b-a	...../002-000
	7-6-5-4-3-2-1-0--0-1-2-3-4-5-6-7	...../003-000
	h-g-f-e-d-c-b-a--a-b-c-d-e-f-g-h	...../004-000

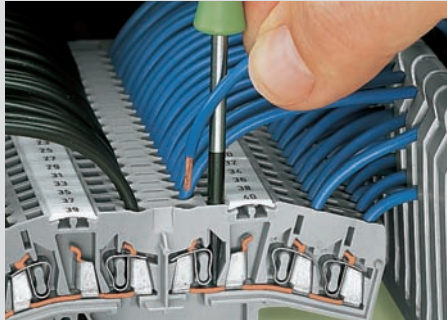
\* For further approvals with corresponding ratings see section 15.



# Rail-Mounted Terminal Blocks for Matrix Patching with CAGE CLAMP® Description and Handling



Terminal blocks for matrix patching.  
Connection/removal of wires on the terminal blocks sides

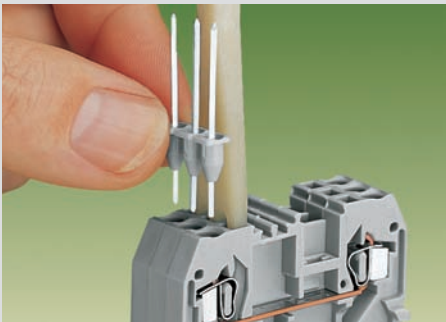


Terminal blocks for matrix patching.  
Connection/removal in the terminal block center



Used as disconnect terminal block.  
Inserting disconnect jumpers

## Pin modules

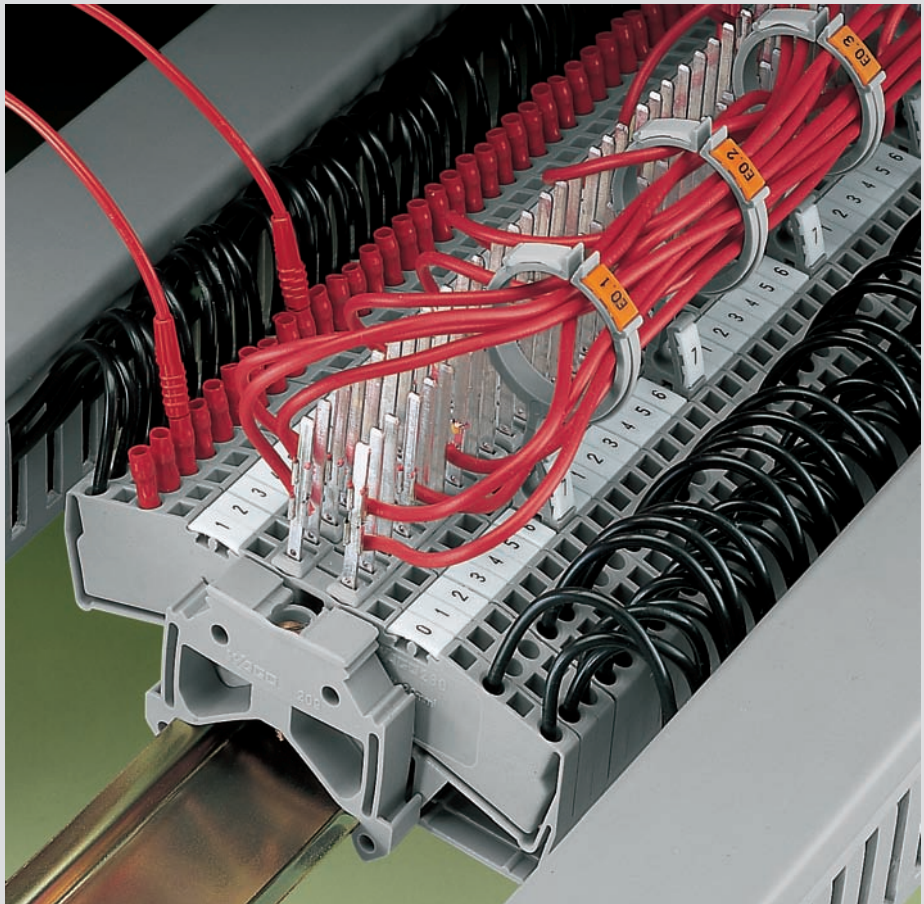


Insertion of a pin module shown with terminal blocks series 280

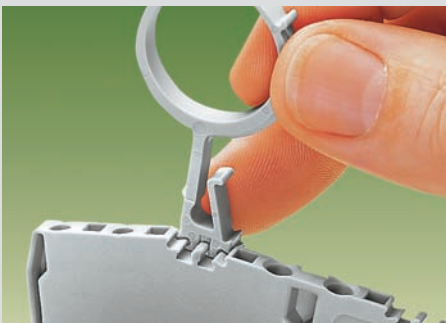
## Comb type jumper bars



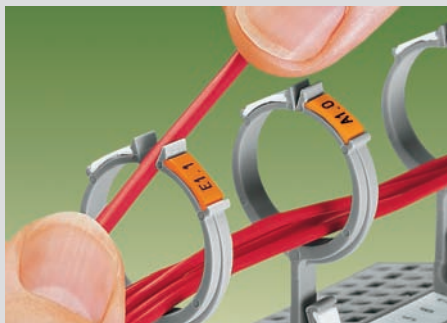
Used as potential multiplication.  
Insertion of a 10-way comb type jumper bar (only possible in the center)



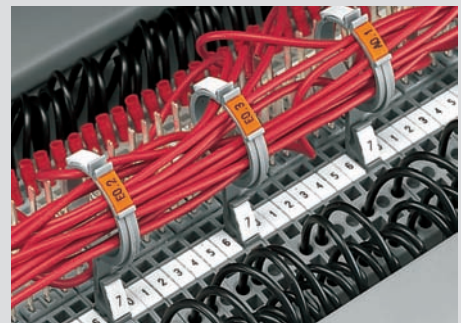
## Wire harness support



Introduction of a wire harness support into the marker slot



Insertion of a cable into the wire harness support



2 x group marking on top  
1 x terminal block marking at the bottom

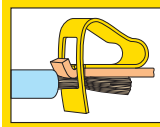
CAGE CLAMP® connects the following copper wires:\*

- solid
- fine-stranded wire – tip bonded
- stranded
- fine-stranded wire with crimped ferrule\*\*
- fine-stranded, also with tinned single strands
- fine-stranded wire with crimped pin terminal

\* For aluminum wire see notes in section 15!

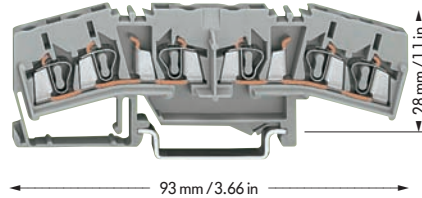
\*\* When using wires with ferrules, it is necessary to use a terminal block one size larger than the nominal cross section of the wire.

# Rail-Mounted Terminal Blocks for Matrix Patching 2.5 mm<sup>2</sup> / AWG 12, Series 280 Wire Harness Support



	<b>0.08 – 2.5 mm<sup>2</sup></b> <b>800 V/8 kV/3 ①</b> <b>20 A</b>	<b>AWG 28 – 12</b> <b>300 V, 10 A</b>	<b>Wire harness support</b>
	<b>Terminal block width 5 mm / 0.197 in</b> <b>8 – 9 mm / 0.33 in</b>		
	*  BV		

① 800 V = rated voltage  
 8 kV = rated surge voltage  
 3 = pollution degree  
 (see also section 10)  
 800 V/8 kV/3 against ground (earth) and adjacent terminal blocks.  
 500 V/6 kV/3 between both current rails.  
 (If used as disconnect terminal block or multiplier of potential)



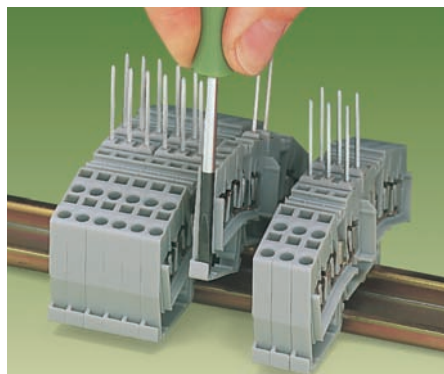
Description	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs												
<b>Terminal block for matrix patching</b> , for DIN 35 rail	<b>3-conductor double potential terminal block</b>		<b>Wire harness support</b>													
grey	<b>280-675</b> ●	50	grey	<b>249-109</b> ● 50												
<b>Attention! These 3-conductor double potential terminal blocks cannot be commonded with adjacent jumpers!</b>																
<b>Accessories</b>	Appropriate marking system <b>WMB/WSB</b> (see section 14)			<b>Application notes</b>												
	<b>End and intermediate plate</b>	5 mm / 0.197 in thick		The maximum number of fine-stranded conductors which can be supported by the system depends on the wire size: <table style="margin-left: 20px;"> <tr> <td>0.25 mm<sup>2</sup>/AWG 24</td> <td>200 conductors</td> </tr> <tr> <td>0.5 mm<sup>2</sup>/AWG 20</td> <td>95 conductors</td> </tr> <tr> <td>0.75 mm<sup>2</sup>/AWG 18</td> <td>75 conductors</td> </tr> <tr> <td>1 mm<sup>2</sup>/AWG 18</td> <td>65 conductors</td> </tr> <tr> <td>1.5 mm<sup>2</sup>/AWG 16</td> <td>45 conductors</td> </tr> <tr> <td>2.5 mm<sup>2</sup>/AWG 14</td> <td>30 conductors</td> </tr> </table>	0.25 mm <sup>2</sup> /AWG 24	200 conductors	0.5 mm <sup>2</sup> /AWG 20	95 conductors	0.75 mm <sup>2</sup> /AWG 18	75 conductors	1 mm <sup>2</sup> /AWG 18	65 conductors	1.5 mm <sup>2</sup> /AWG 16	45 conductors	2.5 mm <sup>2</sup> /AWG 14	30 conductors
0.25 mm <sup>2</sup> /AWG 24	200 conductors															
0.5 mm <sup>2</sup> /AWG 20	95 conductors															
0.75 mm <sup>2</sup> /AWG 18	75 conductors															
1 mm <sup>2</sup> /AWG 18	65 conductors															
1.5 mm <sup>2</sup> /AWG 16	45 conductors															
2.5 mm <sup>2</sup> /AWG 14	30 conductors															
	orange	<b>280-333</b>	25													
	grey	<b>280-325</b>	25													
	<b>Alternate comb type jumper bar</b> , insulated,	2-way	<b>280-492</b>		200 (8 x 25)											
	$I_N = I_N$ of terminal block															
	<b>Disconnect jumper terminal block</b> , orange,	with pull-tab	<b>280-494</b>	200 (8 x 25)												
	$I_N = I_N$ of terminal block	2-way														
	<b>Comb type jumper bar</b> , insulated,	2-way	<b>280-482</b>	200 (8 x 25)												
	$I_N = I_N$ of terminal block	3-way	<b>280-483</b>	200 (8 x 25)												
		10-way	<b>280-490</b>	50 (2 x 25)												
	<b>Operating tool</b> , insulated, for comb jumpers	2-way	<b>280-432</b>	1												
		3-way	<b>280-433</b>	1												
		10-way	<b>280-440</b>	1												
	<b>2-pole pin modules</b> , for assembly on all front-entry rail-mounted term. blocks series 280	1 x 1 mm	<b>280-477</b>	for Wire-Wrap												
		0.8 x 1.6 mm	<b>280-475</b>	for Termi-Point												
		0.8 x 2.4 mm	<b>280-473</b>	for Termi-Point												
	<b>3-pole pin modules</b> , for assembly on all front-entry rail-mounted term. blocks series 280	1 x 1 mm	<b>280-478</b>	for Wire-Wrap												
		0.8 x 1.6 mm	<b>280-476</b>	for Termi-Point												
		0.8 x 2.4 mm	<b>280-474</b>	for Termi-Point												
<b>Application notes</b>																

In process automation systems, the matrix patch-board is an essential element in measurement and control techniques. Particularly in this kind of application, use of the WAGO wire harness support can make wiring easier and more obvious. WAGO 3-conductor front-entry double potential terminal blocks of the 280 series (with or without the addition of Wire-Wrap® or Termi-Point® pins) are particularly suitable in this application. They can be used for the linking of incoming field wires, from items such as measuring devices or servos etc., with the central process controller devices, such as control consoles, panelboards or PLCs, by means of matrix connections. The WAGO wire harness support elements are pushed into the terminal blocks (about every 8th one) to form an additional "cable-duct" above the wiring level of the terminal blocks. Two marker slots are provided in each, the top ones may be used for group marking, and the lower slot for marking the terminal block.

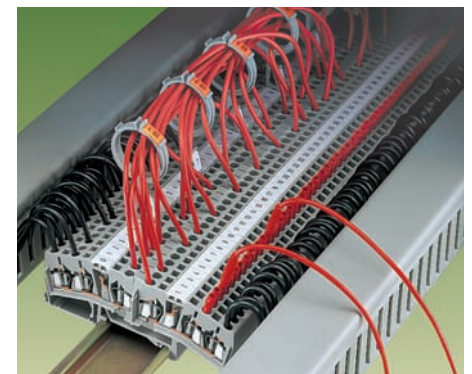
In case of these 5 mm / 0.197 in wide double potential front-entry terminal blocks two 3-conductor through terminal blocks are built into one insulating housing on one level. Compared with "standard" through terminal blocks the terminal block width is only 2.5 mm / 0.098 in.

On each side of the terminal block are marker slots for WAGO WSB markers. By means of the available accessories these terminal blocks can also be used as 4-conductor disconnect terminal blocks or multipliers of potential.

During mounting /dismounting using DIN 35 rail please note that due to the protruding webs the terminal blocks can only be inserted or removed from the strip after having displaced the adjacent terminal blocks (see also opposite photo).



Detaching: separate terminal strip, displace individual terminal block laterally and remove from the carrier rail



Terminal blocks for matrix patching with wire harness support

\* For further approvals with corresponding ratings see section 15.

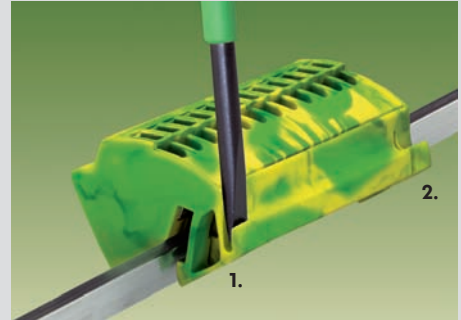


# Busbar Terminal Blocks with CAGE CLAMP® Description and Handling – Series 812

Using the series 812 busbar terminal blocks in switchgear cabinets and distribution boards allows simple and safe potential distribution on standard 10 x 3 mm busbars. Tool-less snapping of self-locking busbar terminal blocks onto the busbar enables quick and easy assembly as well as subsequent extension. The busbar terminal blocks are available in two different versions including conductor cross sections from AWG 16 to AWG 6 (1.5 mm<sup>2</sup> - 16 mm<sup>2</sup>).

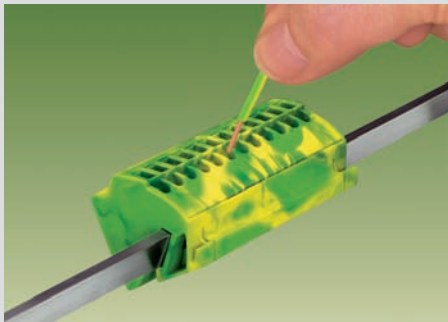


Snapping the ground (earth) busbar terminal block onto the N-busbar



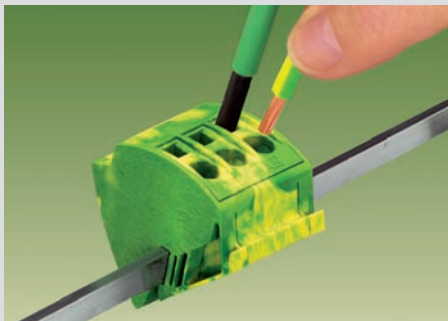
Unlock positions 1. and 2. to remove the ground (earth) busbar terminal block

## Connecting AWG 12 (4 mm<sup>2</sup>) wires



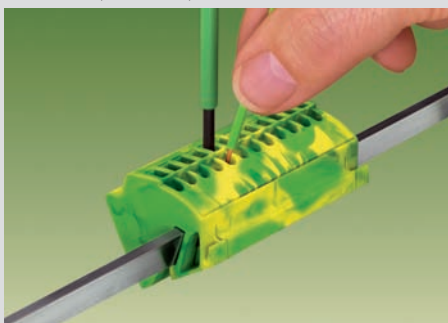
Due to the CAGE CLAMP®S connection, solid wires can be inserted directly into the AWG 12 (4 mm<sup>2</sup>) busbar terminal block, thus reducing wiring time significantly.

## Connecting AWG 6 (16 mm<sup>2</sup>) wires



Open the clamping unit with a screwdriver when connecting solid, stranded and fine-stranded wires.

## Removing AWG 12 (4 mm<sup>2</sup>) and AWG 6 (16 mm<sup>2</sup>) wires



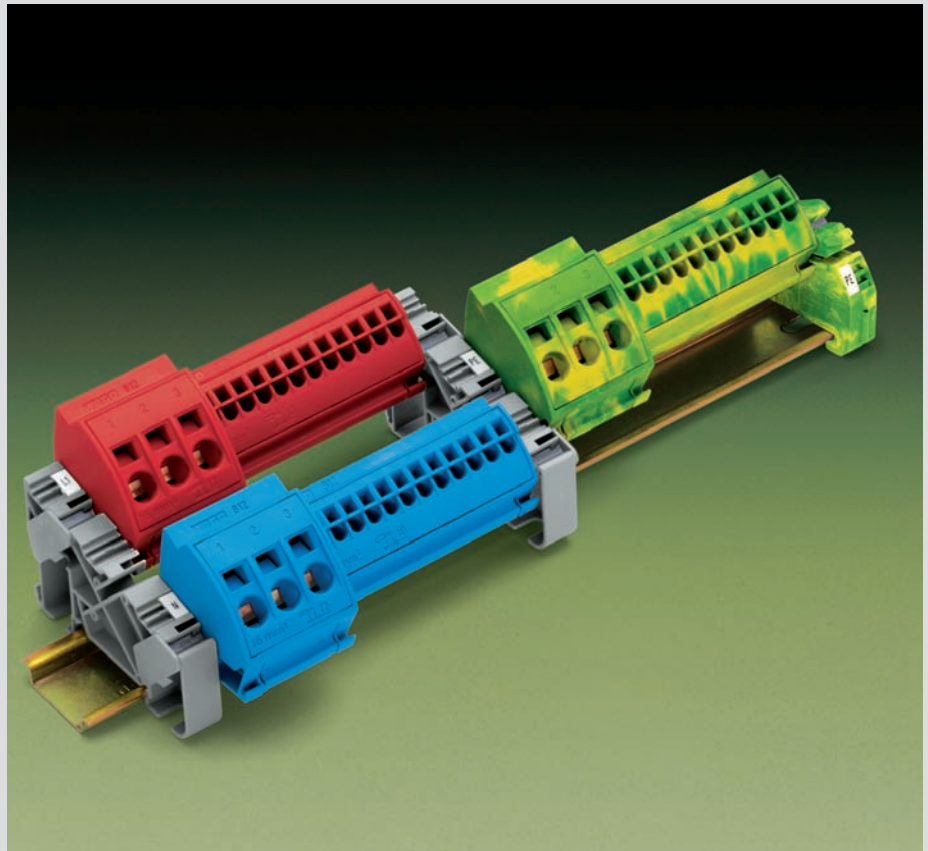
Open the clamping unit using a screwdriver

CAGE CLAMP® connects the following copper wires:\*

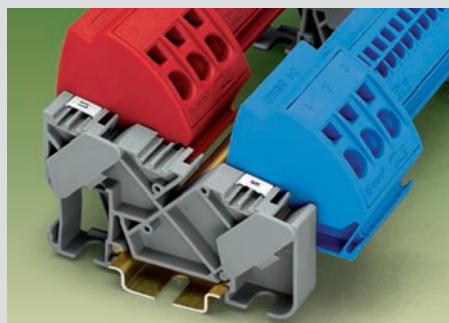
solid                      stranded                      fine-stranded, also with tinned single strands

\* For aluminum wire see notes in section 15!

## Combination of AWG 12 (4 mm<sup>2</sup>) and AWG 6 (16 mm<sup>2</sup>) busbar terminal blocks



## Busbar carrier 812-140



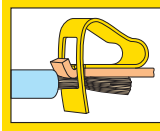
Carrier with 3 receptacles for 10 x 3 mm busbars with locking device for easy mounting of the busbars. The carriers can be snapped onto the DIN 35 rail or fixed on a panel with screw mounting.

## Ground (earth) busbar carrier 812-141

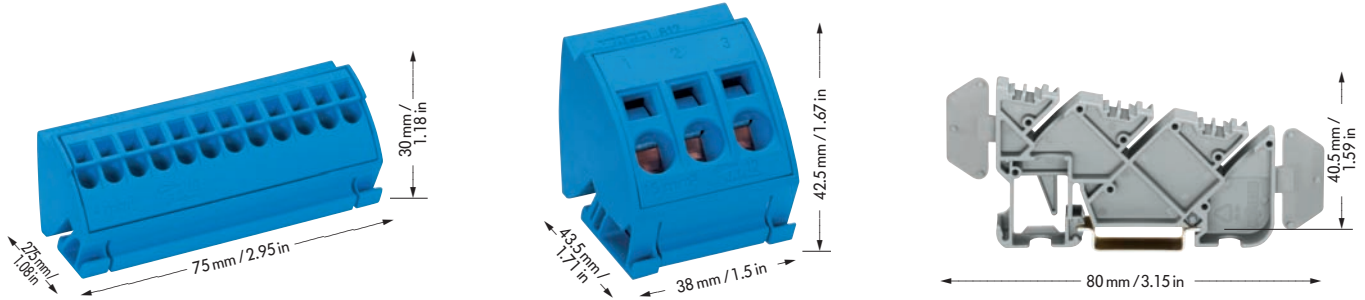


Carrier including a receptacle with locking device for 10 x 3 mm busbar. The contact between the busbar and the rail is made automatically by simply snapping the carrier onto the DIN 35 rail. One end of the busbar is mounted onto the ground (earth) busbar carrier, the other end is inserted into the middle position of the insulated busbar carrier.

# Busbar Terminal Blocks with CAGE CLAMP® Series 812

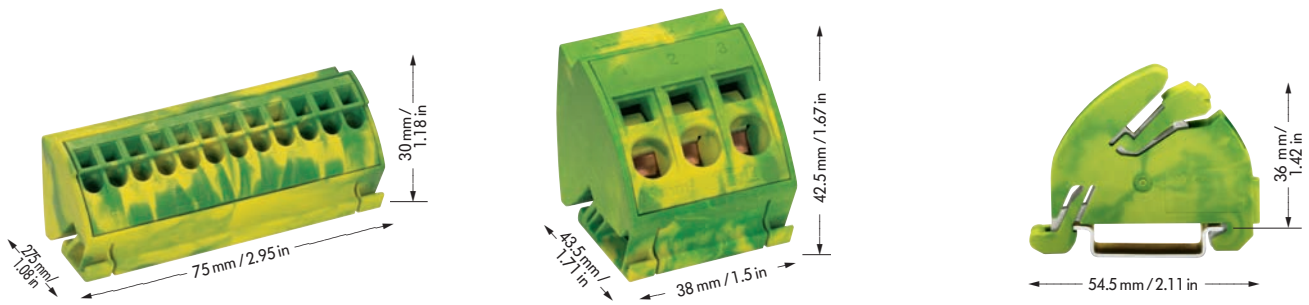


<p>12 x 0.5 – 4 mm<sup>2</sup>   AWG 20 – 12 1000 V / 6 kV / 3 Ø 96 A**</p> <p>Terminal block width 75 mm / 2.953 in 10 mm / 0.39 in</p>	<p>3 x 1.5 – 16 mm<sup>2</sup>   AWG 16 – 6 1000 V / 6 kV / 3* 96 A**</p> <p>Terminal block width 38 mm / 1.496 in 12 mm / 0.47 in</p>	<p>* Can only be used with insulated busbar carrier 812-140 and cover correctly mounted at the end of the busbar.</p>
--	--	---



Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
<b>Busbar terminal blocks with CAGE CLAMP®S 4 mm<sup>2</sup>/AWG 12</b>		<b>Busbar terminal blocks with CAGE CLAMP® 16 mm<sup>2</sup>/AWG 6</b>		<b>Insulated busbar carrier 812-140</b>	
light grey	812-101	10	light grey	812-111	12
dark grey	812-102	10	dark grey	812-112	12
red	812-103	10	red	812-113	12
blue	812-104	10	blue	812-114	12
				Each busbar receptacle is equipped with one marking position for WMB or WSB markers.	

<p>12 x 0.5 – 4 mm<sup>2</sup>   AWG 20 – 12</p> <p>Terminal block width 75 mm / 2.953 in 10 mm / 0.39 in</p>	<p>3 x 1.5 – 16 mm<sup>2</sup>   AWG 16 – 6</p> <p>Terminal block width 38 mm / 1.496 in 12 mm / 0.47 in</p>
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Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
<b>Ground (earth) busbar terminal block with CAGE CLAMP®S 4 mm<sup>2</sup>/AWG 12</b>		<b>Ground (earth) busbar terminal block with CAGE CLAMP® 16 mm<sup>2</sup>/AWG 6</b>		<b>Ground (earth) busbar carrier with contact to DIN 35 rail</b>	
green-yellow	812-100	10	green-yellow	812-110	12
				suitable for WMB or WSB marking system	

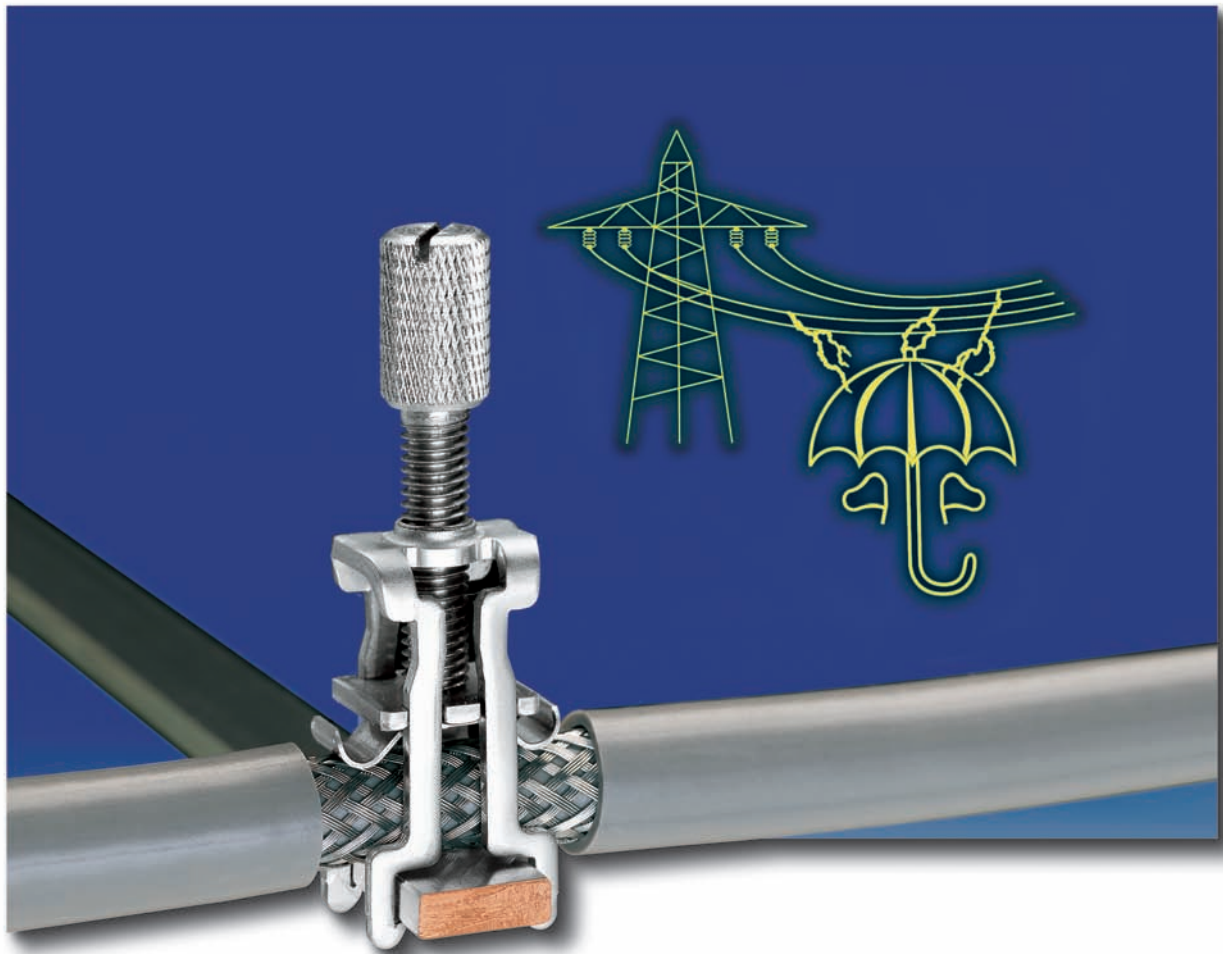
## Accessories

<p><b>N-busbar, copper, tinned,</b> 10 x 3 mm / 0.394 x 0.118 in, I<sub>N</sub> 140 A, 1000 mm / 3'3" long 210-133</p>	<p><b>N-busbar, copper, tinned,</b> 10 x 3 mm / 0.394 x 0.118 in, I<sub>N</sub> 140 A, 1000 mm / 3'3" long 210-133</p>
<p>** Current carrying capacity: With a maximum total current of 96 A, the clamping units of the busbar terminal block can be loaded with the rated current of the conductor cross sections approved. This only applies when 10 x 3 mm busbars are used. Other applications on request.</p>	<p><b>Finger guard cover for busbar terminal blocks 16 mm<sup>2</sup>,</b> serves as touchproof protection for unused clamping units yellow 284-400</p>

## Note:

The busbar system is **touch-proof** provided that there is no space left between the insulated busbar carriers and the busbar terminal blocks. Furthermore, the covers at the ends of the busbar and the finger guard covers of the unused clamping units of the AWG 6 (16 mm<sup>2</sup>) terminal block must be correctly mounted.





The shield (screen) connecting system from WAGO offers high electrical and mechanical safety for very flexible applications.



## Shield (screen) connecting system





Mounting options based on application, description and handling \_\_\_\_\_ 12.3

Shield (screen) clamping saddles    Series 790 \_\_\_\_\_ 12.4 – 12.5




# 12 Shield (Screen) Connecting System

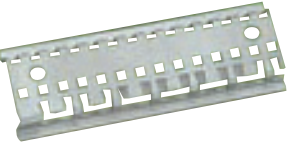

## – Product Summary –

**Series 790 Shield (screen) clamping saddle**

			
11 mm / 0.433 in wide	19 mm / 0.748 in wide	27 mm / 1.063 in wide	43 mm / 1.693 in wide
Page 12.4	Page 12.4	Page 12.5	Page 12.5


**Series 790 Carrier**

		
with grounding foot bar 90° to the rail	with grounding foot bar parallel to the rail	with 2 grounding feet bar parallel to the rail
Page 12.4	Page 12.4	Page 12.4

<b>Series 790 Carrier rail</b>	<b>Stand off</b>
	
with special perforations	for special perforated carrier rail
Page 12.4	Page 12.4

<b>Series 790 Insulated mounting foot</b>	<b>Straight busbar</b>
	
Page 12.4	for insulated mounting foot
	Page 12.4

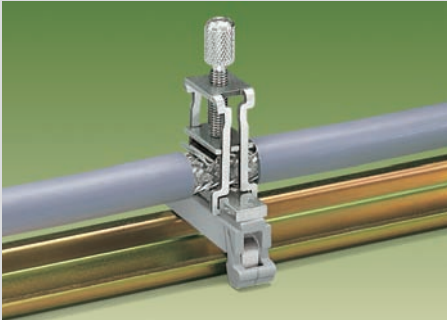
**Series 790 U-shaped busbar**



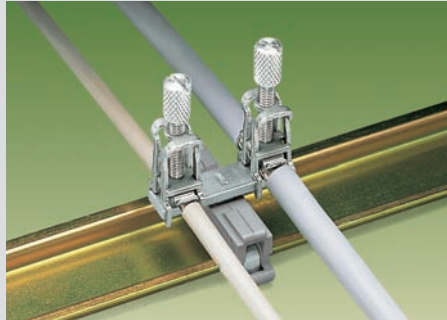
Cu 10 mm (0.394 in) x 3 mm (0.118 in)

Pages 12.4/12.5

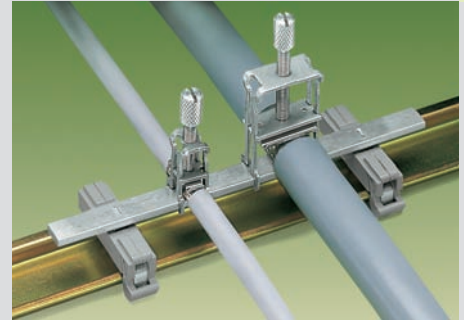
# Shield (Screen) Connecting System Description and Handling – Series 790



Carrier with grounding foot\*  
45 mm/1.772 in long, busbar 90° to the rail  
Item No. 790-113



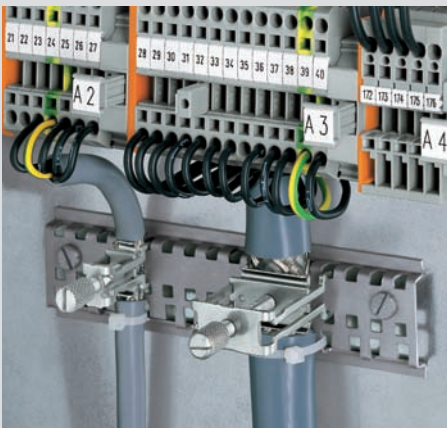
Carrier with grounding foot\*  
45 mm/1.772 in long, busbar parallel to the rail  
Item No. 790-114



Carrier with 2 grounding feet\*  
125 mm/4.921 in long, busbar parallel to the rail  
Item No. 790-115

\*for all sizes of shield (screen) clamping saddles

## Applications



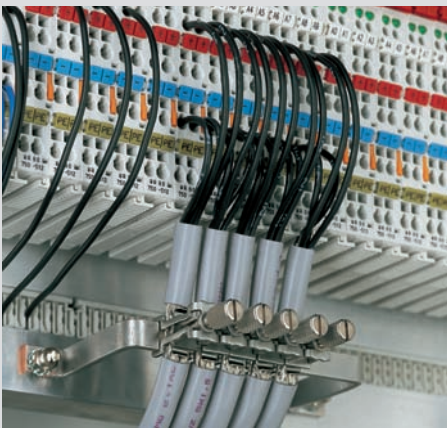
– on special slotted carrier rail



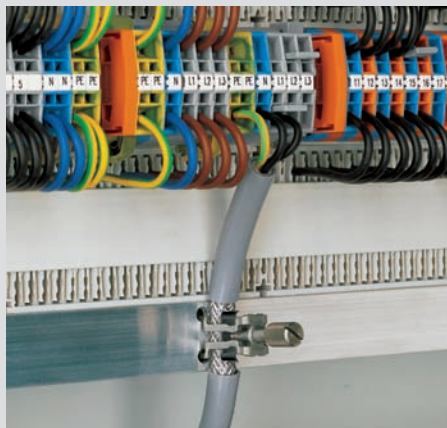
– carrier with grounding foot, busbar parallel to the rail



– insulated mounting carriers for a common shield (screen) reference potential, independent of the housing potential

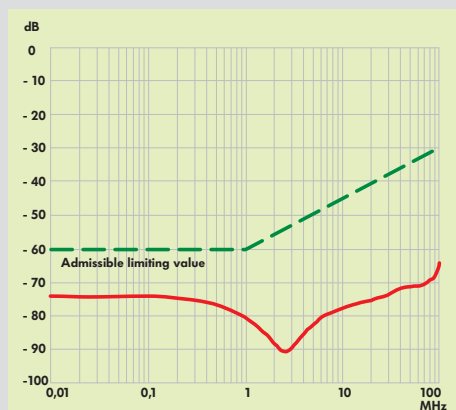


– U-shaped copper busbar  
10 mm (0.394 in) x 3 mm (0.118 in)



– snap into any metal plate up to max. thickness  
3 mm/0.118 in

## Negative shield (screen) attenuation

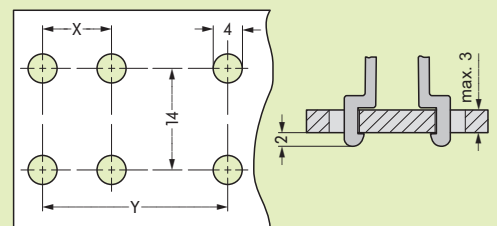


The WAGO shield (screen) connecting system is highly effective because the clamping unit can be brought very close to the unshielded part of the cable. Additionally, the spring material is part of the clamping saddle, giving good electrical connection and compensating for any deformation in the braiding. The system also acts as a partial strain relief.

## Hole dimensions for panel mounting

Shield (screen) clamping saddle size

Distance X	11 mm	9.5 mm
Distance Y	19 mm	17.5 mm
	27 mm	25.5 mm
	43 mm	41.5 mm














# 12 Shield (Screen) Clamping Saddles

4

	<b>Shield (screen) clamping saddle, 11 mm / 0.433 in wide</b> <b>For conductors with a diameter of up to 8 mm / 0.315 in</b>	<b>Shield (screen) clamping saddle, 19 mm / 0.748 in wide</b> <b>For conductors with a diameter of 7 mm / 0.276 in to 16 mm / 0.63 in</b>
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**Note:**  
**Cannot be used for the connection of ground (earth) conductors!**

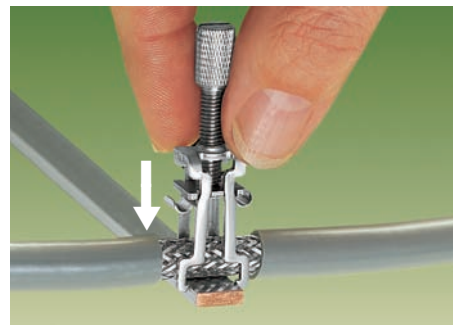


Description	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
<b>Shield (screen) clamping saddle, incl. knurled screw</b> Diameter of connectable conductor	<b>Shield (screen) clamping saddle, 11 mm/0.433 in wide</b> up to 8 mm/0.315 in		<b>Shield (screen) clamping saddle, 19 mm/0.748 in wide</b> 7 mm/0.276 in to 16 mm/0.63 in	
	<b>790-108</b>	50	<b>790-116</b>	50
<b>Accessories</b>				
 <b>Carrier w. grounding foot</b> , bar 90° to the rail, 10 mm (0.394 in) x 3 mm (0.118 in), bar a. foot – Cu w. tin plating	45 mm /1.772 in long		45 mm /1.772 in long	
	<b>790-113</b>	25	<b>790-113</b>	25
 <b>Carrier w. grounding foot</b> , bar parallel to the rail, 10 mm (0.394 in) x 3 mm (0.118 in), bar a. foot – Cu w. tin plating	45 mm /1.772 in long		45 mm /1.772 in long	
	<b>790-114</b>	25	<b>790-114</b>	25
 <b>Carrier w. 2 grounding feet</b> , bar parallel to the rail, 10 mm (0.394 in) x 3 mm (0.118 in), bar a. foot – Cu w. tin plating	125 mm /4.921 in long		125 mm /4.921 in long	
	<b>790-115</b>	25	<b>790-115</b>	25
 <b>Carrier rail</b> , special perforated, 1000 mm /3'.3" long, Cu with tin plating, special lengths on request		1		1
 <b>Stand off</b> , for special perforated carrier rail, use M5 size screw		200 (2 x 100)		200 (2 x 100)
 <b>Straight busbar</b> , 10 mm (0.394 in) x 3 mm (0.118 in), bar – Cu with tin plating	1000 mm /3'.3" long 30 mm /1.181 in long 50 mm /1.969 in long	<b>210-133</b> <b>790-133</b> <b>790-134</b>	20 (20 x 1) 20 (20 x 1) 20 (20 x 1)	1000 mm /3'.3" long 30 mm /1.181 in long 50 mm /1.969 in long
 <b>Insulated mounting foot</b> , for busbar, with standard screw M4 x 8 mm	grey	<b>790-100</b>	50 (2 x 25)	grey <b>790-100</b>
 <b>Insulated mounting foot</b> , for busbar, with sheet metal screw (3.5 x 9) mm	grey	<b>790-101</b>	50 (2 x 25)	grey <b>790-101</b>
 <b>U-shaped busbar</b> , 10 mm (0.394 in) x 3 mm (0.118 in), Cu with tin plating	Item nos. and dimensions, see drawing on page 12.5		Item nos. and dimensions, see drawing on page 12.5	

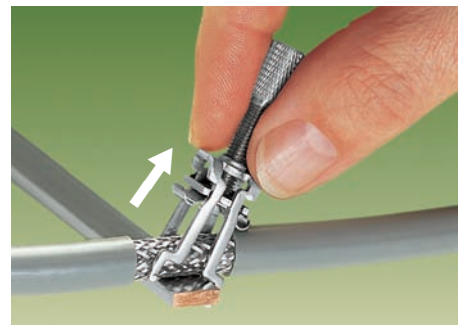
### Application notes

The shield (screen) clamping saddle is shipped ready for direct connection to the busbar 10 mm (0.394 in) x 3 mm (0.118 in) or to a drilled mounting plate. After connection, tighten the knurled screw to complete the installation.  
 Recommended tightening torque: 0.5 Nm

To remove a shield (screen) clamping saddle, unscrew until ratcheted mechanism is released, then slightly tip saddle and remove the clamping saddle.



Assembly

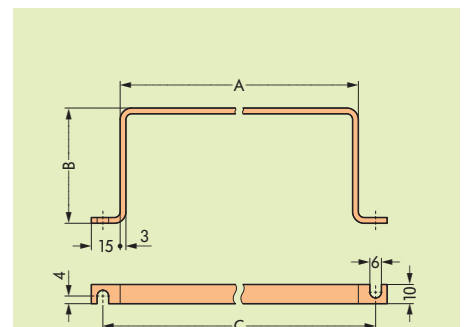


Removal

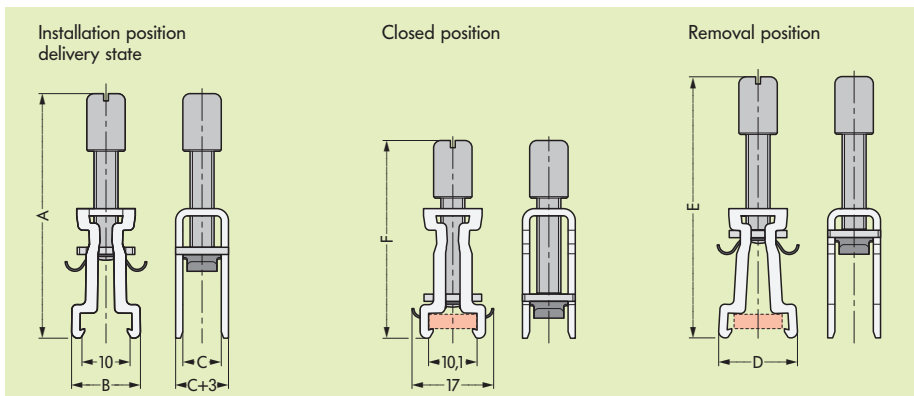
<b>Shield (screen) clamping saddle, 27 mm / 1.063 in wide</b> <b>For conductors with a diameter of 6 mm / 0.236 in to 24 mm / 0.944 in</b>	<b>Shield (screen) clamping saddle, 43 mm / 1.693 in wide</b> <b>For conductors with a diameter of 22 mm / 0.866 in to 40 mm / 1.575 in</b>	
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Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
Shield (screen) clamping saddle, 27 mm/1.063 in wide 6 mm/0.236 in to 24 mm/0.944 in		Shield (screen) clamping saddle, 43 mm/1.693 in wide 22 mm/0.866 in to 40 mm/1.575 in	
<b>790-124</b>	50	<b>790-140</b>	50
45 mm/1.772 in long		45 mm/1.772 in long	
<b>790-113</b>	25	<b>790-113</b>	25
45 mm/1.772 in long		45 mm/1.772 in long	
<b>790-114</b>	25	<b>790-114</b>	25
125 mm/4.921 in long		125 mm/4.921 in long	
<b>790-115</b>	25	<b>790-115</b>	25
<b>790-145</b>	1	<b>790-145</b>	1
<b>790-144</b>	200 (2 x 100)	<b>790-144</b>	200 (2 x 100)
1000 mm/3.3" long	<b>210-133</b> 20 (20 x 1)	1000 mm/3.3" long	<b>210-133</b> 20 (20 x 1)
30 mm/1.181 in long	<b>790-133</b> 20 (20 x 1)	30 mm/1.181 in long	<b>790-133</b> 20 (20 x 1)
50 mm/1.969 in long	<b>790-134</b> 20 (20 x 1)	50 mm/1.969 in long	<b>790-134</b> 20 (20 x 1)
grey	<b>790-100</b> 50 (2 x 25)	grey	<b>790-100</b> 50 (2 x 25)
grey	<b>790-101</b> 50 (2 x 25)	grey	<b>790-101</b> 50 (2 x 25)
Item nos. and dimensions, see drawing on on the right		Item nos. and dimensions, see drawing on on the right	



Item No.	Dimensions in mm			Pack.unit pcs
	A	B	C	
<b>790-190</b>	63	60	83	25 (5 x 5)
suitable for I/O module series 750 (5 E/A)				
<b>790-191</b>	100	60	118	25 (1 x 25)
suitable for I/O module series 750 (8 E/A)				
<b>790-192</b>	63	35	83	25 (5 x 5)
<b>790-193</b>	100	35	118	25 (1 x 25)



Item No.	Dimensions in mm					
	A	B	C	D	E	F
<b>790-108</b>	51	15	8	16	55	42
<b>790-116</b>	53	15	16	16	57	45
<b>790-124</b>	78	15	24	16	83	58
<b>790-140</b>	97	15	40	16	100	73



Forward-looking certification:  
WAGO Ex e II terminal blocks with  
an EC type-examination certificate  
according to  
Ex directive 94/9/EC (ATEX 100 a).



# 13

VOLUME 1



**General technical information  
for electrical equipment  
in hazardous environments**

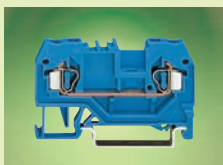
13.2 – 13.9



**All terminal blocks used in  
hazardous environments "Ex e II"  
have their item nos.  
marked with the  
 symbol**



**All terminal blocks used in  
intrinsically safe current circuits "Ex i"  
have their item nos.  
marked with the  
 symbol**





## General Technical Information for Electrical Equipment in Hazardous Environments

Prerequisite for a potential explosion danger is the realization of an explosion endangered atmosphere. This can occur wherever inflammable gases or liquids are produced, processed, transported or stored.

Such **hazardous environment** can form, for example, in chemical plants, refineries, tank farms, vehicles, sewage treatment plants, airports, grain mills or sea ports.

### GUIDELINE FOR THE BASIC PRINCIPLES OF EXPLOSION PROTECTION:

#### General requirement

The European Standard EN 60079-0 – VDE classification 0170/0171 part 1 – contains the general requirements for the construction and testing of electrical apparatus, which are determined for use in potentially explosive atmospheres.

It has to be ensured, that this equipment does not cause an explosion of the surrounding atmosphere. In addition to the EN 60079-0 specification, the (see page 13.3) European Standards which relate to specific standards of protection have to be considered.

#### Electrical equipment

Electrical equipment is any part which serves as a whole or in parts for the application of electrical energy. Amongst these are equipment for the production, transmission, distribution, storage, controlling and use of electrical energy, including telecommunication systems.

#### Ex-components

Ex-components are parts of an electrical equipment for hazardous environments and are marked with the symbol "U". It is not allowed to use them alone in hazardous environments and, in case they should be used in these environments and in electrical equipment, an additional certificate is required.

Ignition protection types			
Designation	European Standard	Explanation	Application area
"o"	EN 50015	<b>Oil immersed apparatus:</b> Electrical equipment or parts of same immersed in oil.	Zone 1 + 2
"p"	EN 50016	<b>Pressurized apparatus:</b> The ingress of the surrounding (explosive) atmosphere into the housing of electrical equipment is avoided by keeping the ignition protection gas inside under pressure.	Zone 1 + 2
"q"	EN 50017	<b>Powder filled apparatus:</b> Filling of the electrical equipment housing with fine grain sand prevents the ignition of a surrounding explosive atmosphere by an electric arc generated in the housing.	Zone 1 + 2
"d"	EN 50018	<b>Flameproof enclosure:</b> Equipment which could ignite an explosive atmosphere is encapsulated in a housing which can resist an explosion pressure within the housing.	Zone 1 + 2
"e"	EN 50019	<b>Increased safety:</b> Measures have been undertaken in order to achieve an increased degree of safety by the avoidance of inadmissibly high temperatures and the creation of sparks or electric arcs.	Zone 1 + 2
"i"	EN 50020	<b>Intrinsic safety:</b> Current circuit in which no sparks or thermal effects can occur and cause an ignition of a certain explosive atmosphere.	Zone 1 + 2 following special testing zone 0
"n"	EN 50021	<b>Non-sparking:</b> Electrical equipment of group II for use in areas in which an explosive mixture of gas, vapor or mist is unlikely to occur during normal operation and if it does it will be for a short period.	Zone 2
"m"	EN 50028	<b>Cast encapsulation:</b> Dangerous electrical equipment is embedded in a cast mass. This corresponds approximately to the known special protection type Ex s.	Zone 1 + 2
	EN 50039	<b>Intrinsically safe electrical systems "i"</b> Assembly of interconnected electrical equipment in which the circuits intended for use, as a whole or in part, in hazardous environments are intrinsically safe. It is documented accordingly in the system description.	Zone 1 + 2 following special testing zone 0
	IEC / TS 60079-27	<b>FISCO standard</b> Electrical apparatus for explosive gas atmospheres – Part 27: Fieldbus intrinsically safe concept (FISCO) and Fieldbus non-incendive concept (FNICO)	

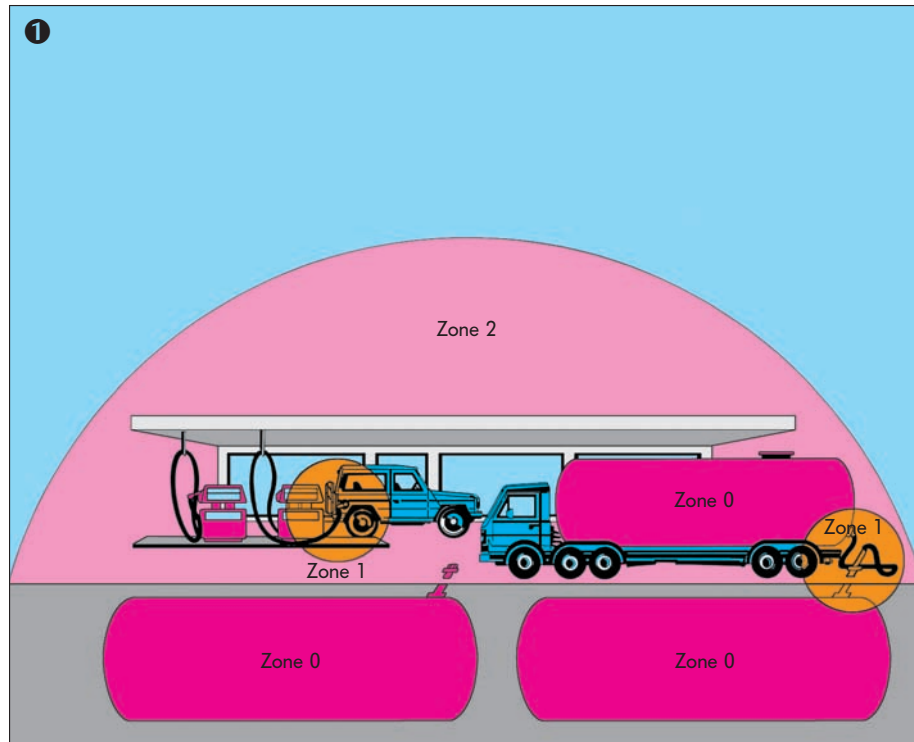
# - Continued - General Technical Information for Electrical Equipment in Hazardous Environments

## Hazardous environments

Hazardous environments are areas in which the atmosphere may become explosive. Explosive atmosphere is defined as a mixture of ignitable substances in the form of gases, vapors or mixtures with air under atmospheric

conditions in critically mixed ratios such that excessive high temperature, arcs or sparks may cause an explosion.

According to ElexV, EN 1127-1, endangered areas are classified into zones according to the probability of the existence of a dangerous explosion prone atmosphere as follows:



① Areas explosion endangered as a result of combustible gases, vapours or mist

### Zone 0

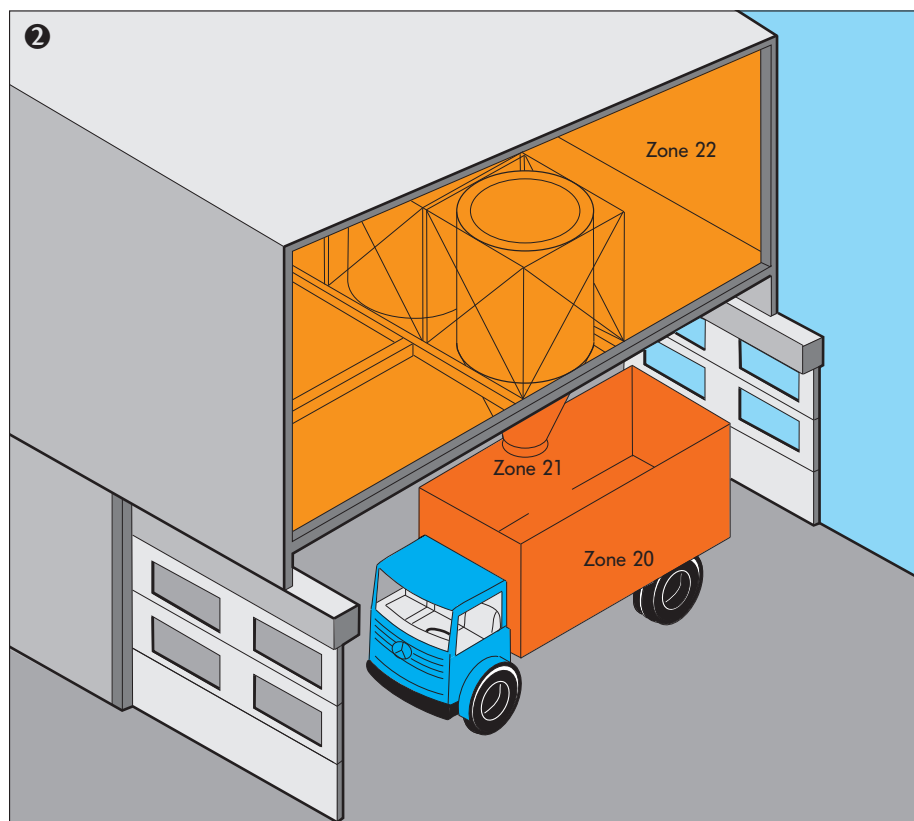
encompasses areas in which an explosive gas/air mixture is continuously present or present for long periods.

### Zone 1

encompasses areas in which an explosive mixture can occur during normal operation.

### Zone 2

encompasses areas in which an explosive mixture is unlikely to occur under normal operation and if it does it will be for a short period.



② Areas explosion endangered due to combustible dust

### Zone 20

Area in which an explosive mixture in the form of dust in air is continuously present or present for long periods. Dust deposits of a known thickness or of an excessive thickness may build up. Dust deposits alone are not synonymous with Zone 20.

### Zone 21

Area in which an explosive mixture in the form of dust in air can occur during normal operation. Deposits of combustible dust exist in general.

### Zone 22

Area in which an explosive mixture in the form of dust in air is unlikely to occur during normal operation and if it does it will be for a short period or in which deposits of combustible dust exist.

The specification EN 60079-0 defines two groups of electrical equipment for hazardous environments:

### Group I:

Electrical equipment for mines.

### Group II:

Electrical equipment for hazardous environments other than mines.

Electrical apparatus in the chemical and petrochemical industry is classed within group II.

Publication of the WBK Mining Authority of March 1989.

Quotation: "... terminal blocks for which the type of protection Ex e II has been certified will also be accepted for use in group I – Electrical equipment of the type of protection – Increased safety "e".

This statement can also be found in point 12 of the EC Examination Certificate stating that terminal blocks are approved for Group I as well as for Group II (see page 13.8).

Temperature class	Max. surface temp. °C	(°F)
T1	450	(842)
T2	300	(572)
T3	200	(392)
T4	135	(275)
T5	100	(212)
T6	85	(185)

The table shows a comparison between the existing practice according to ExeV, DIN VDE 0165-1991 and the new EN 1127-1:

Group II				
Category	Type of protection	Adequate safety with	Comparable with existing practice	new acc. to EN 1127
1 Ex atmosphere is very probable, dust in air	highest	2 protection measures 2 errors	Group II, Zone 0 Zone 10	Zone 0 Zone 20
2 From time to time Ex atmosphere	increased	equipment failure or error	Group II, Zone 1	Zone 1 Zone 21
3 Low probability of Ex atmosphere, settled dust	normal	trouble-free operation	Group II, Zone 2 Zone 11	Zone 2 Zone 22

Depending on the maximum surface temperature of the equipment, the electrical equipment of group II is defined in temperature classes T1 up to T6. The ambient temperature, which has to be considered, is fixed at 40 °C (104 °F). (Modifications of this value are possible under certain conditions)

Terminal blocks for the type of protection – Increased safety "e" – are generally classed in T6. When using terminal blocks in equipment of temperature class T1 up to T5 it has to be ensured, that the highest temperature on the insulating parts does not exceed 85 °C (185 °F).

The highest measured temperature rise on the surface of the equipment shall not exceed 40 K.

The resistance to heat of the insulating material shall at least be 20 °C (68 °F) above the highest operating temperature.

The resistance to low temperature is sufficient if the insulating material withstands a 24-hour storage at a temperature of up to minus 60 °C (-76 °F) without destroying this type of protection.

### Specific requirements "Increased safety Ex e"

The European Standard EN 60079-7 – 1977 – VDE 0170/0171 part 6 – contains the "special requirements" for the construction and testing of electrical equipment for the type of protection – Increased safety "e" –, which are intended for use in explosive atmospheres.

This specification is a supplement to EN 60079-0 and relates to such equipment or parts thereof, which do not produce arcs, sparks or dangerous temperatures under normal operating conditions.

This standard describes special measures, which have to be observed to obtain a safety degree according to the type of protection – Increased safety "e" –. Paragraph 4.2 "Terminal blocks for external conductors" relates to electrical equipment, such as rail-mounted terminal blocks.

The following are the most important design requirements for terminal blocks for external electrical conductors:

They shall be

- sufficiently large to permit the reliable connection of external conductors with cross section of at least the size related to the nominal current of the equipment;
- they must be protected against self-loosening and designed in such a way that the external conductors cannot slip out of their clamping units;
- they must be designed in such a way that sufficient contact pressure is ensured without damaging the conductors;
- their design must ensure that the contact pressure does not change with temperature cycling;
- for the connection of stranded conductors they must be designed with a spring connecting link;
- terminal blocks for conductor cross section up to 4 mm<sup>2</sup>/AWG 12 shall be so designed that smaller conductor cross sections may be connected safely.



**– Continued –  
General Technical Information  
for Electrical Equipment in Hazardous Environments**

It is expressly forbidden to use insulating parts for the transmission of contact pressure. Terminal blocks with sharp edges, which may damage the conductor and others that can rotate or be deformed permanently during normal fixing, are not permissible.

Terminal blocks for connections inside electrical equipment should not be subjected to excessive mechanical stress. They must comply with the conditions for terminal blocks for external electrical conductors.

The air distances between live parts of different potentials are contained in the table 1 with a minimum value of 3 mm for external connections.

The value of the creepage distances depends on the working voltage, the surface condition of the insulating parts and the anti-tracking index of the insulation material.

Grooves on the surface may only be considered if they are at least 2.5 mm wide and deep, and corrugations on the surface only if their height is at least 2.5 mm and their width corresponds to the mechanical strength of the material, however not smaller than 1 mm.

**Table 1: Creepage and air distances**

Voltage <sup>1)</sup> Effective value of AC voltage or DC voltage V	Minimum creepage mm			Minimum air distance
	Material group			
	I	II	III a	mm
10 <sup>2)</sup>	1.6	1.6	1.6	1.6
12.5	1.6	1.6	1.6	1.6
16	1.6	1.6	1.6	1.6
20	1.6	1.6	1.6	1.6
25	1.7	1.7	1.7	1.7
32	1.8	1.8	1.8	1.8
40	1.9	2.4	3.0	1.9
50	2.1	2.6	3.4	2.1
63	2.1	2.6	3.4	2.1
80	2.2	2.8	3.6	2.2
100	2.4	3.0	3.8	2.4
125	2.5	3.2	4	2.5
160	3.2	4	5	3.2
200	4	5	6.3	4
250	5	6.3	8	5
320	6.3	8	10	6
400 (440)*)	8	10	12.5	6
500 (550)*)	10	12.5	16	8
630 (690)*)	12	16	20	10
800	16	20	25	12
1000	20	25	32	14
1250	22	26	32	18
1600	23	27	32	20
2000	25	28	32	23
2500	32	36	40	29
3200	40	45	50	36
4000	50	56	63	44
5000	63	71	80	50
6300	80	90	100	60
8000	100	110	125	80
10000	125	140	160	100

<sup>1)</sup> The indicated voltages are taken from the IEC 60664-1. The working voltage\*) may exceed the voltage indicated in the table by 10%. This is based on the simplification of supply voltages according to table 3b of IEC 60664-1.  
The indicated values for creepage and air distances are based on a maximum deviation of the supply voltage of ± 10%.

<sup>2)</sup> CTI values are not applicable for voltages of 10 V or less. Materials that do not meet the requirements of material group III a can be used.

The classification of the insulating materials according to their tracking resistance follows the Comparative Tracking Index (CTI) and is contained in the table 2 as follows:

This classification is related to insulating parts without grooves or corrugations. If the insulating parts have grooves or corrugations sufficiently large to be considered, the minimum creepage distances according to the values of the insulating materials of the next higher class apply, for ex. group I instead of group II.

Under consideration of the ambient temperature of 40°C (104°F) specified for electrical equipment, the current carrying capacity acc. to DIN/VDE 0298, part 4, table 10, of rubber insulated conductors is reduced to 82%, of PVC-insulated conductors to 87% of the current carrying capacity, specified for 30°C (86°F) ambient temperature acc. to item 4.3.3. of DIN VDE 0298-4: 2003-08.

**Table 2:  
Tracking resistance of Insulating  
materials**

Material group	Comparative tracking index
I	600 ≤ CTI
II	400 ≤ CTI < 600
III a	175 ≤ CTI < 400

**Types of wire and wire preparation**

According to EN 60079-14 / DIN VDE 0165-1 the wire ends of stranded and fine-stranded wire have to be protected against splicing, for example by the use of cable lugs, ferrules, or by the design of the terminal block applied. Soldering alone is not sufficient.

Connecting electrical equipment to terminal blocks in an atmosphere with a type of protection – Increased safety “e” – the air and creepage distances according to EN 60079-7/DIN VDE 0170/0171-6 must not be reduced.

Experience through the application of terminal blocks in aggressive atmospheres in the chemical industry demonstrate that tinned copper ferrules (gastight) or tinned copper pin-type cable sockets/lugs are recommended when connecting fine-stranded wires to terminal blocks in corrosive atmospheres.

### Approvals

Terminal blocks can be used in zones I and II, provided that the terminal blocks are in an enclosure that has a minimum degree of protection IP 54 and an Ex e certification.

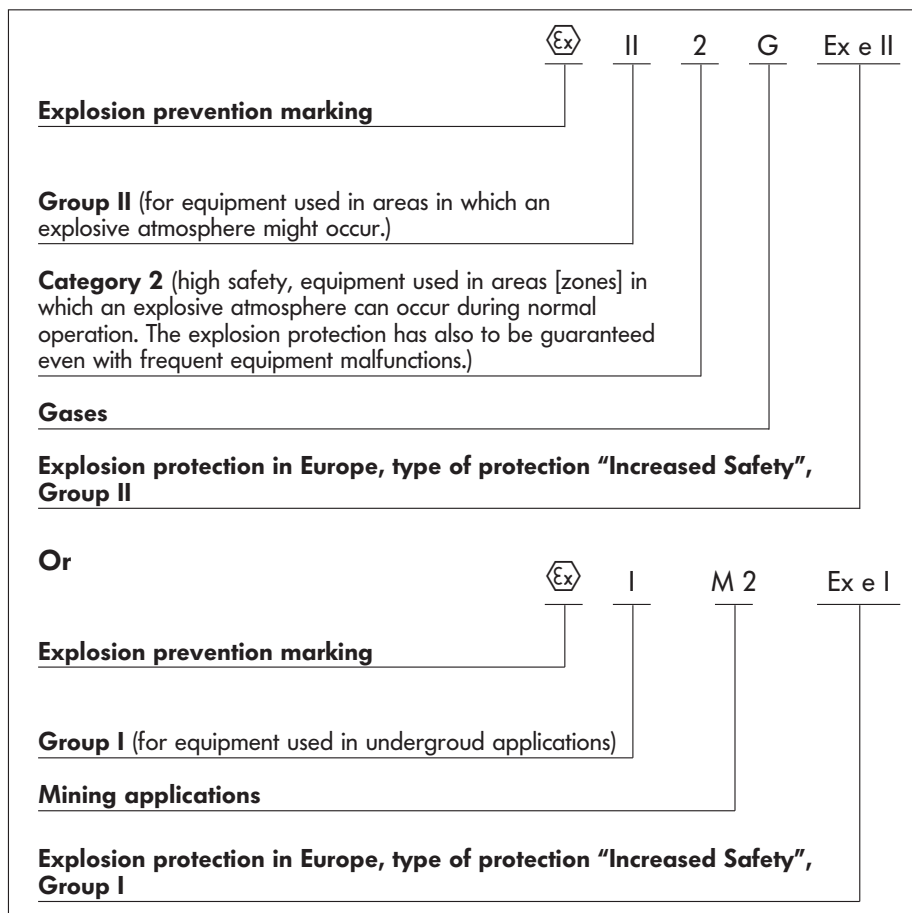
Terminal blocks are considered EX components, as they are only a part of the equipment. Part certificates provided by testing agencies serve as a basis for the complete certification of conformity for the installation.

An EC type examination certificate is issued in accordance with the Explosion Protection Directive 94/9/EG (ATEX 100 a).

In addition, IEXEx certificates can be obtained from the appropriate accredited testing organizations (see also page 13.8) in accordance with the IECEx certification agreement, which is accepted overall in Europe and currently in countries like Canada, China and Australia, etc.

These certificates can be downloaded from [www.iecex.com](http://www.iecex.com).

The marking of the terminal blocks are in conformance with EC directive 94/9/EC ATEX 100 a and will be as follows:



### Example rear

Series

Manufacturer's name

Nominal insulating voltage

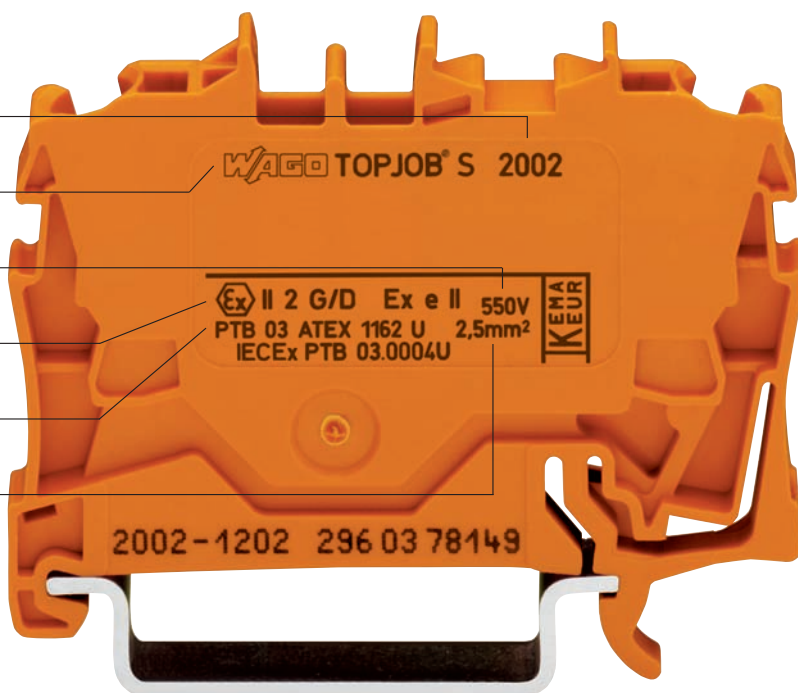
Type of protection

Part certificate No.

Nominal cross section

(solid, stranded and fine-stranded conductors)

The embossed type details on the terminal blocks show the manufacturer's name, the series No., the type of protection Ex e II, the approval No., the data of approval and the name of the test house.




# - Continued - General Technical Information for Electrical Equipment in Hazardous Environments

According to UL Standard 60079-7 terminal blocks for Class I, Zone 1, Ex e II hazardous locations can be approved for Ex applications.

As a result of international harmonization efforts the UL certificate can be issued on the basis of a certificate according to EN 60079-0 or EN 60079-7, provided that the terminal blocks have also been approved in accordance with UL 1059 (ordinary location).

If desired by the applicant, the product can at the same time be approved in accordance with the Canadian Standards E79-0-95 and E79-7-95 and released for use in Canada.


The terminal blocks are marked with  us Cl. I, Zn. 1, AEx e II.

The WAGO terminal blocks specified in this catalog have been granted the EC type examination certificates.

The WAGO terminal blocks approved for the ignition protection type Ex e II are manufactured of flame resistant, self-extinguishing Nylon 6.6. The same applies to the other terminal blocks in the non explosion endangered area.

A tracking resistance with a CTI value of 600 as per IEC 60112 and a constant operating temperature of 105°C/22°F in accordance with IEC 60216-1 and -2 are provided.

To monitor the above described quality features, all CAGE CLAMP® rail-mounted terminal blocks with Ex e II approval are subject to a factory part quality control.

		<b>IECEx Certificate of Conformity</b>	
<b>INTERNATIONAL ELECTROTECHNICAL COMMISSION</b> <b>IEC Certification Scheme for Explosive Atmospheres</b> <small>for rules and details of the IECEx Scheme visit <a href="http://www.iecex.com">www.iecex.com</a></small>			
Certificate No.:	IECEx PTB 03.0004U	Issue No.:	0
Status:	Current		
Date of Issue:	2003-12-12	Page 1 of 3	
Applicant:	<b>WAGO Kontakttechnik GmbH</b> Hansastraße 27 32423 Minden Germany		
Electrical Apparatus:	<b>TOPJOB S, 2002-1.... and 2002-1..7 PE &amp; Through terminal blocks</b> Optional accessory:		
Type of Protection:	<b>Increased Safety</b>		
Marking:	<b>Ex e II</b> <b>Tamb: -55 °C to +45 °C</b>		
Approved for issue on behalf of the IECEx Certification Body:	Dr.-Ing. Uwe Klausmeyer Head of Section "Flameproof Enclosure"		
Signature: (for printed version)	_____		
Date:	_____		
1. This certificate and schedule may only be reproduced in full. 2. This certificate is not transferable and remains the property of the issuing body. 3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.			
Certificate issued by: <b>Physikalisch-Technische Bundesanstalt (PTB)</b> Bundesallee 100 38116 Braunschweig Germany			

<b>Physikalisch-Technische Bundesanstalt</b> Braunschweig und Berlin		
		
<b>EG-Baumusterprüfbescheinigung</b>		
(1)	Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen - <b>Richtlinie 94/9/EG</b> EG-Baumusterprüfbescheinigungsnummer	
	<b>PTB 98 ATEX 3129 U</b>	
(4)	Schraubenlose Klemme Typ 264-...	
(5)	Hersteller: WAGO Kontakttechnik GmbH	
(6)	Anschrift: Hansastraße 27, D-32423 Minden	
(7)	Die Bauart dieser Komponente sowie die verschiedenen zulässigen Ausführungen sind in der Anlage zu dieser Baumusterprüfbescheinigung festgelegt.	
(8)	Die Physikalisch-Technische Bundesanstalt bescheinigt als benannte Stelle Nr. 0102 nach Artikel 9 der Richtlinie des Rates der Europäischen Gemeinschaften vom 23. März 1994 (94/9/EG) die Erfüllung der grundlegenden Sicherheits- und Gesundheitsanforderungen für die Konzeption und den Bau von Geräten und Schutzsystemen zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen gemäß Anhang II der Richtlinie.	
	Die Ergebnisse der Prüfung sind in dem vertraulichen Prüfbericht PTB Ex 98-30020 festgelegt.	
(9)	Die grundlegenden Sicherheits- und Gesundheitsanforderungen werden erfüllt durch Übereinstimmung mit EN 50 014:1997                      EN 50 019:1994	
(10)	Das Zeichen "U" hinter der Zertifikatsnummer gibt an, daß dieses Zertifikat nicht mit einem für ein Gerät oder Schutzsystem vorgesehenen Zertifikat verwechselt werden darf. Diese Teilbescheinigung darf nur als Basis für die Bescheinigung eines Gerätes oder Schutzsystems verwendet werden.	
(11)	Diese EG-Baumusterprüfbescheinigung bezieht sich nur auf Konzeption und Bau der festgelegten Komponente gemäß Richtlinie 94/9/EG. Weitere Anforderungen dieser Richtlinie gelten für die Herstellung und das Inverkehrbringen dieser Komponente.	
(12)	Die Kennzeichnung der Komponente muß die folgenden Angaben enthalten:	
	 <b>II 2 G EEx e II    bzw.    I M 2 EEx e I</b>	
	Zertifizierungsstelle Explosionschutz Im Auftrag  Dr.-Ing. U. Engel Regierungsdirektor	Braunschweig, 09. November 1998 
Seite 1/2		
<small>EG-Baumusterprüfbescheinigungen ohne Unterschrift und ohne Siegel haben keine Gültigkeit.                  Diese EG-Baumusterprüfbescheinigung darf nur unverändert weiterverbreitet werden.                  Auszüge oder Änderungen bedürfen der Genehmigung der Physikalisch-Technischen Bundesanstalt.                  Physikalisch-Technische Bundesanstalt • Bundesallee 100 • D-38116 Braunschweig</small>		

### Special requirements "intrinsic safety Ex i"

The European Standard EN 60079-11 – classification 0170/0171, part 7/08.03 – contains the special requirements for the construction and testing of electrical apparatus, designated for the type of protection intrinsic safety "i" – in potentially explosive atmospheres.

As opposed to other ignition protection types, the ignition protection technique intrinsic safety "i" does not only refer to individual equipment, but to the complete intrinsically safe current circuit.

A current circuit is termed intrinsically safe when in normal operation and with certain occurring fault conditions no sparks and no thermal effects can cause an ignition in a certain explosive atmosphere.

It is important to distinguish between

- intrinsically safe electrical equipment when all circuits are intrinsically safe and
- a related electrical equipment including both intrinsically and non-intrinsically safe circuits, and being designed in such a way that it is impossible for the non-intrinsically safe circuits to affect the intrinsically safe circuits.

Intrinsically safe electrical equipment and intrinsically safe parts or related electrical equipment are classified in categories "ia" or "ib".

Products classified Ex "ia" should not cause any ignition when current is applied in the following cases:

- a) in normal service and the presence of non-countable faults leading to the most unfavorable condition;
- b) in normal service and the presence of one countable fault in addition to the non-countable faults leading to the most unfavorable condition;
- c) in normal service and the presence of two countable faults in addition to the non-countable faults leading to the most unfavorable condition.

Products classified Ex "ib" should not cause any ignition when current is applied in the following cases:

- a) in normal service and the presence of non-countable faults leading to the most unfavorable condition;
- b) in normal service and the presence of one countable fault in addition to the non-countable faults leading to the most unfavorable condition.

No particular approval is necessary for terminal blocks as plain mechanical equipment for use in type of protection Ex i applications, as they do not contain a source of voltage and precise information is available concerning the electrical data and the temperature rise performance.

They shall be identifiable for example by their type designation and the following construction requirements have to be observed:

- The air distance between bare, conducting parts of terminal blocks of different intrinsically safe circuits has to be equal or higher than the values specified in the standard. In addition, the air distances between the terminal blocks must be so that the air distances between bare, conducting parts of the connected external conductors is at least 6 mm for one measurement. Each possible motion of metallic parts that are not rigidly fixed must be considered.
- When a possible connection has not been considered during safety analysis, the minimum air distance between grounded (earthed) metallic or other conducting parts and the uninsulated conducting parts of the conductors that are connected to the terminal blocks must be 3 mm.
- The terminal block has to be marked in a clear and distinct manner. If a color is used, it shall be light blue (approx. RAL 5015).

When using terminal blocks in intrinsically safe circuits, the following requirements have to be observed:

Terminal blocks used for intrinsically safe circuits must be separated from non-intrinsically safe circuits. This is accomplished by several accepted methods. First, intrinsically safe circuits are separated by at least 50 mm of air space from non-intrinsically safe circuits. Second, intrinsically safe circuits are housed in a separate enclosure. Third, intrinsically safe terminal blocks are separated from non-intrinsically safe terminal blocks by either an insulated partition or grounded metal partition. The partition size must allow for either 1.5 mm or less distance from the sides of the housing or provide at least 50 mm of creepage distance between the intrinsically and non-intrinsically safe circuits in all directions. The insulation between an intrinsically safe circuit and the chassis of an electrical equipment or parts, which may be grounded (earthed), has to withstand an effective AC voltage corresponding to double the value of the voltage of the intrinsically safe circuit or a minimum of at least 500 V, depending on which value is higher.

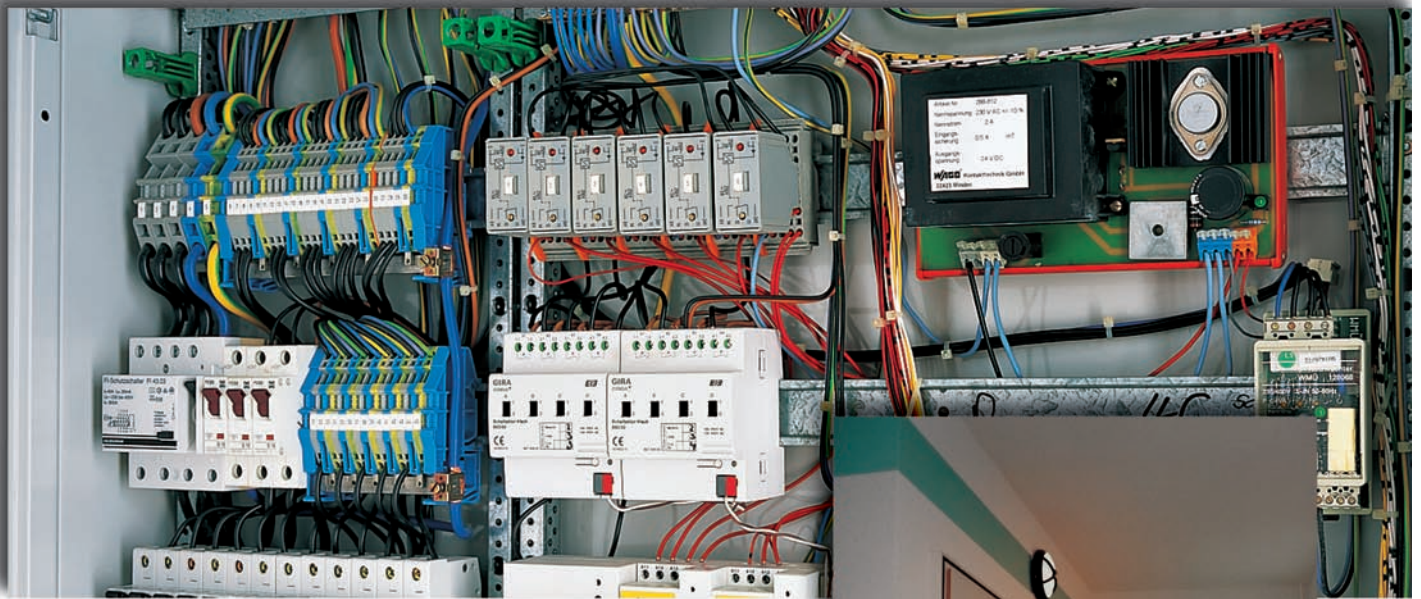
The insulation between an intrinsically safe and a non-intrinsically safe circuit has to withstand an effective AC voltage of  $2 \times \text{nominal value (U)} + 1 \text{ kV}$  or a minimum of 1.5 kV, whereby U represents the total of the effective voltages of the intrinsically safe and the non-intrinsically safe circuit.

Short circuit between different intrinsically safe circuits could cause dangerous conditions. The insulation between these circuits should withstand an effective voltage of at least 500 V AC or  $2 \text{ U AC}$  where U is the total of the effective voltages of the related circuits.

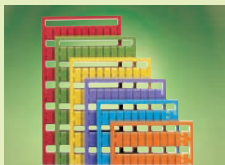
According to the construction specification EN 60079-14 (VDE 0165), stranded and fine-stranded conductors in intrinsically safe circuits have to be protected against splayed ends, for example by ferrules or pin terminals **or by the design of the terminal blocks**. Tinning of the conductor end alone is not permissible.

For the connection of stranded and fine-stranded conductors in terminal blocks it is recommended to use in corrosive atmosphere gastight tinned copper ferrules or tinned copper pin terminals.





Reliable lighting means safety:  
WAGO current flow monitoring modules  
indicate the failure of corridor or stairwell  
lighting in big residential buildings.

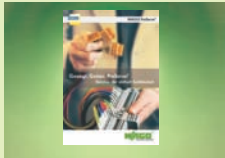


Angled support bracket ..... 14.36

Carrier rails ..... 14.36 – 14.37

Collective carrier for jumpers ..... 14.37

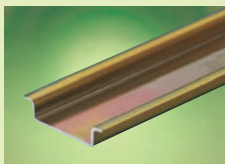
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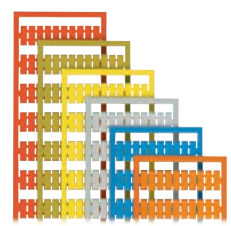
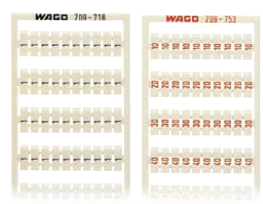
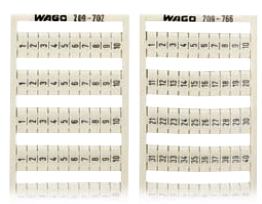
Testboy ..... 14.47

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Wire cutter ..... 14.49

# Marking Accessories – Product Summary –

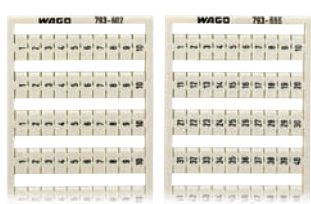
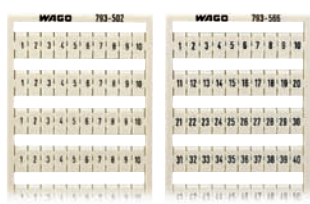
## WSB Quick marking system for terminal block width 4 mm/0.157 in



WSB Cards with vertical marking  
Page 14.8

colored WSB Cards  
Page 14.9

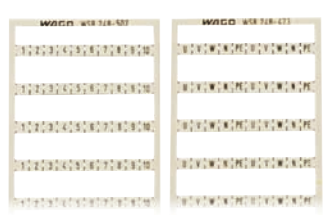
## WMB Multi marking system 4 mm to 4.2 mm (0.157 in – 0.165 in) and 5 mm to 5.2 mm (0.197 in – 0.205 in) and WSB Quick marking system



WMB or WSB Cards with horizontal or vertical marking  
Pages 14.9 – 14.13

colored WMB or WSB Cards  
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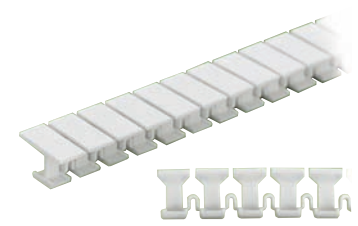
## Miniature WSB Quick marking system



Miniature WSB Cards  
Page 14.14

colored miniature WSB Cards  
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## T marker tag



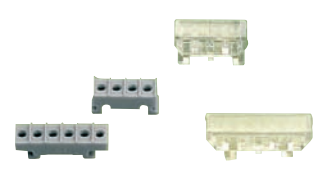
Page 14.14

## Marker tags



Page 14.16

## Marker carriers for marker tags



Page 14.16

## Marker branches



Page 14.16

## WFB Continuous marking strips



Page 14.15

## Vertically movable marking system



Page 14.15

**Marker carriers**



WSB double marker carriers  
Page 14.16



Group marker carriers  
Page 14.18



Group marker carriers for serie 282  
Page 14.17



adjustable height  
group marker carriers  
Page 14.18



pivotal  
group marker carrier  
Page 14.17



WCB combi marker tags  
Page 14.17

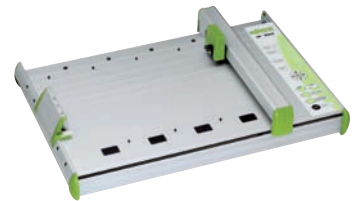
**ProServe**



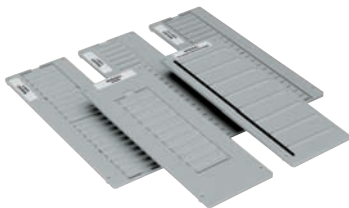
Thermal transfer printer  
Page 14.24



Thermal transfer printer  
Page 14.24



Plotter  
Page 14.25



Interchangeable locating devices  
Page 14.26



Marker cards, plain  
Page 14.27

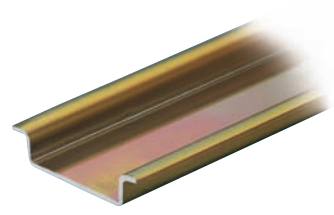


Software  
Page 14.23

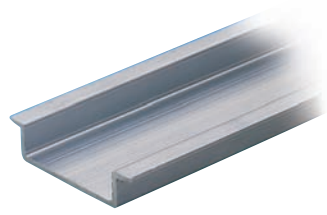


# Montagematerial – Product Summary –

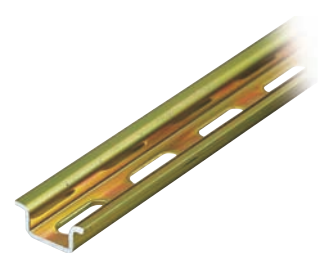
## Carrier rails



DIN 35 rail, steel / aluminum / copper  
Page 14.36



DIN 15 rail, steel / aluminum  
Page 14.37



## End stops

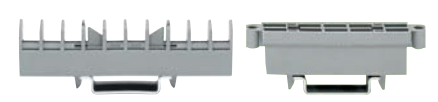


for DIN 15 rail  
Page 14.37



for DIN 35 rail  
Page 14.19

## Spare parts carrier



for jumpers  
Page 14.37

## Angled support bracket



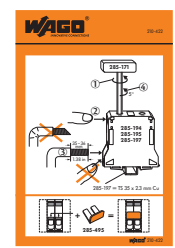
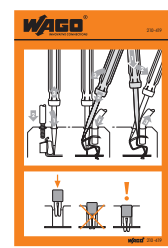
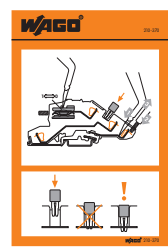
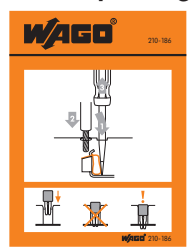
Page 14.36

## Mounting carrier



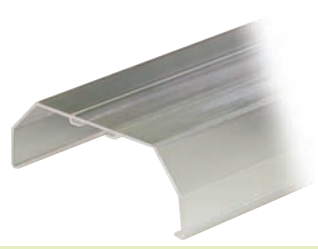
Page 14.18

## Stickers for operating instructions

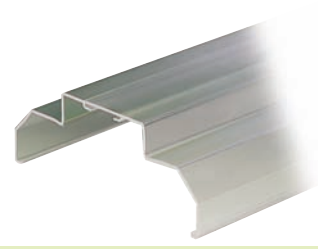


Pages 14.40 – 14.41

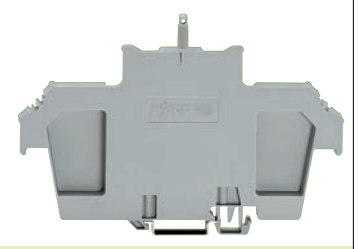
## Covers and cover carriers



Type 1



Type 2



Pages 14.38 – 14.39

# Tools – Product Summery –

## Screwdrivers



Screwdrivers  
with partially insulated shaft  
Page 14.42

Screwdrivers, short  
Page 14.42

## Crimping Tools



Variocrimp 4  
Page 14.44

Variocrimp 16  
Page 14.44

## Ferrules



from 0.25 mm<sup>2</sup> to 16 mm<sup>2</sup>  
insulated and uninsulated  
Page 14.45

## Wire Strippers



Microstrip  
Page 14.46

Quickstrip 10  
Page 14.46

Quickstrip 16  
Page 14.46

## Voltage and Continuity Testers



Profipol  
Page 14.47

Testboy  
Page 14.47

## Contact paste "Alu-Plus"



Page 14.48

## Wire Cutter



Page 14.49

# 14 Marking Accessories . . .

6 WMB (WAGO multi marking system) et WSB (WAGO Quick marking system)



Separation of a strip from the WMB or WSB marker card

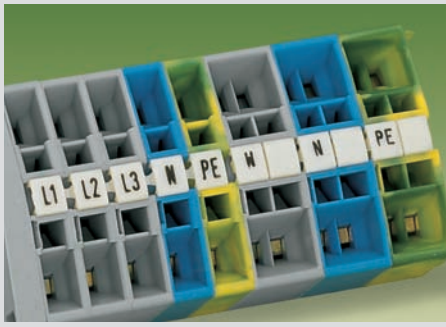


Stretching of a strip – only for WSB marking for terminal block widths above 5 mm up to 6.2 mm



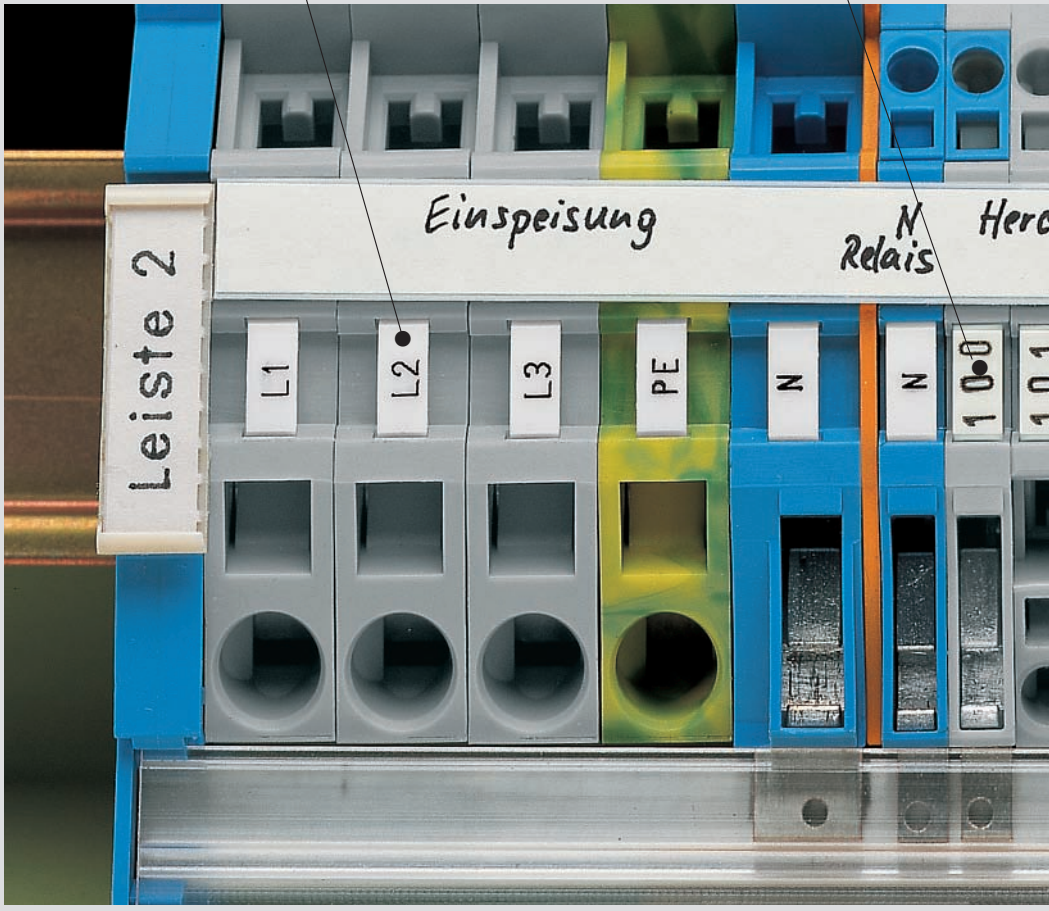
Stretching of a strip – only for WMB marking stretchable from 4 mm up to 4.2 mm stretchable from 5 mm up to 5.2 mm

## Miniature WSB (WAGO Quick marking system)



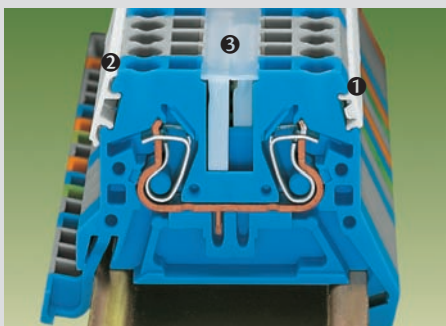
Marking with miniature WSB Quick marking system

## WSB Quick marking system or WMB Multi marking system



## WCB Combi marking system

## Miniature WSB or WMB marking



1 Miniature WSB marking  
2 WMB marking using miniature WSB marker receptacles

## WFB (WAGO Continuous marking strips)



Customized ink pen marking



Adapter for WFB Continuous marking strips, to be fixed every 10th terminal block

## Group marking



Group marking on N-busbar carrier used as end stop



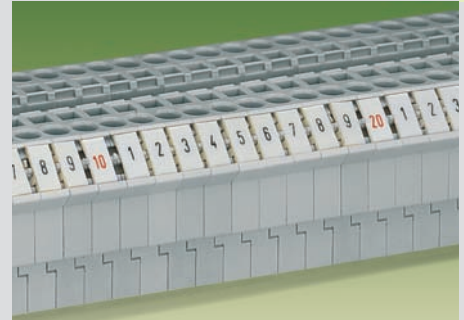
# ... Description and Handling



Separation of an individual marker from the strip, for bigger terminal blocks



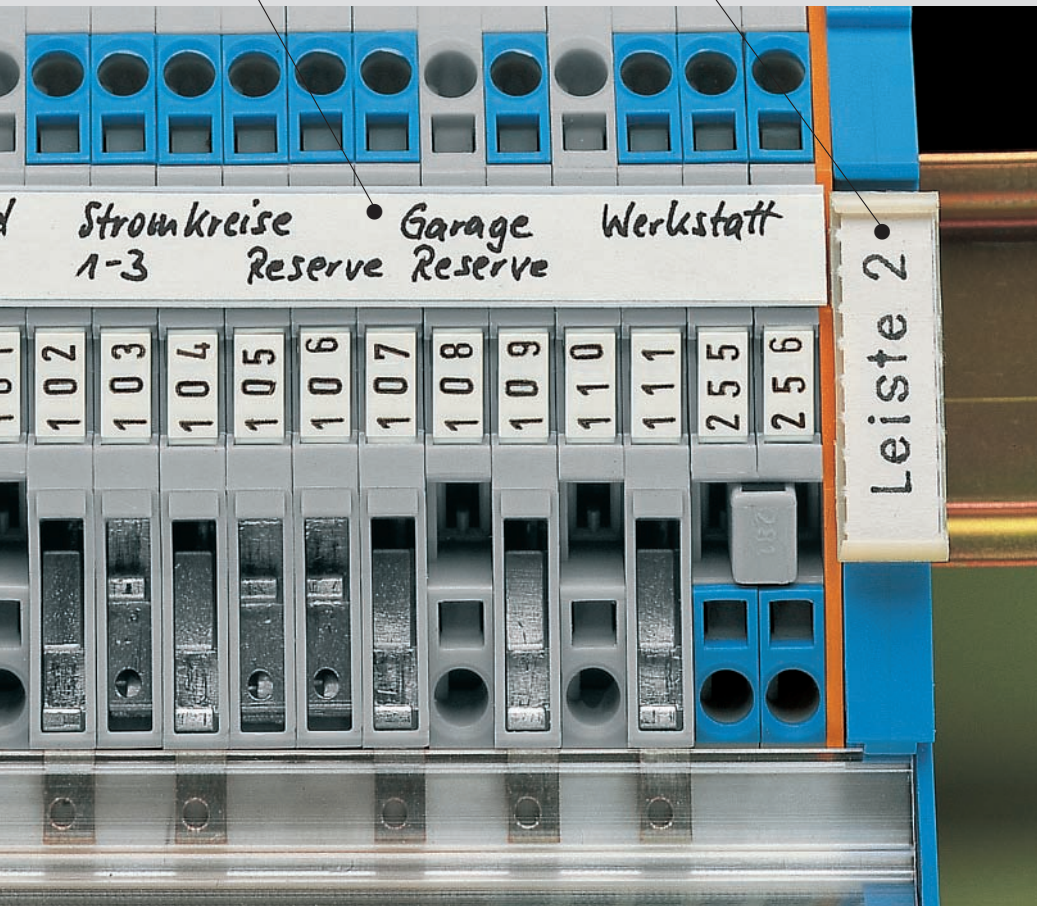
Snapping a strip into the marker receptacle profile



WMB or WSB "decade" labelling

WFB Continuous marking strips

Group marking



Marker branches



Snapping markers into the marker receptacle profile up to 2 branch markers, series 279 up to 3 branch markers, series 280 to 285

Marker tags

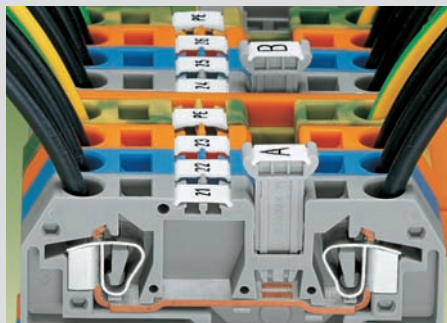


Snapping markers into marker carriers

Group marker carriers

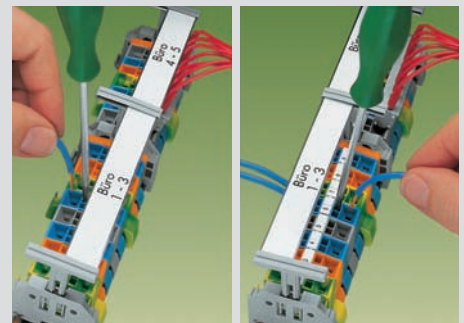


Group marker carrier adjustable in height



Additional group marking

Vertically movable marking system



Additional continuous marking strips

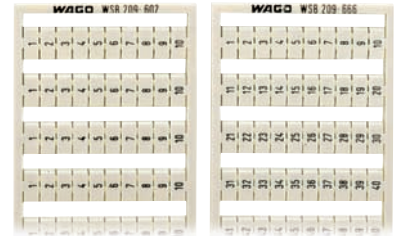
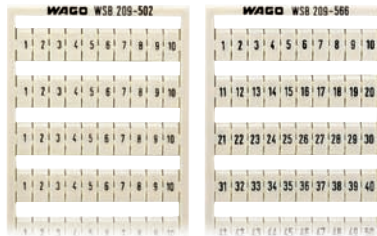




# Colored Marker Cards

# WAGO Quick Marking System WSB<sup>®</sup> WAGO Multi Marking System WMB<sup>®</sup>

<b>Colored marker cards</b> Horizontal/vertical marking Additional item-Nos. 10 strips with 10 markers per card for terminal block widths 5 - 17.5 mm/0.197 in - 0.689 in (WSB/WMB) 4 - 4.2 mm/0.157 in - 0.165 in (WMB)	<b>Horizontal marking</b> Consecutive numbers each strip  10 strips with 10 markers per card for terminal block widths 5 - 17.5 mm/0.197 in - 0.689 in (WSB/WMB) 4 - 4.2 mm/0.157 in - 0.165 in (WMB)	<b>Vertical marking</b> Consecutive numbers each strip  10 strips with 10 markers per card for terminal block widths 5 - 17.5 mm/0.197 in - 0.689 in (WSB/WMB) 4 - 4.2 mm/0.157 in - 0.165 in (WMB)
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Color	Item No.	Marking per card	Item No.	Pack.-unit pcs	Marking per card	Item No.	Pack.-unit pcs
<b>Colored marker cards</b>							
		1 ... 10 (10x)	<b>209-502</b>	5 cards	1 ... 10 (10x)	<b>209-602</b>	5 cards
All the markings shown are also available with black printing on colored marker cards.							
		11 ... 20 (10x)	<b>209-503</b>	5 cards	11 ... 20 (10x)	<b>209-603</b>	5 cards
		21 ... 30 (10x)	<b>209-504</b>	5 cards	21 ... 30 (10x)	<b>209-604</b>	5 cards
		31 ... 40 (10x)	<b>209-505</b>	5 cards	31 ... 40 (10x)	<b>209-605</b>	5 cards
Add. item-No. for colored marker cards							
yellow	.../000-002	41 ... 50 (10x)	<b>209-506</b>	5 cards	41 ... 50 (10x)	<b>209-606</b>	5 cards
red	.../000-005	51 ... 60 (10x)	<b>209-569</b>	5 cards	51 ... 60 (10x)	<b>249-601</b>	5 cards
blue	.../000-006	61 ... 70 (10x)	<b>209-570</b>	5 cards	61 ... 70 (10x)	<b>249-602</b>	5 cards
grey	.../000-007	71 ... 80 (10x)	<b>209-571</b>	5 cards	71 ... 80 (10x)	<b>249-603</b>	5 cards
orange	.../000-012	81 ... 90 (10x)	<b>209-572</b>	5 cards	81 ... 90 (10x)	<b>249-604</b>	5 cards
light green	.../000-017	91 ... 100 (10x)	<b>209-573</b>	5 cards	91 ... 100 (10x)	<b>249-605</b>	5 cards
green	.../000-023	1 ... 50 (2x)	<b>209-566</b>	5 cards	1 ... 50 (2x)	<b>209-666</b>	5 cards
violet	.../000-024	51 ... 100 (2x)	<b>209-507</b>	5 cards	51 ... 100 (2x)	<b>209-607</b>	5 cards
Ordering examples							
		101 ... 150 (2x)	<b>209-508</b>	5 cards	101 ... 150 (2x)	<b>209-608</b>	5 cards
		151 ... 200 (2x)	<b>209-509</b>	5 cards	151 ... 200 (2x)	<b>209-609</b>	5 cards
Terminal block width 4 mm – WSB card							
Marking 1 ... 50 on yellow card							
	<b>209-766/000-002</b>	201 ... 300 (1x)	<b>209-510</b>	5 cards	201 ... 300 (1x)	<b>209-610</b>	5 cards
		301 ... 400 (1x)	<b>209-511</b>	5 cards	301 ... 400 (1x)	<b>209-611</b>	5 cards
		401 ... 500 (1x)	<b>209-512</b>	5 cards	401 ... 500 (1x)	<b>209-612</b>	5 cards
Terminal block width 4 mm – WMB card							
Marking 1 ... 50 on blue card							
	<b>793-4566/000-006</b>	501 ... 600 (1x)	<b>209-513</b>	5 cards	501 ... 600 (1x)	<b>209-613</b>	5 cards
		601 ... 700 (1x)	<b>209-514</b>	5 cards	601 ... 700 (1x)	<b>209-614</b>	5 cards
		701 ... 800 (1x)	<b>209-515</b>	5 cards	701 ... 800 (1x)	<b>209-615</b>	5 cards
		801 ... 900 (1x)	<b>209-516</b>	5 cards	801 ... 900 (1x)	<b>209-616</b>	5 cards
Terminal block width 5 mm – WSB card							
Marking 1 ... 50 on red card							
	<b>209-566/000-005</b>	901 ... 1000 (1x)	<b>209-517</b>	5 cards	901 ... 1000 (1x)	<b>209-617</b>	5 cards
		1 ... 9, ; (10x)	<b>209-565</b>	5 cards	1101 ... 1200 (1x)	<b>209-688</b>	5 cards
					1201 ... 1300 (1x)	<b>209-669</b>	5 cards
Terminal block width 5 mm – WMB card							
Marking 1 ... 50 on green card							
	<b>793-5566/000-023</b>	<b>for double deck terminal blocks</b>			1301 ... 1400 (1x)	<b>209-670</b>	5 cards
		1, 3, 5, ... 99			1401 ... 1500 (1x)	<b>209-671</b>	5 cards
		and 2, 4, 6, ... 100 (1x)			1501 ... 1600 (1x)	<b>209-672</b>	5 cards
			<b>209-599</b>	5 cards	1601 ... 1700 (1x)	<b>209-901</b>	5 cards
<b>Note:</b>							
Please note that colored marker cards are normally on longer delivery and more expensive than standard cards.							
		<b>for triple deck terminal blocks</b>			1701 ... 1800 (1x)	<b>209-902</b>	5 cards
		1, 4, 7, ... 99 (1x)			1801 ... 1900 (1x)	<b>209-903</b>	5 cards
			<b>249-557</b>	5 cards	1901 ... 2000 (1x)	<b>209-912</b>	5 cards
					1 ... 9, ; (10x)	<b>209-913</b>	5 cards
		100, 103, 106, ... 198 (1x)	<b>249-558</b>	5 cards	101, 101, 101, 102, ...		
					...130, 130, 130 (1x)	<b>209-667</b>	5 cards
					131, 131, 131, 132, ...		
					...160, 160, 160 (1x)	<b>209-668</b>	5 cards
<b>for double deck terminal blocks</b>							
		plain,	<b>209-501</b>	5 cards	1, 3, 5, 7, 9, 11, ... 99 and 2, 4, 6, 8, 10, 12, ... 100 (1x)	<b>209-699</b>	5 cards
		for self-			101, 103, 105, ... 149 and 102, 104, 106, ... 150 (2x)		
		marking				<b>209-900</b>	5 cards
<b>Marking pen 210-110 1</b>							
<b>for triple deck terminal blocks</b>							
		<b>with fibre tip,</b>			1, 4, 7, ... 99 (1x)	<b>249-657</b>	5 cards
		for permanent			100, 103, 106, ... 198 (1x)		
		marking				<b>249-658</b>	5 cards

ⓘ All WSB cards shown on this page are also available as WMB cards with the same suffix. Item no. see table:

WSB	WMB
<b>209-...</b>	rigid
<b>249-...</b>	<b>793-...</b>
	<b>794-...</b>
<b>209-...</b>	stretchable 5 – 5.2 mm
<b>249-...</b>	<b>793-5...</b>
	<b>794-5...</b>
<b>209-...</b>	stretchable 4 – 4.2 mm
<b>249-...</b>	<b>793-4...</b>
	<b>794-4...</b>



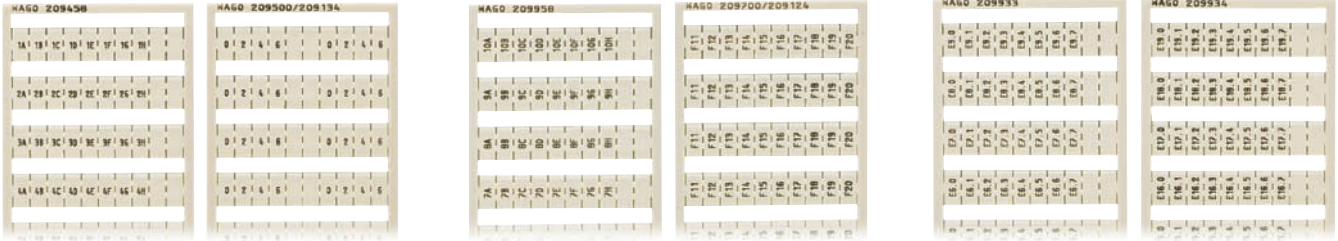





# WAGO Quick Marking System WSB<sup>1</sup>

## WAGO Multi Marking System WMB<sup>1</sup>

<b>Horizontal marking for subdistribution boxes (power stations)</b>  <b>10 strips with 10 markers per card for terminal block widths</b> <b>5 - 17.5 mm/0.197 in - 0.689 in (WSB/WMB)</b> <b>4 - 4.2 mm/0.157 in - 0.165 in (WMB)</b>	<b>Vertical marking for subdistribution boxes (power stations); for relays, shielding (screenings), fuses;</b> <b>10 strips with 10 markers per card for terminal block widths</b> <b>5 - 17.5 mm/0.197 in - 0.689 in (WSB/WMB)</b> <b>4 - 4.2 mm/0.157 in - 0.165 in (WMB)</b>	<b>Vertical marking for PLC input marking;</b>  <b>10 strips with 10 markers per card for terminal block widths</b> <b>5 - 17.5 mm/0.197 in - 0.689 in (WSB/WMB)</b> <b>4 - 4.2 mm/0.157 in - 0.165 in (WMB)</b>
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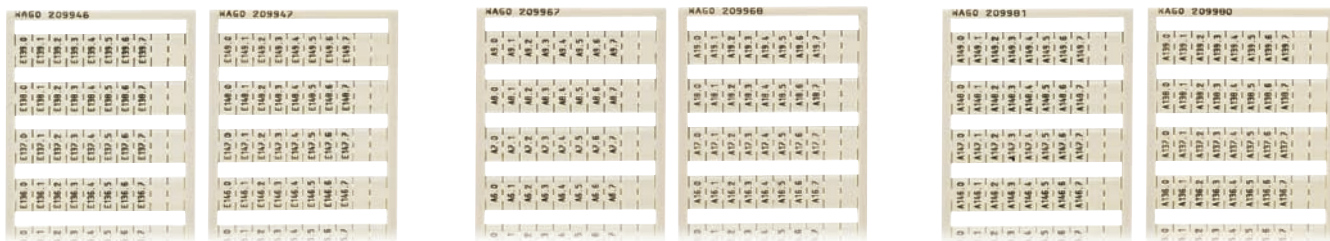


Marking per card	Item No.	Pack.-unit pcs	Marking per card	Item No.	Pack.-unit pcs	Marking per card	Item No.	Pack.-unit pcs
<b>for subdistribution boxes (power stations)</b>			<b>for subdistribution boxes (power stations)</b>			<b>for PLC input marking</b>		
1A, 1B, 1C, 1D, 1E, 1F, 1G, 1H, , ;			1A, 1B, 1C, 1D, 1E, 1F, 1G, 1H, , ;			E0.0, E0.1, E0.2, E0.3, E0.4, E0.5, E0.6, E0.7, , ;		
to			to			to		
10A, 10B, 10C, 10D, 10E, 10F, 10G, 10H, , ; (1 each)			10A, 10B, 10C, 10D, 10E, 10F, 10G, 10H, , ; (1 each)			E9.0, E9.1, E9.2, E9.3, E9.4, E9.5, E9.6, E9.7, , ; (1 each)		
<b>209-458</b>		5 cards	<b>209-958</b>		5 cards	<b>209-933</b>		5 cards
0, 2, 4, 6, , , 0, 2, 4, 6; (5x)			0, 2, 4, 6, , , 0, 2, 4, 6; (5x)			same as above, however		
1, 3, 5, 7, , , 1, 3, 5, 7; (5x)			1, 3, 5, 7, , , 1, 3, 5, 7; (5x)			E10.0 to E19.7 (1 each)		
<b>209-500/209-134</b>		5 cards	<b>209-600/209-073</b>		5 cards	<b>209-934</b>		5 cards
			<b>Symbol shield (screen) term. bl. acc. to DIN 40711</b>			E20.0 to E29.7 (1 each)		
			⊖, ⊖, ⊖, ⊖, ⊖, ⊖, ⊖, ⊖, ⊖, ⊖; (10x)			<b>209-935</b>		5 cards
			<b>209-993</b>		5 cards	E30.0 to E39.7 (1 each)		
			<b>for relays</b>			<b>209-936</b>		5 cards
			A <sub>1r</sub> , A <sub>2r</sub> , A <sub>2r</sub> , 11, 12, 14, A <sub>1r</sub> , A <sub>2r</sub> , A <sub>2r</sub> ; (5x)			E40.0 to E49.7 (1 each)		
<b>WSB Double marker carrier, 4 mm/0.157 in wide</b>			11, 12, 14, A <sub>1r</sub> , A <sub>2r</sub> , A <sub>2r</sub> , 11, 12, 14, ; (5x)			<b>209-937</b>		5 cards
suitable for all WSB and WMB marking systems			<b>209-994</b>		5 cards	E50.0 to E59.7 (1 each)		
<b>209-128</b>		100	12, A <sub>1r</sub> , A <sub>2r</sub> , 24, 11, 14, 21, 22, , ; (10x)			<b>209-938</b>		5 cards
			<b>209-995</b>		5 cards	E60.0 to E69.7 (1 each)		
Snapping a strip into the double marker carrier			A <sub>1r</sub> , A <sub>1r</sub> , A <sub>2r</sub> , A <sub>2r</sub> , 12, 11, 11, 14, , ; (10x)			<b>209-939</b>		5 cards
			<b>209-996</b>		5 cards	E70.0 to E79.7 (1 each)		
			I <sub>1r</sub> , I <sub>1r</sub> , , I <sub>out</sub> , I <sub>out</sub> , 24V, 11, 12, 14, 0V; (10x)			<b>209-940</b>		5 cards
			<b>209-997</b>		5 cards	E80.0 to E89.7 (1 each)		
			A <sub>1r</sub> , A <sub>2r</sub> , A <sub>1r</sub> , A <sub>2r</sub> , R <sub>1r</sub> , - , R <sub>1r</sub> , - , , ; (10x)			<b>209-941</b>		5 cards
			<b>209-998</b>		5 cards	E90.0 to E99.7 (1 each)		
			<b>for fuse terminal blocks 281-6..</b>			<b>209-942</b>		5 cards
			F 1, ..., F10; (10x)		<b>794-615</b>			5 cards
			F11, ..., F20; (10x)		<b>794-616</b>			5 cards
			F21, ..., F30; (10x)		<b>794-617</b>			5 cards
			F31, ..., F40; (10x)		<b>794-618</b>			5 cards
			F41, ..., F50; (10x)		<b>794-619</b>			5 cards
						E100.0 to E109.7 (1 each)		
						<b>209-943</b>		5 cards
						E110.0 to E119.7 (1 each)		
						<b>209-944</b>		5 cards
						E120.0 to E129.7 (1 each)		
						<b>209-945</b>		5 cards
						continued on next page		

**1** All WSB cards shown on this page are also available as WMB cards with the same suffix. Item no. see table:

WSB	WMB
<b>209-...</b>	rigid
<b>249-...</b>	<b>793-...</b>
	<b>794-...</b>
<b>209-...</b>	stretchable 5 - 5.2 mm
<b>249-...</b>	<b>793-5...</b>
	<b>794-5...</b>
<b>209-...</b>	stretchable 4 - 4.2 mm
<b>249-...</b>	<b>793-4...</b>
	<b>794-4...</b>

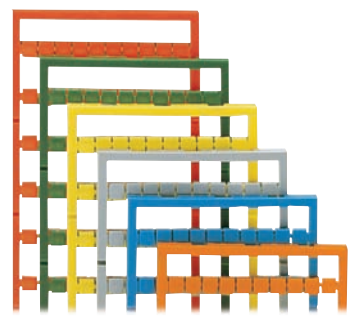
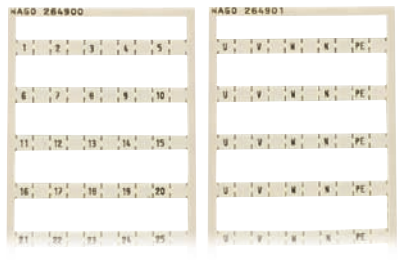
<b>Vertical marking for PLC input marking; (continued)</b> 10 strips with 10 markers per card for terminal block widths 5 - 17.5 mm/0.197 in - 0.689 in (WSB/WMB) 4 - 4.2 mm/0.157 in - 0.165 in (WMB)	<b>Vertical marking for PLC output marking;</b> 10 strips with 10 markers per card for terminal block widths 5 - 17.5 mm/0.197 in - 0.689 in (WSB/WMB) 4 - 4.2 mm/0.157 in - 0.165 in (WMB)	<b>Vertical marking for PLC output marking; (continued)</b> 10 strips with 10 markers per card for terminal block widths 5 - 17.5 mm/0.197 in - 0.689 in (WSB/WMB) 4 - 4.2 mm/0.157 in - 0.165 in (WMB)
---	--	--



Marking per card	Item No.	Pack.-unit pcs	Marking per card	Item No.	Pack.-unit pcs	Marking per card	Item No.	Pack.-unit pcs
<b>for PLC input marking</b>			<b>for PLC output marking</b>			<b>for PLC output marking</b>		
E130.0, E130.1, E130.2, E130.3, E130.4, E130.5, E130.6, E130.7, , ; to			A0.0, A0.1, A0.2, A0.3, A0.4, A0.5, A0.6, A0.7, , ; to			A130.0, A130.1, A130.2, A130.3, A130.4, A130.5, A130.6, A130.7, , ; to		
E139.0, E139.1, E139.2, E139.3, E139.4, E139.5, E139.6, E139.7, , ; (1 each)			A9.0, A9.1, A9.2, A9.3, A9.4, A9.5, A9.6, A9.7, , ; (1 each)			A139.0, A139.1, A139.2, A139.3, A139.4, A139.5, A139.6, A139.7, , ; (1 each)		
<b>209-946</b>		5 cards	<b>209-967</b>		5 cards	<b>209-980</b>		5 cards
same as above, however E140.0 to E149.7 (1 each)			same as above, however A10.0 to A19.7 (1 each)			same as above, however A140.0 to A149.7 (1 each)		
<b>209-947</b>		5 cards	<b>209-968</b>		5 cards	<b>209-981</b>		5 cards
E150.0 to E159.7 (1 each)			A20.0 to A29.7 (1 each)			A150.0 to A159.7 (1 each)		
<b>209-948</b>		5 cards	<b>209-969</b>		5 cards	<b>209-982</b>		5 cards
E160.0 to E169.7 (1 each)			A30.0 to A39.7 (1 each)			A160.0 to A169.7 (1 each)		
<b>209-949</b>		5 cards	<b>209-970</b>		5 cards	<b>209-983</b>		5 cards
E170.0 to E179.7 (1 each)			A40.0 to A49.7 (1 each)			A170.0 to A179.7 (1 each)		
<b>209-950</b>		5 cards	<b>209-971</b>		5 cards	<b>209-984</b>		5 cards
E180.0 to E189.7 (1 each)			A50.0 to A59.7 (1 each)			A180.0 to A189.7 (1 each)		
<b>209-959</b>		5 cards	<b>209-972</b>		5 cards	<b>209-985</b>		5 cards
E190.0 to E199.7 (1 each)			A60.0 to A69.7 (1 each)			A190.0 to A199.7 (1 each)		
<b>209-960</b>		5 cards	<b>209-973</b>		5 cards	<b>209-986</b>		5 cards
E200.0 to E209.7 (1 each)			A70.0 to A79.7 (1 each)			A200.0 to A209.7 (1 each)		
<b>209-961</b>		5 cards	<b>209-974</b>		5 cards	<b>209-987</b>		5 cards
E210.0 to E219.7 (1 each)			A80.0 to A89.7 (1 each)			A210.0 to A219.7 (1 each)		
<b>209-962</b>		5 cards	<b>209-975</b>		5 cards	<b>209-988</b>		5 cards
E220.0 to E229.7 (1 each)			A90.0 to A99.7 (1 each)			A220.0 to A229.7 (1 each)		
<b>209-963</b>		5 cards	<b>209-976</b>		5 cards	<b>209-989</b>		5 cards
E230.0 to E239.7 (1 each)			A100.0 to A109.7 (1 each)			A230.0 to A239.7 (1 each)		
<b>209-964</b>		5 cards	<b>209-977</b>		5 cards	<b>209-990</b>		5 cards
E240.0 to E249.7 (1 each)			A110.0 to A119.7 (1 each)			A240.0 to A249.7 (1 each)		
<b>209-965</b>		5 cards	<b>209-978</b>		5 cards	<b>209-991</b>		5 cards
E250.0 to E259.7 (1 each)			A120.0 to A129.7 (1 each)			A250.0 to A259.7 (1 each)		
<b>209-966</b>		5 cards	<b>209-979</b>		5 cards	<b>209-992</b>		5 cards
			continued in next column					

# Miniature WSB Quick Marking System Mini-WSB<sup>®</sup> WAGO Multi Marking System WMB<sup>®</sup> for Terminal Blocks with Miniature WSB Marker Receptacles

<b>Horizontal marking</b> Consecutive letters/symbols each strip 10 strips with 10 markers for each card ex. for 2-conductor terminal blocks Series 264	<b>Horizontal marking</b> Consecutive letters/symbols each strip 10 strips with 10 markers for each card ex. for 4-conductor terminal blocks Series 264	<b>Colored marker cards</b> Horizontal marking Additional item-numbers 10 strips with 10 markers for each card ex. for 2- and 4-cond. terminal blocks Series 264
--	--	---



Marking per card	Item No.	Pack.-unit pcs	Marking per card	Item No.	Pack.-unit pcs	Color	Item No.
1 ... 10 (10x)	<b>248-502</b>	5 cards	1, 2, 3, 4, 5, ;			Colored marker cards	
11 ... 20 (10x)	<b>248-503</b>	5 cards	to				
21 ... 30 (10x)	<b>248-504</b>	5 cards	46, 47, 48, 49, 50, ; (1 each)			All markings stated opposite are also available with black printing on colored marker cards.	
31 ... 40 (10x)	<b>248-505</b>	5 cards	<b>264-900</b>	5 cards			
41 ... 50 (10x)	<b>248-506</b>	5 cards	U, V, W, N, PE, ; (10x)			Add. item-No. for colored marker cards	
51 ... 60 (10x)	<b>248-569</b>	5 cards	<b>264-901</b>	5 cards			yellow
61 ... 70 (10x)	<b>248-570</b>	5 cards				red	.../000-005
71 ... 80 (10x)	<b>248-571</b>	5 cards	L1, L2, L3, N, PE, ; (10x)			blue	.../000-006
81 ... 90 (10x)	<b>248-572</b>	5 cards	<b>264-902</b>	5 cards		grey	.../000-007
91 ... 100 (10x)	<b>248-573</b>	5 cards				orange	.../000-012
1 ... 50 (2x)	<b>248-566</b>	5 cards	1, 1, 1, 1, 1, ; (10x)			light green	.../000-017
			<b>264-903</b>	5 cards		green	.../000-023
U, V, W, N, PE, U, V, W, N, PE; (10x)	<b>248-474</b>	5 cards	2, 2, 2, 2, 2, ; (10x)			violett	.../000-024
L1, L2, L3, N, PE, L1, L2, L3, N, PE; (10x)	<b>248-472</b>	5 cards				Ordering example	
			3, 3, 3, 3, 3, ; (10x)			Marking 41 ... 50 on yellow card	
plain, <b>209-501</b>	5 cards		<b>264-905</b>	5 cards		<b>248-506/000-002</b>	
for self-marking						<b>Note:</b>	
						Please note that colored marker cards are normally on longer delivery and more expensive than standard cards.	
<b>Marking pen with fibre tip,</b>	<b>210-110</b>	1					
for permanent marking							

Example		
Marking	Mini-WSB card	WMB rigid
51 ... 100	<b>248-507</b>	<b>793-507</b>
F1 ... F10	<b>249-615</b>	<b>794-615</b>
Marking	Mini-WSB card	WMB 5-5,2
51 ... 100	<b>248-507</b>	<b>793-5507</b>
F1 ... F10	<b>249-615</b>	<b>794-5615</b>

① All WSB cards shown on pages 14.9 to 14.11 are also available as WMB cards with the same suffix. Item no. see table:

WSB	WMB
<b>209-...</b>	rigid
<b>249-...</b>	<b>793-...</b>
	<b>794-...</b>
	stretchable 5 – 5.2 mm
<b>209-...</b>	<b>793-5...</b>
<b>249-...</b>	<b>794-5...</b>

## WAGO T Marker Tag



The T marker tag can be used with:

- series 264 modular terminal blocks and terminal strips and
- series 270 sensor and actuator terminal blocks

### 6 characters per marker

The new T marker tag fulfills the customer request for larger marking areas for series 264 terminal strips.

The T marker can be marked with up to 6 characters per marker and is snapped into the miniature WSB marker receptacle.

Terminal strips in any combination of 2- and 4-conductor terminal blocks can be marked without difficulty by stretching the tag.

30 markers per tag, suitable for terminal block widths from 5 mm/0.197 in to 6 mm/0.236 in, Each marker can be marked with up to 6 characters

plain	<b>209-290</b>	50 pieces
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Pre-printed markers on request

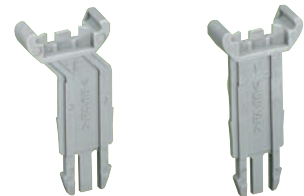
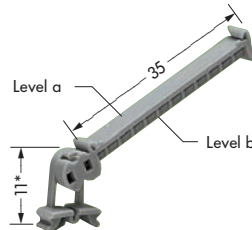






# WCB Combi Marking System and Group Marker Carrier

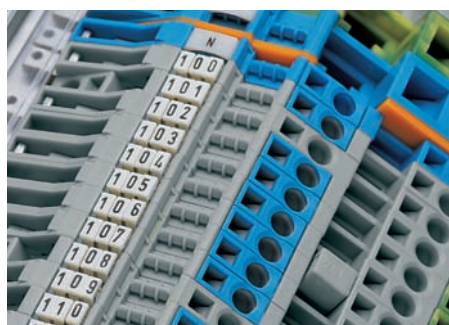
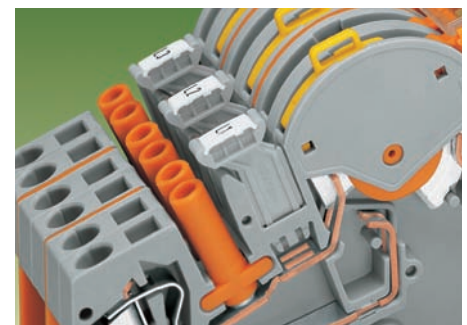
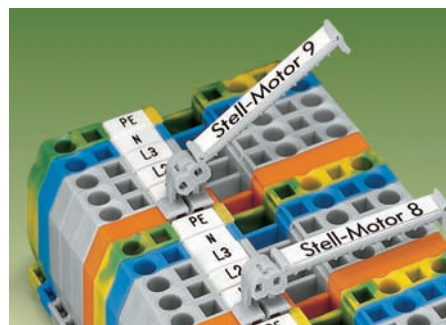
<b>WCB Combi marking system</b>  <b>20 markers with identical numbers/letters each tag</b>	<b>WAGO pivotable group marker carrier</b> – for rail-mounted terminal blocks from 5 mm / 0.197 in on and in spacer housings	<b>WAGO group marker carriers</b> for terminal block series 282
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\* from upper edge of terminal block

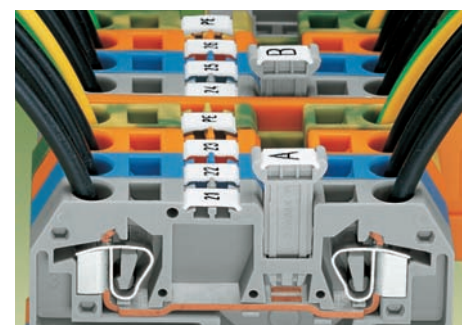
Marking per tag	Item No.	Marking per tag	Item No.	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
plain	249-200	A (20x)	249-211	<b>Pivotable group marker carrier</b>		The <b>group marker carriers</b> are available in two different versions:	
1 (20x)	249-201	B (20x)	249-212	249-105	50	– angled, for example for transformer terminal blocks (picture below top)	
2 (20x)	249-202	C (20x)	249-213	<b>Marker card, 4 x 30 pcs per sheet</b>		– straight, for example for 2- and 3-conductor terminal blocks (picture below bottom)	
3 (20x)	249-203	D (20x)	249-214	209-183	1 sheet	209-144	50
4 (20x)	249-204	E (20x)	249-215	<b>Protection cover, transparent</b>			
5 (20x)	249-205	F (20x)	249-216	209-184	50	209-143	50
6 (20x)	249-206	G (20x)	249-217				
7 (20x)	249-207	H (20x)	249-218				
8 (20x)	249-208	I (20x)	249-219				
9 (20x)	249-209	J (20x)	249-220				
0 (20x)	249-210	K (20x)	249-221				
		L (20x)	249-222				
1 . . . 0 (2x)	249-239	M (20x)	249-223				
		N (20x)	249-224				
1. (20x)	249-241	O (20x)	249-225			Appropriate marking systems: WSB, WMB and WCB	
2. (20x)	249-242	P (20x)	249-226				
3. (20x)	249-243	Q (20x)	249-227				
4. (20x)	249-244	R (20x)	249-228				
5. (20x)	249-245	S (20x)	249-229				
6. (20x)	249-246	T (20x)	249-230				
7. (20x)	249-247	U (20x)	249-231				
8. (20x)	249-248	V (20x)	249-232				
9. (20x)	249-249	W (20x)	249-233				
0. (20x)	249-250	X (20x)	249-234				
		Y (20x)	249-235				
+	249-237	Z (20x)	249-236				
-	249-238						

Pieces per packing unit: 10 tags



This pivotable group marker carrier has been developed for group marking of rail-mounted terminal blocks and brings together many requirements of our customers.

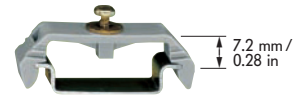
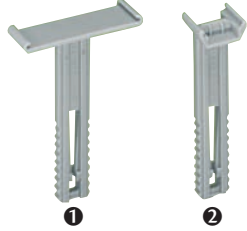
- Can be used in all multiprofile marker receptacles for rail-mounted terminal blocks from 5 mm width on or in spacer housings as shown in the picture
- Pivotable in 7 different stable positions, providing the best visual angle in case of difficult mounting conditions
- Two levels for different marking systems  
 Level a:  
 for marker card (4 x 34) mm (see picture)  
 Level b:  
 for 12 WCB-Combi markers (see left column)



The new group marker carriers make it possible to mark subgroups in confined places. These group marker carriers can be snapped into the jumper contact positions of the terminal block housing.

# Group Marker Carriers and Mounting Carrier

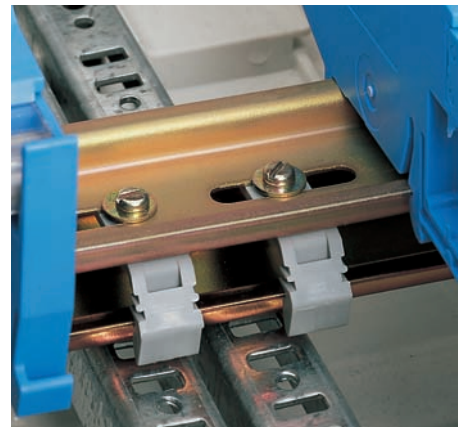
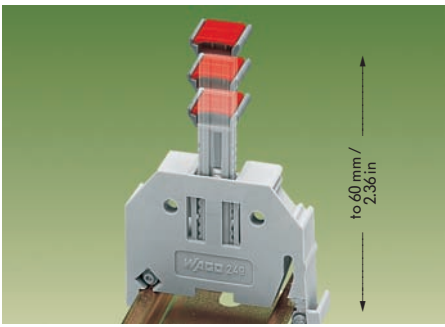
WAGO group marker carriers	Adjustable height group marker carriers	Mounting carrier for isolated mounting on rail
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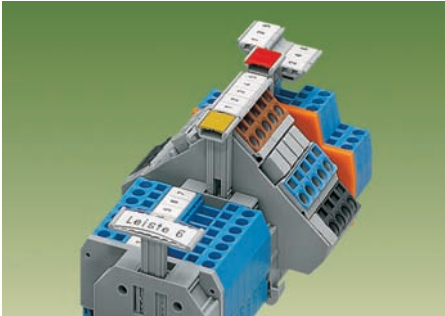
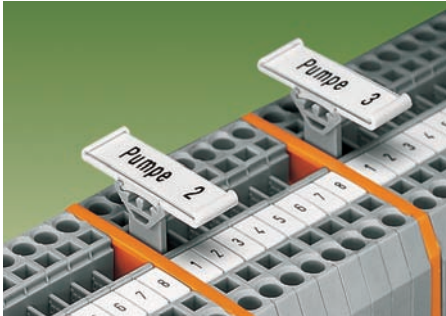
Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
<b>Group marker carrier</b> , for snapping into screwless end stops, 10 mm / 0.394 in wide, for center or side mounting <b>209-112 ①</b>	50	<b>Adjustable height group marker carriers</b> , suitable for end stops 249-116 and 249-117 (see page 14.19)		<b>Mounting carrier</b> , for isolated mounting on DIN 35 rail <b>209-106</b>	25
<b>Marker card . . .</b> , from white cardboard, for self-marking, 100 markers per sheet <b>209-113 ②</b>	1 sheet	for 1 marker card or self-adhesive label and transparent cover protection (see on the left) <b>249-119 ①</b>	50 (2 x 25)		
<b>. . . or self-adhesive label</b> , for self-marking, 7 x 25 pcs per sheet <b>210-345 ②</b>	1 sheet	for 2 WSB Quick markers each, 3 WCB Combi markers or 1 x continuous marking strip <b>249-118 ②</b>	100 (4 x 25)		
<b>Protection cover</b> , transparent <b>209-114 ③</b>	50				

<b>Group marker carrier</b> , for jumper contact slots of rail-mounted terminal blocks, for terminal block widths 4 – 8 mm / 0.157 – 0.315 in	
for up to 3 WMB Markers or 8 branch markers, 15 mm / 0.591 in wide <b>209-140 ④</b>	50
for up to 2 WMB Markers or 5 branch markers, 10 mm / 0.394 in wide <b>209-141 ④</b>	50
for 1 WMB Marker or 2 branch markers, 5 mm / 0.197 in wide <b>209-142 ④</b>	50

### Application notes



Isolated mounting of a carrier rail in a distribution box for protection class 2. Here shown with rail-mounted terminal blocks.

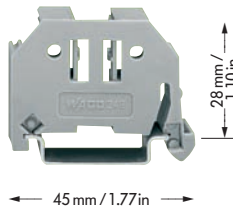
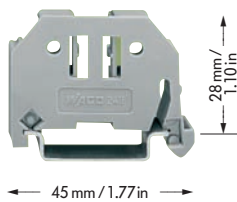


Receptacles for:  
 1 x marker card  
 2 x WSB (Quick marking) or  
 3 x WCB (Combi marking) or  
 1 x WFB (Continuous marking strips)



# End Stop for DIN 35 Rail

End stop for DIN 35 rail, End stop width 6 mm / 0.236 in	End stop for DIN 35 rail, End stop width 10 mm / 0.394 in	
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Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
<b>End stop, for DIN 35 rail</b> 6 mm / 0.236 in wide		<b>End stop, for DIN 35 rail</b> 10 mm / 0.394 in wide	
<b>249-116</b>	100 (4 x 25)	<b>249-117</b>	50 (2 x 25)

## Application notes

Fit – and forget! Assembling the new WAGO screwless end stop is as simple and quick as snapping a WAGO rail-mounted terminal block onto the rail.

### Without any tools!

This way rail-mounted terminal blocks are safely secured, at low cost, against any movement on all carrier rails DIN 35 acc. to DIN EN 50022 (35 x 7.5 mm; 35 x 15 mm).

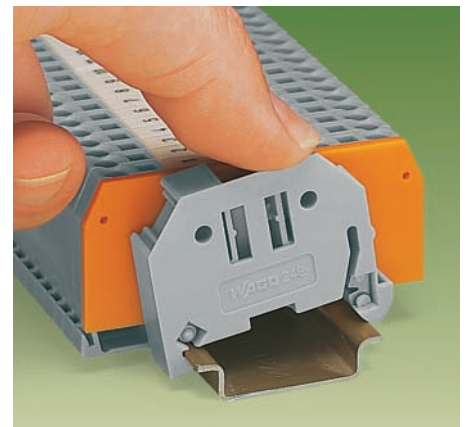
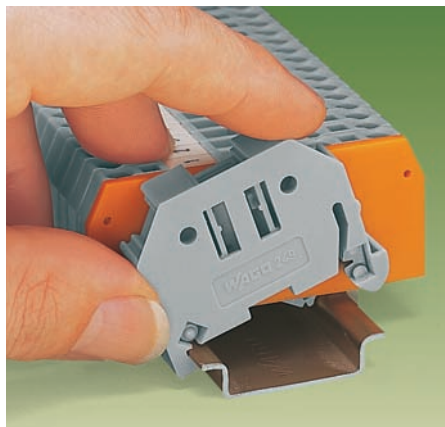
### Entirely without screws!

The “secret” of the excellent tight fit lies in the two small clamping plates which keep the end stop in position, even if the rails are mounted vertically.

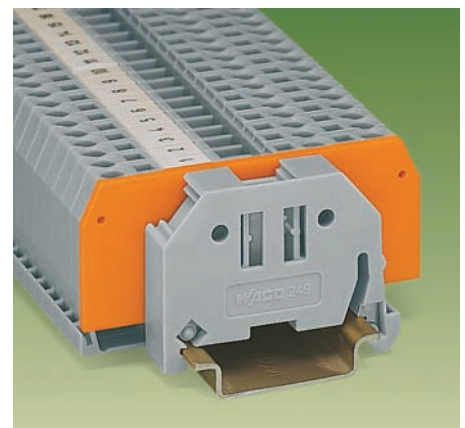
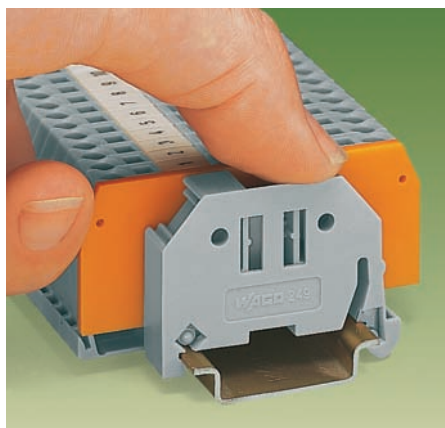
### Simply snap on and forget!

In addition, costs are considerably reduced when using large numbers of end stops.

A further advantage is that three marker receptacles for all WAGO marker systems for rail-mounted terminal blocks and a snap-in hole for WAGO adjustable height group marker carriers offer individual marking possibilities.



Snap on . . .



. . . that's it!



# No sooner said than done. ProServe®. Service that simply works.



ProServe

WAGO ProServe®

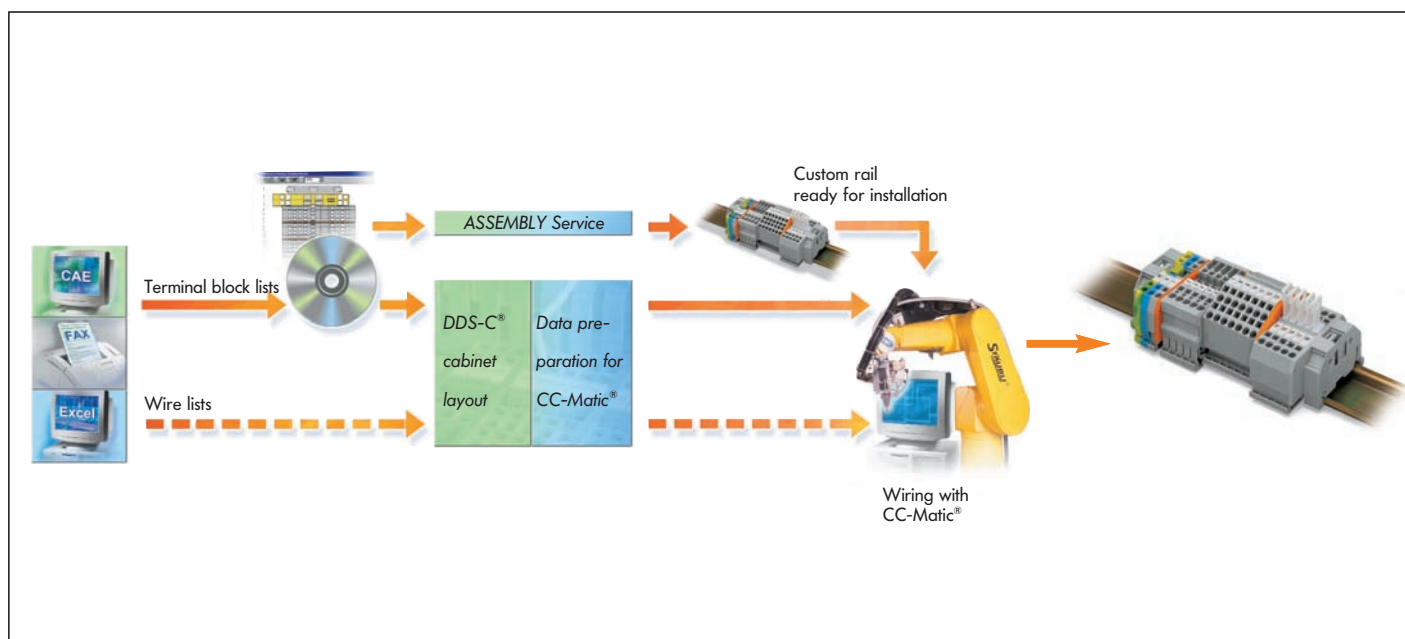
No sooner said than done. ProServe®.  
Service that simply works.



**WAGO**®  
INNOVATIVE CONNECTIONS

The benefits of ProServe are at your disposal every day. With unique features such as accuracy checking, ProServe does a lot of the work for you, therefore saving you time and money. Immediate access to professional and sophisticated services allows for error-free applications, higher flexibility in your daily business and better customer service. With more than 50 years of WAGO expertise at your disposal, put ProServe to work for you in your next application.

# From the circuit diagram to automated wiring.

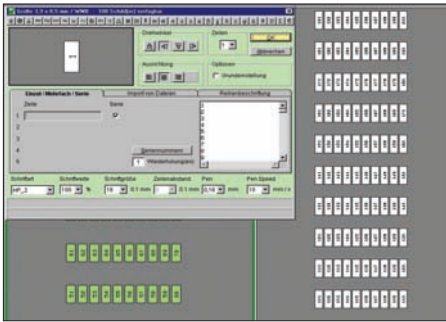


## CONTENTS

### ProServe

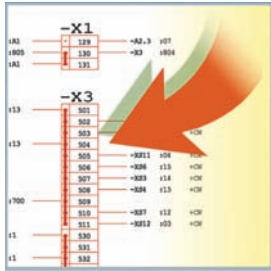
	Page
Services _____	14.22
Software package _____	14.23
Hardware _____	14.24 – 14.25
Accessories _____	14.26
Markings/marketing accessories _____	14.27
Matrix of devices supported by the ProServe marking service _____	14.28 – 14.29
Data sheets (printers/plotter) _____	14.30 – 14.34

<b>Marking service</b>	<b>Assembly service for custom rail assemblies</b>	<b>Wiring service</b>
------------------------	--	-----------------------



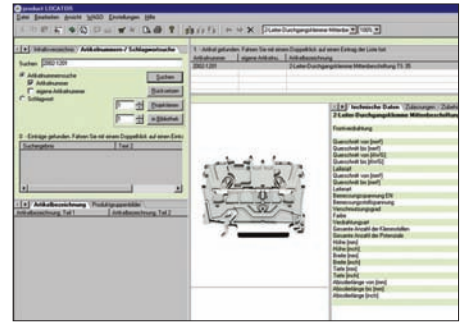
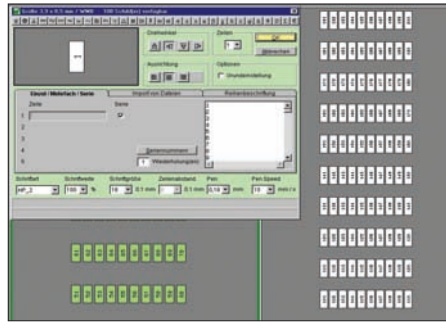
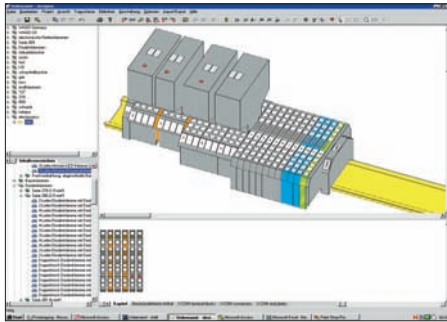
Description	Description	Description
Special markings often require considerable manual work. WAGO smartMARKING helps you minimize this work and optimize the quality of the markings.	Reduce your inventory and part numbers for WAGO terminal blocks and accessories to a single part number: Rail assemblies <b>ready for installation!</b>	The WAGO ProServe wiring service turns the custom rail, ready for installation in a switchgear cabinet, into a wired custom rail <b>ready for connection.</b>
<b>Simply send us your specifications.</b> We will do the rest.	<b>Simply send us your specifications.</b> We will do the rest.	<b>Simply send us your specifications.</b> We will do the rest.
▶ by fax	▶ by fax	▶ by fax
▶ via e-mail	▶ via e-mail	▶ via e-mail
▶ via ProServe Software	▶ via ProServe Software	▶ via ProServe Software

<b>www.wago.com</b>	<b>Macros</b>	<b>Training</b>
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Description	Description	Description
▶ Support-Center	Product macros, i.e. completed product "drawings", make CAD/CAE drawing faster and easier. The EPLAN software version 5.4 includes macro data of the WAGO-I/O-SYSTEM 750 for circuit diagrams, plans and graphics. They can be easily incorporated into the design process in much the same way custom rail assemblies are installed in a switchgear cabinet.	▶ WAGO smartDESIGNER ▶ WAGO smartMARKING ▶ WAGO productLOCATOR
▶ Call-Back Service		
▶ Online Info Service		WAGO seminars help you work optimally with innovative products in a very short time. You will mainly learn by doing without unnecessary teaching. The training will have a cost saving effect for you by reducing the time needed to effectively use our intelligent products. Time is money!
▶ Online Catalog <a href="http://www.wagocatalog.com">www.wagocatalog.com</a>	Free update service at: <a href="http://www.wago.com">www.wago.com</a> (Service/ Downloads/ Software/ CAD/ CAE)	
		Please register at <a href="http://www.wago.com/wagoweb/usa/eng/service/training/index.htm">www.wago.com/wagoweb/usa/eng/service/training/index.htm</a>

<b>WAGO smartDESIGNER</b>	<b>WAGO smartMARKING</b>	<b>WAGO productLOCATOR</b>
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Description	Description	Description
<b>Innovative WAGO ProServe design service</b>	<b>WAGO marker cards – Simplification of terminal block markings.</b>	<b>Full-function product search:</b>
<b>Features overview:</b>	WAGO SCRIPT helps you minimize the cost of custom marking and optimize printing results.	<ul style="list-style-type: none"> <li>▶ Interactive access to over 12,000 part numbers</li> <li>▶ Search by product groups or item numbers</li> <li>▶ Search by keywords or technical data</li> <li>▶ Import of custom part numbers</li> <li>▶ Create part lists with a single mouse-click</li> <li>▶ 13 languages</li> <li>▶ Updates via the Internet</li> </ul>
<ul style="list-style-type: none"> <li>▶ Interactive 3D design of: terminal blocks, connectors, PCB terminal blocks, WAGO-I/O-SYSTEM, ELECTRONICC</li> <li>▶ Possibility of using your own custom part numbers</li> <li>▶ Intelligent, accuracy check feature (AutoAudit function)</li> <li>▶ Data exchange with CAE, XLS, etc.</li> <li>▶ Creation of individual project libraries in addition to the WAGO standard libraries</li> <li>▶ Possibility of designing and printing the marking directly</li> <li>▶ 13 languages</li> <li>▶ Updates via the Internet</li> </ul>	<ul style="list-style-type: none"> <li>▶ WYSIWYG marking</li> <li>▶ Automatic calibration of the plotter</li> <li>▶ Import data from various CAE systems, MS-Excel, WAGO smartDESIGNER</li> <li>▶ Marker cards for marking tag type: WSB, miniature WSB, WTB, WMB etc. with custom marking and competitor's marking</li> <li>▶ Electronic symbol library</li> <li>▶ Text length check feature</li> <li>▶ 13 languages</li> <li>▶ Updates via the Internet</li> </ul>	

<b>Marking cards (plain)</b>	<b>ProServe SOFTWARE</b> <b>Item No. 0888-0402/...</b>	
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Description	Item No.	Description
<b>Adhesive marker strips on cards DIN A4</b>		<b>The software package includes:</b>
pin spacings	strips	▶ WAGO smartDESIGNER
can be chosen	per card	▶ WAGO smartMARKING
Strip height 2.3 mm	100 x <b>210-331</b>	▶ WAGO productLOCATOR
Strip height 3 mm	80 x <b>210-332</b>	▶ WAGO wireLINK
Strip height 5 mm	48 x <b>210-334</b>	
Strip height 6 mm	40 x <b>210-333</b>	
Strip height 9 mm	40 x <b>210-335</b>	
Strip length 182 mm		



Thermal transfer printers TP 298	Thermal transfer printer TP 300	Thermal transfer printer TP 297
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The printers are suitable for printing thermal transfer labels, cable markers, type labels, heat shrink tubes, barcodes, etc. Furthermore, they can be used to print marker strips of both TOPJOB®S and 870, 869, 862 as well as 270 series. For exceptional print quality, the printers offer all the advantages and benefits of the thermal transfer technology. For more information see data sheets beginning on page 11.16

Description	Item No.	Description	Item No.	Description	Item No.
<b>Thermal transfer printer, TP 298</b>	<b>258-298</b>	<b>Thermal transfer printer, TP 300</b>	<b>258-300</b>	<b>Thermal transfer printer, TP 297</b>	<b>258-297</b>
Resolution 300 dpi, without display		Resolution 300 dpi		Resolution 203 dpi, without display	
- technical data on page 14.32		- technical data on page 14.30		- technical data on page 14.33	
ProServe Software included		ProServe Software included		ProServe Software included	

**Accessories required for the marking of marker strips**

<b>Ink ribbon for marker strips</b>	<b>258-145</b>	<b>Marker strips for series ...</b>		
resin, width 38 mm x 300 m		... TOPJOB®S white, plain, width 11 mm,		
		50 m roll	<b>2009-110</b>	
		300 m roll	<b>2009-130</b>	
		... 870, 869, 862, 270		
		white, plain, width 7.5 mm		
		50 m roll	<b>709-178</b>	
		300 m roll	<b>709-188</b>	
		translucent, plain, width 7.5 mm		
		50 m roll	<b>709-177</b>	
		300 m roll	<b>709-187</b>	

**Optional accessories**

<b>Ink ribbon for labels</b>		<b>Carrying case for TP300/298</b>	<b>258-171</b>	
resin/wax, width 60 mm x 300 m	<b>258-143</b>	<b>Carrying case for TP 297</b>	<b>258-172</b>	
resin/wax, width 100 mm x 300 m	<b>258-144</b>			
		<b>Retractable handle</b>	<b>258-173</b>	
<b>External coil mounting system</b>	<b>258-169</b>	<b>for carrying case</b>		
for 300 m rolls				
<b>Cutter</b>				
<b>TP 298/300</b>	<b>258-161</b>			
<b>Spare roller</b>	<b>258-162</b>			
<b>Network card for TP300</b>	<b>258-163</b>			
<b>USB card for TP300</b>	<b>258-164</b>			
<b>Label dispenser</b>	<b>258-165</b>			

<b>Plotter</b>	<b>Full plotter package</b>	
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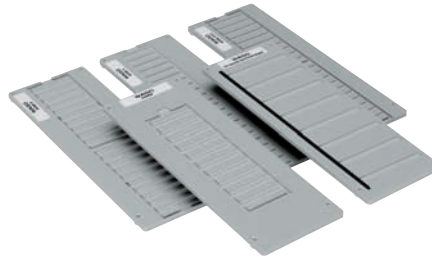


**Plotter** suitable for marking any type of WAGO marker card or competitor's markers, including the ProServe **CD-ROM** and WAGO smartMARKING software.

**The full plotter package, available in 4 versions,** is suitable for marking any type of WAGO marker card or competitor's markers. Includes the ProServe **CD-ROM** and WAGO smartMARKING software.

Description	Item No.	Description	Item No.
<b>Plotter IP 350</b>	<b>258-350</b>	<b>Version 1</b>	<b>258-350/000-001</b>
including power supply and centronics cable, – technical data see page 14.34		1 plotter incl. power supply and centronics cable	
<b>WAGO plotter pen</b> (shown page 11.12)		1 ProServe software	
Line width 0.18 mm	<b>258-226</b>	4 WMB carrier plates 5 mm/0.197 in	
Line width 0.25 mm	<b>258-227</b>	20 WMB marker cards 5 mm/0.197 in	
Line width 0.35 mm	<b>258-228</b>	1 plotter pen, line width 0.25 mm (disposable)	
Line width 0.50 mm	<b>258-229</b>	1 plotter pen, line width 0.35 mm (disposable)	
<b>WAGO plotter pen</b> (disposable)		<b>Version 2</b>	<b>258-350/000-002</b>
Line width 0.25 mm	<b>258-327</b>	1 plotter incl. power supply and centronics cable	
Line width 0.35 mm	<b>258-328</b>	1 ProServe Software	
<b>WAGO cleaning set</b> (shown page 11.12)		4 WSB carrier plates	
	<b>258-139</b>	20 WSB marker cards	
<b>WAGO pen cleaner</b> (shown page 11.12)		1 plotter pen, line width 0.25 mm (disposable)	
	<b>258-140</b>	1 plotter pen, line width 0.35 mm (disposable)	
<b>WAGO ink cartridges</b> (shown page 11.12)		<b>Version 3</b>	<b>258-350/000-003</b>
black, for permanent marking, not refillable (5 x 1 ml)	<b>258-141</b>	1 plotter incl. power supply and centronics cable	
<b>Carrier plate for Plotter IP 350</b> (shown page 11.12)		1 ProServe software	
WSB 5 mm (209-501)	<b>258-361</b>	2 WMB (5 mm/0.197 in) carrier plates	
WSB 4 mm (209-701)	<b>258-362</b>	2 miniature WSB carrier plates	
Mini-WSB (248-501)	<b>258-363</b>	10 WMB (5 mm/0.197 in) marker cards	
Group marking carriers (209-112)	<b>258-364</b>	10 miniature WSB marker cards	
WMB 5 mm (793-501)	<b>258-368</b>	1 plotter pen, line width 0.25 mm (disposable)	
WMB 4 mm (793-4501)	<b>258-368</b>	1 plotter pen, line width 0.35 mm (disposable)	
For other carrier plates see page 11.12		<b>Version 4</b>	<b>258-350/000-004</b>
<b>Marker tags</b>		1 plotter incl. power supply and centronics cable	
(209-200)	<b>258-369</b>	1 ProServe software	
<b>Marker strips</b>		1 WMB carrier plate 5 mm/0.197 in	
(2009-110 + 2009-130 and 709-...)	<b>258-410</b>	1 WSB carrier plate 5 mm/0.197 in	
<b>WMB Inline</b>		1 miniature WSB carrier plate	
(2009-115 + 2009-135)	<b>258-412</b>	1 WSB carrier plate 4 mm/0.157 in	
		5 WMB marker cards 5 mm/0.197 in	
		5 WSB marker cards 5 mm/0.197 in	
		5 miniature WSB marker cards	
		5 WMB marker cards 4 mm/0.157 in	
		1 plotter pen, line width 0.25 mm (disposable)	
		1 plotter pen, line width 0.35 mm (disposable)	

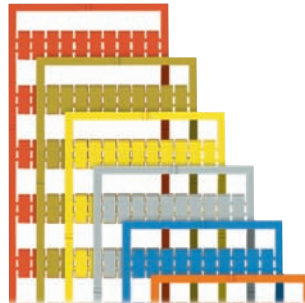
Accessories for thermal transfer printers	Marker card carrier plates for plotter IP 350	Plotter accessories
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Description	Item No.	Description	Item No.	Description	Item No.
<b>Ink ribbon for marker strips</b> resin, width 38 mm x 300 mm	<b>258-145</b>	<b>Carrier plates for marker cards</b> WSB 5 mm/0.197 in (209-501)	<b>258-361</b>	<b>Carrier plate for Partex</b> <b>PA+1</b>	<b>258-391</b>
		WSB 4 mm/0.157 in (209-701)	<b>258-362</b>	<b>PA+2</b>	<b>258-392</b>
<b>Ink ribbon for labels</b> resin/wax, width 60 mm x 300 m	<b>258-143</b>	Miniature WSB (248-501)	<b>258-363</b>	<b>PK2 PVC</b>	<b>258-393</b>
resin/wax, width 100 mm x 300 m	<b>258-144</b>	Group marking carriers (209-112)	<b>258-364</b>	<b>Carrier plate for Entelec</b> <b>Universal</b>	<b>258-394</b>
		WMB 5 mm/0.197 in (793-501)	<b>258-368</b>		
		WMB 4 mm/0.157 in (793-4501)	<b>258-368</b>		
<b>External coil mounting system</b> for 300 m rolls	<b>258-169</b>	<b>Carrier plates for murrplastik</b> <b>MP-400</b>	<b>258-370</b>	<b>WAGO plotter pen</b> line width	
<b>Cutter</b> <b>TP 298/300</b>	<b>258-161</b>	KS 4/12, 4/18, 4/23, 4/30 <b>MP-401</b>	<b>258-371</b>	0.18 mm/0.007 in	<b>258-226</b>
<b>Spare roller</b>	<b>258-162</b>	KES, KLG,KMR, KPX, KS 15x17/27/49/67, KSA, KSF, KSI, KSK, KSO, KSS, KTE, KWI, SKS, WGO, KAB		0.25 mm/0.010 in	<b>258-227</b>
<b>Network card for TP300</b>	<b>258-163</b>	<b>BS 5/6</b>	<b>258-397</b>	0.35 mm/0.014 in	<b>258-228</b>
<b>USB card for TP300</b>	<b>258-164</b>			0.50 mm/0.020 in	<b>258-229</b>
<b>Label dispenser</b>	<b>258-165</b>	<b>Carrier plates for Phoenix Contact</b> <b>ZBM</b>	<b>258-372</b>	The WAGO plotter pen is suitable for any kind of smooth surfaces. No additional adapter is required.	
		<b>ZB</b>	<b>258-373</b>	<b>WAGO plotter pen (disposable)</b>	
<b>Carrying case for TP 300/298</b>	<b>258-171</b>	<b>ZBN</b>	<b>258-374</b>	Line width 0.25 mm	<b>258-327</b>
<b>Carrying case for TP 297</b>	<b>258-172</b>	<b>ZBFM</b>	<b>258-375</b>	Line width 0.35 mm	<b>258-328</b>
		<b>BNZ</b>	<b>258-377</b>		
<b>Retractable handle</b> <b>for carrying case</b>	<b>258-173</b>	<b>BN-ZB</b>	<b>258-378</b>	<b>Cleaning set</b>	<b>258-139</b>
		<b>SS-ZB</b>	<b>258-379</b>	suitable for cleaning all plotter pens	
		<b>PAB</b>	<b>258-381</b>		
		<b>GPE</b>	<b>258-382</b>	<b>WAGO Pen Cleaner</b>	<b>258-140</b>
		<b>BMK, ESL label sheets</b>	<b>258-383</b>		
		<b>Carrier plates for Siemens</b> <b>Sirius 10 x 7, 20 x 7</b>	<b>258-384</b>	<b>WAGO ink cartridges,</b>	<b>258-141</b>
		<b>22 x22</b>	<b>258-385</b>	black, for permanent marking, not refillable (5 x 1 ml)	
		<b>18 x28</b>	<b>258-386</b>		
		<b>Carrier plate for Weidmüller</b> <b>MC Universal</b>	<b>258-387</b>		
		<b>MC SF4-6</b>	<b>258-388</b>		
		<b>Carrier plate for Wörtz/Allen-Bradley</b> <b>Universal</b>	<b>258-389</b>		
		<b>Carrier plate for Möller</b> <b>XB M22-XST</b>	<b>258-390</b>		

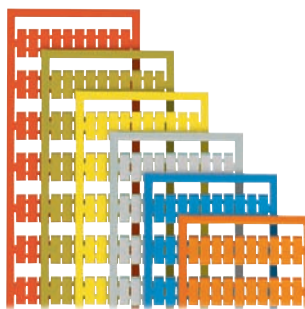
# Marking Accessories

<b>Marker cards (plain)</b>	<b>Marker cards (plain)</b>	<b>Group marking carrier</b>
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Description	Item No.	Description	Item No.	Description	Item No.
<b>Marker cards and tags</b>		<b>Marker cards and tags</b>		<b>Group marking carrier</b>	<b>209-112</b>
WSB 5 – 8 mm/0.197 in – 0.384 in	<b>209-501</b>	WMB 5 mm/0.197 in	<b>793-501</b>	for snapping into 10 mm/0.394 in wide	
		WMB 4 – 4.2 mm/0.157 in – 0.165 in	<b>793-4501</b>	screwless end stops for center or side mounting	
		WMB 5 – 5.2 mm/0.197 in – 0.205 in	<b>793-5501</b>	for carrier plate (258-364)	
Additional item Nos. for colored marker cards		Additional item Nos. for colored marker cards			
yellow	.../000-002	yellow	.../000-002		
red	.../000-005	red	.../000-005		
blue	.../000-006	blue	.../000-006		
grey	.../000-007	grey	.../000-007		
orange	.../000-012	orange	.../000-012		
light green	.../000-017	light green	.../000-017		
green	.../000-023	green	.../000-023		
violet	.../000-024	violet	.../000-024		

<b>Marker cards (plain)</b>	<b>Marker cards (plain)</b>	<b>Marker strips</b>
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Description	Item No.	Description	Item No.	Description	Item No.
<b>Marker cards and tags</b>		<b>Marker cards and tags</b>		<b>Marker strips for series ...</b>	
Miniature WSB	<b>248-501</b>	WSB 4 mm/0.157 in	<b>209-701</b>	... <b>TOPJOB®S</b> white, plain, width 11 mm,	
				50 m roll	<b>2009-110</b>
				300 m roll	<b>2009-130</b>
Additional item Nos. for colored marker cards		Additional item Nos. for colored marker cards		... <b>870, 869, 862, 270</b>	
yellow	.../000-002	yellow	.../000-002	white, plain, width 7.5 mm	
red	.../000-005	red	.../000-005	50 m roll	<b>709-178</b>
blue	.../000-006	blue	.../000-006	300 m roll	<b>709-188</b>
grey	.../000-007	grey	.../000-007	translucent, plain, width 7.5 mm	
orange	.../000-012	orange	.../000-012	50 m roll	<b>709-177</b>
light green	.../000-017	light green	.../000-017	300 m roll	<b>709-187</b>
green	.../000-023	green	.../000-023		
violet	.../000-024	violet	.../000-024		



# Matrix of Devices Supported by the ProServe Marking Service

Thermal transfer printer  
TP 297



Thermal transfer printer  
TP 298



Version	Item No.	TP 297	TP 298
		Printer 258-297	Printer 258-298
Marker carriers	Marker strips 7.5 mm <sup>1)</sup> Item No. 50 m roll Item No. 300 m roll	709-177 —	709-177 709-187
	Marker strips 11 mm <sup>2)</sup> Item No. 50 m roll Item No. 300 m roll	2009-110 —	2009-110 2009-130
	WMB Item No.	—	—
	WSB 5 mm Item No.	—	—
	WSB 4 mm Item No.	—	—
	Miniature WSB Item No.	—	—
Interfaces		parallel serial	serial USB Ethernet
Resolution	203 dpi 300 dpi	X —	— X
	Labels	X	X

<sup>1)</sup> suitable for series 870, 869, 862 and 270

<sup>2)</sup> suitable for the TOBJOB®S series

Thermal transfer printer  
TP 300



Plotter  
IP 350



	TP 300	IP 350
	Printer 258-300	Plotter 258-350
	709-177 709-187	709-177 709-187
	2009-110 2009-130	2009-110 —
	—	793-501 793-5401 793-5501
		209-501
	—	209-701
	—	248-501
	parallel serial	parallel USB
	— X	n.r.
	X	

# 14 Thermal Transfer Printer TP 300

30



Description		Item No.	Pack.-unit pcs
TP 300	Resolution 300 dpi	258-300	1
<b>System Data</b>			
<b>Printing method</b>	Thermal/thermal transfer	<b>Electronics</b>	
<b>Printhead system</b>	Thick film	<b>Processor 32 Bit ColdFire</b>	64 MHz
<b>Print speed</b>	150 mm/sec.	<b>RAM</b>	8 MB
<b>Print width</b>	108.4 mm	<b>ROM</b>	2 MB Flash
<b>Label material,</b>	Continuous mat. on rolls or paper transport	<b>Slot for memory card</b>	standard
	Thermal and standard paper, cardboard, textil, plastic foil: PE, PP, PVC, PA	- CompactFlash Type 1	
<b>Material thickness/weight</b>	0.07 - 0.3 mm / 60-300 g/m <sup>2</sup>	<b>Real time clock</b>	standard
		- for print-out of date and time	
<b>Supply roll</b>		<b>Operation panel as navigator pad</b>	4 / 8
<b>Roll diameter</b>	max. 210 mm	- keys/indicators	
<b>Core diameter</b>	38.1 mm - 76 mm	<b>LCD-grafic display</b>	standard
<b>Width of liner</b>	120 mm	- text 2 lines/20 characters, symbols	
<b>Label width</b>	12 mm - 116 mm	<b>Interfaces</b>	
<b>Label height</b>	5 - 1000 mm	<b>Serial RS 232 C</b>	standard
		- 1200 up to 230 400 bauds/8 bit	
<b>Transfer ribbon</b>		<b>RS 422, RS 485</b>	optional
<b>Ink</b>	inside or outside	- 1200 up to 230 400 bauds/8 bit	
<b>Roll diameter</b>	max. 80 mm	<b>Parallel Centronics</b>	standard
<b>Core diameter</b>	25 mm	- bidirectional acc. to IEEE 1284	
<b>Running length variable</b>	max. 500 m	<b>Ethernet 10/100 Base T,</b>	optional
<b>Width</b>	max. 114 mm	LDP, RawIP-Printing, HTTP, SMTP, DHCP, SNMP, Time, FTP	
<b>Internal rewinder</b>		<b>Wireless LAN</b>	on request
<b>Total diameter</b>	max. 145 mm	<b>USB Slave for PC connection</b>	optional
<b>Core diameter</b>	38.1 mm	<b>Twinax / Coax Converter</b>	optional
<b>Winding direction</b>	only outside	- for IBM connection	
<b>Dimensions</b>		<b>USB Master for keyboard/scanner</b>	standard
<b>Height, depth, width</b>	274 mm, 446 mm, 242 mm	<b>Peripheral connection</b>	standard
<b>Weight</b>	10 kg	<b>Accessories (optional)</b>	
<b>Energy consumption</b>	max. 250 W	Cutter, dispense key, external unwinder, external rewinder, memory card Compact Flash Type 1 up to 64 MB, PC-keyboard USB with 4 Hub, Compact PC-keyboard USB	
<b>Label sensor</b>		<b>Power supply</b>	100 - 240 V ~ 50/60 Hz, PFC
<b>Distance to guide edge</b>	4 mm - 575 mm	<b>Operating temperature/humididy non condensing</b>	10 - 35 °C / 30 - 85 %
<b>See-through/reflective sensor</b>	standard	<b>Safety regulations</b>	CE, FCC class 1

Subject to design changes





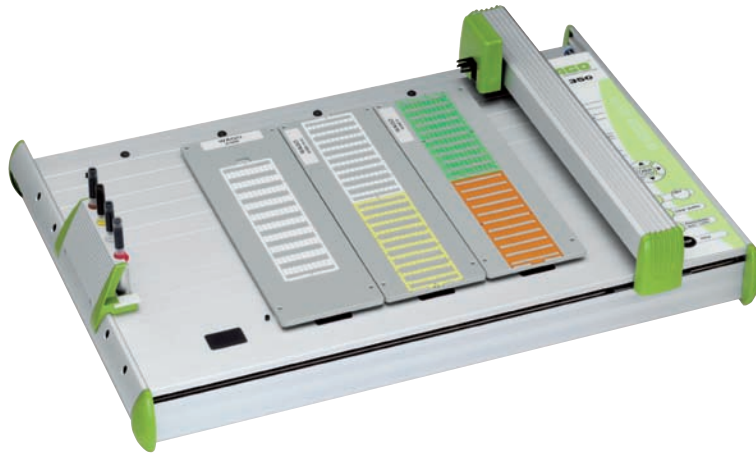
## Thermal Transfer Printer TP 298



Description		Item No.	Pack.-unit pcs
TP 298	Resolution 300 dpi	258-298	1
<b>System Data</b>			
<b>Printing method</b>	Thermal/thermal transfer	<b>Electronics</b>	
<b>Printhead system</b>	Thick film	<b>Processor 32 Bit ColdFire</b>	64 MHz
<b>Print speed</b>	100 mm/sec.	<b>RAM</b>	8 MB
<b>Print width</b>	108.4 mm	<b>ROM</b>	4 MB Flash
<b>Label material,</b>	Continuous mat. on rolls or paper transport	<b>Slot for memory card</b>	standard
	Thermal and standard paper, cardboard, textil, plastic foil: PE, PP, PVC, PA	- CompactFlash Type 1	
<b>Material thickness/weight</b>	0.07 mm - 0.3 mm / 60 g/m <sup>2</sup> -300 g/m <sup>2</sup>	<b>Interfaces</b>	
<b>Supply roll</b>		<b>Serial RS 232 C</b>	standard
<b>Roll diameter</b>	max. 210 mm	<b>Ethernet 10/100 Base T,</b>	standard
<b>Core diameter</b>	38.1 mm - 76 mm	<b>USB for PC connection</b>	standard
<b>Width of liner</b>	120 mm	<b>Accessories (optional)</b>	
<b>Label width</b>	12 mm - 116 mm	Cutter, external unwinder, external rewinder,	
<b>Label height</b>	5 mm - 1000 mm	memory card Compact Flash Type 16-512 MB	
<b>Transfer ribbon</b>		<b>Power supply</b>	100 - 240 V ~ 50/60 Hz, PFC
<b>Ink</b>	inside or outside	<b>Operating temperature/humidity</b>	
<b>Roll diameter</b>	max. 80 mm	<b>non condensing</b>	10 - 35°C / 30 - 85%
<b>Core diameter</b>	25 mm	<b>Safety regulations</b>	CE, FCC class 1
<b>Running length variable</b>	max. 500 m		
<b>Width</b>	max. 114 mm		
<b>Internal rewinder</b>			
<b>Total diameter</b>	max. 145 mm		
<b>Core diameter</b>	38.1 mm		
<b>Winding direction</b>	only outside		
<b>Dimensions</b>			
<b>Height, depth, width</b>	274 mm, 446 mm, 242 mm		
<b>Weight</b>	9 kg		
<b>Energy consumption</b>	max. 200 W		
<b>Label sensor</b>			
<b>Distance to guide edge</b>	4 mm - 575 mm		
<b>See-through/reflective sensor</b>	standard		



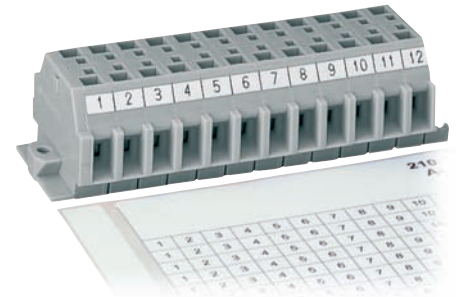
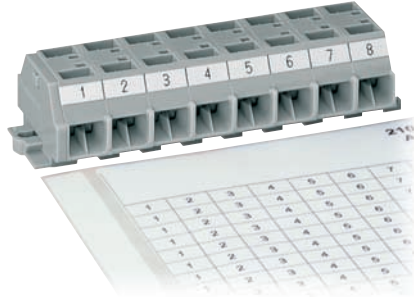
Description		Item No.	Pack.-unit pcs
TP 297	Resolution 203 dpi	258-297	1
<b>System Data</b>			
<b>Printing method</b>	Thermal/thermal transfer	<b>Core diameter</b>	min. 40 mm
<b>Printhead system</b>	Thin-film transfer head	<b>Roll diameter</b>	200 mm
<b>Print resolution</b>	203 dpi	<b>Winding direction inside or outside</b>	
<b>Print speed</b>	max. 76 mm/sec.		
<b>Print width</b>	max. 104 mm		
<b>Font types</b>	all font types supported by Windows, 5 alphanumeric fonts, OCR-A + OCR-B	<b>Transfer ribbon</b>	
<b>Character sets</b>	all character sets supported by Windows, 5 custom character sets	<b>Length</b>	max. 300 mm
<b>Font sizes</b>	all font sizes supported by Windows, continuously adjustable	<b>Width</b>	max. 114 mm
<b>Font styles</b>	TTF-font types, 5 custom fonts	<b>Core diameter</b>	1"
<b>Print directions</b>	all directions supported by Windows	<b>Ink</b>	inside or outside
<b>Barcodes</b>		<b>Operation panel</b>	Pause and feed, error
Code 39, Code 93		<b>Dimensions</b>	
Code 128 A, B, C	EAN-UPC Appendix 2 and 5	<b>Height, depth, width</b>	145 mm, 215 mm, 200 mm
Codabar	PDF417	<b>Depth with winder</b>	450 mm
EAN 8, 13, 128		<b>Net weight</b>	1.5 kg
EAN/UCC E		<b>Power supply</b>	100 - 240 V ~ 50 / 60 Hz
UPS Maxicode		<b>Memory</b>	1.5 MB Flash/2 MB DRAM
Interleaved 2/5		<b>Label sensor</b>	Present sensor
All barcodes are variable in height, width and ratio. Includes digit check, printed character quality check, and start/stop code.		<b>Options</b>	
<b>Graphic formats</b>	every graphic format is supported by Windows	EPL-Zebra programming language, input keyboard	
<b>Interfaces</b>			
Parallel Centronics	IEEE 1284 compliant		
RS 232			
<b>Peripheral connection</b>	Dispense edge		
<b>Labels and continuous material</b>			
<b>Label material,</b>	Thermal and standard paper, plastic foil: PE, PP, PVC, PA		
<b>Weight of adhesive labels</b>	60 - 180g/m <sup>2</sup>		
<b>Weight of cardboard</b>	max. 180g/m <sup>2</sup>		
<b>Label width</b>	12 - 116 mm		
<b>Width of liner</b>	max. 116 mm		
<b>Label height</b>	10 - 2.286 mm		



Description		Item No.	Pack.-unit pcs
IP 350		258-350	1
<b>System Data</b>		<b>Features</b>	
<b>Plot area</b>	max. 440 mm x 305 mm	Robust design made of aluminum frames	
<b>Interface</b>	parallel (centronics) USB 1.1	No calibration required. The plotters can be easily replaced.	
<b>Language</b>	HP-GL 7475A	Additional inputs and outputs are available to control the peripheral units.	
<b>Memory</b>	16 MB	Best possible sealing system of the plotter pens in the pen storage unit. This prevents the ink from drying and clogging the pen tip. As such, the pens do not need to be removed after plotting.	
<b>Speed</b>	max. 400 mm/sec.		
<b>Drive system</b>	Two-phase stepper motor		
<b>Pen storage unit</b>	max. 4 pens with best possible sealing system	Markers with a maximum height of 10.5 mm can be plotted. Plotting special markers up to 15 mm is also possible.	
<b>Plotter pen</b>	Special plotter pens with HP receptacle		
<b>Addressable resolution</b>	0.01 mm	Preparatory functions, i.e. the plotter uses the pen in advance on a separate media to start the ink flow thereby allowing the first marker to be printed perfectly.	
<b>Repeatability (accuracy)</b>	0.05 mm		
<b>Repeatability when changing the pen</b>	0.05 mm using pens of best quality	The marking software automatically identifies the marker card carrier plate being used by the plotter so that the most efficient combination of marker cards can be used for the print job.	
<b>Voltage supply</b>	via separate desktop power supply unit equipped with exchangeable supply line		
<b>Voltage range</b>	Nominal voltage 120 - 240 V ~ 50 - 60 Hz min. 90 V ~ max. 264 V ~		
<b>Current consumption</b>	0.3 A max. at 220 V ~		
<b>Dimensions</b>	660 mm x 440 mm x 125 mm		
<b>Weight</b>	8 kg		
<b>Environmental requirements</b>	Operating temperature: 10 °C - 35 °C Relative air humidity: 35 % - 75 %		
<b>Safety approvals</b>	acc. to UL-UL1950 CSA-950/VDE EN60950		
<b>Immunity to interference</b>	acc. to FCC Class B FCC Part 15 and VDE Class B EN 55022		

# Marker Cards – Self-Adhesive Marker Strips

<b>WAGO marker cards for Series 260, computer marked, 40 self-adhesive strips per card</b>  Height of marker strip 6 mm/0.236 in	<b>WAGO marker cards for Series 261, computer marked, 40 self-adhesive strips per card</b>  Height of marker strip 6 mm/0.236 in	<b>WAGO marker cards for Series 262, computer marked, 40 self-adhesive strips per card</b>  Height of marker strip 6 mm/0.236 in
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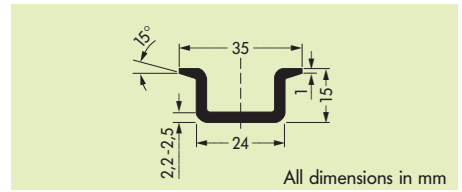
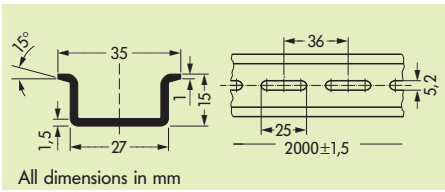
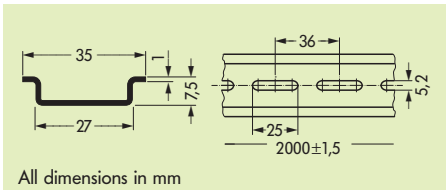
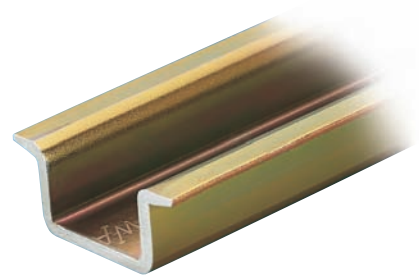
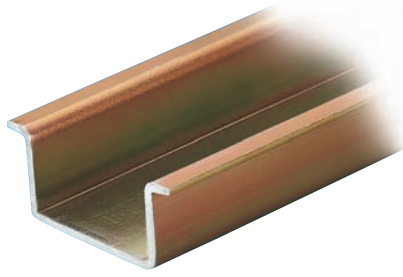
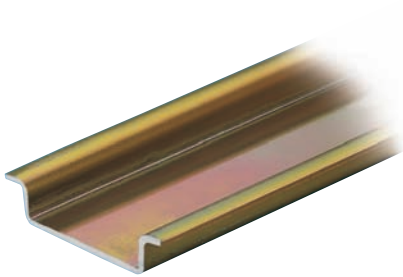
Marking	Item No.	Pack.-unit pcs	Marking	Item No.	Pack.-unit pcs	Marking	Item No.	Pack.-unit pcs							
<b>suitable for 2-conductor terminal strips series 260</b>			<b>suitable for 2-conductor terminal strips series 261</b>			<b>suitable for 2-conductor terminal strips series 262</b>									
only with grid. spac.	<b>210-333/0500-0001</b>	1 card	only with grid. spac.	<b>210-333/0600-0001</b>	1 card	only with grid. spac.	<b>210-333/0700-0001</b>	1 card							
1 – 10 (120x)	<b>210-333/0500-0002</b>	1 card	1 – 12 (80x)	<b>210-333/0600-0103</b>	1 card	1 – 20 (40x)	<b>210-333/0700-0020</b>	1 card							
11 – 20 (120x)	<b>210-333/0500-0003</b>	1 card	13 – 24 (80x)	<b>210-333/0600-0104</b>	1 card	21 – 40 (40x)	<b>210-333/0700-0108</b>	1 card							
21 – 30 (120x)	<b>210-333/0500-0004</b>	1 card	25 – 36 (80x)	<b>210-333/0600-0105</b>	1 card	41 – 60 (40x)	<b>210-333/0700-0109</b>	1 card							
31 – 40 (120x)	<b>210-333/0500-0005</b>	1 card	37 – 48 (80x)	<b>210-333/0600-0106</b>	1 card										
41 – 50 (120x)	<b>210-333/0500-0006</b>	1 card				1 – 50 (20x)	<b>210-333/0700-0021</b>	1 card							
51 – 60 (120x)	<b>210-333/0500-0007</b>	1 card	41 – 50 (80x)	<b>210-333/0600-0006</b>	1 card	L <sub>1</sub> (1040x)	<b>210-333/0700-0074</b>	1 card							
61 – 70 (120x)	<b>210-333/0500-0008</b>	1 card	51 – 60 (80x)	<b>210-333/0600-0007</b>	1 card	L <sub>2</sub> (1040x)	<b>210-333/0700-0075</b>	1 card							
71 – 80 (120x)	<b>210-333/0500-0009</b>	1 card	61 – 70 (80x)	<b>210-333/0600-0008</b>	1 card	L <sub>3</sub> (1040x)	<b>210-333/0700-0076</b>	1 card							
81 – 90 (120x)	<b>210-333/0500-0010</b>	1 card	71 – 80 (80x)	<b>210-333/0600-0009</b>	1 card	N (1040x)	<b>210-333/0700-0077</b>	1 card							
91 – 100 (120x)	<b>210-333/0500-0011</b>	1 card	81 – 90 (80x)	<b>210-333/0600-0010</b>	1 card	PE (1040x)	<b>210-333/0700-0078</b>	1 card							
			91 – 100 (80x)	<b>210-333/0600-0011</b>	1 card	PEN (1040x)	<b>210-333/0700-0079</b>	1 card							
1 – 50 (20x)	<b>210-333/0500-0021</b>	1 card	1 – 50 (20x)	<b>210-333/0600-0021</b>	1 card	<b>suitable for 4-conductor terminal strips series 262</b>									
L <sub>1</sub> (1440x)	<b>210-333/0500-0074</b>	1 card	L <sub>1</sub> (1200x)	<b>210-333/0600-0074</b>	1 card	only with grid. spac.	<b>210-333/1200-0001</b>	1 card							
L <sub>2</sub> (1440x)	<b>210-333/0500-0075</b>	1 card	L <sub>2</sub> (1200x)	<b>210-333/0600-0075</b>	1 card	1 – 12 (40x)	<b>210-333/1200-0103</b>	1 card							
L <sub>3</sub> (1440x)	<b>210-333/0500-0076</b>	1 card	L <sub>3</sub> (1200x)	<b>210-333/0600-0076</b>	1 card	13 – 24 (40x)	<b>210-333/1200-0104</b>	1 card							
N (1440x)	<b>210-333/0500-0077</b>	1 card	N (1200x)	<b>210-333/0600-0077</b>	1 card	25 – 36 (40x)	<b>210-333/1200-0105</b>	1 card							
PE (1440x)	<b>210-333/0500-0078</b>	1 card	PE (1200x)	<b>210-333/0600-0078</b>	1 card	37 – 48 (40x)	<b>210-333/1200-0106</b>	1 card							
PEN (1440x)	<b>210-333/0500-0079</b>	1 card	PEN (1200x)	<b>210-333/0600-0079</b>	1 card	49 – 60 (40x)	<b>210-333/1200-0107</b>	1 card							
<b>suitable for 4-conductor terminal strips series 260</b>			<b>suitable for 4-conductor terminal strips series 261</b>			1 – 24 (20x)	<b>210-333/1200-0203</b>	1 card							
only with grid. spac.	<b>210-333/0800-0001</b>	1 card	only with grid. spac.	<b>210-333/1000-0001</b>	1 card	L <sub>1</sub> (600x)	<b>210-333/1200-0074</b>	1 card							
1 – 10 (80x)	<b>210-333/0800-0002</b>	1 card	1 – 16 (40x)	<b>210-333/1000-0202</b>	1 card	L <sub>2</sub> (600x)	<b>210-333/1200-0075</b>	1 card							
11 – 20 (80x)	<b>210-333/0800-0003</b>	1 card	17 – 32 (40x)	<b>210-333/1000-0204</b>	1 card	L <sub>3</sub> (600x)	<b>210-333/1200-0076</b>	1 card							
21 – 30 (80x)	<b>210-333/0800-0004</b>	1 card	33 – 48 (40x)	<b>210-333/1000-0206</b>	1 card	N (600x)	<b>210-333/1200-0077</b>	1 card							
31 – 40 (80x)	<b>210-333/0800-0005</b>	1 card	49 – 64 (40x)	<b>210-333/1000-0110</b>	1 card	PE (600x)	<b>210-333/1200-0078</b>	1 card							
41 – 50 (80x)	<b>210-333/0800-0006</b>	1 card	65 – 80 (40x)	<b>210-333/1000-0111</b>	1 card	PEN (600x)	<b>210-333/1200-0079</b>	1 card							
51 – 60 (80x)	<b>210-333/0800-0007</b>	1 card	81 – 96 (40x)	<b>210-333/1000-0112</b>	1 card										
61 – 70 (80x)	<b>210-333/0800-0008</b>	1 card	97 – 112 (40x)	<b>210-333/1000-0113</b>	1 card										
71 – 80 (80x)	<b>210-333/0800-0009</b>	1 card													
81 – 90 (80x)	<b>210-333/0800-0010</b>	1 card	1 – 36 (20x)	<b>210-333/1000-0208</b>	1 card										
91 – 100 (80x)	<b>210-333/0800-0011</b>	1 card													
1 – 40 (20x)	<b>210-333/0800-0209</b>	1 card	L <sub>1</sub> (720x)	<b>210-333/1000-0074</b>	1 card	61	201	202	203	204	205	206	207	208	209
L <sub>1</sub> (880x)	<b>210-333/0800-0074</b>	1 card	L <sub>2</sub> (720x)	<b>210-333/1000-0075</b>	1 card	61	201	202	203	204	205	206	207	208	209
L <sub>2</sub> (880x)	<b>210-333/0800-0075</b>	1 card	L <sub>3</sub> (720x)	<b>210-333/1000-0076</b>	1 card	61	201	202	203	204	205	206	207	208	209
L <sub>3</sub> (880x)	<b>210-333/0800-0076</b>	1 card	N (720x)	<b>210-333/1000-0077</b>	1 card	61	201	202	203	204	205	206	207	208	209
N (880x)	<b>210-333/0800-0077</b>	1 card	PE (720x)	<b>210-333/1000-0078</b>	1 card	61	201	202	203	204	205	206	207	208	209
PE (880x)	<b>210-333/0800-0078</b>	1 card	PEN (720x)	<b>210-333/1000-0079</b>	1 card	61	201	202	203	204	205	206	207	208	209
PEN (880x)	<b>210-333/0800-0079</b>	1 card				61	201	202	203	204	205	206	207	208	209
						61	201	202	203	204	205	206	207	208	209
						61	201	202	203	204	205	206	207	208	209
						61	201	202	203	204	205	206	207	208	209
						61	201	202	203	204	205	206	207	208	209

Other markings with different spacings for 2- and 4-conductor terminal blocks available on request.



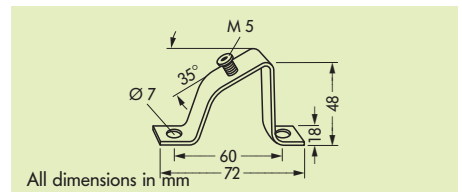
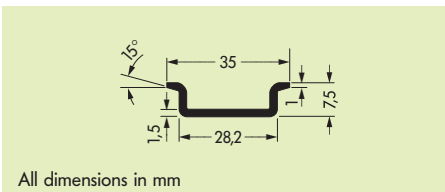
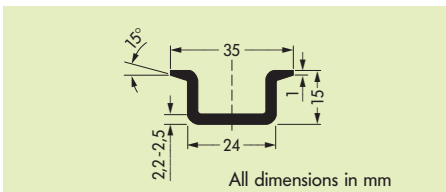
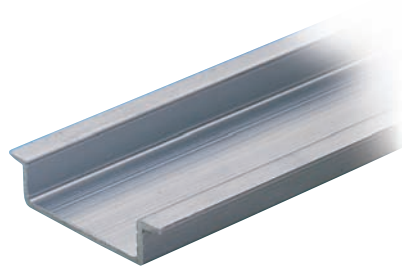
# 14 Carrier Rails and Mounting Accessories

Carrier rail 35 x 7.5 mm, 1 mm/0.039 in thick, acc. to EN 60715, Steel, zinc-plated and yellow chromated I <sub>N</sub> 76 A (referred to a length of 1 m)	Carrier rail 35 x 15 mm, 1.5 mm/0.059 in thick, acc. to EN 60715, Steel, zinc-plated and yellow chromated I <sub>N</sub> 125 A (referred to a length of 1 m)	Carrier rail 35 x 15 mm, 2.3 mm/0.091 in thick, acc. to EN 60715, Steel, zinc-plated and yellow chromated I <sub>N</sub> 125 A (referred to a length of 1 m)
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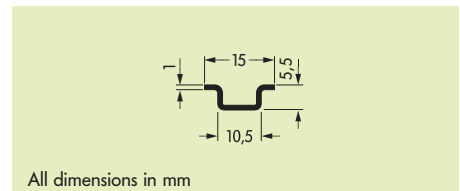
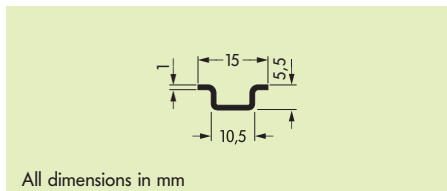
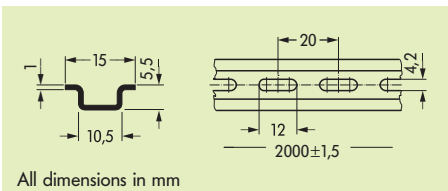
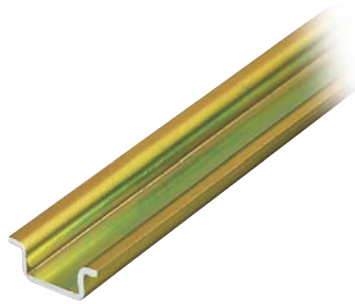
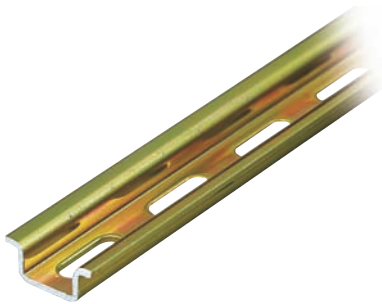
Item No.	Item No.	Pack.-unit pcs	Item No.	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs	
1 m / 3'3" long	2 m / 6'6" long		1 m / 3'3" long	2 m / 6'6" long		2 m / 6'6" long		
Steel rail 35 x 7.5 mm, 1 mm/0.039 in th., unslotted	210-229	10	Steel rail 35 x 15 mm, 1.5 mm/0.059 in th., unslotted	210-114	10	Steel rail 35 x 15 mm, 2.3 mm/0.091 in th., unslotted	210-118	10
Steel rail 35 x 7.5 mm, 1 mm/0.039 in th., slotted	210-162	10	Steel rail 35 x 15 mm, 1.5 mm/0.059 in th., slotted	210-197	10			

Carrier rail 35 x 15 mm, 2.3 mm/0.091 in thick, acc. to EN 60715, Copper, unplated I <sub>N</sub> 309 A (referred to a length of 1 m)	Carrier rail 35 x 7.5 mm, 1.5 mm/0.059 in thick, acc. to EN 60715, Aluminum, unplated I <sub>N</sub> 76 A (referred to a length of 1 m)	Angled support bracket steel, zinc-plated and yellow chromated
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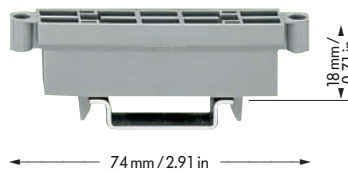
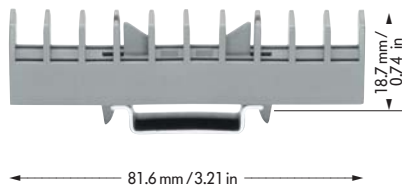
Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs	
2 m / 6'6" long		2 m / 6'6" long		Angled support bracket, without screw		
Copper carrier rail 35 x 15 mm, 2.3 mm/0.091 in thick, unslotted	210-198	10	Aluminum carrier rail 35 x 7.5 mm, 1.5 mm/0.059 in thick, unslotted	210-196	10	
				Angled support bracket, without screw	210-148	10
				Screw M 5 x 8	210-149	100 (5 x 20)

<p>Carrier rail 15 x 5.5 mm, 1 mm/0.039 in thick, acc. to EN 60715, Steel, zinc-plated and yellow chromated I<sub>N</sub> 57 A (referred to a length of 1 m)</p>	<p>Carrier rail 15 x 5.5 mm, 1 mm/0.039 in thick, acc. to EN 60715, Steel, zinc-plated and yellow chromated I<sub>N</sub> 57 A (referred to a length of 1 m)</p>	<p>Carrier rail 15 x 5.5 mm, 1 mm/0.039 in thick, acc. to EN 60715, Aluminum, unplated I<sub>N</sub> 57 A (referred to a length of 1 m)</p>
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Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
2 m / 6'6" long		2 m / 6'6" long		2 m / 6'6" long	
<b>Steel carrier rail 15 x 5.5 mm, 1 mm/0.039 in thick, slotted</b>		<b>Steel carrier rail 15 x 5.5 mm, 1 mm/0.039 in thick, unslotted</b>		<b>Aluminum carrier rail 15 x 5.5 mm, 1 mm/0.039 in thick, unslotted</b>	
<b>210-111</b>	1	<b>210-295</b>	1	<b>210-296</b>	1

<p><b>Collective carrier for standard and special jumpers in longitudinal switching disconnect terminal blocks and transverse switching terminal blocks, Series 282, can be snapped onto DIN 35 rail</b> Width 15.8 mm / 0.62 in (= 2 x pitch 8 mm)</p>	<p><b>Collective carrier for adjacent jumpers, for DIN 35 rail, 10.7 mm / 0.421 in wide</b></p>	<p><b>Screwless end stop, for DIN 15 rail 6 mm / 0.236 in wide</b></p>
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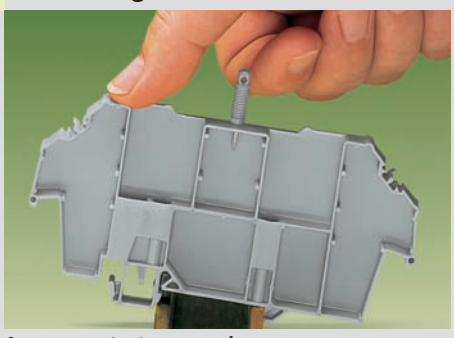
The collective carrier can be snapped onto DIN 35 rails. It serves as a holder for jumpers, e.g. during maintenance work.

The collective carrier can be snapped onto carrier rails DIN 35. It serves for the storage of adjacent jumpers for rail-mounted terminal blocks for use if spares are necessary.

Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
<b>Collective carrier for jumpers</b>		<b>Collective carrier for adjacent jumpers</b>		<b>Screwless end stop, for DIN 15 rail</b>	
<b>282-369</b>	25	<b>209-100</b>	50 (2 x 25)	<b>249-101</b>	25
suitable for jumpers for transverse switching t. bl.	282-811 and	suitable for adjacent jumpers of series 279, 280, 281, 282 and 284		suitable for marking with WSB Quick marking system	
longitudinal switch. disc. t. bl.	282-821	and banana plug series 215			

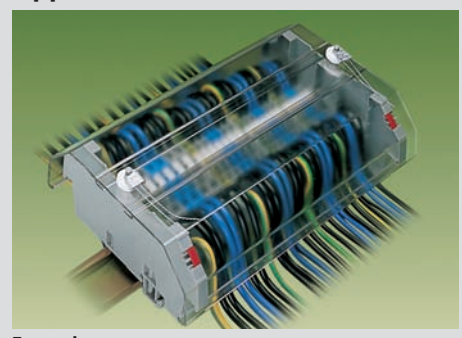
# Transparent Covers for Rail-Mounted Terminal Blocks, Usable with Lead Seals

## Mounting



A cover carrier is snapped onto the rail

## Application

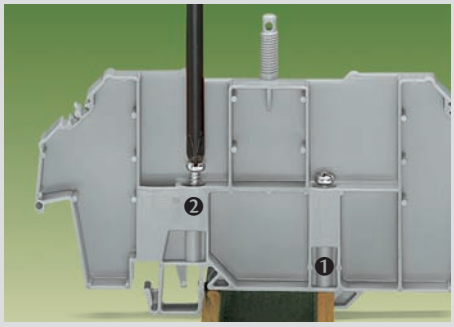


Examples: A cover, type 1, without . . .



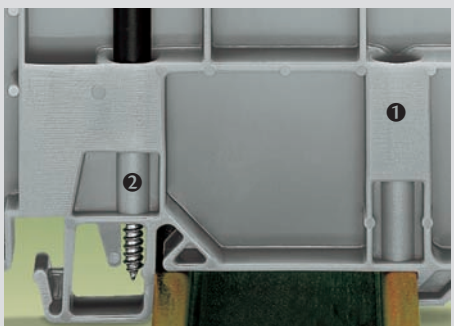
. . . or with safety warning

## Mounting

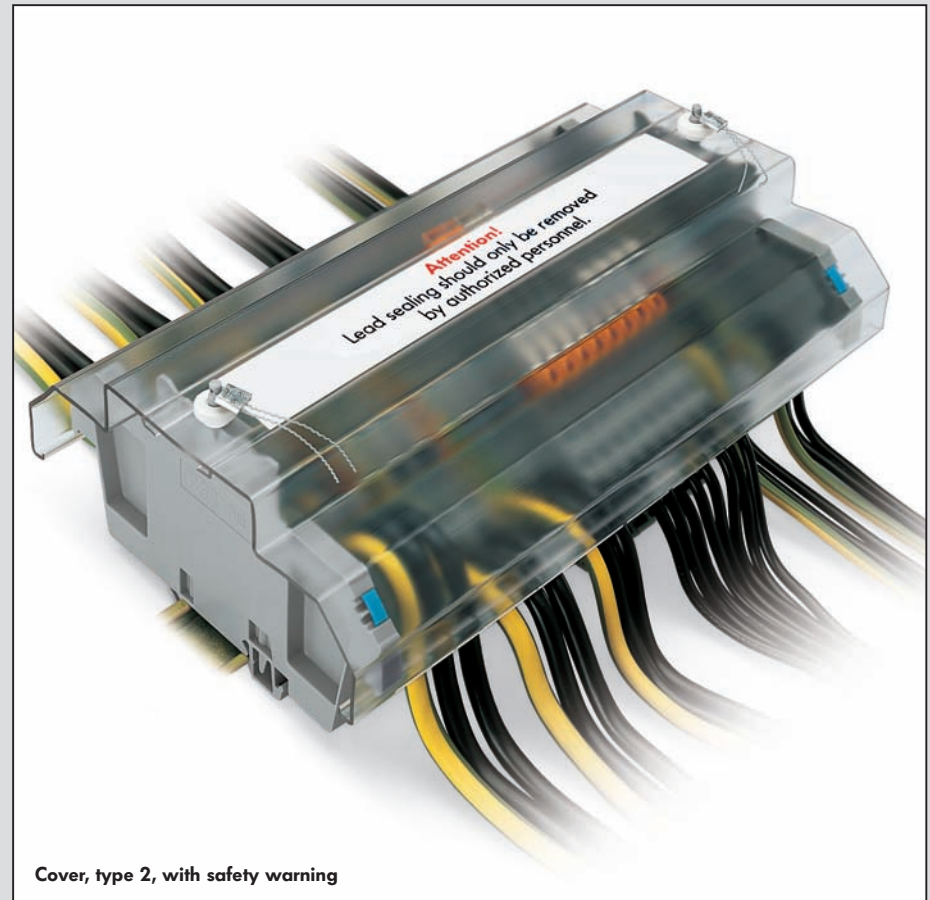


Screwing in the fixing screw ① and the retaining screw ②

## Mounting

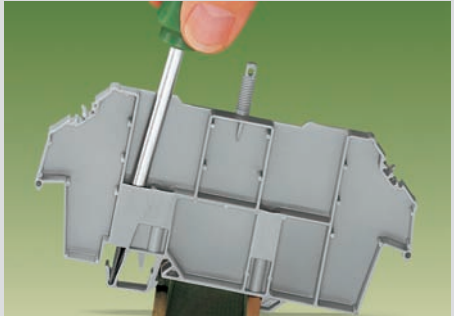


① Fixing screw – prevents the cover carrier from being moved on the rail  
② Retaining screw – prevents lifting off from rail



Cover, type 2, with safety warning

## Removal



Removal of a cover carrier from the carrier rail

## Marking



Pushing in a marking strip into the cover

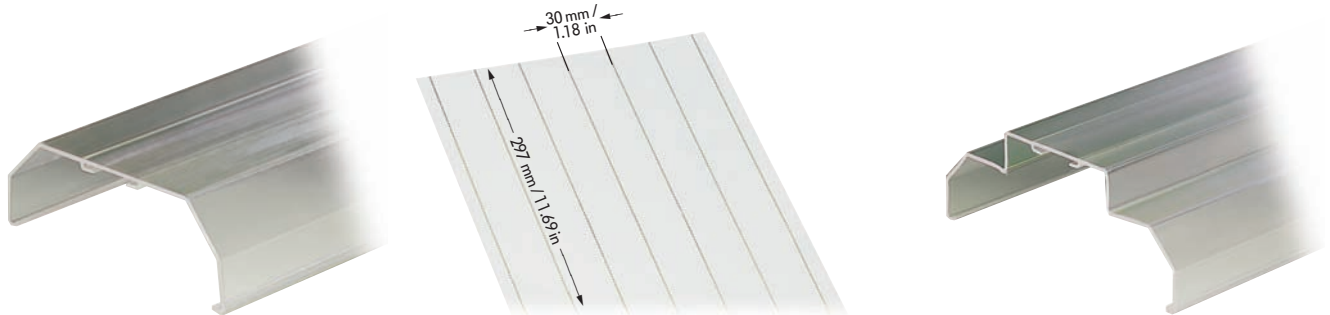
## Lead seal



The cover may be sealed with a lead seal. If the cover is used without a lead seal the threaded stud can be broken off

# Transparent Covers for Rail-Mounted Terminal Blocks, Usable with Lead Seals

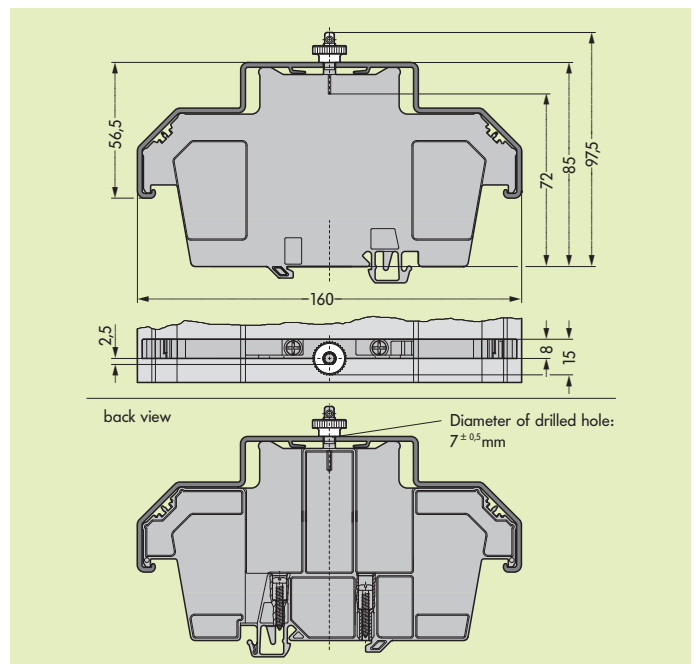
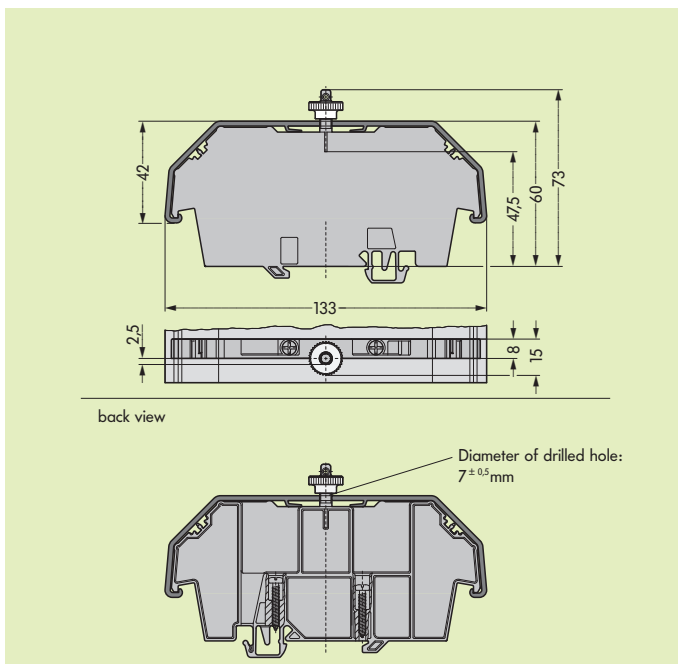
Covers and cover carriers, type 1 suitable for rail-mounted terminal blocks series 279 to 282; 880 Miniature rail-mounted terminal blocks series 264 and sensor/actuator terminal blocks series 269	Marker card for group marking or safety warnings  Spare fixing/retaining screws and spare knurled nut	Covers and cover carriers, type 2, suitable for rail-mounted terminal blocks series 283, 284, 285; double and triple deck terminal blocks series 280/281; topJob rail-mounted terminal blocks series 776, 777, 780 to 784; sensor/actuator terminal blocks series 280 and disconnect and measuring terminal blocks for transformer circuits series 282
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Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
<b>Cover, type 1,</b> 1 m / 3'3" long, suitable for cover carrier, type 1 transparent		<b>Marker card with 6 marking strips, plain</b> 709-183		<b>Cover, type 2,</b> 1 m / 3'3" long, suitable for cover carrier, type 2 transparent	
709-153	10	709-183	1	709-154	1
		<b>Diskette with WinWORD marking system</b> 709-184			
		709-184	1		



Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
<b>Cover carrier, type 1,</b> incl. fixing/retaining screws and knurled nut grey		<b>Spare fixing/retaining screws</b> 209-196		<b>Cover carrier, type 2,</b> incl. fixing/retaining screws and knurled nut grey	
709-167	10	209-196	200 (8 x 25)	709-168	10
		<b>Spare knurled nut</b> 210-549			
		210-549	100 (4 x 25)		

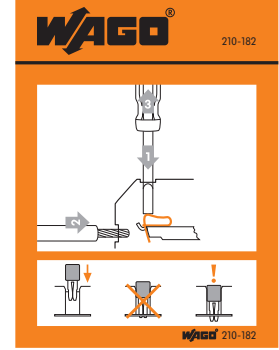
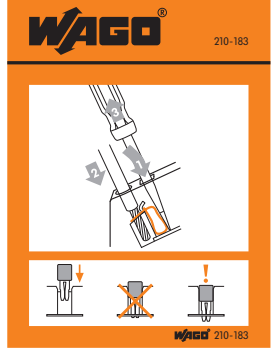
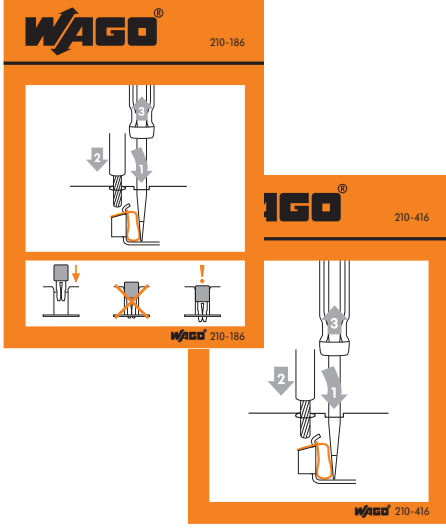




# 14 Stickers for Operating Instructions\*

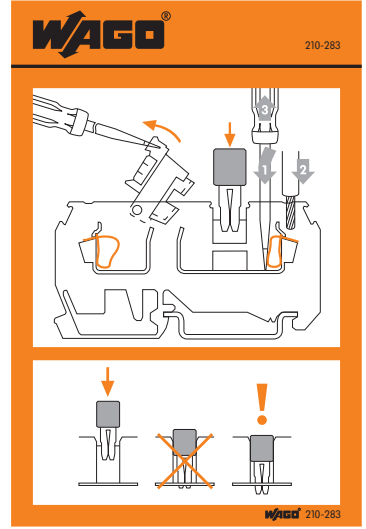
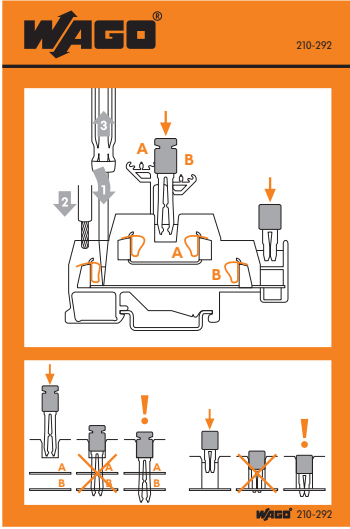
40

<p>for front-entry rail-mounted terminal blocks (horizontal version)</p> <p>for CAGE CLAMP®</p> <p>Size 60 mm x 65 mm/2.36 in x 2.48 in</p>	<p>for front-entry rail-mounted terminal blocks (angled version)</p> <p>Size 60 mm x 65 mm/2.36 in x 2.48 in</p>	<p>for side-entry rail-mounted terminal blocks</p> <p>Size 60 mm x 65 mm/2.36 in x 2.48 in</p>
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Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
<b>Operating sticker,</b> for front-entry rail-mounted terminal blocks series 279 to 285	<b>210-186</b> 100	<b>Operating sticker,</b> for front-entry rail-mounted terminal blocks, angled type series 280 and 281	<b>210-183</b> 100	<b>Operating sticker,</b> for side-entry rail-mounted terminal blocks series 279 to 284	<b>210-182</b> 100
	<b>210-416</b> 100				

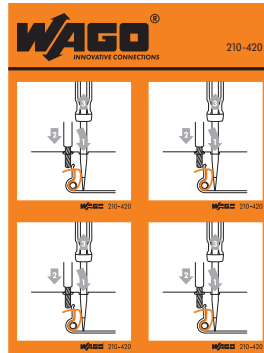
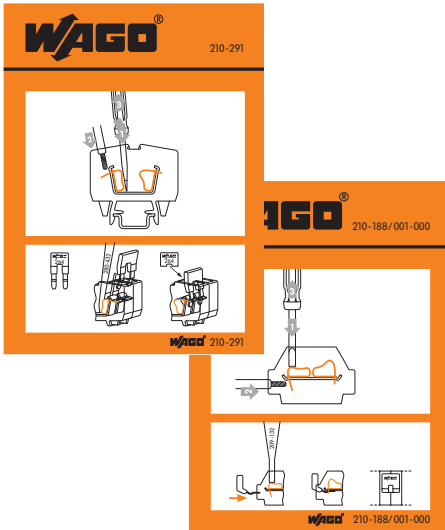
<p>for double and triple deck terminal blocks</p> <p>Size 80 mm x 104 mm/3.15 in x 4.09 in</p>	<p>for disconnect terminal blocks</p> <p>Size 80 mm x 104 mm/3.15 in x 4.09 in</p>
--	--



Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
<b>Operating sticker,</b> for double and triple deck terminal blocks series 280 and 281	<b>210-292</b> 100	<b>Operating sticker,</b> for disconnect terminal blocks series 280	<b>210-283</b> 100

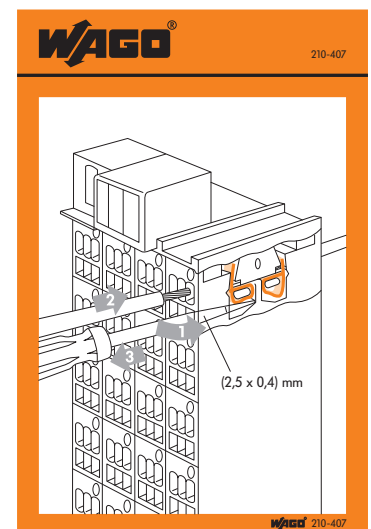
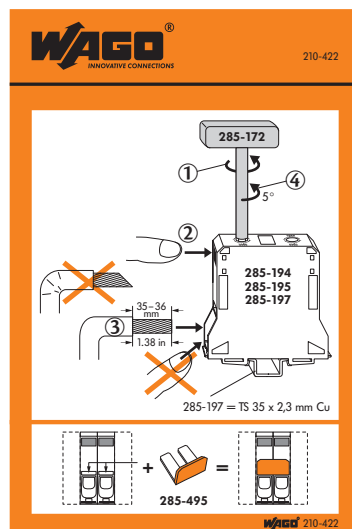
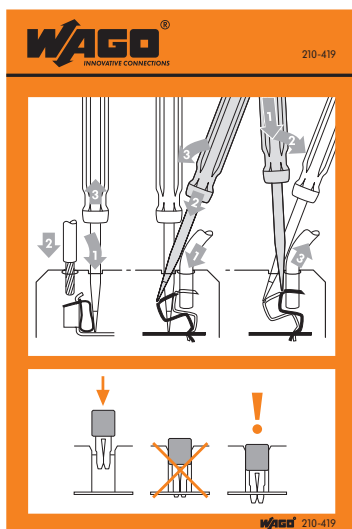
\* Note: Handling instructions for rail-mounted terminal blocks are included in each carton. If self-adhesive stickers, as above, are required to give field wiring information – for example in enclosures, panels or switchboards – please order using the above part numbers.

<p><b>for front-entry miniature rail-mounted terminal blocks and front-entry terminal strips</b></p> <p><b>Size 60 mm x 65 mm/2.36 in x 2.48 in</b></p>	<p><b>for rail mounted terminal blocks with CAGE CLAMP® COMPACT</b></p> <p><b>Size (1.18 x 1.26) in x 4</b></p>	
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Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
Operating sticker, for front-entry miniature rail-mounted terminal blocks, series 264		Operating sticker, for rail-mounted terminal blocks with CAGE CLAMP® COMPACT series	
264	210-291 100	870	210-420 100
260 to 262	210-188/001-000 100		

<p><b>for FIT CLAMP, universal</b></p> <p><b>Size 80 mm x 104 mm/3.15 in x 4.09 in</b></p>	<p><b>for high current terminal</b></p> <p><b>Size 80 mm x 104 mm/3.15 in x 4.09 in</b></p>	<p><b>for matrix patchboards</b></p> <p><b>Size 80 mm x 104 mm/3.15 in x 4.09 in</b></p>
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Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
Operating sticker, for FIT CLAMP, universal series		Operating sticker, for high current terminal blocks series		Operating sticker, for matrix patchboards series	
290	210-419 100	285	210-422 100	726	210-407 100

# 14 Operating Tools

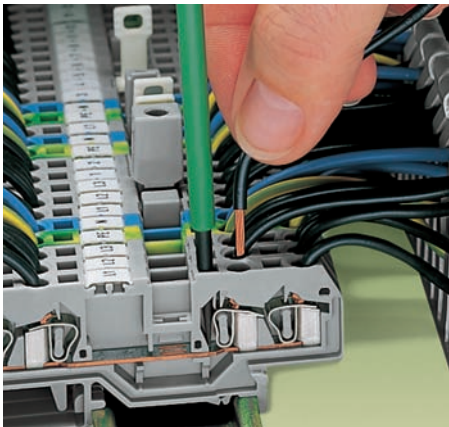
42

Screwdrivers with partially insulated shaft for optimum handling in terminal blocks and connectors	Screwdrivers with partially insulated shaft – Set –	Screwdrivers (DIN 5264) for optimum handling in terminal blocks and connectors
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Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
Screwdriver with partially insulated shaft, type 1, blade 2.5 x 0.4 mm / 0.098 in x 0.016 in, suitable for series 279, 726, 727, 2001	1	Screwdrivers with partially insulated shaft, – set –, types 1 – 3 see left	1	Screwdriver, short, blade 3.5 mm x 0.5 mm / 0.138 in x 0.020 in, suitable for series 260, 261, 262, 264, 280, 281, 869	1
<b>210-619</b>		<b>210-622</b>		<b>210-257</b>	
Screwdriver with partially insulated shaft, type 2, blade 3.5 x 0.5 mm / 0.137 in x 0.020 in, suitable for series 260, 261, 262, 264, 270, 280, 281, 290, 775, 776, 777, 769, 780, 781, 869, 870, 880, 2002, 2004	1			Screwdriver, short angled, 3.5 mm x 0.5 mm / 0.138 in x 0.020 in, specially suitable for sensor and actuator terminal blocks of series 280 or for serie 260, 261, 262, 264, 280, 281, 869, 870, 880	1
<b>210-620</b>				<b>210-258</b>	
Screwdriver with partially insulated shaft, type 3, blade 5.5 x 0.8 mm / 0.217 in x 0.031 in, suitable for series 282, 283, 284, 285, 782, 783, 784, 785, 2006, 2010, 2016	1				
<b>210-621</b>					

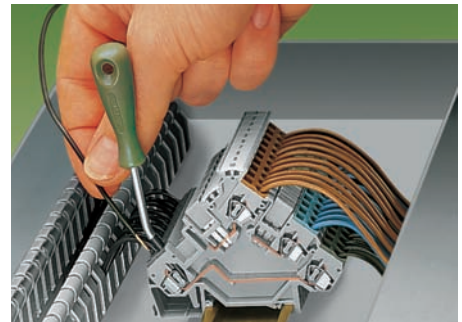
### Application notes



The blade dimensions of the a. m. screwdrivers are particularly appropriate for easy operation of front-entry terminal blocks.



Set of screwdrivers in a box



The blade dimensions of the a. m. screwdrivers (DIN 5264) are particularly appropriate for easy operation of front-entry sensor and actuator terminal blocks of series 280.

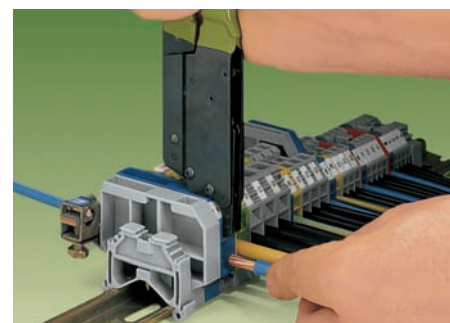
	<b>Multipole operating tools for front-entry terminal blocks (insulated)</b>	<b>Plunger, for side-entry rail-mounted terminal blocks</b>
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	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
	<b>Operating tools, solid non-conducting material</b>		<b>Operating tool,</b>	
	suitable for series 279		for side-entry rail-mounted terminal blocks	
	1-way	209-129	1	series 279 and 280
			210-143	1
	suitable for series 279		<b>Operating tool,</b>	
	2-way	279-432	1	for side-entry rail-mounted terminal blocks
	3-way	279-433	1	series 281, 282, 283 and 284
	10-way	279-440	1	210-141
	suitable for series 264*, 280, 281**			
	1-way	209-130	1	
	2-way	280-432	1	
	3-way	280-433	1	
	4-way	280-434	1	
	5-way	280-435	1	
	6-way	280-436	1	
	7-way	280-437	1	
	8-way	280-438	1	
	9-way	280-439	1	
	10-way	280-440	1	
	suitable for series 281			
	5-way	281-440	1	
	* only 1- and 2-way			
	** only up to 3-way			



Commoning of front-entry through terminal blocks with comb type jumper bars with the aid of a 10-way operating tool.



The plunger is placed into the upper operating slot of the side-entry terminal block and the clamp is hooked into the lateral operating hole. The contact is fully opened by pressing the handles together until they engage – both hands are then free for the preparation and introduction of the conductor into the terminal block. When operating the handles beyond the locked position the ratchet allows the tool to open and be removed from the terminal block.



# Crimping Tools

## Variocrimp 4, Variocrimp 16

	<b>Variocrimp 4</b> Crimping tool for ferrules insulated and uninsulated from 0.25 mm <sup>2</sup> – 4 mm <sup>2</sup> /AWG 24 – 12 weight 400 g/0.882 lbs	<b>Variocrimp 16</b> Crimping tool for ferrules insulated and uninsulated from 6 mm <sup>2</sup> – 16 mm <sup>2</sup> /AWG 10 – 6 weight 580 g/1.28 lbs
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Description	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
<b>Crimping tool Variocrimp 4,</b> 0.25 mm <sup>2</sup> – 4 mm <sup>2</sup> /AWG 24 – 12	206-204	1		
<b>Crimping tool Variocrimp 16,</b> 6 mm <sup>2</sup> – 16 mm <sup>2</sup> /AWG 10 – 6			206-216	1

### Application notes

- With the Variocrimp 4 built-in crimping pressure plates control the crimping force automatically for the conductor cross section used. With the Variocrimp 16 it is necessary to select the wire gauge on the tool before crimping.
- Each tool has only one crimping station for all the wire sizes handled.
- Uniform compact crimping from all four sides for high conductor retention.
- No need to center the conductor in the ferrule sleeve.
- Conductor and ferrule insertion possible from both sides (for left- and right handed).
- Built-in ratchet to guarantee complete crimping every time.
- Tools open automatically after crimping operation is complete.
- Comfortable handles for operator.



Introduce conductor with ferrule into crimping station.



Only for Variocrimp 16:  
Adjust conductor cross section with opened tool.



Squeeze handles until ratchet mechanism is released.



A perfect gastight crimp, both electrically and mechanically reliable.

# Ferrules

Insulated ferrules, electrolytic copper, electro-tin plated, acc. to DIN 46228, part 4/09.90		Uninsulated ferrules, electrolytic copper, electro-tin plated, acc. to DIN 46228, part 1/08.92
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Sleeve for mm <sup>2</sup>	AWG	Color	Stripped length mm	L	L1	D	D1	D2	Item No.	Pack.-unit pcs
0.25	24	yellow	7.5	10.5	6.0	2.5	2.0	0.8	216-321	1000
0.25	24	yellow	9.5	12.5	8.0	2.5	2.0	0.8	216-301	1000
0.34	24	green	7.5	10.5	6.0	2.5	2.0	0.8	216-322	1000
0.34	24	green	9.5	12.5	8.0	2.5	2.0	0.8	216-302	1000
0.5	22	white	7.5	11.5	6.0	3.0	2.5	1.1	216-221	1000
0.5	22	white	9.5	13.5	8.0	3.0	2.5	1.1	216-201	1000
0.75	20	grey	8.0	12.0	6.0	3.3	2.8	1.3	216-222	1000
0.75	20	grey	10.0	14.0	8.0	3.3	2.8	1.3	216-202	1000
1.0	18	red	8.0	12.0	6.0	3.6	3.0	1.5	216-223	1000
1.0	18	red	10.0	14.0	8.0	3.6	3.0	1.5	216-203	1000
1.5	16	black	8.0	12.0	6.0	4.0	3.4	1.8	216-224	1000
1.5	16	black	10.0	14.0	8.0	4.0	3.4	1.8	216-204	1000
2.08	14	yellow	10.0	14.5	8.0	4.2	3.6	2.05	216-205	1000
2.5	14	blue	10.0	15.0	8.0	4.8	4.2	2.3	216-206	1000
4.0	12	grey	12.0	16.8	9.5	5.4	4.8	2.9	216-207	1000
6.0	10	yellow	14.0	20.0	12.0	6.8	6.2	3.5	216-208	100
10.0	8	red	16.0	21.0	12.0	8.1	7.5	4.6	216-209	100
16.0	6	blue	23.0	29.0	18.0	9.6	8.8	5.8	216-210	100

Sleeve for mm <sup>2</sup>	AWG	Stripped length mm	L	D	D2	Item No.	Pack.-unit pcs
0.25	24	5	5	1.7	0.75	216-151	1000
0.25	24	7	7	1.7	0.75	216-131	1000
0.34	24	5	5	1.7	0.85	216-152	1000
0.34	24	7	7	1.7	0.85	216-132	1000
0.5	22	6	6	2.1	1.0	216-121	1000
0.5	22	8	8	2.1	1.0	216-101	1000
0.75	20	6	6	2.3	1.2	216-122	1000
0.75	20	8	8	2.3	1.2	216-102	1000
1.0	18	6	6	2.5	1.4	216-123	1000
1.0	18	8	8	2.5	1.4	216-103	1000
1.5	16	6	6	2.8	1.7	216-124	1000
1.5	16	8	8	2.8	1.7	216-104	1000
2.5	14	10	10	3.4	2.2	216-106	1000
4.0	12	10	10	4.0	2.8	216-107	1000
6.0	10	12	12	4.7	3.5	216-108	250
10.0	8	12	12	5.8	4.5	216-109	250
16.0	6	15	15	7.5	5.8	216-110	250

Insulated ferrules

For letters with the corresponding dimensions see table above.

Uninsulated ferrules

For letters with the corresponding dimensions see table above.

# 14 Stripping Tools






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<p><b>Microstrip wire stripper</b>          0.14 mm<sup>2</sup> – 1.5 mm<sup>2</sup>/AWG 24 – 16          solid and stranded, with          wire cutter up to 1.5 mm<sup>2</sup>/AWG 16          solid and stranded          weight 76 g/0.166 lbs</p>	<p><b>Stripping and cutting tool Quickstrip 10</b>          0.02 mm<sup>2</sup> – 10 mm<sup>2</sup>/AWG 28 – 8 stranded          (6 mm<sup>2</sup>/AWG 10 solid)          with wire cutter up to 10 mm<sup>2</sup>/AWG 8 stran-          ded (1.5 mm<sup>2</sup>/AWG 16 solid)          weight 136 g/0.3 lbs</p>	<p><b>Stripping and cutting tool Quickstrip 16</b>          4 mm<sup>2</sup> – 16 mm<sup>2</sup>/AWG 12 – 6          with wire cutter up to 10 mm<sup>2</sup>/AWG 8 stran-          ded (1.5 mm<sup>2</sup>/AWG 16 solid)          weight 136 g/0.3 lbs</p>
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Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs	Item No.	Pack.-unit pcs
Microstrip wire stripper and cutter		Stripping and cutting tool Quickstrip 10		Stripping and cutting tool Quickstrip 16	
206-501	1	206-124	1	206-125	1

### Accessories

	<p><b>Spare stripping unit, complete</b>            206-502 1</p>		<p><b>Standard blade cassette</b>            0.02 - 10 mm<sup>2</sup>/AWG 34-8            206-126 1</p>		<p><b>Blade cassette 16 mm<sup>2</sup>/AWG 6</b>            4.0 - 16 mm<sup>2</sup>/AWG 12-6            206-128 1</p>
	<p><b>Spare blade, for wire cutter</b>            206-503 1</p>		<p><b>"V" blade cassette</b>            0.02 - 4 mm<sup>2</sup>/AWG 34-12 for PTFE            206-127 1</p>		

### Application notes

- Automatically adjusts to the wire size.
- No damage to wire strands.
- Gripping pressure of jaws adjusts automatically to wire insulation diameter.
- Full cycle strip – jaws open after stripping, ensures no nicked strands.
- Exact strip length may be set by sliding of red setting stop.
- Replaceable stripping jaw assembly.
- Self-sharpening, fully protected wire cutter, also replaceable.\*
- Glass fiber reinforced polyamide tool body.

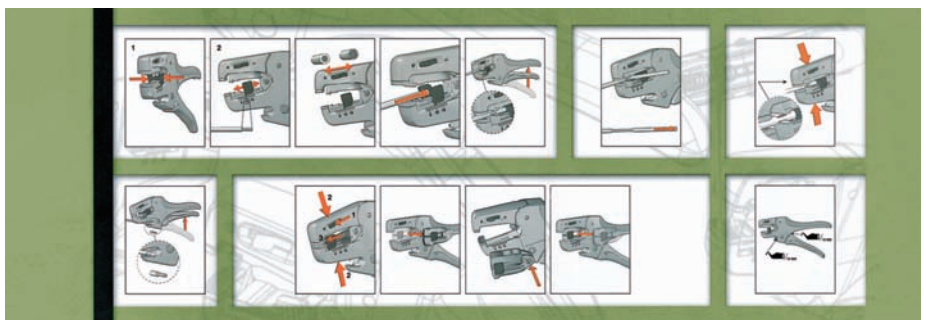


Cutting of wire.



Stripping of wire.

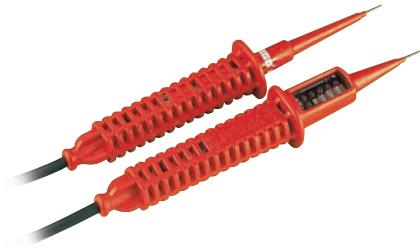
\* applies for Microstrip



Handling description included.

# Voltage Testers and Testboy

<b>Voltage tester Profipol</b> AC 12 V to 400 V DC 12 V to 500 V  weight 138 g /0.304 lbs		<b>Testboy</b>
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Item No.	Pack.-unit pcs		Item No.	Pack.-unit pcs
<b>Voltage tester Profipol</b>			<b>Testboy, with integrated flashlight</b>	
<b>206-802</b>	1		<b>206-804</b>	1
Voltage range	AC 12V up to 400V DC 12V up to 500V		Voltage range	120 V up to AC 1000 V
LED indication AC	12V, 50 V, 100 V, 230 V, 400 V			
DC	12V, 60 V, 120 V, 280 V, 500 V			
Type of protection	IP 65			
Operating time	30 s max.			
Temperature range	-10° up to + 50°C			

## Application notes



Voltage testing at push-wire connectors



A device that will reliably detect A.C. voltages in cables, sockets, fuses, switches, connector boxes, etc.

- LED band provides clear voltage range readings.  
(white scale = AC voltage  
red scale = DC voltage)
- LED indication of polarity
- double-pole voltage testing
- type of protection IP 65
- switching is not necessary
- 85 cm long highly flexible and nonskid test cable

### The following can be detected by the WAGO Testboy:

- Live conductors
- Line breaks
- Blown fuses
- Defective switches
- Defective lamps



# Contact paste "Alu-Plus"

	<p><b>WAGO contact paste "Alu-Plus" for the safe wiring of solid ① aluminum conductors up to 4 mm<sup>2</sup>/AWG 12 in WAGO spring-clamp terminal block</b></p>	<p><b>① Aluminum conductors according to IEC 61 545, Class B, "Alloy 1370" with a tensile strength of 90 – 180 N/mm<sup>2</sup> and a tensile strain of 1 – 4 %.</b></p>
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Use WAGO contact paste "Alu-Plus" when connecting **solid** aluminum wires in WAGO spring-clamp terminal blocks.

Please take note that the nominal currents must be adapted to the reduced conductivity of the aluminum wires:

- 2.5 mm<sup>2</sup>/AWG 14 = 16 A**
- 4 mm<sup>2</sup>/AWG 12 = 22 A**



WAGO contact paste "Alu-Plus" for the safe wiring of solid aluminum wire up to 4 mm<sup>2</sup>/AWG 12 in WAGO spring-clamp terminal blocks. Cleaning and greasing of the aluminum wire is no longer necessary. Use the WAGO contact paste "Alu-Plus" instead, which is directly injected into the conductor entry hole of WAGO terminal blocks by means of the handy syringe.

Aluminum conductors that clearly indicate corrosion effects (stained black) require mechanical cleaning.

This allows the easy connection of solid aluminum wire (in case of multipole terminal blocks, can also be mixed with copper wires).

**WAGO "Alu-Plus"**

- automatically destroys the oxide film during clamping
- prevents fresh oxidation at the clamping point
- prevents electrolytic corrosion between aluminum- and copper wires (in the same terminal block)
- offers permanent protection against corrosion

It is, of course, also possible to apply the WAGO "Alu-Plus" **in addition** on the whole surface of the aluminum wire before clamping.

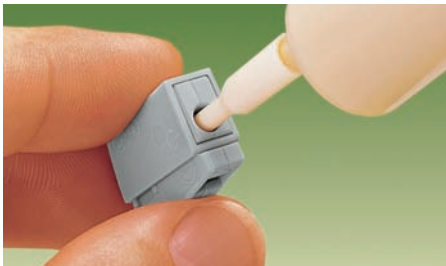
Description	Item No.	Pack.-unit pcs
<b>Syringe</b>	<b>249-130</b>	20 (4 x 5)
Contents: 20 ml contact paste "Alu-Plus"		

**Application notes**



**WAGO Push-wire connectors**

1. Push nozzle of the "Alu-Plus" syringe into the center conductor entry hole of the WAGO junction box connector.
2. Press plunger **until "Alu-Plus" is visible in the other holes.**



**WAGO Lighting connectors**

1. Push nozzle of the "Alu-Plus" syringe first into the circular and then into the square conductor entry hole of the WAGO lighting connector.
2. Press plunger down **until the "Alu-Plus" has filled both holes.**



**WAGO Rail-mounted terminal blocks (only up to 4 mm<sup>2</sup>/AWG 12)**

1. For each conductor entry: Insert nozzle of the "Alu-Plus" syringe in every open conductor entry hole (one after the other).
2. Press plunger down **until "Alu-Plus" has filled each of these holes.**







# CERTIFICATE

The Certification Body  
of TÜV Management Service GmbH

certifies that



**WAGO Kontakttechnik GmbH**

Werk 1: D-32423 Minden

Werk 2: D-99706 Sondershausen

**WAGO Contact SA**

CH-1564 Domdidier

**WAGO Contact S.A.**

F-95947 Roissy CDG Cedex

has established and applies  
a Quality Management System for

## ELECTRICAL INTERCONNECTIONS

Development, production and sales of connecting components with spring clamp technology for the electrical and electronic industries like rail mounted terminal blocks, terminal block strips, terminal in general, plug and socket systems etc.

## ELECTRONIC

Development, production and sales of components for automation of machines, plants and buildings on the basis of field bus systems, pluggable and rail mounted electronic modules and electronic sub systems for the automation industries.

An audit was performed, Report No. **70024958**

Proof has been furnished that the requirements  
according to

## ISO 9001: 2000

are fulfilled. The certificate is valid until **2007-12-16**

Certificate Registration No. **12 100 16077 TMS**



*M. Vogel*

Munich, 2005-01-07



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## International Certification Organizations – Overview

A list of approvals (update: catalog deadline) is provided on pages 15.6 to 15.12.

Due to the numerous agencies and approvals as well as the ever-increasing number of new products, our online catalog provides you with complete up-to-date information at [www.wago.com](http://www.wago.com)

	Abbreviation for online search*		Abbreviation for online search*
 <b>Underwriters Laboratories USA</b> <a href="http://www.ul.com">http://www.ul.com</a>	UL	 <b>Norges Elektriske Materialkontroll Norway</b> <a href="http://express.nemko.com">http://express.nemko.com</a>	NEMKO
 <b>Underwriters Laboratories USA</b> <a href="http://www.ul.com">http://www.ul.com</a>	UL	 <b>Svenska Elektriska Materielkontrollanstalten AB Sweden</b> <a href="http://www.semko.com">http://www.semko.com</a>	SEMKO
 <b>Underwriters Laboratories USA</b> <a href="http://www.ul.com">http://www.ul.com</a>	cURus	 <b>Danmarks Elektriske Materielkontrol Denmark</b> <a href="http://www.demko.dk">http://www.demko.dk</a>	DEMKO
 <b>Underwriters Laboratories USA</b> <a href="http://www.ul.com">http://www.ul.com</a>	cULus	<b>CENELEC CERTIFICATION AGREEMENT</b>  <b>Danmarks Elektriske Materielkontrol Denmark</b> <a href="http://www.cenelec.org">http://www.cenelec.org</a>	CCA App. no. with DK
 <b>Canadian Standards Association Canada</b> <a href="http://www.csa.ca">http://www.csa.ca</a>	CSA	 <b>SETI – FEMKO Sähkötarastuskeskus Elinspektionscentralen Finland</b> <a href="http://www.seti.fi">http://www.seti.fi</a>	
 <b>VDE-Gutachten mit Fertigungsüberwachung Germany</b> <a href="http://www.vde.de/vde/html/e/home.htm">http://www.vde.de/vde/html/e/home.htm</a>	VDE	 <b>Sähkötarastuskeskus Elinspektionscentralen Finland</b> <a href="http://www.fimko.com">http://www.fimko.com</a>	FIMKO
 <b>VDE – Deutscher Verband für Elektrotechnik Germany</b> <a href="http://www.vde.de">http://www.vde.de</a>		<b>SABS</b> <b>South African Bureau of Standards South Africa</b> <a href="http://www.sabs.co.za">http://www.sabs.co.za</a>	SABS
<b>VDE</b> <b>VDE – Prüfbericht Germany</b>		 <b>RosTest Russland</b> <a href="http://www.rostest.ru">http://www.rostest.ru</a>	ROSTEST
 <b>Österreichischer Verband für Elektrotechnik Austria</b> <a href="http://www.ove.at">http://www.ove.at</a>	ÖVE	 <b>Departamentul Moldovastandard Moldova</b> <a href="http://www.moldova.md/ro/government/oll/D_STAND/en/strcent2.htm">http://www.moldova.md/ro/government/oll/D_STAND/en/strcent2.htm</a>	CSM
 <b>Schweizerischer Elektrotechnischer Verein Switzerland</b> <a href="http://www.sev.ch/">http://www.sev.ch/</a>	SEV	 <b>Certificate of Registration Great Britain</b> <a href="http://www.astacertification.com">http://www.astacertification.com</a>	ASTA
 <b>N.V. tot Keuring van Elektrotechnische Materialen Netherlands</b> <a href="http://www.kema.nl">http://www.kema.nl</a>	KEMA	 <b>Rheinisch-Westfälischer Technischer Überwachungsverein e.V. Germany</b> <a href="http://www.rwtuv.de">http://www.rwtuv.de</a>	RWTÜV
<b>CENELEC CERTIFICATION AGREEMENT</b>  <b>N.V. tot Keuring van Elektrotechnische Materialen Netherlands</b> <a href="http://www.cenelec.org">http://www.cenelec.org</a>	CCA App. no. with NL		

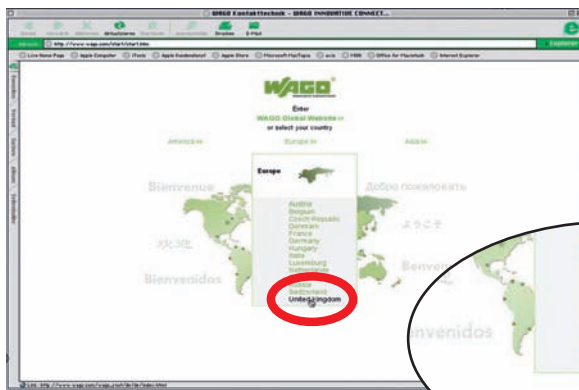
\* see pages 15.4 and 15.5

	Abbreviation for online search*		Abbreviation for online search*
	<b>EZU</b>	<b>Shipbuilding approvals</b>	
<b>Elektrotechnický výskumný a projektový ústav Czech Republic</b> <a href="http://www.ezu.cz">http://www.ezu.cz</a>			<b>GL</b>
	<b>BBJ</b>	<b>Germanischer Lloyd Germany</b> <a href="http://www.gl-group.com">http://www.gl-group.com</a>	
<b>Stowarzyszenie Elektryków Polskich Poland</b> <a href="http://www.bbj.pl">http://www.bbj.pl</a>			<b>BV</b>
	<b>SEP</b>	<b>Bureau Veritas France</b> <a href="http://www.bureauveritas.fr">http://www.bureauveritas.fr</a>	
<b>Stowarzyszenie Elektryków Polskich Poland</b> <a href="http://www.sep.com.pl">http://www.sep.com.pl</a>			<b>LR</b>
<b>CNET</b>	<b>CNET</b>	<b>Lloyd's Register of Shipping Great Britain</b> <a href="http://www.lloydsregister.com">http://www.lloydsregister.com</a>	
<b>Centre National d'Etudes des Télécommunications France</b> <a href="http://www.lannion.cnet.fr">http://www.lannion.cnet.fr</a>			<b>DNV</b>
<b>LCIE</b>	<b>LCIE</b>	<b>NV – Det Norske Veritas Norway</b> <a href="http://www.dnv.com">http://www.dnv.com</a>	
<b>Laboratoire Central des Industries Electriques France</b> <a href="http://www.lcie.fr">http://www.lcie.fr</a>			<b>RMR</b>
	<b>FTZU</b>	<b>Russian Maritime Register of Shipping CIS</b> <a href="http://www.rs-head.spb.ru">http://www.rs-head.spb.ru</a>	
<b>Fyzikálne Technický Zkusební Ústav, Ostrava-Radvanice Czech Republic</b> <a href="http://www.ftzu.cz">http://www.ftzu.cz</a>			<b>PRS</b>
	<b>BKI</b>	<b>Polski Rejestr Statków Poland</b> <a href="http://www.prs.pl">http://www.prs.pl</a>	
<b>Robbanásbiztos Villamos Berendezések Hungary</b> <a href="http://www.bki.hu">http://www.bki.hu</a>			<b>KR</b>
<b>CB</b>	<b>CB</b>	<b>Korean Register of Shipping Korea</b> <a href="http://www.krs.co.kr">http://www.krs.co.kr</a>	
<b>CB – TEST CERTIFICATE India</b> <a href="http://www.ul-europe.com">http://www.ul-europe.com</a>			<b>ABS</b>
<b>CB</b>	<b>CB</b>	<b>American Bureau of Shipping USA</b> <a href="http://www.eagle.org">http://www.eagle.org</a>	
<b>CB – TEST CERTIFICATE China</b> <a href="http://www.ul-europe.com">http://www.ul-europe.com</a>		<b>Ex approvals</b>	
	<b>ENEC</b>		<b>PTB</b>
<b>UL-International Demko A/S Denmark</b> <a href="http://www.ul-europe.com">http://www.ul-europe.com</a>		<b>Physikalisch Technische Bundesanstalt Germany Ex e II</b> <a href="http://www.ptb.de">http://www.ptb.de</a>	
			<b>cURus-EX</b>
		<b>Underwriters Laboratories USA</b> <a href="http://www.ul.com">http://www.ul.com</a>	
			<b>KEMA-EX</b>
		<b>N.V. tot Keuring van Elektrotechnische Materialen Netherland</b> <a href="http://www.kemaquality.com">http://www.kemaquality.com</a>	
		<b>GOSENERGO-Ex GOSENERGONADZOR Russia</b>	<b>GOSENER GO-EX</b>
			<b>FTZU</b>
		<b>Fyzikálne Technický Zkusební Ústav, Ostrava-Radvanice Czech Republic</b> <a href="http://www.ftzu.cz">http://www.ftzu.cz</a>	
			<b>BKI-EX</b>
		<b>Robbanásbiztos Villamos Berendezések Hungary</b> <a href="http://www.bki.hu">http://www.bki.hu</a>	

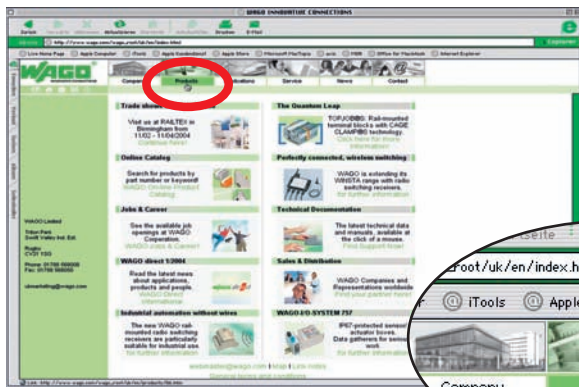
# Approvals – User Guide

This guide will help you find approvals in our online catalog

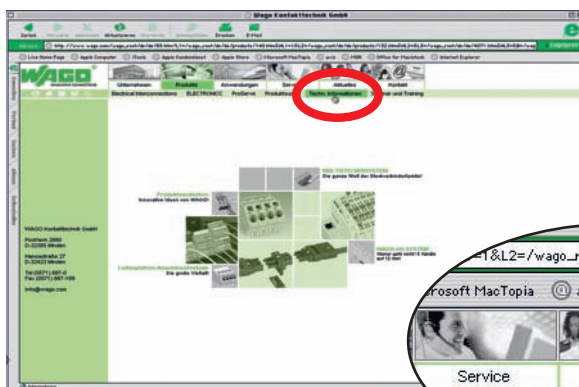
www.wago.com



1: Select "Country"

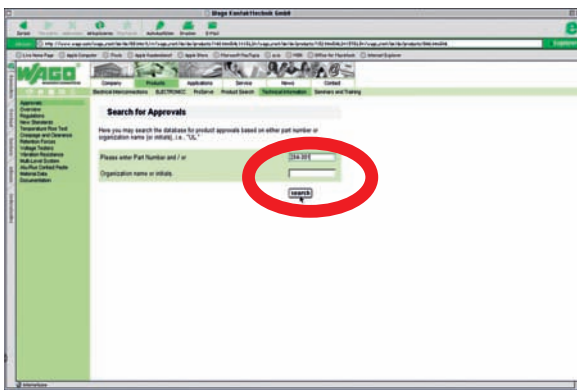


2: Select "Products"

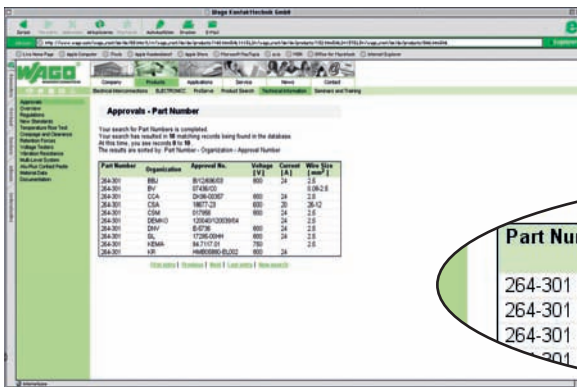
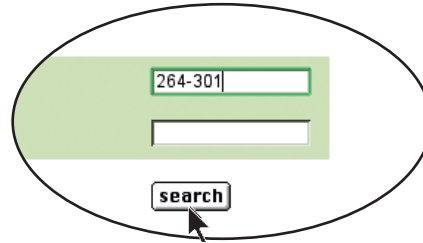


3: Select "Technical Information"





**4: Entry 1**  
Item No.: e.g. "264-301"



**Search result 1**

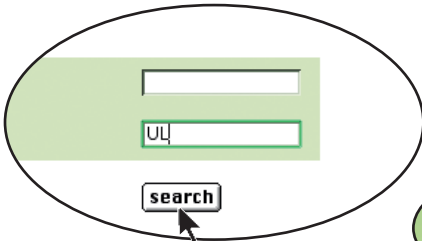
All approvals related to that product will be displayed.

Sorted by: Part Number - Organization - Approval Number

Part Number	Organization	Approval No.	Voltage [V]	Current [A]	Wire Size [mm <sup>2</sup> /AWG]
264-301	BBJ	B/12/696/03	800	24	2,5
264-301	BV	07436/CO			0,08-2,5
264-301	CCA	DK96-00357	800	24	2,5
264-301	CSA	18677-23	600	20	26-12
264-301	CSM	017956	800	24	

**4: Entry 2**

Certification agency: e.g. "UL"



**Search result 2**

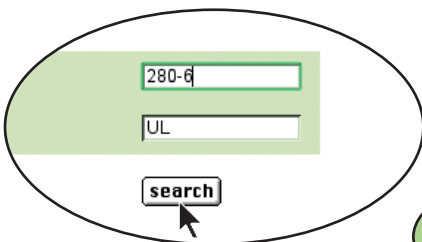
All products approved by that agency will be displayed.

Sorted by: Part Number - Organization - Approval Number

Part Number	Organization	Approval No.	Voltage [V]	Current [A]	Wire Size [mm <sup>2</sup> /AWG]
200-101	UL	E45172	300	10	18-16
200-105	UL	E45172	300	10	18-16
200-107	UL	E45172			18-16
200-111	UL	E45172	300	10	18-16
200-114	UL	E45172	300	10	

**4: Entry 3**

Certification agency and item number range:  
e.g. "UL" and Item-No. "280-6" or "280-60"



**Search result 3**

The whole range of products approved by that agency will be displayed.


Sorted by: Part Number - Organization - Approval Number

Part Number	Organization	Approval No.	Voltage [V]	Current [A]	Wire Size [mm <sup>2</sup> /AWG]
280-601	UL	E45172	600	20	28-12
280-602	UL	E45172	600	20	28-12
280-603	UL	E45172	600	20	28-12
280-604	UL	E45172	300	15	28-12
280-605	UL	E45172	300	15	



# 15 Approvals as per January 2004

6

Item No.	Approval No.	Voltage V	Current A	Cross Section AWG/mm <sup>2</sup>	Item No.	Approval No.	Voltage V	Current A	Cross Section AWG/mm <sup>2</sup>	Item No.	Approval No.	Voltage V	Current A	Cross Section AWG/mm <sup>2</sup>	Item No.	Approval No.	Voltage V	Current A	Cross Section AWG/mm <sup>2</sup>					
 <b>UL – Underwriters Laboratories USA</b>					280-562/281-411	E45172	300	15	28-12	280-687/999-950	E45172				28-12	281-623/281-418	E45172	110	10	28-12				
					280-562/281-420	E45172	24	15	28-12	280-691	E45172	600	20	28-12	281-623/281-541	E45172	30	10	28-12	281-623/281-541	E45172	65	10	28-12
					280-562/281-434	E45172	24	15	28-12	280-695	E45172	300	15	28-12	281-541	E45172				281-542	E45172	600	16	28-12
					280-563	E45172	300	10	28-12	280-805	E45172	300	15	28-12	281-623/281-542	E45172	600	20	28-12	281-624	E45172	600	16	28-12
					280-564	E45172	300	15	28-12	280-829	E45172	300	15	28-12	281-629	E45172	600	20	28-12	281-629	E45172	600	20	28-12
					280-564/281-483	E45172	24	15	28-12	280-830	E45172	600	20	28-12	281-630	E45172	600	20	28-12	281-630	E45172	600	20	28-12
					280-565	E45172	250	6.3	28-12	280-831	E45172	600	20	28-12	281-631	E45172	600	20	28-12	281-631	E45172	600	20	28-12
					280-565/280-321	E45172	250	6.3	28-12	280-832	E45172	600	20	28-12	281-637	E45172	600	20	28-12	281-637	E45172	600	20	28-12
					280-566	E45172	300	10	28-12	280-833	E45172	600	20	28-12	999-950	E45172				281-651	E45172	600	20	28-12
					280-566/281-496	E45172	24	15	28-12	280-834	E45172	600	20	28-12	281-652	E45172	600	20	28-12	281-652	E45172	600	20	28-12
280-567	E45172	300	15	28-12	280-835	E45172	600	20	28-12	281-653	E45172	600	20	28-12	281-653	E45172	600	20	28-12					
280-568	E45172	300	15	28-12	280-836	E45172	600	20	28-12	281-654	E45172	600	20	28-12	281-654	E45172	300	10	28-12					
280-570	E45172	300	15	28-12	280-837	E45172	600	20	28-12	281-657	E45172	600	20	28-12	281-657	E45172	600	20	28-12					
280-570/281-434	E45172	24	15	28-12	280-837/999-950	E45172	300	15	28-12	281-657/999-950	E45172	600	20	28-12	281-658	E45172	600	20	28-12					
280-571	E45172	300	6	28-12	280-838	E45172	600	15	28-12	281-658	E45172	600	20	28-12	281-659	E45172	300	15	28-12					
280-571/281-413	E45172	24	15	28-12	280-839	E45172	300	15	28-12	281-660	E45172	300	15	28-12	281-660	E45172	300	15	28-12					
280-572	E45172	600	20	28-12	280-868	E45172	600	15	28-12	281-663	E45172	600	20	28-12	281-663	E45172	600	20	28-12					
280-572/281-411	E45172	300	15	28-12	280-869	E45172	600	15	28-12	281-664	E45172	600	20	28-12	281-664	E45172	600	20	28-12					
280-572/281-420	E45172	24	15	28-12	280-870	E45172	600	15	24-10	281-668	E45172	600	20	28-12	281-668	E45172	600	20	28-12					
280-572/281-434	E45172	24	15	28-12	280-871	E45172	600	15	28-12	281-672	E45172	600	10	28-12	281-672	E45172	600	10	28-12					
280-573	E45172	300	10	28-12	280-874	E45172	600	15	28-12	281-678	E45172	600	20	28-12	281-678	E45172	600	20	28-12					
280-574	E45172	300	15	28-12	280-875	E45172	600	15	28-12	281-679	E45172	600	20	28-12	281-679	E45172	600	20	28-12					
280-574/281-483	E45172	24	15	28-12	280-876	E45172	600	15	28-12	281-681	E45172	600	20	28-12	281-681	E45172	600	20	28-12					
280-575	E45172	250	6.3	28-12	280-877	E45172	600	15	28-12	281-683	E45172	300	15	28-12	281-683	E45172	300	15	28-12					
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280-576	E45172	300	10	28-12	280-880	E45172	600	15	28-12	281-685	E45172	600	20	28-12	281-685	E45172	600	20	28-12					
280-576/281-496	E45172	24	15	28-12	280-881	E45172	600	15	28-12	281-686	E45172	600	20	28-12	281-686	E45172	600	20	28-12					
280-577	E45172	300	15	28-12	280-882	E45172	600	15	28-12	281-687	E45172	600	20	28-12	281-687	E45172	600	20	28-12					
280-577/281-496	E45172	24	15	28-12	280-883	E45172	600	15	28-12	281-687/999-950	E45172	600	20	28-12	281-687/999-950	E45172	600	20	28-12					
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280-581/281-413	E45172	24	15	28-12	280-907/999-950	E45172	300	15	28-12	281-907/999-950	E45172	600	20	28-12	281-907/999-950	E45172	600	20	28-12					
280-583	E45172	300	15	28-12	280-912	E45172	300	15	28-12	281-912	E45172	300	15	28-12	281-912	E45172	300	15	28-12					
280-584	E45172	300	15	28-12	280-916	E45172	300	15	28-12	281-916	E45172	300	10	28-12	281-916	E45172	300	10	28-12					
280-584/281-483	E45172	24	15	28-12	280-989	E45172	600	20	28-12	281-993	E45172	600	20	28-12	281-993	E45172	600	20	28-12					
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280-586	E45172	300	15	28-12	280-992	E45172	600	20	28-12	280-995	E45172	600	20	28-12	280-995	E45172	600	20	28-12					
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280-587	E45172	300	15	28-12	280-999	E45172	600	20	28-12	280-998	E45172	600	20	28-12	280-998	E45172	600	20	28-12					
280-588	E45172	250	6.3	28-12	281-101	E45172	600	20	28-12	280-999	E45172	600	20	28-12	280-999	E45172	600	20	28-12					
280-588/280-323	E45172	250	6.3	28-12	281-104	E45172	600	20	28-12	281-104	E45172	600	20	28-12	281-104	E45172	600	20	28-12					
280-592	E45172	300	15	28-12	281-107	E45172	600	20	28-12	281-107	E45172	600	20	28-12	281-107	E45172	600	20	28-12					
280-593	E45172	300	15	28-12	281-107/999-950	E45172	600	20	28-12	281-107/999-950	E45172	600	20	28-12	281-107/999-950	E45172	600	20	28-12					
280-601	E45172	600	20	28-12	281-601	E45172	600	20	28-12	281-601	E45172	600	20	28-12	281-601	E45172	600	20	28-12					
280-602	E45172	600	20	28-12	281-603/281-411	E45172	600	20	28-12	281-603/281-411	E45172	600	20	28-12	281-603/281-411	E45172	600	20	28-12					
280-603	E45172	600	20	28-12	281-604	E45172	600	20	28-12	281-604	E45172	600	20	28-12	281-604	E45172	600	20	28-12					
280-604	E45172	300	15	28-12	281-607	E45172	600	20	28-12	281-607	E45172	600	20	28-12	281-607	E45172	600	20	28-12					
280-606	E45172	300	10	28-12	281-607/999-950	E45172	600	20	28-12	281-607/999-950	E45172	600	20	28-12	281-607/999-950	E45172	600	20	28-12					
280-607	E45172	300	10	28-12	281-610	E45172	300	10	28-12	281-610	E45172	300	10	28-12	281-610	E45172	300	10	28-12					
280-607/999-950	E45172	300	15	28-12	281-611	E45172	300	10	28-12	281-611	E45172	300	10	28-12	281-611	E45172	300	10	28-12					
280-610	E45172	300	10	28-12	281-611/110/220	E45172	110/220	10	28-12	281-611/110/220	E45172	110/220	10	28-12	281-611/110/220	E45172	110/220	10	28-12					
280-612	E45172	300	15	28-12	281-617	E45172	600	20	28-12	281-617	E45172	600	20	28-12	281-617	E45172	600	20	28-12					
280-612/280-616	E45172	300	10	28-12	281-618	E45172	600	20	28-12	281-618	E45172	600	20	28-12	281-618	E45172	600	20	28-12					
280-616	E45172	300	10	28-12	281-619	E45172	600	20	28-1															

Item No.	Approval No.	Voltage V	Current A	Cross Section AWG/mm <sup>2</sup>	Item No.	Approval No.	Voltage V	Current A	Cross Section AWG/mm <sup>2</sup>	Item No.	Approval No.	Voltage V	Current A	Cross Section AWG/mm <sup>2</sup>	Item No.	Approval No.	Voltage V	Current A	Cross Section AWG/mm <sup>2</sup>
283-601	E45172	600	65	24-6	769-101/022-016	E45171	600	20	28-12	769-219/281-434	E45171	600	20	28-12	769-662/003-000	E45171	600	20	28-12
283-604	E45172	600	65	24-6	769-102	E45171	600	20	28-12	769-219/281-434	E45172	300/600	10/5	28-12	769-672/003-000				
283-607	E45172			24-6	769-102	E45171	600	20	28-12	769-22	E45171	600	20	28-12	769-662/004-000	E45171	600	20	28-12
283-607/999-950	E45172			24-6	769-115					769-227	E45171	300/600	10/5	28-12	769-672/004-000				
283-609	E45172			24-6	769-102	E45172	300/600	10/5	28-12	769-227	E45172	300/600	10/5	28-12	769-662/004-000	E45171	600	20	28-12
283-671	E45172	600	65	24-6	769-121	E45172	300/600	10/5	28-12	769-228/281-410	E45171	600	20	28-12	769-672/004-000				
283-672	E45172	600	65	24-6	769-135					769-228/281-410	E45172	300/600	10/5	28-12	862-...	E45172	300/600	20/5	20-12
283-674	E45172	600	65	24-6	769-121	E45171	600	20	28-12	769-228/281-411	E45171	600	20	28-12	2001-120	E45172	600	15	22-14
283-677	E45172			24-6	769-135					769-228/281-411	E45172	300/600	10/5	28-12	2001-1207	E45172			
283-677/999-950	E45172			24-6	769-121	E45171	600	20	28-12	769-229/281-413	E45171	600	20	28-12	2001-130	E45172	600	15	22-14
283-691	E45172	600	65	24-6	769-121/000-016	E45171	600	20	28-12	769-229/281-413	E45172	300/600	10/5	28-12	2001-1307	E45172			
283-901	E45172	600	65	24-6	769-15.	E45172	300/600	10/5	28-12	769-229/281-413	E45171	600	20	28-12	2001-140	E45172	600	15	22-14
283-902	E45172	600	65	24-6	769-15.	E45171	600	20	28-12	769-229/281-434	E45171	600	20	28-12	2001-1407	E45172			
283-904	E45172	600	65	24-6	769-161	E45171	600	20	28-12	769-229/281-434	E45172	300/600	10/5	28-12	2002-120	E45172	600	20	22-12
283-907	E45172			24-6	769-161	E45172	300/600	10/5	28-12	769-23	E45171	600	20	28-12	2002-1207	E45172			
283-907/999-950	E45172			24-6	769-162/769-313	E45172	300/600	10/5	28-12	769-23	E45172	300/600	10/5	28-12	2002-130	E45172	600	20	22-12
283-992	E45172	600	65	24-6	769-162/769-313	E45171	600	20	28-12	769-237	E45172	300/600	10/5	28-12	2002-1307	E45172			
283-998	E45172	600	65	24-6	769-163/769-313	E45172	300/600	10/5	28-12	769-237	E45171	600	20	28-12	2002-140	E45172	600	20	22-12
284-101	E45172	600	50	24-8	769-163/769-313	E45171	600	20	28-12	769-238/281-410	E45172	300/600	10/5	28-12	2002-1407	E45172			
284-104	E45172	600	50	24-8	769-164/769-313	E45171	600	20	28-12	769-238/281-410	E45171	600	20	28-12	2004-120	E45172	600	30	20-10
284-107	E45172			24-8	769-164/769-313	E45172	300/600	10/5	28-12	769-238/281-410	E45172	300/600	10/5	28-12	2004-1207	E45172			
284-601	E45172	600	50	24-8	769-165/769-313	E45171	600	20	28-12	769-239/281-411	E45171	600	20	28-12	2004-130	E45172	600	30	20-10
284-604	E45172	600	50	24-8	769-165/769-313	E45172	300/600	10/5	28-12	769-239/281-411	E45171	600	20	28-12	2004-1307	E45172			
284-607	E45172			24-8	769-171	E45171	600	20	28-12	769-239/281-413	E45172	300/600	10/5	28-12	2004-140	E45172	600	30	20-10
284-607/999-950	E45172			24-8	769-171	E45172	300/600	10/5	28-12	769-239/281-413	E45171	600	20	28-12	2004-1407	E45172			
284-621	E45172	600	115	24-8	769-176	E45171	600	20	28-12	769-239/281-413	E45172	300/600	10/5	28-12	2006-120	E45172	600	50	20-8
284-624	E45172	600	115	24-8	769-176	E45172	300/600	10/5	28-12	769-239/281-434	E45171	600	20	28-12	2006-1207	E45172			
284-681	E45172	600	50	24-8	769-181	E45171	600	20	28-12	769-239/281-434	E45172	300/600	10/5	28-12	2006-130	E45172	600	50	20-8
284-682	E45172	600	50	24-8	769-181	E45172	300/600	10/5	28-12	769-239/281-434	E45171	600	20	28-12	2006-1307	E45172			
284-684	E45172	600	50	24-8	769-182/769-314	E45171	600	20	28-12	769-602	E45172	300/600	10/5	28-12	2016-120	E45172	600	85	20-4
284-687	E45172			24-8	769-182/769-314	E45172	300/600	10/5	28-12	769-602	E45171	600	20	28-12	2016-1207	E45172			
284-687/999-950	E45172			24-8	769-184/769-314	E45171	600	20	28-12	769-602	E45171	600	20	28-12	2016-130	E45172	600	85	20-4
284-691	E45172	600	50	24-8	769-184/769-314	E45172	300/600	10/5	28-12	769-602	E45171	600	20	28-12	2016-1307	E45172			
284-901	E45172	600	50	24-8	769-185/769-314	E45171	600	20	28-12	769-615									
284-902	E45172	600	50	24-8	769-185/769-314	E45172	300/600	10/5	28-12	769-615	E45171	600	20	28-12					
284-904	E45172	600	50	24-8	769-191	E45171	600	20	28-12	769-615/001-000									
284-907	E45172			24-8	769-191	E45172	300/600	10/5	28-12	769-615/001-000	E45171	600	20	28-12					
284-907/999-950	E45172			24-8	769-192/769-319	E45171	600	20	28-12	769-615/001-000	E45172	300/600	10/5	28-12					
284-992	E45172	600	50	24-8	769-192/769-319	E45172	300/600	10/5	28-12	769-615/001-000	E45171	600	20	28-12					
284-993	E45172	600	50	24-8	769-193/769-319	E45171	600	20	28-12	769-615/001-000	E45172	300/600	10/5	28-12					
285-194	E45172	600	200	4-3/0"str"	769-193/769-319	E45172	300/600	10/5	28-12	769-615/002-000									
285-195	E45172	600	200	4-3/0"str"	769-194/769-319	E45171	600	20	28-12	769-615/002-000	E45171	600	20	28-12					
285-197	E45172			4-3/0"str"	769-194/769-319	E45172	300/600	10/5	28-12	769-615/002-000	E45171	600	20	28-12					
285-634	E45172	600	115	10-2"s",str"	769-195/769-319	E45171	600	20	28-12	769-615/002-000	E45171	600	20	28-12					
285-635	E45172	600	115	10-2"s",str"	769-195/769-319	E45172	300/600	10/5	28-12	769-615/002-000	E45171	600	20	28-12					
285-637	E45172			10-2"s",str"	769-20.	E45171	600	20	28-12	769-615/002-000	E45171	600	20	28-12					
285-637/999-950	E45172			10-2"s",str"	769-20.	E45172	300/600	10/5	28-12	769-615/002-000	E45171	600	20	28-12					
726-1.	E45172	300	10	28-16/28-18	769-207	E45171	600	20	28-12	769-615/004-000	E45171	600	20	28-12					
726-2.	E45172	300	10	28-14/28-18	769-207	E45172	300/600	10/5	28-12	769-615/004-000	E45172	300/600	10/5	28-12					
726-3.	E45172	300	10	28-16/28-18	769-208/281-410	E45171	600	20	28-12	769-615/004-000	E45171	600	20	28-12					
726-4.	E45172	300	10	28-16/28-18	769-208/281-410	E45172	300/600	10/5	28-12	769-615/004-000	E45171	600	20	28-12					
726-521	E45172	300	10	28-14/28-18	769-208/281-411	E45171	600	20	28-12	769-615/004-000	E45171	600	20	28-12					
726-60.	E45172	300	10	24-6/28-14	769-209/281-413	E45171	600	20	28-12	769-615/004-000	E45171	600	20	28-12					
726-61.	E45172	300	10	24-6/28-14	769-209/281-413	E45172	300/600	10/5	28-12	769-615/004-000	E45171	600	20	28-12					
726-62.	E45172	300	10	24-6/28-14	769-217	E45171	600	20	28-12	769-615/004-000	E45171	600	20	28-12					
726-65.	E45172	300	10	24-6/28-14	769-217	E45172	300/600	10/5	28-12	769-615/004-000	E45171	600	20	28-12					
726-66.	E45172	300	10	24-6/28-14	769-217	E45171	600	20	28-12	769-615/004-000	E45171	600	20	28-12					
726-67.	E45172			24-6/28-14	769-218/281-410														







Item No.	Approval No.	Voltage V	Current A	Cross Section AWG/mm <sup>2</sup>	Item No.	Approval No.	Voltage V	Current A	Cross Section AWG/mm <sup>2</sup>	Item No.	Approval No.	Voltage V	Current A	Cross Section AWG/mm <sup>2</sup>	Item No.	Approval No.	Voltage V	Current A	Cross Section AWG/mm <sup>2</sup>
<b>CENELEC CERTIFICATION AGREEMENT</b> <b>CCA-DK – CCA-NL –</b> <b>CCA N.V. tot Keuring van Elektrotechnische Materialen, Netherland</b>					273-254	DK2017	400	24	2,5	280-646	NL4912	800	24	2,5	281-633/	NL4341	250		4,0
					273-255	DK2017	400	24	2,5	280-649	NL4912	800	24	2,5	281-411			281-634/	NL4341
According to the CENELEC Certification Agreement, the CCA certificate is recognized in the following European countries: Belgium, Denmark, Germany, Greece, Spain, France, Ireland, Italy, Luxembourg, Netherlands, Austria, Portugal, Finland, Sweden, Great Britain, Czech Republic, Estonia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Slovenia, Slovakia					273-258	DK2017	400	24	2,5	280-650	NL4912	800	24	2,5	281-413				
					273-403	DK2017	400	32	4	280-651	NL4912	800	24	2,5	281-634/	NL4341	250		4,0
<b>CCA</b>					273-453	DK2017	400	32	4	280-654	NL4912	800	24	2,5	281-434				
					279-1..	NL3710	800	18	1,5	280-655/...	NL4912	250	16	2,5	281-635/	NL4341	250		4,0
<b>CCA</b>					279-604	NL3710	800	18	1,5	280-656	NL4912	800	24	2,5	281-489				
					279-620/	NL3710	60		1,5	280-671	NL4912	800	24	2,5	281-635/	NL4341	250		4,0
<b>CCA</b>					281-408					280-672	NL4912	800	24	2,5	281-490				
					279-621	NL3710	800	18	1,5	280-673/	NL4912	250	24	2,5	281-635/	NL4341	250		4,0
<b>CCA</b>					279-623/	NL3710	250		1,5	281-410				281-491					
					281-410					280-673/	NL4912	250	24	2,5	281-635/	NL4341	250		4,0
<b>CCA</b>					279-623/	NL3710	250		1,5	281-411				281-492					
					281-411					280-676	NL4912	250	10	2,5	281-636/	NL4341	250		4,0
<b>CCA</b>					279-624/	NL3710	24		1,5	280-677	NL4912	250		2,5	281-487				
					281-413					280-677/	NL4912			2,5	281-636/	NL4341	250		4,0
<b>CCA</b>					279-624/	NL3710	24		1,5	999-950				281-488					
					281-413					280-678	NL4912	800	24	2,5	281-637	NL4341			2,5
<b>CCA</b>					279-624/	NL3710	24		1,5	280-681	NL4912	800	24	2,5	281-637/	NL4341			2,5
					281-434					280-683	NL4912	400	16	2,5	999-950				
<b>CCA</b>					279-626	NL3710	800	18	1,5	280-684	NL4912	800	24	2,5	281-651	NL4341	800	32	4,0
					279-68.	NL3710	800	18	1,5	280-685	NL4912	250	10	2,5	281-652	NL4341	800	26	4,0
<b>CCA</b>					279-687	NL3710	800	18	1,5	280-686	NL4912	250	16	2,5	281-653	NL4341	800	26	4,0
					279-687/	NL3710			1,5	280-687	NL4912			2,5	281-654	NL4341	800	26	4,0
<b>CCA</b>					999-950					280-687	NL4912			2,5	281-656	NL4341	250	6,3	4,0
					279-826	NL3710	800	18	1,5	999-950				281-657	NL4341			4	
<b>CCA</b>					279-83.	NL3710	800	18	1,5	280-691	NL4912	800	24	2,5	281-657/	NL4341			4
					279-837	NL3710			1,5	280-695	NL4912	250	10	2,5	999-950				
<b>CCA</b>					279-837/	NL3710			1,5	280-826	NL4912	800	24	2,5	281-658	NL4341			4,0
					999-950					280-83.	NL4912	800	20	2,5	281-659	NL4341	400	10	4,0
<b>CCA</b>					279-838	NL3710	800	18	1,5	280-837	NL4912	800	20	2,5	281-660	NL4341	400	10	4,0
					279-90.	NL3710			1,5	280-837	NL4912			2,5	281-663	NL4341	800	26	4,0
<b>CCA</b>					279-907	NL3710			1,5	280-837/	NL4912			2,5	281-664	NL4341	800	26	4,0
					279-907/	NL3710			1,5	999-950				281-665/	NL4341	250		4,0	
<b>CCA</b>					999-950					280-868	NL4912	250	16	2,5	281-400				
					279-989	NL3710	800	18	1,5	280-869	NL4912	250	16	2,5	281-665/	NL4341	250		4,0
<b>CCA</b>					279-990	NL3710	800	18	1,5	280-870	NL4912	250	16	2,5	281-401				
					279-992	NL3710	800	18	1,5	280-871	NL4912	250	16	2,5	281-665/	NL4341	250		4,0
<b>CCA</b>					279-993	NL3710	800	18	1,5	280-874	NL4912	250	16	2,5	281-410				
					279-994	NL3710	800	18	1,5	280-875	NL4912	250	16	2,5	281-665/	NL4341	250		4,0
<b>CCA</b>					279-995	NL3710	800	18	1,5	280-876	NL4912	250	16	2,5	281-411				
					280-10.	NL4912	800	24	2,5	280-877	NL4912	250	16	2,5	281-666	NL4341	400	10	4,0
<b>CCA</b>					280-107	NL4912			2,5	280-879	NL4912	250	16	2,5	281-668	NL4341	800	26	4,0
					280-510	NL4912	500	20	2,5	280-88.	NL4912	250	16	2,5	281-673/	NL4341	250		4,0
<b>CCA</b>					280-513	NL4912	500	20	2,5	280-90.	NL4912	800	24	2,5	281-400				
					280-517	NL4912	500	20	2,5	280-907	NL4912			2,5	281-673/	NL4341	250		4,0
<b>CCA</b>					280-519	NL4912	500	20	2,5	999-950				281-401					
					280-520	NL4912	500	20	2,5	280-912	NL4912	400	16	2,5	281-678	NL4341	800	32	4,0
<b>CCA</b>					280-521	NL4912	400	10	2,5	280-915/...	NL4912	250	16	2,5	281-679	NL4341	800	32	4,0
					280-522	NL4912	400	10	2,5	280-916	NL4912	250	16	2,5	281-681	NL4341	800	32	4,0
<b>CCA</b>					280-523	NL4912	500	20	2,5	280-940/	NL4912	250	16	2,5	281-683	NL4341	400	10	4,0
					280-524	NL4912	500	20	2,5	281-410				281-684	NL4341	800	32	4,0	
<b>CCA</b>					280-525	NL4912	400	10	2,5	280-940/	NL4912	250	16	2,5	281-685	NL4341	800	32	4,0
					280-526	NL4912	400	10	2,5	281-411				281-686	NL4341	800	32	4,0	
<b>CCA</b>					280-527	NL4912	500	20	2,5	280-941/	NL4912	250	16	2,5	281-687	NL4341	800	32	4,0
					280-529	NL4912	500	20	2,5	281-491				281-687/	NL4341			4	
<b>CCA</b>					280-530	NL4912	500	20	2,5	280-942/	NL4912	250	16	2,5	999-950				
					280-531	NL4912	500	6,3/20	2,5	280-942/	NL4912	250	16	2,5	281-691	NL4341	800	24	4,0
<b>CCA</b>					280-532	NL4912	500	6,3/20	2,5	281-492				281-90.	NL4341	800	32	4,0	
					280-533	NL4912	500	20	2,5	280-943/	NL4912	250	24	2,5	281-907	NL4341	250		4,0
<b>CCA</b>					280-534	NL4912	500	20	2,5	281-413				281-907	NL4341	400	10	4,0	
					280-537	NL4912	500	20	2,5	281-434				281-907/	NL4341			4	
<b>CCA</b>					280-543	NL4912	500	20	2,5	280-946	NL4912	800	24	2,5	999-950				
					280-547	NL4912	500	20	2,5	280-943/	NL4912	250	24	2,5	281-915/	NL4341	250		4,0
<b>CCA</b>					280-548	NL4912	500	20	2,5	281-434				281-401					
					280-549	NL4912	500	20	2,5	280-946	NL4912	800	24	2,5	281-401				
<b>CCA</b>					280-550	NL4912	500	20	2,5	280-989	NL4912	800	24	2,5	281-915/	NL4341	250		4,0
					280-551	NL4912	500	20	2,5	280-990	NL4912	800	24	2,5	281-410				
<b>CCA</b>					280-552	NL4912	500	20	2,5	280-992	NL4912	800	24	2,5	281-915/	NL4341	250		4,0
					280-555	NL4912	500	20	2,5	280-994	NL4912	800	24	2,5	281-411				
<b>CCA</b>					280-558	NL4912	500	20	2,5	280-995	NL4912	800	24	2,5	281-992	NL4341	800	32	4,0
					280-597	NL4912	500	20	2,5	280-996	NL4912	800	24	2,5	281-993	NL4341	800	32	4,0
<b>CCA</b>					280-601	NL4912	800	24	2,5	280-998	NL4912	800	24	2,5	281-994	NL4341	800	32	4,0
					280-602	NL4912	800	24	2,5	280-999	NL4912	800	24	2,5	281-998	NL4341	800	32	4,0
<b>CCA</b>					280-603	NL4912	800	24	2,5	281-10.	NL4341	800	32	4,0	282-10.	NL5448	800	41	6,0
					280-604	NL4912	800	24	2,5	281-107	NL4341			2,5	282-107	NL544			



# 15 Ex Approvals as per January 2004

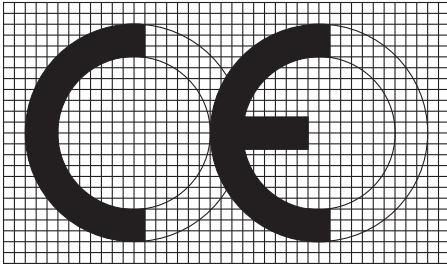
12

Item No.	Approval No.	Vol-tage V	Cur-rent A	Cross Section AWG/mm <sup>2</sup>	Item No.	Approval No.	Vol-tage V	Cur-rent A	Cross Section AWG/mm <sup>2</sup>	Item No.	Approval No.	Vol-tage V	Cur-rent A	Cross Section AWG/mm <sup>2</sup>	Item No.	Approval No.	Vol-tage V	Cur-rent A	Cross Section AWG/mm <sup>2</sup>
<b>PTB Physikalisch Technische Bundesanstalt Bundesrepublik Deutschland EEx e II</b>					<b>Ex approvals for the US market</b>					<b>cURus – Underwriters Laboratories USA</b>									
262-...	IECExPTB04.0004U550	23	4	4	282-607/999-950	PTB98Atex3131U			6	In accordance with the National Electrical Code (NEC), besides the popular classification in divisions 1 and 2 (NEC 500), a new zone classification (NEC 505) based on the IEC/CENELEC standards is being implemented in the US market which is experiencing a strong restructuring in the area of intrinsically safe protection.					262-...	E185892	600	20	24-12
264-...	IECExPTB04.0003U750	23	2,5	2,5	282-687/999-950	PTB98Atex3131U			6	<b>AREA CLASSIFICATION</b>					264-1...	E185892	600	20	28-12
279-687/999-950	PTB00Atex3113U		1,5	1,5	282-691	PTB98Atex3131U 550 39 with adjacent jumper max 35 A			6	Flammable Material / Flammable Material / Flammable Material					264-2...	E185892	600	20	28-12
279-837/999-950	PTB00Atex3113U		1,5	1,5	282-907/999-950	PTB98Atex3131U			6	Present Continuously / Present Intermittently / Present Abnormally					264-2.7	E185892			28-12
279-907/999-950	PTB00Atex3113U		1,5	1,5	283-607/999-950	PTB98Atex3132U			16	IEC/CENELEC Zone 0 Zone 1 Zone 2					264-3.7	E185892			28-12
279-989	PTB00Atex3113U 550 15	1,5	1,5	1,5	283-677/999-950	PTB98Atex3132U			16	US NEC 505 Zone 0 Zone 1 Zone 2					264-7.7	E185892			28-12
279-990	PTB00Atex3113U 550 15 with adjacent jumper max 15 A	1,5	1,5	1,5	283-691	PTB98Atex3132U 550 72 with adjacent jumper max 63 A			16	NEC 500 Division 1 Division 2					264-7.7/999-950	E185892			28-12
279-992	PTB00Atex3113U 550 15 with adjacent jumper max 15 A	1,5	1,5	1,5	283-607/999-950	PTB98Atex3132U			16	Material					280-6.7	E185892			28-12
279-993	PTB00Atex3113U 550 15 with adjacent jumper max 15 A	1,5	1,5	1,5	283-992	PTB98Atex3132U 550 68 with adjacent jumper max 63 A			16	IEC/CENELEC Zone 0 Zone 1 Zone 2					280-6.7/999-950	E185892			28-12
279-994	PTB00Atex3113U 550 15 with adjacent jumper max 15 A	1,5	1,5	1,5	283-998	PTB98Atex3132U 550 68 with adjacent jumper max 63 A			16	US NEC 505 Zone 0 Zone 1 Zone 2					280-9.7	E185892	600	15	26-14
279-995	PTB00Atex3113U 550 15	1,5	1,5	1,5	284-607/999-950	PTB98Atex3133U			10	IEC classification per IEC 79-10.					280-990	E185892	300	15	28-12
280-607/999-950	PTB98Atex3109U		2,5	2,5	284-687/999-950	PTB98Atex3133U			10	CENELEC classification per EN 60 079-10					280-992	E185892	600	20	28-12
280-637/999-950	PTB98Atex3109U		2,5	2,5	284-691	PTB98Atex3133U 550 53 with adjacent jumper max. 53 A			10	US classification per ANSI/NFPA 70					280-993	E185892	600	20	28-12
280-677/999-950	PTB98Atex3109U		2,5	2,5	284-907/999-950	PTB98Atex3133U			10	National Electric Code (NEC) Article 500 or Article 505					280-994	E185892	600	20	28-12
280-687/999-950	PTB98Atex3109U		2,5	2,5	284-992	PTB98Atex3133U 550 53 with adjacent jumper max 53 A			10	Our terminal blocks are certified in accordance with UL standard UL2279					280-995	E185892	600	15	26-14
280-691	PTB98Atex3109U 550 23 with adjacent jumper max 23 A	2,5	2,5	2,5	284-993	PTB98Atex3133U 550 53 with adjacent jumper max 53 A			10	“Electrical Equipment for Use in Class I, Zone 0, 1 and 2 Hazardous (Classified) Locations” und are marked according to the NEC 505 specifications.					280-996	E185892	600	20	28-12
280-837/999-950	PTB98Atex3109U		2,5	2,5	2002-1201	IECExPTB03.0004U550 22 0,2-4 with push-in type jumper bar max 20 A			0,2-4	2002-1202 IECExPTB03.0004U550 22 0,2-4 with push-in type jumper bar max 20 A					280-998	E185892	600	20	28-12
280-907/999-950	PTB98Atex3109U		2,5	2,5	2002-1202	IECExPTB03.0004U550 22 0,2-4 with push-in type jumper bar max 20 A			0,2-4	2002-1204 IECExPTB03.0004U550 22 0,2-4 with push-in type jumper bar max 20 A					281-6.7	E185892			28-12
280-989	PTB98Atex3109U 550 22	2,5	2,5	2,5	2002-1207	IECExPTB03.0004U 0,2-4			0,2-4	2002-1301 IECExPTB03.0004U550 22 0,2-4 with push-in type jumper bar max 20 A					281-6.7/999-950	E185892			28-12
280-990	PTB98Atex3109U 550 22 with adjacent jumper max 22 A	2,5	2,5	2,5	2002-1302	IECExPTB03.0004U550 22 0,2-4 with push-in type jumper bar max 20 A			0,2-4	2002-1304 IECExPTB03.0004U550 22 0,2-4 with push-in type jumper bar max 20 A					281-691	E185892			24-10
280-992	PTB98Atex3109U 550 23 with adjacent jumper max. 23 A	2,5	2,5	2,5	2002-1307	IECExPTB03.0004U 0,2-4			0,2-4	2002-1401 IECExPTB03.0004U550 22 0,2-4 with push-in type jumper bar max 20 A					282-607	E185892			28-12
280-993	PTB98Atex3109U 550 22 with adjacent jumper max 22 A	2,5	2,5	2,5	2002-1402	IECExPTB03.0004U550 22 0,2-4 with push-in type jumper bar max 20 A			0,2-4	2002-1404 IECExPTB03.0004U550 22 0,2-4 with push-in type jumper bar max 20 A					282-607/999-950	E185892			24-10
280-994	PTB98Atex3109U 550 20 with adjacent jumper max 20 A	2,5	2,5	2,5	2002-1404	IECExPTB03.0004U550 22 0,2-4 with push-in type jumper bar max 20 A			0,2-4	2002-1407 IECExPTB03.0004U 0,2-4					283-607	E185892			28-12
280-995	PTB98Atex3109U 550 20 with adjacent jumper max 20 A	2,5	2,5	2,5											283-607/999-950	E185892			24-10
280-996	PTB98Atex3109U 550 23 with adjacent jumper max 23 A	2,5	2,5	2,5											283-691	E185892			24-10
280-998	PTB98Atex3109U 550 23 with adjacent jumper max 20 A	2,5	2,5	2,5											284-607	E185892			28-12
280-999	PTB98Atex3109U 550 20 with adjacent jumper max 23 A	2,5	2,5	2,5											284-607/999-950	E185892			24-8
281-607/999-950	PTB98Atex3110U		4	4											284-691	E185892			24-8
281-637/999-950	PTB98Atex3110U		4	4															
281-657/999-950	PTB98Atex3110U		4	4															
281-687/999-950	PTB98Atex3110U		4	4															
281-691	PTB98Atex3110U 550 30 with adjacent jumper max 26 A	4	4	4															
281-907/999-950	PTB98Atex3110U		4	4															
281-992	PTB98Atex3110U 550 30 with adjacent jumper max 26 A	4	4	4															
281-993	PTB98Atex3110U 550 30 with adjacent jumper max 26 A	4	4	4															
281-994	PTB98Atex3110U 550 30 with adjacent jumper max 26 A	4	4	4															
281-998	PTB98Atex3110U 550 30 with adjacent jumper max 26 A	4	4	4															

## CE Marking and EC Directives

### CE conformity marking:

The CE conformity marking consists of the characters "CE", with the following script:



Communauté Européenne  
(European Community)

The EC directives are legally binding specifications of the European Community. Their aim is the alignment of legal and administrative specifications in the various EC member countries, in order to prevent trading hindrances arising from different national specifications.

In order to launch a product on the market it has to comply with the relevant directives. Several directives may apply for a product, for example the EMC and the low voltage directives.

For WAGO products the following **EC directives** apply:

#### **73/23/EEC** – Low voltage directive

Within the low voltage directives, products are considered electrical equipment if used for applications at nominal voltages between 50 V and 1000 V for alternating current and between 75 V and 1500 V for direct current.

This directive applies for products such as rail-mounted terminal blocks, terminal blocks, modular terminal blocks, terminal strips etc. which comply with the specifications of the coordinated European standards and their specific parts, for example EN 60 947 for rail-mounted terminal blocks and EN 60 998 for terminal blocks.

The CE marking is indicated on the smallest packing-unit.

With the CE marking the manufacturer proves the conformity of the product with the relevant directives.

Apart from the CE marking, the manufacturer issues a declaration of EC conformity for the product. The manufacturer has to keep this declaration of EC conformity and present it on request to a national surveillance authority.

#### **89/336/EEC** – EMC directive

This directive applies to any apparatuses, equipment and systems containing electric or electronic components. The BAPT (Bundesamt für Post und Telekommunikation / Federal Office for Post and Telecommunication) is authorized to differ between elementary and complex components. Elementary components such as resistors, transformers, ICs, relays etc. are not provided with marking. As regards complex components such as electro-motors, electronic cards thermostats etc., the EMC directives apply only if these components are sold directly to the end user.

If the EMC directive applies to products, these products are provided with the CE marking on the housing. This marking proves the conformity with the corresponding standards.

#### **89/392/EEC** – Machine directive

This directive applies to complete machines or equipment.

The manufacturers of machines or equipment are obliged to use components which meet the corresponding EC directives, for example the low voltage or EMC directives.

The conformity with these directives is the precondition of the free exchange of goods in Europe.

#### **94/9/EC Ex directive,** **ATEX 100a**

Explosion proof devices  
(additional information see section 13)



## IEC/EN Specifications

In particular the following standards apply to the design and the application of the terminal blocks and connectors contained in this catalog:

- |   |   |  |
|---|---|--|
| IEC 60364-1<br>VDE 0100-100<br>/.. Erection of power installations with nominal voltages up to 1000 V<br>- Fundamental principles, assessment of general characteristics, definitions | IEC 60079-7<br>EN 60079-7<br>VDE 0170/0171 part 6<br>/ Electrical apparatus for potentially explosive atmospheres<br>- increased safety "e"   | IEC 60439-1<br>EN 60439-1<br>VDE 0660 part 500<br>/ Low-voltage switchgear and control-gear assemblies<br>- Type-tested and partially type-tested assemblies   |
| EN 50110-1<br>VDE 0105 part 1<br>/ Operation of electrical installations  | IEC 60079-11<br>EN 50020<br>VDE 0170/0171 part 7<br>/ Electrical apparatus for potentially explosive atmospheres<br>- intrinsic safety "i"  | IEC 60439-3<br>EN 60439-3<br>VDE 0660 part 504<br>/- Particular requirements for low-voltage switchgear and controlgear assemblies intended to be installed in places where unskilled persons have access<br>- Distribution boards |
| IEC 61140<br>EN 61140<br>VDE 0140 part 1<br>/ Protection against electric shock<br>- Common aspects for installation and equipment  | IEC 60079-14<br>EN 60079-14<br>VDE 0165 part 1<br>/ Erection of electrical installations in hazardous areas   | IEC 61643-1<br>EN 61643-11<br>VDE 0675 part 6-11<br>/ Surge protective devices connected to low-voltage power distribution systems<br>- Performance requirements and testing methods   |
| VDE 0100 part 710<br>/ Erection of power installations with nominal voltages up to 1000 V<br>- Requirements for special installations or locations - Part 710: Medically used areas   | IEC 60079-15<br>EN 60079-15<br>VDE 0170/0171 part 16<br>/ Electrical apparatus for potentially explosive atmospheres<br>- Type of protection "n"  | IEC 60335-1<br>EN 60335-1<br>VDE 0700 part 1<br>/ Safety of household and similar electrical appliances<br>- General requirements  |
| DIN VDE 0108 part 1<br>/ Power installation and safety power supply in institutional facilities<br>- General  | IEC 60038<br>HD 472 S1<br>VDE 0175<br>/ IEC standard voltages   | IEC 60598-1<br>EN 60598-1<br>VDE 0711 part 1<br>/ Lighting fixtures<br>- General requirements and tests  |
| IEC 60664-1<br>EN 60664-1<br>VDE 0110 part 1<br>/ Insulation coordination for equipment within low-voltage systems<br>- Principles, requirements and tests                            | DIN VDE 0298 part 1<br>/ Application of cables and flexible cords in power installations<br>- Recommended values for current carrying capacities of cables for fixed installation and for flexible cables | IEC 60715<br>EN 60715<br>/- Standardized mounting on rails for mechanical support of electrical devices in switchgear and control-gear installations   |
| IEC 60204-1<br>EN 60204-1<br>VDE 0113 part 1<br>/ Safety of machinery<br>- General requirements   | IEC 60112<br>EN 60112<br>VDE 0303 part 11<br>/ Method for determining the comparative and the proof tracking indices of solid insulating materials  |  |
| VDE 0118 part 1<br>/ Installation of electrical equipment in mines<br>- General requirements  | IEC 60529<br>EN 60529<br>VDE 0470 part 1<br>/ Degrees of protection provided by enclosures (IP-Code)<br>- Testing equipment and testing method  |  |
| IEC 60079-0<br>EN 60079-0<br>VDE 0170/0171 part 1<br>/ Electrical apparatus for potentially explosive atmospheres<br>- General requirements   |   |  |

- IEC 60999-1  
EN 60999-1  
VDE 0609 part 1  
/ Connecting devices  
- Electrical copper conductors -  
Safety requirements for screw-type  
and screwless-type clamping units  
- General requirements and particular  
requirements for clamping units for  
conductors from 0.5 mm<sup>2</sup> up to 35  
mm<sup>2</sup> (included)
- IEC 60999-2  
EN 60999-2  
/- Particular requirements for clamping  
units for conductors above 35 mm<sup>2</sup>  
up to 300 mm<sup>2</sup> (included)
- IEC 60998-1  
EN 60998-1  
VDE 0613 part 1  
/ Connecting devices for low-voltage  
circuits for household and similar pur-  
poses  
- General requirements
- IEC 60998-2-1  
EN 60998-2-1  
VDE 0613 part 2-1  
/- Special requirements for connecting  
devices as standalone devices with  
screw-type terminals
- IEC 60998-2-2  
EN 60998-2-2  
VDE 0613 part 2-2  
/- Special requirements for connecting  
devices as standalone devices with  
screwless-type terminals
- IEC 60998-2-3  
EN 60998-2-3  
VDE 0613 part 2-3  
/- Special requirements for connecting  
devices as standalone devices with  
insulation piercing clamping units
- IEC 60998-2-5  
EN 60998-2-5  
/- Particular requirements for connec-  
ting boxes (junction and/or tapping)  
for terminals or connecting devices
- IEC 60947-1  
EN 60947-1  
VDE 0660 part 100  
/ Low-voltage switchgear and control-  
gear  
- General rules
- IEC 60947-7-1  
EN 60947-7-1  
VDE 0611 part 1  
/- Ancillary equipment;  
Terminal blocks for copper  
conductors
- IEC 60947-7-2  
EN 60947-7-2  
VDE 0611 part 3  
/- Ancillary equipment;  
Ground (earth) conductor terminal  
blocks
- DIN VDE 0611 part 4  
/ Terminal blocks for connecting copper  
conductors;  
- Distribution terminal blocks up to  
6 mm<sup>2</sup>
- IEC 60947-7-3  
EN 60947-7-3  
VDE 0611 part 6  
/- Ancillary equipment; Safety require-  
ments for fuse terminal blocks
- IEC 61984  
EN 61984  
VDE 0627  
/ Connectors – Safety requirements  
and tests

## Tests and Testing Procedures According to IEC/EN Standards

Products such as connecting devices, rail-mounted terminal blocks and connectors, etc., have their own product-specific test specifications. The following paragraphs which include the most important tests are both limited to describing the test methods and explaining the test purpose. The values stated in the following paragraphs (e.g. voltages, temperatures, forces, etc.) are solely for the purpose of clarification and may vary according to the test used.

### Mechanical Tests

All WAGO products meet the requirements of the following mechanical tests.

#### • Connecting conditions

##### Conductor connection

Two connection systems have proven themselves in the market for spring clamp connectors:

The **Push-wire connection** in applications with exclusively solid conductors; example for lighting and building wiring, telecommunication, house communication or alarm systems.

Conductor cross section range  
0.28 mm<sup>2</sup> up to 4 mm<sup>2</sup>/  
AWG 24 – AWG 12.

The **CAGE CLAMP® connection** as a **universal clamping** system for solid stranded and fine-stranded conductors for applications in industrial electrotechnical and electronic engineering; preferentially for fine-stranded conductors in the elevator industry, in power stations, the chemical, automobile industry and on board ships.

Conductor cross section range  
0.08 mm<sup>2</sup> up to 35 mm<sup>2</sup>/  
AWG 28 – AWG 2.

The **CAGE CLAMP®S** is a further development of the universal CAGE CLAMP® allowing the connection of solid, stranded and fine-stranded conductors rated AWG 24 (0.2 mm<sup>2</sup>) to AWG 6 (16 mm<sup>2</sup>) (AWG 4/25 mm<sup>2</sup> only "f-st") and offering all the benefits and safety of the original CAGE CLAMP® connection. Furthermore, using the CAGE CLAMP®S connection technology, solid and stranded conductors rated AWG 20-6 (0.5 mm<sup>2</sup> - 16 mm<sup>2</sup>) as well as fine-stranded conductors with crimped ferrule rated from AWG 20 (0.5 mm<sup>2</sup>) to AWG 6 (16 mm<sup>2</sup>) can be connected by simply pushing them in.

The conductor introduction hole is designed to ensure an optimum adaptation to the insulation cross sections of conductor rated cross sections, thus guaranteeing good conductor guidance.

This is of particular importance for applications subject to vibration.

In practice, there is always a danger of very small cross section of fine-stranded wire being fragile enough to allow it to be pushed into the point where the conductor insulation is being clamped by the clamping unit.

In order to prevent resulting "accidental contact" we provide insulation stop sleeves for WAGO rail-mounted terminal blocks with cross section up to AWG 12 (4 mm<sup>2</sup>) which avoid this danger even with conductors of AWG 28 (0.08 mm<sup>2</sup>) (see page 2.43).

### Rated cross section and connectable conductors

I. According to IEC 60999-1 / EN 60999-1 / VDE 0609 part 1, table 1:

Rated cross-section	Theoretical diameter of the largest conductor							Connectable conductors	
	Metric			AWG/Kcmil				Rigid	Flexible
	Rigid		Flexible	Rigid		Flexible			
	Solid	Stranded			b) Solid	b) Class B Stranded	c) Class I, K, M Stranded		
mm <sup>2</sup>	mm	mm	mm	Wire size	mm	mm	mm		
0.2	0.51	0.53	0.61	24	0.54	0.61	0.64	To be specified in the relevant product standard	
0.34	0.63	0.66	0.8	22	0.68	0.71	0.80		
0.5	0.9	1.1	1.1	20	0.85	0.97	1.02		
0.75	1.0	1.2	1.3	18	1.07	1.23	1.28		
1.0	1.2	1.4	1.5	–	–	–	–		
1.5	1.5	1.7	1.8	16	1.35	1.55	1.60		
2.5	1.9	2.2	2.3 <sup>a)</sup>	14	1.71	1.95	2.08		
4.0	2.4	2.7	2.9 <sup>a)</sup>	12	2.15	2.45	2.70		
6.0	2.9	3.3	3.9 <sup>a)</sup>	10	2.72	3.09	3.36		
10.0	3.7	4.2	5.1	8	3.34	3.89	4.32		
16.0	4.6	5.3	6.3	6	4.32	4.91	5.73		
25.0	–	6.6	7.8	4	5.45	6.18	7.26		
35.0	–	7.9	9.2	2	6.87	7.78	9.02		

NOTE: Diameters of the largest rigid and flexible conductors are based on Table 1 of IEC 60228 A and IEC 60344 and, for AWG conductors, on ASTM B172-71 [4], IECA Publication S-19-81 [5], IECA Publication S-66-524 [6] and IECA Publication S-66-516 [7].

<sup>a)</sup> Dimensions for class 5 flexible conductors only, according to IEC 60228 A.

<sup>b)</sup> Nominal cross section + 5 %

<sup>c)</sup> Largest diameter for conductors of classes I, K, M + 5 %

**In practical use the conductor cross sections are approx. 5 % below the values stated in the table!**

This specification concerning clamping units - IEC 60999-1/EN 60999-1/VDE 0609 part 1, contains the following requirement (paragraph 7.1):

**Clamping units must be suitable for connecting unprepared conductors.**

With normal operating conditions this direct clamping, i.e. the direct contacting of the conductor at the current bar of the terminal block, results in optimum contact quality as any additional risk factors arising in connection with anti-splaying methods, are prevented.

Occasionally, due to wire handling on site, conductor anti-splaying methods may be necessary. Various methods may be used (as illustrated below).

For applications in special areas with extremely corrosive atmospheres, special conditions apply.

In this case the use of solid copper wires or fine-stranded copper wires with properly crimped, tinned copper ferrules or copper pin terminals is recommended.

Thus the fine strands are crimped to a dense inner core, like solid copper wire. This action prevents the ingress of the aggressive atmosphere (depending on the ppm concentration), which can diffuse into the conductor bundle along the individual strands and hence cause corrosion deposits between individual strands and the clamping point.

**1 conductor per clamping unit**

A number of VDE-specifications specify that only one conductor may be connected to each clamping unit, for example DIN VDE 0611, part 4/2.91, clause 3.1.9

The same applies to the recommendations of the association of the German automotive industry "Supply specification for the electrical equipment of machines, mechanical installations and buildings in the automotive industry" acc. to clause 15.1.1.3, draft 8.93.

Other VDE-specifications recommend the connection of one conductor per clamping unit unless the clamping unit is specifically tested and approved for the connection of several conductors:

VDE 0660, part 500, 08.00/  
EN 60439-1: 1999, clause 7.8.3.7

VDE 0113, part 1, 11.98  
EN 60 204-1: 1997, clause 14.1.1

VDE 0609, part 1, 12.00/  
EN 60999-1:2000, clause 7.1

One conductor per clamping unit is therefore recommended, to meet the safety requirements of these relevant specifications.

This WAGO principle is the basis for a number of other technical and economic advantages:

Each conductor may be installed or removed without affecting previously installed wires.

Each conductor is clamped independently of the other. Any combinations of conductor cross section or kind of conductor (stranded and solid) can be connected.

Multi-conductor 3- and 4-wire terminal blocks may be selected, or a variety of commoning jumpers may be chosen.

**II. According to IEC 60999-2, table 1:**

Rated cross section  mm <sup>2</sup>	Theoretical diameter of the largest conductor					Connectable conductors	
	Metric		AWG/kcmil				
	Rigid stranded mm	flexible <sup>a</sup> mm	Gage	Rigid stranded mm	Flexible mm	Rigid	Flexible
50	9.1	11.0	0	9.64	12.08	To be specified in the relevant product standard	
70	11.0	13.1	00	11.17	13.54		
95	12.9	15.1	000	12.54	15.33		
-	-	-	0000	14.08	17.22		
120	14.5	17.0	250	15.34	19.01		
150	16.2	19.0	300	16.80	20.48		
185	18.0	21.0	350	18.16	22.05		
-	-	-	400	19.42	24.05		
240	20.6	24.0	500	21.68	26.57		
300	23.1	27.0	600	23.82	30.03		

a) Dimensions for class 5 flexible conductors only, according to IEC 60228A.

NOTE: Diameters of the largest rigid and flexible conductors are based on Table 1 and Table 3 of IEC 60228 A and, for AWG conductors, on ASTM B 172-71 [1], IECA Publication S-19-81 [2], IECA Publication S-66-524 [3] and IECA Publication S-66-516 [7].



Partial stripping of the insulation

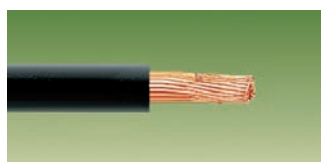


The use of crimped ferrules (gastight crimped)



Tinning of the end of the conductors

With all anti-splaying methods which increase the diameter of the conductor, it is necessary to use the terminal block one size larger than the nominal cross section.



Tip-bonding of conductor ends



or pin terminals (gastight crimped), preferably produced from copper with tinned surface.



## Tests and Testing Procedures According to IEC/EN Standards (continued)

### Mechanical Tests (continued)

#### • Pull-out test according to IEC/EN 60947-7-1, IEC/EN 60998-2-2, IEC/EN 60999-1

This test simulates the mechanical stress on the clamping unit when, for example, the installer is pushing the conductor aside so that the adjacent clamping unit can be better operated or when he wants to check if the wire is connected properly by briefly pulling on it.

During the test, a pulling force is applied without jerks, for one minute, to the connected conductor. The pulling force is selected according to the cross-sectional area. The larger the cross-section of the conductor, the higher the pull-out force is selected. For example, the pulling force is 40 N for a conductor having a cross-section of 1.5 mm<sup>2</sup> (AWG 16) and 100 N for a conductor having a cross-section of 16 mm<sup>2</sup> (AWG 6). The values specified by the standard are the same for both screw-clamp and spring-clamp terminal blocks. During the test, the conductor shall neither slip out of the clamping unit nor break near the clamping unit.

#### Conductor pull-out forces

The clamping units of screwless terminal blocks have to withstand the pull-out forces as follows:

IEC 60947-1/EN 60947-1/VDE 0660, part 100, table 5

Low-voltage switchgear and control-gear, general rules

IEC 60947-7-1/EN 60947-7-1/VDE 0611, part 1,

rail-mounted terminal blocks for copper conductors

IEC 60998-2-1/EN 60998-2-1/VDE 0613, part 2-1, table 104

IEC 60998-2-2/EN 60998-2-2/VDE 0613, part 2-2, table 103

Connecting devices for low-voltage circuits for household and similar purposes.

Particular requirements for connecting devices as separate entities with screw-clamp or with screwless terminal blocks.

IEC 60999-1/EN 60999-1/VDE 0609, part 1, table 3:

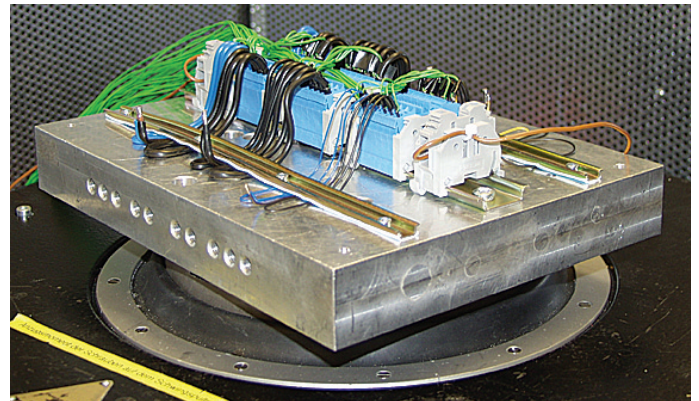
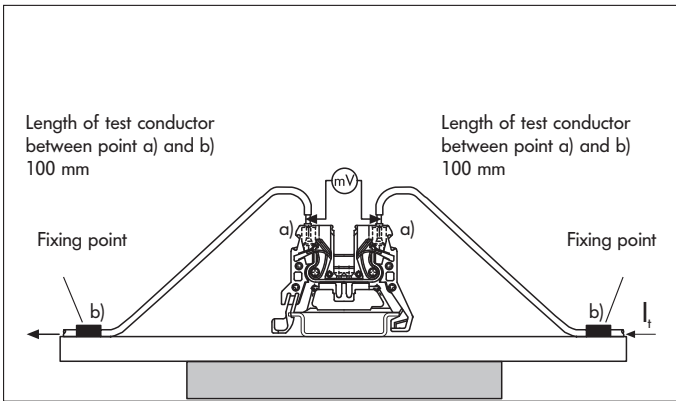
IEC 60999-2/EN 60999-2, table 2:

Safety requirements for screw-clamp and screwless clamping units for electrical copper conductors

Rated cross-sectional area		Pull-out forces according to IEC/EN		
mm <sup>2</sup>	AWG/MCM	60947-7-1 N	60998-2-2 N	60999-1/-2 N
0.2 0.34	24 22	10 15	10 15	10 15
0.5 0.75	20 18	20 30	20 30	20 30
1.0 1.5	– 16	35 40	35 40	35 40
2.5 4.0	14 12	50 60	50 60	50 60
6.0 10	10 8	80 90	80 90	80 90
16 25	6 4	100 135	100 135	100 135
– 35	3 2	156 190	190	190
– 50	1 0	236 236		236
70 95	00 000	285 351		285 351
– 120	0000 250	427 427		427 427
150 185	300 350	427 503		427 503
– 240	400 500	503 578		503 578
300	600	578		578

• Shock test according to IEC/EN 60068-2-27, 60068-2-30; Railway applications IEC/EN 61373

The shock test is very similar to the vibration test (see pages 15.20 and 15.21) except that, instead of continuous vibrations, single shocks are applied to the specimen. Shock tests are usually carried out with an acceleration of 20 g over 11 milliseconds. Tests for special requirements often need much higher values. Just like vibration tests, shock tests are primarily used to test the voltage drop variation or contact breaks, etc.



**e.g. shock requirement**

according to IEC/EN 60068-2-27

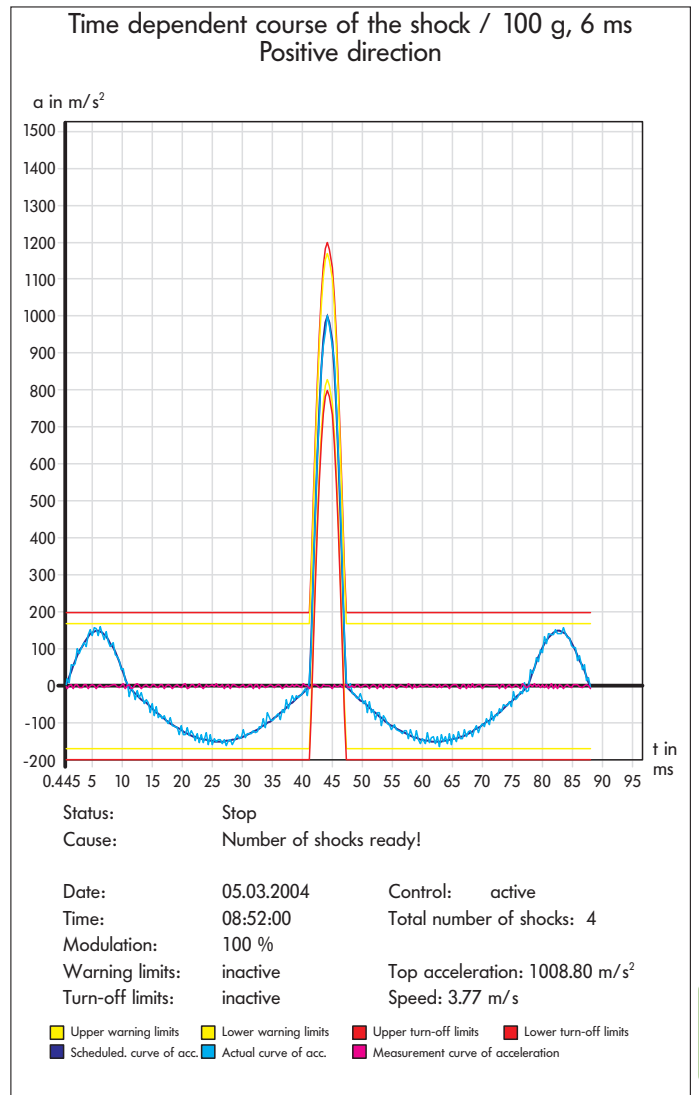
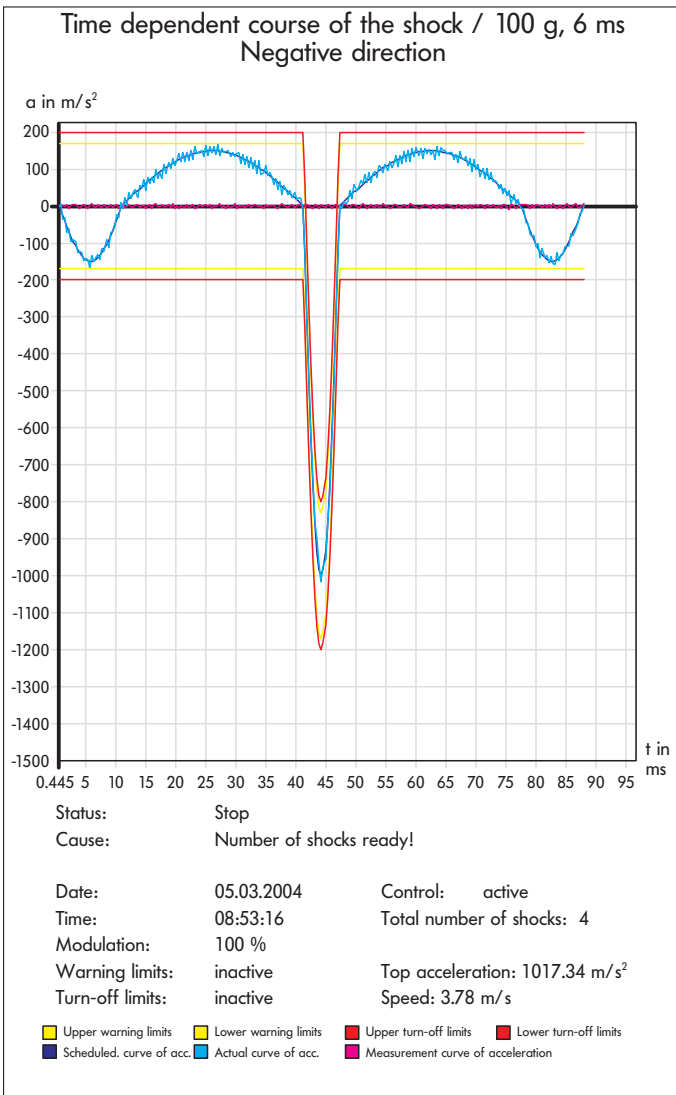
Half-sine shock

100 g acceleration

6 ms duration

Direction of shock: 3 axes

3 shocks in positive direction and 3 shocks in negative direction.

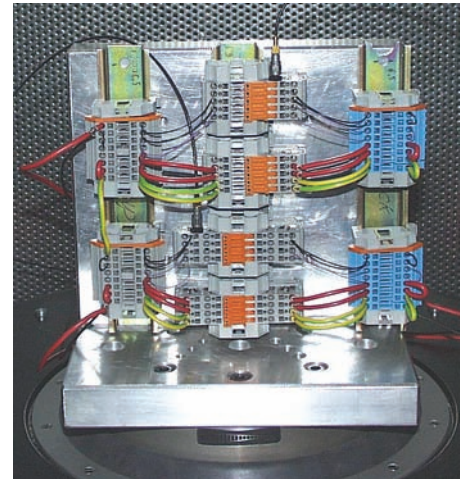
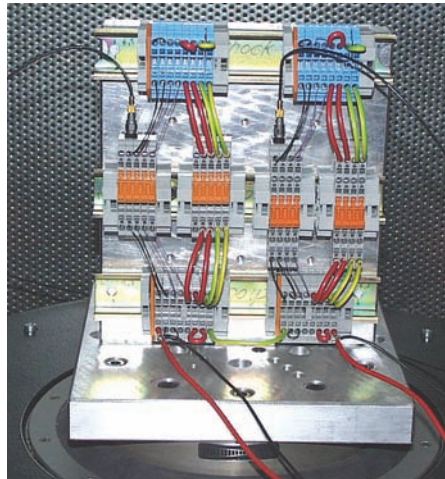


## Tests and Testing Procedures According to IEC/EN Standards (continued) Mechanical Tests (continued)

- Vibration test acc. to IEC/EN 60068-2-6; Shipbuilding GL, LR, DNV; Railway applications EN 61373

The vibration test is aimed at finding out if vibrations, such as those produced in the vicinity of machines or in vehicles, will permanently affect the electrical connection or if contact breaks will occur during vibrations. Using a vibration table, the test specimen is submitted to vibrations in each of the X, Y and Z axes (see pictures). The amplitude, the acceleration and especially the frequency of the vibrations shall vary during the test.

For example, a common test is carried out using a wide frequency band up to 2000 Hz with different accelerations up to 20 g and varying amplitudes up to 20 mm. The test duration can be 90 minutes per axis.



Other types of test are carried out using a single fixed frequency. The exact test procedure shall vary considerably depending on how the product will be used. Some test specifications require the determination of possible resonant frequencies, i.e. finding out if resonances will occur within the frequency spectrum to be passed through. Analysing the specimen behaviour under the influence of resonant frequencies is carried out using a special testing procedure.

Apart from the standard tests mentioned above, special test procedures are carried out by the railway company, for example, on rolling stock electrical equipment or by shipping classification societies such as Germanischen Lloyd, Lloyd's Register of Shipping, Det Norske Veritas.

Though the requirements of such test procedures are particularly high, test arrangements are identical for all of them. During vibrations, possible contact breaks are monitored on an oscilloscope. Voltage drop is measured before and after the test to detect permanent failures, i.e. checking if the electrical resistance at the clamping unit has not increased beyond the permissible limit. The smaller this value is, the smaller the contact resistance of the clamping unit will be.

The test is passed if the conductor has neither slipped out of the terminal block nor been damaged, the maximum permissible voltage drop has not been exceeded and neither contact breaks have occurred nor a defined break time has been exceeded.

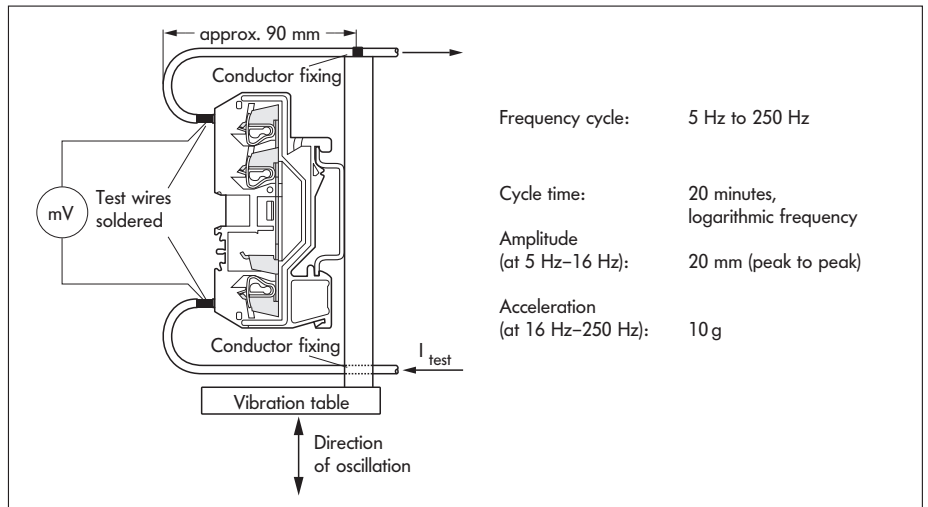
After the test, the specimens should show no damage which could affect subsequent operation.

For many years, the CAGE CLAMP® and CAGE CLAMP®S connections have been tested repeatedly for their resistance to vibration in connection with approval tests.

In addition WAGO undertakes special tests on the self resonance behaviour of the terminal systems with varying terminal block and conductor arrangements.

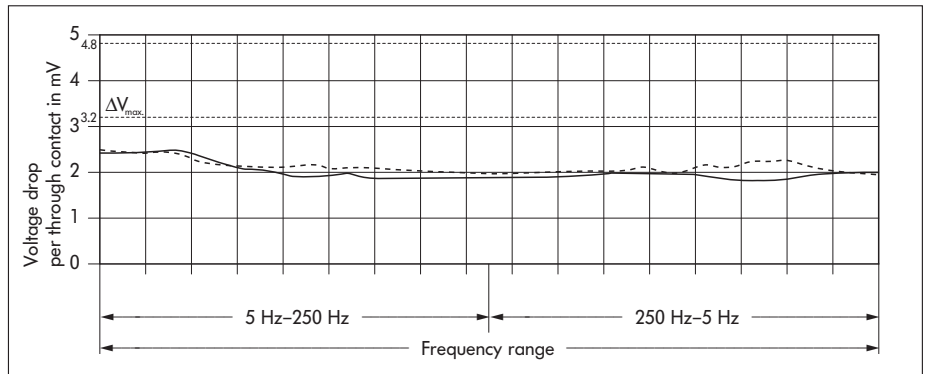
For the purpose of these tests a wide frequency band is continuously run through up to 2000 Hz with differing acceleration up to 20 g and differing amplitudes up to 20 mm.

The figure provides an example of the additional vibration test configuration for self resonance.



Vibration test set-up for self resonance

All WAGO spring clamp connections meet these test requirements.



Frequency cycle Rail-mounted terminal block: Item-No. 280-681 Test current:  $1/10 I_N = 2.4 \text{ A}$  — Test specimen no. 1 - - - Test specimen no. 2



## Electrical Tests

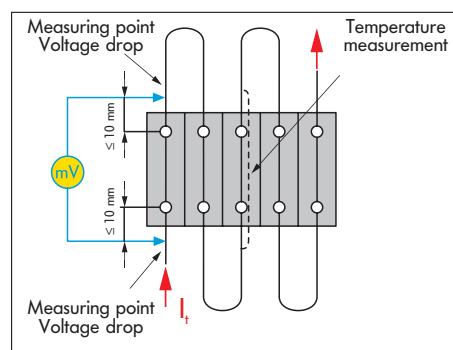
All WAGO products meet the requirements of the following electrical tests.

- Temperature-rise test according to IEC/EN 60947-7-1

The temperature-rise test is necessary to test the terminal block as a whole, including the insulation housing at rated current, at overload and under short circuit conditions.

Unless otherwise specified in the related equipment specification, e.g. by specifying the nominal currents of the equipment, terminal blocks and connectors are tested with the current loads as specified in the respective construction specification.

For rail-mounted terminal blocks acc. to IEC 60947-7-1/EN 60947-7-1/VDE 0611 part 1 and terminal blocks acc. to IEC 60998-1/EN 60998-1/ VDE 0613 part 1 the temperature rise shall not exceed 45 Kelvin.



Test arrangement of the temperature-rise test

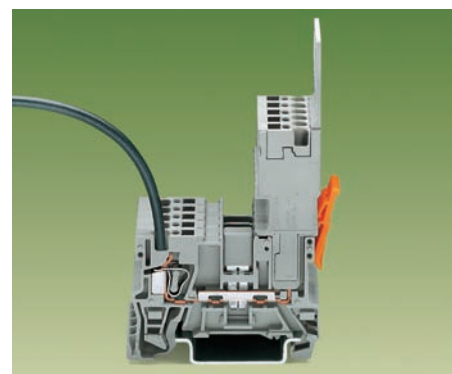
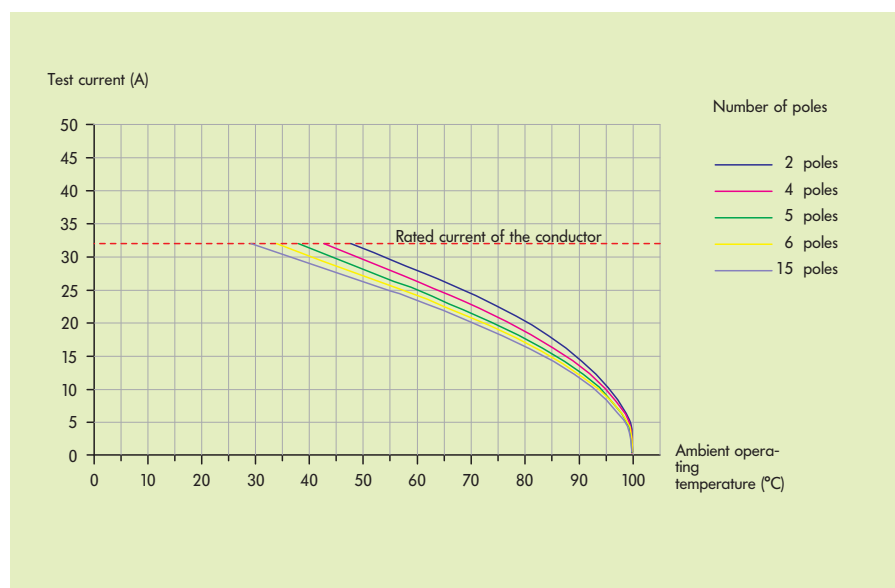
Rated cross section	Test current acc. IEC/EN		Wire size	Test current acc. IEC/EN 60947-7-1 Table 5
	60947-7-1 Table 4	60998-1 Table 2		
mm <sup>2</sup>	A	A	AWG/MCM	A
0.2 0.34	4 5	4 5	24 22	4 6
0.5 0.75	6 9	6 9	20 18	8 10
1.0 1.5	13.5 17.5	13.5 17.5	– 16	– 16
2.5 4.0	24 32	24 32	14 12	22 29
6.0 10	41 57	41 57	10 8	38 50
16 25	76 101	76 101	6 4	67 90
35 –	125	125	2 1	121 139
50 70	150 192		0 00	162 185
95 –	232		000 0000	217 242
120 150	269 309		250 kcmil 300 kcmil	271 309
185 240	353 415		350 kcmil 500 kcmil	353 415
300	520		600 kcmil	520

### • Current-carrying capacity curve (derating curve) according to IEC/EN 60512-5-2

Both the constructional requirements and the current-carrying capacity of a connector must be checked by the user when selecting connectors.

The current-carrying capacity depends on the cross section of the connected wire, the ambient temperature, the number of simultaneously loaded poles, the internal resistance of the connector, the PCB layout if required and the connector materials used. In accordance with the IEC/EN 60512-5-2 standard, the relation between the current, the ambient temperature and the temperature rise up to the upper temperature limit of the connector is represented by a current-carrying capacity curve (derating curve). The connector shall only be operated up to this temperature limit (sum of the self-generated heat and the ambient temperature) without being damaged or destroyed during operation.

The way a current-carrying capacity curve (acc. to IEC/EN 60512-5-2) works is shown in the following application using the X-COM<sup>®</sup>-SYSTEM: the basic curve of a 4-pole connection charged with 32 A per pole shows a maximum ambient temperature of 42°C using a conductor of cross section 4 mm<sup>2</sup> (AWG 12). The current must be reduced at higher ambient temperatures (e.g., to 19 A at 80°C).



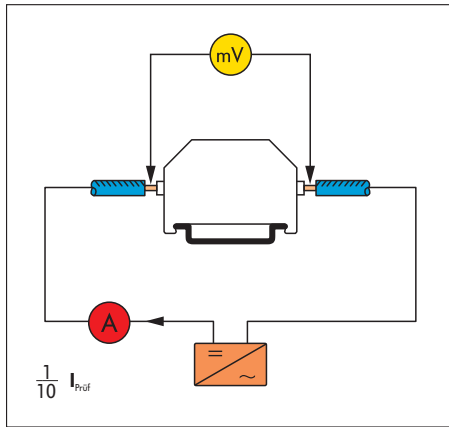
1-conductor/1-pin receptacle terminal block	769-176
Cross section of conductor:	4 mm <sup>2</sup> "f-st"/AWG 12 "f-st"
1-conductor female plugs:	769-102 to 769-115
Cross section of conductor:	4 mm <sup>2</sup> "f-st"/AWG 12 "f-st"
Length of the conductor:	1 m

# Tests and Testing Procedures According to IEC/EN Standards (continued)

## Electrical Tests (continued)

### • Voltage drop test according to IEC/EN 60947-7-1

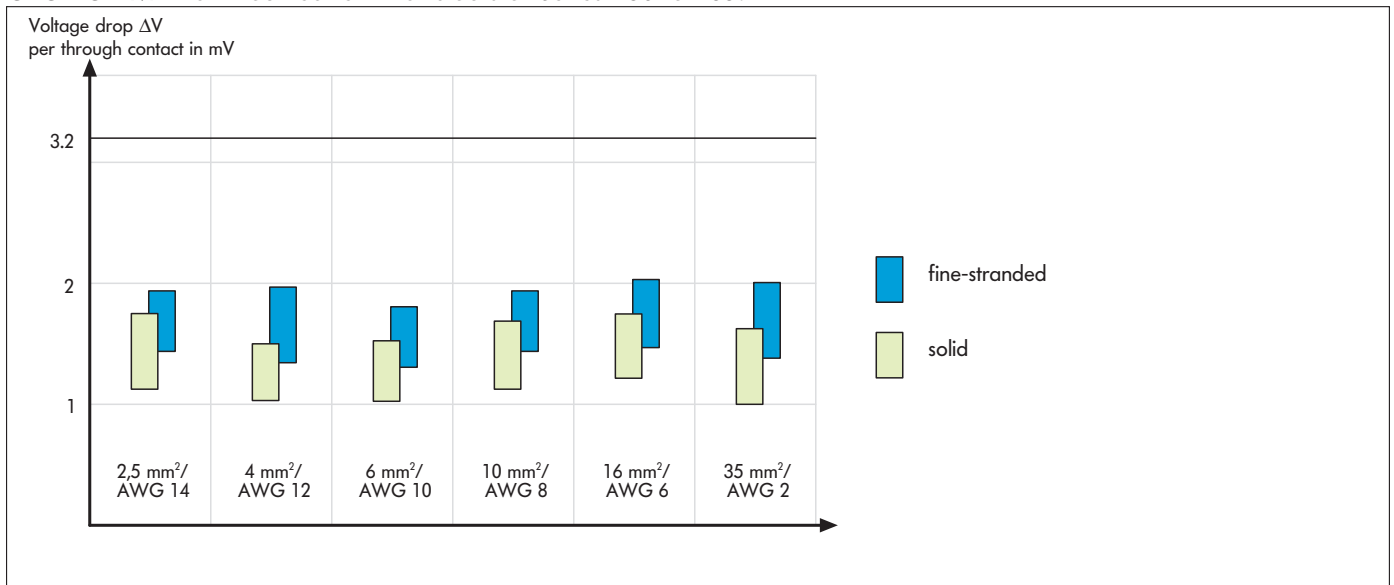
The voltage drop test allows judgement of the quality of a clamping unit under vibration, temperature cycling, industrial climate and salt spray conditions in order to verify that the contact area is gastight.



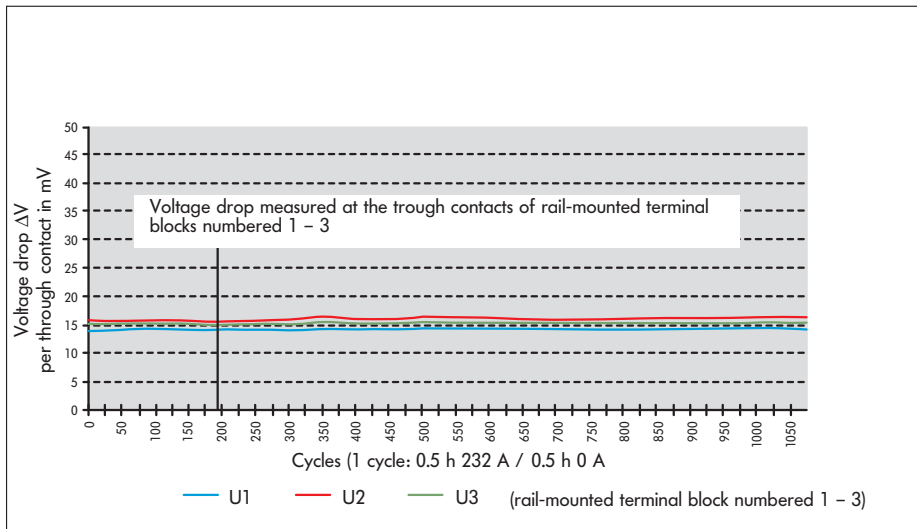
The CAGE CLAMP® and CAGE CLAMP®S connections enclose and contain flexible conductors. Therefore, a variation of the voltage drop with solid and fine-stranded conductors is so small that its influence may be neglected for the practical application of the terminal blocks.

Test arrangement for the voltage drop test

Typical variation of the voltage drops for solid and fine-stranded conductors of CAGE CLAMP® rail-mounted terminal blocks of Series 280 to 285:



Example: Current load cycling test result for rail-mounted terminal blocks (item no. 285-195) using 95 mm<sup>2</sup> (AWG 000) fine-stranded copper wires:

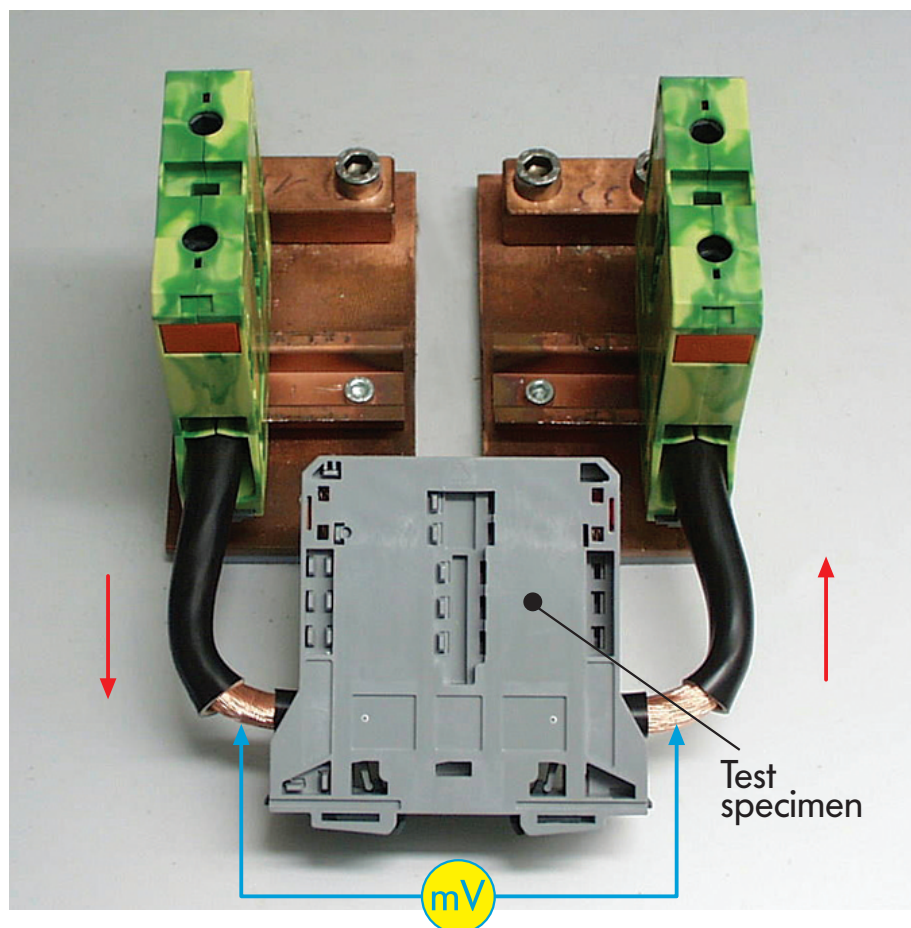


The change of voltage drop over longer periods under current load cycling conditions is shown for the WAGO rail-mounted terminal blocks series 285-195 (95 mm<sup>2</sup>/AWG 000) using fine-stranded copper wires. The diagram shows that the voltage drop is constant, far beyond the 192 cycles required in IEC 60947-7-1.

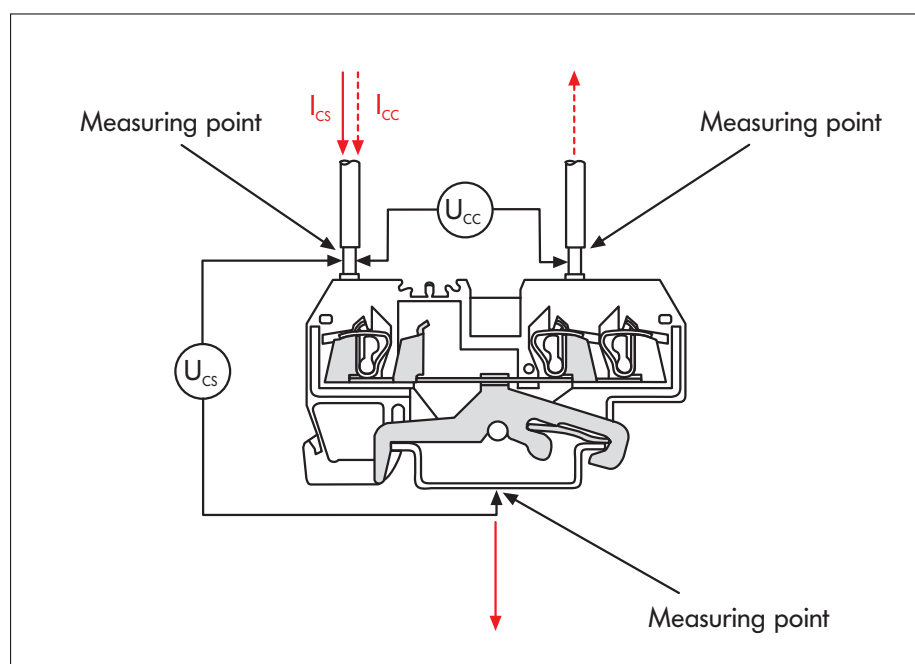
(The voltage drop has been determined using the rated current)

- Short-time withstand current test (short-circuit withstand capacity) according to IEC/EN 60947-7-1

Apart from the rated current, which can be constantly applied to an electrical device, operation-related short peak currents consistently occur in electrical installations when motors are started, for example. Also, in the event of a short circuit, a high current can flow for a short time until the fuse element melts. Terminal blocks and connecting devices must be able to withstand such conditions. For example, a rail-mounted through terminal block shall be capable of withstanding for 1 s the rated short-time withstand current which corresponds to  $120 \text{ A/mm}^2$  of its rated cross-section, in accordance to IEC/EN 60947-7-1.



The short circuit current of the  $95 \text{ mm}^2$  / AWG 000 high current terminal block (item no. 285-195) is **11400 A**.



During the short-time withstand current test, the ground (earth) conductor rail-mounted terminal blocks are subjected three times for 1 s each to a current load of  $120 \text{ A/mm}^2$ .

The voltage drop is the main factor for passing the test (limiting value and constant measured values).



# Tests and Testing Procedures According to IEC/EN Standards (continued)

## Electrical Tests (continued)

• Insulation parameters according to IEC/EN 60664-1

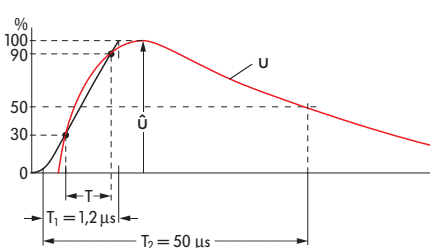
Clearances and creepage distances  
Generally applicable is:  
The equipment specification contains data for the measurement of clearances and creepage distances or refers to the data contained in the new revised edition of the basic standard DIN EN 60664-1/VDE 0110, part 1.  
DIN EN 60664-1/VDE 0110, part 1 contains new clearance and creepage distance data taking into consideration the rules of insulation. That is the insulation parameters of an equipment are assigned to:

- the surge voltages expected,
- the parameters of the protection device against surge voltage and
- the expected environmental conditions and the protection measures against pollution.

The standard is based on IEC 60664-1, with some modifications.

Clearances, rated impulse voltages, overvoltage categories, pollution degrees  
Decisive for the proportioning of air distances are the **impulse voltages** in accordance with table 1.  
This basis forms the **overvoltage category**, i. e. the allocation of the equipment to the expected surge voltage, and the **conductor – earth voltage** derived from the rated line voltage in installations with a grounded (earthed) Y (star) point.  
In ungrounded (unearthed) installations, or in installations where the conductor is not grounded (earthed), the voltage between the conductors is applicable in the same way as conductor voltage to ground (earth).

① Voltage pulse 1.2/50



acc. to IEC 60-1 / VDE 0432, part 1

**Overvoltage categories for electrical equipment:**

Specification of a specific impulse withstand category (overvoltage category) shall be based on the following general explanation:

- Equipment of impulse **withstand category I** is equipment which is intended to be connected to the fixed electrical installations of buildings. Protective means are taken outside the equipment – either in the fixed installation or between the fixed installation and the equipment – to limit transient overvoltages to the specific level.
- Equipment of impulse **withstand category II** is equipment to be connected to the fixed electrical installations of buildings.  
**NOTE:** Examples of such equipment are household appliances, portable tools and similar loads.
- Equipment of impulse **withstand category III** is equipment which is part of the fixed electrical installations and other equipment where a higher degree of availability is expected.  
**NOTE:** Examples of such equipment are distribution boards, circuit breakers, wiring systems (IEV 826-06-01, including cables, bus-bars, junction boxes, switches, socket-outlets) in the fixed installation, and equipment for industrial use and some other equipment, e.g. stationary motors with permanent connection to the fixed installation.
- Equipment of impulse **withstand category IV** is for use at or in the proximity of the origin of the electrical installations of buildings upstream of the main distribution board.  
**NOTE:** Examples of such equipment are electricity meters, primary overcurrent protection devices and ripple control units.

The rated impulse voltage shall be selected from table 1 corresponding to the overvoltage category specified and to the rated voltage of the equipment.

Table 1: Rated impulse voltages for equipment energized directly from the low-voltage mains (DIN EN 60664-1/VDE 0110, part 1)

① Voltage curve: 1.2/50 μs acc. IEC 60-1 / VDE 0432, part 1

Nominal voltage of the supply system <sup>1)</sup> (mains) based on IEC 60038 <sup>3)</sup> V		Voltage line to neutral derived from nominal voltages a.c. or d.c. up to and including V	Rated impulse voltage <sup>2)</sup> V			
Three-phase	Single-phase		Overvoltage category <sup>4)</sup>			
			I	II	III	IV
		50	330	500	800	1500
		100	500	800	1500	2500
		150	800	1500	2500	4000
		300	1500	2500	4000	6000
		600	2500	4000	6000	8000
		1000	4000	6000	8000	12000
230/400	277/480	120-240				
	400/690					
	1000					

<sup>1)</sup> See annex B for application to existing different low-voltage mains and their nominal voltages.  
<sup>2)</sup> Equipment with these rated impulse voltages can be used in installations in accordance with IEC 60364-4-443.  
<sup>3)</sup> The / mark indicates a 4-wire three-phase distribution system. The lower value is the voltage line-to-neutral, while the higher value is the voltage line-to-line. Where only one value is indicated, it refers to 3-wire, three-phase systems and specifies the value line-to-line.  
<sup>4)</sup> See 2.2.2.1.1 for an explanation of the overvoltage categories.

The nominal supply voltages and the corresponding rated impulse voltages apply for grounded (earthed) as well as for ungrounded (unearthed) circuits.

## Pollution degree

Pollution factors are all solid, liquid or gaseous foreign matter which may reduce the dielectric strength or the specific surface resistances. Soiling is divided into 4 classes in accordance with the environmental conditions to be expected:

		Examples of pollution degrees for assigned areas:
pollution degree 1:	No pollution or only dry, non conductive pollution occurs. The pollution has no influence.	Electrical equipment in air-conditioned or clean dry rooms.
pollution degree 2:	Only non-conductive pollution occurs except that occasionally temporary conductivity caused by condensation is to be expected.	Electrical equipment in living areas, shops, laboratories, test stations, mechanical workshops and medical rooms.
pollution degree 3:	Conductive pollution occurs or dry non-conductive pollution occurs which becomes conductive due to condensation which is to be expected.	Electrical equipment in industrial and farming areas, unheated rooms, workshops and boiler rooms.
pollution degree 4:	The pollution generates persistent conductivity caused by conductive dust or by rain or wet conditions.	Electrical equipment for outdoor use.

## Dimensioning of clearances

acc. to DIN EN 60664-1/VDE 0110, part 1, table 2

Choose the minimum clearances in accordance with the rated impulse voltages and the degree of pollution. For the operating life of the equipment do not go below these minimum clearances.

Table 2 contains a list of information for the Case A, the inhomogeneous field, and for the Case B, the homogeneous field.

This covers an electric field with essentially constant (Case B) or not constant (Case A) voltage gradients between the electrodes.

**Equipment with a clearance in accordance with Case A, in other words rated for the most unfavourable case, can be employed without evidence of impulse voltage testing.**

Equipment for which the clearances are dimensioned acc. to Case B or between A and B requires verification by the impulse voltage test.

The clearances shown in table 2 are applicable for an installation height of up to 2000 m above sea level.

Values for clearances above 2000 m must be multiplied by a high correction factor in accordance with table 2.

**Table 2: Clearances to withstand transient overvoltages**  
(DIN EN 60664-1/VDE 0110, part 1)

Required impulse withstand voltage <sup>1)</sup>	Minimum clearances in air up to 2000 m above sea level					
	Case A (inhomogeneous field, see 1.3.15)			Case B (homogeneous field, see 1.3.14)		
	Pollution degree <sup>4)</sup>			Pollution degree <sup>4)</sup>		
kV	1 mm	2 mm	3 mm	1 mm	2 mm	3 mm
0.33 <sup>2)</sup>	0.01	0.2 <sup>3)4)</sup>	0.8 <sup>4)</sup>	0.01	0.2 <sup>3)4)</sup>	0.8 <sup>4)</sup>
0.40	0.02			0.02		
0.50 <sup>2)</sup>	0.04			0.04		
0.60	0.06			0.06		
0.80 <sup>2)</sup>	0.10			0.10		
1.0	0.15			0.15		
1.2	0.25	0.25		0.20		
1.5 <sup>2)</sup>	0.5	0.5		0.30	0.30	
2.0	1.0	1.0	1.0	0.45	0.45	
2.5 <sup>2)</sup>	1.5	1.5	1.5	0.60	0.60	
3.0	2.0	2.0	2.0	0.80	0.80	
4.0 <sup>2)</sup>	3.0	3.0	3.0	1.2	1.2	1.2
5.0	4.0	4.0	4.0	1.5	1.5	1.5
6.0 <sup>2)</sup>	5.5	5.5	5.5	2.0	2.0	2.0
8.0 <sup>2)</sup>	8.0	8.0	8.0	3.0	3.0	3.0
10	11	11	11	3.5	3.5	3.5
12 <sup>2)</sup>	14	14	14	4.5	4.5	4.5
15	18	18	18	5.5	5.5	5.5
20	25	25	25	8	8	8
25	33	33	33	10	10	10
30	40	40	40	12.5	12.5	12.5
40	60	60	60	17	17	17
50	75	75	75	22	22	22
60	90	90	90	27	27	27
80	130	130	130	35	35	35
100	170	170	170	45	45	45

<sup>1)</sup> This voltage is

- for functional insulation: the maximum impulse voltage expected to occur across the clearance (see 3.1.4.);
- for basic insulation directly exposed to or significantly influenced by transient overvoltages from the low-voltage mains (see 2.2.2.2, 2.2.2.3.1 and 3.1.5): the rated impulse voltage of the equipment;
- for other basic insulation (see 2.2.2.3.2.): the highest impulse voltage that can occur in the circuit;
- for reinforced insulation, see 3.1.5.

<sup>2)</sup> Preferred values specified in 2.1.1.2.

<sup>3)</sup> For printed wiring material, the values for pollution degree 1 apply except that the value shall not be less than 0.04 mm, as specified in table 4.

<sup>4)</sup> The minimum clearances given for pollution degrees 2 and 3 are based on the reduced withstand characteristics of the associated creepage distance under humidity conditions (see IEC 60664-5).

<sup>5)</sup> For parts or circuits within equipment subject to impulse voltages according to 2.2.2.3.2, interpolation of values is allowed. However, standardization is achieved by using the preferred series of impulse voltage values in 2.1.1.2.

<sup>6)</sup> The dimensions for pollution degree 4 are as specified for pollution degree 3, except that the minimum clearance 1.6 mm.

## Tests and Testing Procedures According to IEC/EN Standards (continued)

### Electrical Tests (continued)

- Insulation parameters according to IEC/EN 60664-1 (continued)



#### Creepage distances, Rated voltages, Material groups

Criteria for the dimensioning of the creepage distances are the rated voltages, the degrees of pollution and the material groups.

The pollution degrees specified for the clearances and its quoted allocation to locations is also applicable for creepage distances.

The tables 3 a and 3 b of the DIN EN 60664-1/VDE 0110, part 1 contain the rated voltages which have to be considered for dimensioning the minimum creepage distance.

**Table 3 a: Single-phase 3- or 2-wire AC or DC systems**

Nominal voltage of the supply system (mains) <sup>1)</sup>	Voltages rationalized for table 4	
	For insulation line-to-line <sup>1)</sup>	For insulation line-to-earth <sup>1)</sup>
	All systems 	Three-wire systems mid-point earthed 
V	V	V
12.5	12.5	
24 25	25	
30	32	
42 48 50 <sup>**)</sup>	50	
60	63	
30–60	63	32
100 <sup>**)</sup>	100	
110 120	125	
150 <sup>**)</sup>	160	
220	250	
110–220 120–240	250	125
300 <sup>**)</sup>	320	
220–440	500	250
600 <sup>**)</sup>	630	
480–960	1000	500
1000 <sup>**)</sup>	1000	

<sup>1)</sup> Line-to-earth insulation level for unearthed or impedance-earthed systems equals that for line-to-line because the operating voltage to earth of any line can, in practice, approach full line-to-line voltage. This is because the actual voltage to earth is determined by the insulation resistance and capacitive reactance of each line to earth; thus, low (but acceptable) insulation resistance of one line can in effect earth it and raise the other two to full line-to-line voltage to earth.


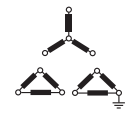
<sup>\*</sup>) For relationship to rated voltage see 2.2.1.

<sup>\*\*)</sup> These values correspond to the values in table 1.

**Table A.2:**  
**Height correction factors**  
(DIN EN 60664-1/VDE 0110, part 1)

Height m	Standard air pressure kPa	Multiplier for distance
2000	80	1
3000	70	1.14
4000	62	1.29
5000	54	1.48
6000	47	1.7
7000	41	1.95
8000	35.5	2.25
9000	30.5	2.62
10000	26.5	3.02
15000	12	6.67
20000	5.5	14.5

**Table 3 b: Three-phase 3- or 4-wire AC systems**

Nominal voltage of the supply system (mains)*	Voltages rationalized for table 4		
	For insulation line-to-line	For insulation line-to-line	
	All systems	Three-phase four-wire systems neutral earthed <sup>2)</sup>	Three-phase three-wire systems unearthed <sup>1)</sup> or corner-earthed
V	V	 V	 V
60	63	32	63
110 120 127	125	80	125
150**)	160		160
208	200	125	200
220 230 240	250	160	250
300**)	320		320
380 400 415	400	250	400
440	500	250	500
480 500	500	320	500
575	630	400	630
600**)	630		630
660 690	630	400	630
720 830	800	500	800
960	1000	630	1000
1000**)	1000		1000

<sup>1)</sup> Line-to-earth insulation level for unearthed or impedance-earthed systems equals that for line-to-line because the operating voltage to earth of any line can, in practice, approach full line-to-line voltage. This is because the actual voltage to earth is determined by the insulation resistance and capacitive reactance of each line to earth; thus, low (but acceptable) insulation resistance of one line can in effect earth it and raise the other two to full line-to-line voltage to earth.

<sup>2)</sup> For equipment for use on both three-phase four-wire and three-phase three-wire supplies, earthed and unearthed, use the values for three-wire systems only.

\*) For relationship to rated voltage see 2.2.1.

\*\*) These values correspond to the values in table 1.

**Material groups**

Materials are separated into four groups according to their CTI (Comparative Tracking Index) as follows:

- Material group I:  $600 \leq \text{CTI}$
- Material group II:  $400 \leq \text{CTI} < 600$
- Material group III a:  $175 \leq \text{CTI} < 400$
- Material group III b:  $100 \leq \text{CTI} < 175$

The CTI values above refer to values obtained, in accordance with DIN EN 60112/VDE 0303, part 11, on samples specially made for the purpose and tested with solution A.



# Tests and Testing Procedures According to IEC/EN Standards (continued)

## Electrical Tests (continued)

### • Insulation parameters according to IEC/EN 60664-1 (continued)

**Table 4: Creepage distances to avoid failure due to tracking**

Voltage <sup>1)</sup> r.m.s.  V	Minimum creepage distances								
	Printed wiring material		Pollution degree						
	Pollution degree		1 All material groups mm	2 Material group			3 Material group		
	1 All material groups mm	2 All mat. gr. except IIIb mm		I mm	II mm	III mm	I mm	II mm	III <sup>2)</sup> mm
10	0.025	0.04	0.08	0.4	0.4	0.4	1	1	1
12.5	0.025	0.04	0.09	0.42	0.42	0.42	1.05	1.05	1.05
16	0.025	0.04	0.1	0.45	0.45	0.45	1.1	1.1	1.1
20	0.025	0.04	0.11	0.48	0.48	0.48	1.2	1.2	1.2
25	0.025	0.04	0.125	0.5	0.5	0.5	1.25	1.25	1.25
32	0.025	0.04	0.14	0.53	0.53	0.53	1.3	1.3	1.3
40	0.025	0.04	0.16	0.56	0.8	1.1	1.4	1.6	1.8
50	0.025	0.04	0.18	0.6	0.85	1.2	1.5	1.7	1.9
63	0.04	0.063	0.2	0.63	0.9	1.25	1.6	1.8	2
80	0.063	0.1	0.22	0.67	0.95	1.3	1.7	1.9	2.1
100	0.1	0.16	0.25	0.71	1	1.4	1.8	2	2.2
125	0.16	0.25	0.28	0.75	1.05	1.5	1.9	2.1	2.4
160	0.25	0.4	0.32	0.8	1.1	1.6	2	2.2	2.5
200	0.4	0.63	0.42	1	1.4	2	2.5	2.8	3.2
250	0.56	1	0.56	1.25	1.8	2.5	3.2	3.6	4
320	0.75	1.6	0.75	1.6	2.2	3.2	4	4.5	5
400	1	2	1	2	2.8	4	5	5.6	6.3
500	1.3	2.5	1.3	2.5	3.6	5	6.3	7.1	8.0
630	1.8	3.2	1.8	3.2	4.5	6.3	8	9	10
800	2.4	4	2.4	4	5.6	8	10	11	12.5
1000	3.2	5	3.2	5	7.1	10	12.5	14	16
1250			4.2	6.3	9	12.5	16	18	20
1600			5.6	8	11	16	20	22	25
2000			7.5	10	14	20	25	28	32
2500			10	12.5	18	25	32	36	40
3200			12.5	16	22	32	40	45	50
4000			16	20	28	40	50	56	63
5000			20	25	36	50	63	71	80
6300			25	32	45	63	80	90	100
8000			32	40	56	80	100	110	125
10000			40	50	71	100	125	140	160
12500			50 <sup>3)</sup>	63 <sup>3)</sup>	90 <sup>3)</sup>	125 <sup>3)</sup>			
16000			63 <sup>3)</sup>	80 <sup>3)</sup>	110 <sup>3)</sup>	160 <sup>3)</sup>			
20000			80 <sup>3)</sup>	100 <sup>3)</sup>	140 <sup>3)</sup>	200 <sup>3)</sup>			
25000			100 <sup>3)</sup>	125 <sup>3)</sup>	180 <sup>3)</sup>	250 <sup>3)</sup>			
32000			125 <sup>3)</sup>	160 <sup>3)</sup>	220 <sup>3)</sup>	320 <sup>3)</sup>			
40000			160 <sup>3)</sup>	200 <sup>3)</sup>	280 <sup>3)</sup>	400 <sup>3)</sup>			
50000			200 <sup>3)</sup>	250 <sup>3)</sup>	360 <sup>3)</sup>	500 <sup>3)</sup>			
63000			250 <sup>3)</sup>	320 <sup>3)</sup>	450 <sup>3)</sup>	600 <sup>3)</sup>			

<sup>1)</sup> This voltage is:

- for functional insulation: the working voltage;
- for basic and supplementary insulation of the circuit energized directly from the mains (see 2.2.1.1.1): the voltage rationalized through table 3a or table 3b, based on the rated voltage of the equipment, or the rated insulation voltage;
- for basic and supplementary insulation of systems, equipment and internal circuits not energized directly from the mains (see 2.2.1.1.2): the highest r. m. s. voltage which can occur in the system, equipment or internal circuit when supplied at rated voltage and under the most onerous combination of conditions of operation within equipment rating.

<sup>2)</sup> Material group IIIb is not recommended for applications in pollution degree 3 above 630 V.

<sup>3)</sup> Provisional data based on extrapolation. Technical committees who have other information based on experience may use their dimensions.

According to their application WAGO terminal blocks and connectors are suitable for the pollution degrees 2 or 3 and for the over-voltage categories II or III.

Example:

**WAGO rail-mounted through terminal blocks**

acc. to IEC 60947-7-1/  
EN 60947-7-1/VDE 0611, part 1  
are dimensioned as follows:

800 V/8 kV/3,

i. e.

Rated voltage	800 V
Rated impulse voltage	8 kV
Pollution degree	3
Overvoltage category	III

WAGO connecting terminal blocks for household and similar fixed electrical installation are classed acc. to IEC 60998-1/ EN 60998-1/ VDE 0613, part 1, table 3.

Example:

**WAGO Push-wire connectors for junction boxes**

are according to this standard  
\* 400 V/4 kV/2

\* for grounded (earthed) circuits,  
dimensioned for

Rated voltage	400 V
Rated impulse voltage	4 kV
Pollution degree	2
Overvoltage category	III

**Table 3: Clearances and creepage distances**  
(IEC 60998-1)

Rated insulation voltage V	Creepage distances, clearances
	mm
≤ 130	1.5
> 130 and ≤ 250	3.0
> 250 and ≤ 450	4.0
> 450 and ≤ 750	6.0
> 750	8.0

**Tests and Testing Procedures According to IEC/EN Standards (continued)**  
**Electrical Tests (continued)**

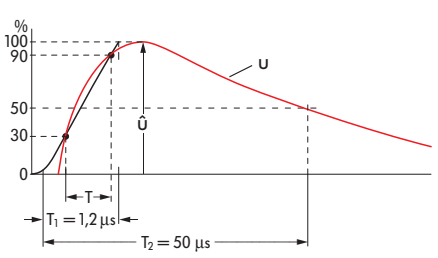
**• Power-frequency withstand voltage test according to IEC/EN 60947-7-1, IEC/EN 60947-1**

This test procedure is used to verify the creepage distances. Creepage distances, i.e. the distances of creeping currents, are caused by conductive impurities on the surface of the insulation housing. Apart from the amount of impurities to which a terminal block, for example, is subjected, the plastic material and housing design are also involved in generating creeping currents. The insulation material of the housing may be carbonized by a creeping current, which increases the conductivity even more.

The specimen is tested using a power-frequency withstand voltage for a short time. For example, a rail-mounted terminal block designed to operate at 800 V nominal voltage is usually tested using 2000 V alternating voltage for 1 minute. The test is considered to be passed if no flashovers or breakdowns have occurred.

**• Rated impulse withstand voltage test according to IEC/EN 60947-7-1, IEC/EN 60947-1**

This test is used to verify the clearances of a product. In simplified terms, a clearance is the distance between two poles of a terminal block. If this distance is too small, voltage peaks may cause flashovers or breakdowns. The arrangement of the rated impulse withstand voltage test is identical to that of the power frequency withstand voltage test; the test voltages, however, are comparatively higher and the testing times shorter, e.g. 7.3 kV over 50 μs (see figure).



Voltage pulse; measurement curve (red) and auxiliary curve (black) for calculating the rate of rise of the pulse and the resulting (virtual) peak of the curve  
 T Time interval for calculating the rate of rise  
 T<sub>1</sub> Front time (duration between start of impulse and reaching the peak)  
 T<sub>2</sub> Total pulse duration

The test values are the values at sea level as specified in the relevant test specification. The values indicated in the catalog correspond to an altitude of 2000 m. The test is considered to be passed if no flashovers or breakdowns have occurred.

**• IP ratings for electrical equipment acc. to IEC/EN 60529**

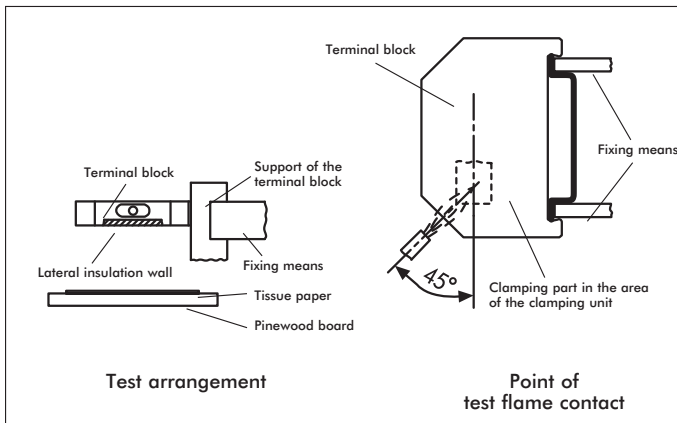
Alphanumeric nomenclature for type of protection			Comparison IP ↔ NEMA
Code letters IP	Protection against touch and solid objects or water	IP = Ingress Protection	
First characteristic 0 to 6	Indicates degrees of protection against touch or solid objects	If the indication of the degree of protection requires only one characteristic, the other one will be replaced by an X	
Second characteristic 0 to 8	Indicates degree of protection against water		
First characteristic:		Second characteristic:	
IP 0X	No protection against touch or solid objects	IP X0	No protection against water
IP 1X	Protected against solid objects > 50 mm	IP X1	Protected against vertically dripping water
IP 2X	Protected against solid objects > 12 mm (e.g. finger)	IP X2	Protected against dripping water -15° angle
IP 3X	Protected against solid objects > 2.5 mm	IP X3	Protected against water spray
IP 4X	Protected against solid objects > 1 mm	IP X4	Protected against water splash
IP 5X	Dust-protected (limited ingress, no harmful deposit)	IP X5	Protected against water jet
IP 6X	Dust-tight (totally protected against dust)	IP X6	Protected against powerful water jet
		IP X7	Protected against temporary immersion
		IP X8	Protected against continuous immersion
		IP code	NEMA Type
		10	1
		11	2
		54	3
		14	3R
		54	3S
		55	4 & 4X
		52	5
		67	6 & 6P
		52	12 & 12K
		54	13

## Material Tests

All WAGO products meet the requirements of the following material test.

### • Needle flame test according to IEC/EN 60947-7-1

This test simulates flames which may result under certain conditions (for example, a fault current over a creepage distance, overloading of parts or components). Nearby parts can be affected by such flames. Not only the ignition of the test specimen resulting from an intrinsic defect is tested, but also its behavior when other parts are ignited.



Flames should not be further fed by the insulation materials used and expand to a larger fire. The test specimen is exposed to a standard gas flame during a defined time period (e.g. 10 seconds).

After the test flame has been removed, the specimen must self-extinguish within 30 seconds. Furthermore, a layer of tissue paper situated underneath the specimen should not be ignited by glowing particles falling from the specimen.

### • Glow-wire test according to IEC/EN 60695-2-11

In the event of failure, a high current may cause a conductor to glow.



However, the glowing conductor should not cause ignition of the product involved (e.g. a rail-mounted terminal block). For the glow-wire test the tip of the glow-wire shall be pressed against a surface of the test specimen (see picture).

The position of the test specimen, the surface to be tested, the test duration and the temperature of the glow-wire, e.g. 960 °C for 30 seconds or 850 °C for 5 seconds, are specified in the standards.

The test is considered to be passed if there is no visible flames or permanent glowing or if flames or glowing extinguish within 30 seconds after removal of the glow-wire. For this test also, a layer of tissue paper situated underneath the specimen shall not be ignited by glowing particles falling from the specimen.



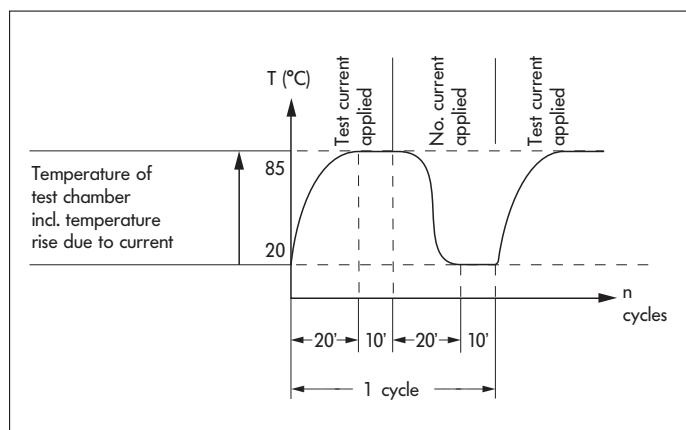
**Environmental Tests**

The following tests show how a product reacts when exposed to an aggressive environment. Climate chambers are used for generating standard atmospheres which may affect the long-term constancy of clamping units.

**All WAGO products meet the requirements of the following environmental tests.**

- Temperature cycling test acc. to IEC/EN 60947-7-1, IEC/EN 60998-2-2

This test shows the change of voltage drop over longer periods under temperature cycling conditions. The test procedure usually consists of 192 temperature cycles, for example, each cycle having a duration of 60 minutes (see diagram).



The rated current is applied to the test specimen during the temperature rise and when the temperature has reached its maximum value; during the second half of the cycle the current is zero. Voltage drop is measured every 24 cycles and shall not exceed a maximum value or vary greatly. The voltage drop measured at the end of the 192nd cycle shall not exceed 1.5 times the value measured after the 24th cycle. After the test an inspection shall show no changes impairing further use of the product.

- Industrial atmospheres acc. to EN ISO 6988, IEC 60068-2-42, IEC/EN 60068-2-60

Sulphur and its combustion products are particularly aggressive pollutants commonly found in industrial environments. A test procedure simulating such corrosive conditions consists of exposing a test specimen to water condensation in variable atmospheres containing sulphur dioxide.



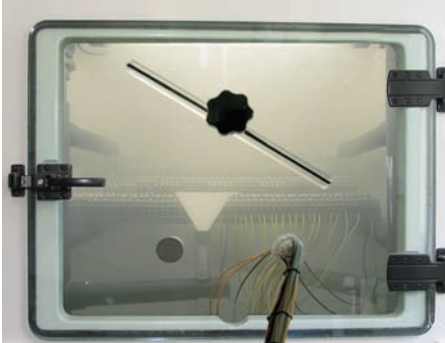
A saturated atmosphere is first created in a climatic chamber by heating an aqueous sulphur dioxide solution. After less than half an hour, the test specimen is fully humidified by the condensing vapors and exposed to this atmosphere for eight hours.

After exposure to humid atmosphere, the test specimen is submitted to dry and cooler conditions at room temperature for 16 hours. Depending on the test severity, the specimen is exposed to both these conditions several times. The gas tightness of the clamping unit is checked by measuring the voltage drop.

In other test procedures, products are exposed to a dry corrosive gas atmosphere containing, for example, sulphide, nitrogen and sulphur oxides or chloric gas. These tests can be performed over 4 to 21 days.

• Salt spray test acc. to IEC/EN 60068-2-11; GL, LR, DNV shipbuilding specifications

This test is similar to the test performed in water condensation alternating atmospheres, except that, instead of industrial atmospheres, salt mist conditions will be simulated in a heated test chamber (see picture).



Depending on the test procedure being used, the test specimen is sprayed with salt mist for up to 96 hours.

Salt spray tests are widely used, especially for ship approvals.

However, this test is performed differently than the test procedures described previously for general applications:

During a typical test, the specimen is sprayed with a salt solution for two hours and is then stored at 100 % humidity for seven days.

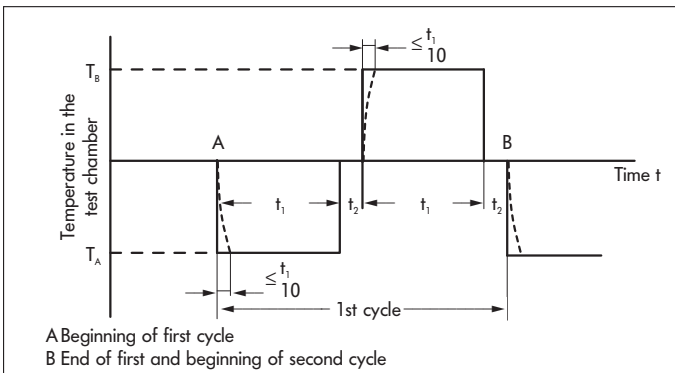
This procedure is repeated four times.

Here too, measuring the voltage drop is used as an evaluation criterion.

• Quick change of temperature acc. to IEC/EN 60068-2-14

Without air-conditioning, distribution panels and terminal boxes are exposed to extreme changing seasonal dependent temperatures on the open field side.

In process technology, for example, a terminal block is exposed to even quicker changes of temperature.



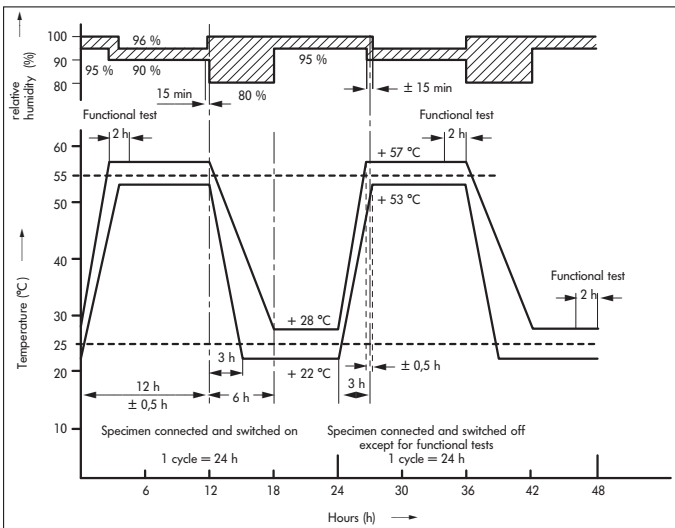
To simulate such conditions, the test specimen is exposed to repeated temperature changes, for example, between  $T_A - 40\text{ °C}$  (-40 °F) and  $T_B + 70\text{ °C}$  (158 °F).

The dwelling time  $t_1$  depends on the thermal capacity of the test specimen and should be between maximum 3 h and minimum 10 min and the transition time  $t_2$  2 - 3 min, 20 - 30 s or less than 10 seconds.

The mechanical and electrical properties of the product are checked at the end of the test.

• Damp heat, cyclic (12 + 12-hour cycle) acc. to IEC/EN 60068-2-30; GL, LR, DNV shipbuilding specifications

The object of this test is to determine the suitability of electrical equipment for use and storage under conditions of high relative humidity when combined with cyclic temperature changes and, in general, producing condensation on the surface of the specimen.



Apart from the salt spray tests, the damp heat test is also used for ship approvals.



For this test the specimens are subjected to temperatures varying cyclically between  $+25\text{ °C}$  (77 °F) and  $+55\text{ °C}$  (131 °F) with a relative humidity of 95 % (for tolerances see figure).

Functional tests are performed at defined times during the storage period.

The electrical and mechanical properties of the product are checked at the end of the test.

## UL Specifications – Underwriters Laboratories USA

WAGO terminal blocks and connectors are tested by Underwriters Laboratories Inc. according to one or more of the relevant following UL standards:

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>- The Series 273 push-wire connectors for junction boxes or the lighting connectors of Series 224 are "splicing wire connectors" and are certified according to UL 486C. They are marked with the <b>UL Listed label</b>  as stand-alone equipment.</li> </ul>  | UL 486 C    Splicing Wire Connectors  |
| <ul style="list-style-type: none"> <li>- Rail-mounted terminal blocks or modular terminal blocks (e.g. Series 280, TOPJOB<sup>®</sup>S or Series 260 – 262 terminal blocks) are approved as non-stand-alone components according to UL 1059 in connection with UL 486E.</li> </ul>  | UL 1059    Standard for Terminal Blocks<br>UL 486 E    Equipment Wiring Terminals for Use with Aluminium and / or Copper Conductors |
| <ul style="list-style-type: none"> <li>- The X-COM<sup>®</sup> connector system is approved as "terminal block" according to UL 1059 in connection with UL 486E. It is defined for "field and factory wiring" with a voltage of 300 V.</li> </ul>   |   |
| <ul style="list-style-type: none"> <li>- Furthermore, it is approved as "connector for use in data, signal, control and power applications" according to UL 1977 for "factory wiring" with 600 V (i.e. the clamping unit shall be wired under controlled manufacturing conditions).</li> </ul>  | UL 1977    Component connectors for use in data, signal, control and power applications   |
| <ul style="list-style-type: none"> <li>- Ex e II terminal blocks are approved according to UL 60079-7.</li> </ul>   | UL 60079-7    Electrical apparatus for explosive gas atmospheres – Part 7: Increased safety   |
| <ul style="list-style-type: none"> <li>- Ground (earth) terminal blocks are tested for grounding and bonding applications according to UL 467. Components with the <b>UR label</b>  are "recognized products". Additionally, after being mounted in their special applications, these components are submitted to an end product test according to the relevant device or equipment standard.</li> </ul> | UL 467    Grounding and Bonding Equipment   |
| <ul style="list-style-type: none"> <li>- Flammability and performance of the insulation material are tested according to UL 94.</li> </ul>  | UL 94    Tests for Flammability of Plastic Materials for Parts in Devices and Appliances  |

## Tests and Testing Procedures According to UL Standards

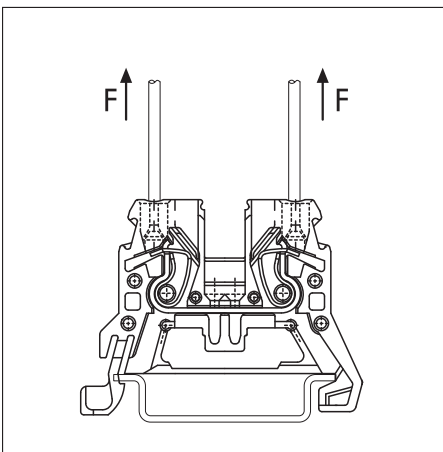
All WAGO products meet the requirements of the following tests.

- Pull-out test acc. to UL 1059, UL 486 E (rail-mounted terminal blocks), UL 486 C (splicing wire connectors)

In this test, the connected wires are subjected to the appropriate pull-out forces specified in the following table without jerks for one minute. Different test arrangements are to be used for rail-mounted terminal blocks and splicing wire connectors.

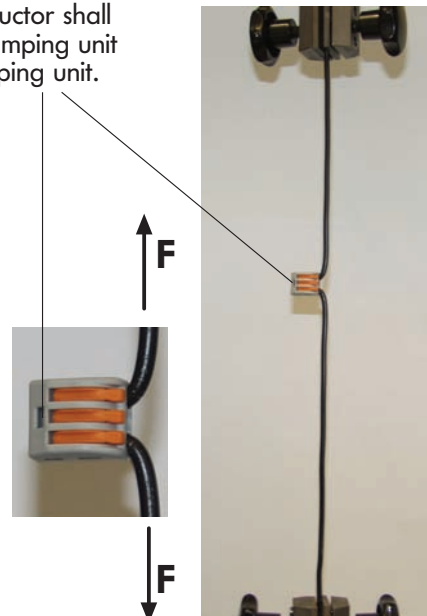
Size of conductor AWG or kcmil		(mm <sup>2</sup> )		Pull-out force, pounds (N)			
				UL 486 E, table 14.1		UL 486 C, table 13.1	
				Copper		Aluminum	
30	(0.05)	0.5	(2.2)	-	-	1.5	(6.9)
28	(0.08)	1	(4.5)	-	-	2	(8.9)
26	(0.13)	2	(8.9)	-	-	3	(13.4)
24	(0.20)	3	(13.4)	-	-	5	(22.3)
22	(0.32)	4.5	(20)	-	-	8	(35)
20	(0.52)	6.75	(30)	-	-	10	(44)
18	(0.82)	6.75	(30)	-	-	10	(44)
16	(1.3)	9	(40)	-	-	15	(66)
14	(2.1)	11.5	(50)	-	-	25	(111)
12	(3.3)	13.5	(60)	10	(44)	35	(155)
10	(5.3)	18	(80)	10	(44)	40	(178)
8	(8.4)	20.5	(90)	10	(44)	45	(200)
6	(13.3)	21	(94)	28	(124)	50	(222)
4	(21.2)	30	(133)	36	(160)		
3	(26.7)	35	(156)	42	(187)		
2	(33.6)	42	(186)	50	(222)		
1	(42.4)	53	(236)	61	(271)		
1/0	(53.5)	64	(285)	72	(320)		
2/0	(67.4)	64	(285)	78	(347)		
3/0	(85.0)	79	(351)	97	(432)		
4/0	(107)	96	(427)	116	(516)		
250	(127)	96	(427)	116	(516)		
300	(152)	99	(441)	116	(516)		

Test arrangement according to UL 1059, UL 486 E:



Test arrangement according to UL 486 C:

During the test, the conductor shall neither slip out of the clamping unit nor break near the clamping unit.





# UL Specifications – Underwriters Laboratories USA (continued)

## Tests and Testing Procedures According to UL Standards (continued)

• Heat cycling test acc. to UL 1059, UL 486 C, UL 486 E

Test performed according to:  
**UL 1059**

Test performed with maximum rated cross sectional area  
Test current: 150% of the max. rated current

84 cycles of: 3 1/2 h "ON" / 1/2 h "OFF"

The temperature rise is measured after the first and the 84th cycle.

The temperature rise shall not exceed 5 °C (41 °F) after the 84th cycle compared to the temperature measured after the first cycle.

**UL 486 C** (splicing wire connectors),  
**UL 486 E** (equipment wiring terminals)

Test performed with maximum rated cross sectional area  
Test current: increased test current acc. to UL 486 C, table 9.1  
UL 486 E, table 10.1

500 cycles of: 1 h "ON" / 1 h "OFF"  
1 1/2 h "ON" / 1 1/2 h "OFF"  
(from AWG 4/0 up to 400 kcmil acc. to UL 486 E)

Temperature rises on the terminal blocks and control wires are measured and recorded after 1, 25, 50, 75, 100, 125, 175, 225, 275, 350, 425 and 500 cycles.

The temperature rise shall not exceed 125 °C (257 °F) and the stability factor "S" shall not exceed ± 10.

Size of conductor		Test currents for copper conductors (A)					
		UL 486 E, table 10.1				UL 486 C, table 9.1	
AWG or kcmil	mm <sup>2</sup>	Assigned maximum Ampere rating <sup>b</sup>	Static heating <sup>c,d,h</sup>	Heating cycling Temperature rating <sup>a</sup>		Static heating	Heat cycling
				75°C <sup>e,h</sup>	90°C <sup>f,h</sup>		
30	(0.05)	-	3	3.5	4	3	3.5
28	(0.08)	-	3.5	4	5	3.5	4
26	(0.13)	-	5.5	8	7	5.5	6
24	(0.20)	-	7	8	10	7	8
22	(0.32)	-	9	12	13	9	12
20	(0.52)	-	12	16	17	12	16
18	(0.82)	-	17	19	24	17	19
16	(1.3)	-	18	20	31	18	20
14	(2.1)	15	[20] 30	[22] 33	[27] 40	30	33
12	(3.3)	20	[25] 35	[28] 39	[40] 54	35	39
10	(5.3)	30	[40] 50	[45] 56	[60] 75	50	56
8	(8.4)	50	70	80	100	70	80
6	(13.3)	65	95	105	131	95	105
4	(21.2)	85	125	140	175		
3	(26.7)	100	145	165	205		
2	(33.6)	115	170	190	240		
1	(42.4)	130	195	220	275		
1/0	(53.5)	150	230	255	320		
2/0	(67.4)	175	265	300	370		
3/0	(85.0)	200	310	345	435		
4/0	(107)	230	360	405	505		
250	(127)	255	405	445	565		
300	(152)	285	445	500	625		

<sup>a</sup> See paragraphs 7.12 and 10.1 (UL 486 E)  
<sup>b</sup> Values are for 75°C (167°F), not more than 3 conductors in raceway or cable ampacities, National Electrical Code, ANSI, NFPA 70-1999, except that for Nos. 14–10 AWG copper wire and Nos. 12–10 AWG aluminium wire, the values are load-current ratings.  
<sup>c</sup> See paragraph 7.13 (UL 486 E)  
<sup>d</sup> Values are for 75°C (167°F) single conductor in free air ampacities, National Electrical code, ANSI/NFPA 70-1999.  
<sup>e</sup> Values are approximately 112 percent of the static heating test currents.  
<sup>f</sup> Values for No. 8 AWG and larger conductors are approximately 140 percent of the static heating test currents.  
<sup>h</sup> Values in brackets apply to connectors with assigned ampere ratings.

• Conditioning – temperature-rise test acc. to UL 1059, UL 486 C

Test performed according to:  
**UL 1059** (rail-mounted terminal blocks)

**UL 486 C** (splicing wire connectors)

**Conditioning:**

The clamping units are **pre-wired/pre-inserted 9 times** using a conductor with maximum rated cross section. At the 10th time, a new conductor is connected. Then, a static heating test is performed.

**Static heating test:**

Test current: rated current of the terminal block  
Test duration: 30 days  
max. permissible temperature rise: 30 °C (86 °F)

Test current: increased test current acc. to table 9.1  
Test duration: 30 days  
max. permissible temperature rise: 50 °C (122 °F)

• Grounding and bonding equipment acc. to UL 467

When used in “grounding and bonding” equipment, terminal blocks, for example, shall withstand a short circuit test using the test currents and test durations as specified in Table 14.1.

In the following example, an AWG 2 (35 mm<sup>2</sup>) ground (earth) conductor terminal block (285-635) is tested for 6 seconds at a current of 3900 A.

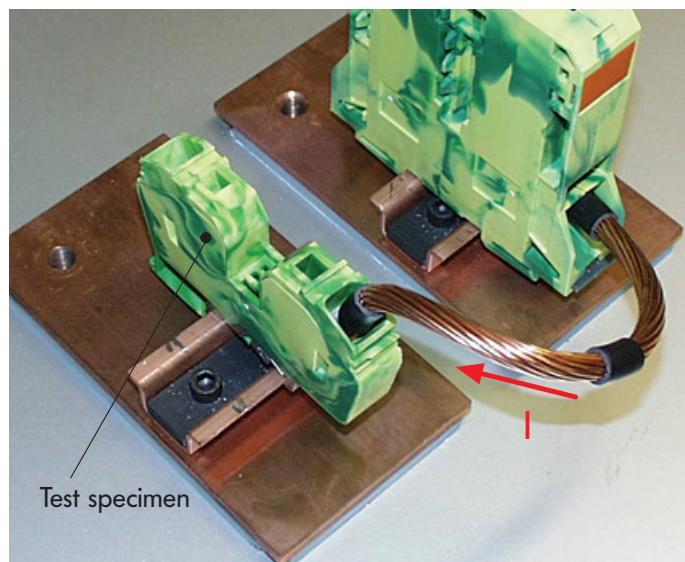


Table 14.1

Size of conductor Copper		Test duration s	Test current A
AWG	mm <sup>2</sup>		
14	(2.1)	4	300
12	(3.3)	4	470
10	(5.3)	4	750
8	(8.4)	4	1180
6	(13.3)	6	1530
4	(21.2)	6	2450
3	(26.7)	6	3100
2	(33.6)	6	3900
1	(42.4)	6	4900
1/0	(53.5)	9	5050
2/0	(67.4)	9	6400
3/0	(85.0)	9	8030
4/0	(107)	9	10100
250 MCM	(127)	9	12000

After the test, the specimen shall show no evidence of damage such as cracking, breaking and melting or changes of electrical properties.

**UL Specifications – Underwriters Laboratories USA (continued)**  
**Tests and Testing Procedures According to UL Standards (continued)**

• Insulation parameters acc. to UL 1059

The table shows the potentials involved and the corresponding clearances and creepage distances required in the different applications.

**Minimum acceptable spacings for terminal blocks, UL standard 1059, Table 8.1**

Application	Potential involved in volts	Spacings in inches (mm) between un-insulated live parts of opposite polarity, un-insulated live parts and un-insulated grounded parts other than the enclosure	
		Through air or oil	Over surfaces
A. Service-including dead-front switchboards, panelboards service equipment, and the like	51 – 150 151 – 300 301 – 600	1/2 (12,7) 3/4 (19,1) 1 (25,4)	3/4 (19,1) 1-1/4 (31,8) 2 (50,8)
B. Commercial appliances, including business equipment, electronic data processing equipment, and the like	51 – 150 151 – 300 301 – 600	1/16 <sup>a</sup> (1,6) <sup>a</sup> 3/32 <sup>a</sup> (2,4) <sup>a</sup> 3/8 (9,5)	1/16 <sup>a</sup> (1,6) <sup>a</sup> 3/32 <sup>a</sup> (2,4) <sup>a</sup> 1/2 (12,7)
C. Industrial, general	51 – 150 151 – 300 301 – 600	1/8 <sup>a</sup> (3,2) <sup>a</sup> 1/4 (6,4) 3/8 (9,5)	1/4 (6,4) 3/8 (9,5) 1/2 (12,7)
D. Industrial, Devices having limited ratings <sup>b</sup>	51 – 300 301 – 600	1/16 <sup>a</sup> (1,6) <sup>a</sup> 3/16 <sup>a</sup> (4,8) <sup>a</sup>	1/8 <sup>a</sup> (3,2) <sup>a</sup> 3/8 (9,5)

Notes

- 1 A slot, groove, or the like, 0.013 inch (0.33 mm) wide or less in the contour of the insulating material is to be disregarded.
- 2 An air space of 0.013 inch (0.33 mm) or less between a live part and an insulating surface is to be disregarded for the purpose of measuring over surface spacings.
- <sup>a</sup> The spacing between wiring terminals of opposite polarity and the spacing between a wiring terminal and a grounded dead metal part shall not be less than 1/4 inch (6.4 mm) if short-circuiting or grounding of such terminals may result from projecting strands of wire.
- <sup>b</sup> see paragraph 8.5 (UL 1059)  
The spacings specified in item of table 8.1 are applicable to a terminal block for use only in or with industrial control equipment where the load on any single circuit of the terminal block does not exceed 15 amperes at 51 – 150 volts, 10 amperes at 151 – 300 volts, 5 amperes at 301 – 600 volts, or the maximum ampere rating, whichever is less.

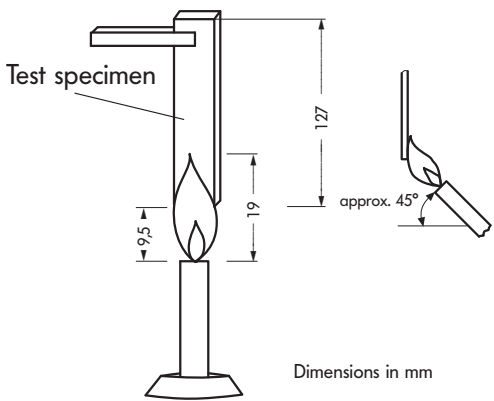
• Flammability test acc. to UL 94

This test is intended to provide an indication of a material's ability to extinguish a flame, once ignited. Several ratings can be applied based on the rate of burning, time to extinguish, ability to resist dripping, and after-glow extinguishing time.

Each material tested may receive several ratings depending on the wall thickness.  
 UL 94 rating categories:

- |   |  |  |
|---|--|--|
| <p><b>V2</b></p> <ul style="list-style-type: none"> <li>- specimen mounted vertically</li> <li>- burning stops within 30 seconds after the flame is removed</li> <li>- flaming drips allowed</li> <li>- after-glow extinguishes within max. 60 seconds</li> </ul> | <p><b>V1</b></p> <ul style="list-style-type: none"> <li>- specimen mounted vertically</li> <li>- burning stops within 30 seconds after the flame is removed</li> <li>- no flaming drips allowed</li> <li>- after-glow extinguishes within max. 60 seconds</li> </ul> | <p><b>V0</b></p> <ul style="list-style-type: none"> <li>- specimen mounted vertically</li> <li>- burning stops within 10 seconds after the flame is removed</li> <li>- no flaming drips allowed</li> <li>- after-glow extinguishes within max. 30 seconds</li> </ul> |
|---|--|--|

During the test, a 3/4 inch (19 mm) flame is applied for two 10 second intervals to the specified bar specimens held vertically.



## Connection of aluminum wires

WAGO spring-clamp terminal blocks are suitable for solid aluminum wires ❶ up to 4 mm<sup>2</sup> / AWG 12 if WAGO contact paste "Alu-Plus" is used for the connection (see page 14.48).

Please take into account that the nominal currents must be adapted to the reduced conductivity of the aluminum wires:

**2.5 mm<sup>2</sup> / AWG 14 = 16 A**  
**4 mm<sup>2</sup> / AWG 12 = 22 A**

Cleaning and greasing of the aluminum conductor is no longer necessary. Use the WAGO contact paste "Alu-Plus" instead, which is directly injected into the conductor entry hole of WAGO terminal block by means of the handy syringe.

This allows the easy connection of solid aluminum wires (in case of multipole terminal blocks, also mixed with copper conductors).

WAGO "Alu-Plus"

- automatically destroys the oxide film during clamping
- prevents fresh oxidation at the clamping point
- prevents electrolytic corrosion between aluminum- and copper conductors (in the same terminal block)
- offers permanent protection against corrosion

It is, of course, also possible to apply the WAGO "Alu-Plus" directly on the whole surface of the aluminum wire before clamping.

**WAGO "Alu-Plus" in the syringe offers a higher degree of security and cleanliness when connecting solid wire aluminum conductors. Filling is, for example, very quickly performed on the three following selected WAGO terminal blocks (see description on the right).**

### How to proceed:

There are two possibilities to use the contact paste when connecting solid aluminum wires:

1. Apply WAGO "Alu-Plus" on the whole surface of the aluminum wire before clamping.
2. Or insert nozzle of the syringe in every conductor entry hole of WAGO terminal blocks as demonstrated with the three examples.

These procedures invariably offer more security and cleanliness in a quick and easy way.

### WAGO Push-wire connectors for junction boxes



1. Push nozzle of the "Alu-Plus" syringe into the center conductor entry hole of the WAGO junction box connector.



2. Press plunger down until "Alu-Plus" is visible in the other holes.

### WAGO Lighting connectors



1. Push nozzle of the "Alu-Plus" syringe first into the circular and then into the square conductor entry hole of the WAGO lighting connector.



2. Press plunger down until the "Alu-Plus" has filled both holes.

### WAGO Insulated terminal blocks (only up to 4 mm<sup>2</sup>/AWG 12 rated cross section)

❶ Aluminum wires in accordance with IEC 61545, Class B, Alloy 1370, with a tensile strength of 90 -180 N/mm<sup>2</sup> and an elongation of 1 - 4 %.

Standard values: Tensile strength 90 - 180 MPa, elongation 1 - 4 %. (acc. to EN 615.4.1)



1. Push nozzle of the "Alu-Plus" syringe in every conductor entry hole (one after the other).



2. Press plunger down until "Alu-Plus" has filled each of these holes.



## Material Specification

### Insulation materials

For 40 years Nylon (PA 6.6 and PA 4.6) and Polycarbonate (PC) have been the preferred insulation materials for housings of current carrying parts and accessories of terminal blocks and connectors (see table). They have been approved by almost all international test houses.

**Table: Standard insulation materials**

Material	PA 6.6	PA 4.6	PC
Flammability	V0	V2	V2
Flammability acc. to UL 94, rating categories	V0	V2	V2
Glow wire test acc. to IEC 60695-2-10/11+12	960 °C	850 °C	850 °C
Oxygen index	37	27	26
Anti tracking index acc. to IEC 60112 CTI	600	375	275
Temperature resistance under HDT/B (0,45 Mpa)	short term 200 °C	short term 280 °C	140 °C
mechanical stress	permanent 105 °C	permanent 115 °C	125 °C
Resistance to heat			
Ball pressure test acc. to EN ISO 2039-1	125 °C passed	125 °C passed	125 °C passed
Testing device B			
Surface resistivity	$10^{10} - 10^{13} \Omega$	$10^{13} - 10^{16} \Omega$	$10^{15} \Omega$
Specific through resistance	$10^{15} \Omega/\text{cm}$	$10^9 - 10^{15} \Omega/\text{cm}$	$10^{13} \Omega/\text{cm}$
Dielectric strength	30 kV/mm	25 kV/mm	29 kV/mm

**Nylon (PA 6.6)**

WAGO uses a modified Nylon, **free** of halogens, fluorocarbons, chlorinated hydrocarbons, silicone, asbestos, cadmium and formaldehyde.

It will not corrode, is hardly inflammable, self-extinguishing (V0 acc. to UL 94) and is temperature-stabilized allowing operation continuously at a temperature of 105 °C (221 °F).

This long-term resistance to temperature refers to UL-Index RTI-Mechanical STR in order to guarantee an adequate safety margin in terms of the electrical and mechanical insulation.

The short-time upper temperature limit is 200 °C (392 °F).

The same safety philosophy is the basis of the indications of the lower limiting temperature. The insulation material can be handled at temperatures as low as -35 °C (-31 °F) without damage. In the assembled and wired condition all WAGO products can be used at temperatures as low as -60 °C (-76 °F).

The humidity absorbed from the environment (up to 2.5 % on average) is chemically bound to the Nylon structure providing best elasticity and safety against breaking.

In practical use the basic stabilization provides sufficient protection against damage by ozone or ultraviolet light for many years. The resistance against adverse climate conditions is good. Nylon is also being used successfully in tropical areas.

Insulating parts produced from Nylon are resistant to termites. The material does not offer a source of oxygen or other biogenic elements to microorganisms. The presence of anaerobic earth bacteria, mould fungus and enzymes does not result in degradation of the material. The resistance to fuels, most oils and fats, the most usually applied detergents such as alcohol, Freon, Freon, carbon tetrachloride is excellent. The resistance to acids is dependent upon the kind of acid and its concentration. More details upon request.

WAGO only accepts deliveries of insulating materials with a certificate of conformity and specified material test results.

**Nylon (PA 4.6)**

In comparison with Nylon 6.6, Nylon 4.6 features a much higher dimensional stability under heat. Its long-term temperature resistance under mechanical stress is 115 °C (239 °F). The long-term heat resistance after 10,000 hours is 140 °C (284 °F). The short-time upper temperature limit is 280 °C (536 °F) for Nylon 4.6 used by WAGO.

For further information see table.

**Polycarbonate (PC)**

Some typical properties of Polycarbonate include:

- excellent dimensional stability under heat, high level of strength, stiffness, hardness and viscosity up to 135 °C (275 °F).
- good electrical properties, also unaffected by exposure to moisture. Its insulation properties are virtually independent of the temperature and humidity.
- high dimensional stability thanks to low level of shrinkage due to low water absorption (about 0.2 % relative humidity)
- high weathering resistance
- high resistance to energetic radiation
- self-extinguishing
- crystal-clear transparency and high luster

The Polycarbonate used has a very high viscosity and chemical resistance. More details upon request.

Thanks to such properties as thermal stability, nonflammability, transparency and viscosity, Polycarbonate is a high quality material which has found a wide use in electronic applications.

**Contact materials**

Electrolytic copper E<sub>CU</sub>, hard and extra-hard as well as extra-hard copper alloys are the standard materials for the current carrying parts of all WAGO products.

This material combines excellent conductivity and good chemical resistance without risk of stress cracking.

**Contact surface**

The special tin alloy layer, the standard surface for all current-carrying parts in WAGO products, is the guarantee for the excellent long-term protection against corrosive substances. Furthermore, these layers make a gastight contact which provides a durable transition resistance.

At the clamping unit the conductor is pressed with a high contact pressure into the soft tin layer. This defined contact area is thereby protected against corrosive influences.

The thick tin layer also ensures good solderability of the solder pins of PCB terminal blocks and connectors.

**Material of the clamping springs**

All WAGO clamping springs are produced from high quality carefully selected austhenitic chrome nickel spring steel (CrNi) with high tensile strength which has proven its resistance to corrosion in many years of practical use.

It is resistant to salt sea air, town gas and the industrial gases sulphur dioxide and hydrogen sulfide.

At normal temperatures around 20 °C (68 °F), the material is resistant to salt solutions up to 30 % and dilute phosphoric acids up to 30 %.

After more than 20 years of practical experience contact corrosion of the chrome nickel spring steel in connection with the contact material used by WAGO and the copper conductors connected to the clamping units could not be noticed.

The relaxation of the material as a function of the time and surrounding temperatures up to 105 °C (221 °F) can be neglected. Even at a temperature of 250 °C (482 °F) a relaxation of only 1.5% at a load of 500 N/mm<sup>2</sup> was measured.

In certain product lines the clamping springs are thermally treated at temperatures between 350 °C (662 °F) and 420 °C (788 °F) after their production.

This treatment results in a reduction of internal stress due to the mechanical deformation of the material and may be noticed by a brownish colour of the spring surface.

WAGO only accepts deliveries of chrome nickel spring steel against certificates of conformity and after certain material tests.





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261-212		261-341/342-000	10.22	262-212		264-225	4.4
		261-343	10.20	262-230	10.26	264-230	10.12
261-202/332-000	10.23	261-343/332-000	10.22	262-232	10.27	264-231	10.12
		261-343/342-000	10.22			264-232	10.14
261-212/332-000		261-344	10.20	262-242			
261-202/342-000	10.23	261-344/332-000	10.22	262-242		264-242	
		261-344/342-000	10.22	262-252	10.27		
261-212/342-000		261-346	10.20			264-252	10.14
261-252	10.21	261-346/332-000	10.22	262-262			
		261-346/342-000	10.22			264-262	
261-262		261-347	10.20	262-280	10.26	264-280	10.13
		261-347/332-000	10.22	262-281	10.26	264-282	10.14
261-252/332-000	10.23	261-347/342-000	10.22	262-282	10.27		
		261-351	10.20			264-292	
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		261-351/342-000	10.22	262-301	10.26	264-304	10.12
261-252/342-000	10.23	261-353	10.20	262-304	10.26	264-306	10.12
		261-353/332-000	10.22	262-306	10.26	264-307	10.12
261-262/342-000		261-353/342-000	10.22	262-307	10.26	264-311	10.13
261-301	10.20	261-354	10.20	262-311	10.26	264-314	10.13
261-301/331-000	10.22	261-354/342-000	10.22	262-314	10.26	264-316	10.13
261-301/341-000	10.22	261-356	10.20	262-316	10.26	264-317	10.13
261-303	10.20	261-356/332-000	10.22	262-317	10.26	264-321	10.12
261-303/331-000	10.22	261-356/342-000	10.22	262-321	10.26	264-324	10.12
261-303/341-000	10.22	261-357	10.20	262-324	10.26	264-326	10.12
261-304	10.20	261-357/332-000	10.22	262-326	10.26	264-327	10.12
261-304/331-000	10.22	261-357/342-000	10.22	262-327	10.26	264-331	10.12
261-304/341-000	10.22	261-361	10.20	262-331	10.26	264-334	10.12
261-306	10.20	261-371	10.20	262-334	10.26	264-336	10.12
261-306/331-000	10.22	261-402	10.20	262-336	10.26	264-337	10.12
261-306/341-000	10.22	261-404	10.28	262-337	10.26	264-341	10.13
261-307	10.20	261-405	10.28	262-341	10.26	264-344	10.13
261-307/331-000	10.22	261-410	10.24	262-344	10.26	264-346	10.13
261-307/341-000	10.22	261-411	10.24	262-346	10.26	264-347	10.13
261-311	10.20	261-411/331-000	10.24	262-347	10.26	264-351	10.12
261-311/331-000	10.22	261-411/341-000	10.24	262-351	10.26	264-354	10.12
261-311/341-000	10.22	261-422	10.25	262-354	10.26	264-356	10.12
261-313	10.20			262-356	10.26	264-357	10.12
261-313/331-000	10.22	261-432		262-357	10.26	264-361	10.12
261-313/341-000	10.22			262-361	10.26	264-363	10.12
261-314	10.20	261-422/331-000	10.25	262-363	10.26	264-364	10.12
261-314/331-000	10.22			262-371	10.26	264-367	4.4
261-314/341-000	10.22	261-432/331-000		262-373	10.26	264-368	4.4
261-316	10.20			262-402	10.26	264-369	4.4
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261-316/341-000	10.22			<b>additional item no.</b>		264-371	10.13
261-317	10.20	261-432/341-000		262-1 .. /000-006	10.27	264-373	10.13
261-317/331-000	10.22	<b>additional item no.</b>		262-2 .. /000-006	10.27	264-374	10.13
261-317/341-000	10.22	261-1 .. /000-006	10.21	<b>Series 264</b>		264-402	4.4
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261-321/331-000	10.22	261-1 .. /341-006				264-704	4.5
261-321/341-000	10.22	261-2 .. /000-006	10.21	264-112		264-706	4.5
261-323	10.20	261-2 .. /332-006				264-711	4.4
261-323/331-000	10.22	261-2 .. /342-006		264-120	4.5	264-714	4.4
261-323/341-000	10.22	<b>Series 262</b>		264-125	4.4	264-716	4.4
261-324	10.20	262-102	10.27	264-130	10.12	264-721	4.5
261-324/331-000	10.22			264-131	10.12	264-724	4.5
261-324/341-000	10.22	262-112		264-132	10.14	264-726	4.5
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261-326/341-000	10.22	262-132	10.27			264-731	4.4
261-327	10.20			264-152	10.14	264-734	4.4
261-327/331-000	10.22	262-142				264-736	4.4
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261-331	10.20					264-737/999-950	4.4
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261-333	10.20	262-162		264-905		264-905	
261-333/332-000	10.22						
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264-9 .. /000-002	14.14	279-308 2.8		279-837/999-950 2.8		280-369 2.30	
264-9 .. /000-005	14.14	279-309 2.8		279-838 2.8		280-371 7.8	
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281-651	2.17	282-316	2.18			283-904	2.20
281-652	2.16	282-317	2.18	282-811	7.21	283-907	2.20
281-653	2.16	282-318	2.18	282-821	7.21	283-907/999-950	2.20
281-654	2.16	282-322	6.7	282-860	7.19	283-992	2.20
281-656	7.34	282-325	2.18	282-865	7.18	283-998	2.20
281-657	2.16	282-326	2.18	282-866	7.19		
281-657/999-950	2.16	282-327	2.18	282-870	7.18		
281-658	2.16	282-328	2.18	282-881	7.18		
281-659	7.12	282-329	2.18	282-882	7.18		
281-660	7.12	282-330	2.18	282-883	7.18		
281-663	2.16	282-331	2.18	282-884	7.18		
281-664	2.16	282-332	6.7				
281-665/281-400	7.58	282-333	7.22	282-901	2.18		
281-665/281-401	7.58	282-334	7.22	282-902	2.18		
281-665/281-410	7.58	282-337	2.18	282-904	2.18	284-301	6.7
281-665/281-411	7.58	282-338	2.18	282-907	2.18	284-302	6.7
281-666	7.12	282-339	2.18	282-907/999-950	2.18	284-308	2.19
281-668	2.16	282-340	2.18	282-992	2.18	284-309	2.19
281-672	7.31	282-341	2.18	282-993	2.18	284-316	2.19
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281-673/281-401	7.58	282-357	2.26			284-318	2.19
281-673/281-410	7.58	282-358	2.26			284-322	6.7
281-673/281-411	7.58	282-360	7.21			284-325	2.19
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281-681	2.16	282-366	7.21	283-104	6.7	284-328	2.19
281-683	7.12	282-367	2.26	283-107	6.7	284-329	2.19
281-684	2.16	282-368	2.26			284-330	2.19
281-685	2.16	282-369	14.37	283-301	6.7	284-331	2.19
281-686	2.16	282-370	7.21	283-302	6.7	284-332	6.7
281-687	2.16	282-372	7.21	283-316	2.20	284-333	6.5
281-687/999-950	2.16	282-373	7.21	283-317	2.20	284-334	2.26
281-691	2.17	282-374	7.21	283-318	2.20	284-335	2.26
		282-384	7.18	283-320	2.3	284-336	2.26
281-901	2.16	282-385	7.18	283-322	6.7	284-337	2.19
		282-386	7.18	283-325	2.20	284-338	2.19
281-906		282-387	7.18	283-326	2.20	284-339	2.19
281-907	2.16	282-390	7.18	283-327	2.20	284-340	2.19
281-907/999-950	2.16	282-391	7.18	283-328	2.20	284-341	2.19
281-912	7.12	282-392	7.18	283-329	2.20	284-342	2.19
281-915/281-400	7.58			283-330	2.20	284-343	6.5
281-915/281-401	7.58	282-402	2.18	283-331	2.20	284-344	2.26
281-915/281-410	7.58	282-405	6.7	283-332	6.7	284-345	2.26
281-915/281-411	7.58	282-409	2.18	283-333	6.5	284-346	2.26
281-916	7.34	282-415	2.18	283-334	2.26	284-357	2.26
281-992	2.16	282-422	2.18	283-335	6.5	284-358	2.26
281-993	2.16	282-424	7.18	283-336	2.26	284-367	2.26
281-994	2.16	282-432	7.21	283-337	2.20	284-368	2.26
281-998	2.17	282-433	7.21	283-338	2.20		
		282-434	7.21	283-350	2.20	284-400	2.19
		282-442	7.21	283-351	2.20	284-402	2.19
		282-443	7.21	283-352	2.20	284-405	6.7
		282-444	7.21	283-353	2.20	284-409	2.19
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282-107	6.7	282-457	7.36			284-422	2.19
282-120	7.36	282-458	7.36	283-400	2.20		
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282-128/281-418	7.37	282-639	7.23	283-422	2.20	284-681	2.19
282-131	7.26	282-640	7.23			284-682	2.19
282-133	7.26	282-641	7.23	283-601	2.20	284-684	2.19
282-135	7.27	282-681	2.18	283-604	2.20	284-687	2.19
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769-304	9.16	<b>Series 773</b>		793-4.../000-002	14.9	812-114	11.21
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		790-190	12.5	794-.../000-007	14.9	862-1532	10.42
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		790-192	12.5	794-.../000-017	14.9	862-1534	10.43
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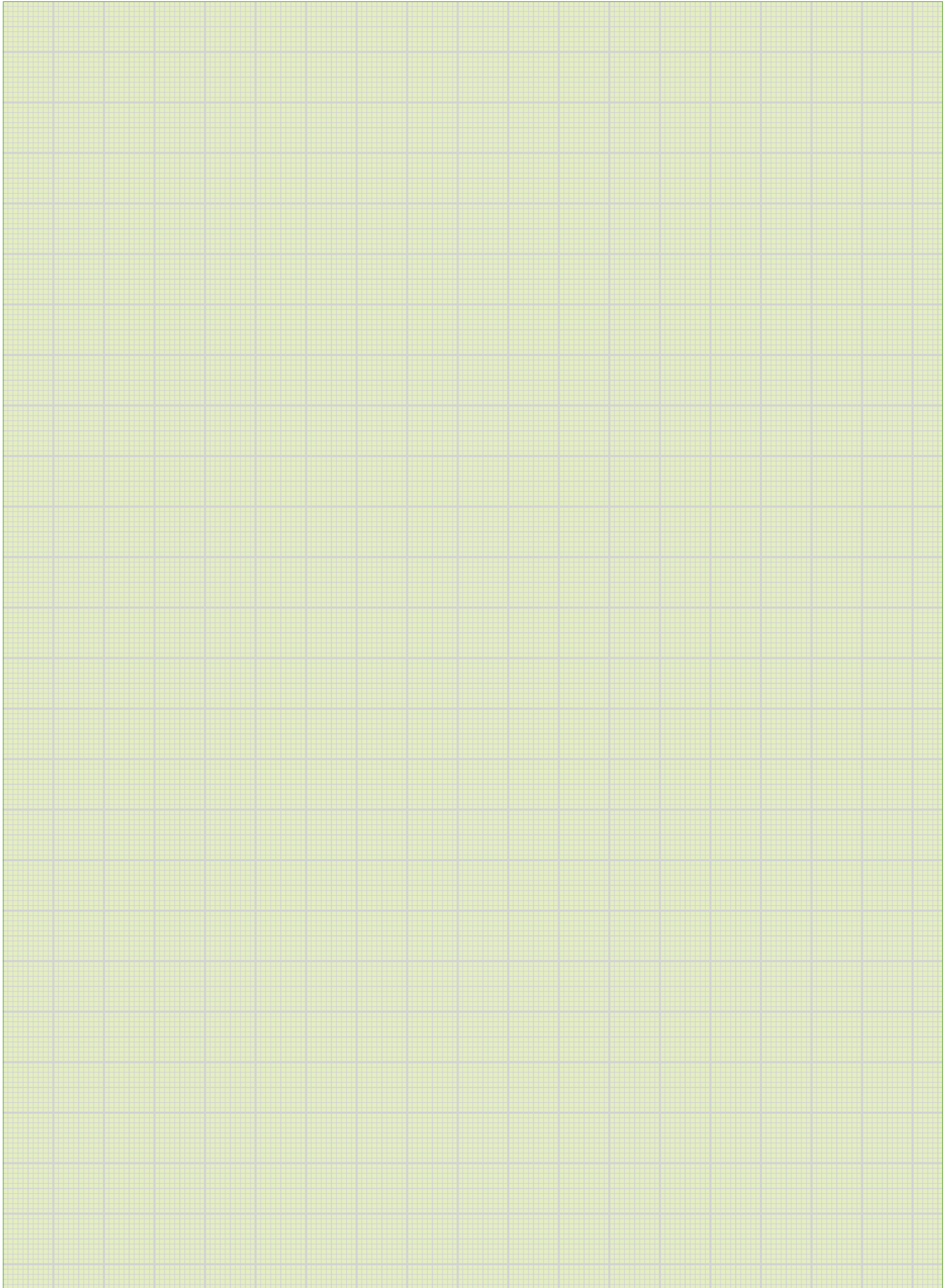
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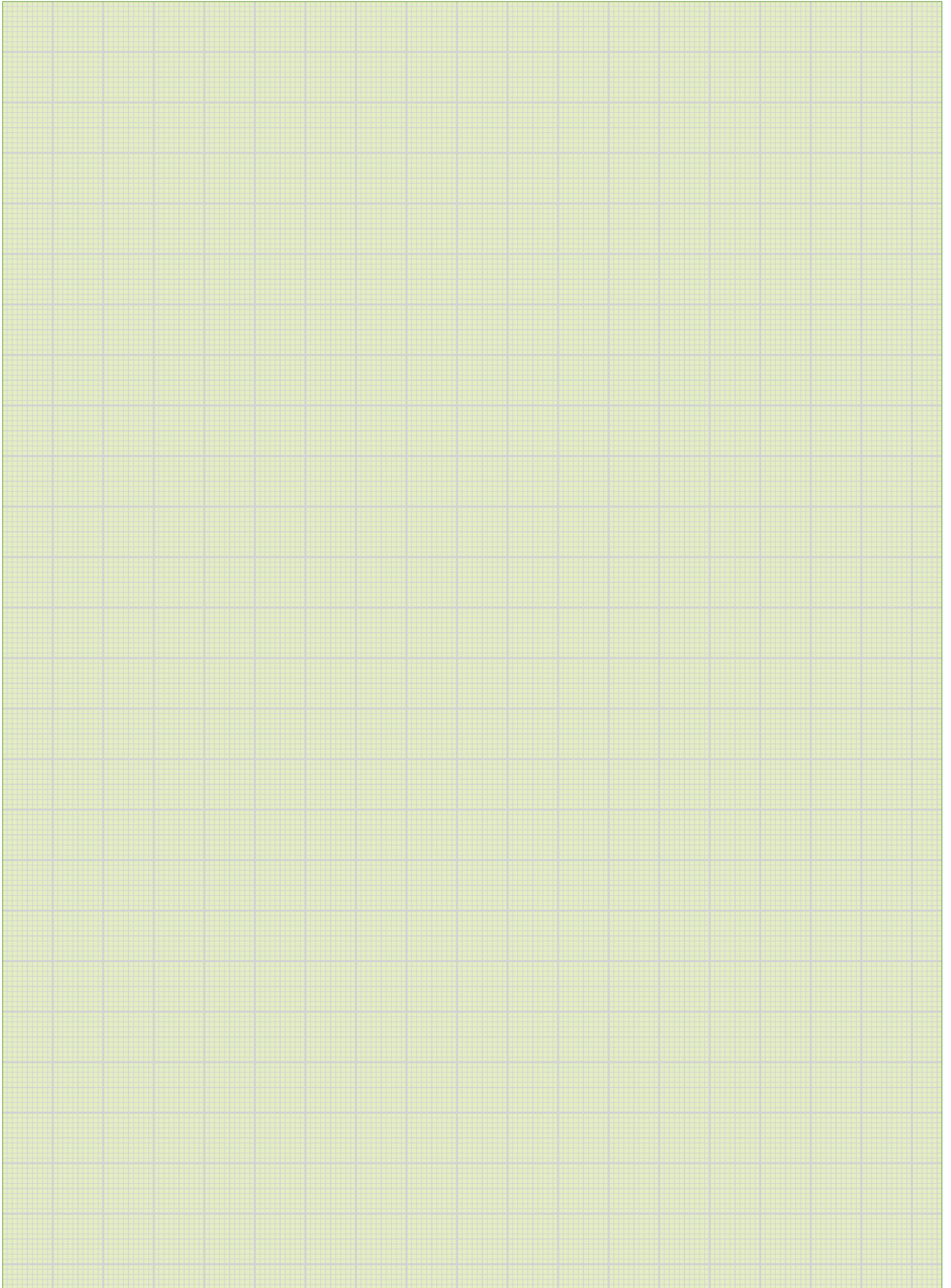
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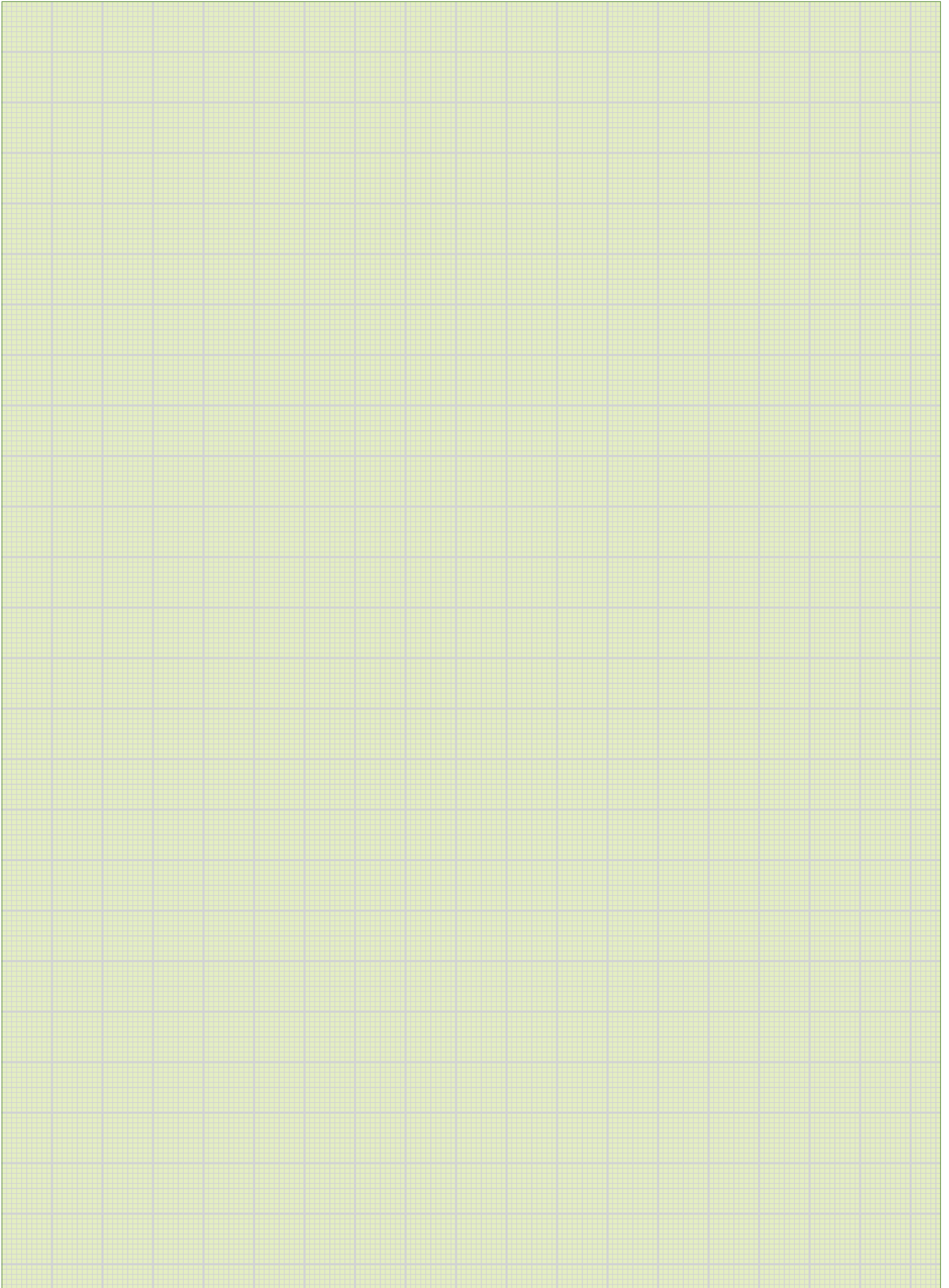


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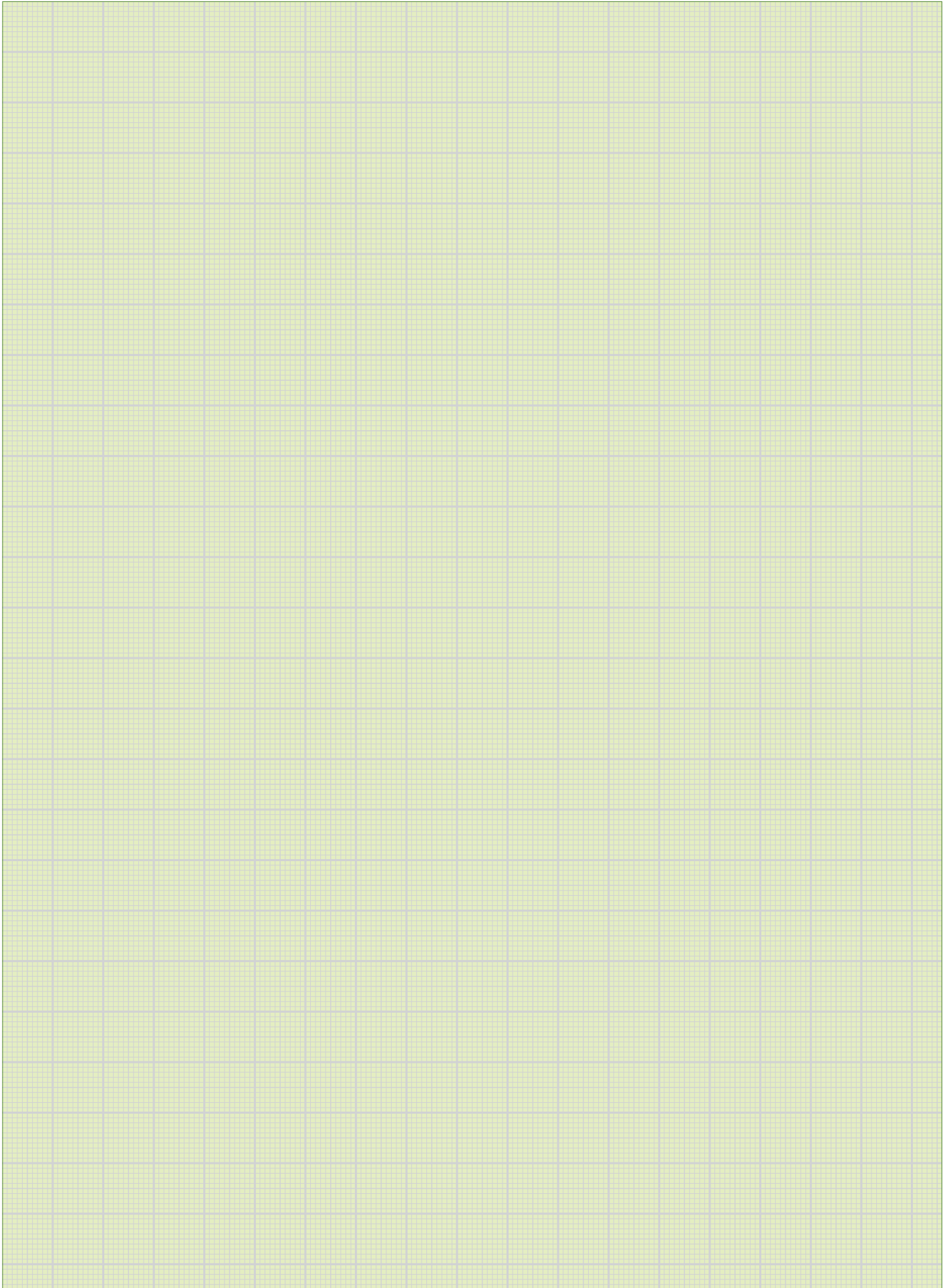




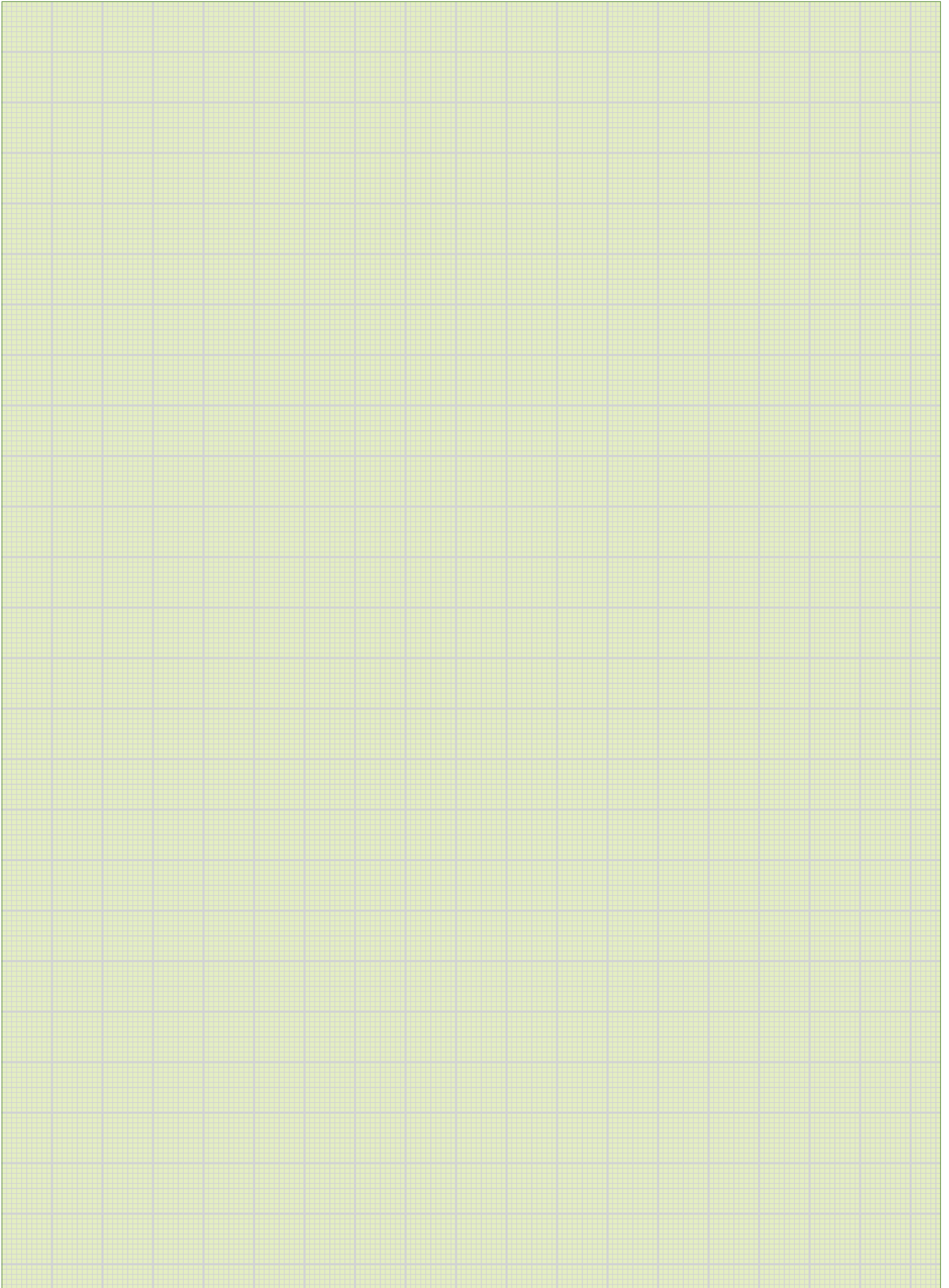
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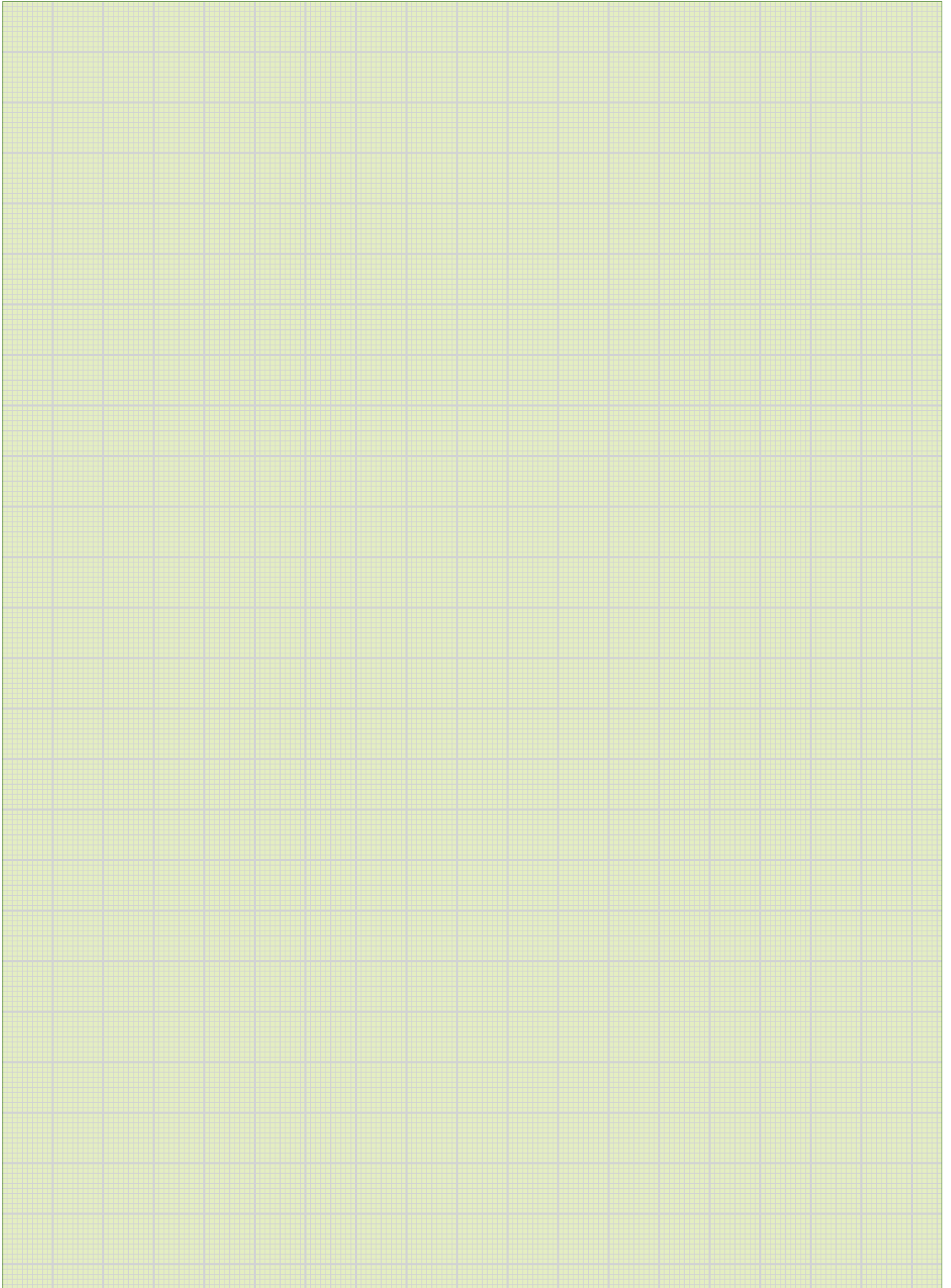
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## Notes



# Notes







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