

# Motor Starters from Telemecanique

## TDL, TRS & TSD



*a brand of*  
**Schneider**  
Electric

 **Telemecanique**



## Corporate Office

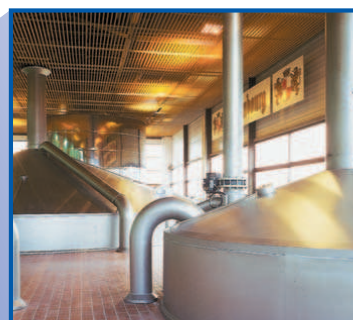
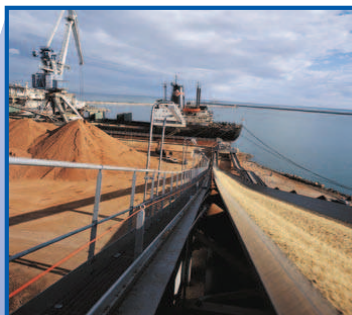
Schneider Electric is the only worldwide specialist in industrial control and automation with market supremacy spanning over 130 countries. It's unparalleled technical expertise providing the highest standards of excellence in terms of products and services has helped it proliferate as one of the leading suppliers in the Indian market within a short span of time.

Telemecanique is the flagship brand of Schneider Electric. It is an old name in the field of industrial control products. Telemecanique brings in a new wave of technology in the form of **TDL**, **TRS** and **TSD** range of motor starters. Superior manufacturing technology, relentless quality control & years of technical expertise are the backbone of these starters. These starters are being developed with the safety of the operator and equipment as prime concerns.

### Key features are as follows:

- Suitable for humid, high temperature & tropical environment
- Conforms to IEC 60947-4-1 & IS 13947-4-1
- Enclosure with dust & vermin resistant
- Ability to withstand wide voltage fluctuation (55% - 110%) for DOL starters upto 20HP & star-delta starters upto 40HP
- Powder coating technology ensures protection against rusting
- Superior aesthetic
- Coordinated starter with HRC fuse

## MCG Solution for Industrial Applications



## Motor Starter TDL



10TDL



10TDL

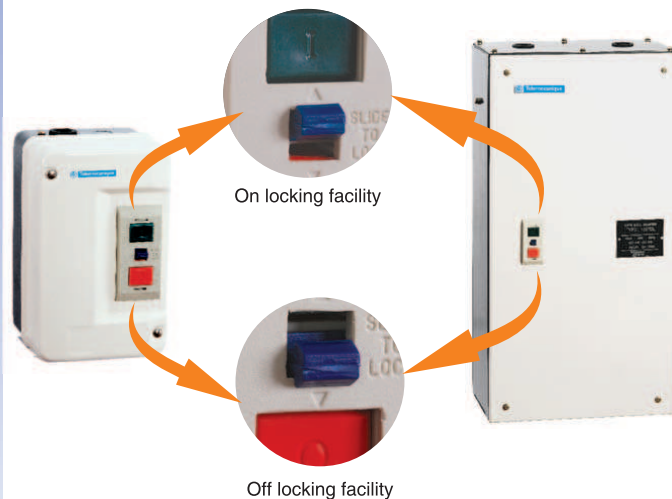
## Automatic DOL Starter, Type :TDL

### Features:

- Single phase version suitable up to 3 HP / 2.2 kW induction motor
- Three phase version suitable up to 125 HP / 93 kW induction motor
- ON / OFF locking facility with trip free mechanism
- Ambient temperature compensated thermal over load relay
- Protective cover of thermal over load relay makes it tamper proof
- Locking facility in on position gives auto restart facility
- Built-in single phasing protection along with over load protection
- Thermal over load relay contains test to trip facility,
- Hand to auto reset conversion of relay possible at site

### Selection Chart

Motor Output HP at 240 V, 1 Ph	Indicating Reference	Reference	Relay Range (A)	Contactors	Back-up Fuse HRC (A)
0.17	5TDL	MS11AC04*	1.1 - 1.7	AV1-12	6
0.33	5TDL	MS11AC06*	2.5 - 4.0	AV1-12	10
0.5	5TDL	MS11AC07*	4 - 6	AV1-12	16
1	5TDL	MS11AC09*	5.5 - 8	AV1-18	20
1.5	10TDL	MS11AC10*	9 - 13	AV1-18	25
2	10TDL	MS11AC11*	9 - 13	AV1-18	25
3	10TDL	MS11AC13*	12 - 18	AV1-18	35



\* Coil voltage

M5	U5	Q5	N5
220	240	380	415

**Note:** The overload relay & fuse rating given above is a guideline; actual selection to be done as per FLA of motor & characteristics of motor & fuses respectively. For three & single phase the standard stockable coil volt are 415V & 220 V respectively. For open execution starter, please contact sales office

## Motor Starter TDL



10TDL



40TDL



75TDL



125TDL

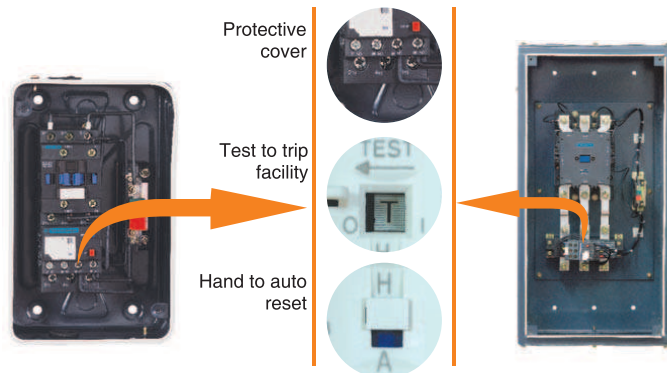
\* Coil voltage

M5	U5	Q5	N5
220	240	380	415

## Automatic DOL Starter, Type :TDL

### Selection Chart

Motor Output HP at 415 V, 3 Ph	Indicating Reference	Reference	Relay Range (A)	Contactors	Back-up Fuse HRC (A)
0.05	5TDL	MS13AC01*	0.16 - 0.25	AV1-12	2
0.125	5TDL	MS13AC03*	0.24 - 0.4	AV1-12	2
0.17	5TDL	MS13AC04*	0.4 - 0.63	AV1-12	2
0.25	5TDL	MS13AC05*	0.63 - 1.0	AV1-12	4
0.33	5TDL	MS13AC06*	0.63 - 1.0	AV1-12	4
0.5	5TDL	MS13AC07*	1 - 1.7	AV1-12	6
0.75	5TDL	MS13AC08*	1 - 1.7	AV1-12	6
1	5TDL	MS13AC09*	1.6 - 2.5	AV1-12	10
1.5	5TDL	MS13AC10*	1.6 - 2.5	AV1-12	10
2	5TDL	MS13AC11*	2.5 - 4.0	AV1-12	10
3	5TDL	MS13AC12*	4 - 6	AV1-12	16
5	5TDL	MS13AC14*	5.5 - 8	AV1-12	20
7.5	10TDL	MS13AC15*	9 - 13	AV1-18	25
10	10TDL	MS13AC16*	12 - 18	AV1-18	35
12.5	15TDL	MS13AC17*	16 - 24	AV1-25	35
15	15TDL	MS13AC18*	16 - 24	AV1-25	50
17.5	20TDL	MS13AC19*	23 - 32	AV1-32	63
20	20TDL	MS13AC20*	23 - 32	AV1-32	63
25	30TDL	MS13AC21*	30 - 40	AV1-50	63
30	30TDL	MS13AC22*	37 - 50	AV1-50	80
40	40TDL	MS13AC24*	48 - 65	AV1-65	100
50	50TDL	MS13AC26*	63 - 80	AV1-80	100
75	75TDL	MS13AC28*	84 - 135	AV1-115	160
100	100TDL	MS13AC29*	124 - 198	AV1-170	200
125	125TDL	MS13AC30*	124 - 198	AV1-200	250



**Note:** The overload relay & fuse rating given above is a guideline; actual selection to be done as per FLA of motor & characteristics of motor & fuses respectively. For three & single phase the standard stockable coil volt are 415V & 220 V respectively. For open execution starter, please contact sales office.

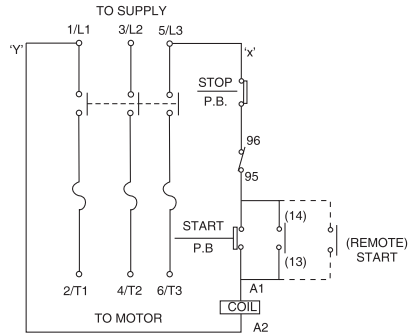
# Motor Starter TDL

## Automatic DOL Starter, Type :TDL

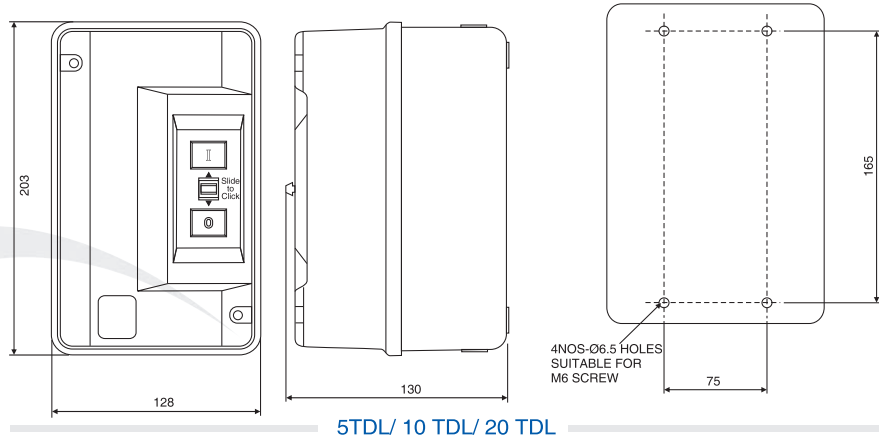
### Wiring Scheme

**Note :**

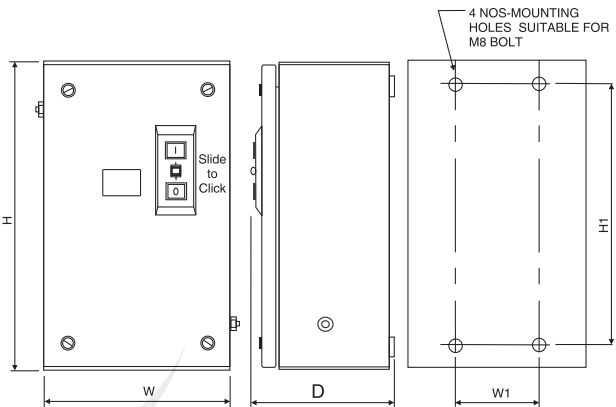
- 1) Remove Link 'X' & connect remote stop push button When required.
- 2) Connect remote start push button across terminal 13 & 14
- 3) For 415V (3ph) starter with 220V / 240V coil remove link 'Y' & connect neutral to terminal A2



### Dimensions & Drilling Plan



FRAME	OVERALL DIMENSIONS			MOUNTING DIMENSIONS	
	H	W	D	H1	W1
30/40/50TDL	300	212	160	220	100
75TDL	480	250	180	390	100
100/125TDL	720	370	245	600	200



**Note:**All dimensions are in mm



## Motor Starter TRS



10TRS



10TRS

## Automatic Reversing DOL Starter Type: TRS

### Features:

- Three phase version suitable up to 20 HP / 15 kW induction motor
- Ambient temperature compensated thermal over load relay
- Protective cover of thermal over load relay makes it tamper proof
- Built-in single phasing protection along with over load protection
- Thermal over load relay contains trip free mechanism & test to trip facility
- Hand to Auto reset conversion of relay possible at site
- Entire assembly on base plate

### Selection Chart

Motor Output HP at 415 V, 3 Ph	Indicating Reference	Reference	Relay Range (A)	Contactors	Back-up Fuse HRC (A)
3	10TRS	MS13RJ12*	4 - 6	AV1-18	16
5	10TRS	MS13RJ14*	5.5 - 8	AV1-18	20
7.5	10TRS	MS13RJ15*	9 - 13	AV1-18	25
10	10TRS	MS13RJ16*	12 - 18	AV1-18	35
12.5	20TRS	MS13RJ17*	16 - 24	AV1-40	35
15	20TRS	MS13RJ18*	16 - 24	AV1-40	50
17.5	20TRS	MS13RJ19*	23 - 32	AV1-40	63
20	20TRS	MS13RJ20*	23 - 32	AV1-40	63



Ergonomically designed push button for forward and reversing application

\* Coil voltage

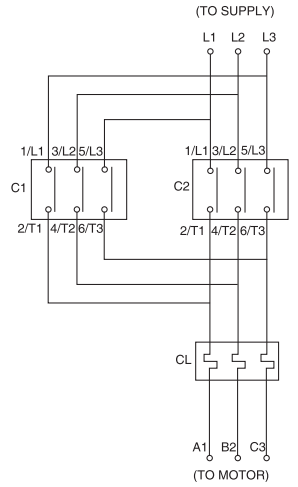
M5	U5	Q5	N5
220	240	380	415

**Note:** The overload relay & fuse rating given above is a guideline; actual selection to be done as per FLA of motor & characteristics of motor & fuses respectively. For three & single phase the standard stockable coil volt are 415V & 220 V respectively. For open execution starter, please contact sales office

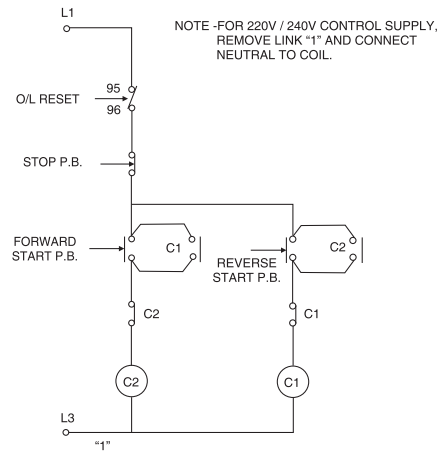
# Motor Starter TRS

## Automatic Reversing DOL Starter Type: TRS

### Wiring Scheme

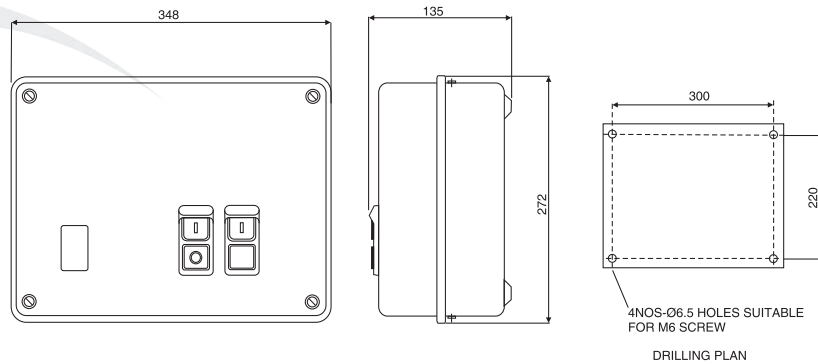


POWER CIRCUIT



CONTROL SCHEMATIC

### Dimensions & Drilling Plan



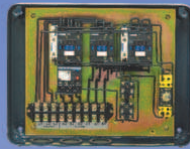
Note: All dimensions are in mm



## Motor Starter TSD-A



15TSD-A



15 TSD-A



75 TSD-A



100 TSD-A

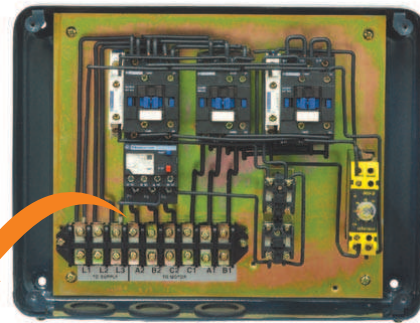


250 TSD-A

## Automatic Star Delta Starter Type: TSD-A

### Features:

- Three phase version suitable up to 400 HP / 300 kW induction motor
- Ambient temperature compensated thermal over load relay
- Protective cover of thermal over load relay makes it tamper proof
- Built-in single phasing protection along with over load protection
- Thermal over load relay contains trip free mechanism & test to trip facility
- Hand to Auto reset conversion of relay possible at site
- Entire assembly on base plate
- Terminal block provided for ease of wiring



Terminal block for ease for wiring



ON-OFF Indication



# Motor Starter TSD-A



400 TSD-A



400 TSD-A

## Automatic Star Delta Starter Type: TSD-A

### Selection Chart

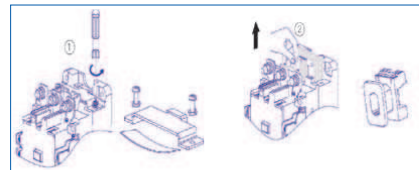
Motor Output HP at 415 V, 3 Ph	Indicating Reference	Reference	Relay Range (A)	Contactur	Back-up Fuse HRC (A)
7.5	15TSDA	MS23AI15*	5.5 - 8	AV1-18	16
10	15TSDA	MS23AI16*	7 - 10	AV1-18	20
12.5	15TSDA	MS23AI17*	9 - 13	AV1-25	25
15	15TSDA	MS23AI18*	9 - 13	AV1-25	32
20	30TSDA	MS23AI20*	12 - 18	AV1-25	32
25	30TSDA	MS23AI21*	16 - 24	AV1-32	50
30	30TSDA	MS23AI22*	23 - 32	AV1-32	50
35	40TSDA	MS23AI23*	23 - 32	AV1-40	63
40	40TSDA	MS23AI24*	30 - 38	AV1-40	63
50	50TSDA	MS23AI26*	37 - 50	AV1-50	100
60	75TSDA	MS23AI27*	37 - 50	AV1-65	100
75	75TSDA	MS23AI28*	45 - 65	AV1-80	125
100	100TSDA	MS23AI29*	62 - 99	AV1-115	160
125	125TSDA	MS23AI30*	84 - 135	AV1-115	200
150	150TSDA	MS23AI31*	84 - 135	AV1-170	200
200	200TSDA	MS23AI32*	124 - 198	AV1-170	315
250	250TSDA	MS23AI33*	174 - 279	AV1-200	350
400	400TSDA	MS23AI34*	259 - 414	AV1-400	500



Ease of termination



Contact replacement ( $\geq 100A$ )



Coil replacement ( $\geq 150A$ )

\* Coil voltage

M5	U5	Q5	N5
220	240	380	415

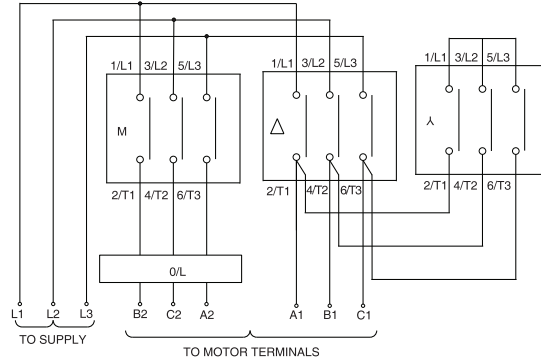
**Note:** The overload relay & fuse rating given above is a guideline; actual selection to be done as per FLA of motor & characteristics of motor & fuses respectively. For three & single phase the standard stockable coil volt are 415V & 220 V respectively. For open execution starter, please contact sales office

# Motor Starter TSD-A

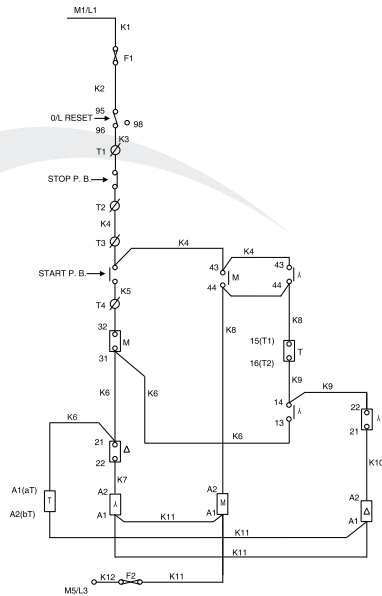
## Automatic Star Delta Starter Type: TSD-A

### Wiring Scheme

#### POWER CIRCUIT

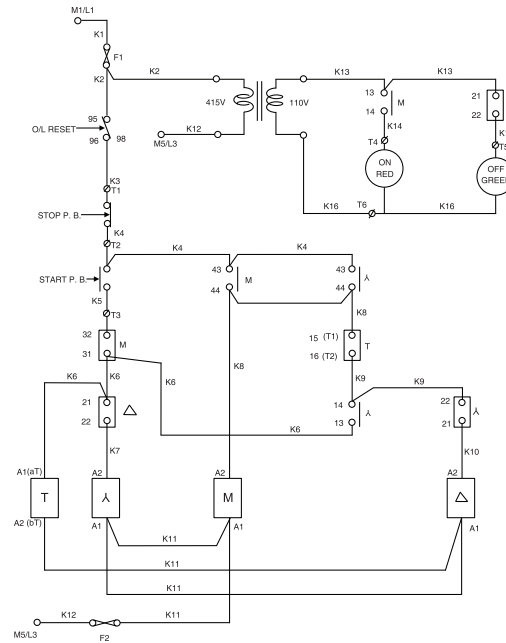


#### CONTROL CIRCUIT



**NOTE :**  
15/30/40TSD/A starters don't have ferrules & control circuit Fuses.

Upto 250 TSD-A



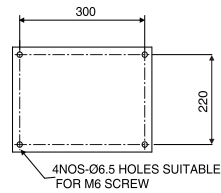
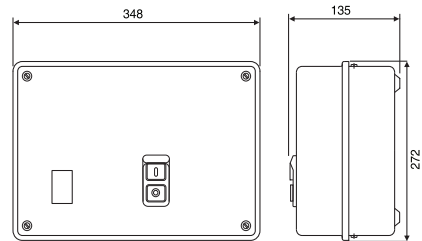
For 400 TSD-A

**Note:**All dimensions are in mm

# Motor Starter TSD-A

## Automatic Star Delta Starter Type: TSD-A

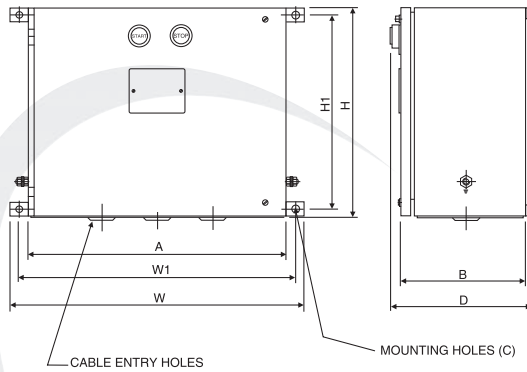
### Dimensions & Drilling Plan



Holes Ø38mm on bottom side are provided for cable entry.

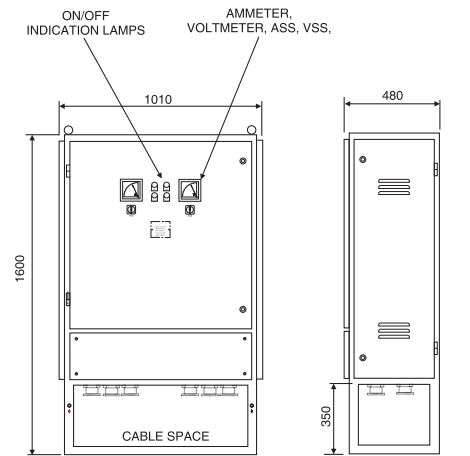
DRILLING PLAN

For 15/30/40TSD-A



FRAME	OVERALL DIMENSIONS					MOUNTING DIMENSIONS		
	H	W	D	A	B	H1	W1	MTG BOLT (C)
50/75 TSD/A 50TSD/S	470	580	245	510	205	433	550	M10
100/125TSD/A 150/200TSD/A	910	700	280	700	245	870	670	
250TSD/A	853	1000	346	900	308	803	953	M12

For 50 to 250 TSD-A



4 NOS 14 DIA HOLE SUITABLE FOR M12 BOLT

FOUNDATION & DRILLING PLAN

For 400TSD-A

Note: All dimensions are in mm

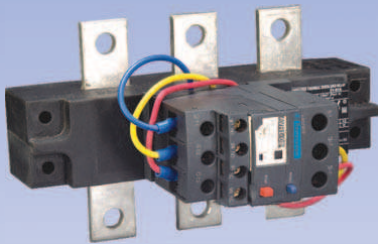
# Thermal O/L Relay Activa



AVR1



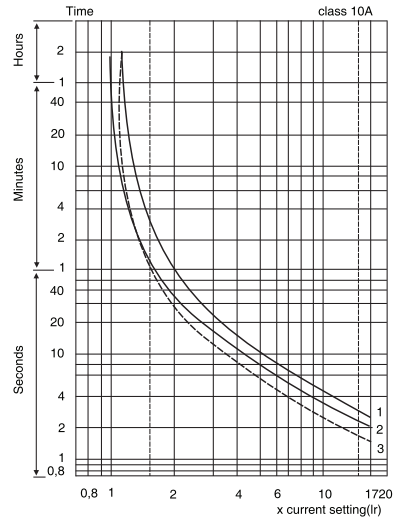
AVR2



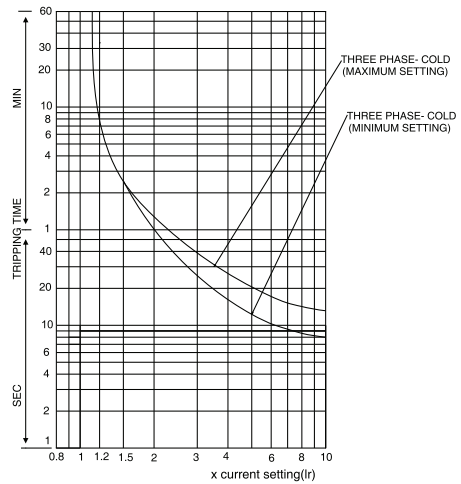
AVR3

## Thermal Over Load Relay Type: AVR1 / 2 / 3

### Tripping Characteristics



1. Balanced operation, 3-phase, from cold state.
2. Balanced operation, 2-phase, from cold state.
3. Balanced operation, 3-phase, after a long period at the set current (hot state).



Time current characteristics curve  
of AVR3 (3phase-cold)

## Substitution Table

### Starter with Closest Functionalities

Motor Output HP at 240 V, 1 Ph	Old Indicating Reference	Old Reference	New Indicating Reference	New Reference
0.17	5HDL	SM11AC04*	5TDL	MS11AC04*
0.33	5HDL	SM11AC06*	5TDL	MS11AC06*
0.5	5HDL	SM11AC07*	5TDL	MS11AC07*
1	5HDL	SM11AC09*	5TDL	MS11AC09*
1.5	10HDL	SM11AC10*	10TDL	MS11AC10*
2	10HDL	SM11AC11*	10TDL	MS11AC11*
3	10HDL	SM11AC13*	10TDL	MS11AC13*

Motor Output HP at 415 V, 3 Ph	Old Indicating Reference	Old Reference	New Indicating Reference	New Reference
0.05	5HDL	SM13AC01*	5TDL	MS13AC01*
0.125	5HDL	SM13AC03*	5TDL	MS13AC03*
0.17	5HDL	SM13AC04*	5TDL	MS13AC04*
0.25	5HDL	SM13AC05*	5TDL	MS13AC05*
0.33	5HDL	SM13AC06*	5TDL	MS13AC06*
0.5	5HDL	SM13AC07*	5TDL	MS13AC07*
0.75	5HDL	SM13AC08*	5TDL	MS13AC08*
1	5HDL	SM13AC09*	5TDL	MS13AC09*
1.5	5HDL	SM13AC10*	5TDL	MS13AC10*
2	5HDL	SM13AC11*	5TDL	MS13AC11*
3	5HDL	SM13AC12*	5TDL	MS13AC12*
5	5HDL	SM13AC14*	5TDL	MS13AC14*
7.5	10HDL	SM13AC15*	10TDL	MS13AC15*
10	10HDL	SM13AC16*	10TDL	MS13AC16*
12.5	15HDL	SM13AC17*	15TDL	MS13AC17*
15	15HDL	SM13AC18*	15TDL	MS13AC18*
17.5	20HDL	SM13AC19*	20TDL	MS13AC19*
20	20HDL	SM13AC20*	20TDL	MS13AC20*
25	30HDL	SM13AC21*	30TDL	MS13AC21*
30	30HDL	SM13AC22*	30TDL	MS13AC22*
40	40HDL	SM13AC24*	40TDL	MS13AC24*
50	50HDL	SM13AC26*	50TDL	MS13AC26*
75	75HDL	SM13AC28*	75TDL	MS13AC28*
100	100HDL	SM13AC29*	100TDL	MS13AC29*
125	125HDL	SM13AC30*	125TDL	MS13AC30*

\* Coil voltage

M5	U5	Q5	N5
220	240	380	415

## Substitution Table

### Starter with Closest Functionalities

Motor Output HP at 415 V, 3 Ph	Old Indicating Reference	Old Reference	New Indicating Reference	New Reference
3	10HRS	SM13RJ12*	10TRS	MS13RJ12*
5	10HRS	SM13RJ14*	10TRS	MS13RJ14*
7.5	10HRS	SM13RJ15*	10TRS	MS13RJ15*
10	10HRS	SM13RJ16*	10TRS	MS13RJ16*
12.5	20HRS	SM13RJ17*	20TRS	MS13RJ17*
15	20HRS	SM13RJ18*	20TRS	MS13RJ18*
17.5	20HRS	SM13RJ19*	20TRS	MS13RJ19*
20	20HRS	SM13RJ20*	20TRS	MS13RJ20*

Motor Output HP at 415 V, 3 Ph	Old Indicating Reference	Old Reference	New Indicating Reference	New Reference
7.5	15HSDA	SM23AI15*	15TSDA	MS23AI15*
10	15HSDA	SM23AI16*	15TSDA	MS23AI16*
12.5	15HSDA	SM23AI17*	15TSDA	MS23AI17*
15	15HSDA	SM23AI18*	15TSDA	MS23AI18*
20	30HSDA	SM23AI20*	30TSDA	MS23AI20*
25	30HSDA	SM23AI21*	30TSDA	MS23AI21*
30	30HSDA	SM23AI22*	30TSDA	MS23AI22*
35	40HSDA	SM23AI23*	40TSDA	MS23AI23*
40	40HSDA	SM23AI24*	40TSDA	MS23AI24*
50	50HSDA	SM23AI26*	50TSDA	MS23AI26*
60	75HSDA	SM23AI27*	75TSDA	MS23AI27*
75	75HSDA	SM23AI28*	75TSDA	MS23AI28*
100	100HSDA	SM23AI29*	100TSDA	MS23AI29*
125	125HSDA	SM23AI30*	125TSDA	MS23AI30*
150	150HSDA	SM23AI31*	150TSDA	MS23AI31*
200	200HSDA	SM23AI32*	200TSDA	MS23AI32*
250	250HSDA	SM23AI33*	250TSDA	MS23AI33*
400	400HSDA	SM23AI34*	400TSDA	MS23AI34*

\* Coil voltage

M5	U5	Q5	N5
220	240	380	415







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