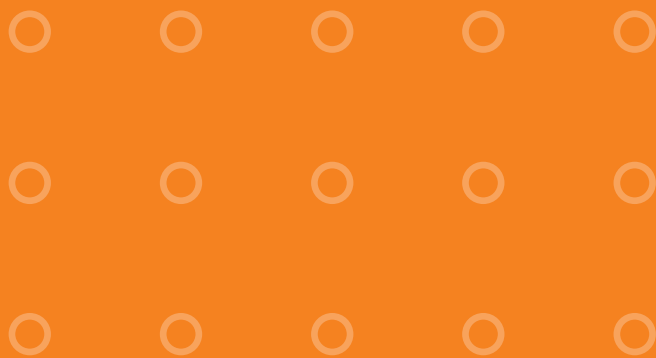


Surge protection systems

Selection with system

The simple and reliable way to achieve perfect surge protection

TBS Transient voltage and lightning protection systems



Step by step to effective surge protection

Surge protection is a complex subject. We hope that this product summary will help you in choosing the right products. We will show you, step by step, the way to achieve effective surge protection for your specific application. You will find our complete surge protection range in our TBS catalogue.

Power supply (230/400 V)

Telecommunication systems

Measurement and control systems

Data technology

TV, video, radio

**Confidence is good,
the OBO warranty is better**

Never compromise on safety: with 5 years' warranty for all surge protection products VDE-tested you can play it safe.



Technical hotline - telephone
+49 (0)23 73/89-15 00

Technical hotline - fax
+49 (0)23 73/89-15 50

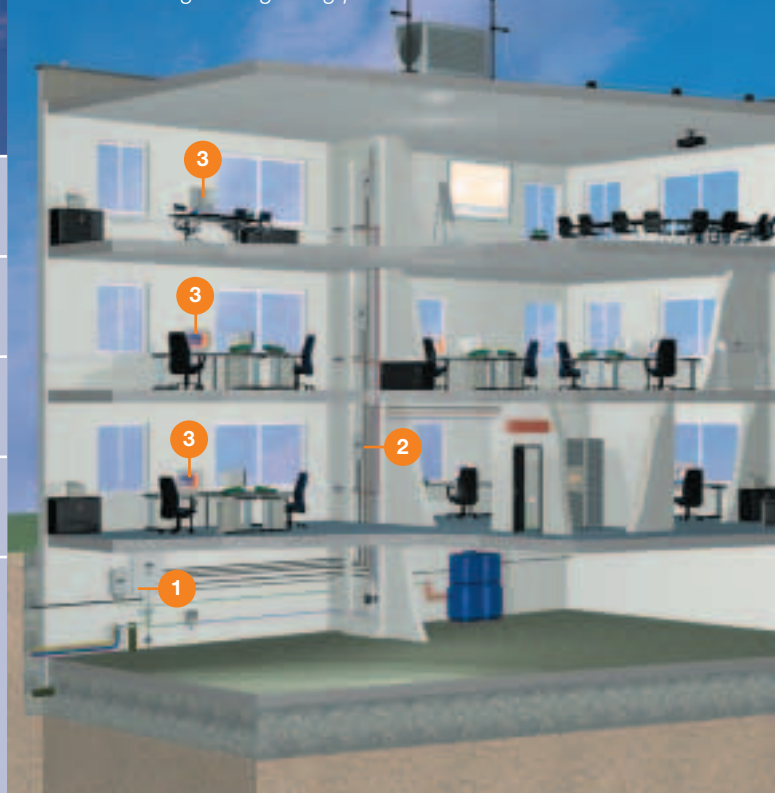
Technical hotline - e-mail
hotline@obo.de

Internet
www.obo-bettermann.com

*Example of application:
Private house with external lightning protection installation*



*Example of application:
Office building with lightning protection installation*



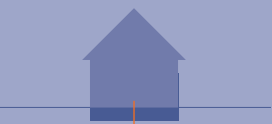


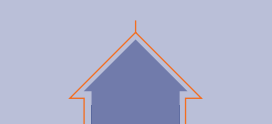


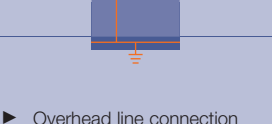


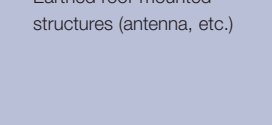









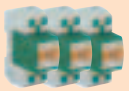









230/400 V Power supply

Situation

Please select type of building

1st step

Basic line protection
Installation in main distribution board,
before meter or in shared distribution board

 <ul style="list-style-type: none"> No external lightning protection installation No overhead line connection 	<p>Private building/residential building Industry/trade Distance between main distribution and sub-distribution or shared distribution board is greater than 10 m</p>	<p>TN-C TN-S TT IT</p> <p>V 20-C/3+NPE (125 A*) Can be combined with FS or AS remote signalling (4 U**)  Order no. 509 5 64 6</p> 	<p>Requirement class C (II) After meter</p>
 <ul style="list-style-type: none"> External lightning protection installation present 	<p>Private building/residential building Industry/trade Distance between main distribution and sub-distribution or shared distribution board is smaller than 10 m</p>	<p>TN-C TN-S TT IT</p> <p>V 20-C/3+NPE (125 A*) Can be combined with FS or AS remote signalling (4 U**)  Order no. 5095 64 6</p> 	<p>Requirement class C (II) After meter</p>
 <ul style="list-style-type: none"> External lightning protection installation present 	<p>Private building Distance between main distribution and sub-distribution or shared distribution board is greater than 10 m</p>	<p>TN-C TN-S TT IT</p> <p>V25-B+C/3+NPE (160 A*) Can be combined with FS or AS remote signalling (4 U**)  Order no. 5097 40 1</p> 	<p>Requirement class B+C (I+II) After meter</p>
 <ul style="list-style-type: none"> External lightning protection installation present 	<p>Private building Distance between main distribution and sub-distribution or shared distribution board is smaller than 10 m</p>	<p>TN-C TN-S TT IT</p> <p>V25-B+C/3+NPE (160 A*) Can be combined with FS or AS remote signalling (4 U**)  Order no. 5097 40 1</p> 	<p>Requirement class B+C (I+II) After meter</p>
 <ul style="list-style-type: none"> Overhead line connection 	<p>Industry/trade/residential building Distance between main distribution and sub-distribution board is greater than 5 m</p>	<p>TN-C </p> <p>3 x MC 50-B VDE (500 A*) (3 x 2 U**)  Requirement class B (I) Before or after meter Order no. 5096 84 7</p> 	<p>TN-S TT, IT </p> <p>3 x MC 50-B VDE (500 A*) Order no. 5096 84 7 1 x MC 125-B/NPE Order no. 5096 86 3 (4 x 2 U**) Requirement class B (I) Before or after meter</p> 
<ul style="list-style-type: none"> Overhead line connection 	<p>Industry/trade/residential building Distance between main distribution and sub-distribution board is smaller than 5 m</p>	<p>TN-C</p> <p>3 x MCD 50-B (500 A*) (3 x 2 U**)  Requirement class B (I) Before or after meter Order no. 5096 84 9</p> 	<p>TN-S TT, IT</p> <p>3 x MCD 50-B VDE (500 A*) Order no. 5096 84 9 1 x MC 125-B/NPE Order no. 5096 86 5 (4 x 2 U**) Requirement class B (I) Before or after meter</p> 
<ul style="list-style-type: none"> Recommendation: Earthed roof-mounted structures (antenna, etc.) 	<p>Industry/trade shared distribution board and distance from nearest sub-distribution board is greater than 10 m</p>	<p>TN-C</p> <p>PS3-VA/TNC (125 A*) Requirement class B+C (I+II) Before or after meter (10 U**)  Order no. 5089 62 0</p> 	<p>TN-S TT, IT</p> <p>PS4-VA/TT+TNS (125 A*) Requirement class B+C (I+II) Before or after meter (12 U**)  Order no. 5089 62 6</p> 
	<p>Industry/trade shared distribution board and distance from nearest sub-distribution board is smaller than 10 m</p>	<p>TN-C</p> <p>PS3-VA/TNC (125 A*) Requirement class B+C (I+II) Before or after meter (10 U**)  Order no. 5089 62 0</p> 	<p>TN-S TT, IT</p> <p>PS4-VA/TT+TNS (125 A*) Requirement class B+C (I+II) Before or after meter (12 U**)  Order no. 5089 62 6</p> 

** If the upstream fuse is rated higher than the stated figure, protect the arrester selectively with the stated figure.

2nd step

Medium protection/requirement class C
Installation in the/each sub-distribution board



V 20-C/3+NPE (125 A*)
Can be combined with FS or AS remote signalling (4 U**) **Requirement class C (II), after meter (applies to TN, TT and IT systems)**
Order no. **5095 64 6**

Not necessary



V 20-C/3+NPE (125 A*)
Can be combined with FS or AS remote signalling (4 U**) **Requirement class C (II), after meter (applies to TN, TT and IT systems)**
Order no. **5095 64 6**

Not necessary



V 20-C/3+NPE (125 A*)
Can be combined with FS or AS remote signalling (4 U**) **Requirement class C (II), after meter (applies to TN, TT and IT systems)**
Order no. **5095 64 6**



V 20-C/3+NPE (125 A*)
Can be combined with FS or AS remote signalling (4 U**) **Requirement class C (II), after meter (applies to TN, TT and IT systems)**
Order no. **5095 64 6**



V 20-C/3+NPE (125 A*)
Can be combined with FS or AS remote signalling (4 U**) **Requirement class C (II), after meter (applies to TN, TT and IT systems)**
Order no. **5095 64 6**

Not necessary

3rd step

Precision line protection/requirement class D
Installation before terminal device



FineController FC-D-D
Universal precision line protection for the private and trade sector, socket adapter device
Order no. **5092 80 0**



CNS-3-D (16 A*)
For the private, trade and industry sector with additional acoustic fault signalling and three-way socket strip
Order no. **5092 70 1**



FineController FC-TV-D
Precision line protection device with integrated surge protection module for TV feed cable to protect televisions and video recorders, incl. adapter cable.
Order no. **5092 80 8**



SNS-D (16 A*)
Suitable for retrofitting in the industry and trade sector. Is simply installed behind the socket screens
Order no. **5095 03 4**



FineController FC-SAT-D
Precision line protection device with integrated surge protection module for TV/SAT feed cable for protection of TV/SAT receivers, incl. adapter cable
Order no. **5092 81 6**



KNS-D (16 A*)
For industry and trade, suitable for invisible installation directly in commercial flush mounting or duct installation boxes
With acoustic signalling
Order no. **5092 50 7**



FineController FC-TAE-D
Precision line protection device with integrated surge protection module for telecom devices (TAE socket) for protection of ISDN So NTBA, DSL splitters or analog terminal devices, incl. adapter cable
Order no. **5092 82 4**



ÜSS 45-O and ÜSS 45-A
Surge protection module 45 for stationary installation in Rapid 45 ducts, skirting ducts and underfloor systems
With optical function check:
ÜSS 45-O: Order no. **6117 47 3**
With acoustic function check:
ÜSS 45-A: Order no. **6117 46 5**




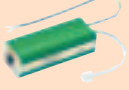



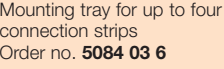


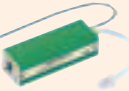



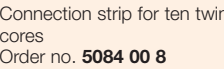
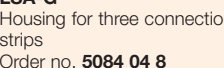

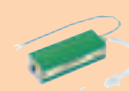

CNS-D (10 A*)
Specially for PC systems with IEC line socket
With acoustic fault signalling
Order no. **5092 60 4**



VF 230-AC/DC (16 A*)
Surge protection device for the industry and trade sector, suitable for invisible installation in sub-distribution boards and switchgear cabinets. Also available with potential-free remote signalling contact (1 U**) **Order no. 5097 64 9**

** 1 U = 17.5 mm standard module width for mounting on top-hat rails

Telecommunication systems

Situation Please select type of connection	1st step Basic line protection Installation after telecom transfer point/building entry	2nd step Precision line protection at telecom terminal device/modem
Analog connection ▶ up to two twin-core e.g. for private connection	 <p>SC-Tele/4-C-G Order no. 5081 68 8</p>	 <p>RJ11-Tele/4-F Order no. 5081 93 9</p> <p>or</p>  <p>FineController FC-TAE-D Precision line protection device with integrated surge protection module for telecom devices (TAE plug) for protection of ISDN So-NTBA, DSL splitters or analog terminal devices, incl. adapter cable Order no. 5092 82 4</p>
Analog connection ▶ from two twin-cores e.g. for telephone system	 <p>LSA-B-Mag Basic line protection magazine for ten twin-cores Order no. 5084 02 0</p>  <p>LSA-A-Lei Connection strip for ten twin-cores Order no. 5084 00 8</p>  <p>LSA-M Mounting tray for up to four connection strips Order no. 5084 03 6</p>  <p>LSA-G Housing for three connection strips Order no. 5084 04 8</p>	
ISDN connection ▶ up to two twin-cores e.g. for private connection (2 x NTso)	 <p>SC-Tele/4-C-G for ISDN-NTBA Order no. 5081 68 8</p>	 <p>RJ45S-ISDN/4-F Order no. 5081 85 8</p> <p>alternative</p>  <p>FineController FC-TAE-D Precision line protection device with integrated surge protection module for telecom devices (TAE socket) for protection of ISDN So-NTBA, DSL splitters or analog terminal devices, incl. adapter cable. Order no. 5092 82 4</p>
ISDN connection ▶ from two twin-cores e.g. for telephone system	 <p>LSA-B-Mag Basic line protection magazine for ten twin-cores Order no. 5084 02 0</p>  <p>LSA-A-Lei Connection strip for ten twin-cores Order no. 5084 00 8</p>  <p>LSA-M Mounting tray for up to four connection strips Order no. 5084 03 6</p>  <p>LSA-G Housing for three connection strips Order no. 5084 04 8</p>	
DSL connection	 <p>SC-Tele/4-C-G for DSL splitters Order no. 5081 68 8</p>	 <p>RJ45S-ISDN/4-F at ISDN/TC terminal device Order no. 5081 85 8</p>  <p>RJ45S-ATM/8-F at PC card Order no. 5081 79 3</p>

Example of application:
Office building

Please also consider the surge protection of the power supply!
(see page 2/3)



Measurement and control systems

Situation Please select application	1st step Power supply: installation before control unit	2nd step Data cable, measuring probe cable: installation after control unit and before receiver/transmitter
Heating	 VF 230-AC/DC AC systems, 230 V version Order no. 5097 64 9	 FLD 24 Installation only before heating and control unit 24 V version Order no. 5098 61 0
SPS	 VF 24-AC/DC DC systems, 24 V version Order no. 5097 60 6	 FRD 24 24V version Order no. 5098 51 3
4-20 mA power loop	 VF 230-AC/DC AC systems, 230 V version Order no. 5097 64 9	 FLD 24 24V version Order no. 5098 61 0
EIB	 VF 230-AC/DC AC systems, 230 V version Order no. 5097 64 9	 FRD 24 24V version Order no. 5098 51 3
Bus systems Interbus, Profibus and OBO Bus	 VF 230-AC/DC AC systems, 230 V version Order no. 5097 64 9	 FRD 24 HF 24V version, 80 Mb Order no. 5098 57 4

Example of application:
 industrial building

You will find other systems
 in our surge protection
 catalogue



Data technology







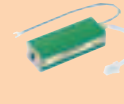



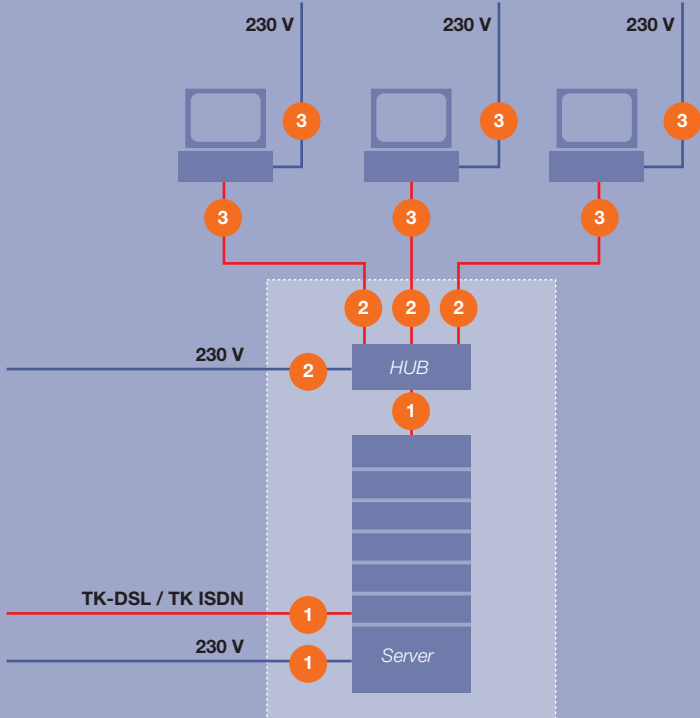
Situation Please select type of cable	1st step Installation at server	2nd step Installation at hub	3rd step Installation before terminal device (e.g. PC)
Cat 5/6 data cable	 RJ45S-ATM/8-F Order no. 5081 79 3	 RJ45S-ATM/8-F Order no. 5081 79 3	 RJ45S-ATM/8-F Order no. 5081 79 3
TC DSL connection	 RJ45S-ATM/8-F Order no. 5081 79 3	Not necessary	 RJ45S-ATM/8-F Order no. 5081 79 3
TC ISDN connection	 RJ45S-ISDN/4-F Order no. 5081 85 8	Not necessary	 RJ45S-ISDN/4-F Order no. 5081 85 8
230 V power supply	 CNS-3-D Order no. 5092 70 1	 CNS-3-D Order no. 5092 70 1	 CNS-3-D Order no. 5092 70 1 alternative FineController FC-D-D Order no. 5092 80 0

Diagram of a network



Example of application: office building



TV, video, SAT and radio







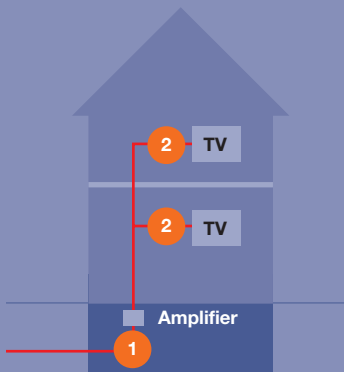
Situation Please select application	1st step Installation between cable TV transfer point and amplifier	2nd step Installation before every terminal device (TV, video, HiFi)
Broadband (cable television)	 DS-BNC m/w and BNC-F/A-S Order no.. 5093 25 2 Verbinder Adapterset Order no. 5093 28 0	 FineController FC-TV-D Precision line protection device with integrated surge protection module for the TV feed cable to protect televisions and video recorders, incl. adapter cable Order no. 5092 80 8
	Installation between antenna and receiver/ multi-switch directly at device to be protected	Installation before every terminal device (receiver or TV, video, HiFi)
SAT with receiver (e.g. in single family house)	 DS-BNC m/w and BNC-F/A-S Order no. 5093 25 2 Verbinder Adapterset Best.-Nr. 5093 28 0	 FineController FC-SAT-D Precision line protection device with integrated surge protection module for the TV/SAT feed cable to protect TV/SAT receivers, incl. adapter cable Order no. 5092 81 6
SAT with multi-switch (e.g. in house in multiple occupation)	 DS-BNC m/w and BNC-F/A-S Order no. 5093 25 2 Verbinder Adapterset Order no. 5093 28 0	 FineController FC-TV-D Precision line protection device with integrated surge protection module for the TV feed cable to protect televisions and video recorders, incl. adapter cable Order no. 5092 80 8
	Installation between antenna and amplifier	Installation before every terminal device (TV, video, HiFi)
Terrestrial (antenna)	 DS-BNC m/w and BNC-F/A-S Order no.. 5093 25 2 Verbinder Adapterset Order no. 5093 28 0	 FineController FC-TV-D Precision line protection device with integrated surge protection module for the TV feed cable to protect televisions and video recorders, incl. adapter cable Order no. 5092 80 8

Diagram of a cable TV system



Example of application: private house with SAT system



**Conducting electricity.
Routing data.
Controlling energy.**

UFS

VBS

TBS

EGS

KTS

BSS

LFS

VBS Connection and fastening systems

Junction box systems
Flush-mounted and hollow wall systems
Clamped systems
Screw-in systems
Fastening systems
Flange clamp systems
Rail systems
Screw-in and knock-in systems

TBS Transient voltage and lightning protection systems

Equipotential bonding systems
Surge protection systems
Earthing systems
Lightning protection systems

KTS Cable support systems

Mounting systems
Rail systems
Cable tray systems
Mesh cable tray systems
Cable ladder systems
Wide span systems
Vertical ladder systems
Luminaire support systems
Modular systems
Stainless steel systems
Function maintenance and MLAR systems

BBS Fire protection systems

Cable routing duct systems
Fire protection duct systems
Function maintenance systems
MLAR systems

LFS Cable routing systems

Cable routing duct systems
Skirting duct systems
Wiring duct systems
Dado duct systems
Dado covers and accessories
Media columns

EGS Device systems

Basic elements
Electronic devices
OBO BUS system
Radio systems
Standard range
Dialogue range
Aura range
Modul 45 range
Hospital technology
Wet-room range
Data technology

UFS Underfloor systems

Underfloor systems screed-covered
Duct systems in-screed, flush with floor surface
Cavity and false floor systems
Device installation systems

OBO BETTERMANN GmbH & Co.

PO Box 1120 · 58694 Menden, Germany
Tel. +49 (0)23 73/89-0
Fax +49 (0)23 73/89-238
E-mail: info@obo.de
www.obo-bettermann.com

Central technical hotline

Tel. +49 (0)23 73/89-1500
Fax +49 (0)23 73/89-1550
E-mail hotline@obo.de

OBO
BETTERMANN