

TBS



**Transient and lightning
protection systems
Export GmbH & Co KG**

2019/2020

Building Connections

OBO
BETTERMANN












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OBO Construct planning aids

Digital selection aids for earthing systems and surge protection

The OBO Construct electronic planning aids are programs developed to support electrical installation engineers and planners in the design of electrical installation systems. In particular, in complex areas such as surge protection and earthing, there are countless technical and standard general conditions to be observed. The two OBO Construct programs for earthing and surge protection systems should provide active help here. Systematic polls simplify the search for suitable products and guaranteed surge protection systems and earthing systems which fulfil the standards.

OBO Construct for earthing systems

The digital selection aid can be used for the easy planning and configuration of earthing systems. The simple and intuitive user guidance leads you through the individual components of the earthing system step by step. The software then automatically calculates the amounts required and the matching accessories. The application can be opened on any end device irrespective of its operating system – be it smartphone, tablet or desktop PC.

OBO Construct for surge protection

This online tool aids you in the project-orientated selection and connection of suitable surge protection systems and provides you with information on the OBO surge protection systems. You can create your personal materials list, connection diagram and invitation to tender texts quickly, efficiently and in a targeted manner for complete surge protection in the fields of energy technology, photovoltaics, telecommunication, MSR, TV, HF and data technology. The result can be exported easily into Excel format for further processing.

Benefits

- Work aid independent of time and place
- Transmit planning requirements to complete product systems
- Find suitable products quickly and simply
- Calculate material and parts lists automatically
- Download configuration results as Excel or Word files



Lightning protection guide. Safely routed.

Reference work and planning aid for electrical installation engineers and technical planners

At OBO Bettermann, we can look back on more than 90 years of experience in the field of lightning and surge protection. This experience and, of course, the latest standards and technical innovations have flowed into the company's new lightning protection guide. The brochure allows you to plan installations in the field of lightning and surge protection faster and more easily.

It contains a balanced mixture of both basic and expert knowledge, as well as planning and selection aids for the protection of buildings and systems.

The new lightning protection guide can be requested by calling +49 23 73 89 - 17 00 and is also available at the address below for download:

<http://obo.eu/Leitfaden>



Topics

- Basic principles
- The external lightning protection system
- Air-termination and down-conductor systems
- Examples and selection aids for wind load calculation conform with Eurocode 1+3
- Earthing systems with foundation earther to current DIN 18014
- The internal lightning protection system
- Equipotential bonding systems
- Overvoltage protection systems
- Current standards
- New selection and planning aids
- Examples



RAL

GÜTEZEICHEN



RAL-GZ 642/5

OBO TBS seminars: First-hand knowledge

With a comprehensive programme of training courses and seminars on the subject of surge voltage and lightning protection systems, OBO is able to support its customers with specialist knowledge from a single source. Alongside the basic theoretical principles, the programme also deals with practical implementation in everyday applications. Special calculation and application examples round off the comprehensive programme of knowledge transfer.

Invitations to tender on the Internet at www.ausschreiben.de

More than 10,000 entries from the cable support systems, fire protection systems, connection and fastening systems, transient and lightning protection systems, cable routing systems, device systems and underfloor systems can be recalled for free. Regular updates and extensions mean that you always have a comprehensive overview of the OBO products. All the current file formats (PDF, DOC, GAEB, HTML, TEXT, XML, ÖNORM) are available. www.ausschreiben.de

Invitations to tender, product information and data sheets

We can make life easier for you, with our comprehensive selection of materials designed for practical applications, which provide you with effective support with the planning and calculation of a project. These include:

- Invitations to tender
- Product information
- Data sheets
- Data sheets

Invitations to tender for lightning protection/earthing at the highest level:

OBO manufacturers products to RAL GZ642-5 and is dedicated to compliance with the RAL directives. Lightning protection and earthing products can be used for invitations to tender according to RAL.

These documents are continually updated and can be downloaded for free at any time from the Internet download area at www.obo-bettermann.com.





Customer service and credibility

Friendliness, reliability and competence create acceptance, credibility and lasting working relationships. These shared values arise from OBO's consistent orientation around the wishes and needs of its customers. Close partnerships with customers is OBO's foremost priority.

Help and advice

Answers to questions about products and installation, planning advice for complex projects – OBO's staff will help you through every phase of your project, no matter what field it is in. We are constantly improving the support we provide in every phase of collaboration, laying the foundations for genuine partnerships.

Speed and reliability

Optimised procedures and highly developed logistics ensure that OBO products are in the right place at the right time, anywhere in the world. OBO offers comprehensive support for large-scale projects, from planning all the way to installation.



Lightning protection guide

Free order and download from www.obo.de



- Production location
- Subsidiary
- Representative



Minor cause, major effect: Damage caused by surge voltages



Our dependency on electrical and electronic equipment continues to increase, in both our professional or private lives. Data networks in companies or emergency facilities such as hospitals and fire stations are lifelines for an essential real time information exchange. Sensitive databases, e.g. in banks or media publishers, need reliable transmission paths.

It is not only lightning strikes that pose a latent threat to these systems. More and more frequently, today's electronic aids are damaged by surge voltages caused by remote lightning discharges or switching operations in large electrical systems. During thunderstorms too, high volumes of energy are instantaneously released. These voltage peaks can penetrate a building through all manner of conductive connections and cause enormous damage.



Financial implications of lightning and surge voltage damage



Financial loss can only be considered in isolation in cases where no legal or insurance requirements relating to personal safety apply.

Substantial losses result from the destruction of electrical devices, notably:

- Computers and servers
- Telephone systems
- Fire alarm systems
- Monitoring systems
- Lift, garage door and roller shutter drives
- Consumer electronics
- Kitchen appliances

Further costs can also be incurred due to outages and consequential damage in relation to:

- Loss of data
- Production outage
- Loss of contactability (Internet, telephone, fax)
- Defective heating systems
- Costs due to faults and false alarms in fire and burglar alarm systems

Financial losses are on the rise

Current statistics and estimates of insurance companies show: Damage levels caused by surges – excluding consequential or outage costs – long since reached drastic levels due to the growing dependency on electronic "aids". It's no surprise, then, that property insurers are checking more and more claims and stipulating the use of devices to protect against surges. Information on protection measures can be found in e.g. the German Directive VDS 2010.

Year	Number of lightning and surge voltage damage cases	Paid damages for lightning and surge voltage damage
1999	490,000	€310 million
2006	550,000	€340 million
2007	520,000	€330 million
2008	480,000	€350 million
2009	490,000	€340 million
2010	330,000	€220 million
2011	440,000	€330 million
2012	410,000	€330 million
2013	340,000	€240 million
2014	410,000	€340 million
2015	350,000	€240 million
2016	300,000	€210 million

Number of instances of damage from lightning and surge voltages and amounts paid out by home and contents insurance companies; source: GDV · Extrapolation based on industry and risk statistics; numbers rounded to the nearest 10,000 or €10 million.



Lightning and surge protection standards

When planning and executing a lightning protection system, it is necessary to observe all relevant national annexes and take account of any special circumstances or applications and the safety stipulations in the relevant country-specific supplements.

A lightning and surge protection system consists of several systems, each tailored to each of the others. At its most basic, a lightning and surge protection system consists of one internal and one external lightning protection system.

These, in turn, can be categorised as follows:

- Air-termination devices
- Down-conductors
- Earthing systems
- Area shielding
- Separation distance
- Lightning protection equipotential bonding system

These systems must be carefully selected for the application at hand, and used in a coordinated way. Installation of the systems takes place according to various application and product standards. The supplements to the international IEC guidelines and harmonised European versions of the various country-specific translations often contain additional informative information specific to the country in question.

Product standards

To ensure that the components can withstand the loads to which they are likely to be exposed in application, they must be checked against the respective product standard for external and internal lightning protection.



External and internal lightning protection systems



Standard	German supplement	Contents
VDE 0185-305-1 (IEC 62305-1)		Protection against lightning – Part 1: General principles
VDE 0185-305-2 (IEC 62305-2)		Protection against lightning – Part 2: Risk management
	1	Lightning risk in Germany
	2	Calculation aids for estimating the risk of damage for buildings
	3	Additional information on use of EN 62305-2
VDE 0185-305-3 (IEC 62305-3)		Protection against lightning – Part 3: Protection of structures and people
	1	Additional information on use of EN 62305-3
	2	Additional information for building structures
	3	Additional information for the testing and servicing of lightning protection systems
	4	Use of metal roofs in lightning protection systems
	5	Lightning and surge protection in PV power supply systems
VDE 0185-305-4 (IEC 62305-4)		Protection against lightning – Part 4: Electrical and electronic systems within structures
	1	Distribution of the lightning current
VDE 0675-6-11 (IEC 0675-6-11)		Low-voltage surge protection devices – Part 11: Surge protection devices connected to low-voltage power systems
VDE 0100-534 (IEC 60364-5-53)		Low-voltage electrical installations - Part 5-53: Selection and erection of electrical equipment – Isolation, switching and control – Clause 534: Devices for protection against surge voltages
VDE 0100-443 (IEC 60364-4-44)		Low-voltage electrical installations – Part 4-44: Protection for safety – Protection against voltage disturbances and electromagnetic disturbances – Clause 443: Protection against surge voltages of atmospheric origin or due to switching
VDE 0100-712 (IEC 60364-7-712)		Requirements for operational premises, special rooms and systems – Solar photovoltaic (PV) power supply systems

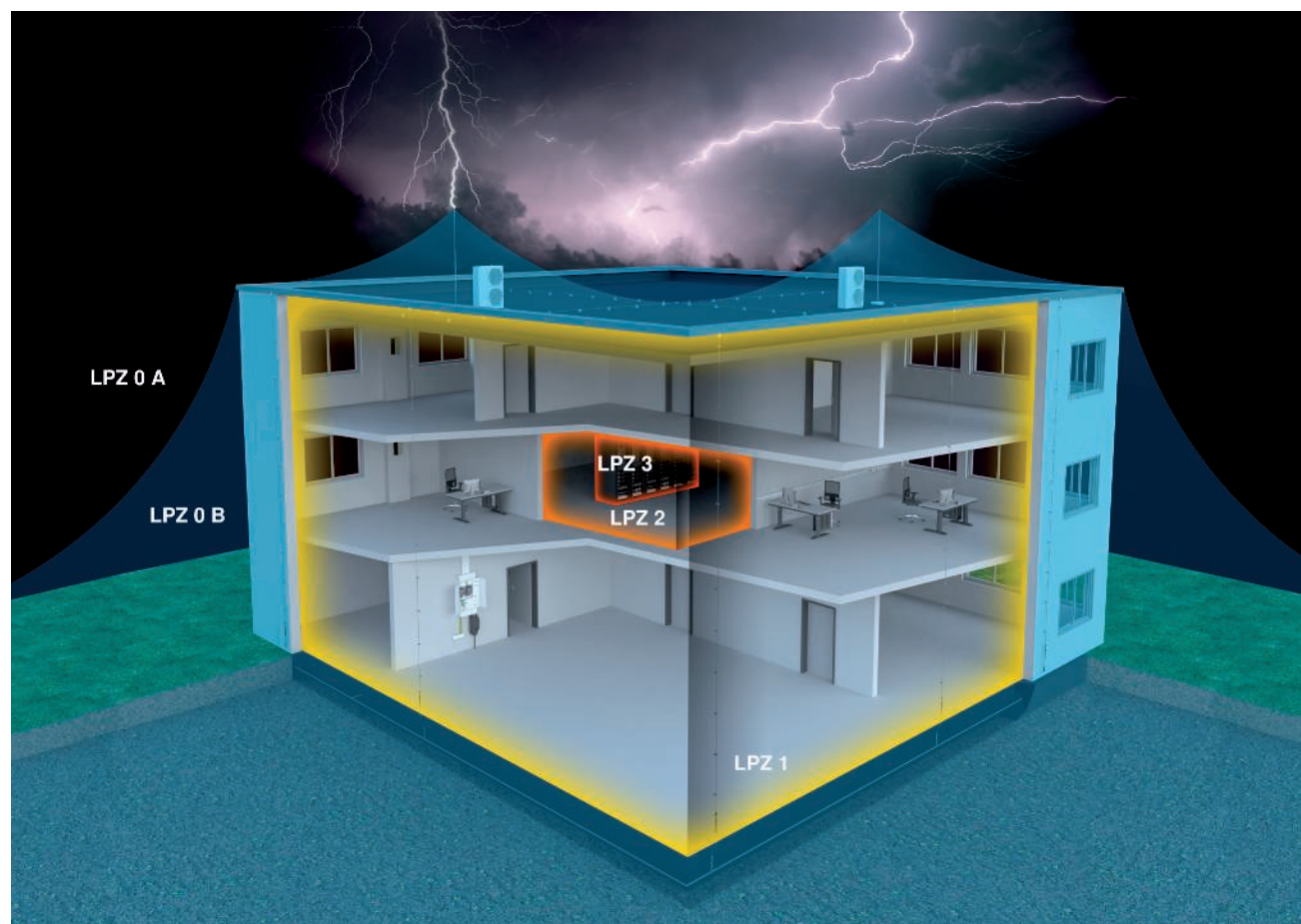
Key lightning protection standards and specifications

Product standards	Contents
VDE 0185-561-1 (IEC 62561-1)	Lightning protection system components – Requirements for connection components
VDE 0185-561-2 (IEC 62561-2)	Lightning protection system components – Requirements for conductors and earthers
VDE 0185-561-3 (IEC 62561-3)	Lightning protection system components – Requirements for spark gaps
VDE 0185-561-4 (IEC 62561-4)	Lightning protection system components – Requirements for holders
VDE 0185-561-5 (IEC 62561-5)	Lightning protection system components – Requirements for inspection boxes and earther penetrations
VDE 0185-561-6 (IEC 62561-6)	Lightning protection system components – Requirements for lightning strike counters
VDE 0185-561-7 (IEC 62561-7)	Lightning protection system components – Requirements for earthing enhancing compounds
IEC TS 62561-8	Lightning protection system components – Requirements for components for insulated lightning protection systems
VDE 0675-6-11 (IEC 61643-11)	Surge protection devices for use in low-voltage power systems – Requirements and test methods
VDE 0845-3-1 (IEC 61643-21)	Surge protection for use in telecommunications and signalling networks

Lightning protection and surge protection components



Gradual surge reduction with lightning protection zones



Lightning protection zone concept

The lightning protection zone concept described in international standard IEC 62305-4 (DIN VDE 0185 Part 4) has proved to be practical and efficient. This concept is based on the principle

of gradually reducing surges to a safe level before they reach the terminal device and cause damage. In order to achieve this situation, a building's entire energy network is split into lightning protection zones (LPZ = Lightning Protection Zone). Installed at each

transition from one zone to another is a surge arrester for equipotential bonding. These arrestors correspond to the requirement class in question.

Lightning protection zone




LPZ 0 A	Unprotected zone outside the building. Direct lightning strike, no shielding against electromagnetic interference pulses LEMP (Lightning Electromagnetic Pulse).
LPZ 0 B	Through the area protected by the external lightning protection system. No shielding against LEMP.
LPZ 1	Zone inside the building. Low partial lightning energies possible.
LPZ 2	Zone inside the building. Low surges possible.
LPZ 3	Zone inside the building (can also be the metal housing of a consumer). No interference pulses through LEMP or surges present.

Choosing the right surge protection devices



The classification of surge protection devices into types means they can be matched to different requirements with regard to location, protection level and current-carrying capacity. The table provides an

overview of the zone transitions. It also shows which OBO surge protection devices can be installed in the energy supply network and their respective function.

Zone transition	Protection device and device type	Product example	Product figure
LPZ 0 B to LPZ 1	Protection device for lightning protection equipotential bonding in accordance with VDE 0185-305 (IEC 62305) for direct or close lightning strikes. Devices: Type 1+2 (Class I+II), e.g. CCF Compact Max. protection level according to standard: 1.5 kV OBO protection level: < 1.5 kV Installation e.g. in the main distributor/at building entry	MCF Compact Item no.: 5096987	
LPZ 1 to LPZ 2	Protection device for lightning protection equipotential bonding in accordance with VDE 0185-305 (IEC 62305) for direct or close lightning strikes. Devices: Type 2 (Class II), e.g. V20 Max. protection level according to standard: 1.5 kV OBO protection level: < 1.3 kV Installation e.g. in the main distributor/at building entry	V20 Item no.: 5095253	
LPZ 2 to LPZ 3	Protection device, designed for surge protection of portable consumers at sockets and power supplies. Devices: Type 3 (Class III), e.g. ÜSM-A Max. protection level according to standard: 1.5 kV OBO protection level: < 1.3 kV Installation e.g. on the end consumer	ÜSM-A Item no.: 5092451	



BET – testing centre for lightning protection, electrical engineering and support systems



Lightning current generator

BET with countless tasks

Whereas previously only lightning current, environmental and electrical testing had been possible at BET, the BET Test Centre is now also a competent partner for the testing of cable support systems. This combination has made it necessary to revise the meaning of the name. If BET previously stood for "Blitzschutz- und EMV-Technologiezentrum" (Lightning protection and EMC technology centre), since 2009 these letters have meant BET Test Centre for lightning protection, electrical engineering and support systems.

Test generator for lightning current tests

The test generator planned in 1994 and completed in 1996 makes it possible to carry out lightning current tests at up to 200 kA. The generator was planned and constructed in cooperation with Soest Technical College. Due to the intensive planning and scientific support in the construction of the test system, it has worked for 20 years without errors and meets current standardised test requirements.

Testing tasks

The main load of the testing generator is generated through the testing of products from the TBS product division. For this, developmental tests of new developments, modifications to existing OBO products and also comparison tests with competitive products are carried out. These include lightning protection components, surge protection devices and lightning arrestors. Tests for lightning protection components are carried out according to DIN EN 62561-1, for spark gaps according to DIN EN 62561-3 and for lightning and surge protection devices according to DIN EN 61643-11. This is only a small amount of the testing standards used for tests in the BET Test Centre.

Certification

In development, manufacture and marketing, the products of OBO Bettermann are subject to high, standardised quality standards and international standards. For decades now, OBO Bettermann has operated ISO 9001-certified quality management, which also fulfils the high requirements of the ATEX 2014/34/EU directive for EX products. In addition, OBO has run certified energy management according to ISO 50001 and is a long-standing member of Industrieverband Feuerverzinken e.V.

The BET Test Centre is a testing laboratory, recognised and certified by VDE, for the execution of countless international standards for lighting protection systems.



Industrieverband Feuerverzinken e.V. Postfach 140461 - 40094 Düsseldorf

Confirmation

Herewith we confirm, that

OBO BETTERMANN GmbH & Co. KG
Hüngser Ring 52
58710 Menden

is a member of our association

Industrieverband Feuerverzinken e.V., Düsseldorf.

The company OBO BETTERMANN GmbH & Co. KG provides among other things corrosion protection for fabricated iron and steel articles by hot dip galvanizing and examines that business in accordance with the requirements of the standard

DIN EN ISO 1461
"Hot dip galvanized coatings on fabricated iron and steel articles - specifications and test methods".

Industrieverband Feuerverzinken e.V. Düsseldorf, February 3rd, 2017
- Director -

Industrieverband Feuerverzinken e.V.
Hörnsbächer-Weg 200
40470 Düsseldorf

Mark Huckahold

Mitglied der European General Galvanizers Association EGGA - BIC DEU1 DE1820UE - IBAN DE42 3007 0024 0589 1643 00

Zertifikat zur Anerkennung
Certificate of acceptance

von / of
OBO Bettermann GmbH & Co. KG
BET Testcenter
Hüngser Ring 52
58710 Menden
GERMANY

durch die / by the
VDE Prüf- und Zertifizierungsinstitut GmbH
VDE Testing and Certification Institute

Zertifikat
Mitteilung über die Bewertung des Qualitätssicherungssystems

1. Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen
Richtlinie 2014/34/EU
Anhang IV - Modul D: Konformität mit dem Baumuster auf der Grundlage einer Qualitätssicherung bezogen auf den Produktionsprozess
Anhang VII - Modul E: Konformität mit dem Baumuster auf der Grundlage der Qualitätssicherung bezogen auf das Produkt

2. Nummer des Zertifikates: **BVS 16 ATEX ZQS/E310**

3. Produktkategorie: **Geräte und Komponenten**
Gerätegruppe II, Kategorien 1G, 2G: Transienten- und Blitzschutz-Systeme

4. für das / for the
Acceptance Program
Stufe 2 / in Stage 2
40046136
2019-08-22
5022908-9501-0001/237781

in mit dem gültigen Dokument „TDAP SCOPE“. Es berechtigt den Inhaber des geschützten Zeichens des VDE, sein Produkt mit dem gültigen Dokument „TDAP SCOPE“ zu versehen. Es ist nicht zulässig, VDE-Marken zu verwenden.

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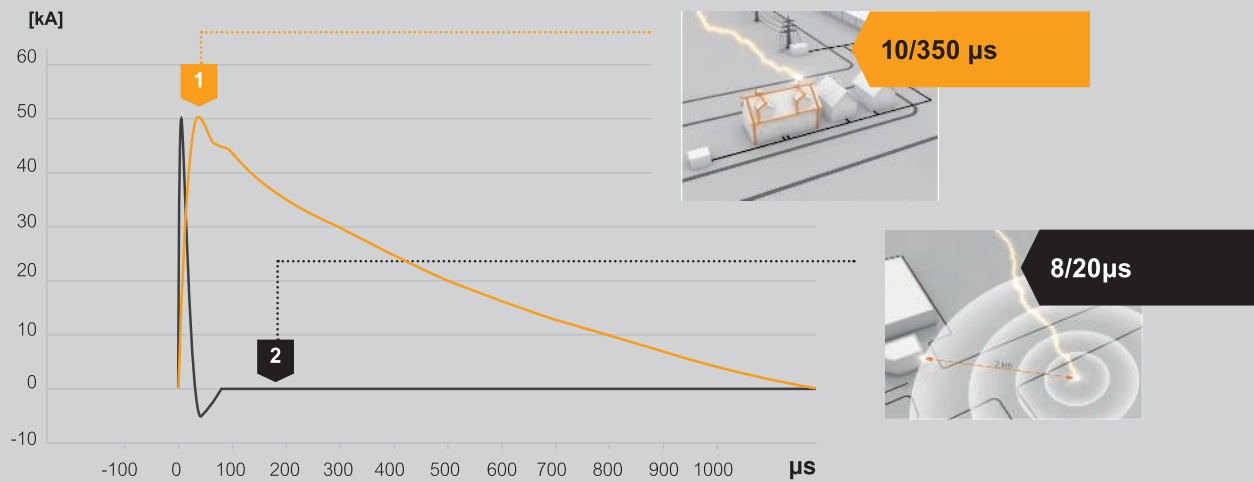
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OBO Bettermann GmbH & Co. KG, Hüngser Ring 52, 58710 Menden
OBO Bettermann Hungary Kft., Alsóvárosi 2, 2347 Bogyi, Ungarn

DEKRA EXAM GmbH, benannte Stelle Nr. 0158 gemäß Artikel 17 der Richtlinie 2014/34/EU vom 26. Februar 2014, bescheinigt, dass der Hersteller ein Qualitätssicherungssystem in Übereinstimmung mit Anhang IV der Richtlinie eingerichtet hat. Die Anlage werden alle überwachten Produkte mit den Baumusterprüfprotokollen im Auditbericht Nr. ZQS/E310/16, ausgestellt am 21.12.2016, und den Nachschauaudits des Qualitätssicherungssystems werden Bestandteil dieses Zertifikats sein. Das Zertifikat ist ab dem 20.08.2016 bis 19.08.2019 und kann zurückgezogen werden, wenn die Anforderungen an die Qualitätssicherung nach Anhang IV und VII erfüllt sind. Die Richtlinie 2014/34/EU ist hinter der CE-Kennzeichnung die Kennnummer der benannten Stelle anzugeben, die in der Phase der Produktion verwendet wird.

Fachzertifizierer

Siehe Seite 1 von 1
Zertifikat darf nur vollständig und unverändert weitergegeben werden.
Tel: +49 234 3099-100, Fax: +49 234 3099-110, zcert@vde.com

VDE
INSTITUT



- | | |
|----------|--|
| 1 | Pulse shape 1: Direct lightning strike, 10/350 µs simulated lightning pulse |
| 2 | Pulse shape 2: Remote lightning strike or switching operation, 8/20 µs simulated current pulse (surge voltage) |

Types of pulse and their characteristics

Testing types for lightning and surge protection

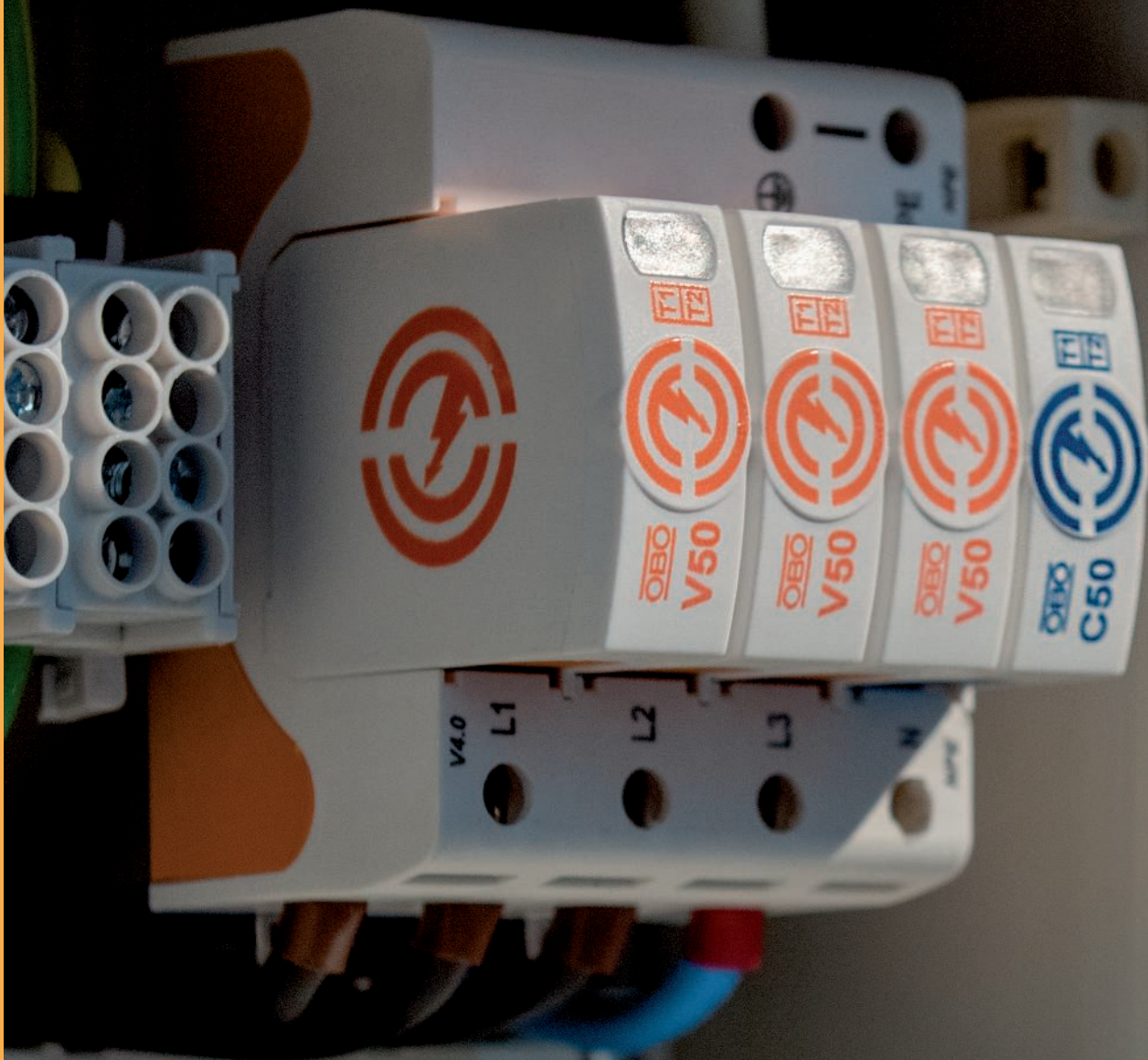
Both lightning current tests and surge voltage tests can be carried out at up to 20 kV. A hybrid generator is used for these tests, which was also developed as part of a cooperation with the Soest Technical College. EMC testing of cable support systems can also be carried out using this test generator. All kinds of cable routing and cable support systems of up to 8 m length can be tested without any difficulties. Tests for electrical conductivity according to IEC 61537 are also carried out.

Simulation of real environmental conditions

To carry out standardised tests on components intended for external use, they must be pretreated under real environmental conditions. This takes place in a salt spray trough and a sulphur dioxide testing chamber. Depending on the test, the test length and the concentration of the salt spray or sulphur dioxide in the testing chambers may vary. This means that it is possible to conduct tests according to IEC 60068-2-52, ISO 7253, ISO 9227 and EN ISO 6988.

Testing cable support systems

The well-known KTS testing system, newly installed in the BET Test Centre, allows the investigation of the load capacities of any cable support system manufactured by OBO. The basis for this is IEC 61537 and VDE 0639. In the BET Test Centre, OBO Bettermann has a testing department in which products can be tested according to standards, even during the development phase.



Diese Anlage ist mit
Überspannungsschutzgeräten
ausgerüstet.

OBO
BETTERMANN

Bei Isolationsmessungen bitte die OBO
Schutzmodule herausziehen bzw.
abklemmen.

System contains overvoltage protection
devices. Please remove or disconnect the
OBO protectors during isolation tests.

Mod. Nr. 4100 0303

Surge protection energy technology, arrester type 1+2

	Combination arrester MCF Compact	21
	MCD combination arrester	24
	Combination arrester in VG housing	31
	V50 combination arrester	42
	Accessories, upper parts and bases	72



Surge protection energy technology, arrester, type 1+2

- Type 1+2 SPD: $I_{imp} = 25$ kA per pole and up to 100 kA in total
- Protection level: < 1.5 kV, usable in coordination with type 3 SPD
- Usable in buildings with lightning protection class 1–4
- Quality according to EN 61643-11 certified by an external testing institute
- Universally usable for industry, offices, commercial and residential buildings
- System protection up to 315 A usable without separate fusing
- Remote signalling, potential-free changeover (RS)
- Variants in three to three-pole+NPE versions
- Operating instructions always available online via QR code
- Space savings of up to 25% (compared to MCD variant)



LightningController
Compact

LightningController Compact - MCF100



Type	Highest continuous voltage		Protection rating	Pack. pcs.	Weight		Item No.
	AC V	Pole version			kg/100 pcs.	pcs.	
MCF100-3+NPE+FS	255	3+N/PE	IP20	1	93.500	5096987	

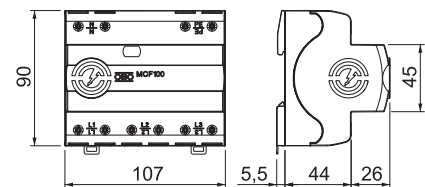
Combination arrester, lightning current and surge arrester, type 1+2

- Protection level < 1.5 kV
- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity to 100 kA (10/350), 3+NPE
- Line following current quenching 50 kA I_{peak}, arrester backup fuse to 315 A gL/gG
- Fulfils the requirements of the VDEW directive and E VDE-AR-N 4100 for use in pre-meter area
- Encapsulated, non-extinguishing spark gap arrester for use in distributor housings

Application: Industrial systems and buildings with external lightning protection of the highest class I to IV.



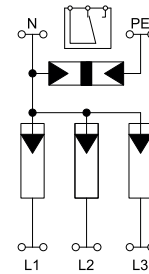
Dimensions



MCF100-3+NPE+FS

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U _n 230 V
Maximum continuous voltage AC	U _c 255 V
Nominal discharge current (8/20 μs)	I _n / I _N 35 kA
Maximum discharge current (8/20 μs)	I _{max} 50 kA
Lightning surge current (10/350 μs)	I _{imp} 25 kA
Total discharge current (10/350)	I _{total} 100 kA
Arrester surge current (8/20 μs) [total]	I _{total} 100 kA
Protection level [L-N]	U _p 1.5 kV
Max. mains-side overcurrent protection	315
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T _u -40 - +80 °C
Protection rating	IP20
Approvals	VDE
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	1.5 - 35 AWG
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 AWG

Connection options



LightningController Compact for TN-C networks

LightningController Compact - MCF75



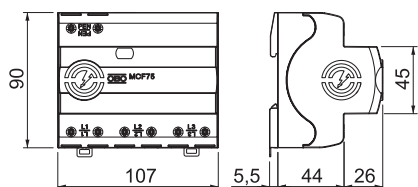
Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
MCF75-3+FS	255	3	IP20	1	75.000	5096981

Combination arrester, lightning current and surge arrester, type 1+2

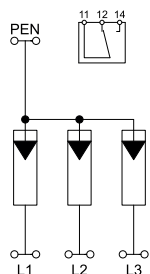
- Protection level < 1.5 kV
- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity to 75 kA (10/350), 3-pole
- Line following current quenching 50 kA I_{peak}, arrester backup fuse to 315 A gL/gG
- Fulfills the requirements of the VDEW directive and E VDE-AR-N 4100 for use in pre-meter area
- Encapsulated, non-extinguishing spark gap arrester for use in distributor housings

Application: Industrial systems and buildings with external lightning protection of the highest class I to IV.

Dimensions



Connection options



MCF75-3+FS

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U _n 230 V
Maximum continuous voltage AC	U _c 255 V
Nominal discharge current (8/20 μs)	I _n / I _N 35 kA
Maximum discharge current (8/20 μs)	I _{max} 50 kA
Lightning surge current (10/350 μs)	I _{imp} 25 kA
Total discharge current (10/350)	I _{total} 75 kA
Arrester surge current (8/20 μs) [total]	I _{total} 75 kA
Max. mains-side overcurrent protection	315
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T _u -40 - +80 °C
Protection rating	IP20
Approvals	VDE
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	1.5 - 35 AWG
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 AWG



Surge protection device for energy technology, arrester, type 1 (industry)

- Type 1+2 SPD – VDE-tested
- Connectable lightning current and surge arrestors
- High arresting capacity up to 50 kA (10/350) per pin
- Combination arrestors for buildings with lightning protection system
- Simple standard DIN rail mounting
- Labelled connections
- Usable in systems with lightning protection class 1–4



Combination arrestors and lightning arrestors

The combination lightning current arrestors MCD 50 meet the type 1 requirement class according to IEC 61643-11. These devices protect low-voltage consumer systems

from overvoltages of all types and are available in single-pole to four-pole versions. The voltage-limiting, high-performance spark gaps provide several benefits. A short

response time, a low protection level and high current leakage capability with long service life.



Combination arrester MCD, type 1+2, 255 V, for TN-S and TT networks

Combination arrester, 3-pole + NPE

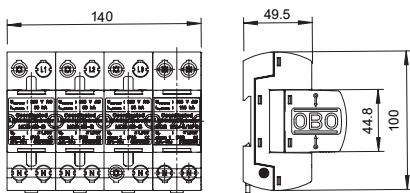


Type	Highest continuous voltage V	Version	Pack. pcs.	Weight kg/100 pcs.	Item No.
MCD 50-B 3+1	255	3 + NPE	1	168.000	5096879

Combination arrester, lightning current arrester, type 1+2, 4-pole, for use in TT and TN-S networks.

Completely pre-terminated and ready for connection, consisting of:
 3 x MCD 50-B: Coordinated lightning current arrester, type 1+2 to EN 61643-11 and
 1 x MCD 125-B/NPE: Coordinated N-PE spark gap, type 1+2 to EN 61643-11. For interface 0 to 2 (LPZ) in accordance with lightning protection zone concept to IEC 61312-1 and/or VDE 0185-305.

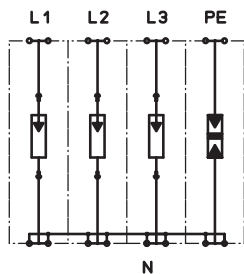
Dimensions



- Lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity to 50 kA (10/350) per pole and up to 125 kA (10/350) in total
- Protection level < 1.7 kV allows device protection
- Short-circuit resistance 10 kA, arrester backup fuse to 500 A gL/gG
- Suitable for use in pre-meter area according to the VDEW directive
- Encapsulated, non-extinguishing spark gap

Application: Industrial systems and buildings with external lightning protection of the highest class I to IV.

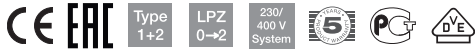
Connection options



MCD 50-B 3+1

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	255 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I_{imp}	50 kA
Total discharge current (10/350)	I_{total}	125 kA
Nominal discharge current (8/20)	I_n	50 kA
Arrester surge current (8/20) [total]	$I_{Total 8/20}$	125 kA
Voltage protection level	U_n	< 1,7 kV
Protection level (N-PE)		< 1,5 kV
Response time	t_A	<100 ns
Follow current quenching capacity leff	$I_{n,eff}$	10 kA
Follow current quenching capacity (eff) [N-PE]	$I_{n,eff}$	0.1 kA
Maximum back-up fuse		500 A
Temperature range	ϑ	-40 - +85 °C
Division unit TE (17.5 mm)		8
Protection rating		IP20
Approvals		VDE
Connection cross-section rigid		10 - 50 mm ²
Connection cross-section, multi-wire		10 - 35 mm ²
Connection cross-section, flexible		10 - 25 mm ²

Combination arrester, 3-pole + NPE with function display



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
MCD 50-B 3+1-OS	255	3 + NPE	1	172.000	5096836

Combination arrester, type 1+2, 4-pole, with visual function display, for use in TN-S and TT networks.

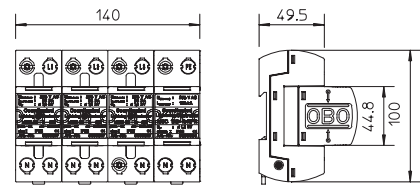
Completely pre-terminated and ready for connection, consisting of:
 3 x MCD 50-B_OS: Type 1+2 (Class B) coordinated lightning current arrester EN 61643-11.
 1 x MCD 125-B/NPE: Coordinated N-PE spark gap, type 1+2 EN 61643-11 for use in TN-S and TT systems.
 Interface 0 to 1 according to lightning protection zone concept according to IEC 61312-1 and VDE 0185-305.

- Lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity to 50 kA (10/350) per pole and up to 125 kA (10/350) in total
- Protection level < 1.7 kV allows device protection
- Short-circuit resistance 10 kA, arrester backup fuse to 500 A gL/gG
- Power consumption < 26 mW/pole
- Suitable for use in pre-meter area according to the VDEW directive
- Encapsulated, non-extinguishing spark gap

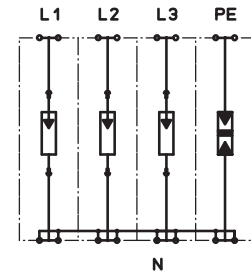
Application: Industrial systems and buildings with external lightning protection of Classes I to IV.



Dimensions



Connection options



MCD 50-B 3+1-OS

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	255 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class I+II
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I_{imp}	50 kA
Total discharge current (10/350)	I_{total}	125 kA
Nominal discharge current (8/20)	I_n	50 kA
Arrester surge current (8/20) [total]	$I_{Total 8/20}$	125 kA
Voltage protection level	U_p	< 1,7 kV
Protection level (N-PE)		< 1,5 kV
Response time	t_A	<100 ns
Follow current quenching capacity leff	$I_{fi\ eff}$	10 kA
Follow current quenching capacity (eff) [N-PE]	I_{fi}	0.1 kA
Maximum back-up fuse		500 A
Temperature range	ϑ	-40 - +85 °C
Division unit TE (17.5 mm)		8
Protection rating		IP20
Approvals		VDE
Connection cross-section rigid		10 - 50 mm ²
Connection cross-section, multi-wire		10 - 35 mm ²
Connection cross-section, flexible		10 - 25 mm ²



Combination arrester MCD, type 1+2, 255 V, for TN-C networks

Combination arrester, 3-pole



Type	Highest continuous voltage V	Version	Weight		Item No.
			Pack. pcs.	kg/100 pcs.	
MCD 50-B 3	255	3-pole	1	117.000	5096877

Combination arrester, lightning current arrester, type 1+2, 3-pole, for use in TN-C networks.

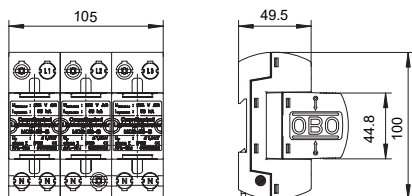
Completely pre-terminated and ready for connection, consisting of:

3 x MCD 50-B: Type 1+2 (Class B) coordinated lightning current arrester EN 61643-11. For interface 0 to 2 (LPZ) in accordance with lightning protection zone concept to IEC 61312-1 and/or VDE 0185-305.

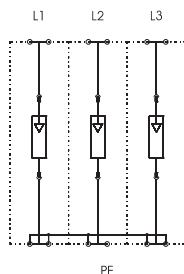
- Lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity to 50 kA (10/350) per pole and up to 150 kA (10/350) in total
- Protection level < 1.7 kV allows device protection
- Short-circuit resistance 10 kA, arrester backup fuse to 500 A gL/gG
- Suitable for use in pre-meter area according to the VDEW directive
- Encapsulated, non-extinguishing spark gaps

Application: Industrial systems and buildings with external lightning protection of the highest class I to IV.

Dimensions



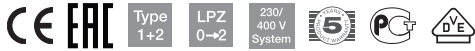
Connection options



MCD 50-B 3

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class I+II
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I_{imp}	50 kA
Total discharge current (10/350)	I_{total}	150 kA
Nominal discharge current (8/20)	I_n	50 kA
Arrester surge current (8/20) [total]	$I_{Total 8/20}$	150 kA
Voltage protection level	U_n	< 1,7 kV
Response time	t_A	<100 ns
Follow current quenching capacity left	$I_{fi eff}$	10 kA
Maximum back-up fuse		500 A
Temperature range	ϑ	-40 - +85 °C
Division unit TE (17.5 mm)		6
Protection rating		IP20
Approvals		VDE
Connection cross-section rigid		10 - 50 mm ²
Connection cross-section, multi-wire		10 - 35 mm ²
Connection cross-section, flexible		10 - 25 mm ²

Combination arrester, 3-pole with function display



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
MCD 50-B 3-OS	255	3-pole	1	118.000	5096835

Combination arrester set, type 1+2, 3-pole, with visual function display, for use in TN-C networks:

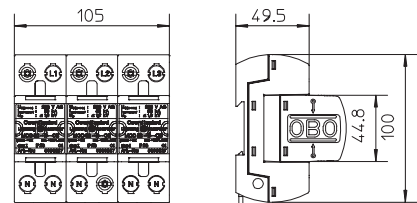
Completely pre-terminated and ready for connection, consisting of:
 3 x MCD 50-B-OS: Type 1+2 coordinated lightning current arrestors to DIN EN 61643-11. For interface 0 to 2 (LPZ) in accordance with lightning protection zone concept to IEC 61312-1 and/or VDE 0185-305.

- Lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity to 50 kA (10/350) per pole and up to 150 kA (10/350) in total
- Protection level < 1.7 kV allows device protection
- Short-circuit resistance 10 kA, arrester backup fuse to 500 A gL/gG
- Power consumption < 26 mW/pole
- Suitable for use in pre-meter area according to the VDEW directive
- Encapsulated, non-extinguishing spark gaps

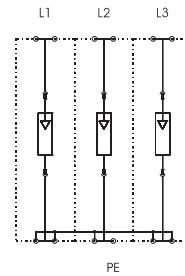
Application: Industrial systems and buildings with external lightning protection of Classes I to IV.



Dimensions



Connection options



MCD 50-B 3-OS

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class I+II
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I_{imp}	50 kA
Total discharge current (10/350)	I_{total}	150 kA
Nominal discharge current (8/20)	I_n	50 kA
Arrester surge current (8/20) [total]	$I_{Total R/20}$	150 kA
Voltage protection level	U_n	< 1,7 kV
Response time	t_A	<100 ns
Follow current quenching capacity leff	$I_{fi\ eff}$	10 kA
Maximum back-up fuse		500 A
Temperature range	ϑ	-40 - +85 °C
Division unit TE (17.5 mm)		6
Protection rating		IP20
Approvals		VDE
Connection cross-section rigid		10 - 50 mm ²
Connection cross-section, multi-wire		10 - 35 mm ²
Connection cross-section, flexible		10 - 25 mm ²





Combination arrester MCD, type 1+2, 255 V

Combination arrester, 1-pole

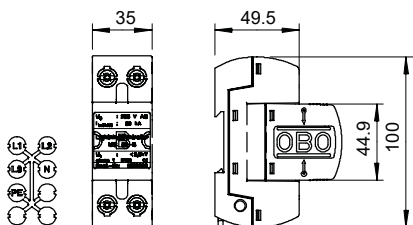


Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
MCD 50-B	255	1-pole	1	34.400	5096849

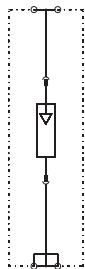
Combination arrester, lightning current arrester, type 1+2, for use in TN and TT networks

- Lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity to 50 kA (10/350) per pole and up to 150 kA (10/350) in total
- Protection level < 1.7 kV allows device protection
- Short-circuit resistance 10 kA, arrester backup fuse to 500 A gL/gG
- Suitable for use in pre-meter area according to the VDEW directive
- Encapsulated, non-extinguishing spark gaps

Dimensions



Connection options

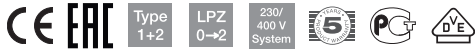


Application: Industrial systems and buildings with external lightning protection of Classes I to IV.

MCD 50-B

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class I+II
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I_{imp}	50 kA
Total discharge current (10/350)	I_{total}	50 kA
Nominal discharge current (8/20)	I_n	50 kA
Arrester surge current (8/20) [total]	$I_{total 8/20}$	50 kA
Voltage protection level	U_n	< 1,7 kV
Response time	t_A	<100 ns
Follow current quenching capacity leff	$I_{fi\ eff}$	10 kA
Maximum back-up fuse		500 A
Temperature range	ϑ	-40 - +85 °C
Division unit TE (17.5 mm)		2
Protection rating		IP20
Approvals		VDE
Connection cross-section rigid		10 - 50 mm ²
Connection cross-section, multi-wire		10 - 35 mm ²
Connection cross-section, flexible		10 - 25 mm ²

Combination arrestor, 1-pole with function display



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
MCD 50-B-OS	255	1-pole	1	34.800	5096852

Combination arrestor, type 1+2, 1-pole, for use in TN and TT networks:

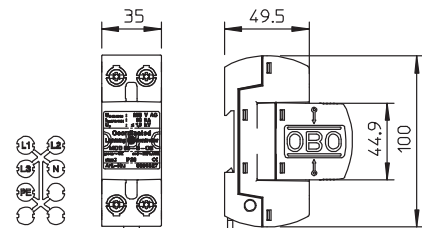
MCD 50-B-OS: Coordinated lightning current arrestor, Type 1 (Class B) to EN 61643-11 with visual function display. For interface 0 to 2 (LPZ) in accordance with lightning protection zone concept to IEC 61312-1 and/or DIN VDE 0185-305.

- Arresting capacity 50 kA (10/350 μs) per pole
- Power consumption < 26 mW/pole
- Protection level < 1.3 kV
- Line follow current quenching 25 kA Ipeak
- Incl. plug caps for identifying the connections
- Encapsulated, non-extinguishing spark gap
- Can be used in standard distributor housings.

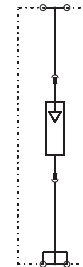
Application: Compact surge protection concepts and installations in a distributor.



Dimensions



Connection options



MCD 50-B-OS

Nominal voltage	U_N	230 V
		—
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class I+II
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I_{imp}	50 kA
Total discharge current (10/350)	I_{total}	50 kA
Nominal discharge current (8/20)	I_n	50 kA
Arrestor surge current (8/20) [total]	$I_{Total R/20}$	50 kA
Voltage protection level	U_p	< 1,7 kV
Response time	t_A	<100 ns
Follow current quenching capacity Ieff	$I_{fi\ eff}$	10 kA
Maximum back-up fuse		500 A
Temperature range	ϑ	-40 - +85 °C
Division unit TE (17.5 mm)		2
Protection rating		IP20
Approvals		VDE
Connection cross-section rigid		10 - 50 mm ²
Connection cross-section, multi-wire		10 - 35 mm ²
Connection cross-section, flexible		10 - 25 mm ²



Combination arrester MCD, type 1+2, 255 V for TN-S and TT networks

Combination arrester, 1-pole NPE



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
MCD 125-B NPE	255	NPE	1	46.500	5096865

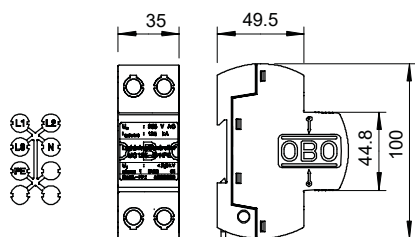
Combination arrester, lightning current arrester, type 1+2, N-PE, for use in TN-S and TT networks.

MCD 125-B/NPE: Coordinated N-PE spark gap, type 1+2 to EN 61643-11. For interface 0 to 2 (LPZ) in accordance with lightning protection zone concept to IEC 61312-1 and/or VDE 0185-305.

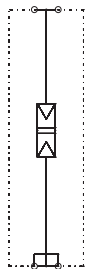
- Arresting capacity 125 kA (10/350 μ s)
- Conforms to VDN Directive 2nd Edition 2004
- Incl. plug caps for identifying the connections
- Protection level < 1.5 kV, allows device protection
- Encapsulated, non-extinguishing spark gap

Application: Industrial systems and buildings with external lightning protection of Classes I to IV.

Dimensions



Connection options



MCD 125-B NPE

Nominal voltage	U_N	230 V
SPD to EN 61643-11		—
SPD to IEC 61643-11		Type 1+2
Lightning protection zone LPZ		Class I+II
Impulse discharge current (10/350)	I_{imp}	0→2
Total discharge current (10/350)	I_{total}	125 kA
Nominal discharge current (8/20)	I_n	125 kA
Arrester surge current (8/20) [total]	$I_{Total 8/20}$	125 kA
Protection level (N-PE)		< 1,5 kV
Response time	t_A	<100 ns
Follow current quenching capacity (eff) [N-PE]	I_{fi}	0.1 kA
Temperature range	ϑ	-40 - +85 °C
Division unit TE (17.5 mm)		2
Protection rating		IP20
Approvals		VDE
Connection cross-section rigid		10 - 50 mm ²
Connection cross-section, multi-wire		10 - 35 mm ²
Connection cross-section, flexible		10 - 25 mm ²

VG housing with MCD 50-B/3+1



Type	Highest continuous voltage V	Version	Pack. pcs.	Weight kg/100 pcs.	Item No.
MCD 50-B 3+1-VG	255	3 + NPE	1	290.000	5096875

Combination arrester, pre-installed in IP65 housing for use in TN-S and TT networks.

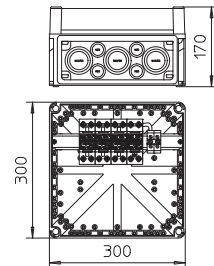
VG...: Lightning arrester system solution type 1+2 according to DIN EN 61643-11.

- LightningController MCD 50-B and MCD 125-B/NPE mounted in insulating housing IP 65, sealable housing
- Pulsed current 125 kA (10/350 μ s), BET-tested
- Conforms to requirements of VDN Directive
- Protection level < 1.7 kV (L-N) and < 1.5 kV (N-PE)
- Enclosed, non-extinguishing discharge gap
- Suitable for TN-S and TT network systems

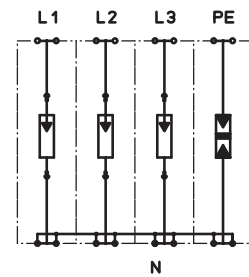
Application example: The system solution is used in the pre-meter area according to VDN Directive.



Dimensions



Connection options



MCD 50-B 3+1-VG

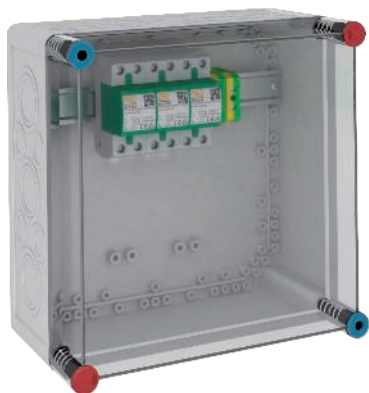
Nominal voltage	U_N	230 V
SPD to EN 61643-11		—
SPD to IEC 61643-11		Type 1+2
Lightning protection zone LPZ		Class I+II
Impulse discharge current (10/350)	I_{imp}	50 kA
Total discharge current (10/350)	I_{total}	125 kA
Nominal discharge current (8/20)	I_n	50 kA
Arrestor surge current (8/20) [total]	$I_{Total 8/20}$	125 kA
Voltage protection level	U_p	< 1,7 kV
Protection level (N-PE)		< 1,5 kV
Response time	t_A	<100 ns
Follow current quenching capacity leff	$I_{fi\ eff}$	10 kA
Follow current quenching capacity (eff) [N-PE]	I_{fi}	25 kA
Maximum back-up fuse		500 A
Temperature range	ϑ	-40 - +85 °C
Division unit TE (17.5 mm)		8
Protection rating		IP54
Connection cross-section rigid		10 - 50 mm ²
Connection cross-section, multi-wire		10 - 35 mm ²
Connection cross-section, flexible		10 - 25 mm ²





Combination arrester in VG housing, for TN-C networks

VG housing with MCD 50-B/3



Type	Highest continuous voltage V	Version	Pack. pcs.	Weight kg/100 pcs.	Item No.
MCD 50-B 3-VG	255	3-pole	1	315.000	5096874

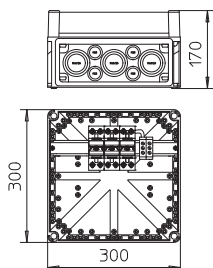
Combination arrester, pre-installed in IP65 housing for use in TN-C networks.

VG...: Lightning arrester system solution type 1 according to EN 61643-11.

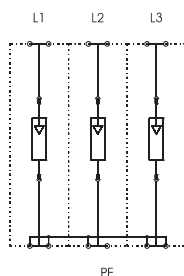
- LightningController MCD 50-B mounted in insulating housing IP 65, sealable housing
- Pulsed current 150 kA 10/350 μ s / 50 kA (10/350) per pole, BET-tested
- Protection level < 1.7 kV
- Enclosed, non-extinguishing spark gaps
- Suitable for TN-C network systems

Application example: The system solution is used in the pre-meter area according to VDN Directive 2nd Edition 2004.

Dimensions



Connection options



MCD 50-B 3-VG

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class I+II
Lightning protection zone LPZ		0-2
Impulse discharge current (10/350)	I_{imp}	50 kA
Total discharge current (10/350)	I_{total}	150 kA
Nominal discharge current (8/20)	I_n	50 kA
Arrestor surge current (8/20) [total]	$I_{total 8/20}$	150 kA
Voltage protection level	U_n	< 1,7 kV
Response time	t_A	<100 ns
Follow current quenching capacity leff	$I_{fi\ eff}$	10 kA
Maximum back-up fuse		500 A
Temperature range	ϑ	-40 - +85 °C
Division unit TE (17.5 mm)		6
Protection rating		IP54
Connection cross-section rigid		10 - 50 mm ²
Connection cross-section, multi-wire		10 - 35 mm ²
Connection cross-section, flexible		10 - 25 mm ²



Surge protection energy technology, arrester, type 1+2: The plus of the V50 family

- Connectable lightning current and surge arrestors
- High arresting capacity up to 50 kA (10/350)
- Visual status display
- Available with optional remote signalling
- Vibration-proof
- For buildings with lightning protection
- Simple standard DIN rail mounting
- Labelled connections
- Usable in systems with lightning protection class III + IV
- Connectable NPE module
- Voltage encoding



V50 combination ar-
restor

Function and areas of use

The combination lightning current and surge arrestors V50 meet the type 1+2 requirement class according to IEC 61643-11. These devices protect low-voltage consumer systems from overvoltages of all types and are available in

single-pole to four-pole versions. The use of high-performance varistors permits a rapid response time and a low protection level, without any line follow current. If circumstances are uncertain and there is a risk of fire from an overload, the internal cut-off unit disconnects the

arrester from the mains if necessary. In addition, the QR code printed on the arrester allows direct access to the online installation instructions.



Combination arrester V50, 150 V, type 1+2

Combination arrester V50, 1-pole 150 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-1-150	150	1	IP20	1	15.400	5093440

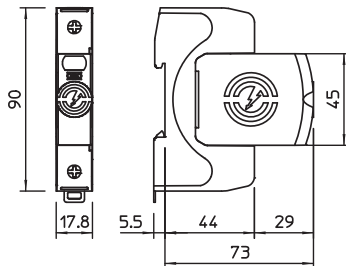
PA Polyamide

Lightning current combination arrester, type 1+2

- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

Application: Lighting current equipotential bonding for buildings of class III and IV.

Dimensions



Connection options



V50-1-150

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 120 V
Maximum continuous voltage AC	U_c 150 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} — kA
Arrester surge current (8/20 μ s) [total]	I_{total} — kA
Protection level [L-N]	U_D 0.8 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,4 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0,5 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Combination arrester V50, 1-pole with FS 150 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-1+FS-150	150	1	IP20	1	15.600	5093446

PA Polyamide

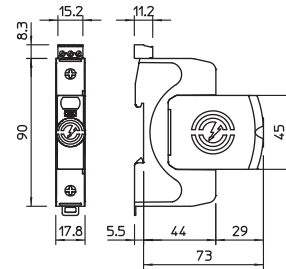
Lightning current combination arrester, type 1+2

- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

Application: Lightning current equipotential bonding for buildings of class III and IV.



Dimensions



Connection options



V50-1+FS-150

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 120 V
Maximum continuous voltage AC	U_c 150 V
Nominal discharge current (8/20 μ s)	I_n / I_{-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} — kA
Arrester surge current (8/20 μ s) [total]	I_{total} — kA
Protection level [L-N]	U_d 0.8 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0.4 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0.5 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG





Combination arrester V50, 150 V, type 1+2, for TN-C networks

Combination arrester V50, 3-pole 150 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-3-150	150	3	IP20	1	43.500	5093442

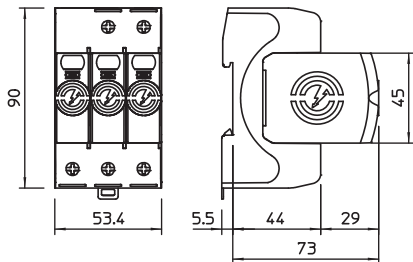
PA Polyamide

Lightning current combination arrester, type 1+2

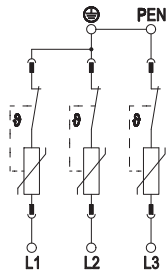
- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

Application: Lighting current equipotential bonding for buildings of class III and IV.

Dimensions



Connection options



V50-3-150

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 120 V
Maximum continuous voltage AC	U_c 150 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 37.5 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 120 kA
Protection level [L-N]	U_D 0.8 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,4 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0,5 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Combination arrester V50, 3-pole with FS 150 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-3+FS-150	150	3	IP20	1	43.900	5093448

PA Polyamide

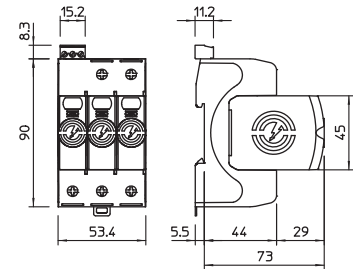
Lightning current combination arrester, type 1+2

- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

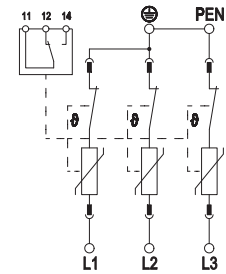
Application: Lightning current equipotential bonding for buildings of class III and IV.



Dimensions



Connection options



V50-3+FS-150

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 120 V
Maximum continuous voltage AC	U_c 150 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 37.5 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 120 kA
Protection level [L-N]	U_d 0.8 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0.4 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0.5 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG





Combination arrester V50, 150 V, with NPE, type 1+2, for TN-S and TT networks

Combination arrester V50, 1-pole + NPE 150 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-1+NPE-150	150	1+N/PE	IP20	1	29.300	5093452

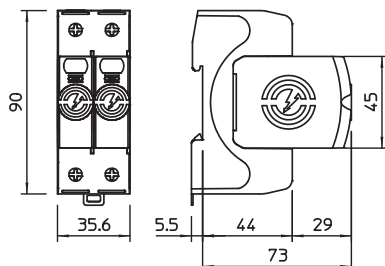
PA Polyamide

Lightning current combination arrester, type 1+2

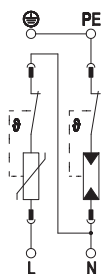
- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

Application: Lighting current equipotential bonding for buildings of class III and IV.

Dimensions



Connection options



V50-1+NPE-150

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 120 V
Maximum continuous voltage AC	U_c 150 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 25 kA
Arrester surge current (8/20 μ s) [total]	I_{total} — kA
Protection level [L-N]	U_D 0.8 kV
Combined voltage protection level [L-PE]	U_n / I_{L-PE} 2.1 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,4 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0,5 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Combination arrester V50, 1-pole + NPE with FS 150 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-1+NPE+FS-150	150	1+N/PE	IP20	1	29.600	5093460

PA Polyamide

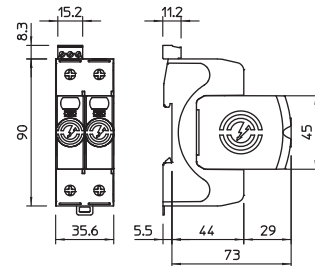
Lightning current combination arrester, type 1+2

- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

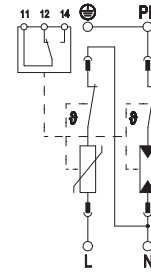
Application: Lightning current equipotential bonding for buildings of class III and IV.



Dimensions



Connection options



V50-1+NPE+FS-150

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 120 V
Maximum continuous voltage AC	U_C 150 V
Nominal discharge current (8/20 μ s)	I_n / I_{1-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 12.5 kA
Arrester surge current (8/20 μ s) [total]	I_{total} — kA
Protection level [L-N]	U_D 0.8 kV
Combined voltage protection level [L-PE]	$U_D / I-PE$ 2.1 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0.4 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0.5 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG



Combination arrester V50, 150 V, with NPE, type 1+2, for TN-S and TT networks

Combination arrester V50, 3-pole + NPE 150 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-3+NPE-150	150	3+N/PE	IP20	1	55.800	5093454

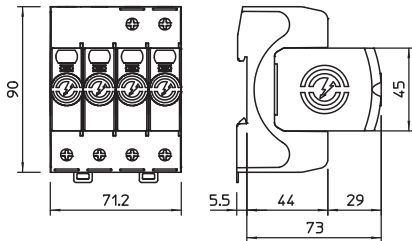
PA Polyamide

Lightning current combination arrester, type 1+2

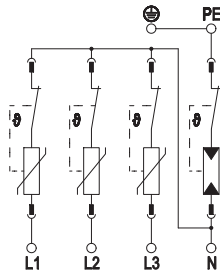
- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

Application: Lighting current equipotential bonding for buildings of class III and IV.

Dimensions



Connection options



V50-3+NPE-150

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 120 V
Maximum continuous voltage AC	U_c 150 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 50 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 80 kA
Protection level [L-N]	U_D 0.8 kV
Combined voltage protection level [L-PE]	U_n / I_{L-PE} 2.1 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,4 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0,5 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Combination arrester V50, 3-pole + NPE with FS 150 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-3+NPE+FS-150	150	3+N/PE	IP20	1	56.300	5093462

PA Polyamide

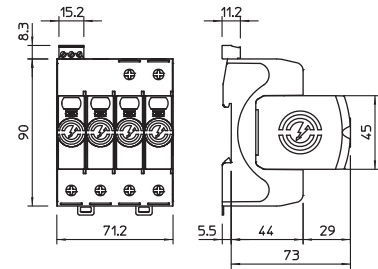
Lightning current combination arrester, type 1+2

- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

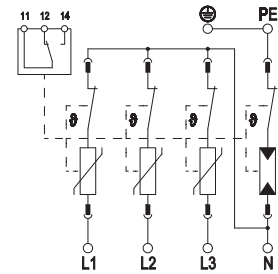
Application: Lightning current equipotential bonding for buildings of class III and IV.



Dimensions



Connection options



V50-3+NPE+FS-150

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 120 V
Maximum continuous voltage AC	U_C 150 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 50 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 80 kA
Protection level [L-N]	U_D 0.8 kV
Combined voltage protection level [L-PE]	$U_D / I-PE$ 2.1 kV
Residual voltage [L-N] @ 1 kA	U_{RES} 0.4 kV
Residual voltage [L-N] @ 5 kA	U_{RES} 0.5 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG





Combination arrester V50, 280 V, type 1+2

Combination arrester V50, 1-pole 280 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-1-280	280	1	IP20	1	16.400	5093500

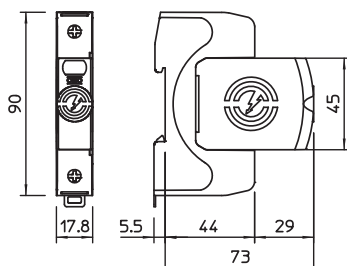
PA Polyamide

Lightning current combination arrester, type 1+2

- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

Application: Lighting current equipotential bonding for buildings of class III and IV.

Dimensions



Connection options



V50-1-280

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} — kA
Arrester surge current (8/20 μ s) [total]	I_{total} — kA
Protection level [L-N]	U_D 1.3 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,7 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0,8 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Combination arrester V50, 1-pole with FS 280 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-1+FS-280	280	1	IP20	1	16.600	5093502

PA Polyamide

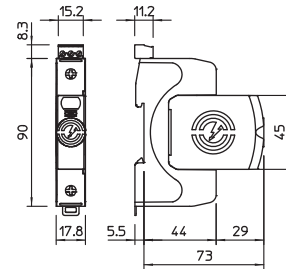
Lightning current combination arrester, type 1+2

- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

Application: Lightning current equipotential bonding for buildings of class III and IV.



Dimensions



Connection options



V50-1+FS-280

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Protection level [L-N]	U_p 1.3 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,7 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0,8 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1,5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1,5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG





Combination arrester V50, 280 V, type 1+2, for TN-C networks

Combination arrester V50, 3-pole 280 V

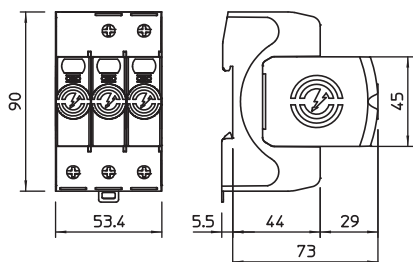


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-3-280	280	3	IP20	1	46.500	5093511

Lightning current combination arrester, type 1+2

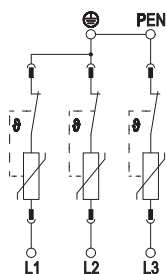
- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

Dimensions



Application: Lighting current equipotential bonding for buildings of class III and IV.

Connection options



V50-3-280

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 37.5 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 120 kA
Protection level [L-N]	U_D 1.3 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,7 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0,8 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Combination arrester V50, 3-pole with FS 280 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-3+FS-280	280	3	IP20	1	46.900	5093516

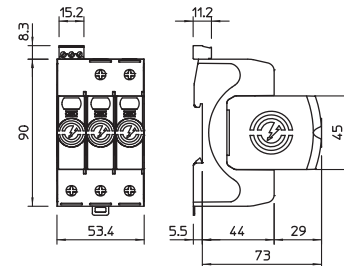
Lightning current combination arrester, type 1+2

- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

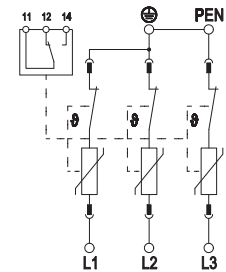
Application: Lightning current equipotential bonding for buildings of class III and IV.



Dimensions



Connection options



V50-3+FS-280

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_C 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 37.5 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 120 kA
Protection level [L-N]	U_D 1.3 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,7 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0,8 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1,5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1,5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG





Combination arrester V50, 280 V, type 1+2, for TN-S networks

Combination arrester V50, 4-pole 280 V

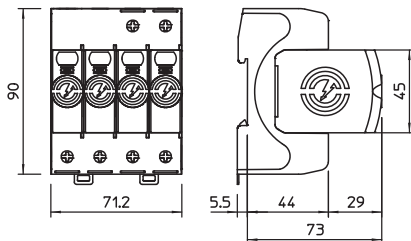


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-4-280	280	4	IP20	1	61.000	5093513

Lightning current combination arrester, type 1+2

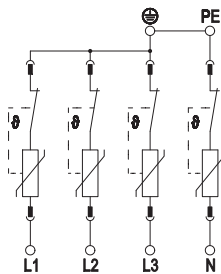
- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

Dimensions



Application: Lighting current equipotential bonding for buildings of class III and IV.

Connection options



V50-4-280

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 50 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 160 kA
Protection level [L-N]	U_D 1.3 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,7 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0,8 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Combination arrester V50, 4-pole with FS 280 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-4+FS-280	280	4	IP20	1	61.500	5093518

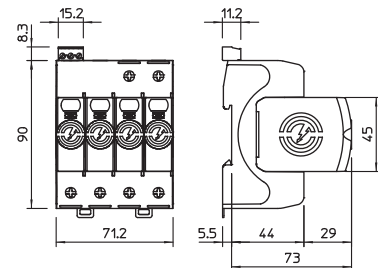
Lightning current combination arrester, type 1+2

- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

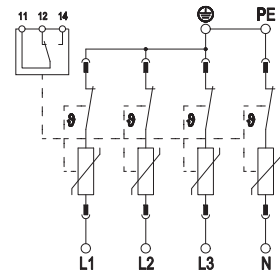
Application: Lightning current equipotential bonding for buildings of class III and IV.



Dimensions



Connection options



V50-4+FS-280

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_C 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 50 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 160 kA
Protection level [L-N]	U_D 1.3 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,7 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0,8 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG





Combination arrester V50, 280 V, with NPE, type 1+2, for TN-S and TT networks

Combination arrester V50, 1-pole + NPE 280 V

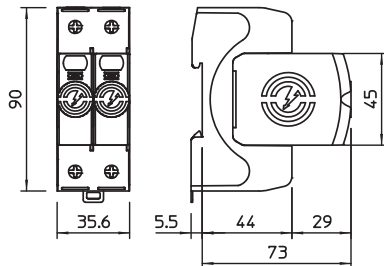


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-1+NPE-280	280	1+N/PE	IP20	1	30.300	5093522

Lightning current combination arrester, type 1+2

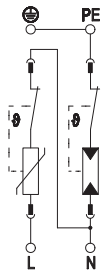
- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

Dimensions



Application: Lighting current equipotential bonding for buildings of class III and IV.

Connection options



V50-1+NPE-280

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 25 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 80 kA
Protection level [L-N]	U_D 1.3 kV
Combined voltage protection level [L-PE]	U_n / I_{-PE} 2.5 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,7 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0,8 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Combination arrester V50, 1-pole + NPE with FS 280 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-1+NPE+FS-280	280	1+N/PE	IP20	1	30.600	5093531

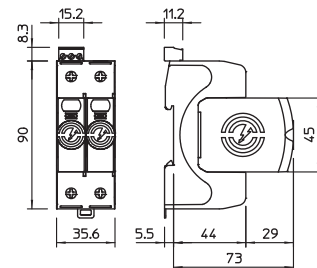
Lightning current combination arrester, type 1+2

- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

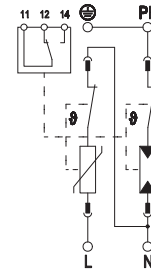
Application: Lightning current equipotential bonding for buildings of class III and IV.



Dimensions



Connection options



V50-1+NPE+FS-280

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_C 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{1-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 25 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 80 kA
Protection level [L-N]	U_D 1.3 kV
Combined voltage protection level [L-PE]	$U_D / I-PE$ 2.5 kV
Residual voltage [L-N] @ 1 kA	U_{RES} 0,7 kV
Residual voltage [L-N] @ 5 kA	U_{RES} 0,8 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1,5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1,5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG





Combination arrester V50, 280 V, with NPE, type 1+2, for TN-S and TT networks

Combination arrester V50, 2-pole + NPE 280 V

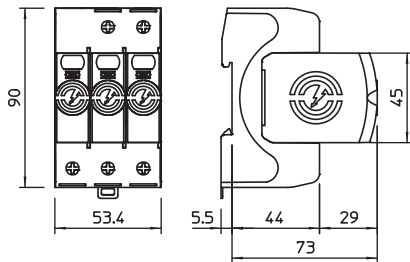


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-2+NPE-280	280	2+N/PE	IP20	1	44.300	5093524

Lightning current combination arrester, type 1+2

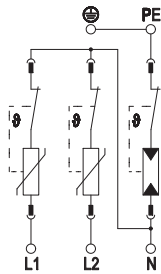
- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

Dimensions



Application: Lighting current equipotential bonding for buildings of class III and IV.

Connection options



V50-2+NPE-280

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 37.5 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 80 kA
Protection level [L-N]	U_D 1.3 kV
Combined voltage protection level [L-PE]	U_n / I_{-PE} 2.5 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,7 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0,8 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Combination arrester V50, 3-pole + NPE 280 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-3+NPE-280	280	3+N/PE	IP20	1	58.800	5093526

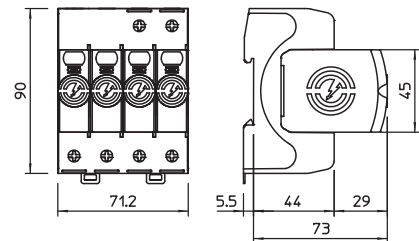
Lightning current combination arrester, type 1+2

- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

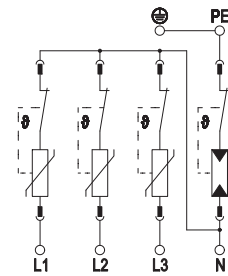
Application: Lightning current equipotential bonding for buildings of class III and IV.



Dimensions



Connection options



V50-3+NPE-280

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_C 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{1-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 50 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 80 kA
Protection level [L-N]	U_D 1.3 kV
Combined voltage protection level [L-PE]	$U_D / I-PE$ 2.5 kV
Residual voltage [L-N] @ 1 kA	U_{RES} 0,7 kV
Residual voltage [L-N] @ 5 kA	U_{RES} 0,8 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG





Combination arrester V50, 280 V, with NPE, type 1+2, for TN-S and TT networks

Combination arrester V50, 3-pole + NPE with FS 280 V

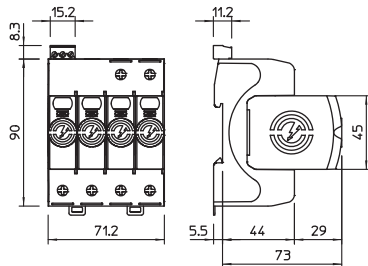


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-3+NPE+FS-280	280	3+N/PE	IP20	1	59.300	5093533

Lightning current combination arrester, type 1+2

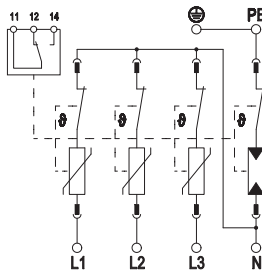
- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

Dimensions



Application: Lightning current equipotential bonding for buildings of class III and IV.

Connection options



V50-3+NPE+FS-280

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{1-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 50 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 80 kA
Protection level [L-N]	U_D 1.3 kV
Combined voltage protection level [L-PE]	U_n / I_{1-PE} 2.5 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,7 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0,8 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1,5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1,5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG





Combination arrester V50, 320 V, type 1+2

Combination arrester V50, 1-pole 320 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-1-320	320	1	IP20	1	17.200	5093540

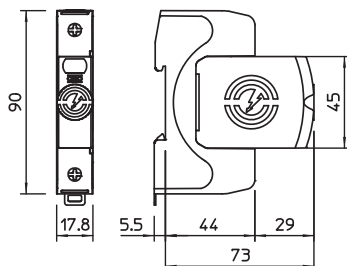
PA Polyamide

Lightning current combination arrester, type 1+2

- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

Application: Lighting current equipotential bonding for buildings of class III and IV.

Dimensions



Connection options



V50-1-320

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 320 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} — kA
Arrester surge current (8/20 μ s) [total]	I_{total} — kA
Protection level [L-N]	U_D 1.4 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,9 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,0 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Combination arrester V50, 1-pole with FS 320 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-1+FS-320	320	1	IP20	1	17.200	5093546

PA Polyamide

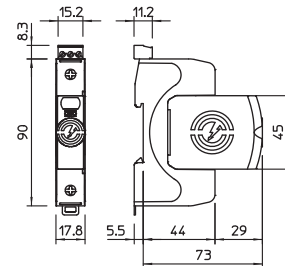
Lightning current combination arrester, type 1+2

- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

Application: Lightning current equipotential bonding for buildings of class III and IV.



Dimensions



Connection options



V50-1+FS-320

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 320 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} — kA
Arrester surge current (8/20 μ s) [total]	I_{total} — kA
Protection level [L-N]	U_d 1.4 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,9 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,0 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG





Combination arrester V50, 320 V, type 1+2, for TN-C networks

Combination arrester V50, 3-pole 320 V



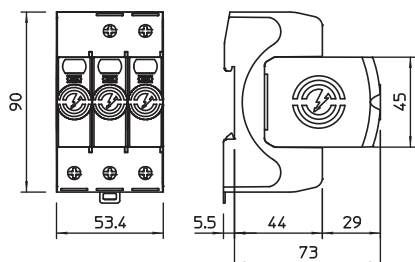
Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs.	Weight kg/100 pcs.	Item No.
V50-3-320	320	3	IP20	1	48.900	5093542

PA Polyamide

Lightning current combination arrester, type 1+2

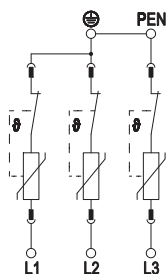
- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

Dimensions



Application: Lighting current equipotential bonding for buildings of class III and IV.

Connection options



V50-3-320

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 320 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 37.5 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 120 kA
Protection level [L-N]	U_D 1.4 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,9 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,0 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Combination arrester V50, 3-pole with FS 320 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-3+FS-320	320	3	IP20	1	49.300	5093548

PA Polyamide

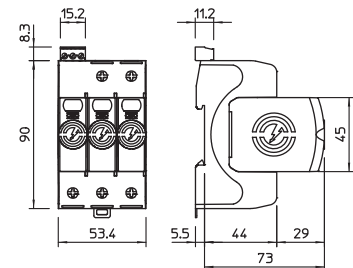
Lightning current combination arrester, type 1+2

- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

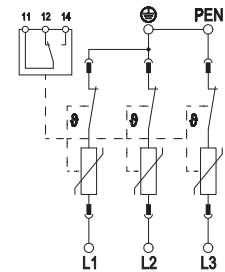
Application: Lightning current equipotential bonding for buildings of class III and IV.



Dimensions



Connection options



V50-3+FS-320

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_C 320 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 37.5 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 120 kA
Protection level [L-N]	U_D 1.4 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,9 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,0 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1,5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1,5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG





Combination arrester V50, 320 V, with NPE, type 1+2, for TN-S and TT networks

Combination arrester V50, 1-pole + NPE 320 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-1+NPE-320	320	1+N/PE	IP20	1	31.100	5093552

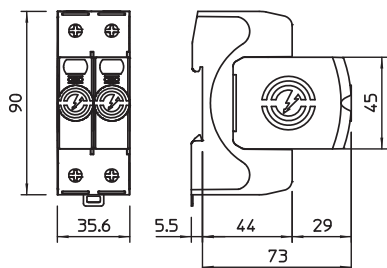
PA Polyamide

Lightning current combination arrester, type 1+2

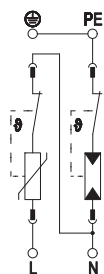
- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

Application: Lighting current equipotential bonding for buildings of class III and IV.

Dimensions



Connection options



V50-1+NPE-320

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 320 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} — kA
Arrester surge current (8/20 μ s) [total]	I_{total} — kA
Protection level [L-N]	U_D 1.4 kV
Combined voltage protection level [L-PE]	U_n / I_{L-PE} 2.5 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,9 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,0 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Combination arrester V50, 1-pole + NPE with FS 320 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-1+NPE+FS-320	320	1+N/PE	IP20	1	31.100	5093560

PA Polyamide

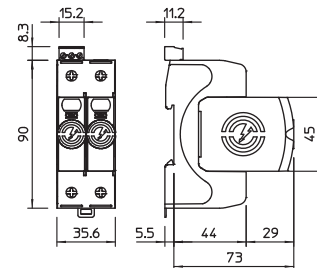
Lightning current combination arrester, type 1+2

- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

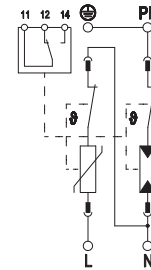
Application: Lightning current equipotential bonding for buildings of class III and IV.



Dimensions



Connection options



V50-1+NPE+FS-320

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_C 320 V
Nominal discharge current (8/20 μ s)	I_n / I_{1-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 12.5 kA
Arrester surge current (8/20 μ s) [total]	I_{total} — kA
Protection level [L-N]	U_D 1.4 kV
Combined voltage protection level [L-PE]	$U_D / I-PE$ 2.5 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,9 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,0 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG





Combination arrester V50, 320 V, with NPE, type 1+2, for TN-S and TT networks

Combination arrester V50, 3-pole + NPE 320 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-3+NPE-320	320	3+N/PE	IP20	1	61.200	5093554

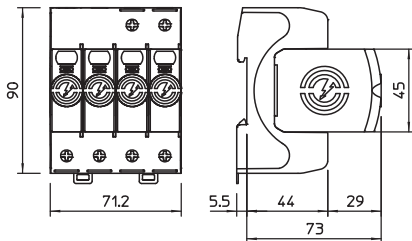
PA Polyamide

Lightning current combination arrester, type 1+2

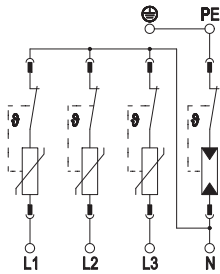
- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

Application: Lighting current equipotential bonding for buildings of class III and IV.

Dimensions



Connection options



V50-3+NPE-320

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 320 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 50 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 80 kA
Protection level [L-N]	U_D 1.4 kV
Combined voltage protection level [L-PE]	U_n / I_{L-PE} 2.5 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,9 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,0 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Combination arrester V50, 3-pole + NPE with FS 320 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-3+NPE+FS-320	320	3+N/PE	IP20	1	61.700	5093562

PA Polyamide

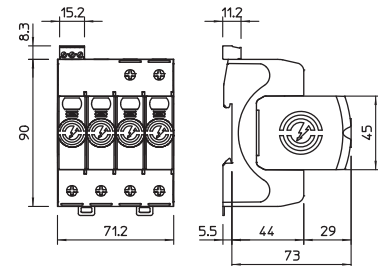
Lightning current combination arrester, type 1+2

- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

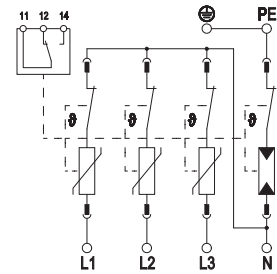
Application: Lightning current equipotential bonding for buildings of class III and IV.



Dimensions



Connection options



V50-3+NPE+FS-320

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_C 320 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 50 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 80 kA
Protection level [L-N]	U_D 1.4 kV
Combined voltage protection level [L-PE]	$U_D / I-PE$ 2.5 kV
Residual voltage [L-N] @ 1 kA	U_{RRS} 0,9 kV
Residual voltage [L-N] @ 5 kA	U_{RES} 1,0 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG





Combination arrester V50, 385 V, type 1+2

Combination arrester V50, 1-pole 385 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-1-385	385	1	IP20	1	18.300	5093572

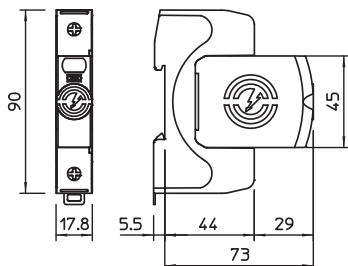
PA Polyamide

Lightning current combination arrester, type 1+2

- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

Application: Lighting current equipotential bonding for buildings of class III and IV.

Dimensions



Connection options



V50-1-385

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 350 V
Maximum continuous voltage AC	U_c 385 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} — kA
Arrester surge current (8/20 μ s) [total]	I_{total} — kA
Protection level [L-N]	U_D 1.7 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1,1 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,2 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Combination arrester V50, 1-pole with FS 385 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-1+FS-385	385	1	IP20	1	18.500	5093578

PA Polyamide

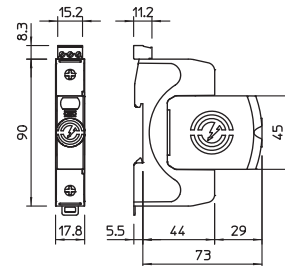
Lightning current combination arrester, type 1+2

- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

Application: Lightning current equipotential bonding for buildings of class III and IV.



Dimensions



Connection options



V50-1+FS-385

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 350 V
Maximum continuous voltage AC	U_c 385 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} — kA
Arrester surge current (8/20 μ s) [total]	I_{total} — kA
Protection level [L-N]	U_d 1.7 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1,1 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,2 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG





Combination arrester V50, 385 V, with NPE, type 1+2, for TN-S and TT networks

Combination arrester V50, 1-pole + NPE 385 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-1+NPE-385	385	1+N/PE	IP20	1	32.200	5093584

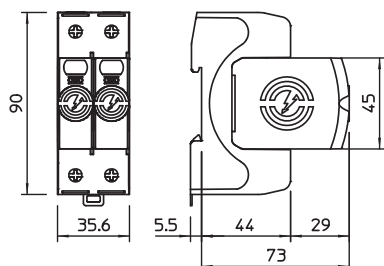
PA Polyamide

Lightning current combination arrester, type 1+2

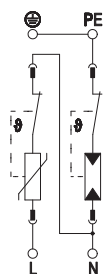
- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

Application: Lighting current equipotential bonding for buildings of class III and IV.

Dimensions



Connection options



V50-1+NPE-385

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 385 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 25 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 80 kA
Protection level [L-N]	U_D 1.7 kV
Combined voltage protection level [L-PE]	U_n / I_{L-PE} 2.5 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1,1 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,2 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Combination arrester V50, 1-pole + NPE with FS 385 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-1+NPE+FS-385	385	1+N/PE	IP20	1	32.500	5093590

PA Polyamide

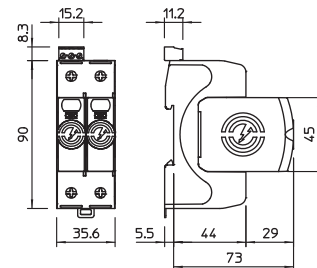
Lightning current combination arrester, type 1+2

- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

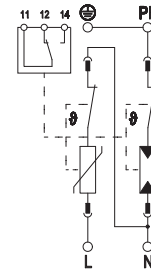
Application: Lightning current equipotential bonding for buildings of class III and IV.



Dimensions



Connection options



V50-1+NPE+FS-385

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_C 385 V
Nominal discharge current (8/20 μ s)	I_n / I_{1-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 12.5 kA
Arrester surge current (8/20 μ s) [total]	I_{total} — kA
Protection level [L-N]	U_D 1.7 kV
Combined voltage protection level [L-PE]	$U_D / I-PE$ 2.5 kV
Residual voltage [L-N] @ 1 kA	U_{RES} 1,1 kV
Residual voltage [L-N] @ 5 kA	U_{RES} 1,2 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG





Combination arrester V50, 385 V, with NPE, type 1+2, for TN-S and TT networks

Combination arrester V50, 3-pole + NPE 385 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-3+NPE-385	385	3+N/PE	IP20	1	64.500	5093586

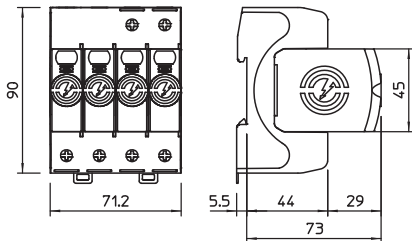
PA Polyamide

Lightning current combination arrester, type 1+2

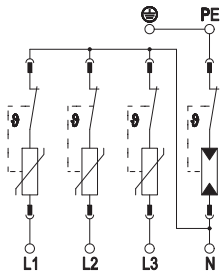
- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

Application: Lighting current equipotential bonding for buildings of class III and IV.

Dimensions



Connection options



V50-3+NPE-385

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 385 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 50 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 80 kA
Protection level [L-N]	U_D 1.7 kV
Combined voltage protection level [L-PE]	U_n / I_{L-PE} 2.5 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1,1 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,2 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Combination arrester V50, 3-pole + NPE with FS 385 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V50-3+NPE+FS-385	385	3+N/PE	IP20	1	65.000	5093592

PA Polyamide

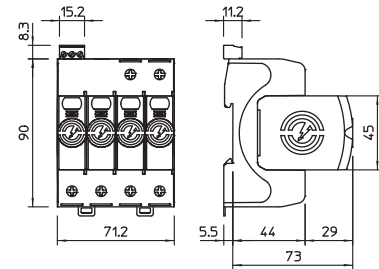
Lightning current combination arrester, type 1+2

- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

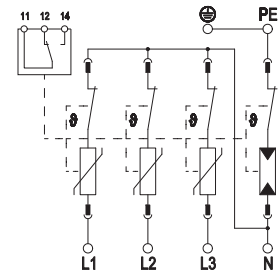
Application: Lightning current equipotential bonding for buildings of class III and IV.



Dimensions



Connection options



V50-3+NPE+FS-385

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_C 385 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 50 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 80 kA
Protection level [L-N]	U_D 1.7 kV
Combined voltage protection level [L-PE]	U_D / I_{L-PE} 2.5 kV
Residual voltage [L-N] @ 1 kA	U_{RES} 1,1 kV
Residual voltage [L-N] @ 5 kA	U_{RES} 1,2 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG



Combination arrester V50 upper part, type 1+2

Upper part V50 150 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
	V	—	IP20	1	7.660	
V50-0-150	150	—	IP20	1	7.660	5093508

Upper part, lightning current combination arrester, type 1+2

- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current discharge capacity of 12.5 kA (10/350) per pole
- Modular, plug-in arrester with dynamic cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic (UL 94 V-0)

Upper part V50 280 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
	V	—	IP20	1	8.500	
V50-0-280	280	—	IP20	1	8.500	5093508

Upper part, lightning current combination arrester, type 1+2

- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current discharge capacity of 12.5 kA (10/350) per pole
- Modular, plug-in arrester with dynamic cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic (UL 94 V-0)

Upper part V50 320 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
	V	—	IP20	1	9.160	
V50-0-320	320	—	IP20	1	9.160	5093508

Upper part, lightning current combination arrester, type 1+2

- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current discharge capacity of 12.5 kA (10/350) per pole
- Modular, plug-in arrester with dynamic cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic (UL 94 V-0)

Upper part V50 385 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
	V	—	IP20	1	10.510	
V50-0-385	385	—	IP20	1	10.510	5093510

Upper part, lightning current combination arrester, type 1+2

- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current discharge capacity of 12.5 kA (10/350) per pole
- Modular, plug-in arrester with dynamic cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic (UL 94 V-0)

Upper part NPE-C50



Type	Highest continuous voltage	Pole version	Protection rating	Pack. pcs	Weight	Item No.
	AC V				kg/100 pcs.	
C50-0-255	255	N/PE	IP20	1	7.215	5095609



Lightning current combination arrester, type 1+2

- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

Application: Lightning current equipotential bonding for buildings of class III and IV.





Combination arrester V50, 385 V, type 1+2, for TN-C networks

Combination arrester V50, 3-pole 385 V



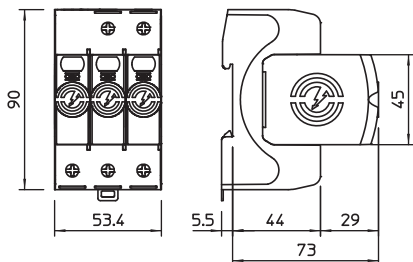
Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-3-385	385	3	IP20	1	52.200	5093574

PA Polyamide

Lightning current combination arrester, type 1+2

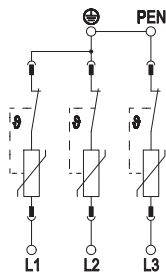
- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

Dimensions



Application: Lighting current equipotential bonding for buildings of class III and IV.

Connection options



V50-3-385

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 350 V
Maximum continuous voltage AC	U_c 385 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 37.5 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 120 kA
Protection level [L-N]	U_D 1.7 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1,1 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,2 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Combination arrester V50, 3-pole with FS 385 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V50-3+FS-385	385	3	IP20	1	52.600	5093580

PA Polyamide

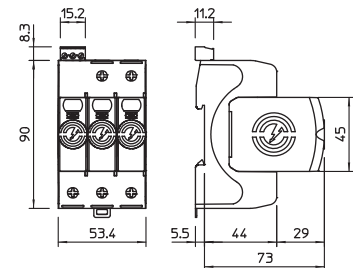
Lightning current combination arrester, type 1+2

- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling (FS) variants have a potential-free changeover contact for remote signalling

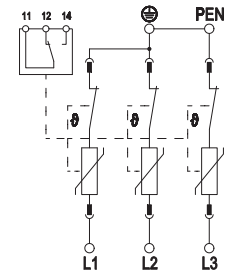
Application: Lightning current equipotential bonding for buildings of class III and IV.



Dimensions



Connection options



V50-3+FS-385

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 350 V
Maximum continuous voltage AC	U_C 385 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 37.5 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 120 kA
Protection level [L-N]	U_D 1.7 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1,1 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,2 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG



MCD accessories, upper parts and bases

Combination arrester upper part



Type	Highest continuous voltage		Pack. pcs.	Weight		Item No.
	V	Version		kg/100 pcs.	pcs.	
MCD 50-B 0	255	1-pole	1	19.200		5096822

Combination arrester, lightning current arrester, type 1+2, upper part.

- Protection level < 1.7 kV, allows device protection
- Line current quenching capacity 10 kA
- Encapsulated, non-extinguishing spark gap

Application: Industrial systems and buildings with external lightning protection of Classes I to IV.

Upper part, combination arrester with function display



Type	Highest continuous voltage		Pack. pcs.	Weight		Item No.
	V	Version		kg/100 pcs.	pcs.	
MCD 50-B 0-OS	255	1-pole	1	19.500		5096827

Combination arrester, lightning current arrester, type 1+2, upper part with visual display.

- Lightning current arresting capacity 50 kA (10/350)
- Power consumption < 26 mW/pole
- Protection level < 1.7 kV
- Line current quenching capacity 10 kA
- Encapsulated, non-extinguishing spark gap

Application: Installations of surge protection devices, type 1+2, in a distribution.

Lightning arrester/combination arrester base



Type	Version		Pack. pcs.	Weight		Item No.
				kg/100 pcs.	pcs.	
MC 50-B U VDE	1-pole		1	18.000		5096839

MC 50-B/U: LightningController bottom section fit type:

- MC 50-B VDE
- MCD 50-B
- Including plug caps for identifying the connections

Accessories for lightning current arrester



Type	Pack. pcs.	Weight		Item No.
		kg/100 pcs.	pcs.	
MC V3	10	1.700		5096884
MC V4	10	2.300		5096886

Cu Copper

MC-V...: Copper bridge 16 mm², suitable for bridging MC arrestors in side channel.

- V3 for 3-pole circuits
- V4 for 4-pole circuits

Protection set MCD + V20 1-pole + NPE



Type	Highest continuous voltage V	Version	Pack. pcs.	Weight kg/100 pcs.	Item No.
PS 2-B+C/TT+TNS	255	1 + NPE	1	101.000	5089748

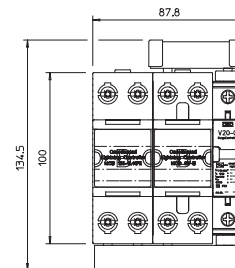
Protection set, lightning and surge arrester combination, type 1+2

- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity to 50 kA (10/350) per pole and up to 125 kA (10/350) N-PE
- Arrester, connectable, including connecting bridges, labelled connection terminals
- Encapsulated, non-extinguishing arrester for use in distributor housings

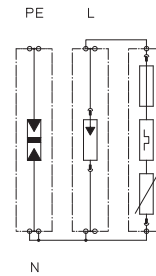
Application: Mobile telecommunications systems and industrial systems with special requirements.



Dimensions



Connection options



PS 2-B+C/TT+TNS

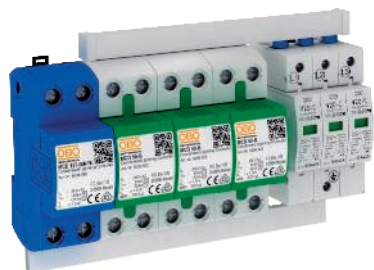
Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class I+II
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I_{imp}	50 kA
Total discharge current (10/350)	I_{total}	100 kA
Nominal discharge current (8/20)	I_n	50 kA
Arrester surge current (8/20) [total]	$I_{Total 8/20}$	100 kA
Maximum discharge current (8/20 μ s)	I_{max}	100 kA
Voltage protection level	U_n	<1,3 kV
Response time	t_A	<25 ns
Follow current quenching capacity (eff) [N-PE]	I_{fi}	25 kA
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +85 °C
Division unit TE (17.5 mm)		5
Protection rating		IP20
Connection cross-section rigid		10 - 50 mm ²
Connection cross-section, multi-wire		10 - 35 mm ²
Connection cross-section, flexible		10 - 25 mm ²





Combination arrester, protection set VA, type 1+2, for TN-S and TT network systems

Protection set MCD + V20 3-pole + NPE



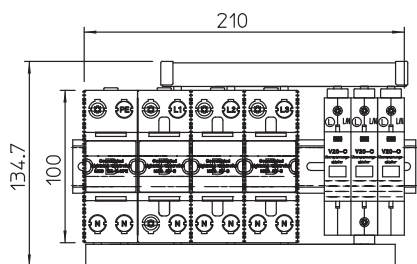
Type	Highest continuous voltage V	Version	Pack. pcs.	Weight kg/100 pcs.	Item No.
PS4-B+C TT+TNS	255	3 + NPE	1	206.000	5089761

Protection set, lightning and surge arrester combination, type 1+2

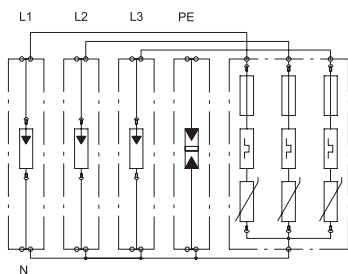
- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity to 50 kA (10/350) per pole and up to 125 kA (10/350) N-PE
- Arrester, connectable, including connecting bridges, labelled connection terminals
- Encapsulated, non-extinguishing arrester for use in distributor housings

Application: Mobile telecommunications systems and industrial systems with special requirements.

Dimensions



Connection options



PS4-B+C TT+TNS

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class I+II
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I_{imp}	50 kA
Total discharge current (10/350)	I_{total}	100 kA
Nominal discharge current (8/20)	I_n	50 kA
Arrester surge current (8/20) [total]	$I_{Total 8/20}$	100 kA
Maximum discharge current (8/20 μ s)	I_{max}	100 kA
Voltage protection level	U_p	<1,3 kV
Protection level (N-PE)		<1,5 kV
Response time	t_A	<25 ns
Follow current quenching capacity (eff) [N-PE]	I_n	25 kA
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +85 °C
Division unit TE (17.5 mm)		12
Protection rating		IP20
Connection cross-section rigid		10 - 50 mm ²
Connection cross-section, multi-wire		10 - 35 mm ²
Connection cross-section, flexible		10 - 25 mm ²

Protection set MCD + V20 3-pole + NPE with remote signalling

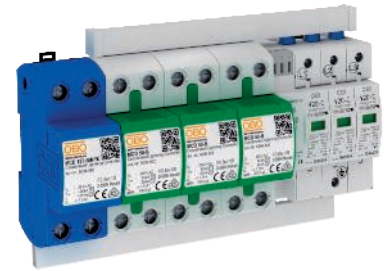


Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
PS4-B+C TNS+FS	255	3 + NPE	1	211.000	5089763

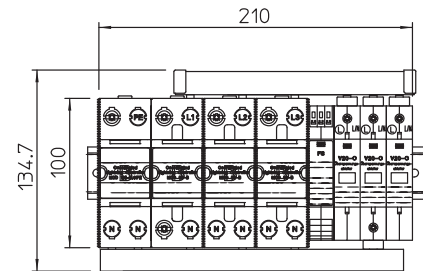
Series PS...: Protection Set, Type 1+2 (Class B+C) lightning and surge arrester to VDE 0675 Part 6-11 (DIN EN 61643-11).

- Arresting capacity 100 kA 10/350 µs BET tested
- Pre-mounted and ready for connection, including connecting bridges, connection terminals marked
- With remote signalling, potential-free NO contact, for function monitoring
- For use in TN-C network system

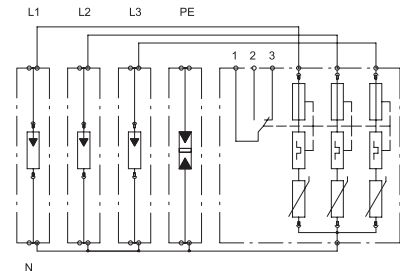
Note: Max. backup fuse (required only if not already fitted in network) 125 A gL/G.



Dimensions



Connection options



PS4-B+C TNS+FS

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I_{imp}	50 kA
Total discharge current (10/350)	I_{total}	100 kA
Nominal discharge current (8/20)	I_n	50 kA
Arrestor surge current (8/20) [total]	$I_{total\ 8/20}$	100 kA
Maximum discharge current (8/20 µs)	I_{max}	100 kA
Voltage protection level	U_n	<1,3 kV
Response time	t_A	<25 ns
Follow current quenching capacity (eff) [N-PE]	I_{fi}	25 kA
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +85 °C
Division unit TE (17.5 mm)		12
Protection rating		IP20
Connection cross-section rigid		10 - 50 mm ²
Connection cross-section, multi-wire		10 - 35 mm ²
Connection cross-section, flexible		10 - 25 mm ²





Combination arrester, protection set, type 1+2 for TN-C network systems

Protection set MCD + V20 3-pole



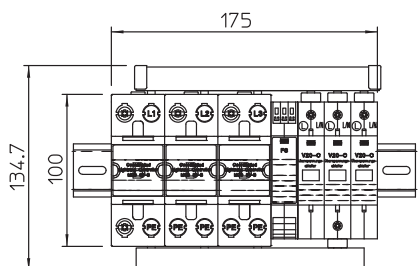
Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
PS3-B+C TNC	255	3-pole	1	158.000	5089754

Protection set, lightning and surge arrester combination, type 1+2

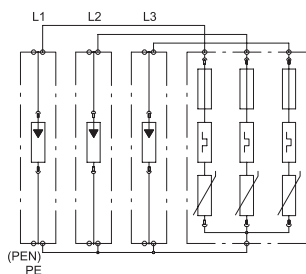
- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity to 50 kA (10/350) per pole and up to 125 kA (10/350) N-PE
- Arrester, connectable, including connecting bridges, labelled connection terminals
- Encapsulated, non-extinguishing arrester for use in distributor housings

Application: Mobile telecommunications systems and industrial systems with special requirements.

Dimensions



Connection options



PS3-B+C TNC

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class I+II
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I_{imp}	50 kA
Total discharge current (10/350)	I_{total}	100 kA
Nominal discharge current (8/20)	I_n	50 kA
Arrester surge current (8/20) [total]	$I_{Total 8/20}$	100 kA
Maximum discharge current (8/20 μ s)	I_{max}	100 kA
Voltage protection level	U_p	< 1,3 kV
Response time	t_A	<25 ns
Follow current quenching capacity (eff) [N-PE]	I_{fi}	25 kA
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +85 °C
Division unit TE (17.5 mm)		10
Protection rating		IP20
Connection cross-section rigid		10 - 50 mm ²
Connection cross-section, multi-wire		10 - 35 mm ²
Connection cross-section, flexible		10 - 25 mm ²

Protection set MCD + V20 3-pole with remote signalling



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
PS3-B+C TNC+FS	255	3-pole	1	163.000	5089756

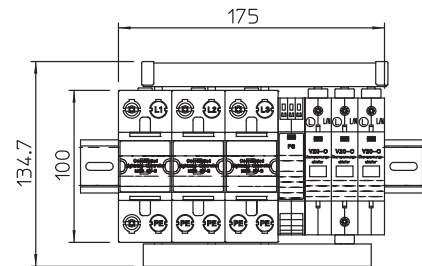
Series PS...: Protection Set,, Type 1+2 (Class B+C) lightning and surge arrester to VDE 0675 Part 6-11 (DIN EN 61643-11).

- Arresting capacity 100 kA 10/350 µs BET tested
- Pre-mounted and ready for connection, including connecting bridges, connection terminals marked
- With remote signalling, potential-free NO contact, for function monitoring
- For use in TN-C network system

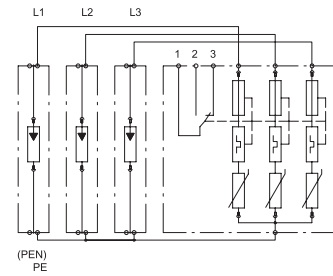
Note: Max. backup fuse (required only if not already fitted in network) 125 A gL/gG.



Dimensions



Connection options



PS3-B+C TNC+FS

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class I+II
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I_{imp}	50 kA
Total discharge current (10/350)	I_{total}	100 kA
Nominal discharge current (8/20)	I_n	50 kA
Arrester surge current (8/20) [total]	$I_{Total 8/20}$	100 kA
Maximum discharge current (8/20 µs)	I_{max}	100 kA
Voltage protection level	U_n	<1,3 kV
Response time	t_A	<25 ns
Follow current quenching capacity (eff) [N-PE]	I_{fi}	25 kA
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +85 °C
Division unit TE (17.5 mm)		10
Protection rating		IP20
Connection cross-section rigid		10 - 50 mm ²
Connection cross-section, multi-wire		10 - 35 mm ²
Connection cross-section, flexible		10 - 25 mm ²





Combination arrester, protection set, type 1+2 for TN-C network systems

Protection set MCD + V20 3-pole



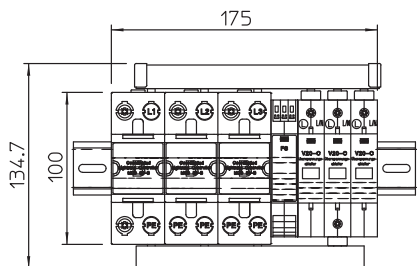
Type	Highest continuous voltage V	Version	Pack. pcs.	Weight kg/100 pcs.	Item No.
PS3-B+C-320	320	3-pole	1	160.000	5089755

Protection set, lightning and surge arrester combination, type 1+2

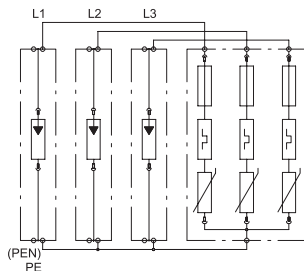
- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity to 50 kA (10/350) per pole and up to 125 kA (10/350) N-PE
- Arrester, connectable, including connecting bridges, labelled connection terminals
- Encapsulated, non-extinguishing arrester for use in distributor housings

Application: Mobile telecommunications systems and industrial systems with special requirements.

Dimensions



Connection options



PS3-B+C-320

Nominal voltage	U_N	320 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class I+II
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I_{imp}	50 kA
Total discharge current (10/350)	I_{total}	100 kA
Nominal discharge current (8/20)	I_n	100 kA
Arrester surge current (8/20) [total]	$I_{Total\ 8/20}$	100 kA
Maximum discharge current (8/20 μ s)	I_{max}	100 kA
Voltage protection level	U_p	< 1,7 kV
Response time	t_A	<25 ns
Follow current quenching capacity (eff) [N-PE]	I_{fi}	25 kA
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +85 °C
Division unit TE (17.5 mm)		10
Protection rating		IP20
Connection cross-section rigid		10 - 50 mm ²
Connection cross-section, multi-wire		10 - 35 mm ²
Connection cross-section, flexible		10 - 25 mm ²

Protection set MCD + V20 3-pole with remote signalling



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
PS3-B+C-320+FS	320	3-pole	1	170.000	5089757

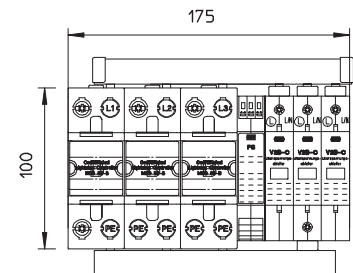
Protection set, lightning and surge arrester combination, type 1+2

- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity to 50 kA (10/350) per pole and up to 125 kA (10/350) N-PE
- Arrester, connectable, including connecting bridges, labelled connection terminals
- Encapsulated, non-extinguishing arrester for use in distributor housings

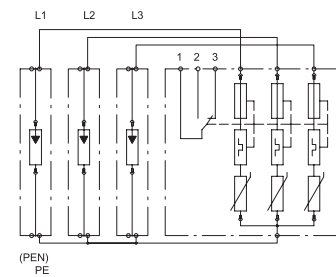
Application: Mobile telecommunications systems and industrial systems with special requirements.



Dimensions



Connection options



PS3-B+C-320+FS

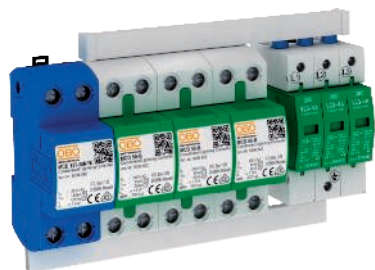
Nominal voltage	U_N	320 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class I+II
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I_{imp}	50 kA
Total discharge current (10/350)	I_{total}	100 kA
Nominal discharge current (8/20)	I_n	100 kA
Arrester surge current (8/20) [total]	$I_{Total 8/20}$	100 kA
Maximum discharge current (8/20 μ s)	I_{max}	100 kA
Voltage protection level	U_n	<1,7 kV
Response time	t_A	<25 ns
Follow current quenching capacity (eff) [N-PE]	I_{fi}	25 kA
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		10
Protection rating		IP20
Connection cross-section rigid		10 - 50 mm ²
Connection cross-section, multi-wire		10 - 35 mm ²
Connection cross-section, flexible		10 - 25 mm ²





Combination arrester, protection set VA, type 1+2, for TN and TT network systems

Protection set MCD + V20, leakage current-free, 3-pole + NPE



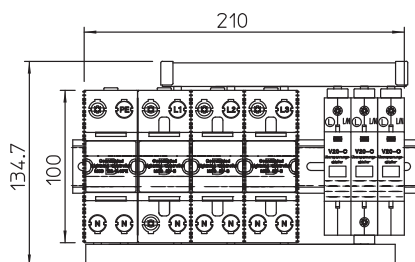
Highest continuous voltage

Type	V	Version	Pack. pcs.	Weight kg/100 pcs.	Item No.
PS4-VA TT+TNS	255	3 + NPE	1	210.000	5089770

Protection set VA, lightning and surge arrester combination, type 1+2

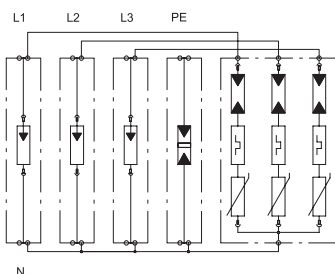
- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity to 50 kA (10/350) per pole and up to 125 kA (10/350) N-PE
- Free of leak current and suitable for use in pre-meter area according to the VDEW directive
- Arrester, connectable, including connecting bridges, labelled connection terminals
- Encapsulated, non-extinguishing arrester for use in distributor housings

Dimensions



Application: pre-meter area and industrial systems with special requirements.

Connection options



PS4-VA TT+TNS

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class I
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I_{imp}	100 kA
Total discharge current (10/350)	I_{total}	100 kA
Nominal discharge current (8/20)	I_n	100 kA
Arrester surge current (8/20) [total]	$I_{Total 8/20}$	100 kA
Maximum discharge current (8/20 μ s)	I_{max}	100 kA
Voltage protection level	U_p	<1,3 kV
Response time	t_A	<25 ns
Follow current quenching capacity (eff) [N-PE]	I_{fi}	25 kA
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +85 °C
Division unit TE (17.5 mm)		12
Protection rating		IP20
Connection cross-section rigid		10 - 50 mm ²
Connection cross-section, multi-wire		10 - 35 mm ²
Connection cross-section, flexible		10 - 25 mm ²

Protection set MCD + V20, leakage current-free, 3-pole + NPE with remote signalling

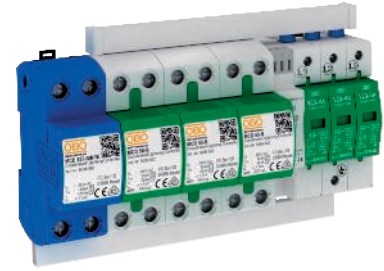


Type	Highest continuous voltage		Pack. pcs.	Weight kg/100 pcs.	Item No.
	V	Version			
PS4-VA TT+FS	255	3 + NPE	1	215.000	5089777

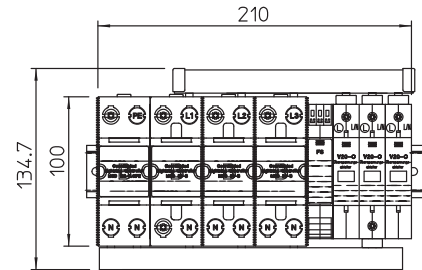
Protection set VA, lightning and surge arrestor combination, type 1+2

- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity to 50 kA (10/350) per pole and up to 125 kA (10/350) N-PE
- Free of leak current and suitable for use in pre-meter area according to the VDEW directive
- Arrestor, connectable, including connecting bridges, labelled connection terminals
- Encapsulated, non-extinguishing arrestor for use in distributor housings

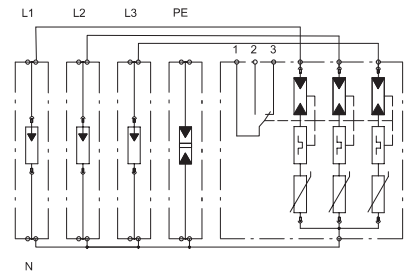
Application: pre-meter area and industrial systems with special requirements.



Dimensions



Connection options



PS4-VA TT+FS

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class I
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I_{im0}	100 kA
Total discharge current (10/350)	I_{total}	100 kA
Nominal discharge current (8/20)	I_n	100 kA
Arrestor surge current (8/20) [total]	$I_{Total R/20}$	100 kA
Maximum discharge current (8/20 μ s)	I_{max}	100 kA
Voltage protection level	U_p	<1,3 kV
Response time	t_A	<25 ns
Follow current quenching capacity (eff) [N-PE]	I_{fi}	25 kA
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +85 °C
Division unit TE (17.5 mm)		12
Protection rating		IP20
Connection cross-section rigid		10 - 50 mm ²
Connection cross-section, multi-wire		10 - 35 mm ²
Connection cross-section, flexible		10 - 25 mm ²





Combination arrester, protection set VA, type 1+2, for TN and TT network systems

Protection set MCD + V20, leakage current-free, 3-pole



Highest
continu-
ous
voltage

Type 1+2

230/
400 V
System

LPZ
0→2

5

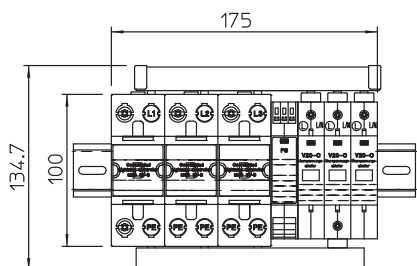
TEST
TESTED

Type	V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
PS3-VA TNC	255	3-pole	1	162.000	5089768

Protection set VA, lightning and surge arrester combination, type 1+2

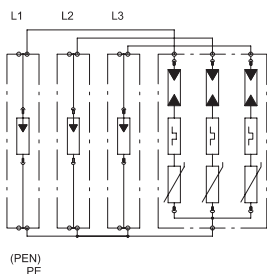
- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity to 50 kA (10/350) per pole and up to 125 kA (10/350) N-PE
- Free of leak current and suitable for use in pre-meter area according to the VDEW directive
- Arrester, connectable, including connecting bridges, labelled connection terminals
- Encapsulated, non-extinguishing arrester for use in distributor housings

Dimensions



Application: pre-meter area and industrial systems with special requirements.

Connection options



PS3-VA TNC

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class I
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I_{imp}	100 kA
Total discharge current (10/350)	I_{total}	100 kA
Nominal discharge current (8/20)	I_n	100 kA
Arrester surge current (8/20) [total]	$I_{Total 8/20}$	100 kA
Maximum discharge current (8/20 μ s)	I_{max}	100 kA
Voltage protection level	U_p	<1,3 kV
Response time	t_A	<25 ns
Follow current quenching capacity (eff) [N-PE]	I_{fi}	25 kA
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +85 °C
Division unit TE (17.5 mm)		10
Protection rating		IP20
Connection cross-section rigid		10 - 50 mm ²
Connection cross-section, multi-wire		10 - 35 mm ²
Connection cross-section, flexible		10 - 25 mm ²

Protection set MCD + V20, leakage current-free, 3-pole with remote signalling

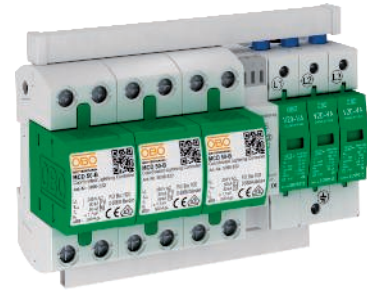


Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
PS3-VA TNC+FS	255	3-pole	1	167.000	5089775

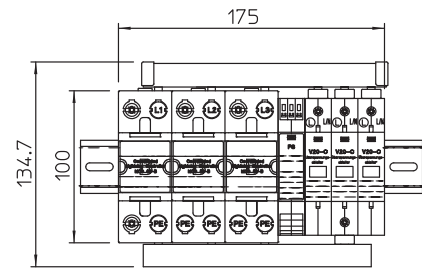
Protection set VA, lightning and surge arrestor combination, type 1+2

- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity to 50 kA (10/350) per pole and up to 125 kA (10/350) N-PE
- Free of leak current and suitable for use in pre-meter area according to the VDEW directive
- Arrestor, connectable, including connecting bridges, labelled connection terminals
- Encapsulated, non-extinguishing arrestor for use in distributor housings

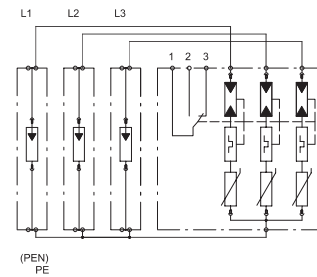
Application: pre-meter area and industrial systems with special requirements.



Dimensions



Connection options



PS3-VA TNC+FS

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class I
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I_{imp}	100 kA
Total discharge current (10/350)	I_{total}	100 kA
Nominal discharge current (8/20)	I_n	100 kA
Arrestor surge current (8/20) [total]	$I_{Total 8/20}$	100 kA
Maximum discharge current (8/20 μ s)	I_{max}	100 kA
Voltage protection level	U_p	<1,3 kV
Response time	t_A	<25 ns
Follow current quenching capacity (eff) [N-PE]	I_{fi}	25 kA
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +85 °C
Division unit TE (17.5 mm)		10
Protection rating		IP20
Connection cross-section rigid		10 - 50 mm ²
Connection cross-section, multi-wire		10 - 35 mm ²
Connection cross-section, flexible		10 - 25 mm ²





Combination arrester V50 in the housing, type 1+2, for TN-S and TT networks

Combination arrester V50, 1-pole + NPE 280 V



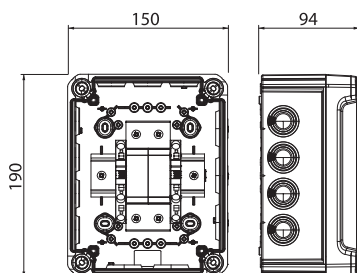
Type	Highest continuous voltage AC V	Pole version	Pack. pcs	Weight kg/100 pcs	Item No.
VG-V50-1+NPE-280	280	1+N/PE	1	81.000	5093594

Lightning current combination arrester, type 1+2 to DIN EN 61643-11

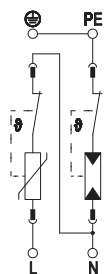
- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Complete unit, pre-mounted and ready for connection in polycarbonate housing (IP66)
- Lightning current arresting capacity 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total

Application: Lightning protection equipotential bonding for buildings of Class III and IV.
If there is a danger of condensation forming through wind, ice, temperature or sunlight, further measures may be necessary!

Dimensions



Connection options



VG-V50-1+NPE-280

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 25 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 50 kA
Protection level [L-N]	U_D 1.3 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,7 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0,8 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP66
Approvals	UL, ÖVE, VDE
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Combination arrester V50, 3-pole + NPE 280 V



Type	Highest continuous voltage AC V	Pole version	Pack. pcs	Weight kg/100 pcs.	Item No.
VG-V50-3+NPE-280	280	3+N/PE	1	110.000	5093596

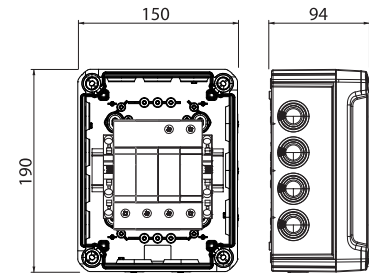
Lightning current combination arrester, type 1+2 to DIN EN 61643-11

- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Complete unit, pre-mounted and ready for connection in polycarbonate housing (IP66)
- Lightning current arresting capacity 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total

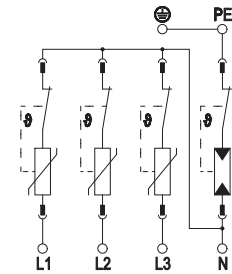
Application: Lightning protection equipotential bonding for buildings of Class III and IV.
If there is a danger of condensation forming through wind, ice, temperature or sunlight, further measures may be necessary!



Dimensions



Connection options



VG-V50-3+NPE-280

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_C 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 30 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 12.5 kA
Total discharge current (10/350)	I_{total} 50 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 50 kA
Protection level [L-N]	U_D 1.3 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,7 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0,8 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP66
Approvals	UL, ÖVE, VDE
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG







 Typ/Type
MCF 35-1+FS-440
 Art.-Nr./Art. No.
 5096 974
 Lightning protection
 for 400/690V
 power supply systems

U_n	440 V	(50/60Hz)
I_{imp}	35 kA	(10/350 μ s)
I_n	35 kA	(8/20 μ s)
U_p	$\leq 2,5$ kV	

 SPD L/PEN **TT**
 \Rightarrow 400 A gL/gG
CE 0589
 0589-P1-0446
 Schnellauslösevorrichtung
 fast-lock device
 NEM 0,03g




 Typ/Type
MCF 35-1+FS-440
 Art.-Nr./Art. No.
 5096 974
 Lightning protection
 for 400/690V
 power supply systems

U_n	440 V	(50/60Hz)
I_{imp}	35 kA	(10/350 μ s)
I_n	35 kA	(8/20 μ s)
U_p	$\leq 2,5$ kV	

 SPD L/PEN **TT**
 \Rightarrow 400 A gL/gG
CE 0589
 0589-P1-0446
 Schnellauslösevorrichtung
 fast-lock device
 NEM 0,03g




 Typ/Type
MCF 35-1+FS-440
 Art.-Nr./Art. No.
 5096 974
 Lightning protection
 for 400/690V
 power supply systems

U_n	440 V	(50/60Hz)
I_{imp}	35 kA	(10/350 μ s)
I_n	35 kA	(8/20 μ s)
U_p	$\leq 2,5$ kV	

 SPD L/PEN **TT**
 \Rightarrow 400 A gL/gG
CE 0589
 0589-P1-0446
 Schnellauslösevorrichtung
 fast-lock device
 NEM 0,03g


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Surge protection device for energy technology, arrester, type 1 (industry)



Lightning arrester MCF 35

89



Accessories MCF

100

Type 1, lightning arrester MCF 35



1-pole with FS

Volts	Item no.	Page
440	5096974	95



3-pole with FS

Volts	Item no.	Page
440	5096976	96

Lightning current arrester, 1-pole



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
MC 50-B VDE	255	1-pole	1	34.400	5096847

MC 50-B VDE: Type 1 (Class B) lightning current arrester in accordance with DIN EN 61643-11 for interface 0 to 1 (LPZ) to and/or in accordance with lightning protection concept to IEC 61313-1 and/or DIN VDE 0185-305 (IEC 62305)

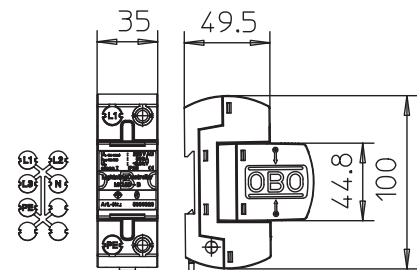
- Upper part and base, plug-in upper part
- Arresting capacity 50 kA (10/350 μ s) per pole
- Protection level < 2.0 kV
- Line following current quenching 25 kA I_{peak}
- Incl. plug caps for identifying the connections
- Encapsulated, non-extinguishing spark gap: can be used in standard distributor housings

Application example: Industrial plants; lightning current arrester in accordance with VDN Directive for pre-meter area.

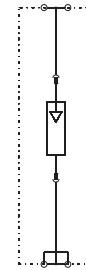
Note: Required as decoupling length for surge voltage protection of 5 m of cable.



Dimensions



Connection options



MC 50-B VDE

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 1
SPD to IEC 61643-11		Class I
Lightning protection zone LPZ		0→1
Impulse discharge current (10/350)	I_{imp}	50 kA
Total discharge current (10/350)	I_{total}	50 kA
Nominal discharge current (8/20)	I_n	50 kA
Arrestor surge current (8/20) [total]	$I_{Total 8/20}$	50 kA
Voltage protection level	U_n	< 2,0 kV
Response time	t_A	<100 ns
Follow current quenching capacity (eff) [N-PE]	I_{fi}	25 kA
Maximum back-up fuse		500 A
Temperature range	ϑ	-40 - +85 °C
Division unit TE (17.5 mm)		2
Protection rating		IP20
Connection cross-section rigid		10 - 50 mm ²
Connection cross-section, multi-wire		10 - 35 mm ²
Connection cross-section, flexible		10 - 25 mm ²

Lightning arrestors MC, 255 V

Lightning current arrester, 1-pole with function display

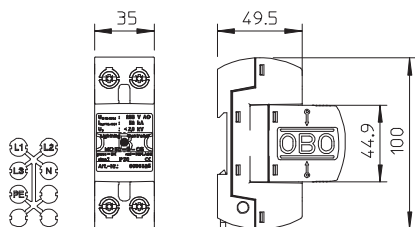


Type	Highest continuous voltage V	Version	Weight		Item No.
			Pack. pcs	kg/100 pcs.	
MC 50-B-OS	255	1-pole	1	34.800	5096851

MC 50-B:OS: Type 1 (Class B) lightning current arrester with visual function display in accordance with DIN EN 61643-11 for interface 0 to 1 (LPZ) in accordance with lightning protection concept to IEC 61313-1 and VDE 0185-305 (IEC 62305)

- Upper part and base, plug-in base
- Arresting capacity 50 kA (10/350 μ s) per pole
- Protection level < 2.0 kV
- Power consumption < 26 mW/pole
- Line following current quenching 25 kA Ipeak
- Incl. plug caps for identifying the connections
- Encapsulated, non-extinguishing spark gap: Can be used in standard distributor housings

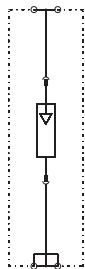
Dimensions



Application example: Industrial systems.

Note: Required as decoupling length for surge voltage protection of 5 m of cable.

Connection options



MC 50-B-OS

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 1
SPD to IEC 61643-11		Class I
Lightning protection zone LPZ		0→1
Impulse discharge current (10/350)	I_{imp}	50 kA
Total discharge current (10/350)	I_{total}	50 kA
Nominal discharge current (8/20)	I_n	50 kA
Arrester surge current (8/20) [total]	$I_{Total 8/20}$	50 kA
Voltage protection level	U_n	< 2,0 kV
Response time	t_A	<100 ns
Follow current quenching capacity (eff) [N-PE]	I_n	25 kA
Maximum back-up fuse		500 A
Temperature range	ϑ	-40 - +85 °C
Division unit TE (17.5 mm)		2
Protection rating		IP20
Connection cross-section rigid		10 - 50 mm ²
Connection cross-section, multi-wire		10 - 35 mm ²
Connection cross-section, flexible		10 - 25 mm ²

Lightning current arrester, 3-pole



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
MC 50-B 3	255	3-pole	1	117.000	5096876

LightningController set, 3-pole, for use in TN-C networks:

Completely pre-terminated and ready for connection, consisting of:

MC 50-B VDE: Type 1 (Class B) lightning current arrester in accordance with DIN EN 61643-11 for interface 0 to 1 (LPZ) to and/or in accordance with lightning protection concept to IEC 61312-1 and/or DIN V VDE V 0185-305 (IEC 62305)

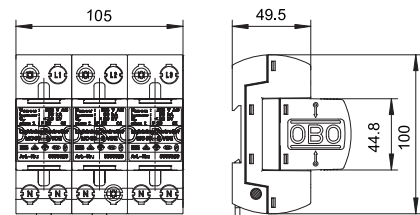
- VDE test marks
- Conforms to VDN Directive 2nd Edition 2004
- Upper part and base, plug-in upper part
- Arresting capacity 50 kA (10/350 µs) per pole
- Voltage protection level < 2,0 kV
- Line following current quenching 25 kA Ipeak
- Incl. plug caps for identifying the connections
- Encapsulated, non-extinguishing spark gap: can be used in standard distributor housings

Application example: Industrial plants; lightning current arrester in accordance with VDN Directive 2nd Edition 2004 for pre-meter area.

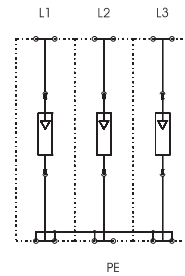
Note: Required as decoupling length for surge voltage protection of 5 m of cable.



Dimensions



Connection options



MC 50-B 3

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 1
SPD to IEC 61643-11		Class I
Lightning protection zone LPZ		0→1
Impulse discharge current (10/350)	I_{imp}	50 kA
Total discharge current (10/350)	I_{total}	150 kA
Nominal discharge current (8/20)	I_n	50 kA
Arrester surge current (8/20) [total]	$I_{Total 8/20}$	150 kA
Voltage protection level	U_n	< 2,0 kV
Response time	t_A	<100 ns
Follow current quenching capacity (eff) [N-PE]	I_{fi}	25 kA
Maximum back-up fuse		500 A
Temperature range	ϑ	-40 - +85 °C
Division unit TE (17.5 mm)		6
Protection rating		IP20
Connection cross-section rigid		10 - 50 mm ²
Connection cross-section, multi-wire		10 - 35 mm ²
Connection cross-section, flexible		10 - 25 mm ²

Lightning current arrester MC, 255 V for TN-S and TT networks

Lightning current arrester, 1-pole NPE

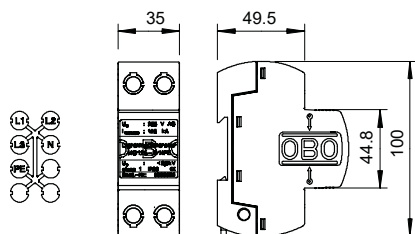


Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
MC 125-B NPE	255	NPE	1	52.000	5096863

MC 125-B/NPE: For use in TN-S and TT systems as N-PE discharge gap, type 1 (Class B) IEC 61643, for interface 0 to 1 (LPZ) according to lightning protection zone concept to IEC 61312-1 and/or DIN V VDE V 0185 Part 4 for use as discharge gap between N and PE.

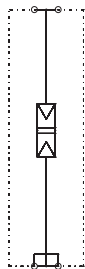
- VDE test mark
- Conforms to VDN Directive, 2nd Edition 2004
- Protection capability 125 kA 10/350 μ s
- Including plug caps for identifying the connections
- Protection level ≤ 2.5 kV
- Enclosed, non-extinguishing discharge gap: can be used in normal commercial distributor housings

Dimensions



Application example: lightning arrester in accordance with VDN Directive for pre-meter area.
Note: required as de-coupling length for overvoltage protection of 5 m of cable.

Connection options



MC 125-B NPE

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 1
SPD to IEC 61643-11		Class I
Lightning protection zone LPZ		0→1
Impulse discharge current (10/350)	I_{imp}	50 kA
Total discharge current (10/350)	I_{total}	125 kA
Nominal discharge current (8/20)	I_n	50 kA
Arrester surge current (8/20) [total]	$I_{Total 8/20}$	125 kA
Voltage protection level	U_n	<math>< 2,5</math> kV
Response time	t_A	<math>< 100</math> ns
Follow current quenching capacity (eff) [N-PE]	I_n	0.1 kA
Maximum back-up fuse		— A
Temperature range	ϑ	-40 - +85 °C
Division unit TE (17.5 mm)		2
Protection rating		IP20
Connection cross-section rigid		10 - 50 mm ²
Connection cross-section, multi-wire		10 - 35 mm ²
Connection cross-section, flexible		10 - 25 mm ²

Lightning current arrester, 3-pole + NPE



	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
Type					
MC 50-B 3+1	255	3 + NPE	1	168.000	5096878

LightningController-Set, 4-pole, for use in TN-S and TT networks:

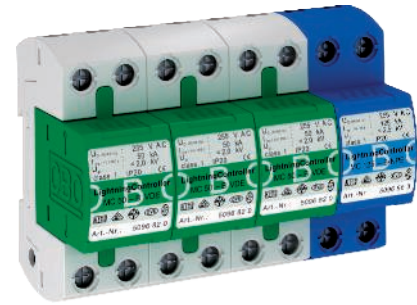
Completely pre-terminated and ready for connection, consisting of:

MC 50-B VDE: Lightning current arrester, type 1 (Class B) to EN 61643-11 for interface 0 to 1 (LPZ) according to lightning protection zone concept to IEC 61313-1 and DIN VDE 0185-305.
MC 125-B/NPE: N-PE spark gap, type 1 (Class B) to IEC 61643 for use in TN-S and TT systems.

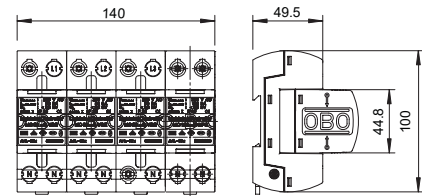
- VDE test marks
- Conforms to VDN Directive 2nd Edition 2004
- Upper part and base, plug-in upper part
- Arresting capacity 125 kA 10/350 μ s
- Voltage protection level < 2,0 kV
- Line following current quenching 25 kA Ipeak
- Incl. plug caps for identifying the connections
- Encapsulated, non-extinguishing spark gap: can be used in standard distributor housings

Application example: Lightning current arrester in accordance with VDN Directive 2nd Edition 2004 for pre-meter area.

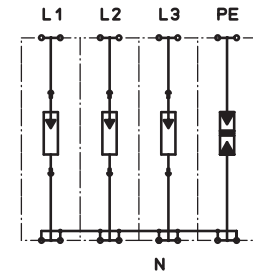
Note: Required as decoupling length for surge voltage protection of 5 m of cable.



Dimensions



Connection options



MC 50-B 3+1

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 1
SPD to IEC 61643-11		Class I
Lightning protection zone LPZ		0→1
Impulse discharge current (10/350)	I_{imp}	50 kA
Total discharge current (10/350)	I_{total}	125 kA
Nominal discharge current (8/20)	I_n	50 kA
Arrester surge current (8/20) [total]	$I_{Total 8/20}$	125 kA
Voltage protection level	U_n	< 2,0 kV
Response time	t_A	<100 ns
Follow current quenching capacity (eff) [N-PE]	I_{fi}	25 kA
Maximum back-up fuse		500 A
Temperature range	ϑ	-40 - +85 °C
Division unit TE (17.5 mm)		8
Protection rating		IP20
Connection cross-section rigid		10 - 50 mm ²
Connection cross-section, multi-wire		10 - 35 mm ²
Connection cross-section, flexible		10 - 25 mm ²

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Surge protection device for energy technology, arrester, type 1 (industry)

- Lightning current and surge arrestors
- High arresting capacity up to 35 kA (10/350) per pole
- Arrestors for buildings with lightning protection system
- Visual status display
- With remote signalling
- Simple standard DIN rail mounting
- Labelled connections
- Usable in systems with lightning protection class I-IV



Lightning current and surge arrester MCF 35

The MCF lightning current arrestors meet the type 1 requirement class according to IEC 61643-11. These devices protect low-voltage systems and consumer systems against any kind of surge voltages. The voltage-limit-

ing carbon spark gap provides multiple benefits. A short response time, a low protection level and high current leakage capability with long service life. In addition, the devices do not produce any line follow current. If circum-

stances are uncertain and there is a risk of fire from overloads, the cut-off unit disconnects the arrester safely from the mains.

Lightning arrester MCF 35, 400/690 V, 1-pole with IR



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
MCF 35-1+FS-440	440	1-pole	1	98.000	5096974

AIG Cast aluminium

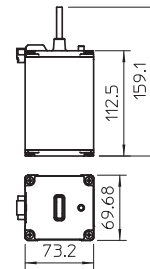
Lightning arrester type 1

- For lightning protection equipotential bonding to DIN EN 62305 (IEC 62305)
- Lightning current arresting capacity 35 kA (10/350) per pole
- Follow current extinguishing 50 kA_{eff}, arrester back-up fuse up to 400 A gL/gG
- Encapsulated, non-extinguishing spark gap arrester for use in distributor housings
- Cut-off unit with visual indicator
- Remote signalling with potential-free changeover contact

Application: Without exception for 400/690 V network systems



Dimensions



Connection options



MCF 35-1+FS-440

Nominal voltage	U_N	400 V
Max. continuous operating voltage	U_c	440 V
SPD to EN 61643-11		Type 1
SPD to IEC 61643-11		Class I
Impulse discharge current (10/350)	I_{imp}	35 kA
Nominal discharge current (8/20)	I_n	35 kA
Voltage protection level	U_o	2,5 kV
Follow current quenching capacity I _{eff}	$I_{fi\ eff}$	50 kA
Maximum back-up fuse		400 A
Protection rating		IP20
Response time	t_A	< 100 ns
Temperature range	ϑ	-40 - +85 °C

Lightning arrester MCF 35, 400/690 V for power networks

Lightning arrester MCF 35, 400/690 V, 3-pole with IR



Type	Highest continuous voltage V	Version	Pack. pcs.	Weight kg/100 pcs.	Item No.
MCF 35-P3+FS-440	440	3-pole	1	400.000	5096976

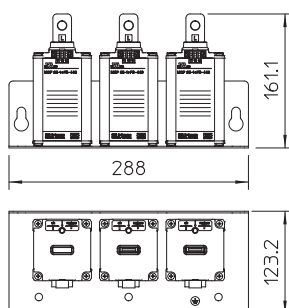
AIG Cast aluminium

Lightning arrester type 1

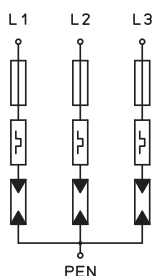
- Fully assembled 3-pole connection unit
- For lightning protection equipotential bonding according to DIN EN 62305 (IEC 62305)
- Lightning current arresting capacity 35 kA (10/350) per pole
- Line following current quenching 50 kA_{eff}, arrester back-up fuse up to 400 A gL/gG
- Encapsulated, non-extinguishing spark gap arrester for use in distributor housings
- Cut-off unit with visual indicator
- Remote signalling with potential-free changeover contact
- For finished mounting on busbars and walls

Application: Without exception for 400/690 V power systems

Dimensions



Connection options



MCF 35-P3+FS-440

Nominal voltage	U_N	400 V
Max. continuous operating voltage	U_C	440 V
SPD to EN 61643-11		Type 1
SPD to IEC 61643-11		Class I
Impulse discharge current (10/350)	I_{imp}	35 kA
Nominal discharge current (8/20)	I_n	35 kA
Voltage protection level	U_p	2,5 kV
Follow current quenching capacity leff	$I_{fi\ eff}$	— kA
Maximum back-up fuse		400 A
Protection rating		IP20
Response time	t_A	< 100 ns
Temperature range	ϑ	-40 - +85 °C



Combination arrester in VG housing for TN-S and TT network systems

VG housing with MC 50-B/3+1

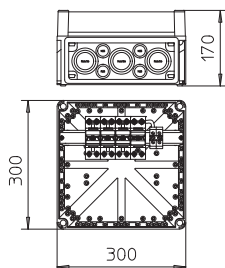


Type	Highest continuous voltage V	Version	Pack. pcs.	Weight kg/100 pcs.	Item No.
VG 4-B TNS+TT	255	3 + NPE	1	290.000	5089200

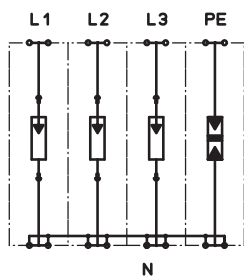
VG...: Lightning arrester system solution Type 1 (Class B) to DIN EN 61643-11.

- LightningController MC 50-B/VDE and MC 125-B/NPE installed in insulating housing IP 65, sealable housing
- Pulsed current 100 kA 10/350 μ s BET-tested
- Conforms to requirements of VDN Directive, 2nd Edition 2004
- Protection level < 2.0 kV
- Enclosed, non-extinguishing discharge gap
- Suitable for TNS and TT network systems

Dimensions



Connection options



VG 4-B TNS+TT

Nominal voltage	U_N	230 V
SPD to EN 61643-11		—
SPD to IEC 61643-11		Type 1
Lightning protection zone LPZ		Class I
Impulse discharge current (10/350)	I_{imp}	0→1
Total discharge current (10/350)	I_{total}	50 kA
Nominal discharge current (8/20)	I_n	125 kA
Arrester surge current (8/20) [total]	$I_{Total 8/20}$	50 kA
Voltage protection level	U_n	125 kA
Response time	t_A	<2,0 kV
Follow current quenching capacity leff	$I_{fi\ eff}$	<100 ns
Follow current quenching capacity (eff) [N-PE]	I_n	12.5 kA
Maximum back-up fuse		25 kA
Temperature range	ϑ	500 A
Division unit TE (17.5 mm)		-40 - +85 °C
Protection rating		8
Connection cross-section rigid		IP54
Connection cross-section, multi-wire		10 - 50 mm ²
Connection cross-section, flexible		10 - 35 mm ²
		10 - 25 mm ²

VG housing with MC 50-B/3



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
VG 3-B TNC	255	3-pole	1	315.000	5089212

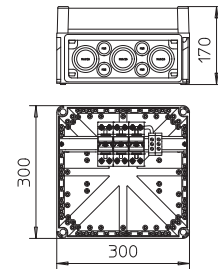
VG...: Lightning arrester system solution Type 1 (Class B) to DIN EN 61643-11.

- LightningController MC 50-B/VDE installed in insulating housing IP 65, sealable housing
- Pulsed current 100 kA 10/350 μ s BET-tested
- Conforms to requirements of VDN Directive, 2nd Edition 2004
- Protection level < 2.0 kV
- Enclosed, non-extinguishing discharge gap
- Suitable for TNC network systems

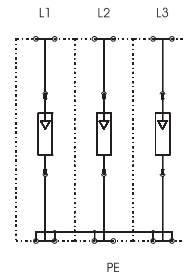
Application example: the system solution is used in the pre-meter area according to VDN Directive, 2nd Edition 2004.



Dimensions



Connection options



VG 3-B TNC

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 1
SPD to IEC 61643-11		Class I
Lightning protection zone LPZ		0-1
Impulse discharge current (10/350)	I_{imp}	50 kA
Total discharge current (10/350)	I_{total}	150 kA
Nominal discharge current (8/20)	I_n	50 kA
Arrester surge current (8/20) [total]	$I_{Total R/20}$	150 kA
Voltage protection level	U_n	<2,0 kV
Response time	t_A	<100 ns
Follow current quenching capacity leff	$I_{fi\ eff}$	12.5 kA
Maximum back-up fuse		500 A
Temperature range	ϑ	-40 - +85 °C
Division unit TE (17.5 mm)		6
Protection rating		IP54
Connection cross-section rigid		10 - 50 mm ²
Connection cross-section, multi-wire		10 - 35 mm ²
Connection cross-section, flexible		10 - 25 mm ²

MC accessories, upper parts and bases

Upper part, lightning current arrester



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.

MC 50-B/0: LightningController, upper part

Upper part, lightning current arrester with function display



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.

MC 50-B/0 OS: LightningController, upper part
Capacity: < 1mW

Lightning arrester/combination arrester base



Version

Type	Pack. pcs.	Weight kg/100 pcs.	Item No.
MC 50-B U VDE 1-pole	1	18.000	5096839

MC 50-B/U: LightningController bottom section fit type:

- MC 50-B VDE
- MCD 50-B
- Including plug caps for identifying the connections



Decoupling inductivity



Rated current

Type	A	Version	Version	Pack. pcs.	Weight kg/100 pcs.	Item No.
LC 63 63	63	1-pole	63 A	1	43.500	5096970

LC 63: Decoupling inductivity.

- Compact design in a 35 mm housing
- Two connection options for input and output
- Nominal load current 63 A
- Nominal inductivity 5 μ H

Application example: in combination with MC 50-B VDE and V 20-C for line lengths of less than 5 m.



Accessories for lightning current arrester

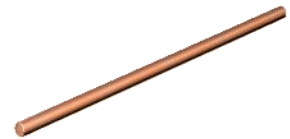


Type	Pack. pcs.	Weight kg/100 pcs.	Item No.
MC V3	10	1.700	5096884
MC V4	10	2.300	5096886

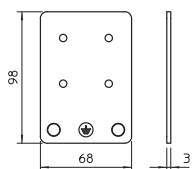
Cu Copper

MC-V...: Copper bridge 16 mm², suitable for bridging MC arrestors in side channel.

- V3 for 3-pole circuits
- V4 for 4-pole circuits



Mounting plate, 1-pole



Version

Type

MCF-MS-P1 | 1-pole

V2A Stainless steel, grade 304

Pack. Weight
pcs kg/100
pcs pcs.

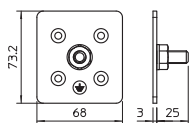
Item No.

1 | 19.600 | **5096992**

Mounting plate 1-pole

- Mounting plate for installation of the arrester MCF 35-1+FS-440
- Prefabricated hole pattern for mounting the arrester on busbars
- Required screws for installation the arrester enclosed

Mounting plate, 1-pole, M10



Version

Type

MCF-MS-M10 | 1-pole

V2A Stainless steel, grade 304

Pack. Weight
pcs kg/100
pcs pcs.

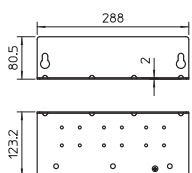
Item No.

1 | 14.200 | **5096990**

Mounting plate with threaded connector M10

- Mounting plate with threaded M10 connector to install the arrester MCF 35-1+FS-440
- M10 bolts for direct installation of the arrester on busbars
- Required screws for installation enclosed

Mounting plate, 3-pole



Version

Type

MCF-MS-P3 | 3-pole

V2A Stainless steel, grade 304

Pack. Weight
pcs kg/100
pcs pcs.

Item No.

1 | 99.800 | **5096994**

Mounting plate 3-pole

- Mounting plate 3-pole for installation of the arrester MCF 35-1+FS-440
- Prefabricated hole pattern for mounting the arrester on busbars
- Suitable for wall mounting
- Required screws for installation enclosed



Diese Anlage ist mit
Überspannungsschutzgeräten
ausgerüstet.

OBO
BETTERMANN

Bei Isolationsmessungen bitte die OBO
Schutzmodule herausziehen bzw.
abklemmen.

System contains overvoltage protection
devices. Please remove or disconnect the
OBO protectors during isolation tests.




Mat.-Nr. 4100 8383



V20 Überspannungsableiter Typ 2

V20 surge arrester type 2

Surge protection energy technology, type 2 arrester

	Surge arrester V20	107
	System solution, surge arrester V20 in housing	158
	Accessories, upper parts and bases V20	161



Surge protection energy technology, arrester, type 2

The plus of the V20 family

- Connectable surge arrester
- High arresting capacity
- Visual status display
- Available with optional remote signalling
- Vibration-proof
- Simple standard DIN rail mounting
- Labelled connections
- Voltage encoding



Function and areas of use

The surge arrestors V20 meet the type 2 requirement class according to IEC 61643-11. These devices protect low-voltage consumer systems from overvoltages of all types and are available in

single-pole to four-pole versions. The use of high-performance varistors permits a rapid response time and a low protection level, without any line follow current. If circumstances are uncertain and there is a risk of fire from an overload, the

internal cut-off unit disconnects the arrester from the mains if necessary. In addition, the QR code printed on the arrester allows direct access to the online installation instructions.

Surge arrester V20, 1-pole 75 V



Type	Highest continuous voltage AC	Pole version	Protection rating	Pack. pcs	Weight	Item No.
	V				kg/100 pcs.	
V20-1-75	75	1	IP20	1	11.500	5095141

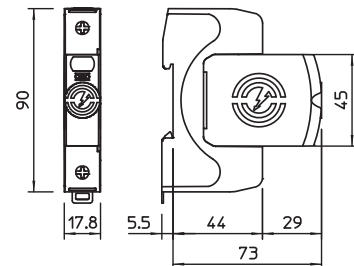
Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Application: Equipotential bonding in main and sub-distributions.



Dimensions



Connection options



V20-1-75

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 60 V
Maximum continuous voltage AC	U_c 75 V
Nominal discharge current (8/20 μ s)	I_n / I_{-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 40 kA
Protection level [L-N]	U_p 0.5 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,3 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0,4 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	25 kA
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Surge arrester V20, 2-pole, 75 V

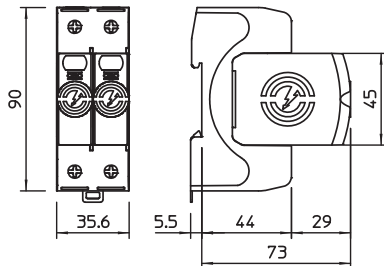


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-2-75	75	2	IP20	1	22.800	5095142

Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Dimensions



Application: Equipotential bonding in main and sub-distributions.

Connection options



V20-2-75

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 60 V
Maximum continuous voltage AC	U_c 75 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 80 kA
Protection level [L-N]	U_p 0.5 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,3 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0,4 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG





Surge arrester V20, 1-pole, 150 V

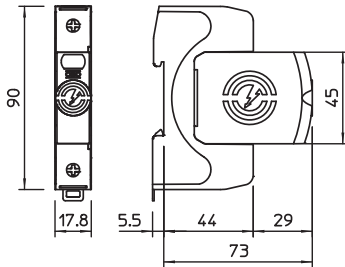


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-1-150	150	1	IP20	1	11.900	5095151

Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Dimensions



Application: Equipotential bonding in main and sub-distributions.

Connection options



V20-1-150

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 120 V
Maximum continuous voltage AC	U_c 150 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 40 kA
Protection level [L-N]	U_p 0.8 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,5 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0,6 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG



Surge arrester V20, 2-pole, 150 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-2-150	150	2	IP20	1	23.600	5095152

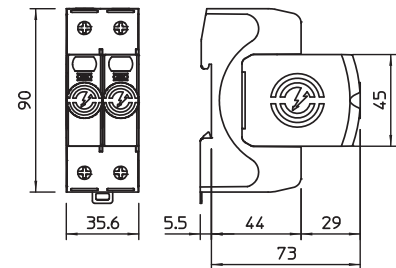
Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

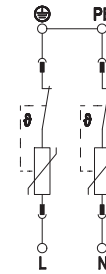
Application: Equipotential bonding in main and sub-distributions.



Dimensions



Connection options



V20-2-150

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 120 V
Maximum continuous voltage AC	U_c 150 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 80 kA
Protection level [L-N]	U_p 0.8 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,5 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0,6 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Surge arrester V20 in 150 V, type 2, for TN-S networks

Surge arrester V20, 2-pole + NPE, 150 V

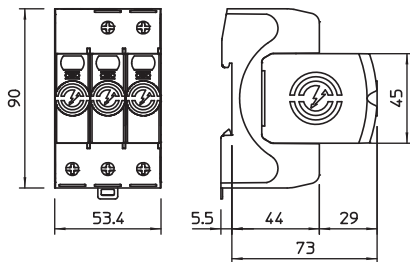


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-2+NPE-150	150	2+N/PE	IP20	1	32.800	5095232

Surge arrester, type 2

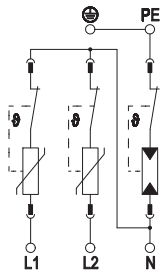
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Dimensions



Application: Equipotential bonding in main and sub-distributions.

Connection options



V20-2+NPE-150

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 120 V
Maximum continuous voltage AC	U_c 150 V
Nominal discharge current (8/20 μ s)	I_n / I_{1-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 60 kA
Protection level [L-N]	U_n 0.8 kV
Combined voltage protection level [L-PE]	U_n / I_{1-PF} 1.2 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,5 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0,6 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{11} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Surge arrester V20, 2-pole + NPE and FS, 150 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-2+NPE+FS-150	150	2+N/PE	IP20	1	33.200	5095322

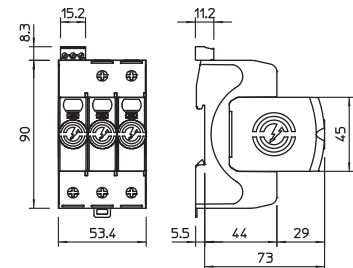
Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

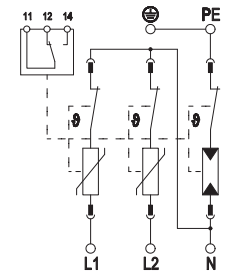
Application: Equipotential bonding in main and sub-distributions.



Dimensions



Connection options



V20-2+NPE+FS-150

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 120 V
Maximum continuous voltage AC	U_c 150 V
Nominal discharge current (8/20 μ s)	I_n / I_{1-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 60 kA
Protection level [L-N]	U_n 0.8 kV
Combined voltage protection level [L-PE]	U_n / I_{1-PE} 1.2 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,5 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0,6 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1,5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1,5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

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Surge arrester V20 in 150 V, type 2, for TN-C networks

Surge arrester V20, 3-pole, 150 V

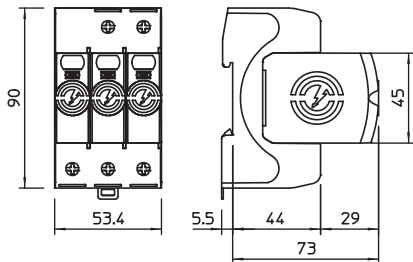


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-3-150	150	3	IP20	1	33.000	5095153

Surge arrester, type 2

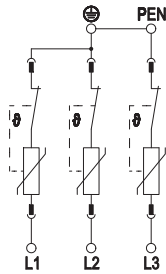
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Dimensions



Application: Equipotential bonding in main and sub-distributions.

Connection options



V20-3-150

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 120 V
Maximum continuous voltage AC	U_c 150 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 120 kA
Protection level [L-N]	U_p 0.8 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0.5 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0.6 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Surge arrester V20, 1-pole+ NPE, 150 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-1+NPE-150	150	1+N/PE	IP20	1	23.300	5095231

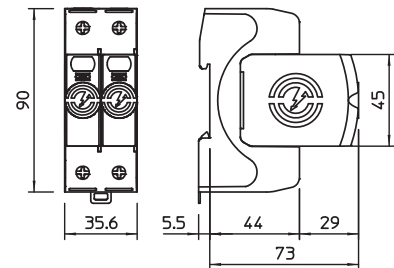
Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

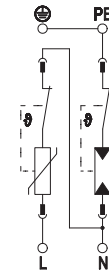
Application: Equipotential bonding in main and sub-distributions.



Dimensions



Connection options



V20-1+NPE-150

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 120 V
Maximum continuous voltage AC	U_c 150 V
Nominal discharge current (8/20 μ s)	I_n / I_{1-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 60 kA
Protection level [L-N]	U_n 0.8 kV
Combined voltage protection level [L-PE]	U_n / I_{1-PE} 1.2 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,5 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0,6 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{11} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG



Surge arrester V20, 3-pole + NPE, 150 V

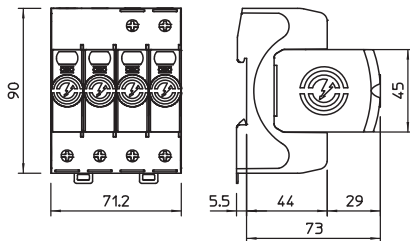


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-3+NPE-150	150	3+N/PE	IP20	1	42.700	5095233

Surge arrester, type 2

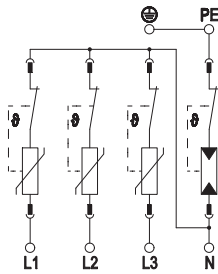
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Dimensions



Application: Equipotential bonding in main and sub-distributions.

Connection options



V20-3+NPE-150

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 120 V
Maximum continuous voltage AC	U_c 150 V
Nominal discharge current (8/20 μ s)	I_n / I_{1-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 60 kA
Protection level [L-N]	U_p 0.8 kV
Combined voltage protection level [L-PE]	$U_{p / L-PE}$ 1.2 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,5 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0,6 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{11} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG



Surge arrester V20, 3-pole+ NPE and FS, 150 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-3+NPE+FS-150	150	3+N/PE	IP20	1	43.300	5095321

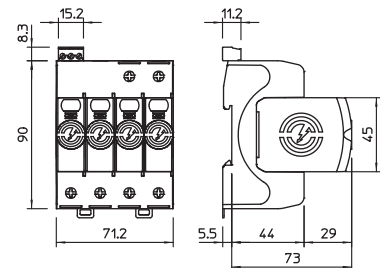
Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

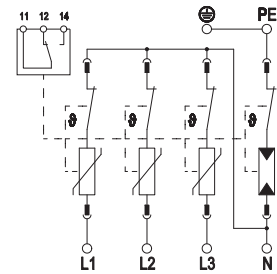
Application: Equipotential bonding in main and sub-distributions.



Dimensions



Connection options



V20-3+NPE+FS-150

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 120 V
Maximum continuous voltage AC	U_c 150 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 60 kA
Protection level [L-N]	U_n 0.8 kV
Combined voltage protection level [L-PE]	U_n / I_{L-PE} 1.2 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,5 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0,6 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1,5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1,5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG



Surge arrester V20 in 280 V, type 2

Surge arrester V20, 1-pole, 280 V

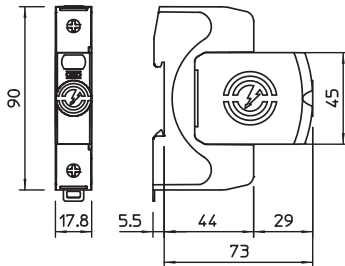


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-1-280	280	1	IP20	1	12.900	5095161

Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Dimensions



Application: Equipotential bonding in main and sub-distributions.

Connection options



V20-1-280

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 40 kA
Protection level [L-N]	U_p 1.3 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,8 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,0 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG



Surge arrester V20, 1-pole with remote signalling, 280 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-1+FS-280	280	1	IP20	1	13.100	5095281

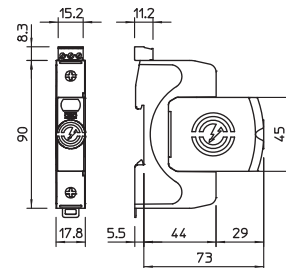
Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Application: Equipotential bonding in main and sub-distributions.



Dimensions



Connection options



V20-1+FS-280

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 40 kA
Protection level [L-N]	U_d 1.3 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,8 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,0 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{U} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1,5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1,5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Surge arrester V20 in 280 V, type 2, for TN-S networks

Surge arrester V20, 2-pole, 280 V

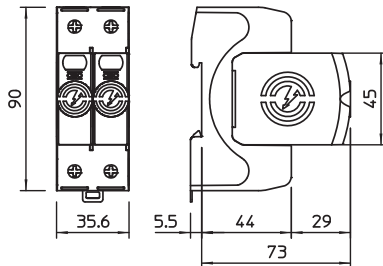


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs.	Weight kg/100 pcs.	Item No.
V20-2-280	280	2	IP20	1	25.600	5095162

Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Dimensions



Application: Equipotential bonding in main and sub-distributions.

Connection options



V20-2-280

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 80 kA
Protection level [L-N]	U_p 1.3 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,8 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,0 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG



Surge arrester V20, 2-pole with remote signalling, 280 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-2+FS-280	280	2	IP20	1	25.900	5095282

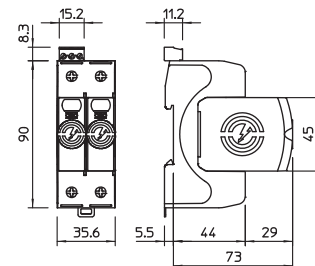
Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

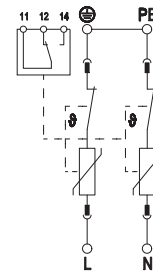
Application: Equipotential bonding in main and sub-distributions.



Dimensions



Connection options



V20-2+FS-280

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 80 kA
Protection level [L-N]	U_d 1.3 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,8 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,0 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1,5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1,5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Surge arrester V20 in 280 V, type 2, for TN-S networks

Surge arrester V20, 2-pole + NPE, 280 V

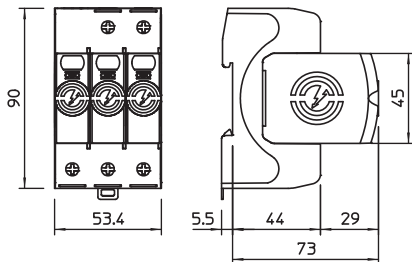


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-2+NPE-280	280	2+N/PE	IP20	1	34.600	5095252

Surge arrester, type 2

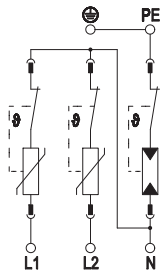
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Dimensions



Application: Equipotential bonding in main and sub-distributions.

Connection options



V20-2+NPE-280

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{1-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 60 kA
Protection level [L-N]	U_n 1.3 kV
Combined voltage protection level [L-PE]	U_n / I_{1-PF} 1.5 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0.8 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1.0 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{11} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG



Surge arrester V20, 2-pole + NPE and remote signalling, 280 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-2+NPE+FS-280	280	2+N/PE	IP20	1	34.800	5095332

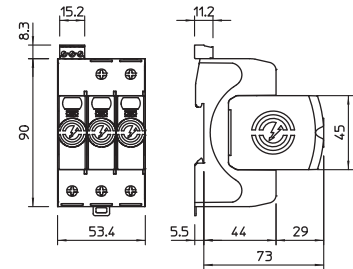
Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

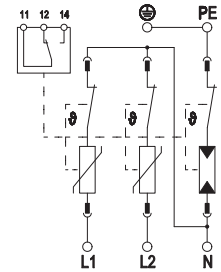
Application: Equipotential bonding in main and sub-distributions.



Dimensions



Connection options



V20-2+NPE+FS-280

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{1-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 60 kA
Protection level [L-N]	U_n 1.3 kV
Combined voltage protection level [L-PE]	U_n / I_{1-PE} 1.5 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,8 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,0 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1,5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1,5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Surge arrester V20 in 280 V, type 2, for TN-C networks

Surge arrester V20, 3-pole, 280 V

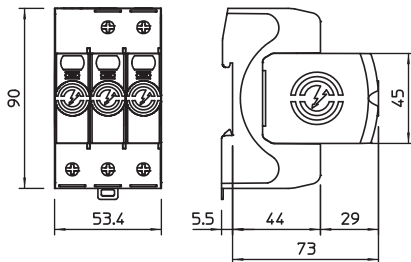


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-3-280	280	3	IP20	1	36.000	5095163

Surge arrester, type 2

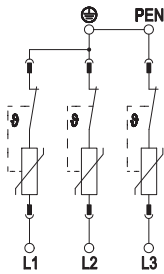
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Dimensions



Application: Equipotential bonding in main and sub-distributions.

Connection options



V20-3-280

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 120 kA
Protection level [L-N]	U_p 1.3 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,8 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,0 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG



Surge arrester V20, 3-pole with remote signalling, 280 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-3+FS-280	280	3	IP20	1	36.400	5095283

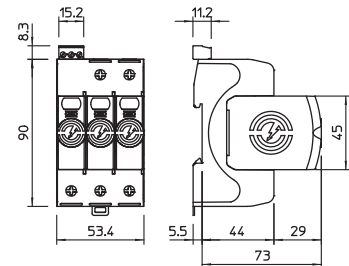
Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

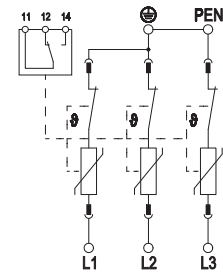
Application: Equipotential bonding in main and sub-distributions.



Dimensions



Connection options



V20-3+FS-280

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 120 kA
Protection level [L-N]	U_p 1.3 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,8 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,0 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{U} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1,5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1,5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Surge arrester V20, 4-pole, 280 V

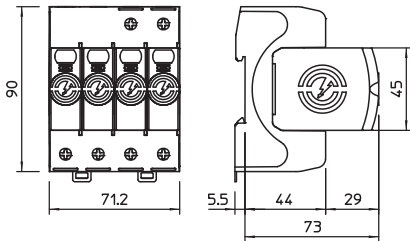


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-4-280	280	4	IP20	1	47.000	5095164

Surge arrester, type 2

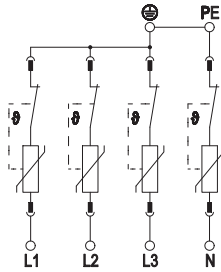
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Dimensions



Application: Equipotential bonding in main and sub-distributions.

Connection options



V20-4-280

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 160 kA
Protection level [L-N]	U_p 1.3 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,8 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,0 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG



Surge arrester V20, 4-pole with remote signalling, 280 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-4+FS-280	280	4	IP20	1	47.500	5095284

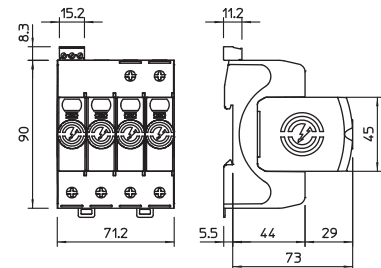
Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

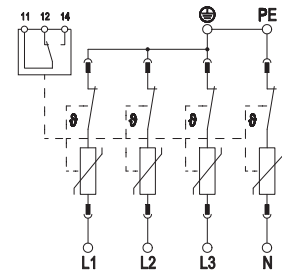
Application: Equipotential bonding in main and sub-distributions.



Dimensions



Connection options



V20-4+FS-280

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 160 kA
Protection level [L-N]	U_p 1.3 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,8 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,0 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1,5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1,5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Surge arrester V20 in 280 V, type 2, TN-S and TT networks

Surge arrester V20, 1-pole + NPE, 280 V

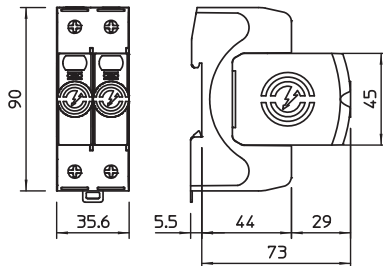


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-1+NPE-280	280	1+N/PE	IP20	1	24.300	5095251

Surge arrester, type 2

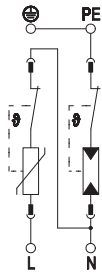
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Dimensions



Application: Equipotential bonding in main and sub-distributions.

Connection options



V20-1+NPE-280

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{L-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 60 kA
Protection level [L-N]	U_p 1.3 kV
Combined voltage protection level [L-PE]	$U_{p / L-PE}$ 1.5 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0.8 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1.0 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG



Surge arrester V20, 1-pole + NPE and remote signalling, 280 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-1+NPE+FS-280	280	1+N/PE	IP20	1	24.600	5095331

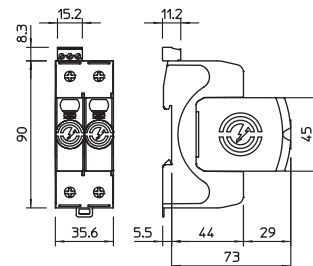
Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

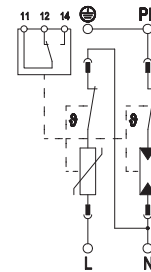
Application: Equipotential bonding in main and sub-distributions.



Dimensions



Connection options



V20-1+NPE+FS-280

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{1-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 60 kA
Protection level [L-N]	U_n 1.3 kV
Combined voltage protection level [L-PE]	U_n / I_{1-PE} 1.5 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,8 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,0 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{ui} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1,5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1,5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Surge arrester V20, 3-pole + NPE, 280 V

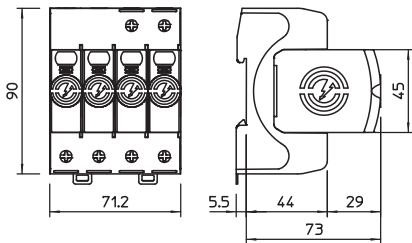


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-3+NPE-280	280	3+N/PE	IP20	1	45.800	5095253

Surge arrester, type 2

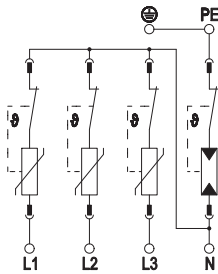
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Dimensions



Application: Equipotential bonding in main and sub-distributions.

Connection options



V20-3+NPE-280

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{1-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 60 kA
Protection level [L-N]	U_p 1.3 kV
Combined voltage protection level [L-PE]	$U_{p / L-PE}$ 1.5 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0.8 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1.0 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{11} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Surge arrester V20, 3-pole + NPE and remote signalling, 280 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-3+NPE+FS-280	280	3+N/PE	IP20	1	46.300	5095333

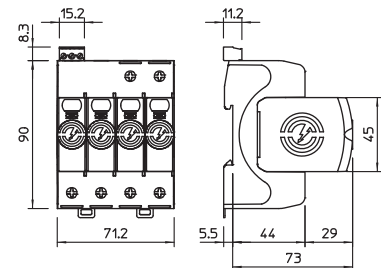
Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

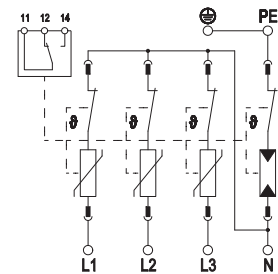
Application: Equipotential bonding in main and sub-distributions.



Dimensions



Connection options



V20-3+NPE+FS-280

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 60 kA
Protection level [L-N]	U_n 1.3 kV
Combined voltage protection level [L-PE]	U_n / I_{L-PE} 1.5 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,8 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,0 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1,5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1,5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG



Surge arrester V20, 1-pole, 320 V

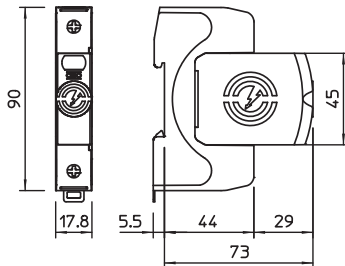


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-1-320	320	1	IP20	1	13.000	5095171

Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Dimensions



Application: Equipotential bonding in main and sub-distributions.

Connection options



V20-1-320

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 320 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 40 kA
Protection level [L-N]	U_p 1.4 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1,0 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,2 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG



Surge arrester V20, 1-pole with remote signalling, 320 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-1+FS-320	320	1	IP20	1	13.200	5095291

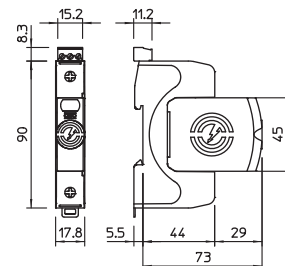
Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Application: Equipotential bonding in main and sub-distributions.



Dimensions



Connection options



V20-1+FS-320

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 320 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 40 kA
Protection level [L-N]	U_d 1.4 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1,0 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,2 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1,5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1,5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Surge arrester V20, 3-pole, 320 V

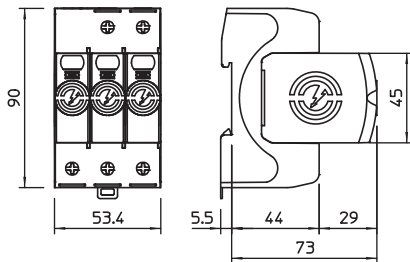


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-3-320	320	3	IP20	1	36.300	5095173

Surge arrester, type 2

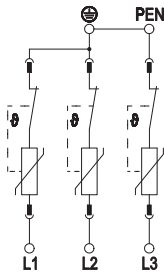
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Dimensions



Application: Equipotential bonding in main and sub-distributions.

Connection options



V20-3-320

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 320 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 120 kA
Protection level [L-N]	U_p 1.4 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1,0 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,2 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Surge arrester V20, 3-pole with remote signalling, 320 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-3+FS-320	320	3	IP20	1	36.700	5095293

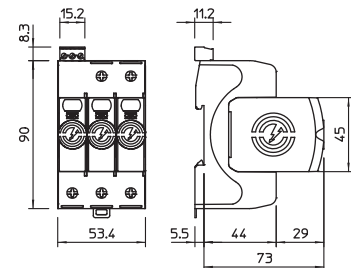
Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

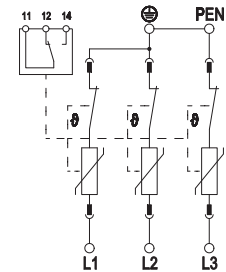
Application: Equipotential bonding in main and sub-distributions.



Dimensions



Connection options



V20-3+FS-320

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 320 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 120 kA
Protection level [L-N]	U_d 1.4 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1,0 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,2 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1,5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1,5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Surge arrester V20, 1-pole + NPE, 320 V

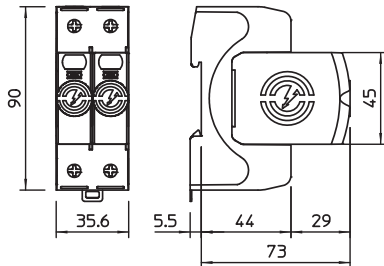


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-1+NPE-320	320	1+N/PE	IP20	1	24.400	5095261

Surge arrester, type 2

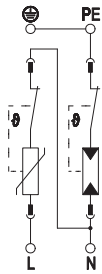
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Dimensions



Application: Equipotential bonding in main and sub-distributions.

Connection options



V20-1+NPE-320

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 320 V
Nominal discharge current (8/20 μ s)	I_n / I_{1-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 60 kA
Protection level [L-N]	U_n 1.4 kV
Combined voltage protection level [L-PE]	U_n / I_{1-PF} 1.7 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1,0 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,2 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{11} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG



Surge arrester V20, 1-pole + NPE and remote signalling, 320 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-1+NPE+FS-320	320	1+N/PE	IP20	1	24.700	5095341

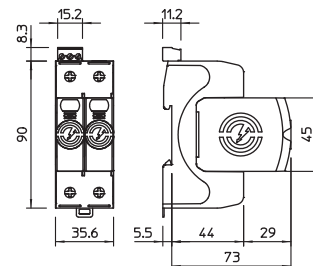
Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

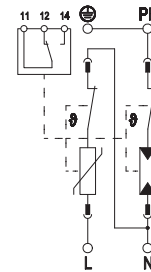
Application: Equipotential bonding in main and sub-distributions.



Dimensions



Connection options

**V20-1+NPE+FS-320**

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 320 V
Nominal discharge current (8/20 μ s)	I_n / I_{1-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 60 kA
Protection level [L-N]	U_n 1.4 kV
Combined voltage protection level [L-PE]	U_n / I_{1-PE} 1.7 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1,0 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,2 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1,5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1,5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Surge arrester V20, 3-pole + NPE, 320 V

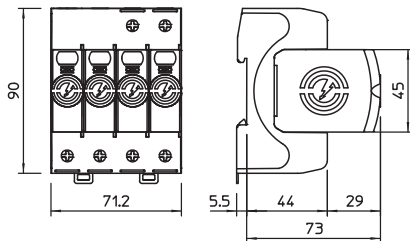


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-3+NPE-320	320	3+N/PE	IP20	1	46.100	5095263

Surge arrester, type 2

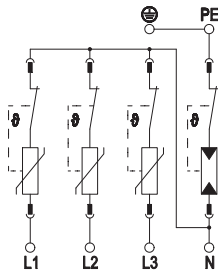
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Dimensions



Application: Equipotential bonding in main and sub-distributions.

Connection options



V20-3+NPE-320

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 320 V
Nominal discharge current (8/20 μ s)	I_n / I_{1-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 60 kA
Protection level [L-N]	U_p 1.4 kV
Combined voltage protection level [L-PE]	$U_{p / L-PE}$ 1.7 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1,0 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,2 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{11} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Surge arrester V20, 3-pole + NPE and remote signalling, 320 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-3+NPE+FS-320	320	3+N/PE	IP20	1	46.600	5095343

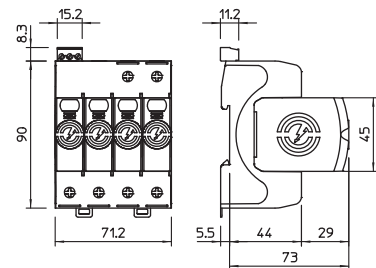
Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

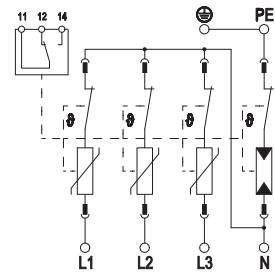
Application: Equipotential bonding in main and sub-distributions.



Dimensions



Connection options



V20-3+NPE+FS-320

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 320 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 60 kA
Protection level [L-N]	U_n 1.4 kV
Combined voltage protection level [L-PE]	U_n / I_{L-PE} 1.7 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1,0 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,2 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1,5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1,5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG



Surge arrester V20, 1-pole, 385 V

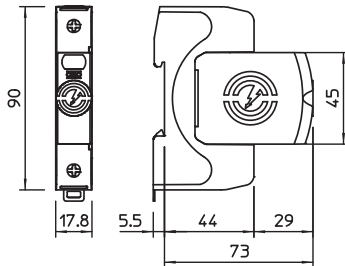


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-1-385	385	1	IP20	1	13.300	5095191

Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Dimensions



Application: Equipotential bonding in main and sub-distributions.

Connection options



V20-1-385

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 385 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrestor surge current (8/20 μ s) [total]	I_{total} 40 kA
Protection level [L-N]	U_p 1.7 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1,2 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,4 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG



Surge arrester V20, 2-pole, 385 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
	V					
V20-2-385	385	2	IP20	1	26.400	5095192

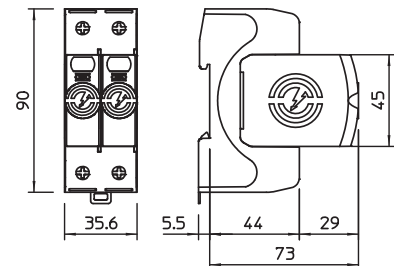
Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

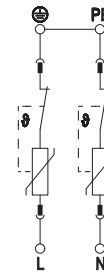
Application: Equipotential bonding in main and sub-distributions.



Dimensions



Connection options



V20-2-385

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 385 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 80 kA
Protection level [L-N]	U_p 1.7 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1.2 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1.4 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Surge arrester V20, 2-pole with remote signalling, 385 V

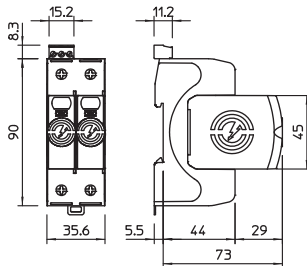


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-2+FS-385	385	2	IP20	1	26.700	5095302

Surge arrester, type 2

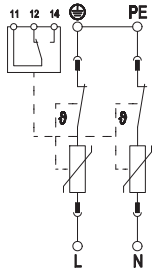
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Dimensions



Application: Equipotential bonding in main and sub-distributions.

Connection options



V20-2+FS-385

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 385 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 80 kA
Protection level [L-N]	U_p 1.7 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1.2 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1.4 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1,5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1,5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG



Surge arrester V20, 1-pole + NPE, 385 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-1+NPE-385	385	1+N/PE	IP20	1	24.700	5095271

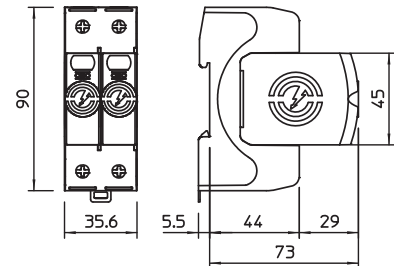
Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Application: Equipotential bonding in main and sub-distributions.



Dimensions



Connection options



V20-1+NPE-385

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 385 V
Nominal discharge current (8/20 μ s)	I_n / I_{L-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 60 kA
Protection level [L-N]	U_n 1.7 kV
Combined voltage protection level [L-PE]	U_n / I_{L-PE} 1.9 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1.2 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1.4 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

02_TBS_Produnkteilheitenkatalog_EX_2018 / en / 2018/11/23 15:05:20 (LLEXP02235) / 2018/11/23 15:07:49 15:07:49

Surge arrester V20, 3-pole + NPE, 385 V

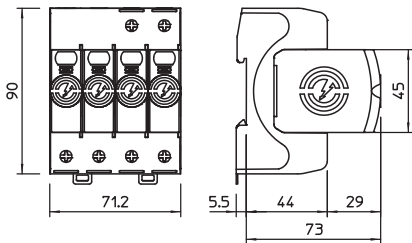


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-3+NPE-385	385	3+N/PE	IP20	1	47.000	5095273

Surge arrester, type 2

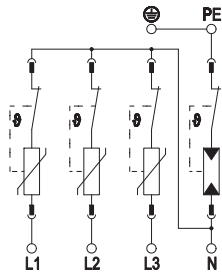
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Dimensions



Application: Equipotential bonding in main and sub-distributions.

Connection options



V20-3+NPE-385

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 385 V
Nominal discharge current (8/20 μ s)	I_n / I_{1-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 60 kA
Protection level [L-N]	U_n 1.7 kV
Combined voltage protection level [L-PE]	U_n / I_{1-PF} 1.9 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1.2 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1.4 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{11} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Surge arrester V20, 3-pole + NPE and remote signalling, 385 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-3+NPE+FS-385	385	3+N/PE	IP20	1	47.500	5095353

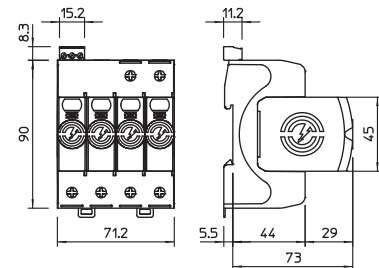
Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

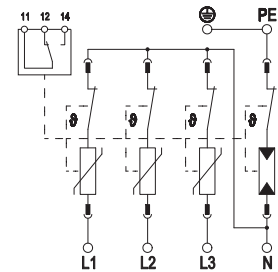
Application: Equipotential bonding in main and sub-distributions.



Dimensions



Connection options



V20-3+NPE+FS-385

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 385 V
Nominal discharge current (8/20 μ s)	I_n / I_{1-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 60 kA
Protection level [L-N]	U_n 1.7 kV
Combined voltage protection level [L-PE]	U_n / I_{1-PE} 1.9 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1.2 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1.5 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1,5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1,5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG



Surge arrester V20, 3-pole, 385 V

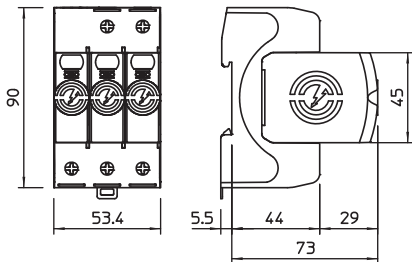


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-3-385	385	3	IP20	1	35.600	5095193

Surge arrester, type 2

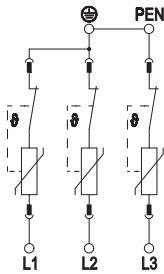
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Dimensions



Application: Equipotential bonding in main and sub-distributions.

Connection options



V20-3-385

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 385 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 120 kA
Protection level [L-N]	U_p 1.7 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1.2 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1.4 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG



Surge arrester V20, 3-pole with remote signalling, 385 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-3+FS-385	385	3	IP20	1	37.600	5095303

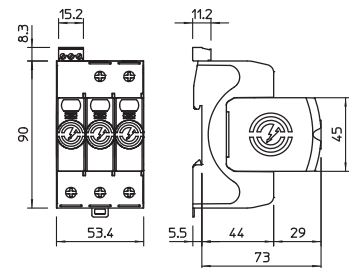
Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

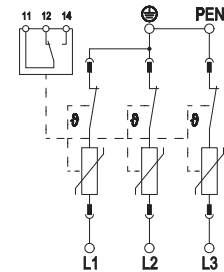
Application: Equipotential bonding in main and sub-distributions.



Dimensions



Connection options



V20-3+FS-385

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 385 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 120 kA
Protection level [L-N]	U_p 1.7 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1.2 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1.4 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{U} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1,5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1,5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Surge arrester V20, 4-pole, 385 V

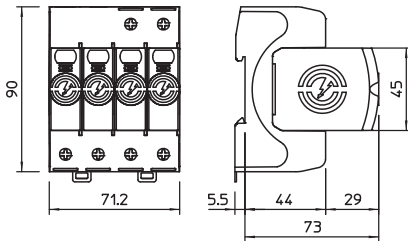


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-4-385	385	4	IP20	1	48.600	5095194

Surge arrester, type 2

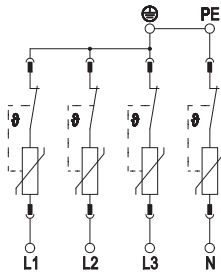
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Dimensions



Application: Equipotential bonding in main and sub-distributions.

Connection options



V20-4-385

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 385 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 160 kA
Protection level [L-N]	U_p 1.7 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1.2 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1.4 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG



Surge arrester V20, 4-pole with remote signalling, 385 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-4+FS-385	385	4	IP20	1	49.100	5095304

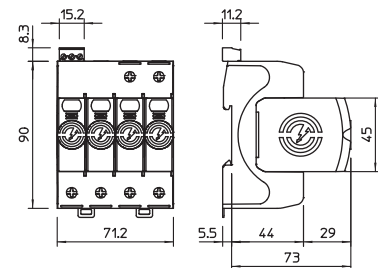
Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

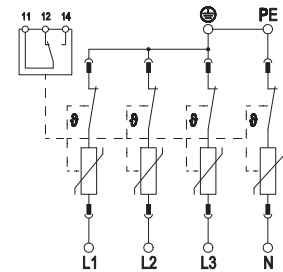
Application: Equipotential bonding in main and sub-distributions.



Dimensions



Connection options



V20-4+FS-385

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 385 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 160 kA
Protection level [L-N]	U_d 1.7 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1.2 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1.4 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1,5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1,5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Surge arrester V20, 1-pole, 440 V

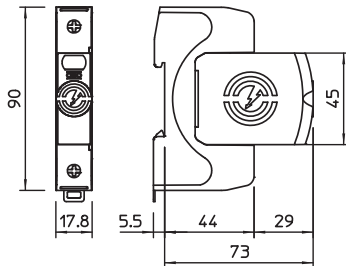


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-1-440	440	1	IP20	1	13.600	5095201

Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Dimensions



Application: Equipotential bonding in main and sub-distributions.

Connection options



V20-1-440

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 400 V
Maximum continuous voltage AC	U_c 440 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 40 kA
Protection level [L-N]	U_p 2 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1,5 kV
Residual voltage [L-N] @ 5 kA	U_{res} 1,8 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL
Cable cross-section, flexible (fine-wire)	1,5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1,5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG



Surge arrester V20, 1-pole, 550 V



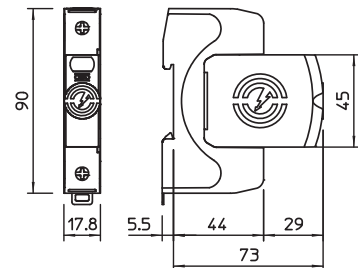
Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
	550	1	IP20	1	14.300	
Surge arrester, type 2						

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Application: Equipotential bonding in main and sub-distributions.



Dimensions



Connection options



V20-1-550

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 400 V
Maximum continuous voltage AC	U_c 550 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 15 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 40 kA
Protection level [L-N]	U_p 2.4 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1,7 kV
Residual voltage [L-N] @ 5 kA	U_{res} 2,1 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Surge arrester V20 in 550 V, type 2, for TN-S networks

Surge arrester V20, 2-pole, 550 V

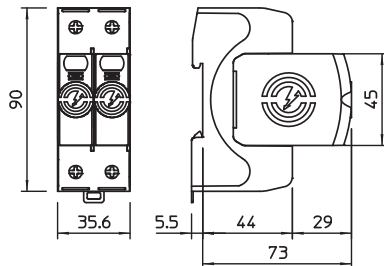


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs.	Weight kg/100 pcs.	Item No.
V20-2-550	550	2	IP20	1	27.000	5095212

Surge arrester, type 2

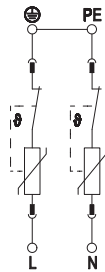
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Dimensions



Application: Equipotential bonding in main and sub-distributions.

Connection options



V20-2-550

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 400 V
Maximum continuous voltage AC	U_c 550 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 15 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 80 kA
Protection level [L-N]	U_p 2,4 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1,7 kV
Residual voltage [L-N] @ 5 kA	U_{res} 2,1 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL
Cable cross-section, flexible (fine-wire)	1,5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1,5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG



Surge arrester V20, 2-pole with remote signalling, 550 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-2+FS-550	550	2	IP20	1	27.300	5095312

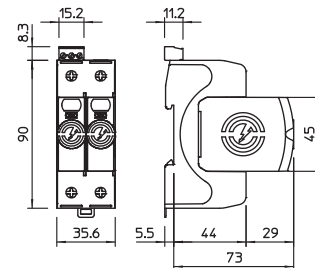
Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

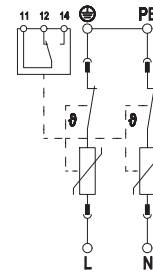
Application: Equipotential bonding in main and sub-distributions.



Dimensions



Connection options



V20-2+FS-550

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 480 V
Maximum continuous voltage AC	U_c 550 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 15 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 80 kA
Protection level [L-N]	U_d 2.4 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1,7 kV
Residual voltage [L-N] @ 5 kA	U_{res} 2,1 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1,5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1,5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Surge arrester V20, 3-pole, 550 V

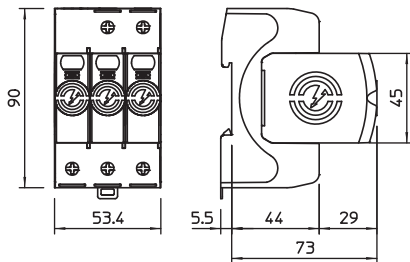


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-3-550	550	3	IP20	1	38.100	5095213

Surge arrester, type 2

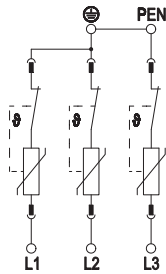
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Dimensions



Application: Equipotential bonding in main and sub-distributions.

Connection options



V20-3-550

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 400 V
Maximum continuous voltage AC	U_c 550 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 15 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 120 kA
Protection level [L-N]	U_p 2.4 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1,7 kV
Residual voltage [L-N] @ 5 kA	U_{res} 2,1 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG



Surge arrester V20, 3-pole with remote signalling, 550 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-3+FS-550	550	3	IP20	1	38.500	5095313

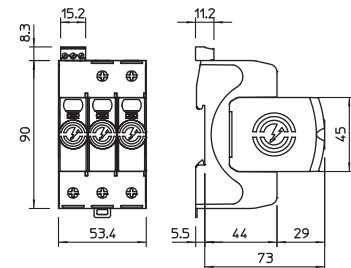
Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

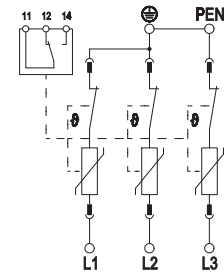
Application: Equipotential bonding in main and sub-distributions.



Dimensions



Connection options



V20-3+FS-550

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 480 V
Maximum continuous voltage AC	U_c 550 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 15 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 120 kA
Protection level [L-N]	U_p 2.4 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1,7 kV
Residual voltage [L-N] @ 5 kA	U_{res} 2,1 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{U} -40 - +80 °C
Protection rating	IP20
Approvals	UL
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1,5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1,5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG



Surge arrester V20, 4-pole, 550 V

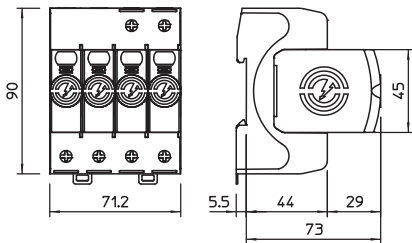


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-4-550	550	4	IP20	1	49.800	5095214

Surge arrester, type 2

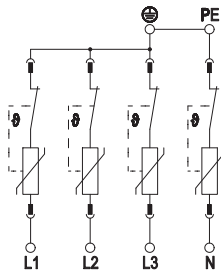
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

Dimensions



Application: Equipotential bonding in main and sub-distributions.

Connection options



V20-4-550

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 400 V
Maximum continuous voltage AC	U_c 550 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 15 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 160 kA
Protection level [L-N]	U_p 2.4 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1,7 kV
Residual voltage [L-N] @ 5 kA	U_{res} 2,1 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG



Surge arrester V20, 4-pole with remote signalling, 550 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
V20-4+FS-550	550	4	IP20	1	50.300	5095314

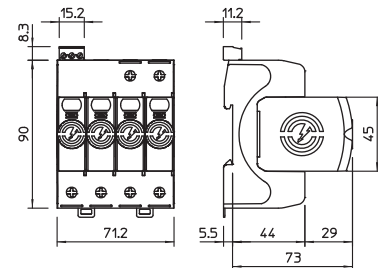
Surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic to UL 94 V-0
- The remote signalling variants (FS) have a potential-free changeover contact for remote signalling

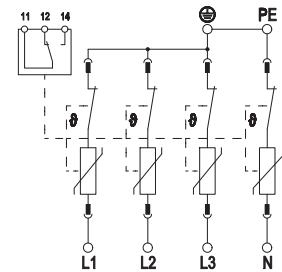
Application: Equipotential bonding in main and sub-distributions.



Dimensions



Connection options



V20-4+FS-550

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 480 V
Maximum continuous voltage AC	U_c 550 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 15 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 160 kA
Protection level [L-N]	U_d 2.4 kV
Residual voltage [L-N] @ 1 kA	U_{res} 1,7 kV
Residual voltage [L-N] @ 5 kA	U_{res} 2,1 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP20
Approvals	UL
FM contacts	Changeover
Switching power AC	230 V; 0,5 A
Switching power DC	230 V; 0,1 A / 75 V; 0,5 A
Connection cross-section, FM terminals	0,5 - 1,5 mm ²
Connection cross-section, FM terminals	21 - 16 AWG
Cable cross-section, flexible (fine-wire)	1,5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1,5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

System solution, surge arrester V20 in housing, 1-pole + NPE, 280 V



Type	Highest continuous voltage AC V	Pole version	Pack. pcs	Weight kg/100 pcs	Item No.
VG-V20-1+NPE-280	280	1+N/PE	1	74.000	5095381

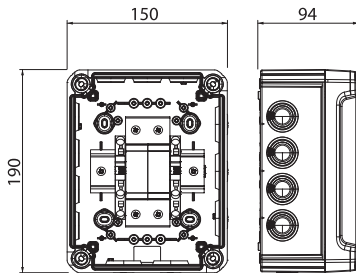
Surge arrester, type 2, according DIN EN 61643-11

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Complete unit, pre-mounted and ready for connection in polycarbonate housing (IP66)
- Arresting capacity to 40 kA (8/20) per pole through high-performance varistors

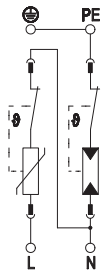
Application: Equipotential bonding in main and sub-distributors.

If there is a danger of condensation forming through wind, ice, temperature or sunlight, further measures may be necessary!

Dimensions



Connection options



VG-V20-1+NPE-280

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrestor surge current (8/20 μ s) [total]	I_{total} 60 kA
Protection level [L-N]	U_p 1.3 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,7 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0,9 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP66
Approvals	ÖVE, UL
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

System solution, surge arrester V20 in housing, 3-pole + NPE, 280 V



Type	Highest continuous voltage AC V	Pole version	Pack. pcs	Weight kg/100 pcs	Item No.
VG-V20-3+NPE-280	280	3+N/PE	1	96.000	5095383

Surge arrester, type 2, according DIN EN 61643-11

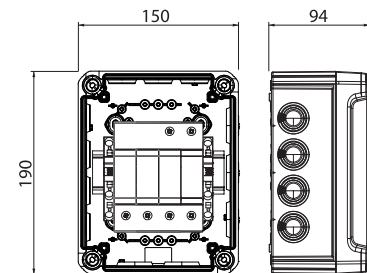
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Complete unit, pre-mounted and ready for connection in polycarbonate housing (IP66)
- Arresting capacity to 40 kA (8/20) per pole through high-performance varistors

Application: Equipotential bonding in main and sub-distributors.

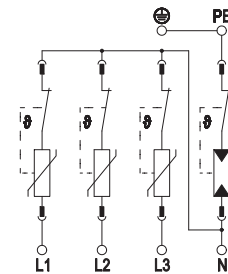
If there is a danger of condensation forming through wind, ice, temperature or sunlight, further measures may be necessary!



Dimensions



Connection options



VG-V20-3+NPE-280

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 280 V
Nominal discharge current (8/20 μ s)	I_n / I_{n-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrestor surge current (8/20 μ s) [total]	I_{total} 60 kA
Protection level [L-N]	U_d 1.3 kV
Residual voltage [L-N] @ 1 kA	U_{res} 0,7 kV
Residual voltage [L-N] @ 5 kA	U_{res} 0,9 kV
Max. mains-side overcurrent protection	160 A gL/gG
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -40 - +80 °C
Protection rating	IP66
Approvals	ÖVE, UL
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

Surge arrester V20 upper parts, type 2

Upper part V20 75 V

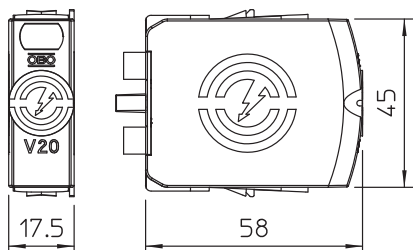


Type	Highest continuous voltage	Pole version	Protection rating	Pack. pcs	Weight		Item No.
	AC V				kg/100 pcs.		
V20-0-75	75	1	IP20	1	3.600		5095360

Upper part, surge arrester, type 2

- For surge protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular, plug-in upper part with dynamic cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic (UL 94 V-0)

Dimensions



Upper part V20 150 V

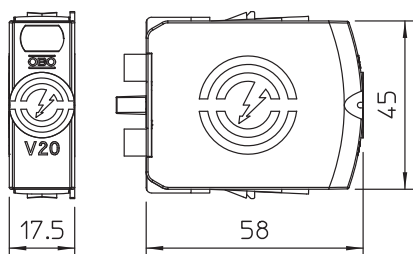


Type	Highest continuous voltage	Pole version	Protection rating	Pack. pcs	Weight		Item No.
	AC V				kg/100 pcs.		
V20-0-150	150	1	IP20	1	4.160		5095362

Upper part, surge arrester, type 2

- For surge protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular, plug-in upper part with dynamic cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic (UL 94 V-0)

Dimensions



Upper part V20 280 V



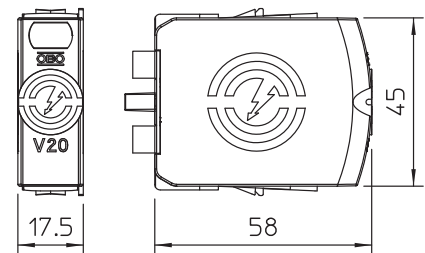
Type	Highest continuous voltage		Protection rating	Pack. pcs.	Weight		Item No.
	AC V	Pole version			kg/100 pcs.		
V20-0-280	280	1	IP20	1	5.000		5095364

Upper part, surge arrester, type 2

- For surge protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular, plug-in upper part with dynamic cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic (UL 94 V-0)



Dimensions



Upper part V20 320 V



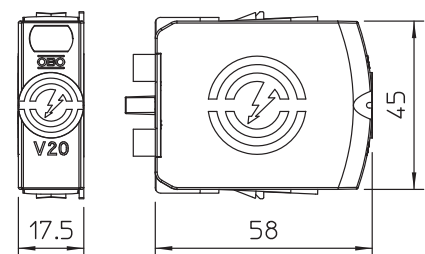
Type	Highest continuous voltage		Protection rating	Pack. pcs.	Weight		Item No.
	AC V	Pole version			kg/100 pcs.		
V20-0-320	320	1	IP20	1	5.100		5095366

Upper part, surge arrester, type 2

- For surge protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular, plug-in upper part with dynamic cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic (UL 94 V-0)



Dimensions



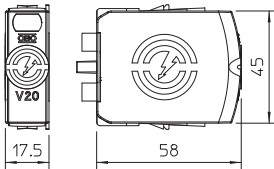
Upper part V20 385 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-0-385	385	1	IP20	1	5.360	5095368

Upper part, surge arrester, type 2

- For surge protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular, plug-in upper part with dynamic cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic (UL 94 V-0)



V20-0-385	
SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 385 V
Nominal discharge current (8/20 μ s)	I_n / I_{L-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA

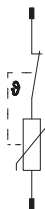
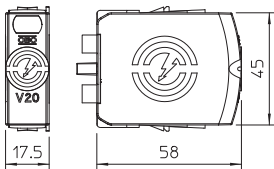
Upper part V20 440 V



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-0-440	440	1	IP20	1	5.660	5095370

Upper part, surge arrester, type 2

- For surge protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular, plug-in upper part with dynamic cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic (UL 94 V-0)



V20-0-440	
SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 400 V
Maximum continuous voltage AC	U_c 440 V
Nominal discharge current (8/20 μ s)	I_n / I_{L-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL

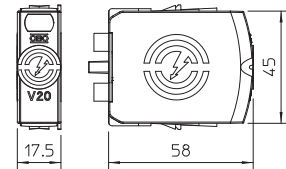
Upper part V20 550 V



Type	Highest continuous voltage		Protection rating	Pack. pcs	Weight		Item No.
	AC V	Pole version			kg/100 pcs.		
V20-0-550	550	1	IP20	1	6.360		5095372

Upper part, surge arrester, type 2

- For surge protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular, plug-in upper part with dynamic cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic (UL 94 V-0)

**V20-0-550**

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 400 V
Maximum continuous voltage AC	U_C 550 V
Nominal discharge current (8/20 μ s)	$I_{n / I-N}$ 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL



Upper part C20 280 V

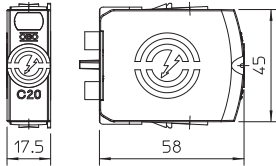


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
	C20-0-255	255	N/PE	IP20	1	

Upper part, N-PE surge arrester, type 2

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with dynamic cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- Plastic (UL 94 V-0)

Application: Equipotential bonding in main and sub-distributors.



C20-0-255

SPD to EN 61643-11	Type 2
SPD to IEC 61643-11	Class II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 255 V
Nominal discharge current (8/20 μ s)	I_n / I_{1-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA



Surge arrester, 1-pole



Type	Highest continuous voltage		Version	Pack. pcs	Weight		Item No.
	V				kg/100 pcs	pcs.	
V20-C 1-150	150		1-pole	1	11.300		5094677

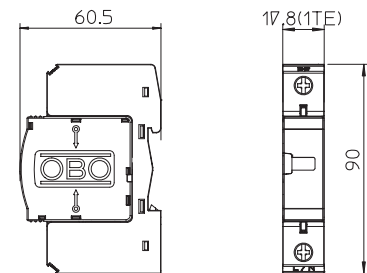
Surge arrester, type 2, 150 V

- VDE-tested
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity to 40 kA (8/20) per pole
- Arrester, connectable with dynamic cut-off unit and visual function display
- Encapsulated, non-extinguishing zinc oxide varistor arrester for use in distributor housings
- Base with multiple connection terminals

Application: Equipotential bonding (LPZ 1 to 2) and device protection in main and sub-distributors.



Dimensions



Connection options



V20-C 1-150

Nominal voltage	U_N	130 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Arrester surge current (8/20) [total]	$I_{Ttotal 8/20}$	20 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_o	< 0,8 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		1
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

Surge arrester, 2-pole



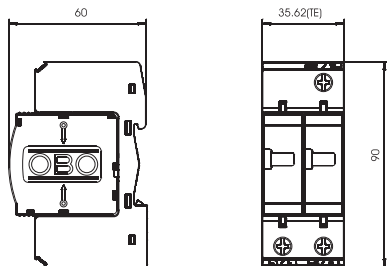
Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 2-150	150	2-pole	1	21.300	5094679

Surge arrester, type 2, 150 V

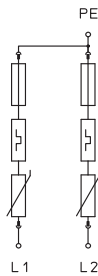
- VDE-tested
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity to 40 kA (8/20) per pole
- Arrester, connectable with dynamic cut-off unit and visual function display
- Encapsulated, non-extinguishing zinc oxide varistor arrester for use in distributor housings
- Base with multiple connection terminals

Application: Equipotential bonding (LPZ 1 to 2) and device protection in main and sub-distributors.

Dimensions



Connection options



V20-C 2-150

Nominal voltage	U_N	130 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Arrester surge current (8/20) [total]	$I_{Total 8/20}$	40 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_p	— kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		2
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²



Surge arrester, 3-pole



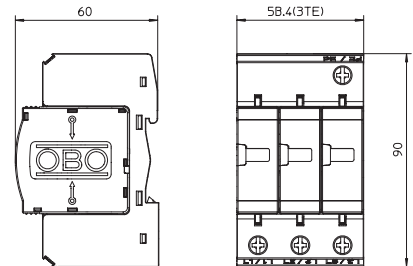
Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 3-150	150	3-pole	1	31.500	5094680

Surge arrester, type 2, 150 V

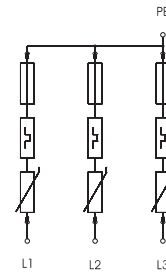
- VDE-tested
 - For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
 - Arresting capacity to 40 kA (8/20) per pole
 - Arrestor, connectable with dynamic cut-off unit and visual function display
 - Encapsulated, non-extinguishing zinc oxide varistor arrester for use in distributor housings
 - Base with multiple connection terminals
- Application: Equipotential bonding (LPZ 1 to 2) and device protection in main and sub-distributors.



Dimensions



Connection options



V20-C 3-150

Nominal voltage	U_N	130 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Arrestor surge current (8/20) [total]	$I_{Ttotal 8/20}$	60 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_o	< 0,8 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		3
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

Surge arrester, 3-pole + NPE with remote signalling

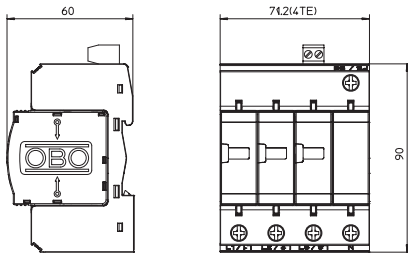


Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V 20-C 3+NPE+FS	150	3+NPE + FS	1	41.300	5094764

V 20-C/...: Type 2 (Class C) surge arrester to EN 61643-11 (VDE 0675 Parts 6–11).

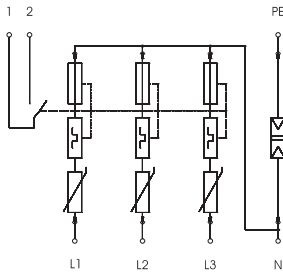
- With new MultiBase base with multiple connection terminals
- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- VDE-tested
- Suitable for TN and TT network systems
- Plug-in upper part, upper part can be separated from base without tool
- With remote signalling, potential-free changeover contact, for function monitoring
- Incl. thermal and dynamic cut-off unit
- With visual fault display
- High current conductivity and long service life
- Labelled connections

Dimensions



Application example: Residential buildings, single-family homes and industry

Connection options



V 20-C 3+NPE+FS

Nominal voltage	U_N	130 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Arrestor surge current (8/20) [total]	$I_{Total 8/20}$	80 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_p	< 0,8 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		4
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

Surge arrester, 1-pole + NPE



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 1+NPE-150	150	1+NPE	1	21.500	5094639

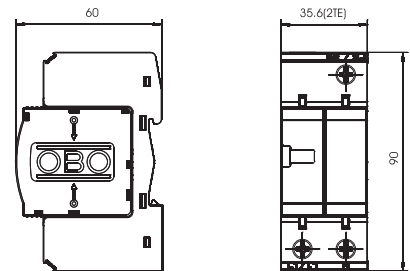
V 20-C/...: Type 2 (Class C) surge arrester to EN 61643-11 (VDE 0675 Parts 6–11).

- With new MultiBase base with multiple connection terminals
- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- VDE-tested
- Suitable for TN and TT network systems
- Plug-in upper part, upper part can be separated from base without tool
- Incl. thermal and dynamic cut-off unit
- With visual fault display
- High current conductivity and long service life
- Labelled connections

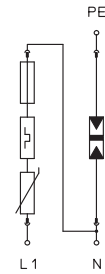
Application example: Residential buildings, single-family homes and industry



Dimensions



Connection options



V20-C 1+NPE-150

Nominal voltage	U_N	130 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Arrestor surge current (8/20) [total]	$I_{Ttotal 8/20}$	40 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_o	< 0,8 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		2
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

Surge arrester, 3-pole + NPE

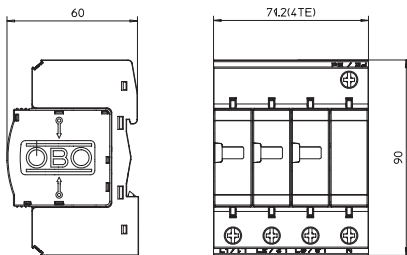


Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 3+NPE-150	150	3+NPE	1	39.600	5094644

V 20-C/...: Type 2 (Class C) surge arrester to EN 61643-11 (VDE 0675 Parts 6–11).

- With new MultiBase base with multiple connection terminals
- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- VDE-tested
- Suitable for TN and TT network systems
- Plug-in upper part, upper part can be separated from base without tool
- Incl. thermal and dynamic cut-off unit
- With visual fault display
- High current conductivity and long service life
- Labelled connections

Dimensions



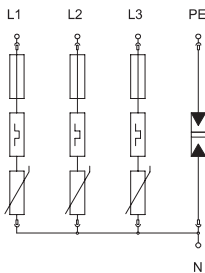
Application example: Residential buildings, single-family homes and industry

V 20-C/...: Surge protection device Type 2 (Class C) according to VDE 0675 Parts 6–11 (DIN EN 61643-11), designed for surge voltage protection to DIN VDE 0100 part 443 for protecting low voltage consumer systems from transient surge voltage due to atmospheric discharges and switching actions.

- Plug-in upper part; upper part can be separated from base without tools
- Including thermal and dynamic cut-off unit
- Visual function display
- Nominal/maximum arresting surge current 20 kA/40 kA
- High current conductivity and long service life
- Protection level at 20 kA < 1.4 kV
- 5 year warranty

Application: Industrial buildings and housing in any standard distributor housing

Connection options



V20-C 3+NPE-150

Nominal voltage	U_N	130 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Arrestor surge current (8/20) [total]	$I_{Total\ 8/20}$	80 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_o	< 0,8 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		4
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

Surge arrester, 3-pole + NPE with acoustic signalling



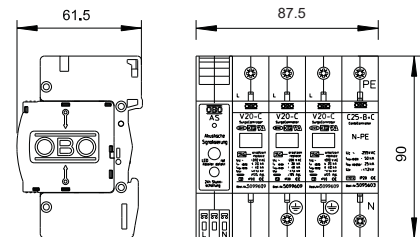
Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 3+NPE+AS	280	3 + NPE	1	57.000	5096397

V 20-C/...: Surge protection device Type 2 (Class C) to VDE 0675 part 6-11 (DIN EN 61643-11) with acoustic signalling.

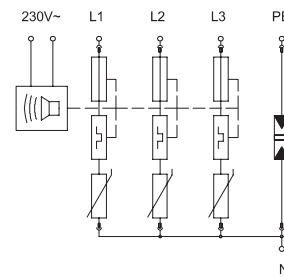
- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- With acoustic signalling for function monitoring, signal tone can be shut down for 24 h
- VDE-tested
- Suitable for TN and TT network systems
- Plug-in upper part; upper part can be separated from base without tools
- Including thermal and dynamic separating device
- With visual display of defects
- High current conductivity and long service life



Dimensions



Connection options



V20-C 3+NPE+AS

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Arrestor surge current (8/20) [total]	$I_{Ttotal 8/20}$	80 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_o	< 1,3 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		5
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²



Surge arrester, 1-pole + NPE

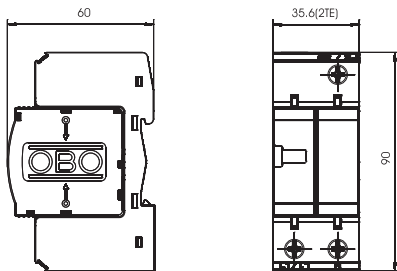


Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 1+NPE-280	280	1+NPE	1	22.300	5094650

V 20-C/...: Surge protection device Type 2 (Class C) to VDE 0675 part 6-11 (DIN EN 61643-11).

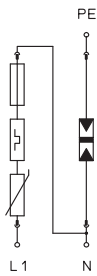
- With new MultiBase base part and Multi-connection clamps
- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- VDE-tested
- Suitable for TN- and TT network systems
- Plug-in upper part; upper part can be separated from base without tools
- Including thermal and dynamic separating device
- With visual display of defects
- High current conductivity and long service life
- Marked connections

Dimensions



Application example: residential buildings, single-family homes without outer lightning protection system.

Connection options



V20-C 1+NPE-280

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Arrestor surge current (8/20) [total]	$I_{Ttotal 8/20}$	40 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_p	< 1,3 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		2
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

Combination arrester C25, 1-pole+NPE



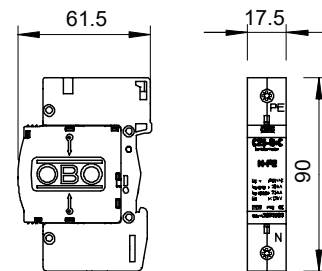
Type	Highest continuous voltage	Version	Pack. pcs	Weight	Item No.
	V			kg/100 pcs	
C 25-B+C 1	255	NPE	1	12.500	5095606

C 25-B+C/..+NPE: Plug-in total discharge gap for use between neutral lines (N) and protector (PE). Suitable for use in combination with:

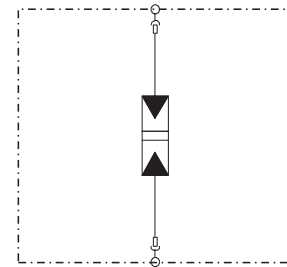
- CombiController Type V 25-B+C
- SurgeController Type V 20-C
- SurgeController Type V 10-C



Dimensions



Connection options



C 25-B+C 1

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class I+II
Lightning protection zone LPZ		0→2
Lightning impulse current (10/350) (N-PE)	I_{imp}	25 kA
Nominal discharge current (8/20)	I_n	30 kA
Maximum discharge current (8/20 μ s)	I_{max}	50 kA
Voltage protection level	U_p	<1,2 kV
Response time	t_A	< 100 ns
Follow current quenching capacity (eff) [N-PE]	I_{fi}	0.1 kA
Maximum back-up fuse		— A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		1
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

Surge arrester, 3-pole + NPE

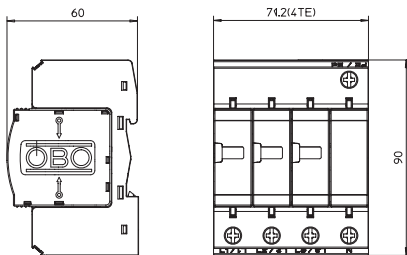


Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 3+NPE-280	280	3+NPE	1	41.700	5094656

V 20-C/...: Surge protection device Type 2 (Class C) to VDE 0675 part 6-11 (DIN EN 61643-11).

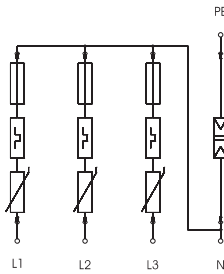
- With new MultiBase base part and Multi-connection clamps
- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- VDE-tested
- Suitable for TN- and TT network systems
- Plug-in upper part; upper part can be separated from base without tools
- Including thermal and dynamic separating device
- With visual display of defects
- High current conductivity and long service life
- Marked connections

Dimensions



Application example: residential buildings, single-family homes without outer lightning protection system.

Connection options



V20-C 3+NPE-280

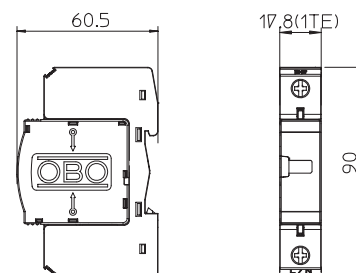
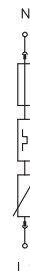
Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Arrestor surge current (8/20) [total]	$I_{Total 8/20}$	50 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_d	< 1,3 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		4
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

Surge arrester, 1-pole 

Type	Highest continuous voltage		Version	Weight		Item No.
	V	V		Pack. pcs.	kg/100 pcs.	
V20-C 1-280	280		1-pole	1	12.000	5094618

Surge arrester, type 2, 280 V

- VDE-tested
 - For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
 - Arresting capacity to 40 kA (8/20) per pin
 - Arrester, connectable with dynamic cut-off unit and visual function display
 - Encapsulated, non-extinguishing zinc oxide varistor arrester for use in distributor housings
 - Base with multiple connection terminals
- Application: Equipotential bonding (LPZ 1 to 2) and device protection in main and subdistributors.

**Dimensions** **Connection options** **V20-C 1-280**

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Arrester surge current (8/20) [total]	$I_{Ttotal 8/20}$	20 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_o	< 1,3 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		1
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²



Surge arrester, 2-pole, with acoustic signalling



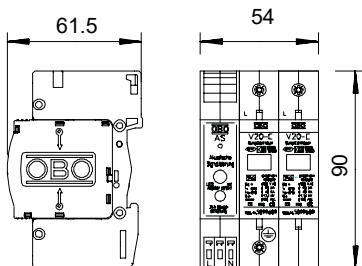
Type	Highest continuous voltage	Version	Pack. pcs	Weight kg/100 pcs	Item No.
	V				
V20-C 2+AS-280	280	2-pole	1	35.000	5096375

V 20-C/...: Surge protection device Type 2 (Class C) to VDE 0675 part 6-11 (DIN EN 61643-11) with acoustic signalling.

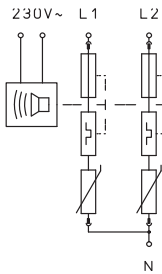
- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- VDE-tested
- Suitable for TN network systems
- With acoustic signalling for function monitoring, signal tone can be shut down for 24 h
- Plug-in upper part; upper part can be separated from base without tools
- Including thermal and dynamic separating device
- With visual display of defects
- High current conductivity and long service life
- Marked connections

Application example: residential buildings, single-family homes

Dimensions



Connection options



V20-C 2+AS-280

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Arrestor surge current (8/20) [total]	$I_{Total 8/20}$	40 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_d	< 1,3 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		3
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²



Surge arrester, 3-pole



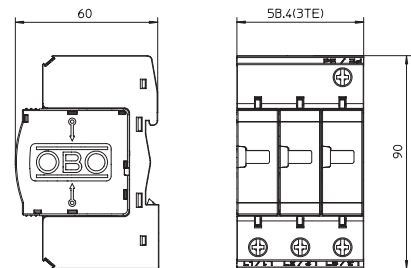
Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 3-280	280	3-pole	1	33.500	5094624

Surge arrester, type 2, 280 V

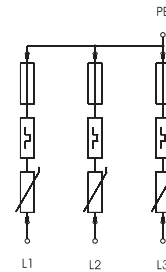
- VDE-tested
 - For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
 - Arresting capacity to 40 kA (8/20) per pin
 - Arrester, connectable with dynamic cut-off unit and visual function display
 - Encapsulated, non-extinguishing zinc oxide varistor arrester for use in distributor housings
 - Base with multiple connection terminals
- Application: Equipotential bonding (LPZ 1 to 2) and device protection in main and subdistributors.



Dimensions



Connection options



V20-C 3-280

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Arrester surge current (8/20) [total]	$I_{Ttotal 8/20}$	60 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_o	< 1,3 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		3
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

Surge arrester, 3-pole, with acoustic signalling



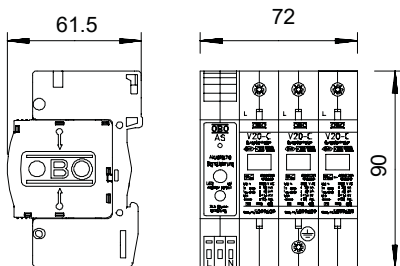
Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 3+AS-280	280	3-pole	1	44.000	5096383

V 20-C/...: Surge protection device Type 2 (Class C) to VDE 0675 part 6-11 (DIN EN 61643-11) with acoustic signalling.

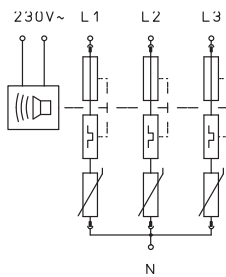
- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- VDE-tested
- Suitable for TN network systems
- With acoustic signalling for function monitoring, signal tone can be shut down for 24 h
- Plug-in upper part; upper part can be separated from base without tools
- Including thermal and dynamic separating device
- With visual display of defects
- High current conductivity and long service life
- Marked connections

Application example: residential buildings, single-family homes

Dimensions



Connection options



V20-C 3+AS-280

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Arrestor surge current (8/20) [total]	$I_{Total 8/20}$	60 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_d	< 1,3 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		4
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²



Surge arrester, 3-pole with fuse monitoring



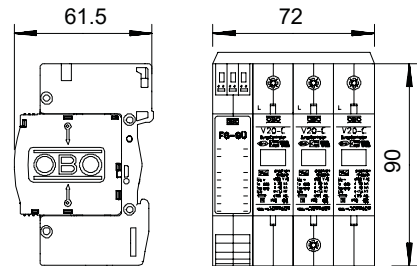
Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 3+FS-SÜ	280	3-pole	1	45.000	5096251

V 20-C/...: Surge protection device Type 2 (Class C) to VDE 0675 part 6-11 (DIN EN 61643-11), ready-for-connection with remote signalling and voltage monitoring.

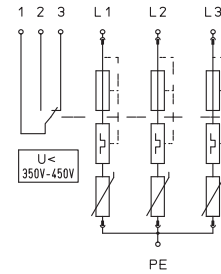
- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- VDE-tested
- Suitable for TN network systems
- With voltage monitoring of phases and function monitoring of arrester upper part, remote signalling
- Plug-in upper part; upper part can be separated from base without tools
- Including thermal and dynamic separating device
- With visual display of defects
- High current conductivity and long service life



Dimensions



Connection options



V20-C 3+FS-SÜ

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Arrester surge current (8/20) [total]	$I_{Ttotal 8/20}$	60 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_o	< 1,3 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		4
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

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Surge arrester, 4-pole

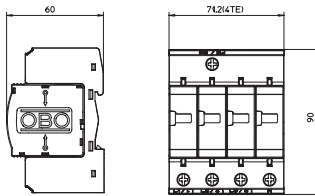


Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 4-280	280	4-pole	1	43.000	5094627

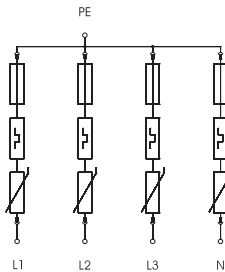
Surge arrester, type 2, 280 V

- VDE-tested
 - For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
 - Arresting capacity to 40 kA (8/20) per pin
 - Arrester, connectable with dynamic cut-off unit and visual function display
 - Encapsulated, non-extinguishing zinc oxide varistor arrester for use in distributor housings
 - Base with multiple connection terminals
- Application: Equipotential bonding (LPZ 1 to 2) and device protection in main and subdistributors.

Dimensions



Connection options



V20-C 4-280

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Arrester surge current (8/20) [total]	$I_{Total 8/20}$	80 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_n	< 1,3 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		4
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²



Surge arrester, 4-pole with acoustic signalling



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 4+AS-280	280	4-pole	1	57.000	5096391

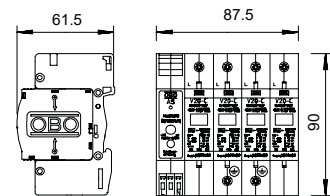
V20-C/...: Surge protection device Type 2 (Class C) to VDE 0675 part 6-11 (DIN EN 61643-11) with acoustic signalling.

- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- VDE-tested
- Suitable for TN network systems
- With acoustic signalling for function monitoring, signal tone can be shut down for 24 h
- Plug-in upper part; upper part can be separated from base without tools
- Including thermal and dynamic separating device
- With visual display of defects
- High current conductivity and long service life
- Marked connections

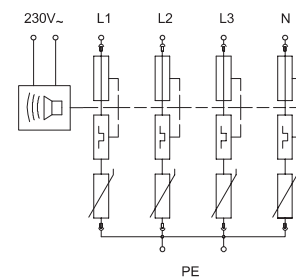
Application example: residential buildings, single-family homes



Dimensions



Connection options



V20-C 4+AS-280

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Arrestor surge current (8/20) [total]	$I_{Total\ 8/20}$	80 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_p	< 1,3 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		5
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²



Surge arrester, 4-pole with fuse monitoring

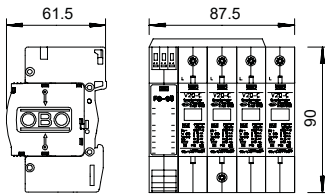


Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 4+FS-SÜ	280	4-pole	1	56.500	5096278

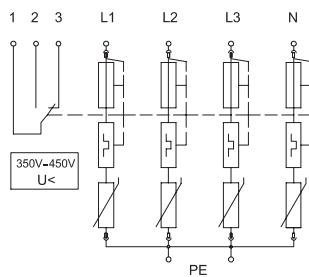
V 20-C/...: Surge protection device Type 2 (Class C) to VDE 0675 part 6-11 (DIN EN 61643-11), ready-for-connection with remote signalling and voltage monitoring.

- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- VDE-tested
- Suitable for TN network systems
- With voltage monitoring of phases and function monitoring of arrester upper part, remote signalling
- Plug-in upper part; upper part can be separated from base without tools
- Including thermal and dynamic separating device
- With visual display of defects
- High current conductivity and long service life

Dimensions



Connection options



V20-C 4+FS-SÜ

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Arrester surge current (8/20) [total]	$I_{Total\ 8/20}$	80 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_n	< 1,3 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		5
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

Surge arrester, 1-pole



Type	Highest continuous voltage		Version	Pack. pcs	Weight		Item No.
	V	V			kg/100 pcs	pcs.	
V20-C 1-385	385		1-pole	1	12.500		5094703

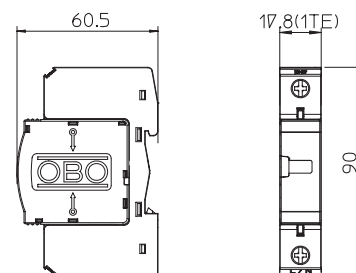
Surge arrester, type 2, 385 V

- VDE-tested
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity to 40 kA (8/20) per pin
- Arrester, connectable with dynamic cut-off unit and visual function display
- High-performance varistor technology

Application: Equipotential bonding (LPZ 1 to 2) in main and subdistributors.



Dimensions



Connection options



V20-C 1-385

Nominal voltage	U_N	350 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Arrester surge current (8/20) [total]	$I_{Ttotal 8/20}$	20 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_o	< 1,7 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		1
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

Surge arrester, 2-pole

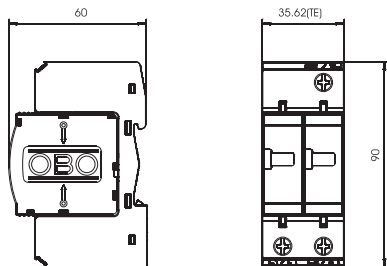


Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 2-385	385	2-pole	1	23.700	5094704

Surge arrester, type 2, 385 V

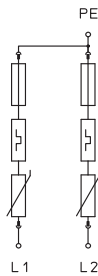
- VDE-tested
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity to 40 kA (8/20) per pin
- Arrester, connectable with dynamic cut-off unit and visual function display
- High-performance varistor technology

Dimensions



Application: Equipotential bonding (LPZ 1 to 2) in main and subdistributors.

Connection options



V20-C 2-385

Nominal voltage	U_N	350 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Arrester surge current (8/20) [total]	$I_{Ttotal 8/20}$	40 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_p	< 1,7 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		2
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

Surge arrester, 3-pole



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 3-385	385	3-pole	1	34.500	5094705

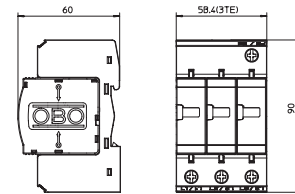
Surge arrester, type 2, 385 V

- VDE-tested
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity to 40 kA (8/20) per pin
- Arrester, connectable with dynamic cut-off unit and visual function display
- High-performance varistor technology

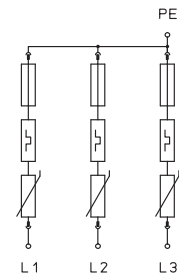
Application: Equipotential bonding (LPZ 1 to 2) in main and subdistributors.



Dimensions



Connection options



V20-C 3-385

Nominal voltage	U_N	350 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Arrester surge current (8/20) [total]	$I_{Total 8/20}$	60 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_p	< 1,7 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		3
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

Surge arrester, 3-pole with remote signalling



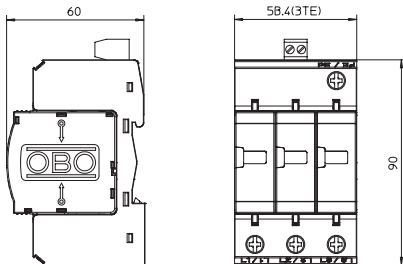
Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 3+FS-385	385	3-pole + FS	1	34.700	5094780

V 20-C/...: Surge protection device Type 2 Class C) to VDE 0675 part 6-11 (DIN EN 61643-11).

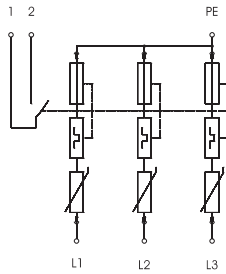
- With new MultiBase base part and Multi-connection clamps
- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- VDE-tested
- Suitable for TN network systems
- Plug-in upper part; upper part can be separated from base without tools
- With remote signalling, potential-free changeover contact, for function monitoring
- Including thermal and dynamic separating device
- With visual display of defects
- High current conductivity and long service life
- Marked connections

Application example: residential buildings, single-family homes

Dimensions



Connection options



V20-C 3+FS-385

Nominal voltage	U_N	350 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Arrestor surge current (8/20) [total]	$I_{Total 8/20}$	60 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_d	< 1,7 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		3
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

Surge arrester, 4-pole



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 4-385	385	4-pole	1	44.000	5094708

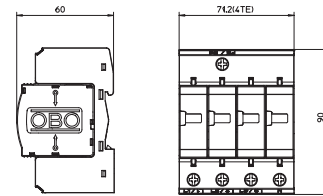
Surge arrester, type 2, 385 V

- VDE-tested
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity to 40 kA (8/20) per pin
- Arrester, connectable with dynamic cut-off unit and visual function display
- High-performance varistor technology

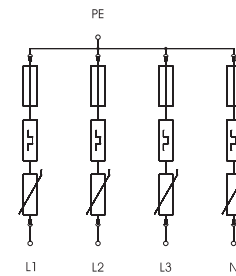
Application: Equipotential bonding (LPZ 1 to 2) in main and subdistributors.



Dimensions



Connection options



V20-C 4-385

Nominal voltage	U_N	350 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Arrester surge current (8/20) [total]	$I_{Total\ 8/20}$	80 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_p	< 1,7 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		4
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

Surge arrester, 1-pole + NPE

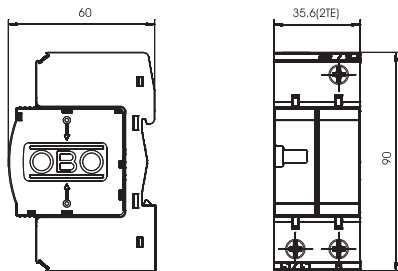


Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 1+NPE-385	385	1+NPE	1	23.300	5094666

V 20-C/...: Surge protection device Type 2 (Class C) to VDE 0675 part 6-11 (DIN EN 61643-11).

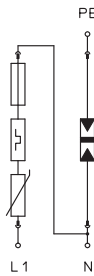
- With new MultiBase base part and Multi-connection clamps
- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- VDE-tested
- Suitable for TN- and TT network systems
- Plug-in upper part; upper part can be separated from base without tools
- Including thermal and dynamic separating device
- With visual display of defects
- High current conductivity and long service life
- Marked connections

Dimensions



Application example: residential buildings, single-family homes without outer lightning protection system.

Connection options



V20-C 1+NPE-385

Nominal voltage	U_N	350 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Arrestor surge current (8/20) [total]	$I_{Ttotal 8/20}$	40 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_p	< 1,7 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		2
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²



Surge arrester, 3-pole + NPE



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 3+NPE-385	385	3+NPE	1	42.600	5094668

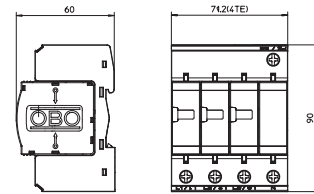
V20-C/...: Surge protection device Type 2 (Class C) to VDE 0675 part 6-11 (DIN EN 61643-11).

- With new MultiBase base part and Multi-connection clamps
- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- VDE-tested
- Suitable for TN- and TT network systems
- Plug-in upper part; upper part can be separated from base without tools
- Including thermal and dynamic separating device
- With visual display of defects
- High current conductivity and long service life
- Marked connections

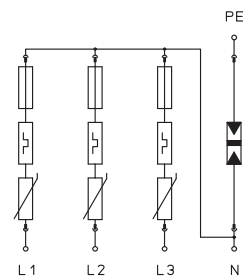
Application example: residential buildings, single-family homes without outer lightning protection system.



Dimensions



Connection options



V20-C 3+NPE-385

Nominal voltage	U_N	350 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Arrestor surge current (8/20) [total]	$I_{Total\ 8/20}$	80 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_p	< 1,7 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		4
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²



Surge arrester, 3-pole + NPE with remote signalling



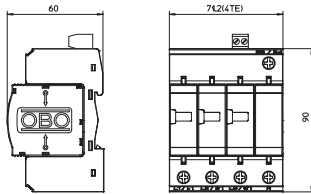
Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 3+NPEFS38	385	3+NPE + FS	1	45.200	5094788

V 20-C/...: Surge protection device Type 2 Class C) to VDE 0675 part 6-11 (DIN EN 61643-11).

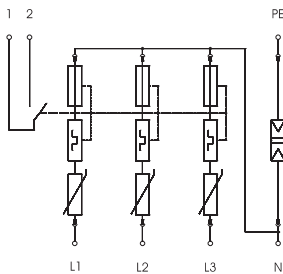
- With new MultiBase base part and Multi-connection clamps
- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- VDE-tested
- Suitable for TN- and TT- network systems
- Plug-in upper part; upper part can be separated from base without tools
- With remote signalling, potential-free changeover contact, for function monitoring
- Including thermal and dynamic separating device
- With visual display of defects
- High current conductivity and long service life
- Marked connections

Application example: residential buildings, single-family homes

Dimensions



Connection options



V20-C 3+NPEFS38

Nominal voltage	U_N	350 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Arrestor surge current (8/20) [total]	$I_{Total\ 8/20}$	80 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_n	< 1,7 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		4
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²



Surge arrester, 1-pole



Type	Highest continuous voltage		Version	Weight		Item No.
	V			Pack. pcs	kg/100 pcs.	
V20-C 1-550	550		1-pole	1	12.900	5094713

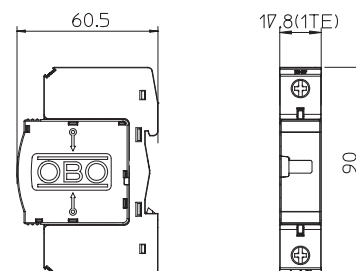
Surge arrester, type 2, 550 V

- VDE-tested
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity to 40 kA (8/20) per pin
- Arrester, connectable with dynamic cut-off unit and visual function display
- High-performance varistor technology

Application: Equipotential bonding (LPZ 1 to 2) in main and subdistributors.



Dimensions



Connection options



V20-C 1-550

Nominal voltage	U_N	500 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	15 kA
Arrester surge current (8/20) [total]	$I_{Ttotal 8/20}$	15 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_o	< 2,4 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		1
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

Surge arrester, 2-pole



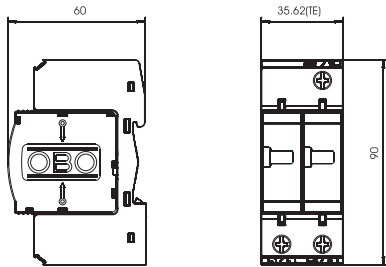
Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 2-550	550	2-pole	1	24.300	5094714

Surge arrester, type 2, 550 V

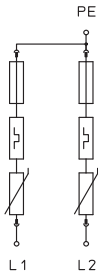
- VDE-tested
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity to 40 kA (8/20) per pin
- Arrester, connectable with dynamic cut-off unit and visual function display
- High-performance varistor technology

Application: Equipotential bonding (LPZ 1 to 2) in main and subdistributors.

Dimensions



Connection options



V20-C 2-550

Nominal voltage	U_N	500 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	15 kA
Arrester surge current (8/20) [total]	$I_{Ttotal 8/20}$	30 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_p	< 2,4 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		2
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

Surge arrester, 3-pole



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 3-550	550	3-pole	1	36.000	5094715

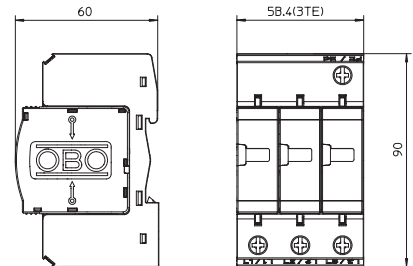
Surge arrester, type 2, 550 V

- VDE-tested
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity to 40 kA (8/20) per pin
- Arrester, connectable with dynamic cut-off unit and visual function display
- High-performance varistor technology

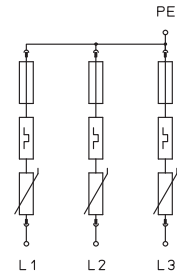
Application: Equipotential bonding (LPZ 1 to 2) in main and subdistributors.



Dimensions



Connection options



V20-C 3-550

Nominal voltage	U_N	500 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	15 kA
Arrester surge current (8/20) [total]	$I_{Ttotal 8/20}$	45 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_o	< 2,4 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		3
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

Surge arrester, 3-pole with remote signalling



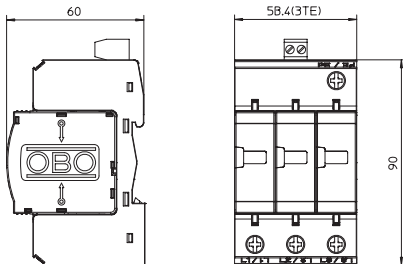
Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 3+FS-550	550	3-pole + FS	1	36.200	5094792

V 20-C/...: Surge protection device Type 2 Class C) to VDE 0675 part 6-11 (DIN EN 61643-11).

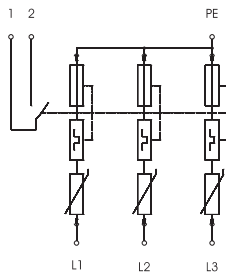
- With new MultiBase base part and Multi-connection clamps
- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- VDE-tested
- Suitable for TN network systems
- Plug-in upper part; upper part can be separated from base without tools
- With remote signalling, potential-free changeover contact, for function monitoring
- Including thermal and dynamic separating device
- With visual display of defects
- High current conductivity and long service life
- Marked connections

Application example: residential buildings, single-family homes

Dimensions



Connection options



V20-C 3+FS-550

Nominal voltage	U_N	500 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	15 kA
Arrestor surge current (8/20) [total]	$I_{Total 8/20}$	45 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_d	< 2,4 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		3
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²



Surge arrester, 4-pole



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 4-550	550	4-pole	1	45.500	5094718

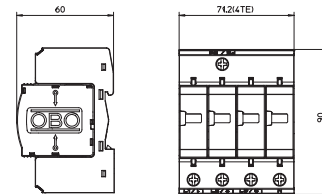
Surge arrester, type 2, 550 V

- VDE-tested
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity to 40 kA (8/20) per pin
- Arrester, connectable with dynamic cut-off unit and visual function display
- High-performance varistor technology

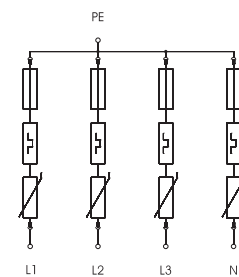
Application: Equipotential bonding (LPZ 1 to 2) in main and subdistributors.



Dimensions



Connection options

**V20-C 4-550**

Nominal voltage	U_N	500 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	15 kA
Arrester surge current (8/20) [total]	$I_{Total\ 8/20}$	60 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_p	< 2,4 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		4
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

MultiBase base MB25



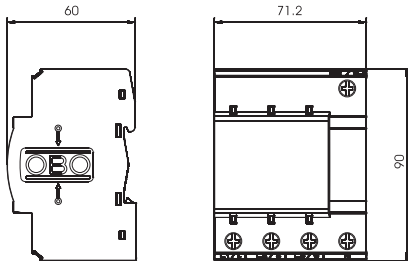
Highest continuous voltage

Type	V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
MB25-3+NPE	440	3 + NPE	1	27.000	5096672

Base for 400/690 V networks

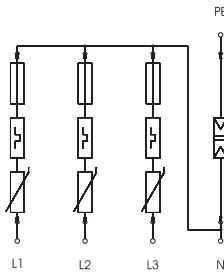
- VDE-tested
- Suitable for TN, TT and IT network systems
- NPE spark gap designed for max 440 V AC (IEC 60364-5-53)
- Arresting capacity of the spark gap MB25 up to 25 kA (10/350)
- Labelled connections
- Vibration-proof through Shock Guard
- Particularly suitable for use in wind power plants

Dimensions



Application example: Industrial and wind power plants

Connection options



MB25-3+NPE

Nominal voltage	U_N	400 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class I+II
Lightning protection zone LPZ		0→2
Nominal discharge current (8/20)	I_n	— kA
Arrestor surge current (8/20) [total]	$I_{Total 8/20}$	50 kA
Maximum discharge current (8/20 μ s)	I_{max}	— kA
Voltage protection level	U_p	<2,0 kV
Response time	t_A	100 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		4
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 35 mm ²

Surge arrester, 1-pole, leakage current-free



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-VA 1-385	385	1-pole	1	12.500	5099475

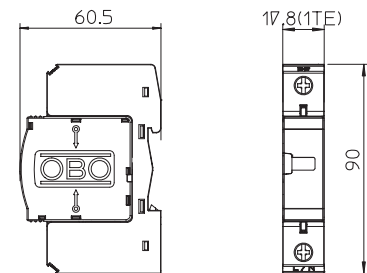
V 20-VA/...: Surge protection device Type 2 Class C) to VDE 0675 part 6-11 (DIN EN 61643-11).

- With new MultiBase base part and Multi-connection clamps
- Suitable for use in the pre-meter area (absolutely free of leakage current)
- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- Suitable for TN-C network systems
- Plug-in upper part; upper part can be separated from base without tools
- Including thermal and dynamic separating device
- With visual display of defects
- High current conductivity and long service life
- Marked connections

Application example: residential buildings, single-family homes



Dimensions



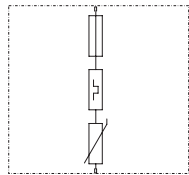
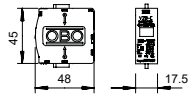
Connection options



V20-VA 1-385

Nominal voltage	U_N	350 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Arrestor surge current (8/20) [total]	$I_{Ttotal 8/20}$	20 kA
Maximum discharge current (8/20 μ s)	I_{max}	25 kA
		—
Voltage protection level	U_n	< 1,8 kV
Response time	t_A	< 100 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		1
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

Cover, surge arrester 75 V



Type	Highest continuous voltage		Version	Pack. pcs.	Weight kg/100 pcs.	Item No.
	V	DC V				
V20-C 0-75	75	100	1-pole	1	5.160	5099579

Upper part – type 2 surge arrester

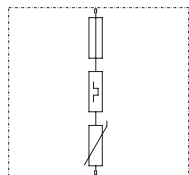
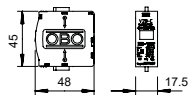
- Plug-in upper part: upper part can be separated from base without tools
- Including thermal and dynamic separating device and visual fault display
- High current conductivity and long service life

Connection options

V20-C 0-75

Max. continuous operating voltage	U_c	75 V
U max DC	$U_{c, DC}$	100 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	15 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_n	< 0,5 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1

Cover, surge arrester 150 V



Type	Highest continuous voltage		Version	Pack. pcs.	Weight kg/100 pcs.	Item No.
	V	DC V				
V20-C 0-150	150	200	1-pole	1	4.794	5096707

Upper part – type 2 surge arrester

- Plug-in upper part: upper part can be separated from base without tools
- Including thermal and dynamic separating device and visual fault display
- High current conductivity and long service life

Connection options

V20-C 0-150

Max. continuous operating voltage	U_c	150 V
U max DC	$U_{c, DC}$	200 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_n	< 0,8 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1



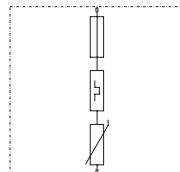
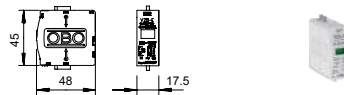
Cover, surge arrester 280 V



Type	Highest continuous voltage U _{max} DC		Version	Pack. pcs.	Weight kg/100 pcs.	Item No.
	V	V				
V20-C 0-280	280	350	1-pole	1	8.500	5099609

Upper part – type 2 surge arrester

- Plug-in upper part: upper part can be separated from base without tools
- Including thermal and dynamic separating device and visual fault display
- High current conductivity and long service life



Connection options

V20-C 0-280

Max. continuous operating voltage	U _C	280 V
U max DC	U _{n DC}	350 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I _n	20 kA
Maximum discharge current (8/20 μs)	I _{max}	40 kA
Voltage protection level	U _n	< 1,3 kV
Response time	t _A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1

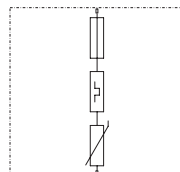
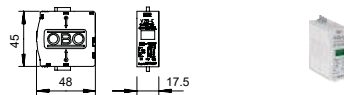
Cover, surge arrester 320 V



Type	Highest continuous voltage U _{max} DC		Version	Pack. pcs.	Weight kg/100 pcs.	Item No.
	V	V				
V20-C 0-320	320	420	1-pole	1	5.545	5099848

Upper part – type 2 surge arrester

- Plug-in upper part: upper part can be separated from base without tools
- Including thermal and dynamic separating device and visual fault display
- High current conductivity and long service life

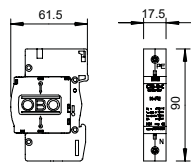


Connection options

V20-C 0-320

Max. continuous operating voltage	U _C	320 V
U max DC	U _{n DC}	420 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I _n	20 kA
Maximum discharge current (8/20 μs)	I _{max}	40 kA
Voltage protection level	U _n	< 1,4 kV
Response time	t _A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1

Combination arrester C25, 1-pole+NPE



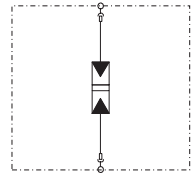
Type 1+2
 LPZ 0→2
 Highest continuous voltage V
 Version

Pack. pcs
 Weight kg/100 pcs
 Item No.

Type	V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
C 25-B+C 1	255	NPE	1	12.500	5095606

C 25-B+C/..+NPE: Plug-in total discharge gap for use between neutral lines (N) and protector (PE). Suitable for use in combination with:

- CombiController Type V 25-B+C
- SurgeController Type V 20-C
- SurgeController Type V 10-C

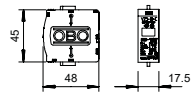


Connection options

C 25-B+C 1

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class I-II
Lightning protection zone LPZ		0→2
Lightning impulse current (10/350) (N-PE)	I_{imp}	25 kA
Nominal discharge current (8/20)	I_n	30 kA
Maximum discharge current (8/20 μ s)	I_{max}	50 kA
Voltage protection level	U_p	<1,2 kV
Response time	t_A	< 100 ns
Follow current quenching capacity (eff) [N-PE]	I_{fi}	0.1 kA
Maximum back-up fuse		— A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		1
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

Cover, total spark gap between N and PE 255 V



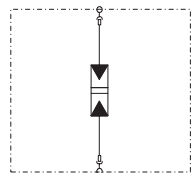
Type 1+2
 LPZ 0→2
 Highest continuous voltage V
 Version

Pack. pcs
 Weight kg/100 pcs
 Item No.

Type	V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
C 25-B+C 0	255	NPE	1	5.300	5095603

C 25-B+C/..+NPE: Plug-in total discharge gap for use between N and PE. Suitable for use in combination with:

- CombiController Type V 25-B+C
- SurgeController Type V 20-C
- SurgeController Type V 10-C



Connection options

C 25-B+C 0

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class I-II
Lightning protection zone LPZ		0→2
Lightning impulse current (10/350) (N-PE)	I_{imp}	25 kA
Nominal discharge current (8/20)	I_n	30 kA
Maximum discharge current (8/20 μ s)	I_{max}	50 kA
Voltage protection level	U_d	<1,2 kV
Response time	t_A	< 100 ns
Follow current quenching capacity (eff) [N-PE]	I_{fi}	0.1 kA
Maximum back-up fuse		160 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		1
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

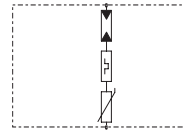
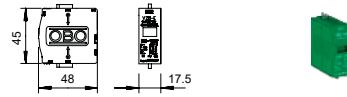
Upper part, surge protection, leak current-free



Type	U max V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-VA 0	385	1-pole	1	6.018	5099613

V 20-VA/O...: Separate upper part (plug-in).

- Suitable for use in the pre-meter area (absolutely free of leakage current)
- Plug-in upper part; upper part can be separated from base without tools



V20-VA 0

Max. continuous operating voltage	U_c	385 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Maximum discharge current (8/20 μ s)	I_{max}	25 kA
Voltage protection level	U_p	< 1,8 kV
Response time	t_A	< 100 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		1
Protection rating		IP20

Connection options

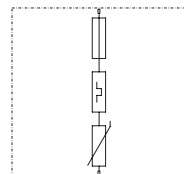
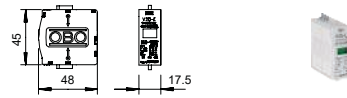
Cover, surge arrester 335 V



Type	U max V	U max DC V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 0-335	335	420	1-pole	1	5.545	5099850

Upper part – type 2 surge arrester

- Plug-in upper part: upper part can be separated from base without tools
- Including thermal and dynamic separating device and visual fault display
- High current conductivity and long service life

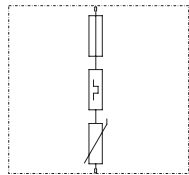
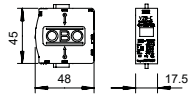


V20-C 0-335

Max. continuous operating voltage	U_c	335 V
U max DC	$U_{c, DC}$	420 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_p	< 1,4 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1

Connection options

Cover, surge arrester 385 V



Type	Highest continuous voltage		Version	Pack. pcs.	Weight kg/100 pcs.	Item No.
	V	DC V				
V20-C 0-385	385	505	1-pole	1	5.826	5099595

Upper part – type 2 surge arrester

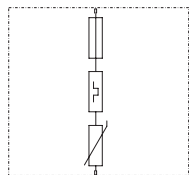
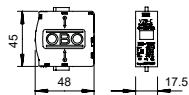
- Plug-in upper part: upper part can be separated from base without tools
- Including thermal and dynamic separating device and visual fault display
- High current conductivity and long service life

Connection options

V20-C 0-385

Max. continuous operating voltage	U_c	385 V
U max DC	U_c DC	505 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_n	< 1,7 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1

Cover, surge arrester 440 V



Type	Highest continuous voltage		Version	Pack. pcs.	Weight kg/100 pcs.	Item No.
	V	DC V				
V20-C 0-440	440	585	1-pole	1	6.452	5099706

Upper part – type 2 surge arrester

- Plug-in upper part: upper part can be separated from base without tools
- Including thermal and dynamic separating device and visual fault display
- High current conductivity and long service life

Connection options

V20-C 0-440

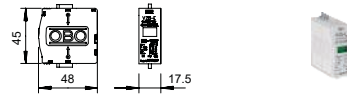
Max. continuous operating voltage	U_c	440 V
U max DC	U_c DC	585 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_n	< 2,0 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1



Cover, surge arrester 550 V

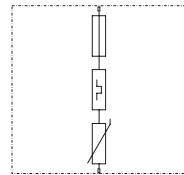


Type	Highest continuous voltage		Version	Weight		Item No.
	V	U max DC V		Pack. pcs	kg/100 pcs	
V20-C 0-550	550	745	1-pole	1	6.452	5099617



Upper part – type 2 surge arrester

- Plug-in upper part: upper part can be separated from base without tools
- Including thermal and dynamic separating device and visual fault display
- High current conductivity and long service life

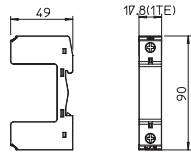


Connection options

V20-C 0-550		
Max. continuous operating voltage	U_c	550 V
U max DC	U_n DC	745 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	15 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_n	< 2,4 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1



MultiBase base

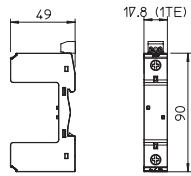


Dividing unit
Version TE (17.5 mm)

Type			Pack. pcs	Weight kg/100 pcs.	Item No.
MB 1	1-pole	1	1	7.000	5096648
MB 2	2-pole	2	1	11.200	5096653
MB 3	3-pole	3	1	16.000	5096665
MB 4	4-pole	4	1	21.000	5096680

- Suitable for V25-B+C, V20-C and V10-C
- Pre-mounted and ready for connection
- For TN systems
- Multifunction terminals for easy circuit of series-mounted devices
- Upper parts can be rotated through 180 degrees

Base, MultiBase with remote signalling

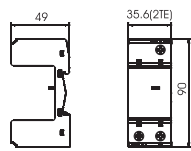


Dividing unit
Version TE (17.5 mm)

Type			Pack. pcs	Weight kg/100 pcs.	Item No.
MB 1+FS	1-pole	1	1	6.700	5096649
MB 2+FS	2-pole	2	1	11.700	5096654
MB 3+FS	3-pole	3	1	16.500	5096667
MB 4+FS	4-pole	4	1	21.000	5096682

- Suitable for V 25-B+C, V 20-C and V10-C
- Pre-mounted and ready for connection
- Multifunction terminals for easy connection to series-mounted devices
- Upper parts can be rotated through 180 degrees
- With remote signalling, potential-free NO contact, for function monitoring

MultiBase base + NPE

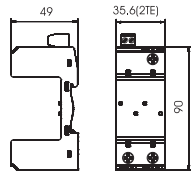


Dividing unit
Version TE (17.5 mm)

Type			Pack. pcs	Weight kg/100 pcs.	Item No.
MB 1+NPE	1 + NPE	2	1	11.500	5096650
MB 2+NPE	2 + NPE	3	1	16.100	5096655
MB 3+NPE	3 + NPE	4	1	20.000	5096669

- Suitable for V 25-B+C, V 20-C and V10-C
- Pre-mounted and ready for connection
- Multifunction terminals for easy connection to series-mounted devices
- Upper parts can be rotated through 180 degrees
- For TN-S and TT network systems

Base, MultiBase + NPE with remote signalling



Dividing unit
Version TE (17.5 mm)

Type			Pack. pcs	Weight kg/100 pcs.	Item No.
MB 1+NPE+FS	1 + NPE	2	1	11.600	5096651
MB 2+NPE+FS	2 + NPE	3	1	16.000	5096657
MB 3+NPE+FS	3 + NPE	4	1	21.000	5096671

- Suitable for V 25-B+C, V 20-C and V10-C
- Pre-mounted and ready for connection
- Multifunction terminals for easy connection to series-mounted devices
- Upper parts can be rotated through 180 degrees
- With remote signalling, potential-free NO contact, for function monitoring
- 3+1 protection circuit for TN-S and TT network systems

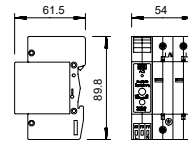


Base, MultiBase with acoustic signalling



Version

Type	Version	Pack. pcs	Weight		Item No.
			kg/100	pcs.	
V20-C U-2 AS	2-pole	1	23.000	5096413	
V20-C U-3 AS	3-pole	1	29.000	5096421	
V20-C U-4 AS	4-pole	1	35.000	5096448	
V20-C U-3+NPE-AS	3 + NPE	1	32.500	5096372	



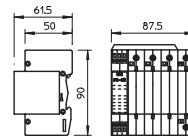
- Suitable for V 25-B+C, V 20-C and V 10-C
- With remote signalling, potential-free changeover contact, for function monitoring
- With acoustic signalling for function monitoring, signal tone can be shut down for 24 h
- Pre-mounted and ready for connection

Base, MultiBase + NPE with fuse monitoring



Version

Type	Version	Pack. pcs	Weight		Item No.
			kg/100	pcs.	
V20-C U-3+NPE	3-NPE with FS-SÜ	1	30.000	5096370	



- Suitable for V 25-B+C, V 20-C and V 10-C
- With voltage monitoring of phases and function monitoring of arrester upper part, remote signalling
- With remote signalling, potential-free changeover contact, for function monitoring
- For TN-S and TT network systems
- Pre-mounted and ready for connection





Keller 1 Wasch- maschine	Keller 2 Trockner	Keller 3 Licht	Keller 4 Steckdosen	Keller 5 Heizung und Pumpe	Keller 6 Garage	EG/OG DG 1 Licht	EG/OG/DG Steckdosen
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Doepke
B16

Doepke
B16

Doepke
B16

OBO
BETTERMANN

**V10
Compact**

SurgeController

ON OFF

U_n 230-400 V AC
 U_c 255 V AC
 U_{max} 20 kV
 U_p <1,1 kV
 I_{max} 63 A

I_n 10 kA
 I_{max} 20 kA
 I_{max} 80 kA
 I_{max} 100 kA
 I_{max} 150 kA
 I_{max} 200 kA
 I_{max} 250 kA
 I_{max} 300 kA
 I_{max} 350 kA
 I_{max} 400 kA
 I_{max} 450 kA
 I_{max} 500 kA
 I_{max} 550 kA
 I_{max} 600 kA
 I_{max} 650 kA
 I_{max} 700 kA
 I_{max} 750 kA
 I_{max} 800 kA
 I_{max} 850 kA
 I_{max} 900 kA
 I_{max} 950 kA
 I_{max} 1000 kA

Art.-Nr. 5093 38 0

CE

Herd 1	Herd 2	Herd 3					
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Doepke

ROCB

DES 4

U_n 230/400V
 I_n 63A
 $I_{\Delta n}$ 0,03A

I_{sc} 10000 A
 I_{sc} 15000 A
 I_{sc} 20000 A
 I_{sc} 25000 A
 I_{sc} 30000 A
 I_{sc} 35000 A
 I_{sc} 40000 A
 I_{sc} 45000 A
 I_{sc} 50000 A
 I_{sc} 55000 A
 I_{sc} 60000 A
 I_{sc} 65000 A
 I_{sc} 70000 A
 I_{sc} 75000 A
 I_{sc} 80000 A
 I_{sc} 85000 A
 I_{sc} 90000 A
 I_{sc} 95000 A
 I_{sc} 100000 A

I_{sc} 10000 A
 I_{sc} 15000 A
 I_{sc} 20000 A
 I_{sc} 25000 A
 I_{sc} 30000 A
 I_{sc} 35000 A
 I_{sc} 40000 A
 I_{sc} 45000 A
 I_{sc} 50000 A
 I_{sc} 55000 A
 I_{sc} 60000 A
 I_{sc} 65000 A
 I_{sc} 70000 A
 I_{sc} 75000 A
 I_{sc} 80000 A
 I_{sc} 85000 A
 I_{sc} 90000 A
 I_{sc} 95000 A
 I_{sc} 100000 A

I_{sc} 10000 A
 I_{sc} 15000 A
 I_{sc} 20000 A
 I_{sc} 25000 A
 I_{sc} 30000 A
 I_{sc} 35000 A
 I_{sc} 40000 A
 I_{sc} 45000 A
 I_{sc} 50000 A
 I_{sc} 55000 A
 I_{sc} 60000 A
 I_{sc} 65000 A
 I_{sc} 70000 A
 I_{sc} 75000 A
 I_{sc} 80000 A
 I_{sc} 85000 A
 I_{sc} 90000 A
 I_{sc} 95000 A
 I_{sc} 100000 A

Doepke

ROCB

DES 2

U_n 230/400V
 I_n 25A
 $I_{\Delta n}$ 0,03A

I_{sc} 10000 A
 I_{sc} 15000 A
 I_{sc} 20000 A
 I_{sc} 25000 A
 I_{sc} 30000 A
 I_{sc} 35000 A
 I_{sc} 40000 A
 I_{sc} 45000 A
 I_{sc} 50000 A
 I_{sc} 55000 A
 I_{sc} 60000 A
 I_{sc} 65000 A
 I_{sc} 70000 A
 I_{sc} 75000 A
 I_{sc} 80000 A
 I_{sc} 85000 A
 I_{sc} 90000 A
 I_{sc} 95000 A
 I_{sc} 100000 A

Doepke

B16

I_n 16A
 $I_{\Delta n}$ 0,03A

FI-Schalter 1.1 allgemein	FI-Schalter 1.2 allgemein	FI-Schalter 1.3 allgemein	FI-Schalter 1.4 allgemein	FI-Schalter 2.1 Bad/WC	FI-Schalter 2.2 Bad/WC	LS 16A Bad/WC	
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Surge protection energy technology, arrester, type 2+3



Surge arrester V10 Compact

211



Accessories, upper parts and bases V10

216



Compact surge protection

231

Type 2+3, surge arrester V10 Compact



3-pole + NPE

Volts	Item no.	Page
255	5093380	212
255	5093380	212
385	5093384	213

Type 2+3, surge arrester V10 Compact with remote/acoustic signalling



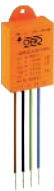
3-pole + NPE + FS

Volts	Item no.	Page
255	5093382	215

3-pole + NPE + AS

Volts	Item no.	Page
255	5093391	214

Type 2+3, surge arrester ÜSM-LED



IP20

Volts	Item no.	Page
255	5092 43 1	233
255	5092 43 3	234
255	5092 42 6	253
255	5092 42 4	254
255	5092 42 2	255
255	5092 42 4	254

IP65

Volts	Item no.	Page
255	5092 43 3	234

Type 2+3, surge arrester V10 upper parts



Upper part

Volts	Item no.	Page
280	5093402	222
280	5093402	222
320	5093404	223
385	5093406	224

Surge arrester Compact 150 V



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V10 COMPACT 150	150	3 + NPE	1	15.800	5093378

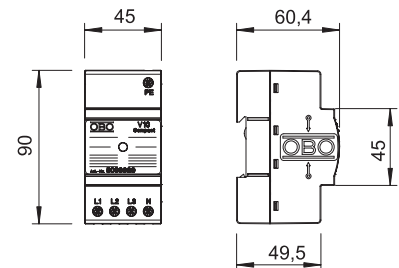
Surge protection device, compact module, type 2+3

- Surge protection in subdistributors to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity up to 60 kA (8/20) in total
- Integrated 3+1 solution for TN and TT network systems on 45 mm module width
- High-performance varistor technology
- Including thermic and dynamic cut-off unit and visual function display
- Optionally with -AS acoustic signalling or -FS remote signalling

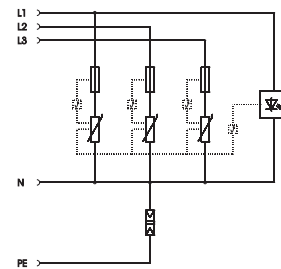
Application: Sub/storey distribution as well as device protection in rotational current systems.



Dimensions



Connection options



V10 COMPACT 150

Nominal voltage	U_N	130 V
SPD to EN 61643-11		Type 2+3
SPD to IEC 61643-11		Class II+III
Lightning protection zone LPZ		1→3
Nominal discharge current (8/20)	I_n	10 kA
Arrestor surge current (8/20) [total]	$I_{Ttotal 8/20}$	60 kA
Maximum discharge current (8/20 μ s)	I_{max}	20 kA
Voltage protection level	U_o	< 0,7 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		63 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		2.5
Protection rating		IP20
Connection cross-section rigid		2.5 - 10 mm ²
Connection cross-section, multi-wire		2.5 - 10 mm ²
Connection cross-section, flexible		2.5 - 10 mm ²



Surge arrester V10 Compact

Surge arrester Compact 255 V



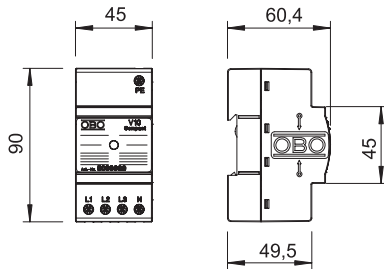
Highest continuous voltage

Type	V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V10 COMPACT 255	255	3 + NPE	1	15.800	5093380

Surge protection device, compact module, type 2+3

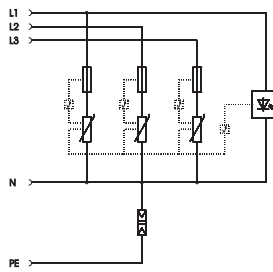
- Surge protection in subdistributors to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity up to 60 kA (8/20) in total
- Integrated 3+1 solution for TN and TT network systems on 45 mm module width
- High-performance varistor technology
- Including thermic and dynamic cut-off unit and visual function display
- Optionally with -AS acoustic signalling or -FS remote signalling

Dimensions



Application: Sub/storey distribution as well as device protection in rotational current systems.

Connection options



V10 COMPACT 255

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 2+3
SPD to IEC 61643-11		Class II+III
Lightning protection zone LPZ		1→3
Nominal discharge current (8/20)	I_n	10 kA
Arrestor surge current (8/20) [total]	$I_{Total 8/20}$	60 kA
Maximum discharge current (8/20 μ s)	I_{max}	20 kA
Voltage protection level	U_d	< 1,1 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		63 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		2.5
Protection rating		IP20
Connection cross-section rigid		2.5 - 10 mm ²
Connection cross-section, multi-wire		2.5 - 10 mm ²
Connection cross-section, flexible		2.5 - 10 mm ²

Surge arrester Compact 385 V



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V10 COMPACT 385	385	3 + NPE	1	16.800	5093384

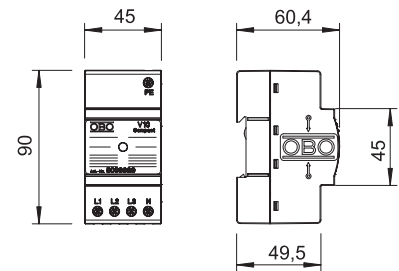
Surge protection device, compact module, type 2+3

- Surge protection in subdistributors to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity up to 60 kA (8/20) in total
- Integrated 3+1 solution for TN and TT network systems on 45 mm module width
- High-performance varistor technology
- Including thermic and dynamic cut-off unit and visual function display
- Optionally with -AS acoustic signalling or -FS remote signalling

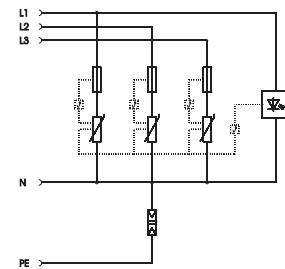
Application: Sub/storey distribution as well as device protection in rotational current systems.



Dimensions



Connection options



V10 COMPACT 385

Nominal voltage	U_N	385 V
SPD to EN 61643-11		Type 2+3
SPD to IEC 61643-11		Class II+III
Lightning protection zone LPZ		1→3
Nominal discharge current (8/20)	I_n	10 kA
Arrestor surge current (8/20) [total]	$I_{Ttotal 8/20}$	60 kA
Maximum discharge current (8/20 μ s)	I_{max}	20 kA
Voltage protection level	U_d	< 1,5 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		63 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		2.5
Protection rating		IP20
Connection cross-section rigid		2.5 - 10 mm ²
Connection cross-section, multi-wire		2.5 - 10 mm ²
Connection cross-section, flexible		2.5 - 10 mm ²



Surge arrester Compact with acoustic signalling



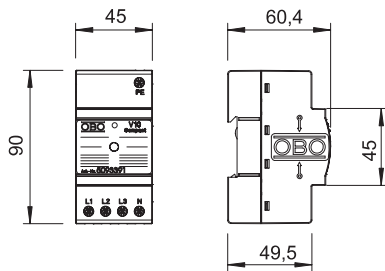
Highest continuous voltage

Type	V	Version	Designation	Pack. pcs	Weight kg/100 pcs.	Item No.
V10 COMPACT-AS	255	3 + NPE	with acoustic signalling	1	15.800	5093391

Surge protection device, compact module, type 2+3

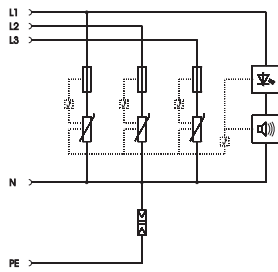
- Surge protection in subdistributors to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity up to 60 kA (8/20) in total
- Integrated 3+1 solution for TN and TT network systems on 45 mm module width
- High-performance varistor technology
- Including thermic and dynamic cut-off unit and visual function display
- ...-AS version with additional acoustic defect signalling (switchable)

Dimensions



Application: Sub/storey distribution as well as device protection in rotational current systems.

Connection options



V10 COMPACT-AS

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 2+3
SPD to IEC 61643-11		Class II+III
Lightning protection zone LPZ		1→3
Nominal discharge current (8/20)	I_n	10 kA
Arrestor surge current (8/20) [total]	$I_{Total 8/20}$	60 kA
Maximum discharge current (8/20 μ s)	I_{max}	20 kA
Voltage protection level	U_d	< 1,1 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		63 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		2.5
Protection rating		IP20
Connection cross-section rigid		2.5 - 10 mm ²
Connection cross-section, multi-wire		2.5 - 10 mm ²
Connection cross-section, flexible		2.5 - 10 mm ²

Surge arrester Compact with remote signalling



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V10 COMPACT-FS	255	3 + NPE	1	17.300	5093382

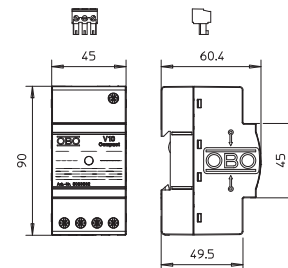
Surge protection device, compact module, type 2+3

- Surge protection in subdistributors to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity up to 60 kA (8/20) in total
- Integrated 3+1 solution for TN and TT network systems on 45 mm module width
- High-performance varistor technology
- Including thermic and dynamic cut-off unit and visual function display
- ...-FS version with potential-free changeover contact for remote signalling

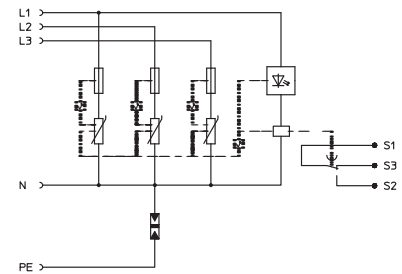
Application: Sub/storey distribution as well as device protection in rotational current systems.



Dimensions



Connection options

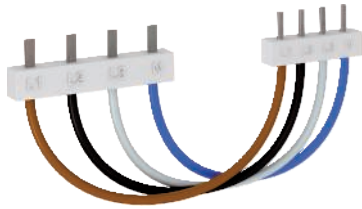


V10 COMPACT-FS

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 2+3
SPD to IEC 61643-11		Class II+III
Lightning protection zone LPZ		1→3
Nominal discharge current (8/20)	I_n	10 kA
Arrestor surge current (8/20) [total]	$I_{Ttotal 8/20}$	60 kA
Maximum discharge current (8/20 μ s)	I_{max}	20 kA
Voltage protection level	U_d	< 1,1 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		63 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		2.5
Protection rating		IP20
Connection cross-section rigid		2.5 - 10 mm ²
Connection cross-section, multi-wire		2.5 - 10 mm ²
Connection cross-section, flexible		2.5 - 10 mm ²



Connecting bridge for V10 Compact 200 mm

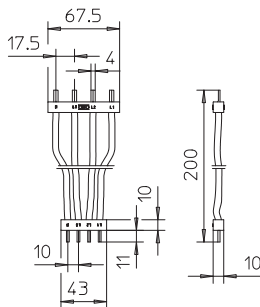


Type	Version	Pack.		Weight	Item No.
		pcs	kg/100 pcs		
VB-V10 COMPACT-2	200 mm	1	5.300		5089650

VB-V10 Compact: To bridge V10 Compact e.g. to FI protection switches in a 17.5 mm grid.

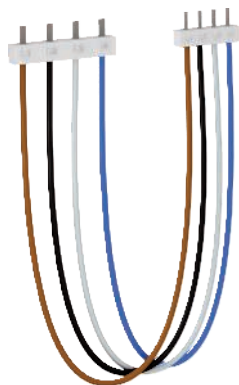
- 4-pole version (L1; L2; L3; N)
- Conductor: H07V-K 4 mm²
- V10 Compact connection via pin contact (diameter: 2.7 mm)
- FI protection switch connection via flat contact (4 x 1.5 mm)

Dimensions



Connection options

Connecting bridge for V10 Compact 400 mm

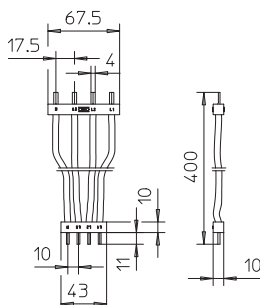


Type	Version	Pack.		Weight	Item No.
		pcs	kg/100 pcs		
VB-V10 COMPACT-4	400 mm	1	8.900		5089652

VB-V10 Compact: To bridge V10 Compact e.g. to FI protection switches in a 17.5 mm grid.

- 4-pole version (L1; L2; L3; N)
- Conductor: H07V-K 4 mm²
- V10 Compact connection via pin contact (diameter: 2.7 mm)
- FI protection switch connection via flat contact (4 x 1.5 mm)

Dimensions



Surge arrester V10 3-pole + NPE 280 V



Type	Highest continuous voltage		Pack. pcs.	Weight		Item No.
	V	Version		kg/100 pcs.	pcs.	
V10-C 3+NPE	280	3 + NPE	1	37.800	5094920	

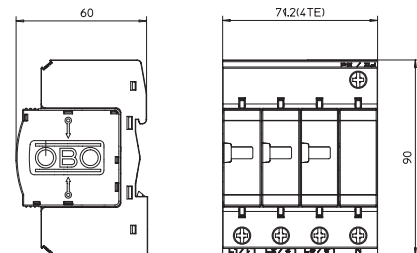
V 10-C/...: lightning and surge protection device type 2+3 (Class C+D) to VDE 0675 part 6-11 (DIN EN 61643-11) to overvoltage protection to DIN VDE 0100 part 443.

- With new MultiBase base part and Multi-connection clamps
- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- Suitable for any TN and TT network systems
- Plug-in arrester with dynamic separating device
- With visual function display
- Version FS with remote signalling, potential-free changeover contact, for function monitoring
- High current conductivity and long service life
- Marked connections

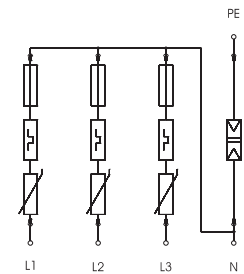
Application example: residential buildings, single-family homes



Dimensions



Connection options



V10-C 3+NPE

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 2+3
SPD to IEC 61643-11		Class II+III
Lightning protection zone LPZ		1→3
Nominal discharge current (8/20)	I_n	10 kA
Arrestor surge current (8/20) [total]	$I_{Ttotal 8/20}$	40 kA
Maximum discharge current (8/20 μ s)	I_{max}	20 kA
Voltage protection level	U_o	< 1,1 kV
Response time	t_A	<25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		4
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

Surge arrester V10 3-pole + NPE with remote signalling 280 V

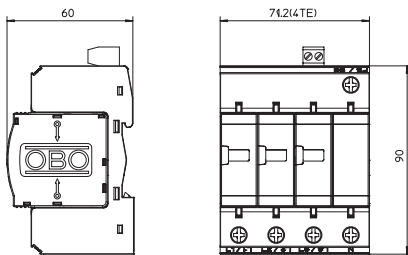


Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V10-C 3+NPE+FS	280	3 + NPE	1	37.900	5094931

V 10-C/...: lightning and surge protection device type 2+3 (Class C+D) to VDE 0675 part 6-11 (DIN EN 61643-11) to overvoltage protection to DIN VDE 0100 part 443.

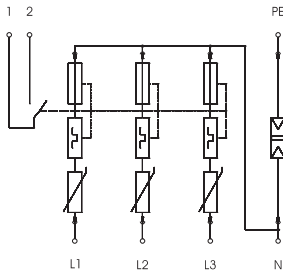
- With new MultiBase base part and Multi-connection clamps
- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- Suitable for any TN and TT network systems
- Plug-in arrester with dynamic separating device
- With visual function display
- Version FS with remote signalling, potential-free changeover contact, for function monitoring
- High current conductivity and long service life
- Marked connections

Dimensions



Application example: residential buildings, single-family homes

Connection options



V10-C 3+NPE+FS

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 2+3
SPD to IEC 61643-11		Class II+III
Lightning protection zone LPZ		1→3
Nominal discharge current (8/20)	I_n	10 kA
Arrestor surge current (8/20) [total]	$I_{Total 8/20}$	40 kA
Maximum discharge current (8/20 μ s)	I_{max}	20 kA
Voltage protection level	U_p	< 1,1 kV
Response time	t_A	<25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		4
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

Surge arrester V10 1-pole + NPE 280 V



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V10-C 1+NPE-280	280	1 + NPE	1	22.200	5093418

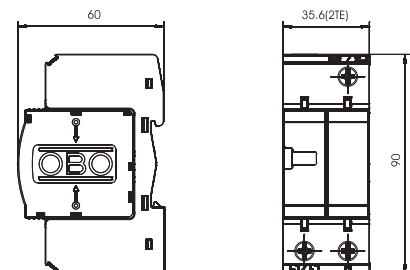
V 10-C/...: lightning and surge protection device type 2+3 (Class C+D) to VDE 0675 part 6-11 (DIN EN 61643-11) to overvoltage protection to DIN VDE 0100 part 443.

- With new MultiBase base part and Multi-connection clamps
- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- Suitable for any TN and TT network systems
- Plug-in arrester with dynamic separating device
- With visual function display
- Version FS with remote signalling, potential-free changeover contact, for function monitoring
- High current conductivity and long service life
- Marked connections

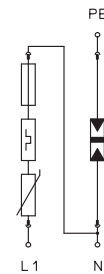
Application example: residential buildings, single-family homes



Dimensions



Connection options



V10-C 1+NPE-280

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 2+3
SPD to IEC 61643-11		Class II+III
Lightning protection zone LPZ		1→3
Nominal discharge current (8/20)	I_n	10 kA
Arrestor surge current (8/20) [total]	$I_{Ttotal 8/20}$	40 kA
Maximum discharge current (8/20 μ s)	I_{max}	20 kA
Voltage protection level	U_o	< 1,1 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		2
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 35 mm ²

Surge arrester V10 3-pole + NPE 320 V

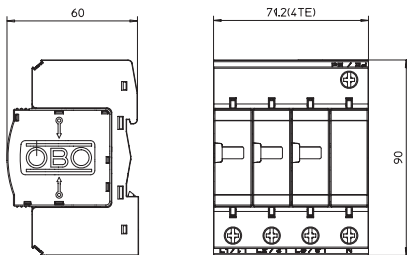


Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V10-C 3+NPE-320	320	3 + NPE	1	39.000	5094924

V 10-C/...: lightning and surge protection device type 2+3 (Class C+D) to VDE 0675 part 6-11 (DIN EN 61643-11) to overvoltage protection to DIN VDE 0100 part 443.

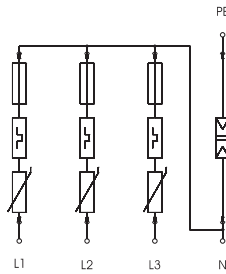
- With new MultiBase base part and Multi-connection clamps
- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- Suitable for any TN and TT network systems
- Plug-in arrester with dynamic separating device
- With visual function display
- Version FS with remote signalling, potential-free changeover contact, for function monitoring
- High current conductivity and long service life
- Marked connections

Dimensions



Application example: residential buildings, single-family homes

Connection options



V10-C 3+NPE-320

Nominal voltage	U_N	320 V
SPD to EN 61643-11		Type 2+3
SPD to IEC 61643-11		Class II+III
Lightning protection zone LPZ		1→3
Nominal discharge current (8/20)	I_n	10 kA
Arrestor surge current (8/20) [total]	$I_{Total 8/20}$	40 kA
Maximum discharge current (8/20 μ s)	I_{max}	20 kA
Voltage protection level	U_p	< 1,2 kV
Response time	t_A	<25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		4
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

Upper part, surge arrester V10 280 V



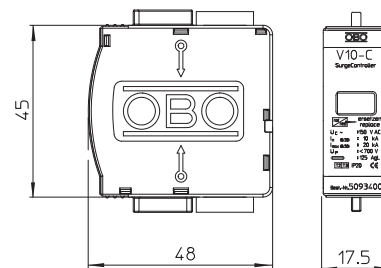
Type	Highest continuous voltage		Pack. pcs.	Weight		Item No.
	V	Version		kg/100 pcs.	pcs.	
V10-C 0-150	150	1-pole	1	2.900	5093400	

Upper part – V 10-C/...: Type 2+3 surge arrester to EN 61643-11

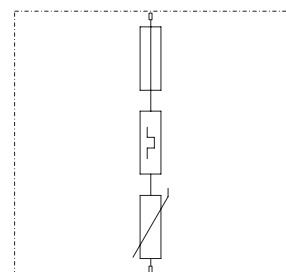
- Plug-in upper part; upper part can be separated from base without tools
- Including thermal and dynamic separating device and visual fault display
- High current conductivity and long service life



Dimensions



Connection options



V10-C 0-150

Max. continuous operating voltage	U_c	150 V
SPD to EN 61643-11		Type 2+3
SPD to IEC 61643-11		Class II+III
Lightning protection zone LPZ		1→3
Nominal discharge current (8/20)	I_n	10 kA
Arrestor surge current (8/20) [total]	$I_{Ttotal 8/20}$	10 kA
Maximum discharge current (8/20 μ s)	I_{max}	20 kA
Voltage protection level	U_o	< 0,7 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		1
Protection rating		IP20



Upper part, surge arrester V10 280 V

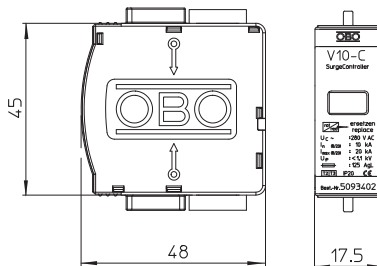


Type	Highest continuous voltage		Pack. pcs	Weight		Item No.
	V	Version		kg/100 pcs.		
V10-C 0-280	280	1-pole	1	3.360		5093402

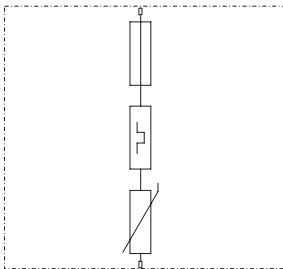
Upper part – V 10-C/...: Type 2+3 surge arrester to EN 61643-11

- Plug-in upper part; upper part can be separated from base without tools
- Including thermal and dynamic separating device and visual fault display
- High current conductivity and long service life

Dimensions



Connection options



V10-C 0-280

Max. continuous operating voltage	U_C	280 V
SPD to EN 61643-11		Type 2+3
SPD to IEC 61643-11		Class II+III
Lightning protection zone LPZ		1→3
Nominal discharge current (8/20)	I_n	10 kA
Arrestor surge current (8/20) [total]	$I_{Total 8/20}$	10 kA
Maximum discharge current (8/20 μ s)	I_{max}	20 kA
Voltage protection level	U_D	< 1,1 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		1
Protection rating		IP20

Upper part, surge arrester V10 320 V



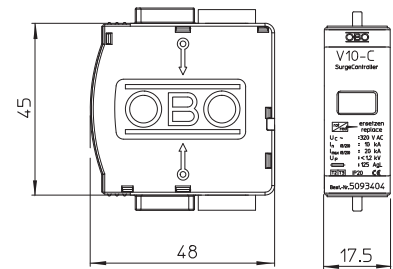
Type	Highest continuous voltage V	Version	Pack. pcs	Weight		Item No.
				kg/100	pcs.	
V10-C 0-320	320	1-pole	1	3.510		5093404

Upper part – V 10-C/...: Type 2+3 surge arrester to EN 61643-11

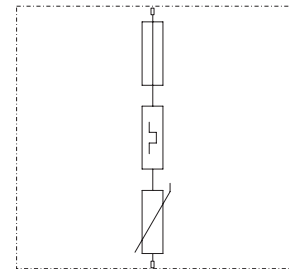
- Plug-in upper part; upper part can be separated from base without tools
- Including thermal and dynamic separating device and visual fault display
- High current conductivity and long service life



Dimensions



Connection options



V10-C 0-320

Max. continuous operating voltage	U_c	320 V
SPD to EN 61643-11		Type 2+3
SPD to IEC 61643-11		Class II+III
Lightning protection zone LPZ		1-3
Nominal discharge current (8/20)	I_n	10 kA
Arrestor surge current (8/20) [total]	$I_{Ttotal 8/20}$	10 kA
Maximum discharge current (8/20 μ s)	I_{max}	20 kA
Voltage protection level	U_p	< 1,2 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		1
Protection rating		IP20

Upper part, surge arrester V10 385 V

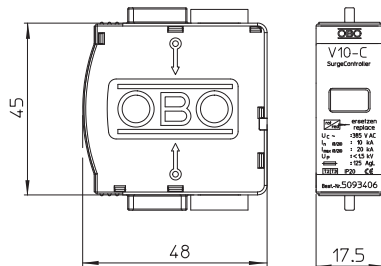


Type	Highest continuous voltage		Pack. pcs	Weight		Item No.
	V	Version		kg/100 pcs.		
V10-C 0-385	385	1-pole	30	3.630		5093406

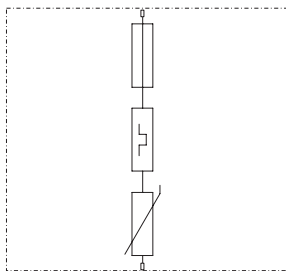
Upper part – V 10-C/...: Type 2+3 surge arrester to EN 61643-11

- Plug-in upper part; upper part can be separated from base without tools
- Including thermal and dynamic separating device and visual fault display
- High current conductivity and long service life

Dimensions



Connection options



V10-C 0-385

Max. continuous operating voltage	U_C	385 V
SPD to EN 61643-11		Type 2+3
SPD to IEC 61643-11		Class II+III
Lightning protection zone LPZ		1→3
Nominal discharge current (8/20)	I_n	10 kA
Arrestor surge current (8/20) [total]	$I_{Total 8/20}$	10 kA
Maximum discharge current (8/20 μ s)	I_{max}	20 kA
Voltage protection level	U_D	< 1,5 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		1
Protection rating		IP20

Base, MultiBase with remote signalling

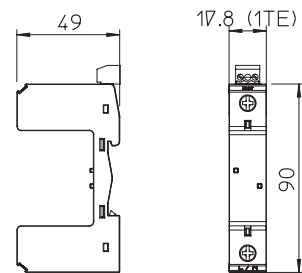


Type	Dividing unit		Pack. pcs	Weight		Item No.
	Version	TE (17.5 mm)		kg/100 pcs	pcs	
MB 1+FS	1-pole	1	1	6.700	5096649	
MB 2+FS	2-pole	2	1	11.700	5096654	
MB 3+FS	3-pole	3	1	16.500	5096667	
MB 4+FS	4-pole	4	1	21.000	5096682	

- Suitable for V 25-B+C, V 20-C and V10-C
- Pre-mounted and ready for connection
- Multifunction terminals for easy connection to series-mounted devices
- Upper parts can be rotated through 180 degrees
- With remote signalling, potential-free NO contact, for function monitoring



Dimensions



Connection options

MultiBase base + NPE

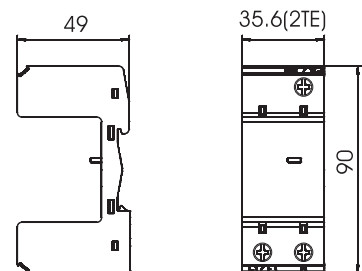


Type	Dividing unit		Pack. pcs	Weight		Item No.
	Version	TE (17.5 mm)		kg/100 pcs	pcs	
MB 1+NPE	1 + NPE	2	1	11.500	5096650	
MB 2+NPE	2 + NPE	3	1	16.100	5096655	
MB 3+NPE	3 + NPE	4	1	20.000	5096669	

- Suitable for V 25-B+C, V 20-C and V10-C
- Pre-mounted and ready for connection
- Multifunction terminals for easy connection to series-mounted devices
- Upper parts can be rotated through 180 degrees
- For TN-S and TT network systems



Dimensions



Connection options

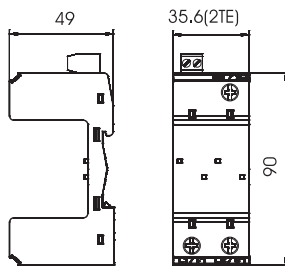
Base, MultiBase + NPE with remote signalling



Type	Version	Dividing unit TE (17.5 mm)	Pack. pcs	Weight kg/100 pcs.	Item No.
MB 1+NPE+FS	1 + NPE	2	1	11.600	5096651
MB 2+NPE+FS	2 + NPE	3	1	16.000	5096657
MB 3+NPE+FS	3 + NPE	4	1	21.000	5096671

- Suitable for V 25-B+C, V 20-C and V10-C
- Pre-mounted and ready for connection
- Multifunction terminals for easy connection to series-mounted devices
- Upper parts can be rotated through 180 degrees
- With remote signalling, potential-free NO contact, for function monitoring
- 3+1 protection circuit for TN-S and TT network systems

Dimensions



Connection options

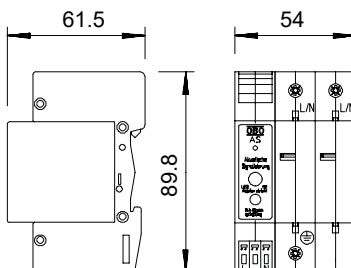
Base, MultiBase with acoustic signalling



Type	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C U-2 AS	2-pole	1	23.000	5096413
V20-C U-3 AS	3-pole	1	29.000	5096421
V20-C U-4 AS	4-pole	1	35.000	5096448
V20-C U-3+NPE-AS	3 + NPE	1	32.500	5096372

- Suitable for V 25-B+C, V 20-C and V 10-C
- With remote signalling, potential-free changeover contact, for function monitoring
- With acoustic signalling for function monitoring, signal tone can be shut down for 24 h
- Pre-mounted and ready for connection

Dimensions



Connection options

Base, MultiBase + NPE with fuse monitoring

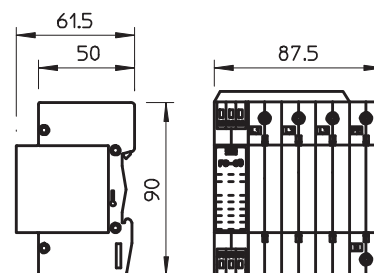


Type	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C U-3+NPE	3-NPE with FS-SÜ	1	30.000	5096370

- Suitable for V 25-B+C, V 20-C and V 10-C
- With voltage monitoring of phases and function monitoring of arrester upper part, remote signalling
- With remote signalling, potential-free changeover contact, for function monitoring
- For TN-S and TT network systems
- Pre-mounted and ready for connection



Dimensions



Connection options

Copper bridges with step width 17.6 mm

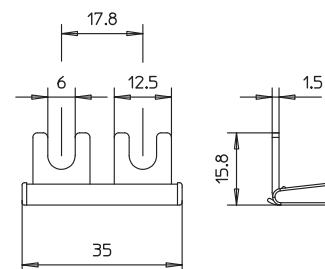


Type	Pack. pcs	Weight kg/100 pcs	Item No.
KB MB	10	0.900	5089660

The bridges KB... permit parallel connection of bases and poles of the MultiBase bases. The bridges are available in various widths.



Dimensions



Connection options



Copper bridges with step width 53.4 mm

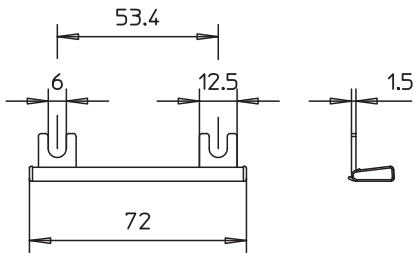


Type
KB MB

Pack.	Weight		Item No.
	kg/100	pcs.	
10	1.470		5089662

The bridges KB... permit parallel connection of bases and poles of the MultiBase bases. The bridges are available in various widths.

Dimensions



Connection options

Remote signalling replacement connector for MultiBase



Version

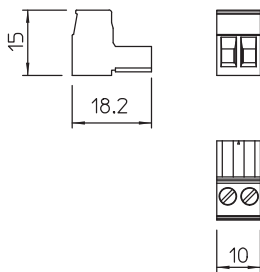


Type
MB-FS | 2-pole

Pack.	Weight		Item No.
	kg/100	pcs.	
25	0.310		5096693

Replacement telephony connector, 2-pole version, for MultiBase base

Dimensions



Connection terminal for through-wiring



Type	Colour	Version	Weight		Item No.
			Pack. pcs	kg/100 pcs	
AS 3x16	Light grey	3 x 16 mm ²	5	2.474	5012010

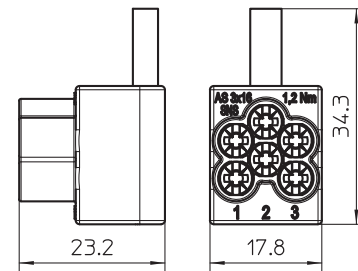
Connection terminal type: AS 3 x 16

Connection cross-section: 3 x 1.5 - 16 sq mm rigid/ multiple strands
 3 x 1.5 - 10 sq mm fine-wire/with wire end sleeve
 Stripping length: 16 mm
 Rec. tightening torque: 1.2 Nm
 Nominal current: 50 A
 Width: 17.5 mm (1 TE)

For EMC-optimised V through-wiring to IEC 60364-5-53 (VDE 0100-534).

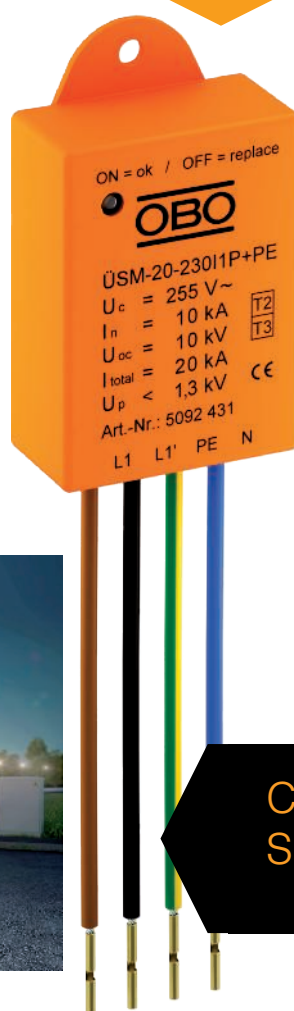


Dimensions



Surge protection energy technology, arrester, type 2+3: The plus for LED street lighting

- + Surge arrestors with high arresting capacity
- + High arresting capacity of 10 kA to 20 kA
- + Visual status display
- + Labelled connections
- + Optional switch-off of the LED luminaires after surge protection fails



Compact
Surge protection

Function and areas of use

The surge arrester ÜSM-LED 230 meets the type 2+3 requirement class according to IEC 61643-11. This device protects lighting systems against any kind

of surge voltages. The voltage-limiting, high-performance zinc oxide varistor provides several benefits. An extremely short response time, a low protection level and high current leakage capability with

long service life. It can be used in the mast connection box or in LED luminaires.

Surge protection for LED systems 230V



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
ÜSM-LED 230	255	1+NPE	1	3.500	5092480
ÜSM-LED 440	440	1+NPE	1	4.500	5092482

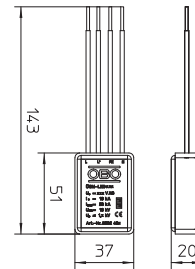
Surge protection module type 2+3 to DIN EN 61643-11 for 230/400 V power grids.
Appropriate for the protection of LED lighting.

- With visual function display
- Small size for the installation in the pole or in the LED lamp head
- 1+NPE protective circuit with a maximum discharge capacity of 20 kA
- Surge limitation under 1,300 V or 1,000 V @ 5 kA
- Available with or without cut-off function of the lamp in case of malfunction

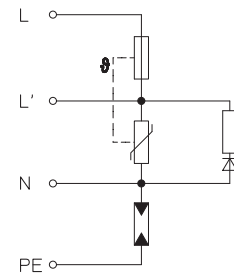
Application: Universally deployable in all lighting systems



Dimensions



Connection options



ÜSM-LED 230

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 2+3
SPD to IEC 61643-11		Class II+III
Lightning protection zone LPZ		1→3
Nominal discharge current (8/20)	I_n	10 kA
Arrestor surge current (8/20) [total]	$I_{Total\ 8/20}$	20 kA
Maximum discharge current (8/20 μ s)	I_{max}	20 kA
Voltage protection level	U_o	1,3 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		16 A
Temperature range	ϑ	-15 - +60 °C
Protection rating		IP20
Connecting cable length		0.09 m

ÜSM-LED 440

Nominal voltage	U_N	440 V
SPD to EN 61643-11		Type 2+3
SPD to IEC 61643-11		Class II+III
Lightning protection zone LPZ		1→3
Nominal discharge current (8/20)	I_n	10 kA
Arrestor surge current (8/20) [total]	$I_{Total\ 8/20}$	20 kA
Maximum discharge current (8/20 μ s)	I_{max}	20 kA
Voltage protection level	U_n	1,8 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		16 A
Temperature range	ϑ	-15 - +60 °C
Protection rating		IP20
Connecting cable length		0.09 m



Surge protection for LED systems 230 V 65

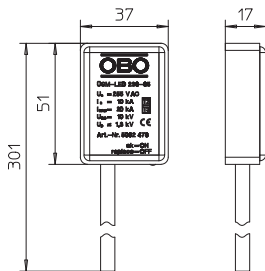


Type	Highest continuous voltage V	Version	Weight		Item No.
			Pack. pcs	kg/100 pcs	
ÜSM-LED 230-65	255	1+NPE	25	7.500	5092478

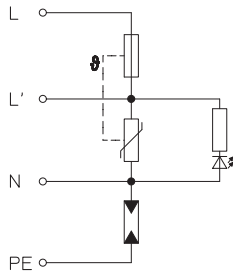
Surge protection module type 2+3 to DIN EN 61643-11 for 230/400 V power grids. Appropriate for the protection of LED lighting and the LED driver.

- With visual function display
- Small size for the installation in the mast connection box
- IP65 and with 25 cm connection cable
- 1+NPE protective circuit with a maximum discharge capacity of 20 kA
- Surge limitation under 1,300 V or 1,000 V @ 5 kA
- Available with or without cut-off function of the lamp in case of malfunction

Dimensions



Connection options



Application: Universally deployable in all lighting systems

ÜSM-LED 230-65

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 2+3
SPD to IEC 61643-11		Class II+III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I_n	10 kA
Arrestor surge current (8/20) [total]	$I_{Total 8/20}$	20 kA
Maximum discharge current (8/20 μ s)	I_{max}	20 kA
Voltage protection level	U_d	1,3 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		16 A
Temperature range	ϑ	-15 - +60 °C
Protection rating		IP65
Connecting cable length		0.25 m

Surge protection for LED systems ÜSM-20-230I1P+PE

LPZ
1→3Type
2+3

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
ÜSM-20-230I1P+PE	255	1-pole + NPE for PC I	1	4.100	5092431

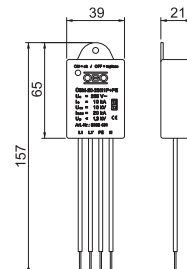
Surge protection module type 2+3 to DIN EN 61643-11 for 230/400 V power grids.
Appropriate for the protection of LED lighting.

- With function display and switch-off of the load circuit when a SPD fails
- Small size for the installation in the pole connection box or upstream of the LED driver
- 1+NPE protective circuit with a maximum discharge capacity of 20 kA
- Reduction of overvoltage to under 1,300 V or 1,000 V @ 5 kA
- With or without luminaire switch-off in case of defect

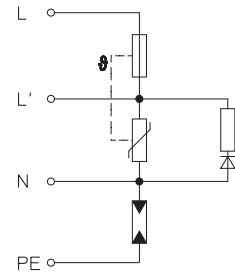
Application: In the cable transition box, junction boxes, cable duct to underfloor systems



Dimensions



Connection options



ÜSM-20-230I1P+PE

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 2+3
SPD to IEC 61643-11		Class II+III
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	10 kA
Arrestor surge current (8/20) [total]	$I_{Ttotal 8/20}$	20 kA
Maximum discharge current (8/20 μ s)	I_{max}	20 kA
Voltage protection level	U_o	1,3 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		16 A
Temperature range	ϑ	-15 - +60 °C
Protection rating		IP20
Connecting cable length		0.09 m



Surge protection for LED systems ÜSM-20-230I1PE65



Highest continuous voltage V

Version

Pack. pcs

Weight kg/100 pcs.

Item No.

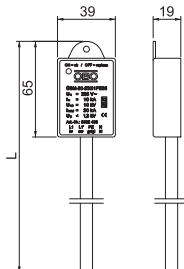
Type	V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
ÜSM-20-230I1PE65	255	1-pole + NPE for PC I	1	8.300	5092433

Surge protection module type 2+3 to DIN EN 61643-11 for 230/400 V power grids. Appropriate for the protection of LED lighting.

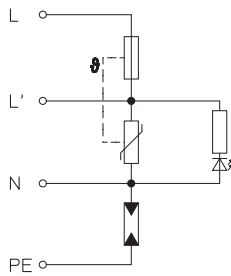
- With function display and switch-off of the load circuit when a SPD fails
- Small size for the installation in the pole connection box or upstream of the LED driver
- 1+NPE protective circuit with a maximum discharge capacity of 20 kA
- Reduction of overvoltage to under 1,300 V or 1,000 V @ 5 kA
- With or without luminaire switch-off in case of defect

Application: In the cable transition box, junction boxes, cable duct to underfloor systems

Dimensions



Connection options



ÜSM-20-230I1PE65

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 2+3
SPD to IEC 61643-11		Class II+III
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	10 kA
Arrestor surge current (8/20) [total]	$I_{Total 8/20}$	20 kA
Maximum discharge current (8/20 μ s)	I_{max}	20 kA
Voltage protection level	U_d	1,5 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		16 A
Temperature range	ϑ	-15 - +60 °C
Protection rating		IP65
Connecting cable length		0.25 m



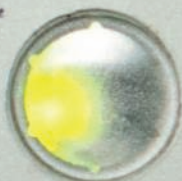
OBO

Blitzbarriere

VF
24
AC/DC



OK



Replace

U_N : 24 V
 I_L : 20 A
 $I_n (8/20)$: 700 A
 $I_{max} (8/20)$: 2 kA
 U_p : ≤ 130 V
IP20 CE

Art.-Nr. 5097 60 7

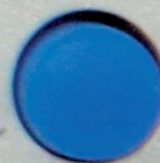
theben

13 03 15

OFF

13:41

MENU



2_TBS_Produnkteilheitenkatalog_EX_2018 / en / 2018/11/23 15:05:20 (LExport_02235) / 2018/11/23 15:07:49 15:07:49

Surge protection Energy technology, type 3 arrester



Fine power protection, connectable

240



Fine power protection, fixed installation

247



Fine power protection, series installation

259



Type 3, fine power protection FC, connectable



SchuKo

Volts	Item no.	Page
230	5092800	240



SchuKo + TV

Volts	Item no.	Page
230	5092808	241



SchuKo + SAT

Volts	Item no.	Page
230	5092816	242



SchuKo + TAE

Volts	Item no.	Page
230	5092824	243



SchuKo + ISDN

Volts	Item no.	Page
230	5092812	244



SchuKo + RJ

Volts	Item no.	Page
230	5092828	245



Socket bar

Volts	Item no.	Page
230	5092701	246

Type 3, fine power protection ÜSM, fixed installation



Direct connection

Volts	Item no.	Page
150	5092451	247
230	5092466	247



V connection

Volts	Item no.	Page
230	5092460	248



For GB2 and GB3 mounting boxes

Volts	Item no.	Page
230	5092472	249



SchuKo

Volts	Item no.	Page
230	5092441	250

Type 3, fine power protection ÜSS, Modul 45



Visual signalling

Volts	Item no.	Page
230	6117473	251



Acoustic signalling

Volts	Item no.	Page
230	6117465	252

Type 3, fine power protection VF, series installation



2-pole

Volts	Item no.	Page
12	5097453	259
24	5097607	260
48	5097615	261
60	5097623	262
110	5097631	263
230	5097650	264

Type 3, fine power protection VF, series installation with remote signalling



2-pole + FS

Volts	Item no.	Page
24	5097820	265
230	5097858	266

Type 3, fine power protection VF, series installation with leakage current-free signalling



2-pole + FS leakage current-free

Volts	Item no.	Page
230	5097939	267



FineController FC-D for protective contact socket

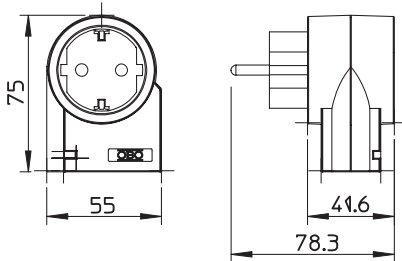


Country version		Colour	Pack. pcs	Weight kg/100 pcs	Item No.
Type	FC-D	EN	1	11.000	5092800

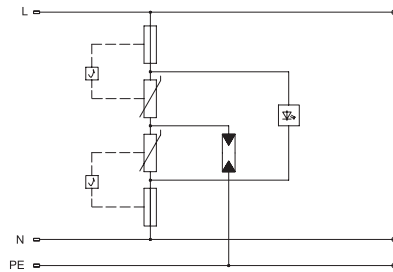
Type 3 surge protection device to EN 61643-11, intended for use in protective contact sockets.

- Adapter
- Disconnection device and function display
- Child lock through increased finger touch protection

Dimensions



Connection options



FC-D

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_c	275 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I_n	3 kA
Protection level (L-N)		< 1,2 kV
Protection level (N-PE)		< 1,5 kV
Maximum back-up fuse		16 A
Response time	t_A	<25 ns

FineController FC-TV for video, TV and hi-fi systems



Type	Country version		Colour	Pack. pcs	Weight		Item No.
	EN				kg/100	pcs.	
FC-TV-D	EN		Pure white	1	17.000		5092808

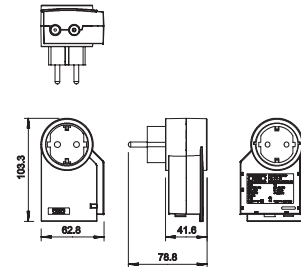
Type 3 combined surge protection to EN 61643-11, designed for use on Schuko sockets and video, TV and hi-fi systems with IEC adapter.

- Adapter
- Disconnection device and function display
- Child lock through increased finger contact protection
- Incl. 0.5 m connection cable in white (double screen)
- Maximum continuous voltage, TV connection 72 V DC / 1.5 A (25 °C)
- Limit frequency: 2.5 GHz (75 Ohm system)

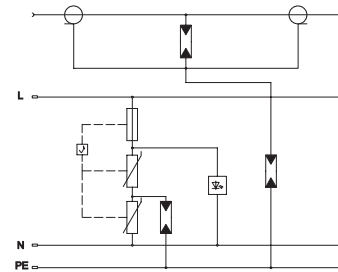
Note: The technical data in the table below refer to the power supply.



Dimensions



Connection options



FC-TV-D

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_c	275 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I_n	3 kA
Protection level (L-N)		< 1,2 kV
Protection level (N-PE)		< 1,5 kV
Maximum back-up fuse		16 A
Response time	t_A	<25 ns



FineController FC-SAT for SAT systems and receivers

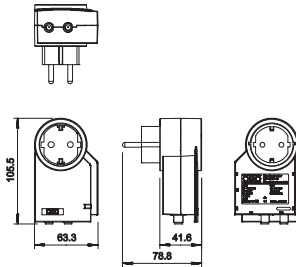


Type	Country version		Colour	Pack. pcs	Weight kg/100 pcs	Item No.
	EN					
FC-SAT-D	EN		Pure white	1	16.000	5092816

Type 3 combined surge protection to EN 61643-11, designed for use on satellite systems and receivers.

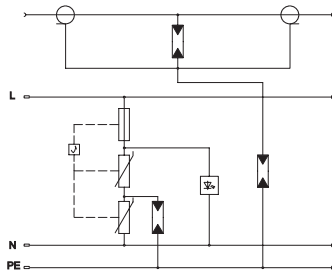
- Adapter
- Disconnection device and function display
- Child lock through increased finger contact protection
- Incl. 0.5 m connection cable in white (double screen)
- Maximum continuous voltage, TV connection 72 V DC / 1.5 A (25 °C)
- Limit frequency: 2.5 GHz (75 Ohm system)

Dimensions



Note: The technical data in the table below refer to the power supply.

Connection options



FC-SAT-D

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	275 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I_n	3 kA
Protection level (L-N)		< 1,2 kV
Protection level (N-PE)		< 1,5 kV
Maximum back-up fuse		16 A
Response time	t_A	<25 ns



FineController FC-TAE for telephone systems and terminals



Type	Country version	Colour	Pack. pcs	Weight kg/100 pcs	Item No.
FC-TAE-D	EN	Pure white	1	18.000	5092824

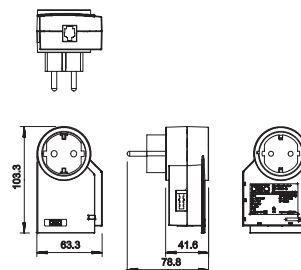
Type 3 combined surge protection to EN 61643-11, designed for use in telephone systems with TAE connection (telephones upstream of the NTBA/DSL splitter).

- Adapter connector
- Cut-off unit and function display
- Child lock through increased finger contact protection
- Incl. 0.5 m connection cable TAE / RJ11
- Maximum continuous voltage, TAE connection 200 V DC / 1.5 A (25 °C)
- Limit frequency: type 4 MHz / VDSL up to 46 MBit/s

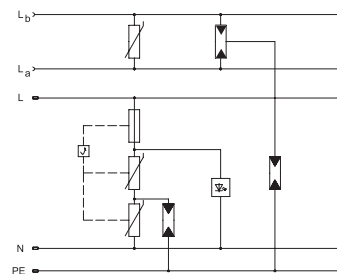
Note: The technical data in the table below refers to the power supply.



Dimensions



Connection options



FC-TAE-D

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_c	275 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I_n	3 kA
Protection level (L-N)		< 1,2 kV
Protection level (N-PE)		< 1,5 kV
Maximum back-up fuse		16 A
Response time	t_A	<25 ns



Fine power protection, connectable

FineController FC-ISDN for ISDN telephone systems and terminals

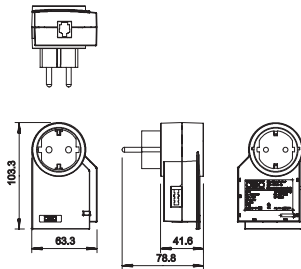


Type	Country version		Colour	Pack. pcs	Weight kg/100 pcs	Item No.
	EN					
FC-ISDN-D	EN		Pure white	1	18.000	5092812

Type 3 combined surge protection to EN 61643-11 designed for use in ISDN / DSS 1 telephone systems and terminals.

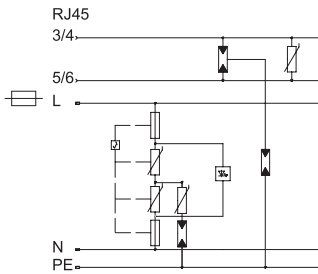
- Adapter
- Disconnection device and function display
- Child lock through increased finger contact protection
- Incl. 0.5 m connection cable RJ12
- Maximum continuous voltage, ISDN connection 6 V DC / 1.5 A (25 °C)
- Limit frequency: Type 300 kHz

Dimensions



Note: The technical data in the table below refer to the power supply.

Connection options



FC-ISDN-D

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	275 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I_n	3 kA
Protection level (L-N)		< 1,2 kV
Protection level (N-PE)		< 1,5 kV
Maximum back-up fuse		16 A
Response time	t_A	<25 ns

FineController FC-RJ-D for telephone systems with RJ12



Type	Country version		Colour	Pack. pcs	Weight kg/100 pcs	Item No.
	Country version	Colour				
FC-RJ-D	EN		Pure white	1	18.000	5092828

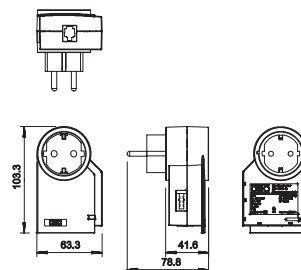
Type 3 combined surge protection to EN 61643-11 designed for use in telephone systems and terminals with RJ12 connection.

- Adapter
- Disconnection device and function display
- Child lock through increased finger contact protection
- Incl. 0.5 m connection cable RJ12
- Maximum continuous voltage, RJ connection 200 V DC / 1.5 A (25 °C)
- Limit frequency: Typ. 4 MHz / DSL-compatible

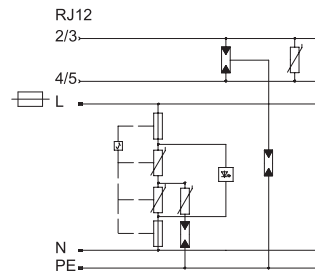
Note: The technical data in the table below refer to the power supply.



Dimensions



Connection options



FC-RJ-D

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_c	275 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I_n	3 kA
Protection level (L-N)		< 1,2 kV
Protection level (N-PE)		< 1,5 kV
Maximum back-up fuse		16 A
Response time	t_A	<25 ns



surge protection device CNS 3 D



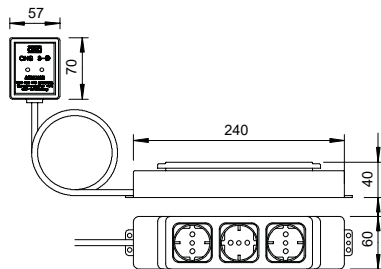
Type	Country version	Colour	Connection cable length m	Pack. pcs	Weight kg/100 pcs.	Item No.
CNS 3-D-D	EN	Black	2	1	65.000	5092701

CNS 3-D: Type 3 surge protection device to DIN EN 61643-11, intended for use in protective contact sockets.

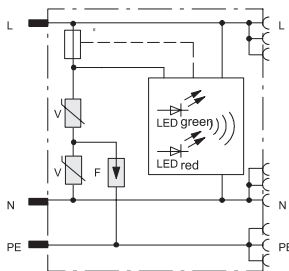
- With visual and audible signalling, function display
- 3-way socket
- Length of connection cable: 2 m
- Y circuit for high electrical safety

Application: For example, the protection of PCs, printers, copiers, fax machines, etc.

Dimensions



Connection options



CNS 3-D-D

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	255 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I_n	2.5 kA
Protection level (L-N)		< 1,0 kV
Protection level (N-PE)		< 1,5 kV
Maximum back-up fuse		16 A
Response time	t_A	<25 ns



Surge protection module 230 V



Type	Signalling on device		Pack. pcs	Weight kg/100 pcs		Item No.
	Type	Version		pcs	pcs	
ÜSM-A	Audible	Acoustic function display	1	1.500		5092451
ÜSM-A-150	Audible	Acoustic function display	1	1.500		5092466

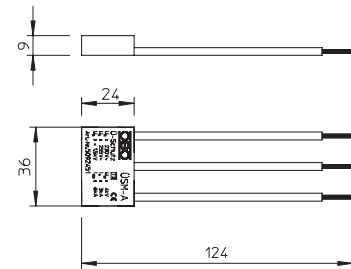
Surge protection module type 3 to DIN EN 61643-11 for 230 V power grids.

- With acoustic defect signal
- With low construction height
- Halogen-free plastic (UL 94 V-0)
- Y circuit

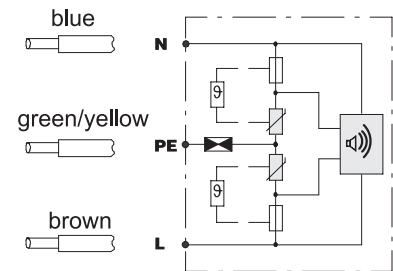
Application: Universally applicable for all installation systems.



Dimensions



Connection options



ÜSM-A

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	255 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2-3
Nominal discharge current (8/20)	I_n	3 kA
Protection level (L-N)		< 1,3 kV
Protection level (N-PE)		< 1,5 kV
Maximum back-up fuse		16 A
Response time	t_A	< 25 ns
Temperature range	ϑ	-15 - +60 °C
Maximum discharge current (8/20 μ s)	I_{max}	6 kA
Rated current	I_l	16 A

ÜSM-A-150

Nominal voltage	U_N	150 V
Max. continuous operating voltage	U_C	170 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2-3
Nominal discharge current (8/20)	I_n	3 kA
Protection level (L-N)		< 1,3 kV
Protection level (N-PE)		< 1,5 kV
Maximum back-up fuse		16 A
Response time	t_A	< 25 ns
Temperature range	ϑ	-15 - +60 °C
Maximum discharge current (8/20 μ s)	I_{max}	6 kA
Rated current	I_l	16 A



surge protection device 230 V for through wiring



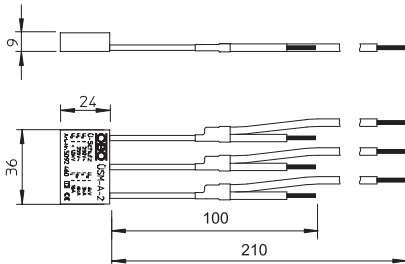
Type	Signalling on device	Version	Pack. pcs	Weight kg/100 pcs	Item No.
ÜSM-A-2	Audible	V connection	1	2.200	5092460

Surge protection device type 3 to DIN EN 61643-11 for 230 V networks.

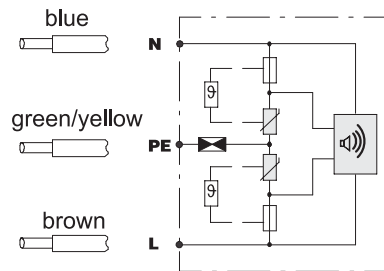
- With acoustic defect signal
- With 2 strands for continuous wiring
- With low construction height
- Halogen-free plastic (UL 94 V-0)
- Y circuit

Application: Universally applicable for all installation systems.

Dimensions



Connection options



ÜSM-A-2

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	255 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I_n	3 kA
Protection level (L-N)		< 1,3 kV
Protection level (N-PE)		< 1,5 kV
Maximum back-up fuse		16 A
Response time	t_A	< 25 ns
Temperature range	ϑ	-15 - +60 °C
Maximum discharge current (8/20 μ s)	I_{max}	6 kA
Rated current	I_t	16 A

Surge protection module 230 V with holder for GB2 and GB3 mounting boxes



Type	Signalling on device		Version	Weight		Item No.
	Pack. pcs.	kg/100 pcs.				
ÜSM-A-4	Audible	Incl. holder with partition function	1	2.000	5092472	

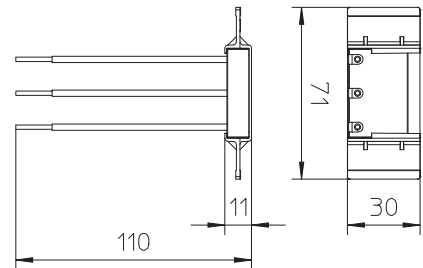
Surge protection module type 3 to DIN EN 61643-11 for 230 V power grids.

- With acoustic defect signal
- With low construction height and Y circuit
- ÜSM with halogen-free plastic (UL 94 V-0)
- Holder with separating retainer function for GB2 / GB3 mounting boxes and universal supports UT3 and UT4

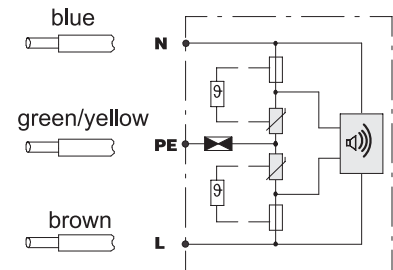
Application: Universally applicable for all installation systems.



Dimensions



Connection options



ÜSM-A-4

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	255 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I_n	3 kA
Maximum discharge current (8/20 μ s)	I_{max}	6 kA
Protection level (L-N)		< 1,3 kV
Protection level (N-PE)		< 1,5 kV
Maximum back-up fuse		16 A
Response time	t_A	< 25 ns
Temperature range	ϑ	-15 - +60 °C



Fine power protection, fixed installation

Fine power protection 230 V protective contact sockets



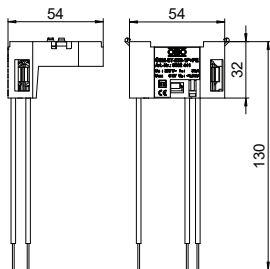
Type	Signalling on device		Pack. pcs	Weight kg/100 pcs		Item No.
	Audible	Acoustic function display		1	1.770	
ÜSM-ST-230-1P+PE						

Surge protection / fine power protection, type 3, to EN 61643-11 for protective contact sockets.

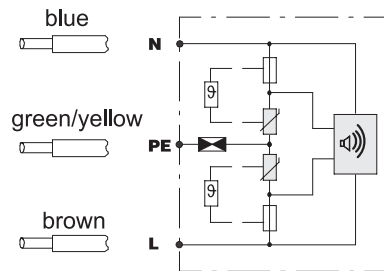
- Thermal cut-off unit with acoustic defect signalling
- Y protection circuit for increased safety
- Mounting through snapping onto the support ring of the socket
- Halogen-free plastic (UL 94 V-0)
- Labelling of the socket with supplied sign

Application: For retrofitting on standard Schuko sockets.

Dimensions



Connection options



ÜSM-ST-230-1P+PE

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	255 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2-3
Nominal discharge current (8/20)	I_n	3 kA
Maximum discharge current (8/20 μ s)	I_{max}	5 kA
Protection level (L-N)		< 1,5 kV
Protection level (N-PE)		< 1,5 kV
Maximum back-up fuse		16 A
Response time	t_A	25 ns
Temperature range	ϑ	-5 - +40 °C



Fine power protection for Modul 45 with acoustic function display



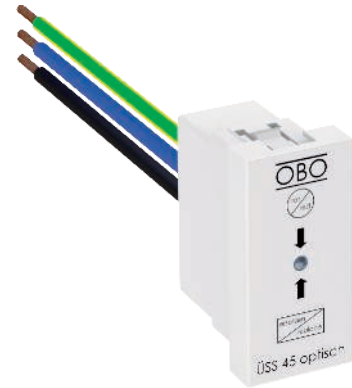
Signalling
on device Version

Type	Signalling on device	Version	Pack. pcs	Weight kg/100 pcs	Item No.
ÜSS 45-O-RW	Visual	Visual function display	1	2.411	6117473

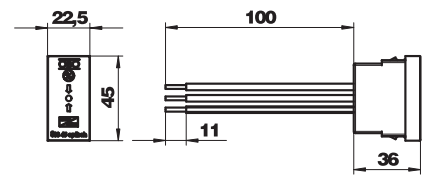
Surge protection / network fine protection, type 3, according to EN 61643-11 for installation in Rapid 45 trunking, device installation trunking and underfloor systems.

- Version-O with acoustic function display
- Quick and easy mounting
- Low construction width of 22.5 mm

Application: The surge protection device secures downstream and nearby sockets.



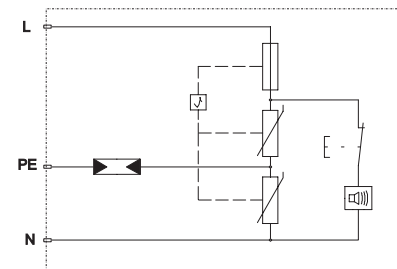
Dimensions



ÜSS 45-O-RW

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_c	255 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I_n	2.5 kA
Protection level (L-N)		< 1,5 kV
Protection level (N-PE)		< 1,5 kV
Maximum back-up fuse		16 A
Response time	t_A	25 ns
Temperature range	ϑ	-25 - +45 °C

Connection options



Fine power protection for Modul 45 with acoustic function display



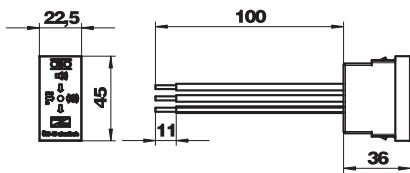
Type	Signalling on device		Pack. pcs	Weight		Item No.
	Version	Version		kg/100 pcs	pcs	
ÜSS 45-A-RW	Audible	Acoustic function display	1	2.800		6117465

Surge protection / network fine protection, type 3, according to EN 61643-11 for installation in Rapid 45 trunking, device installation trunking and underfloor systems.

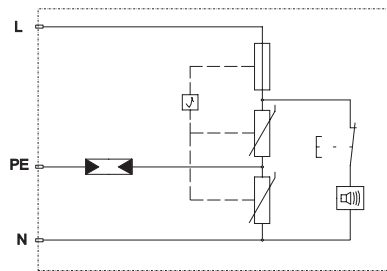
- Version-A with acoustic function display (switchable signal tone)
- Quick and easy mounting
- Low construction width of 22.5 mm

Application: The surge protection device secures downstream and nearby sockets.

Dimensions



Connection options



ÜSS 45-A-RW

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_c	255 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I_n	2.5 kA
Protection level (L-N)		< 1,5 kV
Protection level (N-PE)		< 1,5 kV
Maximum back-up fuse		16 A
Response time	t_A	25 ns
Temperature range	ϑ	-25 - +45 °C

Surge protection module ÜSM-10-230I2P+PE



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
ÜSM-10-230I2P+PE	255	2-pole + NPE for PC I	1	4.400	5092426

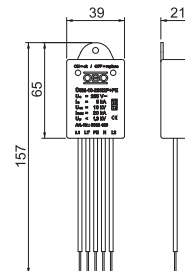
Surge protection module type 2+3 to DIN EN 61643-11 for 230/400 V power grids. Appropriate for the protection of electronic devices and LED drivers.

- For luminaires with 2 phases (power reduction)
- With function display and switch-off of the load circuit when a SPD fails
- Small size for the installation in the pole connection box or upstream of the LED driver
- Protective circuit with a maximum arresting capacity of 10 kA
- Reduction of overvoltage to under 1,300 V (protection level)
- For LED luminaires with PE connection

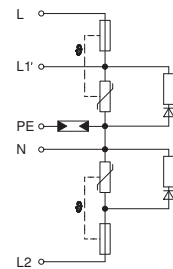
Application: In the cable transition box, junction boxes, cable duct to underfloor systems



Dimensions



Connection options



ÜSM-10-230I2P+PE

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 2+3
SPD to IEC 61643-11		Class II+III
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	5 kA
Arrestor surge current (8/20) [total]	$I_{Ttotal 8/20}$	10 kA
Maximum discharge current (8/20 μ s)	I_{max}	10 kA
Voltage protection level	U_o	1,3 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		16 A
Temperature range	ϑ	-15 - +60 °C
Protection rating		IP20
Connecting cable length		0.09 m



Surge protection module ÜSM-10-230I2P-0



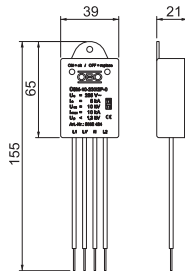
Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
ÜSM-10-230I2P-0	255	2-pole without NPE for PC II	1	4.100	5092424

Surge protection module type 2+3 to DIN EN 61643-11 for 230/400 V power grids. Appropriate for the protection of electronic devices and LED drivers.

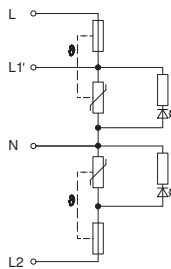
- For luminaires with 2 phases (power reduction)
- With function display and switch-off of the load circuit when a SPD fails
- Small size for the installation in the pole connection box or upstream of the LED driver
- Protective circuit with a maximum arresting capacity of 10 kA
- Reduction of overvoltage to under 1,300 V (protection level)
- For protection insulated luminaires (PC II) without PE connection

Application: In the cable transition box, junction boxes, cable duct to underfloor systems

Dimensions



Connection options



ÜSM-10-230I2P-0

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 2+3
SPD to IEC 61643-11		Class II+III
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	5 kA
Arrestor surge current (8/20) [total]	$I_{Total 8/20}$	— kA
Maximum discharge current (8/20 μ s)	I_{max}	10 kA
Voltage protection level	U_d	1,3 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		16 A
Temperature range	ϑ	-15 - +60 °C
Protection rating		IP20
Connecting cable length		0.09 m



Surge protection module ÜSM-10-230IP+PE



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
ÜSM-10-230IP+PE	255	1-pole + NPE for PC I	1	3.500	5092422

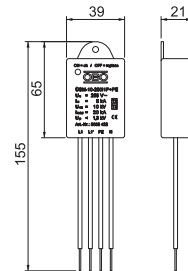
Surge protection module type 2+3 to DIN EN 61643-11 for 230/400 V power grids. Appropriate for the protection of electronic devices and LED drivers.

- With function display and switch-off of the load circuit when a SPD fails
- Small size for the installation in the pole connection box or upstream of the LED driver
- Use in the LED luminaire head upstream of the electronic LED driver
- Protective circuit with a maximum arresting capacity of 10 kA
- Reduction of overvoltage to under 1,300 V (protection level)
- For LED luminaires with PE connection

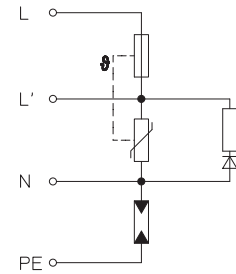
Application: In the cable transition box, junction boxes, cable duct to underfloor systems



Dimensions



Connection options

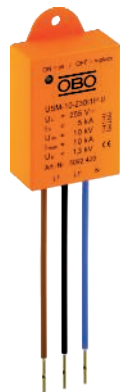


ÜSM-10-230IP+PE

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 2+3
SPD to IEC 61643-11		Class II+III
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	5 kA
Arrestor surge current (8/20) [total]	$I_{Ttotal 8/20}$	10 kA
Maximum discharge current (8/20 μ s)	I_{max}	10 kA
Voltage protection level	U_o	1,3 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		16 A
Temperature range	ϑ	-15 - +60 °C
Protection rating		IP20
Connecting cable length		0.09 m



Surge protection module ÜSM-10-2301P-0



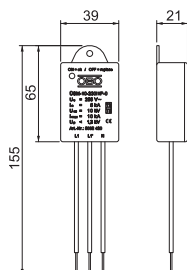
Highest continuous voltage

Type	V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
ÜSM-10-2301P-0	255	1-pole without NPE for PC II	1	3.200	5092420

Surge protection module type 2+3 to DIN EN 61643-11 for 230/400 V power grids. Appropriate for the protection of electronic devices and LED drivers.

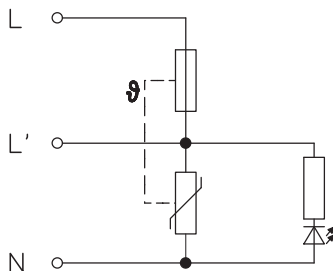
- With function display and switch-off of the load circuit when a SPD fails
- Small size for the installation in the pole connection box or upstream of the LED driver
- Protective circuit with a maximum arresting capacity of 10 kA
- Reduction of overvoltage to under 1,300 V (protection level)
- For protection insulated luminaires (PC II) without PE connection

Dimensions



Application: In the cable transition box, junction boxes, cable duct to underfloor systems

Connection options



ÜSM-10-2301P-0

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 2+3
SPD to IEC 61643-11		Class II+III
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	5 kA
Arrestor surge current (8/20) [total]	$I_{Total 8/20}$	— kA
Maximum discharge current (8/20 μ s)	I_{max}	10 kA
Voltage protection level	U_d	1,3 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		16 A
Temperature range	ϑ	-15 - +60 °C
Protection rating		IP20
Connecting cable length		0.09 m

Surge protection for LED systems ÜSM-20-230I1P+PE



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
ÜSM-20-230I1P+PE	255	1-pole + NPE for PC I	1	4.100	5092431

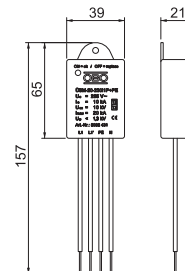
Surge protection module type 2+3 to DIN EN 61643-11 for 230/400 V power grids. Appropriate for the protection of LED lighting.

- With function display and switch-off of the load circuit when a SPD fails
- Small size for the installation in the pole connection box or upstream of the LED driver
- 1+NPE protective circuit with a maximum discharge capacity of 20 kA
- Reduction of overvoltage to under 1,300 V or 1,000 V @ 5 kA
- With or without luminaire switch-off in case of defect

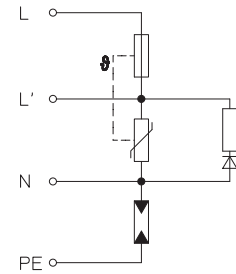
Application: In the cable transition box, junction boxes, cable duct to underfloor systems



Dimensions



Connection options



ÜSM-20-230I1P+PE

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 2+3
SPD to IEC 61643-11		Class II+III
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	10 kA
Arrestor surge current (8/20) [total]	$I_{Ttotal 8/20}$	20 kA
Maximum discharge current (8/20 μ s)	I_{max}	20 kA
Voltage protection level	U_o	1,3 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		16 A
Temperature range	ϑ	-15 - +60 °C
Protection rating		IP20
Connecting cable length		0.09 m



Fine power protection, fixed installation

Surge protection for LED systems ÜSM-20-230I1PE65



Highest continuous voltage V

Version

Pack. pcs

Weight kg/100 pcs.

Item No.

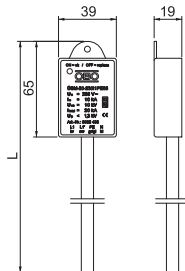
Type	V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
ÜSM-20-230I1PE65	255	1-pole + NPE for PC I	1	8.300	5092433

Surge protection module type 2+3 to DIN EN 61643-11 for 230/400 V power grids. Appropriate for the protection of LED lighting.

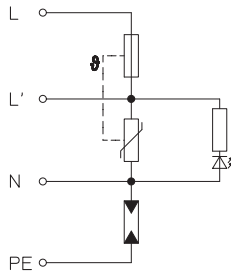
- With function display and switch-off of the load circuit when a SPD fails
- Small size for the installation in the pole connection box or upstream of the LED driver
- 1+NPE protective circuit with a maximum discharge capacity of 20 kA
- Reduction of overvoltage to under 1,300 V or 1,000 V @ 5 kA
- With or without luminaire switch-off in case of defect

Application: In the cable transition box, junction boxes, cable duct to underfloor systems

Dimensions



Connection options



ÜSM-20-230I1PE65

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 2+3
SPD to IEC 61643-11		Class II+III
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	10 kA
Arrestor surge current (8/20) [total]	$I_{Ttotal 8/20}$	20 kA
Maximum discharge current (8/20 μ s)	I_{max}	20 kA
Voltage protection level	U_d	1,5 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		16 A
Temperature range	ϑ	-15 - +60 °C
Protection rating		IP65
Connecting cable length		0.25 m



MCR protection for 2-pole power supply, 12 V



Type	Highest continuous voltage V	Pack. pcs	Weight		Item No.
			kg/100	pcs.	
VF12-AC DC	13.5	1	9.000		5097453

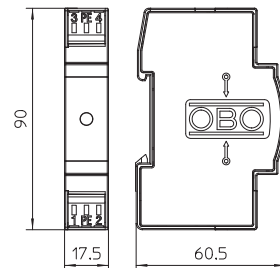
Surge protection device / fine protection type 3 to EN 61643-11

- Suitable for DC and AC voltage systems
- With visual function display
- With installation-friendly, screwless connection terminals
- In a space-saving 17.5 mm grid
- Y circuit

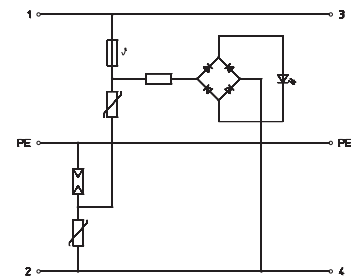
Application: Universal use on 35 mm DIN profile rail in every normal commercially available distributor housing.



Dimensions



Connection options



VF12-AC DC

U max AC	U _c AC	13.5 V
U max DC	U _c DC	18 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I _n	0,7 kA
Maximum discharge current (8/20 μs)	I _{max}	2 kA
Rated current	I _t	20 A
Protection level wire-wire		<110 V
Protection level wire-earth		<1200 V
Response time	t _A	<25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1
Connection cross-section rigid		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section, flexible		0.14 - 2.5 mm ²
Approvals		UL



MCR protection for 2-pole for power supply, 24 V

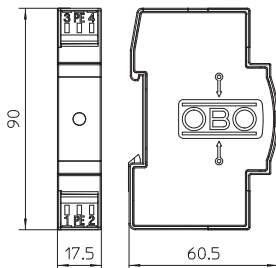


Type	Highest continuous voltage V	Pack. pcs	Weight kg/100 pcs	Item No.
VF24-AC/DC	34	1	8.000	5097607

Surge protection device / fine protection type 3 to EN 61643-11

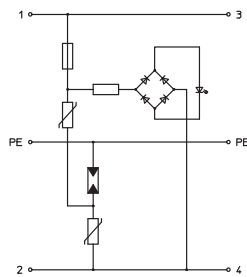
- Suitable for DC and AC voltage systems
- With visual function display
- With installation-friendly, screwless connection terminals
- In a space-saving 17.5 mm grid
- Y circuit

Dimensions



Application: Universal use on 35 mm DIN profile rail in every normal commercially available distributor housing.

Connection options



VF24-AC/DC

U max AC	U_c AC	34 V
U max DC	U_c DC	46 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I_n	0,7 kA
Maximum discharge current (8/20 μ s)	I_{max}	2 kA
Rated current	I_t	20 A
Protection level wire-wire		<130 V
Protection level wire-earth		<1200 V
Response time	t_A	<25 ns
Temperature range	ϑ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1
Connection cross-section rigid		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section, flexible		0.14 - 2.5 mm ²
Approvals		UL



MCR protection for 2-pole for power supply, 48 V



Type	Highest continuous voltage V	Pack. pcs	Weight kg/100 pcs	Item No.
	VF48-AC/DC 60	1	8.000	5097615

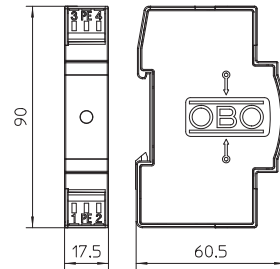
Surge protection device / fine protection type 3 to EN 61643-11

- Suitable for DC and AC voltage systems
- With visual function display
- With installation-friendly, screwless connection terminals
- In a space-saving 17.5 mm grid
- Y circuit

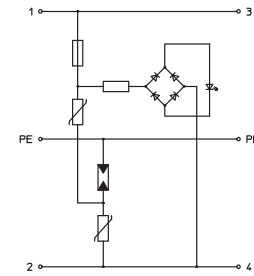
Application: Universal use on 35 mm DIN profile rail in every normal commercially available distributor housing.



Dimensions



Connection options



VF48-AC/DC

U max AC	U _c AC	60 V
U max DC	U _c DC	80 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I _n	0,7 kA
Maximum discharge current (8/20 μs)	I _{max}	2 kA
Rated current	I _t	20 A
Protection level wire-wire		<220 V
Protection level wire-earth		<1200 V
Response time	t _A	<25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1
Connection cross-section rigid		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section, flexible		0.14 - 2.5 mm ²
Approvals		UL

02_TBS_Produkteinheitenkatalog_EX_2018 / en / 2018/11/23 15:05:20 (LLExpert_02235) / 2018/11/23 15:07:49 15:07:49

Surge protection energy technology, arrester, type 3



MCR protection for 2-pole for power supply, 60 V



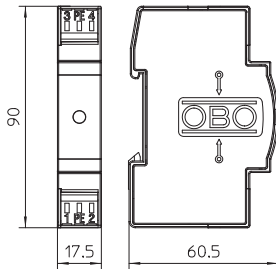
Highest continuous voltage V

Type	Highest continuous voltage V	Pack. pcs	Weight kg/100 pcs	Item No.
VF60-AC/DC	80	1	8.000	5097623

Surge protection device / fine protection type 3 to EN 61643-11

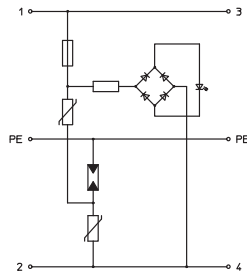
- Suitable for DC and AC voltage systems
- With visual function display
- With installation-friendly, screwless connection terminals
- In a space-saving 17.5 mm grid
- Y circuit

Dimensions



Application: Universal use on 35 mm DIN profile rail in every normal commercially available distributor housing.

Connection options



VF60-AC/DC

U max AC	U_c AC	80 V
U max DC	U_c DC	110 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I_n	0,7 kA
Maximum discharge current (8/20 μ s)	I_{max}	2 kA
Rated current	I_t	20 A
Protection level wire-wire		<280 V
Protection level wire-earth		<1200 V
Response time	t_A	<25 ns
Temperature range	ϑ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1
Connection cross-section rigid		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section, flexible		0.14 - 2.5 mm ²



MCR protection for 2-pole for power supply, 110 V



Highest continuous voltage V

Type	Pack. pcs	Weight kg/100 pcs	Item No.
VF110-AC DC 150	1	8.000	5097631

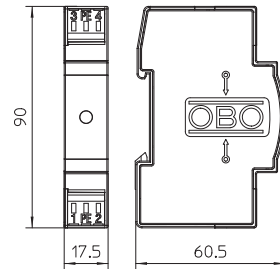
Surge protection device / fine protection type 3 to EN 61643-11

- Suitable for DC and AC voltage systems
- With visual function display
- With installation-friendly, screwless connection terminals
- In a space-saving 17.5 mm grid
- Y circuit

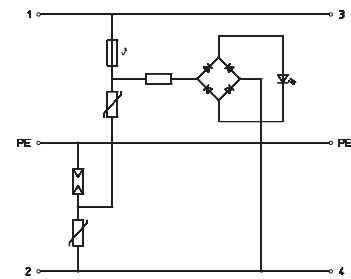
Application: Universal use on 35 mm DIN profile rail in every normal commercially available distributor housing.



Dimensions



Connection options



VF110-AC DC

U max AC	U _c AC	150 V
U max DC	U _c DC	200 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I _n	2 kA
Maximum discharge current (8/20 μs)	I _{max}	6.5 kA
Rated current	I _t	20 A
Protection level wire-wire		<500 V
Protection level wire-earth		<1400 V
Response time	t _A	<25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1
Connection cross-section rigid		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section, flexible		0.14 - 2.5 mm ²



MCR protection for 2-pole for power supply, 230 V



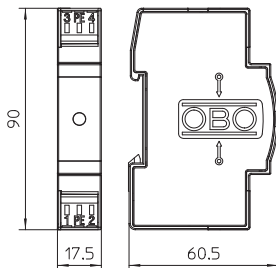
Highest continuous voltage V

Type	Highest continuous voltage V	Pack. pcs	Weight kg/100 pcs	Item No.
VF230-AC/DC	255	1	8.000	5097650

Surge protection device / fine protection type 3 to EN 61643-11

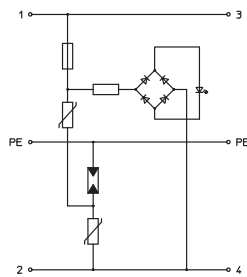
- Suitable for DC and AC voltage systems
- With visual function display
- With installation-friendly, screwless connection terminals
- In a space-saving 17.5 mm grid
- Y circuit

Dimensions



Application: Universal use on 35 mm DIN profile rail in every normal commercially available distributor housing.

Connection options



VF230-AC/DC

U max AC	U _c AC	255 V
U max DC	U _c DC	350 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I _n	2.5 kA
Maximum discharge current (8/20 μs)	I _{max}	7 kA
Rated current	I _t	20 A
Protection level wire-wire		<1000 V
Protection level wire-earth		<1400 V
Response time	t _A	<25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1
Connection cross-section rigid		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section, flexible		0.14 - 2.5 mm ²



MCR protection for 2-pole power supply with remote signalling, 24 V AC/DC



Type	Highest continuous voltage	Weight		Item No.
	V	Pack. pcs	kg/100 pcs	
VF24-AC/DC-FS	34	1	6.620	5097820

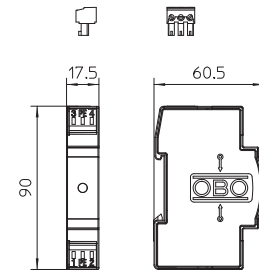
Surge protection / fine power protection, type 3, to EN 61643-11 with remote signalling

- With remote signalling, potential-free changeover contact, for function monitoring
- Suitable for DC and AC systems
- With visual function display
- With easy mounting, screwless connection terminals
- In space-saving 17.5 mm grid
- Y circuit

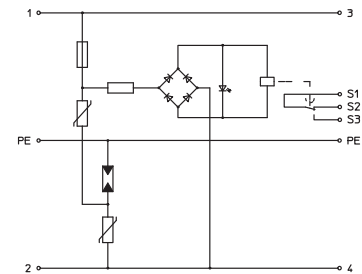
Application: Universal use on 35 mm DIN profile rails in any standard distributor housing.



Dimensions



Connection options



VF24-AC/DC-FS

U max AC	U _{c AC}	34 V
U max DC	U _{c DC}	46 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I _n	0,7 kA
Maximum discharge current (8/20 μs)	I _{max}	2 kA
Rated current	I _t	20 A
Protection level wire-wire		<160 V
Protection level wire-earth		<1200 V
Response time	t _A	<25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1
Connection cross-section rigid		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section, flexible		0.14 - 2.5 mm ²



MCR protection for 2-pole power supply with remote signalling, 230 V AC

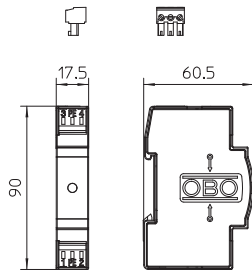


Type	Highest continuous voltage	Weight		Item No.
	V	Pack. pcs.	kg/100 pcs.	
VF230-AC-FS	255	1	6.910	5097858

Surge protection / fine power protection, type 3, to EN 61643-11 with remote signalling

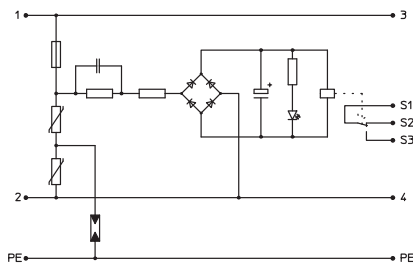
- With remote signalling, potential-free changeover contact, for function monitoring
- Suitable for AC systems
- With visual function display
- With easy mounting, screwless connection terminals
- In space-saving 17.5 mm grid
- Y circuit

Dimensions



Application: Universal use on 35 mm DIN profile rails in any standard distributor housing.

Connection options



VF230-AC-FS

U max AC	U _c AC	255 V
U max DC	U _c DC	— V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I _n	2,5 kA
Maximum discharge current (8/20 μs)	I _{max}	7 kA
Rated current	I _t	20 A
Protection level wire-wire		<1060 V
Protection level wire-earth		<1400 V
Response time	t _A	<25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1
Connection cross-section rigid		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section, flexible		0.14 - 2.5 mm ²

MCR protection for 2-pin for power supply with leak current-free remote signalling, 230 V AC/DC



Type	U max		Pack.	Weight	
	AC	DC		kg/100	pcs.
VF2-230-AC/DC-FS	255	350	1	6.000	5097939

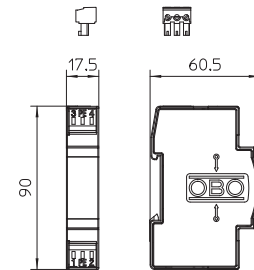
Type 3 surge protection/fine network protection to EN 61643-11 with leak current-free remote signalling

- With remote signalling: potential-free NC contact for function monitoring
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid
- Y circuit

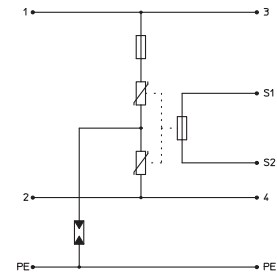
Application: Universal use on 35 mm DIN profile rails in any standard distributor housing.



Dimensions



Connection options



VF2-230-AC/DC-FS

U max AC	U _c AC	255 V
U max DC	U _c DC	350 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I _n	2,5 kA
Maximum discharge current (8/20 μs)	I _{max}	7 kA
Rated current	I _t	20 A
Protection level wire-wire		< 1000 V
Protection level wire-earth		< 1400 V
Response time	t _A	<25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1
Connection cross-section rigid		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section, flexible		0.14 - 2.5 mm ²





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Photovoltaic systems

	Lightning current and surge arrester, type 1+2, photovoltaic systems 1,500 V DC	272
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	Photovoltaic system solution with 2/3 MPP trackers	286
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	Photovoltaic system solution with circuit breaker	299
	Photovoltaic upper parts	303
	Photovoltaic bases	307

Type 1+2, combination arrestor, PV system



Y circuit

Volts	Item no.	Page
1,500	5094240	272
1,000	5094230	274
900	5097447	276
600	5093623	278

Type 1+2, combination arrestor with remote signalling, PV system



Y circuit + FS

Volts	Item no.	Page
1,500	5094242	273
1,000	5094232	275
900	5097448	277
600	5093625	279

Type 2, surge arrestor, PV system



Y circuit

Volts	Item no.	Page
1,500	5094210	280
1,000	5094608	282
600	5094605	284

Type 2, surge arrestor with remote signalling, PV system



Y circuit + FS

Volts	Item no.	Page
1,500	5094212	281
1,000	5094574	283
600	5094576	308

Type 1+2, PV system solution



WR with 1 MPP

Volts	Item no.	Page
900	5088591	286



WR with 2 MPPs

Volts	Item no.	Page
900	5088566	288



WR with 2 MPPs

Volts	Item no.	Page
900	5088576	292



WR with 3 MPPs

Volts	Item no.	Page
900	5088579	293

Type 2, PV system solution



WR with 1 MPP

Volts	Item no.	Page
1,000	5088593	287



WR with 2 MPPs

Volts	Item no.	Page
1,000	5088568	289



WR with 2 MPPs

Volts	Item no.	Page
1,000	5088582	290



WR with 3 MPPs

Volts	Item no.	Page
1,000	5088585	295

Type 2, PV system solution with fuse



Unequipped holder

Volts	Item no.	Page
900	5088640	298
1,000	5088654	297

PV system solution with circuit breaker



Type 1+2

Volts	Item no.	Page
900	5088635	299



Type 2

Volts	Item no.	Page
900	5088660	300



PV complete block 1500V DC



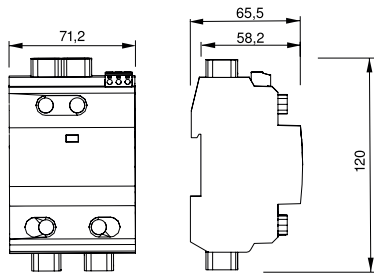
Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V-PV-T1+2-1500	1500	Y configuration	1	49.200	5094240

Type 1+2 combination arrester for lightning and surge protection of PV systems.

- Lightning protection equipotential bonding according to IEC 62305 (VDE 0185-305)
- Surge protection according to IEC 60364-7-712 (VDE 0100-712)
- Arresting capacity to 12.5 kA (10/350) and 40 kA (8/20)
- Error-resistant Y circuit with status display
- The FS variant possesses a potential-free changeover contact for remote signalling

Application: Lightning current and surge protection devices for PV systems.

Dimensions



Connection options

V-PV-T1+2-1500

U max DC	U _c DC	1500 V
SPD to EN 61643-11		Type 1+2
Lightning protection zone LPZ		0→3
Impulse discharge current (10/350)	I _{imp}	6.25 kA
Nominal discharge current (8/20)	I _n	20 kA
Maximum discharge current (8/20 μs)	I _{max}	40 kA
Voltage protection level	U _o	< 4,5 kV
Response time	t _A	< 25 ns
Temperature range	θ	-40 - 80 °C
Protection rating		IP20
Division unit TE (17.5 mm)		4
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 35 mm ²

PV complete block 1500V DC with remote signalling



Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V-PV-T1+2-1500FS	1500	Y configuration + RS	1	49.600	5094242

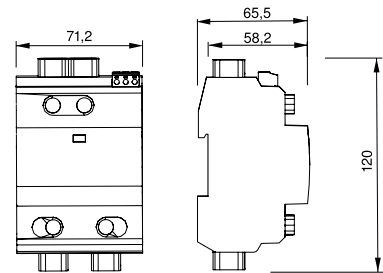
Type 1+2 combination arrester for lightning and surge protection of PV systems.

- Lightning protection equipotential bonding according to IEC 62305 (VDE 0185-305)
- Surge protection according to IEC 60364-7-712 (VDE 0100-712)
- Arresting capacity to 12.5 kA (10/350) and 40 kA (8/20)
- Error-resistant Y circuit with status display
- The FS variant possesses a potential-free changeover contact for remote signalling

Application: Lightning current and surge protection devices for PV systems.



Dimensions



Connection options

V-PV-T1+2-1500FS

U max DC	U _c DC	1500 V
SPD to EN 61643-11		Type 1+2
Lightning protection zone LPZ		0→3
Impulse discharge current (10/350)	I _{impD}	6.25 kA
Nominal discharge current (8/20)	I _n	20 kA
Maximum discharge current (8/20 μs)	I _{max}	40 kA
Voltage protection level	U _d	< 4,5 kV
Response time	t _A	< 25 ns
Temperature range	θ	-40 - 80 °C
Protection rating		IP20
Division unit TE (17.5 mm)		4
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 35 mm ²



PV complete block 1000V DC



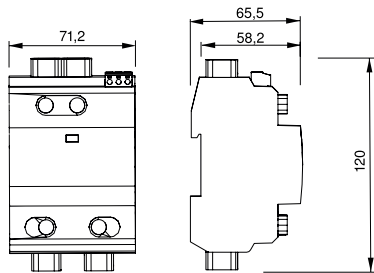
Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V-PV-T1+2-1000	1000	Y configuration	1	40.700	5094230

Type 1+2 combination arrester according to EN 50539-11 for lightning and surge protection of PV systems.

- Lightning protection equipotential bonding according to IEC 62305 (VDE 0185-305)
- Surge protection according to IEC 60364-7-712 (VDE 0100-712)
- Arresting capacity to 12.5 kA (10/350) and 40 kA (8/20)
- Error-resistant Y circuit with status display
- The FS variant possesses a potential-free changeover contact for remote signalling

Application: Lightning current and surge protection devices for PV systems.

Dimensions



Connection options

V-PV-T1+2-1000

U max DC	U _c DC	1000 V
SPD to EN 61643-11	Type	1+2
Lightning protection zone LPZ		0→3
Impulse discharge current (10/350)	I _{imp}	6.25 kA
Nominal discharge current (8/20)	I _n	20 kA
Maximum discharge current (8/20 μs)	I _{max}	40 kA
Voltage protection level	U _o	< 3,3 kV
Response time	t _A	< 25 ns
Temperature range	θ	-40 - 80 °C
Protection rating		IP20
Division unit TE (17.5 mm)		4
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 35 mm ²

PV complete block 1000V DC with remote signalling



Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V-PV-T1+2-1000FS	1000	Y configuration + RS	1	41.200	5094232

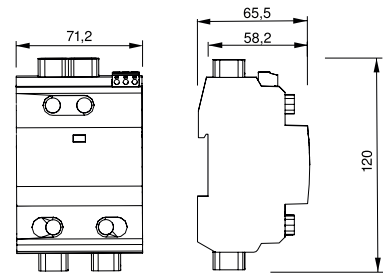
Type 1+2 combination arrester according to EN 50539-11 for lightning and surge protection of PV systems.

- Lightning protection equipotential bonding according to IEC 62305 (VDE 0185-305)
- Surge protection according to IEC 60364-7-712 (VDE 0100-712)
- Arresting capacity to 12.5 kA (10/350) and 40 kA (8/20)
- Error-resistant Y circuit with status display
- The FS variant possesses a potential-free changeover contact for remote signalling

Application: Lightning current and surge protection devices for PV systems.



Dimensions



Connection options

V-PV-T1+2-1000FS

U max DC	U _c DC	1000 V
SPD to EN 61643-11		Type 1+2
Lightning protection zone LPZ		0→3
Impulse discharge current (10/350)	I _{impD}	6.25 kA
Nominal discharge current (8/20)	I _n	20 kA
Maximum discharge current (8/20 μs)	I _{max}	40 kA
Voltage protection level	U _d	< 3,3 kV
Response time	t _A	< 25 ns
Temperature range	θ	-40 - 80 °C
Protection rating		IP20
Division unit TE (17.5 mm)		4
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 35 mm ²



PV combination arrester V25, 900 V DC



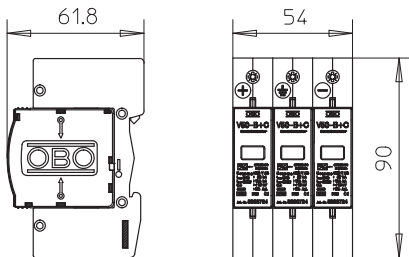
Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V25-B+C 3-PH900	900	3-pole for PV systems	1	42.200	5097447

V25 combination arrester, type 1+2, for photovoltaic systems

- Complete unit, consisting of plug-in varistor arrester with cut-off unit
- Error-resistant Y circuit to VDE 0100-712 (EN 50539-12)
- Surge protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity up to 7 kA (10/350) and 50 kA (8/20) per pole
- Low DC protection level: < 3.0 kV and Voc max = 900 V DC
- With visual function display for use in distributor housings

Application: PV systems with lightning protection system

Dimensions



Connection options

V25-B+C 3-PH900

U max DC	U _c DC	900 V
SPD to EN 61643-11	Type	1+2
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I _{impD}	7 kA
Nominal discharge current (8/20)	I _n	30 kA
Maximum discharge current (8/20 μs)	I _{max}	50 kA
Voltage protection level	U _v	< 3,0 kV
Response time	t _A	< 25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		3
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

PV combination arrester V25, 900 V DC with remote signalling



Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V25-B+C 3PHFS900	900	3-pole for PV systems with RS	1	53.500	5097448

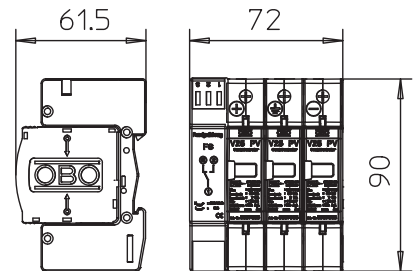
V25 combination arrester, type 1+2, for photovoltaic systems

- Complete unit, consisting of plug-in varistor arrester with cut-off unit
- Error-resistant Y circuit to VDE 0100-712 (EN 50539-12)
- Surge protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity up to 7 kA (10/350) and 50 kA (8/20) per pole
- Low DC protection level: < 3.0 kV and Voc max = 900 V DC
- With visual function display for use in distributor housings

Application: PV systems with lightning protection system



Dimensions



Connection options

V25-B+C 3PHFS900

U max DC	U _c DC	900 V
SPD to EN 61643-11		Type 1+2
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I _{impD}	7 kA
Nominal discharge current (8/20)	I _n	30 kA
Maximum discharge current (8/20 μs)	I _{max}	50 kA
Voltage protection level	U _d	< 3,0 kV
Response time	t _A	< 25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		4
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²



PV combination arrester V50, 600 V DC

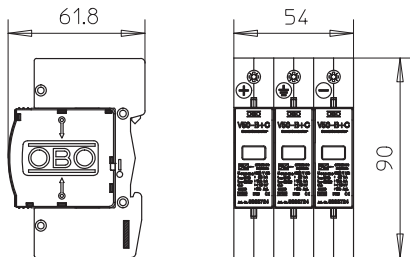


Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V50-B+C 3-PH600	600	3-pole for PV systems	1	41.000	5093623

V50 combination arrester, type 1+2, for photovoltaic systems

- Complete unit, consisting of plug-in varistor arrester with cut-off unit
- Error-resistant Y circuit to VDE 0100-712 (EN 50539-12)
- Surge protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity up to 12.5 kA (10/350) and 50 kA (8/20) per pole
- Low DC protection level: < 2.6 kV and Voc max = 600 V DC
- With visual function display for use in distributor housings

Dimensions



Application: PV systems with lightning protection system

Connection options

V50-B+C 3-PH600

U max DC	U _c DC	600 V
SPD to EN 61643-11	Type	1+2
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I _{impD}	12.5 kA
Nominal discharge current (8/20)	I _n	30 kA
Maximum discharge current (8/20 μs)	I _{max}	50 kA
Voltage protection level	U _v	< 2,6 kV
Response time	t _A	< 25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		3
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

PV combination arrester V50, 600 V DC with remote signalling



Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V50-B+C 3PHFS600	600	3-pole for PV systems with FS	1	49.600	5093625

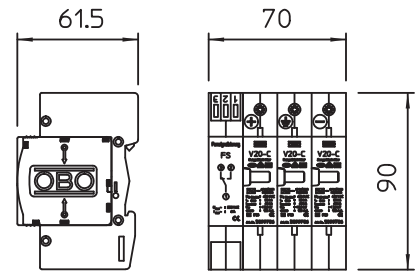
V50 combination arrester, type 1+2, for photovoltaic systems

- Complete unit, consisting of plug-in varistor arrester with cut-off unit
- Error-resistant Y circuit to VDE 0100-712 (EN 50539-12)
- Surge protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity up to 12.5 kA (10/350) and 50 kA (8/20) per pole
- Low DC protection level: < 2.6 kV and Voc max = 600 V DC
- With visual function display for use in distributor housings

Application: PV systems with lightning protection system



Dimensions



Connection options

V50-B+C 3PHFS600

U max DC	U _c DC	600 V
SPD to EN 61643-11		Type 1+2
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I _{impD}	12.5 kA
Nominal discharge current (8/20)	I _n	30 kA
Maximum discharge current (8/20 μs)	I _{max}	50 kA
Voltage protection level	U _d	< 2,6 kV
Response time	t _A	< 25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		4
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²



PV type 2 surge protection complete block

PV complete block 1500V DC



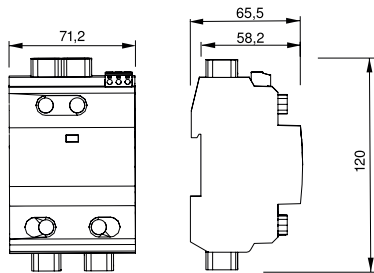
Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V-PV-T2-1500	1500	Y configuration	1	33.800	5094210

Type 2 surge protection for PV plants.

- Surge protection according to IEC 60364-7-712 (VDE 0100-712)
- Arresting capacity of 20 kA per pole and up to 40 kA (8/20)
- Error-resistant Y circuit with status display
- The FS variant possesses a potential-free changeover contact for remote signalling

Application: Surge protection devices for PV systems.

Dimensions



Connection options

V-PV-T2-1500

U max DC	U _c DC	1500 V
SPD to EN 61643-11		Type 2
Lightning protection zone LPZ		1→3
Nominal discharge current (8/20)	I _n	20 kA
Maximum discharge current (8/20 μs)	I _{max}	40 kA
Voltage protection level	U _n	< 4,5 kV
Response time	t _A	< 25 ns
Temperature range	ϑ	-40 - 80 °C
Protection rating		IP20
Division unit TE (17.5 mm)		4
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 35 mm ²

PV complete block 1500V DC with remote signalling



Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V-PV-T2-1500+FS	1500	Y configuration + RS	1	34.400	5094212

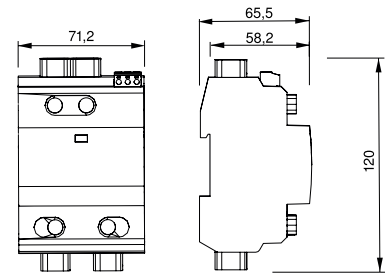
Type 2 surge protection for PV plants.

- Surge protection according to IEC 60364-7-712 (VDE 0100-712)
- Arresting capacity of 20 kA per pole and up to 40 kA (8/20)
- Error-resistant Y circuit with status display
- The FS variant possesses a potential-free changeover contact for remote signalling

Application: Surge protection devices for PV systems.



Dimensions



Connection options

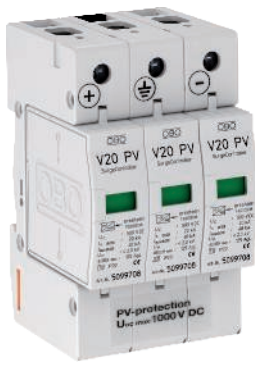
V-PV-T2-1500+FS

U max DC	U _c DC	1500 V
SPD to EN 61643-11		Type 2
Lightning protection zone LPZ		1→3
Nominal discharge current (8/20)	I _n	20 kA
Maximum discharge current (8/20 μs)	I _{max}	40 kA
Voltage protection level	U _n	< 4,5 kV
Response time	t _A	< 25 ns
Temperature range	θ	-40 - 80 °C
Protection rating		IP20
Division unit TE (17.5 mm)		4
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 35 mm ²



PV type 2 surge protection complete block

PV surge protection V20, 1,000 V DC

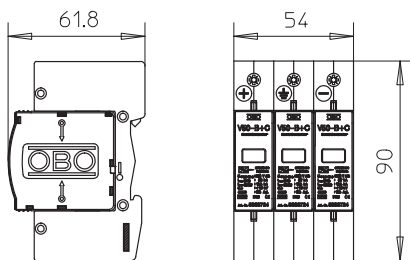


Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 3-PH-1000	1000	3-pole for PV systems	1	36.500	5094608

V20 surge arrester, type 2, for photovoltaic systems

- Complete unit, consisting of plug-in varistor arrester with cut-off unit
- Error-resistant Y circuit to VDE 0100-712 (EN 50539-12)
- Surge protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- V20-C 3-PH-1000 tested to EN 50539-11 (VDE / KEMA)
- Arresting capacity to 40 kA (8/20) per pole
- Low DC protection level: < 4.0 kV and Voc max = 1,000 V DC
- With visual function display for use in distributor housings

Dimensions



Application: PV systems with or without separate lightning protection system

Connection options

V20-C 3-PH-1000

U max DC	U _c DC	1000 V
SPD to EN 61643-11		Type 2
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I _n	20 kA
Maximum discharge current (8/20 μs)	I _{max}	40 kA
Voltage protection level	U _n	< 4,0 kV
Response time	t _A	< 25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		3
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

PV surge protection V20, 1,000 V DC with remote signalling



Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 3PHFS-1000	1000	3-pole for PV systems with FS	1	44.500	5094574

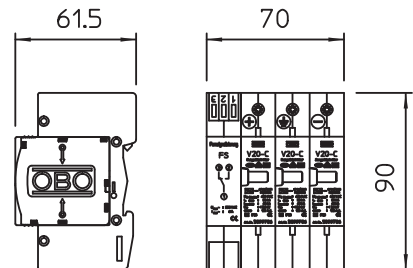
V20 surge arrester, type 2, for photovoltaic systems

- Complete unit, consisting of plug-in varistor arrester with cut-off unit
- Error-resistant Y circuit to VDE 0100-712 (EN 50539-12)
- Surge protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- V20-C 3-PH-1000 tested to EN 50539-11 (VDE / KEMA)
- Arresting capacity to 40 kA (8/20) per pole
- Low DC protection level: < 4.0 kV and Voc max = 1,000 V DC
- With visual function display for use in distributor housings

Application: PV systems with or without separate lightning protection system



Dimensions



Connection options

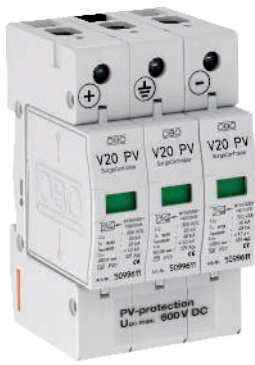
V20-C 3PHFS-1000

U max DC	U _c DC	1000 V
SPD to EN 61643-11		Type 2
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I _n	20 kA
Maximum discharge current (8/20 μs)	I _{max}	40 kA
Voltage protection level	U _n	< 4,0 kV
Response time	t _A	< 25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		4
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²



PV type 2 surge protection complete block

PV surge protection V20, 600 V DC

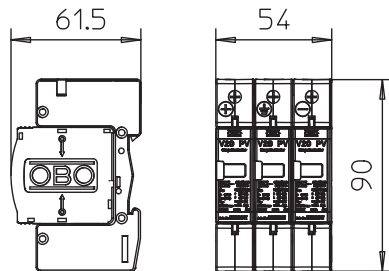


Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 3PH-600	600	3-pole for PV systems	1	33.500	5094605

V20 surge arrester, type 2, for PV systems

- Complete unit, consisting of plug-in varistor arrester with cut-off unit
- Error-resistant Y circuit for use according to VDE 0100-712 (EN 50539-12)
- For surge protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity to 40 kA (8/20) per pole
- Low DC protection level: < 2.6 kV (Voc max = 600 V DC)
- Arrester, connectable with thermodynamic cut-off unit and visual function display
- Encapsulated, zinc oxide varistor arrester for use in distributor housings

Dimensions



Application: PV systems with or without separate lightning protection system

Connection options

V20-C 3PH-600

U max DC	U _c DC	600 V
SPD to EN 61643-11		Type 2
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I _n	20 kA
Maximum discharge current (8/20 μs)	I _{max}	40 kA
Voltage protection level	U _n	< 2,6 kV
Response time	t _A	< 25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		3
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

Connection terminal for through-wiring



Colour Version

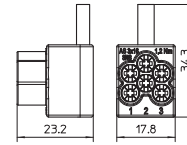
Type

AS 3x16 | Light grey | 3 x 16 mm²

Weight
Pack. kg/100
pcs pcs.

Item No.

5 | 2.474 | **5012010**



Connection terminal type: AS 3 x 16

Connection cross-section: 3 x 1.5 - 16 sq mm rigid/ multiple strands

3 x 1.5 - 10 sq mm fine-wire/with wire end sleeve

Stripping length: 16 mm

Rec. tightening torque: 1.2 Nm

Nominal current: 50 A

Width: 17.5 mm (1 TE)

For EMC-optimised V through-wiring to IEC 60364-5-53 (VDE 0100-534).



PV system solution, type 1+2, for inverter with 1 MPP trackers, 900 V DC

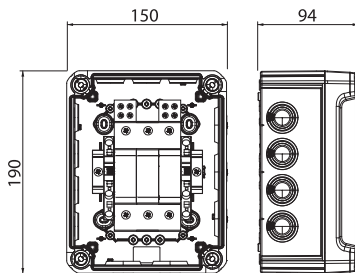


Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
VG-V25-BC3-PH900	900	Type 1+2 in housing with terminals	1	93.000	5088591

System solution for photovoltaic inverter with 1 MPP tracker

- Varistor arrester, connectable with cut-off unit in error-resistant Y circuit to VDE 0100-712 (50539-12)
- Low DC protection level: < 2.6 kV (Voc max = 600 V DC with V50-B+C/0-300PV / V20-C/0-300PV)
- Low DC protection level: < 3.0 kV (Voc max = 900 V DC with V25-B+C/0-450PV)
- Low DC protection level: < 4.0 kV (Voc max = 1,000 V DC with V20-C/0-500PV)
- For each protection device, there are 10 terminals up to 6 mm² pre-mounted in the housing, up to 30 A DC per terminal
- Pre-mounted in polycarbonate housing (IP65), UV-resistant for use outside, including cable gland kit

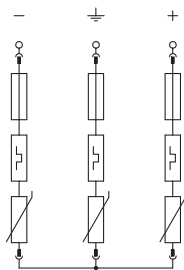
Dimensions



For DC protection of the inverter in photovoltaic systems.

If there is a danger of condensation forming through wind, ice, temperature or sunlight, further measures may be necessary!

Connection options



VG-V25-BC3-PH900

U max DC	U _c DC	900 V
SPD to EN 61643-11		Type 1+2
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I _{imp}	7 kA
Nominal discharge current (8/20)	I _n	30 kA
Maximum discharge current (8/20 μs)	I _{max}	50 kA
Voltage protection level	U _n	< 3,0 kV
Response time	t _A	< 25 ns
Connection cross-section rigid		1.5 - 16 mm ²
Connection cross-section, flexible		1.5 - 10 mm ²
Temperature range	ϑ	-40+80 °C
Protection rating		IP66

PV system solution, type 2, for inverter with 1 MPP trackers, 1,000 V DC



Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
VG-V20-C3-PH1000	1000	Type 1+2 in housing with terminals	1	87.000	5088593

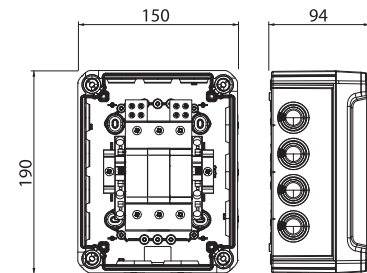
System solution for photovoltaic inverter with 1 separate MPP tracker

- Varistor arrester, connectable with cut-off unit in error-resistant Y circuit to VDE 0100-712 (50539-12)
- Low DC protection level: < 4.0 kV (Uoc max = 1,000 V DC with V20-C/0-500PV)
- Low DC protection level: < 3.0 kV (Uoc max = 900 V DC with V25-B+C/0-450PV)
- Per protection device, there are 8 terminals up to 6 mm² pre-mounted in the housing, up to 30 A DC per terminal
- Pre-mounted in polycarbonate housing (IP65), UV-resistant for the use outside, including cable gland kit

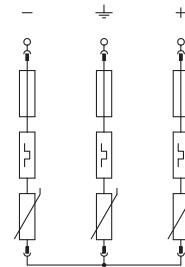
For DC protection of the inverter in photovoltaic systems.
If there is a danger of condensation forming through wind, ice, temperature or sunlight, further measures may be necessary!



Dimensions



Connection options

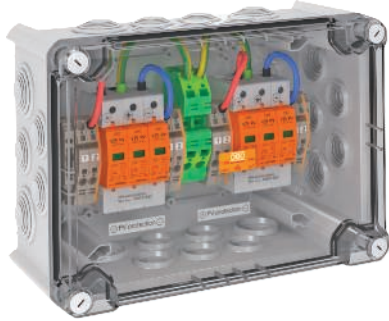


VG-V20-C3-PH1000

U max DC	U _c DC	1000 V
SPD to EN 61643-11		Type 2
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I _n	20 kA
Maximum discharge current (8/20 μs)	I _{max}	40 kA
Voltage protection level	U _p	< 4,0 kV
Response time	t _A	< 25 ns
Connection cross-section rigid		1.5 - 16 mm ²
Connection cross-section, flexible		1.5 - 10 mm ²
Temperature range	θ	-40 - +80 °C
Protection rating		IP66



PV system solution, type 1+2, for inverter with 2 MPP trackers, 900 V DC

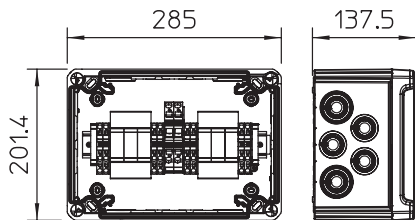


Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
VG-BCPV900K 22	900	For two MPP and with terminal connection	1	220.000	5088566

System solution for photovoltaic inverter with 2 separate MPP trackers

- Varistor arrestor, connectable with disconnecting device in error-resistant Y circuit to VDE 0100-712 (50539-12)
- Low DC protection level: < 4.0 kV (Uoc max = 1,000 V DC with V20-C/0-500PV)
- Low DC protection level: < 3.0 kV (Uoc max = 900 V DC with V25-B+C/0-450PV)
- Per protection device, there are 4 terminals up to 6 mm² pre-mounted in the housing, up to 30 A DC per terminal
- Pre-mounted in polycarbonate housing (IP66), UV-resistant for the use outside, including cable gland kit

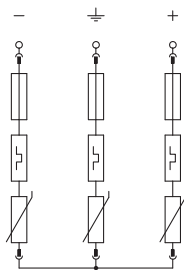
Dimensions



For DC protection of the inverter in photovoltaic systems.

If there is a danger of condensation forming through wind, ice, temperature or sunlight, further measures may be necessary!

Connection options



VG-BCPV900K 22

U max DC	U _c DC	900 V
SPD to EN 61643-11	Type	1+2
Lightning protection zone LPZ		0→2
Nominal discharge current (8/20)	I _n	30 kA
Maximum discharge current (8/20 μs)	I _{max}	60 kA
Voltage protection level	U _p	< 3,0 kV
Response time	t _A	< 25 ns
Temperature range	θ	-30 - 90 °C
Protection rating		IP66

PV system solution, type 2, for inverter with 2 MPP trackers, 1,000 V DC



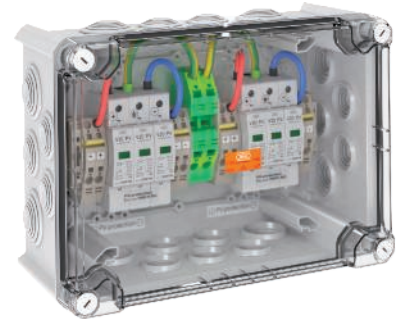
Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
VG-CPV1000K 22	1000	For two MPP and with terminal connection	1	216.600	5088568

System solution for photovoltaic inverter with 2 separate MPP trackers

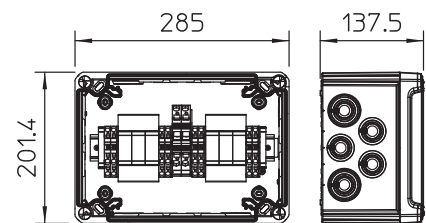
- Varistor arrestor, connectable with disconnecting device in error-resistant Y circuit to VDE 0100-712 (50539-12)
- Low DC protection level: < 4.0 kV (Uoc max = 1,000 V DC with V20-C/0-500PV)
- Low DC protection level: < 3.0 kV (Uoc max = 900 V DC with V25-B+C/0-450PV)
- Per protection device, there are 4 terminals up to 6 mm² pre-mounted in the housing, up to 30 A DC per terminal
- Pre-mounted in polycarbonate housing (IP66), UV-resistant for the use outside, including cable gland kit

For DC protection of the inverter in photovoltaic systems.

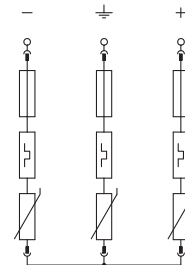
If there is a danger of condensation forming through wind, ice, temperature or sunlight, further measures may be necessary!



Dimensions



Connection options



VG-CPV1000K 22

U max DC	U _c DC	1000 V
SPD to EN 61643-11		Type 2
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I _n	20 kA
Maximum discharge current (8/20 μs)	I _{max}	40 kA
Voltage protection level	U _p	< 4,0 kV
Response time	t _A	< 25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP65



PV system solution, type 2, for inverter with 2 MPP trackers, 1,000 V DC

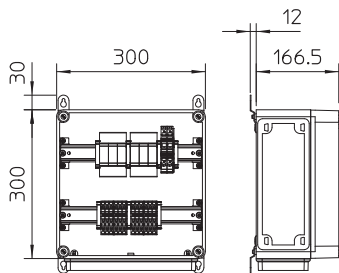


Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
VG-CPV 1000K 330	1000	For two MPP and with terminal connection	1	468.000	5088582

System solution for photovoltaic inverter with 2 separate MPP trackers

- Varistor arrester, connectable with disconnecting device in error-resistant Y circuit to VDE 0100-712 (50539-12)
- Low DC protection level: < 3.0 kV (Uoc max = 900 V DC with V25-B+C/0-450PV)
- Per protection device there are 6 terminals up to 6 mm² pre-mounted in the housing, up to 30 A DC per terminal
- Pre-mounted in polycarbonate housing (IP65), UV-resistant for the use outside, including cable gland kit

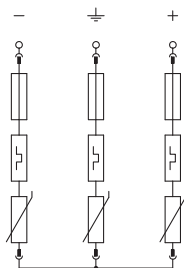
Dimensions



For DC protection of the inverter in photovoltaic systems.

If there is a danger of condensation forming through wind, ice, temperature or sunlight, further measures may be necessary!

Connection options



VG-CPV 1000K 330

U max DC	U _c DC	1000 V
SPD to EN 61643-11	Type	Type 2
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I _n	20 kA
Maximum discharge current (8/20 μs)	I _{max}	40 kA
Voltage protection level	U _p	< 4,0 kV
Response time	t _A	< 25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP65

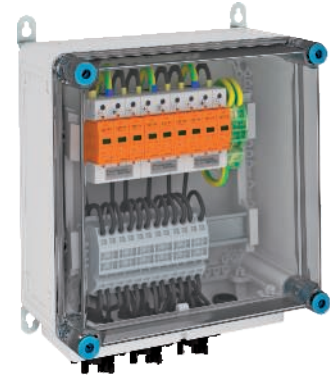
PV housing for inverter with 3 MPP trackers, type 1+2, 900 V DC



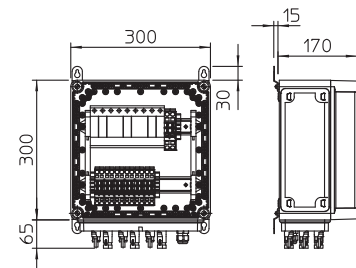
Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
VG-BC DCPH900-31	900	For three MPP and with MC4 connection	1	542.000	5088629

System solution with MC4 connector for photovoltaic inverter with 3 separate MPP trackers

- Varistor arrester, connectable with cut-off unit in error-resistant Y circuit to VDE 0100-712 (50539-12)
- Low DC protection level: < 4.0 kV (Voc max = 1,000 V DC with V20-C/0-500PV)
- Low DC protection level: < 3.0 kV (Voc max = 900 V DC with V25-B+C/0-450PV)
- Two PV string inputs (MC4 plug connector) at one MPP inverter input, up to 30 A DC per terminal
- Pre-mounted in polycarbonate housing (IP65), UV-resistant for use outside, including cable gland kit



Dimensions

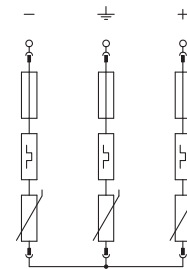


For DC protection of the inverter in photovoltaic systems.
If there is a danger of condensation forming through wind, ice, temperature or sunlight, further measures may be necessary!

VG-BC DCPH900-31

U max DC	U _c DC	900 V
SPD to EN 61643-11	Type	1+2
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I _{impD}	7 kA
Nominal discharge current (8/20)	I _n	30 kA
Maximum discharge current (8/20 μs)	I _{max}	60 kA
Voltage protection level	U _d	< 3,0 kV
Response time	t _A	< 25 ns
Temperature range	ϑ	-40 - +80 °C
Protection rating		IP65

Connection options



PV system solution, type 1+2, for inverter with 2 MPP trackers, 900 V DC

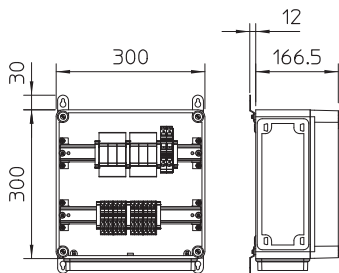


Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
VG-BCPV 900K 330	900	For two MPP and with terminal connection	1	478.000	5088576

System solution for photovoltaic inverter with 2 separate MPP trackers

- Varistor arrester, connectable with disconnecting device in error-resistant Y circuit to VDE 0100-712 (50539-12)
- Low DC protection level: < 3.0 kV (Uoc max = 900 V DC with V25-B+C/0-450PV)
- Per protection device there are 6 terminals up to 6 mm² pre-mounted in the housing, up to 30 A DC per terminal
- Pre-mounted in polycarbonate housing (IP65), UV-resistant for the use outside, including cable gland kit

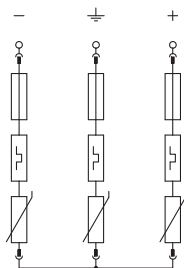
Dimensions



For DC protection of the inverter in photovoltaic systems.

If there is a danger of condensation forming through wind, ice, temperature or sunlight, further measures may be necessary!

Connection options



VG-BCPV 900K 330

U max DC	U _c DC	900 V
SPD to EN 61643-11	Type	1+2
Lightning protection zone LPZ		0-2
Impulse discharge current (10/350)	I _{imp}	7 kA
Nominal discharge current (8/20)	I _n	30 kA
Maximum discharge current (8/20 μs)	I _{max}	60 kA
Voltage protection level	U _n	< 3,0 kV
Response time	t _A	< 25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP65

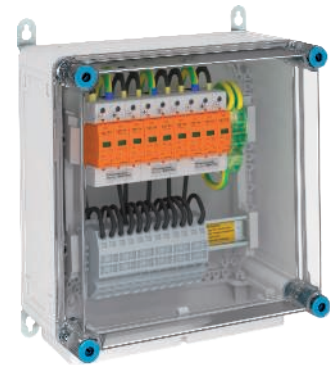
PV system solution, type 1+2, for inverter with 3 MPP trackers, 900 V DC



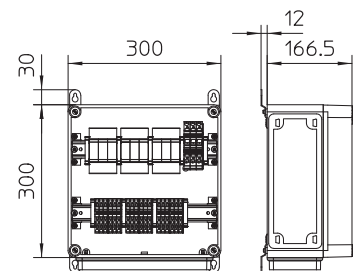
Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
VG-BCPV 900K 333	900	For three MPP and with terminal connection	1	546.000	5088579

System solution for photovoltaic inverter with 3 separate MPP trackers

- Varistor arrester, connectable with cut-off unit in error-resistant Y circuit to VDE 0100-712 (50539-12)
- Low DC protection level: < 3.0 kV (Voc max = 900 V DC with V25-B+C/0-450PV)
- Per protection device there are 6 terminals up to 6 mm² pre-mounted in the housing, up to 30 A DC per terminal
- Pre-mounted in polycarbonate housing (IP65), UV-resistant for use outside, including cable gland kit



Dimensions



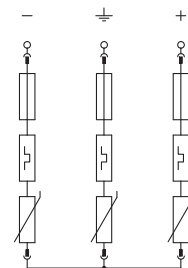
For DC protection of the inverter in photovoltaic systems.

If there is a danger of condensation forming through wind, ice, temperature or sunlight, further measures may be necessary!

VG-BCPV 900K 333

U max DC	U _c DC	900 V
SPD to EN 61643-11		Type 1+2
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I _{imp}	7 kA
Nominal discharge current (8/20)	I _n	30 kA
Maximum discharge current (8/20 μs)	I _{max}	60 kA
Voltage protection level	U _n	< 3,0 kV
Response time	t _A	< 25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP65

Connection options



PV system solution, type 2, for inverter with 2 MPP trackers, 1,000 V DC

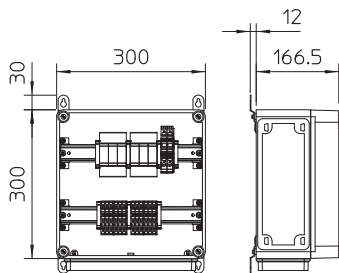


Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
VG-CPV 1000K 330	1000	For two MPP and with terminal connection	1	468.000	5088582

System solution for photovoltaic inverter with 2 separate MPP trackers

- Varistor arrester, connectable with disconnecting device in error-resistant Y circuit to VDE 0100-712 (50539-12)
- Low DC protection level: < 3.0 kV (Uoc max = 900 V DC with V25-B+C/0-450PV)
- Per protection device there are 6 terminals up to 6 mm² pre-mounted in the housing, up to 30 A DC per terminal
- Pre-mounted in polycarbonate housing (IP65), UV-resistant for the use outside, including cable gland kit

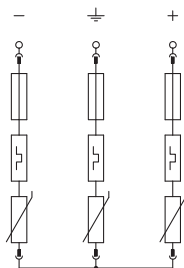
Dimensions



For DC protection of the inverter in photovoltaic systems.

If there is a danger of condensation forming through wind, ice, temperature or sunlight, further measures may be necessary!

Connection options



VG-CPV 1000K 330

U max DC	U _c DC	1000 V
SPD to EN 61643-11		Type 2
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I _n	20 kA
Maximum discharge current (8/20 μs)	I _{max}	40 kA
Voltage protection level	U _p	< 4,0 kV
Response time	t _A	< 25 ns
Temperature range	ϑ	-40 - +80 °C
Protection rating		IP65

PV system solution, type 2, for inverter with 3 MPP trackers, 1,000 V DC



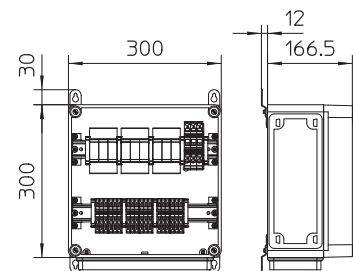
Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
VG-CPV 1000K 333	1000	For three MPP and with terminal connection	1	528.000	5088585

System solution for photovoltaic inverter with 3 separate MPP trackers

- Varistor arrester, connectable with cut-off unit in error-resistant Y circuit to VDE 0100-712 (50539-12)
- Low DC protection level: < 3.0 kV (Voc max = 900 V DC with V25-B+C/0-450PV)
- Per protection device there are 6 terminals up to 6 mm² pre-mounted in the housing, up to 30 A DC per terminal
- Pre-mounted in polycarbonate housing (IP65), UV-resistant for use outside, including cable gland kit



Dimensions



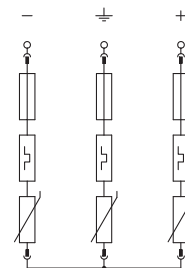
For DC protection of the inverter in photovoltaic systems.

If there is a danger of condensation forming through wind, ice, temperature or sunlight, further measures may be necessary!

VG-CPV 1000K 333

U max DC	U _c DC	1000 V
SPD to EN 61643-11		Type 2
Lightning protection zone LPZ		1-2
Nominal discharge current (8/20)	I _n	20 kA
Maximum discharge current (8/20 μs)	I _{max}	40 kA
Voltage protection level	U _p	< 4,0 kV
Response time	t _A	< 25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP65

Connection options



Photovoltaic housing with 4 fuses 10 A

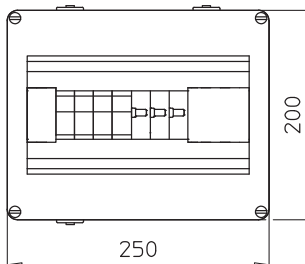


Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
VG-C DCPH1000-4S	1000	Type 2 in housing with 4 PV fuses (10 A)	1	200.000	5088651

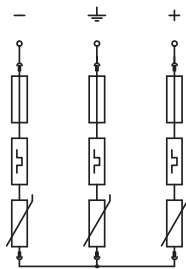
System solution for photovoltaic fuses for photovoltaic inverters with 1 MPP tracker

- Error-resistant Y circuit to VDE 0100-712 (50539-12)
- Low DC protection level: < 4.0 kV (Voc max = 1,000 V DC with V20-C/0-500PV)
- Item no.: 5088651: (+) poles protected via 4 photovoltaic fuses 10 x 38 mm 10 A, 1,000 V DC protected
- Item no.: 5088654: (+) poles protected via 4 photovoltaic fuses 10 x 38 mm (unequipped), 1,000 V DC protected
- 4 (-) poles via terminal up 6 mm² switched in parallel in the housing, up to 30 A DC per terminal
- Pre-mounted in polycarbonate housing (IP65), weather-resistant for use outside, including cable gland kit

Dimensions



Connection options



For DC protection of the inverter in photovoltaic systems.

If there is a danger of condensation forming through wind, ice, temperature or sunlight, further measures may be necessary!

VG-C DCPH1000-4S

U max DC	U _{c DC}	1000 V
SPD to EN 61643-11		Type 2
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I _n	20 kA
Maximum discharge current (8/20 μs)	I _{max}	40 kA
Voltage protection level	U _n	< 4,0 kV
Response time	t _A	< 25 ns
Connection cross-section rigid		0.5 - 6 mm ²
Connection cross-section, flexible		0.5 - 6 mm ²
Temperature range	θ	-40 - +80 °C
Protection rating		IP 65

Photovoltaic housing with 4 fuse holders, unequipped



Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
VG-C PV1000KS4	1000	Type 2 in housing with fuse holder (unequipped)	1	190.000	5088654

System solution for photovoltaic fuses for photovoltaic inverters with 1 MPP tracker

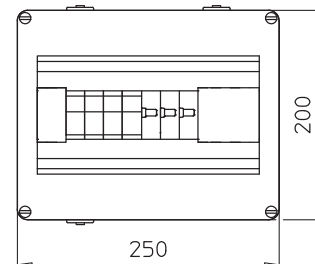
- Error-resistant Y circuit to VDE 0100-712 (50539-12)
- Low DC protection level: < 4.0 kV (Voc max = 1,000 V DC with V20-C/0-500PV)
- Item no.: 5088651: (+) poles protected via 4 photovoltaic fuses 10 x 38 mm 10 A, 1,000 V DC protected
- Item no.: 5088654: (+) poles protected via 4 photovoltaic fuses 10 x 38 mm (unequipped), 1,000 V DC protected
- 4 (-) poles via terminal up 6 mm² switched in parallel in the housing, up to 30 A DC per terminal
- Pre-mounted in polycarbonate housing (IP65), weather-resistant for use outside, including cable gland kit

For DC protection of the inverter in photovoltaic systems.

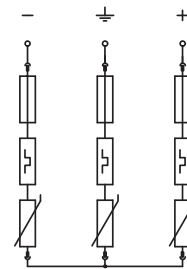
If there is a danger of condensation forming through wind, ice, temperature or sunlight, further measures may be necessary!



Dimensions



Connection options



VG-C PV1000KS4

U max DC	U _c DC	1000 V
SPD to EN 61643-11		Type 2
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I _n	20 kA
Maximum discharge current (8/20 μs)	I _{max}	40 kA
Voltage protection level	U _n	< 4,0 kV
Response time	t _A	< 25 ns
Connection cross-section rigid		0.5 - 6 mm ²
Connection cross-section, flexible		0.5 - 6 mm ²
Temperature range	θ	-40 - +80 °C
Protection rating		IP 65



Photovoltaic housing with 4 fuse holders, V25, 900 V

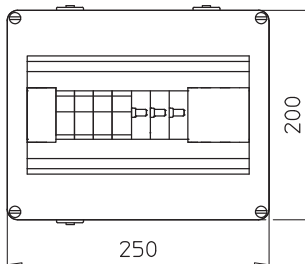


Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
VG-BC PV900KS4	900	Type 1+2 in housing with fuse holder (unequipped)	1	205.000	5088640

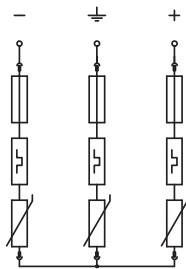
System solution for photovoltaic fuses for photovoltaic inverters with 1 MPP tracker

- Error-resistant Y circuit to VDE 0100-712 (50539-12)
- Low DC protection level: < 4.0 kV (Voc max = 1,000 V DC with V20-C/0-500PV)
- Item no.: 5088654: (+) poles protected via 4 photovoltaic fuses 10 x 38 mm (unequipped), 1,000 V DC protected
- Item no.: 5088640: (+) poles protected via 4 photovoltaic fuses 10 x 38 mm (unequipped), 900 V DC protected
- 4 (-) poles via terminal up to 6 mm² switched in parallel in the housing, up to 30 A DC per terminal
- Pre-mounted in polycarbonate housing (IP65), UV-resistant for use outside, including cable gland kit

Dimensions



Connection options



For DC protection of the inverter in photovoltaic systems.

If there is a danger of condensation forming through wind, ice, temperature or sunlight, further measures may be necessary!

VG-BC PV900KS4

U max DC	U _c DC	900 V
SPD to EN 61643-11	Type	1+2
Lightning protection zone LPZ		1→2
Impulse discharge current (10/350)	I _{imp}	7 kA
Nominal discharge current (8/20)	I _n	30 kA
Maximum discharge current (8/20 μs)	I _{max}	60 kA
Voltage protection level	U _o	< 3,0 kV
Response time	t _A	< 25 ns
Connection cross-section rigid		0.5 - 6 mm ²
Connection cross-section, flexible		0.5 - 6 mm ²
Temperature range	θ	-40 - +80 °C
Protection rating		IP 65



PV system solution, type 1+2, to 900 V DC with circuit breaker (32 A)

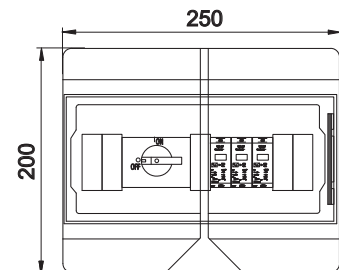


Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
VG-BC DC-TS900	900	Type 1+2 and Benedikt LS32-SMA-A4 DC isolator	1	182.500	5088635

- System solution for circuit breaker photovoltaic inverter with 1 MPP tracker
- Varistor arrester, connectable with cut-off unit in error-resistant Y circuit to VDE 0100-712 (50539-12)
 - Low DC protection level: < 3.0 kV (Voc max = 900 V DC with V25-B+C/0-450PV)
 - Circuit breaker (1,000 V; 32 A) for secure switch-off of the DC string cable
 - Per protection device there is 1 terminal up to 6 mm² pre-mounted in the housing, up to 30 A DC per terminal
 - Pre-mounted in polycarbonate housing (IP65), UV-resistant for use outside, including cable gland kit



Dimensions

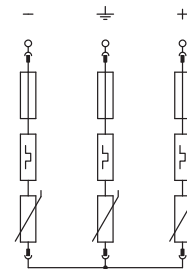


For DC protection of the inverter in photovoltaic systems.
If there is a danger of condensation forming through wind, ice, temperature or sunlight, further measures may be necessary!

VG-BC DC-TS900

U max DC	U _c DC	900 V
SPD to EN 61643-11		Type 1+2
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I _{impD}	7 kA
Nominal discharge current (8/20)	I _n	30 kA
Maximum discharge current (8/20 μs)	I _{max}	50 kA
Voltage protection level	U _d	< 3,0 kV
Response time	t _A	< 25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP65
Connection cross-section String		0.5 - 10
Connection cross-section PE		0.5 - 10

Connection options



PV system solution, type 2, to 1,000 V DC with circuit breaker (32 A)

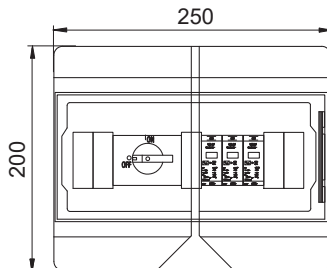


Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
VG-C DC-TS1000	1000	Type 2 and Benedikt LS32-SMA-A4 DC isolator	1	182.500	5088660

System solution for circuit breaker photovoltaic inverter with 1 MPP tracker

- Varistor arrester, connectable with cut-off unit in error-resistant Y circuit to VDE 0100-712 (50539-12)
- Low DC protection level: < 4.0 kV (Uoc max = 1,000 V DC with V20-B+C/0-500PV)
- Circuit breaker (1,000 V; 32 A) for secure switch-off of the DC string cable
- Per protection device, there is 1 terminal up to 6 mm² pre-mounted in the housing, up to 30 A DC per terminal
- Pre-mounted in polycarbonate housing (IP65), UV-resistant for use outside, including cable gland kit

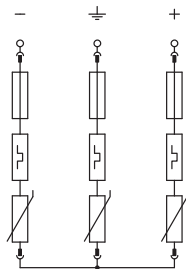
Dimensions



For DC protection of the inverter in photovoltaic systems.

If there is a danger of condensation forming through wind, ice, temperature or sunlight, further measures may be necessary!

Connection options



VG-C DC-TS1000

U max DC	U _c DC	1000 V
SPD to EN 61643-11		Type 2
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I _n	20 kA
Maximum discharge current (8/20 μs)	I _{max}	40 kA
Voltage protection level	U _n	< 4,0 kV
Response time	t _A	< 25 ns
Temperature range	ϑ	-40 - +80 °C
Protection rating		IP65
Connection cross-section String		0.5 - 10
Connection cross-section PE		2.5 - 35

Photovoltaic housing, type 1+2, with MC connector 900 V DC



Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
VG-C DCPH-Y1000	1000	Equipped in housing with MC4 connector	1	169.500	5088672

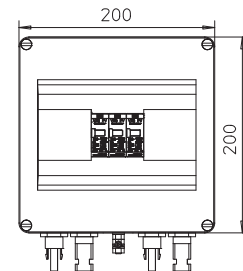
System solution with MC4 connector for photovoltaic inverter with 1 MPP tracker

- Varistor arrester, connectable with cut-off unit in error-resistant Y circuit to VDE 0100-712 (50539-12)
- Low DC protection level: < 2.6 kV (Voc max = 600 V DC with V50-B+C/0-300PV / V20-C/0-300PV)
- Low DC protection level: < 3.0 kV (Voc max = 900 V DC with V25-B+C/0-450PV)
- Low DC protection level: < 4.0 kV (Voc max = 1,000 V DC with V20-C/0-500PV)
- One PV string input (MC4 plug connector) at one MPP inverter input, up to 15 A DC MC4 connector
- Pre-mounted in polycarbonate housing (IP65), weather-resistant for use outside, including cable gland kit

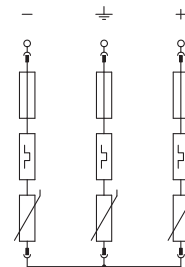
For DC protection of the inverter in photovoltaic systems.
If there is a danger of condensation forming through wind, ice, temperature or sunlight, further measures may be necessary!



Dimensions



Connection options



VG-C DCPH-Y1000

U max DC	U _c DC	1000 V
SPD to EN 61643-11		Type 2
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I _n	20 kA
Maximum discharge current (8/20 μs)	I _{max}	40 kA
Voltage protection level	U _n	< 4,0 kV
Response time	t _A	< 25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP65



Photovoltaic housing with connection terminals, unequipped

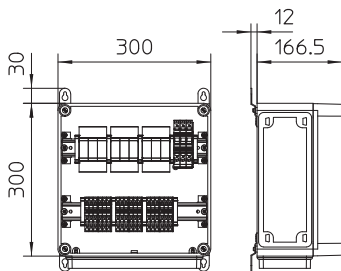


Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
VG-BCPV U K 333	1000	For 3 MPPs, unequipped	1	478.000	5088573

System solution for photovoltaic inverter with 3 separate MPP trackers, unequipped

- Varistor arrester, connectable with cut-off unit in error-resistant Y circuit to VDE 0100-712 (50539-12)
- 5088609: Two PV string inputs (MC4 plug connector) at an MPP inverter input, IN up to 15 A DC per MC4 connector
- 5088573: Per protection device there are 6 terminals up to 6 mm² pre-mounted in the housing, IN up to 30 A DC per terminal
- Unequipped, order covers separately
- Pre-mounted in polycarbonate housing (IP65), UV-resistant for use outside, including cable gland kit

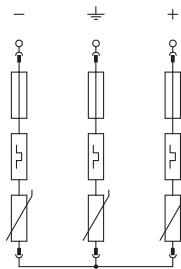
Dimensions



For DC protection of the inverter in photovoltaic systems.

If there is a danger of condensation forming through wind, ice, temperature or sunlight, further measures may be necessary!

Connection options



VG-BCPV U K 333

U max DC	U _c DC	1000 V
Connection cross-section rigid		0.5 - 10 mm ²
Connection cross-section, flexible		0.5 - 6 mm ²
Temperature range	ϑ	-40 - +80 °C
Protection rating		IP65

PV cover - lightning and surge arrester, type 1+2



Type	U max DC V	Version	Pack.		Item No.
			pcs	kg/100 pcs	
V50-B+C 0-300PV	300	1-pole, PV upper part with Y base to 600 V DC	1	8,200	5093726

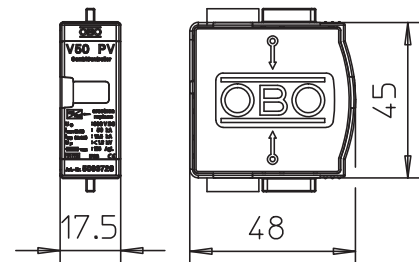
V50-B+C/...PV: CombiController upper part, type 1+2, combination arrester for photovoltaic systems

- For surge protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity to 12.5 kA (10/350) and 50 kA (8/20) per pole
- Low DC protection level: < 1.3 kV per pole (Y circuit: 2.6 kV and Voc max = 600 V DC)
- Arrester, connectable with thermodynamic cut-off unit and visual function display
- Encapsulated, zinc oxide varistor arrester for use in distributor housings
- High current carrying capacity with long lifespan

Application: PV systems with or without separated insulated lightning protection system



Dimensions



Connection options



V50-B+C 0-300PV

U max DC	U _c DC	300 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class I+II
Lightning protection zone LPZ		0→2
Nominal discharge current (8/20)	I _n	30 kA
Impulse discharge current (10/350)	I _{imp}	12.5 kA
Maximum discharge current (8/20 μs)	I _{max}	50 kA
Voltage protection level	U _p	< 1,3 kV
Response time	t _A	<25 ns
Maximum back-up fuse		125 A
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1



PV cover - lightning and surge arrester, type 1+2

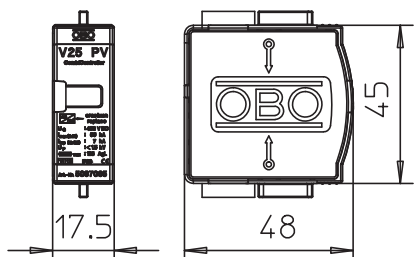


Type	U max DC	Version	Pack. pcs	Weight		Item No.
	V			kg/100 pcs	pcs.	
V25-B+C 0-450PV	450	1-pole, PV upper part with Y base to 900 V DC	1	9.500		5097065

V25-B+C/...PV: CombiController upper part, type 1+2, combination arrester for photovoltaic systems

- For surge protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity to 7 kA (10/350) and 50 kA (8/20) per pole
- Low DC protection level: < 1.5 kV per pole (Y circuit: 3.0 kV and Voc max = 900 V DC)
- Arrester, connectable with thermodynamic cut-off unit and visual function display
- Encapsulated, zinc oxide varistor arrester for use in distributor housings
- High current carrying capacity with long lifespan

Dimensions



Application: PV systems with or without separated insulated lightning protection system

Connection options



V25-B+C 0-450PV

U max DC	U _c DC	450 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class I+II
Lightning protection zone LPZ		0→2
Nominal discharge current (8/20)	I _n	30 kA
Impulse discharge current (10/350)	I _{imp}	7 kA
Maximum discharge current (8/20 μs)	I _{max}	50 kA
Voltage protection level	U _p	< 1,5 kV
Response time	t _A	< 25 ns
Maximum back-up fuse		160 A
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1

PV cover - surge arrester, type 2



Type	U max DC		Version	Pack.		Weight	Item No.
	V	Version		pcs	pcs.		
V20-C 0-300PV	300		1-pole, PV upper part with Y base to 600 V DC	1	5.500		5099611

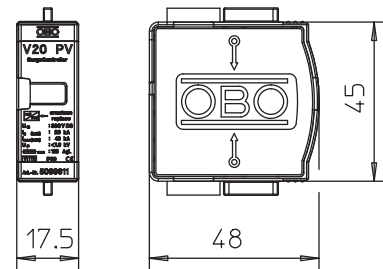
V20-C/...PV: SurgeController upper part, type 2, surge arrester for photovoltaic systems

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity to 40 kA (8/20) per pin
- Low DC protection level: < 1.3 kV per pole (Y circuit: 2.6 kV and Voc max = 600 V DC)
- Arrester, connectable with thermodynamic cut-off unit and visual function display
- Encapsulated, non-extinguishing zinc oxide varistor arrester for use in distributor housings
- High current carrying capacity with long lifespan

Application example: PV systems with or without separated insulated lightning protection system



Dimensions



Connection options



V20-C 0-300PV

U max DC	U _c DC	300 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I _n	20 kA
Maximum discharge current (8/20 μs)	I _{max}	40 kA
Voltage protection level	U _o	< 1,3 kV
Response time	t _A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1



PV cover - surge arrester, type 2



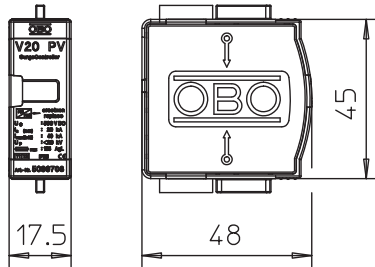
Type	U max DC	Version	Pack. pcs	Weight	Item No.
	V			kg/100 pcs	
V20-C 0-500PV	500	1-pole, PV upper part with Y base to 1,000 V DC	1	6.500	5099708

V20-C/...PV: SurgeController upper part, type 2, surge arrester for photovoltaic systems

- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity to 40 kA (8/20) per pin
- Low DC protection level: < 1.3 kV per pole (Y circuit: 2.6 kV and Voc max = 600 V DC)
- Arrester, connectable with thermodynamic cut-off unit and visual function display
- Encapsulated, non-extinguishing zinc oxide varistor arrester for use in distributor housings
- High current carrying capacity with long lifespan

Application example: PV systems with or without separated insulated lightning protection system

Dimensions



Connection options



V20-C 0-500PV

U max DC	U _c DC	500 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I _n	20 kA
Maximum discharge current (8/20 μs)	I _{max}	40 kA
Voltage protection level	U _o	< 2,0 kV
Response time	t _A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1

PV base, 3-pole in Y circuit



Version

Type

V20-C U-3PH-Y | 3-pole Y circuit for PV

Pack. Weight
pcs kg/100
1 17.000

Item No.
5096647

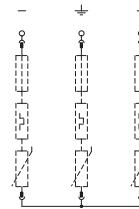
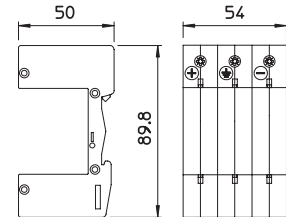


V 20-C/3-PH-Y: Bottom part for photovoltaic systems up to $U_{oc} = 1,000$ V (Y-circuit)

- Suitable for V 25-B+C upper parts type 1+2 combination arrester
- Suitable for V 20-C upper parts type 2 surge arrester
- Protection circuit against transverse and longitudinal voltages
- Y-protection circuit
- Low protection level < 4.0 kV (U_{oc} max = 1,000 V DC with V20-C/0-440)
- Low protection level < 3.0 kV (U_{oc} max = 900 V DC with V25-B+C/0-385)
- Low protection level < 2.6 kV (U_{oc} max = 600 V DC with V50-C/0-280)

Indicated connectors

Application: In photovoltaic systems between PH modules and inverters.



V20-C U-3PH-Y

Temperature range	ϑ -40 - +80 °C
Protection rating	IP 20
Division unit TE (17.5 mm)	3
Connection cross-section rigid	2.5 - 35 mm ²
Connection cross-section, multi-wire	2.5 - 35 mm ²
Connection cross-section, flexible	2.5 - 25 mm ²

PV base, 3-pole in Y circuit with remote signalling



Version

Type

V20-C U-3PH-Y-FS | 3-pole Y circuit for photovoltaic systems with FS

Pack. Weight
pcs kg/100
1 25.000

Item No.
5096646



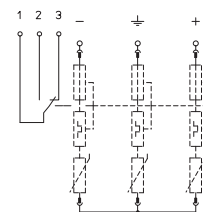
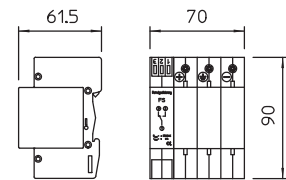
V 20-C/U-3-PH-Y-FS: Base for photovoltaic systems up to $V_{oc}=1,000$ V (Y circuit)

- Suitable for V 50-B+C and V25-B+C upper parts, type 1+2 combination arrester
- Suitable for V 20-C upper parts, type 2, surge arrester
- Protection circuit against transverse and longitudinal voltages
- Y circuit
- Low protection level < 4.0 kV (V_{oc} max = 1,000 V DC with V20-C/0-440)
- Low protection level < 3.0 kV (V_{oc} max = 900 V DC with V25-B+C/0-385)

Low protection level < 2.6 kV (V_{oc} max = 600 V DC with V50-C/0-280)

- -FS with remote signalling, potential-free changeover contact, for function monitoring
- Labelled connections

Application: In photovoltaic systems between PH modules and inverters.



V20-C U-3PH-Y-FS

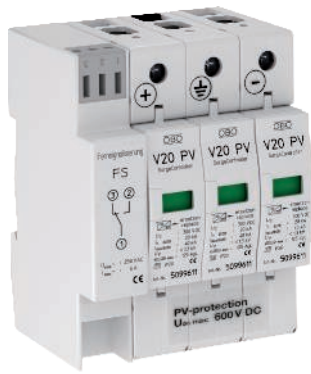
Temperature range	ϑ -40 - +80 °C
Protection rating	IP 20
Division unit TE (17.5 mm)	4
Connection cross-section rigid	2.5 - 35 mm ²
Connection cross-section, multi-wire	2.5 - 35 mm ²
Connection cross-section, flexible	2.5 - 25 mm ²

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PV type 2 surge protection complete block

PV surge protection V20, 600 V DC with remote signalling



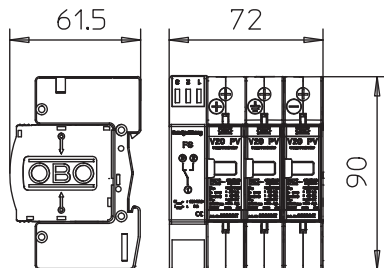
Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V20-C 3PHFS-600	600	3-pole for PV systems; Y circuit with FS	1	41.500	5094576

V20 surge arrester, type 2, for PV systems

- Complete unit, consisting of plug-in varistor arrester with cut-off unit
- Error-resistant Y circuit for use according to VDE 0100-712 (EN 50539-12)
- For surge protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity to 40 kA (8/20) per pole
- Low DC protection level: < 2.6 kV (Voc max = 600 V DC)
- Arrester, connectable with thermodynamic cut-off unit and visual function display
- Encapsulated, zinc oxide varistor arrester for use in distributor housings

Application: PV systems with or without separate lightning protection system

Dimensions










Connection options

V20-C 3PHFS-600

U max DC	U _c DC	600 V
SPD to EN 61643-11		Type 2
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I _n	20 kA
Maximum discharge current (8/20 μs)	I _{max}	40 kA
Voltage protection level	U _n	< 2,6 kV
Response time	t _A	< 25 ns
Temperature range	ϑ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		4
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²



Surge protection, data and information technology

	Surge protection for telecommunication systems	315
	Surge protection for LSA-Plus systems	327
	Coaxial protection devices for high-frequency applications	333
	Surge protection for network technology and CCTV camera systems	348
	MCR protection 2-pole power supply	363
	MCR protection FRD/FLD/TKS-B lightning protection barriers	375
	MCR protection MDP, in series terminal format	393

Data technology, network technology and CCTV camera systems



Eth. RJ45

Type	Item no.	Page
CAT6A/EA	5081800	348
ND-CAT6/E-F	5081802	354
ND-CAT6/E-B	5081804	354



BNC/CCTV

Type	Item no.	Page
Combination	5082430	350
Fine	5082432	351
Fine	5082434	352



RJ45/4-pole

Type	Item no.	Page
RJ11	5081975	321
RJ11	5081977	322
RJ45	5081982	323
RJ45	5081984	324



PND combined protection device

Type	Item no.	Page
PND-2in1-C-RS	5081064	408
PND-3in1-C-RS	5081066	409

Measurement and control technology



FRD

Volts	Item no.	Page
24	5098514	380
48	5098522	381
110	5098557	382
48	5098522	381
110	5098557	382



FRD-2

Volts	Item no.	Page
24	5098727	388



FLD

Volts	Item no.	Page
5	5098600	384
12	5098603	385
24	5098611	386
48	5098630	387
110	5098646	388
110	5098646	388



MDP 2-pole

Volts	Item no.	Page
5	5098404	393
24	5098422	396
48	5098442	399



MDP 3-pole

Volts	Item no.	Page
5	5098407	394
24	5098427	397
48	5098446	400



MDP 4-pole

Volts	Item no.	Page
5	5098411	395
24	5098431	398
48	5098450	401



MDP, 10 A, 2-pole

Volts	Item no.	Page
12	5098415	403
24	5098425	405



MDP, 10 A, 4-pole

Volts	Item no.	Page
5	5098413	402
12	5098419	404
24	5098433	406



MDP EX 4-pole

Volts	Item no.	Page
5	5098412	413
24	5098432	414
48	5098452	415



FDB 2-pole 24 V

Type	Item no.	Page
Metric	5098380	417
NPT	5098390	419



FDB 3-pole 24 V

Type	Item no.	Page
Metric	5098382	418
NPT	5098392	420

Telecommunications, fixed mounting



VDSL		
MHz	Item no.	Page
0-225	5081698	315



ISDN + Analogue		
MHz	Item no.	Page
0-100	5081690	316



TAE		
MHz	Item no.	Page
0-100	5081692	317



DIN rail		
MHz	Item no.	Page
0-75	5081694	318

Telecommunications, cable adapter



LSA basic protection		
Volts	Item no.	Page
180	5084020	327



LSA basic + fine protection		
Volts	Item no.	Page
24	5084028	329
180	5084024	328

High-frequency technology, coaxial arrestors



S-UHF		
Type	Item no.	Page
M/F	5093023	333
W/W	5093015	334



BNC		
Type	Item no.	Page
M/F	5093252	335
W/W	5093236	336
M/M	5093260	337



N		
Type	Item no.	Page
M/F	5093998	340
M/F	5093996	338
W/W	5093988	339



TNC		
Type	Item no.	Page
M/F	5093270	341



7/16		
Type	Item no.	Page
M/F	5093171	344



F		
Type	Item no.	Page
M/F	5093275	343
W/W	5093272	344



SMA		
Type	Item no.	Page
W/W	5093277	345



F/SAT		
Type	Item no.	Page
W/W	5083400	346



Surge protection devices for telecommunications applications: The plus of the combination protection devices

- + Simple installation
- + Low protection level
- + High arresting capability
- + High bandwidth
- + Wide range of uses



Combined protection device for VDSL, ISDN and DSL systems

The data cable protection devices for telecommunications applications are available as combination protection and fine protection. Depending on the application, from DSL through to analogue

communication, the devices are used for direct intermediate switching into the data cable, meaning that they can easily be retrofitted in existing installations. The devices differ in their connection techno-

logy and transmission cable and are thus optimised for their appropriate applications, in order to cause the lowest attenuation level possible.

Combination protection device for VDSL systems



Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs	Item No.
TD-2D-V	125	180	2	Terminal	1	9.500	5081698

Plastic

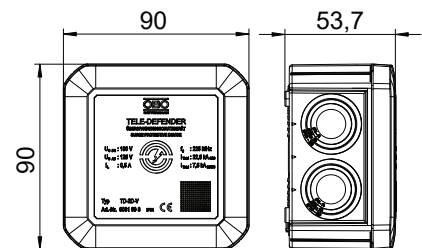
Data cable protection device for telecommunications equipment

- Low protection level at a high current load
- "Push-in" clamps for quick installation
- Bandwidth-optimised for secure transmission up to 225 MHz
- Surface mounting

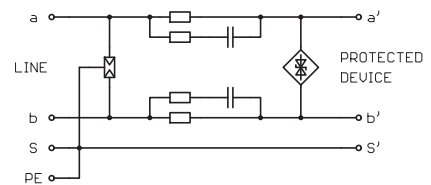
Application: Ideal for all DSL systems, IP connections, ISDN or analogue telecommunications



Dimensions



Connection options



TD-2D-V

Maximum continuous voltage AC	U_c	125 V
Maximum continuous voltage DC	U_c	180 V
Category	Type	1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0-3
Number of poles		2
Rated current	I_n	0.5 A
Capacity (wire-wire)		<10 pF
Capacity (wire-earth)		<20 pF
Series resistance per wire		2,2 Ω \pm 5 %
Impulse durability wire-wire		C2: 15 kV / 7,5 kA (8/20 μ s)
Impulse durability wire-earth		C2: 15 kV / 7,5 kA (8/20 μ s)
Impulse discharge current (10/350) I_{imp}		2.5 kA
Total discharge current (8/20)		22,5 kA
Total discharge current (10/350)		D1: 7,5 kA
Protection level wire-wire		<350 V
Protection level wire-earth		<600 V
Protection level shield-earth (S-PE)		- V
Frequency range		0 - 225 MHz
Insertion loss	S_{21}	\leq 3 dB
Temperature range	ϑ	-40 - +80 °C
Installation type		Surface-mounted
Connection system		Terminal
Protection rating		IP54
Shielding connection available		Yes
Connection cross-section, flexible		0.14 - 1 mm ²
Connection cross-section, multi-wire		0.14 - 1 mm ²
Connection cross-section rigid		0.08 - 1.5 mm ²
Testing standard		IEC 61643-21

Combination protection device TD-4/I for ISDN and DSL systems



Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
TD-4/I	120	170	4	Terminal	1	11.000	5081690

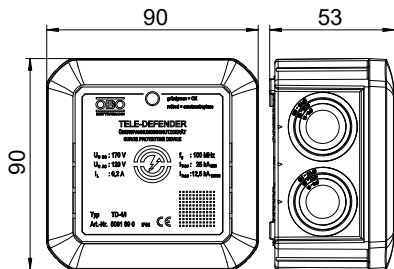
Plastic

Data cable protection device for telecommunications equipment

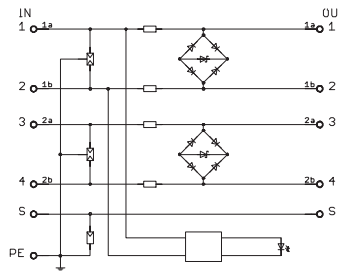
- Low protection level at a high current load
- "Push-in" terminals for quick installation
- Bandwidth-optimised for secure transmission
- Surface mounting
- Visual function display

Application: DSL systems, IP connections, ISDN or analogue telecommunications

Dimensions



Connection options



TD-4/I

Maximum continuous voltage AC	U_c	120 V
Maximum continuous voltage DC	U_c	170 V
Category		Type 1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		4
Rated current	I_n	0.2 A
Capacity (wire-wire)		<50 pF
Capacity (wire-earth)		<10 pF
Series resistance per wire		$9 \Omega \pm 10 \%$
Impulse durability wire-wire		C2: 18 kV / 9 kA (8/20 μ s)
Impulse durability wire-earth		C2: 18 kV / 9 kA (8/20 μ s)
Impulse discharge current (10/350)	I_{imp}	2.5 kA
Total discharge current (8/20)		25 kA
Total discharge current (10/350)		D1: 12,5 kA
Protection level wire-wire		<300 V
Protection level wire-earth		<650 V
Protection level shield-earth (S-PE)		850 V
Frequency range		0 - 100 MHz
Insertion loss	S_{21}	≤ 3 dB
Temperature range	θ	-40 - +80 °C
Installation type		Surface-mounted
Connection system		Terminal
Protection rating		IP54
Shielding connection available		Yes
Connection cross-section, flexible		0.14 - 0.75 mm ²
Connection cross-section, multi-wire		0.14 - 0.75 mm ²
Connection cross-section rigid		0.14 - 0.75 mm ²
Testing standard		IEC 61643-21

Combination protection device for ISDN and DSL systems



Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs.	Weight kg/100 pcs.	Item No.
TD-4/I-TAE-F	120	170	4	Terminal	1	12.300	5081692

Plastic

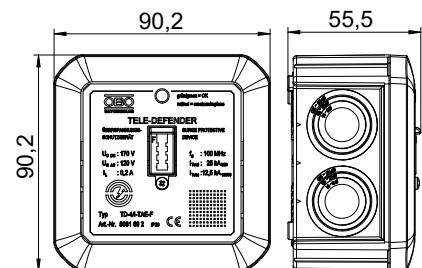
Data cable protection device for telecommunications equipment

- Low protection level at a high current load
- "Push-in" terminals for quick installation
- Bandwidth-optimised for secure transmission
- Preinstalled TAE socket for Plug & Play
- Surface mounting
- Visual function display

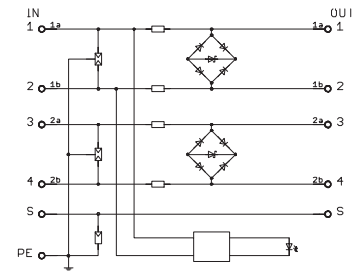
Application: DSL systems, IP connections, ISDN or analogue telecommunications



Dimensions



Connection options



TD-4/I-TAE-F

Maximum continuous voltage AC	U_c	120 V
Maximum continuous voltage DC	U_c	170 V
Category	Type	1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		4
Rated current	I_n	0.2 A
Capacity (wire-wire)		<50 pF
Capacity (wire-earth)		<10 pF
Series resistance per wire		$9 \Omega \pm 10 \%$
Impulse durability wire-wire		C2: 18 kV / 9 kA (8/20 μ s)
Impulse durability wire-earth		C2: 18 kV / 9 kA (8/20 μ s)
Impulse discharge current (10/350)	I_{imp}	2.5 kA
Total discharge current (8/20)		25 kA
Total discharge current (10/350)		D1: 12,5 kA
Protection level wire-wire		<300 V
Protection level wire-earth		<650 V
Protection level shield-earth (S-PE)		850 V
Frequency range		0 - 100 MHz
Insertion loss	S_{21}	≤ 3 dB
Temperature range	ϑ	-40 - +80 °C
Installation type		Surface-mounted
Connection system		Terminal
Protection rating		IP20
Shielding connection available		Yes
Connection cross-section, flexible		0.14 - 0.75 mm ²
Connection cross-section, multi-wire		0.14 - 0.75 mm ²
Connection cross-section rigid		0.14 - 0.75 mm ²
Testing standard		IEC 61643-21

Combination protection device TD-2/D-HS for ISDN and DSL systems



Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
TD-2/D-HS	120	170	2	Terminal	1	4.800	5081694

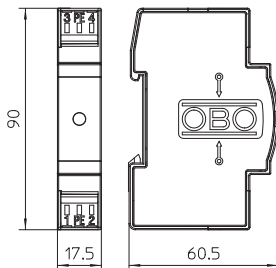
Plastic

Data cable protection devices for telecommunication systems

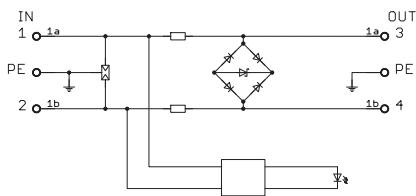
- Low protection level at high current load
- Screwless terminals or connectable
- Bandwidth-optimised for secure transmission
- Quick mounting onto DIN rail for a telephone line
- Visual function display

Application: DSL systems, ISDN or analogue telecommunication

Dimensions



Connection options



TD-2/D-HS

Maximum continuous voltage AC	U_c	120 V
Maximum continuous voltage DC	U_c	170 V
Category		Type 1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		2
Rated current	I_n	0.2 A
Capacity (wire-wire)		<50 pF
Capacity (wire-earth)		<50 pF
Series resistance per wire		$9 \Omega \pm 10 \%$
Impulse durability wire-wire		C2: 18 kV / 9 kA (8/20 μ s)
Impulse durability wire-earth		C2: 18 kV / 9 kA (8/20 μ s)
Impulse discharge current (10/350) I_{imp}		2.5 kA
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		D1: 5 kA kA
Protection level wire-wire		<300 V
Protection level wire-earth		<650 V
Protection level shield-earth (S-PE)		- V
Frequency range		0 - 75 MHz
Insertion loss	S_{21}	≤ 3 dB
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail 35 mm
Connection system		Terminal
Protection rating		IP20
Shielding connection available		No
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Testing standard		IEC 61643-21



Surge protection devices for telecommunications applications: The plus of the fine protection devices RJ11-Tele and RJ45 Tele

- + Simple installation
- + Low protection level
- + High arresting capability
- + High bandwidth
- + Wide range of uses



Combination and fine protection device for analogue cables

Function and applications

The data cable protection devices for telecommunications applications are available as combination protection and fine protection.

Depending on the application, from DSL through to analogue

communication, the devices are used for direct intermediate switching into the data cable, meaning that they can easily be retrofitted in existing installations.

The devices differ in their connection technology and transmission

cable and are thus optimised for their appropriate applications, in order to cause the lowest attenuation level possible.

Combination protection device TELE 4-C for ISDN RJ11



Type	Version	Connection system	Pack. pcs	Weight kg/100 pcs	Item No.
RJ11-TELE 4-C	Combi protection, 4 wires	RJ11	1	14.000	5081975

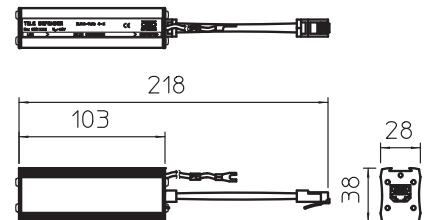
Data line protection device for analogue telecommunications systems

- In aluminium housing
- With 2-stage protection circuit
- Simple mounting
- Incl. 150 mm connection cable with RJ11 and/or RJ45 connectors
- Optimised bandwidth for TC systems
- DIN rail mounting with DLS-BS accessories (5082 38 2)

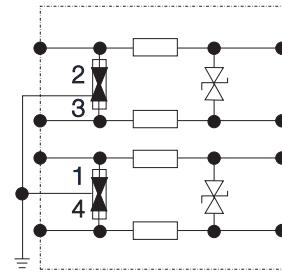
Application: For analogue telecommunication systems



Dimensions



Connection options



RJ11-TELE 4-C

Maximum continuous voltage AC	U_c	120 V
Maximum continuous voltage DC	U_c	170 V
Category		Type 1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		4
Series resistance per wire		$8,2 \Omega \pm 10 \%$
Total discharge current (8/20)		4 kA
Total discharge current (10/350)		1,5 kA
Protection level wire-wire		<300 V
Protection level wire-earth		<600 V
Protection level, wire-earth at 1 kV/ μ s (C3)	U_p	<245 V
Frequency range		0 - 12 MHz
Insertion loss	$S_{p,1}$	≤ 3 dB
Temperature range	ϑ	-40 - +80 °C
Installation type		Connector/cable adapter
Connection system		RJ11
Protection rating		IP40
Earthing via:		Connection cable
Testing standard		IEC 61643-21

Fine protection device TELE 4-F for ISDN RJ11



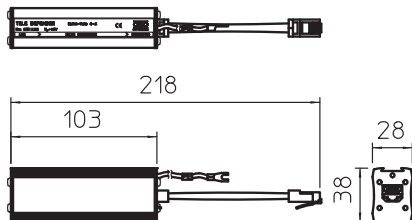
Type	Version	Connection system	Pack. pcs	Weight kg/100 pcs	Item No.
RJ11-TELE 4-F	Fine protection, 4 wires	RJ11	1	14.000	5081977

Data line protection device for analogue telecommunications systems

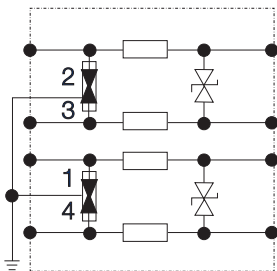
- In aluminium housing
- With 2-stage protection circuit
- Simple mounting
- Incl. 150 mm connection cable with RJ11 and/or RJ45 connectors
- Optimised bandwidth for TC systems
- DIN rail mounting with DLS-BS accessories (5082 38 2)

Application: For analogue telecommunication systems

Dimensions



Connection options



RJ11-TELE 4-F

Maximum continuous voltage AC	U_c	120 V
Maximum continuous voltage DC	U_c	170 V
Category		Type 2+3 / C2+C1
Lightning protection zone LPZ		1→3
Number of poles		4
Series resistance per wire		$2,2 \Omega \pm 10 \%$
Total discharge current (8/20)		4 kA
Total discharge current (10/350)		— kA
Protection level wire-wire		<300 V
Protection level wire-earth		<600 V
Protection level, wire-earth at $1 \text{ kV}/\mu\text{s}$ (C3)	U_p	<245 V
Frequency range		0 - 18 MHz
Insertion loss	$S_{>1}$	$\leq 3 \text{ dB}$
Temperature range	ϑ	-40 - +80 °C
Installation type		Connector/cable adapter
Connection system		RJ11
Protection rating		IP40
Earthing via:		Connection cable
Testing standard		IEC 61643-21

Combination protection device TELE 4-C for ISDN RJ45



Type	Version	Connection system	Pack. pcs	Weight kg/100 pcs	Item No.
RJ45-TELE 4-C	Combi protection, 4 wires	RJ45	1	14.000	5081982

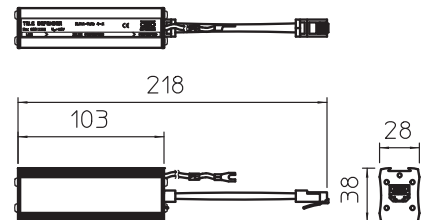
Data line protection device for analogue telecommunications systems

- In aluminium housing
- With 2-stage protection circuit
- Simple mounting
- Incl. 150 mm connection cable with RJ11 and/or RJ45 connectors
- Optimised bandwidth for TC systems
- DIN rail mounting with DLS-BS accessories (5082 38 2)

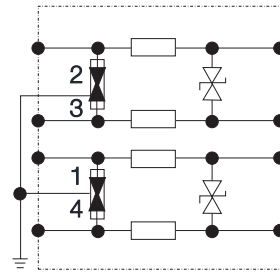
Application: For analogue telecommunication systems



Dimensions



Connection options



RJ45-TELE 4-C

Maximum continuous voltage AC	U_c	120 V
Maximum continuous voltage DC	U_c	170 V
Category		Type 1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		4
Series resistance per wire		$8,2 \Omega \pm 10 \%$
Total discharge current (8/20)		4 kA
Total discharge current (10/350)		1,5 kA
Protection level wire-wire		<300 V
Protection level wire-earth		<600 V
Protection level, wire-earth at $1 \text{ kV}/\mu\text{s}$ (C3)	U_p	<245 V
Frequency range		0 - 12 MHz
Insertion loss	$S_{p,1}$	$\leq 3 \text{ dB}$
Temperature range	ϑ	-40 - +80 °C
Installation type		Connector/cable adapter
Connection system		RJ45
Protection rating		IP40
Earthing via:		Connection cable
Testing standard		IEC 61643-21

Fine protection device TELE 4-F for ISDN RJ45



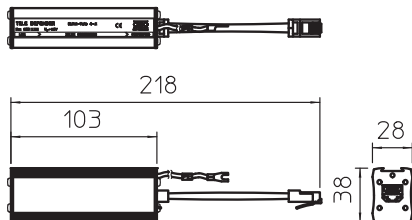
Type	Version	Connection system	Pack. pcs	Weight kg/100 pcs	Item No.
RJ45-TELE 4-F	Fine protection, 4 wires	RJ45	1	14.000	5081984

Data line protection device for analogue telecommunications systems

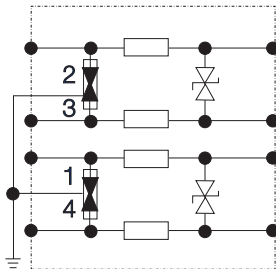
- In aluminium housing
- With 2-stage protection circuit
- Simple mounting
- Incl. 150 mm connection cable with RJ11 and/or RJ45 connectors
- Optimised bandwidth for TC systems
- DIN rail mounting with DLS-BS accessories (5082 38 2)

Application: For analogue telecommunication systems

Dimensions



Connection options



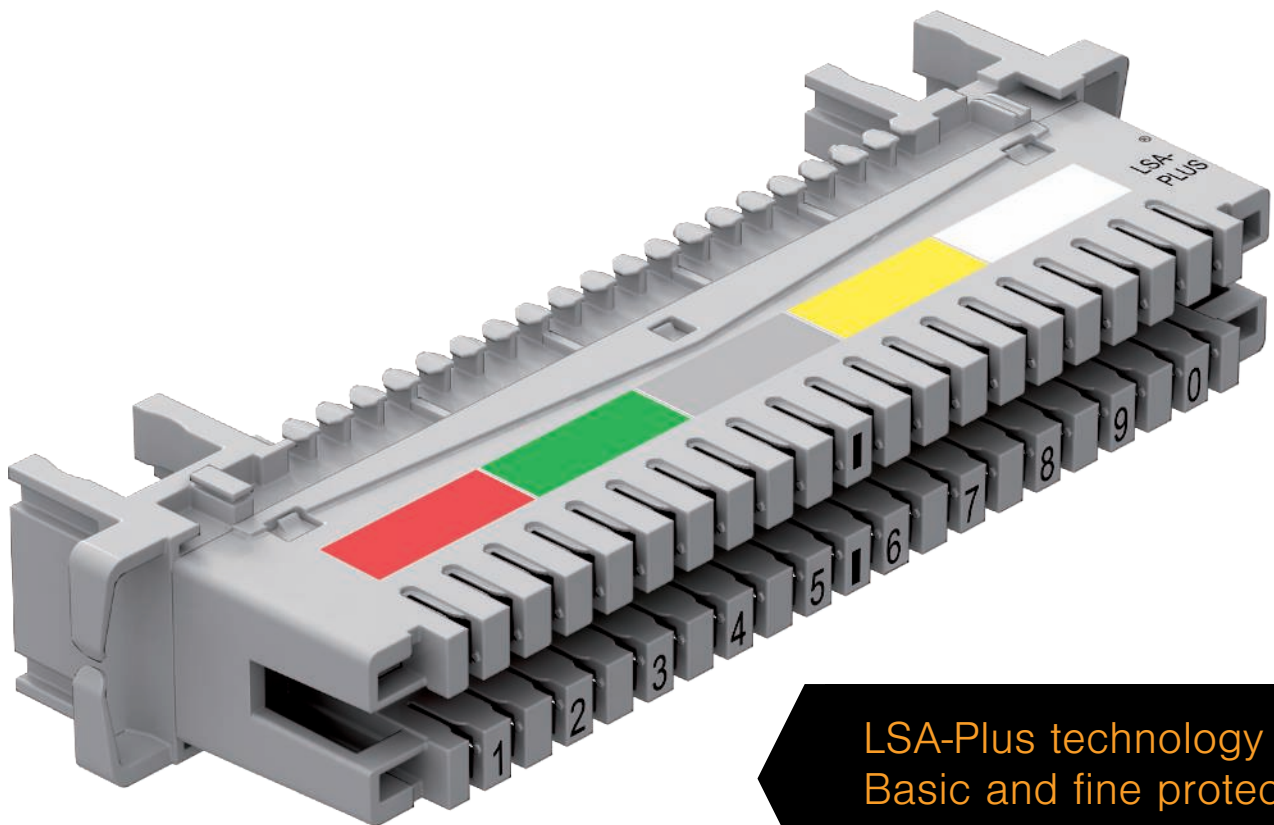
RJ45-TELE 4-F

Maximum continuous voltage AC	U_c	120 V
Maximum continuous voltage DC	U_c	170 V
Category		Type 2+3 / C2+C1
Lightning protection zone LPZ		1→3
Number of poles		4
Series resistance per wire		$2,2 \Omega \pm 10 \%$
Total discharge current (8/20)		4 kA
Total discharge current (10/350)		— kA
Protection level wire-wire		<300 V
Protection level wire-earth		<600 V
Protection level, wire-earth at $1 \text{ kV}/\mu\text{s}$ (C3)	U_p	<245 V
Frequency range		0 - 18 MHz
Insertion loss	S_{p1}	$\leq 3 \text{ dB}$
Temperature range	ϑ	-40 - +80 °C
Installation type		Connector/cable adapter
Connection system		RJ45
Protection rating		IP40
Earthing via:		Connection cable
Testing standard		IEC 61643-21



Surge protection devices for industrial telecommunications applications

- Simple installation
- Protection up to ten two-core wires
- Low protection level
- High arresting capacity
- High broadband in basic protection
- Wide range of uses



LSA-Plus technology
Basic and fine protection

In particular with multi-wire cable systems, such as telecommunications distribution systems, the LSA surge voltage components offer rapid, adequate protection. The

LSA system offers both basic protection modules and fine protection modules to protect up to ten two-core wires per connection strip. These are split up into separ-

ating and connection strips and must be selected according to the application.

LSA basic protection magazine

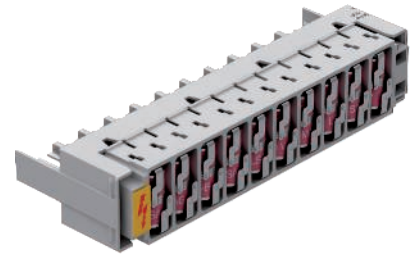


Type	Installation type	Number of poles	Weight		Item No.
			Pack. pcs	kg/100 pcs	
LSA-B-MAG	LSA-Plus, connectable	20	1	8.600	5084020

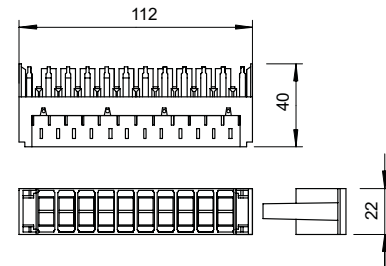
LSA-B-MAG: LSA basic protection magazine for use in multi-core data cable systems, MCR systems and telephone switchboards.

- Basic protection
- Equipped with 20 gas charge tubes
- Max. voltage: 180 V

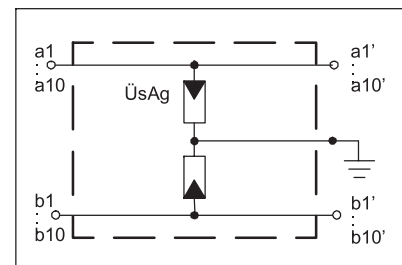
Application: Directly on LSA-Plus separating strips or connection strips (e.g. OBO LSA-A-LEI (5084 00 8) or OBO LSA-T-LEI (5084 01 2)).



Dimensions



Connection options



LSA-B-MAG

Maximum continuous voltage AC U_c	120 V
Maximum continuous voltage DC U_c	180 V
Category	Type 1+2 / D1+C2
Lightning protection zone LPZ	0→2
Number of poles	20
Rated current I_n	1 A
Impulse durability wire-wire	C2: 10 kV / 5 kA (8/20 μ s)
Impulse durability wire-earth	C2: 10 kV / 5 kA (8/20 μ s)
Total discharge current (8/20)	10 kA
Total discharge current (10/350)	1 kA
Protection level @ C1	<750 V
Temperature range ϑ	-40 - +80 °C
Installation type	LSA-Plus, connectable
Connection system	Other
Protection rating	IP20
Testing standard	IEC 61643-21

Combination protection device LSA BF 180



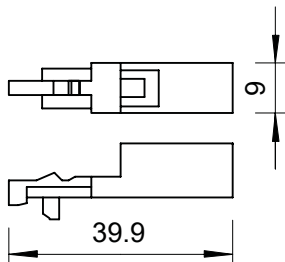
Type	Installation type	Number of poles	Pack. pcs	Weight kg/100 pcs	Item No.
LSA-BF-180	LSA-Plus, connectable	2	1	0.500	5084024

LSA-BF 24: LSA basic and fine protection, for application in MCR systems

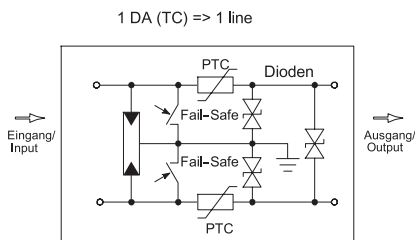
- Basic and fine protection
- Rough protection using fail-safe technology.
- With PTC protection components against overcurrent.
- Max. voltage: 24 V

Application: Directly on LSA-Plus barrier strip or connection rails with earthing rail (e.g. OBO LSA-A-LEI (5084 00 8) or OBO LSA-T-LEI (5084 01 2), and OBO LSA-E (5084 03 2))

Dimensions



Connection options



LSA-BF-180

Maximum continuous voltage AC	U_c	120 V
Maximum continuous voltage DC	U_c	180 V
Category		Type 1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0-3
Number of poles		2
Rated current	I_n	0.12 A
Impulse durability wire-wire		C2: 5 kV / 2,5 kA (8/20 μ s)
Impulse durability wire-earth		C2: 5 kV / 2,5 kA (8/20 μ s)
Total discharge current (8/20)		5 kA
Total discharge current (10/350)		0,5 kA
Protection level wire-wire		<300 V
Protection level wire-earth		<300 V
Temperature range	ϑ	-40 - +80 °C
Installation type		LSA-Plus, connectable
Connection system		Other
Protection rating		IP20
Testing standard		IEC 61643-21

Combination protection device LSA BF 24



Type	Installation type	Number of poles	Pack.		Weight	Item No.
			pcs	kg/100 pcs		
LSA-BF-24	LSA-Plus, connectable	2	1	0,500		5084028

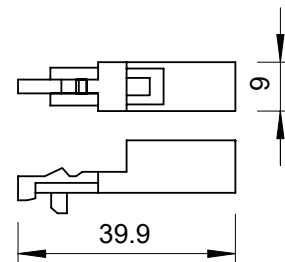
LSA-BF 24: LSA basic and fine protection, for application in MCR systems

- Basic and fine protection
- Rough protection using fail-safe technology.
- With PTC protection components against overcurrent.
- Max. voltage: 24 V

Application: Directly on LSA-Plus barrier strip or connection rails with earthing rail (e.g. OBO LSA-A-LEI (5084 00 8) or OBO LSA-T-LEI (5084 01 2), and OBO LSA-E (5084 03 2))

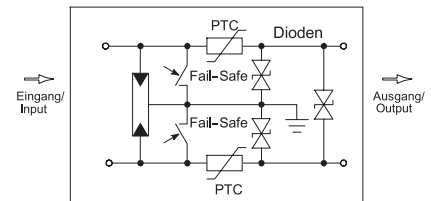


Dimensions



Connection options

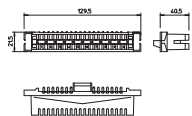
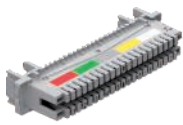
1 DA (TC) => 1 line



LSA-BF-24

Maximum continuous voltage AC U_c	15 V
Maximum continuous voltage DC U_c	24 V
Category	Type 1+2+3 / D1+C2+C1
Lightning protection zone LPZ	0-3
Number of poles	2
Rated current I_n	0,12 A
Impulse durability wire-wire	C2: 5 kV / 2,5 kA (8/20 μ s)
Impulse durability wire-earth	C2: 5 kV / 2,5 kA (8/20 μ s)
Total discharge current (8/20)	5 kA
Total discharge current (10/350)	0,5 kA
Protection level wire-wire	<70 V
Protection level wire-earth	<70 V
Temperature range ϑ	-40 - +80 °C
Installation type	LSA-Plus, connectable
Connection system	Other
Protection rating	IP20
Testing standard	IEC 61643-21

LSA connection strip



Colour

Type

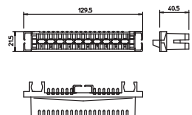
LSA-A-LEI | Grey

Pack.	Weight		Item No.
	kg/100 pcs	pcs.	
1	5.100	5084008	

LSA-A-LEI: LSA attaching strip 2/10 for attaching ten double-cores.

- For use with protection element LSA-B-MAG
- Fastening to mounting trough LSA-M
- Colour: grey
- Clampable cross-sections 0.14-0.5 (AWG 26 to 20)

LSA separating strip



Colour

Type

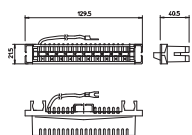
LSA-T-LEI | White

Pack.	Weight		Item No.
	kg/100 pcs	pcs.	
1	5.400	5084012	

LSA-T-LEI: LSA separating strip 2/10 for attaching up to ten double-cores.

- For use with protection element LSA-BF-180, LSA-BF-24, LSA-B-MAG
- Fastening to mounting trough LSA-M
- Colour: white
- Clampable cross-sections 0.14-0.5 (AWG 26 to 20)

LSA earthing strip



Colour

Type

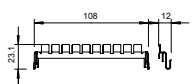
LSA-E-LEI | Red

Pack.	Weight		Item No.
	kg/100 pcs	pcs.	
1	6.500	5084016	

LSA-E-LEI: LSA earthing strip, 40-pin for attaching earth lines or screens to the earth connection.

- Complete with connection line, green-yellow, 1.5 mm²
- Colour: red

LSA earthing rail



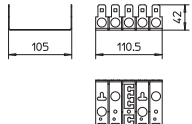
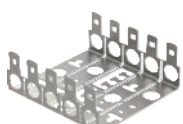
Type

LSA-E

Pack.	Weight		Item No.
	kg/100 pcs	pcs.	
1	1.000	5084032	

LSA-E: Earth rail as earth connection between overvoltage protectors LFS-BF... (1 DA) and distributor connector LSA-...-LEI.

LSA installation trough



Type

LSA-M

Pack.	Weight		Item No.
	kg/100 pcs	pcs.	
1	7.800	5084036	

SI Steel

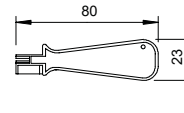
LSA-M: Installation trough for 5 connection or separating strips. Grid 22.5 mm. Depth: 22 mm; 30 mm; 50 mm

LSA simple tool



Type	Pack. pcs	Weight kg/100 pcs	Item No.
LSA-TOOL	1	0.600	5084040

LSA-TOOL: Simple tool for soldering, bolting and stripping-free connection of cores, without cutter.



LSA protective housing



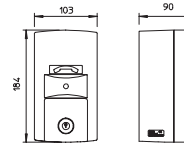
Colour

Type	Colour	Pack. pcs	Weight kg/100 pcs	Item No.
LSA-G	Light grey	1	57.500	5084048

PA Polyamide

Protective housing for a LSA 10 DA bar

- Protective housing for 10 wire pairs
- Housing can be locked
- Incl. key
- 4x cable fixing
- Light grey



Surge protection for high frequency applications: the plus of the DS family

- Coaxial protection devices
- Optimum protection for sensitive systems
- Low insertion attenuation and low return loss at different wave resistances
- High bandwidth



Coaxial protection devices for S-UHF, BNC, N, TNC, F and SMA connection

The coaxial protection devices of type DS offer optimum protection of sensitive systems, based on coaxial plug connections. The low insertion attenuation and low return attenuation at different wave

resistances offer ideal protection for any application. In accordance with their structure, the protection devices are switched into the application in series, and are connected to the local equipotential bond-

ing. The direct shield earthing avoids reducing of the shield performance.

Coaxial protection devices for S-UHF connection: male/female



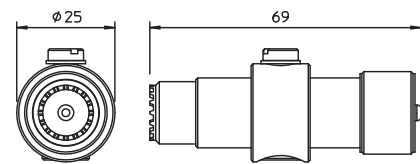
Type	Con- nection system	Frequency range	Pack. pcs	Weight		Item No.
				kg/100 pcs.	pcs.	
S-UHF M/W	UHF	0 - 1,3 GHz	1	7.000		5093023

Coaxial data cable protection devices

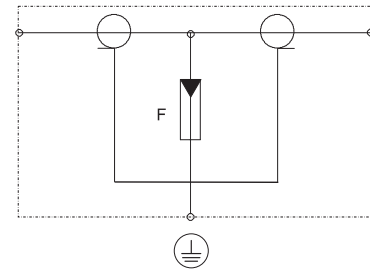
- Basic protection
- High pulsed current carrying capacity 2 x 2.5 kA (10/350 μ s)
- Simple installation (adapter plug), m = male/f = female connector
- Various plug combinations
- With UHF connector
- Optimised transmission behaviour
- Including OBO M25 Quick clip for simple installation



Dimensions



Connection options



S-UHF M/W

Maximum continuous voltage AC	U_c	130 V
Maximum continuous voltage DC	U_c	185 V
Category	Type	1+2 / D1+C2
Lightning protection zone LPZ		0→2
Number of poles		1
Rated current	I_n	10 A
Wave resistance	Z_L	50 Ω
Impulse durability wire-wire		C2: 10 kV / 5 kA (8/20 μ s)
Impulse durability wire-earth		C2: 10 kV / 5 kA (8/20 μ s)
Impulse discharge current (10/350)	I_{imp}	2.5 kA
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		5 kA
Protection level		<800 V
Frequency range		0 - 1,3 GHz
Insertion loss	S_{21}	$\leq 0,2$ dB
Return loss	S_{11}	≥ 14 dB
Temperature range	ϑ	-40 - +80 °C
Installation type		Connector/cable adapter
Connection system		UHF
Protection rating		IP40
Shielding connection available		Yes
Shield connection		Direct
Testing standard		IEC 61643-21

Coaxial protection devices for S-UHF connection: female/female

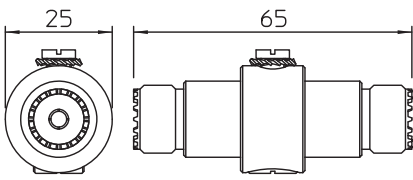


Type	Con- nection system	Frequency range	Weight		Item No.
			Pack. pcs	kg/100 pcs.	
S-UHF W/W	UHF	0 - 1,3 GHz	1	7.000	5093015

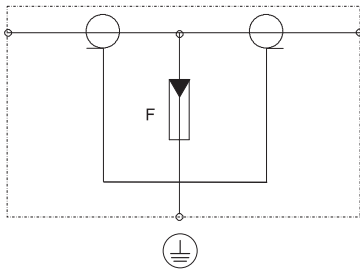
Coaxial data cable protection devices

- Basic protection
- High pulsed current carrying capacity 2 x 2.5 kA (10/350 μs)
- Simple installation (adapter plug), m = male/f = female connector
- Various plug combinations
- With UHF connector
- Optimised transmission behaviour
- Including OBO M25 Quick clip for simple installation

Dimensions



Connection options



S-UHF W/W

Maximum continuous voltage AC	U_c	130 V
Maximum continuous voltage DC	U_c	185 V
Category		Type 1+2 / D1+C2
Lightning protection zone LPZ		0→2
Number of poles		1
Rated current	I_n	10 A
Wave resistance	Z_L	50 Ω
Impulse durability wire-wire		C2: 10 kV / 5 kA (8/20μs)
Impulse durability wire-earth		C2: 10 kV / 5 kA (8/20μs)
Impulse discharge current (10/350)	I_{imp}	2.5 kA
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		5 kA
Protection level		<800 V
Frequency range		0 - 1,3 GHz
Insertion loss	S_{21}	≤0,2 dB
Return loss	S_{11}	≥14 dB
Temperature range	ϑ	-40 - +80 °C
Installation type		Connector/cable adapter
Connection system		UHF
Protection rating		IP40
Shielding connection available		Yes
Shield connection		Direct
Testing standard		IEC 61643-21



Coaxial protection device for BNC connection: male/female



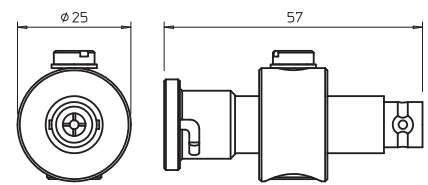
Type	Conne- tion system	Frequency range	Pack. pcs	Weight		Item No.
				kg/100 pcs	pcs	
DS-BNC M/W	BNC	0 - 2,2 GHz	1	6.500	5093252	

Coaxial data cable protection devices

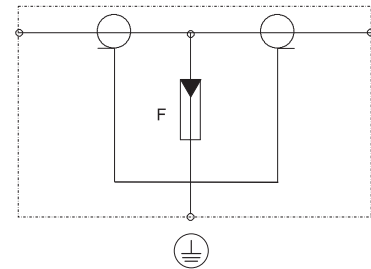
- Basic protection
- High pulsed current carrying capacity 2 x 2.5 kA (10/350 μ s)
- Simple installation (adapter plug), m = plug/f = female connector
- Various plug combinations
- With BNC connector
- Optimised transmission behaviour
- Including OBO M25 Quick clip for simple installation



Dimensions



Connection options



DS-BNC M/W

Maximum continuous voltage AC	U_c	130 V
Maximum continuous voltage DC	U_c	185 V
Category	Type	1+2 / D1+C2
Lightning protection zone LPZ		0-2
Number of poles		1
Rated current	I_n	10 A
Wave resistance	Z_L	50 Ω
Impulse durability wire-wire		C2: 10 kV / 5 kA (8/20 μ s)
Impulse durability wire-earth		C2: 10 kV / 5 kA (8/20 μ s)
Impulse discharge current (10/350)	I_{imp}	2.5 kA
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		5 kA
Protection level		<800 V
Frequency range		0 - 2,2 GHz
Insertion loss	S_{21}	$\leq 0,95$ dB
Return loss	S_{11}	≥ 14 dB
Temperature range	ϑ	-40 - +80 °C
Installation type		Connector/cable adapter
Connection system		BNC
Protection rating		IP40
Shielding connection available		Yes
Shield connection		Direct
Testing standard		IEC 61643-21

Coaxial protection device for BNC connection: female/female

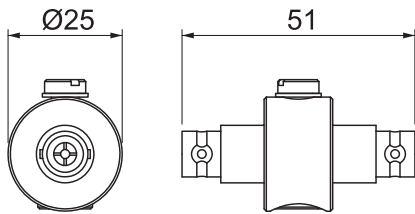


Type	Conne- tion system	Frequency range	Pack. pcs	Weight kg/100 pcs	Item No.
DS-BNC W/W	BNC	0 - 2,2 GHz	1	6.000	5093236

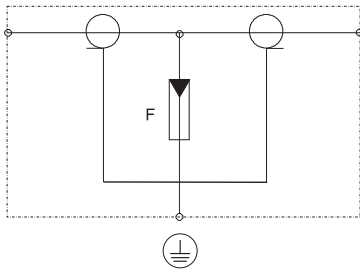
Coaxial data cable protection devices

- Basic protection
- High pulsed current carrying capacity 2 x 2.5 kA (10/350 μs)
- Simple installation (adapter plug), m = plug/f = female connector
- Various plug combinations
- With BNC connector
- Optimised transmission behaviour
- Including OBO M25 Quick clip for simple installation

Dimensions



Connection options



DS-BNC W/W

Maximum continuous voltage AC	U_c	130 V
Maximum continuous voltage DC	U_c	185 V
Category		Type 1+2 / D1+C2
Lightning protection zone LPZ		0→2
Number of poles		1
Rated current	I_n	10 A
Wave resistance	Z_L	50 Ω
Impulse durability wire-wire		C2: 10 kV / 5 kA (8/20μs)
Impulse durability wire-earth		C2: 10 kV / 5 kA (8/20μs)
Impulse discharge current (10/350)	I_{imp}	2.5 kA
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		5 kA
Protection level		<800 V
Frequency range		0 - 2,2 GHz
Insertion loss	$S_{2,1}$	≤0,95 dB
Return loss	$S_{1,1}$	≥14 dB
Temperature range	θ	-40 - +80 °C
Installation type		Connector/cable adapter
Connection system		BNC
Protection rating		IP40
Shielding connection available		Yes
Shield connection		Direct
Testing standard		IEC 61643-21



Coaxial protection device for BNC connection: male/male



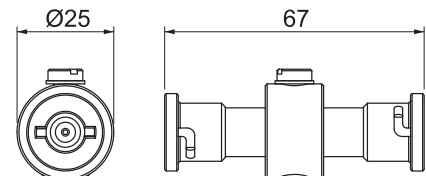
Type	Connection system	Frequency range	Pack. pcs	Weight kg/100 pcs	Item No.
DS-BNC M/M	BNC	0 - 2,2 GHz	1	7.000	5093260

Coaxial data cable protection devices

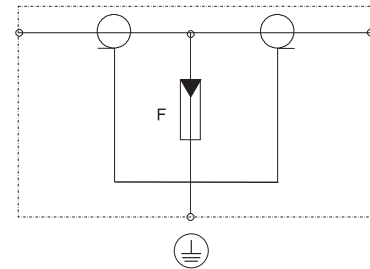
- Basic protection
- High pulsed current carrying capacity 2 x 2.5 kA (10/350 μs)
- Simple installation (adapter plug), m = plug/f = female connector
- Various plug combinations
- With BNC connector
- Optimised transmission behaviour
- Including OBO M25 Quick clip for simple installation



Dimensions



Connection options



DS-BNC M/M

Maximum continuous voltage AC	U_c	130 V
Maximum continuous voltage DC	U_c	185 V
Category	Type	1+2 / D1+C2
Lightning protection zone LPZ		0→2
Number of poles		1
Rated current	I_n	10 A
Wave resistance	Z_L	50 Ω
Impulse durability wire-wire		C2: 10 kV / 5 kA (8/20μs)
Impulse durability wire-earth		C2: 10 kV / 5 kA (8/20μs)
Impulse discharge current (10/350)	I_{imp}	2.5 kA
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		5 kA
Protection level		<800 V
Frequency range		0 - 2,2 GHz
Insertion loss	S_{21}	≤0,95 dB
Return loss	S_{11}	≥14 dB
Temperature range	ϑ	-40 - +80 °C
Installation type		Connector/cable adapter
Connection system		BNC
Protection rating		IP40
Shielding connection available		Yes
Shield connection		Direct
Testing standard		IEC 61643-21

Coaxial protection device for N connection: male/female

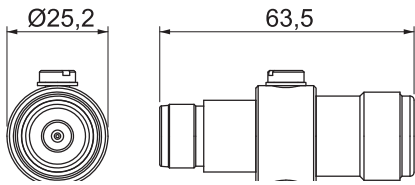


Type	Connection system	Frequency range	Pack. pcs	Weight kg/100 pcs	Item No.
DS-N M/W	N	0 - 3 GHz	1	12.200	5093996

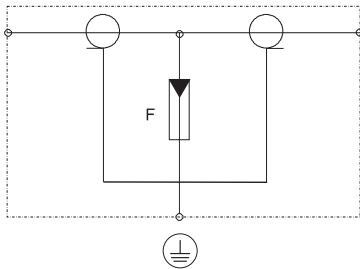
Coaxial data cable protection devices

- High pulsed current carrying capacity 2 x 2.5 kA (10/350)
- Simple mounting (adapter plug), m = plug/f = female connector
- Optimised transmission behaviour
- 5-year guarantee
- With N connector
- Including OBO M25 Quick clip for simple installation

Dimensions



Connection options



DS-N M/W

Maximum continuous voltage AC	U_c	130 V
Maximum continuous voltage DC	U_c	185 V
Category		Type 1+2 / D1+C2
Lightning protection zone LPZ		0-2
Number of poles		1
Rated current	I_n	10 A
Wave resistance	Z_L	50 Ω
Impulse durability wire-wire		C2: 10 kV / 5 kA (8/20 μ s)
Impulse durability wire-earth		C2: 10 kV / 5 kA (8/20 μ s)
Impulse discharge current (10/350)	I_{imp}	2.5 kA
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		5 kA
Protection level		<800 V
Frequency range		0 - 3 GHz
Insertion loss	S_{21}	$\leq 0,62$ dB
Return loss	S_{11}	≥ 14 dB
Temperature range	θ	-40 - +80 °C
Installation type		Connector/cable adapter
Connection system		N
Protection rating		IP40
Shielding connection available		Yes
Shield connection		Direct
Testing standard		IEC 61643-21

Coaxial protection device for N connection: female/female



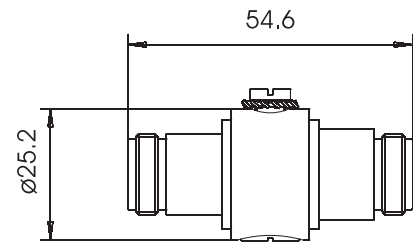
Type	Con- nection system	Frequency range	Pack.		Weight kg/100 pcs	Item No.
			pcs	pcs.		
DS-N W/W	N	0 - 3 GHz	1	11.500		5093988

Coaxial data cable protection devices

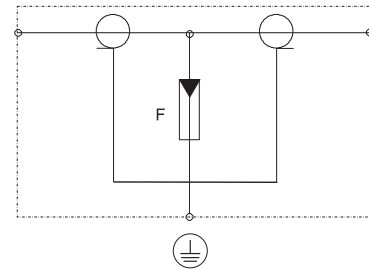
- High pulsed current carrying capacity 2 x 2.5 kA (10/350)
- Simple mounting (adapter plug), m = plug/f = female connector
- Optimised transmission behaviour
- 5-year guarantee
- With N connector
- Including OBO M25 Quick clip for simple installation



Dimensions



Connection options



DS-N W/W

Maximum continuous voltage AC	U_c	130 V
Maximum continuous voltage DC	U_c	185 V
Category		Type 1+2 / D1+C2
Lightning protection zone LPZ		0→2
Number of poles		1
Rated current	I_n	10 A
Wave resistance	Z_L	50 Ω
Impulse durability wire-wire		C2: 10 kV / 5 kA (8/20 μ s)
Impulse durability wire-earth		C2: 10 kV / 5 kA (8/20 μ s)
Impulse discharge current (10/350)	I_{imp}	2.5 kA
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		5 kA
Protection level		<800 V
Frequency range		0 - 3 GHz
Insertion loss	S_{21}	$\leq 0,62$ dB
Return loss	S_{11}	≥ 14 dB
Temperature range	ϑ	-40 - +80 °C
Installation type		Connector/cable adapter
Connection system		N
Protection rating		IP40
Shielding connection available		Yes
Shield connection		Direct
Testing standard		IEC 61643-21

Coaxial protection device for N connection up to 6 GHz: Male/female

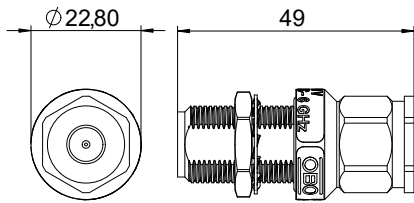


Type	Conne- ction system	Frequency range	Weight		Item No.
			Pack. pcs	kg/100 pcs.	
DS-N-6 M/W	N	0 - 6 GHz	1	7.830	5093998

Coaxial data cable protection devices for transmission and reception technology

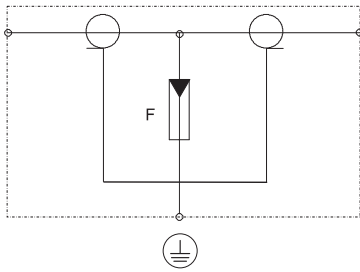
- With N-Connector, male/female
- High impulse current load capacity: 2.5 kA (10/350)
- Simple mounting (adapter), m = connector, w = socket
- Low protection level at high current loads
- Optimum transmission behaviour:
 - Low reflection behaviour
 - Bandwidth-optimised for secure transmission up to 6 GHz
- Available in 50 Ω technology

Dimensions



Application: For example: SAT-TV C band, WiMAX, WLAN applications, DVB-T2

Connection options



DS-N-6 M/W

Maximum continuous voltage AC	U_c	50 V
Maximum continuous voltage DC	U_c	70 V
Category		Type 1+2 / D1+C2
Lightning protection zone LPZ		0-2
Number of poles		1
Rated current	I_n	10 A
Wave resistance	Z_L	50 Ω
Impulse durability wire-wire		C2: 10 kV / 5 kA (8/20μs)
Impulse durability wire-earth		C2: 10 kV / 5 kA (8/20μs)
Impulse discharge current (10/350)	I_{imp}	2.5 kA
Protection level		<750 V
Frequency range		0 - 6 GHz
Insertion loss	S_{21}	≤0,1 dB
Return loss	S_{11}	≥22 dB
Temperature range	θ	-40 - +80 °C
Installation type		Connector/cable adapter
Connection system		N
Protection rating		IP65/67
Shielding connection available		Yes
Shield connection		Direct
Testing standard		IEC 61643-21

Coaxial protection device for TNC connection: male/female



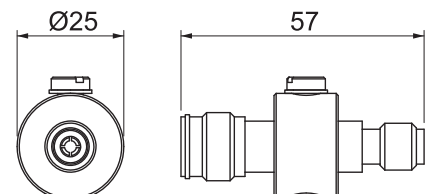
Type	Conne- tion system	Frequency range	Pack. pcs	Weight		Item No.
				kg/100 pcs	pcs	
DS-TNC M/W	TNC	0 - 4 GHz	1	9.000		5093270

Coaxial data cable protection devices

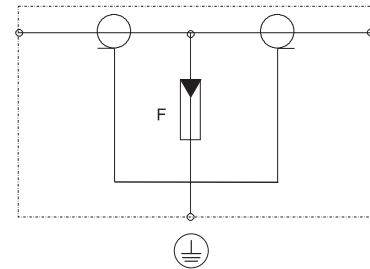
- Basic protection
- High pulsed current carrying capacity 2 x 2.5 kA (10/350 μ s)
- Simple installation (adapter plug), m = plug/f = female connector
- Various plug combinations
- With TNC connector
- Optimised transmission behaviour
- Including OBO M25 Quick clip for simple installation



Dimensions



Connection options



DS-TNC M/W

Maximum continuous voltage AC	U_c	130 V
Maximum continuous voltage DC	U_c	185 V
Category	Type	1+2 / D1+C2
Lightning protection zone LPZ		0→2
Number of poles		1
Rated current	I_n	10 A
Wave resistance	Z_L	50 Ω
Impulse durability wire-wire		C2: 10 kV / 5 kA (8/20 μ s)
Impulse durability wire-earth		C2: 10 kV / 5 kA (8/20 μ s)
Impulse discharge current (10/350)	I_{imp}	2.5 kA
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		5 kA
Protection level		<800 V
Frequency range		0 - 4 GHz
Insertion loss	S_{21}	$\leq 0,5$ dB
Return loss	S_{11}	≥ 14 dB
Temperature range	ϑ	-40 - +80 °C
Installation type		Connector/cable adapter
Connection system		TNC
Protection rating		IP40
Shielding connection available		Yes
Shield connection		Direct
Testing standard		IEC 61643-21

Coaxial protection device for 7/16 connection: male/female



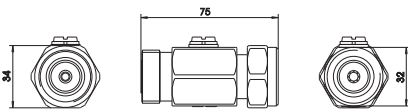
Type	Connection system	Frequency range	Pack. pcs	Weight kg/100 pcs	Item No.
DS-7 16 M/W	7/16	0 - 3 GHz	1	35.500	5093171

Coaxial data protection device

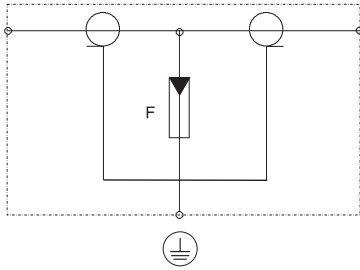
- Basic protection
- Simple mounting (adapter)
- Optimum transmission
- High pulse load capacity
- With 7/16 connector

Application: to protect mobile telephony applications.

Dimensions



Connection options



DS-7 16 M/W

Maximum continuous voltage AC	U_c	130 V
Maximum continuous voltage DC	U_c	185 V
Category		Type 1+2 / D1+C2
Lightning protection zone LPZ		0→2
Number of poles		1
Rated current	I_n	10 A
Wave resistance	Z_L	50 Ω
Impulse durability wire-wire		C2: 10 kV / 5 kA (8/20 μ s)
Impulse durability wire-earth		C2: 10 kV / 5 kA (8/20 μ s)
Impulse discharge current (10/350)	I_{imp}	2.5 kA
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		5 kA
Protection level		<800 V
Frequency range		0 - 3 GHz
Insertion loss	S_{21}	$\leq 0,95$ dB
Return loss	S_{11}	≥ 14 dB
Temperature range	θ	-40 - +80 °C
Installation type		Connector/cable adapter
Connection system		7/16
Protection rating		IP40
Shielding connection available		Yes
Shield connection		Direct
Testing standard		IEC 61643-21



Coaxial protection device for F connection: male/female



Type	Conne- tion system	Frequency range	Pack. pcs	Weight		Item No.
				kg/100 pcs.		
DS-F M/W	F	0 - 3,4 GHz	1	9.000		5093275

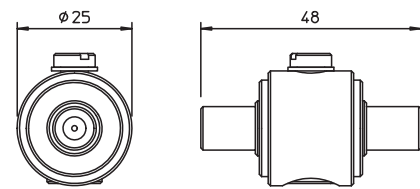
Coaxial data cable protection devices

- Basic protection
- High pulsed current carrying capacity 2 x 2.5 kA (10/350 µs)
- Simple installation (adapter plug), m = plug/f = female connector
- Various plug combinations
- With F connector
- Optimised transmission behaviour
- Including OBO M25 Quick clip for simple installation

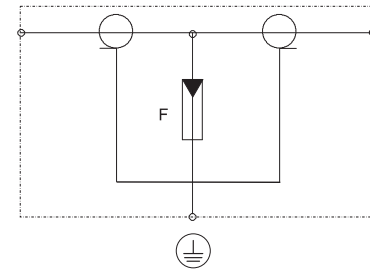
Application: Protection of TV and SAT systems, multi-switches, receivers and DVB-T(2)



Dimensions



Connection options



DS-F M/W

Maximum continuous voltage AC	U_c	130 V
Maximum continuous voltage DC	U_c	185 V
Category	Type	1+2 / D1+C2
Lightning protection zone LPZ		0-2
Number of poles		1
Rated current	I_n	5 A
Wave resistance	Z_L	75 Ω
Impulse durability wire-wire		C2: 10 kV / 5 kA (8/20µs)
Impulse durability wire-earth		C2: 10 kV / 5 kA (8/20µs)
Impulse discharge current (10/350)	I_{imp}	1 kA
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		2 kA
Protection level		<800 V
Frequency range		0 - 3,4 GHz
Insertion loss	S_{21}	≤0,9 dB
Return loss	S_{11}	≥14 dB
Temperature range	ϑ	-40 - +80 °C
Installation type		Connector/cable adapter
Connection system		F
Protection rating		IP40
Shielding connection available		Yes
Shield connection		Direct
Testing standard		IEC 61643-21

Coaxial protection device for F connection: female/female



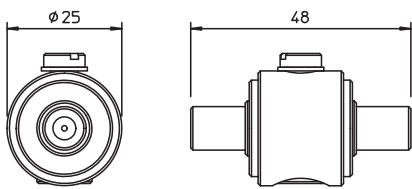
Type	Connection system	Frequency range	Pack. pcs	Weight kg/100 pcs	Item No.
DS-F W/W	F	0 - 3,4 GHz	1	9.000	5093272

Coaxial data cable protection devices

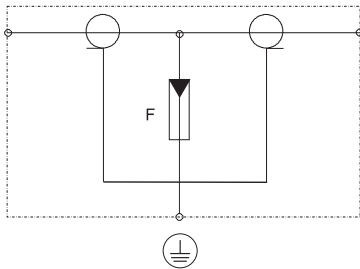
- Basic protection
- High pulsed current carrying capacity 2 x 2.5 kA (10/350 μs)
- Simple installation (adapter plug), m = plug/f = female connector
- Various plug combinations
- With F connector
- Optimised transmission behaviour
- Including OBO M25 Quick clip for simple installation

Dimensions

Application: Protection of TV and SAT systems, multi-switches, receivers and DVB-T(2)



Connection options



DS-F W/W

Maximum continuous voltage AC	U_c	130 V
Maximum continuous voltage DC	U_c	185 V
Category		Type 1+2 / D1+C2
Lightning protection zone LPZ		0→2
Number of poles		1
Rated current	I_n	5 A
Wave resistance	Z_L	75 Ω
Impulse durability wire-wire		C2: 10 kV / 5 kA (8/20μs)
Impulse durability wire-earth		C2: 10 kV / 5 kA (8/20μs)
Impulse discharge current (10/350)	I_{imp}	1 kA
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		2 kA
Protection level		<800 V
Frequency range		0 - 3,4 GHz
Insertion loss	S_{21}	≤0,9 dB
Return loss	S_{11}	≥14 dB
Temperature range	ϑ	-40 - +80 °C
Installation type		Connector/cable adapter
Connection system		F
Protection rating		IP40
Shielding connection available		Yes
Shield connection		Direct
Testing standard		IEC 61643-21



Coaxial protection device for SMA connection: female/female



Type	Conne- tion system	Frequency range	Pack. pcs	Weight		Item No.
				kg/100 pcs.		
DS-SMA W/W	SMA	0 - 3,7 GHz	1	7.500		5093277

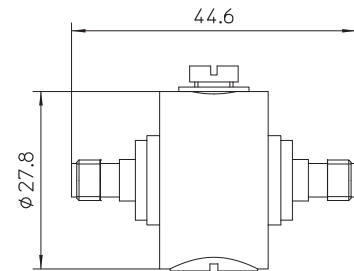
Coaxial data cable protection devices

- High pulsed current carrying capacity 2 x 2.5 kA (10/350)
- Simple mounting (adapter plug), m = plug/f = female connector
- Optimised transmission behaviour
- 5-year guarantee
- With SMA connector
- Including OBO M25 Quick clip for simple installation
- 50 Ω technology

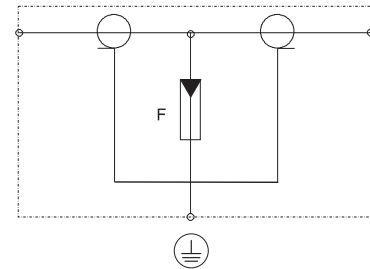
Application: Radio and data technology with SMA connector



Dimensions



Connection options



DS-SMA W/W

Maximum continuous voltage AC	U_c	130 V
Maximum continuous voltage DC	U_c	185 V
Category		Type 1+2 / D1+C2
Lightning protection zone LPZ		0→2
Number of poles		1
Rated current	I_n	10 A
Wave resistance	Z_L	50 Ω
Impulse durability wire-wire		C2: 10 kV / 5 kA (8/20μs)
Impulse durability wire-earth		C2: 10 kV / 5 kA (8/20μs)
Impulse discharge current (10/350)	I_{imp}	2.5 kA
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		5 kA
Protection level		<800 V
Frequency range		0 - 3,7 GHz
Insertion loss	S_{21}	≤0,2 dB
Return loss	S_{11}	≥14 dB
Temperature range	ϑ	-40 - +80 °C
Installation type		Connector/cable adapter
Connection system		SMA
Protection rating		IP40
Shielding connection available		Yes
Shield connection		Direct
Testing standard		IEC 61643-21

Coaxial protection device for SAT and cable multiswitch



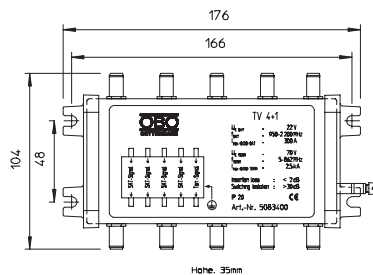
Type	Connection system	Frequency range	Connection system	Pack. pcs	Weight kg/100 pcs	Item No.
TV 4+1	F	0,5 - 2,8 GHz	F	1	37.000	5083400

Coaxial data line protection for TV reception systems

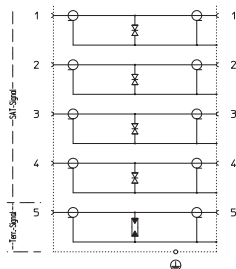
- Protects up to four SAT lines
- Protects one terrestrial line, e.g. DVB-T.
- Simple mounting using screws and holder
- With F-connector
- Optimum transmission behaviour with 75 Ohm technology.

Application: Protection of TV and SAT systems, multi-switches, receivers and DVB-T receivers

Dimensions



Connection options



TV 4+1

Maximum continuous voltage V _c SAT inputs	U _c	22 V
Maximum continuous voltage V _c terrestrial input	U _c	70 V
Category		Type 2+3 / C2+C1
Lightning protection zone LPZ		1→3
Number of poles		5
Rated current	I _r	2 A
Wave resistance	Z _L	75 Ω
Nominal discharge current SAT inputs	I _n	300 A
Lightning impulse current terrestrial input	I _{imp}	1 kA
Protection level SAT inputs at I _n	U _p	<45 V
Protection level terrestrial input at I _n		<500 V
Frequency range		0,5 - 2,8 GHz
Insertion loss	S ₂₁	≤3 dB
Return loss	S ₁₁	>30 dB
Temperature range	θ	-40 - +80 °C
Installation type		Surface-mounted
Connection system		F
Protection rating		IP10
Shielding connection available		Yes
Shield connection		Direct
Earthing via:		Connection cable
Testing standard		IEC 61643-21

Surge protection devices for network technology and CCTV camera systems

- Connectable protection device
- High-performance surge protection
- Usable in the "Channel Link" up to 10 GBit
- Supports Power over Ethernet to 1 A
- Testing protocol available



Surge protection for data and network technology

The "Net Defender" permits the use of Power over Ethernet with nominal currents of up to 1 A and optimised surge protection in the channel up to 10 GBit/s. This corresponds to a Channel Perform-

ance according to ISO/IEC 11801 Amd. 2 of Class EA or CAT 6A to TIA/ANSI. Of course, reverse compatibility is also guaranteed. To ensure easy installation, the "Net Defender" can be snapped directly

onto the DIN rail and uses it to create the necessary equipotential bonding. Alternatively, terminal protection using a separately connectable earthing line is possible.

Surge protection for high-speed networks up to 10 GBit (Class EA/CAT6A)

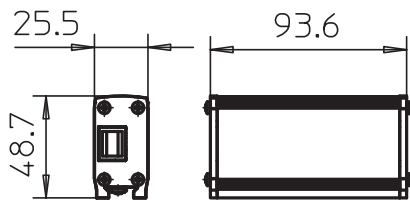


Type	Version	Connection system	Pack. pcs	Weight kg/100 pcs	Item No.
ND-CAT6A/EA	Fine protection, 8 wires + shield	RJ45 8(8)	1	16.600	5081800

Data cable protection device for high-speed networks

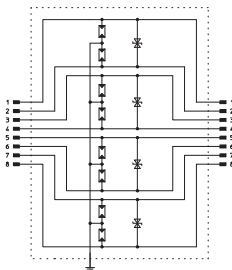
- High-quality RJ45 sockets
- Low protection level at high current load
- Earthing via DIN rail or connection cable
- Support of Power over Ethernet + to 1 A
- Tested transmission quality in networks up to 10 GBit (Class EA) or CAT6A
- Rapid installation through plug-in version
- Incl. DIN rail fastening set and earthing cable

Dimensions



Application example: 10 GBit Ethernet, 10/100 MBit Ethernet, PoE applications, IP camera systems, ISDN S0 interfaces

Connection options



ND-CAT6A/EA

Maximum continuous voltage AC	U_c	41 V
Maximum continuous voltage DC	U_c	58 V
Category		Type 2+3 / C2+C1
Lightning protection zone LPZ		1-3
Channel performance ISO/IEC		Class EA
Channel performance Ansi/EA		CAT 6A
Number of poles		8
Rated current	I_n	1 A
Impulse durability wire-wire		C1: 0,3 kV / 0,15 kA (8/20 μ s)
Impulse durability wire-earth		C2: 2 kV / 1 kA (8/20 μ s)
Total discharge current (8/20)		7 kA
Protection level wire-wire		<120 V
Protection level wire-earth		<700 V
Frequency range		>500 MHz
Temperature range	θ	-40 - +80 °C
Installation type		Connector/cable adapter
Connection system		RJ45 8(8)
Protection rating		IP10
Shielding connection available		Yes
Shield connection		Direct
Earthing via:		Connection cable / DIN rail
Testing standard		IEC 61643-21

Fine protection 8-F for Ethernet networks (Class D/CAT 5)



Type	Version	Connection system	Pack. pcs	Weight kg/100 pcs	Item No.
RJ45 S-ATM 8-F	Fine protection, 8 wires + shield	RJ45 8(8)	1	14.000	5081990

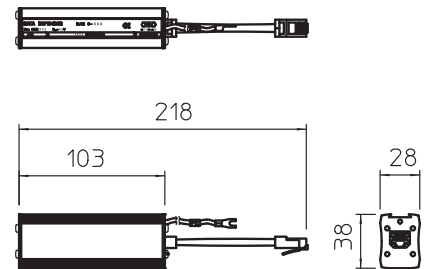
Universal data cable protection device for network technology and telecommunication systems

- In aluminium housing
- Protection for 8 cores
- With two-stage protective circuit
- Simple mounting
- With RJ45 Western connector
- Incl. 150 mm connection cable with RJ45 connectors
- Cat 5e network technology, 10BaseT, 100BaseT, 1000BaseT
- DIN rail mounting with accessories DLS-BS (5082 38 2)

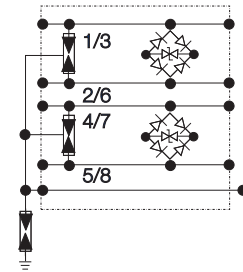
Application: For analogue, ISDN, DSL systems, Ethernet Twisted Pair.



Dimensions



Connection options

**RJ45 S-ATM 8-F**

Maximum continuous voltage AC U_c	4.2 V
Maximum continuous voltage DC U_c	6.2 V
Category	Type 2+3 / C2+C1
Lightning protection zone LPZ	1-3
Channel performance ISO/IEC	Class D
Channel performance Ansi/EA	CAT 5e
Number of poles	8
Rated current I_n	1 A
Impulse durability wire-wire	C2: 3 kV / 1,5 kA (8/20 μ s)
Impulse durability wire-earth	C2: 3 kV / 1,5 kA (8/20 μ s)
Total discharge current (8/20)	7,5 kA
Protection level wire-wire	<40 V
Protection level wire-earth	<900 V
Frequency range	>155 MHz
Temperature range ϑ	-40 - +80 °C
Installation type	Connector/cable adapter
Connection system	RJ45 8(8)
Protection rating	IP40
Shielding connection available	Yes
Shield connection	Direct
Earthing via:	Connection cable
Testing standard	IEC 61643-21

Combination arrestor for 10Base2-/10Base5 networks



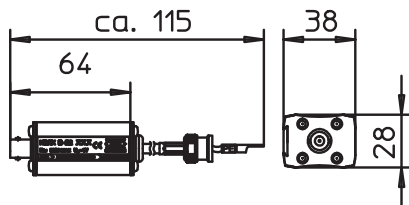
Type	Version	Connection system	Pack. pcs	Weight kg/100 pcs	Item No.
KOAX B-E2 MF-C	Combi protection	BNC	1	10.300	5082430

Data line protection device for coaxial Ethernet network systems

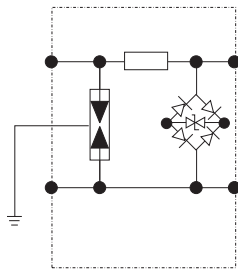
- In aluminium housing
- BNC connector m/f
- Simple mounting with adapter plug
- Two-stage protection circuit
- DIN rail mounting with DLS-BS accessories (5082 38 2)

Application: Protecting video signals; cameras and/or CCTV units, Cheapernet, 10BASE2, 10BASE5

Dimensions



Connection options



KOAX B-E2 MF-C

Maximum continuous voltage AC	U_c	4.2 V
Maximum continuous voltage DC	U_c	6.2 V
Category	Type	1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		1
Rated current	I_l	0.3 A
Series resistance per wire		4,7 Ω \pm 10%
Wave resistance	Z_l	75 Ω
Impulse durability wire-wire		C2: 10 kV / 5 kA (8/20 μ s)
Impulse durability wire-earth		C2: 10 kV / 5 kA (8/20 μ s)
Impulse discharge current (10/350)	I_{imp}	1 kA
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		2 kA
Protection level wire-wire		<75 V
Protection level wire-earth		<600 V
Frequency range		0 - 68 MHz
Insertion loss	S_{21}	\leq 1,7 dB
Return loss	S_{11}	\geq 14 dB
Temperature range	ϑ	-20 - +80 °C
Installation type		Connector/cable adapter
Connection system		BNC
Protection rating		IP40
Shielding connection available		Yes
Shield connection		Direct
Earthing via:		Connection cable
Testing standard		IEC 61643-21

Fine protection for 10Base2-/10Base5 networks



Type	Version	Connection system	Pack. pcs	Weight kg/100 pcs	Item No.
KOAX B-E2 MF-F	Fine protection	BNC	1	9.800	5082432

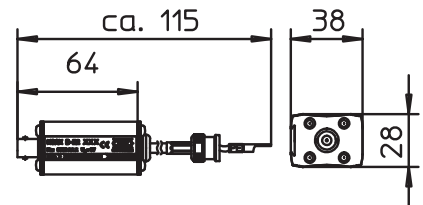
Data line protection device for coaxial Ethernet network systems

- In aluminium housing
- BNC connector m/f
- Simple mounting with adapter plug
- Two-stage protection circuit
- DIN rail mounting with DLS-BS accessories (5082 38 2)

Application: Protecting video signals; cameras and/or CCTV units, Cheapernet, 10BASE2, 10BASE5



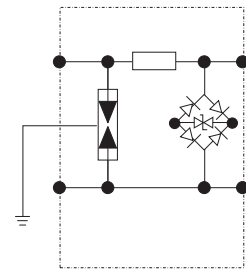
Dimensions



KOAX B-E2 MF-F

Maximum continuous voltage AC	U_c	4.2 V
Maximum continuous voltage DC	U_c	6.2 V
Category		Type 2+3 / C2+C1
Lightning protection zone LPZ		1→3
Number of poles		1
Rated current	I_n	1 A
Series resistance per wire		—
Wave resistance	Z_1	75 Ω
Impulse durability wire-wire		C1: 1 kV / 0,5 kA (8/20 μ s)
Impulse durability wire-earth		C2: 10 kV / 5 kA (8/20 μ s)
Impulse discharge current (10/350)	I_{imp}	— kA
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		— kA
Protection level wire-wire		<40 V
Protection level wire-earth		<600 V
Frequency range		0 - 70 MHz
Insertion loss	S_{21}	≤ 1 dB
Return loss	S_{11}	≥ 14 dB
Temperature range	ϑ	-20 - +80 °C
Installation type		Connector/cable adapter
Connection system		BNC
Protection rating		IP40
Shielding connection available		Yes
Shield connection		Direct
Earthing via:		Connection cable
Testing standard		IEC 61643-21

Connection options



Data cable protection device for coaxial TV / camera systems



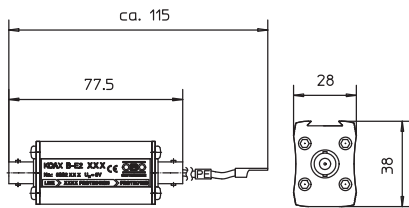
Type	Version	Connection system	Pack. pcs	Weight kg/100 pcs	Item No.
KOAX B-E2 FF-F	Fine protection	BNC	1	14.400	5082434

Data cable protection device for coaxial TV / camera systems

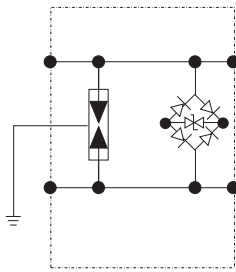
- In aluminium housing
- BNC connector socket/socket
- Simple mounting with adapter plug
- Two-stage protection circuit
- DIN rail mounting with DLS-BS accessories (5082 38 2)

Application: Protection of CCTV, video signals; cameras and/or TV systems

Dimensions



Connection options



KOAX B-E2 FF-F

Maximum continuous voltage AC	U_c	4.2 V
Maximum continuous voltage DC	U_c	6.2 V
Category		Type 2+3 / C2+C1
Lightning protection zone LPZ		1→3
Number of poles		1
Rated current	I_l	1 A
Series resistance per wire		—
Wave resistance	Z_l	75 Ω
Impulse durability wire-wire		C1: 1 kV / 0,5 kA (8/20μs)
Impulse durability wire-earth		C2: 10 kV / 5 kA (8/20μs)
Impulse discharge current (10/350)	I_{imp}	— kA
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		— kA
Protection level wire-wire		<40 V
Protection level wire-earth		<600 V
Frequency range		0 - 160 MHz
Insertion loss	S_{21}	≤1,7 dB
Return loss	S_{11}	≥14 dB
Temperature range	ϑ	-20 - +80 °C
Installation type		Connector/cable adapter
Connection system		BNC
Protection rating		IP40
Shielding connection available		Yes
Shield connection		Direct
Earthing via:		—
Testing standard		IEC 61643-21

Fastening set for DIN profile rail



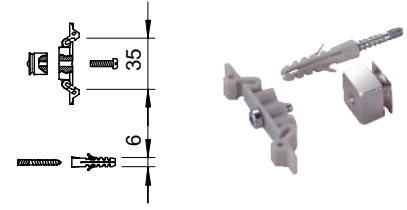
Version

Type

Type	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
DLS-BS	For mounting: <ul style="list-style-type: none"> • Coax B-E2/... • Coax N-E5/... • RJ 11-Tele/4... • RJ 45 S... 	1	5.000	5082382

DLS-BS: The attachment set is designed for DIN profile rail and wall mounting and can be used for the data cable protection devices listed below:

- Coax B-E2/...
- RJ 11-Tele/4...
- RJ 45 S...



Surge protection for high-speed networks up to 1 GBit (Class ND-CAT6/E-F)



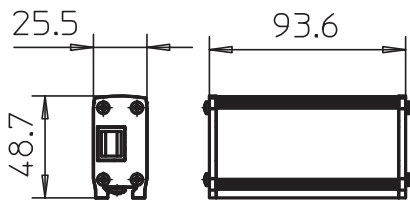
Type	Version	Connection system	Pack. pcs	Weight kg/100 pcs	Item No.
ND-CAT6/E-F	Fine protection, 8 wires + shield	RJ45 8(8)	1	16.380	5081802
ND-CAT6/E-B	Basic protection, 8 wires + shield	RJ45 8(8)	1	16.220	5081804

Alu Aluminium

Data cable protection device for high-speed networks

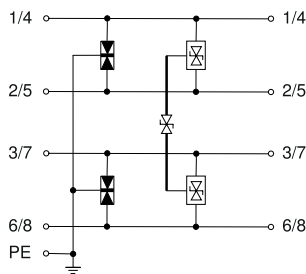
- High-quality RJ45 sockets
- Low protection level at high current load
- Earthing via DIN rail or connection cable
- Support of Power over Ethernet + to 1 A
- Tested transmission quality in networks up to 10 GBit (Class EA) or CAT6A
- Rapid installation through plug-in version
- Incl. DIN rail fastening set and earthing cable

Dimensions



Application example: 10 GBit Ethernet, 10/100 MBit Ethernet, PoE applications, IP camera systems, ISDN S0 interfaces

Connection options



ND-CAT6/E-F

Maximum continuous voltage AC U_c	41 V
Maximum continuous voltage DC U_c	58 V
Category	Type 2+3 / C2+C1
Lightning protection zone LPZ	1→3
Channel performance ISO/IEC	Class E
Channel performance Ansi/EA	CAT 6
Number of poles	8
Rated current I_L	1 A
Impulse durability wire-wire	C1: 0,3 kV / 0,15 kA (8/20 μ s)
Impulse durability wire-earth	C2: 3 kV / 1,5 kA (8/20 μ s)
Total discharge current (8/20)	5 kA
Protection level wire-wire	<40 V
Protection level wire-earth	<900 V
Frequency range	>250 MHz
Temperature range ϑ	-40 - +80 °C
Installation type	Connector/cable adapter
Connection system	RJ45 8(8)
Protection rating	IP10
Shielding connection available	Yes
Shield connection	Direct
Earthing via:	Connection cable / DIN rail
Testing standard	IEC 61643-21

ND-CAT6/E-B

Maximum continuous voltage AC U_c	46 V
Maximum continuous voltage DC U_c	65 V
Category	Type 1 / D1
Lightning protection zone LPZ	0→1
Channel performance ISO/IEC	Class E
Channel performance Ansi/EA	CAT 6
Number of poles	8
Rated current I_L	1 A
Impulse durability wire-wire	C2: 3 kV / 1,5 kA (8/20 μ s)
Impulse durability wire-earth	C2: 3 kV / 1,5 kA (8/20 μ s)
Total discharge current (8/20)	10 kA
Protection level wire-wire	<1100 V
Protection level wire-earth	<900 V
Frequency range	>250 MHz
Temperature range ϑ	-40 - +80 °C
Installation type	Connector/cable adapter
Connection system	RJ45 8(8)
Protection rating	IP10
Shielding connection available	Yes
Shield connection	Direct
Earthing via:	Connection cable / DIN rail
Testing standard	IEC 61643-21

Basic protection for 4-wire information technology systems with RJ45



Type	Version	Connection system	Pack. pcs	Weight kg/100 pcs	Item No.
RJ45 S-E100 4-B	Basic protection, 4 wires + shield	RJ45	1	14.000	5081001

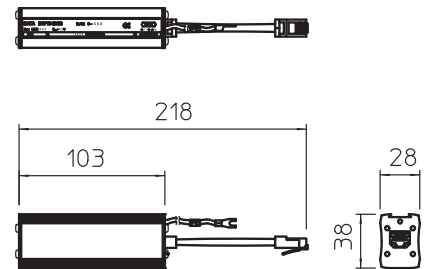
Data line protection device for IT systems

- In aluminium housing
- RJ45 connector
- Incl. 150 mm connection cable with RJ45 connectors
- Simple mounting using adapter
- 2-stage protection circuit
- DIN rail mounting with DLS-BS accessories (5082 38 2)

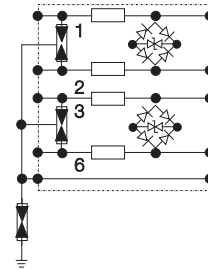
Application: Twisted Pair, control circuits, RJ45 communication cables



Dimensions



Connection options

**RJ45 S-E100 4-B**

Maximum continuous voltage AC	U_c	120 V
Maximum continuous voltage DC	U_c	170 V
Category	Type	1+2 / D1+C2
Lightning protection zone LPZ		0→2
Number of poles		4
Rated current	I_n	1 A
Series resistance per wire		—
Impulse durability wire-wire		C2: 3 kV / 1,5 kA (8/20 μ s)
Impulse durability wire-earth		C2: 3 kV / 1,5 kA (8/20 μ s)
Impulse discharge current (10/350)	I_{imp}	0,5 kA
Total discharge current (8/20)		7,5 kA
Total discharge current (10/350)		2,5 kA
Protection level wire-wire		<700 V
Protection level wire-earth		<850 V
Frequency range		0 - 463 MHz
Insertion loss	S_{21}	≤ 3 dB
Temperature range	ϑ	-40 - +80 °C
Installation type		Connector/cable adapter
Connection system		RJ45
Protection rating		IP40
Shielding connection available		Yes
Shield connection		Indirect
Earthing via:		Connection cable
Testing standard		IEC 61643-21

Combination arrester for 4-wire information technology systems with RJ45



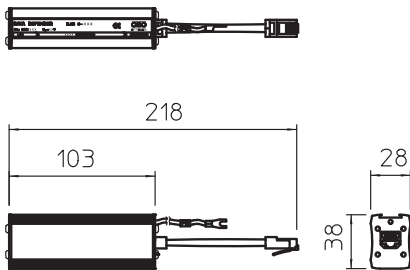
Type	Version	Connection system	Pack. pcs.	Weight kg/100 pcs.	Item No.
RJ45 S-E100 4-C	Combined protection, 4 wires + shield	RJ45	1	14.000	5081003

Data line protection device for IT systems

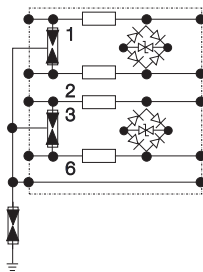
- In aluminium housing
- RJ45 connector
- Incl. 150 mm connection cable with RJ45 connectors
- Simple mounting using adapter
- 2-stage protection circuit
- DIN rail mounting with DLS-BS accessories (5082 38 2)

Application: Twisted Pair, control circuits, RJ45 communication cables

Dimensions



Connection options



RJ45 S-E100 4-C

Maximum continuous voltage AC	U_c	4.2 V
Maximum continuous voltage DC	U_c	6.2 V
Category		Type 1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0-2
Number of poles		4
Rated current	I_L	0.3 A
Series resistance per wire		4,7 $\Omega \pm 10\%$
Impulse durability wire-wire		C2: 3 kV / 1,5 kA (8/20 μ s)
Impulse durability wire-earth		C2: 3 kV / 1,5 kA (8/20 μ s)
Impulse discharge current (10/350)	I_{imp}	1.5 kA
Total discharge current (8/20)		7,5 kA
Total discharge current (10/350)		2,5 kA
Protection level wire-wire		<70 V
Protection level wire-earth		<850 V
Frequency range		0 - 109 MHz
Insertion loss	S_{21}	≤ 3 dB
Temperature range	ϑ	-40 - +80 °C
Installation type		Connector/cable adapter
Connection system		RJ45
Protection rating		IP40
Shielding connection available		Yes
Shield connection		Indirect
Earthing via:		Connection cable
Testing standard		IEC 61643-21

Fine protection for 4-wire information technology systems with RJ45



Type	Version	Conne- tion system	Pack. pcs	Weight kg/100 pcs.	Item No.
RJ45 S-E100 4-F	Fine protection, 4 wires + shield	RJ45	1	14.000	5081005

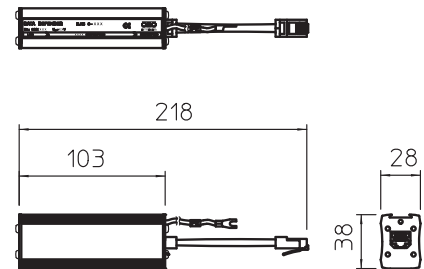
Data line protection device for IT systems

- In aluminium housing
- RJ45 connector
- Incl. 150 mm connection cable with RJ45 connectors
- Simple mounting using adapter
- 2-stage protection circuit
- DIN rail mounting with DLS-BS accessories (5082 38 2)

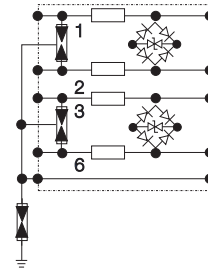
Application: Twisted Pair, control circuits, RJ45 communication cables



Dimensions



Connection options

**RJ45 S-E100 4-F**

Maximum continuous voltage AC	U_c	4.2 V
Maximum continuous voltage DC	U_c	6.2 V
Category	Type	2+3 / C2+C1
Lightning protection zone LPZ		2→3
Number of poles		4
Rated current	I_n	1 A
Series resistance per wire		—
Impulse durability wire-wire		C1: 1 kV / 0,5 kA (8/20 μ s)
Impulse durability wire-earth		C1: 1 kV / 0,5 kA (8/20 μ s)
Impulse discharge current (10/350)	I_{imp}	— kA
Total discharge current (8/20)		2,5 kA
Total discharge current (10/350)		— kA
Protection level wire-wire		<40 V
Protection level wire-earth		<750 V
Frequency range		0 - 100 MHz
Insertion loss	S_{21}	≤ 3 dB
Temperature range	ϑ	-40 - +80 °C
Installation type		Connector/cable adapter
Connection system		RJ45
Protection rating		IP40
Shielding connection available		Yes
Shield connection		Indirect
Earthing via:		Connection cable
Testing standard		IEC 61643-21

Fine protection for 9-pole RS232 interface



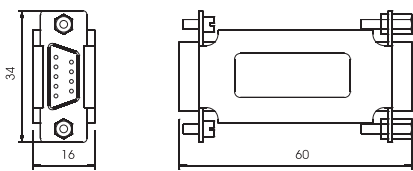
Type	Highest continuous voltage		Weight		Item No.
	V	Version	Pack. pcs	kg/100 pcs.	
SD09-V24 9	18	SUB-D-9; V24 RS232	1	6.000	5080053

Data cable protection devices, serial interfaces

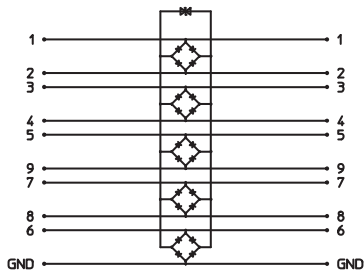
- Various connection technologies available
- Low protection level

Application: PLC, alarm systems, controllers

Dimensions



Connection options



SD09-V24 9

Max. continuous operating voltage	U_c	18 V
Category		Type 3 / C1
Lightning protection zone LPZ		2→3
Number of poles		9
Impulse durability wire-wire		0,34 kA (8/20 μ s)
Impulse durability wire-earth		0,34 kA (8/20 μ s)
Protection level wire-wire		<50 V
Protection level wire-earth		<50 V
Protection level, wire-earth at 1 kV/ μ s (C3)	U_n	<25 V
Temperature range	θ	-40 - +80 °C
Installation type		Connector/cable adapter
Connection system		D-Sub 9 pole
Protection rating		IP40
Shielding connection available		Yes
Shield connection		Direct
Testing standard		IEC 61643-21



Fine protection for 15-pole RS232 interface



Highest
continu-
ous
voltage

Type	V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
SD15-V24 15	18	SUB-D-15; V24 RS232	1	7.000	5080150

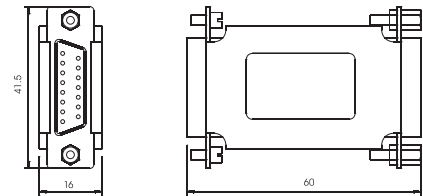
Data cable protection devices, serial interfaces

- Various connection technologies available
- Low protection level

Application: PLC, alarm systems, controllers



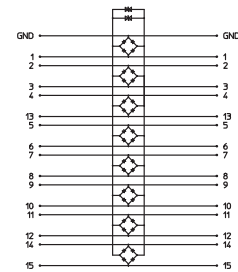
Dimensions



SD15-V24 15

Max. continuous operating voltage	U_c	18 V
Category		Type 3 / C1
Lightning protection zone LPZ		2-3
Number of poles		15
Impulse durability wire-wire		0,34 kA (8/20 μ s)
Impulse durability wire-earth		0,34 kA (8/20 μ s)
Protection level wire-wire		<50 V
Protection level wire-earth		<50 V
Protection level, wire-earth at 1 kV/ μ s (C3)	U_n	<25 V
Temperature range	ϑ	-40 - +80 °C
Installation type		Connector/cable adapter
Connection system		D-Sub 15 pole
Protection rating		IP40
Shielding connection available		Yes
Shield connection		Direct
Testing standard		IEC 61643-21

Connection options



Fine protection for 9-pole RS485 interface



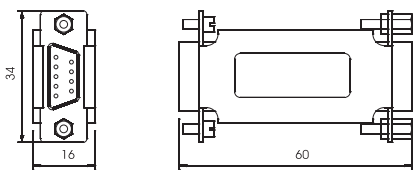
Type	Highest continuous voltage		Pack. pcs.	Weight		Item No.
	V	Version		kg/100 pcs.		
SD09-V11 9	7.5	SUB-D-9; V11 RS485	1	6.000		5080061

Data cable protection devices, serial interfaces

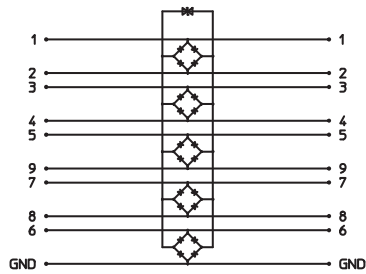
- Various connection technologies available
- Low protection level

Application: PLC, alarm systems, controllers

Dimensions



Connection options



SD09-V11 9

Max. continuous operating voltage	U_c	7.5 V
Category		Type 3 / C1
Lightning protection zone LPZ		2→3
Number of poles		9
Impulse durability wire-wire		0,75 kA (8/20 μ s)
Impulse durability wire-earth		0,75 kA (8/20 μ s)
Protection level wire-wire		<100 V
Protection level wire-earth		<100 V
Protection level, wire-earth at 1 kV/ μ s (C3)	U_n	<10 V
Temperature range	ϑ	-40 - +80 °C
Installation type		Connector/cable adapter
Connection system		D-Sub 9 pole
Protection rating		IP40
Shielding connection available		Yes
Shield connection		Direct
Testing standard		IEC 61643-21





Fine protection for energy systems, series installation: the plus of the VF family

- High arresting capacity
- Low protection level
- Usable in AC/DC applications
- Simple mounting using screwless terminals
- UL-listed



Protection for 2-pole power supplies

The lightning barriers of type VF are fine protection devices, used for single-phase energy technology systems. Besides the low protection level, these devices also have a visual display, which will indicate

defective surge protection. If required, remote signalling is also available using a changeover contact and an NC contact.

MCR protection for 2-pole power supply, 12 V



Type	Highest continuous voltage V	Pack. pcs	Weight		Item No.
			kg/100	pcs.	
VF12-AC DC	13.5	1	9.000		5097453

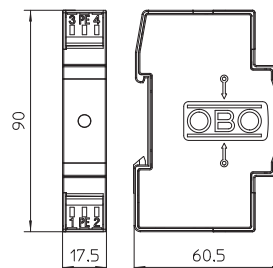
Surge protection device / fine protection type 3 to EN 61643-11

- Suitable for DC and AC voltage systems
- With visual function display
- With installation-friendly, screwless connection terminals
- In a space-saving 17.5 mm grid
- Y circuit

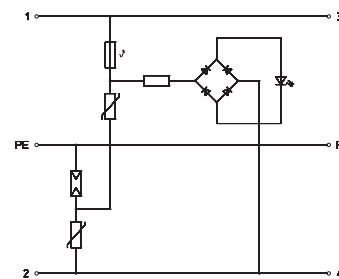
Application: Universal use on 35 mm DIN profile rail in every normal commercially available distributor housing.



Dimensions



Connection options



VF12-AC DC

U max AC	U _c AC	13.5 V
U max DC	U _c DC	18 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I _n	0,7 kA
Maximum discharge current (8/20 μs)	I _{max}	2 kA
Rated current	I _t	20 A
Protection level wire-wire		<110 V
Protection level wire-earth		<1200 V
Response time	t _A	<25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1
Connection cross-section rigid		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section, flexible		0.14 - 2.5 mm ²
Approvals		UL



MCR protection for 2-pole for power supply, 24 V

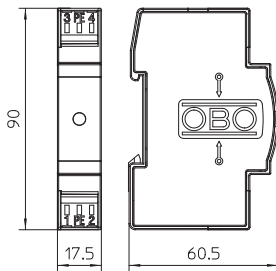


Type	Highest continuous voltage	Weight	
	V	Pack. pcs	kg/100 pcs
VF24-AC/DC	34	1	8.000
			Item No.
			5097607

Surge protection device / fine protection type 3 to EN 61643-11

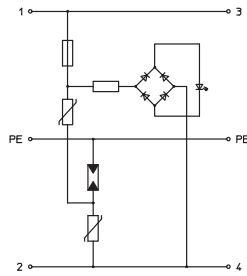
- Suitable for DC and AC voltage systems
- With visual function display
- With installation-friendly, screwless connection terminals
- In a space-saving 17.5 mm grid
- Y circuit

Dimensions



Application: Universal use on 35 mm DIN profile rail in every normal commercially available distributor housing.

Connection options



VF24-AC/DC

U max AC	U _c AC	34 V
U max DC	U _c DC	46 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I _n	0,7 kA
Maximum discharge current (8/20 μs)	I _{max}	2 kA
Rated current	I _t	20 A
Protection level wire-wire		<130 V
Protection level wire-earth		<1200 V
Response time	t _A	<25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1
Connection cross-section rigid		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section, flexible		0.14 - 2.5 mm ²
Approvals		UL

MCR protection for 2-pole for power supply, 48 V



Highest continuous voltage V

Type	Weight	Pack.	kg/100	Item No.
	pcs	pcs.		
VF48-AC/DC 60	1	8.000		5097615

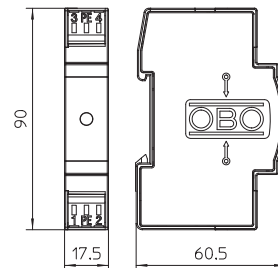
Surge protection device / fine protection type 3 to EN 61643-11

- Suitable for DC and AC voltage systems
- With visual function display
- With installation-friendly, screwless connection terminals
- In a space-saving 17.5 mm grid
- Y circuit

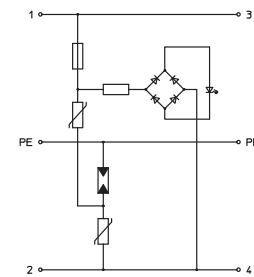
Application: Universal use on 35 mm DIN profile rail in every normal commercially available distributor housing.



Dimensions



Connection options



VF48-AC/DC

U max AC	U _{c AC}	60 V
U max DC	U _{c DC}	80 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I _n	0,7 kA
Maximum discharge current (8/20 μs)	I _{max}	2 kA
Rated current	I _t	20 A
Protection level wire-wire		<220 V
Protection level wire-earth		<1200 V
Response time	t _A	<25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1
Connection cross-section rigid		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section, flexible		0.14 - 2.5 mm ²
Approvals		UL



MCR protection for 2-pole for power supply, 60 V

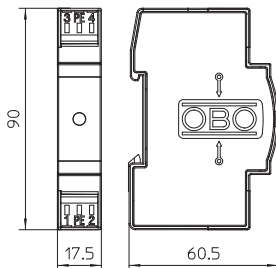


Type	Highest continuous voltage V	Weight		Item No.
		Pack. pcs	kg/100 pcs.	
VF60-AC/DC	80	1	8.000	5097623

Surge protection device / fine protection type 3 to EN 61643-11

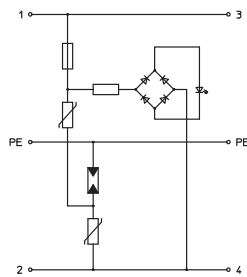
- Suitable for DC and AC voltage systems
- With visual function display
- With installation-friendly, screwless connection terminals
- In a space-saving 17.5 mm grid
- Y circuit

Dimensions



Application: Universal use on 35 mm DIN profile rail in every normal commercially available distributor housing.

Connection options



VF60-AC/DC

U max AC	U _c AC	80 V
U max DC	U _c DC	110 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I _n	0,7 kA
Maximum discharge current (8/20 μs)	I _{max}	2 kA
Rated current	I _t	20 A
Protection level wire-wire		<280 V
Protection level wire-earth		<1200 V
Response time	t _A	<25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1
Connection cross-section rigid		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section, flexible		0.14 - 2.5 mm ²

MCR protection for 2-pole for power supply, 110 V



Highest continuous voltage V

Type	Weight	Pack.	kg/100	Item No.
		pcs	pcs.	
VF110-AC DC 150		1	8.000	5097631

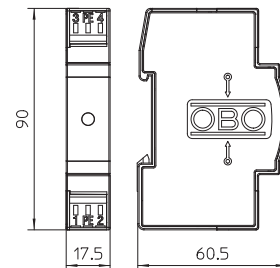
Surge protection device / fine protection type 3 to EN 61643-11

- Suitable for DC and AC voltage systems
- With visual function display
- With installation-friendly, screwless connection terminals
- In a space-saving 17.5 mm grid
- Y circuit

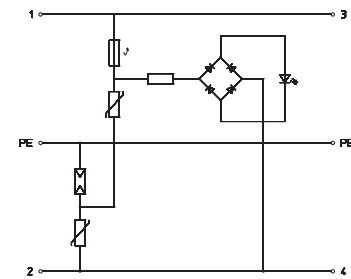
Application: Universal use on 35 mm DIN profile rail in every normal commercially available distributor housing.



Dimensions



Connection options



VF110-AC DC

U max AC	U _{c AC}	150 V
U max DC	U _{c DC}	200 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I _n	2 kA
Maximum discharge current (8/20 μs)	I _{max}	6.5 kA
Rated current	I _t	20 A
Protection level wire-wire		<500 V
Protection level wire-earth		<1400 V
Response time	t _A	<25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1
Connection cross-section rigid		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section, flexible		0.14 - 2.5 mm ²



MCR protection for 2-pole for power supply, 230 V

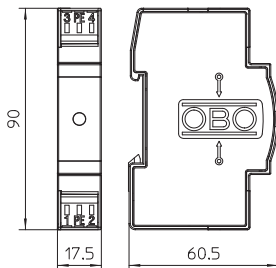


Type	Highest continuous voltage V	Pack. pcs	Weight kg/100 pcs	Item No.
	VF230-AC/DC 255	1	8.000	5097650

Surge protection device / fine protection type 3 to EN 61643-11

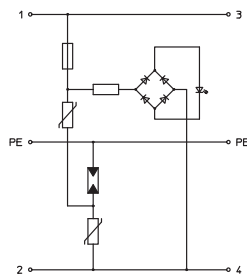
- Suitable for DC and AC voltage systems
- With visual function display
- With installation-friendly, screwless connection terminals
- In a space-saving 17.5 mm grid
- Y circuit

Dimensions



Application: Universal use on 35 mm DIN profile rail in every normal commercially available distributor housing.

Connection options



VF230-AC/DC

U max AC	U _c AC	255 V
U max DC	U _c DC	350 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I _n	2.5 kA
Maximum discharge current (8/20 μs)	I _{max}	7 kA
Rated current	I _t	20 A
Protection level wire-wire		<1000 V
Protection level wire-earth		<1400 V
Response time	t _A	<25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1
Connection cross-section rigid		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section, flexible		0.14 - 2.5 mm ²

MCR protection for 2-pole for power supply with remote signalling, 12 V AC/DC



Type	Highest continuous voltage V	Weight		Item No.
		Pack. pcs	kg/100 pcs	
VF12-AC/DC-FS	13.5	1	6.400	5097454

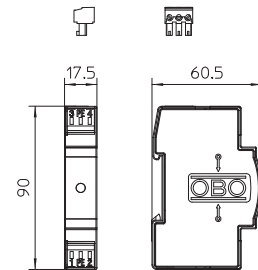
Surge protection / fine power protection, type 3, to EN 61643-11 with remote signalling

- With remote signalling, potential-free changeover contact, for function monitoring
- Suitable for DC and AC systems
- With visual function display
- With easy mounting, screwless connection terminals
- In space-saving 17.5 mm grid
- Y circuit

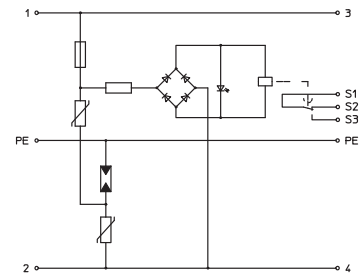
Application: Universal use on 35 mm DIN profile rails in any standard distributor housing.



Dimensions



Connection options



VF12-AC/DC-FS

U max AC	U _c AC	13.5 V
U max DC	U _c DC	18 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I _n	0,7 kA
Maximum discharge current (8/20 μs)	I _{max}	2 kA
Rated current	I _t	20 A
Protection level wire-wire		<110 V
Protection level wire-earth		<1200 V
Response time	t _A	<25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1
Connection cross-section rigid		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section, flexible		0.14 - 2.5 mm ²

MCR protection for 2-pole power supply with remote signalling, 24 V AC/DC

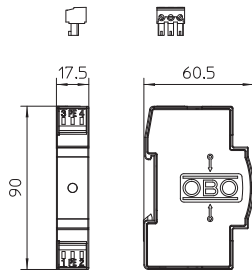


Type	Highest continuous voltage	Weight		Item No.
	V	Pack. pcs	kg/100 pcs	
VF24-AC/DC-FS	34	1	6.620	5097820

Surge protection / fine power protection, type 3, to EN 61643-11 with remote signalling

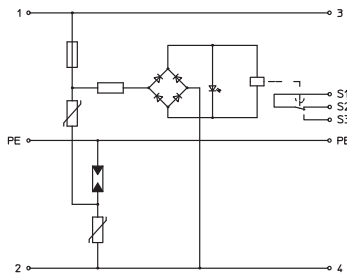
- With remote signalling, potential-free changeover contact, for function monitoring
- Suitable for DC and AC systems
- With visual function display
- With easy mounting, screwless connection terminals
- In space-saving 17.5 mm grid
- Y circuit

Dimensions



Application: Universal use on 35 mm DIN profile rails in any standard distributor housing.

Connection options



VF24-AC/DC-FS

U max AC	U _c AC	34 V
U max DC	U _c DC	46 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I _n	0,7 kA
Maximum discharge current (8/20 μs)	I _{max}	2 kA
Rated current	I _t	20 A
Protection level wire-wire		<160 V
Protection level wire-earth		<1200 V
Response time	t _A	<25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1
Connection cross-section rigid		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section, flexible		0.14 - 2.5 mm ²

MCR protection for 2-pole for power supply with remote signalling, 12 V AC/DC



Type	Highest continuous voltage V	Pack. pcs	Weight kg/100 pcs	Item No.
VF48-AC/DC-FS	60	1	6.630	5097822

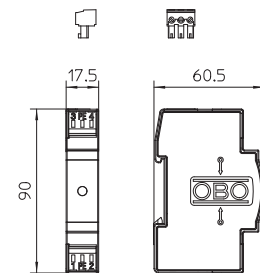
Surge protection / fine power protection, type 3, to EN 61643-11 with remote signalling

- With remote signalling, potential-free changeover contact, for function monitoring
- Suitable for DC and AC systems
- With visual function display
- With easy mounting, screwless connection terminals
- In space-saving 17.5 mm grid
- Y circuit

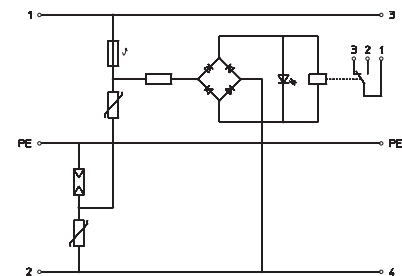
Application: Universal use on 35 mm DIN profile rails in any standard distributor housing.



Dimensions



Connection options



VF48-AC/DC-FS

U max AC	U _c AC	60 V
U max DC	U _c DC	80 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I _n	0,7 kA
Maximum discharge current (8/20 μs)	I _{max}	2 kA
Rated current	I _t	20 A
Protection level wire-wire		<220 V
Protection level wire-earth		<1200 V
Response time	t _A	<25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1
Connection cross-section rigid		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section, flexible		0.14 - 2.5 mm ²

MCR protection for 2-pole power supply with remote signalling, 230 V AC

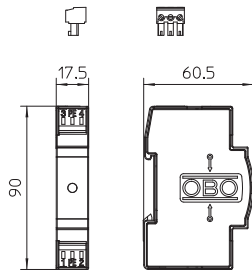


	Highest continuous voltage		Weight
Type	V	Pack. pcs.	kg/100 pcs.
VF230-AC-FS	255	1	6.910
Item No. 5097858			

Surge protection / fine power protection, type 3, to EN 61643-11 with remote signalling

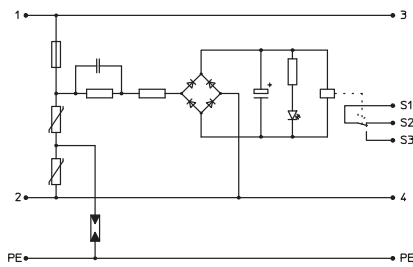
- With remote signalling, potential-free changeover contact, for function monitoring
- Suitable for AC systems
- With visual function display
- With easy mounting, screwless connection terminals
- In space-saving 17.5 mm grid
- Y circuit

Dimensions



Application: Universal use on 35 mm DIN profile rails in any standard distributor housing.

Connection options



VF230-AC-FS

U max AC	U _c AC	255 V
U max DC	U _c DC	— V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I _n	2,5 kA
Maximum discharge current (8/20 μs)	I _{max}	7 kA
Rated current	I _t	20 A
Protection level wire-wire		<1060 V
Protection level wire-earth		<1400 V
Response time	t _A	<25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1
Connection cross-section rigid		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section, flexible		0.14 - 2.5 mm ²

MCR protection for 2-pin for power supply with leak current-free remote signalling, 230 V AC/DC



Type	U max		Pack.	Weight	
	AC	DC		kg/100	Item No.
VF2-230-AC/DC-FS	255	350	1	6.000	5097939

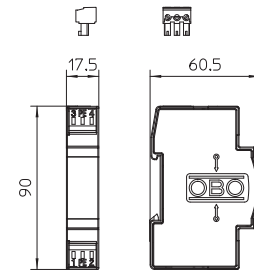
Type 3 surge protection/fine network protection to EN 61643-11 with leak current-free remote signalling

- With remote signalling: potential-free NC contact for function monitoring
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid
- Y circuit

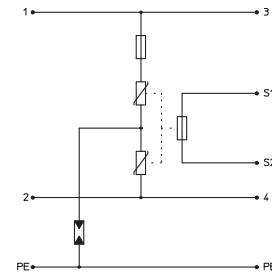
Application: Universal use on 35 mm DIN profile rails in any standard distributor housing.



Dimensions



Connection options



VF2-230-AC/DC-FS

U max AC	U _c AC	255 V
U max DC	U _c DC	350 V
SPD to EN 61643-11		Type 3
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		2→3
Nominal discharge current (8/20)	I _n	2,5 kA
Maximum discharge current (8/20 μs)	I _{max}	7 kA
Rated current	I _t	20 A
Protection level wire-wire		< 1000 V
Protection level wire-earth		< 1400 V
Response time	t _A	<25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1
Connection cross-section rigid		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section, flexible		0.14 - 2.5 mm ²

MCR protection for two-core systems: the plus of the FRD/FLD family

- High arresting capacity
- Low noise
- Universal application
- Simple mounting using screwless terminals
- High bandwidth
- UL-listed



Basic and combination protection for two-core systems

The use of lightning barriers in two-core wire systems is commonplace. These surge protection devices are used from telecommunication cables through bus systems up to measurement and control technology. Surge protection

technology allows flexible protection for all kinds of applications. All the devices have both a low protection level and a high arresting capacity.

Basic protection for two-core systems with HF applications 120 V



Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs	Item No.
TKS-B	120	170	2	Terminal	1	4.400	5097976

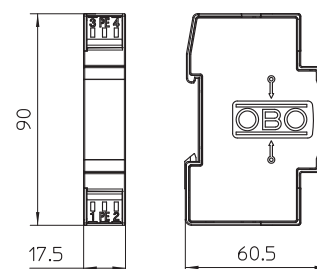
Basic protection for measuring, control and regulation technology and telecommunication systems.

- Basic protection for lightning protection equipotential bonding
- High impulse arresting capacity 6 kA (10/350)
- With easy-to-mount, screwless connection terminals
- In a space-saving 17.5 mm grid

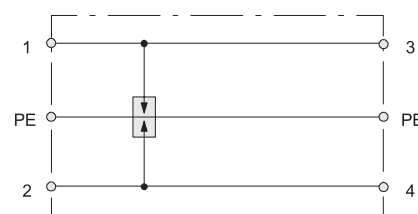
Application: Universal use on 35 mm DIN rails in standard distributor housings.



Dimensions



Connection options



TKS-B

Maximum continuous voltage AC	U_c	120 V
Maximum continuous voltage DC	U_c	170 V
Category		Type 1+2 / D1+C2
Lightning protection zone LPZ		0→2
Number of poles		2
Rated current	I_n	20 A
Series resistance per wire		—
Impulse durability wire-wire		C2: 18 kV / 9 kA
Impulse durability wire-earth		C2: 18 kV / 9 kA
Total discharge current (8/20)		18 kA
Total discharge current (10/350)		D1: 6 kA
Protection level wire-wire		<950 V
Protection level wire-earth		<600 V
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail
Connection system		Terminal
Division unit TE (17.5 mm)		1
Protection rating		IP20
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		Connection cable
Testing standard		IEC 61643-21



Combination protection for two-core systems with HF applications 5 V

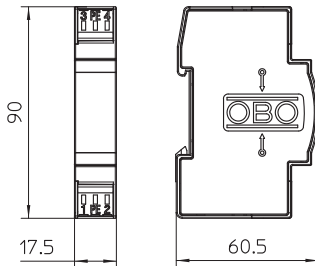


Type	Highest continuous AC voltage V	Highest continuous DC voltage V	Number of poles	Connection system	Pack. pcs.	Weight kg/100 pcs.	Item No.
FRD 5 HF	4	6	2	Terminal	1	4.400	5098571

Surge protection for use in measuring, control and regulation systems.

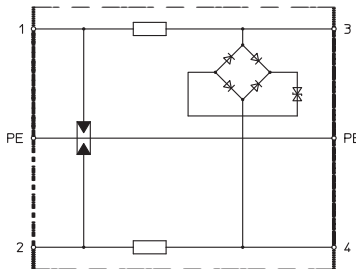
- Basic, medium and fine protection
- Two-stage protection circuit with high lightning current carrying capacity
- High transmission frequency up to 100 MHz
- Suitable for all bus systems (e.g. Profibus)
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid

Dimensions



Application: Multipurpose use on any 35 mm DIN profile rail in every commercially available distribution housing.

Connection options



FRD 5 HF

Maximum continuous voltage AC	U_c	4 V
Maximum continuous voltage DC	U_c	6 V
Category		Type 1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		2
Rated current	I_n	0.45 A
Series resistance per wire		2,2 Ω \pm 10 %
Impulse durability wire-wire		C2: 18 kV / 9 kA (8/20 μ s)
Impulse durability wire-earth		C2: 18 kV / 9 kA (8/20 μ s)
Total discharge current (8/20)		18 kA
Total discharge current (10/350)		D1: 6 kA
Protection level wire-wire		<90 V
Protection level wire-earth		<650 V
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail 35 mm
Connection system		Terminal
Division unit TE (17.5 mm)		1
Protection rating		IP20
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		Terminal
Testing standard		IEC 61643-21
Approvals		UL

Combination protection for two-core systems with HF applications 24 V



Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs	Item No.
FRD 24 HF	19	28	2	Terminal	1	4.400	5098575

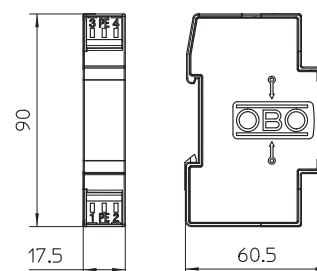
Surge protection for use in measuring, control and regulation systems.

- Basic, medium and fine protection
- Two-stage protection circuit with high lightning current carrying capacity
- High transmission frequency up to 100 MHz
- Suitable for all bus systems (e.g. Profibus)
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid

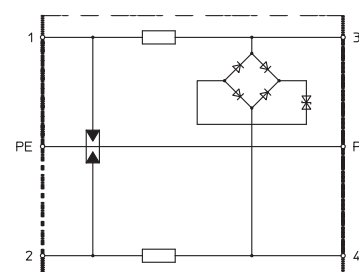
Application: Multipurpose use on any 35 mm DIN profile rail in every commercially available distribution housing.



Dimensions



Connection options



FRD 24 HF

Maximum continuous voltage AC	U_c	19 V
Maximum continuous voltage DC	U_c	28 V
Category		Type 1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		2
Rated current	I_L	0.45 A
Series resistance per wire		$2,2 \Omega \pm 10 \%$
Impulse durability wire-wire		C2: 18 kV / 9 kA (8/20 μ s)
Impulse durability wire-earth		C2: 18 kV / 9 kA (8/20 μ s)
Total discharge current (8/20)		18 kA
Total discharge current (10/350)		D1: 6 kA
Protection level wire-wire		<120 V
Protection level wire-earth		<650 V
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail 35 mm
Connection system		Terminal
Division unit TE (17.5 mm)		1
Protection rating		IP20
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		Terminal
Testing standard		IEC 61643-21
Approvals		UL

Medium and fine protection FRD for two-core systems 5 V

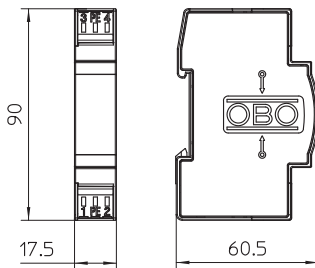


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs.	Weight kg/100 pcs.	Item No.
FRD 5	5	8	2	Terminal	1	5.100	5098492

Surge protection for use in measurement and control technology

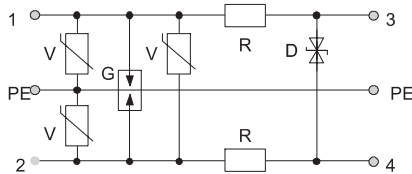
- Medium and fine protection
- Standard design for double core systems
- Two-stage protection circuit
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid
- With ohmic decoupling in the longitudinal branch

Dimensions



Application: Universal use on any 35 mm DIN profile rail in every commercially available distributor housing.

Connection options



FRD 5

Maximum continuous voltage AC	U_c	5 V
Maximum continuous voltage DC	U_c	8 V
Category		Type 1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		2
Rated current	I_n	0.2 A
Series resistance per wire		15 Ω \pm 10 %
Impulse durability wire-wire		C1: 1 kV / 0,5 kA (8/20 μ s)
Impulse durability wire-earth		C2: 10 kV / 5 kA (8/20 μ s)
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		D1: 3 kA
Protection level wire-wire		<15 V
Protection level wire-earth		<600 V
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail 35 mm
Connection system		Terminal
Division unit TE (17.5 mm)		1
Protection rating		IP20
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		Terminal
Testing standard		IEC 61643-21
Approvals		UL

Medium and fine protection FRD for two-core systems 12 V



Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs.	Weight kg/100 pcs.	Item No.
FRD 12	9	13	2	Terminal	1	5.100	5098506

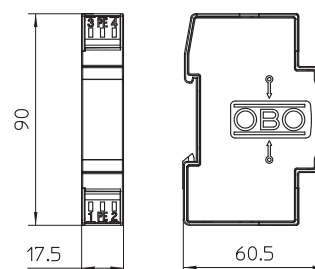
Surge protection for use in measurement and control technology

- Medium and fine protection
- Standard design for double core systems
- Two-stage protection circuit
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid
- With ohmic decoupling in the longitudinal branch

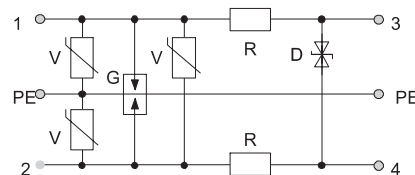
Application: Universal use on any 35 mm DIN profile rail in every commercially available distributor housing.



Dimensions



Connection options



FRD 12

Maximum continuous voltage AC	U_c	9 V
Maximum continuous voltage DC	U_c	13 V
Category	Type	1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		2
Rated current	I_n	0.2 A
Series resistance per wire		15 Ω \pm 10 %
Impulse durability wire-wire		C1: 1 kV / 0,5 kA (8/20 μ s)
Impulse durability wire-earth		C2: 10 kV / 5 kA (8/20 μ s)
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		D1: 3 kA
Protection level wire-wire		<30 V
Protection level wire-earth		<600 V
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail 35 mm
Connection system		Terminal
Division unit TE (17.5 mm)		1
Protection rating		IP20
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		Terminal
Testing standard		IEC 61643-21
Approvals		UL

Medium and fine protection FRD for two-core systems 24 V

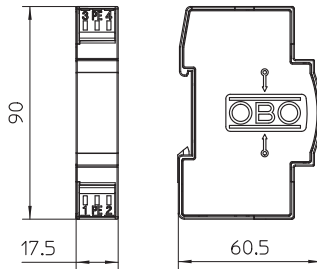


Type	Highest continuous AC voltage V	Highest continuous DC voltage V	Number of poles	Connection system	Pack. pcs.	Weight kg/100 pcs.	Item No.
FRD 24	19	28	2	Terminal	1	5.100	5098514

Surge protection for use in measurement and control technology

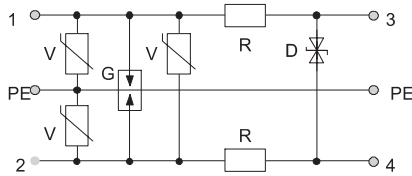
- Medium and fine protection
- Standard design for double core systems
- Two-stage protection circuit
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid
- With ohmic decoupling in the longitudinal branch

Dimensions



Application: Universal use on any 35 mm DIN profile rail in every commercially available distributor housing.

Connection options



FRD 24

Maximum continuous voltage AC	U_c	19 V
Maximum continuous voltage DC	U_c	28 V
Category		Type 1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0-3
Number of poles		2
Rated current	I_n	0.2 A
Series resistance per wire		15 Ω \pm 10 %
Impulse durability wire-wire		C2: 5 kV / 2.5 kA (8/20 μ s)
Impulse durability wire-earth		C2: 10 kV / 5 kA (8/20 μ s)
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		D1: 3 kA
Protection level wire-wire		<60 V
Protection level wire-earth		<600 V
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail 35 mm
Connection system		Terminal
Division unit TE (17.5 mm)		1
Protection rating		IP20
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		Terminal
Testing standard		IEC 61643-21
Approvals		UL

Medium and fine protection FRD for two-core systems 48 V



Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs.	Weight kg/100 pcs.	Item No.
FRD 48	37	53	2	Terminal	1	5.100	5098522

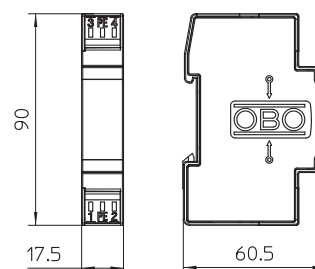
Surge protection for use in measurement and control technology

- Medium and fine protection
- Standard design for double core systems
- Two-stage protection circuit
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid
- With ohmic decoupling in the longitudinal branch

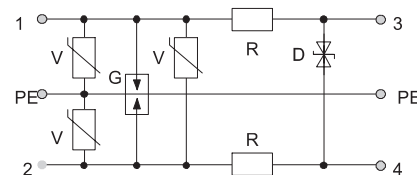
Application: Universal use on any 35 mm DIN profile rail in every commercially available distributor housing.



Dimensions



Connection options



FRD 48

Maximum continuous voltage AC	U_c	37 V
Maximum continuous voltage DC	U_c	53 V
Category	Type	1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		2
Rated current	I_n	0.2 A
Series resistance per wire		15 Ω \pm 10 %
Impulse durability wire-wire		C2: 5 kV / 2.5 kA (8/20 μ s)
Impulse durability wire-earth		C2: 10 kV / 5 kA (8/20 μ s)
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		D1: 3 kA
Protection level wire-wire		<140 V
Protection level wire-earth		<600 V
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail 35 mm
Connection system		Terminal
Division unit TE (17.5 mm)		1
Protection rating		IP20
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		Terminal
Testing standard		IEC 61643-21
Approvals		UL

Medium and fine protection FRD for two-core systems 110 V

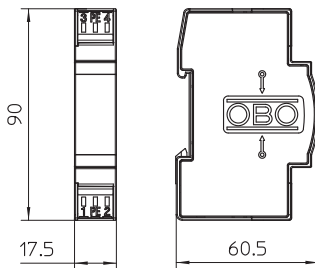


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FRD 110	86	122	2	Terminal	1	5.100	5098557

Surge protection for use in measurement and control technology

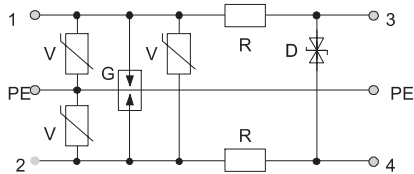
- Medium and fine protection
- Standard design for double core systems
- Two-stage protection circuit
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid
- With ohmic decoupling in the longitudinal branch

Dimensions



Application: Universal use on any 35 mm DIN profile rail in every commercially available distributor housing.

Connection options



FRD 110

Maximum continuous voltage AC	U_c	86 V
Maximum continuous voltage DC	U_c	122 V
Category		Type 1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		2
Rated current	I_n	0.2 A
Series resistance per wire		15 Ω ± 10 %
Impulse durability wire-wire		C2: 5 kV / 2.5 kA (8/20 μ s)
Impulse durability wire-earth		C2: 10 kV / 5 kA
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		D1: 3 kA
Protection level wire-wire		<300 V
Protection level wire-earth		<600 V
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail 35 mm
Connection system		Terminal
Division unit TE (17.5 mm)		1
Protection rating		IP20
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		Terminal
Testing standard		IEC 61643-21
Approvals		UL

Medium and fine protection FRD 2 for two-core systems 24 V



Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs.	Weight kg/100 pcs.	Item No.
FRD 2-24	19	28	2	Terminal	1	5.100	5098727

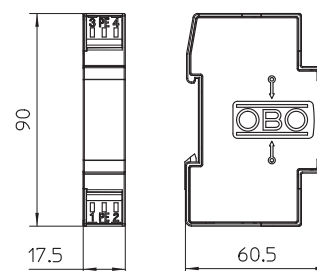
Surge protection for use in measurement and control technology

- Medium and fine protection
- Standard design for double core systems
- Two-stage protection circuit
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid
- With ohmic decoupling in the longitudinal branch

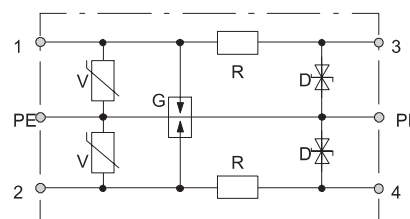
Application: Universal use on any 35 mm DIN profile rail in every commercially available distributor housing.



Dimensions



Connection options



FRD 2-24

Maximum continuous voltage AC	U_c	19 V
Maximum continuous voltage DC	U_c	28 V
Category		Type 2+3 / C2+C1
Lightning protection zone LPZ		1→3
Number of poles		2
Rated current	I_n	0.2 A
Series resistance per wire		15 $\Omega \pm 10\%$
Impulse durability wire-wire		C2: 5 kV / 2,5 kA (8/20 μ s)
Impulse durability wire-earth		C2: 5 kV / 2,5 kA (8/20 μ s)
Total discharge current (8/20)		5 kA
Total discharge current (10/350)		— kA
Protection level wire-wire		<120 V
Protection level wire-earth		<60 V
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail 35 mm
Connection system		Terminal
Division unit TE (17.5 mm)		1
Protection rating		IP20
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		Terminal
Testing standard		IEC 61643-21
Approvals		—

Medium and fine protection FLD for two-core systems 5 V

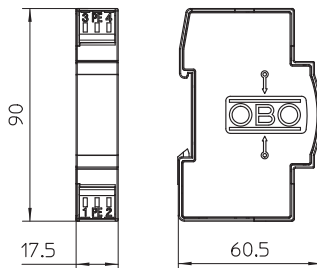


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs.	Weight kg/100 pcs.	Item No.
FLD 5	5	8	2	Terminal	1	5.200	5098600

Surge protection for use in measurement and control technology

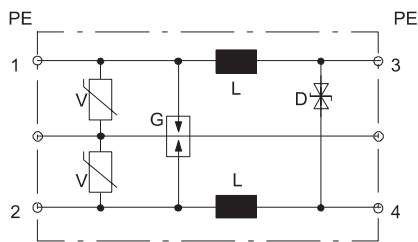
- Medium and fine protection
- Standard design for single core systems
- Two-stage protection circuit
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid
- With inductive decoupling in the longitudinal branch

Dimensions



Application: Universal use on any 35 mm DIN profile rail in every commercially available distributor housing.

Connection options



FLD 5

Maximum continuous voltage AC	U_c	5 V
Maximum continuous voltage DC	U_c	8 V
Category		Type 1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		2
Rated current	I_n	1 A
Series inductivity per wire		120 μ H \pm 20 %
Impulse durability wire-wire		C1: 1 kV / 0,5 kA (8/20 μ s)
Impulse durability wire-earth		C2: 10 kV / 5 kA (8/20 μ s)
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		D1: 3 kA
Protection level wire-wire		<15 V
Protection level wire-earth		<600 V
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail 35 mm
Connection system		Terminal
Division unit TE (17.5 mm)		1
Protection rating		IP20
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		Terminal
Testing standard		IEC 61643-21
Approvals		UL

Medium and fine protection FLD for two-core systems 12 V



Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FLD 12	9	13	2	Terminal	1	5.200	5098603

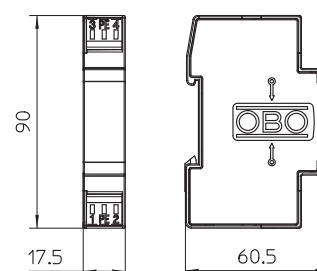
Surge protection for use in measurement and control technology

- Medium and fine protection
- Standard design for single core systems
- Two-stage protection circuit
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid
- With inductive decoupling in the longitudinal branch

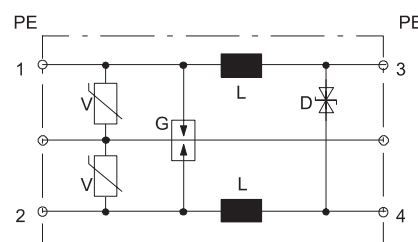
Application: Universal use on any 35 mm DIN profile rail in every commercially available distributor housing.



Dimensions



Connection options



FLD 12

Maximum continuous voltage AC	U_c	9 V
Maximum continuous voltage DC	U_c	13 V
Category	Type	1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		2
Rated current	I_n	1 A
Series inductivity per wire		120 μ H \pm 20 %
Impulse durability wire-wire		C1: 1 kV / 0,5 kA (8/20 μ s)
Impulse durability wire-earth		C2: 10 kV / 5 kA (8/20 μ s)
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		D1: 3 kA
Protection level wire-wire		<30 V
Protection level wire-earth		<600 V
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail 35 mm
Connection system		Terminal
Division unit TE (17.5 mm)		1
Protection rating		IP20
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		Terminal
Testing standard		IEC 61643-21
Approvals		UL

Medium and fine protection FLD for two-core systems 24 V

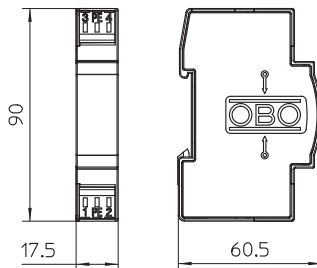


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs.	Weight kg/100 pcs.	Item No.
FLD 24	19	28	2	Terminal	1	5.200	5098611

Surge protection for use in measurement and control technology

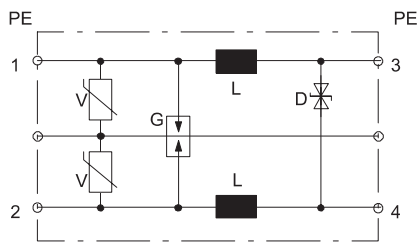
- Medium and fine protection
- Standard design for single core systems
- Two-stage protection circuit
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid
- With inductive decoupling in the longitudinal branch

Dimensions



Application: Universal use on any 35 mm DIN profile rail in every commercially available distributor housing.

Connection options



FLD 24

Maximum continuous voltage AC	U_c	19 V
Maximum continuous voltage DC	U_c	28 V
Category		Type 1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		2
Rated current	I_n	1 A
Series inductivity per wire		120 μ H \pm 20 %
Impulse durability wire-wire		C2: 5 kV / 2.5 kA (8/20 μ s)
Impulse durability wire-earth		C2: 10 kV / 5 kA (8/20 μ s)
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		D1: 3 kA
Protection level wire-wire		<60 V
Protection level wire-earth		<600 V
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail 35 mm
Connection system		Terminal
Division unit TE (17.5 mm)		1
Protection rating		IP20
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		Terminal
Testing standard		IEC 61643-21
Approvals		UL

Medium and fine protection FLD for two-core systems 48 V



Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FLD 48	37	53	2	Terminal	1	5.200	5098630

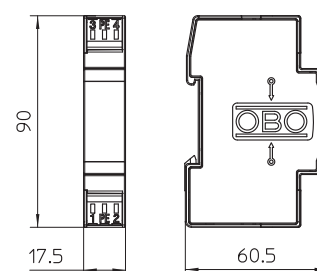
Surge protection for use in measurement and control technology

- Medium and fine protection
- Standard design for single core systems
- Two-stage protection circuit
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid
- With inductive decoupling in the longitudinal branch

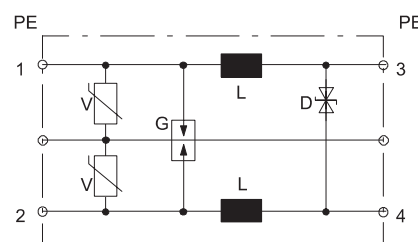
Application: Universal use on any 35 mm DIN profile rail in every commercially available distributor housing.



Dimensions



Connection options



FLD 48

Maximum continuous voltage AC	U_c	37 V
Maximum continuous voltage DC	U_c	53 V
Category	Type	1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		2
Rated current	I_n	1 A
Series inductivity per wire		120 μ H \pm 20 %
Impulse durability wire-wire		C2: 5 kV / 2.5 kA (8/20 μ s)
Impulse durability wire-earth		C2: 10 kV / 5 kA (8/20 μ s)
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		D1: 3 kA
Protection level wire-wire		<140 V
Protection level wire-earth		<600 V
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail 35 mm
Connection system		Terminal
Division unit TE (17.5 mm)		1
Protection rating		IP20
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		Terminal
Testing standard		IEC 61643-21
Approvals		UL

Medium and fine protection FLD for two-core systems 110 V

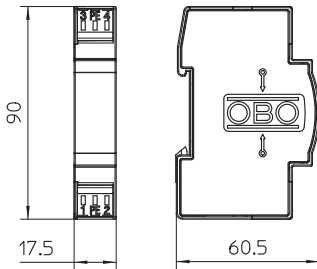


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs.	Weight kg/100 pcs.	Item No.
FLD 110	86	122	2	Terminal	1	5.200	5098646

Surge protection for use in measurement and control technology

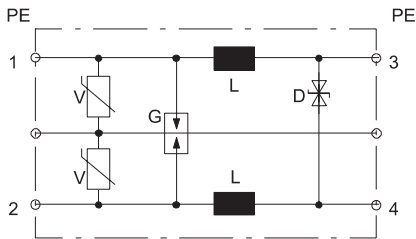
- Medium and fine protection
- Standard design for single core systems
- Two-stage protection circuit
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid
- With inductive decoupling in the longitudinal branch

Dimensions



Application: Universal use on any 35 mm DIN profile rail in every commercially available distributor housing.

Connection options



FLD 110

Maximum continuous voltage AC	U_c	86 V
Maximum continuous voltage DC	U_c	122 V
Category		Type 1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		2
Rated current	I_n	1 A
Series inductivity per wire		120 μ H \pm 20 %
Impulse durability wire-wire		C1: 1 kV / 0,5 kA (8/20 μ s)
Impulse durability wire-earth		C2: 10 kV / 5 kA (8/20 μ s)
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		D1: 3 kA
Protection level wire-wire		<300 V
Protection level wire-earth		<600 V
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail 35 mm
Connection system		Terminal
Division unit TE (17.5 mm)		1
Protection rating		IP20
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		Terminal
Testing standard		IEC 61643-21
Approvals		UL

Medium and fine protection FLD 2 for two-core systems 12 V



Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FLD 2-12	9	13	2	Terminal	1	5.100	5098808

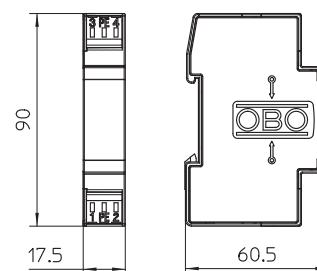
Surge protection for use in measurement and control technology

- Medium and fine protection
- Standard design for single core systems
- Two-stage protection circuit
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid
- With inductive decoupling in the longitudinal branch

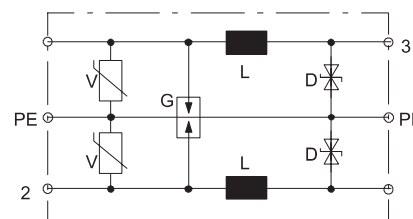
Application: Universal use on any 35 mm DIN profile rail in every commercially available distributor housing.



Dimensions



Connection options



FLD 2-12

Maximum continuous voltage AC	U_c	9 V
Maximum continuous voltage DC	U_c	13 V
Category		Type 2+3 / C2+C1
Lightning protection zone LPZ		1→3
Number of poles		2
Rated current	I_n	1 A
Series inductivity per wire		120 μ H \pm 10 %
Impulse durability wire-wire		C1: 1 kV / 0,5 kA (8/20 μ s)
Impulse durability wire-earth		C1: 1 kV / 0,5 kA (8/20 μ s)
Total discharge current (8/20)		1 kA
Total discharge current (10/350)		— kA
Protection level wire-wire		<60 V
Protection level wire-earth		<30 V
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail 35 mm
Connection system		Terminal
Division unit TE (17.5 mm)		1
Protection rating		IP20
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		Terminal
Testing standard		IEC 61643-21
Approvals		UL

Medium and fine protection FLD 2 for two-core systems

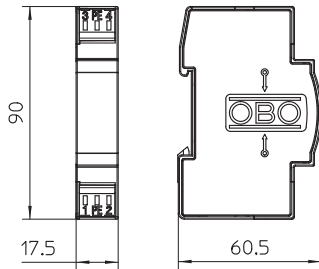


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs.	Weight kg/100 pcs.	Item No.
FLD 2-24	28	19	2	Terminal	1	5.100	5098816

Surge protection for use in measurement and control technology

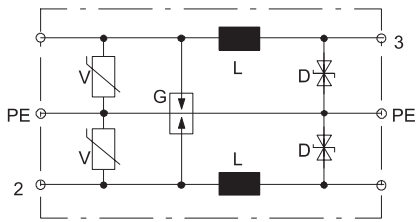
- Medium and fine protection
- Standard design for single core systems
- Two-stage protection circuit
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid
- With inductive decoupling in the longitudinal branch

Dimensions



Application: Universal use on any 35 mm DIN profile rail in every commercially available distributor housing.

Connection options



FLD 2-24

Maximum continuous voltage AC	U_c	28 V
Maximum continuous voltage DC	U_c	19 V
Category		Type 2+3 / C2+C1
Lightning protection zone LPZ		1→3
Number of poles		2
Rated current	I_n	1 A
Series inductivity per wire		120 μ H \pm 10 %
Impulse durability wire-wire		C1: 1 kV / 0,5 kA (8/20 μ s)
Impulse durability wire-earth		C1: 1 kV / 0,5 kA (8/20 μ s)
Total discharge current (8/20)		1 kA
Total discharge current (10/350)		— kA
Protection level wire-wire		<120 V
Protection level wire-earth		<60 V
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail 35 mm
Connection system		Terminal
Division unit TE (17.5 mm)		1
Protection rating		IP20
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		Terminal
Testing standard		IEC 61643-21
Approvals		UL

Medium and fine protection FLD 2 for two-core systems 110 V



Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs.	Weight kg/100 pcs.	Item No.
FLD 2-110	86	122	2	Terminal	1	5.100	5098859

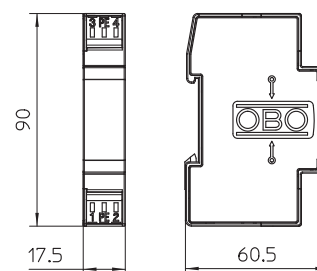
Surge protection for use in measurement and control technology

- Medium and fine protection
- Standard design for single core systems
- Two-stage protection circuit
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid
- With inductive decoupling in the longitudinal branch

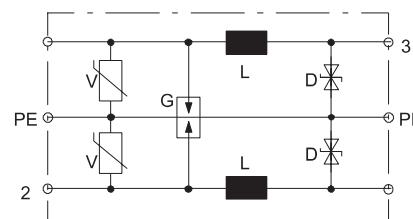
Application: Universal use on any 35 mm DIN profile rail in every commercially available distributor housing.



Dimensions



Connection options



FLD 2-110

Maximum continuous voltage AC	U_c	86 V
Maximum continuous voltage DC	U_c	122 V
Category		Type 2+3 / C2+C1
Lightning protection zone LPZ		1→3
Number of poles		2
Rated current	I_n	1 A
Series inductivity per wire		120 μ H \pm 10 %
Impulse durability wire-wire		C2: 5 kV / 2,5 kA (8/20 μ s)
Impulse durability wire-earth		C2: 5 kV / 2,5 kA (8/20 μ s)
Total discharge current (8/20)		5 kA
Total discharge current (10/350)		— kA
Protection level wire-wire		<500 V
Protection level wire-earth		<300 V
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail 35 mm
Connection system		Terminal
Division unit TE (17.5 mm)		1
Protection rating		IP20
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 2.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		Terminal
Testing standard		IEC 61643-21
Approvals		UL

MCR protection for multi-wire systems (testable): the plus of the MDP family

- Protection device for multi-wire systems (4-pole)
- Direct shield earthing
- Easy-mounting, screwless connection terminals
- Space-saving width of just 8.1 mm
- Versions with nominal currents up to 10 A
- High frequency bandwidth up to 100 MHz
- UL-listed



Series protection device
2–3 and 4-pole
from 5 to 48 V

Besides the high current capacity, the lightning barriers of type MDP offer a narrow installation width of just 8 mm. A separate screen connection permits shield attachment on both sides of the equipotential bonding, thus optimising the shield

effect against capacitive and inductive couplings. Depending on the version, a nominal current of up to 10 A can be applied to the devices, meaning that they are thus ideally suited to use in special applications, such as slip ring

transmitters or heating systems in wind power systems. When installed, all the MDPs can be checked using LifeControl.

Series protection device, 2-pole, 5 V version



Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-2 D-5-T	7	10	2	Terminal	1	6.000	5098404

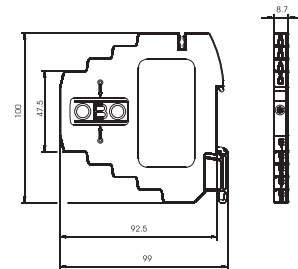
MDP... D-5-T: Lightning barrier with test function; 5 V version

- Nominal load current 0.58 A
- Protection device for multi-wire systems
- Direct shield earthing and screwless connection terminals
- Space-saving width of just 8.7 mm
- Protection circuit testable with Life Control
- High frequency range of 0–100 MHz
- UL-listed (4DG1)

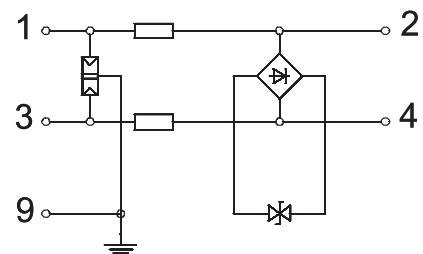
Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.



Dimensions



Connection options

**MDP-2 D-5-T**

Maximum continuous voltage AC	U_c	7 V
Maximum continuous voltage DC	U_c	10 V
Category	Type	1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		2
Rated current	I_n	0.58 A
Series resistance per wire		2,35 $\Omega \pm 5\%$
Impulse durability wire-wire		C1: 0,5 kV / 0,25 kA (8/20 μ s)
Impulse durability wire-earth		C2: 5 kV / 2,5 kA (8/20 μ s)
Total discharge current (8/20)		5 kA
Total discharge current (10/350)		D1: 1 kA
Protection level wire-wire		<35 V
Protection level wire-earth		<800 V
Frequency range		0 - 100 MHz
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail 35 mm
Connection system		Terminal
Protection rating		IP20
Shielding connection available		Yes
Shield connection		Direct
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 1.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		DIN rail
Testing standard		IEC 61643-21
Approvals		UL

Series protection device, 3-pole, 5 V version

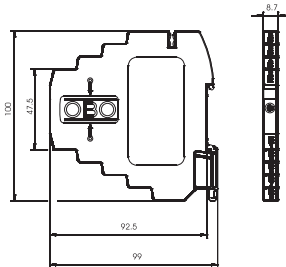


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs	Item No.
MDP-3 D-5-T	7	10	3	Terminal	1	6.000	5098407

MDP... D-5-T: Lightning barrier with test function; 5 V version

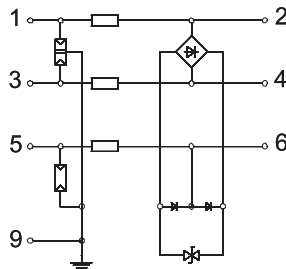
- Nominal load current 0.58 A
- Protection device for multi-wire systems
- Direct shield earthing and screwless connection terminals
- Space-saving width of just 8.7 mm
- Protection circuit testable with Life Control
- High frequency range of 0–100 MHz
- UL-listed (4DG1)

Dimensions



Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.

Connection options



MDP-3 D-5-T

Maximum continuous voltage AC	U_c	7 V
Maximum continuous voltage DC	U_c	10 V
Category		Type 1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		3
Rated current	I_n	0.58 A
Series resistance per wire		2,35 Ω \pm 5 %
Impulse durability wire-wire		C1: 0,5 kV / 0,25 kA (8/20 μ s)
Impulse durability wire-earth		C2: 5 kV / 2,5 kA (8/20 μ s)
Total discharge current (8/20)		7,5 kA
Total discharge current (10/350)		D1: 1,5 kA
Protection level wire-wire		<35 V
Protection level wire-earth		<800 V
Frequency range		0 - 100 MHz
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail 35 mm
Connection system		Terminal
Protection rating		IP20
Shielding connection available		Yes
Shield connection		Direct
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 1.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		DIN rail
Testing standard		IEC 61643-21
Approvals		UL

Series protection device, 4-pole, 5 V version



Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs	Item No.
MDP-4 D-5-T	7	10	4	Terminal	1	6.000	5098411

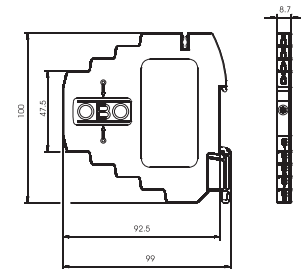
MDP... D-5-T: Lightning barrier with test function; 5 V version

- Nominal load current 0.58 A
- Protection device for multi-wire systems
- Direct shield earthing and screwless connection terminals
- Space-saving width of just 8.7 mm
- Protection circuit testable with Life Control
- High frequency range of 0–100 MHz
- UL-listed (4DG1)

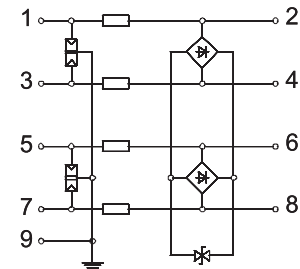
Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.



Dimensions



Connection options

**MDP-4 D-5-T**

Maximum continuous voltage AC	U_c	7 V
Maximum continuous voltage DC	U_c	10 V
Category	Type	1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		4
Rated current	I_n	0.58 A
Series resistance per wire		2,35 $\Omega \pm 5\%$
Impulse durability wire-wire		C1: 0,5 kV / 0,25 kA (8/20 μ s)
Impulse durability wire-earth		C2: 5 kV / 2,5 kA (8/20 μ s)
Total discharge current (8/20)		10 kA kA
Total discharge current (10/350)		D1: 2kA kA
Protection level wire-wire		<35 V
Protection level wire-earth		<800 V
Frequency range		0 - 100 MHz
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail 35 mm
Connection system		Terminal
Protection rating		IP20
Shielding connection available		Yes
Shield connection		Direct
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 1.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		DIN rail
Testing standard		IEC 61643-21
Approvals		UL

Series protection device, 2-pole, 24 V version

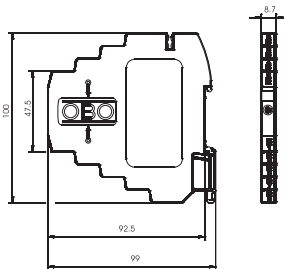


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs	Item No.
MDP-2 D-24-T	20	28	2	Terminal	1	6.000	5098422

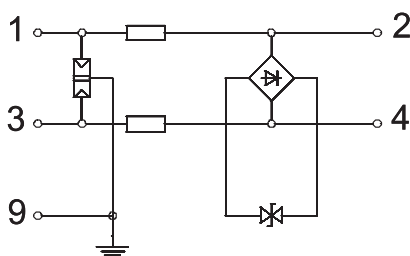
MDP... D-24-T: Lightning barrier with test function; 24 V version

- Nominal load current 0.58 A
- Protection device for multi-wire systems
- Direct shield earthing and screwless connection terminals
- Space-saving width of just 8.7 mm
- Protection circuit testable with Life Control
- High bandwidth to 100 MHz
- UL-listed (4DG1)

Dimensions



Connection options



Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.

MDP-2 D-24-T

Maximum continuous voltage AC	U_c	20 V
Maximum continuous voltage DC	U_c	28 V
Category		Type 1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		2
Rated current	I_n	0.58 A
Series resistance per wire		2,35 Ω \pm 5 %
Impulse durability wire-wire		C1: 0,5 kV / 0,25 kA (8/20 μ s)
Impulse durability wire-earth		C2: 5 kV / 2,5 kA (8/20 μ s)
Total discharge current (8/20)		5 kA
Total discharge current (10/350)		D1: 1 kA
Protection level wire-wire		<55 V
Protection level wire-earth		<800 V
Frequency range		0 - 100 MHz
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail 35 mm
Connection system		Terminal
Protection rating		IP20
Shielding connection available		Yes
Shield connection		Direct
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 1.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		DIN rail
Testing standard		IEC 61643-21
Approvals		UL

Series protection device, 3-pole, 24 V version



Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs	Item No.
MDP-3 D-24-T	20	28	3	Terminal	1	6.000	5098427

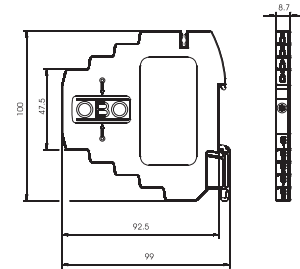
MDP... D-24-T: Lightning barrier with test function; 24 V version

- Nominal load current 0.58 A
- Protection device for multi-wire systems
- Direct shield earthing and screwless connection terminals
- Space-saving width of just 8.7 mm
- Protection circuit testable with Life Control
- High bandwidth to 100 MHz
- UL-listed (4DG1)

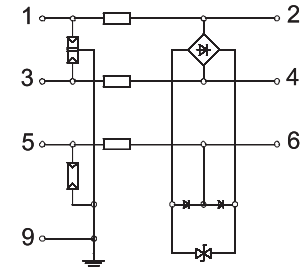
Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.



Dimensions



Connection options



MDP-3 D-24-T

Maximum continuous voltage AC	U_c	20 V
Maximum continuous voltage DC	U_c	28 V
Category	Type	1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		3
Rated current	I_n	0.58 A
Series resistance per wire		2,35 $\Omega \pm 5\%$
Impulse durability wire-wire		C1: 0,5 kV / 0,25 kA (8/20 μ s)
Impulse durability wire-earth		C2: 5 kV / 2,5 kA (8/20 μ s)
Total discharge current (8/20)		7,5 kA
Total discharge current (10/350)		D1: 1,5 kA
Protection level wire-wire		<55 V
Protection level wire-earth		<800 V
Frequency range		0 - 100 MHz
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail 35 mm
Connection system		Terminal
Protection rating		IP20
Shielding connection available		Yes
Shield connection		Direct
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 1.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		DIN rail
Testing standard		IEC 61643-21
Approvals		UL

Series protection device, 4-pole, 24 V version

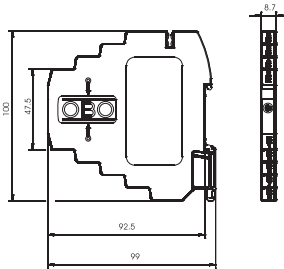


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs	Item No.
MDP-4 D-24-T	20	28	4	Terminal	1	5.800	5098431

MDP... D-24-T: Lightning barrier with test function; 24 V version

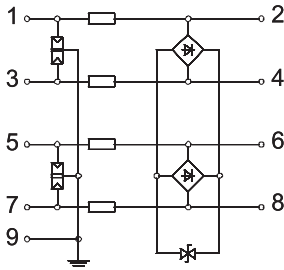
- Nominal load current 0.58 A
- Protection device for multi-wire systems
- Direct shield earthing and screwless connection terminals
- Space-saving width of just 8.7 mm
- Protection circuit testable with Life Control
- High bandwidth to 100 MHz
- UL-listed (4DG1)

Dimensions



Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.

Connection options



MDP-4 D-24-T

Maximum continuous voltage AC	U_c	20 V
Maximum continuous voltage DC	U_c	28 V
Category		Type 1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		4
Rated current	I_n	0.58 A
Series resistance per wire		2,35 $\Omega \pm 5\%$
Impulse durability wire-wire		C1: 0,5 kV / 0,25 kA (8/20 μ s)
Impulse durability wire-earth		C2: 5 kV / 2,5 kA (8/20 μ s)
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		D1: 2 kA
Protection level wire-wire		<55 V
Protection level wire-earth		<800 V
Frequency range		0 - 100 MHz
Temperature range	θ	-40 - +80 °C
Installation type		DIN rail 35 mm
Connection system		Terminal
Protection rating		IP20
Shielding connection available		Yes
Shield connection		Direct
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 1.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		DIN rail
Testing standard		IEC 61643-21
Approvals		UL

Series protection device, 2-pole, 48 V version



Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs	Item No.
MDP-2 D-48-T	41	58	2	Terminal	1	6.000	5098442

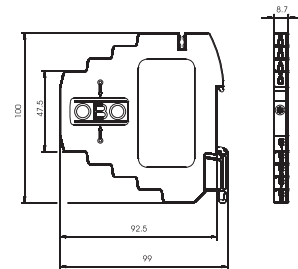
MDP... D-48-T: Lightning barrier with test function; 48 V version

- Nominal load current 0.58 A
- Protection device for multi-wire systems
- Direct shield earthing and screwless connection terminals
- Space-saving width of just 8.7 mm
- Protection circuit testable with Life Control
- High bandwidth to 100 MHz
- UL-listed (4DG1)

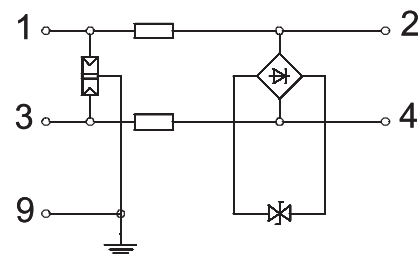
Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.



Dimensions



Connection options

**MDP-2 D-48-T**

Maximum continuous voltage AC	U_c	41 V
Maximum continuous voltage DC	U_c	58 V
Category	Type	1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		2
Rated current	I_n	0.58 A
Series resistance per wire		2,35 $\Omega \pm 5\%$
Impulse durability wire-wire		C1: 0,5 kV / 0,25 kA (8/20 μ s)
Impulse durability wire-earth		C2: 5 kV / 2,5 kA (8/20 μ s)
Total discharge current (8/20)		5 kA
Total discharge current (10/350)		D1: 1 kA
Protection level wire-wire		<95 V
Protection level wire-earth		<800 V
Frequency range		0 - 100 MHz
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail 35 mm
Connection system		Terminal
Protection rating		IP20
Shielding connection available		Yes
Shield connection		Direct
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 1.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		DIN rail
Testing standard		IEC 61643-21
Approvals		UL

Series protection device, 3-pole, 48 V version

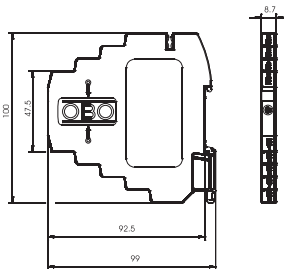


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-3 D-48-T	41	58	3	Terminal	1	6.000	5098446

MDP... D-48-T: Lightning barrier with test function; 48 V version

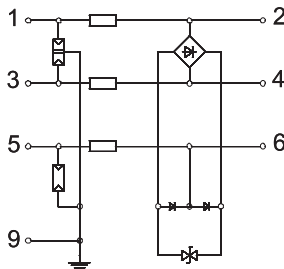
- Nominal load current 0.58 A
- Protection device for multi-wire systems
- Direct shield earthing and screwless connection terminals
- Space-saving width of just 8.7 mm
- Protection circuit testable with Life Control
- High bandwidth to 100 MHz
- UL-listed (4DG1)

Dimensions



Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.

Connection options



MDP-3 D-48-T

Maximum continuous voltage AC	U_c	41 V
Maximum continuous voltage DC	U_c	58 V
Category	Type	1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		3
Rated current	I_n	0.58 A
Series resistance per wire		2,35 $\Omega \pm 5\%$
Impulse durability wire-wire		C1: 0,5 kV / 0,25 kA (8/20 μ s)
Impulse durability wire-earth		C2: 5 kV / 2,5 kA (8/20 μ s)
Total discharge current (8/20)		7,5 kA
Total discharge current (10/350)		D1: 1,5 kA
Protection level wire-wire		<95 V
Protection level wire-earth		<800 V
Frequency range		0 - 100 MHz
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail 35 mm
Connection system		Terminal
Protection rating		IP20
Shielding connection available		Yes
Shield connection		Direct
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 1.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		DIN rail
Testing standard		IEC 61643-21
Approvals		UL

Series protection device, 4-pole, 48 V version



Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs	Item No.
MDP-4 D-48-T	41	58	4	Terminal	1	5.800	5098450

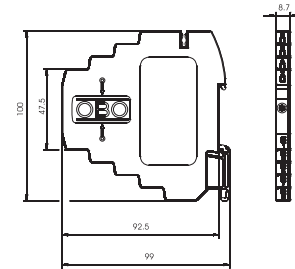
MDP... D-48-T: Lightning barrier with test function; 48 V version

- Nominal load current 0.58 A
- Protection device for multi-wire systems
- Direct shield earthing and screwless connection terminals
- Space-saving width of just 8.7 mm
- Protection circuit testable with Life Control
- High bandwidth to 100 MHz
- UL-listed (4DG1)

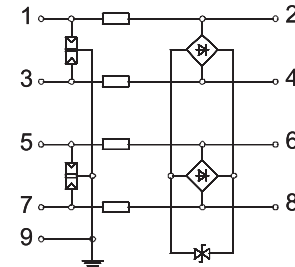
Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.



Dimensions



Connection options



MDP-4 D-48-T

Maximum continuous voltage AC	U_c	41 V
Maximum continuous voltage DC	U_c	58 V
Category	Type	1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		4
Rated current	I_n	0.58 A
Series resistance per wire		2,35 $\Omega \pm 5\%$
Impulse durability wire-wire		C1: 0,5 kV / 0,25 kA (8/20 μ s)
Impulse durability wire-earth		C2: 5 kV / 2,5 kA (8/20 μ s)
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		D1: 2 kA
Protection level wire-wire		<95 V
Protection level wire-earth		<800 V
Frequency range		0 - 100 MHz
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail 35 mm
Connection system		Terminal
Protection rating		IP20
Shielding connection available		Yes
Shield connection		Direct
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 1.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		DIN rail
Testing standard		IEC 61643-21
Approvals		UL

Series protection device, 4-pole, 5 V version

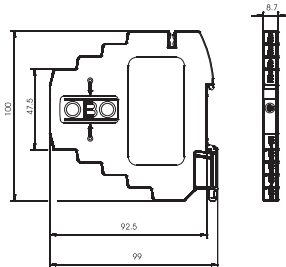


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-4 D-5-T-10	7	10	4	Terminal	1	7.200	5098413

MDP-4 D-5-T-10: Lightning barrier with test function; 5 V version

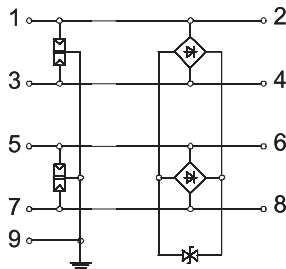
- Nominal load current 10 A
- Protection device for multi-wire systems
- Direct shield earthing and screwless connection terminals
- Space-saving width of just 8.7 mm
- Protection circuit testable with Life Control
- High bandwidth to 100 MHz
- UL-listed (4DG1)

Dimensions



Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.

Connection options



MDP-4 D-5-T-10

Maximum continuous voltage AC	U_c	7 V
Maximum continuous voltage DC	U_c	10 V
Category		Type 1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		4
Rated current	I_n	10 A
Series resistance per wire		—
Impulse durability wire-wire		C1: 0,5 kV / 0,25 kA (8/20μs)
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		D1: 2 kA
Protection level wire-wire		<45 V
Protection level wire-earth		<800 V
Frequency range		0 - 100 MHz
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail
Connection system		Terminal
Protection rating		IP20
Shielding connection available		Yes
Shield connection		Direct
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 1.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		DIN rail
Testing standard		IEC 61643-21
Approvals		UL

Series protection device, 2-pole, 12 V version



Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-2 D-12-T-10	10.5	15	2	Terminal	1	6.000	5098415

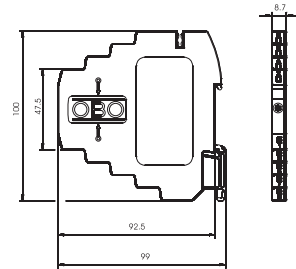
MDP... D-12-T-10: Lightning barrier with test function; 12 V version

- Nominal load current 10 A
- Protection device for multi-wire systems
- Direct shield earthing and screwless connection terminals
- Space-saving width of just 8.7 mm
- Protection circuit testable with Life Control
- High bandwidth to 100 MHz
- UL-listed (4DG1)

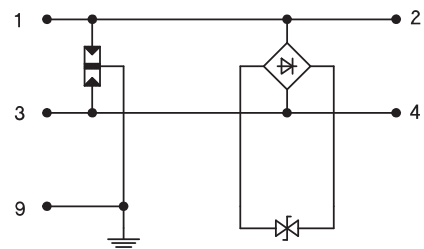
Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.



Dimensions



Connection options



MDP-2 D-12-T-10

Maximum continuous voltage AC	U_c	10.5 V
Maximum continuous voltage DC	U_c	15 V
Category	Type	1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		2
Rated current	I_n	10 A
Series resistance per wire		—
Impulse durability wire-wire		C1: 0,5 kV / 0,25 kA (8/20μs)
Total discharge current (8/20)		5 kA
Total discharge current (10/350)		D1: 1 kA
Protection level wire-wire		<55 V
Protection level wire-earth		<800 V
Frequency range		0 - 100 MHz
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail
Connection system		Terminal
Protection rating		IP20
Shielding connection available		Yes
Shield connection		Direct
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 1.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		DIN rail
Testing standard		IEC 61643-21
Approvals		UL

Series protection device, 4-pole, 12 V version

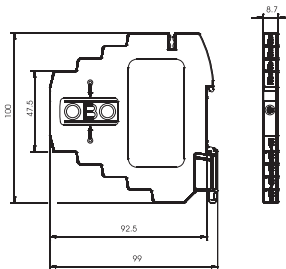


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs	Item No.
MDP-4 D-12-T-10	10.5	15	4	Terminal	1	6.000	5098419

MDP... D-12-T-10: Lightning barrier with test function; 12 V version

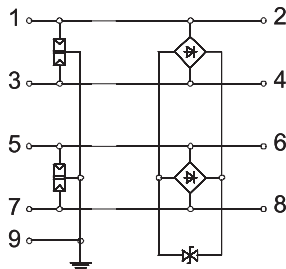
- Nominal load current 10 A
- Protection device for multi-wire systems
- Direct shield earthing and screwless connection terminals
- Space-saving width of just 8.7 mm
- Protection circuit testable with Life Control
- High bandwidth to 100 MHz
- UL-listed (4DG1)

Dimensions



Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.

Connection options



MDP-4 D-12-T-10

Maximum continuous voltage AC	U_c	10.5 V
Maximum continuous voltage DC	U_c	15 V
Category		Type 1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		4
Rated current	I_n	10 A
Series resistance per wire		—
Impulse durability wire-wire		C1: 0,5 kV / 0,25 kA (8/20μs)
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		D1: 2 kA
Protection level wire-wire		<55 V
Protection level wire-earth		<800 V
Frequency range		0 - 100 MHz
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail
Connection system		Terminal
Protection rating		IP20
Shielding connection available		Yes
Shield connection		Direct
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 1.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		DIN rail
Testing standard		IEC 61643-21
Approvals		UL

Series protection device, 2-pole, 24 V version



Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs	Item No.
MDP-2 D-24-T-10	20	28	2	Terminal	1	6.000	5098425

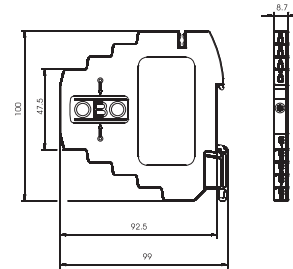
MDP... D-24-T-10: Lightning barrier with test function; 24 V version

- Nominal load current 10 A
- Protection device for multi-wire systems
- Direct shield earthing and screwless connection terminals
- Space-saving width of just 8.7 mm
- Protection circuit testable with Life Control
- High bandwidth to 100 MHz
- UL-listed (4DG1)

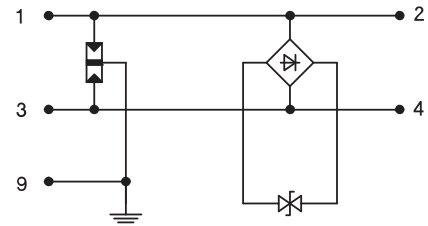
Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.



Dimensions



Connection options



MDP-2 D-24-T-10

Maximum continuous voltage AC	U_c	20 V
Maximum continuous voltage DC	U_c	28 V
Category	Type	1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		2
Rated current	I_n	10 A
Series resistance per wire		—
Impulse durability wire-wire		C1: 0,5 kV / 0,25 kA (8/20μs)
Total discharge current (8/20)		5 kA
Total discharge current (10/350)		D1: 1 kA
Protection level wire-wire		<70 V
Protection level wire-earth		<800 V
Frequency range		0 - 100 MHz
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail
Connection system		Terminal
Protection rating		IP20
Shielding connection available		Yes
Shield connection		Direct
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 1.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		DIN rail
Testing standard		IEC 61643-21
Approvals		UL

Series protection device, 4-pole, 24 V version

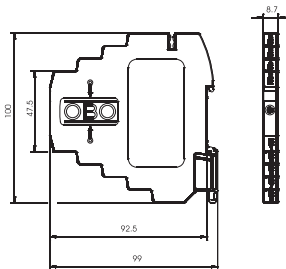


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs	Item No.
MDP-4 D-24-T-10	20	28	4	Terminal	1	7.200	5098433

MDP... D-24-T-10: Lightning barrier with test function; 24 V version

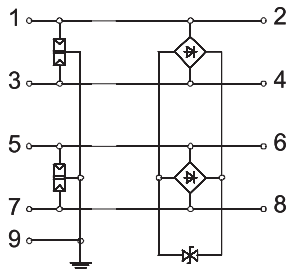
- Nominal load current 10 A
- Protection device for multi-wire systems
- Direct shield earthing and screwless connection terminals
- Space-saving width of just 8.7 mm
- Protection circuit testable with Life Control
- High bandwidth to 100 MHz
- UL-listed (4DG1)

Dimensions



Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.

Connection options



MDP-4 D-24-T-10

Maximum continuous voltage AC	U_c	20 V
Maximum continuous voltage DC	U_c	28 V
Category		Type 1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0→3
Number of poles		4
Rated current	I_n	10 A
Series resistance per wire		—
Impulse durability wire-wire		C1: 0,5 kV / 0,25 kA (8/20μs)
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		D1: 2 kA
Protection level wire-wire		<70 V
Protection level wire-earth		<800 V
Frequency range		0 - 100 MHz
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail
Connection system		Terminal
Protection rating		IP20
Shielding connection available		Yes
Shield connection		Direct
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 1.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		DIN rail
Testing standard		IEC 61643-21
Approvals		UL

Earthing strip



Type
VB-MDP 10-MD

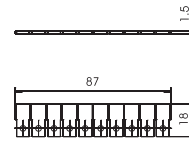
Cu Copper

Connecting bridge for 8 mm lightning barriers

- Length of bridge can be adjusted
- Material: Copper
- Allows quick equipotential bonding

Application: Parallel switching of the MDP lightning barriers

Pack.	Weight		Item No.
	pcs	kg/100 pcs.	
1	2.300		5098470



Replacement connector for VF remote signalling

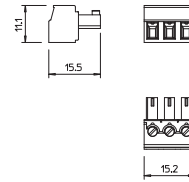


Version

Type
VF-FS | 3-pole

Replacement telephony connector, 3-pin version, for VF variant

Pack.	Weight		Item No.
	pcs	kg/100 pcs.	
25	0.320		5098475



Combined protection device 2in1 for CCTV camera systems



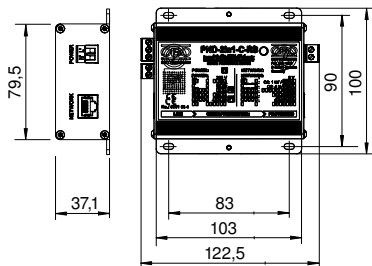
Type	Maximum continuous voltage (L-N) V	Maximum discharge current (8/20 μs) kA	Pack. pcs	Weight kg/100 pcs.	Item No.
PND-2in1-C-RS	230	10	1	27.000	5081064

Combination protection device
Data cable protection devices for coaxial and IP-based TV / camera systems

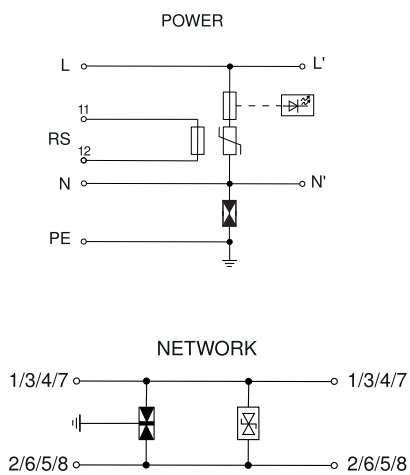
- Protection of power and data interface in a single device
- In aluminium housing
- Simple mounting with adapter plug
- Two-stage protection circuit
- Two-pole power connection for the power interface
- RJ45 connection for the data interface
- With remote signalling (RS) and LED operation display
- Incl. DIN rail fastening set

Application: Protection of CCTV, video signals; (IP) cameras and/or TV systems

Dimensions



Connection options



PND-2in1-C-RS

Temperature range	θ	-20 - +80 °C
Protection rating		IP20
Earthing via:		Connection cable / DIN rail
Lightning protection zone LPZ		0→2
Power		
SPD to IEC 61643-11		Class I+II
SPD to EN 61643-11		Type 1+2
Maximum continuous voltage (L-N)	U_C	230 V
Rated current	I_l	10 A
Voltage protection level	U_n	<1,2 kV
Idle voltage	U_{OC}	10 kV
Nominal discharge current (8/20 μs)	I_n / I_{L-N}	5 kA
Maximum discharge current (8/20 μs)	I_{max}	10 kA
Impulse discharge current (10/350)	I_{imp}	1.5 kA
Network		
Maximum continuous voltage AC	U_C	5.6 V
Maximum continuous voltage DC	U_C	8 V
Category		Type 1+2 / D1+C2
Impulse durability wire-wire		C1: 1 kV / 0,5 kA (8/20μs)
Impulse durability wire-earth		C2: 4 kV / 2 kA (8/20μs)
Protection level wire-wire		<40 V
Protection level wire-earth		<600 V
Frequency range		0 - 100 MHz
Shielding connection available		Yes
Shield connection		Direct
Testing standard		IEC 61643-21

Combined protection device 3in1 for CCTV camera systems



Type	Maximum continuous voltage (L-N) V	Maximum discharge current (8/20 μs) kA	Pack. pcs	Weight kg/100 pcs	Item No.
PND-3in1-C-RS	230	10	1	29.900	5081066

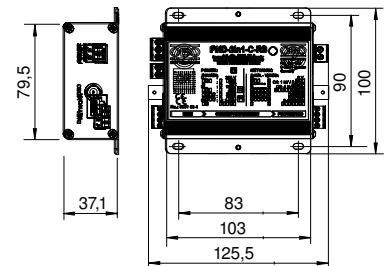
Combination protection device
Data cable protection devices for coaxial and IP-based TV / camera systems

- Protection of power and data interfaces in a single device
- In aluminium housing
- Simple mounting with adapter plug
- Two-stage protection circuit
- Two-pole power connection for the power interface
- Screwless terminal and BNC connection for the data and video interface
- With remote signalling (RS) and LED operation display
- Incl. hat rail fastening set

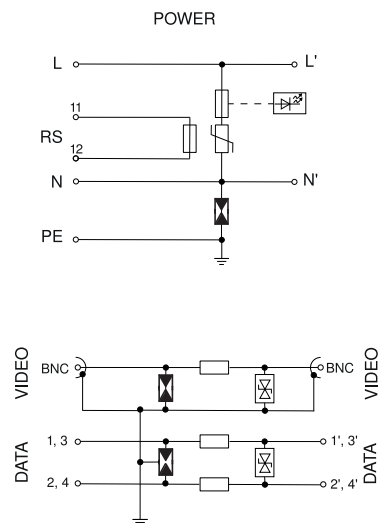
Application: Protection of CCTV, video signals; (IP) cameras and/or TV systems



Dimensions



Connection options





PND-3in1-C-RS

Lightning protection zone LPZ	0→2
Earthing via:	Connection cable / DIN rail
Protection rating	IP20
Power	
SPD to IEC 61643-11	Class I+II
SPD to EN 61643-11	Type 1+2
Maximum continuous voltage (L-N)	U_C 230 V
Rated current	I_L 10 A
Voltage protection level	U_n <1,2 kV
Nominal discharge current (8/20 μs)	$I_{n / I-N}$ 5 kA
Maximum discharge current (8/20 μs)	I_{max} 10 kA
Impulse discharge current (10/350)	I_{imp} 1.5 kA
Data	
Maximum continuous voltage AC	U_C 5.65 V
Maximum continuous voltage DC	U_C 8 V
SPD to IEC 61643-21	Class I+II / D1+C2
Category	Type 1+2 / D1+C2
Impulse durability wire - wire	C2: 10 kV / 5 kA (8/20μs)
Impulse durability wire - earth	C2: 10 kV / 5 kA (8/20μs)
Lightning impulse current (10/350)	I_{imp} 1 kA
Protection level wire-earth	<450 V
Protection level wire-wire	<65 V
Frequency range	0-100 MHz
Video	
Maximum continuous voltage AC	U_C 5.65 V
Maximum continuous voltage DC	U_C 8 V
SPD to IEC 61643-21	Class I+II / D1+C2
Category	Type 1+2 / D1+C2
Impulse durability wire - earth	C2: 10 kV / 5 kA (8/20μs)
Impulse durability wire - wire	C2: 10 kV / 5 kA (8/20μs)
Lightning impulse current (10/350)	I_{imp} 1 kA
Protection level wire-wire	<90 V
Protection level wire-earth	<150 V
Frequency range	0-100 MHz
Screen connection	Yes
Screening	Direct
Temperature range	θ -20 - +80 °C

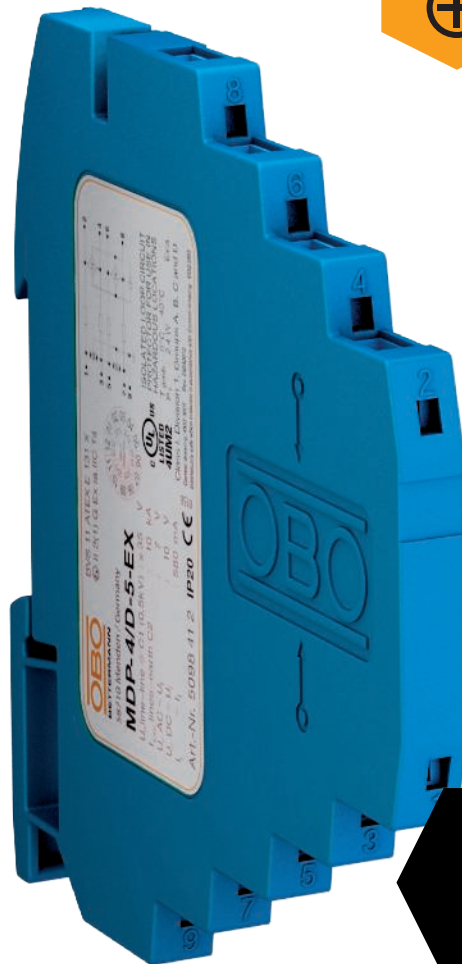


Surge protection, Ex protection

	Series protection device, 4-pole, 5 V	413
	Series protection device, 4-pole, 24 V	414
	Series protection device, 4-pole, 48 V	415
	MCR protection, 2-pole 24 V	417
	MCR protection, 3-pole 24 V	418

MCR protection for Ex areas: the plus of the MDP Ex family

- Protection device for multi-wire systems (4-pole)
- Direct shield earthing
- Easy-mounting, screwless connection option
- Space-saving width of just 8.7 mm
- Ex-tested for intrinsically safe measuring circuits
- High frequency bandwidth up to 100 MHz



Series protection device,
Ex protection
2-4-pole, 5-48 V

Surge protection in potentially explosive areas is an important topic. Here, it is important to protect costly measuring technology against the influence of surge voltages through atmospheric dis-

charge. OBO lightning barriers are tested for intrinsic safety (ia) and are independently certified. With a high arresting capacity of 10 kA, they offer optimum protection for four-pole measurement and con-

trol applications. Different voltage variants offer a wide range of applications.

Series protection device, 4-pole, 5 V version, Ex-tested



Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-4 D-5-EX	7	10	4	1	5.800	5098412

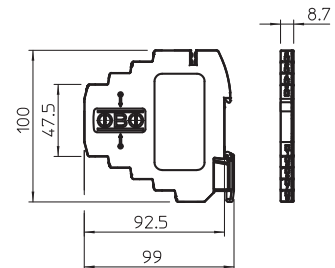
MDP-4 D...-EX : Lightning barrier for intrinsically safe measuring circuits

- Protection device for multi-wire systems
- Direct shield earthing and screwless connection terminals
- Space-saving width of just 8.7 mm
- High frequency range of 0-100 MHz
- ATEX approval: II 2(1) G Ex ia [ia Ga] IIC T4 (BVS 11 ATEX E 131 X)
- UL-listed (4UM2)

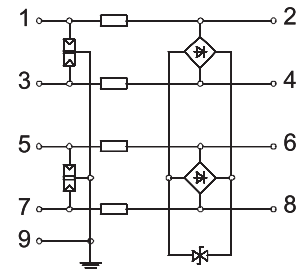
Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.



Dimensions



Connection options



MDP-4 D-5-EX

Maximum continuous voltage AC	U_c	7 V
Maximum continuous voltage DC	U_c	10 V
Category	Type	1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0-3
Number of poles		4
Rated current	I_n	0.58 A
Series resistance per wire		2,35 $\Omega \pm 5\%$
Impulse durability wire-wire		C1: 0,5 kV / 0,25 kA (8/20 μ s)
Impulse durability wire-earth		C2: 5 kV / 2,5 kA (8/20 μ s)
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		D1: 2 kA
Protection level wire-wire		< 35 V
Protection level wire-earth		< 800 V
Frequency range		0-100 MHz
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail
Connection system		Terminal
Protection rating		IP20
Shielding connection available		Yes
Shield connection		Direct
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 1.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		DIN rail
EX approval		II 2(1)G Ex ia [ia Ga] IIC T4 Gb
Testing standard		IEC 61643-21
Approvals		UL



Series protection device, 4-pole, 24 V version, Ex-tested

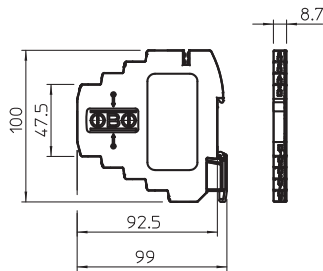


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-4 D-24-EX	20	28	4	1	5.800	5098432

MDP-4 D...-EX : Lightning barrier for intrinsically safe measuring circuits

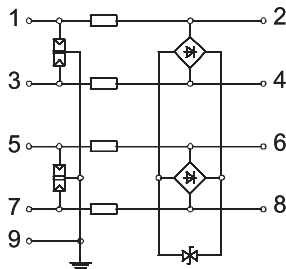
- Protection device for multi-wire systems
- Direct shield earthing and screwless connection terminals
- Space-saving width of just 8.7 mm
- High frequency range of 0-100 MHz
- ATEX approval: II 2(1) G Ex ia [ia Ga] IIC T4 (BVS 11 ATEX E 131 X)
- UL-listed (4UM2)

Dimensions



Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.

Connection options



MDP-4 D-24-EX

Maximum continuous voltage AC	U_c	20 V
Maximum continuous voltage DC	U_c	28 V
Category		Type 1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0-3
Number of poles		4
Rated current	I_n	0.58 A
Series resistance per wire		2,35 $\Omega \pm 5\%$
Impulse durability wire-wire		C1: 0,5 KV / 0,25 kA (8/20 μ s)
Impulse durability wire-earth		C2: 5 KV / 2,5 kA (8/20 μ s)
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		D1: 2 kA
Protection level wire-wire		< 55 V
Protection level wire-earth		< 800 V
Frequency range		0-100 MHz
Temperature range	θ	-40 - +80 °C
Installation type		DIN rail
Connection system		Terminal
Protection rating		IP20
Shielding connection available		Yes
Shield connection		Direct
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 1.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		DIN rail
EX approval		II 2(1)G Ex ia [ia Ga] IIC T4 Gb
Testing standard		IEC 61643-21
Approvals		UL



Series protection device, 4-pole, 48 V version, Ex-tested



Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-4 D-48-EX	41	58	4	1	5.800	5098452

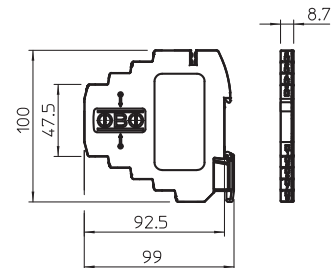
MDP-4 D...-EX : Lightning barrier for intrinsically safe measuring circuits

- Protection device for multi-wire systems
- Direct shield earthing and screwless connection terminals
- Space-saving width of just 8.7 mm
- High frequency range of 0-100 MHz
- ATEX approval: II 2(1) G Ex ia [ia Ga] IIC T4 (BVS 11 ATEX E 131 X)
- UL-listed (4UM2)

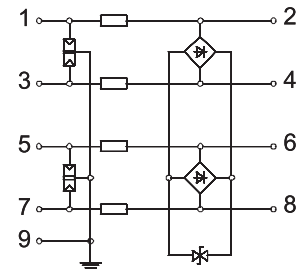
Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.



Dimensions



Connection options



MDP-4 D-48-EX

Maximum continuous voltage AC	U_c	41 V
Maximum continuous voltage DC	U_c	58 V
Category	Type	1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0-3
Number of poles		4
Rated current	I_n	0.58 A
Series resistance per wire		2,35 $\Omega \pm 5\%$
Impulse durability wire-wire		C1: 0,5 kV / 0,25 kA (8/20 μ s)
Impulse durability wire-earth		C2: 5 kV / 2,5 kA (8/20 μ s)
Total discharge current (8/20)		10 kA
Total discharge current (10/350)		D1: 2 kA
Protection level wire-wire		< 95 V
Protection level wire-earth		< 800 V
Frequency range		0-100 MHz
Temperature range	ϑ	-40 - +80 °C
Installation type		DIN rail
Connection system		Terminal
Protection rating		IP20
Shielding connection available		Yes
Shield connection		Direct
Connection cross-section, flexible		0.14 - 2.5 mm ²
Connection cross-section, multi-wire		0.14 - 1.5 mm ²
Connection cross-section rigid		0.14 - 2.5 mm ²
Earthing via:		DIN rail
EX approval		II 2(1)G Ex ia [ia Ga] IIC T4 Gb
Testing standard		IEC 61643-21
Approvals		UL



MCR protection for explosive areas

- For potentially explosive areas
- Two or three-pole protection of various sensors
- Metric or NPT thread
- Robust VA housing
- High arresting capacity



Surge protection
with NPT or
metric thread

With the Petrol Field Protector for data cable protection devices, OBO Bettermann can offer a surge protection device for sensors in potentially explosive areas. The Petrol Field Protector permits two or three-pole protection for all

kinds of sensors. The protection device can be fastened directly on the sensor and wired in using the appropriate metric or NPT thread. The robust VA housing means that aggressive atmospheres are no problem. The intrinsic safety of the

Petrol Field Protector was independently tested and certified. The Petrol Field Protector is your partner for safety-relevant applications in which effective surge protection must be guaranteed.

MCR protection for explosive areas, 2-pole, 24 V



Type	Highest continuous voltage		Version	Pack. pcs.	Weight kg/100 pcs.	Item No.
	AC V	DC V				
FDB-2 24-M	22	32	2-pole; metric	1	18.500	5098380

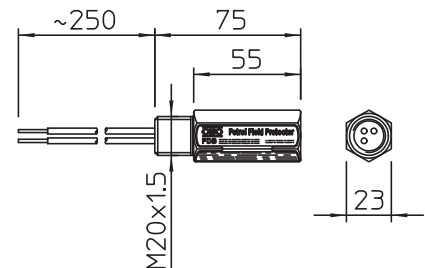
Petrol Field Protector FDB for intrinsically safe measuring circuits and bus systems

- Different connection technologies available (metric/NPT)
- Low protection level at high current load
- Easy mounting on field devices
- Negligible internal capacitance and inductance
- Stainless steel housing with pressure-resistant encapsulation
- ATEX approval: II 2(1) G Ex ia [ia Ga] IIC T4..T6 Gb (BVS 10 ATEX E 48)

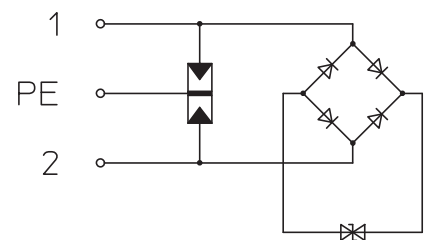
Application: Flow sensors, temperature sensors



Dimensions



Connection options



FDB-2 24-M

Maximum continuous voltage AC U_c	22 V
Maximum continuous voltage DC U_c	32 V
Category	Type 2+3 / C2+C1
Lightning protection zone LPZ	1→3
Number of poles	2
Impulse durability wire-wire	C1: 0,5 kV / 0,25 kA (8/20 μ s)
Impulse durability wire-earth	C2: 5 kV / 2,5 kA (8/20 μ s)
Total discharge current (8/20)	10 kA
Protection level wire-wire	<80 V
Protection level wire-earth	<800 V
Temperature range ϑ	-20 - +70 °C
Installation type	Screw-on
Protection rating	IP65/67
Mounting of input / output	M20 x 1.5 external thread
Mounting of field / device side:	Connection cable 1.5 mm ² Length ~ 250 mm
Earthing via:	Connection cable
Housing material	V2A
EX approval	II 2(1)G Ex ia [ia Ga] IIC T4..T6 Gb (BVS 10 ATEX E 048)
Testing standard	IEC 61643-21



MCR protection for explosive areas, 3-pole, 24 V



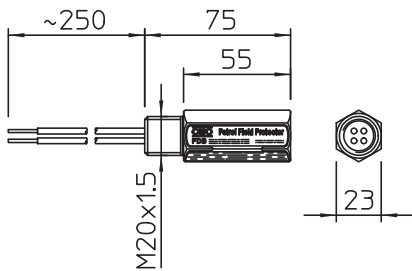
Type	AC	DC	Version	Weight		Item No.
	V	V		Pack. pcs	kg/100 pcs.	
FDB-3 24-M	22	32	3-pole; metric	1	19.000	5098382

Petrol Field Protector FDB for intrinsically safe measuring circuits and bus systems

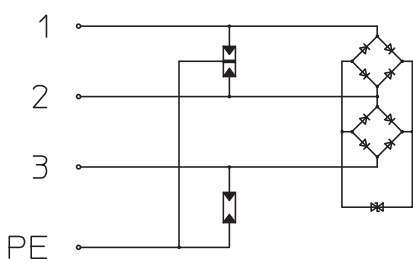
- Different connection technologies available (metric/NPT)
- Low protection level at high current load
- Easy mounting on field devices
- Negligible internal capacitance and inductance
- Stainless steel housing with pressure-resistant encapsulation
- ATEX approval: II 2(1) G Ex ia [ia Ga] IIC T4..T6 Gb (BVS 10 ATEX E 48)

Application: Flow sensors, temperature sensors

Dimensions



Connection options



FDB-3 24-M

Maximum continuous voltage AC U_c	22 V
Maximum continuous voltage DC U_c	32 V
Category	Type 2+3 / C2+C1
Lightning protection zone LPZ	1→3
Number of poles	3
Impulse durability wire-wire	C1: 0,5 kV / 0,25 kA (8/20 μ s)
Impulse durability wire-earth	C2: 5 kV / 2,5 kA (8/20 μ s)
Total discharge current (8/20)	10 kA
Protection level wire-wire	<80 V
Protection level wire-earth	<800 V
Temperature range ϑ	-20 - +70 °C
Installation type	Screw-on
Protection rating	IP65/67
Mounting of input / output	M20 x 1.5 external thread
Mounting of field / device side:	Connection cable 1.5 mm ² Length ~ 250 mm
Earthing via:	Connection cable
Housing material	V2A
EX approval	II 2(1)G Ex ia [ia Ga] IIC T4..T6 Gb (BVS 10 ATEX E 048)
Testing standard	IEC 61643-21

MCR protection for explosive areas, 2-pole, 24 V



Type	Highest continuous voltage		Version	Pack. pcs.	Weight kg/100 pcs.	Item No.
	AC V	DC V				
FDB-2 24-N	22	32	2-pole; NPT	1	19.000	5098390

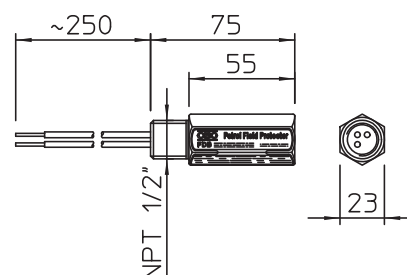
Petrol Field Protector FDB for intrinsically safe measuring circuits and bus systems

- Different connection technologies available (metric/NPT)
- Low protection level at high current load
- Easy mounting on field devices
- Negligible internal capacitance and inductance
- Stainless steel housing with pressure-resistant encapsulation
- ATEX approval: II 2(1) G Ex ia [ia Ga] IIC T4..T6 Gb (BVS 10 ATEX E 48)

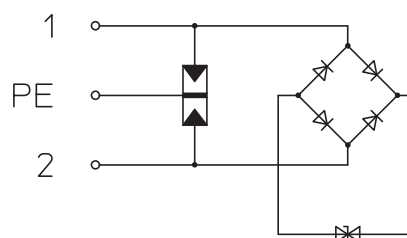
Application: Flow sensors, temperature sensors



Dimensions



Connection options



FDB-2 24-N

Maximum continuous voltage AC U_c	22 V
Maximum continuous voltage DC U_c	32 V
Category	Type 2+3 / C2+C1
Lightning protection zone LPZ	1→3
Number of poles	2
Impulse durability wire-wire	C1: 0,5 kV / 0,25 kA (8/20 μ s)
Impulse durability wire-earth	C2: 5 kV / 2,5 kA (8/20 μ s)
Total discharge current (8/20)	10 kA
Protection level wire-wire	<80 V
Protection level wire-earth	<800 V
Temperature range ϑ	-20 - +70 °C
Installation type	Screw-on
Protection rating	IP65/67
Mounting of input / output	1/2" NPT
Mounting of field / device side:	Connection cable 1.5 mm ² Length ~ 250 mm
Earthing via:	Connection cable
Housing material	V2A
EX approval	II 2(1)G Ex ia [ia Ga] IIC T4..T6 Gb (BVS 10 ATEX E 048)
Testing standard	IEC 61643-21



MCR protection for explosive areas, 3-pole, 24 V



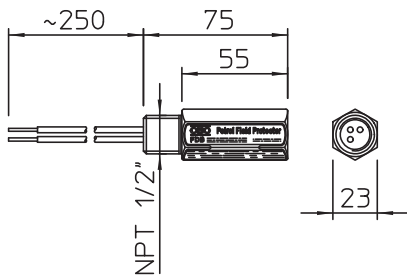
Type	Highest continuous voltage		Version	Weight		Item No.
	AC V	DC V		Pack. pcs	kg/100 pcs	
FDB-3 24-N	22	32	3-pole; NPT	1	19.500	5098392

Petrol Field Protector FDB for intrinsically safe measuring circuits and bus systems

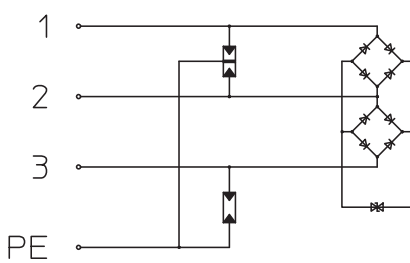
- Different connection technologies available (metric/NPT)
- Low protection level at high current load
- Easy mounting on field devices
- Negligible internal capacitance and inductance
- Stainless steel housing with pressure-resistant encapsulation
- ATEX approval: II 2(1) G Ex ia [ia Ga] IIC T4..T6 Gb (BVS 10 ATEX E 48)

Application: Flow sensors, temperature sensors

Dimensions



Connection options



FDB-3 24-N

Maximum continuous voltage AC U_c	22 V
Maximum continuous voltage DC U_c	32 V
Category	Type 2+3 / C2+C1
Lightning protection zone LPZ	1→3
Number of poles	3
Impulse durability wire-wire	C1: 0,5 kV / 0,25 kA (8/20 μ s)
Impulse durability wire-earth	C2: 5 kV / 2,5 kA (8/20 μ s)
Total discharge current (8/20)	10 kA
Protection level wire-wire	<80 V
Protection level wire-earth	<800 V
Temperature range ϑ	-20 - +70 °C
Installation type	Screw-on
Protection rating	IP65/67
Mounting of input / output	1/2" NPT
Mounting of field / device side:	Connection cable 1.5 mm ² Length ~ 250 mm
Earthing via:	Connection cable
Housing material	V2A
EX approval	II 2(1)G Ex ia [ia Ga] IIC T4..T6 Gb (BVS 10 ATEX E 048)
Testing standard	IEC 61643-21





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Surge protection, protection and spark gaps

	Isolating spark gap	424
	Connection straps	426
	Closed spark gap with lightning current carrying capability	427
	Protective spark gap	427
	Spark gap/ surge voltage protection	427

Spark gap EX ISG

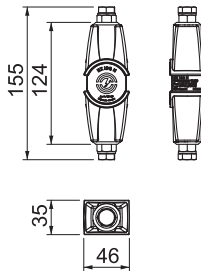


Type	Connection cable length m	Contact voltage kV	Lightning current carrying capacity kA	Temperature range °C	Pack. pcs	Weight kg/100 pcs.	Item No.
EX ISG H	0	1.25	100	-20 - +60	1	41.360	5240030
EX ISG H 350	0.35	1.25	100	-20 - +60	1	57.260	5240031

Hotmelt

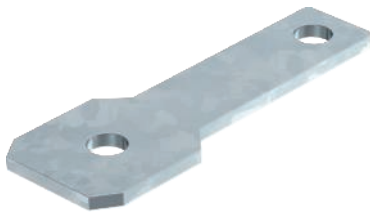
- Spark gap to VDE 0185-561-3 (IEC 62561-3)
- Ex certificate to ATEX
- Labelling to EN 60079-0/-1: II 2G Ex db IIC T6 Gb
- Labelling to EN 60079-0/-31: II 2 D Ex td IIIC T80 °C Db IP67
- Ex certificate to IECEx
- Labelling to EN 60079-0/-1: Ex db IIC T6 Gb
- Labelling to EN 60079-0/-31: Ex td IIIC T80 °C Db IP67

Dimensions



Application: In potentially explosive areas, indirect bridging of insulating flanges and insulating glands, e.g. in cathodic, corrosion-protected (KKS) systems

Connection clamp AB EX ISG straight



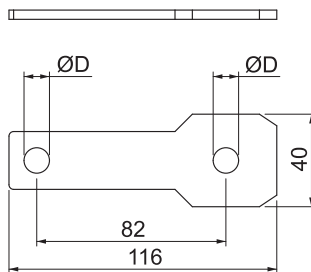
Type	Bore hole Ø mm	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
AB EX ISG S M10	11	For M10 bolt	2	9.000	5240360
AB EX ISG S M12	13	For M12 bolt	2	8.900	5240362
AB EX ISG S M16	17	For M16 bolt	2	8.600	5240366
AB EX ISG S M20	21	For M20 bolt	2	8.200	5240370
AB EX ISG S M24	25	For M24 bolt	2	7.800	5240374

St Steel

FT Hot-dip galvanised

Connection straps for mounting the OBO Ex spark gap, type EX ISG, on insulating flanges and insulating pieces.

Dimensions



Connection clamp AB EX ISG, angled

Type	Bore hole Ø		Pack. pcs.	Weight		Item No.
	mm	Version		kg/100 pcs.	pcs.	
AB EX ISG SW M10	11	For M10 bolt	2	10.900	5240380	
AB EX ISG SW M12	13	For M12 bolt	2	10.800	5240382	
AB EX ISG SW M16	17	For M16 bolt	2	10.500	5240386	
AB EX ISG SW M20	21	For M20 bolt	2	10.100	5240390	
AB EX ISG SW M24	25	For M24 bolt	2	9.700	5240394	

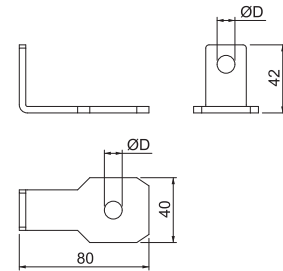
St Steel

FT Hot-dip galvanised

Connection straps for mounting the OBO Ex spark gap, type EX ISG, on insulating flanges and insulating pieces.



Dimensions



Connection cable - AL EX ISG

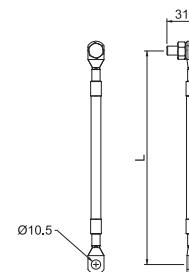
Type	Dimension mm	Pack. pcs.	Weight		Item No.
			kg/100 pcs.	pcs.	
AL EX ISG 100	100	1	9.600	5240102	
AL EX ISG 200	200	1	12.300	5240104	
AL EX ISG 300	300	1	15.200	5240106	

Cu Copper

UV-resistant connection cable for mounting the OBO Ex spark gap, type EX ISG, on insulating flanges and insulating pieces.



Dimensions

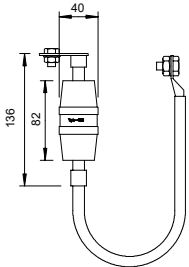


Explosion-proof, Parex closed spark gap

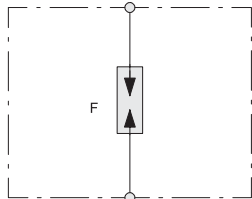


Type	Connection cable length m	Dimension mm	Pack. pcs	Weight	
				kg/100 pcs.	Item No.
480 180	0.18	180	1	48.000	5240034
480 250	0.25	250	1	50.000	5240077
480 350	0.35	350	1	53.000	5240069

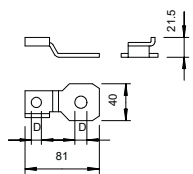
- Ex certificate to ATEX
- Labelling to EN 60079-0/-1: II 2G Ex d IIC T6 Gb
- Ex certificate to IECEx and DNV
- Labelling to EN 60079-0/-1: Ex d IIC T6 Gb
- Lightning current carrying capacity class H (100 kA) to VDE 0185-561-3 (IEC 62561-3)
- Incl. connector cable 25 mm² Cu, highly flexible, with cable shoe, screw (M 10), nut and lock washer



Application: In potentially explosive areas, indirect bridging of insulating flanges and insulating glands e.g. in cathodic, corrosion-protected (KKS) systems



Connection bracket for Parex spark gap



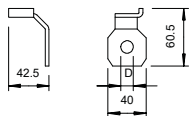
Type	Bore hole Ø mm	Version	Pack. pcs	Weight	
				kg/100 pcs.	Item No.
484 M12	13	For M12 bolt	2	8.100	5240220
484 M16	17	For M16 bolt	2	7.700	5240239
484 M20	21	For M20 bolt	2	7.300	5240247
484 M24	25	For M24 bolt	2	6.800	5240255

St Steel

F Hot-dip galvanised

Attaching flange for installing OBO Parex spark gap 480 on insulating flanges.

Connection bracket for Parex spark gap



Type	Bore hole Ø mm	Version	Pack. pcs	Weight	
				kg/100 pcs.	Item No.
485 M12	13	For M12 bolt	2	8.100	5240328
485 M10	11	For M10 bolt	2	8.300	5240301
485 M16	17	For M16 bolt	2	7.700	5240336

St Steel

F Hot-dip galvanised

Attaching flange for installing OBO Parex spark gap 480 on insulating flanges.

Closed spark gap with lightning current carrying capability

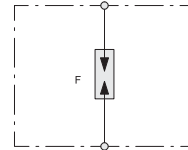
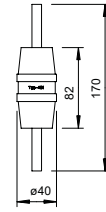


Type	Impulse current (10/350) kA	Nominal discharge current (8/20) kA	Protection level kV	Contact voltage kV	Temperature range °C	Pack. pcs.	Weight kg/100 pcs.	Item No.
481	50	100	< 5,0	2,5	-20 - +50	1	26.500	5240085

Closed, lightning current carrying spark gap for separation of electrically conductive plant components.

- Connection bolts; Ø 10 mm; stainless steel.
- Pulsed current 50 kA (10/350)
- BET

Tested application: Installation of electrical isolations for external lightning protection and earthing systems, e.g. two earthing systems on account of mutual influence or corrosion (corrosion current prevention).



Connection options

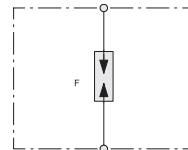
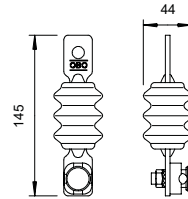
Protective spark gap



Type	Protection level kV	Nominal discharge current (8/20) kA	Contact voltage kV	Pack. pcs.	Weight kg/100 pcs.	Item No.
482	< 10 kV	25 kA	10	1	56.000	5240050

Closed spark gap for bridging a proximity point between roof standard of low-voltage system and components of outer lightning protection system

- Protection rating IP 54
- With pre-mounted type 5001 connector for attaching round conductors Rd 8 - 10



Connection options

Spark gap / surge voltage protection for coupling earthing systems



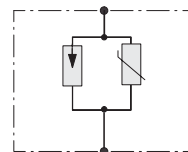
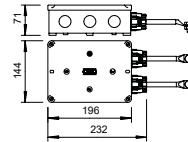
Type	Rated power frequency withstand voltage V	Rated DC withstand voltage V	Impulse current (10/350) kA	Nominal discharge current (8/20) kA	Pack. pcs.	Weight kg/100 pcs.	Item No.
FS-V20	280	280	100	100	1	170.000	5099803

The FS-V20 device is a spark gap with parallel-connected surge arrester (protection level <1.5 kV). It is used to couple different earthing systems.

It is connected directly to the appropriate equipotential busbar.

Cable mounted with M10 cable shoe and bolt M10x25 (DIN 933) and nut M10 (DIN 934).

Application: Coupling earthing systems in data technology sector (functional and operational earthing)









Connection options

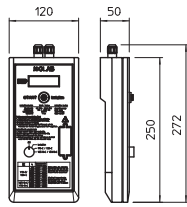
HINWEIS!
**Isolierter Blitzschutz mit dem
OBO isCon®-System.**
**Änderungen sind nur von einer
Blitzschutzfachkraft
durchzuführen!**



Measuring and testing systems

	ISOLAB measuring system arrester tester	430
	Testing unit for lightning barriers	430
	Magnetic card PCS	430
	Magnetic card holder PCS-H	431
	Card reader PCS-CS..	431
	Lightning current meter LSC	431

ISOLAB measuring system arrestor tester



Type	Country version	Nom. voltage V	Measuring range	Pack. pcs	Weight		Item No.
					kg/100 pcs	pcs	
ISOLAB	D/GB	6	0 V - 999 V	1	75.000		5096812

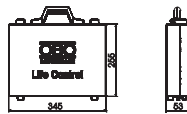
To test the insulation resistance to DIN VDE 0100 Part 610 and the characteristic curve behaviour of the following surge voltage and lightning current arrestors:

• V10-C and V20-C:	Uc	Tolerance range
	75 V	-> 110 V - 130 V
	150 V	-> 215 V - 265 V
	280 V	-> 385 V - 475 V
	320 V	-> 460 V - 560 V
	335 V	-> 460 V - 560 V
	385 V	-> 560 V - 680 V
	440 V	-> 645 V - 785 V
	550 V	-> 820 V - 1,000 V

• V25-B+C and V50-B+C:	Uc	Tolerance range
	150 V	-> 215 V - 265 V
	280 V	-> 385 V - 475 V
	320 V	-> 460 V - 560 V
	385 V	-> 560 V - 680 V

- Varistor arrestors of other manufacturers can be tested for 1 or 3 mA characteristic curve behaviour
- Battery operation
- Measuring cables contained in the scope of delivery.

Testing unit for lightning barriers



Type	Pack. pcs	Weight		Item No.
		kg/100 pcs	pcs	
LFC	1	164.500		5096786

OBO Life Control allows function control of the MDP lightning barriers.

The lightning barriers can be checked while installed. Life Control will not have any influences on the measuring signal.

Life Control possesses an integrated OLED with visual and acoustic defect signalling. A separate LED inside the testing pin is also integrated.

Life Control is delivered in a case, complete with a CD and instructions.

Magnetic card PCS



Type	Pack. PU	Weight		Item No.
		kg/100 PUs	PUs	
PCS	1	5.000		5091438

Peak Current Sensor (PCS) card for recording pulsed/lightning currents. A continuous check of whether lightning has struck the lightning protection system and how high the most recent lightning current was in kA can thus be carried out in the simplest manner by the system operator, specialist lightning protection company or by a surveyor. Here, the printed maintenance circuit and the labelling panels support the maintenance work of the entire lightning protection system which must be performed at defined intervals according to VDE 0185-305-3 (IEC/EN 62305-3).

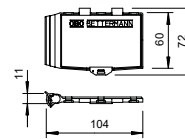
- Contents = 10 units
- Digital evaluation via the PCS card reading device
- Can be used in addition to the OBO lightning current meter LSC I-II
- With separate labelling panels: "Erected by", "Tested by", "Card code"
- Integrated maintenance circuit (year/month)

Magnetic card holder PCS-H

Type	Pack. PU	Weight kg/100 PUs	Item No.
PCS-H	1	31.000	5091527

Magnetic card holder for mounting PCS cards.

- Sealable holder
- For installing on round conductor Rd 8-10
- Simple holder installation by means of clamp
- 1 PU = 10 pieces

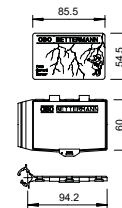


Magnetic card and holder MK-B

Type	Pack. PU	Weight kg/100 PUs	Item No.
MK-B	1	31.000	5091322

PCS magnetic card to record pulse/lightning currents including holder

- Holder can be leaded
- For mounting on round conductor Rd 8-10
- Simple holder mounting through clamping
- 1 PU = 10 units



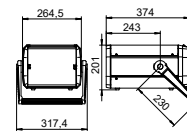
Card reader PCS-CS..



Type	Country version	Nom. voltage V	Measuring range	Measuring tolerances	Pack. pcs	Weight kg/100 pcs.	Item No.
PCS-CS-D	EN	230	3 -- 120 kA	< 2 kA (< 2%)	1	750.000	5091683
PCS-CS-GB	GB	230	3 -- 120 kA	< 2 kA (< 2%)	1	750.000	5091691

Magnetic card reader for reading and analysing PCS cards.

- Inc. rechargeable battery for 4 h continuous, no-mains operation
- Large, clear display



Lightning strike counter

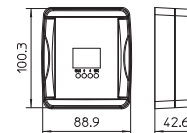


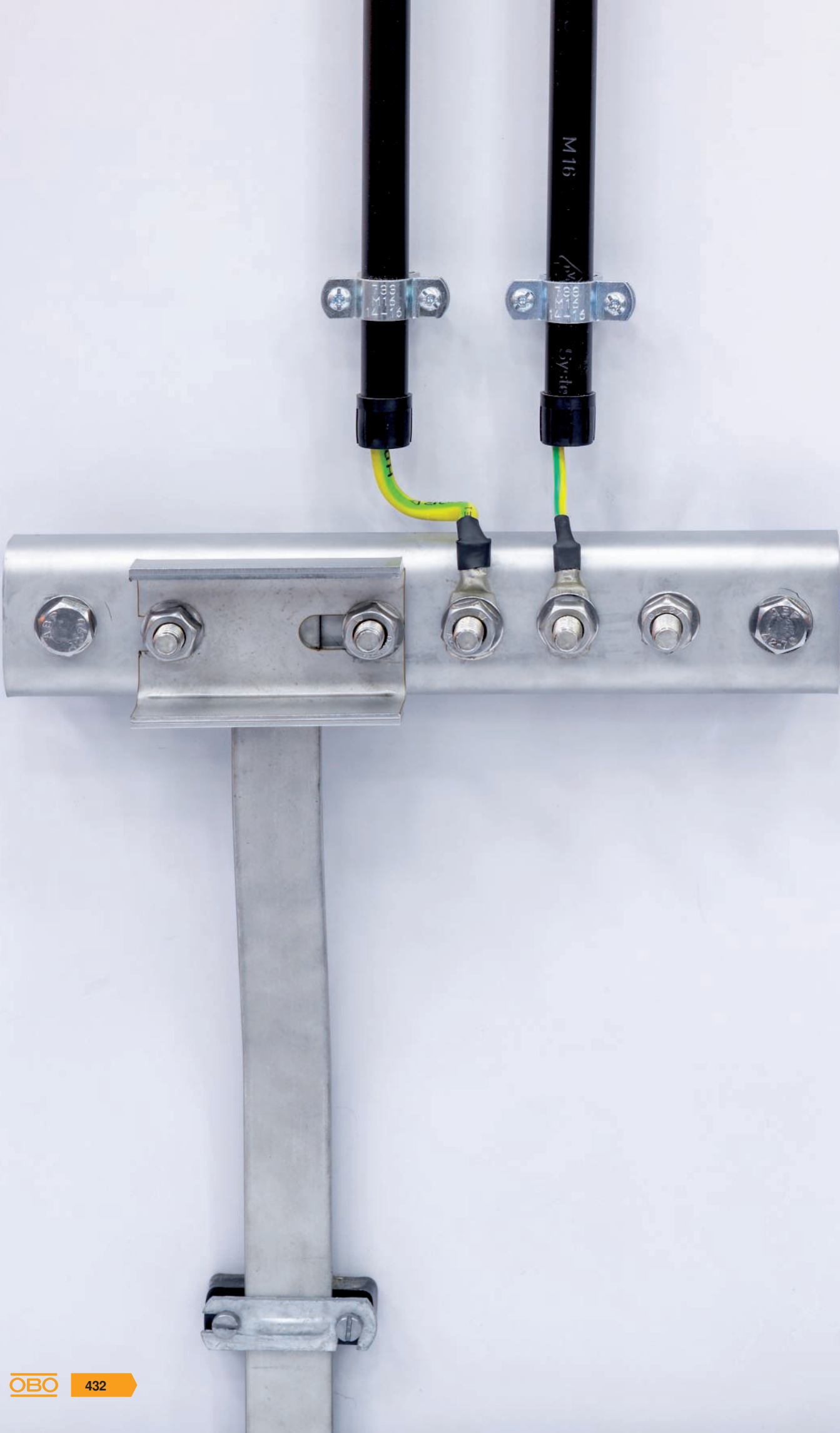
Type	Measuring range	Pack. pcs	Weight kg/100 pcs.	Item No.
LSC I+II	1 kA - 100 kA	1	32.500	5091722

Plastic





The LSC I+II lightning current meter measures and permanently saves pulse currents, together with the date and time. This ensures constant monitoring in order to notice if any lightning has struck the lightning protection system. Should this be the case, then the lightning protection system must be maintained according to VDE 0185-305 (IEC 62305).

- Saving and display of time and date
- Usable both inside and outside due to its protection class of IP65
- Cable clip for round conductor or flat conductor
- Direct mounting on the conductor or the PE conductor of the surge protection device
- Long lifespan of the internal lithium batteries
- LCD display
- Internal battery
- Tested according to VDE 0185-561-6 (IEC 62561-6)





Equipotential bonding systems

	Equipotential busbars for indoor use	437
	Equipotential busbars for outdoor areas	443
	Equipotential busbars for industrial areas	445
	Equipotential busbars for Ex area	449
	Earthing clamps	453
	Earthing clamps	454



Equipotential busbars for industry



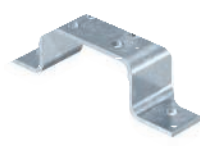
Type stainless steel

Pole	Item no.	Page
5	5015854	445
10	5015866	445



Type copper

Pole	Item no.	Page
5	5015830	445
6	5015832	445
8	5015836	445
10	5015842	445
12	5015844	445
14	5015847	445
20	5015849	445



Type: Galvanised steel

Pole	Item no.	Page
2	5016029	446
4	5016037	446
6	5016045	446



Type stainless steel

Pole	Item no.	Page
2	5016096	447
4	5016118	447
6	5016126	447

Equipotential busbars for potentially explosive areas



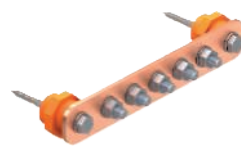
Zone 1/21 + 2/22

Pole	Item no.	Page
5	5015265	449
10	5015270	449



Zone 2/22 (stainless steel)

Pole	Item no.	Page
5	5015854	375
10	5015866	375



Zone 2/22 (copper)

Pole	Item no.	Page
5	5015830	375
6	5015832	375
8	5015836	375
10	5015842	375
12	5015844	375
14	5015847	375
20	5015849	375



Connector

Type	Item no.	Page
249 8-10 VA	5311551	451
5001 N-VA	5304176	447
5002 N-VA	5304270	451
249 8-	5311590	451
10X16 VA		



Equipotential busbars for indoor use



VDE-tested

Type	Item no.	Page
1801 VDE	5015650	437



Standard

Type	Item no.	Page
1809	5015073	439



With metal base plate

Type	Item no.	Page
1809 M	5015081	439



Bioplastic

Type	Item no.	Page
1809 NR	5015075	440

Equipotential busbars for outdoor areas



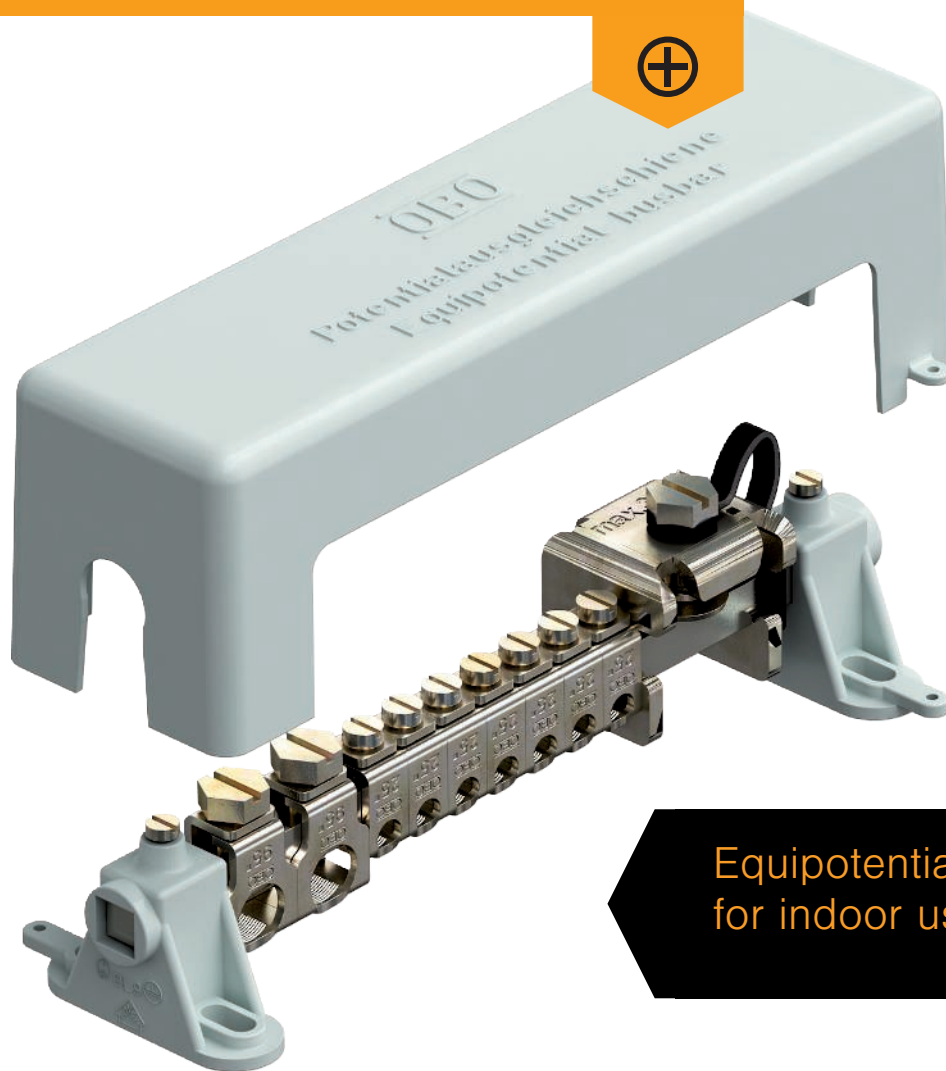
UV-resistant

Type	Item no.	Page
1809 A	5015111	443
1809 AM	5015105	443



Equipotential busbars for indoor use

- Simple installation
- Modular series terminal system
- Wide range of uses



Equipotential bonding
for indoor use

The equipotential busbars for interior areas are available as a modular, VDE-tested series terminal system 1801 or as a ready-for-installation equipotential busbar 1809 with plastic or metal footplate. The OBO Green 1809 is a

solution made from renewable resources. The simple versions of the 1809 and 1804 are available as both surface-mounted and concealed versions. The equipotential busbars are used for installation the protection and functional equi-

potential bonding according to DIN VDE 0100-410/540 and the lightning equipotential bonding according to VDE 0185-305 (IEC 62305).

Equipotential bonding rail for indoors, VDE-tested



Colour

Type

Type	Pack. pcs.	Weight kg/100 pcs.	Item No.
1801 VDE Grey	1	55.000	5015650

CuZn Brass

Equipotential busbar for equipotential bonding to DIN VDE 0100-410/-540 as well as lightning protection equipotential bonding to DIN VDE 0185-305

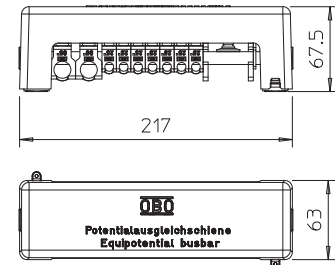
- According to VDE 0618, Part 1
- With 10 x 10 mm clamping rail made of nickel-plated brass
- With contact-secure series terminals made of electrogalvanised steel
- Cover and rail stands made of grey polystyrene
- Sealable / labellable cover
- Lightning current carrying capacity 100 kA (10/350)
- Tension clamp with screw lock against self-loosening (e.g. required in industrial and Ex areas)

Connection options:

- 7 single or multi-wire cables 2.5–25 mm² or fine-wire cables to 16 mm² (max. Ø 7 mm)
- 2 single or multi-wire cable 25–95 mm² or fine-wire cable to 70 mm² (max. Ø 13.5 mm)
- 1 flat conductor 30 x 3.5 mm



Dimensions

Round conductor terminal to 25 mm² for 1801 VDE

Connection option

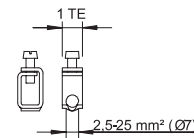
Type

Type	Connection option	Pack. pcs.	Weight kg/100 pcs.	Item No.
1801 RK25	2.5–25 mm ²	10	2.080	5015758

St Steel

G Electrogalvanised

- For single or multi-wire cables 2.5–25 mm²
- For fine-wire cables to 16 mm² (max. Ø 7 mm)
- 1 division unit
- Lightning current carrying capacity 100 kA (10/350)
- Electrogalvanised steel
- Tension clamp with screw lock against self-loosening (e.g. required in industry and in explosion-protected areas)

Round conductor terminal from 25 mm² for 1801 VDE

Connection option

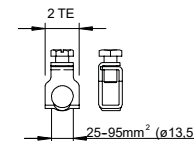
Type

Type	Connection option	Pack. pcs.	Weight kg/100 pcs.	Item No.
1801 RK95	25–95 mm ²	10	4.700	5015766

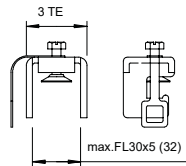
St Steel

G Electrogalvanised

- For single or multi-wire cables 25–95 mm²
- For fine-wire cables to 70 mm² (max. Ø 13.5 mm)
- 2 division units
- Lightning current carrying capacity 100 kA (10/350)
- Electrogalvanised steel
- Tension clamp with screw lock against self-loosening (e.g. required in industry and in explosion-protected areas)



Flat conductor terminal to FL 30 for 1801 VDE



Connection option

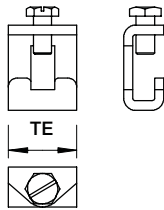
Type	Pack. pcs	Weight kg/100 pcs	Item No.
1801 RK30 FL 30 x 5	10	10.643	5015731

St Steel

G Electrogalvanised

- For flat conductors to FL 30 and thickness to 5 mm
- Captive design with plastic safety strap
- 3 division units
- Lightning current carrying capacity 100 kA (10/350)
- Electrogalvanised steel

Flat conductor terminal from FL 30 for 1801 VDE



Connection option

Type	Pack. pcs	Weight kg/100 pcs	Item No.
1801 RK40 FL 40 x 5	10	7.300	5015774

St Steel

G Electrogalvanised

- For flat conductors from FL 30
- 2 terminals always required for each flat conductor connection
- Lightning current carrying capacity 100 kA (10/350)
- Electrogalvanised steel

Contact strip for 1801 VDE



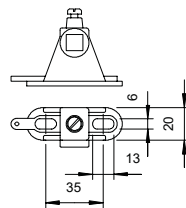
Length mm

Type	Length mm	Pack. pcs	Weight kg/100 pcs	Item No.
1801 KL1	212	1	18.000	5015723
1801 KL2	430	1	36.000	5015804
1801 KL3	645	1	54.000	5015812

CuZn Brass

- 10 x 10 mm made of nickel-plated brass
- 1801 KL1: 14 subunits
- 1801 KL2: 28 subunits
- 1801 KL3: 42 subunits

Busbar stands for 1801 VDE



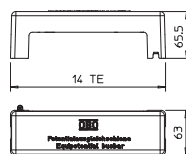
Colour

Type	Colour	Pack. pcs	Weight kg/100 pcs	Item No.
1801 SCH	Grey	10	1.490	5015715

PS Polystyrene

- 2 rail stands required per 14 units
- With 6 x 13 mm slot

Cover hood for 1801 VDE



Colour

Type	Colour	Pack. pcs	Weight kg/100 pcs	Item No.
1801 AH	Grey	1	6.450	5015707

PS Polystyrene

- 1 covering hood required per 14 division units
- Fastening to rail stands 1801/Sch
- Sealable

Equipotential bonding rail with plastic base plate

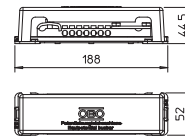


Colour

Type

1809 Grey

CuZn Brass

Pack. Weight
pcs kg/1001 23.000 **5015073**

Equipotential busbar for equipotential bonding according to DIN VDE 0100-410/-540 and lightning protection equipotential bonding according to DIN VDE 0185-305

- Base plate and covering made of polystyrene, grey
- Sealable / labellable cover
- Contact strip made of nickel-plated brass
- Screws and crossbar made of electrogalvanised steel
- Capable of carrying lightning current 50 kA (10/350)

Connection options:

- 7 x single or multi-core cables to 25 mm² or fine-core cables to 16 mm²
- 1 x round conductor Rd 8-10
- 1 x flat strip to FL30 or round conductor Rd 8-10

Equipotential bonding rail with metal base plate

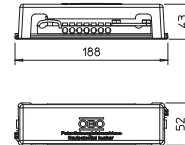


Colour

Type

1809 M Grey

CuZn Brass

Pack. Weight
pcs kg/1001 28.100 **5015081**

Equipotential busbar with metal foot for equipotential bonding according to DIN VDE 0100-410/-540 and lightning protection equipotential bonding according to DIN VDE 0185-305

- Cover hood from polystyrene, grey
- Sealable / labellable cover
- Base plate made of strip-galvanised steel
- Contact strip made of nickel-plated brass
- Screws and crossbar made of electrogalvanised steel
- Capable of carrying lightning current 50 kA (10/350)

Connection options:

- 7 x single or multi-core cables to 25 mm² or fine-core cables to 16 mm²
- 1 x round conductor Rd 8-10
- 1 x flat strip to FL30 or round conductor Rd 8-10

Cover hood for 1809

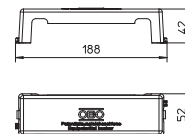


Colour

Type

1809 30 AH Grey

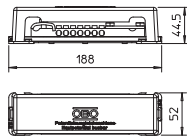
PS Polystyrene

Pack. Weight
pcs kg/10050 3.700 **5015200**

- Replacement cover hood for equipotential busbar, type 1809



Equipotential busbar OBO Green



Type
1809 NR

CuZn Brass

Natural product protects against natural influences.

The OBO Green equipotential busbar is a solution manufactured from cellulose acetate CA for the installation of the equipotential bonding according to DIN VDE 0100-410/-540 and lightning protection equipotential bonding according to DIN VDE 0185-305. The basic material is widely used in the paper industry.

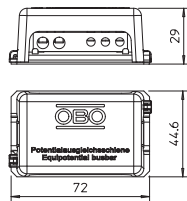
- Base plate and cover hood made of CA, white
- Sealable and labellable cover
- Contact strip made of nickel-plated brass
- Bolts and crossbar made of electrogalvanised steel
- Capable of carrying lightning current 50 kA (10/350)

Connection options:

- 7x single or multi-wire cables to 25 mm² or fine-wire cables to 16 mm²
- 1x round conductor Rd 8–10
- 1x flat strip to FL 30 or round cable Rd 8–10

Pack.	Weight		Item No.
	kg/100	pcs.	
1	22.300	5015075	

Equipotential bonding rail for small systems



Colour

Type
1809 BG Grey

CuZn Brass

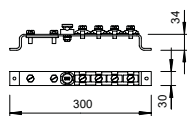
- Cover made of polystyrene, grey
- Sealable / labellable cover
- Base plate made of strip galvanised steel
- Contact strip and screws made of nickel-plated brass

Connection options:

- 3 x multi-core cables to 6 mm²
- 2 x multi-core cables to 16 mm²

Pack.	Weight		Item No.
	kg/100	pcs.	
1	9.000	5015502	

Equipotential bonding rail, simple version



Type
1808

CuZn Brass

- Clamp and crossbar, electrogalvanised steel
- Clamping element and contact strip, brass, screws, hot dipped galvanised steel

Connection options:

- 8 x cables to 25 mm²
- 1 x round conductor Rd 8-10
- 1 x flat conductor to FL 40

Pack.	Weight		Item No.
	kg/100	pcs.	
1	67.000	5015014	

Equipotential bonding bar for bathrooms

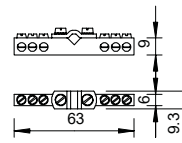
Type	Pack. pcs	Weight		Item No.
		kg/100	pcs.	
1804	5	3.000	5015553	

CuZn Brass

- Nickel-plated brass contact strip
- Screws and clamp made of electrogalvanised steel

Connection options:

- 6 cables 1.5-10 mm²
- 1 cable 6-16 mm²



Equipotential bonding rail for surface mounting with 1804

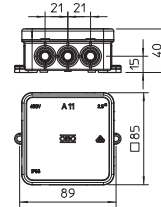
Type	Pack. pcs	Weight		Item No.
		kg/100	pcs.	
1804 AP	10	8.077	5015557	

PE Polyethylene

A 10/BP: Equipotential busbar for bathroom in housing

Connection options:

- 6x conductors 1.5-10 mm²
- 1x conductor 6-16 mm²
- Uncut
- With mounted potential equalisation rail 1804 in wet-room branch box A10



Equipotential bonding rail for flush-mounting with 1809

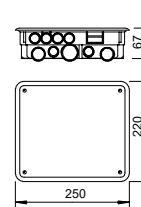


Type	Pack. pcs	Weight		Item No.
		kg/100	pcs.	
1809 UP	1	74.500	5015065	

CuZn Brass

Connection options:

- 7 conductors to 25 mm²
- 1 round conductor Rd 8-10
- 1 flat conductor to FL30 or round conductor Rd 8-10
- With mounted potential equalisation rail 1809 (without covering hood)
- Pre-marked boxes for inserting required conductors and cover



Equipotential bonding rail for flush-mounting with 1804

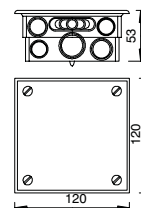
Type	Pack. pcs	Weight		Item No.
		kg/100	pcs.	
1804 UP	5	20.700	5015545	

CuZn Brass

A 10/BP: Equipotential busbars for bathroom in housing

Connection options:

- 6x conductors 1.5-10 mm²
- 1x conductor 6-16 mm²
- Uncut
- With mounted potential equalisation rail 1804 in wet-room branch box A10



Equipotential busbars for outdoor areas

- UV-stabilised
- Corrosion-resistant
- Simple installation
- Sealable
- Labelling in the lid



Equipotential bonding
for outdoor use

The equipotential busbar for outdoor areas, 1809 A, is used for installation the protection and functional equipotential bonding according to DIN VDE 0100-410/540 and the lightning protection equipotential bonding accord-

ing to VDE 0185-305 (IEC 62305). Thanks to corrosion-resistant and UV-stabilised materials, the equipotential busbar is suitable for both outdoor areas and systems in aggressive environments.

Equipotential bonding rail for outside installation



Colour

Type	Colour	Pack. pcs	Weight		Item No.
			kg/100	pcs.	
1809 A	Black	1	23.000	5015111	
1809 AM	Black	1	23.000	5015105	

V2A Stainless steel, grade 304

Equipotential busbar for equipotential bonding according to DIN VDE 0100-410/-540 and lightning protection equipotential bonding according to DIN VDE 0185-305

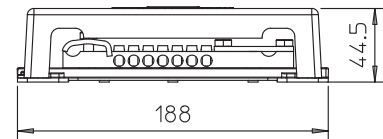
- Cover hood and base plate made of polystyrene
- Colour: Black, UV-resistant
- Screws and crossbar made of VA
- Capable of carrying lightning current 50 kA (10/350)

Connection options:

- 7 x single or multi-core cables to 25 mm² or fine-core cables to 16 mm²
- 1 x round conductor Rd 8-10
- 1 x flat strip to FL30 or round conductor Rd 8-10



Dimensions



Equipotential bonding rail, solid version

Type	Pack. pcs	Weight		Item No.
		kg/100	pcs.	
1810	1	173.000	5015057	

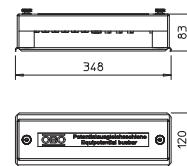
S Steel

F Hot-dip galvanised

- Base plate and screw-on cover made of strip-galvanised steel
- Sealable / labellable cover
- Contact strip made of strip-galvanised steel
- Screws and crossbar made of steel, hot-dip galvanised or electrogalvanised

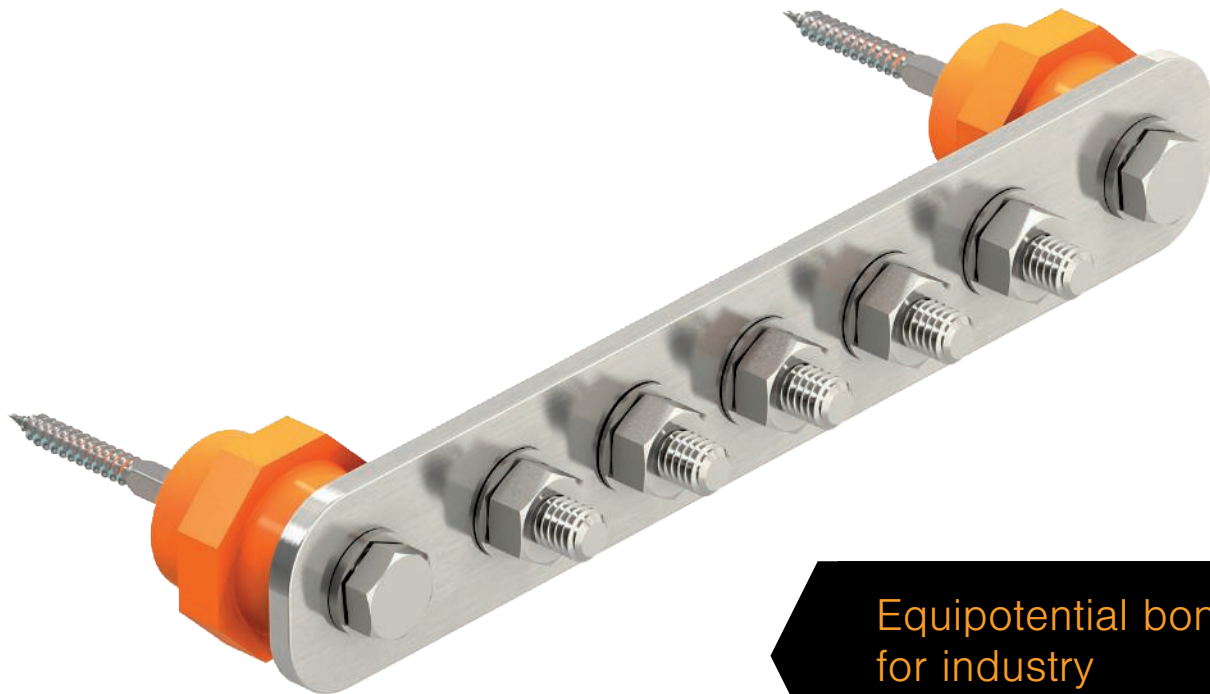
Connection options:

- 6 cables 6-16 mm²
- 1 round conductor Rd 8-10
- 1 flat conductor to FL 40
- 2 cable shoe M8



Equipotential busbars for industrial areas

- Corrosion-resistant
- UV-stabilised
- Quick and easy mounting



Equipotential bonding
for industry

The equipotential busbars for industry, BigBar (1802) and 1805, are used for the installation of protection and functional equipotential bonding according to DIN VDE 0100-410/540 and the lightning protection equipotential bonding

according to VDE 0185-305 (IEC 62305). Due to the combination of corrosion resistance materials and their simple installation, the equipotential busbars are especially suitable for use in the industrial sector. The stainless steel

(V4A, 1.4571, 316 Ti) variants of the 1805 can be used in a wide range of applications thanks to the fastening holes with their 11 mm diameter.

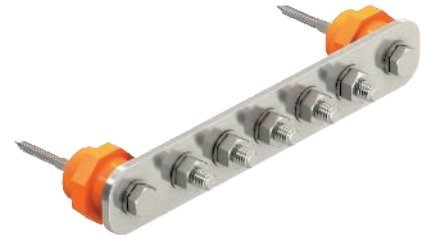
Equipotential bonding rail BigBar for industrial application



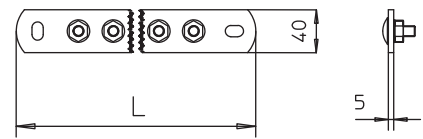
Type	Number of connections	Width mm	Length mm	Height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1802 5 VA	5	40	246	5	1	90.000	5015854
1802 10 VA	10	40	408.5	5	1	190.000	5015866

V2A Stainless steel, grade 304

- Main potential equalisation to VDE 0100 Part 410 and Part 540, and also lightning protection potential equalisation to VDE 0185-305 (IEC 62305)
- Insulation feet
- Quick, simple assembly of connection conductors to the contact rail using lock bolts M10
- The high-grade stainless steel versions (V2A) are suitable for outdoor use
- Complete with anchors and bolts for wall mounting
- With lock washer (DIN 137) for bolt locking against loosening (e.g. required in industry and explosion-protected areas)



Dimensions



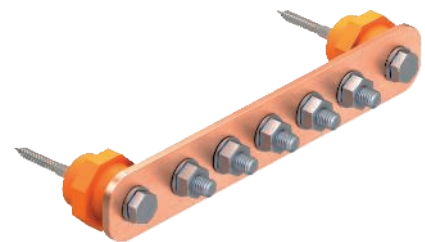
Equipotential bonding rail BigBar for industrial application



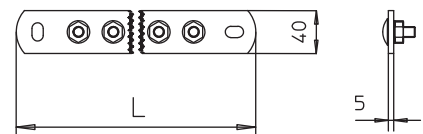
Type	Number of connections	Width mm	Length mm	Height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1802 5 CU	5	40	246	5	1	80.000	5015830
1802 6 CU	6	40	278.5	5	1	98.400	5015832
1802 8 CU	8	40	343.5	5	1	116.550	5015836
1802 10 CU	10	40	408.5	5	1	180.000	5015842
1802 12 CU	12	40	473.5	5	1	152.850	5015844
1802 14 CU	14	40	538.5	5	1	171.000	5015847
1802 20 CU	20	40	733.5	5	1	225.450	5015849

Cu Copper

- Main potential equalisation to VDE 0100 Part 410 and Part 540, and also lightning protection potential equalisation to VDE 0185-305 (IEC 62305)
- Insulation feet
- Quick, simple assembly of connection conductors to the contact rail using lock bolts M10
- The high-grade stainless steel versions (V2A) are suitable for outdoor use
- Complete with anchors and bolts for wall mounting
- With lock washer (DIN 137) for bolt locking against loosening (e.g. required in industry and explosion-protected areas)



Dimensions

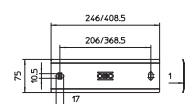


Cover for BigBar equipotential bonding rail

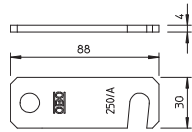
Type	Number of connections	Pack. pcs	Weight kg/100 pcs.	Item No.
1802 AH 5	5	1	25.800	5015880
1802 AH 10	10	1	36.300	5015884

V2A Stainless steel, grade 304

- Complete with all mounting components
- Labellable



Crossbar for equipotential bonding rail



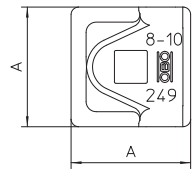
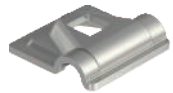
Connection option

Type	Pack. pcs	Weight kg/100 pcs	Item No.
1802 KL FL20-FL40	1	7.000	5015890

V2A Stainless steel, grade 304

- To clamp the flat conductors 30 x 3.5 and 40 x 5
- Suitable for equipotential busbar BigBar, type 1802

Connection terminal, equipotential bonding, Rd 8–10 mm

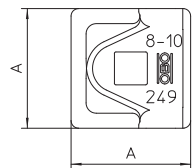
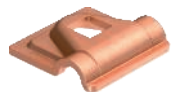


Type	Fit mm	Dimension A mm	Pack. pcs	Weight kg/100 pcs	Item No.
249 8-10 VA-OT Rd 8-10 40	Rd 8-10	40	100	3.130	5311554

V2A Stainless steel, grade 304

- For round conductor Rd 8-10
- Suitable for M10 bolts

Connection terminal, equipotential bonding, Rd 8–10 mm

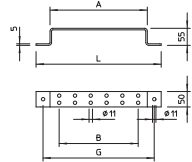


Type	Fit mm	Dimension A mm	Pack. pcs	Weight kg/100 pcs	Item No.
249 8-10 CU-OT Rd 8-10 40	Rd 8-10	40	100	3.580	5311530

Cu Copper

- For round conductor fastening RD 8-10
- Suitable for M10 bolts

Earthing connection bar



Type	Dimension L mm	Dimension A mm	Dimension B mm	Dimension G mm	Pack. pcs	Weight kg/100 pcs	Item No.
1805 2 FT	200	110	51	155	1	54.800	5016029
1805 4 FT	302	212	153	257	1	77.000	5016037
1805 6 FT	404	314	255	359	1	97.100	5016045

St Steel

FT Hot-dip galvanised

1805/...: For connecting different earthing systems

- With 2 mounting holes Ø 11 mm
- 1805/2: With 4 attaching holes
- 1805/4: With 8 attaching holes
- 1805/6: With 12 attaching holes

Earthing connection bar

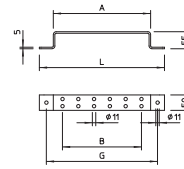


Type	Dimension				Pack. pcs.	Weight kg/100 pcs.	Item No.
	Dimension L mm	Dimension A mm	Dimension B mm	Dimension G mm			
1805 2 VA	200	110	51	155	1	54.800	5016096
1805 4 VA	302	212	153	257	1	77.000	5016118
1805 6 VA	404	314	255	359	1	97.100	5016126

V4A Stainless steel, grade 316 Ti

1805/...: For connecting different earthing systems

- With 2 mounting holes \varnothing 11 mm
- 1805/2: With 4 attaching holes
- 1805/4: With 8 attaching holes
- 1805/6: With 12 attaching holes



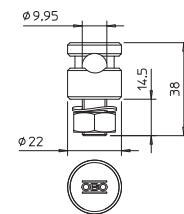
Connector, Rd 8–10 mm with pressure trough



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs.	Weight kg/100 pcs.	Item No.

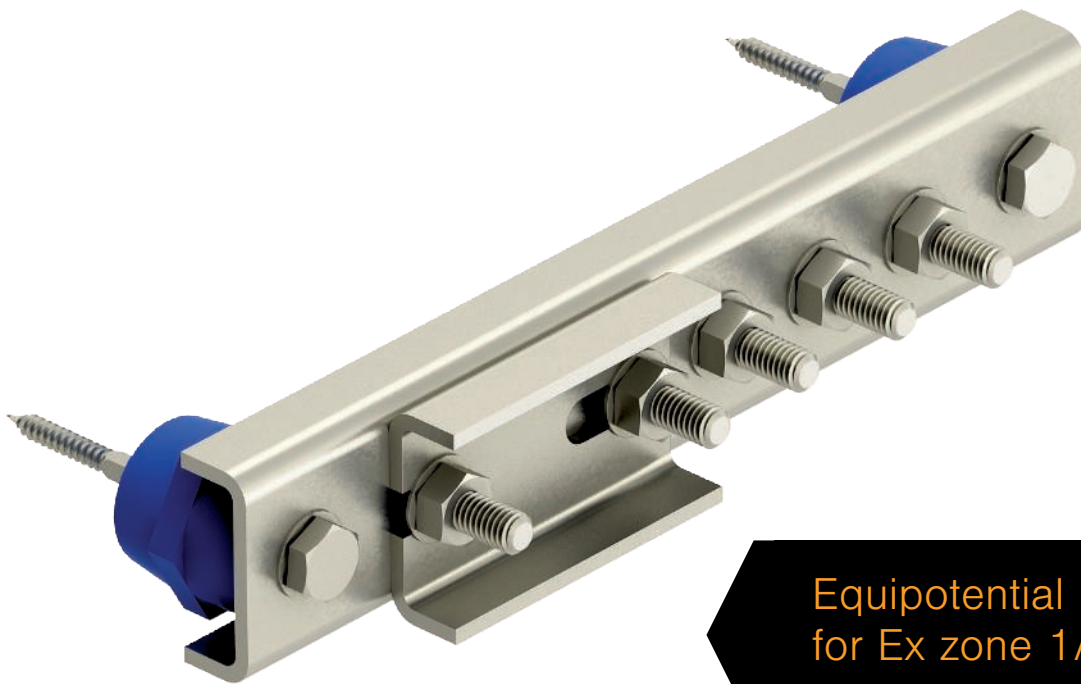
V2A Stainless steel, grade 304

- With 1 fix contact clamping screw, nut and serrated washer
- Including pre-mounted pressure sump, steel
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)



Equipotential bonding for Ex areas

- Manufacturer declaration for use in potentially explosive areas
- Protected against self-loosening
- UV-stabilised and halogen-free insulation feet
- For single, multi and fine-wire connection cables and flat conductors
- Suitable for FT, VA, CU and AL material
- Corrosion-resistant



Equipotential bonding
for Ex zone 1/21, 2/22

The lightning protection components for equipotential bonding in Ex areas can be used as part of the erection according to VDE 0165 Part 1 (IEC 60079-14) and VDE 0185-305-3 (IEC 62305-3). They are secured against self-loosening in accordance with VDE 0185-305-3 Supplementary Sheet 2 (DIN EN 62305-3 Supplementary Sheet 2). The equipotential busbars are used for lightning protection equipotential bonding ac-

ording to VDE 0185-305-3 (IEC 62305-3) and protective/function equipotential bonding according to DIN VDE 0100 Part 410/540. The Vario quick connectors and the connectors with pressure trough are connected with lightning current carrying capacity according to VDE 0185-305-3 (IEC 62305-3) and VDE 0185-561-1 (IEC 62561-1). The components are suitable for use in potentially explosive areas of Zone 2 (gases, vapours,

mist) as well as Zone 22 (dusts). They do not possess their own potential source of ignition and thus cannot be evaluated according to the European Directive 94/9/EC. This means that an approval according to the European Directive 94/9/EC is not legally possible and also not required in the context of explosion protection.

Equipotential busbar for EX zone 1/21, 2/22



Type	Number of connections	Width mm	Length mm	Height mm	Pack. pcs.	Weight kg/100 pcs.	Item No.
EX PAS 5	5	54	279	4	1	152.000	5015265
EX PAS 10	10	54	441	4	1	214.000	5015270

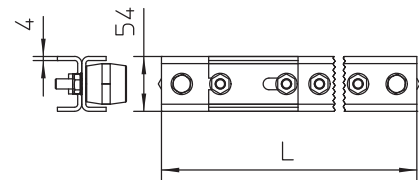
V2A Stainless steel, grade 304

For ignition spark-free protection/functional equipotential bonding to DIN VDE 0100-410/-540 as well as ignition spark-free lightning protection equipotential bonding to DIN VDE 0185-305 (IEC 62305) in systems to VDE 0165-1 (IEC/ EN 60079-14)

- Use in potentially explosive areas, Ex zone 1 and 2/21 and 22
- Tested according to explosion group IIC
- Lightning current carrying capacity class H (100 kA) to VDE 0185-561-1 (IEC/EN 62561-1)
- UV-stabilised and halogen-free insulation feet
- With spring washer for locking screws against self-loosening to VDE 0185-305-3 Supplementary sheet 2
- Suitable for indoor and outdoor applications



Dimensions



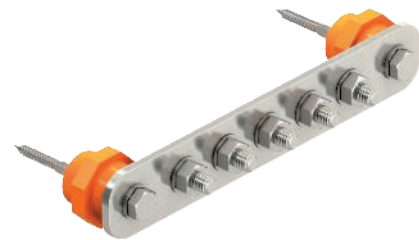
Equipotential bonding rail BigBar for industrial application



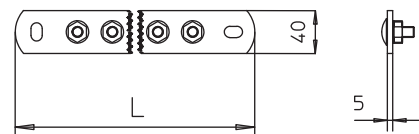
Type	Number of connections	Width mm	Length mm	Height mm	Pack. pcs.	Weight kg/100 pcs.	Item No.
1802 5 VA	5	40	246	5	1	90.000	5015854
1802 10 VA	10	40	408.5	5	1	190.000	5015866

V2A Stainless steel, grade 304

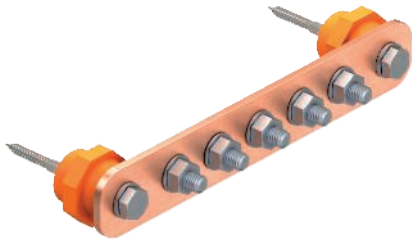
- Main potential equalisation to VDE 0100 Part 410 and Part 540, and also lightning protection potential equalisation to VDE 0185-305 (IEC 62305)
- Insulation feet
- Quick, simple assembly of connection conductors to the contact rail using lock bolts M10
- The high-grade stainless steel versions (V2A) are suitable for outdoor use
- Complete with anchors and bolts for wall mounting
- With lock washer (DIN 137) for bolt locking against loosening (e.g. required in industry and explosion-protected areas)



Dimensions



Equipotential bonding rail BigBar for industrial application

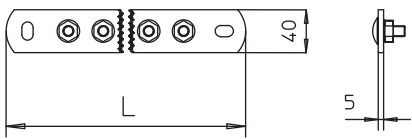


Type	Number of connections	Width mm	Length mm	Height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1802 5 CU	5	40	246	5	1	80.000	5015830
1802 6 CU	6	40	278.5	5	1	98.400	5015832
1802 8 CU	8	40	343.5	5	1	116.550	5015836
1802 10 CU	10	40	408.5	5	1	180.000	5015842
1802 12 CU	12	40	473.5	5	1	152.850	5015844
1802 14 CU	14	40	538.5	5	1	171.000	5015847
1802 20 CU	20	40	733.5	5	1	225.450	5015849

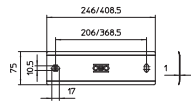
Cu Copper

- Main potential equalisation to VDE 0100 Part 410 and Part 540, and also lightning protection potential equalisation to VDE 0185-305 (IEC 62305)
- Insulation feet
- Quick, simple assembly of connection conductors to the contact rail using lock bolts M10
- The high-grade stainless steel versions (V2A) are suitable for outdoor use
- Complete with anchors and bolts for wall mounting
- With lock washer (DIN 137) for bolt locking against loosening (e.g. required in industry and explosion-protected areas)

Dimensions



Cover for BigBar equipotential bonding rail

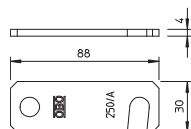
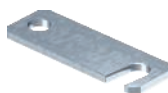


Type	Number of connections	Pack. pcs	Weight kg/100 pcs.	Item No.
1802 AH 5	5	1	25.800	5015880
1802 AH 10	10	1	36.300	5015884

V2A Stainless steel, grade 304

- Complete with all mounting components
- Labellable

Crossbar for equipotential bonding rail

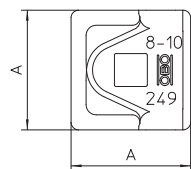
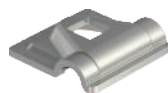


Type	Connection option	Pack. pcs	Weight kg/100 pcs.	Item No.
1802 KL	FL20-FL40	1	7.000	5015890

V2A Stainless steel, grade 304

- To clamp the flat conductors 30 x 3.5 and 40 x 5
- Suitable for equipotential busbar BigBar, type 1802

Connection terminal, equipotential bonding, Rd 8–10 mm



Type	Fit mm	Dimension A mm	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 VA-OT	Rd 8-10	40	100	3.130	5311554

V2A Stainless steel, grade 304

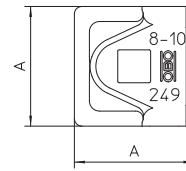
- For round conductor Rd 8-10
- Suitable for M10 bolts

Connection terminal, equipotential bonding, Rd 8–10 mm

Type	Fit mm	Di- men- sion A mm	Pack. pcs	Weight		Item No.
				kg/100 pcs.	pcs.	
249 8-10 CU-OT	Rd 8-10	40	100	3.580	5311530	

Cu Copper

- For round conductor fastening RD 8-10
- Suitable for M10 bolts



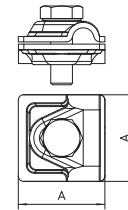
Vario quick connector



Type	Fit mm	Di- men- sion A mm	Lightning current carrying capacity kA	Pack. pcs	Weight		Item No.
					kg/100 pcs.	pcs.	
249 8-10 VA	Rd 8-10	40	H/100	10	10.700	5311551	

V2A Stainless steel, grade 304

- For T, cross and parallel connectors
- Quick installation using hexagonal bolt M10 x 30, high-grade stainless steel
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)



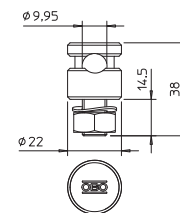
Connector, Rd 8–10 mm with pressure trough



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight		Item No.
				kg/100 pcs.	pcs.	
5001 N-VA	Rd 8-10	N/50	10	6.800	5304176	

V2A Stainless steel, grade 304

- With 1 fix contact clamping screw, nut and serrated washer
- Including pre-mounted pressure sump, steel
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)



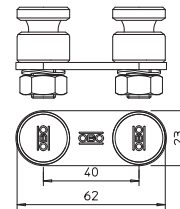
Connector, Rd 8–10 mm, double, with pressure trough



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight		Item No.
				kg/100 pcs.	pcs.	
5002 N-VA	Rd 8-10	N/50	10	16.200	5304270	

V2A Stainless steel, grade 304

- With 2 Fix-Kontakt clamping bolts, nuts and serrated washers
- With pre-mounted pressure trough made of VA
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)



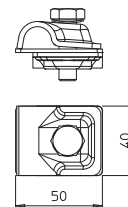
Vario quick connector Rd 8-10x16



Type	Fit mm	Di- men- sion A mm	Lightning current carrying capacity kA	Pack. pcs	Weight		Item No.
					kg/100 pcs.	pcs.	
249 8-10X16 VA	8-10X16	40	H/100	10	16.300	5311590	

V2A Stainless steel, grade 304

- For T, intersection and parallel connections with adapter plates
- Quick mounting using an M10 x 30 bolt, made from rustproof stainless steel
- With sprung washer to DIN 137
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)



The plus of earthing pipe clamps

- Varied connection options
- Adjustable mounting strip
- Suitable for many pipe diameters



Earthing pipe clamps

Each system has different environmental and normative requirements relating to equipotential bonding. To implement equipotential bonding correctly, it is therefore necessary to select the right components to use. Equipotential busbars and earthing pipe clamps are key components of this kind of

installation. In the context of lightning protection equipotential bonding, these must fulfill the requirements and undergo tests as defined in VDE 0185-561-1 (IEC 62561-1). When connecting metallic pipes to the equipotential bonding, strip earthing pipe clamps such as OBO type 927 are gener-

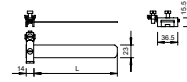
ally used. These offer a wide range of advantages over pipe clamps during assembly. With their rust-proof stainless steel tightening strap, they are suitable for a wide range of pipe diameters and materials.

Earthing pipe clamp VA

Type	for pipe Ø	Dimension L	for pipe Ø	Pack. pcs.	Weight kg/100 pcs.	Item No.
	inch	mm	mm			
927 1	3/8-11/2	200	17.2 - 48	10	7.780	5057515
927 2	3/8-4	395	17.2 - 114	10	8.550	5057523
927 4	3/8-6	555	17.2 - 185	10	8.900	5057558

V2A Stainless steel, grade 304

- For pipes of Ø 3/8 - 6"
- Connection options: Max. 2 cables 2.5-25 mm²
- Round conductor Rd 8
- Clip element, bolts and tightening strap made of rustproof stainless steel (VA)



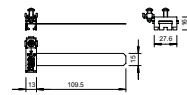
Earthing pipe clamp, nickel-plated

Type	Dimension L	Dimension Ø	Pack. pcs.	Weight kg/100 pcs.	Item No.
	mm	mm			
927 0	109.5	8 - 22	10	5.000	5057507

CuZn Brass

N Nickel-plated

- For pipe Ø 8-22 mm
- Connection options: max. 2 conductors 2.5-10 mm²
- Clip elements and screws from nickel-plated brass
- Tightening strip from high-grade stainless steel (V2A)

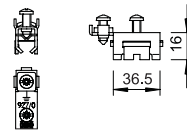


Clamp lock for earthing pipe clamp

Type	Pack. pcs.	Weight kg/100 pcs.	Item No.

V2A Stainless steel, grade 304

- Connection option: max. 2 conductors 2.5-25 mm²
- Possible to connect round conductor Rd 8

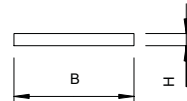


Installation strip for earthing pipe clamp

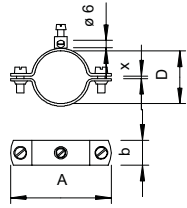
Type	Dimension B	Dimension H	Pack. m	Weight kg/100 m	Item No.
	mm	mm			
927 BAND-VA	23	0.3	40	6.000	5057922

V2A Stainless steel, grade 304

- 40 m roll
- Ready for transport and installation in unroll pack



Earthing clamp, type 925



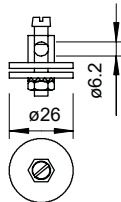
Type	Dimension A mm	Clamping range D mm	Dim. X mm	for pipe Ø inch	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
925 1/4	48	11.5 - 13.5	2	1/4	300	25	4.100	5040035
925 3/8	52	15.2 - 17.2	2	3/8	300	25	4.360	5040051
925 1/2	56	19.3 - 21.3	2	1/2	300	25	4.788	5040078
925 3/4	62	24.9 - 26.9	2	3/4	250	25	5.316	5040094
925 1	70	31.7 - 33.7	2	1	250	25	5.956	5040116
925 1 1/4	81	40.4 - 42.4	2	1 1/4	300	25	7.744	5040132
925 1 1/2	88	46.3 - 48.3	2	1 1/2	240	20	9.615	5040159

St Steel

G Electrogalvanised

- For pipes 1/4"-1 1/2" or Ø 11.5-48.3 mm
- Connection options: conductors to 16 mm² with connecting terminal, riveted with brass and 1 cylinder screw M5 x 12
- To 1 1/2" with 2 cylinder screws M6 x 16 (G)

Earthing terminal for fastening on earthing strap



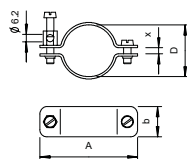
Type	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
928	240	10	5.700	5040507

CuZn Brass

N Nickel-plated

- For use in bathtubs or shower tubs etc.
- Connection option: conductors to 16 mm²
- Clamping element with threaded connection M6, 1 hexagonal nut M6, 1 serrated dimension washer and 1 cylinder screw M5 x 8
- Clamping element, nut and screws from copper-plated brass
- Serrated washer from stainless steel; 2 washers from galvanised steel

Earthing clamp, type 942



Type	Dimension A mm	Clamping range D mm	Dim. X mm	for pipe Ø inch	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
942 11	44	8 - 11	3.5	1/8	420	10	4.480	5038014
942 15	50	13 - 15	3	1/4	320	10	4.800	5038030
942 18	52	16 - 18	2	3/8	200	10	5.170	5038057
942 22	55	19 - 22	3	1/2	180	10	5.550	5038073
942 28	63	24 - 28	3	3/4	180	10	6.170	5038081
942 35	71	30 - 35	5	1	120	10	8.570	5038111
942 43	81	39 - 43	5	1 1/4	100	10	9.740	5038138
942 49	86	44 - 49	5	1 1/2	100	10	10.540	5038154

Cu Copper

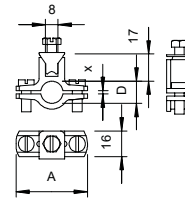
N Nickel-plated

- For pipes 1/8"-1 1/2" or Ø 8-49 mm
- Connection options: conductors to 16 mm²
- With attaching clamp and cylinder screw M6 x 16 from nickel-plated brass
- Top and bottom clip sections from nickel-plated copper



Earthing clamp, type 950

Type	Dimension A mm	Clamping range D mm	Dim. X mm	for pipe Ø inch	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
950 Z 1/4	45	12 - 14	2	1/4	300	10	5.830	5050030
950 Z 3/8	50	15.5 - 17.5	2	3/8	180	10	6.020	5050057
950 Z 1/2	54	20 - 22.5	2.5	1/2	120	10	7.000	5050073
950 Z 3/4	61	25 - 28	3	3/4	120	10	7.620	5050081
950 Z 1	66	31.5 - 34.5	3	1	150	10	8.410	5050111
950 Z 1 1/4	78	40.5 - 43.5	3	1 1/4	160	10	10.030	5050138
950 Z 1 1/2	84	46.5 - 49.5	3	1 1/2	150	10	10.410	5050154
950 Z 1 3/4	88	51 - 54	3	1 3/4	100	10	10.251	5050170
950 Z 2	96	58.5 - 61.5	3	2	80	10	12.150	5050197



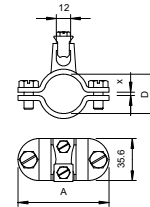
Zn Die-cast zinc

G Electrogalvanised

- For pipes Ø 1/4"-2"
- Connection options: conductors to 35 mm² or round conductors to Ø 6 mm
- With captive pressure strip, 2 cylinder screws M6 x 16 and 1 hex-head screw M6 x 16 from galvanised steel, top and bottom part of clip from die-cast zinc

Earthing clamp, type 952

Type	Dimension A mm	Clamping range D mm	Dim. X mm	for pipe Ø inch	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
952 Z 1/2	65	18.5 - 21.5	3	1/2	50	5	24.880	5052076
952 Z 3/4	71	24 - 27	3	3/4	50	5	26.780	5052092
952 Z 1	77	30.5 - 33.5	3	1	50	5	28.560	5052114
952 Z 1 1/4	87	39.5 - 42.5	3	1 1/4	50	5	32.200	5052130
952 Z 1 1/2	94	45.5 - 48.5	3	1 1/2	20	5	34.720	5052157
952 Z 2	105	57 - 60	3	2	30	5	38.520	5052181



St Steel

FT Hot-dip galvanised

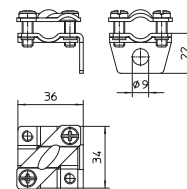
- For pipes 1/2-2" or Ø 11.5-60 mm
- Connection options: conductors 16-70 mm² and/or round conductors to Rd 10 with captive pressure strip from stainless steel
- With 2 hexagonal bolts M6 x 16 and 2 hexagonal bolts M6 x 20 from hot-dip galvanised steel
- Top section of clip with cast contact point from die-cast zinc, bottom section of clip from hot-dip galvanised steel

Earthing terminal type 951

Type	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
951	120	10	5.400	5051509

V2A Stainless steel, grade 304

- Longitudinal and transverse conductor routing
- With 1 attaching hole Ø 9 mm
- With 2 cylinder bolts M6 x 16



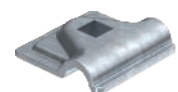
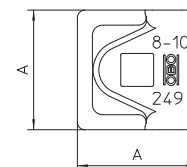
Connection terminal, equipotential bonding, Rd 8-10 mm

Type	Fit mm	Dimension A mm	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 ST-OT	Rd 8-10	40	100	3.240	5311503

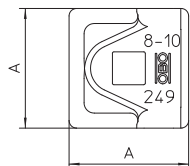
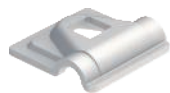
St Steel

FT Hot-dip galvanised

- For round conductor fastening RD 8-10
- Suitable for M10 bolts



Connection terminal, equipotential bonding, Rd 8–10 mm

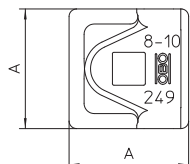
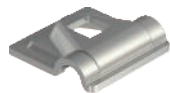


Type	Dimension		Pack. pcs	Weight		Item No.
	A mm	Fit mm		kg/100 pcs.	pcs.	
249 8-10 ALU-OT	44	Rd 8-10	100	2.100		5311585

Alu Aluminium

- For round conductor fastening RD 8-10
- Suitable for M10 bolts

Connection terminal, equipotential bonding, Rd 8–10 mm

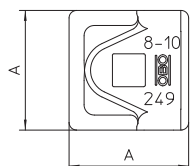
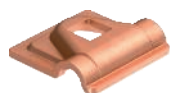


Type	Fit mm	Dimension A mm	Pack. pcs	Weight		Item No.
				kg/100 pcs.	pcs.	
249 8-10 VA-OT	Rd 8-10	40	100	3.130		5311554

V2A Stainless steel, grade 304

- For round conductor Rd 8-10
- Suitable for M10 bolts

Connection terminal, equipotential bonding, Rd 8–10 mm

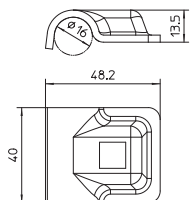


Type	Fit mm	Dimension A mm	Pack. pcs	Weight		Item No.
				kg/100 pcs.	pcs.	
249 8-10 CU-OT	Rd 8-10	40	100	3.580		5311530

Cu Copper

- For round conductor fastening RD 8-10
- Suitable for M10 bolts

Connection terminal, equipotential bonding, Rd 16 mm

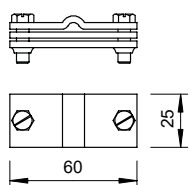
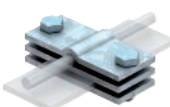


Type	Fit mm	Pack. pcs	Weight		Item No.
			kg/100 pcs.	pcs.	
249 VA-OT	16	100	5.700		5311573

V2A Stainless steel, grade 304

- For round conductor fastening RD 16
- Suitable for M10 bolts

Earth connection terminal for round conductor and flat conductor



Type	Shipping box pcs	Pack. pcs	Weight		Item No.
			kg/100 pcs.	pcs.	
937 50	100	10	11.750		5043018

St Steel

FT Hot-dip galvanised

- For round and flat conductors
- Fit: cable 50 mm² x max. FL 40
- Rd 8 x max. FL 40
- With 2 hexagonal bolts M6 x 20 (F)

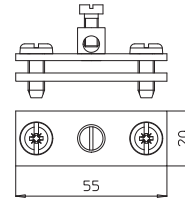
Earthing terminal for cables and flat conductors

Type	Shipping box pcs	Pack. pcs	Weight kg/100 pcs	Item No.
939	150	25	5.932	5043107

St Steel

G Electrogalvanised

- For cables to 16 mm² and flat conductors
- Fit: cable to 16 mm² x max. FL 30
- With riveted brass connection terminal and one cylinder bolt, M5 x 12, with two cylinder bolts, M6 x 16



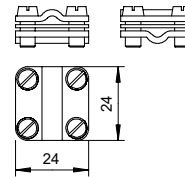
Clip branch terminal

Type	Pack. pcs	Weight kg/100 pcs	Item No.
470 4-16	50	2.856	5064015

CuZn Brass

N Nickel-plated

- Seat: 4-8 mm x 4-8 mm
- With 4 cylinder bolts M4 x 16



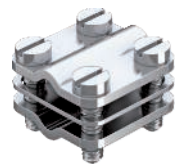
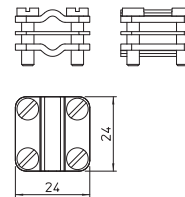
Clip branch terminal, parallel

Type	Colour	Pack. pcs	Weight kg/100 pcs	Item No.
471 4-16 P	—	50	2.900	5064017

CuZn Brass

N Nickel-plated

- Seat: 4-8 mm x 4-8 mm
- With 4 cylinder bolts M4 x 16



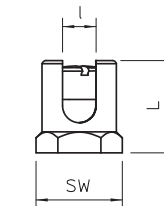
Earthing terminal with fastening thread



Type	Dimen- sion L mm	Dimen- sion I mm	Cross- section mm ²	Thread	Pack. pcs	Weight kg/100 pcs	Item No.
EKL 25 M6	22	8	25	M6	50	3.100	6404006
EKL 35 M6	26	10	35	M6	50	4.800	6404014
EKL 25 M8	26	10	25	M8	50	3.970	6404001

CuZn Brass

Earthing terminal for fastening the equipotential bonding conductor to the cable support system.



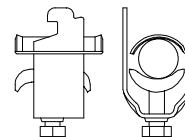
Clamp clips for screen connection



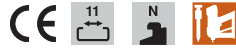
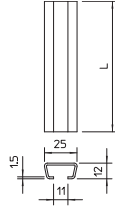
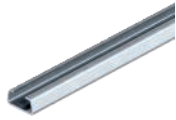
Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs	Item No.
2056N SAS 8 A2	4 - 8	50	2.900	1167006
2056N SAS 12 A2	8 - 12	50	3.700	1167014
2056N SAS 16 A2	12 - 16	50	4.200	1167022
2056N SAS 22 A2	16 - 22	50	4.850	1167030
2056N SAS 28 A2	22 - 28	50	6.600	1167049

V2A Stainless steel, A2

For electrical connection of the braided shield of stripped cables. Delivery complete with counter-trough; pressure trough and VA counter-trough. A cable screen for protection against electromagnetic influences, can also contribute towards equipotential bonding as both ends are connected to the reference potential.



Profile rail CL2512, slot 11 mm, unperforated



Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack. m	Weight kg/100 m	Item No.
CL2512UP2000FT	2000	25 x 12	1.5	2000	20	65.000	1117025
CL2512UP2000FS	2000	25 x 12	1.5	2000	20	58.300	1117033

SI Steel

FS Strip-galvanised FT Hot-dip galvanised



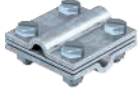

Light-duty C profile rail for cable routing, in conjunction with series clips or clamp clips with N foot. Can also be used in building of control cabinets.







Earthing systems

	Conductor material	464
	Earth rods and plates	469
	Connection material	478
	Holders and accessories	494

Diagonal and parallel clamps



RD 8-10/FL 30

Surface	Item no.	Page
FT	5312906	484
V4A	5312925	484
V2A	5312922	484



RD 6-22/max. FL 50

Surface	Item no.	Page
FT	5313015	485
FT	5313031	485
FT	5313066	485
V2A	5313023	485



RD 8-10

Surface	Item no.	Page
V4A	5313013	486
V2A	5001612	486



RD 10-20

Surface	Item no.	Page
V2A	5315522	486
FT	5315514	486
ST	5315557	486

Connection terminals, sealing sleeves and fixed earthing terminals



Ø 8-14 mm

Surface	Item no.	Page
ST	5014476	487
FT	5014468	487



Ø 16-37 mm

Surface	Item no.	Page
ST	5014477	487
FT	5014469	487



RD 10/FL 30x3.5

Surface	Item no.	Page
	2360041	487
	2360043	487

Earth rods



219 Standard

Surface	Item no.	Page
FT	5000742	469
FT	5000750	469
FT	5000769	469



BP

Surface	Item no.	Page
FT	5000947	470
FT	5000955	470
Stainless steel	5000858	470
Stainless steel	5000866	470
Copper-plated	5000500	470



OMEX

Surface	Item no.	Page
FT	5000017	471
FT	5000203	471
FT	5000025	471



Pipe earther

Surface	Item no.	Page
FT	5000300	469
Stainless steel	5000335	469

Connection clips for earth rods



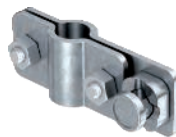
RD 8-10/FL 30-40

Surface	Item no.	Page
FT	5001641	478
FT	5001749	478
FT	5001668	478
Stainless steel	5001633	479
Stainless steel	5001672	479
Stainless steel	5001617	479
Stainless steel	5001625	479



Universal

Surface	Item no.	Page
FT	5001412	478
FT	5001404	478
Stainless steel	5001366	478



RD 8-10

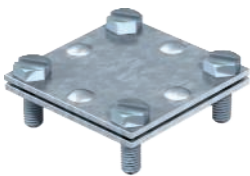
Surface	Item no.	Page
FT	5001218	478
FT	5001226	478



RD 7-12.5

Surface	Item no.	Page
Copper-plated	5001560	479

Cross-connectors



FL/FL

Surface	Item no.	Page
FT	5314534	480
FT	5314518	480
FT	5314658	480
FT	5314666	480
FT	5314615	481
FT	5314623	481
Stainless steel	5314659	480
Stainless steel	5314720	480
Stainless steel	5314616	481



RD 8-10/RD 8-10

Surface	Item no.	Page
FT	5312604	481
FT	5312310	482
Stainless steel	5312318	482
Copper-plated	5312418	482



RD 8-10/RD 16

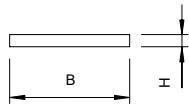
Surface	Item no.	Page
FT	5312809	482
FT	5312345	483
Stainless steel	5312346	483
Copper-plated	5312442	483



RD 8-10/FL 30

Surface	Item no.	Page
FT	5312655	483
Stainless steel	5312656	484

Galvanised steel flat conductor for earth



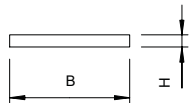
Type	Dimension W x H mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
5052 DIN 20X2.5	20 x 2,5	50	122	50	122	41.000	5019340
5052 DIN 25X3	25 x 3	75	84	50	84	59.700	5019342
5052 DIN 30X3	30 x 3	90	71	50	71	70.650	5019344
5052 DIN 30X3.5	30 x 3,5	105	30	25	30	84.000	5019345
5052 DIN 30X3.5	30 x 3,5	105	60	50	60	84.000	5019347
5052 DIN 30X4	30 x 4	120	52	50	52	97.000	5019350
5052 DIN 40X4	40 x 4	160	40	51	40	128.000	5019355
5052 DIN 40X5	40 x 5	200	30	50	30	162.000	5019360

St Steel

Fl Hot-dip galvanised

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Meets the requirements of VDE 0185-305 (IEC 62305)
- Zinc coating: 500 g/m² (approx. 70 µm)
- For lightning protection, earthing systems and ring equipotential bonding

Stainless steel flat conductor



Type	Dimension W x H mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
5052 V2A 30X3.5	30 x 3,5	105	50	42	50	82.500	5018501
5052 V4A 30X3.5	30 x 3,5	105	50	42	50	82.425	5018706
5052 V4A 30X3.5	30 x 3,5	105	25	21	25	82.425	5018730

V2A Stainless steel, grade 304 **V4A** Stainless steel, 316Ti / 316L

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)
- According to the foundation earther standard DIN 18014, V4A is required in the earth
- For use in areas at risk of corrosion
- For lightning protection, earthing systems and ring equipotential bonding

Flat conductor, copper

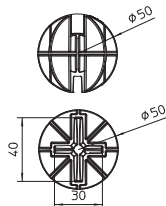


Type	Dimension W x H mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
FL 20-CU	20 x 2,5	50	45	20	45	44.500	5021804

Cu Copper

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Meets the requirements of VDE 0185-305 (IEC 62305)
- For lightning protection, earthing systems and ring equipotential bonding

Protective cap for connection lugs, reflective



Type	Fit mm	Weight kg/100 pcs.	Item No.
ProtectionBall	RD 8-10/ FL 25/ 30/ 40	25	5018014

PE Polyethylene

- For snapping onto round conductors or flat conductors
- Noticeable, reflective label
- For accident protection during the construction phase

Round conductor, galvanised steel

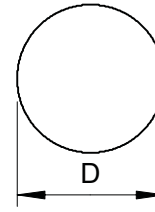


Type	Nominal size Ø mm	Cross-section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
RD 8-FT	8	50	125	50	125	40.000	5021081
RD 8-FT 50	8	50	50	20	50	40.000	5021050
RD 10	10	78	80	50	80	52.500	5021103

St Steel

FT Hot-dip galvanised

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)
- RD 10 can also be used in the earth
- Zinc coating: 350 g/m² (approx. 50 µm)



Round conductor, galvanised steel with PVC jacketing

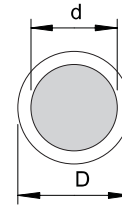


Type	Colour	Dimension d mm	Dimension D mm	Cross-section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
RD 10-PVC	Black	10	13	78	75	50	75	67.000	5021162

St Steel

FT Hot-dip galvanised

- Conforms to the requirements according to VDE V 0185-305, (IEC 62305)
- Zinc coating: 350 g/m² (approx. 50 µm)
- With PVC sheathing



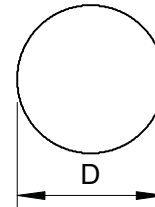
Round conductor, aluminium



Type	Nominal size Ø mm	Cross-section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
RD 8-ALU	8	50	150	20	150	13.500	5021286
RD 8-ALU-T	8	50	150	20	150	13.500	5021294
RD 8-ALU-T 75	8	50	75	10	75	13.500	5021296
RD 10-ALU	10	78	95	20	95	21.000	5021308

Alu Aluminium

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)
- RD 8 ALU: Semi-hard (E-AlMgSi0.5 corresponds to DIN 48801)
- RD 8 ALU-T: Can be subjected to torsion (E-AlMgSi0.5 corresponds to DIN 48801)
- RD 10 ALU: Pure aluminium (E-Al corresponds to DIN 48801)
- AL and ALMgSi may not be routed directly on, in or under plaster, mortar or concrete, nor routed in the earth



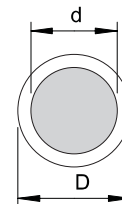
Round conductor, aluminium, with PVC sheathing



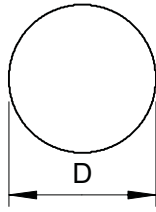
Type	Nominal size Ø mm	Cross-section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
RD 8-PVC	8/11	50	100	20	100	20.000	5021332

Alu Aluminium

- Meets the requirements of VDE 0185-305 (IEC 62305)
- With PVC jacketing (halogen-free)
- Suitable for routing on, in or under plasterwork, mortar or concrete



Round conductor, stainless steel A2

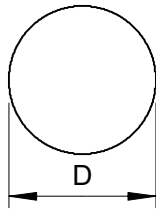


Type	Nominal size Ø mm	Cross-section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
RD 8-V2A	8	50	125	50	125	40.000	5021235
RD 10-V2A	10	78	50	32	50	63.000	5021227
RD 10-V2A	10	78	80	50	80	63.000	5021239
RD 8-V4A	8	50	125	50	125	40.000	5021644
RD 10-V4A 20	10	78	20	12	20	63.000	5021640
RD 10-V4A	10	78	50	32	50	63.000	5021642
RD 10-V4A	10	78	80	50	80	63.000	5021647

V2A Stainless steel, grade 304 V4A Stainless steel, 316Ti / 316L

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)
- RD 10-V4A for applications in the earth
- According to the foundation earther standard DIN 18014, V4A is required in the earth

Round conductor, copper

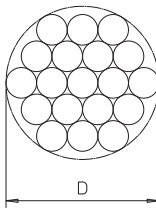


Type	Nominal size Ø mm	Cross-section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
RD 8-CU	8	50	100	45	100	45.000	5021480
RD 10-CU	10	78	50	35	50	70.000	5021502

Cu Copper

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)

Copper cable



Type	Dimension D mm	Individual wires	Cross-section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
S 11-CU	10.5	19x Ø 2,1	70	50	30	50	58.600	5021654
S 9-CU	9	19x Ø 1,8	50	100	45	100	45.000	5021652
S-11-CU SN	10.5	19x Ø 2,1	70	50	30	50	58.600	5021656

Cu Copper

Sn Tin-plated

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)





The plus of earth rods and plates

- + Corrosion-resistant – zinc coating double the amount required
- + Constant resistance values
- + No cross-section increase at the coupling point
- + Optimised for vibration hammers
- + Tested to VDE-0185-561-2 (IEC/EN 62561-2)
- + Can carry short-circuit current



Earth rod with modular structure

The earthing system is the basis for the entire electrical system. Together with the equipotential bonding system, a conductive and low-resistance connection to the local earth is created. Voltage differences between the connected parts are shorted and a reference potential is generated. The safety conditions and switch-off systems can only reach their protection aims when the system is implemented correctly.

Besides correct planning, the installation must be checked and documented. The continued protective action of the earthing system must be ensured through regular maintenance and testing. Besides the state of the art and the named standards, the directives of the local power generating company must be complied with.

A correctly installed earthing system, together with lightning and

surge protection devices, can minimise damage and failures.

The earthing system creates the electrical connection to the surrounding earth. The earthing resistance of the system should be as small as possible (less than 10 Ω) and must be coordinated with further protective measures and switch-off conditions.



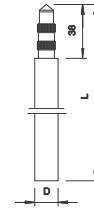
Earthing rod for standard applications

Type	Length mm	Outer-Ø mm	Pack. pcs	Weight		Item No.
				kg/100 pcs.	pcs.	
219 20 ST FT	1000	20	5	250.000	5000742	
219 20 ST FT	1500	20	5	360.000	5000750	

St Steel

FT Hot-dip galvanised

- High corrosion resistance
- Zinc support 70 µm
- With peg and bore for linking together
- Round pegs with two knurls
- Conforms to the requirements according to VDE 0185-305 (IEC 62305)
- Short-circuit current I_k (50 Hz), time 1 s, max. temp 300 °C: 7.9 kA (219/20 ST)



Earthing rod for standard applications

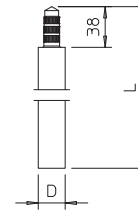


Type	Length mm	Outer-Ø mm	Pack. pcs	Weight		Item No.
				kg/100 pcs.	pcs.	
219 25 ST FT	1500	25	5	573.000	5000769	

St Steel

FT Hot-dip galvanised

- High corrosion resistance
- Zinc support approx. 130 µm
- With peg and bore for linking together
- Round pegs with three knurls
- Conforms to the requirements according to VDE 0185-305 (IEC 62305)
- Short-circuit current I_k (50 Hz), time 1 s, temp. max. 300 °C: 12.3 kA



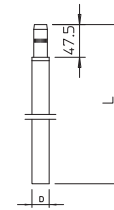
LightEarth earthing rod

Type	Length mm	Outer-Ø mm	Pack. pcs	Weight		Item No.
				kg/100 pcs.	pcs.	
LE ERDER FT	1500	25	5	235.000	5000300	

St Steel

FT Hot-dip galvanised

- Expandable earth rod system for erecting earthing connections (type A)
- Also suitable for difficult soil conditions
- The LightEarth earthing system is connected using the pre-mounted sleeve
- Satisfies requirements according to DIN VDE 0185-305 (IEC 62305)
- For use with antenna earthing systems, lightning earthing systems, etc.

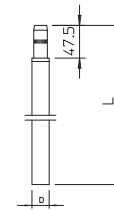


LightEarth earthing rod

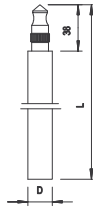
Type	Length mm	Outer-Ø mm	Pack. pcs	Weight		Item No.
				kg/100 pcs.	pcs.	
LE ERDER V4A	1500	25	5	235.000	5000335	

V4A Stainless steel, grade 316 L

- Expandable earth rod system for erecting earthing connections (type A)
- Also suitable for difficult soil conditions
- The LightEarth earthing system is connected using the pre-mounted sleeve
- Satisfies requirements according to DIN VDE 0185-305 (IEC 62305)
- For use with antenna earthing systems, lightning earthing systems, etc.



BP earthing rod



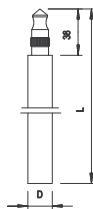
Type	Length mm	Outer-Ø mm	Short-circuit current (50 Hz) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
219 20 BP FT	1500	20	7.9	H/100	5	360.000	5000947
219 25 BP FT	1500	25	12.3	H/100	5	573.000	5000955

St Steel

FT Hot-dip galvanised

- "BP" system (Bundespost)
- Very good contacting properties with soft metal inlay in the bore hole
- With peg and bore for linking together
- FT version with zinc coating approx. 130 µm
- Conforms to the requirements according to VDE 0185-305 (IEC 62305)

BP earthing rod

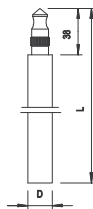


Type	Length mm	Outer-Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
219 20 BP V4A	1000	20	5	250.000	5000858
219 20 BP V4A	1500	20	5	365.000	5000866

V4A Stainless steel, grade 316

- "BP" system (Bundespost)
- Very good contacting properties with soft metal inlay in the bore hole
- With peg and bore for linking together
- Conforms to the requirements according to VDE 0185-305 (IEC 62305)
- Short circuit current I_k (50 Hz), time 1 s, max. temp. 300 °C: 4.5 kA (219 20 BP V4A)

BP earthing rod with copper sheath



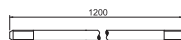
Type	Length mm	Outer-Ø mm	Short-circuit current (50 Hz) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
219 20 BP CU	1500	20	7.9	H/100	5	365.400	5000500

St Steel

Cu Copper-plated

- "BP" system (Bundespost)
- Made of steel with a copper jacket of min. 0.25 mm
- Very good contacting properties with soft metal inlay in the bore hole
- With peg and bore for linking together
- Tensile strength min. 600 N/mm²
- Conforms to the requirements according to VDE 0185-305 (IEC 62305)

BP earth rod with copper sheath



Type	Length mm	Outer-Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
219 16 CU	1200	14.2	5	192.000	5000481

St Steel

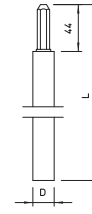
Cu Copper-plated

- Made of steel with a copper jacket of min. 0.25 mm
- With thread for linking together
- Tensile strength min. 600 N/mm²
- Meets the requirements of VDE 0185-305 (IEC 62305)

OMEX earthing rod



Type	Length mm	Outer-Ø mm	Short-circuit current (50 HZ) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs.	Weight kg/100 pcs.	Item No.
219 20 OMEX FT	1500	20	7.9	H/100	5	365.400	5000017
219 20 OMEX FT	2000	20	7.9	H/100	5	491.400	5000203



St Steel

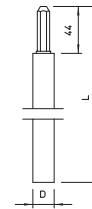
FT Hot-dip galvanised

- OMEX system
- With peg and bore for linking together
- With hardened hexagonal pins
- Min. zinc coating 60 µm
- Very good contacting properties with soft metal inlay in the bore hole
- Conforms to the requirements according to VDE 0185-305 (IEC 62305) and DIN EN 62561-2

OMEX earthing rod



Type	Length mm	Outer-Ø mm	Short-circuit current (50 HZ) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs.	Weight kg/100 pcs.	Item No.
219 25 OMEX FT	1500	25	12.3	H/100	5	577.200	5000025



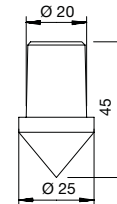
St Steel

FT Hot-dip galvanised

- OMEX system
- With peg and bore for linking together
- With hardened hexagonal pins
- Min. zinc coating 60 µm
- Very good contacting properties with soft metal inlay in the bore hole
- Conforms to the requirements according to VDE 0185-305 (IEC 62305) and DIN EN 62561-2

Driving spike for LightEarth earth rod

Type	For earth rods Ø mm	Pack. pcs.	Weight kg/100 pcs.	Item No.
LE SPITZE	25	5	10.000	3041409



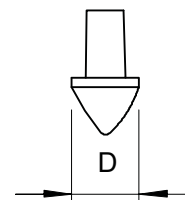
St Steel

FT Hot-dip galvanised

- Suitable for LightEarth system

Driving spike for ST and BP earth rod

Type	For earth rods Ø mm	Pack. pcs.	Weight kg/100 pcs.	Item No.
1819 20BP	20	5	3.800	3041212
1819 25BP	25	5	6.700	3041956

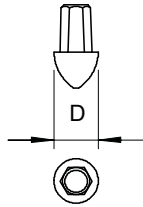


TG Cast iron

FT Hot-dip galvanised

- Suitable for ST and BP system

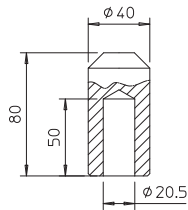
Driving spike for OMEX earth rod



Type	For earth rods Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1819 20	20	5	3.300	3041204
1819 25	25	5	4.900	3041255

- TG Cast iron
- FT Hot-dip galvanised
- Suitable for OMEX system
- DIN 48852, Form SP

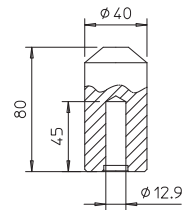
Impact head for LightEarth earthing rod



Type	Material symbol	For earth rods Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
LE KOPF	St	25	1	0.550	3042308

- SI Steel
- FT Hot-dip galvanised
- Suitable for LightEarth system
- For driving earth rods using hand-held hammer
- Hardened

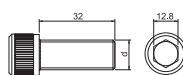
Impact head for earthing rods ST, BP and OMEX



Type	Material symbol	For earth rods Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1820 20	St	20	1	62.600	3042200
1820 25	St	25	1	70.000	3042251

- SI Steel
- Suitable for ST, BP and OMEX systems
- Hardened
- DIN 48852, Form SP

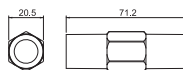
Impact head for earthing rod with thread



Type	Material symbol	For earth rods Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1820 16	V2A	14.2	5	5.800	3042270

- V2A Stainless steel, grade 304
- Suitable for earth rods, type 2019 16 CU

Coupling for earth rod with thread



Type	For earth rods Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2019 16	14.2	10	8.000	5001190

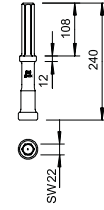
- CuSn Red bronze
- Suitable for earth rods, type 2019 16 CU

Hammer insert, type 2500, for earthing rods ST, BP and OMEX

Type	For earth rods Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2500 20	20	1	120.000	3043207
2500 25	25	1	140.000	3043258

St Steel

- Manufactured by Cobra BBM 47 SPA-Super, Tex11 and COBRA 248
- Fits earth rod system ST, BP and OMEX
- Hardened

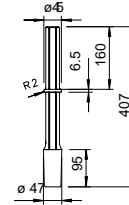


Hammer insert, type 2510, for earthing rods ST, BP and OMEX

Type	For earth rods Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2510 20	20	1	310.000	3043312

St Steel

- Manufactured by Atlas Copco, type FB 60 S-Super
- Fits earth rod system ST, BP and OMEX
- Hardened

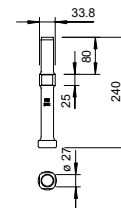


Hammer insert, type 2520, for earthing rods ST, BP and OMEX

Type	For earth rods Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2520 20	20	1	197.000	3043703
2520 25	25	1	197.000	3043754

St Steel

- Manufactured by Wacker BHF 25, BHF 30S, EHU 25/220
- Fits earth rod system ST, BP and OMEX
- Hardened

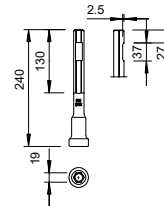


Hammer insert, type 2530, for earthing rods ST, BP and OMEX

Type	For earth rods Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2530 20	20	1	125.000	3043401
2530 25	25	1	125.000	3043452

St Steel

- Manufactured by Bosch USH 10, HSH 10
- Fits earth rod system ST, BP and OMEX
- Hardened



Hammer insert, type 2531, for earthing rods ST, BP and OMEX

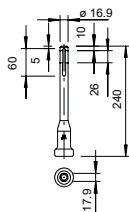
Type	For earth rods Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2531 20	20	1	200.000	3043908

St Steel

- Make: Bosch GSH 27, USH 27 (WAF 28 mm)
- Suitable for ST, BP and OMEX earth rod systems
- Hardened



Hammer insert, type 2535, for earthing rods ST, BP and OMEX

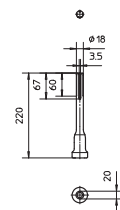


Type	For earth rods Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2535 20	20	1	100.000	3043916
2535 25	25	1	100.000	3044912

St Steel

- Manufactured by Hilti TE 52/42, TE 72/60, TE 92
- Fits earth rod system ST, BP and OMEX
- Hardened

Hammer insert, type 2536, for earthing rods ST, BP and OMEX



Type	For earth rods Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2536 20	20	1	63.000	3044904
2536 25	25	1	61.000	3044831

St Steel

- Fits earth rod system ST, BP and OMEX
- For vibration hammers with SDS- Max/TEY- mounting
- Hardened

Hammer insert for LightEarth earthing rod



Type	Seat systems	Pack. pcs	Weight kg/100 pcs.	Item No.
LE HAMMER-W	Wacker	1	132.000	3043606
LE HAMMER-H	Hilti	1	76.000	3043610
LE HAMMER-B	Bosch	1	87.000	3043614
LE HAMMER-SDS-M	SDS-max	1	76.000	3043602
LE HAMMER-AC	Atlas Copco	1	76.000	3043618
LE HAMMER-B-II	Other	1	200.000	3043628

St Steel

- Suitable for LightEarth system
- 3043606 for Wacker (BHF 25, BHF 30S)
- 3043610 for Hilti (TE 52/42, TE72/60, TE92)
- 3043614 for Bosch (USH 10, HSH 10)
- 3043602 for SDS-Max
- 3043618 for Atlas Copco (Hexagon seat)
- 3043628 for Bosch GSH27/UH27 (11304) / HS28 (12314)
Hitachi H65SD
Makita HM 1500B / HM1800
- Hardened

Air-termination/earth entry rod, rounded-off on both ends

Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 A-1500	1500	16	10	240.000	5400155

St Steel

FT Hot-dip galvanised

- Full material Ø 16 mm
- Rounded on both ends
- Suitable for FangFix stand system

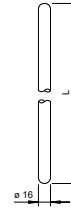


Air-termination/earth entry rod, rounded-off on both ends

Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
200 V4A-1500	1500	16	10	242.000	5420504
200 V4A-2000	2000	16	10	320.000	5420539

V4A Stainless steel, grade 316 Ti

- Full material Ø 16 mm
- Rounded on both ends
- Suitable for FangFix stand system



Air-termination/earth entry rod, rounded-off on both ends

Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 A-CU	1500	16	10	272.100	5400627

Cu Copper

- Full material Ø 16 mm
- Rounded on both ends
- Suitable for FangFix stand system



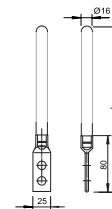
Air-termination/earth entry rod with connection tabs

Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 F1500	1500	16	10	240.000	5424151
101 F2000	2000	16	10	320.000	5424208

St Steel

FT Hot-dip galvanised

- With 2 attaching holes Ø 12 mm
- One end rounded



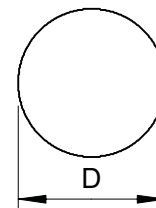
Connection lug/earth entry rod made of stainless steel



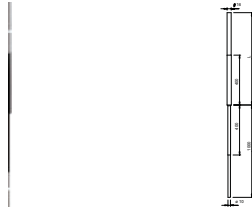
Type	Nominal size Ø mm	Cross- section mm ²	Pack. pcs	Weight kg/100 pcs.	Item No.
AF RD 10 V4A	10	75	5	123.600	5430720

V4A Stainless steel, 316Ti / 316L

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)
- RD 10-V4A for applications in the earth
- According to the foundation earther standard DIN 18014, V4A is required in the earth



Earth entry rod, tapered and partially insulated



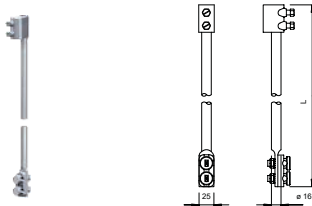
Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
204 KS-2000	2000	16/10	1	230.000	5430011
204 KS-2500	2500	16/10	1	310.000	5430062

Sl Steel

F Hot-dip galvanised

- 16 mm earth entry with 10 mm connection
- With mounted heat-shrinkable sleeve (corrosion protection)

Earth entry rod with separating piece and connector

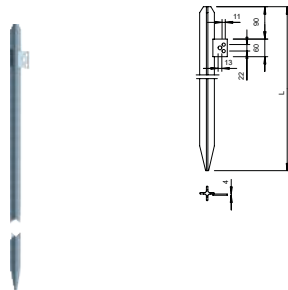


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
204 KL-1500	Rd 8-10	10	260.700	5430151

Sl Steel

- With separating piece type 223 DIN and connector type 5002 DIN

Profile earthing rod with connecting lug



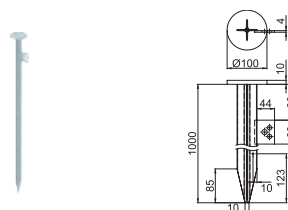
Type	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
213 1000 DIN	1000	5	240.500	5003008
213 1500 DIN	1500	5	364.500	5003016
213 2000 DIN	2000	5	488.400	5003024
213 2500 DIN	2500	3	612.400	5003032
213 3000 DIN	3000	3	736.400	5003040

Sl Steel

FT Hot-dip galvanised

- Cross-profile 50 x 50 x 3 mm
- With connecting strap
- 1 through hole Ø 13 mm
- 2 through holes Ø 11 mm
- Round conductor fastening e.g. with type 5001 DIN-FT possible
- For the construction of earthing systems e.g. antenna or earthing of building site distribution boards

Profile earthing rod with connection strap/hand protection



Type	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
213 1000 DIN HS	1000	5	300.000	5003081

Sl Steel

FT Hot-dip galvanised

- Cross-profile 50 x 50 x 3 mm
- Hand protection Ø 100 mm
- With connecting strap
- 1 gland hole Ø 13 mm
- 2 gland holes Ø 11 mm
- Round cable fastening e.g. with type 5001 DIN-FT possible
- For the construction of earthing systems e.g. antennas or earthing of building site distribution boards

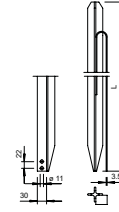
Profile earth rod connection with strip steel lug

Type	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
213 1500 M	1500	3	527.600	5003261
213 2000 M	2000	3	651.600	5003288
213 2500 M	2500	3	783.800	5003296
213 3000 M	3000	3	899.500	5003318

St Steel

FT Hot-dip galvanised

- With 2 m strip steel section FL 30 x 3.5
- With 2 through holes Ø 11 mm
- For the construction of earthing systems e.g. antenna or earthing of building site distribution boards



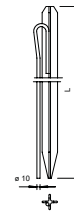
Profile earth rod connection with round conductor lug

Type	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
213 1500 F	1500	3	486.900	5003776
213 2000 F	2000	3	610.900	5003784

St Steel

FT Hot-dip galvanised

- With 2 m round conductor lugs Rd 10
- For the construction of earthing systems e.g. antenna or earthing of building site distribution boards



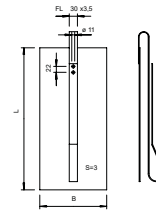
Earthing plate

Type	Dimension B x L x S mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1816 F-500X1000	500 x 1000 x 3	1	1,329.300	5009227
1816 F-1000X1000	1000 x 1000 x 3	1	2,700.000	5009235

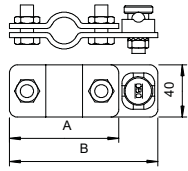
St Steel

FT Hot-dip galvanised

- With 3 m strip steel section FL30 x 3.5
- With 2 attaching holes Ø 11 mm



Connection clamp for earth rod to round conductors Rd 8–10



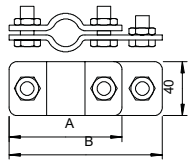
Type	For earth rods Ø mm	Dimension A mm	Dimension B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2710 20	20	84	114	5	39.900	5001218
2710 25	25	89	119	5	42.300	5001226

St Steel

FT Hot-dip galvanised

- ST, BP, OMEX and LightEarth system
- On round conductor Rd 8-10
- Incl. connector, type 5001 DIN

Connection clamp for earth rod on flat conductor



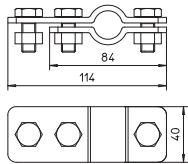
Type	Pack. pcs	Weight kg/100 pcs.	Item No.
2730 25 FT	5	38.800	5001412
2730 20 FT	5	35.900	5001404

St Steel

FT Hot-dip galvanised

- ST, BP, OMEX and LightEarth systems
- On flat conductors
- Including hex-head screw for attaching flat conductors

Connection clamp for earth rod on flat conductor

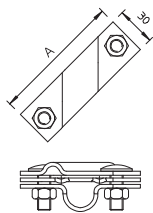
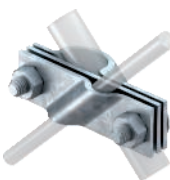


Type	For earth rods Ø mm	Dimension A mm	Dimension B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2730 20 VA	20	84	114	5	35.900	5001366

V2A Stainless steel, grade 304

- ST, BP, OMEX and LightEarth systems
- On flat conductors
- Including hex-head screw for attaching flat conductors

Connection clamp for earth rod, universal



Type	Dimension A mm	For earth rods Ø mm	Fit mm	Short-circuit current (50 HZ) (1 s; ≤300°C) kA	Pack. pcs	Weight kg/100 pcs.	Item No.
2760 20 FT	101	20	Rd 8-10/FL40	—	5	32.400	5001641
2760 B-20 FT	101	20	Rd 8-10/FL40	—	20	32.400	5001749
2760 25 FT	110	25	Rd 8-10/FL40	8.5	5	38.400	5001668

St Steel

FT Hot-dip galvanised

- Suitable for attaching round conductors Rd 8-10 or flat conductors to FL 40
- With separator plate
- Installed with 2 hexagonal bolts M10 x 30 and 2 hexagonal nuts M10

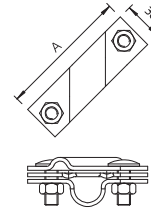
Connection clamp for earth rod, universal



Type	Dimension		Fit	Pack. pcs	Weight kg/100 pcs.	Item No.
	A mm	For earth rods Ø mm				
2760 20 VA	101	20	Rd 8-10/FL40	5	32.400	5001617
2760 B-20 VA	101	20	Rd 8-10/FL40	20	32.400	5001625
2760 20 V4A	101	20	Rd 8-10/FL40	5	32.400	5001633
2760 25 V4A	110	25	Rd 8-10/FL40	5	32.400	5001672

V2A Stainless steel, grade 304 V4A Stainless steel, grade 316 L

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Suitable for connecting round conductors Rd 8-10 or flat conductors to FL 40
- With adapter plate
- Mounted with 2 hexagonal bolts M10 x 30 and 2 hexagonal bolts M10



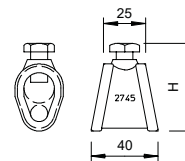
Connection clamp for earth rod or cables

Type	For earth rods		Fit	Pack. pcs	Weight kg/100 pcs.	Item No.
	Ø mm	mm				
2745 20 MS	20	7-12,5	S95 mm ²	5	16.000	5001560

CuZn Brass

Cu Copper-plated

- For earth rod connectors Ø 20 or conductors 95 mm²
- For round conductor attachments Rd 7-12.5 with hexagonal bolts M10 x 25, copper (Cu)

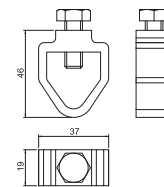


Connection clamp for RD16 / FL25

Type	For earth rods		Fit	Pack. pcs	Weight kg/100 pcs.	Item No.
	Ø mm	mm				
2745 16 25	14.2	Rd 14,2/	FL max. 26 x 12	10	12.000	5001590
2745 16 30	14.2	Rd 14,2/	FL max. 40 x 12	10	19.000	5001592
2745 16 70	14.2	Rd 14,2/	Seil 16-70 mm ²	10	6.400	5001594

CuAl Aluminium bronze CuSn Red bronze

- For connection of the copper-plated earth rod, type 219 16 CU, to conductor material
- Type A terminal



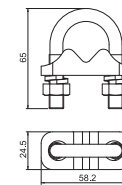
Connection clamp for RD16 / FL25



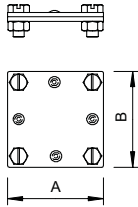
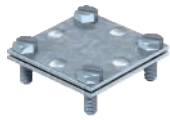
Type	For earth rods		Fit	Pack. pcs	Weight kg/100 pcs.	Item No.
	Ø mm	mm				
2740 16	14.2	FL/ Rd		10	12.900	5001511
2740 16 KL	14.2	Rd 8-10/FL	max. 26	10	17.500	5001513

CuSn Red bronze

- Suitable for connecting round conductors Rd 8-10 or flat conductors with earth rod 219 16 CU



Cross-connector for flat conductor



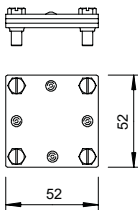
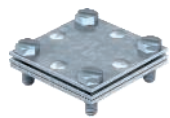
Type	Fit mm	Dimension A mm	Dimension B mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
255 A-FL30 FT	max. FL30	52	52	H/100	20	11.500	5314534

St Steel

FT Hot-dip galvanised

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Max FL 30 x FL 30
- Without adapter plate
- Mounted with 4 hexagonal bolts M6 x 20 (F)

Cross-connector for flat conductor, with intermediate plate



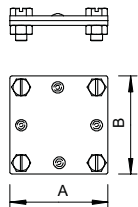
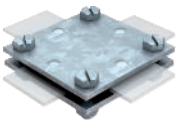
Type	Fit mm	Dimension A mm	Dimension B mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
255 30	max. FL30	52	52	H/100	20	16.650	5314518

St Steel

FT Hot-dip galvanised

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Max FL 30 x FL 30
- With adapter plate
- Mounted with 4 hexagonal bolts M6 x 20 (F)

DIN cross-connector for flat conductor



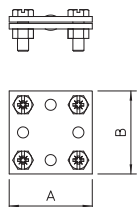
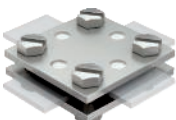
Type	Fit mm	Dimension A mm	Dimension B mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
256 A-DIN 30 FT	max. FL30	60	60	H/100	10	27.800	5314658
256 A-DIN 40 FT	max. FL40	80	80	H/100	10	38.800	5314666

St Steel

FT Hot-dip galvanised

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Max. FL 30 x FL 30 or max. FL 40 x FL 40
- Without adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8 (F)

DIN cross-connector for flat conductor



Type	Fit mm	Dimension A mm	Dimension B mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
256 A-DIN 30 VA	max. FL30	60	60	H/100	10	27.800	5314720
256 A-DIN 30 V4A	max. FL30	60	60	H/100	10	26.400	5314659

V2A Stainless steel, grade 304 **V4A** Stainless steel, grade 316 Ti

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Max. FL 30 x FL 30
- Without adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8

DIN cross-connector for flat conductor, with intermediate plate

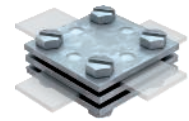
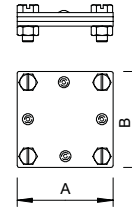


Type	Fit mm	Di- men- sion A mm	Dimen- sion B mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
256 DIN 30 FT	max. FL30	60	60	H/100	10	35.860	5314615
256 DIN 40 FT	max. FL40	80	80	H/100	10	54.650	5314623

St Steel

FT Hot-dip galvanised

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Max. FL 30 x FL 30 or max. FL 40 x FL 40
- With adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8



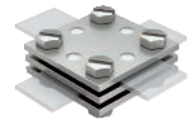
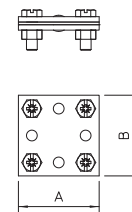
DIN cross-connector for flat conductor, with intermediate plate



Type	Fit mm	Di- men- sion A mm	Dimen- sion B mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
256 DIN 30 V4A	max. FL30	60	60	H/100	10	29.100	5314616

V4A Stainless steel, grade 316 Ti

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Max. FL 30 x FL 30
- With adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8



Cross-connector Rd 8–10 mm, wide version

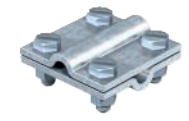
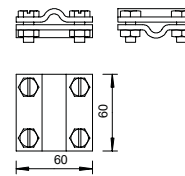


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
253 8X8	Rd 8-10	H/100	25	30.700	5312604

St Steel

FT Hot-dip galvanised

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10 / FL 30
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8 (F)



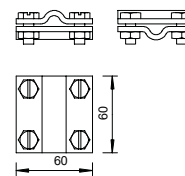
Cross-connector round/round without intermediate plate



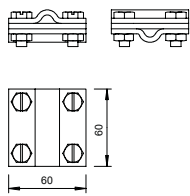
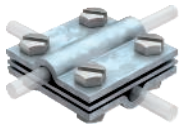
Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
253 8-10 V4A	Rd 8-10	H/100	25	23.650	5312582

V4A Stainless steel, 316Ti / 316L

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10 / FL 30
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8 (F)



Cross-connector with intermediate plate for Rd 8–10 mm, wide version



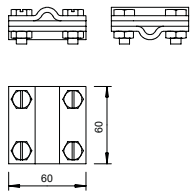
Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10 FT	Rd 8-10	H/100	25	33.530	5312310

St Steel

FT Hot-dip galvanised

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10 / FL 30
- With adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8 (F)

Cross-connector with intermediate plate for Rd 8–10 mm, wide version

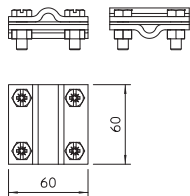
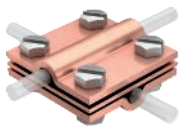


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10 V4A	Rd 8-10	H/100	10	33.530	5312318

V4A Stainless steel, grade 316 Ti

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10 / FL 30
- With adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8

Cross-connector with intermediate plate for Rd 8–10 mm, wide version

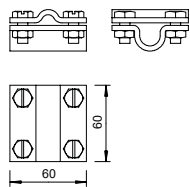


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10 CU	Rd 8-10	H/100	10	38.940	5312418

Cu Copper

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10 / FL 30
- With adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8

Cross-connector for Rd 8–10 x Rd 16 mm



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
253 10X16	Rd 8-10 x 16	H/100	25	29.800	5312809

St Steel

FT Hot-dip galvanised

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 16 / FL 30
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8 (F)



Cross-connector with intermediate plate for Rd 8–10 x Rd 16 mm

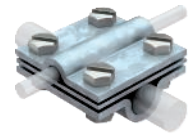
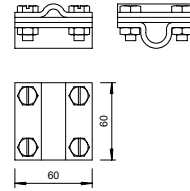


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10X16 FT	Rd 8-10 x 16	H/100	25	38.800	5312345

St Steel

FT Hot-dip galvanised

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 16 / FL 30
- With adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8



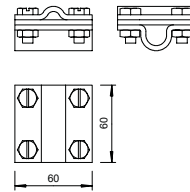
Cross-connector with intermediate plate for Rd 8–10 x Rd 16 mm



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10x16 V4A	Rd 8-10 x 16	H/100	10	39.000	5312346

V4A Stainless steel, grade 316 Ti

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 16 / FL 30
- With adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8



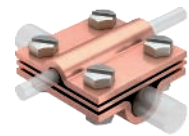
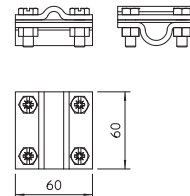
Cross-connector with intermediate plate for Rd 8–10 x Rd 16 mm



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10X16 CU	Rd 8-10 x 16	H/100	10	43.985	5312442

Cu Copper

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 16 / FL 30
- With adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8



Cross-connector for round cables and flat conductors DIN

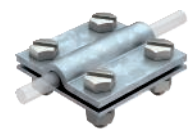
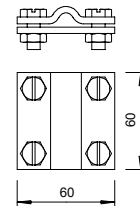


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10XFL30 FT	8-10 x FL30	H/100	25	28.500	5312655

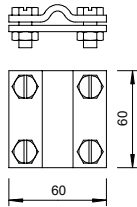
St Steel

FT Hot-dip galvanised

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x FL 30
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8



Cross-connector for round cables and flat conductors

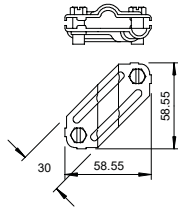


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10xFL30V4A	8-10 x FL30	H/100	10	28.500	5312656

V4A Stainless steel, grade 316 Ti

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x FL 30
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8

Cross-connector for flat conductors and round conductors

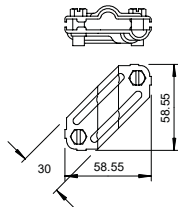


Type	Fit mm	Short-circuit current (50 HZ) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
250	Rd 8-10/FL30	5.6	N/50	25	10.260	5312906

St Steel
FT Hot-dip galvanised

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10
- Fit: Rd 8-10 x FL 30
- Fit: FL 30 x FL 30
- Mounted with 2 hexagonal bolts M8 x 20 (F)

Cross-connector for flat conductors and round conductors

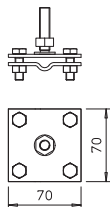


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
250 VA	Rd 8-10/FL30	H/100	25	10.260	5312922
250 V4A	Rd 8-10/FL30	H/100	10	10.260	5312925

V2A Stainless steel, grade 304 V4A Stainless steel, grade 316 Ti

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10
- Fit: Rd 8-10 x FL 30
- Fit: FL 30 x FL 30
- Mounted with 2 hexagonal bolts M8 x 20

Cross-connector for flat conductors and round conductors with threaded bolt M10x45



Type	Fit mm	Short-circuit current (50 HZ) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 GB 10x45	8-10 x FL30	4.2	H/100	10	34.800	5312657

V2A Stainless steel, grade 304
FT/VA Hot-dip galvanised/stainless steel, grade 304

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x FL 30
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8

Diagonal clamp for flat conductors and round conductors

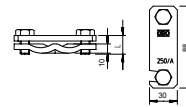


Type	Fit mm	Short-circuit current (50 Hz) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
250 A-FT	Rd 6-22/max. FL50	7.3	H/100	25	28.800	5313015
250 AS-FT	Rd 6-22/max. FL50	7.3	H/100	25	26.000	5313031
250 A	Rd 6-22/max. FL50	7.3	H/100	25	28.800	5313058

Sl Steel

FT Hot-dip galvanised

- For reinforced steels Ø 6-22 mm and flat conductor 50 x 4
- Installed with screws M10 x 40
- AS version with screws M10 x 20
- Simple installation with open slot



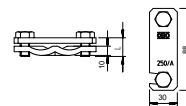
Diagonal clamp for flat conductors and round conductors



Type	Dimension L mm	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
250 A-VA	40	Rd 6-22/max. FL50	H/100	10	28.800	5313023

V2A Stainless steel, grade 304

- For reinforced steels Ø 6-22 mm and flat conductor 50 x 4
- Installed with screws M10 x 40
- AS version with screws M10 x 20
- Simple installation with open slot



Diagonal clamp with bolt

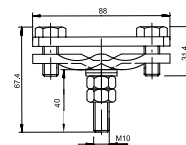


Type	Dimension L mm	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
250 A-BO	25	Rd 6-22/max. FL50	H/100	25	33.000	5313066

Sl Steel

F Hot-dip galvanised

- For reinforced steels Ø 6-22 mm and flat conductor 50 x 4
- Installed with screws M10 x 25
- Simple installation with open slot
- With flange-welded bolts M10 x 40, inc. 2 washers and 2 nuts



Cross-connector for flat conductors and round conductors with threaded bolt M10x45

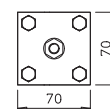
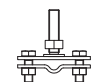


Type	Fit mm	Short-circuit current (50 Hz) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 GB 10x45	8-10 x FL30	4.2	H/100	10	34.800	5312657

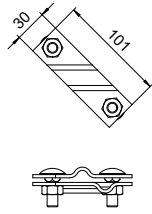
V2A Stainless steel, grade 304

FT/VA Hot-dip galvanised/stainless steel, grade 304

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x FL 30
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8



Diagonal clamp for flat conductors and round conductors

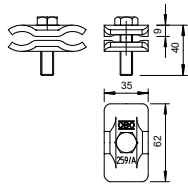
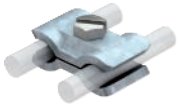


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
2760 8-10 V4A	Rd 8-10	H/100	25	20.600	5313013
2760 8	Rd 8-10	H/100	5	27.120	5001612

V2A Stainless steel, grade 304 V4A Stainless steel, 316Ti / 316L

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- To connect round conductors 8–10 mm
- Mounted with 2 truss-head bolts M10 x 30 and 2 hexagonal bolts M10
- Type 2760 8 with adapter plate

Parallel clamp for the connecting of reinforcing steels



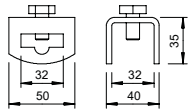
Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
259 A ST	Ø 10-20	H/100	25	18.800	5315557
259 A FT	Ø 10-20	H/100	25	18.800	5315514
259 A VA	Ø 10-20	H/100	10	18.800	5315522

St Steel V2A Stainless steel, grade 304

FT Hot-dip galvanised

- For connecting reinforced steels Ø 10–20 mm
- Mounted with M10 x 40 bolts

Variable earthing terminal



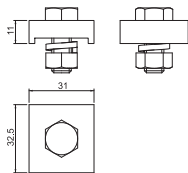
Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
1813 KL	FL30 x Rd 8-10	H/100	50	18.000	5014425

St Steel

FT Hot-dip galvanised

- Suitable for connection for Rd 10 x FL 30, FL 30 x FL 30
- Quick mounting using a hexagonal bolt M10 x 20 (F)

Connection terminal for round cable



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
1818	Rd 8-10	N/50	10	17.600	5012015

St Steel

FT Hot-dip galvanised

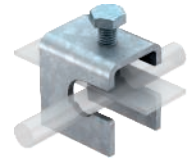
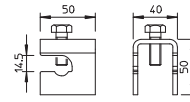
- For connecting round conductor Rd 8-10
- With 1 hexagonal bolt M12 x 40, 1 hexagonal nut M12 and 1 lock washer, stainless steel



Connection terminal for reinforced steels



Type	Fit mm	Short-circuit current (50 Hz) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
1814 ST	FL30x5 x Rd8-14	7.3	N/50	25	20.000	5014476
1814 FT	FL30x5 x Rd8-14	7.3	N/50	25	20.000	5014468



St Steel

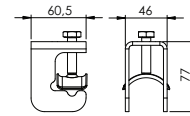
FT Hot-dip galvanised

- For reinforced steels with diameters 8-14 mm and FL 30 x 5
- Simple mounting through open slot
- Side suspension possible

Connection terminal for large reinforced steels



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
1814 ST D37	FL30x3-4mm /Rd 10 x Rd 16-37	H/100	25	30.000	5014477
1814 FT D37	FL30x3-4mm /Rd 10 x Rd 16-37	H/100	25	30.000	5014469



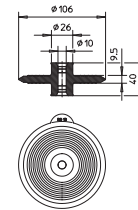
St Steel

FT Hot-dip galvanised

- For armoured steel with 16-37 mm diameter and round conductors and flat conductors
- Rapid installation using open slot and only one M10 screw
- Rotatable metal pressure trough for simple, safe mounting

Sealing sleeve for round conductors

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
DW RD10	RD 10	1	13.000	2360041

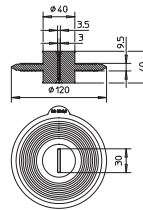


TPE Thermoplastic elastomer

- Sealing sleeve for penetrations with waterproof foundation plates/walls (e.g. white trough)
- For mounting on connection lugs with stainless steel tightening straps
- With pressurised water testing to 5 bar

Sealing sleeve for flat conductors

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
DW FL30x3,5	FL 30x3,5	1	18.000	2360043

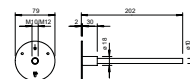


TPE Thermoplastic elastomer

- Sealing sleeve for penetrations with waterproof foundation plates/walls (e.g. white trough)
- For mounting on connection lugs with stainless steel tightening straps
- With pressurised water testing to 5 bar

Fixed earthing point

Type	Thread	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
205 B-M10 VA	M10	—	10	25.500	5420008
205 B-M12 VA	M12	—	10	25.500	5420016

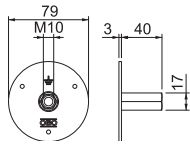


V4A Stainless steel, grade 316 L

- Connection to earthing systems, conductors and reinforcement
- Contact plate: ϕ 79 mm, made of rustproof stainless steel (V4A)
- Clamping bolt ϕ 10 mm, rustproof (V2A)
- Incl. plastic cover for simple installation



Earthing fixed point with double thread



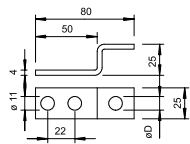
Type	Thread	Short-circuit current (50 Hz) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
205 DG V4A	M10/M12	6.2	H/100	10	14.800	5420020
205 DG L180 V4A	M10/M12	—	H/100	10	23.900	5420022
205 DG L180 FT	M10/M12	—	—	10	23.900	5420024

St Steel **V4A** Stainless steel, grade 316 L

FT Hot-dip galvanised

- For connection to earthing systems, conductors and reinforcements
- Contact plate: Ø 79 mm made of stainless steel, rustproof (V4A)
- With double thread M10/M12
- Incl. plastic cover for simple installation

Connection and end piece



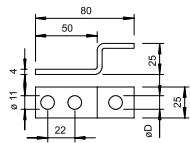
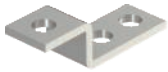
Type	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
5011	11	10	7.064	5304997

St Steel

FT Hot-dip galvanised

- For attaching to steel structures or bolting to fixed earthing terminals
- For attachments: Round conductor Rd 8-10 and flat conductor FL 30 x 3.5
- 2 attaching holes Ø 11 mm
- 1 attaching holes Ø D mm

Connection and end piece

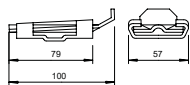


Type	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
5011 VA M10	11	10	7.064	5334934
5011 VA M12	13	10	7.048	5334942

V4A Stainless steel, grade 316 Ti

- For attaching to steel structures or bolting to fixed earthing terminals
- For attachments: Round conductor Rd 8-10 and flat conductor FL 30 x 3.5
- 2 attaching holes Ø 11 mm
- 1 attaching holes Ø D mm

Wedge connector



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
1813 DIN	10/FL30 x FL30	H/100	5	21.400	5014212

St Steel

FT Hot-dip galvanised

- DIN 48834, Form A
- Suitable for connecting Rd 10 x FL 30, FL 30 x FL 30
- Quick installation with high contact force



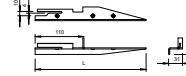
Spacer

Type	Fit mm	Length mm	Pack. pcs	Weight kg/100 pcs	Item No.
1811	10/FL30 x 3,5	250	25	19.000	5014018
1811 L	10/FL30 x 3,5	400	25	31.500	5014026

Sl Steel

FT Hot-dip galvanised

- For professional laying of round conductors and flat conductors according to DIN VDE 0185-305 (IEC 62305)
- DIN 48833
- Suitable for mounting round conductors Rd 10 or flat conductors FL 30 x 3.5

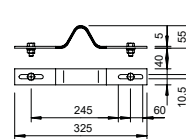


Expansion piece

Type	Pack. pcs	Weight kg/100 pcs	Item No.
1807	1	27.000	5016142

Alu Aluminium

- For expansion joints, for a connection of the foundation earther outside the concrete
- To VDE 0185-561-2 (IEC 62561-2)
- 2 hexagonal nuts M10 x 30, 2 steel washers, hot galvanised and 2 serrated washers made of rustproof steel



Earthing connection bar



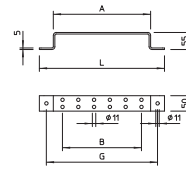
Type	Dimension L mm	Dimension A mm	Dimension B mm	Dimension G mm	Pack. pcs	Weight kg/100 pcs	Item No.
1805 2 FT	200	110	51	155	1	54.800	5016029
1805 4 FT	302	212	153	257	1	77.000	5016037
1805 6 FT	404	314	255	359	1	97.100	5016045

Sl Steel

FT Hot-dip galvanised

1805/...: For connecting different earthing systems

- With 2 mounting holes \varnothing 11 mm
- 1805/2: With 4 attaching holes
- 1805/4: With 8 attaching holes
- 1805/6: With 12 attaching holes



Earthing connection bar

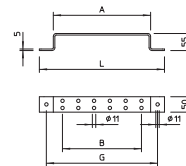


Type	Dimension L mm	Dimension A mm	Dimension B mm	Dimension G mm	Pack. pcs	Weight kg/100 pcs	Item No.
1805 2 VA	200	110	51	155	1	54.800	5016096
1805 4 VA	302	212	153	257	1	77.000	5016118
1805 6 VA	404	314	255	359	1	97.100	5016126

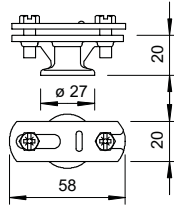
V4A Stainless steel, grade 316 Ti

1805/...: For connecting different earthing systems

- With 2 mounting holes \varnothing 11 mm
- 1805/2: With 4 attaching holes
- 1805/4: With 8 attaching holes
- 1805/6: With 12 attaching holes



Cable bracket for flat conductor



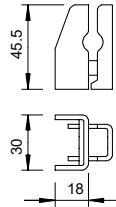
Type	Pack. pcs	Weight kg/100 pcs	Item No.
113 BZ-FL	100	6.280	5230446
113 B-Z-HD-FL	100	7.000	5230462

Zn Die-cast zinc

G Electrogalvanised

- With female thread M8 or through hole for wood screws
- For flat conductor FL 30
- Sliding over-piece for quick installation

Cable bracket for Rd 8–10 and FL 30



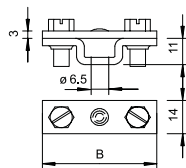
Type	Fit mm	Pack. pcs	Weight kg/100 pcs	Item No.
835	Rd 8/10/ FL 30x3,5	1	12.100	5033209

St Steel

FT Hot-dip galvanised

- For round conductor Rd 8-10 and flat conductor FL 30 x 3.5
- Supplied with hexagonal wood bolt 6 x 70 and straddling dowel 910/N

Spacer clip for flat conductor with fastening hole Ø 6.5



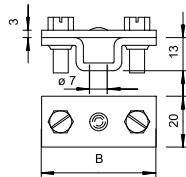
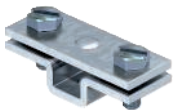
Type	Fit mm	Dimension B mm	Pack. pcs	Weight kg/100 pcs	Item No.
831 30	max. FL30	54	25	3.580	5032032
831 40	max. FL40	65	25	3.894	5032040

St Steel

FT Hot-dip galvanised

- Fit: FL 30 and FL 40
- With mounting hole Ø 6.5 and 2 hexagonal bolts M6 x 16 (F)

Spacer clip for flat conductor, with fastening hole Ø 7



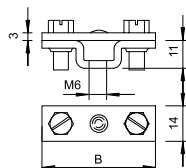
Type	Fit mm	Dimension B mm	Pack. pcs	Weight kg/100 pcs	Item No.
832 30	max. FL30	55	25	7.416	5032539
832 40	max. FL40	65	25	7.612	5032547

St Steel

FT Hot-dip galvanised

- Fit: FL 30 and FL 40
- With mounting hole Ø 7 mm and 2 hexagonal bolts M6 x 16

Spacer clip for flat conductor, with threaded connection M6



Type	Fit mm	Dimension B mm	Pack. pcs	Weight kg/100 pcs	Item No.
831 30 M6	max. FL30	54	25	3.712	5032237
831 40 M6	max. FL40	65	25	3.880	5032245

St Steel

FT Hot-dip galvanised

- Fit: FL 30 and FL 40
- With attaching thread M6 and 2 hexagonal bolts M6 x 16 (F)

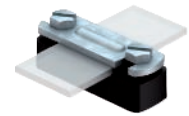
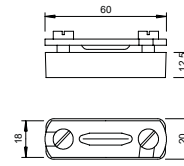
Spacer clip for flat conductor, with polyamide base

Type	Fit mm	Dimension B mm	Pack. pcs	Weight kg/100 pcs	Item No.
833 35	max. FL30	60	25	4.228	5033039

St Steel

FT Hot-dip galvanised

- Fit: FL 30
- With mounting hole 6.2 x 22 mm
- With 2 cylinder bolts M6 x 16 and over-piece from hot-dip galvanised steel
- Bottom section from polyamide, black



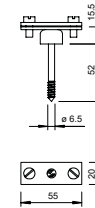
Spacer clip for flat conductor, with wood screw and spacer

Type	Fit mm	Dimension B mm	Pack. pcs	Weight kg/100 pcs	Item No.
370 H	max. FL30	55	100	10.200	5025206

St Steel

FT Hot-dip galvanised

- Fit: FL 30
- With spacer and cylinder bolts M6 x 16 (G)
- With wood bolts



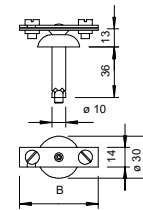
Spacer clip for flat conductor, with steel spreading anchor Ø 10

Type	Fit mm	Dimension B mm	Pack. pcs	Weight kg/100 pcs	Item No.
710 30	max. FL30	52	25	5.044	5028035
710 40	max. FL40	62	25	5.360	5028043

St Steel

G Electrogalvanised

- Fit: FL 30 and FL 40
- With steel straddling dowel Ø 10 mm, spacer and 2 cylinder bolts M5 x 14 (G)



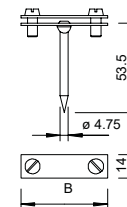
Spacer clip for flat conductor, with square pin

Type	Fit mm	Dimension B mm	Pack. pcs	Weight kg/100 pcs	Item No.
708 30 SP	max. FL30	52	50	3.148	5030021

St Steel

G Electrogalvanised

- Fit: FL 30 and FL 40
- With 2 cylinder bolts M5 x 12 (G) and over-piece
- With square pin



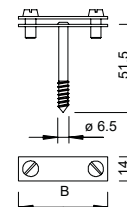
Spacer clip for flat conductor, with wood screw

Type	Fit mm	Dimension B mm	Pack. pcs	Weight kg/100 pcs	Item No.
708 30 HG	max. FL30	52	50	3.148	5030234
708 40 HG	max. FL40	52	50	3.474	5030242

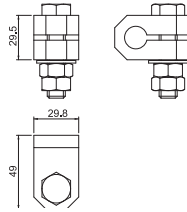
St Steel

G Electrogalvanised

- Fit: FL 30 and FL 40
- With 2 cylinder bolts M5 x 12 (G) and over-piece
- With wood screw



Connection clamp for round conductors RD 16



For earth rods
Ø mm

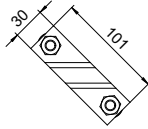
Type
2760 16 | 14.2

Pack.	Weight	Item No.
pcs	kg/100 pcs.	
5	35.000	5001601

CuSn1 Red bronze

- For the connection of conductor materials with conductor shoes to earth rod 219 16 CU

Diagonal clamp for flat conductors and round conductors

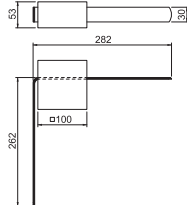


Type	Fit	Lightning current	Pack.	Weight	Item No.
	mm	carrying capacity	pcs	kg/100 pcs.	
2760 S8 V4A	Rd 8-10	H/100	3600	20.600	5313012

V4A Stainless steel, grade 316

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- To connect round conductors 8–10 mm
- Mounted with 2 truss-head bolts M10 x 30 and 2 hexagonal bolts M10
- Type 2760 8 with adapter plate

Expansion strip for foundation earther systems



Dimension
W x H
mm

Type
1807 DB | 30x3,5

Pack.	Weight	Item No.
pcs	kg/100 pcs.	
1	40.000	5016160

V2A Stainless steel, grade 304

- Expansion strip according to VDE 0185-561-2 (IEC 62561-2)
- To pass the foundation earther through movement joints



Connection clamp for earth rod on flat conductor



Type

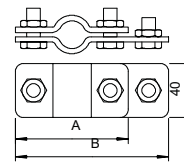
2730 25 M12 FT

Sl Steel

FT Hot-dip galvanised

- ST, BP, OMEX and LightEarth systems
- On flat conductors
- Including hex-head screw for attaching flat conductors

Pack.	Weight	Item No.
pcs	kg/100	
5	46.280	5001416



Earthing enhancing compound

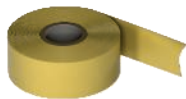


Dimension

Type	Dimension	Pack. pcs	Weight kg/100 pcs	Item No.
OEK 25	25kg	1	2,500.000	5009200

- To improve and maintain a constant earth electrode resistance
- Highly swellable and powdery special clay
- Tested according to IEC 62561-7 (VDE 0185-561-7)

Plastic corrosion protection strip

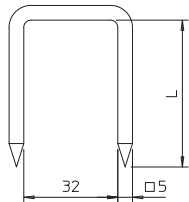


Type	Width mm	Length m	Pack. pcs	Weight kg/100 pcs	Item No.
356 50	50	10	1	71.500	2360055
356 100	100	10	1	122.200	2360101

PETRO Petrolatum

- Approx. 1.1 mm thick
- Width: 50 mm or 100 mm, made of petrolatum-coated chemical fibre fabric
- Can be processed cold

Strip steel crimp



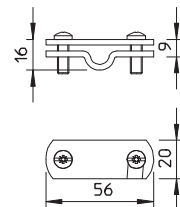
Type	Length mm	Fit mm	Pack. pcs	Weight kg/100 pcs	Item No.
366 35	35	max. FL30	100	1.737	5059356
366 50	50	max. FL30	100	2.300	5059496

St Steel

Fl Hot-dip galvanised

- Fit: FL 30

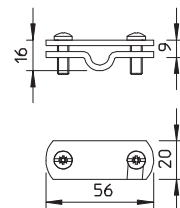
Number plates



Type	Fit mm	Pack. pcs	Weight kg/100 pcs	Item No.
311 N-ALU 8-10	RD 8 - 10 / FL30	5	2.500	3049256
311 N-ALU 16	RD 16 - FL30	5	2.800	3049345

- To identify the point of separation to DIN 48821
- Suitable for universal labelling (e.g. stamped numbers)

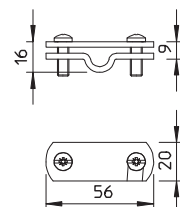
Number plates



Type	Fit mm	Pack. pcs	Weight kg/100 pcs	Item No.
311 N-VA 8-10	RD 8 - 10 / FL30	5	5.600	3049221
311 N-VA 16	RD 16 - FL30	5	6.400	3049329

- To identify the point of separation to DIN 48821
- Suitable for universal labelling (e.g. stamped numbers)

Number plates



Type	Fit mm	Pack. pcs	Weight kg/100 pcs	Item No.
311 N-CU 8-10	RD 8 - 10 / FL30	5	6.400	3049205

Cu Copper

- To identify the point of separation to DIN 48821
- Suitable for universal labelling (e.g. stamped numbers)
















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Air-termination and down conductor systems

	Conductor material	500
	Air-termination systems	503
	Air-termination rods	510
	Roof conductor holder	519
	Cable bracket	528
	Connectors and connection terminals	537
	Connection and separating terminals	564
	Earth entries	568
	Accessories	570

Air-termination rods



Type FangFix-Junior

Length	Item no.	Page
1 m	5403308	503



Type 101 VL Tapered tubular air-termination rod

Length	Item no.	Page
1.5 m	5401980	503
2.0 m	5401983	503
2.5 m	5401986	503
3.0 m	5401989	503
3.5 m	5401993	503
4.0 m	5401995	503



Type 101 ALU Threaded air-termination rod

Length	Item no.	Page
1.0 m	5401771	507
1.5 m	5401801	507
2.0 m	5401836	507
3.0 m	5401879	507



Concrete blocks

Type	Item no.	Page
FangFix	5403200	504
FangFix	5403205	504
Loose	5403227	504
FangFix	5403103	505
FangFix	5403110	505
Loose	5403117	505
Thread	5402891	507

Air-termination rod systems up to 8 m



Type 101 3B isFang air-termination rod, AL

Length	Item no.	Page
4.0 m	5402864	510
4.5 m	5402866	510
5.0 m	5402868	510
5.5 m	5402870	510
6.0 m	5402872	510
6.5 m	5402874	510
7.0 m	5402876	510
7.5 m	5402878	510
8.0 m	5402880	510



isFang air-termination rod, insulated

Length	Item no.	Page
4.0 m	5408943	511
6.0 m	5408947	511
4.0 m	5408942	511
6.0 m	5408946	511



isFang stand

Spr.	Item no.	Page
1.0 m	5408966	511
1.5 m	5408967	511
1.0 m	5408968	511
1.5 m	5408969	511

Air-termination rod systems 10 m, 12 m, 14 m, 19 m Accessories, air-termination rod systems



irod

Length	Item no.	Page
10 m	5400810	517
12 m	5400812	517
14 m	5400814	517
19 m	5400817	517



Accessories

Type	Item no.	Page
isFang 3B-100 AL	5408966	511
isFang 3B-150 AL	5408967	511
isFang 3B-100	5408968	511
isFang 3B-150	5408968	513
F-FIX-S16	5403227	504
F-FIX-B16 3B	5403238	513



Roof conductor holder



Ridge

Surface	Item no.	Page
V2A	5203018	519
V2A	5202833	519
V2A	5203015	519
V2A	5202510	520
Copper-plated	5203023	519
Copper-plated	5202868	519
Copper-plated	5202590	520
FT	5202566	520



Tile

Surface	Item no.	Page
V2A	5215555	521
V2A	5215552	521
V2A	5215544	521
V2A	5215668	522
Copper	5216192	521
Copper	5216184	521
Copper	5216184	521
Copper	5215749	522



Slate

Surface	Item no.	Page
V2A	5215838	523
V2A	5215439	523
V2A	5215374	523
Copper-plated	5215854	523
Copper-plated	5215471	523
Copper-plated	5215382	523



Flat roof

Colour	Item no.	Page
Grey	5218999	526

Connector



Vario quick connector 8-10

Surface	Item no.	Page
FT	5311500	537
FT	5311705	537
Copper	5311527	538
V2A	5311551	451
ALU	5311519	537
V4A	5311404	537
Bimetal	5311535	538



Vario quick connector 6-8

Surface	Item no.	Page
FT	5311410	538
Copper-plated	5311417	538
Copper-plated	5311407	539



Fix contact clamping screw Rd 8-10

Surface	Item no.	Page
FT	5304105	539
FT	5304107	539
FT	5304202	540
FT	5304318	540
Copper-plated	5304113	540



Flat roof

Surface	Item no.	Page
FT	5304164	540
Copper-plated	5304172	541
V2A	5304270	541
V2A	5304176	447

Terminals and clips



Fold

Surface	Item no.	Page
FT	5317010	549
FT	5317401	550
FT	5317428	552
Copper-plated	5317053	549
Copper-plated	5317258	550
Copper-plated	5317452	551
V2A	5317208	550
V2A	5317481	551



Trays

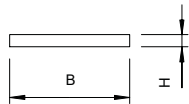
Surface	Item no.	Page
FT	5316450	552
FT	5316308	553
FT	5316510	554
Copper-plated	5316468	553
Copper-plated	5316154	554
V2A	5316459	552
V2A	5316324	553
V2A	5316324	553



Downspout

Surface	Item no.	Page
Strip galvanised	5350867	558
Strip galvanised	5351057	559
Copper-plated	5350883	558
Copper-plated	5351456	559
Copper-plated	5351472	559
V2A	5350905	558
V2A	5351251	559
ALU	5351359	559

Galvanised steel flat conductor for earth



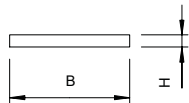
Type	Dimension W x H mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
5052 DIN 20X2.5	20 x 2,5	50	122	50	122	41.000	5019340
5052 DIN 25X3	25 x 3	75	84	50	84	59.700	5019342
5052 DIN 30X3	30 x 3	90	71	50	71	70.650	5019344
5052 DIN 30X3.5	30 x 3,5	105	30	25	30	84.000	5019345
5052 DIN 30X3.5	30 x 3,5	105	60	50	60	84.000	5019347
5052 DIN 30X4	30 x 4	120	52	50	52	97.000	5019350
5052 DIN 40X4	40 x 4	160	40	51	40	128.000	5019355
5052 DIN 40X5	40 x 5	200	30	50	30	162.000	5019360

St Steel

FT Hot-dip galvanised

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Meets the requirements of VDE 0185-305 (IEC 62305)
- Zinc coating: 500 g/m² (approx. 70 µm)
- For lightning protection, earthing systems and ring equipotential bonding

Stainless steel flat conductor



Type	Dimension W x H mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
5052 V2A 30X3.5	30 x 3,5	105	50	42	50	82.500	5018501
5052 V4A 30X3.5	30 x 3,5	105	50	42	50	82.425	5018706
5052 V4A 30X3.5	30 x 3,5	105	25	21	25	82.425	5018730

V2A Stainless steel, grade 304 **V4A** Stainless steel, 316Ti / 316L

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)
- According to the foundation earthen standard DIN 18014, V4A is required in the earth
- For use in areas at risk of corrosion
- For lightning protection, earthing systems and ring equipotential bonding

Flat conductor, copper

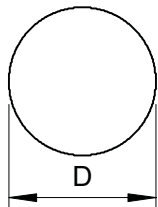


Type	Dimension W x H mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
FL 20-CU	20 x 2,5	50	45	20	45	44.500	5021804
FL 25-CU	25 x 3	75	50	33	50	67.000	5021830

Cu Copper

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Meets the requirements of VDE 0185-305 (IEC 62305)
- For lightning protection, earthing systems and ring equipotential bonding

Round conductor, galvanised steel



Type	Nominal size Ø mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
RD 8-FT	8	50	125	50	125	40.000	5021081
RD 8-FT 50	8	50	50	20	50	40.000	5021050
RD 10	10	78	80	50	80	52.500	5021103

St Steel

FT Hot-dip galvanised

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)
- RD 10 can also be used in the earth
- Zinc coating: 350 g/m² (approx. 50 µm)

Round conductor, galvanised steel with PVC jacketing

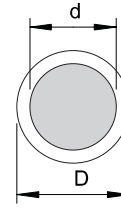


Type	Colour	Dimen- sion d mm	Dimen- sion D mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
RD 10-PVC	Black	10	13	78	75	50	75	67.000	5021162

St Steel

FT Hot-dip galvanised

- Conforms to the requirements according to VDE V 0185-305, (IEC 62305)
- Zinc coating: 350 g/m² (approx. 50 µm)
- With PVC sheathing



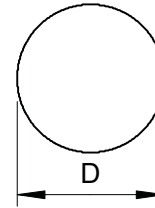
Round conductor, aluminium



Type	Nominal size Ø mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
RD 8-ALU	8	50	150	20	150	13.500	5021286
RD 8-ALU-T	8	50	150	20	150	13.500	5021294
RD 8-ALU-T 75	8	50	75	10	75	13.500	5021296
RD 10-ALU	10	78	95	20	95	21.000	5021308

Alu Aluminium

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)
- RD 8 ALU: Semi-hard (E-ALMgSi0.5 corresponds to DIN 48801)
- RD 8 ALU-T: Can be subjected to torsion (E-ALMgSi0.5 corresponds to DIN 48801)
- RD 10 ALU: Pure aluminium (E-Al corresponds to DIN 48801)
- AL and ALMgSi may not be routed directly on, in or under plaster, mortar or concrete, nor routed in the earth



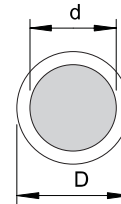
Round conductor, aluminium, with PVC sheathing



Type	Nominal size Ø mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
RD 8-PVC	8/11	50	100	20	100	20.000	5021332

Alu Aluminium

- Meets the requirements of VDE 0185-305 (IEC 62305)
- With PVC jacketing (halogen-free)
- Suitable for routing on, in or under plasterwork, mortar or concrete



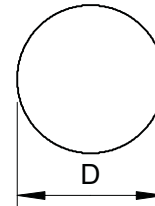
Round conductor, stainless steel A2



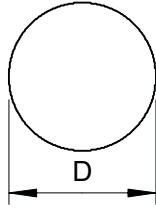
Type	Nominal size Ø mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
RD 8-V2A	8	50	125	50	125	40.000	5021235
RD 10-V2A	10	78	50	32	50	63.000	5021227
RD 10-V2A	10	78	80	50	80	63.000	5021239
RD 8-V4A	8	50	125	50	125	40.000	5021644
RD 10-V4A 20	10	78	20	12	20	63.000	5021640
RD 10-V4A	10	78	50	32	50	63.000	5021642
RD 10-V4A	10	78	80	50	80	63.000	5021647

V2A Stainless steel, grade 304 V4A Stainless steel, 316Ti / 316L

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)
- RD 10-V4A for applications in the earth
- According to the foundation earther standard DIN 18014, V4A is required in the earth



Round conductor, copper

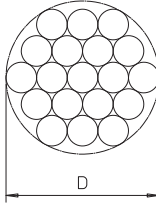


Type	Nominal size Ø mm	Cross-section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
RD 8-CU	8	50	100	45	100	45.000	5021480
RD 10-CU	10	78	50	35	50	70.000	5021502

Cu Copper

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)

Copper cable



Type	Dimension D mm	Individual wires	Cross-section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
S 11-CU	10.5	19x Ø 2,1	70	50	30	50	58.600	5021654
S 9-CU	9	19x Ø 1,8	50	100	45	100	45.000	5021652
S-11-CU SN	10.5	19x Ø 2,1	70	50	30	50	58.600	5021656

Cu Copper

Sn Tin-plated

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)

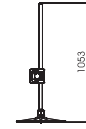


Stand for FangFix Junior system

Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
F-FIX-JUNIOR	1000	10	10	32.000	5403308

Alu Aluminium

- Incl. aluminium air-termination rod 1,000 mm long (Ø 10 mm)
- Quick mounting of the air-termination rod in the base using plug technology
- With Vario quick connector 249

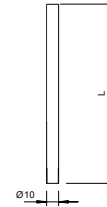


Air-termination rod for FangFix-Junior

Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 J1000	1000	10	10	21.800	5401970

Alu Aluminium

- Suitable for wind loads according to Eurocode 1: DIN EN 1991-1-4
- Ø 10 mm, aluminium
- Without thread
- Suitable for use in FangFix-Junior

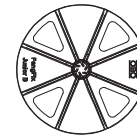
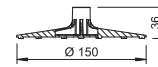


Base for FangFix Junior

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
F-FIX-BASIS	10	3.790	5403324

PP Polypropylene

- For mounting Ø 10 mm air-termination rods up to an overall length of 1,000 mm
- Quick installation of air-termination rod in base using plug-in system
- Quick and easy installation



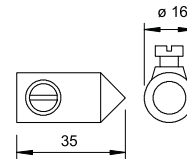
Air-termination tip

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
120 A	Rd 8-10	10	2.500	5405068

Zn Die-cast zinc

G Electrogalvanised

- To be used for Rd 8–10 (corrosion protection)
- With cylinder bolt M6 x 10
- Made of die-cast zinc, bolts made of hot-galvanised steel



Tapered pipe air-termination rod

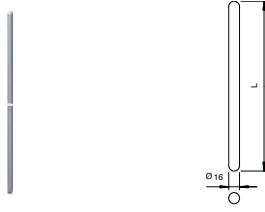
Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 VL1500	1500	10/16	10	38.000	5401980
101 VL2000	2000	10/16	10	55.000	5401983
101 VL2500	2500	10/16	10	72.000	5401986
101 VL3000	3000	10/16	10	88.000	5401989
101 VL3500	3500	10/16	10	105.000	5401993
101 VL4000	4000	10/16	10	120.000	5401995

Alu Aluminium

- Suitable for wind loads according to Eurocode 1: DIN EN 1991-1-4
- From a free length of > 2.5 m, an additional fastening, e.g. insulated spacer is recommended
- Last metre is tapered from Ø 16 mm to Ø 10 mm, material: AlMgSi
- Matches stand system FangFix



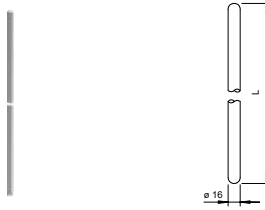
Air-termination/earth entry rod, rounded-off on both ends



Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 A-1500	1500	16	10	240.000	5400155

- St** Steel
- FI** Hot-dip galvanised
- Full material Ø 16 mm
- Rounded on both ends
- Suitable for FangFix stand system

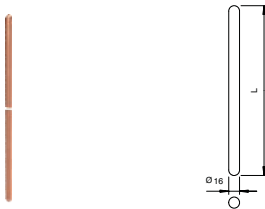
Air-termination/earth entry rod, rounded-off on both ends



Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
200 V4A-1500	1500	16	10	242.000	5420504
200 V4A-2000	2000	16	10	320.000	5420539

- V4A** Stainless steel, grade 316 Ti
- Full material Ø 16 mm
- Rounded on both ends
- Suitable for FangFix stand system

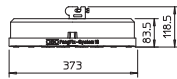
Air-termination/earth entry rod, rounded-off on both ends



Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 A-CU	1500	16	10	272.100	5400627

- Cu** Copper
- Full material Ø 16 mm
- Rounded on both ends
- Suitable for FangFix stand system

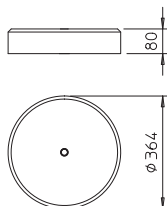
Stand for FangFix system 16 kg



Type	Fit mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
F-FIX-16	Rd 8	373	1	1,732.500	5403200
F-FIX-16B	Rd 8	373	54	1,732.500	5403205

- BET** Concrete
- System consists of FangFix stone with base and clamp
- FangFix clamp made of VA; lightning current tested with 100 kA (10/350)
- 16 kg stone of Ø 365 mm, high level of stability
- Quick and easy mounting of air-termination rod using anchors
- Concrete, frost-resistant
- The FangFix stone can be stacked

Concrete block for FangFix-System 16 kg



Type	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
F-FIX-S16	365	1	1,700.000	5403227

- BET** Concrete
- 16 kg stone of Ø 365 mm, high level of stability
- Frost-resistant concrete
- Stackable

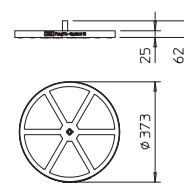


Base for FangFix system 16 kg

Type	Nominal size Ø mm	Pack. pcs	Weight		Item No.
			kg/100	pcs.	
F-FIX-B16	373	10	16.400	5403235	

PP Polypropylene

Edge protection with integrated dowel (basic) suitable for FangFix system.



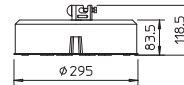
Stand for FangFix system 10 kg



Type	Fit mm	Nominal size Ø mm	Pack. pcs	Weight		Item No.
				kg/100	pcs.	
F-FIX-10	Rd 8	295	1	1,058.000	5403103	
F-FIX-10B	Rd 8	295	72	1,058.000	5403110	

BET Concrete

- System consists of FangFix stone with base and clamp
- FangFix clamp made of VA; lightning current tested with 100 kA (10/350)
- 10 kg stone of Ø 289 mm, high level of stability
- Quick and easy mounting of air-termination rod using anchors
- Concrete, frost-resistant
- The FangFix stone can be stacked

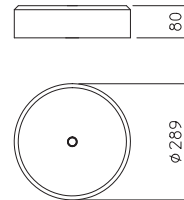


Concrete block for FangFix system 10 kg

Type	Nominal size Ø mm	Pack. pcs	Weight		Item No.
			kg/100	pcs.	
F-FIX-S10	289	1	1,000.000	5403117	

BET Concrete

- 10 kg stone of Ø 289 mm, high level of stability
- Frost-resistant concrete
- Stackable

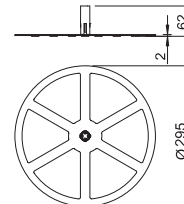


Base for FangFix system 10 kg

Type	Nominal size Ø mm	Pack. pcs	Weight		Item No.
			kg/100	pcs.	
F-FIX-B10	295	10	7.600	5403124	

PP Polypropylene

Edge protection with integrated dowel (basic) suitable for FangFix 10 system.



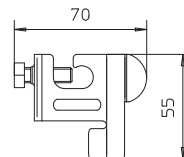
Terminal for FangFix system



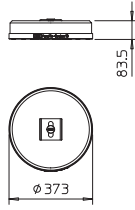
Type	Fit mm	Pack. pcs	Weight		Item No.
			kg/100	pcs.	
F-FIX-KL	Rd 8	5	8.700	5403219	

V2A Stainless steel, grade 304

- FangFix terminal, VA for RD 8 mm
- Tested with H (100 kA) to DIN EN 50164-1
- Round conductor installed on the air-termination rod with only one screw



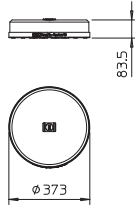
Stand - TrayFix set 16 L



Type	From tray width mm	Weight		Item No.
		Pack. pcs	kg/100 pcs.	
TrayFix-16-L	100	1	1,700.000	5403098

- Mounting system for the fastening of mesh cable trays with the FangFix stone, e.g. cable routing on a flat roof.
- Matched to OBO cable tray systems MKSM and SKSM.
- Matched to OBO mesh cable systems with a minimum width of 100 mm.
- Set consisting of TrayFix mounting adapter and concrete block including base for FangFix system 16 kg

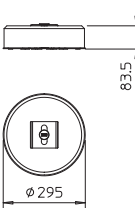
Stand - TrayFix set 16 S



Type	From tray width mm	Weight		Item No.
		Pack. pcs	kg/100 pcs.	
TrayFix-16-S	100	1	1,700.000	5403099

- Mounting system for the fastening of mesh cable trays with the FangFix stone, e.g. cable routing on a flat roof.
- Matches OBO mesh cable tray systems with a minimum width of 100 mm
- Set consisting of TrayFix mounting adapter and concrete block including base for FangFix system 16 kg

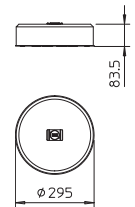
Stand - TrayFix set 10 L



Type	From tray width mm	Weight		Item No.
		Pack. pcs	kg/100 pcs.	
TrayFix-10-L	100	1	1,100.000	5403101

- Mounting system for the fastening of mesh cable trays with the FangFix stone, e.g. cable routing on a flat roof.
- Matched to OBO cable tray systems MKSM and SKSM.
- Matched to OBO mesh cable systems with a minimum width of 100 mm.
- Set consisting of TrayFix mounting adapter and concrete block including base for FangFix system 16 kg

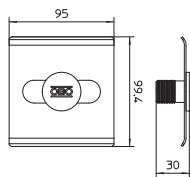
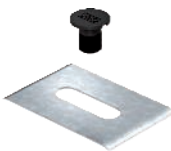
Stand - TrayFix set 10 S



Type	From tray width mm	Weight		Item No.
		Pack. pcs	kg/100 pcs.	
TrayFix-10-S	100	1	1,000.000	5403102

- Mounting system for the fastening of mesh cable trays with the FangFix stone, e.g. cable routing on a flat roof.
- Matches OBO mesh cable tray systems with a minimum width of 100 mm
- Set consisting of TrayFix mounting adapter and concrete block including base for FangFix system 10 kg

TrayFix mounting adapter for mesh cable trays on FangFix system



Type	Dimension	Weight		Item No.
		Pack. pcs	kg/100 pcs.	
TrayFix	ø20mm	25	9.850	5403100

- Mounting system for the fastening of mesh cable trays and cable trays on FangFix stone e.g. cable routing on a flat roof.
- Adapted to OBO cable tray systems MKSM, SKSM and IKSM
- Adapted to OBO mesh cable tray systems with a minimum width of 100 mm

Air-termination rod, one end rounded Aluminium

Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 ALU-1000	1000	16	10	55.000	5401771
101 ALU-1500	1500	16	10	81.000	5401801
101 ALU-2000	2000	16	10	109.000	5401836
101 ALU-2500	2500	16	10	136.000	5401852
101 ALU-3000	3000	16	5	162.000	5401879

Alu Aluminium

- Suitable for wind loads according to Eurocode 1: DIN EN 1991-1-4
- From a free length of > 2.5 m, an additional fastening, e.g. insulated spacer is recommended
- Ø 16 mm, aluminium
- For stand system with M16 internal thread



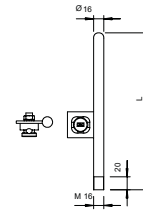
Air-termination rod, one end rounded with connection strap

Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 A-L100	1000	16	10	160.000	5402808
101 A-L150	1500	16	10	240.000	5402859

St Steel

FT Hot-dip galvanised

- With thread M16 x 20
- With connecting strap
- Including pre-mounted connector type 5001 DIN for round conductor Rd 8-10
- For stands with female thread M16

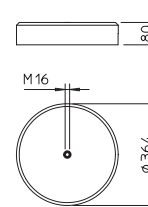


Stand 16 kg with female thread

Type	Nominal size Ø mm	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
101 B2-16 M16	364	M16	1	1,600.000	5402958

BET Concrete

- Weight 16 kg
- Frost-resistant concrete
- Female thread M16
- Recommended air-termination rod length max. 3.0 m, depending on wind load zone

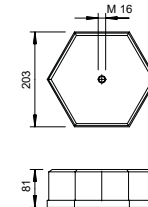


Stand 6.9 kg with female thread

Type	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
101 ST	M16	4	690.000	5402891

BET Concrete

- Weight 6.9 kg
- Frost-resistant concrete
- Female thread M16
- Recommended air-termination rod length max. 1.0 m



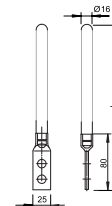
Air-termination/earth entry rod with connection tabs

Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 F1000	1000	16	10	160.000	5424100
101 F1500	1500	16	10	240.000	5424151
101 F2000	2000	16	10	320.000	5424208

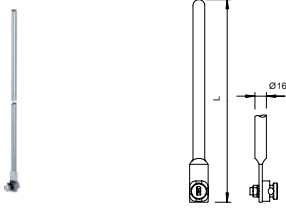
St Steel

FT Hot-dip galvanised

- With 2 attaching holes Ø 12 mm
- One end rounded



Air-termination/earth entry rod with connection tabs and connector



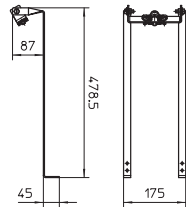
Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 G1000	1000	16	10	164.300	5402107
101 G1500	1500	16	10	240.000	5402158

SI Steel

FT Hot-dip galvanised

- 1 attaching hole Ø 12 mm
- With pre-mounted conductor for Rd 8-10
- One end rounded

Air-termination rod holder for sloping roof



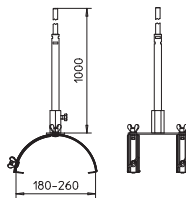
Type	Pack. pcs	Weight kg/100 pcs.	Item No.
SD-Fix	1	81.000	5403335

V2A Stainless steel, grade 304

Stand system: rod holder for sloping roofs, for simple, quick and secure fastening of Ø 16 mm air-termination rods.

- System consists of a bracket made of V2A stainless steel
- Quick and easy mounting
- Adjustable angle
- In the case of high air-termination rods (> 1 m), additional fastening with insulated spaces is necessary

Air-termination rod holder for ridge tiles



Type	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
F-Fix-132	110	1	62.000	5403330
F-Fix-132-300	300	1	78.000	5403333

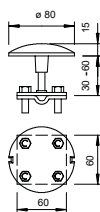
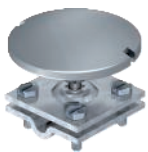
V2A Stainless steel, grade 304

Rod holder for ridge tiles, for simple, quick and safe fastening of Ø 16 mm air-termination rods

- System consisting of holder made of V2A stainless steel and aluminium air-termination rods
- Quick and easy mounting thanks to pre-mounted air-termination rod
- Air-termination rod length:
- Air-termination rod length: 1,000 mm
- Width adjustable between 180–260 mm
- Spacing of the ridge holders: 110 mm (5403330)
- Spacing of the ridge holders: 300 mm (5403333)

Application: To protect roof structures such as photovoltaic and TV/SAT systems.

Mushroom-shaped air-termination with connectors



Type	Fit mm	Dimen- sion D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
128 F	Rd 8-10/ FL30	—	5	40.000	5405769

SI Steel

FT Hot-dip galvanised

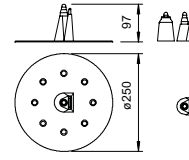
- Mushroom-shaped interceptor from aluminium
- With pre-mounted cross-piece and hexagonal bolt M8 x 25, hot-dip galvanised steel
- For round conductor Rd 8-10 and flat conductor FL 30

Roof penetration

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
330 K Rd 8-16/ FL20 u. FL30		5	14.400	5201101

PA Polyamide

- For round conductors 8-10, air-termination rods 16 mm
- Flat conductors 20 mm/30 mm
- Colour: Black, UV-resistant
- For penetration and sealing of roofs



isFang air-termination rod

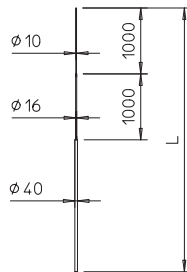


Type	Dimension B mm	Dimension D mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 3B-4000	2000	1000	4000	1	400.000	5402864
101 3B-4500	2500	1000	4500	1	480.000	5402866
101 3B-5000	3000	1000	5000	1	550.000	5402868
101 3B-5500	3000	1500	5500	1	630.000	5402870
101 3B-6000	4000	1000	6000	1	700.000	5402872
101 3B-6500	4500	1000	6500	1	780.000	5402874
101 3B-7000	5000	1000	7000	1	850.000	5402876
101 3B-7500	5500	1000	7500	1	930.000	5402878
101 3B-8000	5500	1000	8000	1	1,000.000	5402880

Alu Aluminium

- Suitable for wind loads according to Eurocode 1: DIN EN 1991-1-4
- Tapered air-termination rod
- Suitable for 40 mm isFang tripod stand and isFang support systems

Dimensions



Insulated air-termination rod



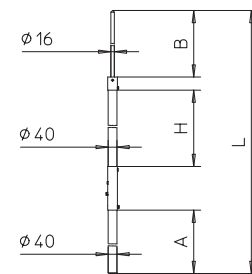
Type	Dimension A mm	Dimension H mm	Dimension B mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang 4000 AL	1240	1500	1000	4000	1	580.000	5408943
isFang 6000 AL	3340	1500	1000	6000	1	600.000	5408947
isFang 4000	1240	1500	1000	4000	1	680.000	5408942
isFang 6000	3340	1500	1000	6000	1	680.000	5408946

GFK Fibre-glass-reinforced plastic

- For isolated creation of air-termination systems
- Suitable for isFang air-termination rod stands, type isFang 3B-100/150
- Suitable for wind loads according to Eurocode 1: DIN EN 1991-1-4
- For mounting on the building structure with isFang support
- Fastening of the OBO isCon® conductor possible using accessories
- Suitable for internally and externally-routed isCon® conductor



Dimensions



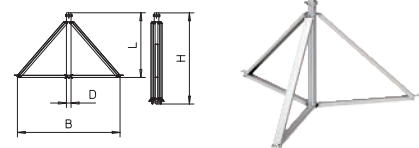
isFang air-termination rod stand



Type	Dimension B mm	Dimension D Ø mm	Dimension L mm	Dimension H mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang 3B-100 AL	1000	40	600	885	1	380.000	5408966
isFang 3B-150 AL	1500	40	900	1275	1	560.000	5408967
isFang 3B-100	1000	40	600	885	1	620.000	5408968
isFang 3B-150	1500	40	900	1275	1	950.000	5408969

V2A Stainless steel, grade 304 **Alu** Aluminium

Folding tripod stand for screwless installation of free-standing air-termination rods with a diameter of 40 mm, e.g. for OBO isCon® conductors. Roof slope to max. 5 degrees. Incl. Rd 8–10 crossbar for rapid round conductor fastening. The concrete plinth and threaded rods are to be ordered separately.



isFang, insulated air-termination rod for inner-routed isCon conductor with side exit

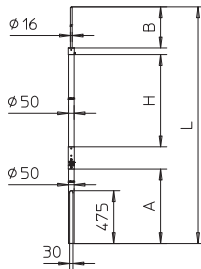


Type	Dimension D Ø mm	Dimension A mm	Dimension H mm	Dimension B mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang IN-A 4000	50	1325	1500	1000	4000	1	535.000	5408938
isFang IN-A 6000	50	3325	1500	1000	6000	1	835.000	5408940
isFang IN-A 8000	50	5335	1500	1000	8000	1	1,385.000	5408888
isFang IN-A10000	50	6000	1733	2000	10000	1	1,540.000	5408890

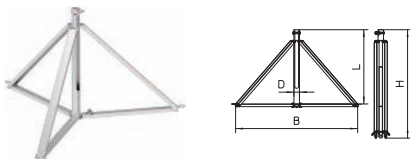
GFK Fibre-glass-reinforced plastic

- For installation of the OBO isCon® Pro+ conductor in the pipe
- With side conductor outlet matching isFang air-termination rod stand with side outlet, type isFang 3B-A
- Suitable for wind loads according to Eurocode 1: DIN EN 1991-1-4
- Inclusive connection element (type isCon IN connect)
- Inclusive potential connection (type IsCon In PAE)

Dimensions



isFang air-termination rod stand with side exit



Type	Dimension B mm	Dimension D Ø mm	Dimension L mm	Dimension H mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang 3B-100-A	1026	50	600	885	1	610.000	5408930
isFang 3B-150-A	1500	50	900	1275	1	950.000	5408932
isFang 3B-250-A	2900	50	1450	2055	1	2,500.000	5408902

V2A Stainless steel, grade 304

- Screwless installation of freestanding air-termination rods as well as insulated air-termination rods with 50 mm diameter
- E.g. for internal OBO isCon® conductor
- Roof slope to max. 5 degrees
- Incl. Rd 8–10 crossbar for quick round conductor fastening
- Concrete plinths as well as threaded rods should be ordered separately

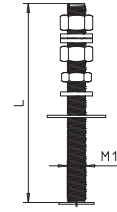


isFang-3B threaded rod

Type	Dimension L mm	Pack. pcs	Weight		Item No.
			kg/100 pcs.	pcs.	
isFang 3B-G1	270	3	48.000	5408971	
isFang 3B-G2	340	3	60.400	5408972	
isFang 3B-G3	430	3	69.500	5408973	
isFang 3B-G4	500	3	75.000	5408905	

V2A Stainless steel, grade 304

- For fastening on one, two, three or four FangFix concrete bases with tripod stand

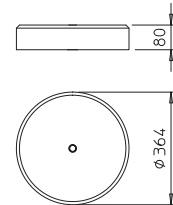


Concrete block for FangFix-System 16 kg

Type	Nominal size Ø mm	Pack. pcs	Weight		Item No.
			kg/100 pcs.	pcs.	
F-FIX-S16	365	1	1,700.000	5403227	

BET Concrete

- 16 kg stone of Ø 365 mm, high level of stability
- Frost-resistant concrete
- Stackable

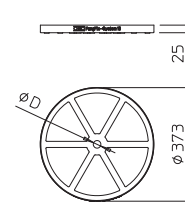


Base for FangFix system 16 kg for mounting the isFang tripod

Type	Nominal size Ø mm	Dimension D Ø mm	Pack. pcs	Weight		Item No.
				kg/100 pcs.	pcs.	
F-FIX-B16 3B	373	25	10	15.800	5403238	

PP Polypropylene

- Edge protection with through hole
- For mounting isFang-3B threaded rod and FangFix concrete block F-FIX-S16



Insulated air-termination rod for inner-routed isCon conductor

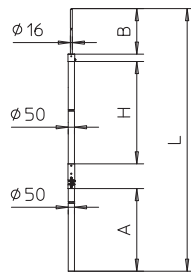


Type	Dimension D Ø mm	Dimension A mm	Dimension H mm	Dimension B mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang IN 4000	50	1325	1500	1000	4000	1	535.000	5408934
isFang IN 6000	50	3325	1500	1000	6000	1	835.000	5408936
isFang IN 8000	50	5335	1500	1000	8000	1	1,315.000	5408868
isFang IN 10000	50	6000	1733	2000	10000	1	1,540.000	5408870

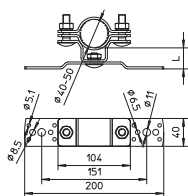
GFK Fibre-glass-reinforced plastic

- For installation of the OBO isCon® Pro+ conductor in the pipe
- For mounting on the building structure with isFang support
- Suitable for wind loads according to Eurocode 1: DIN EN 1991-1-4
- Inclusive connection element (type isCon IN connect)
- Inclusive potential connection (type IsCon In PAE)

Dimensions



isFang support for wall mounting, 30 mm spacing

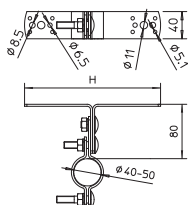


Type	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang TW30	30	2	62.000	5408952

V2A Stainless steel, grade 304

Fastening clip to fasten the insulated support pipes on the structure to be protected or on the wall.

isFang support for wall mounting, 80 mm spacing



Type	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang TW80	80	2	63.000	5408950

V2A Stainless steel, grade 304

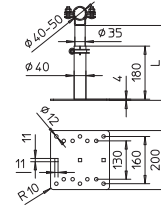
Fastening clip to fasten the insulated support pipes on the structure to be protected or on the wall.

isFang support for wall mounting, 200–300 mm spacing

Type	Dimension L mm	Weight Pack. kg/100 pcs	Item No.
isFang TW200	300	2 230.000	5408954

V2A Stainless steel, grade 304

Fastening clip to fasten the insulated support pipes on the structure to be protected or on the wall.

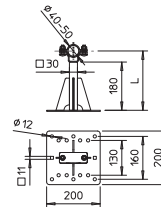


Support for wall mounting, 200 mm spacing

Type	Dimension D \varnothing mm	Dimension L mm	Weight Pack. kg/100 pcs	Item No.
isFang TW200 12	50	200	2 240.000	5408910

V2A Stainless steel, grade 304

Fastening clip to fasten the insulated support pipes on the structure to be protected or on the wall.

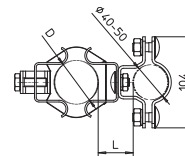


isFang support for pipe mounting, \varnothing 50–300 mm

Type	Dimension D \varnothing mm	Dimension L mm	Weight Pack. kg/100 pcs	Item No.
isFang TR100	300	40	2 77.000	5408956

V2A Stainless steel, grade 304

Tightening strap clip to fasten the insulated support pipes on the structure to be protected or for construction-side pipes of \varnothing 50–300mm.

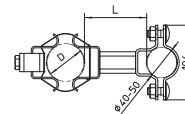


isFang support for spaced pipe mounting, \varnothing 50–300 mm

Type	Dimension D \varnothing mm	Dimension L mm	Weight Pack. kg/100 pcs	Item No.
isFang TR100 100	300	100	2 95.500	5408955
isFang TR100 200	300	200	2 121.000	5408957
isFang TR100 300	300	300	2 146.000	5408959

V2A Stainless steel, grade 304

Tightening strap clip to fasten the insulated support pipes on the structure to be protected or for construction-side pipes of \varnothing 50–300 mm.

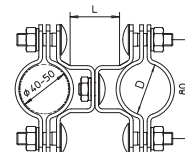


isFang support for pipe mounting, \varnothing 40–50 mm

Type	Dimension D \varnothing mm	Dimension L mm	Weight Pack. kg/100 pcs	Item No.
isFang TS40-50	50	40	2 90.000	5408958

V2A Stainless steel, grade 304

Tightening strap clip to fasten the insulated support pipes on the structure to be protected or for construction-side pipes of \varnothing 40–50 mm.

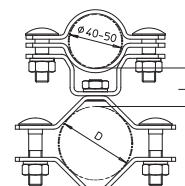


isFang support for pipe mounting, \varnothing 50–60 mm

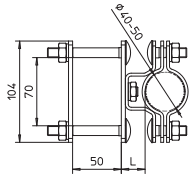
Type	Dimension D \varnothing mm	Dimension L mm	Weight Pack. kg/100 pcs	Item No.
isFang TS50-60	60	30	2 76.000	5408960

V2A Stainless steel, grade 304

Tightening strap clip to fasten the insulated support pipes on the structure to be protected or for construction-side pipes of \varnothing 50–60 mm.



isFang support for corner pipe mounting, 50 x 50 mm



Type	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang TS50x50	30	2	82.000	5408964
V2A Stainless steel, grade 304				

Fastening clip to fasten the insulated support pipes on the structure to be protected or for construction-side corner pipes of 50x50 mm.



10 m air-termination rod with 6-legged air-termination rod stand

Type	Dimension D Ø mm	Dimension B mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
irod 10	48.3	1800	10000	1	6,500.000	5400810

V2A Stainless steel, grade 304

- Tele lightning protection system against direct lightning strikes into plants, such as biogas plants
- Consisting of air-termination rod and air-termination rod stand
- Please order concrete foot, edge protection and threaded rods separately

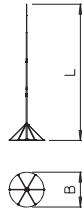


12 m air-termination rod with 6-legged air-termination rod stand

Type	Dimension D Ø mm	Dimension B mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
irod 12	85	3000	12000	1	10,900.000	5400812

V2A Stainless steel, grade 304

- Tele lightning protection system against direct lightning strikes into plants, such as biogas plants
- Consisting of air-termination rod and air-termination rod stand
- Please order concrete foot, edge protection and threaded rods separately

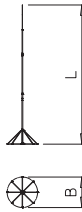


14 m air-termination rod with 8-legged air-termination rod stand

Type	Dimension D Ø mm	Dimension B mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
irod 14	85	3200	14000	1	15,400.000	5400814

V2A Stainless steel, grade 304

- Tele lightning protection system against direct lightning strikes into plants, such as biogas plants, gas pressure regulation plants, control and greenfield photovoltaic systems
- Consisting of air-termination rod and air-termination rod stand
- Please order concrete foot, edge protection and threaded rods separately



19 m air-termination rod with 12-legged air-termination rod stand

Type	Dimension D Ø mm	Dimension B mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
irod 19	198	3400	19500	1	41,500.000	5400817

V2A Stainless steel, grade 304

- Tele lightning protection system against direct lightning strikes into plants, such as biogas plants, gas-pressure regulation plants, control and greenfield photovoltaic systems
- Consisting of air-termination rod and air-termination rod stand
- Please order concrete foot and edge protection separately
- Including 800-mm threaded rods

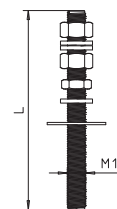


isFang-3B threaded rod

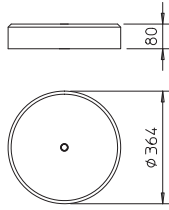
Type	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang 3B-G1	270	3	48.000	5408971
isFang 3B-G2	340	3	60.400	5408972
isFang 3B-G3	430	3	69.500	5408973
isFang 3B-G4	500	3	75.000	5408905

V2A Stainless steel, grade 304

- For fastening on one, two, three or four FangFix concrete bases with tripod stand



Concrete block for FangFix-System 16 kg

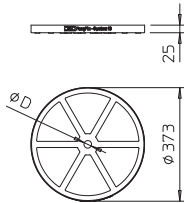


Type	Nominal size Ø mm	Weight		Item No.
		Pack. pcs	kg/100 pcs.	
F-FIX-S16	365	1	1,700.000	5403227

BET Concrete

- 16 kg stone of Ø 365 mm, high level of stability
- Frost-resistant concrete
- Stackable

Base for FangFix system 16 kg for mounting the isFang tripod



Type	Nominal size Ø mm	Dimension D Ø mm	Weight		Item No.
			Pack. pcs	kg/100 pcs.	
F-FIX-B16 3B	373	25	10	15.800	5403238

PP Polypropylene

- Edge protection with through hole
- For mounting isFang-3B threaded rod and FangFix concrete block F-FIX-S16

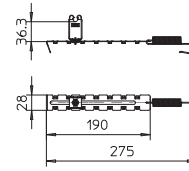


Ridge conductor holder with tensioning spring 35 mm

Type	Fit mm	Installation height mm	Pack. pcs	Weight		Item No.
				kg/100	pcs.	
132 U 35	Rd 8	35	20	6.800	5203018	

V2A Stainless steel, grade 304

- For round conductor Rd 8
- Clamping range 280-380 mm

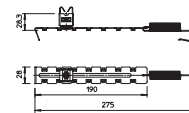


Ridge conductor holder with tensioning spring 8 mm

Type	Fit mm	Installation height mm	Pack. pcs	Weight		Item No.
				kg/100	pcs.	
132 U	Rd 8	20	20	6.000	5203015	

V2A Stainless steel, grade 304

- For round conductor Rd 8
- Clamping range 280-380 mm



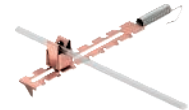
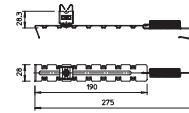
Ridge conductor holder with tensioning spring 8 mm copper-plated

Type	Fit mm	Installation height mm	Pack. pcs	Weight		Item No.
				kg/100	pcs.	
132 U-CU	Rd 8	20	10	0.600	5203023	

V2A Stainless steel, grade 304

Cu Copper-plated

- For round conductor Rd 8
- Clamping range 280-380 mm

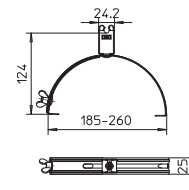


Roof conductor holder for ridge tiles, 185–260 mm, Rd 8, A2 35 mm

Type	Fit mm	Installation height mm	Pack. pcs	Weight		Item No.
				kg/100	pcs.	
132 VA 35	Rd 8	35	20	13.700	5202836	

V2A Stainless steel, grade 304

- Adjustable width from 185-260 mm
- Fast installation using wing screw

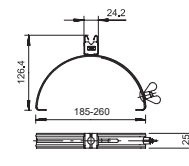


Roof conductor holder for ridge tiles, 185–260 mm, Rd 8, A2 8mm

Type	Fit mm	Installation height mm	Pack. pcs	Weight		Item No.
				kg/100	pcs.	
132 VA	Rd 8	20	20	12.900	5202833	

V2A Stainless steel, grade 304

- Adjustable width from 185-260 mm
- Fast installation using wing screw

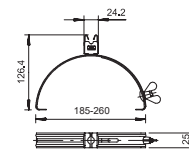


Roof conductor holder for ridge tiles, 185–260 mm, Rd 8. CU 8 mm

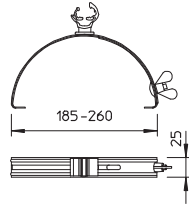
Type	Fit mm	Installation height mm	Pack. pcs	Weight		Item No.
				kg/100	pcs.	
132 CU	Rd 8	20	10	13.400	5202868	

Cu Copper

- Adjustable width from 185-260 mm
- Fast installation using wing screw



Roof conductor holder for ridge tiles, 185–260 mm, Rd 8–10, A2 8mm

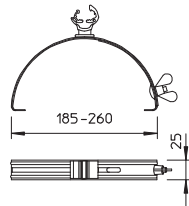


Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
132 K-VA	Rd 8-10	20	20	10.900	5202515

V2A Stainless steel, grade 304

- Adjustable width from 185-260 mm
- Bottom part made of non-rusting stainless steel (V2A)
- Infinitely adjustable conductor holder
- Conductor holder of polyamide
- Fast installation using wing screw

Roof conductor holder for ridge tiles, 185–260 mm, Rd 8–10, CU 8 mm

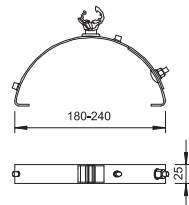


Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
132 K-CU	Rd 8-10	20	10	11.600	5202590

Cu Copper

- Adjustable width from 185-260 mm
- Bottom part made of copper
- Infinitely adjustable conductor holder
- Conductor holder of polyamide
- Fast installation using wing screw

Roof conductor holder for ridge tiles, 180–240 mm, Rd 8–10, FT 8 mm



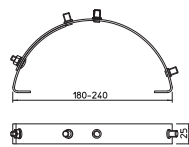
Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
132 N-DK	Rd 8-10	20	20	19.700	5202566

St Steel

FT Hot-dip galvanised

- Adjustable from 180–240 mm
- With conductor 177/20, polyamide, grey
- With 3 M8 threaded nipples for positioning the holder

Roof conductor holder for ridge tiles with M8 threaded bolts



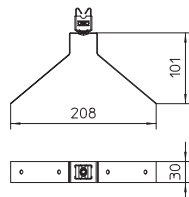
Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
132 GB-M8	—	20	20	18.700	5202568

St Steel

FT Hot-dip galvanised

- Adjustable from 180–240 mm
- With conductor 177/20, polyamide, grey
- With 3 M8 threaded nipples for positioning the holder

Roof conductor holder for ridge tiles, metal roofs, Rd 8



Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
132 P VA	Rd 8	20	20	8.420	5202510

V2A Stainless steel, grade 304

- For round conductors Rd 8
- Suitable for metal roofs

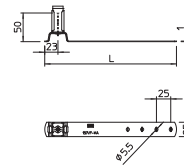


Roof conductor holder for tiled roofs, Rd 8, A2 35 mm

Type	Fit mm	Installation		Pack. pcs	Weight		Item No.
		height mm	Length mm		kg/100 pcs.	pcs.	
157 F-VA 230 35	Rd 8	50	230	20	8.300	5215555	
157 F-VA 280 35	Rd 8	50	280	20	9.700	5215582	

V2A Stainless steel, grade 304

- Conductor holder from stainless steel (V2A)
- Including drill hole in bottom section for quick installation

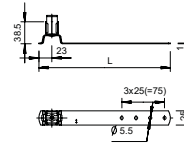


Roof conductor holder for tiled roofs, Rd 8, A2 8 mm

Type	Fit mm	Installation		Pack. pcs	Weight		Item No.
		height mm	Length mm		kg/100 pcs.	pcs.	
157 F-VA 230	Rd 8	38.5	230	20	8.350	5215552	
157 F-VA 280	Rd 8	38.5	280	20	10.170	5215579	
157 F-VA 410	Rd 8	38.5	410	20	14.880	5215595	

V2A Stainless steel, grade 304

- Conductor holder from stainless steel (V2A)
- Including drill hole in bottom section for quick installation

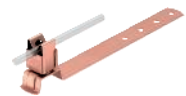
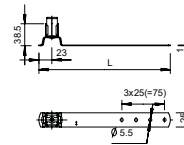


Roof conductor holder for tiled roofs, Rd 8, CU 8mm

Type	Fit mm	Installation		Pack. pcs	Weight		Item No.
		height mm	Length mm		kg/100 pcs.	pcs.	
157 F-CU 230	Rd 8	38.5	230	10	10.300	5216192	
157 F-CU 280	Rd 8	38.5	280	10	11.100	5216206	
157 F-CU 410	Rd 8	38.5	410	10	14.500	5216257	

Cu Copper

- Conductor holder from copper plated stainless steel (V2A)
- Including drill hole in bottom section for quick installation

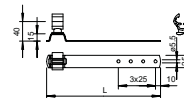


Roof conductor holder for tiled roofs, Rd 8-10, A2 8 mm

Type	Fit mm	Installation		Pack. pcs	Weight		Item No.
		height mm	Length mm		kg/100 pcs.	pcs.	
157 FK-VA 230	Rd 8-10	40	230	20	7.800	5215544	
157 FK-VA 280	Rd 8-10	40	280	20	10.170	5215587	
157 FK-VA 410	Rd 8-10	40	410	20	14.880	5215609	

V2A Stainless steel, grade 304

- Conductor holder of polyamide
- Including drill hole in bottom section for quick installation

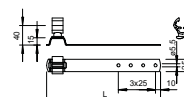


Roof conductor holder for tiled roofs, Rd 8-10, CU 8 mm

Type	Fit mm	Installation		Pack. pcs	Weight		Item No.
		height mm	Length mm		kg/100 pcs.	pcs.	
157 FK-CU 230	Rd 8-10	40	230	10	8.800	5216184	
157 FK-CU 280	Rd 8-10	40	280	10	9.600	5216214	

Cu Copper

- Conductor holder of polyamide
- Including drill hole in bottom section for quick installation

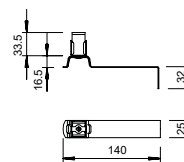


Roof conductor holder for tiled roofs, angled, Rd 8, A2 8 mm

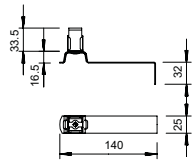
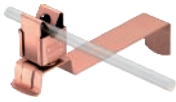
Type	Fit mm	Installation		Pack. pcs	Weight		Item No.
		height mm	Length mm		kg/100 pcs.	pcs.	
157 I-VA	Rd 8	26.5	140	20	7.150	5215625	

V2A Stainless steel, grade 304

- Conductor holder high-grade stainless steel (V2A)
- Curved bottom strip for quick installation



Roof conductor holder for tiled roofs, angled, Rd 8, CU 8mm

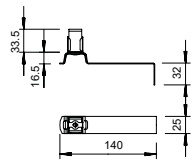


Type	Fit mm	Installation		Pack. pcs	Weight		Item No.
		height mm	Length mm		kg/100 pcs.		
157 I-CU	Rd 8	26.5	140	10	7.800		5215749

Cu Copper

- Conductor holder copper plated high-grade stainless steel (V2A)
- Curved bottom strip for quick installation

Roof conductor holder for tiled roofs, angled, flexible, Rd 8, Aluminium

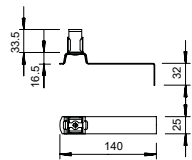
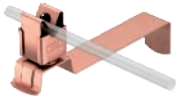


Type	Fit mm	Installation		Pack. pcs	Weight		Item No.
		height mm	Length mm		kg/100 pcs.		
157 FX-AL	Rd 8	26.5	140	20	3.900		5215875

Alu Aluminium

- With flexible bottom section from aluminium for matching to roof tiles (easy to flex)
- Holder from stainless steel (V2A)
- Curved bottom section for quick installation

Roof conductor holder for tiled roofs, angled, flexible, Rd 8, CU

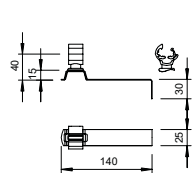


Type	Fit mm	Installation		Pack. pcs	Weight		Item No.
		height mm	Length mm		kg/100 pcs.		
157 FX-CU	Rd 8	26.5	140	10	7.500		5215879

Cu Copper

- With flexible bottom section from copper for matching to roof tiles (easy to flex)
- Holder from copper plated stainless steel (V2A)
- Curved bottom section for quick installation

Roof conductor holder for tiled roofs, angled, Rd 8–10, A2



Type	Fit mm	Installation		Pack. pcs	Weight		Item No.
		height mm	Length mm		kg/100 pcs.		
157 IK-VA	Rd 8-10	40	140	20	7.150		5215668

V2A Stainless steel, grade 304

- Conductor holder of polyamide
- Curved bottom strip for quick installation

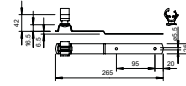


Roof conductor holder for slated roofs, crimped, Rd 8–10, A2

Type	Fit mm	Length mm	Installation height mm	Pack. pcs	Weight		Item No.
					kg/100	pcs.	
157 EK-VA	Rd 8-10	265	42	20	7.800		5215838

V2A Stainless steel, grade 304

- Conductor holder of polyamide
- With Ø 5.5 mm drill hole

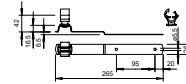


Roof conductor holder for slated roofs, crimped, Rd 8–10, CU

Type	Fit mm	Length mm	Installation height mm	Pack. pcs	Weight		Item No.
					kg/100	pcs.	
157 EK-CU	Rd 8-10	265	42	10	8.800		5215834

Cu Copper

- Conductor holder of polyamide
- With Ø 5.5 mm drill hole

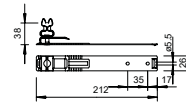


Roof conductor holder for slated roofs, Rd 8, A2

Type	Fit mm	Length mm	Installation height mm	Pack. pcs	Weight		Item No.
					kg/100	pcs.	
157 L-VA	Rd 8	212	32	20	8.000		5215439

V2A Stainless steel, grade 304

- With Ø 5.5 mm drill hole and beading

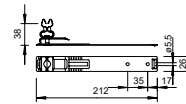


Roof conductor holder for slated roofs, Rd 8, CU

Type	Fit mm	Length mm	Installation height mm	Pack. pcs	Weight		Item No.
					kg/100	pcs.	
157 L-CU	Rd 8	212	32	10	9.900		5215471

Cu Copper

- With Ø 5.5 mm drill hole and beading

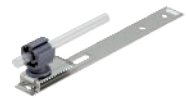
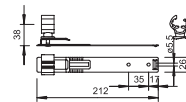


Roof conductor holder for slated roofs, Rd 8–10, A2

Type	Fit mm	Length mm	Installation height mm	Pack. pcs	Weight		Item No.
					kg/100	pcs.	
157 LK-VA	Rd 8-10	212	38	20	8.000		5215374

V2A Stainless steel, grade 304

- With Ø 5.5 mm drill hole and beading
- Conductor holder of polyamide

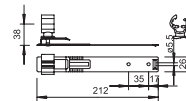


Roof conductor holder for slated roofs, Rd 8–10, CU

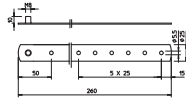
Type	Fit mm	Length mm	Installation height mm	Pack. pcs	Weight		Item No.
					kg/100	pcs.	
157 LK-CU	Rd 8-10	212	38	10	8.400		5215382

Cu Copper

- With Ø 5.5 mm drill hole and beading
- Conductor holder of polyamide



Roof conductor holder for slated roofs with M8 threaded bolts



Type	Fit mm	Length mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
157 GB-M8	Rd 8-10	260	27	20	5.000	5202569

V2A Stainless steel, grade 304

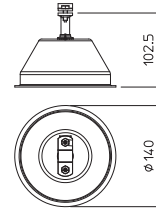
- With Ø 5.5 mm drill hole
- With 3 M8 threaded nipples for positioning the holder



Roof cable holder for flat roofs, with raised cable bracket

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 KRB-I FL 30		9	144.000	5218888

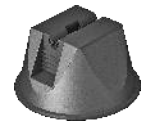
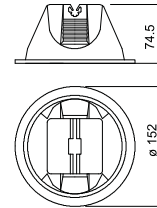
- Closed form with base
- With double conductor holder
- Filling weight 1 kg (frost-resistant concrete)
- Sleeve made of polyethylene, black, bottom polypropylene, black
- Base made of polyamide PA 6, black, UV-stabilised and weather-resistant
- Base can be used on almost roofing felt systems (bitumen, PVC)
- Types 165 MBG...FO: Packed in foil bag



Roof conductor holder for flat roofs, without base

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 OBG-8 Rd 8		12	100.000	5218683

- PE Polyethylene
- Without bottom
 - With double conductor holder
 - Filling weight 1 kg (frost-resistant concrete)
 - Sleeve from polyethylene, black



Flat conductor adapter for roof conductor holder, type 165/MBG

Type	Fit Colour mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 MBG HFL Black Rd 8		12	0.670	5218885

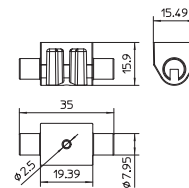
- PP Polypropylene
- Flat conductor holder FL 30 x 3.5 mm
 - For fastening to 165/MBG in fit Rd 8



Universal flat conductor adapter for roof conductor holder, type 165/MBG

Type	Fit Colour mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 MBG UH Black Rd 8		25	0.254	5218882

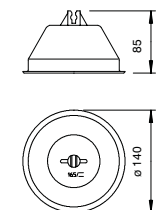
- PP Polypropylene
- Universal adapter with drill hole $\varnothing 2.5$ mm
 - E.g. for OBO Golden Sprint screw, type 4758 4 x L (L = depending on application)
 - For fastening to 165/MBG



Roof conductor holder for flat roofs, plastic sleeve

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 KR Rd 8		50	5.449	5218861

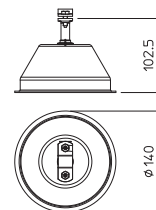
- PE Polyethylene
- For self-filling with concrete
 - Potential filling weight: approx. 1.3 kg
 - Sleeve from polyethylene, black



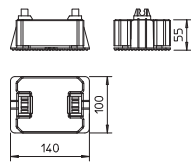
Roof conductor holder for flat roofs, with raised cable bracket

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 KRB SO Rd 8-10		9	144.000	5218977

- Filling weight 1.3 kg (frost-resistant concrete)
- With conductor holder, type 168 DIN-K
- Die-cast zinc conductor holder, electrogalvanised
- Polyethylene sleeve, black



Roof conductor holder for flat roofs, recyclable

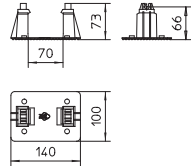


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 R-8-10	Rd 8-10	10	106.000	5218997

PE Polyethylene

- For round conductors Rd 8 to 10
- With polyethylene plastic holder, black
- Block made of frost-resistant concrete
- Weight 1 kg
- Block can be split into plastic and concrete (recyclable)

Roof conductor holder, for plastic film roofs

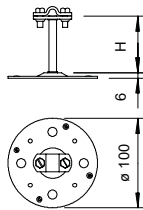


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 R-8-10 OBG	Rd 8-10	100	6.760	5218999

PE Polyethylene

- For flat roofs
- For round conductors Rd 8 to 10
- Polyethylene plastic holder, light grey
- For clamping in roof strips

Roof conductor holder, suitable for bonding straight to flat roofs



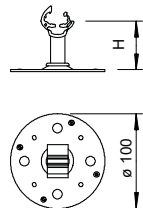
Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 B 60	Rd 8-10	60	50	26.100	5218810
165 B 100	Rd 8-10	100	50	27.700	5218829

St Steel

FT Hot-dip galvanised

- With conductor holder and bottom section, hot-dip galvanised steel
- Bottom section Ø 100 mm

Roof conductor holder, 55 mm, suitable for bonding straight to flat roofs



Type	Fit mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 NBK 55	Rd 8-10	100	75	17.060	5218314

PA Polyamide

- Suitable for bonding straight to flat roofs
- Conductor holder of polyamide
- Bottom section, hot-dip galvanised steel
- Bottom section Ø 100 mm

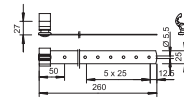


Roof conductor holder for tiled and slated roofs, Rd 8–10

Type	Fit mm	Length mm	Installation height mm	Pack. pcs	Weight		Item No.
					kg/100	pcs.	
157 NB-VA	Rd 8-10	260	27	20	6.000		5215277

V2A Stainless steel, grade 304

- With Ø 5.5 mm drill hole
- Conductor holder of polyamide

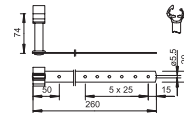


Roof conductor holder for tiled and slated roofs, 74 mm height

Type	Fit mm	Length mm	Installation height mm	Pack. pcs	Weight		Item No.
					kg/100	pcs.	
157 ND-VA	Rd 8-10	260	74	20	6.000		5215307

V2A Stainless steel, grade 304

- High roof conductor holder: 74 mm
- With perforation Ø 5.5 mm
- Polyamide cable bracket

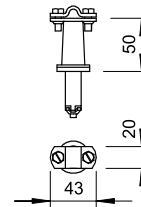


Roof conductor holder for tiled, slated and corrugated roofs, with crossbar

Type	Fit mm	Installation height mm	Pack. pcs	Weight		Item No.
				kg/100	pcs.	
133 A	Rd 8-10	50	20	8.217		5202248

PA Polyamide

- With weatherproof clamping collar from soft PVC
- Required drill hole Ø = 16 mm
- Spacer from polyamide, grey

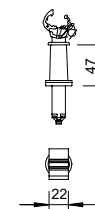


Roof conductor holder for tiled, slated and corrugated roofs, with cable bracket

Type	Fit mm	Installation height mm	Pack. pcs	Weight		Item No.
				kg/100	pcs.	
133 NB	Rd 8-10	67	20	4.338		5202213

PA Polyamide

- With weather-proof clamping collar from soft-PVC
- Required drill hole Ø = 16 mm
- Spacer and conductor holder from polyamide, grey

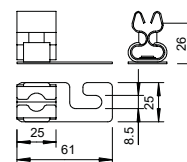


Roof conductor holder for tiled, slated and corrugated roofs, Rd 8

Type	Fit mm	Installation height mm	Pack. pcs	Weight		Item No.
				kg/100	pcs.	
159 VA-V	Rd 8	21	20	3.900		5217075

V2A Stainless steel, grade 304

- Bottom section and conductor holder stainless steel (V2A)
- Bottom section with Ø 8.5 mm slot

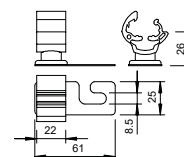


Roof conductor holder for tiled, slated and corrugated roofs, Rd 8–10

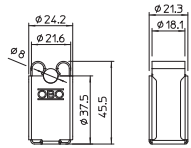
Type	Fit mm	Installation height mm	Pack. pcs	Weight		Item No.
				kg/100	pcs.	
159 K-VA	Rd 8-10	21	20	2.540		5216818

V2A Stainless steel, grade 304

- Bottom section stainless steel (V2A)
- Bottom section with Ø 8.5 mm slot
- Conductor holder of polyamide



Screwless cable bracket, raised construction type, for Rd 8 mm, through-way Ø 5 mm

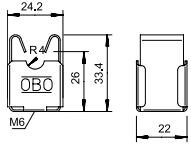


Type	Fit mm	Installation height mm	Pack. pcs.	Weight		Item No.
				kg/100 pcs.	pcs.	
177 35 VA M6	Rd 8	35	20	2.680		5207342

V2A Stainless steel, grade 304

- With female thread M6 or through hole Ø 5 mm
- From stainless steel (V2A)

Screwless cable bracket for Rd 8 mm, through-way Ø 5 mm

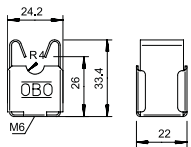


Type	Fit mm	Installation height mm	Pack. pcs.	Weight		Item No.
				kg/100 pcs.	pcs.	
177 20 VA M6	Rd 8	20	20	2.500		5207339

V2A Stainless steel, grade 304

- With female thread M6 or through hole Ø 5 mm
- From stainless steel (V2A)

Screwless cable bracket for Rd 8 mm, through-way Ø 5 mm copper-plated



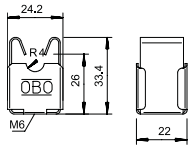
Type	Fit mm	Installation height mm	Pack. pcs.	Weight		Item No.
				kg/100 pcs.	pcs.	
177 20 VA-VK M6	Rd 8	20	20	2.500		5207800

V2A Stainless steel, grade 304

Cu Copper-plated

- With female thread M6 or through hole Ø 5 mm
- From stainless steel (V2A)
- VA-VK: copper-plated

Screwless cable bracket for Rd 8 mm, through-way Ø 7 mm

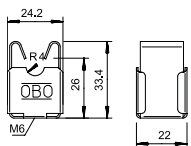


Type	Fit mm	Installation height mm	Pack. pcs.	Weight		Item No.
				kg/100 pcs.	pcs.	
177 20 VA M8	Rd 8	20	20	1.900		5207347

V2A Stainless steel, grade 304

- With female thread M8 or through hole Ø 5 mm
- From stainless steel (V2A)

Screwless cable bracket for Rd 8 mm, through-way Ø 7 mm copper-plated



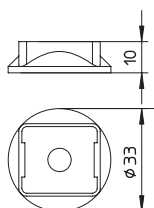
Type	Fit mm	Installation height mm	Pack. pcs.	Weight		Item No.
				kg/100 pcs.	pcs.	
177 20 VA-VK M8	Rd 8	20	20	1.900		5207819

V2A Stainless steel, grade 304

Cu Copper-plated

- With female thread M8 or through hole Ø 5 mm
- From stainless steel (V2A)
- VA-VK: copper-plated

Washer for cable bracket, type 177



Type	Colour	Pack. pcs.	Weight		Item No.
			kg/100 pcs.	pcs.	
177 U	Light grey	20	0.286		5207371

PP Polypropylene

- For simple wall installation
- UV-resistant

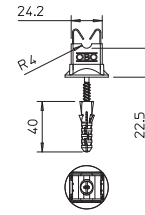


Screwless cable bracket for Rd 8 mm, fastening with screw and anchor

Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
177 20 VA B-HD	Rd 8	20	50	2.900	5207901

V2A Stainless steel, grade 304

- With female thread M8 or through hole \varnothing 5 mm
- From stainless steel (V2A)
- With pre-mounted wood screws (5 x 60) and plastic dowels (8 x 40).

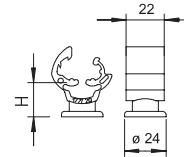


Universal cable bracket Rd 8–10 mm

Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
177 20 M8	Rd 8-10	20	20	0.723	5207444
177 30 M8	Rd 8-10	30	20	0.790	5207460
177 55 M8	Rd 8-10	55	20	1.007	5207487

PA Polyamide

- With female thread M8 or through hole \varnothing 7 mm
- Weather and temperature-resistant from -35 °C to +90 °C

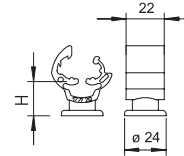


Universal cable bracket Rd 8–10 mm, copper-plated

Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
177 20 CU	Rd 8-10	20	10	0.718	5207746
177 30 CU	Rd 8-10	30	10	0.784	5207754
177 55 CU	Rd 8-10	55	10	1.450	5207762

PA Polyamide

- With female thread M8 for screwing and through hole for wood screws
- Colour: copper
- Weather and temperature-resistant from -35 °C to +90 °C

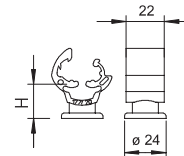


Universal cable bracket Rd 8–10 mm with pre-mounted wood screw

Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
177 B-HD20	Rd 8-10	20	50	1.930	5207851
177 B-HD30	Rd 8-10	30	50	1.503	5207878

PA Polyamide

- With female thread M8 for screwing and through hole for wood screws
- For round conductor Rd 8-10
- Weather and temperature-resistant from -35 °C to +90 °C
- With pre-mounted wood screws (5 x 60) and plastic dowels (8 x 40).

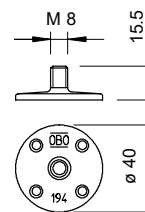


Bonding base

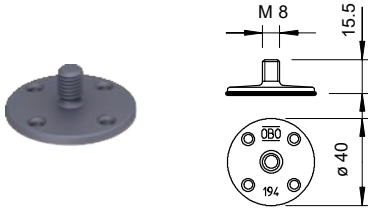
Type	Colour	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
194	Grey	M8	100	0.389	5207258

PA Polyamide

- With threaded stem M8
- For mounting conductor supports with M8 female thread
- For bonding to concrete, steel or brickwork



Bonding base including industrial bonding pad

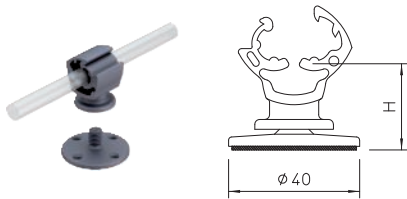


Type	Colour	Thread	Pack. pcs	Weight kg/100 pcs	Item No.
194 K	Grey	M8	20	0.600	5207266

PA Polyamide

- With threaded pin M8
- To accept conductor supports with M8 internal thread
- For bonding to concrete, steel or smooth substrates
- Not suitable for rough surfaces such as plaster, wood, bitumen strips
- Processing at > +15 °C and on cleaned substrate
- To route the conductor, cannot be used on the roof
- Use on sheet roofs after agreement with the responsible roofing contractors

Cable bracket, Rd 8–10 mm with bonding base

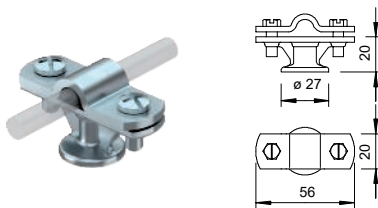


Type	Pack. pcs	Weight kg/100 pcs	Item No.
177 20 KL	50	1.239	5207451

PA Polyamide

- For bonding to concrete, steel or smooth substrates
- Not suitable for rough surfaces such as plaster, wood, bitumen strips
- Processing at > +15 °C and on cleaned substrate
- To route the conductor, cannot be used on the roof
- Use on sheet roofs after agreement with the responsible roofing contractors

Cable bracket with crossbar Rd 8–10 mm



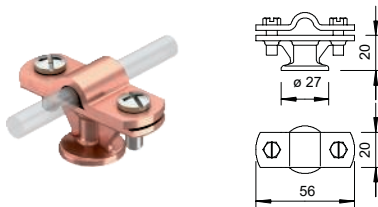
Type	Fit mm	Pack. pcs	Weight kg/100 pcs	Item No.
113 Z8-10	Rd 8-10	20	6.202	5229960

Zn Die-cast zinc

G Electrogalvanised

- With female thread M8 or through hole Ø 7 mm
- Over-piece installed with 2 hexagonal bolts
- Version HD with wood screws (5 x 60) and plastic dowels (8 x 40)

Cable bracket with crossbar Rd 8–10 mm copper-plated



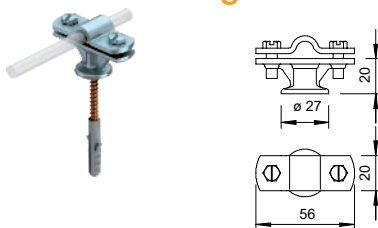
Type	Fit mm	Pack. pcs	Weight kg/100 pcs	Item No.
113 8-10	Rd 8-10	20	9.600	5230217

Zn Die-cast zinc

Cu Copper-plated

- With female thread M8 or through hole Ø 7 mm
- Over-piece installed with 2 hexagonal bolts

Cable bracket with crossbar, wood screw, plastic anchor Rd 8-10 mm galvanised



Type	Fit mm	Pack. pcs	Weight kg/100 pcs	Item No.
113 B-Z-HD	Rd 8-10	100	6.580	5230322

Zn Die-cast zinc

VZ Galvanised

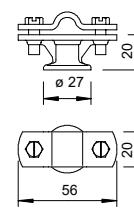
- With female thread M8 or through hole Ø 7 mm
- Over-piece installed with 2 hexagonal bolts
- Version HD with wood screws (5 x 60) and plastic dowels (8 x 40)



Cable bracket with crossbar, wood screw, plastic anchor Rd 8-10 mm copper-plated

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
113 B-MS-HD 8-10	Rd 8-10	100	7.280	5230365
Zn	Die-cast zinc			
Cu	Copper-plated			

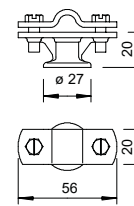
- With female thread M8 or through hole \varnothing 7 mm
- Over-piece installed with 2 hexagonal bolts
- Version HD with wood screws (5 x 60) and plastic dowels (8 x 40)



Cable bracket with hinged crossbar Rd 8-10 mm

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
113 Z-K 8-10	Rd 8-10	20	6.202	5229961
Zn	Die-cast zinc			
G	Electrogalvanised			

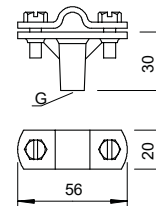
- With female thread M8 or through hole \varnothing 7 mm
- Hinge crossbar for quick swivel mounting
- Crossbar mounted with 2 hexagonal bolts



Cable bracket with hinged crossbar Rd 8-10, 30 mm mounting height, galvanised

Type	Fit mm	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
168 8-10 M6	Rd 8-10	M6	20	7.800	5229162
168 DIN-K-M8	Rd 8-10	M8	20	7.780	5229839
Zn	Die-cast zinc				
G	Electrogalvanised				

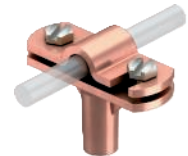
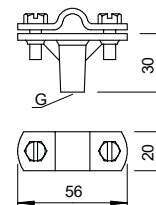
- With female thread (G)
- With over-piece and 2 hexagonal bolts
- Installed height 30 mm



Cable bracket with hinged crossbar Rd 8-10, 30 mm mounting height, copper-plated

Type	Fit mm	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
168 ZN-M6	Rd 8-10	M6	20	8.660	5229367
168 DIN-K-M8	Rd 8-10	M8	20	8.440	5229383
Zn	Die-cast zinc				
Cu	Copper-plated				

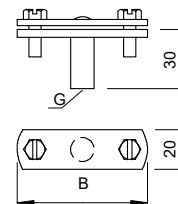
- With female thread (G)
- With over-piece and 2 hexagonal bolts
- Installed height 30 mm



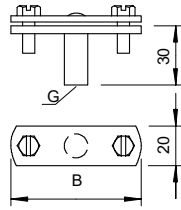
Cable bracket with crossbar FL, 30 mm mounting height FT

Type	Dimension B mm	Fit mm	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
168 FL40-M8	66	FL 40	M8	20	8.200	5229553
TG	Cast iron					
FT	Hot-dip galvanised					

- For flat strip
- With female thread (G)
- Installed height 30 mm



Cable bracket with crossbar FL, 30 mm mounting height galvanised



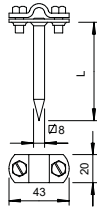
Type	Dimension B mm	Fit mm	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
168 FL30-M6	56	FL 30	M6	20	7.640	5229464
168 DIN 30	56	FL 30	M8	20	7.320	5229480

Zn Die-cast zinc

G Electrogalvanised VZ Galvanised

- For flat strip
- With female thread (G)
- Installed height 30 mm

Cable bracket with crossbar Rd 8–10 mm, with square pin



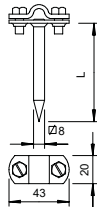
Type	Fit mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
163 70 FT	Rd 8-10	70	50	8.476	5223075
163 100 FT	Rd 8-10	100	50	10.056	5223105
163 150 FT	Rd 8-10	150	50	14.400	5223156
163 200 FT	Rd 8-10	200	20	18.880	5223202

St Steel

FT Hot-dip galvanised

- Complete with crossbar and hexagonal bolts
- With square pin for rapid mounting
- With hexagonal bolts made of VA

Cable bracket with crossbar Rd 8–10 mm, with square pin, copper-plated

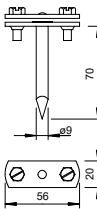


Type	Fit mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
163 100 CU	Rd 8-10	100	10	10.840	5223601

Cu Copper

- Complete with crossbar and hexagonal bolts
- With square pin for rapid mounting
- With hexagonal bolts made of VA

Cable bracket with crossbar FL 30 mm, with round pin



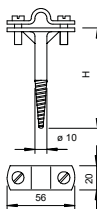
Type	Fit mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
166 LS 70	FL30	70	50	9.140	5226570

St Steel

FT Hot-dip galvanised

- With crossbar and 2 hexagonal bolts (VA)
- With loose round pin Ø 9 mm

Cable bracket with crossbar Rd 8–10 mm, with wood screw thread



Type	Fit mm	Dimension H mm	Pack. pcs	Weight kg/100 pcs.	Item No.
176 A 65	Rd 8-10	65	50	9.536	5227070
176 A 80	Rd 8-10	80	50	10.025	5227089
176 A 100	Rd 8-10	100	50	11.500	5227100
176 A 150	Rd 8-10	150	20	13.100	5227151

TG Cast iron

F Hot-dip galvanised

- Also for flat conductor to FL 30
- With wood screw thread
- Bottom section, hot-dip galvanised cast iron
- Over-piece and screws, hot dipped galvanised steel

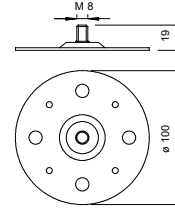


Base plate

Type	Thread	Pack. pcs.	Weight kg/100 pcs.	Item No.
199 DIN	M8	10	14.200	5208017

St Steel
FS Strip-galvanised

- With threaded pin M8
- Suitable for direct bonding
- Threaded pin brass and base plate hot-dip galvanised steel

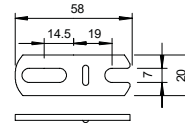


Hinge crossbar for FL 30 mm

Type	Fit mm	Pack. pcs.	Weight kg/100 pcs.	Item No.
156 FL	FL30	50	2.460	5228328

St Steel
FT Hot-dip galvanised

- With slot for quick installation

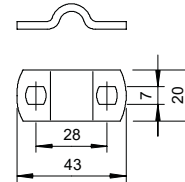


Crossbar for Rd 8–10 mm, steel

Type	Fit mm	Pack. pcs.	Weight kg/100 pcs.	Item No.
156 K8-10 ST	Rd 8-10	100	2.000	5228123

St Steel
FT Hot-dip galvanised

- For round conductor Rd 8-10

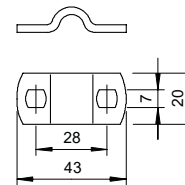


Crossbar for Rd 8–10 mm, stainless steel

Type	Fit mm	Pack. pcs.	Weight kg/100 pcs.	Item No.
156 K8-10 VA	Rd 8-10	100	2.100	5228134

V2A Stainless steel, grade 304

- For round conductor Rd 8-10

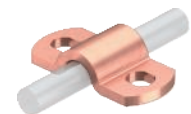
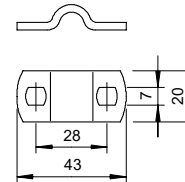


Crossbar for Rd 8–10 mm, copper

Type	Fit mm	Pack. pcs.	Weight kg/100 pcs.	Item No.
156 K8-10 CU	Rd 8-10	100	2.260	5228131

Cu Copper

- For round conductor Rd 8-10

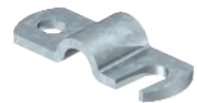
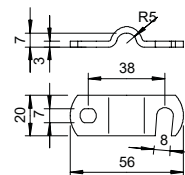


Hinge crossbar for Rd 8-10 mm

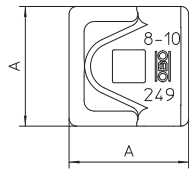
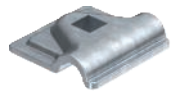
Type	Fit mm	Pack. pcs.	Weight kg/100 pcs.	Item No.
156 8-10	Rd 8-10	100	2.680	5228026

St Steel
FT Hot-dip galvanised

- With open slot for quick installation



Connection terminal, equipotential bonding, Rd 8–10 mm



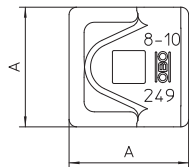
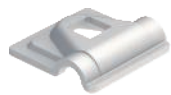
Type	Fit mm	Di- men- sion A mm	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 ST-OT	Rd 8-10	40	100	3.240	5311503

St Steel

FT Hot-dip galvanised

- For round conductor fastening RD 8-10
- Suitable for M10 bolts

Connection terminal, equipotential bonding, Rd 8–10 mm

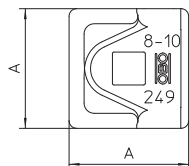
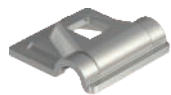


Type	A mm	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 ALU-OT	44	Rd 8-10	100	2.100	5311585

Alu Aluminium

- For round conductor fastening RD 8-10
- Suitable for M10 bolts

Connection terminal, equipotential bonding, Rd 8–10 mm

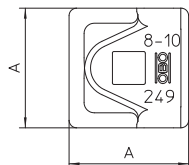


Type	Fit mm	Di- men- sion A mm	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 VA-OT	Rd 8-10	40	100	3.130	5311554

V2A Stainless steel, grade 304

- For round conductor Rd 8-10
- Suitable for M10 bolts

Connection terminal, equipotential bonding, Rd 8–10 mm

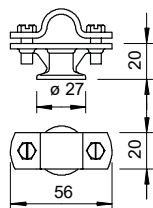


Type	Fit mm	Di- men- sion A mm	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 CU-OT	Rd 8-10	40	100	3.580	5311530

Cu Copper

- For round conductor fastening RD 8-10
- Suitable for M10 bolts

Rod holder for 16 mm air-termination and earth entry rods, galvanised



Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
113 Z-16	Rd 16	10	6.000	5412609

Zn Die-cast zinc

VZ Galvanised

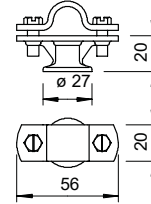
- For lightning and ground insertion rods Rd 16
- Installed with over-piece and hex-head screws M6 x 16
- With female thread M8 or through hole Ø 7 mm



Rod holder for 16 mm air-termination and earth entry rods, copper-plated

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
113 ZN-16	Rd 16	10	10.100	5412633
Zn	Die-cast zinc			
Cu	Copper-plated			

- For lightning and ground insertion rods Rd 16
- Installed with over-piece and hex-head screws M6 x 16
- With female thread M8 or through hole \varnothing 7 mm

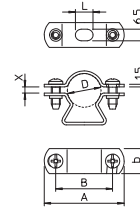


Cable and pipe spacer clip 733 V2A



Type	Clamping range D mm	Hole size mm	Bolt	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
733 16 A2	14 - 16	6,5 x 10	M5 x 12	500	50	2.430	1362011
V2A	Stainless steel, A2						

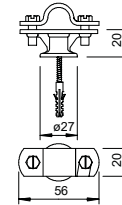
- * Size M16 is not suitable for nail device
- * Sizes M16 - PG16 are not suitable for bolt-firing tool



Rod holder for 16 mm air-termination and earth entry rods, with screw and anchor

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
113 B-Z-HD	Rd 16	100	6.000	5412803
Zn	Die-cast zinc			
VZ	Galvanised			

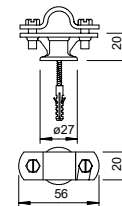
- For lightning and ground insertion rods Rd 16
- Installed with over-piece and hexagonal bolts M6 x 16 (VA)
- Female thread M8 for screwing and through hole for wood screws
- Pre-mounted with wood screw 5 x 60 and plastic dowels 8 x 40



Rod holder for 16 mm air-termination and earth entry rods, with screw and anchor, copper-plated

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
113 B-HD-16	Rd 16	100	10.100	5412811
Zn	Die-cast zinc			
Cu	Copper-plated			

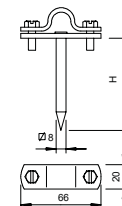
- For lightning and ground insertion rods Rd 16
- Installed with over-piece and hexagonal bolts M6 x 16 (VA)
- Female thread M8 for screwing and through hole for wood screws
- Pre-mounted with wood screw 5 x 60 and plastic dowels 8 x 40



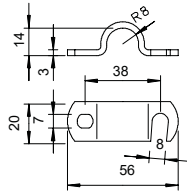
Rod holder for 16 mm air-termination and earth entry rods, with square pin

Type	Fit mm	Dimension H mm	Pack. pcs	Weight kg/100 pcs.	Item No.
112 DIN-100	Rd 16	100	10	12.412	5410096
St	Steel				
F	Hot-dip galvanised				

- For lightning and ground insertion rods
- Over-piece with 2 hexagonal bolts M6 x 16 (VA)
- With square pin



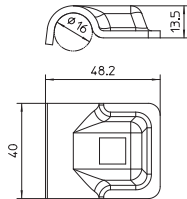
Crossbar, round conductors and interception rods 16 mm



Type	Fit mm	Pack. pcs	Weight		Item No.
			kg/100 pcs.	pcs.	
156 16 Rd 16		50	3.230		5228220
St Steel					
Fl Hot-dip galvanised					

- With open slot for quick installation

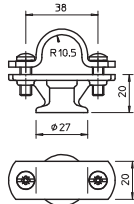
Connection terminal, equipotential bonding, Rd 16 mm



Type	Fit mm	Pack. pcs	Weight		Item No.
			kg/100 pcs.	pcs.	
249 VA-OT 16		100	5.700		5311573
V2A Stainless steel, grade 304					

- For round conductor fastening RD 16
- Suitable for M10 bolts

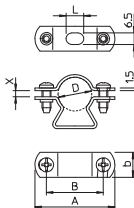
Rod holder



Type	Fit mm	Pack. pcs	Weight		Item No.
			kg/100 pcs.	pcs.	
113 Z-20 Rd 20		20	8.200		5230527
Zn Die-cast zinc					
VZ Galvanised					

- Installed with over-piece and hex-head screws M6 x 16
- With female thread M8 or through hole Ø 7 mm

Conductor and pipe spacer clip 733 V2A



Type	Clamping range D mm	Hole size mm	Bolt	Shipping box pcs	Pack. pcs	Weight		Item No.
						kg/100 pcs.	pcs.	
733 21 A2 19 - 21 6,5 x 10 M5 x 16 500					50	2.740		1362046
V2A Stainless steel, A2								

- * Size M16 is not suitable for nail device
- * Sizes M16 - PG16 are not suitable for bolt-firing tool



Vario quick connector

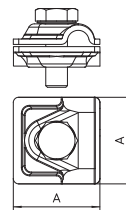


Type	Fit mm	Dimension A mm	Short-circuit current (50 Hz) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs	Item No.
249 8-10 ST	Rd 8-10	40	5.6	H/100	20	10.800	5311500
249 B ST	Rd 8-10	40	5.6	H/100	100	10.800	5311705

St Steel

FT Hot-dip galvanised

- For T, cross and parallel connectors
- Quick installation using hexagonal bolt M10 x 30, high-grade stainless steel
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)



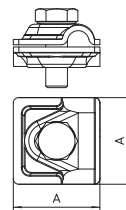
Vario quick connector



Type	Fit mm	Dimension A mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs	Item No.
249 8-10 ALU	Rd 8-10	44	H/100	30	6.600	5311519
249 B ALU	Rd 8-10	44	H/100	100	7.250	5311713

Alu Aluminium

- For T, cross and parallel connectors
- Quick installation using hexagonal bolt M10 x 30, high-grade stainless steel
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)



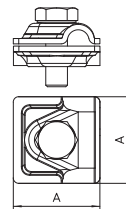
Vario quick connector



Type	Fit mm	Dimension A mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs	Item No.
249 8-10 VA	Rd 8-10	40	H/100	10	10.700	5311551

V2A Stainless steel, grade 304

- For T, cross and parallel connectors
- Quick installation using hexagonal bolt M10 x 30, high-grade stainless steel
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)



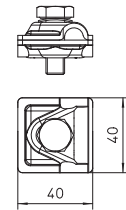
Vario quick connector



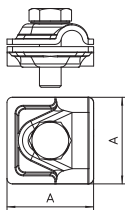
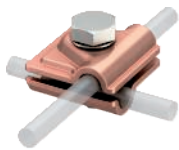
Type	Fit mm	Dimension A mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs	Item No.
249 8-10 V4A	Rd 8-10	40	H/100	10	9.500	5311404

V4A Stainless steel, 316Ti / 316L

- For T, cross and parallel connectors
- Quick installation using hexagonal bolt M10 x 30, high-grade stainless steel
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)



Vario quick connector

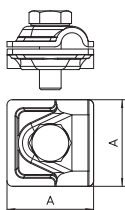
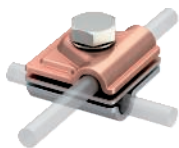


Type	Fit mm	Di- men- sion A mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 CU	Rd 8-10	40	H/100	10	11.900	5311527

Cu Copper

- For T, cross and parallel connectors
- Quick installation using hexagonal bolt M10 x 30, high-grade stainless steel
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)

Variable bi-metal quick connector

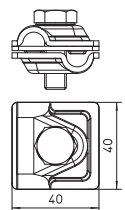


Type	Fit mm	Lightning current carrying capacity kA	Di- men- sion A mm	Material symbol	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 ZV	Rd 8-10	H/100	44	Cu	10	14.220	5311535

Cu Copper

- Intermediate plate, copper/aluminium, top section copper and aluminium
- For T, cross and parallel connectors
- Quick installation using hexagonal bolt M10 x 30, high-grade stainless steel
- With spring washer according to DIN 137
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)

Variable earthing connector Rd 6-8 / 8-10 mm



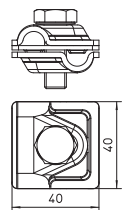
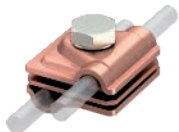
Type	Fit mm	Di- men- sion A mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
249 6-10 ST	RD 6-8 / 8-10	40	H/100	20	13.100	5311410

St Steel

FT Hot-dip galvanised

- For T, intersection and parallel connections with adapter plates
- Quick mounting using an M10 x 30 bolt, made from rustproof stainless steel
- With sprung washer to DIN 137
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)

Variable earthing connector Rd 6-8 / 8-10 mm



Type	Fit mm	Di- men- sion A mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
249 6-10 CU	RD 6-8 / 8-10	40	H/100	10	14.540	5311417

Cu Copper

- For T, intersection and parallel connections with adapter plates
- Quick mounting using an M10 x 30 bolt, made from rustproof stainless steel
- With sprung washer to DIN 137
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)

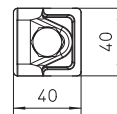
Vario quick connector Rd 6-8 / Rd 6-8 mm



Type	Fit mm	Di- men- sion A mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
249 6-8 CU	RD 6-8 / 6-8	40	H/100	10	12.710	5311407

Cu Copper

- For T, intersection and parallel connections with adapter plates
- Quick mounting using an M10 x 30 bolt, made from rustproof stainless steel
- With sprung washer to DIN 137
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)



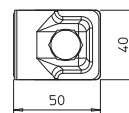
Vario quick connector Rd 8-10x16



Type	Fit mm	Di- men- sion A mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10X16 VA	8-10X16	40	H/100	10	16.300	5311590

V2A Stainless steel, grade 304

- For T, intersection and parallel connections with adapter plates
- Quick mounting using an M10 x 30 bolt, made from rustproof stainless steel
- With sprung washer to DIN 137
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)



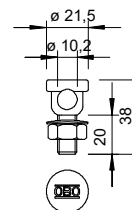
Connector, Rd 8–10 mm with M10 thread

Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5000	Rd 8-10		20	4.630	5304008

St Steel

F Hot-dip galvanised

- With bore hole 10.2 mm
- With thread M10
- Including pre-mounted nut M10 and serrated washer
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)



Connector Rd 8–10 mm, single

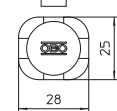


Type	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5001 DIN-FT	H/100	20	7.450	5304105
5001 DIN-FT+VA	H/100	20	7.450	5304107

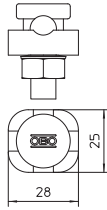
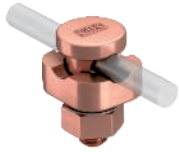
St Steel

FT Hot-dip galvanised

- With fix contact clamping screw, nut and serrated washer
- With bore hole 10.2 mm
- With pre-mounted pressure piece, die-cast zinc
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)



Connector Rd 8–10 mm, single, copper

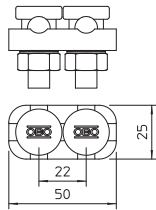


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5001 ZN-CU	Rd 8-10	H/100	10	8.760	5304113

- Zn** Die-cast zinc
- Cu** Copper-plated

- With fix contact clamping screw, nut and serrated washer
- With bore hole 10.2 mm
- With pre-mounted pressure piece, die-cast zinc
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)

Connector Rd 8–10 mm, double

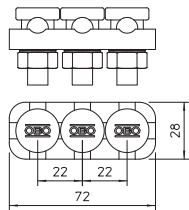


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5002 DIN-FT	Rd 8-10	H/100	20	14.240	5304202

- St** Steel
- FT** Hot-dip galvanised

- With 2 fix contact clamping screws, nut and serrated washer
- Including pre-mounted connecting pressure piece, die-cast zinc or copper-plated die-cast zinc
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)

Connector Rd 8–10 mm, triple

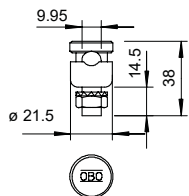


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5003	Rd 8-10	H/100	10	22.420	5304318

- TG** Cast iron
- FT** Hot-dip galvanised

- With 3 fix contact clamping screws, nut and serrated washer
- With pre-mounted connecting pressure piece, die-cast zinc
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)

Connector, Rd 8–10 mm with pressure trough



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5001 N-FT	Rd 8-10	N/50	20	5.900	5304164

- St** Steel
- FT** Hot-dip galvanised

- With 1 fix contact clamping screw, nut and serrated washer
- Including pre-mounted pressure sump, steel
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)



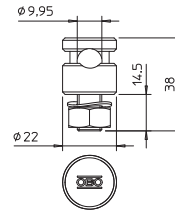
Connector, Rd 8–10 mm with pressure trough



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5001 N-VA	Rd 8-10	N/50	10	6.800	5304176

V2A Stainless steel, grade 304

- With 1 fix contact clamping screw, nut and serrated washer
- Including pre-mounted pressure sump, steel
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)



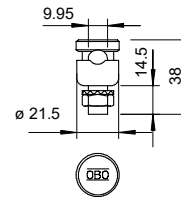
Connector, Rd 8–10 mm with pressure trough



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5001 N-CU	Rd 8-10	H/100	10	6.750	5304172

Cu Copper

- With 1 fix contact clamping screw, nut and serrated washer
- Including pre-mounted pressure sump, steel
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)



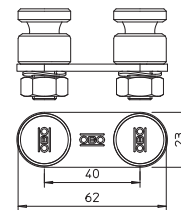
Connector, Rd 8–10 mm, double, with pressure trough



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5002 N-VA	Rd 8-10	N/50	10	16.200	5304270

V2A Stainless steel, grade 304

- With 2 Fix-Kontakt clamping bolts, nuts and serrated washers
- With pre-mounted pressure trough made of VA
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)



Connection and end piece with connector

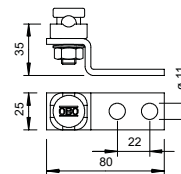


Type	Material	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5009	St	Rd 8-10	H/100	10	14.500	5304970

St Steel

F Hot-dip galvanised

- With 2 attaching holes \varnothing 11 mm
- Installed with connector (single-piece) type 5001 DIN-FT
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)



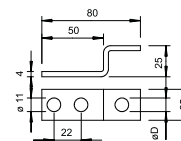
Connection and end piece

Type	Dimension D \varnothing mm	Pack. pcs	Weight kg/100 pcs.	Item No.
5011	11	10	7.064	5304997

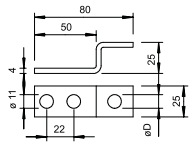
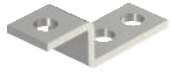
St Steel

FT Hot-dip galvanised

- For attaching to steel structures or bolting to fixed earthing terminals
- For attachments: Round conductor Rd 8-10 and flat conductor FL 30 x 3.5
- 2 attaching holes \varnothing 11 mm
- 1 attaching holes \varnothing D mm



Connection and end piece

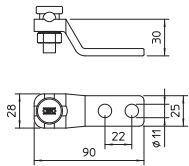


Type	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
5011 VA M10	11	10	7.064	5334934
5011 VA M12	13	10	7.048	5334942

V4A Stainless steel, grade 316 Ti

- For attaching to steel structures or bolting to fixed earthing terminals
- For attachments: Round conductor Rd 8-10 and flat conductor FL 30 x 3.5
- 2 attaching holes Ø 11 mm
- 1 attaching holes Ø D mm

Connection and end piece, DIN version

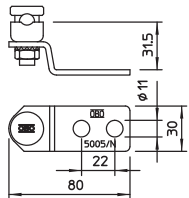


Type	Fit mm	Material symbol	Pack. pcs	Weight kg/100 pcs.	Item No.
5005 DIN-FT	Rd 8-10	St	10	15.518	5304601

St Steel
F Hot-dip galvanised

- With 2 attaching holes and 1 fix contact clamping screw 5000...
- With 2 attaching holes Ø 11 mm
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)

Connection and end piece with connector and pressure trough

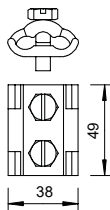


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
5005 N-FT	Rd 8-10	10	11.600	5304660

St Steel
FT Hot-dip galvanised

- With 2 attaching holes Ø 11 mm
- Including pre-mounted connector 5001 N
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)

Parallel connector Rd 8–10 mm, M8 x 25

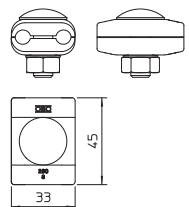
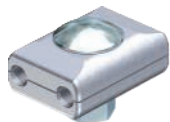


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
259 8-10	Rd 8-10	N/50	25	13.230	5315506

TG Cast iron
FT Hot-dip galvanised

- With 2 hex-head screws M8 x 25, hot-dip galvanised steel

Parallel connector Rd 8 mm, M10 x 30



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
260 8	Rd 8	H/100	50	13.930	5315700

Zn Die-cast zinc
G Electrogalvanised

- With flat, round screw M10 x 30 and hexagonal nut, hot-dip galvanised steel



Parallel connector Rd 8–10 mm, M6 x 20

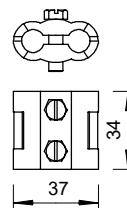


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
260 8-10 MS	Rd 8-10		50	15.820	5315654

CuZn Brass

Cu Copper-plated

- With 2 hexagonal bolts M6 x 20 from copper



Straight connector Rd 8 mm

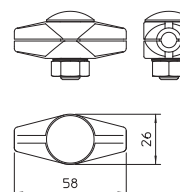


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
239	Rd 8	N/50	20	12.510	5329078

Zn Die-cast zinc

G Electrogalvanised

- With truss-head bolt M10 x 30 and hexagonal nut M10
- Complies with the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)



Straight connector Rd 8–10 mm



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
237 N FT	Rd 8-10	H/100	20	8.560	5328209

St Steel

F Hot-dip galvanised

- With 4 hexagonal bolts M6 x 10
- Complies with the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)



Straight connector Rd 8–10 mm



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
237 N CU	Rd 8-10	H/100	10	8.760	5328284

Cu Copper

- With 4 hexagonal bolts M6 x 10
- Complies with the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)



T connector Rd 8 mm

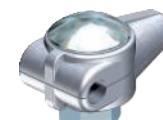
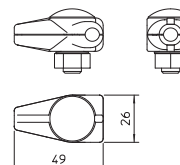


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
244	Rd 8	N/50	10	11.580	5311039

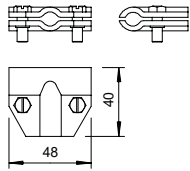
Zn Die-cast zinc

G Electrogalvanised

- With truss-head bolt M10 x 30 and hexagonal nut M10
- Complies with the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)



T connector Rd 8–10 mm



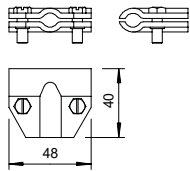
Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
245 8-10 FT	Rd 8-10	N/50	10	9.401	5311101

St Steel

FT Hot-dip galvanised

- With 2 hexagonal bolts M6 x 16 (VA)
- Complies with the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)

T connector Rd 8–10 mm

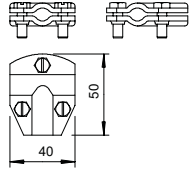


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
245 8-10 CU	Rd 8-10	N/50	10	11.560	5311152

Cu Copper

- With 2 hexagonal bolts M6 x 16 (VA)
- Complies with the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)

T connector Rd 8-10 mm, triple-screwed



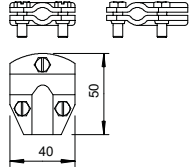
Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
247 8-10 FT	Rd 8-10	N/50	10	10.934	5311209

St Steel

FT Hot-dip galvanised

- With 3 hexagonal bolts M6 x 16 (VA)

T connector Rd 8-10 mm, triple-screwed

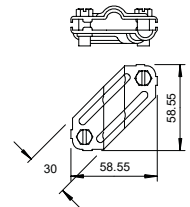


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
247 8-10 CU	Rd 8-10	N/50	10	10.750	5311268

Cu Copper

- With 3 hexagonal bolts M6 x 16 (VA)
- Complies with the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)

Cross-connector for flat conductors and round conductors



Type	Fit mm	Short-circuit current (50 HZ) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
250	Rd 8-10/FL30	5.6	N/50	25	10.260	5312906

St Steel

FT Hot-dip galvanised

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10
- Fit: Rd 8-10 x FL 30
- Fit: FL 30 x FL 30
- Mounted with 2 hexagonal bolts M8 x 20 (F)



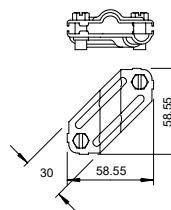
Cross-connector for flat conductors and round conductors



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
250 VA	Rd 8-10/FL30	H/100	25	10.260	5312922
250 V4A	Rd 8-10/FL30	H/100	10	10.260	5312925

V2A Stainless steel, grade 304 V4A Stainless steel, grade 316 Ti

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10
- Fit: Rd 8-10 x FL 30
- Fit: FL 30 x FL 30
- Mounted with 2 hexagonal bolts M8 x 20



Cross-connector for round cables and flat conductors DIN

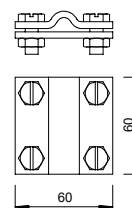


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10XFL30 FT	8-10 x FL30	H/100	25	28.500	5312655

Sl Steel

FT Hot-dip galvanised

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x FL 30
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8



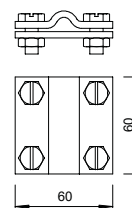
Cross-connector for round cables and flat conductors



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10xFL30V4A	8-10 x FL30	H/100	10	28.500	5312656

V4A Stainless steel, grade 316 Ti

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x FL 30
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8



Cross-connector Rd 8–10 mm

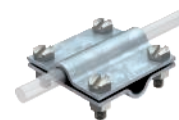
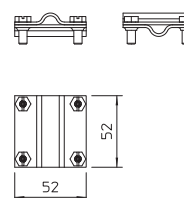


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
251 8-10	Rd 8-10	H/100	25	11.690	5312035

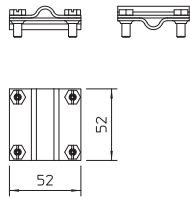
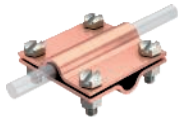
Sl Steel

FT Hot-dip galvanised

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- For round conductors, fit: Rd 8-10 x Rd 8-10
- With 4 hexagonal bolts M6 x 16 (VA)



Cross-connector Rd 8–10 mm

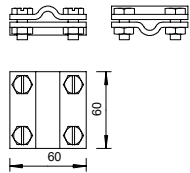
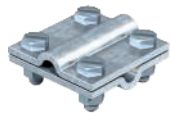


Type	Fit mm	Lightning current carrying capacity kA	Weight		Item No.
			Pack. pcs	kg/100 pcs.	
251 CU Rd 8-10 H/100			10	12.400	5312132

Cu Copper

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10
- With 4 hexagonal bolts M6 x 16, must of rust-proof steel (VA)

Cross-connector Rd 8–10 mm, wide version

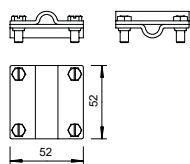
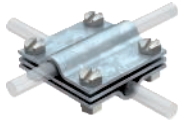


Type	Fit mm	Lightning current carrying capacity kA	Weight		Item No.
			Pack. pcs	kg/100 pcs.	
253 8X8 Rd 8-10 H/100			25	30.700	5312604

St Steel
FI Hot-dip galvanised

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10 / FL 30
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8 (F)

Cross-connector with intermediate plate for Rd 8–10 mm

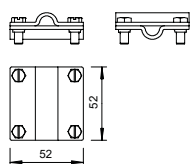
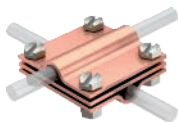


Type	Fit mm	Lightning current carrying capacity kA	Weight		Item No.
			Pack. pcs	kg/100 pcs.	
254 DIN 8-10 FT Rd 8-10 H/100			25	16.660	5314038

St Steel
FI Hot-dip galvanised

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- For round conductors, fit: Rd 8-10 x Rd 8-10
- With adapter plate
- Mounted with 4 hexagonal bolts M6 x 20 and 4 hexagonal nuts M6

Cross-connector with intermediate plate for Rd 8–10 mm



Type	Fit mm	Lightning current carrying capacity kA	Weight		Item No.
			Pack. pcs	kg/100 pcs.	
254 DIN 8-10 CU Rd 8-10 H/100			10	17.410	5314135

Cu Copper

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10
- With adapter plate
- Mounted with 4 hexagonal bolts M6 x 20 and 4 hexagonal nuts M6 (F) made of rustproof steel (VA)



Cross-connector with intermediate plate for Rd 8–10 mm, wide version

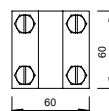
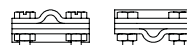


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10 FT	Rd 8-10	H/100	25	33.530	5312310

St Steel

FT Hot-dip galvanised

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10 / FL 30
- With adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8 (F)



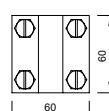
Cross-connector with intermediate plate for Rd 8–10 mm, wide version



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10 V4A	Rd 8-10	H/100	10	33.530	5312318

V4A Stainless steel, grade 316 Ti

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10 / FL 30
- With adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8



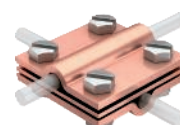
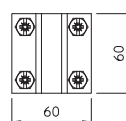
Cross-connector with intermediate plate for Rd 8–10 mm, wide version



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10 CU	Rd 8-10	H/100	10	38.940	5312418

Cu Copper

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10 / FL 30
- With adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8



Cross-connector for Rd 8–10 x Rd 16 mm

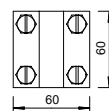


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
253 10X16	Rd 8-10 x 16	H/100	25	29.800	5312809

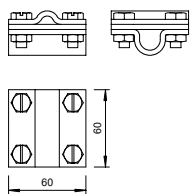
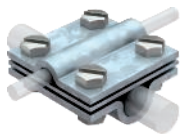
St Steel

FT Hot-dip galvanised

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 16 / FL 30
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8 (F)



Cross-connector with intermediate plate for Rd 8–10 x Rd 16 mm



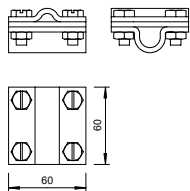
Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs.	Weight kg/100 pcs.	Item No.
252 8-10X16 FT	Rd 8-10 x 16	H/100	25	38.800	5312345

St Steel

FT Hot-dip galvanised

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 16 / FL 30
- With adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8

Cross-connector with intermediate plate for Rd 8–10 x Rd 16 mm

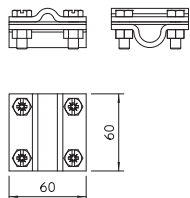
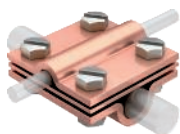


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs.	Weight kg/100 pcs.	Item No.
252 8-10x16 V4A	Rd 8-10 x 16	H/100	10	39.000	5312346

V4A Stainless steel, grade 316 Ti

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 16 / FL 30
- With adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8

Cross-connector with intermediate plate for Rd 8–10 x Rd 16 mm

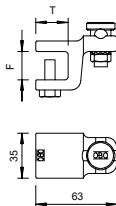


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs.	Weight kg/100 pcs.	Item No.
252 8-10X16 CU	Rd 8-10 x 16	H/100	10	43.985	5312442

Cu Copper

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 16 / FL 30
- With adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8

Folding and construction clamp, 10–20 mm



Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs.	Weight kg/100 pcs.	Item No.
5004 DIN-FT 12	Rd 8-10	max. 12	N/50	10	18.730	5304407
5004 DIN-FT 20	Rd 8-10	10 - 20	N/50	10	30.600	5304504

TG Cast iron

FT Hot-dip galvanised

- Flange thickness to 12 or 10–20 mm
- With pre-mounted Fix-Kontakt clamping screw 5000
- 2 hexagonal bolts M8 x 20, screws made of hot galvanised steel,
- Terminal block made of malleable iron, hot galvanised
- Mounting of the round conductors either vertical or transverse to structure
- Corresponds to the requirements of DIN VDE 0185-305-3



Construction clamp to 20 mm

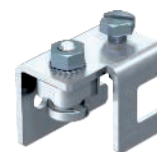
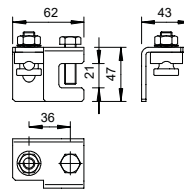


Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5010 20 FT	Rd 8-10	4 - 20	N/50	10	30.600	5304520

St Steel

FT Hot-dip galvanised

- Mounting of the round conductor possible vertically or transverse to construction
- For fastening to constructions up to a flange thickness of 20 mm
- Fastening to constructions using a hexagonal bolt M10
- Meets the requirements of VDE 0185-305 (IEC 62305)



Connection terminal to 14 mm

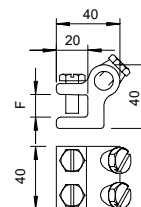


Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
272 8	Rd 8-10	max. 8	N/50	20	22.800	5318084
272 14	Rd 8-10	max. 14	N/50	20	25.230	5318149

TG Cast iron

FT Hot-dip galvanised

- Flange thickness to 8 and/or 14 mm
- With 4 hexagonal bolts M8
- Conforms to the requirements according to DIN V VDE V 0185-3, Section 4.5



Folding clamp up to 7 mm plate thickness

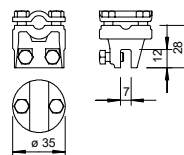


Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
269 8-10	Rd 8-10	max. 7	N/50	20	14.460	5317010

Zn Die-cast zinc

G Electrogalvanised

- Plate thickness to 7 mm
- For conductor arrangement transverse and parallel to plate with 4 hexagonal bolts M6 x 16
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)



Folding clamp up to 7 mm plate thickness

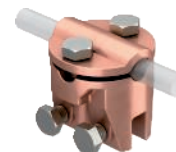
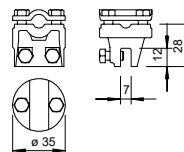


Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
269 MS	Rd 8-10	max. 7	H/100	10	14.480	5317053

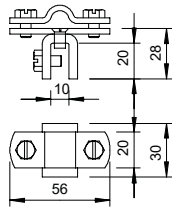
Zn Die-cast zinc

Cu Copper-plated

- Plate thickness to 7 mm
- For conductor arrangement transverse and parallel to plate with 4 hexagonal bolts M6 x 16
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)



Folding clamp Rd 8-10 up to 10 mm plate thickness



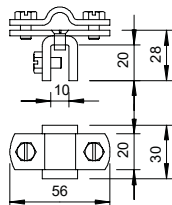
Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
270 8-10 FT	Rd 8-10	max. 10	N/50	20	13.810	5317207

SI Steel

FI Hot-dip galvanised

- Metal thickness to 10 mm
- For conductor routing transverse and in parallel to the plate
- Corresponds to the requirements to DIN V VDE V 0185-3 section 4.5

Folding clamp Rd 8-10 up to 10 mm plate thickness

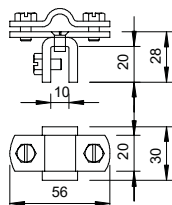


Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
270 8-10 VA	Rd 8-10	max. 10	N/50	10	13.800	5317208

V2A Stainless steel, grade 304

- Metal thickness to 10 mm
- For conductor routing transverse and in parallel to the plate
- Corresponds to the requirements to DIN V VDE V 0185-3 section 4.5

Folding clamp Rd 8-10 up to 10 mm plate thickness

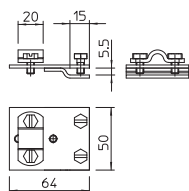


Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
270 8-10 CU	Rd 8-10	max. 10	H/100	10	14.740	5317258

Cu Copper

- Metal thickness to 10 mm
- For conductor routing transverse and in parallel to the plate
- Corresponds to the requirements to DIN V VDE V 0185-3 section 4.5

Folding clamp up to 5 mm plate thickness



Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
271 8-10	Rd 8-10	max. 5	N/50	20	14.060	5317401

SI Steel

FI Hot-dip galvanised

- Plate thickness to 5 mm
- For conductor routing transverse and longitudinal to plate
- With 4 hexagonal bolts M6 x 12
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)
- 271 Cu: with hexagonal bolts stainless steel (VA)



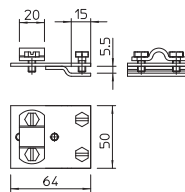
Folding clamp up to 5 mm plate thickness



Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
271 8-10 VA	Rd 8-10	max. 5	N/50	10	15.000	5317481

V2A Stainless steel, grade 304

- Plate thickness to 5 mm
- For conductor routing transverse and longitudinal to plate
- With 4 hexagonal bolts M6 x 12
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)
- 271 Cu: with hexagonal bolts stainless steel (VA)



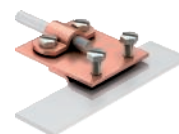
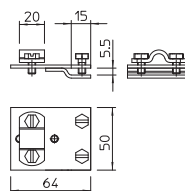
Folding clamp up to 5 mm plate thickness



Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
271 CU	Rd 8-10	max. 5	N/50	10	15.230	5317452

Cu Copper

- Plate thickness to 5 mm
- For conductor routing transverse and longitudinal to plate
- With 4 hexagonal bolts M6 x 12
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)
- 271 Cu: with hexagonal bolts stainless steel (VA)



Folding clamp up to 10 mm plate thickness

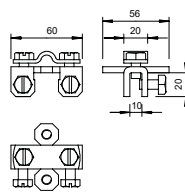


Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
273 8-10	Rd 8-10	max. 10	N/50	50	17.000	5317223

St Steel

FT Hot-dip galvanised

- Plate thickness to 10 mm
- Conductor routing transverse and longitudinal to plate with 2 hexagonal bolts M8 x 10 and 2 hexagonal bolts M8 x 16 (F)



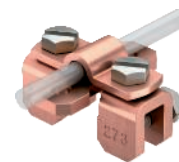
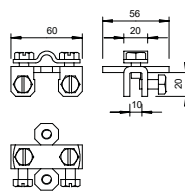
Folding clamp up to 10 mm plate thickness



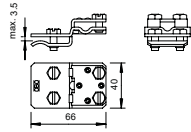
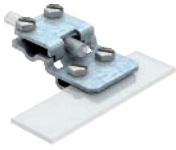
Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
273 CU	Rd 8-10	max.10	N/50	10	18.500	5317274

Cu Copper

- Plate thickness to 10 mm
- Conductor routing transverse and longitudinal to plate with 2 hexagonal bolts M8 x 10 and 2 hexagonal bolts M8 x 16 (F)
- 273 Cu: with hexagonal bolts, stainless steel (VA)



Folding clamp and connection terminal up to 10 mm plate thickness



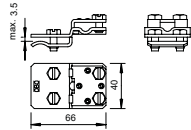
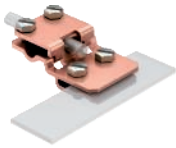
Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
274 8-10	Rd 8-10	max. 10	N/50	20	10.400	5317428

St Steel

FT Hot-dip galvanised

- Plate thickness to 10 mm
- For conductor routing transverse and longitudinal to plate
- 4 hexagonal bolts M6 x 16
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)

Folding clamp and connection terminal up to 10 mm plate thickness

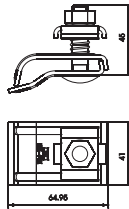


Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
274 CU	Rd 8-10	max. 10	N/50	10	11.340	5317479

Cu Copper

- Plate thickness to 10 mm
- For conductor routing transverse and longitudinal to plate
- 4 hexagonal bolts M6 x 16
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)

Gutter clamp RK-FIX



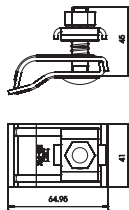
Type	Fit mm	Material	Inter- symbol face	Pack. pcs	Weight kg/100 pcs.	Item No.
RK-FIX	2 x Rd 8	St	FT	25	19.100	5316450

St Steel

FT Hot-dip galvanised

- For up to 2 conductors Rd 8
- With double crossbar
- Suitable for all bead thicknesses (15–25 mm)
- With 1 truss-head bolt M10 x 45
- Nut and bolt made of VA stainless steel
- With spring for prefixing for rain gutter

Gutter clamp RK-FIX



Type	Fit mm	Material	Inter- symbol face	Pack. pcs	Weight kg/100 pcs.	Item No.
RK-FIX VA	2 x Rd 8	V2A	—	10	19.100	5316459

V2A Stainless steel, grade 304

- For up to 2 conductors Rd 8
- With double crossbar
- Suitable for all bead thicknesses (15–25 mm)
- With 1 truss-head bolt M10 x 45
- Nut and bolt made of VA stainless steel
- With spring for prefixing for rain gutter
- Tested to DIN EN 50164-1



Gutter clamp RK-FIX

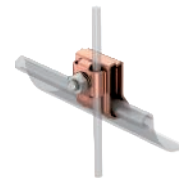
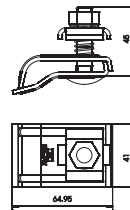


Type	Fit mm	Lightning current carrying capacity kA	Weight		Item No.
			Pack. pcs	kg/100 pcs.	
RK-FIX CU	2 x Rd 8	H/100	10	21.000	5316468

V2A Stainless steel, grade 304

Cu Copper-plated

- For up to 2 conductors Rd 8
- With double crossbar
- Suitable for all bead thicknesses (15–25 mm)
- With 1 truss-head bolt M10 x 45
- Nut and bolt made of VA stainless steel
- With spring for prefixing for rain gutter
- Tested to DIN EN 50164-1



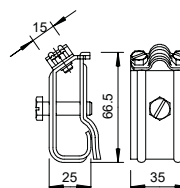
Gutter clamp for all bead thicknesses

Type	Fit mm	Weight		Item No.
		Pack. pcs	kg/100 pcs.	
267	Rd 8-10	25	13.950	5316308

St Steel

FT Hot-dip galvanised

- Fits all bead thicknesses
- With 1 hexagonal bolt M8 x 30
- 2 hexagonal bolts M6 x 12

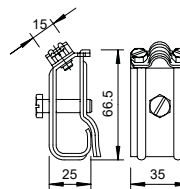


Gutter clamp for all bead thicknesses

Type	Fit mm	Weight		Item No.
		Pack. pcs	kg/100 pcs.	
267 VA	Rd 8-10	10	11.360	5316324

V2A Stainless steel, grade 304

- Fits all bead thicknesses
- With 1 hexagonal bolt M8 x 30
- 2 hexagonal bolts M6 x 12
- VA version also for use as bimetal conductor (holder)



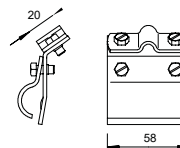
Gutter clamp for bead thickness 15–22 mm

Type	Fit mm	Weight		Item No.
		Pack. pcs	kg/100 pcs.	
262 A-DIN FT	Rd 8-10	25	19.610	5316219

St Steel

FT Hot-dip galvanised

- Suitable for bulge thickness 15–22 mm
- With 4 hexagonal bolts M6 x 16 (VA)

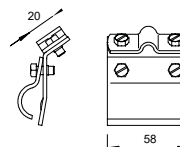


Gutter clamp for bead thickness 15–22 mm

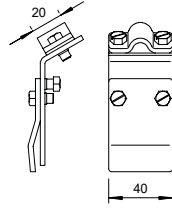
Type	Fit mm	Weight		Item No.
		Pack. pcs	kg/100 pcs.	
262 A-DIN CU	Rd 8-10	10	20.840	5316251

Cu Copper

- Suitable for bulge thickness 15–22 mm
- With 4 hexagonal bolts M6 x 16 (VA)



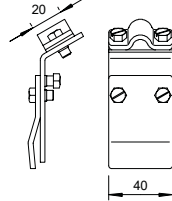
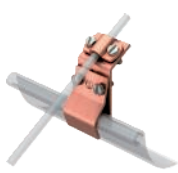
Roof gutter clamp for all bead thicknesses



Fit mm		Weight kg/100		Item No.
Pack. pcs	Type	Pack. pcs	kg/100 pcs.	
25	262 Rd 8-10	25	20.300	5316014
	St Steel			
	FI Hot-dip galvanised			

- With 4 hexagonal bolts M6 x 16
- Fits all bead thicknesses

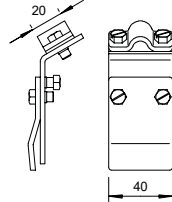
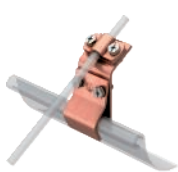
Roof gutter clamp for all bead thicknesses



Fit mm		Weight kg/100		Item No.
Pack. pcs	Type	Pack. pcs	kg/100 pcs.	
10	262 CU Rd 8-10	10	20.940	5316154
	Cu Copper			

- With 4 hexagonal bolts M6 x 16
- Fits all bead thicknesses

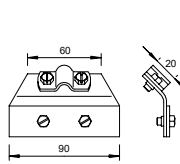
Bi-metal roof gutter clamp for all bead thicknesses



Fit mm		Weight kg/100		Item No.
Pack. pcs	Type	Pack. pcs	kg/100 pcs.	
10	262 ZM Rd 8-10	10	23.100	5316170
	St Steel			
	FI Hot-dip galvanised			

- Fits all bead thicknesses
- Bi-metal for attaching round conductors aluminium or steel to roof gutters without corrosion to different metals

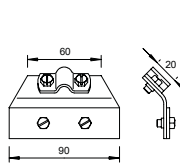
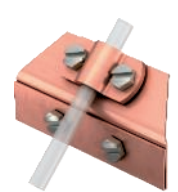
Snow catching grate clamp



Fit mm		Weight kg/100		Item No.
Pack. pcs	Type	Pack. pcs	kg/100 pcs.	
25	264 Rd 8-10	25	18.640	5316510
	St Steel			
	F Hot-dip galvanised			

- Plate thickness to 8 mm
- With 4 hexagonal bolts M6 x 16

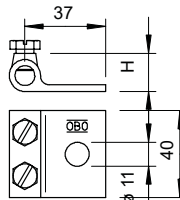
Snow catching grate clamp



Fit mm		Weight kg/100		Item No.
Pack. pcs	Type	Pack. pcs	kg/100 pcs.	
10	264 CU Rd 8-10	10	21.140	5316553
	Cu Copper			

- Plate thickness to 8 mm
- With 4 hexagonal bolts M6 x 16

Clamping shoe



Fit mm		Weight kg/100		Item No.
Pack. pcs	Type	Pack. pcs	kg/100 pcs.	
25	319 8 Rd 8	25	7.800	5325307
25	319 10 Rd 10	25	9.650	5325315
	TG Cast iron			
	F Hot-dip galvanised			

- With Ø 11 mm attaching hole
- 2 hexagonal bolts M8 x 16
- Bolts hot-dip galvanised steel and clamping element hot dipped galvanised cast steel

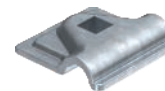
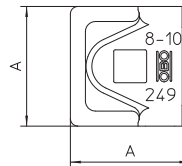
Connection terminal, equipotential bonding, Rd 8–10 mm

Type	Fit mm	Di- men- sion A mm	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 ST-OT	Rd 8-10	40	100	3.240	5311503

St Steel

FT Hot-dip galvanised

- For round conductor fastening RD 8-10
- Suitable for M10 bolts

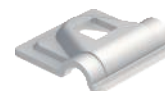
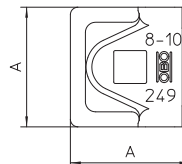


Connection terminal, equipotential bonding, Rd 8–10 mm

Type	A mm	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 ALU-OT	44	Rd 8-10	100	2.100	5311585

Alu Aluminium

- For round conductor fastening RD 8-10
- Suitable for M10 bolts

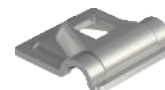
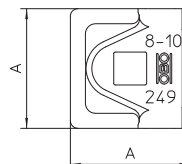


Connection terminal, equipotential bonding, Rd 8–10 mm

Type	Fit mm	Di- men- sion A mm	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 VA-OT	Rd 8-10	40	100	3.130	5311554

V2A Stainless steel, grade 304

- For round conductor Rd 8-10
- Suitable for M10 bolts

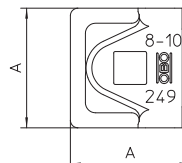


Connection terminal, equipotential bonding, Rd 8–10 mm

Type	Fit mm	Di- men- sion A mm	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 CU-OT	Rd 8-10	40	100	3.580	5311530

Cu Copper

- For round conductor fastening RD 8-10
- Suitable for M10 bolts

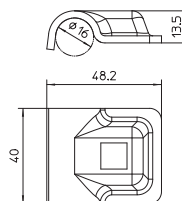


Connection terminal, equipotential bonding, Rd 16 mm

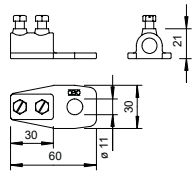
Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
249 VA-OT	16	100	5.700	5311573

V2A Stainless steel, grade 304

- For round conductor fastening RD 16
- Suitable for M10 bolts



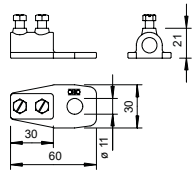
End piece



Type	Fit mm	Weight		Item No.
		Pack. pcs	kg/100 pcs.	
280 8-10 Rd 8-10		20	6.300	5320011
Zn	Die-cast zinc			
G	Electrogalvanised			

- With Ø 11 mm attaching hole
- 2 hexagonal bolts M6 x 12, bolts hot-dip galvanised steel or VA
- Clamping element from die-cast zinc or copper-plated die-cast zinc

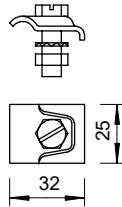
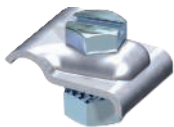
End piece



Type	Fit mm	Weight		Item No.
		Pack. pcs	kg/100 pcs.	
280 VK Rd 8-10		20	9.000	5320054
Zn	Die-cast zinc			

- With Ø 11 mm attaching hole
- 2 hexagonal bolts M6 x 12, bolts hot-dip galvanised steel or VA
- Clamping element from die-cast zinc or copper-plated die-cast zinc

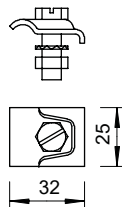
Universal clamping block Rd 8–10 mm



Type	Fit mm	Weight		Item No.
		Pack. pcs	kg/100 pcs.	
324 S-FT Rd 8-10		20	3.400	5326303
St	Steel			
FT	Hot-dip galvanised			

- Including hexagonal bolt M8 x 25, washer and nuts

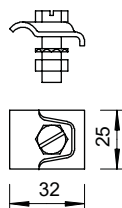
Universal clamping block Rd 8–10 mm



Type	Fit mm	Weight		Item No.
		Pack. pcs	kg/100 pcs.	
324 S-VA Rd 8-10		10	3.400	5326311
V2A	Stainless steel, grade 304			

- Including hexagonal bolt M8 x 25, washer and nuts

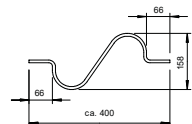
Universal clamping block Rd 8–10 mm



Type	Fit mm	Weight		Item No.
		Pack. pcs	kg/100 pcs.	
324 S-CU Rd 8-10		10	3.660	5326338
Cu	Copper			

- Including hexagonal bolt M8 x 25, washer and nuts

Expansion piece



Type	Fit mm	Weight		Item No.
		Pack. pcs	kg/100 pcs.	
172 AR		10	7.500	5218926
Alu	Aluminium			

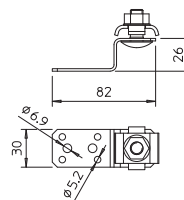
- For equalising temperature-related length changes
- Necessary on conductor lengths over 20 m
- From round conductor Rd 8-Al

Connection component

Type	Pack. pcs	Weight		Item No.
		kg/100	pcs.	
287	20	1.600	5320704	

Alu Aluminium

- With 1 attaching hole Ø 11 mm
- 4 mounting holes Ø 5.2 mm
- 2 mounting holes Ø 6.9 mm

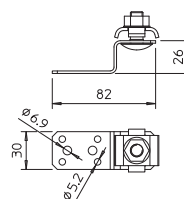


Connection component

Type	Pack. pcs	Weight		Item No.
		kg/100	pcs.	
287 CU	10	5.600	5320690	

Cu Copper

- With 1 attaching hole Ø 11 mm
- 4 mounting holes Ø 5.2 mm
- 2 mounting holes Ø 6.9 mm



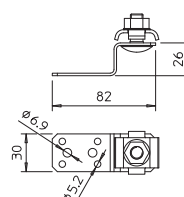
Connection component with double crossbar



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight		Item No.
				kg/100	pcs.	
287 DCT	Rd 8	N/50	10	6.450	5320707	

Alu Aluminium

- Conforming to VDE 0185-305 (IEC 62305) standards
- Quick mounting thanks to an M10x30 screw from rustproof stainless steel
- 4 mounting holes Ø 5.2 mm
- 2 mounting holes Ø 6.9 mm

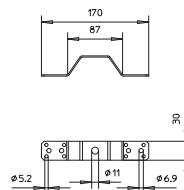


Connection and bridging component

Type	Pack. pcs	Weight		Item No.
		kg/100	pcs.	
288 DIN	20	2.900	5320712	

Alu Aluminium

- With 1 attaching hole Ø 11 mm
- With 2 x 4 mounting hole Ø 5.2 mm
- With 2 x 2 mounting hole Ø 6.9 mm

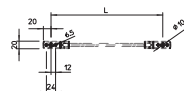


Bridging cable

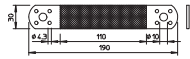
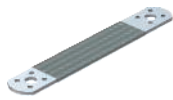
Type	Dimen- sion L mm	Pack. pcs	Weight		Item No.
			kg/100	pcs.	
853 200	200	10	4.840	5331008	
853 300	300	10	7.260	5331013	
853 400	400	10	9.680	5331017	

Cu Copper

- From flexible copper cable 16 mm²
- Coating: black, chlorinated India rubber mixture
- With 1 mounting hole Ø 10.5 mm per attachment side
- With 2 mounting holes Ø 7.3 mm per attachment side
- For applications outside or inside suitable



Connection and expansion strip



Type

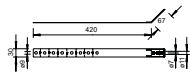
856

Cu Copper

- Copper strip 35 mm², tin-plated
- Highly flexible with rigid ends
- Each end with 1 fastening hole Ø 10 mm and 4 fastening holes Ø 4.3 mm

Pack.	Weight		Item No.
	pcs	kg/100 pcs.	
10	8.125		5331501

Universal downspout clamp 60–130 mm



Type

301 V

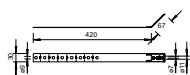
St Steel

FS Strip-galvanised

- Adjustable for pipes from 60-130 mm
- With 2x attaching holes Ø 7 mm
- With 1x attaching hole Ø 9 mm
- With 1x attaching hole Ø 11 mm
- Including hexagonal bolt M6 x 20 and nuts M6

Pack.	Weight		Item No.
	pcs	kg/100 pcs.	
5	11.900		5350867

Universal downspout clamp 60–130 mm



Type

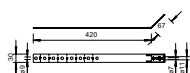
301 V-VA

V2A Stainless steel, grade 304

- Adjustable for pipes from 60-130 mm
- With 2x attaching holes Ø 7 mm
- With 1x attaching hole Ø 9 mm
- With 1x attaching hole Ø 11 mm
- Including hexagonal bolt M6 x 20 and nuts M6

Pack.	Weight		Item No.
	pcs	kg/100 pcs.	
5	11.800		5350905

Universal downspout clamp 60–130 mm



Type

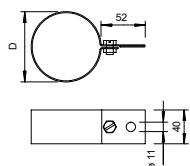
301 V-CU

Cu Copper

- Adjustable for pipes from 60-130 mm
- With 2x attaching holes Ø 7 mm
- With 1x attaching hole Ø 9 mm
- With 1x attaching hole Ø 11 mm
- Including hexagonal bolt M6 x 20 and nuts M6

Pack.	Weight		Item No.
	pcs	kg/100 pcs.	
5	13.500		5350883

Downspout clamp



Type

301 DIN-80

301 DIN-90

301 DIN-100

301 DIN-110

301 DIN-120

St Steel

FS Strip-galvanised

- To connect conductors and downspouts
- Similar to DIN 48818 C
- Strip galvanised (rd. 275 g/m² = 40 µm average value)
- With 1x hexagonal bolt M8 x 20
- With 1x hexagonal nut M8 and 1 stainless steel serrated washer
- With connection hole Ø 11 mm

Type	For pipe mm	Pack. pcs	Weight		Item No.
			kg/100 pcs.		
301 DIN-80	80	10	19.580		5350085
301 DIN-90	90	10	21.880		5350093
301 DIN-100	100	10	19.880		5350107
301 DIN-110	110	10	24.920		5350115
301 DIN-120	120	10	26.240		5350123

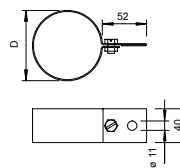


Downspout clamp

Type	For pipe mm	Pack. pcs	Weight		Item No.
			kg/100 pcs.	pcs.	
301 CU-80	80	10	22.500	5350689	
301 CU-100	100	10	26.230	5350700	
301 CU-110	110	10	30.400	5350719	
301 CU-120	120	10	31.400	5350727	

Cu Copper

- With 1x hexagonal bolt M8 x 20
- With 1x hexagonal nut M8 and 1 serrated disc made of rustproof steel
- With connection hole \varnothing 11 mm



Downspout clamp for routing Rd 8–10 mm behind pipe

Type	For pipe mm	Pack. pcs	Weight		Item No.
			kg/100 pcs.	pcs.	
301 S-100	100	10	5.200	5351057	
301 S-120	120	10	5.950	5351073	

St Steel

FS Strip-galvanised

- With beading
- For round conductor Rd 8-10
- Including hexagonal bolt M6 x 20 and nuts M6



Downspout clamp for routing Rd 8–10 mm behind pipe

Type	For pipe mm	Pack. pcs	Weight		Item No.
			kg/100 pcs.	pcs.	
301 S-AL-100	100	10	4.100	5351359	
301 S-AL-120	120	10	4.600	5351375	

Alu Aluminium

- With beading
- For round conductor Rd 8-10
- Including hexagonal bolt M6 x 20 and nuts M6



Downspout clamp for routing Rd 8–10 mm behind pipe

Type	For pipe mm	Pack. pcs	Weight		Item No.
			kg/100 pcs.	pcs.	
301 S-VA-100	100	10	5.200	5351251	
301 S-VA-120	120	10	5.950	5351286	

V2A Stainless steel, grade 304

- With beading
- For round conductor Rd 8-10
- Including hexagonal bolt M6 x 20 and nuts M6



Downspout clamp for routing Rd 8–10 mm behind pipe

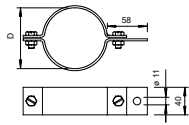
Type	For pipe mm	Pack. pcs	Weight		Item No.
			kg/100 pcs.	pcs.	
301 S-CU-100	100	10	5.850	5351456	
301 S-CU-120	120	10	6.700	5351472	

Cu Copper

- With beading
- For round conductor Rd 8-10
- Including hexagonal bolt M6 x 20 and nuts M6



Pipe clamp



Type	For pipe mm	For pipe inch	Pack. pcs	Weight kg/100 pcs.	Item No.
303 DIN-3/8	17.2	3/8	5	22.600	5102057
303 DIN-1/2	21.3	1/2	5	23.280	5102073
303 DIN-3/4	26.9	3/4	5	25.640	5102081
303 DIN-1	33.7	1	5	28.300	5102111
303 DIN-1 1/4	42.4	1 1/4	5	31.300	5102138
303 DIN-1 1/2	48.3	1 1/2	5	33.220	5102154
303 DIN-2	60.3	2	5	36.840	5102197
303 DIN-2 1/2	76.1	2 1/2	10	39.400	5102219
303 DIN-3	88.9	3	10	43.300	5102235
303 DIN-3 1/2	100	3 1/2	10	64.900	5102251
303 DIN-4	114.3	4	10	66.800	5102278

SI Steel

FT Hot-dip galvanised

- DIN 48818, Form D
- With Ø 11 mm mounting hole
- 2 hexagonal bolts M8 x 20 (4 inch = M10)
- 2 hex-head nuts M8 (4 inch = M10)



Cross-connector flat/flat without adapter plate A4

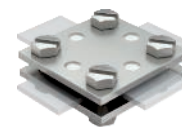
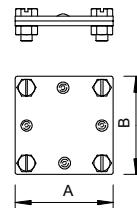


Type	Fit mm	Di- men- sion A mm	Dimen- sion B mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
256 S6 V4A	max. FL30	60	60	H/100	3600	24.100	5314574

V4A Stainless steel, grade 316

• Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)

- Fit: Max. FL 30 x FL 30
- Without adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8



Cross-connector flat/flat without adapter plate FT



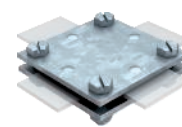
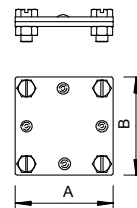
Type	Fit mm	Di- men- sion A mm	Dimen- sion B mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
256 S6 FT	max. FL30	—	—	H/100	3600	24.100	5314572

St Steel

FT Hot-dip galvanised

• Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)

- Fit: Max. FL 30 x FL 30 or max. FL 40 x FL 40
- Without adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8 (F)



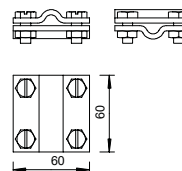
Cross-connector round/round without intermediate plate



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
253 S3 V4A	Rd 8-10	H/100	3400	25.900	5312594

V4A Stainless steel, grade 316

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10 / FL 30
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8 (F)



Cross-connector Rd 8–10 mm, wide version

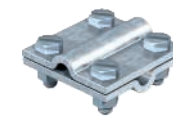
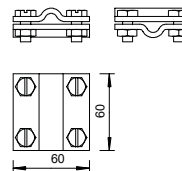


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
253 S3 FT	Rd 8-10	H/100	3400	23.300	5312592

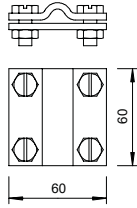
St Steel

FT Hot-dip galvanised

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10 / FL 30
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8 (F)



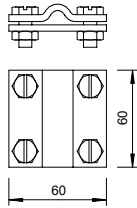
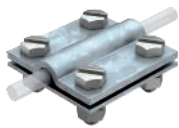
Cross-connector for round cables and flat conductors



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 S4 V4A	8-10 x FL30	H/100	3600	25.000	5312308
V4A Stainless steel, grade 316					

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x FL 30
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8

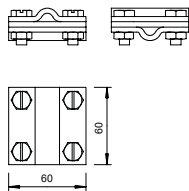
Cross-connector for round cables and flat conductors DIN



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 S4 FT	8-10 x FL30	H/100	3600	25.000	5312302
SI Steel					
FT Hot-dip galvanized					

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x FL 30
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8

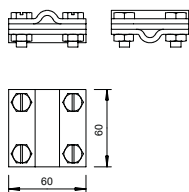
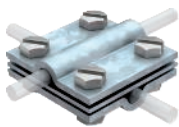
Cross-connector with intermediate plate for Rd 8–10 mm, wide version



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 S1 V4A	Rd 8-10	H/100	2800	31.100	5312294
V4A Stainless steel, grade 316					

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10 / FL 30
- With adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8

Cross-connector with intermediate plate for Rd 8–10 mm, wide version



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 S1 FT	Rd 8-10	H/100	2800	28.600	5312292
SI Steel					
FT Hot-dip galvanized					

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10 / FL 30
- With adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8 (F)

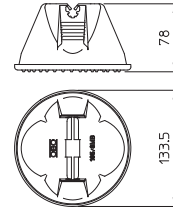


Roof conductor holder for flat roofs, black

Type	Fit mm	Pack. pcs	Weight		Item No.
			kg/100 pcs.	pcs.	
165 MBL	Rd 8	100	7.679	5218616	

PE Polyethylene

- Closed form with base
- With double conductor holder
- Filling weight 1 kg (frost-resistant concrete)
- Sleeve made of polyethylene, black, bottom polypropylene, black
- Base made of polyamide PA 6, black, UV-stabilised and weather-resistant
- Base can be used on almost roofing felt systems (bitumen, PVC)
- Types 165 MBG...FO: Packed in foil bag

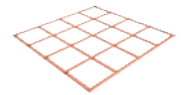
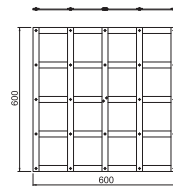


Earth mats

Type	Length mm	Width mm	Height mm	Pack. pcs	Weight		Item No.
					kg/100 pcs.	pcs.	
1816 CU 6	600	600	3	1	403.000	5009250	
1816 CU 9	900	900	3	1	605.000	5009256	

Cu Copper

- To reduce the step and contact voltage
- In accordance with IEC 62561-2 and IEC 62305-3

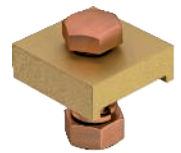
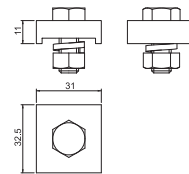


Connection terminal for round cable

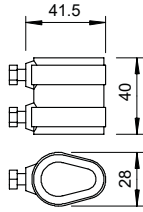
Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight		Item No.
				kg/100 pcs.	pcs.	
1818 FL CU	FL 20 ÷ FL 26	—	10	10.000	5012270	

Cu Copper

- For connecting round conductor Rd 8-10
- With 1 hexagonal bolt M12 x 40, 1 hexagonal nut M12 and 1 lock washer, stainless steel



Separating piece, open



Fit
mm

Type

223 O DIN ZN | Rd 8-10/16

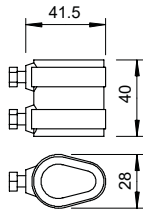
Zn Die-cast zinc

G Electrogalvanised

- With 2 hexagonal bolts, stainless steel (VA)
- Clamping element, die-cast zinc

Pack.	Weight	Item No.
pcs	kg/100 pcs	
20	12.500	5335140

Separating piece, open



Fit
mm

Type

223 O DIN MS | Rd 8-10/16

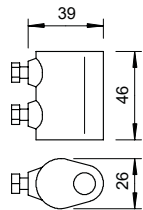
Zn Die-cast zinc

Cu Copper-plated

- With 2 hexagonal bolts, stainless steel (VA)
- Clamping element, copper-plated die-cast zinc

Pack.	Weight	Item No.
pcs	kg/100 pcs	
20	14.900	5335167

Separating piece, closed



Fit
mm

Type

223 DIN ZN | Rd 8-10/16

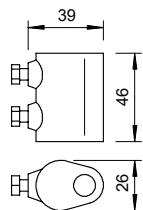
Zn Die-cast zinc

G Electrogalvanised

- For fitting round conductors Rd 8-10 to ground insertion rods Rd 16
- Including 2 hexagonal bolts, high-grade stainless steel (V2A)
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)

Pack.	Weight	Item No.
pcs	kg/100 pcs	
20	10.500	5335205

Separating piece, closed



Fit
mm

Type

223 DIN MS | Rd 8-10/16

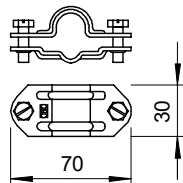
Zn Die-cast zinc

Cu Copper-plated

- For fitting round conductors Rd 8-10 to ground insertion rods Rd 16
- Including 2 hexagonal bolts, high-grade stainless steel (V2A)
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)

Pack.	Weight	Item No.
pcs	kg/100 pcs	
10	11.700	5335256

Universal separating piece



Fit
mm

Type

226 8-10 | Rd 8-10/FL30 x 16

St Steel

FT Hot-dip galvanised

- For fitting round conductors Rd 8–10 to Rd 16 or flat conductors FL30
- Including 2 hexagonal bolts M8 x 20 high-grade stainless steel (V2A)
- Conforms to the requirements according to VDE 0185-305 (IEC 62305)

Pack.	Weight	Item No.
pcs	kg/100 pcs	
20	8.600	5336007



Universal separating piece


 Fit
mm

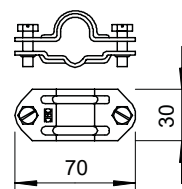
Type
226 VA | Rd 8-10/FL30 x 16

V2A Stainless steel, grade 304

- For fitting round conductors Rd 8–10 to Rd 16 or flat conductors FL30
- Including 2 hexagonal bolts M8 x 20 high-grade stainless steel (V2A)
- Conforms to the requirements according to VDE 0185-305 (IEC 62305)

 Weight
Pack. kg/100
pcs pcs. **Item No.**

10 | 8.700 | 5336058



Universal separating piece


 Fit
mm

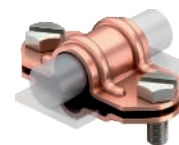
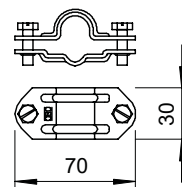
Type
226 CU | Rd 8-10/FL30 x 16

Cu Copper

- For fitting round conductors Rd 8–10 to Rd 16 or flat conductors FL30
- Including 2 hexagonal bolts M8 x 20 high-grade stainless steel (V2A)
- Conforms to the requirements according to VDE 0185-305 (IEC 62305)

 Weight
Pack. kg/100
pcs pcs. **Item No.**

10 | 9.700 | 5336023

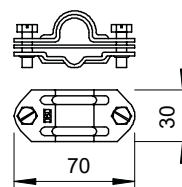


Universal bi-metal separating piece

Type	Fit mm	Material	Material	Pack. pcs	Weight kg/100 pcs.	Item No.
		upper part	lower part			
226 ZV VA	Rd 8-10/FL30 x 16	VA	Cu	10	11.000	5336074

Cu Copper

- Fit: Rd 8-10 x 16, FL 30 x Rd 16
- With 2 hexagonal bolts M8 x 20, stainless steel (VA)
- Intermediate plate, aluminium/copper

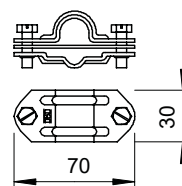


Universal bi-metal separating piece

Type	Fit mm	Material	Material	Pack. pcs	Weight kg/100 pcs.	Item No.
		upper part	lower part			
226 ZV CU	Rd 8-10/FL30 x 16	Cu	VA	10	11.900	5336090

V2A Stainless steel, grade 304

- Fit: Rd 8-10 x 16, FL 30 x Rd 16
- With 2 hexagonal bolts M8 x 20, stainless steel (VA)
- Intermediate plate, aluminium/copper



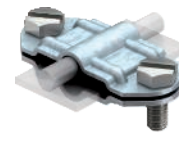
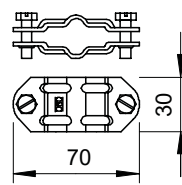
Separating piece for Rd 8–10 and FL 30 mm

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.

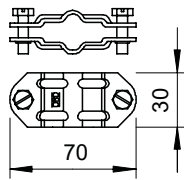
St Steel

Ft Hot-dip galvanised

- To fit round conductors Rd 8-10 or flat conductors FL 30
- With 2 hexagonal bolts M8 x 20 made of rustproof steel (VA)
- Short-circuit current I_k (50 Hz), time 0.6 s, temp. max. 300 °C: 8.5 kA

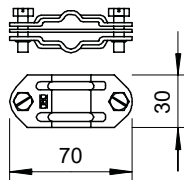
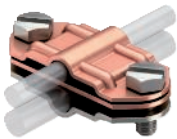


Separating piece for Rd 8–10 and FL 30 mm



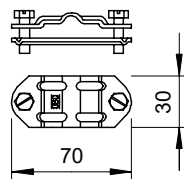
Type	Fit mm	Material upper part	Material lower part	Pack. pcs	Weight		Item No.
					kg/100 pcs.	Item No.	
233 VA	Rd 8-10/FL30 x Rd 8-10/FL30			10	8.300		5336341
V2A Stainless steel, grade 304							
<ul style="list-style-type: none"> • For fitting round conductors Rd 8-10 or flat conductors FL 30 • With 2 hexagonal bolts M8 x 20, stainless steel (VA) 							

Bi-metal separating piece for Rd 8–10 and FL 30 mm



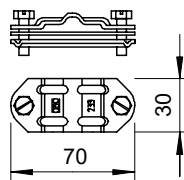
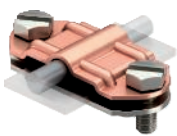
Type	Fit mm	Material upper part	Material lower part	Pack. pcs	Weight		Item No.
					kg/100 pcs.	Item No.	
233 ZV	Rd 8-10/FL30 x Rd 8-10/FL30	Cu	VA	10	10.100		5336376
V2A Stainless steel, grade 304							
<ul style="list-style-type: none"> • For fitting round conductors Rd 8-10 to flat conductors FL 30 • With 2 hexagonal bolts M8 x 20, stainless steel (VA) • Intermediate plate aluminium/copper, top section copper, bottom section stainless steel 							

Separating piece for Rd 8–10 and FL 30–40 mm



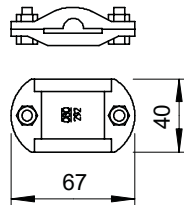
Type	Fit mm	Material upper part	Material lower part	Pack. pcs	Weight		Item No.
					kg/100 pcs.	Item No.	
233 A VA	8-10xFL30-40			10	8.300		5336457
V2A Stainless steel, grade 304							
<ul style="list-style-type: none"> • Fit: Rd 8-10 x FL 30-40 • With 2 hexagonal bolts M8 x 20 (VA) 							

Bi-metal separating piece for Rd 8–10 and FL 30–40 mm



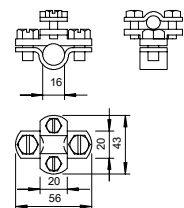
Type	Fit mm	Material upper part	Material lower part	Pack. pcs	Weight		Item No.
					kg/100 pcs.	Item No.	
233 A ZV	Rd 8-10 x FL30-40	Cu	VA	10	10.400		5336503
Cu Copper							
<ul style="list-style-type: none"> • Fit: Rd 8-10 x FL 30-40, FL 30 x FL 30-40 • With 2 hexagonal bolts M8 x 20, stainless steel (VA) • Intermediate plate, aluminium/copper • Top section copper, bottom section stainless steel 							

Malleable iron separating piece



Type	Fit mm	Material	Pack. pcs	Weight		Item No.
				kg/100 pcs.	Item No.	
292 DIN	Rd 8-10 x FL30		10	19.259		5340012
TG Cast iron						
F Hot-dip galvanised						
<ul style="list-style-type: none"> • For round conductor/flat conductor • Fit: Rd 8-10 x FL 30 • With 2 hexagonal bolts M8 x 25 and 2 hexagonal nuts M8, stainless steel (VA) • Clamping parts, hot-dip galvanised cast iron 						

Rod clamp

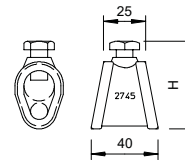


Type	Fit mm	Material	Pack. pcs	Weight		Item No.
				kg/100 pcs.	Item No.	
108 B DIN	Rd 8-10/16		10	13.970		5416566
St Steel						
FT Hot-dip galvanised						
<ul style="list-style-type: none"> • Rod clamp for connecting round conductors Rd 8–10 to connector rods Rd 16 • Mounted with 2 hexagonal bolts M8 x 16 and M6 x 12 • Adapter from malleable iron • Crossbar and bolts from hot dip galvanized steel 						



Connection clamp for earth rod or cables

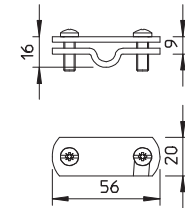
Type	For earth rods		Pack. pcs.	Weight kg/100 pcs.	Item No.
	Ø mm	Fit mm			
2745 20 MS	20	7-12,5/S95 mm ²	5	16.000	5001560
CuZn	Brass				
Cu	Copper-plated				



- For earth rod connectors Ø 20 or conductors 95 mm²
- For round conductor attachments Rd 7-12.5 with hexagonal bolts M10 x 25, copper (Cu)

Number plates

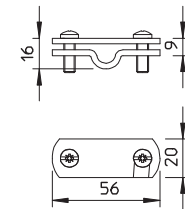
Type	Fit mm	Pack. pcs.	Weight kg/100 pcs.	Item No.
311 N-ALU 16	RD 16 - FL30	5	2.800	3049345



- To identify the point of separation to DIN 48821
- Suitable for universal labelling (e.g. stamped numbers)

Number plates

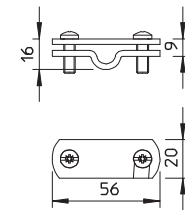
Type	Fit mm	Pack. pcs.	Weight kg/100 pcs.	Item No.
311 N-VA 16	RD 16 - FL30	5	6.400	3049329



- To identify the point of separation to DIN 48821
- Suitable for universal labelling (e.g. stamped numbers)

Number plates

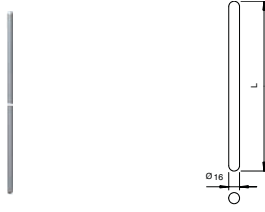
Type	Fit mm	Pack. pcs.	Weight kg/100 pcs.	Item No.
Cu	Copper			



- To identify the point of separation to DIN 48821
- Suitable for universal labelling (e.g. stamped numbers)



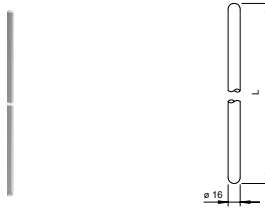
Air-termination/earth entry rod, rounded-off on both ends



Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 A-1500	1500	16	10	240.000	5400155

- St** Steel
- FT** Hot-dip galvanised
- Full material Ø 16 mm
- Rounded on both ends
- Suitable for FangFix stand system

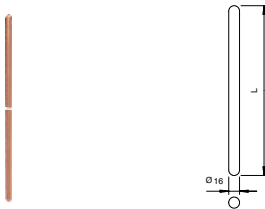
Air-termination/earth entry rod, rounded-off on both ends



Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
200 V4A-1500	1500	16	10	242.000	5420504
200 V4A-2000	2000	16	10	320.000	5420539

- V4A** Stainless steel, grade 316 Ti
- Full material Ø 16 mm
- Rounded on both ends
- Suitable for FangFix stand system

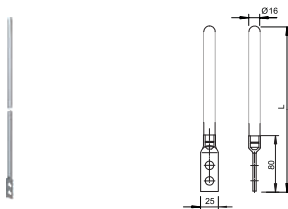
Air-termination/earth entry rod, rounded-off on both ends



Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 A-CU	1500	16	10	272.100	5400627

- Cu** Copper
- Full material Ø 16 mm
- Rounded on both ends
- Suitable for FangFix stand system

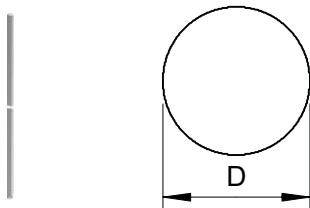
Air-termination/earth entry rod with connection tabs



Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 F1500	1500	16	10	240.000	5424151
101 F2000	2000	16	10	320.000	5424208

- St** Steel
- FT** Hot-dip galvanised
- With 2 attaching holes Ø 12 mm
- One end rounded

Connection lug/earth entry rod made of stainless steel



Type	Nominal size Ø mm	Cross- section mm ²	Pack. pcs	Weight kg/100 pcs.	Item No.
AF RD 10 V4A	10	75	5	123.600	5430720

- V4A** Stainless steel, 316Ti / 316L
- According to DIN EN 62561-2 (VDE 0185-561-2)
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)
- RD 10-V4A for applications in the earth
- According to the foundation earther standard DIN 18014, V4A is required in the earth

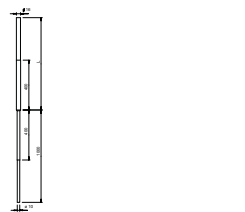
Earth entry rod, tapered and partially insulated

Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
204 KS-2000	2000	16/10	1	230.000	5430011
204 KS-2500	2500	16/10	1	310.000	5430062

St Steel

F Hot-dip galvanised

- 16 mm earth entry with 10 mm connection
- With mounted heat-shrinkable sleeve (corrosion protection)

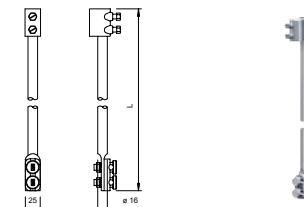


Earth entry rod with separating piece and connector

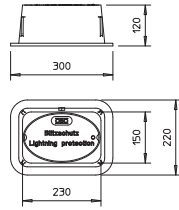
Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
204 KL-1500	Rd 8-10	10	260.700	5430151

St Steel

- With separating piece type 223 DIN and connector type 5002 DIN



Underfloor test box



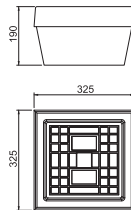
Type
5700

EN-GJL Cast iron

- Without base
- Cast iron, painted black
- Without cut-off unit
- To VDE 0185-561-5 (IEC 62561-5) suitable for heavy loads (up to 40 kN/ 4.0 t)

Pack. pcs.	Weight		Item No.
	kg/100	pcs.	
1	720.000		5106002

Underfloor test box



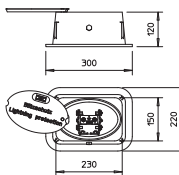
Type
5700 CIP

BET Concrete

- Made of concrete
- Without separating piece
- According to VDE 0185-561-5 (IEC 62561-5)

Pack. pcs.	Weight		Item No.
	kg/100	pcs.	
1	3,000.000		5106041

Inspection pit with integrated separation piece



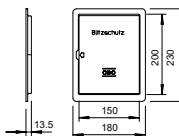
Type
5700 SP

EN-GJL Cast iron

- Without base
- Cast iron, painted black
- With built-in cut-off unit for round conductors Rd 8-10 and flat conductors to FL 40
- To VDE 0185-561-5 (IEC 62561-5) suitable for heavy loads (up to 40 kN/ 4.0 t)

Pack. pcs.	Weight		Item No.
	kg/100	pcs.	
1	770.000		5106003

Inspection door



Type
5800 VZ

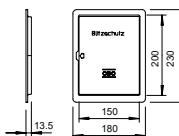
St Steel

FS Strip-galvanised

- Lightweight design for flush-mounted separation points
- Claw length approx. 80 mm

Pack. pcs.	Weight		Item No.
	kg/100	pcs.	
1	46.000		5106133

Inspection door



Type
5800 VA

V2A Stainless steel, grade 304

- Lightweight design for flush-mounted separation points
- Claw length approx. 80 mm

Pack. pcs.	Weight		Item No.
	kg/100	pcs.	
1	46.000		5106141



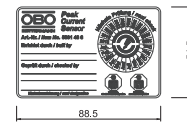
Magnetic card PCS



Type	Pack. PU	Weight kg/100 PUs	Item No.
PCS	1	5.000	5091438

Peak Current Sensor (PCS) card for recording pulsed/lightning currents. A continuous check of whether lightning has struck the lightning protection system and how high the most recent lightning current was in kA can thus be carried out in the simplest manner by the system operator, specialist lightning protection company or by a surveyor. Here, the printed maintenance circuit and the labelling panels support the maintenance work of the entire lightning protection system which must be performed at defined intervals according to VDE 0185-305-3 (IEC/EN 62305-3).

- Contents = 10 units
- Digital evaluation via the PCS card reading device
- Can be used in addition to the OBO lightning current meter LSC I-II
- With separate labelling panels: "Erected by", "Tested by", "Card code"
- Integrated maintenance circuit (year/month)

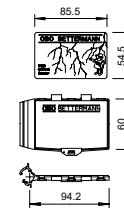


Magnetic card and holder MK-B

Type	Pack. PU	Weight kg/100 PUs	Item No.
MK-B	1	31.000	5091322

PCS magnetic card to record pulse/lightning currents including holder

- Holder can be leaded
- For mounting on round conductor Rd 8-10
- Simple holder mounting through clamping
- 1 PU = 10 units

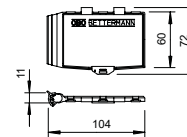


Magnetic card holder PCS-H

Type	Pack. PU	Weight kg/100 PUs	Item No.
PCS-H	1	31.000	5091527

Magnetic card holder for mounting PCS cards.

- Sealable holder
- For installing on round conductor Rd 8-10
- Simple holder installation by means of clamp
- 1 PU = 10 pieces



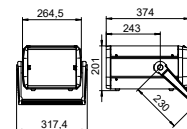
Card reader PCS-CS..



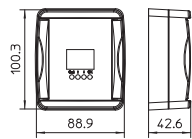
Type	Country version	Nom. voltage V	Measuring range	Measuring tolerances	Weight		Item No.
					Pack. pcs	kg/100 pcs.	
PCS-CS-D	EN	230	3 -- 120 kA	< 2 kA (< 2%)	1	750.000	5091683
PCS-CS-GB	GB	230	3 -- 120 kA	< 2 kA (< 2%)	1	750.000	5091691

Magnetic card reader for reading and analysing PCS cards.

- Inc. rechargeable battery for 4 h continuous, no-mains operation
- Large, clear display



Lightning strike counter



Measuring range

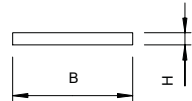
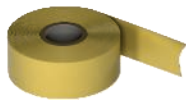
Type	Pack. pcs	Weight kg/100 pcs	Item No.
LSC I+II 1 kA - 100 kA	1	32.500	5091722

Plastic

The LSC I+II lightning current meter measures and permanently saves pulse currents, together with the date and time. This ensures constant monitoring in order to notice if any lightning has struck the lightning protection system. Should this be the case, then the lightning protection system must be maintained according to VDE 0185-305 (IEC 62305).

- Saving and display of time and date
- Usable both inside and outside due to its protection class of IP65
- Cable clip for round conductor or flat conductor
- Direct mounting on the conductor or the PE conductor of the surge protection device
- Long lifespan of the internal lithium batteries
- LCD display
- Internal battery
- Tested according to VDE 0185-561-6 (IEC 62561-6)

Plastic corrosion protection strip



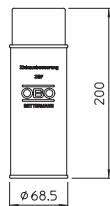
Width Length
mm m

Type	Pack. pcs	Weight kg/100 pcs	Item No.
356 50 50 10	1	71.500	2360055
356 100 100 10	1	122.200	2360101

PETRO Petrolatum

- Approx. 1.1 mm thick
- Width: 50 mm or 100 mm, made of petrolatum-coated chemical fibre fabric
- Can be processed cold

Zinc repairs

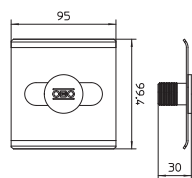
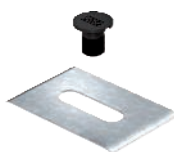


Dimension

Type	Pack. pcs	Weight kg/100 pcs	Item No.
ZSF 400ml	1	45.000	2362970

Zinc spray for treatment of unprotected surfaces and cutting edges. Can contents: 400 ml.

TrayFix mounting adapter for mesh cable trays on FangFix system



Dimension

Type	Pack. pcs	Weight kg/100 pcs	Item No.
TrayFix ø20mm	25	9.850	5403100

- Mounting system for the fastening of mesh cable trays and cable trays on FangFix stone e.g. cable routing on a flat roof.
- Adapted to OBO cable tray systems MKSM, SKSM and IKSM
- Adapted to OBO mesh cable tray systems with a minimum width of 100 mm

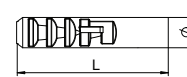
Angler spreading anchor



Type	Dowel Ø mm	Dimension L mm	Bore hole depth mm	Bore hole Ø mm	Wood screws Ø mm	Pull-out value N	Pack. pcs	Weight kg/100 pcs.	Item No.
910 N 5x25 GRW	5	25	30	5	2,5-4	2100	100	0.051	2349043
910 N 6x30 GRW	6	30	35	6	3,5-5	3300	100	0.052	2349051
910 N 6x60 GRW	6	60	65	6	3,5-5	3300	100	0.079	2349078
910 N 8x40 GRW	8	40	45	8	4,5-6	4500	100	0.140	2349086
910 N 10x50 GRW	10	50	55	10	6-8	9400	50	0.306	2349108
910 N 12x60 GRW	12	60	65	12	8-10	11600	25	0.459	2349124

PA Polyamide

Required minimum bolt length = anchor length + component thickness + 1 x bolt Ø.
 Withdrawal force applies to wood screws of the largest bolt diameter in concrete of class B25.
 Our safety value recommendation: 5x



Screw-in anchor with M6 thread

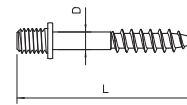


Type	Shank-Ø mm	Wood thread outer-Ø mm	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
985 M6 25	4,3	5	3000	100	0.412	3133028
985 M6 35	4,3	5	2000	100	0.533	3133036

St Steel

G Electrogalvanised

With wood screw shank and M6 thread.



Screw-in anchor with M8 thread

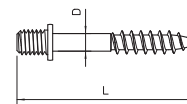


Type	Shank-Ø mm	Wood thread outer-Ø mm	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
985 M8 35	6	1200		100	1.288	3133230

St Steel

G Electrogalvanised

With wood screw shank and M8 thread.



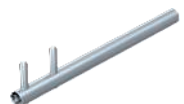
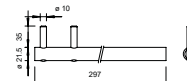
Directional irons

Type	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
364	297	1	35.000	3051013

St Steel

FI Hot-dip galvanised

• Directional iron for bending and aligning conductors

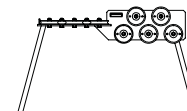


Wire straightening machine

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
5900	1	3,300.000	3059006

St Steel

- Factory-set for round conductor Rd 8
- Structure, steel, painted
- Straightening rolls, galvanised cast iron





Insulated lightning protection



Insulated lightning protection

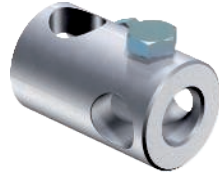
579



OBO isCon® system

587

Insulated lightning protection



Set

Type	Item no.	Page
101 3-ES-16	5408976	579
101 VS-16	5408978	579
101 FS-16	5408980	579
101 VRS-16	5408982	579

Connector

Type	Item no.	Page
101 IT	5408156	580
101 IK	5408296	580
101 IDK	5408245	580
101 IW-M10	5408687	580
101 IES	5408393	581
101 A-M16	5408350	581
101 IAG	5408504	581
101 IGL-16	5408630	581
101 IV-16	5408557	582

Concrete blocks

Type	Item no.	Page
101 B2-16 M16	5402958	507
101 ST	5402891	507
F-FIX-S16	5403227	504
F-FIX-B16	5403235	505
F-FIX-S10	5403117	505

Fastening

Type	Item no.	Page
101 BP-16	5408984	583
101 WG-16	5408986	583
101 BB-16	5408988	583
101 HV-16	5408990	583
101 F-16	5408992	583
101 R-16	5408994	583

isCon® air-termination rod systems



Mast, without outlet

Length	Item no.	Page
4.0 m	5408934	514
6.0 m	5408936	514
8.0	5408868	514
10.0 m	5408870	514

Support system for mast without outlet

Mounting location	Item no.	Page
Wall	5408952	514
Wall	5408950	514
Wall	5408954	515
Wall	5408910	515
Pipe	5408956	515
Pipe	5408955	515
Pipe	5408957	515
Pipe	5408959	515
Pipe	5408958	515
Pipe	5408960	515
Corner pipe	5408964	516
Corner pipe	5408964	516

Stand, with outlet

Spr.	Item no.	Page
1.0 m	5408930	512
1.5 m	5408932	512
2.5 m	5408902	512

Mast

Length	Item no.	Page
4.0 m	5408943	511
6.0 m	5408947	511
4.0 m	5408942	511
6.0 m	5408946	511



Stand

Spr.	Item no.	Page
1.0 m	5408966	511
1.5 m	5408967	511
1.0 m	5408968	511
1.5 m	5408969	511

Connection plates

-pole	Item no.	Page
2	5408026	596
3	5408028	596

Accessories

Item no.	Page
Tool	5408013 588
Cable tie	2381924
Spacer	5408043 592
Concrete block	5403227 504
Threaded rod	5408971 513
Threaded rod	5408972 513
Threaded rod	5408973 513
Threaded rod	5408905 513
Basic	5403238 513

isCon® lightning protection



Professional Plus

Ring size	Item no.	Page
25 m	5408002	587
100 m	5408004	587
250 m	5408006	587



Professional Plus light grey

Ring size	Item no.	Page
25 m	5407995	587
100 m	5407997	587



Premium

Ring size	Item no.	Page
100 m	5408018	587



Professional

Ring size	Item no.	Page
100 m	5408008	588



Basic

Ring size	Item no.	Page
100 m	5408014	588



Connection elements

	Item no.	Page
Rd 10	5408022	588
M 16	5408024	590



Potential connection

	Item no.	Page
Clip	5408036	589
Holder	5408056	590
Holder	5408064	590
Clip	5057599	596



The plus of insulated lightning protection

- + Variable combination of components
- + Multifunctional
- + For conductors and insulation rods
- + For maintenance of the separation distance to VDE 0185-305 (IEC 62305)



Insulated lightning protection Components and sets

Isolated lightning protection systems allow standard-compliant lightning protection according to IEC 62305. The separation distance to electronic systems required by the standard can be maintained by the different versions of the insulated lightning protection.

The individual components and systems allow the creation of different solutions, according to requirements.

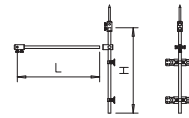
The insulated lightning protection system consists of GFRP rods with a diameter of 16 or 20 mm:

- There is a comprehensive range of system accessories available for both variants.
- Two material thicknesses
- Can be obtained as a set for different applications

Insulated lightning protection set, 3-corner fastening

Type	Dimension D Ø mm	Dimension L mm	Dimension H mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 3-ES-16	16	750	1500	1	207.100	5408976

3-corner fastening for an insulated air-termination unit at the separating distance s.

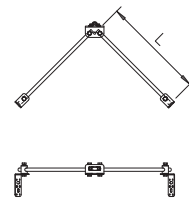


- Mounting on walls and roof structures with two fastening plates
- For maintenance of the separation distance to electrically conductive parts according to VDE 0185-305-3 (IEC 62305-3)
- Acceptance of air-termination rods and round conductors with 8, 16 and 20 mm diameter
- UV-stabilised and weatherproof
- Continuous temperature range -50°C to +100°C
- Material factor $k_m = 0.7$

Insulated lightning protection set, V fastening

Type	Dimension D Ø mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 VS-16	16	750	1	201.800	5408978

V fastening for an insulated air-termination unit at the separating distance s.

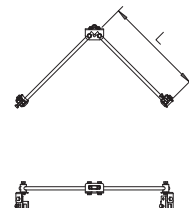


- Mounting on walls and roof structures with two wall connection brackets
- For maintenance of the separation distance to electrically conductive parts according to VDE 0185-305-3 (IEC 62305-3)
- Acceptance of air-termination rods and round conductors with 8, 16 and 20 mm diameter
- UV-stabilised and weatherproof
- Continuous temperature range -50°C to +100°C
- Material factor $k_m = 0.7$

Insulated lightning protection set, IR fastening

Type	Dimension D Ø mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 FS-16	16	750	1	235.500	5408980

Fold fastening for an insulated air-termination unit at the separating distance s.

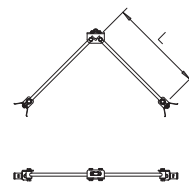


- Mounting on folds with a thickness of up to 20 mm
- For maintenance of the separation distance to electrically conductive parts according to VDE 0185-305-3 (IEC 62305-3)
- Acceptance of air-termination rods and round conductors with 8, 16 and 20 mm diameter
- UV-stabilised and weatherproof
- Continuous temperature range -50°C to +100°C
- Material factor $k_m = 0.7$

Insulated lightning protection set, VRS fastening

Type	Dimension D Ø mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 VRS-16	16	750	1	209.400	5408982

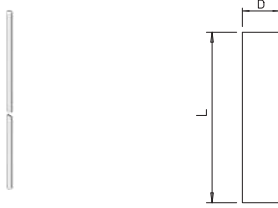
Pipe V fastening for an insulated air-termination unit at the separating distance s.



- Mounting on pipes with two pipe clips
- Including 2 m tightening strip and tension jack
- For maintenance of the separation distance to electrically conductive parts according to VDE 0185-305-3 (IEC 62305-3)
- Acceptance of air-termination rods and round conductors with 8, 16 and 20 mm diameter
- UV-stabilised and weatherproof
- Continuous temperature range -50°C to +100°C
- Material factor $k_m = 0.7$



Insulating rod

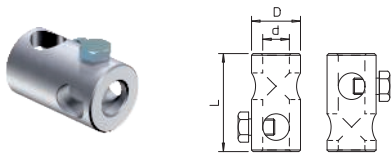


Type	Nominal size Ø mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 20-3000	20	3000	5	190.000	5408105
101 20-6000	20	6000	5	380.000	5408148
101 16-750	16	750	5	30.000	5408107
101 16-1500	16	1500	5	60.000	5408108
101 16-3000	16	3000	5	120.000	5408109

GFK Fibre-glass-reinforced plastic

- For the erection of insulated air-termination systems to VDE 0185-305 (IEC 62305)
- UV-stabilised and weatherproof
- Continuous temperature range -50°C to +100°C
- Material factor $k_m = 0.7$

T connector

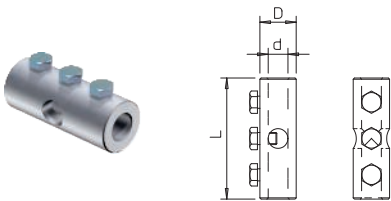


Type	Dimension d Ø mm	Length mm	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 IT	20	65	40	10	20.000	5408156
101 IT-16	16	60	30	10	11.475	5408158

Alu Aluminium

- T connector for installation of insulating rods
- With M10 bolts

K connector

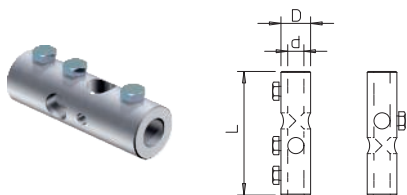


Type	Dimension d Ø mm	Length mm	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 IK	20	100	40	10	20.000	5408296
101 IK-16	16	100	30	10	17.500	5408298

Alu Aluminium

- K connector for installation of insulating rods
- With M10 bolts

DK connector

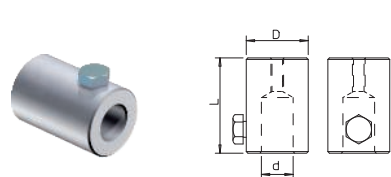


Type	Dimension d Ø mm	Length mm	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 IDK	20	125	40	10	40.000	5408245

Alu Aluminium

- DK connector link for installing insulating rods
- With M10 bolts

Wall connection



Type	Dimension d Ø mm	Length mm	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 IW-M10	20	60	40	10	20.000	5408687
101 W-16	16	60	30	10	14.200	5408689

Alu Aluminium

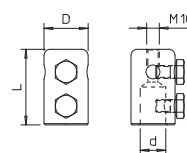
- For mounting insulating rods to structures or walls
- With M8 internal thread, e.g. for mounting the cable bracket type 177 (5207347) for loose conductor routing of round conductors
- Incl. M10 bolts

End piece

Type	Dimension d Ø		Dimension D Ø mm	Pack. pcs	Weight		Item No.
	mm	mm			kg/100 pcs.	pcs.	
101 IES	20	60	35	10	20.000		5408393
101 IES-16	16	60	30	10	10.000		5408395

Alu Aluminium

- End piece for attaching round conductors Rd 8-10 and air-termination tips, type 101 ISP
- With M10 internal thread, e.g. for mounting a Vario quick connector for fixed conductor routing at intersections
- With M10 bolts

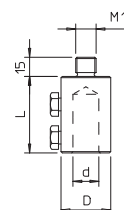


Connection piece

Type	Dimension d Ø		Dimension D Ø mm	Pack. pcs	Weight		Item No.
	mm	mm			kg/100 pcs.	pcs.	
101 A-M16	20	60	40	10	20.000		5408350
101 A-16	16	60	30	10	13.000		5408352

Alu Aluminium

- Fitting with M16 thread
- For mounting on stands with M16 female thread such as type 101 (5402891,5402958)
- With M10 bolts

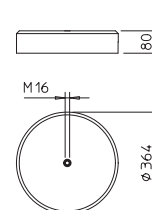


Stand 16 kg with female thread

Type	Nominal size Ø		Thread	Pack. pcs	Weight		Item No.
	mm	mm			kg/100 pcs.	pcs.	
101 B2-16 M16	364		M16	1	1,600.000		5402958

BET Concrete

- Weight 16 kg
- Frost-resistant concrete
- Female thread M16
- Recommended air-termination rod length max. 3.0 m, depending on wind load zone

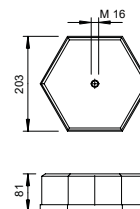


Stand 6.9 kg with female thread

Type	Thread	Pack. pcs	Weight		Item No.
			kg/100 pcs.	pcs.	
101 ST	M16	4	690.000		5402891

BET Concrete

- Weight 6.9 kg
- Frost-resistant concrete
- Female thread M16
- Recommended air-termination rod length max. 1.0 m

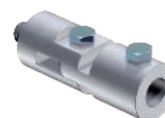
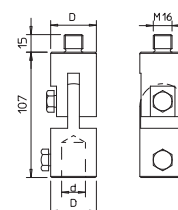


Connection joint

Type	Dimension d Ø		Dimension D Ø mm	Pack. pcs	Weight		Item No.
	mm	mm			kg/100 pcs.	pcs.	
101 IAG	20	107	40	10	40.000		5408504

Alu Aluminium

- Attaching link for installation on concrete stones
- With thread M16 on slanting roof surfaces
- With M10 bolts

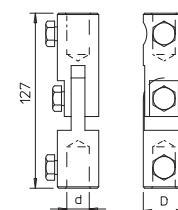


Articulated connector

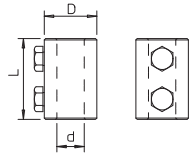
Type	Dimension d Ø		Dimension D Ø mm	Pack. pcs	Weight		Item No.
	mm	mm			kg/100 pcs.	pcs.	
101 IGL-16	16	127	30	10	32.000		5408630

Alu Aluminium

Link for installation of insulation pipes, including M10 screws.



Extension

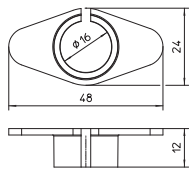


Type	Dimension d	Length	Dimension D	Pack.	Weight	Item No.
	mm		mm			
101 IV-16	16	60	30	10	16.000	5408557

Alu Aluminium

- Extension of insulating rods
- With M10 bolts

FangFix reducing sleeve

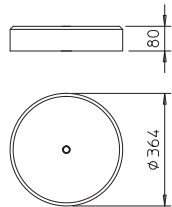


Type	Colour	Fit	Pack.	Weight	Item No.
101 RH-16	Black	16	25	0.182	5408101

PA Polyamide

Reduces the drill hole of the FangFix block from Ø 20 mm to Ø 16 mm. Suitable for the installation of GFK insulating rods of Ø 16 mm.

Concrete block for FangFix-System 16 kg

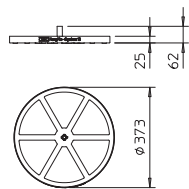


Type	Nominal size Ø	Pack.	Weight	Item No.
F-FIX-S16	365	1	1,700.000	5403227

BET Concrete

- 16 kg stone of Ø 365 mm, high level of stability
- Frost-resistant concrete
- Stackable

Base for FangFix system 16 kg

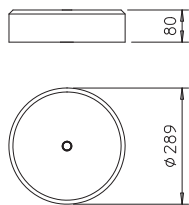


Type	Nominal size Ø	Pack.	Weight	Item No.
F-FIX-B16	373	10	16.400	5403235

PP Polypropylene

Edge protection with integrated dowel (basic) suitable for FangFix system.

Concrete block for FangFix system 10 kg

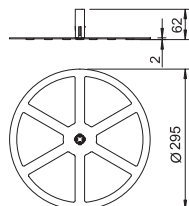


Type	Nominal size Ø	Pack.	Weight	Item No.
F-FIX-S10	289	1	1,000.000	5403117

BET Concrete

- 10 kg stone of Ø 289 mm, high level of stability
- Frost-resistant concrete
- Stackable

Base for FangFix system 10 kg



Type	Nominal size Ø	Pack.	Weight	Item No.
F-FIX-B10	295	10	7.600	5403124

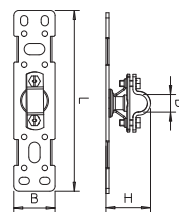
PP Polypropylene

Edge protection with integrated dowel (basic) suitable for FangFix 10 system.

Fastening plate

Type	Length mm	Dimen- sion B mm	Dimen- sion H mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 BP-16	175	40	42	1	21.200	5408984

To mount insulating rods on constructions or walls
 Plate made of VA stainless steel
 Holder and crosspiece for 16 and 20 mm rods and Rd 8–10 mm

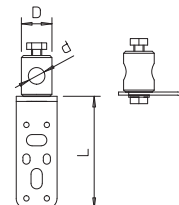


Wall connection, angled

Type	Dimen- sion d mm	Dimen- sion L mm	Dimen- sion D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 WG-16	16	110	30	1	27.960	5408986

V2A Stainless steel, grade 304

- Wall connection for GFK rods
- Dimension D Ø: 16 mm

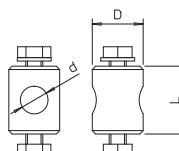


Fastening bolts

Type	Dimen- sion d mm	Dimen- sion L mm	Dimen- sion D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 BB-16	16	40	30	1	13.920	5408988

Alu Aluminium

For GFK rods, Dimension D Ø: 16 mm

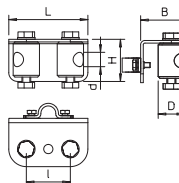


Holder, V support

Type	Dimen- sion d mm	Dimen- sion L mm	Dimen- sion H mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 HV-16	16	90	55	48	1	50.700	5408990

V2A Stainless steel, grade 304

- Rod holder to accept two GRP rods
- Bracket and crossbar for 16 and 20 mm rods and Rd 8-10 mm

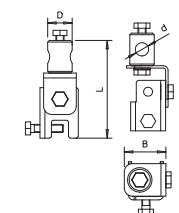


Fold fastening

Type	Dimen- sion d mm	Dimen- sion L mm	Dimen- sion D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 F-16	16	121	30	1	45.120	5408992

V2A Stainless steel, grade 304

To fasten a GFK rod on constructions of 4 to 20 mm, Dimension D Ø: 16 mm

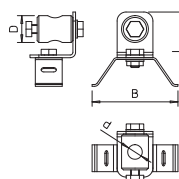


Pipe fastening

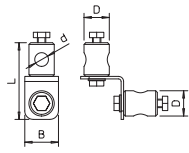
Type	Dimen- sion d mm	Dimen- sion L mm	Dimen- sion D mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 R-16	16	81	30	96	1	26.830	5408994

V2A Stainless steel, grade 304

- For pipe fastening of a GRP rod using a tightening strap
- Slot width (l x w) 17 x 6 mm



Multi adapter

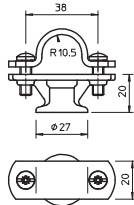


Type	Dimension d mm	Dimension L mm	Dimension D Ø mm	Dimension B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 MA-16	16	91	30	40	1	36.280	5408996

V2A Stainless steel, grade 304

- Connector for two GFK rods
- Dimension D Ø: 16 mm

Rod holder



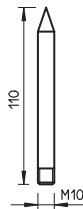
Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
113 Z-20	Rd 20	20	8.200	5230527

Zn Die-cast zinc

VZ Galvanised

- Installed with over-piece and hex-head screws M6 x 16
- With female thread M8 or through hole Ø 7 mm

Air-termination tip

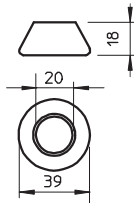
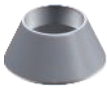


Type	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 ISP M10	110	10	10.000	5408458

Alu Aluminium

Air-termination tip for attaching to end piece, type 101 IES, with M10 thread

Water repellent



Type	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 IAB	18	10	2.000	5408733

Alu Aluminium

Water repellent for mounting on insulation rods with d = 20 mm

Adjustable insulating beam – pipe



Type	Pack. pcs	Weight kg/100 pcs.	Item No.
ISAV1000R	1	130.000	5408849

GFK Fibre-glass-reinforced plastic

Variable spacer for conductors and air-termination rods to maintain the separation distance.

- Infinitely adjustable distance range (L = 550–1,000 mm)
- Made of fibre-glass-reinforced plastic (km = 0.7)
- For pipe mounting (including 2 m tightening strap and tension jack)

Adjustable insulating beam – wall

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
ISAV1000W	1	130.000	5408852

GFK Fibre-glass-reinforced plastic

Variable spacer for conductors and air-termination rods to maintain the separation distance.

- Infinitely adjustable distance range (L = 550–1,000 mm)
- Made of fibre-glass-reinforced plastic (km = 0.7)
- For wall mounting with 10 fastening holes (4.2 mm) and 4 fastening holes (6.9 mm)

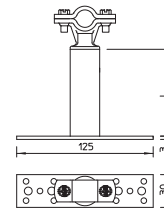


Insulated spacer

Type	Length mm	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
ISO-A-500	500	Rd 16	15	36.000	5408806
ISO-A-800	800	Rd 16	15	55.000	5408814
ISO-A-1030	1030	Rd 16	15	68.000	5408820
ISO-A-150 8	150	Rd 8	15	13.800	5408800

Alu Aluminium **PA** Polyamide

- Mounting foot with 10 connection holes \varnothing 6.5 mm and 4 connection holes \varnothing 8.5 mm
- Type ...150 8 with holder suitable for round conductor RD 8
- Application for shelters e.g. golf, barbecue or mountain huts



The plus of the isCon® system

- + Unique structure
- + Equivalent separation distance ≤ 0.90 m (air)
or ≤ 1.8 m (solid material)
- + isCon® air-termination rods fulfil the requirements to Eurocode + system test according to IEC TS 62564-8
- + Suitable for all lightning protection classes
- + Satisfies requirements according to VDE 0185-561-1/-2/-8
- + Satisfies requirements according to IEC 62561-1/-2/-8



isCon® lightning protection

Insulated conductors are used in the field of external lightning protection to reduce or avoid the separation distance according to VDE 0185-305 (IEC 62305). isCon® creates an equivalent separation distance of 0.90 m in air.

In contrast to standard shielded medium-voltage conductors with a metallic shield, insulated down-conductors possess a weakly conductive jacket for field control, de-energising the high voltage in the area of the supply point. This thus prevents arcing via the conductor jacketing of the insulated conductor.

After the first potential connection of the conductor jacket, the insu-

lated conductor secures the specified equivalent separation distance.

The insulated air-termination rods protect electrical and metallic roof structures, taking the calculated separating distance (s) according to VDE 0185-305-3 (IEC 62305-3) into account. An insulated section of 1.5 metres made of fibre-glass reinforced plastic (GFK) ensures sufficient distance to all roof structures. Even complex building structures can be protected by the comprehensive system accessories.

The three-part aluminium and GRP

air-termination rod with its insulated structure allows the isCon® conductor (black and light grey) to be routed inside the air-termination rod. Combining a perfect appearance with perfect functionality, it offers the following advantages:

- Tidy appearance through internal isCon® conductor
- 4 variants: 4 m to 10 m height
- Including connection element and potential connection in the rod
- For freestanding installation, can be combined with isFang air-termination rod stand with side exit

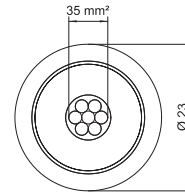
isCon® arrester, professional plus black



Type	Cross-section mm ²	Nominal size Ø mm	Equivalent separation distance m	Pack. m	Weight kg/100 m	Item No.
isCon Pro+ 75 SW	35	23	0.75	25	69.400	5408002
isCon Pro+ 75 SW	35	23	0.75	100	69.400	5408004
isCon Pro+ 75 SW	35	23	0.75	250	69.400	5408006

Please refer to the mounting instructions for information on routing the OBO isCon® conductor.

- Highly voltage-resistant, insulated conductor
- Floating discharge-free
- Additional mechanical protection (black protective jacket)
- For maintenance of the separation distance according to IEC 62305 (VDE 0185-305-3)
- Tested according to IEC/EN 62561-1 (VDE 0185-561-1) with H1/150 kA
- Equivalent separation distance $se \leq 0.75$ m (air) and $se \leq 1.5$ (solid material)
- Tested according to IEC TS 62561-8
- Halogen-free
- Fire load 4.3 kWh/m
- Can be used in potentially explosive areas Ex zone 1/2 and 21/22 when taking the current mounting instructions into account



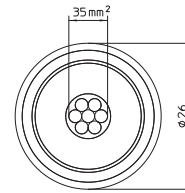
isCon® arrester, professional plus light grey



Type	Cross-section mm ²	Nominal size Ø mm	Equivalent separation distance m	Pack. m	Weight kg/100 m	Item No.
isCon Pro+ 75 GR	35	26	0.75	25	86.800	5407995
isCon Pro+ 75 GR	35	26	0.75	100	86.800	5407997

Please refer to the mounting instructions for information on routing the OBO isCon® conductor.

- Highly voltage-resistant, insulated conductor
- Floating discharge-free
- Additional mechanical protection (double protective jacket)
- For maintenance of the separation distance according to IEC 62305 (VDE 0185-305-3)
- Tested according to IEC/EN 62561-1 (VDE 0185-561-1) with H1/150 kA
- Equivalent separation distance $se \leq 0.75$ m (air) and $se \leq 1.5$ (solid material)
- Tested according to IEC TS 62561-8
- Halogen-free
- Fire load 5.1 kWh/m
- Protection against contact voltage under sprinkling (VDE 0432-1 (IEC/EN 60060-1))
- Can be used in potentially explosive areas Ex zone 1/2 and 21/22 when taking the current mounting instructions into account



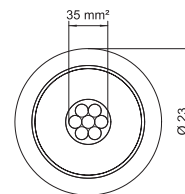
isCon® conductor, premium black



Type	Cross-section mm ²	Nominal size Ø mm	Equivalent separation distance m	Pack. m	Weight kg/100 m	Item No.
isCon PR 90 SW	35	23	0.9	100	66.600	5408018

Please refer to the mounting instructions for information on routing the OBO isCon® Premium conductor.

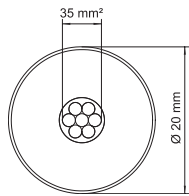
- Highly voltage-resistant, insulated arrester
- Floating discharge-free
- Tested according to IEC/EN 62561-1 (VDE 0185-561-1) with H2/200 kA
- Equivalent separation distance $se \leq 0.90$ m (air) and $se \leq 1.8$ m (solid material)
- Tested according to IEC TS 62561-8
- Halogen-free
- Fire load 4.2 kWh/m



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OBO isCon® system and insulated lightning protection

isCon® conductor, professional black

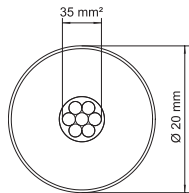


Type	Cross-section mm ²	Nominal size Ø mm	Equivalent separation distance m	Pack. m	Weight kg/100 m	Item No.
isCon Pro 75 SW	35	20	0.75	100	57.000	5408008

Please refer to the mounting instructions for information on routing the OBO isCon® Pro conductor.

- Highly voltage-resistant, insulated conductor
- Floating discharge-free
- For maintenance of the separation distance according to IEC 62305 (VDE 0185-305-3)
- Tested according to IEC/EN 62561-1 (VDE 0185-561-1) with H1/150 kA
- Equivalent separation distance $s_e \leq 0.75$ m (air) and $s_e \leq 1.5$ m (solid material)
- Tested according to IEC TS 62561-8
- Halogen-free
- Fire load 3.3 kWh/m

isCon® conductor, basic black

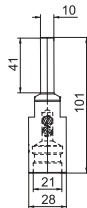


Type	Cross-section mm ²	Nominal size Ø mm	Equivalent separation distance m	Pack. m	Weight kg/100 m	Item No.
isCon BA 45 SW	35	20	0.45	100	57.000	5408014

Please refer to the mounting instructions for information on routing the OBO isCon® Basic conductor.

- Highly voltage-resistant, insulated conductor
- For maintenance of the separation distance according to IEC 62305 (VDE 0185-305-3)
- Tested according to IEC/EN 62561-1 (VDE 0185-561-1) with H1/150 kA
- Equivalent separation distance $s_e \leq 0.45$ m (air) and $s_e \leq 0.90$ m (solid material)
- Tested according to IEC TS 62561-8
- Halogen-free
- Fire load 3.3 kWh/m

isCon®-Connection element

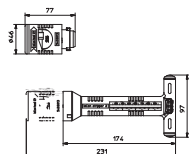


Type	Dimension D Ø mm	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs	Item No.
isCon con 2	20	10	H1/150	2	21.500	5408021
isCon connect	23	10	H1/150	2	21.500	5408022
isCon con PRE	23	10	H2/200	2	21.500	5408023

V2A Stainless steel, grade 304

- Screw-on termination of the connection for the isCon® conductor
- Incl. heat-shrinkable sleeve, hexagonal
- Tested up to 200 kA (lightning protection class I)

Stripping tool for isCon conductor



Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs	Item No.
isCon stripper 2	20 - 23	1	170.000	5408013

PA/PE Polyamide/Polyethylene

Stripping tool to remove the insulation of OBO isCon® conductor.

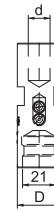
Connection element for installation in the insulated air-termination rod isFang IN



Type	Dimension D Ø mm	Lightning current carrying capacity kA	Pack. pcs.	Weight kg/100 pcs.	Item No.
isCon IN con 2	20	H1/150	1	27.800	5408019
isCon IN con PRE	23	H2/200	1	27.800	5408020

V2A Stainless steel, grade 304

- Screw-on termination of the connection for the isCon® conductor
- Connection and installation of the conductor in the insulated air-termination rod
- Tested up to 200 kA (lightning protection Class II)



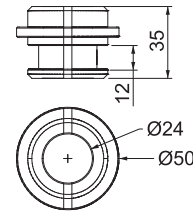
Potential connection for installation in the insulated air-termination rod isFang IN



Type	Dimension D Ø mm	Dimension d mm	Dimension L mm	Pack. pcs.	Weight kg/100 pcs.	Item No.
isCon IN PAE	23	49.9	35	1	5.900	5408031

Alu Aluminium

- To avoid surface discharges on the isCon® conductor
- Installation takes place after the first 1.5 metres in the insulated air-termination rod type isFang IN



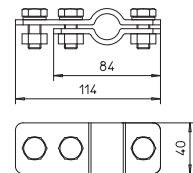
Potential connection



Type	Fit mm	Pack. pcs.	Weight kg/100 pcs.	Item No.
isCon PAE	Ø 17-25mm	2	36.500	5408036

V2A Stainless steel, grade 304

- Potential connection
- To avoid floating discharges on the isCon® conductor
 - With sprung discs to protect screws against loosening



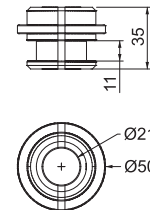
Potential connection for installation in the insulated air-termination rod isFang IN



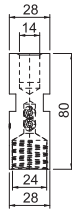
Type	Dimension D Ø mm	Dimension d mm	Dimension L mm	Pack. pcs.	Weight kg/100 pcs.	Item No.
isCon IN PAE 2	20	49.9	35	1	5.900	5408032

Alu Aluminium

- To avoid surface discharges on the isCon® conductor
- Installation takes place after the first 1.5 metres in the insulated air-termination rod type isFang IN



Connection element for installation in the insulated air-termination rod isFang IN

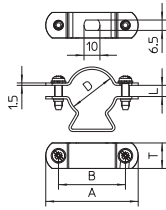


Type	Dimension D Ø mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
isCon IN connect	23	H1/150	1	26.900	5408024

V2A Stainless steel, grade 304

- Screw-on termination of the connection for the isCon® conductor
- Connection and installation of the conductor in the insulated air-termination rod
- Tested up to 200 kA (lightning protection Class II)

VA cable bracket for isCon® conductor for mounting on roof/wall structures

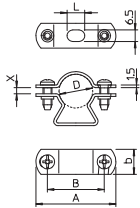


Type	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isCon H VA	21 - 23	50	2.850	5408056
isCon H 26 VA	26	20	3.400	5408064

V2A Stainless steel, grade 304

- For isCon® conductor for mounting on roof/wall structures
- With sprung discs to protect the screws against loosening

Conductor and pipe spacer clip 733 V2A

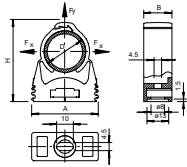


Type	Clamping range D mm	Hole size mm	Bolt	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
733 21 A2	19 - 21	6,5 x 10	M5 x 16	500	50	2.740	1362046

V2A Stainless steel, A2

- * Size M16 is not suitable for nail device
- * Sizes M16 - PG16 are not suitable for bolt-firing tool

Quick clip, black

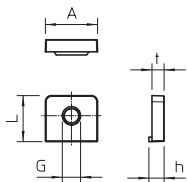


Type	Colour	Dimension D mm	Dimension A mm	Dimension B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
SQ-20 SW	Jet black	23	29	17	50	0.848	2146164
SQ-25 LGR	Light grey	26	40	17	50	0.970	2146207

PP Polypropylene PA Polyamide

Cable brackets for isCon® conductors for mounting on the building structure. Can also be used in the first 1.5 m. Can be arranged next to each other. Made from a UV and weather-resistant polyamide.

starQuick nut



Type	Colour	Nominal size	Dimension L mm	Dimension h mm	Dimension t mm	Pack. pcs	Weight kg/100 pcs.	Item No.
SQ M6	Light grey	M6	15	5	4	100	0.070	2146509

PC Polycarbonate

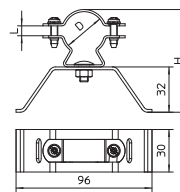
The starQuick nut was developed especially for the starQuick clip. Simply push into the intended opening of the clip. The nut is captive in the clip. Suitable for M6 threads.

VA cable bracket with tightening strap

Type	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isCon HS VA	23	10	25.200	5408052
isCon HS 26 VA	26	10	25.900	5408068

V2A Stainless steel, grade 304

- For isCon® conductor for pipe mounting
- Including 2 m tightening strap
- Cable bracket with sprung discs to protect the screws against loosening

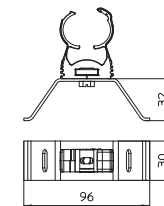


PA cable bracket with tightening strap

Type	Colour	Dimension Ø mm	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isCon HS 26 PA	Light grey	Ø 26mm	26	10	23.200	5408066

PA Polyamide

For isCon® conductor for pipe mounting including 2 m tightening strap.

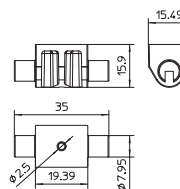


Universal flat conductor adapter for roof conductor holder, type 165/MBG

Type	Fit Colour	mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 MBG UH	Black	Rd 8	25	0.254	5218882

PP Polypropylene

- Universal adapter with drill hole Ø 2.5 mm
- E.g. for OBO Golden Sprint screw, type 4758 4 x L (L = depending on application)
- For fastening to 165/MBG



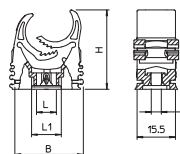
Multi-Quick clip, metric



Type	Clamping range D mm	Pull- out value N	Colour	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
M-Quick M32 LGR	25 - 32	60	Light grey	600	50	1.390	2153734

PA Polyamide

- Multi-quick metric
- Simple fastening
- Secure locking
- Radial arrangement
- Simplified storage
- Universally applicable

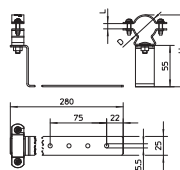


VA roof conductor holder, sloping roof

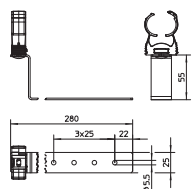
Type	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isCon H280 VA	55	25	16.100	5408047
isCon H280 26 VA	55	25	16.900	5408074

V2A Stainless steel, grade 304

- For routing of the isCon® conductor on pitched roofs
- Cable bracket with sprung discs to protect the screws against loosening



PA roof conductor holder, sloping roof

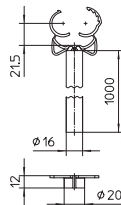


Type	Colour	Dimension	Pack. pcs	Weight kg/100 pcs	Item No.
isCon H280 PA	Black	280mm	25	13.950	5408049
isCon H280 26 PA	Light grey	280mm	25	14.060	5408072

PA Polyamide

To route the isCon® conductor on pitched roofs.

Spacer



Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs	Item No.
isCon DH	23 - 26	2	41.400	5408043

GFK Fibre-glass-reinforced plastic

For stand-off installation of the isCon® conductor in the area of the connection, incl. reducing sleeve for mounting on FangFix concrete block 10 Kg.

isFang, insulated air-termination rod for inner-routed isCon conductor with side exit



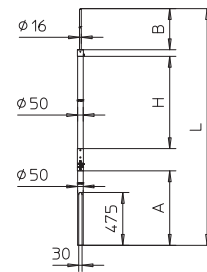
Type	Dimension D Ø mm	Dimension A mm	Dimension H mm	Dimension B mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang IN-A 4000	50	1325	1500	1000	4000	1	535.000	5408938
isFang IN-A 6000	50	3325	1500	1000	6000	1	835.000	5408940
isFang IN-A 8000	50	5335	1500	1000	8000	1	1,385.000	5408888
isFang IN-A10000	50	6000	1733	2000	10000	1	1,540.000	5408890

GFK Fibre-glass-reinforced plastic

- For installation of the OBO isCon® Pro+ conductor in the pipe
- With side conductor outlet matching isFang air-termination rod stand with side outlet, type isFang 3B-A
- Suitable for wind loads according to Eurocode 1: DIN EN 1991-1-4
- Inclusive connection element (type isCon IN connect)
- Inclusive potential connection (type isCon In PAE)



Dimensions



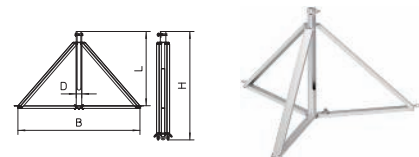
isFang air-termination rod stand with side exit



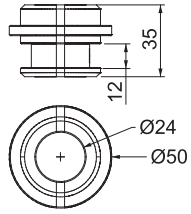
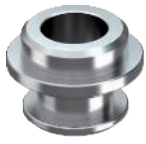
Type	Dimension B mm	Dimension D Ø mm	Dimension L mm	Dimension H mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang 3B-100-A	1026	50	600	885	1	610.000	5408930
isFang 3B-150-A	1500	50	900	1275	1	950.000	5408932
isFang 3B-250-A	2900	50	1450	2055	1	2,500.000	5408902

V2A Stainless steel, grade 304

- Screwless installation of freestanding air-termination rods as well as insulated air-termination rods with 50 mm diameter
- E.g. for internal OBO isCon® conductor
- Roof slope to max. 5 degrees
- Incl. Rd 8–10 crossbar for quick round conductor fastening
- Concrete plinths as well as threaded rods should be ordered separately



Potential connection for installation in the insulated air-termination rod isFang IN

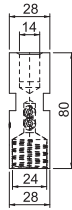


Type	Dimen- sion D Ø mm	Dimen- sion d mm	Dimen- sion L mm	Weight		Item No.
				Pack. pcs.	kg/100 pcs.	
isCon IN PAE	23	49.9	35	1	5.900	5408031

Alu Aluminium

- To avoid surface discharges on the isCon® conductor
- Installation takes place after the first 1.5 metres in the insulated air-termination rod type isFang IN

Connection element for installation in the insulated air-termination rod isFang IN



Type	Dimen- sion D Ø mm	Lightning current carrying capacity kA	Weight		Item No.
			Pack. pcs.	kg/100 pcs.	
isCon IN connect	23	H1/150	1	26.900	5408024

V2A Stainless steel, grade 304

- Screw-on termination of the connection for the isCon® conductor
- Connection and installation of the conductor in the insulated air-termination rod
- Tested up to 200 kA (lightning protection Class II)

Insulated air-termination rod



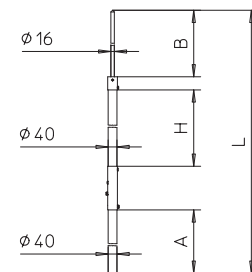
Type	Dimension A mm	Dimension H mm	Dimension B mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang 4000 AL	1240	1500	1000	4000	1	580.000	5408943
isFang 6000 AL	3340	1500	1000	6000	1	600.000	5408947
isFang 4000	1240	1500	1000	4000	1	680.000	5408942
isFang 6000	3340	1500	1000	6000	1	680.000	5408946

GFK Fibre-glass-reinforced plastic

- For isolated creation of air-termination systems
- Suitable for isFang air-termination rod stands, type isFang 3B-100/150
- Suitable for wind loads according to Eurocode 1: DIN EN 1991-1-4
- For mounting on the building structure with isFang support
- Fastening of the OBO isCon® conductor possible using accessories
- Suitable for internally and externally-routed isCon® conductor



Dimensions



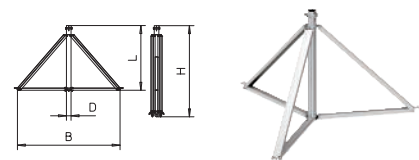
isFang air-termination rod stand



Type	Dimension B mm	Dimension D Ø mm	Dimension L mm	Dimension H mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang 3B-100 AL	1000	40	600	885	1	380.000	5408966
isFang 3B-150 AL	1500	40	900	1275	1	560.000	5408967
isFang 3B-100	1000	40	600	885	1	620.000	5408968
isFang 3B-150	1500	40	900	1275	1	950.000	5408969

V2A Stainless steel, grade 304 Alu Aluminium

Folding tripod stand for screwless installation of free-standing air-termination rods with a diameter of 40 mm, e.g. for OBO isCon® conductors. Roof slope to max. 5 degrees. Incl. Rd 8–10 crossbar for rapid round conductor fastening. The concrete plinth and threaded rods are to be ordered separately.

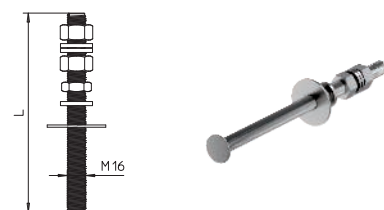


isFang-3B threaded rod

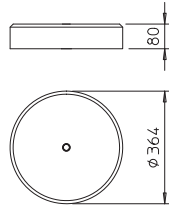
Type	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang 3B-G1	270	3	48.000	5408971
isFang 3B-G2	340	3	60.400	5408972
isFang 3B-G3	430	3	69.500	5408973
isFang 3B-G4	500	3	75.000	5408905

V2A Stainless steel, grade 304

- For fastening on one, two, three or four FangFix concrete bases with tripod stand



Concrete block for FangFix-System 16 kg

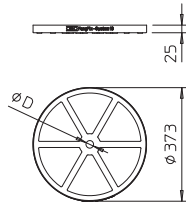


Type	Nominal size Ø mm	Weight		Item No.
		Pack. pcs.	kg/100 pcs.	
F-FIX-S16	365	1	1,700.000	5403227

BET Concrete

- 16 kg stone of Ø 365 mm, high level of stability
- Frost-resistant concrete
- Stackable

Base for FangFix system 16 kg for mounting the isFang tripod

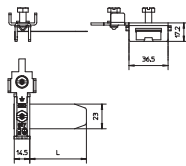


Type	Nominal size Ø mm	Dimension D Ø mm	Weight		Item No.
			Pack. pcs.	kg/100 pcs.	
F-FIX-B16 3B	373	25	10	15.800	5403238

PP Polypropylene

- Edge protection with through hole
- For mounting isFang-3B threaded rod and FangFix concrete block F-FIX-S16

Potential connection clamp for mounting on isFang

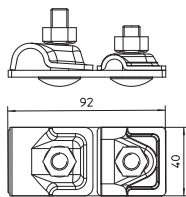


Type	Fit mm	Weight		Item No.
		Pack. pcs.	kg/100 pcs.	
927 2 6-K	3/8-4mm	10	5.500	5057599

V2A Stainless steel, grade 304

Potential connection for isCon® conductor for mounting on insulated air-termination rods of type isFang.

Connection plate for one isCon® conductor

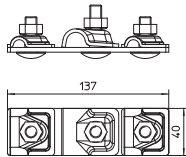


Type	Dimension	Weight		Item No.
		Pack. pcs.	kg/100 pcs.	
isCon AP1-16 VA	16x8-10mm	1	27.400	5408026

V2A Stainless steel, grade 304

Connection plate to connect an isCon® conductor with air-termination rod Ø 16 mm, tested up to 150 kA (lightning protection class II)

Connection plate for two isCon® conductors



Type	Dimension	Weight		Item No.
		Pack. pcs.	kg/100 pcs.	
isCon AP2-16 VA	16x8-10mm	1	39.500	5408028

V2A Stainless steel, grade 304

Connection plate to connect two isCon® conductors with air-termination rod Ø 16 mm, tested up to 150 kA (lightning protection class II)

Cable tie, black, UV and weather-resistant



Type	Dimension B mm	Dimension L mm	Dimension t mm	Max. bundle Ø mm	Colour	Weight		Item No.
						Pack. pcs.	kg/100 pcs.	
565 7.6x380 SWUV	7.6	380	1.8	105	Black	100	0.533	2331924

PA Polyamide

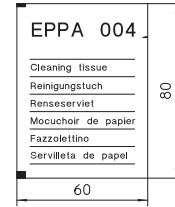
Cable ties are used for quick, uncomplicated fixing or bundling of cables and pipes to cable support systems or other mounting structures.

Cleaning cloth

Type	Width mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isCon EPPA 004	140	200	50	0.420	5408060

Z-PP-P Cellulose-polypropylene paper

- Cellulose polypropylene paper with abrasive sections, folded multiple times
- Doused with 2.8 ml impregnation solution
- For cleaning the external jacket of the OBO isCon® conductor



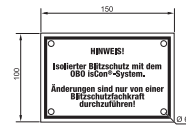
Information panel

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
isCon HWS	1	2.000	5408058
isCon HWS EN	1	2.000	5408059

PS Polystyrene

Label: "NOTE! Insulated lightning protection with the OBO isCon® system. Only a lightning protection specialist may carry out changes"

- To label the lightning protection system
- Self-adhesive and with 4 fastening holes \varnothing 6.5 mm

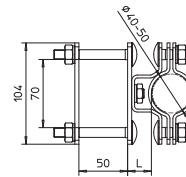


isFang support for corner pipe mounting, 50 x 50 mm

Type	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang TS50x50	30	2	82.000	5408964

V2A Stainless steel, grade 304

Fastening clip to fasten the insulated support pipes on the structure to be protected or for construction-side corner pipes of 50x50 mm.

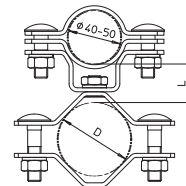


isFang support for pipe mounting, \varnothing 50–60 mm

Type	Dimen- sion D \varnothing mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang TS50-60	60	30	2	76.000	5408960

V2A Stainless steel, grade 304

Tightening strap clip to fasten the insulated support pipes on the structure to be protected or for construction-side pipes of \varnothing 50–60 mm.

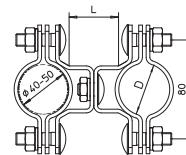


isFang support for pipe mounting, \varnothing 40–50 mm

Type	Dimen- sion D \varnothing mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang TS40-50	50	40	2	90.000	5408958

V2A Stainless steel, grade 304

Tightening strap clip to fasten the insulated support pipes on the structure to be protected or for construction-side pipes of \varnothing 40–50 mm.

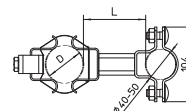


isFang support for spaced pipe mounting, \varnothing 50–300 mm

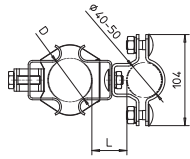
Type	Dimen- sion D \varnothing mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang TR100 100	300	100	2	95.500	5408955
isFang TR100 200	300	200	2	121.000	5408957
isFang TR100 300	300	300	2	146.000	5408959

V2A Stainless steel, grade 304

Tightening strap clip to fasten the insulated support pipes on the structure to be protected or for construction-side pipes of \varnothing 50–300 mm.



isFang support for pipe mounting, ø 50–300 mm

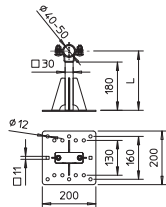


Type	Dimen-	Dimen-	Weight		Item No.
	sion D Ø mm	sion L mm	Pack. pcs	kg/100 pcs.	
isFang TR100	300	40	2	77.000	5408956

V2A Stainless steel, grade 304

Tightening strap clip to fasten the insulated support pipes on the structure to be protected or for construction-side pipes of ø 50–300mm.

Support for wall mounting, 200 mm spacing

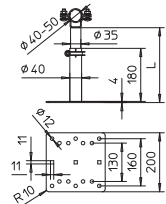
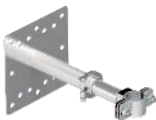


Type	Dimen-	Dimen-	Weight		Item No.
	sion D Ø mm	sion L mm	Pack. pcs	kg/100 pcs.	
isFang TW200 12	50	200	2	240.000	5408910

V2A Stainless steel, grade 304

Fastening clip to fasten the insulated support pipes on the structure to be protected or on the wall.

isFang support for wall mounting, 200–300 mm spacing

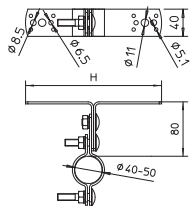


Type	Dimen-	Weight		Item No.
	sion L mm	Pack. pcs	kg/100 pcs.	
isFang TW200	300	2	230.000	5408954

V2A Stainless steel, grade 304

Fastening clip to fasten the insulated support pipes on the structure to be protected or on the wall.

isFang support for wall mounting, 80 mm spacing

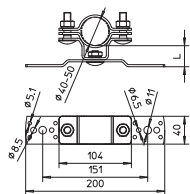


Type	Dimen-	Weight		Item No.
	sion L mm	Pack. pcs	kg/100 pcs.	
isFang TW80	80	2	63.000	5408950

V2A Stainless steel, grade 304

Fastening clip to fasten the insulated support pipes on the structure to be protected or on the wall.

isFang support for wall mounting, 30 mm spacing



Type	Dimen-	Weight		Item No.
	sion L mm	Pack. pcs	kg/100 pcs.	
isFang TW30	30	2	62.000	5408952

V2A Stainless steel, grade 304

Fastening clip to fasten the insulated support pipes on the structure to be protected or on the wall.

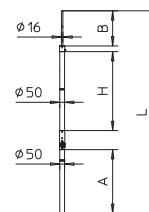
Insulated air-termination rod for inner-routed isCon conductor

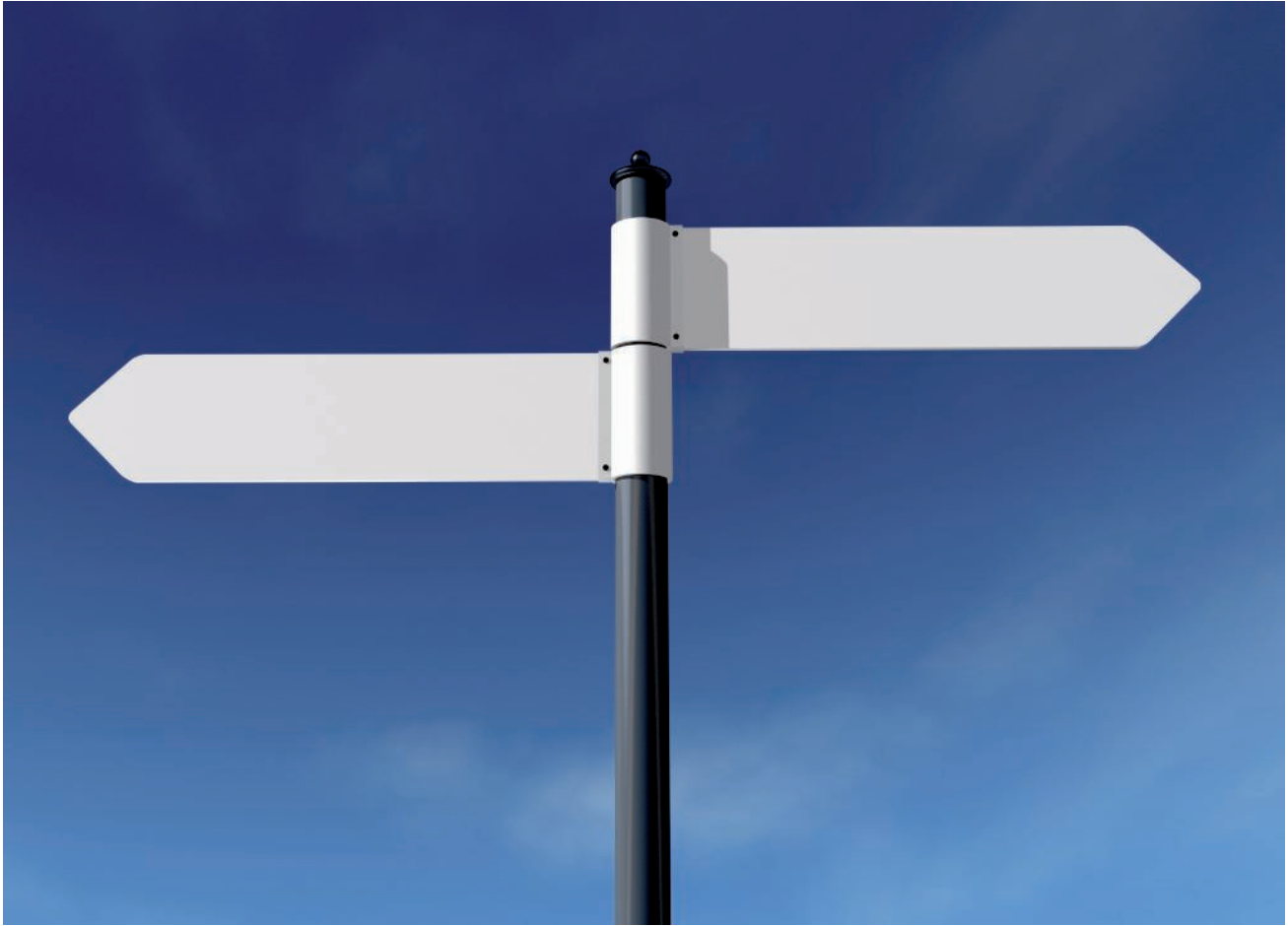


Type	Dimension D Ø mm	Dimension A mm	Dimension H mm	Dimension B mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang IN 4000	50	1325	1500	1000	4000	1	535.000	5408934
isFang IN 6000	50	3325	1500	1000	6000	1	835.000	5408936
isFang IN 8000	50	5335	1500	1000	8000	1	1,315.000	5408868
isFang IN 10000	50	6000	1733	2000	10000	1	1,540.000	5408870




GFK Fibre-glass-reinforced plastic

- For installation of the OBO isCon® Pro+ conductor in the pipe
- For mounting on the building structure with isFang support
- Suitable for wind loads according to Eurocode 1: DIN EN 1991-1-4
- Inclusive connection element (type isCon IN connect)
- Inclusive potential connection (type IsCon In PAE)





Directories

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5046516	price/100 1117025	458	5371298	/pc. 5000017	471	5800118	/pc. 5015200	439	5383413	/100 pc. 5030021	491	6532766	/pc. 5081802	354
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927 1	5388579	5057515	453
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927 4	5388692	5057558	453
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927 SCH-K-VA	5805519	5057930	453
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937 50	5385998	5043018	456
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942 15	5384618	5038030	454
942 18	5384670	5038057	454
942 22	5384731	5038073	454
942 28	5384793	5038081	454
942 35	5384854	5038111	454
942 43	5384915	5038138	454
942 49	5384977	5038154	454
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952 Z 1	5386957	5052114	455
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952 Z 1/2	5386834	5052076	455
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985 M6 35	5250456	3133036	573
985 M8 35	5250579	3133230	573
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AB EX ISG SW M12	6524457	5240382	425
AB EX ISG SW M16	6524464	5240386	425
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AF RD 10 V4A	6456161	5430720	475
AF RD 10 V4A	6456161	5430720	568
AL EX ISG 100	6521159	5240102	425
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		/pc.	
C 25-B+C 0	5919391	5095603	200
C 25-B+C 1	5542957	5095606	173
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		/100 pc.	
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EX PAS 10	6427680	5015270	449
EX PAS 5	6427628	5015265	449
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F-FIX-10B	5070061	5403110	505
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F-FIX-B16	5548959	5403235	505
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F-FIX-BASIS	5034933	5403324	503
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		/100 pc.	
F-FIX-KL	5548775	5403219	505
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RD 8-CU	5382034	5021480	502	ÜSM-ST-230-1P+PE	6426690	5092441	250
RD 8-FT	5381556	5021081	465	ÜSS 45-A-RW	6117611	6117465	252
RD 8-FT	5381556	5021081	500	ÜSS 45-O-RW	6117673	6117473	251
RD 8-FT 50	5423898	5021050	465	V 20-C 3+NPE+FS	5616382	5094764	168
RD 8-FT 50	5423898	5021050	500	V10 COMPACT 150	5246268	5093378	211
RD 8-PVC	5067474	5021332	465	V10 COMPACT 255	5076551	5093380	212
RD 8-PVC	5067474	5021332	501	V10 COMPACT 385	5126041	5093384	213
RD 8-V2A	5680529	5021235	466	V10 COMPACT-AS	5299448	5093391	214
RD 8-V2A	5680529	5021235	501	V10 COMPACT-FS	6098583	5093382	215
RD 8-V4A	5680574	5021644	466	V10-C 0-150	5158103	5093400	221
RD 8-V4A	5680574	5021644	501	V10-C 0-280	5012825	5093402	222
RJ11-TELE 4-C	6415656	/pc. 5081975	321	V10-C 0-320	5012832	5093404	223
RJ11-TELE 4-F	6415663	5081977	322	V10-C 0-385	5004660	5093406	224
RJ45 S-ATM 8-F	6415694	5081990	349	V10-C 1+NPE-280	5382799	5093418	219
RJ45 S-E100 4-B	6415748	5081001	355	V10-C 3+NPE	5363903	5094920	217
RJ45 S-E100 4-C	6415755	5081003	356	V10-C 3+NPE+FS	5363941	5094931	218
RJ45 S-E100 4-F	6415762	5081005	357	V10-C 3+NPE-320	5363934	5094924	220
RJ45-TELE 4-C	6415670	5081982	323	V20-0-150	6163540	5095362	160
RJ45-TELE 4-F	6415687	5081984	324	V20-0-280	6163557	5095364	161
RK-FIX	5433682	/100 pc. 5316450	552	V20-0-320	6163595	5095366	161
RK-FIX CU	5433736	5316468	553	V20-0-385	6163601	5095368	162
RK-FIX VA	5433729	5316459	552	V20-0-440	6163618	5095370	162
S 11-CU	5836209	price/100 5021654	466	V20-0-550	6163625	5095372	163
S 11-CU	5836209	5021654	502	V20-0-75	6163533	5095360	160
S 9-CU	6033768	5021652	466	V20-1+FS-280	6162000	5095281	119
S 9-CU	6033768	5021652	502	V20-1+FS-320	6162826	5095291	133
S-11-CU SN	5938668	5021656	466	V20-1+NPE+FS-280	6163014	5095331	129
S-11-CU SN	5938668	5021656	502	V20-1+NPE+FS-320	6163489	5095341	137
SD09-V11 9	5916277	/pc. 5080061	360	V20-1+NPE-150	6160051	5095231	115
SD09-V24 9	5915973	5080053	358	V20-1+NPE-280	6161140	5095251	128
SD15-V24 15	5916031	5080150	359	V20-1+NPE-320	6161379	5095261	136
SD-Fix	5670735	5403335	508	V20-1+NPE-385	6161706	5095271	143
SQ M6	5016069	/100 pc. 2146509	590	V20-1-150	6159758	5095151	110
SQ-20 SW	5655367	2146164	590	V20-1-280	6159802	5095161	118
SQ-25 LGR	5595717	2146207	590	V20-1-320	6159840	5095171	132
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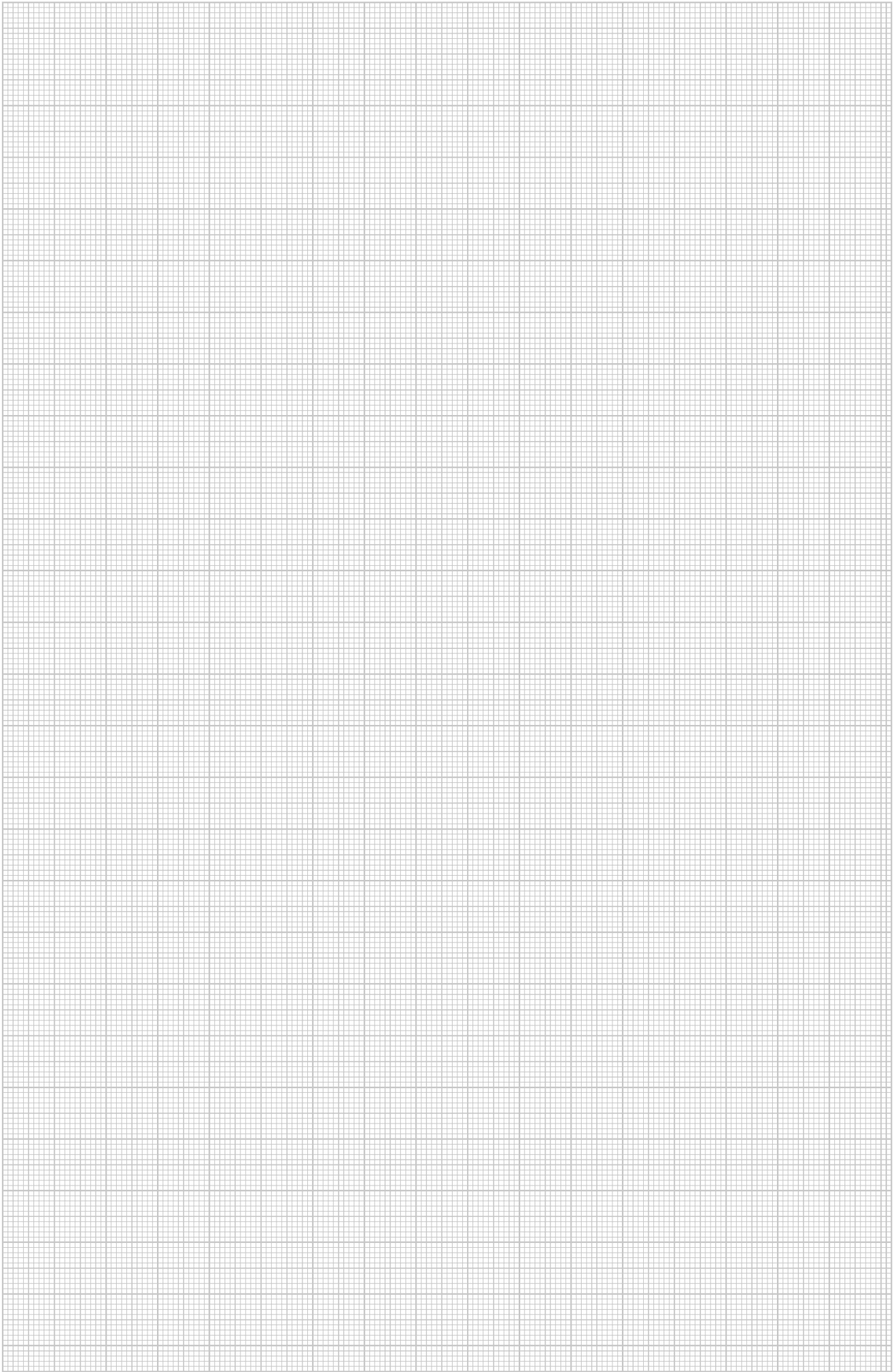
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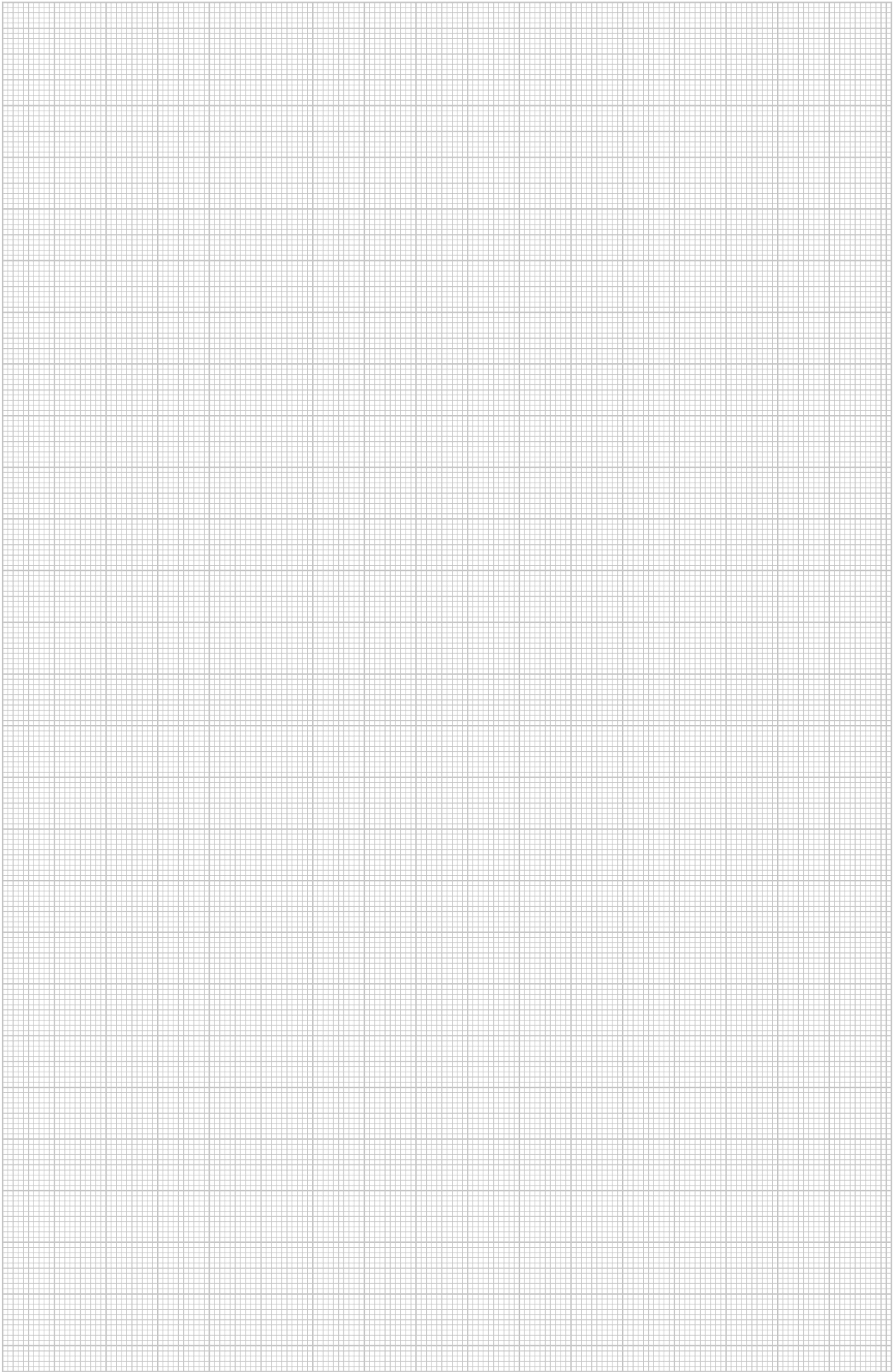
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Sale and delivery conditions

of the companies **OBO Bettermann Vertrieb Deutschland GmbH & Co. KG, OBO Bettermann Projekt und Systemtechnik GmbH, OBO Bettermann Export GmbH & Co. KG, OBTEC GmbH, Flugplatzgesellschaft Arnsberg – Minden mbH, FAM Holding GmbH, OBO JET-CHARTER GmbH, Grundstücksverwaltung Bettermann GmbH & Co. KG, OBO Bettermann Produktion Deutschland GmbH & Co. KG as well as the OBO Bettermann Holding GmbH & Co. KG as well as the OBO Bettermann Holding GmbH & Co. KG**

§ 1 General

(1.1) The general terms and conditions of business given below (hereinafter referred to as "AGB" or "VLB") are applicable in the respectively latest version for all contracts signed and to be signed in future between the OBO Bettermann Vertrieb Deutschland GmbH & Co. KG, OBO Bettermann Projekt und Systemtechnik GmbH, OBO Bettermann Export GmbH & Co. KG, OBTEC GmbH, Flugplatzgesellschaft Arnsberg – Minden mbH, FAM Holding GmbH, OBO JET-CHARTER GmbH, Grundstücksverwaltung Bettermann GmbH & Co. KG, OBO Bettermann Produktion Deutschland GmbH & Co. KG, as well as the OBO Bettermann Holding GmbH & Co. KG (hereinafter referred to as "sellers") and the respective (possibly future) contractual partners (hereinafter referred to as "Customers") regarding the sale and / or delivery of goods, as far as these are used against entrepreneurs, legal entities under public law and special assets governed by public law as defined in § 310 BGB.

(1.2) It is pointed out hereby that the local AGB also contain the address, drawing, dimension plan, engineering if the contract is / should be signed with the OBO Bettermann Projekt und Systemtechnik GmbH. The additional conditions for plant engineering in this case are attached with the offer and with the acceptance of the offer and can also be viewed and stored in the Internet at http://cdn.obo.de/mailings/downloads/AGB_PuS_Anlagenbau.pdf.

(1.3) It is pointed out explicitly that AGB of the customer become an integral part of the contract only when these have been acknowledged in writing by the sellers. In particular, an inclusion through a conclusive behaviour is not effected to the extent that the customer discernibly refers to his AGB and the sellers do not contradict their validity.

(1.4) Insofar as the AGB of the customer have also become a part of the contract and contradict the AGB, the AGB of both parties forms a part of the contract only when they match (principle of congruency). Disagreement arising from the contradicting AGB is to be interpreted primarily under consideration of the interests of both parties and a solution satisfying the interests of both parties is to be found. If this is not possible, the legal regulations are applicable. Disagreements do not impact the effectiveness of the contract and of the AGB.

(1.5) Contracts or amendments of the contracts are effective only when they have been agreed upon in writing; to this extent, the written form not only serves the purpose of a proof, but is also a right-constitutive pre-requisite for effectiveness of the declaration of intent (constitutive written form). This also applies to the amendment of this written clause. Informally signed contracts and contractual amendments are effective only when they have been signed by means of individually negotiated terms as defined in § 305b BGB. It is clarified explicitly that the written form requirement is maintained by transmission through telecommunication (e-mail, fax) (see § 127 II, S.1 BGB).

(1.6) These VLB can be amended at any time for adaptation to changes in law, changes in jurisdiction or in the event of essential changes to the economic situation. The amendments shall become effective to the extent that seller has notified customer of the new version of the VLB in a textual form with clear emphasis of the changes, seller makes reference as early as the notification of the new version that the changes also take effect without customer's consent / customer does not contradict the changes in good time and a contradiction from customer is not made in good time within 2 weeks after receipt of the notification.

(1.7) The seller reserves the right to make technical changes in design, shape and material even during the delivery period, if the changes are reasonable for the customer and nothing on the contrary has been agreed upon.

§ 2 Offers

(2.1) Offers from the seller always are not binding and represent only a request for submitting a binding order from the interested parties.

(2.2) Offers of the seller are, in case they do not contain any deviating data - subject to an adequate assurance of the order sum (e.g. through credit insurance or bank guarantee) - valid four weeks starting from the day of the proposal submission.

(2.3) The documents being part of the offer such as diagrams, drawings, technical specifications, capacity values and weight data are subject to deviations, which are usual in the industry and / or lie in the framework of the normal production tolerances.

(2.4) Samples are non-binding approval samples. Deviations, which are customary to trade and/or lie in the framework of the normal production tolerances, are reserved. In case of a sample, which is not possible to supply in a flawless state within four weeks, unless agreed upon otherwise. If the return is not done within this period or not in a proper way, the seller has the right to invoice the purchase price of the sample according to the latest price list.

§ 3 Protection rights

(3.1) The seller reserves the copyright for drawings and other design documents and data. These may not be made accessible to third parties, unless agreed upon otherwise, such as for the case that the data / drawings / images are also to be used for a web-shop.

(3.2) The customer guarantees vis-à-vis the seller that the manufacturer and delivery of the goods made according to his instructions do not violate any third party protection rights. In case third party protection rights are asserted vis-à-vis the seller, the seller has the right to take legal action to withdraw from the corresponding contract after hearing the customer, unless the third party declares the non-assertion of protection rights vis-à-vis the seller within eight days in writing.

(3.3) The customer warrants the seller from the claims in the context of the assertion of third-party protection rights of third parties. Services and expenses of the seller already made are to be compensated or reimbursed in case of assertion of third-party protection rights regardless of their maturity.

§ 4 Prices and payment modalities, notification duties

(4.1) The prices mentioned in the offers and documents of the seller are the ex-factory or the ex-warehouse prices of the seller. The prices do not include the respectively applicable value-added tax, the cost of packing, loading and unloading, freight, customs, insurance, dismantling, return and proper disposal of electrical and electronic old devices for commercial purposes as defined in the ordinance for waste electrical and electronic equipment, unless agreed upon otherwise. Fees, taxes or other expenses in the context of the delivery will be borne by the customer. Unless agreed upon otherwise, the delivery taken over from the seller does not include the unloading and bringing of the goods.

(4.2) The unit prices mentioned by the seller in an offer are valid only upon placing a purchase order for the complete delivery scope given in the respective offer or for a purchase order in case of a purchase order deviating in quantity or in scope from the offer of the seller, the prices listed in the offer are not applicable to the seller.

(4.3) Payments for invoices as well as credits, which are made within 10 (ten) days after receiving, with the exception of payments made by means of exchange are to be made with 2 (two) percent net cash discount; later incoming payments within 30 (thirty) days from the date of the invoice are to be made net without discount. Mounting services as well as all works to be paid without cash discount within 10 (ten) days. Incoming payments are credited at first against costs, then against interest and then against the longest due liability.

(4.4) All invoices and credits - subject to different written agreements in the individual case - are payable by within 30 (thirty) days of the invoice without deduction; a cash discount of 2 (two) percent is reserved. In case of a purchase order for a purchase for products containing the invoice as agreed upon currency by mentioning the account number. For payments of all kinds, fulfillment is said to occur on the day, on which the payment becomes available to the seller without restriction. The seller is not committed to accept bills of exchange or cheques. However, if these are acknowledged, they are accepted by the seller. The seller is not obliged to provide timely notification of changes and checks as well as to raise protests. (See also § 364 i BGB). Similarly, the seller is also not obliged to provide timely notification of changes and checks as well as to raise protests.

(4.5) The customer ensures the correctness of his sales tax identification number, which is to be informed immediately and without being asked. The customer is committed to inform immediately about each change in his company name, his address, the delivery address and his sales tax identification number in writing to the seller as well as to the responsible tax authority. The seller has the right to check the correctness of the information.

(4.6) The seller has the right to adjust his prices, if needed, to the normal level in the market, if wages, material prices or taxes increase in the period between signing the contract and executing the order. In case of an increase in stock exchange listing for NE metals, the seller has the right to raise the prices of brass and copper. The seller has the right to change the prices of his products in a proper way and to refuse the order. In case of further changes in stock exchange listings, the seller has the right to correct the calculated basis for the list prices.

(4.7) The prices of the products containing brass and copper are subject to certain fluctuations, which are based on the respective DEL quotations. The prices of brass and copper are based on the quotation of Euro 150.00 for ME 58, those of copper products are based on a DEL value of Euro 200.00 for electrolyte copper. In case of an upward or downward change of these rates by more than Euro 5.00, a five percent surcharge or deduction is credited for each 15 (fifteen) points. For calculating the surcharge or the deduction the respective DEL note of the date is taken as the basis, on which the seller received the offer.

(4.8) In case of payment by instalment, the seller has the right to charge default interest amounting to 9 (nine) percent points p.a. over and above the respective base interest rate as per § 247 BGB. The asserting of a further default interest according to § 9 (nine) percent points p.a. over and above the respective base interest rate is not possible.

(4.9) The customer is entitled to the rights of set-off or rights of retention only when counter-claims have been recognised by declaratory judgment or are undisputed.

(4.10) If an application has been filed for initiating insolvency proceedings over the assets of the customer, the customer has initiated an out-of-court process for debt settlement, has stopped his payments or else the seller is aware of other circumstances, which essentially reduce the credit-worthiness of the customer and which jeopardise the rendering of the services by the customer, the seller has the right to demand security through advance payment or to refuse the order. The customer is obliged to set up security within one week and to release the rendering of his services till the security is paid. After a suitable notice period has elapsed in vain, the seller further has the right to withdraw from the contract as well as to demand immediately. Moreover, in this case, the seller can also demand the resale authorisation along with direct debt authorisation as per § 8 (8) of the German Insolvency Code, including and mixing the already delivered goods according to §§ 8.4-8.5 as well as demand the return of the delivered goods according to §§ 8.4-8.5.

(4.11) If the legal situation at the time of the conclusion of the contract decisively changes or if control of customer or of a considerable part of his assets passes to the customer or to legal entities controlled by the customer, the seller has the right to demand security through advance payment or to refuse the order. The customer is obliged to set up security within one week and to release the rendering of his services till the security is paid. After a suitable notice period has elapsed in vain, the seller further has the right to withdraw from the contract as well as to demand immediately. Moreover, in this case, the seller can also demand the resale authorisation along with direct debt authorisation as per § 8 (8) of the German Insolvency Code, including and mixing the already delivered goods according to §§ 8.4-8.5 as well as demand the return of the delivered goods according to §§ 8.4-8.5.

(4.12) In order to have a tax-free delivery and, alternatively, not having to include sales tax in all invoices and thereafter to pay the sales tax after receiving the papers, the customer must bring forth the proof of delivery. To do this, he has to demonstrate the delivery of goods by sending the corresponding original document within 4 (four) weeks to the seller after pick-up / dispatch of the goods. In case the seller does not receive this document within the mentioned period, he has the right to charge the customer the sales tax on the net goods value valid for this period.

(4.13) Invoice reductions, differences, debit advances or other disagreements do not change the original term of payment of the invoice. All indisputable receivables, not affected by disagreements, become due for payment according to the original invoice. All credit advances created by the seller for settling the differences do not change in any way the original term of payment of the invoice.

§ 5 Delivery

(5.1) Packaging, dispatch route and means of transportation are generally based on the graded lumpsum prices; the regulations of § 4.1 are applicable in addition. The seller charges the costs for packaging, dispatch route and means of transportation.

(5.2) A carriage-paid delivery, in which the freight and packaging costs within Germany, is done for free starting with a net order value of Euro 2,500.00. It is made clear that a delivery is "free to the door" when the carrier opens his vehicle at the agreed upon unloading point and makes it available for unloading. The unloading as well as the on-site delivery of the goods is to be done by the customer.

(5.3) Undamaged returnable goods are taken back by the seller in case of freight-free provision. The pool pallets used for transportation are to be exchanged with the freight carrier or to be returned. Details of the processing are given in the respectively applicable equipment handling of the seller, which can be stored permanently in the Internet at http://cdn.obo.de/mailings/downloads/Packschema_Ladehilfsmittel.pdf and as a part of this contract.

(5.4) The smallest selling units defined in the article master data are binding. Goods ordered below the smallest selling unit are rounded off automatically i.e. without consulting the buyer, to the next higher smallest selling unit.

(5.5) The seller reserves the over and under-deliveries, in particular in case of order-related production in the market-based scope or the as per the national or international standard. In case of a demand for achieving to precise quantity, an explicit instruction is necessary, which is confirmed.

(5.6) The seller has the right to partial deliveries, but is not committed, if the partial deliveries are reasonable for the customer. Partial deliveries can be invoiced separately from the main delivery. This does not apply, if the seller is responsible for the non-delivery or for the delay.

(5.7) The customer cannot reject excess or reduced services in a reasonable scope. The complaint of an excess or reduced service does not justify the rejection of further deliveries from the same or from another contract. In case of custom-made products the seller reserves an excess or under-delivery of 10% of the ordered quantity. In any case, only the actually delivered quantity is invoiced.

(5.8) Blanket and call orders commit the customer for accepting the total quantity underlying the blanket and call orders. In case no specific call orders result from the contract or from any other agreement, the total quantity of the blanket or call order is to be called within 3 (three) months. If the customer does not adhere to the call dates, the seller has the right to completely deliver the total quantity to his house address and to invoice it 4 (four) weeks after written declaration by indicating the consequences of the omitted call. The rights of the seller default of the customer remain unaffected.

(5.9) The delivery commitment of the seller is subject to the provision of defect-free and on-time self-delivery, if the seller procures the goods as a whole or parts of product from a sub-contractor. This does not apply, if the seller is responsible for the non-delivery or for the delay.

(5.10) Events, such as those below, for which the seller is not responsible in the scope of the normal operating risk and which make the (partial) delivery essentially difficult or even impossible, entitle the seller to postpone the (partial) delivery by the duration of the hindrance together with suitable start-up time or alternatively to withdraw from the contract. In each case, the customer can demand a declaration from the seller, whether he will deliver within a suitable time period according to the circumstances or whether he will withdraw. The delivery periods gets extended in case of events such as industrial conflicts, strikes and lockouts, regulatory actions, material procurement difficulties, scrap or rework, business disruptions and lack of staff, lack of means of transportation as well as upon occurrence of other unforeseen events, on which the seller has no influence, by the duration of these events.

(5.11) Even in case of dispatch readiness, the customer comes in default of acceptance, if in case of delivery ex-factory/warehouse or agreed upon pick-up obligation the delivery is offered to him by the seller only in writing or else the customer has declared that he will not accept the delivery.

(5.12) Products reported as ready for dispatch per the contract must be accepted immediately by the customer. Otherwise, the customer comes in default of acceptance so that the seller - his other rights notwithstanding - has the right either to dispatch the goods at the cost and risk of the customer or to store them and invoice them upon the expiry of a notice period of one week. The same applies, if the goods are not called or not called completely within the decisive call period (see § 5.8).

(5.13) For the case that the customer comes in default of acceptance or violates other service or participation duties, the seller has the right to demand the damages caused to him including possible extra expenses.

(5.14) If the customer is in default of acceptance or violates other service or participation duties by more than one month, the seller can further rights notwithstanding - demand from the customer a contractual penalty of 5 (five) percent of the invoice value instead of contract fulfillment and dispose of the stored goods in any other way under consideration of the interests of the customer or scrap the goods. The contractual penalty is charged at a reimbursement of damages or expenses to be paid by the customer. A bulk discount granted on earlier deliveries based on this contract is then to be paid back later by the customer.

§ 6 Delivery periods and dates

(6.1) Delivery periods and dates apply only approximately unless something to the contrary has been agreed upon.

(6.2) The adherence to the delivery period is to be confirmed by the seller at the latest by the date of the customer. Delivery periods start with the date of order confirmation by the seller, but not before clarifying all details of the execution of the order and receipt of all documents necessary for the order execution and other information to be made by the customer as well as the receipt of an advance payment agreed upon. If these requirements are not fulfilled, the delivery period is not applicable. If the delay is caused by the seller, the delivery period shall be deemed to have been met, if the goods leave the plant or the warehouse at the appointed time or the dispatch readiness of the customer is reported, but the goods cannot be dispatched on time without a fault of the seller. The aforesaid regulations apply accordingly to delivery dates.

(6.3) In case of a later start of the order desired by the customer, the seller can demand an appropriate extension of the delivery periods and dates. If the delivery is delayed upon request or by fault of the customer, the goods are then stored at the cost and risk of the customer, unless agreed upon otherwise.

(6.4) Regulatory and other third party approvals, necessary for executing the assets or deliveries e.g. for the purpose of import are to be obtained by the customer. If such approvals are not present at the right time (i.e. at the start of the fulfilment negotiations / acts by the seller) then the delivery period gets extended accordingly.

(6.5) The seller has the right to carry out partial deliveries as well as deliveries before the date and to settle them separately. If the delivery is agreed upon call, the goods are then considered as called latest by three months after placing the order, unless agreed upon otherwise. The customer must call the goods at the time specified in the contract.

seller then has an obligation to accept the delivery, upon whose violation the seller in particular has the right to store the goods with a third party at the cost and risk of the customer or to deliver them at the address of the customer.

(6.6) In case of articles manufactured by the seller on order, the customer is obliged to accept the same. It is agreed upon explicitly that in case of a withdrawal of the customer from the contract, the customer must bear the costs accruing till the time of the withdrawal.

(6.7) The seller is not liable under the contract of the performance hindrance mentioned above for any delay arising from acts of God or from acts of persons or objects, sovereign interventions including currency and trade-related measures, industrial actions at the place of the seller or his suppliers or transportation companies, disruptions of the intended traffic connections, fire, scarcity of raw material, shortage of power and other disruptions of the seller through no fault of one's own extend the agreed upon delivery periods and dates by the duration of the hindrance. This also applies, if the seller is already in default of delivery or if the performance hindrance mentioned above were already present before signing the contract, but were not known to the seller. The seller will inform the customer immediately about the hindrances of the aforesaid type.

(6.8) If the delivery delays cause by these factors last for more than two months, both sides have the right to withdraw from the contract. However, the seller can withdraw only under the condition of the performance hindrance mentioned above for any delay arising from acts of God or from acts of persons or objects within a suitable period. The same right of withdrawal arises independent of the aforesaid period, if the execution of the contract has become unreasonably for one of the parties under consideration of the delay that has occurred.

(7.1) A claim of the customer for return of the goods not needed arises - except for warranty cases or other return obligations resulting from the law - only after a prior written approval of the seller. Return requests, whose net goods value - before sales tax - is less than Euro 15.00 for each item, cannot be accepted and processed. Credit notes or charges resulting from returns can be maximum up to 70 (seventy) percent of the net goods value.

(7.2) In addition, the conditions and conditions set out below shall be complied with pursuant to §§ 7.3-7.6 and no case of § 7.7 shall exist.

(7.3) A return is permitted till maximum 12 (twelve) months after the date of delivery and only by specifying the delivery note or invoice number of the goods.

(7.4) A product currently in the catalogue is to be returned in a flawless state so that it can be resold. A product is to be returned unused, undamaged, in original packing as well as in complete packaging units. The minimum value for accepting each item in the warehouse is Euro 15.00.

(7.5) The return must be reported and confirmed by the seller in writing with a return number. If needed, an inspection of the product is done by the seller at site, which the customer has to allow. The return confirmation of the seller is to be attached with the dispatch. The return is done free of charge. A remuneration is paid via credit note. Only approved articles in a flawless condition are credited. Debit notes of the customer are not permitted.

(7.6) For handling and checking in the scope of the quality management system ISO 9001, the seller charges a lump-sum processing fee of 30 (thirty) percent of the affected goods value. The seller bears the necessary costs for the new packing and cleaning of the goods.

(7.7) Custom-made products, not listed / inactive articles and discontinued types, packaging units with a shortfall and old executions are not taken back.

(7.8) If one of the points mentioned under § 7.7 is relevant, the returned product is scrapped after consulting with the customer and expiry of a suitable period set for the customer.

(8.1) Reservation of ownership / Reservation of proprietary rights and property relations
(8.1.1) The seller retains the ownership of the delivered objects till the receipt of all payments from the business relationship with the customer. The reservation of ownership also extends to the recognised balance, if the seller posts receivables vis-à-vis the customer in the current invoice (current account retention).

(8.2) The seller assigns documents and other similar objects delivered by the seller for executing the order also remain the property of the seller. In particular, no ownership rights follow from the fact that the customer has contributed towards the costs of manufacturing the dies, tools, design documents and other similar objects.

(8.3) The seller reserves the right to transfer the ownership has not been transferred to him, to handle the purchased object properly and to identify it clearly and permanently as property of the seller. He is especially committed in case of high quality products to insure these at the new value adequately against theft, fire and water damages at his own cost. In case of doubt, the customer must obtain information from the seller. If maintenance and inspection work is to be done, the customer must carry these out on time at his cost.

(8.4) The processing or restructuring of the delivered objects by the customer is done always for the seller as manufacturer as defined in § 950 BGB (manufacturer's clause), but without committing him. If the delivered objects are processed with other objects not belonging to the seller, the seller then acquires the co-ownership of the new object in the ratio of the value of the delivered object to the other connected or joined objects at the time of processing. The object arising from processing must be handled as the goods subject to retention of title.

(8.5) If the delivered objects are processed with other objects not belonging to the seller, are connected or joined inseparably, the seller then acquires the co-ownership of the new object in the ratio of the value of the delivered object to the other connected or mixed objects at the time of connecting or joining. If the connection or joining is done in a way that the product of the customer is to be considered as the main product, the customer then transfers the co-ownership to the seller proportionally. The offer directed towards this is accepted explicitly.

(8.6) The customer is committed to take charge of the (co-) ownership of the seller free of cost and with proper business care; it is to be treated like goods subject to retention of title. In doing so, the customer is committed to show the care over and above the one he shows in his own matter.

(8.7) Before the transfer of ownership, the product of the seller may neither be mortgaged nor pledged as security without a written permission. The assertion of third party rights on the product is to be informed immediately to the seller. In addition, all information necessary in this case for a possible defence of the seller is to be given and the documents and other correspondence necessary for this must be handed over. If the customer does not fulfil the requirements, the damages arising from this are charged to the customer. In this case, all claims against the customer become due immediately.

(8.8) As long as the customer goes according to the offer, he fulfils his contractual payment obligations, the customer has the right to sell further the delivered objects in the scope of proper business transaction and to collect the corresponding receivables after assignment of claim. Otherwise, the authorisation can be revoked. If the goods are sold before paying the receivables of the seller, the customer is then committed to preserve and secure the ownership rights of the seller till the complete repayment of the receivables. To do this, he surrenders all receivables arising from the sale of the delivered objects and the proceeds of the sale to the seller. The seller is entitled to the proceeds of the sale and possible indemnity claims owing to damage and destruction of the goods subject to retention of title, which also includes an insurance sum in place of the retention of title) amounting to the final invoice amount (including VAT), which accrue for the customer from the resale to his customers.

(8.9) The customer is committed to take care of the delivered objects (or their saleable objects) in a proper way and to ensure that the customer also takes care of claim accepted here explicitly. In case of finalisation of the customer is sold, the assignment of claim of the receivable extends to the amount, which matches the share value of the seller. The customer is authorised to collect the receivables even after surrendering them. The authority of the seller to collect the receivable himself remains unaffected by this; however, the seller is committed not to collect the receivable as long as the customer is committed to take care of the delivered objects (or their saleable objects) in a proper way and to ensure that the customer also takes care of claim accepted here explicitly. In case of finalisation of the customer is sold, the assignment of claim of the receivable extends to the amount, which matches the share value of the seller. 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