

TBS



**Transient and lightning
protection systems
Ukraine**

2019/2020

Building Connections

OBO
BETTERMANN



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Monday to Friday 09.00 to 18.00

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www.obo.ua



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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

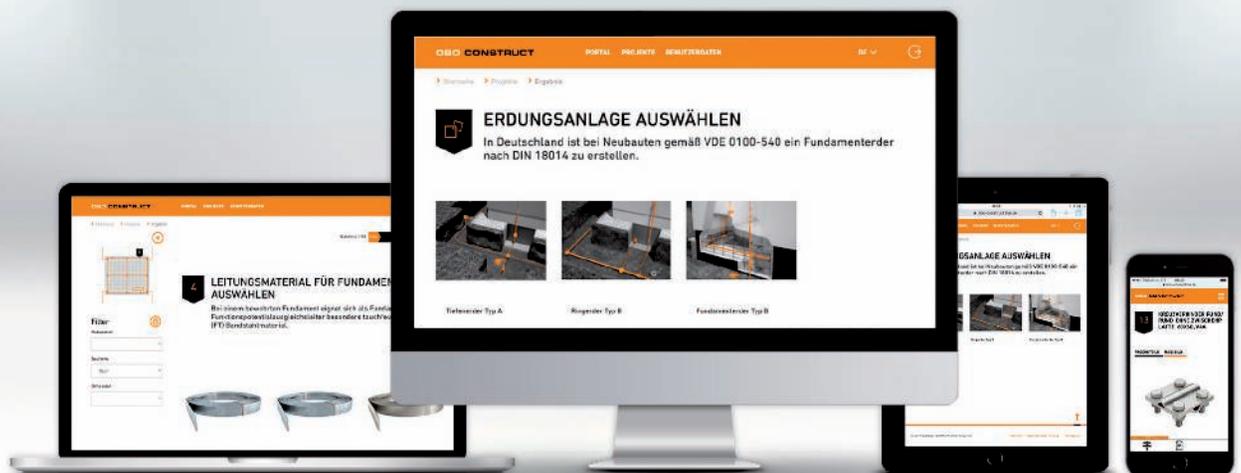
The digital selection aid can be used for the easy planning and configuration of earthing systems. The simple and intuitive user guidance leads you through the individual components of the earthing system step by step. The software then automatically calculates the amounts required and the matching accessories. 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



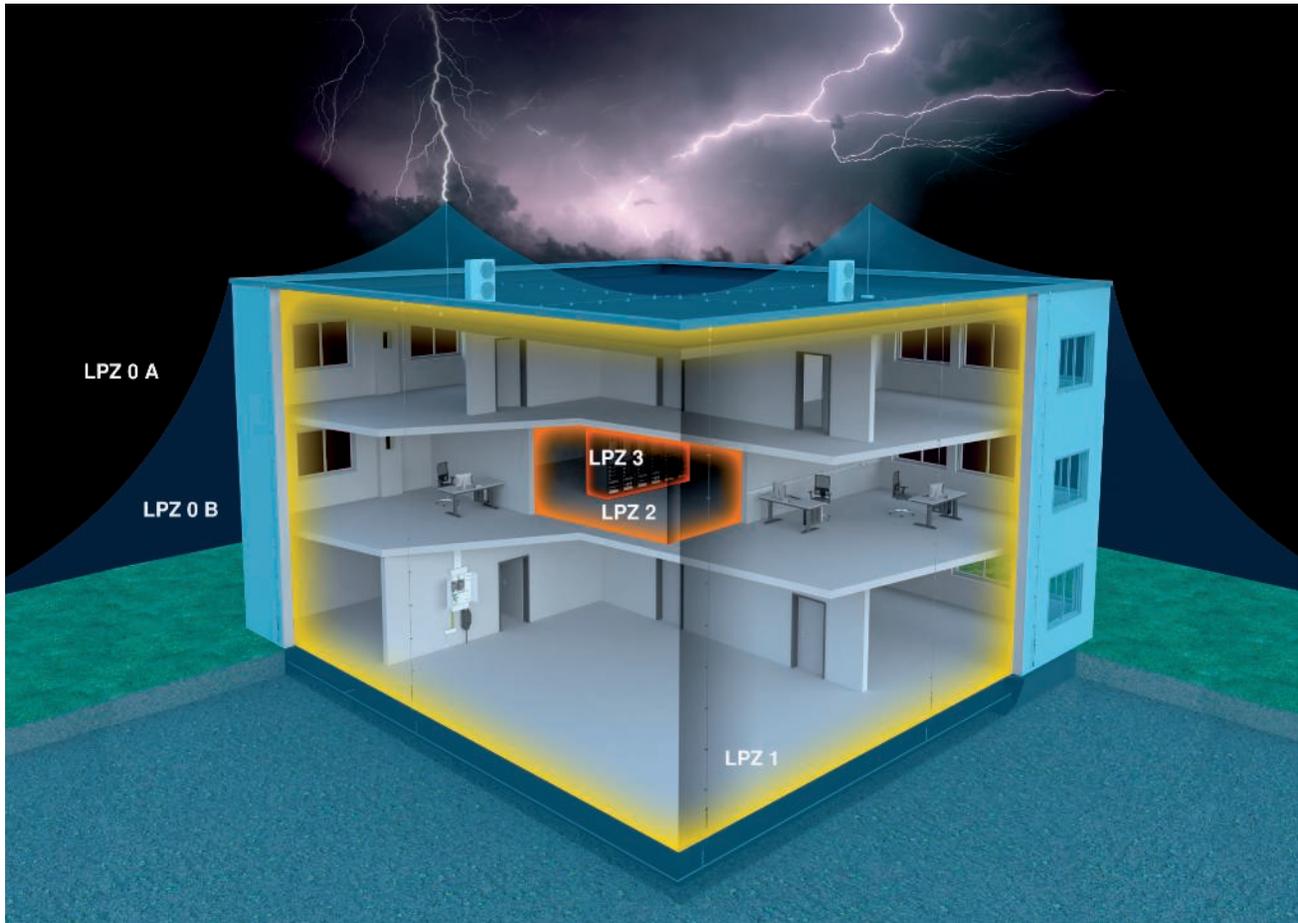
Standard	German supplement	Contents
VDE 0185-305-1 (IEC 62305-1)		Protection against lightning – Part 1: General principles
VDE 0185-305-2 (IEC 62305-2)		Protection against lightning – Part 2: Risk management
	1	Lightning risk in Germany
	2	Calculation aids for estimating the risk of damage for buildings
	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.



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

Zertifikat zur Anerkennung
Certificate of acceptance

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

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

für das / for the
Acceptance Program
Stufe 2 / in Stage 2

40046136
2019-06-22
5022908-9501-0001/237781

in mit dem gültigen Dokument „TDAP SCOPE“. Es berechtigt h geschützten Zeichens des VDE. in with the valid document „TDAP SCOPE“. It does not ected VDE marks.

stitut GmbH
Institute
n Products

VDE
INSTITUT

Confirmation

Herewith we confirm, that

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

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

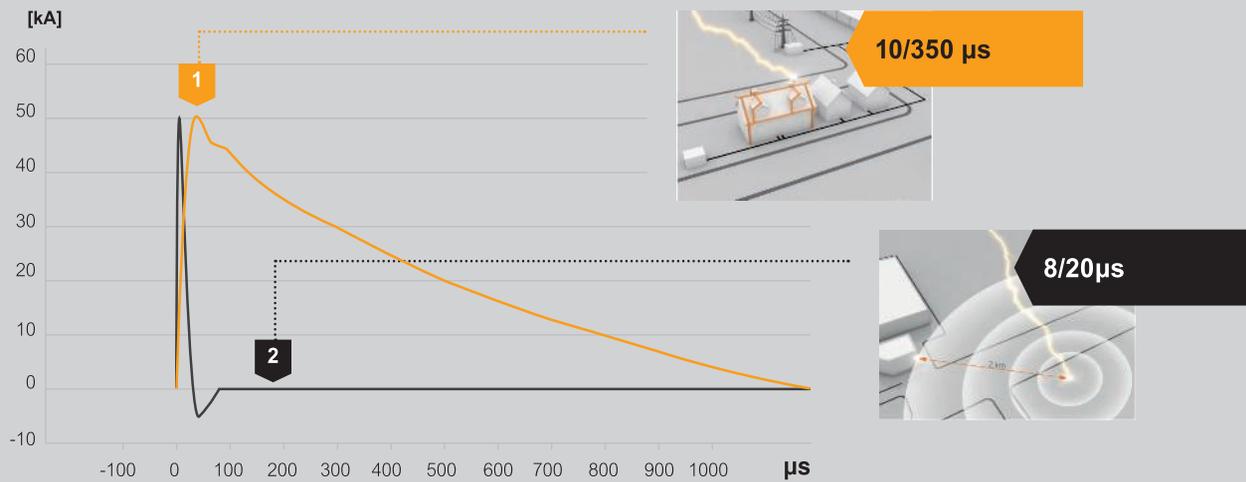
DIN EN ISO 1461
"Hot dip galvanized coatings on fabricated iron and steel articles – specifications and test methods".

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

Industrieverband Feuerverzinken e.V.
Hörnsicher Weg 200
40470 Düsseldorf

Mark Huckhold
Mark Huckhold

Mitglied der European General Galvanizers Association EGGA - BIC DEU | DEIBDU - IBAN DE42 3007 0024 0589 1643 00



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

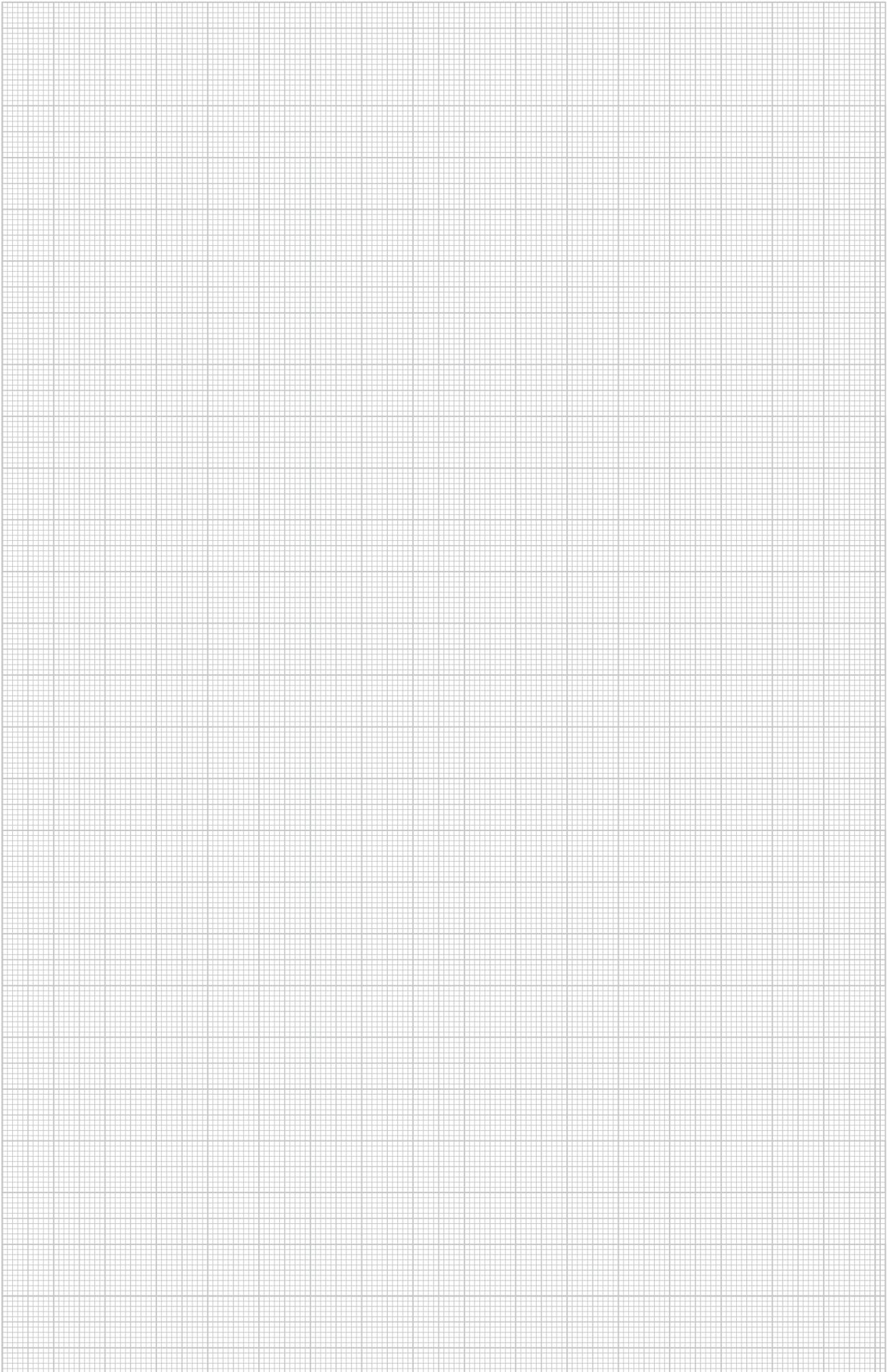
Both lightning current tests and surge voltage tests can be carried out at up to 20 kV. A hybrid generator is used for these tests, which was also developed as part of a cooperation with the Soest Technical College. EMC testing of cable support systems can also be carried out using this test generator. 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.



Test marks

	
	Lightning current-tested
	Lightning current-tested, Class H (100 kA)
	ELEKTROTECHNICKÝ ZKUŠEBNÍ ÚSTAV, Czech Republic
	ATEX certificate for explosive areas
	Russia, GOST The State Committee for Standards
	KEMA-KEUR, Netherlands
	Indication of metric products
	MAGYAR ELEKTROTECHNIKAI ELLENŐRZŐ INTÉZET Budapest, Hungary
	Österreichischer Verband für Elektrotechnik, Austria
	Underwriters Laboratories Inc., USA
	Eidgenössisches Starkstrominspektorat, Switzerland
	Underwriters Laboratories Inc., USA
	Verband der Elektrotechnik, Elektronik, Informationstechnik e.V., Germany
	German Association of Electricians, tested safety
	5-year warranty
	Halogen-free; without chlorine, fluorine and bromine
	INMETRO, Brazil

Pictogram explanation

Lightning protection classes

	Protection device to DIN EN 61643-11 or IEC 61643-11
	Combination protection device made of type 1 and type 2
	Protection device to DIN EN 61643-11 or IEC 61643-11
	Protection device to DIN EN 61643-11 or IEC 61643-11
	Protection device to DIN EN 61643-11 or IEC 61643-11

Lightning protection zone

	Transition from LPZ 0 to LPZ 1
	Transition from LPZ 0 to LPZ 2
	Transition from LPZ 0 to LPZ 3
	Transition from LPZ 1 to LPZ 2
	Transition from LPZ 1 to LPZ 3
	Transition from LPZ 2 to LPZ 3

Applications

	Remote signalling
	Acoustic signalling
	Integrated Service Digital Network, ISDN applications
	Digital Subscriber Line, DSL applications
	Analogue telecommunication
	Category 5 TwisterPair
	Channel Performance to American EIA/TIA standard
	Measuring, controlling and regulating systems
	TV applications
	SAT-TV applications
	MultiBase base
	LifeControl
	Intrinsically safe protection device for areas with a risk of explosions
	Channel Performance to ISO / IEC 11801
	Power over Ethernet
	230/400 V system
	Protection rating IP 54
	Protection rating IP 65

Metals

	Aluminium
	Stainless steel, grade 304
	Stainless steel, grade 316
	Stainless steel, grade 316 L
	Stainless steel, grade 316 Ti
	Copper
	Brass
	Steel
	Cast iron
	Die-cast zinc

Plastics

	Fibre-glass-reinforced plastic
	Petrolatum
	Polyamide
	Polycarbonate
	Polyethylene
	Polypropylene
	Polystyrene

Surfaces

	Strip-galvanised
	Hot-dip galvanised
	Electro-galvanised
	Hot-dip galvanised
	Copper-plated
	Nickel-plated
	Galvanised, Deltatone 500

Metallic materials



Alu — Aluminium

VA (1.4301) — Stainless steel, grade 304

VA (1.4401) — Stainless steel, grade 316

VA (1.4404) — Stainless steel, grade 316 L

VA (1.4571) — Stainless steel, grade 316 Ti

Cu — Copper

CuZn — Brass

St — Steel

TG — Cast iron
Electro-galvanised

Zn — Die-cast zinc



Plastic materials

GFK — Fibre-glass-reinforced plastic

Temperature resistance:
-50 to 130 °C.

Resistant to

High chemical resistance
Corrosion resistance
UV light resistance

PETR — Petrolatum

PA — Polyamide

Temperature resistance:
permanently up to approx. 90 °C, briefly up to about 130 °C
and to about minus 40 °C*.

Chem. resistance generally as for polyethylene.

Resistant to

Petrol, benzene, diesel oil, acetone, solvents for paints and lacquers,
oils and greases.

Unstable with

Bleach, most acids, chlorine.

Risk of tension cracking

Low in air-humid conditions; only with some aqueous salt solutions.
Highly desiccated parts (high temperature and extremely low air
humidity) are highly sensitive to fuels and various solvents.

PA/PE — Polyamide/Polyethylene

PC — Polycarbonate

Temperature resistance:
permanently up to approx. 110 °C (in water 60 °C), briefly up to
125 °C, and to below minus 35 °C.

Resistant to

Petrol, turpentine, most weak acids.

Unstable with

Acetone, benzene, chlorine, methylene chloride, most concentrated
acids.

Risk of tension cracking

Relatively low.

Media which can cause tension cracking include benzene, aromatic
hydrocarbons, methanol, butanol, acetone, turpentine.

PE — Polyethylene

Temperature resistance:
hard types permanently up to about 90 °C, briefly up to about 105 °C,
soft types permanently up to about 80 °C, briefly up to about 100 °C
and to about minus 40 °C*.

Resistant to

Alkalis and inorganic acids.

Conditionally resistant to

Acetone, organic acids, petrol, benzene, diesel oil, most oils.

Unstable with

Chlorine, hydrocarbons, oxidising acids.

Risk of tension cracking

Relatively high.

Stress cracks can be caused by, among other things, acetone, various
alcohols, formic acid, ethanol, petrol, benzene, butyric acid, acetic acid,
formaldehyde, various oils, petroleum, propanol, nitric acid,
hydrochloric acid, sulphuric acid, soap solutions, turpentine,
trichloroethylene, citric acid.

PP — Polypropylene

Temperature resistance:
permanently up to approx. 90 °C, briefly up to about 110 °C
and to about minus 30 °C*.

Chem. resistance generally as for polyethylene.

Resistant to

Alkalis and inorganic acids.

Conditionally resistant to

Acetone, organic acids, petrol, benzene, diesel oil, most oils.

Unstable with

Chlorine, hydrocarbons, oxidising acids.

Risk of tension cracking

Low, only with some acids such as chromic acid, hydrofluoric acid and
hydrochloric acid, as well as nitrogen oxide.

PS — Polystyrene

Temperature resistance:

Because of its relatively high sensitivity to the effects of chemicals, its
use is not recommended at temperatures above normal room
temperature, about 25 °C.

Resistance to cold: to about minus 40 °C*.

Resistant to

Alkalis, most acids, alcohol.

Conditionally resistant to

Oils and greases.

Unstable with

Butyric acid, concentrated nitric acid, concentrated acetic acid,
acetone, ether, petrol and benzene, solvents for paints and lacquers,
chlorine, diesel fuel.

Risk of tension cracking

Relatively high.

Stress cracks can be caused by, amongst other things, acetone, ether,
petrol, cyclohexane, heptane, methanol, propanol and the softeners
used in some PVC cable mixes.

*The minus values apply only for parts in the quiescent condition with
no severe impact stress.

There is no plastic that is resistant to every chemical. The agents listed
are only a small selection. Plastic parts are especially at risk in the
presence of chemicals and high temperatures. Stress cracks may
occur. If in doubt, please consult us and/or ask for a detailed chemical
resistance table.

Stress crack formation: stress cracks may occur if plastic parts under
tension are exposed to chemicals at the same time. Parts made of
polystyrene and polyethylene are particularly susceptible. Stress cracks
may even be caused by agents to which the plastic in question is
resistant in the absence of stress. Typical examples of parts under
constant stress when used as intended: grip clips, intermediate
supports of cable glands, ribbon clips.

Tested lightning protection components



Tightening torques

M5 = 4 Nm

M6 = 6 Nm

M8 = 12 Nm

M10 = 20 Nm

Detailed data can be provided on request.



Brief glossary of overvoltage protection

100% response lightning impulse voltage

The 100% response lightning impulse voltage is the value of the lightning impulse voltage 1.2/50 μ s, causing the arrester to switch. With this testing voltage, the surge protection device must respond ten times to ten loads.

Arrester

Arresters are resources, which primarily consist of voltage-dependent resistors and/or spark gaps. Both elements can be switched in series or in parallel or used individually.

Arresters are used to protect other electrical resources and electrical systems against surge voltages.

Arrester measured voltage V_c

For arresters without a spark gap, the measured voltage is the maximum permitted effective value of the mains voltage on the arrester terminals. The measured voltage may constantly be applied to the arrester without changing its operational characteristics.

Back-up fuse before the arresters

There must be a back-up fuse before the arresters. If the upstream fuse is greater than the maximum approved back-up fuse of the arrester elements (see technical data of the device), the arrester must be protected selectively with the required value.

Cut-off unit

The cut-off unit cuts the arrester off from the mains or the earthing system if it is overloaded, thus preventing a fire risk and also signalling the switch-off of the protection device.

Equipotential bonding

Electrical connection, which brings the bodies of electrical resources and other conductive parts to the same or almost the same potential.

Equipotential busbar (PAS)

A terminal or rail, intended to connect the protective conductor, the equipotential bonding conductor and, if necessary, the conductor for function earthing with the earthing cable and the earthers.

Error current protection unit (RCD)

Resource for protection against electric shocks and fire protection (e.g. FI protection switches).

Lightning protection equipotential bonding system

The lightning protection equipotential bonding is a key measure in reducing the risk of fire and explosion on the room or building to be protected. The lightning protection equipotential bonding is achieved using equipotential bonding cables or arresters, which connect the external lightning protection system, metallic parts of the building or room, the installation, the other conductive parts and the electrical energy and telecommunications systems.

Lightning protection system (LPS)

A lightning protection system (LPS) is considered as the entire system used to protect a room or building against the impact of a lightning strike. This includes both internal and external lightning protection.

Lightning protection zone (LPZ)

Lightning protection zones are those areas in which the electromagnetic environment of the lightning is to be defined and mastered. At the zone transitions, all cables and metallic parts must be integrated into the equipotential bonding system.

Lightning surge current (Iimp)

A lightning surge current (lightning current carrying capacity per path) is a standardised surge current curve of the shape 10/350 μ s. With its parameters

- Peak value
- Charge
- Specific energy

it represents the load from natural lightning currents. Type 1 lightning current arresters (previously requirement class B) must be able to arrest such lightning currents without being destroyed.

Line follow current quenching (If)

The follow current – also called network follow current – is the current which flows through the surge protection device after an arresting operation and is supplied by the network. The follow current is considerably different from the continuous operating current. The level of the network follow current is dependent on the feed line from the transformer to the arrester.

Nominal current (In)

The nominal current is the maximum permitted operating current which may be run continually through the appropriately labelled connection terminals.

Nominal discharge surge current (In)

Peak value of the current flowing through the arrester with the wave shape 8/20. It is used to classify the testing of surge arresters of type 2 (formerly requirements Class C).

Nominal frequency (fn)

The nominal frequency is that frequency for which a resource is measured, by which it is called and upon which other nominal parameters refer.

Nominal voltage (Vn)

The rated voltage is the voltage value for which a resource is designed. In so doing it might be a direct voltage value or the effective value of a sine-form alternating voltage.

Surge protection device (SPD)

A device intended for the limitation of transient surge voltages and arresting of surge voltages. It contains at least one non-linear construction element. In general speech, surge protection devices are also termed arresters.

Protection level (Up)

The protection level is the highest current voltage value on the terminals of the surge protection device before response.

Residual voltage (Vres)

The peak voltage value, occurring via the terminals of the surge protection device during or immediately after the arresting surge current has flowed.

Short-circuit resistance

The surge protection device must be able to conduct the short-circuit current, until it is either interrupted by the device itself or by an internal or external cut-off unit or by mains-side over-current protection (e.g. back-up fuse).

Response time (ta)

The response time primarily characterises the response behaviour of the individual protection elements used in arresters. Depending on the slope du/dt of the surge voltage or di/dt of the surge current, the response times may vary within specific limits.

SPD

Surge protection device.

Surge arrester, type 1

Arresters, which, due to their special structure, are able to arrest lightning currents or partial lightning currents during direct strikes.

Surge arrester, type 2

Arresters, which are able to arrest surge voltages caused by remote or nearby strikes or switching actions.

Surge arrester, type 3

Arresters, used for surge protection of individual consumers or consumer groups and are employed directly on sockets.

Surge voltage

A surge voltage is a voltage occurring briefly between conductors or between a conductor and the earth, which exceeds the highest permissible operating voltage value by a long way, but does not have the operating frequency. It can be created by storms or by earthing or short-circuits.

Temperature range

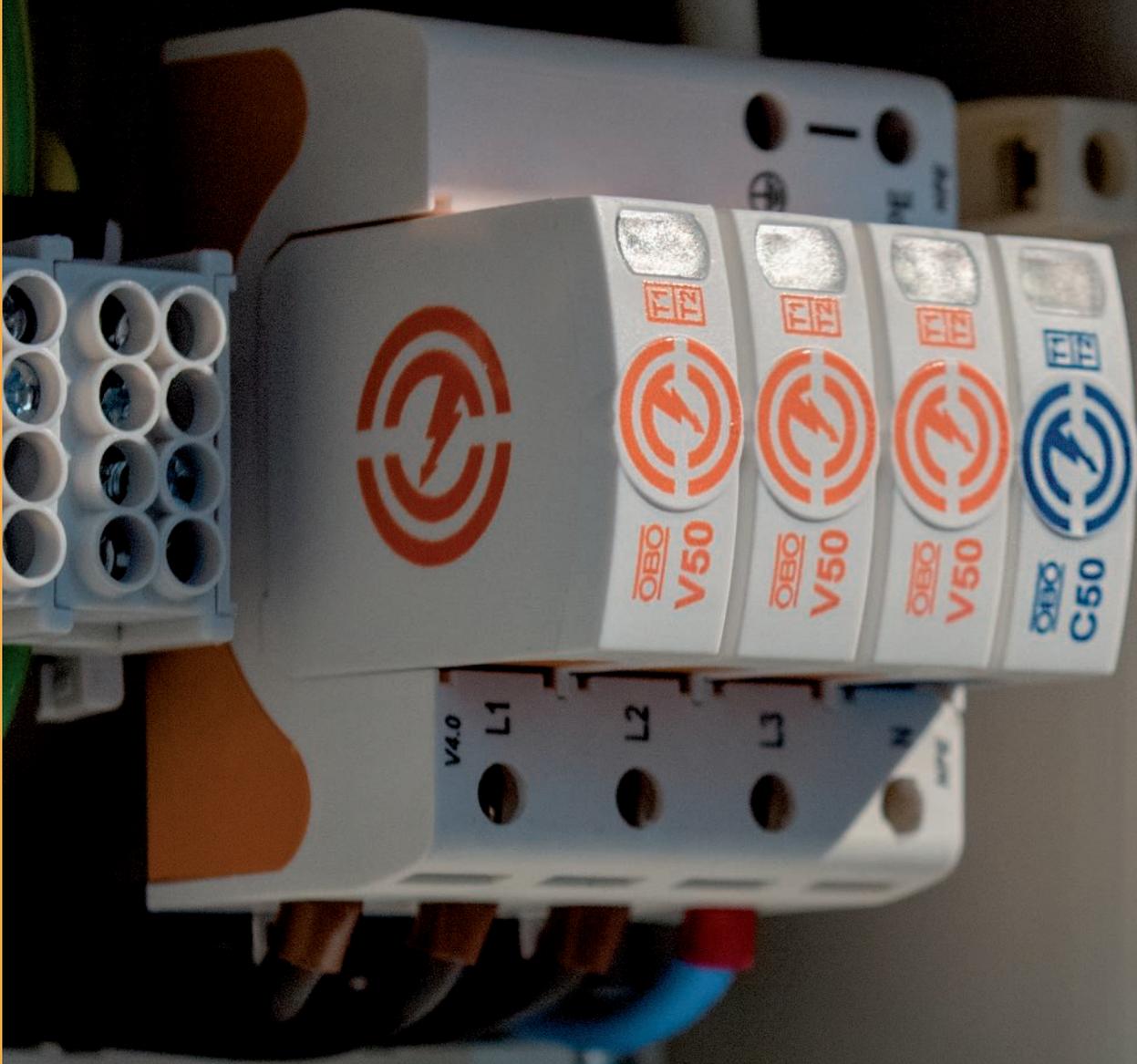
The operating temperature specifies within which temperature limits the perfect function of the surge protection device is guaranteed.

Transmission frequency (fg)

The transmission frequency specifies up to which frequency the insertion damping of the employed resource is less than 3 dB.

Volume resistance per path, series resistance

The volume resistance per path specifies the ohmic resistance increase of the conductor path per wire caused by the use of the surge protection device.



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	26
	MCD combination arrester	33
	V50 combination arrester	33
	Accessories, upper parts and bases	59

Lightning Controller Compact

Lightning Controller Compact - MCF100



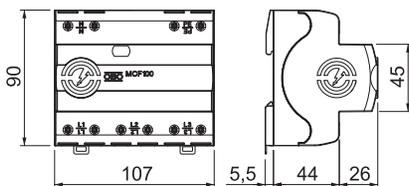
Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
MCF100-3+NPE+FS	255	3+N/PE	IP20	1	93.500	5096987

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

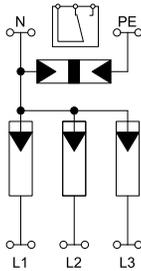
- Protection level < 1.5 kV
- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity to 100 kA (10/350), 3+NPE
- Line following current quenching 50 kA Ipeak, arrester backup fuse to 315 A gL/gG
- Fulfills the requirements of the VDEW directive 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



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 μ s)	I_n / I_{n-N} 35 kA
Maximum discharge current (8/20 μ s)	I_{max} 50 kA
Lightning surge current (10/350 μ s)	I_{imp} 25 kA
Total discharge current (10/350)	I_{total} 100 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 100 kA
Protection level [L-N]	U_o 1.5 kV
Max. mains-side overcurrent protection	315 A
Short-circuit withstand for max. mains-side overcurrent protection	50 kA eff
Operating temperature range	T_{li} -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)	16 - 3 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 3 AWG

Lightning Controller 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

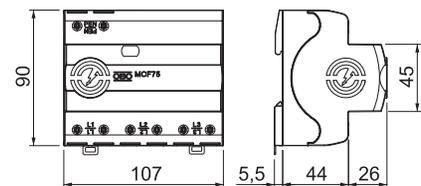
Combination arrester, lightning current and surge arrester, type 1+2

- 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
- 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.



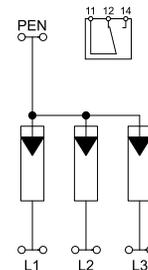
Dimensions



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
Combined voltage protection level [L-PEN]	U _D / L-PEN 1.5 kV
Max. mains-side overcurrent protection	315 A
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)	16 - 3 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 3 AWG

Connection options





Combination arrester MCD, 255 V for TN and TT networks

Combination arrester, 3-pole



Highest continuous voltage V Version

Type	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
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.

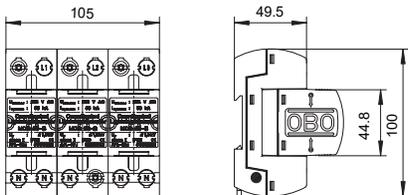
Completely pre-terminated and ready for connection, consisting of:

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.

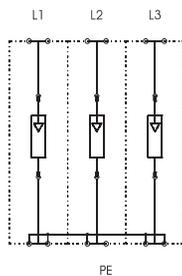
- Lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity to 50 kA (10/350) per pole and up to 150 kA (10/350) in total
- Protection level < 1.7 kV allows device protection
- Short-circuit resistance 10 kA, arrester backup fuse to 500 A gL/gG
- Suitable 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
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}	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 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, 1-pole



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

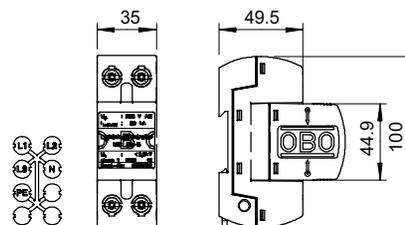
Combination arrester, lightning current arrester, type 1+2, for use in TN and TT networks

- 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

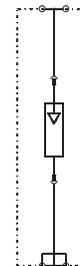
Application: Industrial systems and buildings with external lightning protection of Classes I to IV.



Dimensions



Connection options



MCD 50-B

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}	50 kA
Nominal discharge current (8/20)	I_n	50 kA
Arrester surge current (8/20) [total]	$I_{Total R/20}$	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 arrester MCD, 255 V for TN and TT networks

Combination arrester, 1-pole with function display



Highest continuous voltage V

Pack. Weight pcs kg/100 pcs. Item No.

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

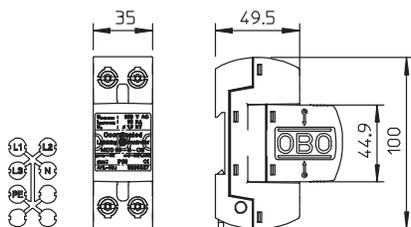
Combination arrester, type 1+2, 1-pole, for use in TN and TT networks:

MCD 50-B-OS: Coordinated lightning current arrester, 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.

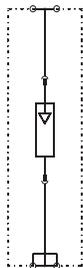
- Arresting capacity 50 kA (10/350 μ s) per pole
- Power consumption < 26 mW/pole
- Protection level < 1.3 kV
- Line follow current quenching 25 kA I_{peak}
- Incl. plug caps for identifying the connections
- Encapsulated, non-extinguishing spark gap
- Can be used in standard distributor housings.

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

Dimensions



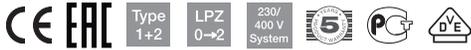
Connection options



MCD 50-B-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}	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	< 1,7 kV
Response time	t_A	<100 ns
Follow current quenching capacity I _{eff}	$I_{fi\ eff}$	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, 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.

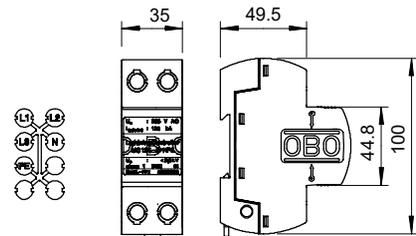
MCD 125-B/NPE: Coordinated N-PE spark gap, type 1+2 to EN 61643-11. For interface 0 to 2 (LPZ) in accordance with lightning protection zone concept to IEC 61312-1 and/or VDE 0185-305.

- Arresting capacity 125 kA (10/350 μs)
- 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

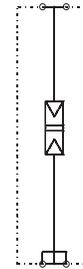
Application: Industrial systems and buildings with external lightning protection of Classes I to IV.



Dimensions



Connection options



MCD 125-B NPE

Nominal voltage	U_N	230 V
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}	125 kA
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_{ff}	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



MCD accessories, covers and bases

Combination arrester upper part



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

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 arresters in side channel.

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

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

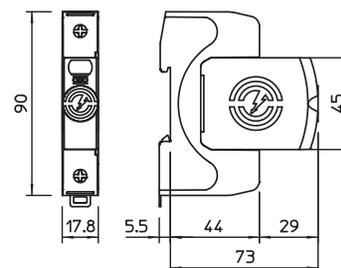
Lightning current combination arrester, type 1+2

- 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: Lightning 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_{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} — 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 in 280 V, type 1+2

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

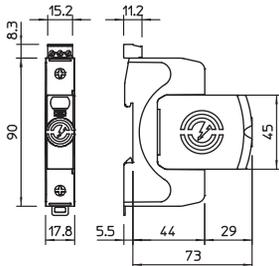
PA Polyamide

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: Lighting 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, 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

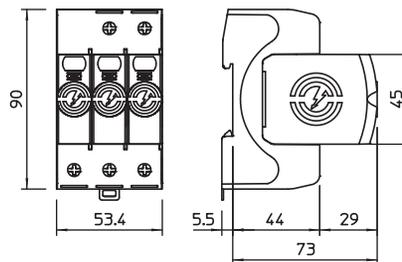
Lightning current combination arrester, type 1+2

- 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

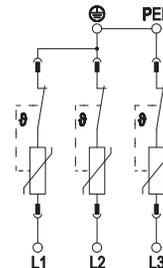
Application: Lightning current equipotential bonding for buildings of class III and IV.



Dimensions



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 in 280 V, type 1+2

Combination arrester V50, 3-pole with FS 280 V

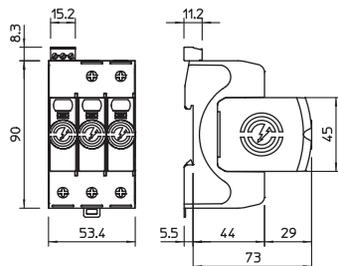


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V50-3+FS-280	280	3	IP20	1	46.900	5093516

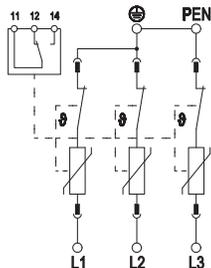
Lightning current combination arrester, type 1+2

- 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

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, 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

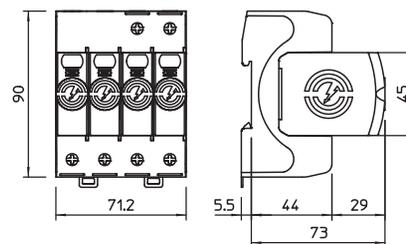
Lightning current combination arrester, type 1+2

- 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

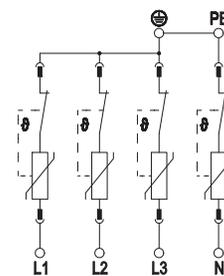
Application: Lightning current equipotential bonding for buildings of class III and IV.



Dimensions



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 in 280 V, type 1+2

Combination arrester V50, 4-pole with FS 280 V

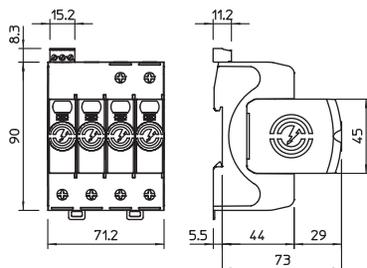


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V50-4+FS-280	280	4	IP20	1	61.500	5093518

Lightning current combination arrester, type 1+2

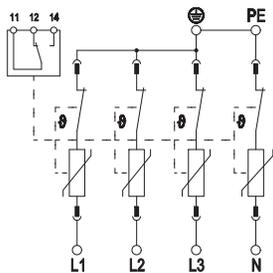
- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage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

Dimensions



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

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, 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

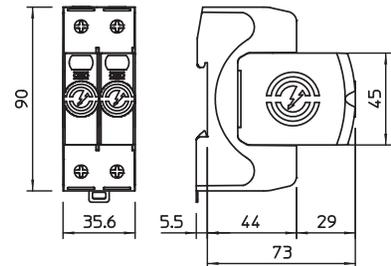
Lightning current combination arrester, type 1+2

- 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

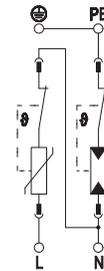
Application: Lightning current equipotential bonding for buildings of class III and IV.



Dimensions



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_{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_{rRS} 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 in 280 V with NPE, type 1+2

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

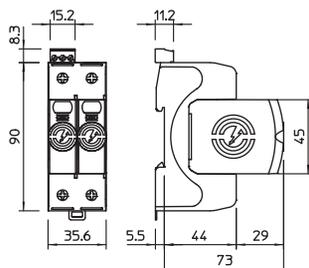


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V50-1+NPE+FS-280	280	1+N/PE	IP20	1	30.600	5093531

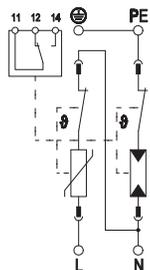
Lightning current combination arrester, type 1+2

- 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

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_{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
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, 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

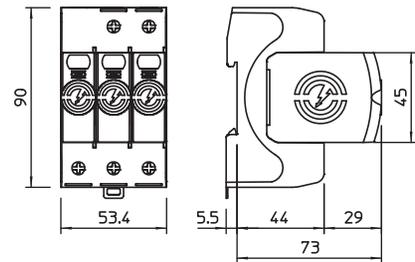
Lightning current combination arrester, type 1+2

- 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

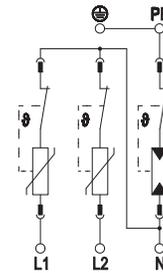
Application: Lightning current equipotential bonding for buildings of class III and IV.



Dimensions



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]	$U_D / I-PE$ 2.5 kV
Residual voltage [L-N] @ 1 kA	U_{RRS} 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 in 280 V with NPE, type 1+2

Combination arrester V50, 3-pole + NPE 280 V

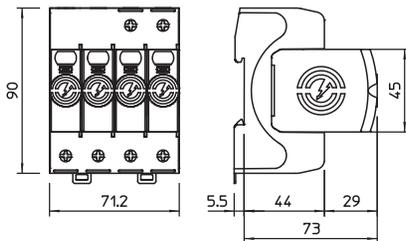


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V50-3+NPE-280	280	3+N/PE	IP20	1	58.800	5093526

Lightning current combination arrester, type 1+2

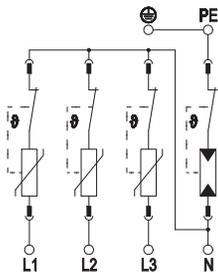
- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage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

Dimensions



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

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_{L-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_{L-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 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

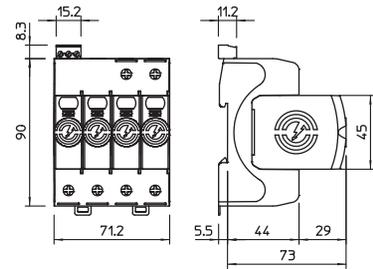
Lightning current combination arrester, type 1+2

- 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

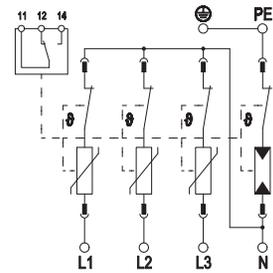
Application: Lightning current equipotential bonding for buildings of class III and IV.



Dimensions



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_{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 1.3 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 in 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

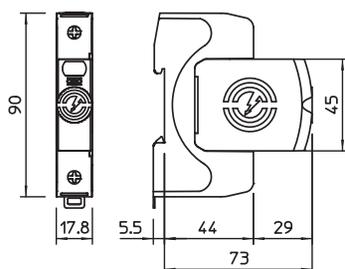
PA Polyamide

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
Protection level [L-N]	U_p 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_{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 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

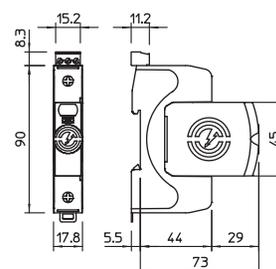
Lightning current combination arrester, type 1+2

- 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
Protection level [L-N]	U_p 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_{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 in 320 V, type 1+2

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

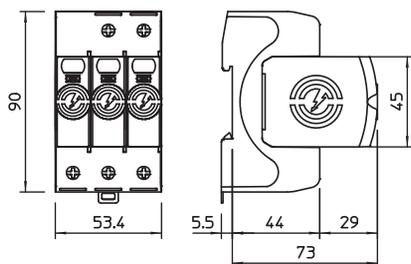
PA Polyamide

Lightning current combination arrester, type 1+2

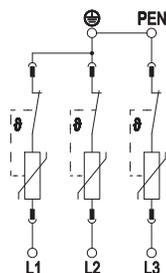
- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage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

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

Dimensions



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
Protection level [L-N]	U_p 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_{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 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

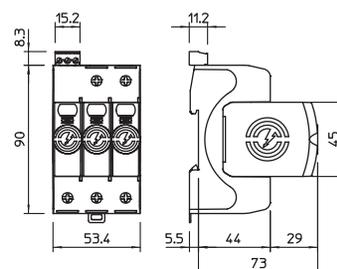
Lightning current combination arrester, type 1+2

- 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

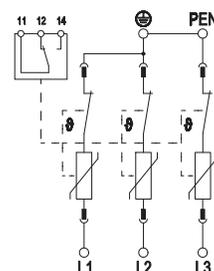
Application: Lightning current equipotential bonding for buildings of class III and IV.



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
Protection level [L-N]	U_p 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 in 320 V with NPE, type 1+2

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

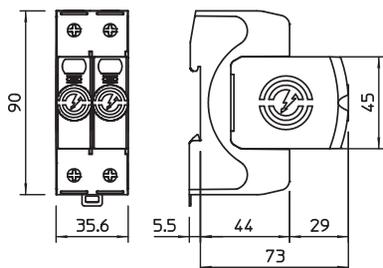
PA Polyamide

Lightning current combination arrester, type 1+2

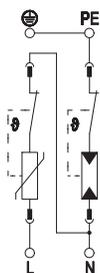
- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage 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_{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
Protection level [L-N]	U_p 1.4 kV
Combined voltage protection level [L-PE]	$U_{p / L-PE}$ 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

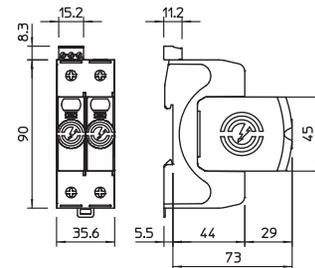
Lightning current combination arrester, type 1+2

- 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

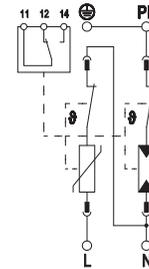
Application: Lightning current equipotential bonding for buildings of class III and IV.



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} 50 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 in 320 V with NPE, type 1+2

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

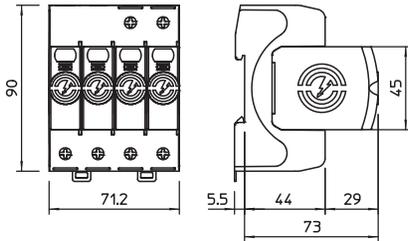
PA Polyamide

Lightning current combination arrester, type 1+2

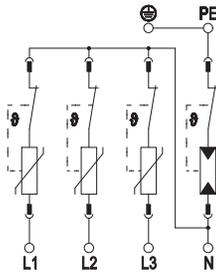
- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage 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_{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
Protection level [L-N]	U_p 1.4 kV
Combined voltage protection level [L-PE]	$U_{p / L-PE}$ 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

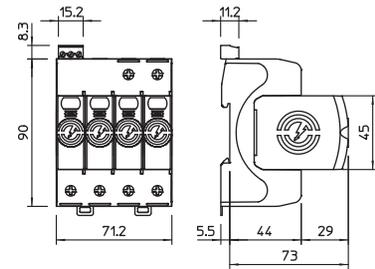
Lightning current combination arrester, type 1+2

- 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

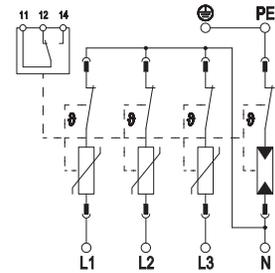
Application: Lightning current equipotential bonding for buildings of class III and IV.



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_{L-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 upper part, type 1+2

Upper part V50 280 V



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

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.
	V50-0-320	320	1	IP20	1	

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 AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
	C50-0-255	255	N/PE	IP20	1	

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.

Lightning current and surge arrester, 1-pole + NPE



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V50-B+C 1+NPE	280	1+NPE	1	31.300	5093653

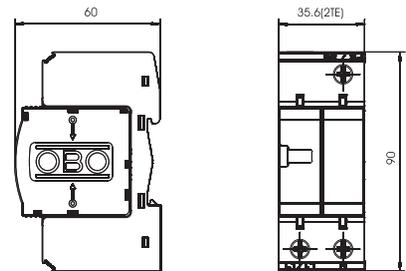
Combination arrester set, lightning and surge arrester Type 1+2 to DIN EN 61643-11 (B+C to VDE 0675 part 6).

- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity 12.5 kA (10/350) per pole and 50 kA (10/350) in total
- Universally suitable for TN and TT systems
- With new Multibase base with multi-connection terminals
- Complete unit, consisting of cover and base, pre-mounted and ready for connection
- arrester, connectable with dynamic cut-off unit
- With visual status display
- Voltage protection level < 1,3 kV
- Encapsulated, non-extinguishing zinc oxide varistor arrester for use in distributor housings
- Labelled connections

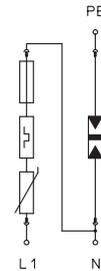
Application: Equipotential bonding in buildings, even those with external lightning protection of class III and IV, and in standard distributor housings.



Dimensions



Connection options



V50-B+C 1+NPE

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	280 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I_{imp}	12.5 kA
Total discharge current (10/350)	I_{total}	25 kA
Nominal discharge current (8/20)	I_n	30 kA
Arrester surge current (8/20) [total]	$I_{Total 8/20}$	50 kA
Maximum discharge current (8/20 μs)	I_{max}	50 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)		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 V50, 280 V for TN and TT network systems

Lightning current and surge arrester, 1-pole + NPE with remote
signalling

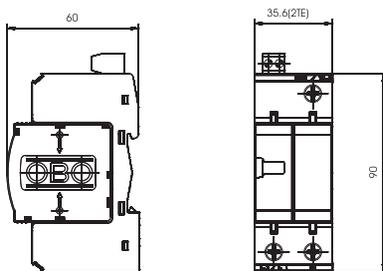
Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V50-B+C 1+NPE+FS	280	1+NPE + FS	1	26.100	5093661

V 50-B+C/3+NPE+FS: combination arrester set, lightning and surge arrester type 1+2 to DIN EN 61643-11 (B+C to VDE 0675 part 6).

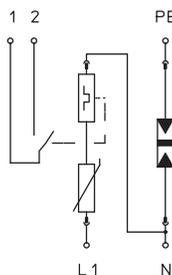
- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current dissipation capacity 12.5 kA (10/350) per pole
- Universally suitable for TN and TT systems
- With new Multibase base with multiple connection terminals
- Complete unit, consisting of cover and base, pre-mounted and ready for connection
- arrester, connectable with dynamic cut-off unit
- With optical status display
- Voltage protection level < 1,3 kV
- Encapsulated, non-extinguishing zinc oxide varistor arrester for use in distributor housing
- Labelled connections
- -FS variant with remote signalling contact (potential-free NO contact)

Application: lightning protection equipotential bonding in buildings which also have external lightning protection of Classes III and IV and in standard distributor housings.

Dimensions



Connection options



V50-B+C 1+NPE+FS

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	280 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}	12.5 kA
Total discharge current (10/350)	I_{total}	25 kA
Nominal discharge current (8/20)	I_n	30 kA
Arrester surge current (8/20) [total]	$I_{Total 8/20}$	50 kA
Maximum discharge current (8/20 μ s)	I_{max}	50 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)		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

Lightning current and surge arrester, 3-pole + NPE



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V50-B+C 3+NPE	280	3+NPE	1	55.000	5093654

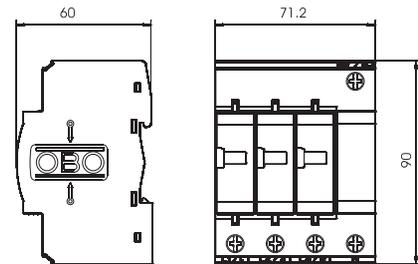
Combination arrester set, lightning and surge arrester Type 1+2 to DIN EN 61643-11 (B+C to VDE 0675 part 6).

- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity 12.5 kA (10/350) per pole and 50 kA (10/350) in total
- Universally suitable for TN and TT systems
- With new Multibase base with multi-connection terminals
- Complete unit, consisting of cover and base, pre-mounted and ready for connection
- arrester, connectable with dynamic cut-off unit
- With visual status display
- Voltage protection level < 1,3 kV
- Encapsulated, non-extinguishing zinc oxide varistor arrester for use in distributor housings
- Labelled connections

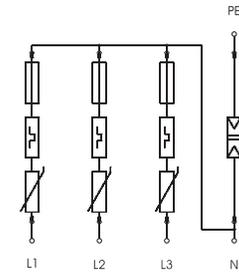
Application: Equipotential bonding in buildings, even those with external lightning protection of class III and IV, and in standard distributor housings.



Dimensions



Connection options



V50-B+C 3+NPE

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	280 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I_{imp}	12.5 kA
Total discharge current (10/350)	I_{total}	50 kA
Nominal discharge current (8/20)	I_n	30 kA
Arrester surge current (8/20) [total]	$I_{Total 8/20}$	50 kA
Maximum discharge current (8/20 μ s)	I_{max}	50 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





Combination arrester V50, 280 V for TN and TT network systems

Lightning current and surge arrester, 3-pole + NPE with remote signalling



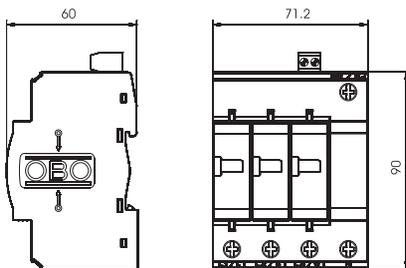
Type	LPZ	Mu	FS	5	PC		
1+2	0→2						
	Highest continuous voltage		Version		Pack.	Weight	Item No.
V	V		Version		pcs	kg/100 pcs.	
V50-B+C 3+NPE+FS	280	3+NPE + FS		1	55.000		5093662

V 50-B+C/3+NPE+FS: combination arrester set, lightning and surge arrester type 1+2 to DIN EN 61643-11 (B+C to VDE 0675 part 6).

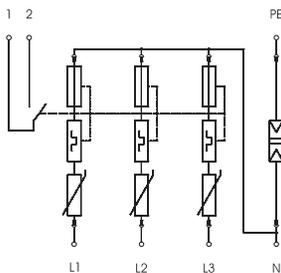
- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current dissipation capacity 12.5 kA (10/350) per pole
- Universally suitable for TN and TT systems
- With new Multibase base with multiple connection terminals
- Complete unit, consisting of cover and base, pre-mounted and ready for connection
- arrester, connectable with dynamic cut-off unit
- With optical status display
- Voltage protection level < 1,3 kV
- Encapsulated, non-extinguishing zinc oxide varistor arrester for use in distributor housing
- Labelled connections
- -FS variant with remote signalling contact (potential-free NO contact)

Application: lightning protection equipotential bonding in buildings which also have external lightning protection of Classes III and IV and in standard distributor housings.

Dimensions



Connection options



V50-B+C 3+NPE+FS

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	280 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}	12.5 kA
Total discharge current (10/350)	I_{total}	50 kA
Nominal discharge current (8/20)	I_n	30 kA
Arrester surge current (8/20) [total]	$I_{Total 8/20}$	50 kA
Maximum discharge current (8/20 μ s)	I_{max}	50 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

Lightning current and surge arrester, 3-pole



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V50-B+C 3-280	280	3-pole	1	42.300	5093627

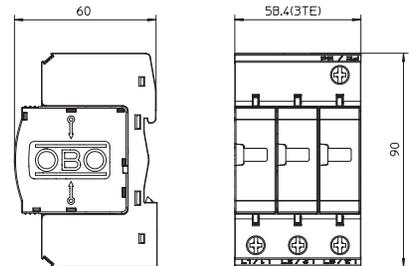
V 50-B+C/...: Combination arrester set, lightning and surge arrester Type 1+2 to DIN EN 61643-11 (B+C to VDE 0675 Part 6).

- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity 12.5 kA (10/350) per pole
- Universally suitable for TN-C systems
- With new Multibase base with multi-connection terminals
- Complete unit, consisting of cover and base, pre-mounted and ready for connection
- arrester, connectable with dynamic cut-off unit
- With visual function display
- Voltage protection level < 1,3 kV
- Encapsulated, non-extinguishing zinc oxide varistor arrester for use in distributor housings
- Labelled connections

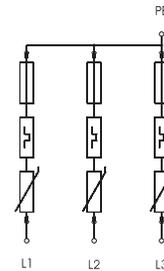
Application: Equipotential bonding in buildings, even those with external lightning protection of Class III and IV, and in standard distributor housings.



Dimensions



Connection options



V50-B+C 3-280

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	280 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class III
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I_{imp}	12.5 kA
Total discharge current (10/350)	I_{total}	37.5 kA
Nominal discharge current (8/20)	I_n	30 kA
Arrester surge current (8/20) [total]	$I_{Total 8/20}$	90 kA
Maximum discharge current (8/20 μs)	I_{max}	50 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)		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





Combination arrester V50, 280 V for TN-C network systems

Lightning current and surge arrester, 3-pole with remote signalling

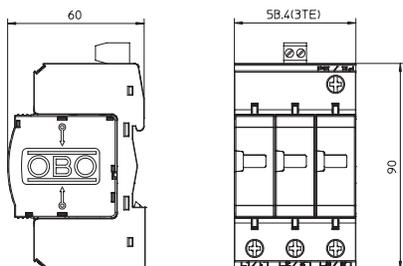


Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V50-B+C 3+FS280	280	3-pole + FS	1	43.000	5093643

V 50-B+C/...: Combination arrester set, lightning and surge arrester Type 1+2 to DIN EN 61643-11 (B+C to VDE 0675 Part 6).

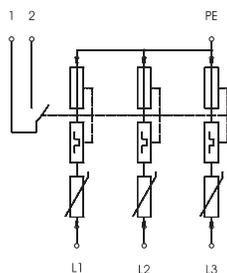
- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity 12.5 kA (10/350) per pole
- Universally suitable for TN-C systems
- With new Multibase base with multi-connection terminals
- Complete unit, consisting of cover and base, pre-mounted and ready for connection
- arrester, connectable with dynamic cut-off unit
- With visual function display
- Voltage protection level < 1,3 kV
- Encapsulated, non-extinguishing zinc oxide varistor arrester for use in distributor housings
- Labelled connections
- FS variant with remote signalling contact (potential-free NO contact)

Dimensions



Application: Equipotential bonding in buildings, even those with external lightning protection of Class III and IV, and in standard distributor housings.

Connection options



V50-B+C 3+FS280

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	280 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}	12.5 kA
Total discharge current (10/350)	I_{total}	37.5 kA
Nominal discharge current (8/20)	I_n	30 kA
Arrester surge current (8/20) [total]	$I_{Total 8/20}$	90 kA
Maximum discharge current (8/20 μ s)	I_{max}	50 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)		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

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



Type	230/400 V System	Type 1+2	LPZ 0→2	5	TESTED	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
PS4-VA TT+TNS	255	3 + NPE	1	210.000	5089770					

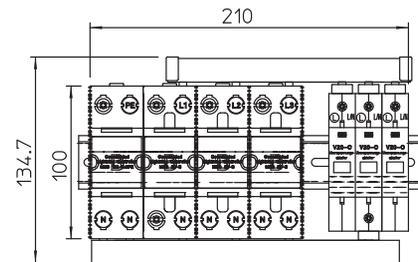
Protection set VA, lightning and surge arrester combination, type 1+2

- For lightning 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

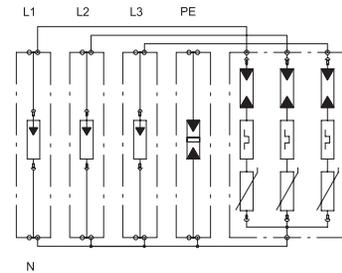
Application: pre-meter area and industrial systems with special requirements.



Dimensions



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_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 VA for TN and TT network systems

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

Highest
continu-
ous
voltage

Type 1+2

LPZ
0→2

5

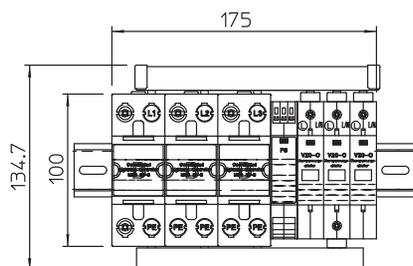
TEST
TESTED

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

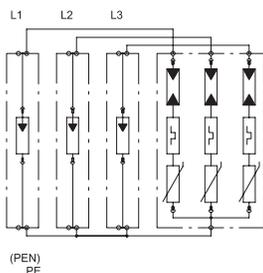
Protection set VA, lightning and surge arrester combination, type 1+2

- 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



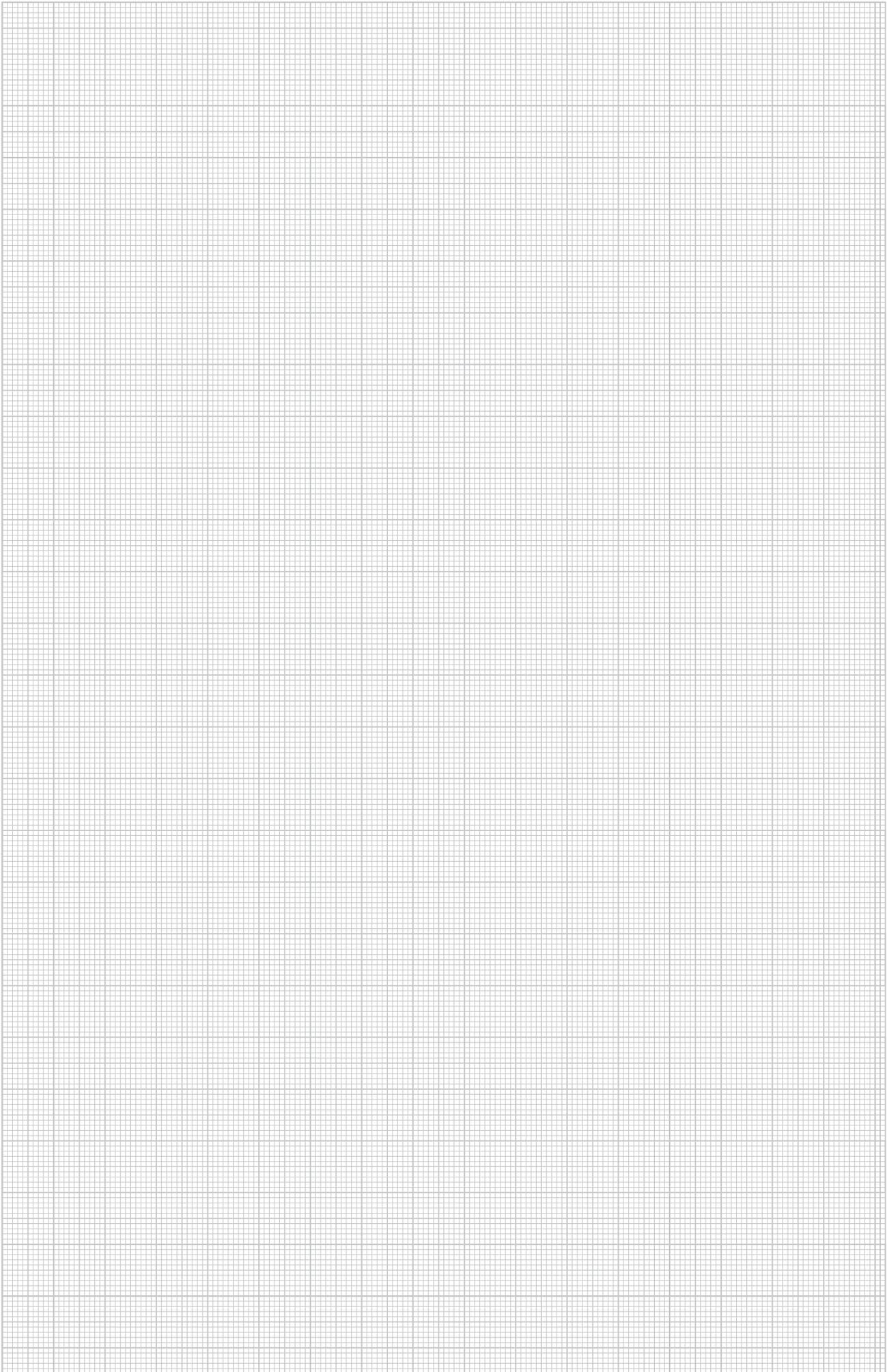
Connection options



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

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







 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_c	$\leq 2,5$ 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_c	$\leq 2,5$ 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_c	$\leq 2,5$ 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

64



Accessories MCF

66

Lightning current arrester MC, 255 V for TN networks

Lightning current arrester, 1-pole



Highest
continu-
ous
voltage

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

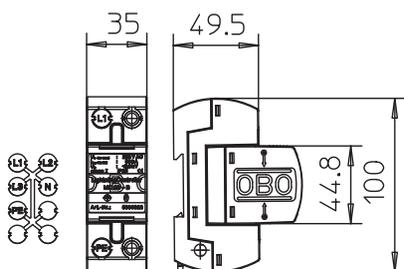
MC 50-B VDE: Type 1 (Class B) lightning current arrester in accordance with DIN EN 61643-11 for interface 0 to 1 (LPZ) to and/or in accordance with lightning protection concept to IEC 61313-1 and/or DIN VDE 0185-305 (IEC 62305)

- 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 Ipeak
- Incl. plug caps for identifying the connections
- Encapsulated, non-extinguishing spark gap: can be used in standard distributor housings

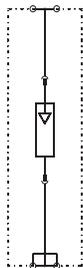
Application example: Industrial plants; lightning current arrester in accordance with VDN Directive for pre-meter area.

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
Max. continuous operating voltage	U_C	255 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_{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 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

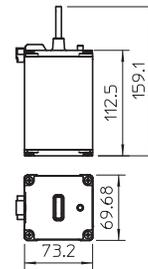
Lightning arrester type 1

- 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

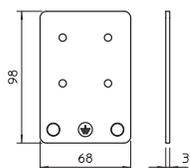


MCF 35-1+FS-440

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

Accessories MCF

Mounting plate, 1-pole

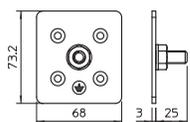


Type	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
MCF-MS-P1	1-pole	1	19.600	5096992
V2A Stainless steel, grade 304				

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

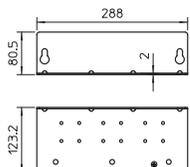


Type	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
MCF-MS-M10	1-pole	1	14.200	5096990
V2A Stainless steel, grade 304				

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



Type	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
MCF-MS-P3	3-pole	1	99.800	5096994
V2A Stainless steel, grade 304				

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

Lightning arrester/combination arrester base



Type	Version	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



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



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	70
	System solution, surge arrester V20 in housing	76
	Accessories, upper parts and bases V20	128



Surge arrester V20 in 280 V, type 2

Surge arrester V20, 1-pole, 280 V

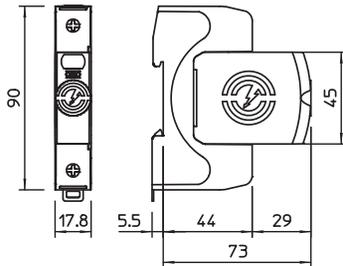


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-1-280	280	1	IP20	1	12.900	5095161

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

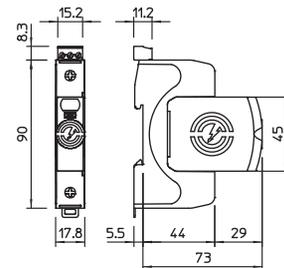
Surge arrester, type 2

- 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, 2-pole, 280 V

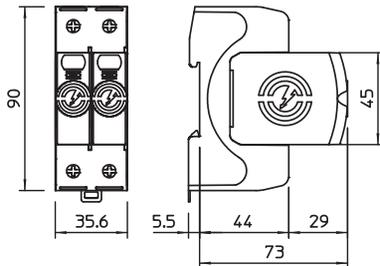


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-2-280	280	2	IP20	1	25.600	5095162

Surge arrester, type 2

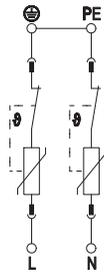
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying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

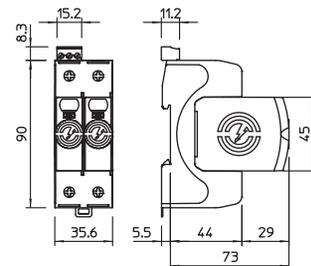
Surge arrester, type 2

- 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

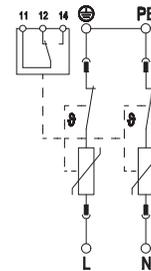
Application: Equipotential bonding in main and sub-distributions.



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_{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 + NPE, 280 V

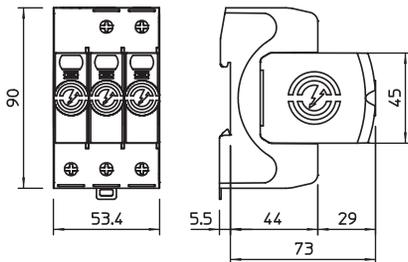


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-2+NPE-280	280	2+N/PE	IP20	1	34.600	5095252

Surge arrester, type 2

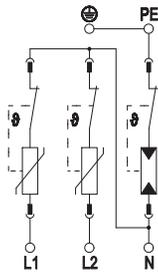
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying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

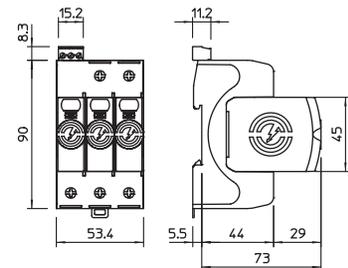
Surge arrester, type 2

- 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

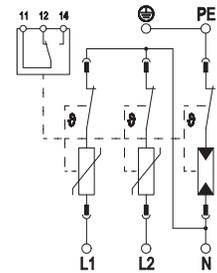
Application: Equipotential bonding in main and sub-distributions.



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, 3-pole, 280 V

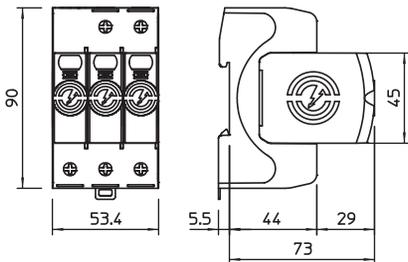


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-3-280	280	3	IP20	1	36.000	5095163

Surge arrester, type 2

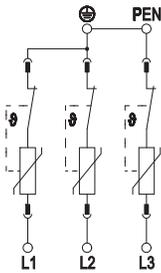
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying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

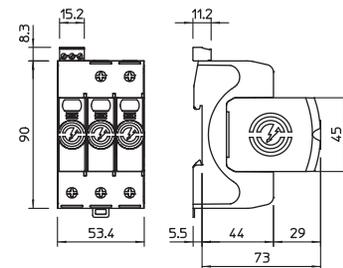
Surge arrester, type 2

- 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

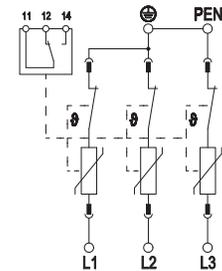
Application: Equipotential bonding in main and sub-distributions.



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

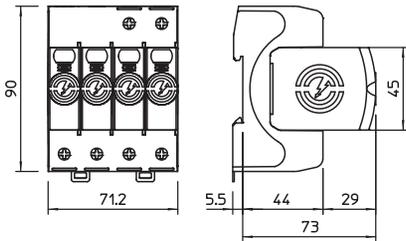


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-4-280	280	4	IP20	1	47.000	5095164

Surge arrester, type 2

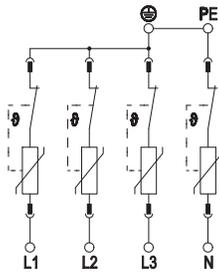
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying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

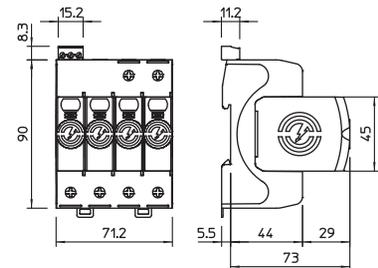
Surge arrester, type 2

- 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

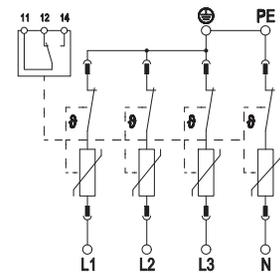
Application: Equipotential bonding in main and sub-distributions.



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, 1-pole + NPE, 280 V

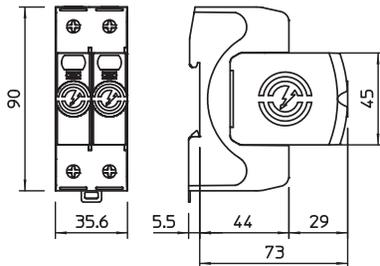


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-1+NPE-280	280	1+N/PE	IP20	1	24.300	5095251

Surge arrester, type 2

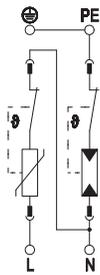
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying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

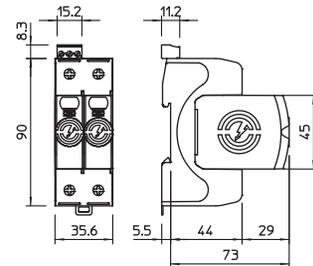
Surge arrester, type 2

- 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

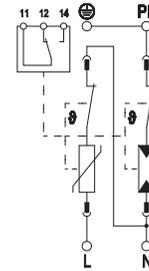
Application: Equipotential bonding in main and sub-distributions.



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_{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, 280 V

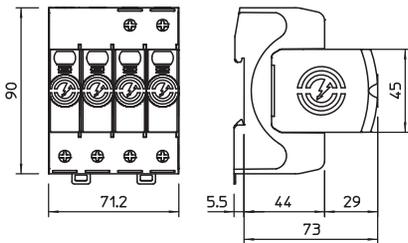


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-3+NPE-280	280	3+N/PE	IP20	1	45.800	5095253

Surge arrester, type 2

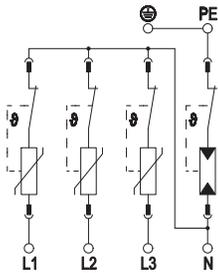
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying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

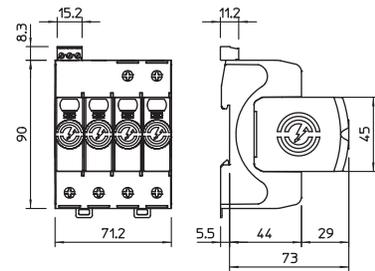
Surge arrester, type 2

- 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

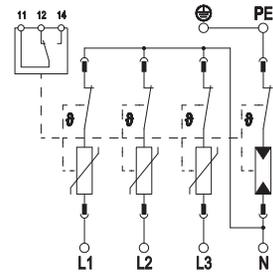
Application: Equipotential bonding in main and sub-distributions.



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

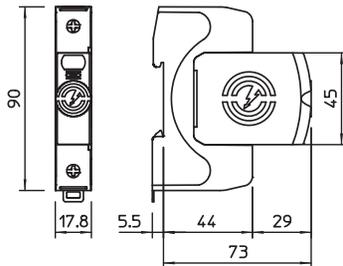


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-1-320	320	1	IP20	1	13.000	5095171

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

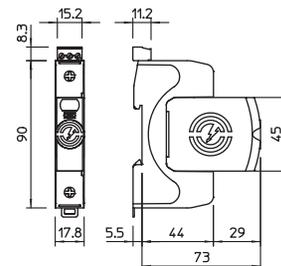
Surge arrester, type 2

- 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

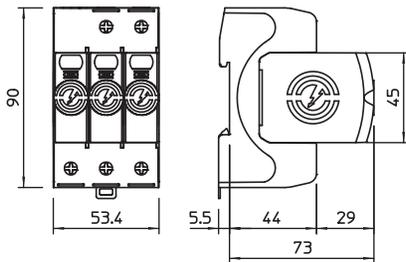


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-3-320	320	3	IP20	1	36.300	5095173

Surge arrester, type 2

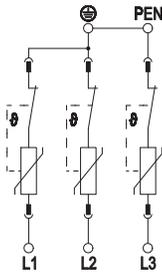
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying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

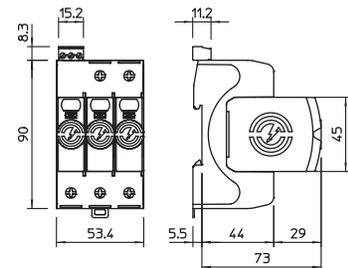
Surge arrester, type 2

- 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

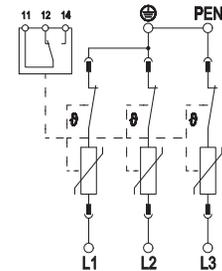
Application: Equipotential bonding in main and sub-distributions.



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_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 320 V, type 2

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

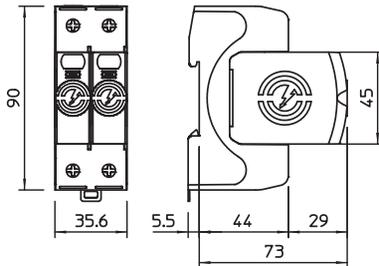


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-1+NPE-320	320	1+N/PE	IP20	1	24.400	5095261

Surge arrester, type 2

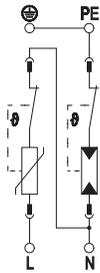
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying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

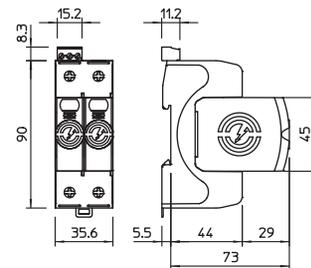
Surge arrester, type 2

- 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

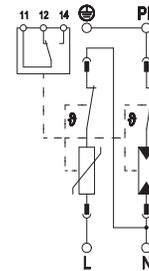
Application: Equipotential bonding in main and sub-distributions.



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

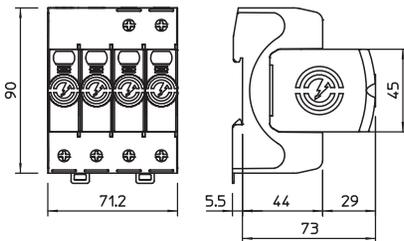


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-3+NPE-320	320	3+N/PE	IP20	1	46.100	5095263

Surge arrester, type 2

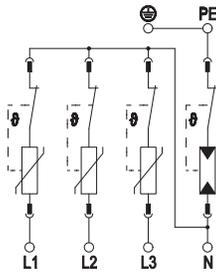
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- 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_{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 1.4 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_{II} -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

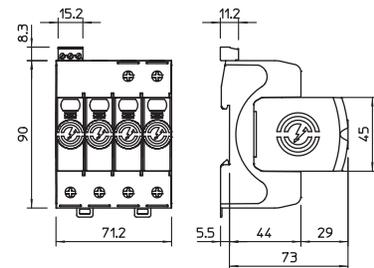
Surge arrester, type 2

- 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

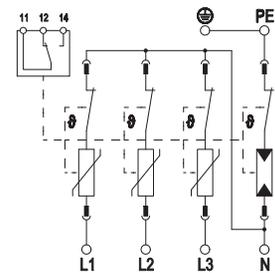
Application: Equipotential bonding in main and sub-distributions.



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_p 1.4 kV
Combined voltage protection level [L-PE]	U_p / 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



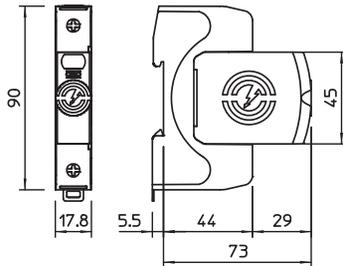
Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-1-385	385	1	IP20	1	13.300	5095191

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

Application: Equipotential bonding in main and sub-distributions.

Dimensions



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
Arrester 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.
V20-2-385	385	2	IP20	1	26.400	5095192

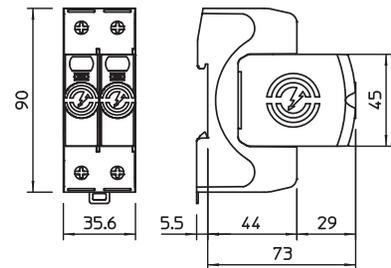
Surge arrester, type 2

- 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

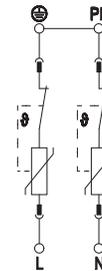
Application: Equipotential bonding in main and sub-distributions.



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

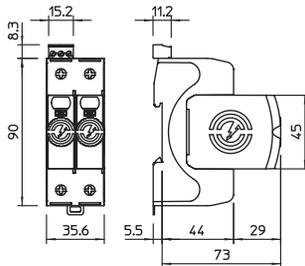


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-2+FS-385	385	2	IP20	1	26.700	5095302

Surge arrester, type 2

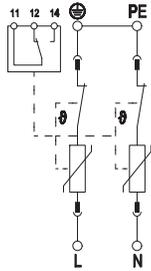
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying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

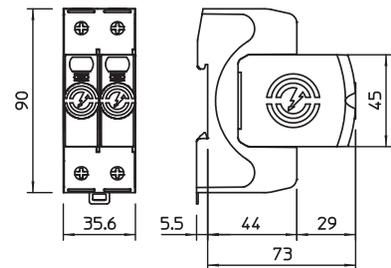
Surge arrester, type 2

- 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

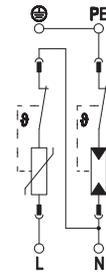
Application: Equipotential bonding in main and sub-distributions.



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_{-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_{-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_{ui} -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, 385 V

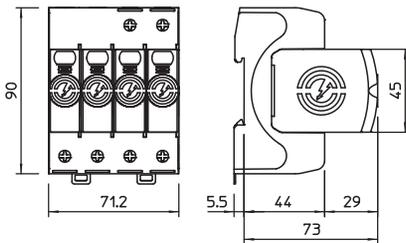


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-3+NPE-385	385	3+N/PE	IP20	1	47.000	5095273

Surge arrester, type 2

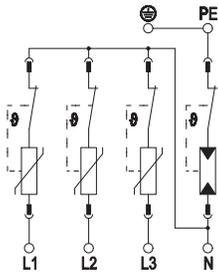
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying
- 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_{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 1.7 kV
Combined voltage protection level [L-PE]	$U_{p / L-PE}$ 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_{II} -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

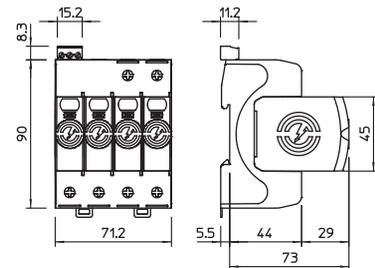
Surge arrester, type 2

- 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

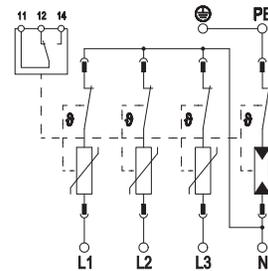
Application: Equipotential bonding in main and sub-distributions.



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_{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_p 1.7 kV
Combined voltage protection level [L-PE]	U_p / 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} 1.5 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

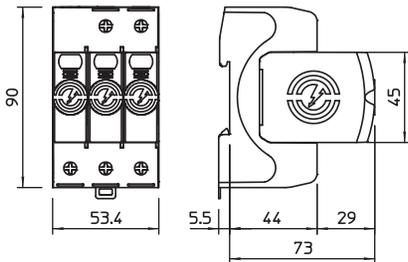


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-3-385	385	3	IP20	1	35.600	5095193

Surge arrester, type 2

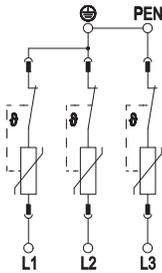
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying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

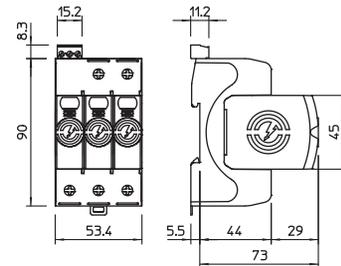
Surge arrester, type 2

- 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

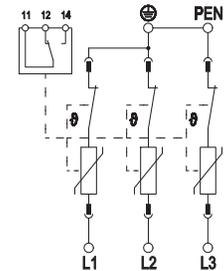
Application: Equipotential bonding in main and sub-distributions.



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

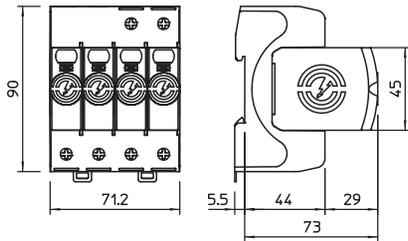


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-4-385	385	4	IP20	1	48.600	5095194

Surge arrester, type 2

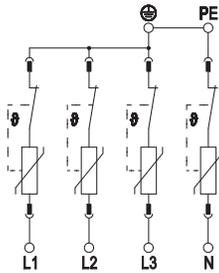
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying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

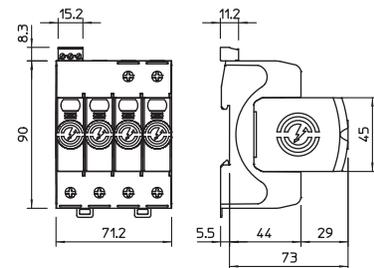
Surge arrester, type 2

- 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

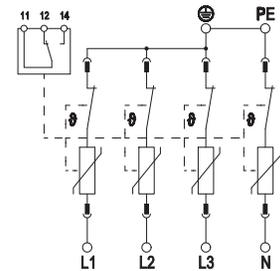
Application: Equipotential bonding in main and sub-distributions.



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_{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 upper parts, type 2

Upper part V20 280 V

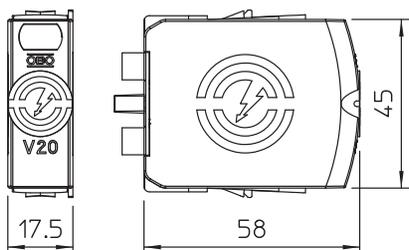


Type	AC	Pole	Protec-	Pack.	Weight	Item No.
	voltage	version	tion			
	V		rating	pcs	kg/100 pcs.	
V20-0-280	280	1	IP20	1	5.000	5095364

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

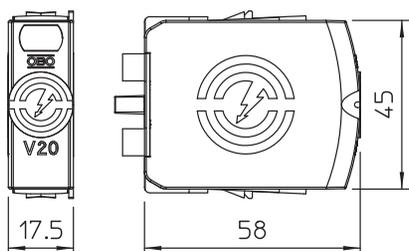


Type	AC	Pole	Protec-	Pack.	Weight	Item No.
	voltage	version	tion			
	V		rating	pcs	kg/100 pcs.	
V20-0-320	320	1	IP20	1	5.100	5095366

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



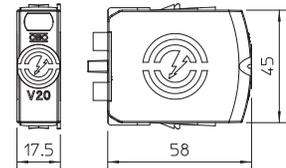
Upper part V20 385 V



Type	Highest continuous voltage		Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
	AC V	Pole version				
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_{n-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



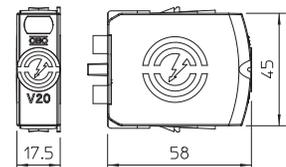
Upper part V20 1000 V



Type	Highest continuous voltage		Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
	AC V	Pole version				
V20-0-1000	1000	1	IP20	1	6.960	5095378

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)

**V20-0-1000**

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 750 V
Maximum continuous voltage AC	U_c 1000 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
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	—



Upper part C20 280 V

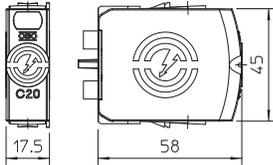


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
	C20-0-255	255	N/PE	IP20	1	3.680

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, 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

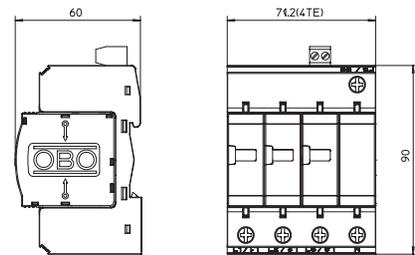
V 20-C/...: Type 2 (Class C) surge arrester to EN 61643-11 (VDE 0675 Parts 6–11).

- 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

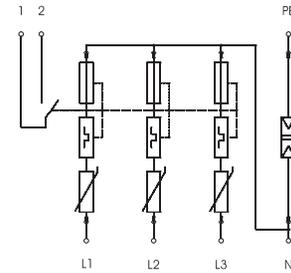
Application example: Residential buildings, single-family homes and industry



Dimensions



Connection options



V 20-C 3+NPE+FS

Nominal voltage	U_N	130 V
Max. continuous operating voltage	U_C	150 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	< 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



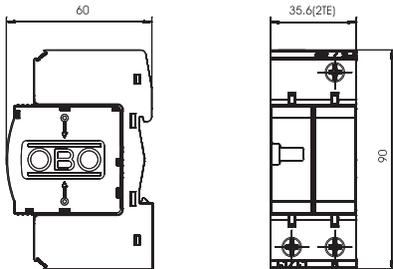
Highest continuous voltage V Version

Type	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).

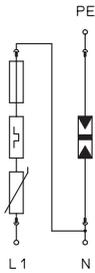
- With new MultiBase base part and Multi-connection clamps
- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- VDE-tested
- Suitable for TN- and TT network systems
- Plug-in upper part; upper part can be separated from base without tools
- Including thermal and dynamic 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
Max. continuous operating voltage	U_C	280 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_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)		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



Highest
continu-
ous
voltage

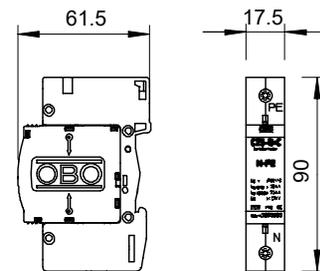
Type	V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
C 25-B+C 1	255	NPE	1	12.500	5095606

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:

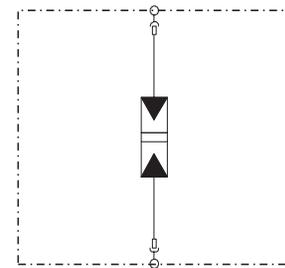
- CombiController Type V 25-B+C
- SurgeController Type V 20-C
- SurgeController Type V 10-C



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, 2-pole + NPE

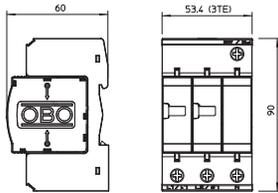


Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 2+NPE-280	280	2+NPE	1	32.300	5094653

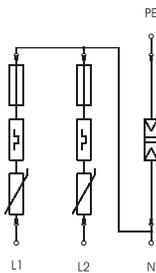
V 20-C/...: Surge protection device Type 2 (Class C) to VDE 0675 part 6-11 (DIN EN 61643-11).

- 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



Connection options



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

V20-C 2+NPE-280

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	280 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_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)		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

230/
400 V
SystemType
2LPZ
1→2

5

4/10

PCF

Highest
continu-
ous
voltage

Version

Pack. Weight
pcs kg/100 pcs.

Item No.

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

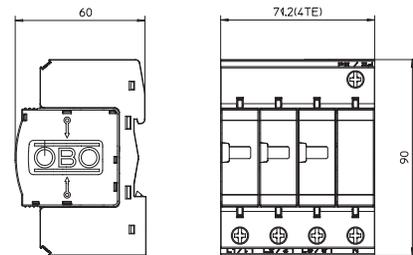
V20-C/...: Surge protection device Type 2 (Class C) to VDE 0675 part 6-11 (DIN EN 61643-11).

- 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

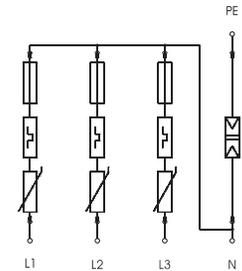
Application example: residential buildings, single-family homes without outer lightning protection system.



Dimensions



Connection options



V20-C 3+NPE-280

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	280 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_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, 1-pole + NPE with remote signalling



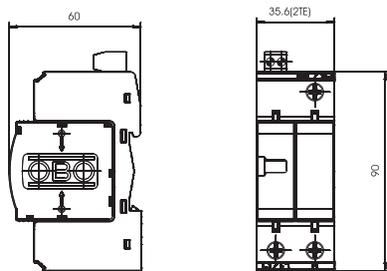
Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 1+NPE+FS	280	1+NPE + FS	1	22.500	5094760

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

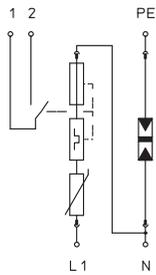
- With new MultiBase base part and Multi-connection clamps
- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- VDE-tested
- Suitable for TN- and TT- network systems
- Plug-in upper part; upper part can be separated from base without tools
- With remote signalling, 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 1+NPE+FS

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	280 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_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)		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, 2-pole + NPE with remote signalling



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 2+NPE+FS	280	2+NPE + FS	1	32.500	5094762

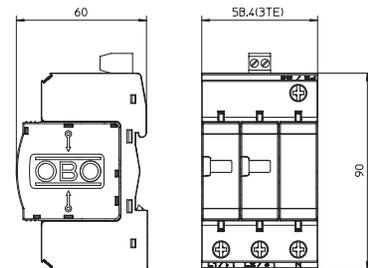
V 20-C/...: Surge protection device Type 2 Class C) to VDE 0675 part 6-11 (DIN EN 61643-11).

- 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

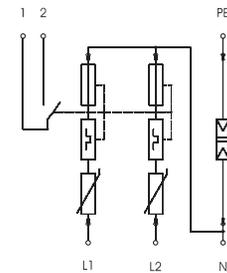
Application example: residential buildings, single-family homes



Dimensions



Connection options



V20-C 2+NPE+FS

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	280 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_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)		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



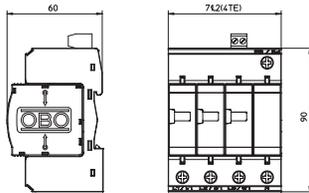
Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 3+NPE+FS	280	3+NPE + FS	1	43.300	5094765

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

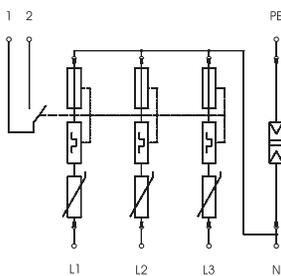
- With new MultiBase base part and Multi-connection clamps
- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- VDE-tested
- Suitable for TN- and TT- network systems
- Plug-in upper part; upper part can be separated from base without tools
- With remote signalling, 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+NPE+FS

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	280 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_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)		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



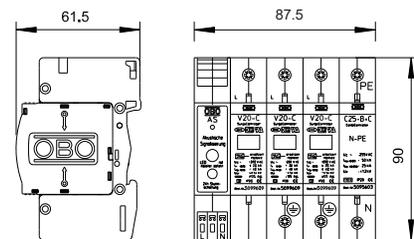
Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 3+NPE+AS	280	3 + NPE	1	57.000	5096397

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



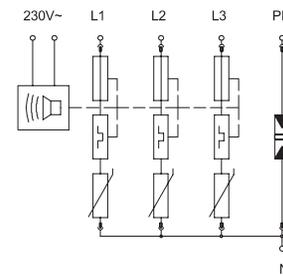
Dimensions



V20-C 3+NPE+AS

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	280 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	< 1,3 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

Connection options



Surge arrester V20, 280 V, type 2,

Surge arrester, 1-pole

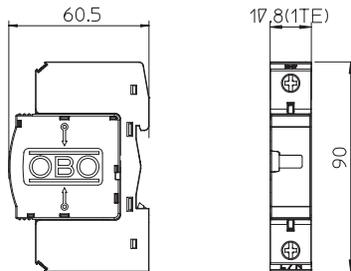


Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 1-280	280	1-pole	1	12.000	5094618

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 status 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
Max. continuous operating voltage	U_C	280 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]	$I_{Total\ 8/20}$	20 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)		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, 1-pole with remote signalling 

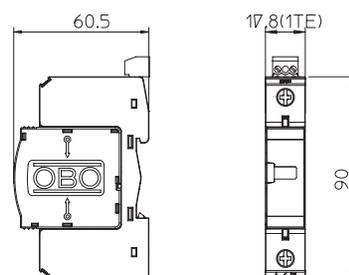
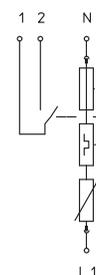
Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 1+FS-280	280	1-pole + FS	1	12,400	5094727

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 1+FS-280**

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	280 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]	$I_{Total\ 8/20}$	20 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)		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

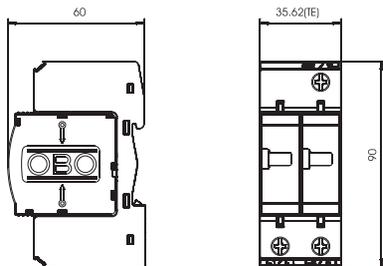


Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 2-280	280	2-pole	1	22.700	5094621

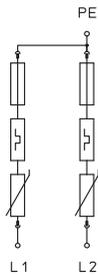
Surge arrester, type 2, 280 V

- 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 status 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 2-280

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	280 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_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)		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, 2-pole, with acoustic signalling



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

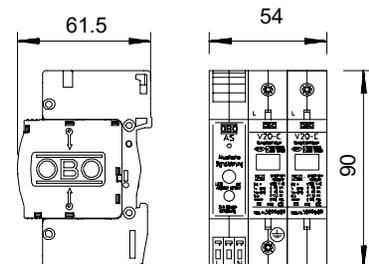
V 20-C/...: Surge protection device Type 2 (Class C) to VDE 0675 part 6-11 (DIN EN 61643-11) with acoustic signalling.

- 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

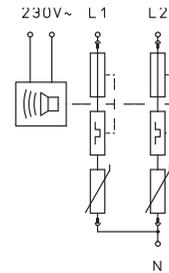
Application example: residential buildings, single-family homes



Dimensions



Connection options



V20-C 2+AS-280

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	280 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_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)		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

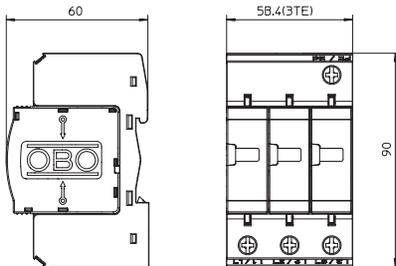


Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 3-280	280	3-pole	1	33.500	5094624

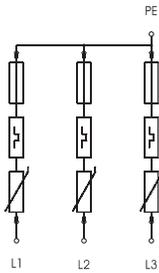
Surge arrester, type 2, 280 V

- 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 status 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
Max. continuous operating voltage	U_C	280 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_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)		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-280	280	3-pole + FS	1	33.700	5094731

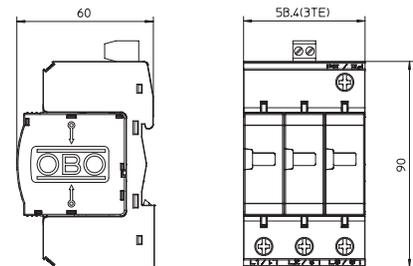
V 20-C/...: Surge protection device Type 2 Class C) to VDE 0675 part 6-11 (DIN EN 61643-11).

- 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

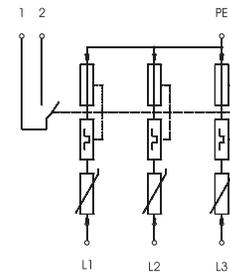
Application example: residential buildings, single-family homes



Dimensions



Connection options



V20-C 3+FS-280

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	280 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_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)		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



Highest continuous voltage

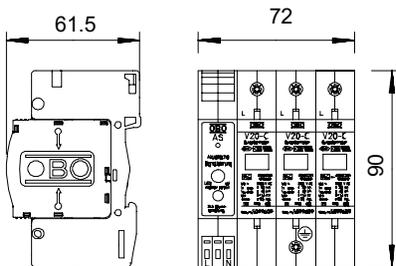
Type	V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 3+AS-280	280	3-pole	1	44.000	5096383

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

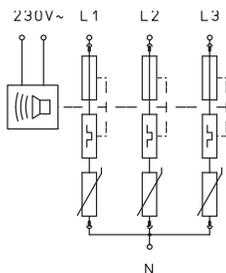
- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- VDE-tested
- Suitable for TN network systems
- With acoustic signalling for function monitoring, signal tone can be shut down for 24 h
- Plug-in upper part; upper part can be separated from base without tools
- 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
Max. continuous operating voltage	U_C	280 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_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



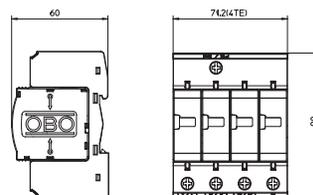
Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 4-280	280	4-pole	1	43.000	5094627

Surge arrester, type 2, 280 V

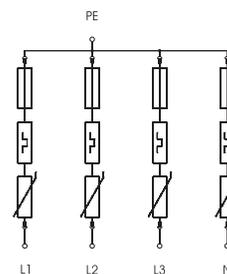
- VDE-tested
 - For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
 - Arresting capacity to 40 kA (8/20) per pin
 - Arrester, connectable with dynamic cut-off unit and visual status display
 - Encapsulated, non-extinguishing zinc oxide varistor arrester for use in distributor 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
Max. continuous operating voltage	U_C	280 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]	$I_{Ttotal 8/20}$	80 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, 4-pole with remote signalling



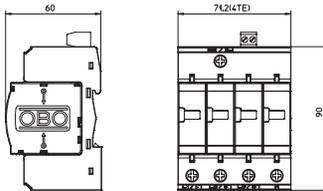
Type	Highest continuous voltage V		Version	Pack. pcs	Weight kg/100 pcs.	Item No.
	V20-C 4+FS-280	280	4-pole + FS	1	43.000	5094734

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

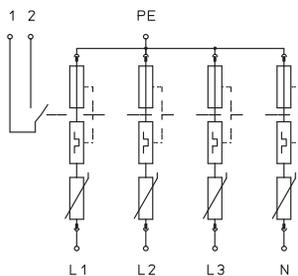
- With new MultiBase base part and Multi-connection clamps
- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- VDE-tested
- Suitable for TN network systems
- Plug-in upper part; upper part can be separated from base without tools
- With remote signalling, potential-free 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 4+FS-280

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	280 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)		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

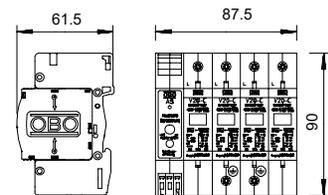
V20-C/...: Surge protection device Type 2 (Class C) to VDE 0675 part 6-11 (DIN EN 61643-11) with acoustic signalling.

- 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

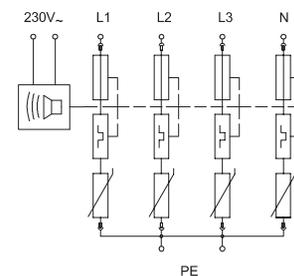
Application example: residential buildings, single-family homes



Dimensions



Connection options

**V20-C 4+AS-280**

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	280 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_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)		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

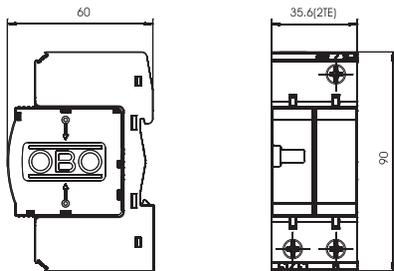


Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 1+NPE-385	385	1+NPE	1	23.300	5094666

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

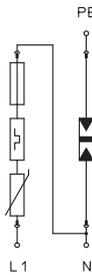
- With new MultiBase base part and Multi-connection clamps
- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- VDE-tested
- Suitable for TN- and TT network systems
- Plug-in upper part; upper part can be separated from base without tools
- Including thermal and dynamic separating device
- With visual status 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
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
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_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)		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

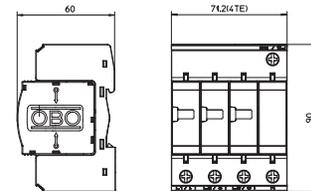
V 20-C/...: Surge protection device Type 2 (Class C) to VDE 0675 part 6-11 (DIN EN 61643-11).

- 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 status of defects
- High current conductivity and long service life
- Marked connections

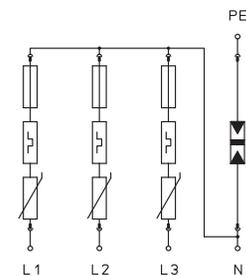
Application example: residential buildings, single-family homes without outer lightning protection system.



Dimensions



Connection options



V20-C 3+NPE-385

Nominal voltage	U_N	350 V
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
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_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)		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



SurgeController V20



Highest continuous voltage V Version

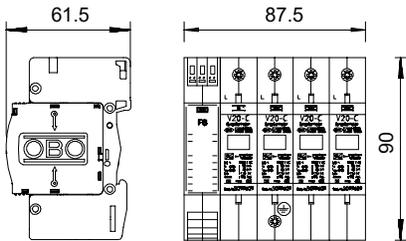
Type	V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 4+FS-280A	280	4-pole	1	55.000	5096030

Surge arrester type 2, 280 V

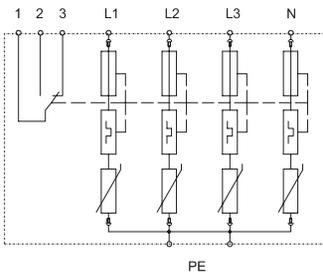
- VDE-tested
- With remote signalling, potential-free change-over contact, for monitoring operations
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity to 40 kA (8/20) per pin
- Arrester, connectable with dynamic cut-off unit and visual function display
- High-performance varistor technology

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

Dimensions



Connection options



V20-C 4+FS-280A

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	280 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	80 kA
Arrester surge current (8/20) [total]	$I_{Total\ 8/20}$	20 kA
Maximum discharge current (8/20 μ s)	I_{max}	150 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

PV surge protection V20 2pole 1000 V DC



Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 2-PH-1000	1000	2-pole for earthed PV systems	1	27.000	5094617

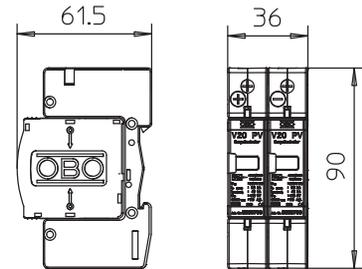
V20 surge arrester, type 2, for photovoltaic systems

- 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 status display for use in distributor housings

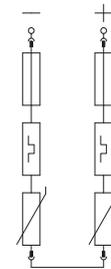
Application: PV systems with or without separate lightning protection system



Dimensions



Connection options

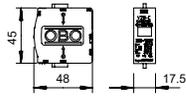


V20-C 2-PH-1000

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)		2
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 280 V

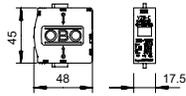


Type	Highest continuous voltage DC		Version	Pack. pcs	Weight kg/100 pcs.	Item No.
	V	V				
V20-C 0-280	280	350	1-pole	1	8.500	5099609

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 status display
- High current conductivity and long service life

Cover, surge arrester 320 V



Type	Highest continuous voltage 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 status display
- High current conductivity and long service life



Combination arrester C25, 1-pole+NPE

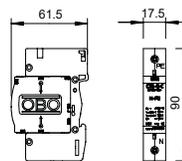


Highest continuous voltage

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



Cover, total spark gap between N and PE 255 V

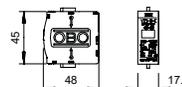


Highest continuous voltage

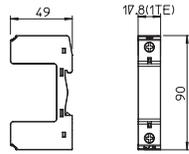
Type	V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
C 25-B+C 0	255	NPE	1	5.300	5095603

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



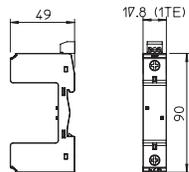
MultiBase base



Type	Version	Dividing unit TE (17.5 mm)	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

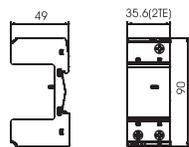
Base, MultiBase with remote signalling



Type	Version	Dividing unit TE (17.5 mm)	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



Type	Version	Dividing unit TE (17.5 mm)	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

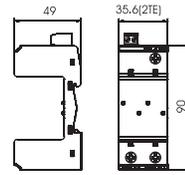
- Suitable for V 25-B+C, V 20-C and V10-C
- Pre-mounted and ready for connection
- Multifunction terminals for easy connection to series-mounted devices
- Upper parts can be rotated through 180 degrees
- For TN-S and TT network systems



Base, MultiBase + NPE with remote signalling



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



Connection terminal for through-wiring

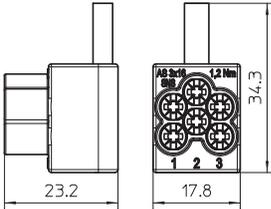


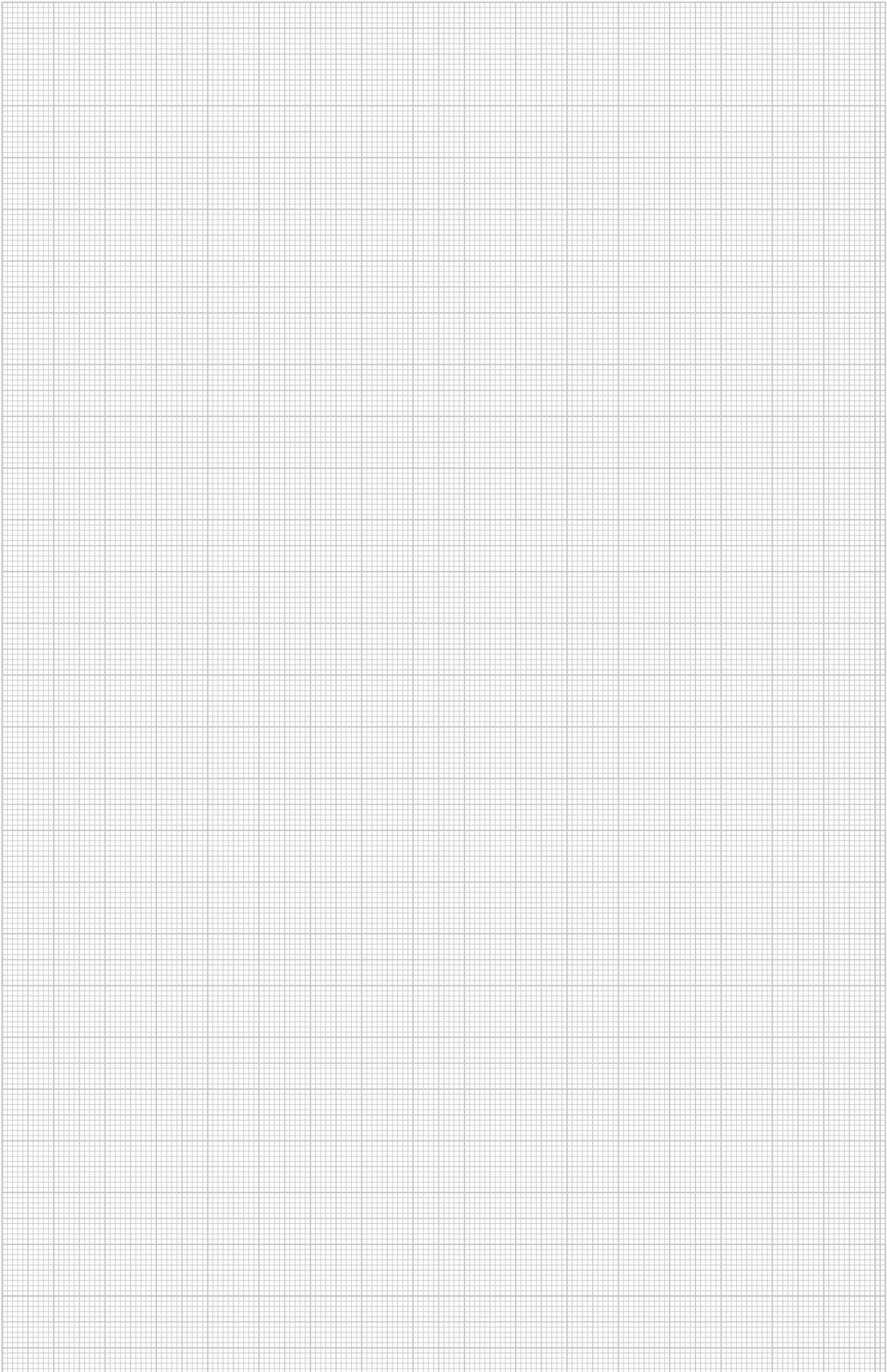
Type	Colour	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
AS 3x16	Light grey	3 x 16 mm ²	5	2.474	5012010

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).





Surge protection energy technology, arrester, type 2+3



Surge arrester V10 Compact

136



Accessories, upper parts and bases V10

146



Compact surge protection

150

Surge arrester Compact 255 V



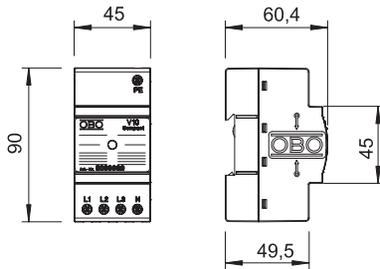
Highest continuous voltage

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

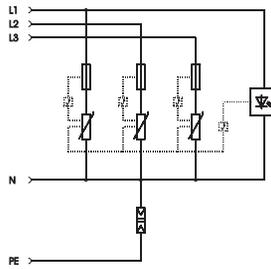
- Surge protection in subdistributors to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity up to 60 kA (8/20) in total
- Integrated 3+1 solution for TN and TT network systems on 45 mm module width
- High-performance varistor technology
- Including thermic and dynamic cut-off unit and visual status display
- 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
Max. continuous operating voltage	U_C	255 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_n	< 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

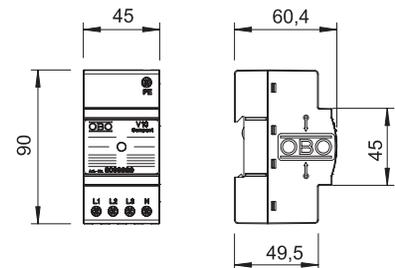
Surge protection device, compact module, type 2+3

- 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 status display
- Optionally with -AS acoustic signalling or -FS remote signalling

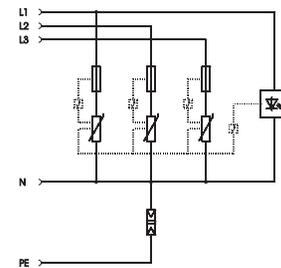
Application: Sub/storey distribution as well as device protection in rotational current systems.



Dimensions



Connection options



V10 COMPACT 385

Nominal voltage	U_N	385 V
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]	$I_{Total\ 8/20}$	60 kA
Maximum discharge current (8/20 μ s)	I_{max}	20 kA
Voltage protection level	U_n	< 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



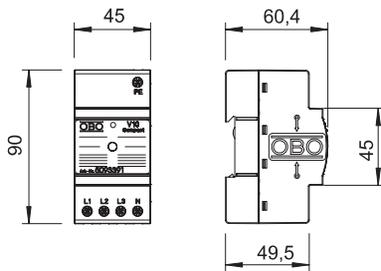
Highest continuous voltage

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

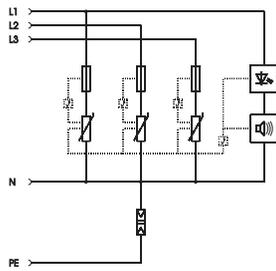
- Surge protection in sub-distributors to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity up to 60 kA (8/20) in total
- Integrated 3+1 solution for TN and TT network systems on 45 mm module width
- High-performance varistor technology
- Including thermic and dynamic cut-off unit and visual function 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
Max. continuous operating voltage	U_C	255 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_n	< 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

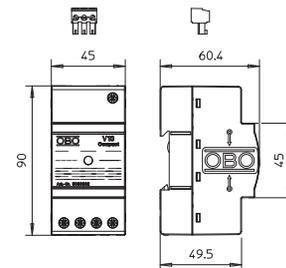
Surge protection device, compact module, type 2+3

- 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

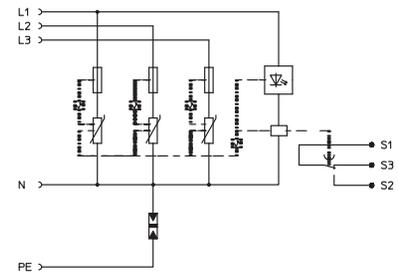
Application: Sub/storey distribution as well as device protection in rotational current systems.



Dimensions



Connection options

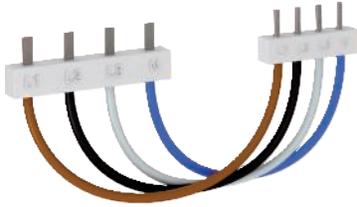


V10 COMPACT-FS

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	255 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_n	< 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

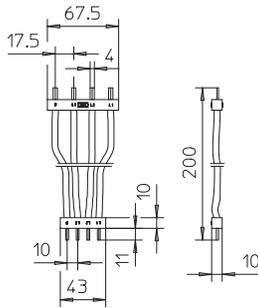


Type	Version	Pack.	Weight	Item No.
		pcs	kg/100 pcs.	
VB-V10 COMPACT-2	200 mm	1	5.300	5089650

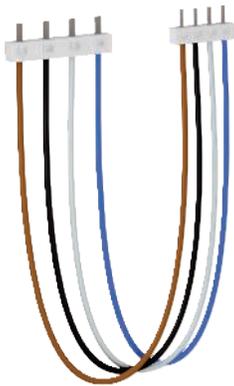
VB-V10 Compact: To bridge V10 Compact e.g. to FI protection switches in a 17.5 mm grid.

- 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



Connecting bridge for V10 Compact 400 mm

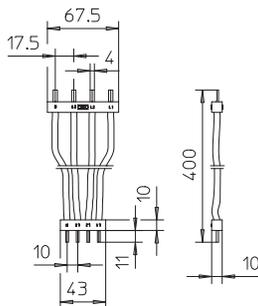


Type	Version	Pack.	Weight	Item No.
		pcs	kg/100 pcs.	
VB-V10 COMPACT-4	400 mm	1	8.900	5089652

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



Upper part, surge arrester V10 280 V



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V10-C 1-280	280	—	1	10.000	5093415

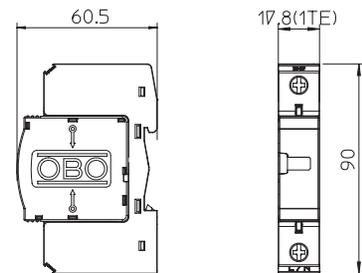
Surge arrester, type 2+3

- Surge protection in subdistributors to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity to 20 kA (8/20) per pole
- Arrester, connectable with dynamic cut-off unit and visual function display
- High-performance varistor technology
- Base with multiple connection terminals

Application: Equipotential bonding in subdistributors and device protection



Dimensions



Connection options

V10-C 1-280

Nominal voltage	U_N	230 V
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
Arrester 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_n	< 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
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, 280 V

Surge arrester V10 3-pole + NPE 280 V



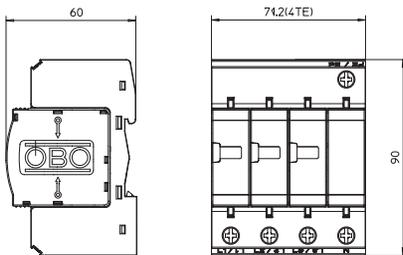
Highest continuous voltage

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

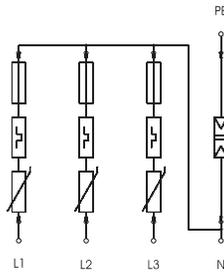
- With new MultiBase base part and Multi-connection clamps
- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- Suitable for any TN and TT network systems
- Plug-in arrester with dynamic separating device
- With visual function display
- Version FS with remote signalling, potential-free changeover contact, for function monitoring
- High current conductivity and long service life
- Marked connections

Dimensions



Application example: residential buildings, single-family homes

Connection options



V10-C 3+NPE

Nominal voltage	U_N	230 V
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]	$I_{Total\ 8/20}$	40 kA
Maximum discharge current (8/20 μ s)	I_{max}	20 kA
Voltage protection level	U_n	< 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	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
	V				
V10-C 3+NPE+FS	280	3 + NPE	1	37.900	5094931

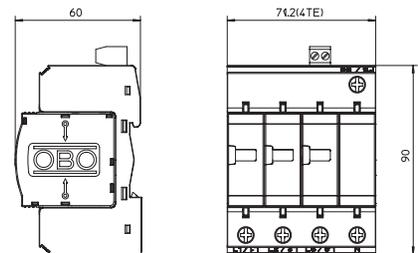
V 10-C/...: lightning and surge protection device type 2+3 (Class C+D) to VDE 0675 part 6-11 (DIN EN 61643-11) to overvoltage protection to DIN VDE 0100 part 443.

- 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

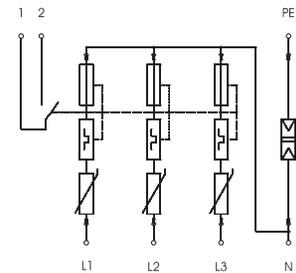
Application example: residential buildings, single-family homes



Dimensions



Connection options



V10-C 3+NPE+FS

Nominal voltage	U_N	230 V
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]	$I_{Total\ 8/20}$	40 kA
Maximum discharge current (8/20 μ s)	I_{max}	20 kA
Voltage protection level	U_n	< 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

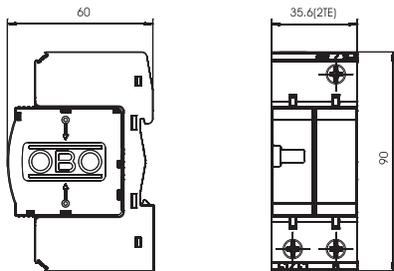


Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V10-C 1+NPE-280	280	1 + NPE	1	22.200	5093418

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.

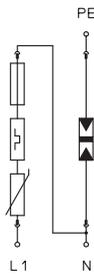
- With new MultiBase base part and Multi-connection clamps
- Complete unit consisting of upper part and base, pre-mounted and ready for connection
- Suitable for any TN and TT network systems
- Plug-in arrester with dynamic separating device
- With visual function display
- Version FS with remote signalling, potential-free changeover contact, for function monitoring
- High current conductivity and long service life
- Marked connections

Dimensions



Application example: residential buildings, single-family homes

Connection options



V10-C 1+NPE-280

Nominal voltage	U_N	230 V
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]	$I_{Total\ 8/20}$	40 kA
Maximum discharge current (8/20 μ s)	I_{max}	20 kA
Voltage protection level	U_n	< 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	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
	V				
V10-C 3+NPE-320	320	3 + NPE	1	39.000	5094924

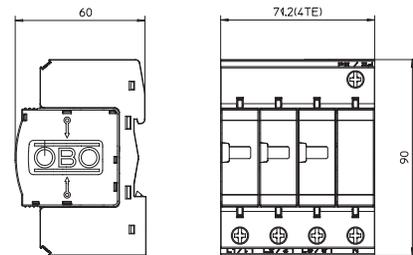
V 10-C/...: lightning and surge protection device type 2+3 (Class C+D) to VDE 0675 part 6-11 (DIN EN 61643-11) to overvoltage protection to DIN VDE 0100 part 443.

- 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

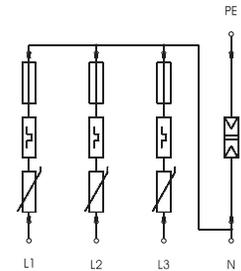
Application example: residential buildings, single-family homes



Dimensions



Connection options



V10-C 3+NPE-320

Nominal voltage	U_N	320 V
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]	$I_{Total\ 8/20}$	40 kA
Maximum discharge current (8/20 μ s)	I_{max}	20 kA
Voltage protection level	U_n	< 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



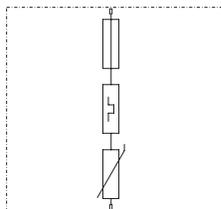
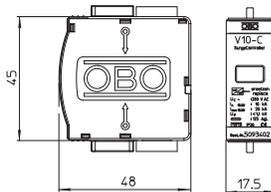
Upper part, surge arrester V10 280 V



Type	Highest continuous voltage	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
	V				
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 status display
- High current conductivity and long service life



V10-C 0-280

Nominal voltage	U_N	230 V
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_n	< 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

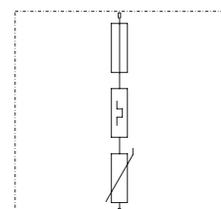
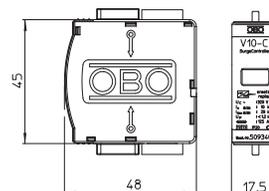
Upper part, surge arrester V10 320 V



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
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 status display
- High current conductivity and long service life



V10-C 0-320

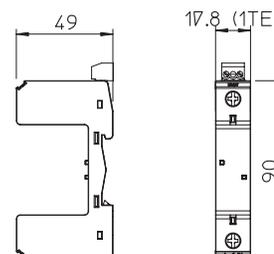
Nominal voltage	U_N	320 V
Max. continuous operating voltage	U_C	320 V
SPD to EN 61643-11		Type 2+3
SPD to IEC 61643-11		Class II+III
Lightning protection zone LPZ		1-3
Nominal discharge current (8/20)	I_n	10 kA
Arrestor surge current (8/20) [total]	$I_{Total\ 8/20}$	10 kA
Maximum discharge current (8/20 μ s)	I_{max}	20 kA
Voltage protection level	U_n	< 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

Base, MultiBase with remote signalling



Type	Version	Dividing unit TE (17.5 mm)	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

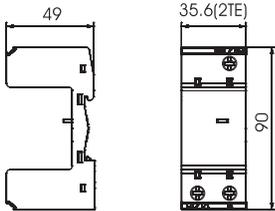


MultiBase base + NPE



Type	Version	Dividing unit TE (17.5 mm)	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

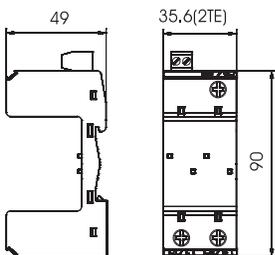


Base, MultiBase + NPE with remote signalling



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

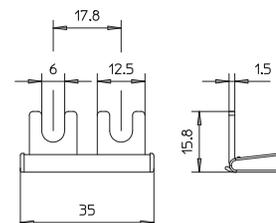


Copper bridges with step width 17.6 mm



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.

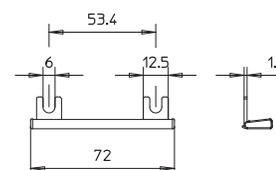


Copper bridges with step width 53.4 mm



Type	Pack. pcs	Weight kg/100 pcs.	Item No.
KB MB	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.



Connection terminal for through-wiring

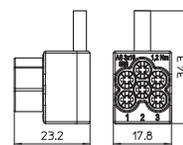


Type	Colour	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
AS 3x16	Light grey	3 x 16 mm ²	5	2.474	5012010

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).



Surge protection for LED systems 230V



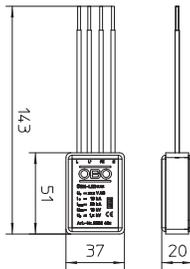
Type	Highest continuous voltage		Pack. pcs	Weight kg/100 pcs.	Item No.
	V	Version			
ÜSM-LED 230	255	1+NPE	1	3.500	5092480
ÜSM-LED 440	440	1+NPE	1	4.500	5092482

Surge protection module type 2+3 to DIN EN 61643-11 for 230/400 V power grids. Appropriate for the protection of LED lighting.

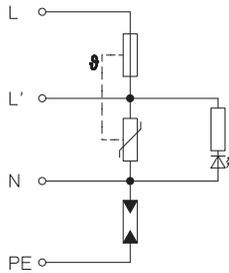
- With visual function display
- Small size for the installation in the pole or in the LED lamp head
- 1+NPE protective circuit with a maximum discharge capacity of 20 kA
- Surge limitation under 1,300 V or 1,000 V @ 5 kA
- Available with or without cut-off function of the lamp in case of malfunction

Application: Universally deployable in all lighting systems

Dimensions



Connection options



ÜSM-LED 230

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	255 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	1,3 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
Max. continuous operating voltage	U_C	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	Pack. pcs	Weight kg/100 pcs.	Item No.
ÜSM-LED 230-65	255	1+NPE	25	7.500	5092478

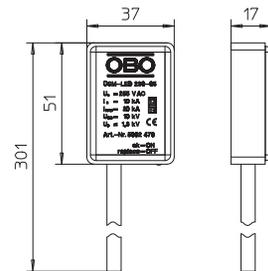
Surge protection module type 2+3 to DIN EN 61643-11 for 230/400 V power grids. Appropriate for the protection of LED lighting and the LED driver.

- 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

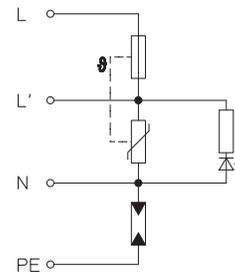
Application: Universally deployable in all lighting systems



Dimensions



Connection options



ÜSM-LED 230-65

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	255 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_n	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



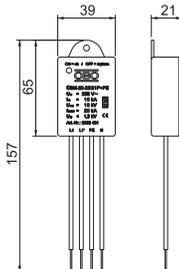
Highest continuous voltage

Type	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

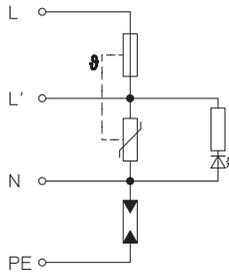
Surge protection module type 2+3 to DIN EN 61643-11 for 230/400 V power grids. Appropriate for the protection of LED lighting.

- 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

Dimensions



Connection options



ÜSM-20-230I1P+PE

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	255 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_n	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

LPZ
1→3Type
2+3Highest
continu-
ous
voltage

Version

Pack. Weight
pcs kg/100 pcs.

Item No.

Type	V	Version	pcs	kg/100 pcs.	Item No.
ÜSM-20-230I1PE65	255	1-pole + NPE for PC I	1	8.300	5092433

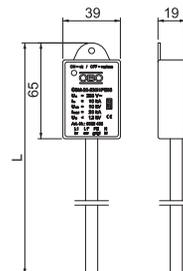
Surge protection module type 2+3 to DIN EN 61643-11 for 230/400 V power grids.
Appropriate for the protection of LED lighting.

- 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

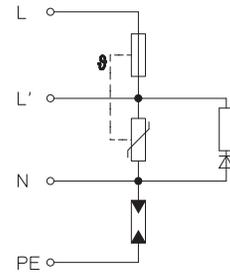
Application: In the cable transition box, junction boxes, cable duct to underfloor systems



Dimensions



Connection options



ÜSM-20-230I1PE65

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	255 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_n	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



Surge protection module ÜSM-10-230I2P+PE



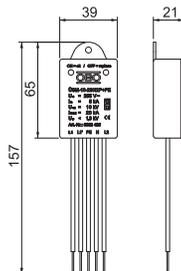
Highest continuous voltage

Type	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

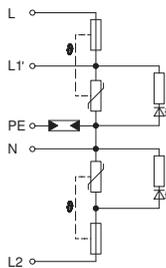
Surge protection module type 2+3 to DIN EN 61643-11 for 230/400 V power grids. Appropriate for the protection of electronic devices and LED drivers.

- 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

Dimensions



Connection options



ÜSM-10-230I2P+PE

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	255 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]	$I_{Total 8/20}$	10 kA
Maximum discharge current (8/20 μ s)	I_{max}	10 kA
Voltage protection level	U_n	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



Highest
continu-
ous
voltage

Version

Pack. Weight
pcs kg/100 pcs.

Item No.

Type	V	Version	pcs	kg/100 pcs.	Item No.
ÜSM-10-230I2P-0	255	2-pole without NPE for PC II	1	4.100	5092424

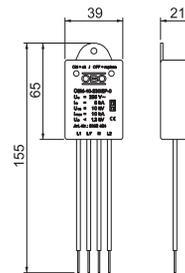
Surge protection module type 2+3 to DIN EN 61643-11 for 230/400 V power grids.
Appropriate for the protection of electronic devices and LED drivers.

- 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

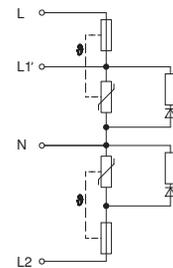
Application: In the cable transition box, junction boxes, cable duct to underfloor systems



Dimensions



Connection options



ÜSM-10-230I2P-0

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	255 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_n	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+PE



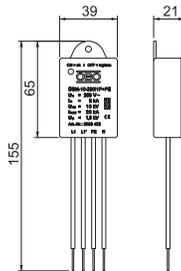
Highest continuous voltage

Type	V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
ÜSM-10-2301P+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.

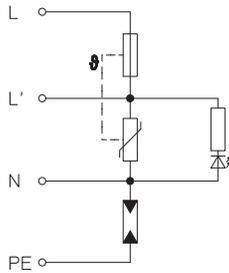
- With function display and switch-off of the load circuit when a SPD fails
- Small size for the installation in the pole connection box or upstream of the LED driver
- Use in the LED luminaire head upstream of the electronic LED driver
- Protective circuit with a maximum arresting capacity of 10 kA
- Reduction of overvoltage to under 1,300 V (protection level)
- For LED luminaires with PE connection

Dimensions



Application: In the cable transition box, junction boxes, cable duct to underfloor systems

Connection options



ÜSM-10-2301P+PE

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	255 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]	$I_{Total\ 8/20}$	10 kA
Maximum discharge current (8/20 μ s)	I_{max}	10 kA
Voltage protection level	U_n	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-10-230I1P-0



Highest
continu-
ous
voltage

Version

Pack. Weight
pcs kg/100 pcs.

Item No.

Type	V	Version	pcs	kg/100 pcs.	Item No.
ÜSM-10-230I1P-0	255	1-pole without NPE for PC II	1	3.200	5092420

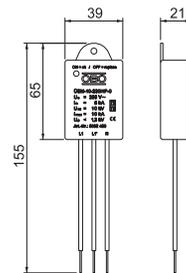
Surge protection module type 2+3 to DIN EN 61643-11 for 230/400 V power grids.
Appropriate for the protection of electronic devices and LED drivers.

- 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

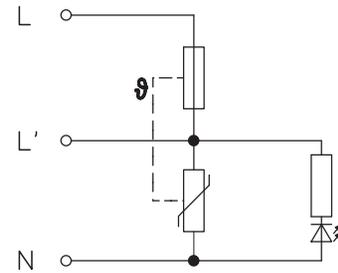
Application: In the cable transition box, junction boxes, cable duct to underfloor systems



Dimensions



Connection options



ÜSM-10-230I1P-0

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	255 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_n	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



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

18

MENU



Surge protection Energy technology, type 3 arrester

	Fine power protection, connectable	160
	Fine power protection, fixed installation	168
	Fine power protection, series installation	178

Fine power protection, connectable

FineController FC-D for protective contact socket

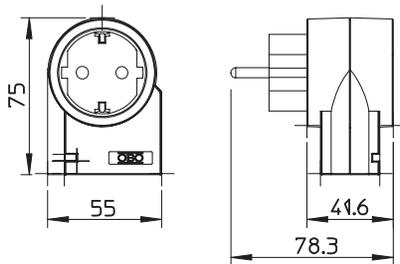


Type	Country version	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
FC-D	EN	Pure white	1	11.000	5092800

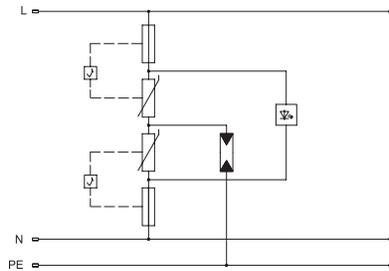
Type 3 surge protection device to EN 61643-11, intended for use in protective contact sockets.

- 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 kg/100 pcs.	Item No.
FC-TV-D	EN	Pure white	1	17.000	5092808

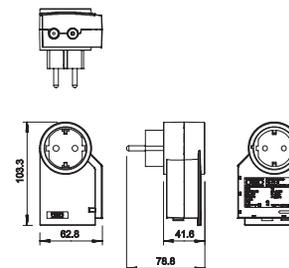
Type 3 combined surge protection to EN 61643-11, designed for use on Schuko sockets and video, TV and hi-fi systems with IEC adapter.

- 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)

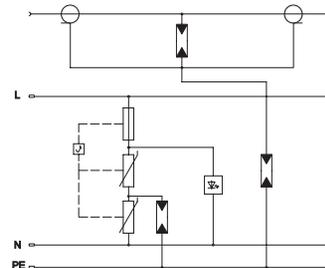
Note: The technical data in the table below refer to the power supply.



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



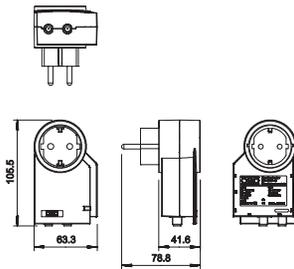
Type	Country version	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
FC-SAT-D	EN	Pure white	1	16.000	5092816

Type 3 combined surge protection to EN 61643-11, designed for use on satellite systems and receivers.

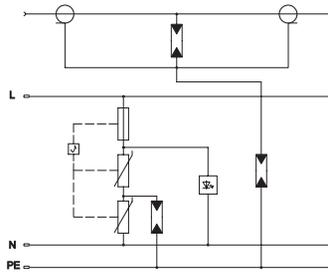
- Adapter
- Disconnection device and function display
- Child lock through increased finger contact protection
- Incl. 0.5 m connection cable in white (double screen)
- Maximum continuous voltage, TV connection 72 V DC / 1.5 A (25 °C)
- Limit frequency: 2.5 GHz (75 Ohm system)

Note: The technical data in the table below refer to the power supply.

Dimensions



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

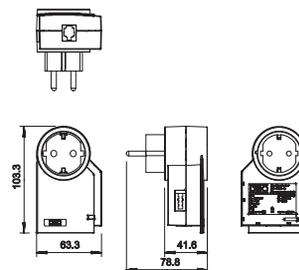
Type 3 combined surge protection to EN 61643-11, designed for use in telephone systems with TAE connection (telephones upstream of the NTBA/DSL splitter).

- 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

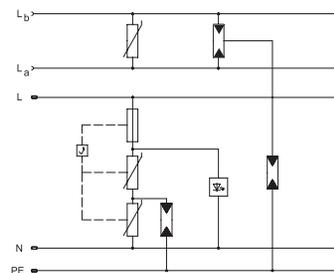
Note: The technical data in the table below refers to the power supply.



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



FineController FC-B for sockets B/F

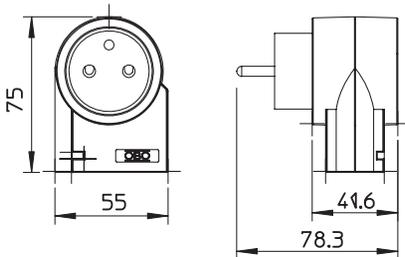


Type	Country version	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
FC-B/F	B/F	Pure white	1	7.900	5092840

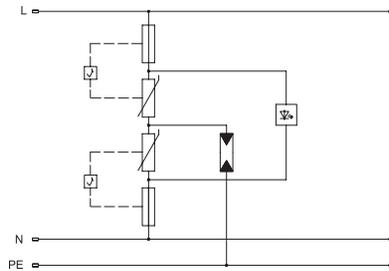
Type 3 surge protection device to EN 61643-11 designed for use on protective contact sockets of B/F country version.

- Adapter
- Disconnection device and function display
- Child lock through increased finger touch protection

Dimensions



Connection options



FC-B/F

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
Voltage protection level	U_p	<1,5 kV
Rated current	I_l	16 A
Maximum back-up fuse		16 A
Response time	t_A	<25 ns

FineController FC-ISDN for ISDN telephone systems and terminals



Type	Country version	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
FC-ISDN-D	EN	Pure white	1	18.000	5092812

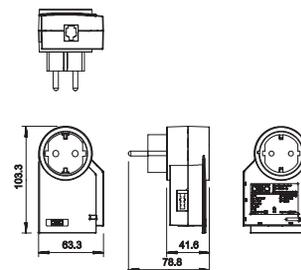
Type 3 combined surge protection to EN 61643-11 designed for use in ISDN / DSS 1 telephone systems and terminals.

- 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

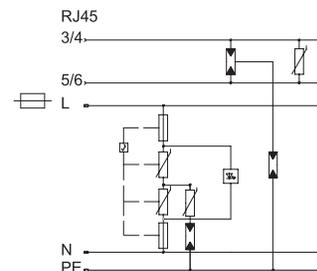
Note: The technical data in the table below refer to the power supply.



Dimensions



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



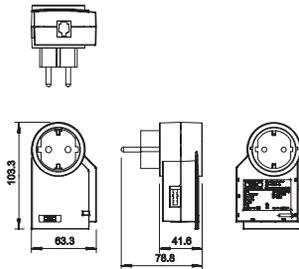
Type	Country version	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
FC-RJ-D	EN	Pure white	1	18.000	5092828

Type 3 combined surge protection to EN 61643-11 designed for use in telephone systems and terminals with RJ12 connection.

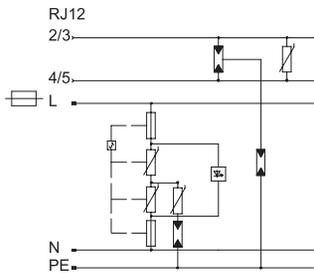
- Adapter
- Disconnection device and function display
- Child lock through increased finger contact protection
- Incl. 0.5 m connection cable RJ12
- Maximum continuous voltage, RJ connection 200 V DC / 1.5 A (25 °C)
- Limit frequency: Typ. 4 MHz / DSL-compatible

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

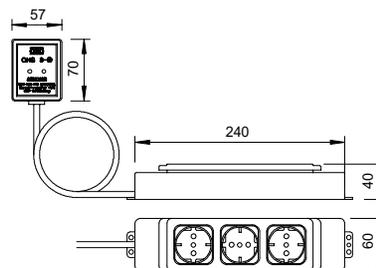
CNS 3-D: Type 3 surge protection device to DIN EN 61643-11, intended for use in protective contact sockets.

- With visual and audible signalling, function display
- 3-way socket
- Length of connection cable: 2 m
- Y circuit for high electrical safety

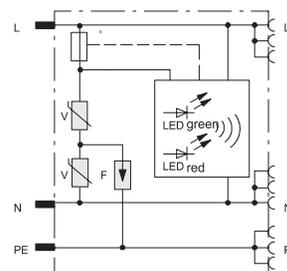
Application: For example, the protection of PCs, printers, copiers, fax machines, etc.



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



Fine power protection, fixed installation

Surge protection module 230 V



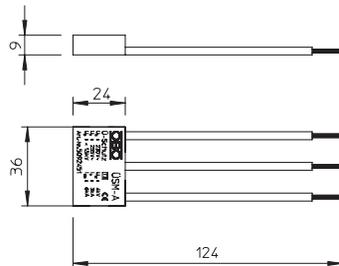
Type	Signalling on device	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
ÜSM-A	Audible	Acoustic function display	1	1.500	5092451

Surge protection module type 3 to DIN EN 61643-11 for 230 V power grids.

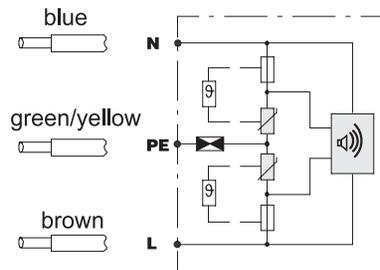
- With acoustic defect signal
- With low construction height
- Halogen-free plastic (UL 94 V-0)
- Y circuit

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_t	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

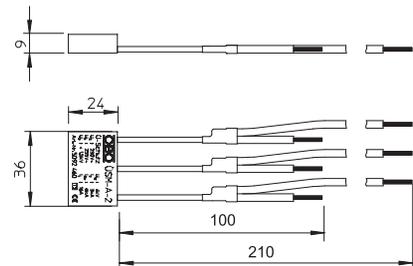
Surge protection device type 3 to DIN EN 61643-11 for 230 V networks.

- With acoustic defect signal
- With 2 strands for continuous wiring
- With low construction height
- Halogen-free plastic (UL 94 V-0)
- Y circuit

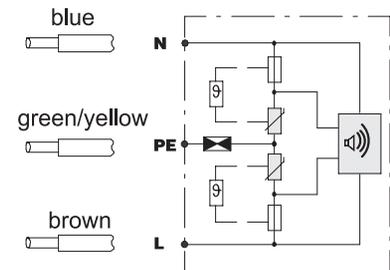
Application: Universally applicable for all installation systems.



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_r	16 A



Fine power protection, fixed installation

Surge protection module 230 V with holder for GB2 and GB3 mounting boxes



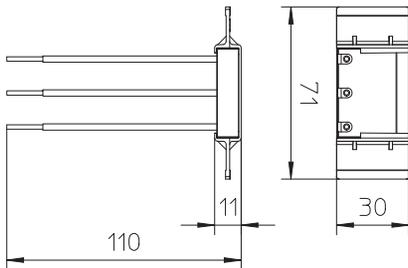
Type	Signalling on device	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
ÜSM-A-4	Audible	Incl. holder with partition function	1	2.000	5092472

Surge protection module type 3 to DIN EN 61643-11 for 230 V power grids.

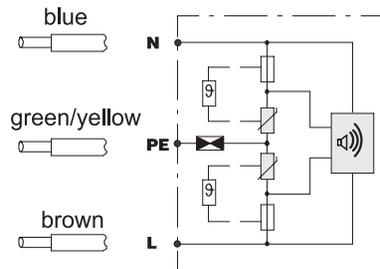
- With acoustic defect signal
- With low construction height and Y circuit
- ÜSM with halogen-free plastic (UL 94 V-0)
- Holder with separating retainer function for GB2 / GB3 mounting boxes and universal supports UT3 and UT4

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 230 V protective contact sockets



Type	Signalling on device	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
ÜSM-ST-230-1P+PE	Audible	Acoustic function display	1	1.770	5092441

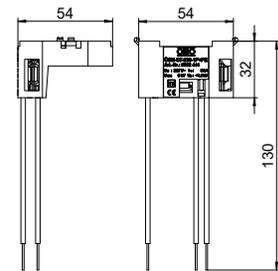
Surge protection / fine power protection, type 3, to EN 61643-11 for protective contact sockets.

- 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

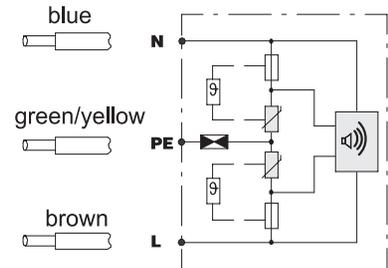
Application: For retrofitting on standard Schuko sockets.



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



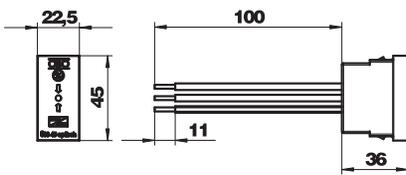
Type	Signalling on device	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
ÜSS 45-O-RW	Visual	Visual function display	1	2.411	6117473

Surge protection / network fine protection, type 3, according to EN 61643-11 for installation in Rapid 45 trunking, device installation trunking and underfloor systems.

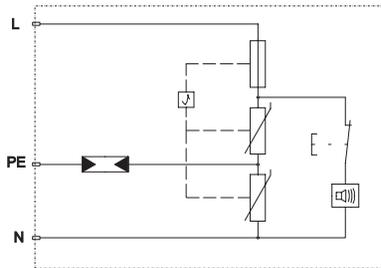
- Version-O with acoustic function display
- Quick and easy mounting
- Low construction width of 22.5 mm

Application: The surge protection device secures downstream and nearby sockets.

Dimensions



Connection options



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

Fine power protection for Modul 45 with acoustic function display



Type	Signalling on device	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
ÜSS 45-A-RW	Audible	Acoustic function display	1	2.800	6117465

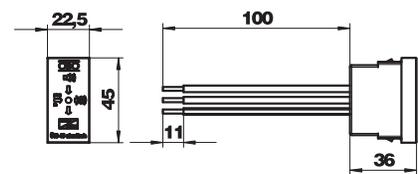
Surge protection / network fine protection, type 3, according to EN 61643-11 for installation in Rapid 45 trunking, device installation trunking and underfloor systems.

- 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.



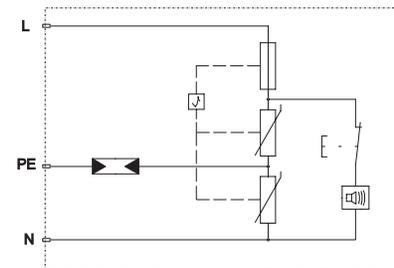
Dimensions



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

Connection options



Fine power protection, fixed installation

Lightning barrier FLD

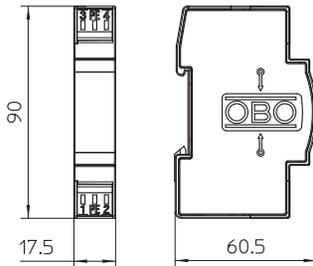


Type	Highest continuous voltage protection		Pack. pcs	Weight kg/100 pcs.	Item No.
	V	rating			
FLD 60T S	230	IP20	1	4.400	5098940

The type VF...AC/DC lightning barrier is a surge arrester/fine power protection type 3 (Class D) to DIN EN 61643-11 for protecting end consumers from transient surges. The integrated protective circuit consisting of gas-discharge protector and varistors is permanently monitored by a temperature controller. A function display signals a defect caused by protection circuit failure. The FS version features remote signalling with potential-free changeover contact.

The protection devices are used for mounting on hat profile rails near to devices to be protected and are designed for DC and AC systems.

Dimensions



Lightning barrier VF-KSA FA



Type	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
VF-KSA FA	IP20	1	8.000	5097959

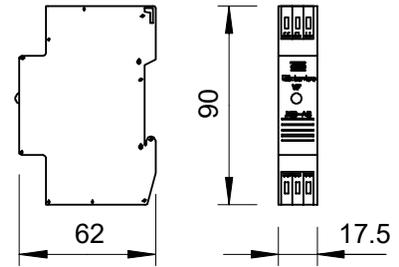
VF...: Surge protection module, fine protection type 3 (Class C) according to DIN VDE 0675 Part 6-11 for distributor installation

- With visual function display
- With mounting-friendly, screwless connection clamps
- In a space-saving 17.5 mm grid.
- Y circuit
- VF...-AC: For alternating current systems
- VF...-DC: For direct current systems
- 5-year guarantee

Application: Universal use on 35 mm hat profile rail in any standard distributor housing



Dimensions



Surge protection module ÜSM 10



Highest continuous voltage V

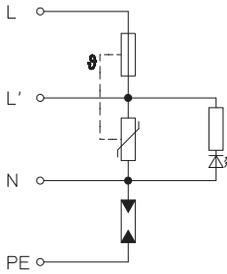
Type	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
ÜSM-10-230I1PE25	255 1-pole + NPE for PC I	1	5.500	5092440

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 1300 V or 1000 V @ 5 kA
- With or without luminaire switch-off in case of defect

Dimensions

Connection options



Application: In the cable transition box, junction boxes, cable duct to underfloor systems

ÜSM-10-230I1PE25

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	255 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]	$I_{Ttotal, R/2\Omega}$	10 kA
Maximum discharge current (8/20 μ s)	I_{max}	10 kA
Voltage protection level	U_n	1,5 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



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
ÜSM-20-230I1PE65	255	1-pole + NPE for PC I	1	8.300	5092433

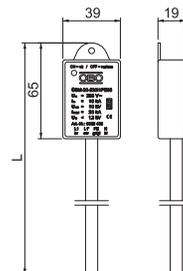
Surge protection module type 2+3 to DIN EN 61643-11 for 230/400 V power grids. Appropriate for the protection of LED lighting.

- 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

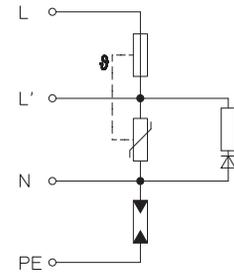
Application: In the cable transition box, junction boxes, cable duct to underfloor systems



Dimensions



Connection options



ÜSM-20-230I1PE65

Nominal voltage	U_N	230 V
Max. continuous operating voltage	U_C	255 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_n	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



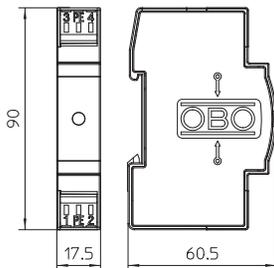
Highest continuous voltage V

Type	Highest continuous voltage V	Pack. pcs	Weight kg/100 pcs.	Item No.
VF12-AC DC	13.5	1	9.000	5097453

Surge protection device / fine protection type 3 to EN 61643-11

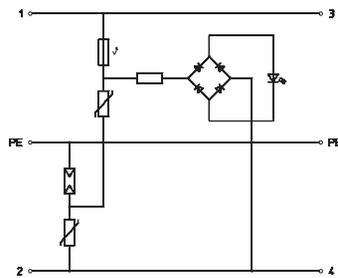
- Suitable for DC and AC voltage systems
- With visual function display
- With installation-friendly, screwless connection terminals
- In a space-saving 17.5 mm grid
- Y circuit

Dimensions



Application: Universal use on 35 mm DIN profile rail in every normal commercially available distributor housing.

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		—



MCR protection for 2-pole for power supply, 24 V



Highest continuous voltage V

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
VF24-AC/DC 34	1	8.000	5097607

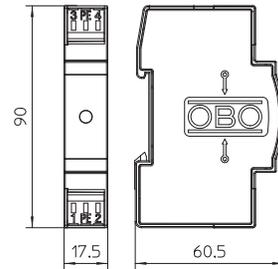
Surge protection device / fine protection type 3 to EN 61643-11

- 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

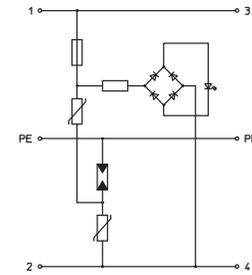
Application: Universal use on 35 mm DIN profile rail in every normal commercially available distributor housing.



Dimensions



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		—



MCR protection for 2-pole for power supply, 48 V



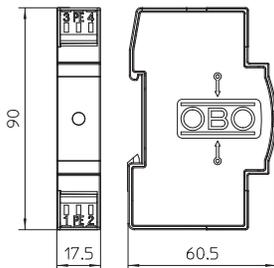
Highest continuous voltage V

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

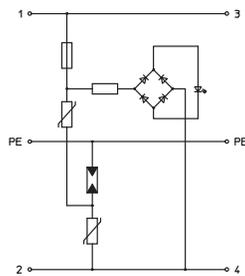
- Suitable for DC and AC voltage systems
- With visual function display
- With installation-friendly, screwless connection terminals
- In a space-saving 17.5 mm grid
- Y circuit

Dimensions



Application: Universal use on 35 mm DIN profile rail in every normal commercially available distributor housing.

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		—



MCR protection for 2-pole for power supply, 60 V



Highest continuous voltage V

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
VF60-AC/DC 80	1	8.000	5097623

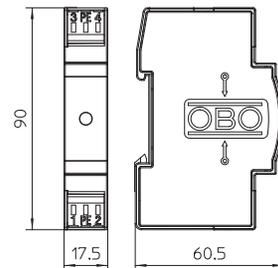
Surge protection device / fine protection type 3 to EN 61643-11

- 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

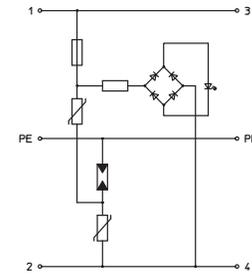
Application: Universal use on 35 mm DIN profile rail in every normal commercially available distributor housing.



Dimensions



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

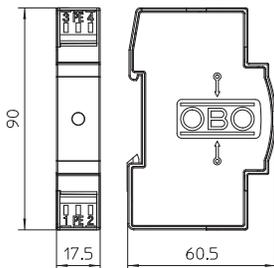
VF110-AC DC | 150

Pack. pcs	Weight kg/100 pcs.	Item No.
1	8.000	5097631

Surge protection device / fine protection type 3 to EN 61643-11

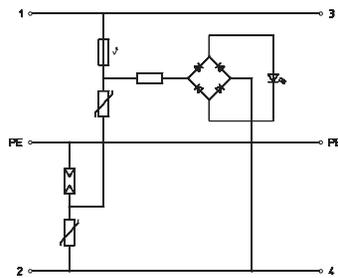
- Suitable for DC and AC voltage systems
- With visual function display
- With installation-friendly, screwless connection terminals
- In a space-saving 17.5 mm grid
- Y circuit

Dimensions



Application: Universal use on 35 mm DIN profile rail in every normal commercially available distributor housing.

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	Pack. pcs	Weight kg/100 pcs.	Item No.
VF230-AC/DC 255	1	8.000	5097650

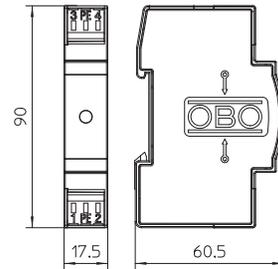
Surge protection device / fine protection type 3 to EN 61643-11

- 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

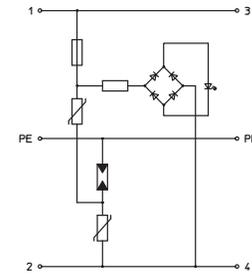
Application: Universal use on 35 mm DIN profile rail in every normal commercially available distributor housing.



Dimensions



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



Fine power protection, series installation

Protection for 2-pole for power supply, 230 V 20



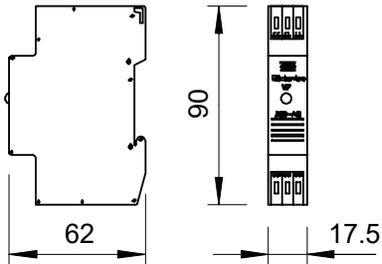
Type	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
VF230 AC/DC-20	IP20	1	10.000	5097916

VF...: Surge protection module, fine protection type 3 (Class C) according to DIN VDE 0675 Part 6-11 for distributor installation

- With visual function display
- With mounting-friendly, screwless connection clamps
- In a space-saving 17.5 mm grid.
- Y circuit
- VF...-AC: For alternating current systems
- VF...-DC: For direct current systems
- 5-year guarantee

Application: Universal use on 35 mm hat profile rail in any standard distributor housing

Dimensions



MCR protection for 2-pole power supply with remote signalling, 24 V AC/DC



Highest continuous voltage V

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
VF24-AC/DC-FS 34	1	6.620	5097820

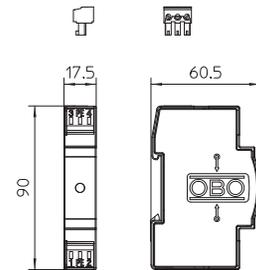
Surge protection / fine power protection, type 3, to EN 61643-11 with remote signalling

- 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

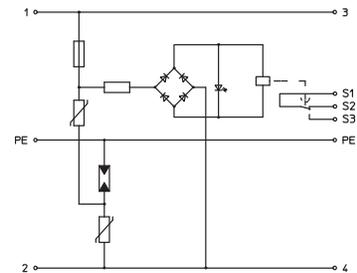
Application: Universal use on 35 mm DIN profile rails in any standard distributor housing.



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



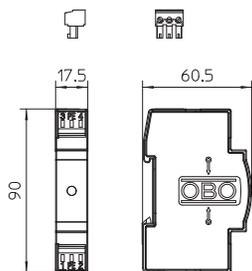
Highest continuous voltage

Type	U _c V	Pack. pcs	Weight kg/100 pcs.	Item No.
VF230-AC-FS	255	1	6.910	5097858

Surge protection / fine power protection, type 3, to EN 61643-11 with remote signalling

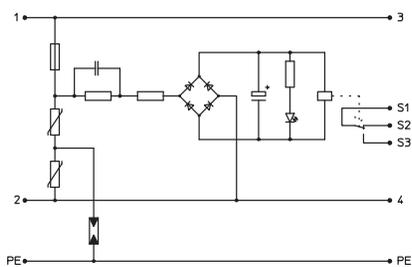
- With remote signalling, potential-free changeover contact, for function monitoring
- Suitable for AC systems
- With visual function display
- With easy mounting, screwless connection terminals
- In space-saving 17.5 mm grid
- Y circuit

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. pcs	Weight kg/100 pcs.	Item No.
	AC V	DC V			
VF2-230-AC/DC-FS	255	350	1	6.000	5097939

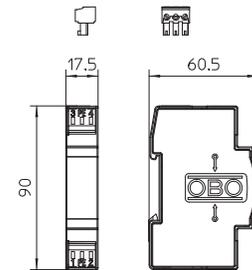
Type 3 surge protection/fine network protection to EN 61643-11 with leak current-free remote signalling

- 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

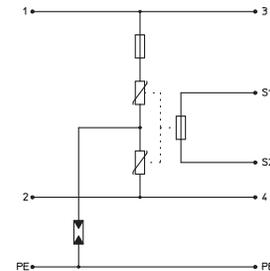
Application: Universal use on 35 mm DIN profile rails in any standard distributor housing.



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





Photovoltaic systems

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PV complete block 1500V DC



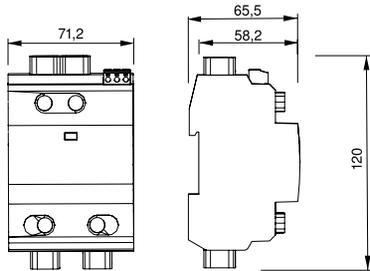
Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V-PV-T1+2-1500	1500	Y configuration	1	49.200	5094240

Type 1+2 combination arrester for lightning and surge protection of PV systems.

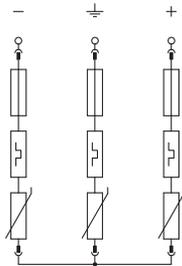
- Lightning protection equipotential bonding according to IEC 62305 (VDE 0185-305)
- Surge protection according to IEC 60364-7-712 (VDE 0100-712)
- Arresting capacity to 12.5 kA (10/350) and 40 kA (8/20)
- Error-resistant Y circuit with status display
- The FS variant possesses a potential-free changeover 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 _{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 _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

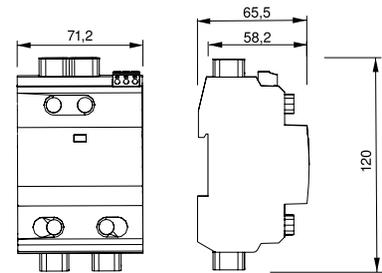
Type 1+2 combination arrester for lightning and surge protection of PV systems.

- 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

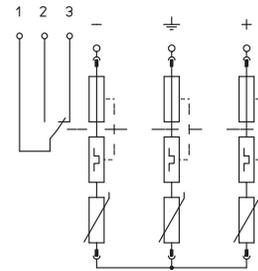
Application: Lightning current and surge protection devices for PV systems.



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



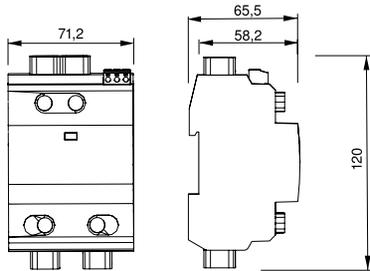
Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V-PV-T1+2-1000	1000	Y configuration	1	40.700	5094230

Type 1+2 combination arrester according to EN 50539-11 for lightning and surge protection of PV systems.

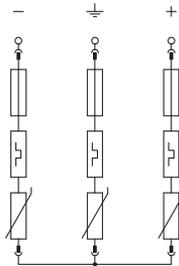
- Lightning protection equipotential bonding according to IEC 62305 (VDE 0185-305)
- Surge protection according to IEC 60364-7-712 (VDE 0100-712)
- Arresting capacity to 12.5 kA (10/350) and 40 kA (8/20)
- Error-resistant Y circuit with status display
- The FS variant possesses a potential-free changeover 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

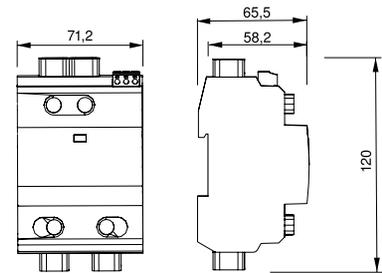
Type 1+2 combination arrester according to EN 50539-11 for lightning and surge protection of PV systems.

- 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

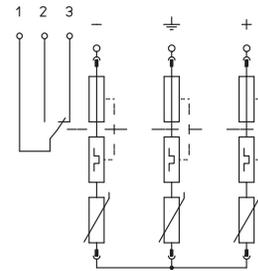
Application: Lightning current and surge protection devices for PV systems.



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



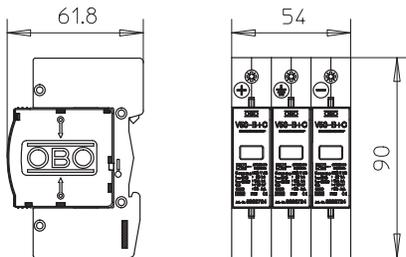
Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V25-B+C 3-PH900	900	3-pole for PV systems	1	42.200	5097447

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 _o	< 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

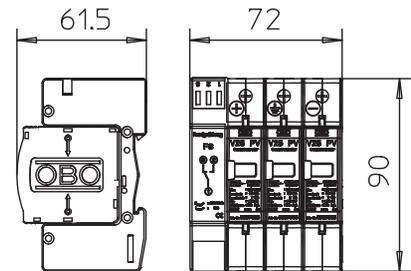
V25 combination arrester, type 1+2, for photovoltaic systems

- 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

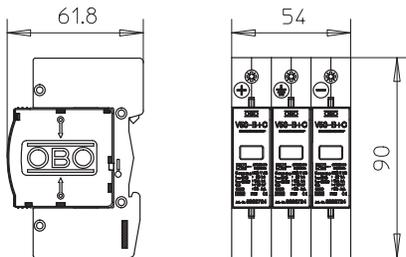


Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V50-B+C 3-PH600	600	3-pole for PV systems	1	41.000	5093623

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 _o	< 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

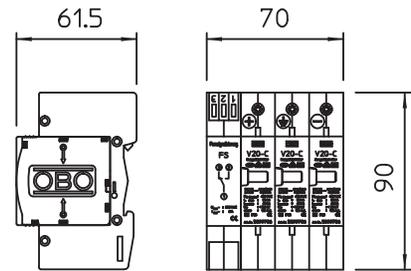
V50 combination arrester, type 1+2, for photovoltaic systems

- 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 complete block 1500V DC



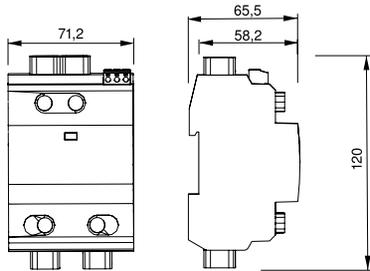
Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V-PV-T2-1500	1500	Y configuration	1	33.800	5094210

Type 2 surge protection for PV plants.

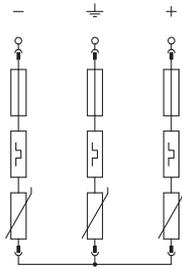
- Surge protection according to IEC 60364-7-712 (VDE 0100-712)
- Arresting capacity of 20 kA per pole and up to 40 kA (8/20)
- Error-resistant Y circuit with status display
- The FS variant possesses a potential-free changeover contact for remote signalling

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

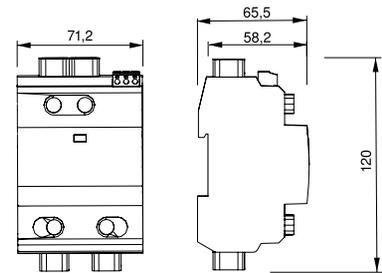
Type 2 surge protection for PV plants.

- 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

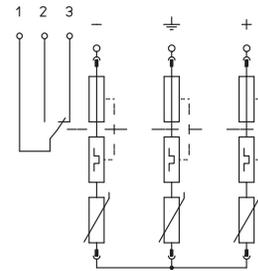
Application: Surge protection devices for PV systems.



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 surge protection V20, 1,000 V DC

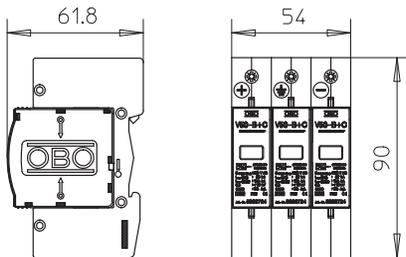


Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 3-PH-1000	1000	3-pole for PV systems	1	36.500	5094608

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 status 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

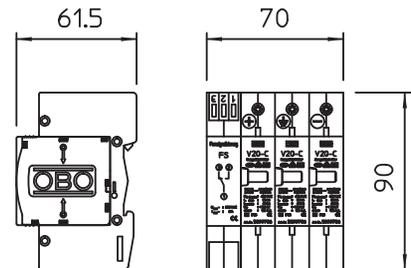
V20 surge arrester, type 2, for photovoltaic systems

- 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 status 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 surge protection V20, 600 V DC

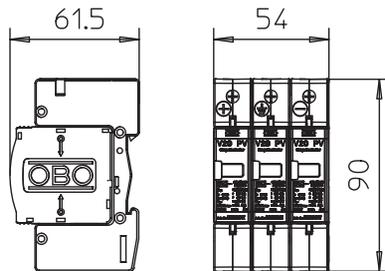


Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 3PH-600	600	3-pole for PV systems	1	33.500	5094605

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

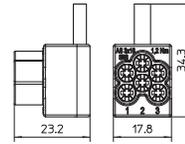
U max DC	U _c DC	600 V
SPD to EN 61643-11		Type 2
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I _n	20 kA
Maximum discharge current (8/20 μs)	I _{max}	40 kA
Voltage protection level	U _n	< 2,6 kV
Response time	t _A	< 25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP 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



Type	Colour	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
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).



PV type 2 surge protection complete block 600 V and 1,000 V DC

PV surge protection V20, 600 V DC with remote signalling



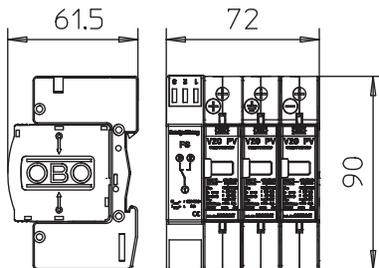
Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 3PHFS-600	600	3-pole for PV systems; Y circuit with FS	1	41.500	5094576

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

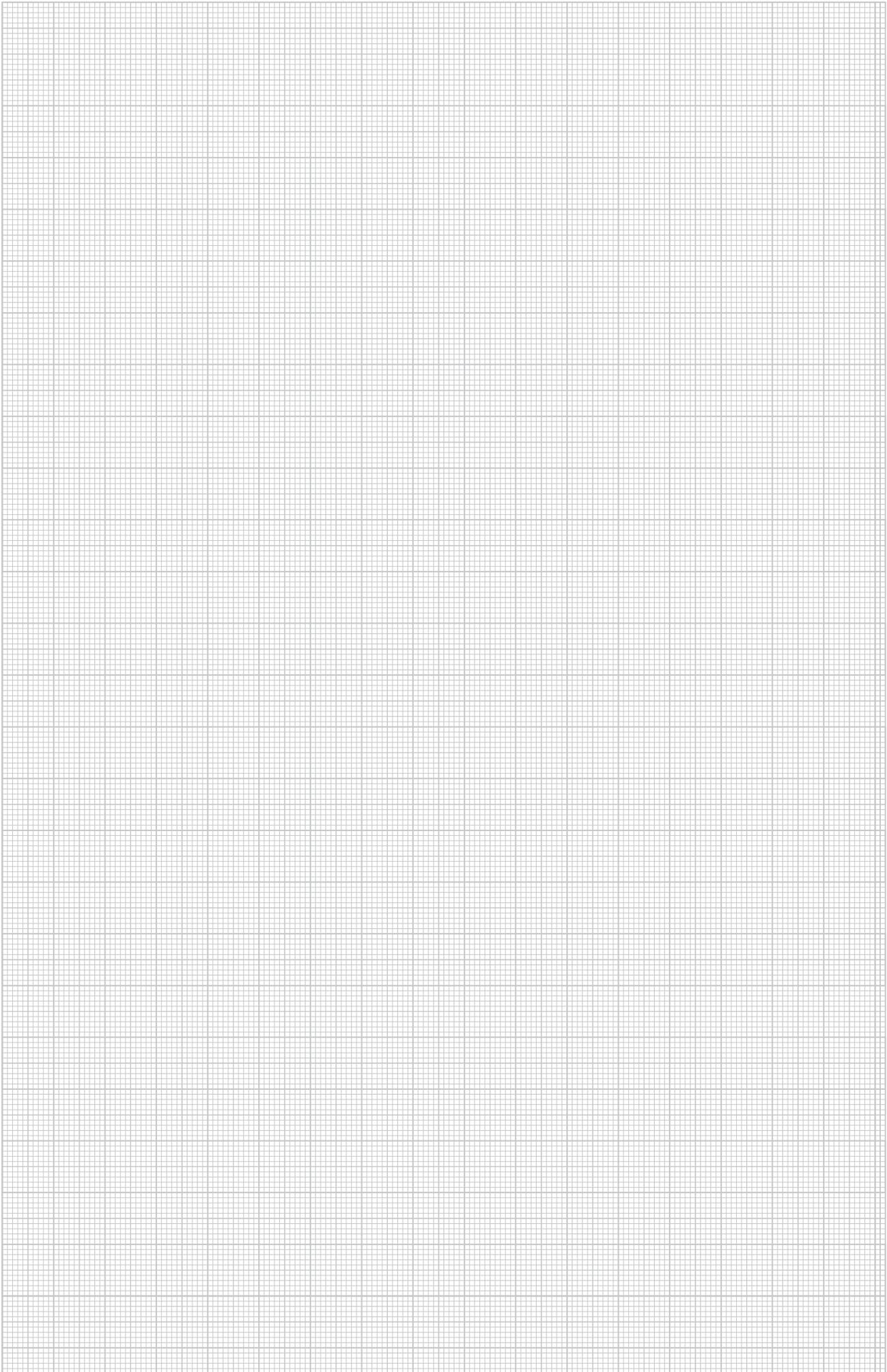
Dimensions



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





bleiter

Net-Defender

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Surge protection, data and information technology

	Surge protection for telecommunication systems	208
	Surge protection for LSA-Plus systems	215
	Coaxial protection devices for high-frequency applications	220
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	MCR protection 2-pole power supply	250
	MCR protection FRD/FLD/TKS-B lightning protection barriers	264
	MCR protection MDP, in series terminal format	278

Combination protection device TD-2d-V for VDSL systems



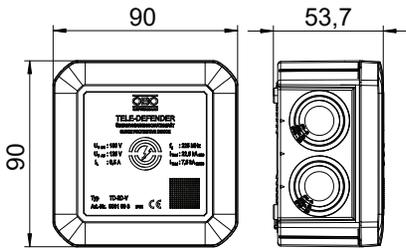
Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
TD-2D-V	125	180	2	Terminal	1	9.500	5081698

Plastic

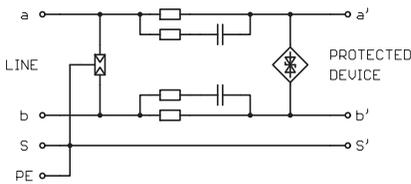
Data cable protection device for telecommunications equipment

- 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

Dimensions



Connection options



Application: Ideal for all DSL systems, IP connections, ISDN or analogue telecommunications

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

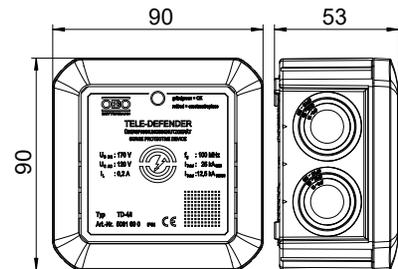
Data cable protection device for telecommunications equipment

- Low protection level at a high current load
- "Push-in" terminals for quick installation
- Bandwidth-optimised for secure transmission
- Surface mounting
- Visual function display

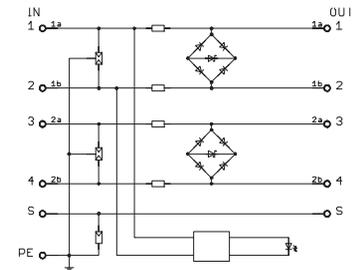
Application: DSL systems, IP connections, ISDN or analogue telecommunications



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 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

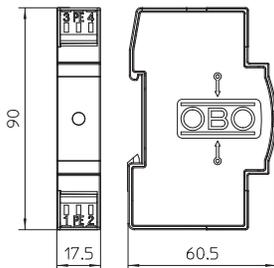
Plastic

Data cable protection devices for telecommunication systems

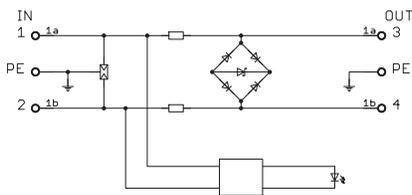
- Low protection level at high current load
- Screwless terminals or connectable
- Bandwidth-optimised for secure transmission
- Quick mounting onto DIN rail for a telephone line
- Visual function display

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		Hat 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

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

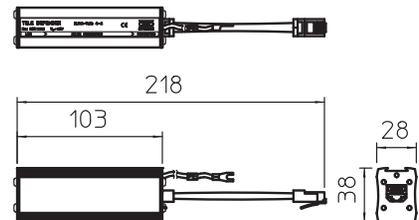
Data line protection device for analogue telecommunications systems

- 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)

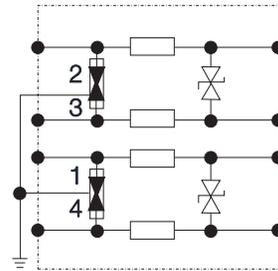
Application: For analogue telecommunication systems



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



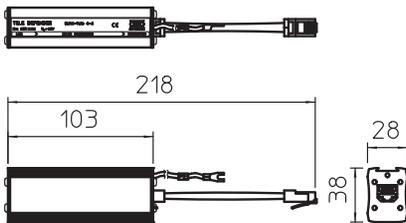
Type	Version	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
RJ11-TELE 4-F	Fine protection, 4 wires	RJ11	1	14.000	5081977

Data line protection device for analogue telecommunications systems

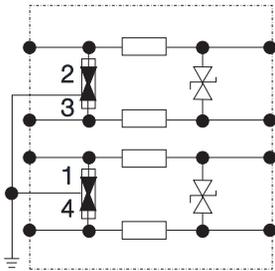
- In aluminium housing
- With 2-stage protection circuit
- Simple mounting
- Incl. 150 mm connection cable with RJ11 and/or RJ45 connectors
- Optimised bandwidth for TC systems
- DIN rail mounting with DLS-BS accessories (5082 38 2)

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 Ω \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 kV/ μ s (C3)	U_p	<245 V
Frequency range		0 - 18 MHz
Insertion loss	$S_{>1}$	\leq 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

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

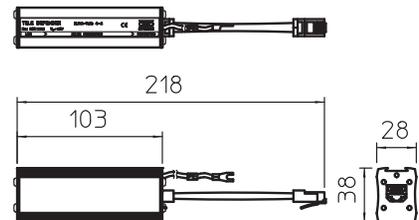
Data line protection device for analogue telecommunications systems

- 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)

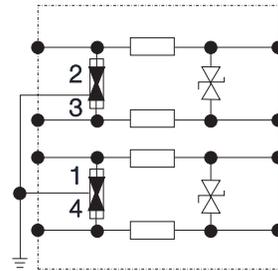
Application: For analogue telecommunication systems



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 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		RJ45
Protection rating		IP40
Earthing via:		Connection cable
Testing standard		IEC 61643-21



Fine protection device TELE 4-F for ISDN RJ45



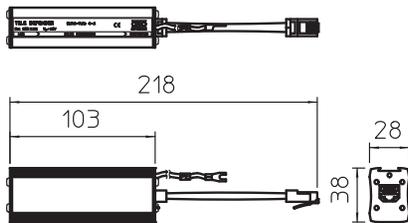
Type	Version	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
RJ45-TELE 4-F	Fine protection, 4 wires	RJ45	1	14.000	5081984

Data line protection device for analogue telecommunications systems

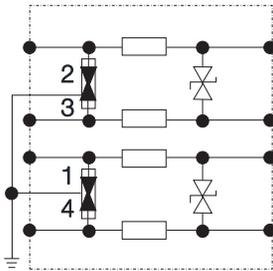
- In aluminium housing
- With 2-stage protection circuit
- Simple mounting
- Incl. 150 mm connection cable with RJ11 and/or RJ45 connectors
- Optimised bandwidth for TC systems
- DIN rail mounting with DLS-BS accessories (5082 38 2)

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 Ω \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 kV/ μ s (C3)	U_p	<245 V
Frequency range		0 - 18 MHz
Insertion loss	$S_{>1}$	\leq 3 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

LSA basic protection magazine

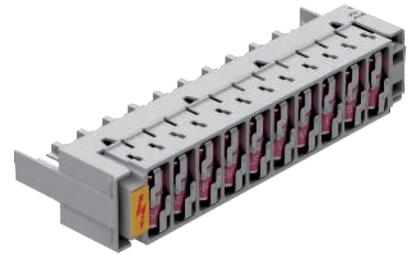


Type	Installation type	Number of poles	Pack. pcs	Weight kg/100 pcs.	Item No.
LSA-B-MAG	LSA-Plus, connectable	20	1	8.600	5084020

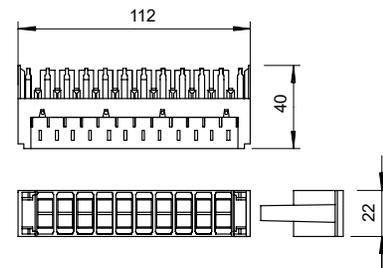
LSA-B-MAG: LSA basic protection magazine for use in multi-core data cable systems, MCR systems and telephone switchboards.

- Basic protection
- Equipped with 20 gas charge tubes
- Max. voltage: 180 V

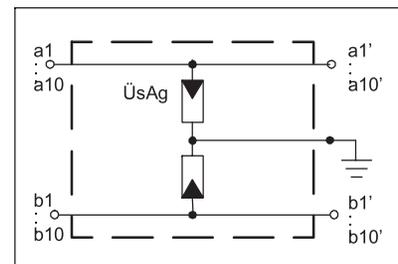
Application: Directly on LSA-Plus separating strips or connection strips (e.g. OBO LSA-A-LEI (5084 00 8) or OBO LSA-T-LEI (5084 01 2)).



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



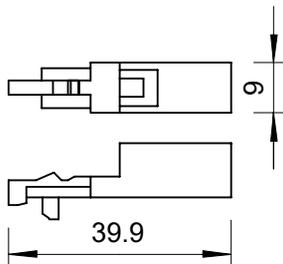
Type	Installation type	Number of poles	Pack. pcs	Weight kg/100 pcs.	Item No.
LSA-BF-180	LSA-Plus, connectable	2	1	0.500	5084024

LSA-BF 24: LSA basic and fine protection, for application in MCR systems

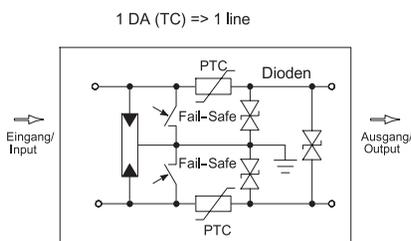
- Basic and fine protection
- Rough protection using fail-safe technology.
- With PTC protection components against overcurrent.
- Max. voltage: 24 V

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. pcs	Weight kg/100 pcs.	Item No.
LSA-BF-24	LSA-Plus, connectable	2	1	0.500	5084028

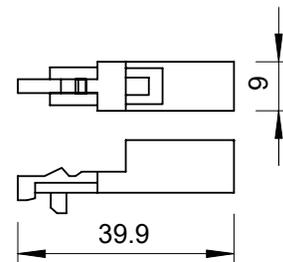
LSA-BF 24: LSA basic and fine protection, for application in MCR systems

- 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))

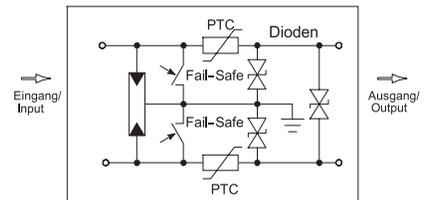


Dimensions



Connection options

1 DA (TC) => 1 line

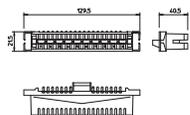


LSA-BF-24

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

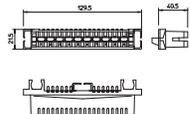


Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
LSA-A-LEI	Grey	1	5.100	5084008

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

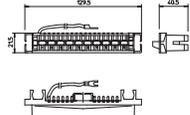


Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
LSA-T-LEI	White	1	5.400	5084012

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

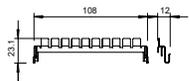


Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
LSA-E-LEI	Red	1	6.500	5084016

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	Pack. pcs	Weight kg/100 pcs.	Item No.
LSA-E	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



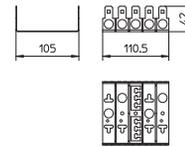
Type

LSA-M

SI Steel

LSA-M: Installation trough for 5 connection or separating strips. Grid 22.5 mm.
Depth: 22 mm; 30 mm; 50 mm

Pack. pcs	Weight kg/100 pcs.	Item No.
1	7.800	5084036



LSA simple tool

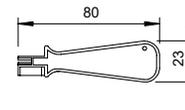


Type

LSA-TOOL

LSA-TOOL: Simple tool for soldering, bolting and stripping-free connection of cores, without cutter.

Pack. pcs	Weight kg/100 pcs.	Item No.
1	0.600	5084040



LSA protective housing



Colour

Type

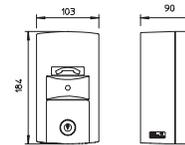
LSA-G | Light grey

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

Pack. pcs	Weight kg/100 pcs.	Item No.
1	57.500	5084048



Coaxial protection devices for S-UHF connection: male/female

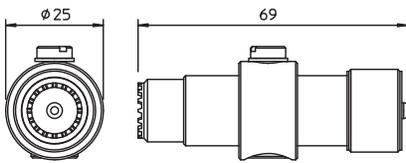


Type	Connection system	Frequency range	Pack. pcs	Weight kg/100 pcs.	Item No.
S-UHF M/W	UHF	0 - 1,3 GHz	1	7.000	5093023

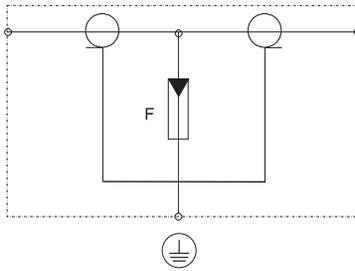
Coaxial data cable protection devices

- Basic protection
- High pulsed current carrying capacity 2 x 2.5 kA (10/350 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 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 (8/20μs)
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 devices for S-UHF connection: female/female



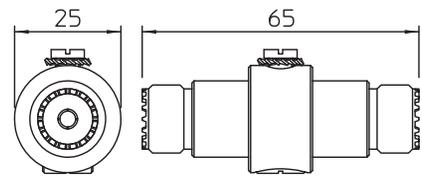
Type	Connection system	Frequency range	Pack. pcs	Weight kg/100 pcs.	Item No.
S-UHF W/W	UHF	0 - 1,3 GHz	1	7.000	5093015

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



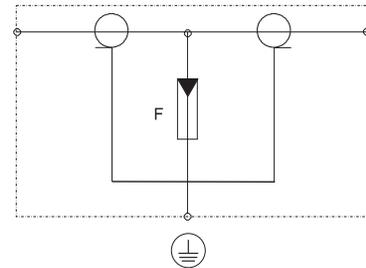
Dimensions



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

Connection options



Coaxial protection device for BNC connection: male/female

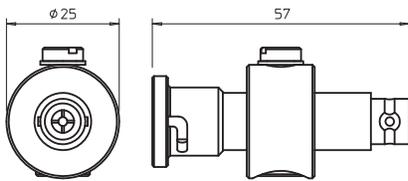


Type	Connection system	Frequency range	Pack. pcs	Weight kg/100 pcs.	Item No.
DS-BNC M/W	BNC	0 - 2,2 GHz	1	6.500	5093252

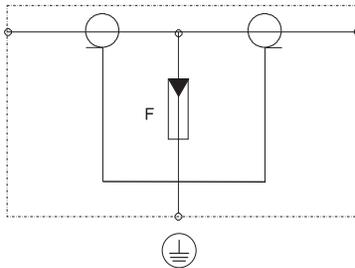
Coaxial data cable protection devices

- Basic protection
- High pulsed current carrying capacity 2 x 2.5 kA (10/350 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/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: female/female



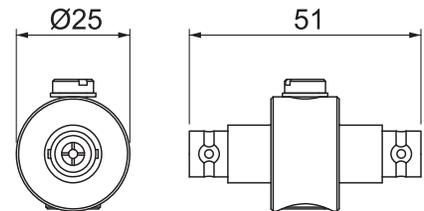
Type	Connection system	Frequency range	Pack. pcs	Weight kg/100 pcs.	Item No.
DS-BNC W/W	BNC	0 - 2,2 GHz	1	6.000	5093236

Coaxial data cable protection devices

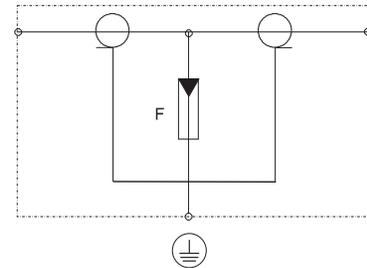
- Basic protection
- High pulsed current carrying capacity 2 x 2.5 kA (10/350 µs)
- Simple installation (adapter plug), m = plug/f = female connector
- Various plug combinations
- With BNC connector
- Optimised transmission behaviour
- Including OBO M25 Quick clip for simple installation



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

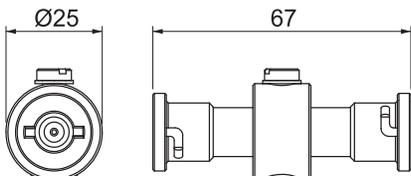


Type	Con- nection system	Frequency range	Pack. pcs	Weight kg/100 pcs.	Item No.
DS-BNC M/M	BNC	0 - 2,2 GHz	1	7.000	5093260

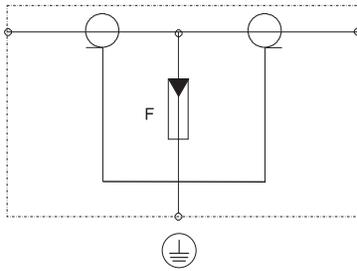
Coaxial data cable protection devices

- 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	$S_{2,1}$	≤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 N connection: male/female



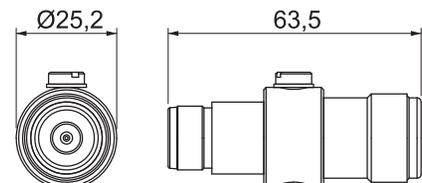
Type	Conne- tion system	Frequency range	Pack. pcs	Weight kg/100 pcs.	Item No.
DS-N M/W	N	0 - 3 GHz	1	12.200	5093996

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



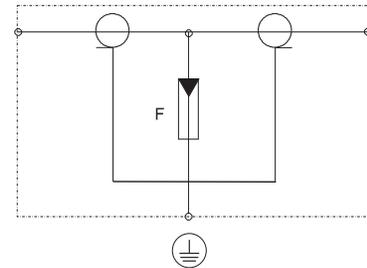
Dimensions



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

Connection options



Coaxial protection device for N connection: female/female

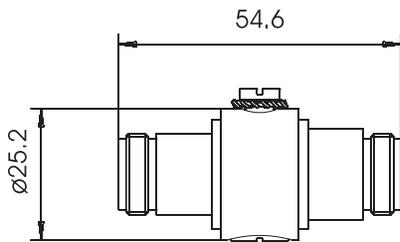


Type	Connection system	Frequency range	Pack. pcs	Weight kg/100 pcs.	Item No.
DS-N W/W	N	0 - 3 GHz	1	11.500	5093988

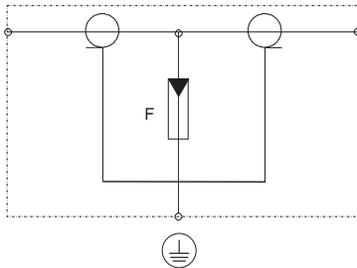
Coaxial data cable protection devices

- 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	Connection system	Frequency range	Pack. pcs	Weight kg/100 pcs.	Item No.
DS-N-6 MW	N	0 - 6 GHz	1	7.830	5093998

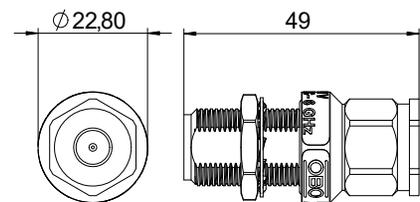
Coaxial data cable protection devices for transmission and reception technology

- 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

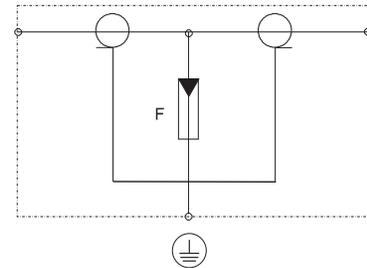
Application: For example: SAT-TV C band, WiMAX, WLAN applications, DVB-T2



Dimensions



Connection options



DS-N-6 MW

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	$S_{r,1}$	≤0,1 dB
Return loss	$S_{r,1}$	≥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

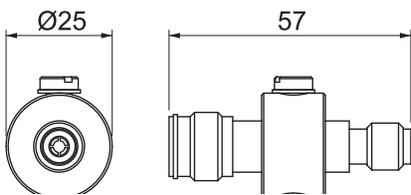


Type	Connection system	Frequency range	Pack. pcs	Weight kg/100 pcs.	Item No.
DS-TNC M/W	TNC	0 - 4 GHz	1	9.000	5093270

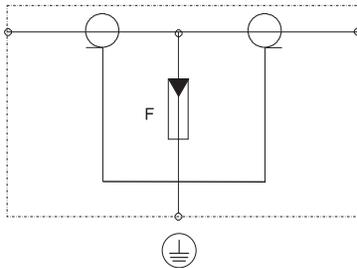
Coaxial data cable protection devices

- 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	$S_{2,1}$	$\leq 0,5$ dB
Return loss	$S_{1,1}$	≥ 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

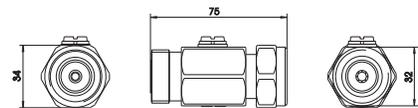
Coaxial data protection device

- Basic protection
- Simple mounting (adapter)
- Optimum transmission
- High pulse load capacity
- With 7/16 connector

Application: to protect mobile telephony applications.



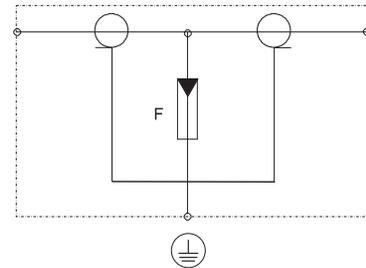
Dimensions



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	$S_{2,1}$	$\leq 0,95$ dB
Return loss	$S_{1,1}$	≥ 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

Connection options



Coaxial protection device for F connection: male/female



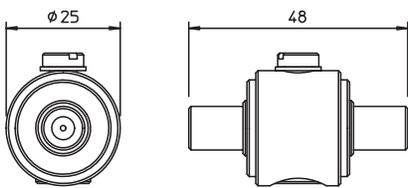
Type	Connection system	Frequency range	Pack. pcs	Weight kg/100 pcs.	Item No.
DS-F M/W	F	0 - 3,4 GHz	1	9.000	5093275

Coaxial data cable protection devices

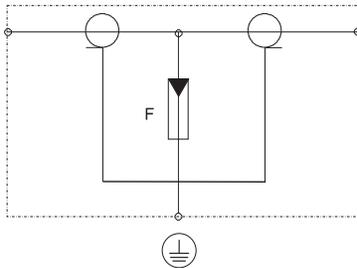
- Basic protection
- High pulsed current carrying capacity 2 x 2.5 kA (10/350 μs)
- Simple installation (adapter plug), m = plug/f = female connector
- Various plug combinations
- With F connector
- Optimised transmission behaviour
- Including OBO M25 Quick clip for simple installation

Dimensions

Application: Protection of TV and SAT systems, multi-switches, receivers and DVB-T(2)



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	Conne- tion system	Frequency range	Pack. pcs	Weight kg/100 pcs.	Item No.
DS-F W/W	F	0 - 3,4 GHz	1	9.000	5093272

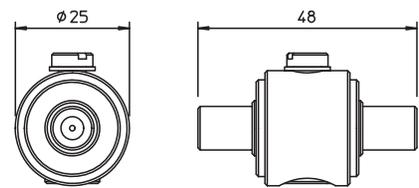
Coaxial data cable protection devices

- 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

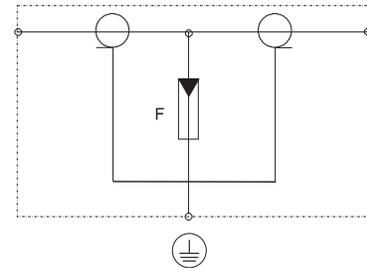
Application: Protection of TV and SAT systems, multi-switches, receivers and DVB-T(2)



Dimensions



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

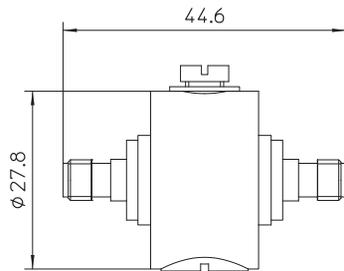


Type	Connection system	Frequency range	Pack. pcs	Weight kg/100 pcs.	Item No.
DS-SMA W/W	SMA	0 - 3,7 GHz	1	7.500	5093277

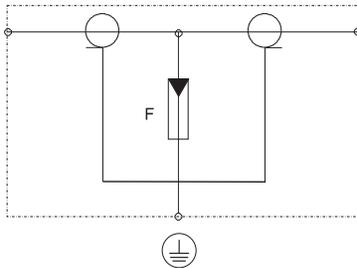
Coaxial data cable protection devices

- 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

Dimensions



Connection options



Application: Radio and data technology with SMA connector

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

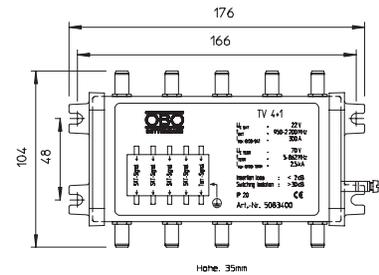
Coaxial data line protection for TV reception systems

- 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.

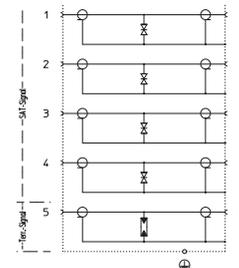
Application: Protection of TV and SAT systems, multi-switches, receivers and DVB-T receivers



Dimensions



Connection options



TV 4+1

Maximum continuous voltage U_c SAT inputs	U_c	22 V
Maximum continuous voltage U_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_l	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_{p1}	≤ 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 for high-speed networks up to 10 GBit (Class EA/CAT6A)

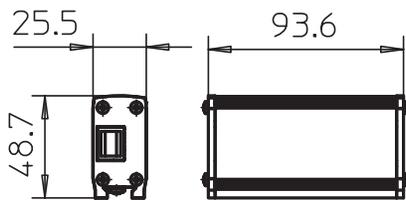


Type	Version	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
ND-CAT6A/EA	Fine protection, 8 wires + shield	RJ45 8(8)	1	16.600	5081800

Data cable protection device for high-speed networks

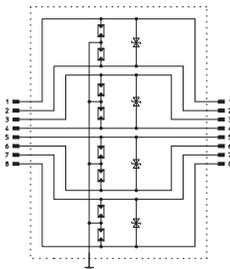
- High-quality RJ45 sockets
- Low protection level at high current load
- Earthing via DIN rail or connection cable
- Support of Power over Ethernet + to 1 A
- Tested transmission quality in networks up to 10 GBit (Class EA) or CAT6A
- Rapid installation through plug-in version
- Incl. DIN rail fastening 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 / hat 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

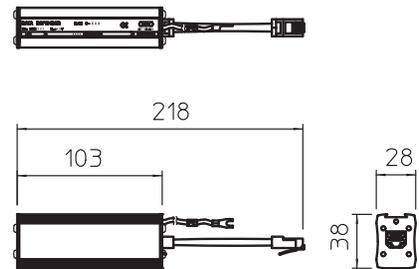
Universal data cable protection device for network technology and telecommunication systems

- 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)

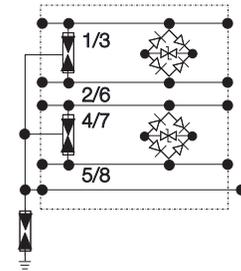
Application: For analogue, ISDN, DSL systems, Ethernet Twisted Pair.



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 arrester for 10Base2-/10Base5 networks



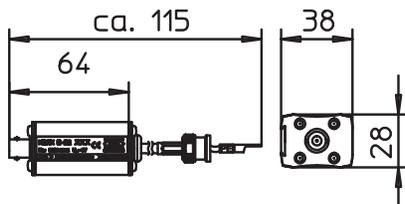
Type	Version	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
KOAX B-E2 MF-C	Combi protection	BNC	1	10.300	5082430

Data line protection device for coaxial Ethernet network systems

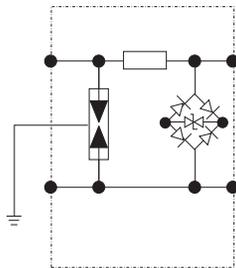
- In aluminium housing
- BNC connector m/f
- Simple mounting with adapter plug
- Two-stage protection circuit
- DIN rail mounting with DLS-BS accessories (5082 38 2)

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		$4,7 \Omega \pm 10\%$
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}	≥ 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

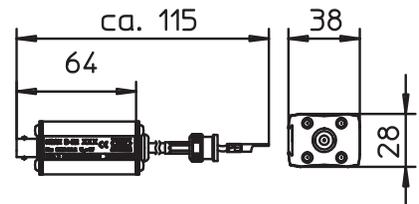
Data line protection device for coaxial Ethernet network systems

- 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



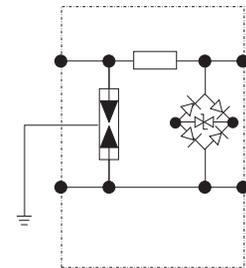
Dimensions



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



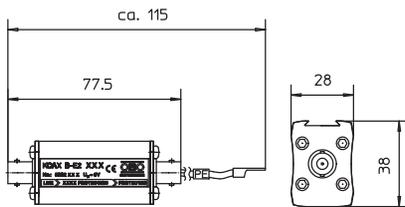
Type	Version	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
KOAX B-E2 FF-F	Fine protection	BNC	1	14.400	5082434

Data cable protection device for coaxial TV / camera systems

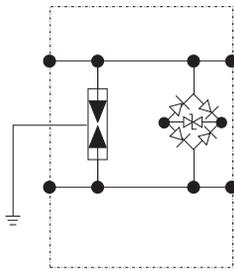
- In aluminium housing
- BNC connector socket/socket
- Simple mounting with adapter plug
- Two-stage protection circuit
- DIN rail mounting with DLS-BS accessories (5082 38 2)

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



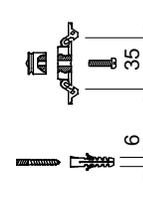
Fastening set for DIN profile rail



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)



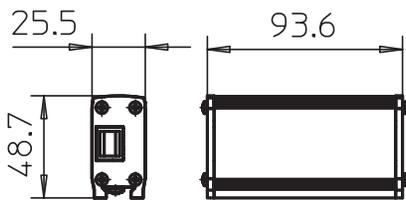
Type	Version	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
ND-CAT6/E-F	Fine protection, 8 wires + shield	RJ45 8(8)	1	16.380	5081802

Alu Aluminium

Data cable protection device for high-speed networks

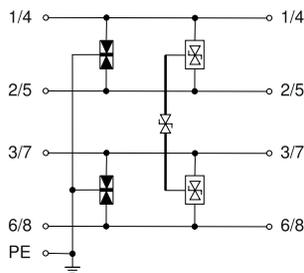
- High-quality RJ45 sockets
- Low protection level at high current load
- Earthing via DIN rail or connection cable
- Support of Power over Ethernet + to 1 A
- Tested transmission quality in networks up to 10 GBit (Class EA) or CAT6A
- Rapid installation through plug-in version
- Incl. DIN rail fastening 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_n	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 / hat rail
Testing standard		IEC 61643-21

Surge protection for high-speed networks up to 1 GBit (Class ND-CAT6/E-B)



Type	Version	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
ND-CAT6/E-B	Basic protection, 8 wires + shield	RJ45 8(8)	1	16.220	5081804

Alu Aluminium

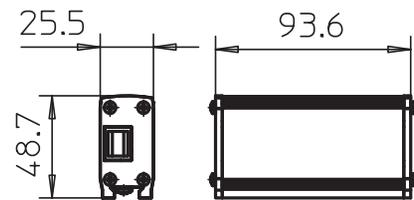
Data cable protection device for high-speed networks

- 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

Application example: 10 GBit Ethernet, 10/100 MBit Ethernet, PoE applications, IP camera systems, ISDN S0 interfaces



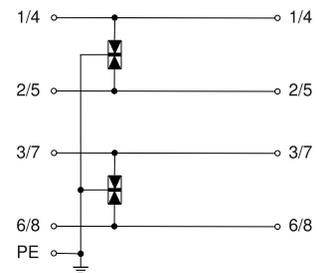
Dimensions



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_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)	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 / hat rail
Testing standard	IEC 61643-21

Connection options



Basic protection for 4-wire information technology systems with RJ45

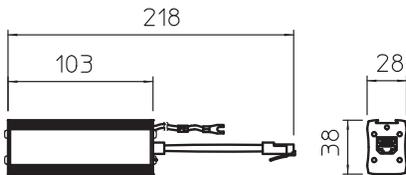


Type	Version	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
RJ45 S-E100 4-B	Basic protection, 4 wires + shield	RJ45	1	14.000	5081001

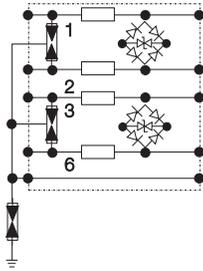
Data line protection device for IT systems

- 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)

Dimensions



Connection options



Application: Twisted Pair, control circuits, RJ45 communication cables

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	$S_{2,1}$	≤ 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

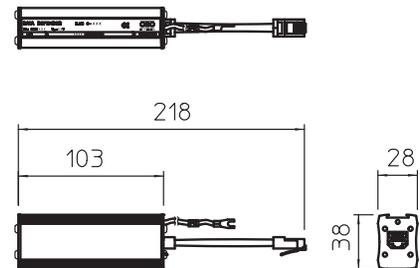
Data line protection device for IT systems

- 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)

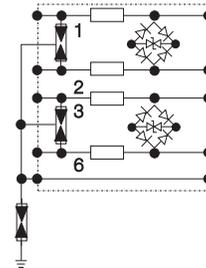
Application: Twisted Pair, control circuits, RJ45 communication cables



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

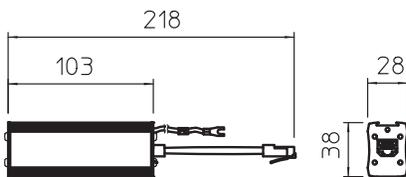


Type	Version	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
RJ45 S-E100 4-F	Fine protection, 4 wires + shield	RJ45	1	14.000	5081005

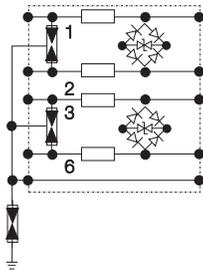
Data line protection device for IT systems

- 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)

Dimensions



Connection options



Application: Twisted Pair, control circuits, RJ45 communication cables

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_l	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	$S_{2,1}$	≤ 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

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

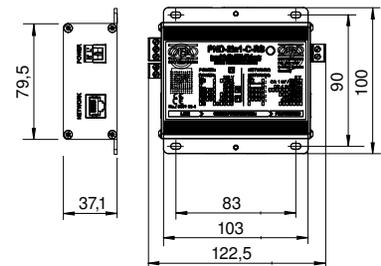
Combination protection device
Data cable protection devices for coaxial and IP-based TV / camera systems

- 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

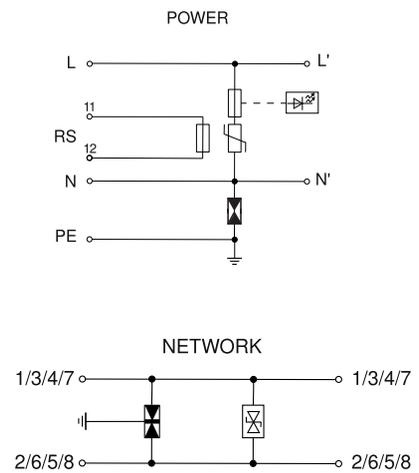
Application: Protection of CCTV, video signals; (IP) cameras and/or TV systems



Dimensions



Connection options



PND-2in1-C-RS

Temperature range	θ	-20 - +80 °C
Protection rating		IP20
Earthing via:		Connection cable / hat 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_n	10 A
Voltage protection level	U_p	<1,2 kV
Idle voltage	U_{OC}	10 kV
Nominal discharge current (8/20 μs)	I_n / I_{n-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

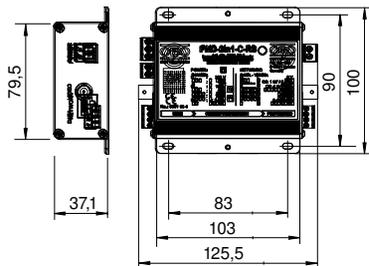


Type	Maximum continuous voltage (L-N) V	Maximum discharge current (8/20 μs) kA	Pack. pcs	Weight kg/100 pcs.	Item No.
PND-3in1-C-RS	230	10	1	29.900	5081066

Combination protection device
Data cable protection devices for coaxial and IP-based TV / camera systems

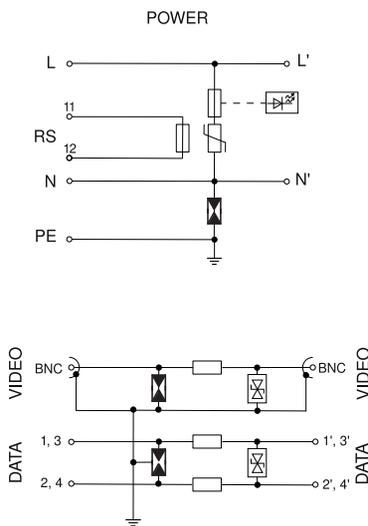
- Protection of power and data interfaces in a single device
- In aluminium housing
- Simple mounting with adapter plug
- Two-stage protection circuit
- Two-pole power connection for the power interface
- Screwless terminal and BNC connection for the data and video interface
- With remote signalling (RS) and LED operation display
- Incl. hat rail fastening set

Dimensions



Application: Protection of CCTV, video signals; (IP) cameras and/or TV systems

Connection options



PND-3in1-C-RS

Lightning protection zone LPZ	0→2
Earthing via:	Connection cable / hat 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_t	10 A
Voltage protection level U_n	<1,2 kV
Nominal discharge current (8/20 μs) I_n / I_{n-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

Fine protection for 9-pole RS232 interface



Highest continuous voltage

Type	V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
SD09-V24 9	18	SUB-D-9; V24 RS232	1	6.000	5080053

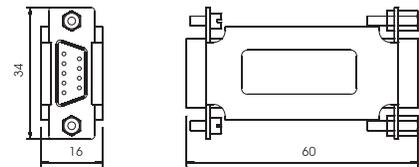
Data cable protection devices, serial interfaces

- Various connection technologies available
- Low protection level

Application: PLC, alarm systems, controllers



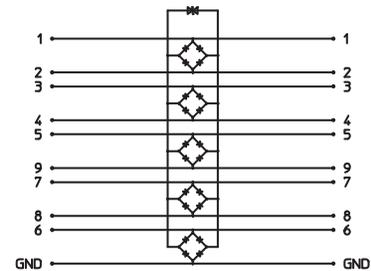
Dimensions



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

Connection options



Fine protection for 15-pole RS232 interface



Highest continuous voltage

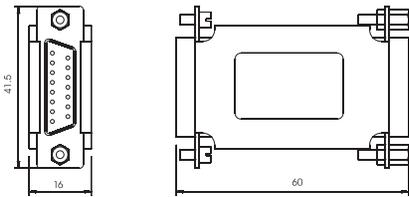
Type	V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
SD15-V24 15	18	SUB-D-15; V24 RS232	1	7.000	5080150

Data cable protection devices, serial interfaces

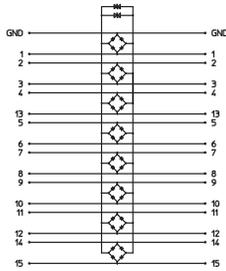
- Various connection technologies available
- Low protection level

Application: PLC, alarm systems, controllers

Dimensions



Connection options



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



Fine protection for 9-pole RS485 interface



Highest continuous voltage

Type	V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
SD09-V11 9	7.5	SUB-D-9; V11 RS485	1	6.000	5080061

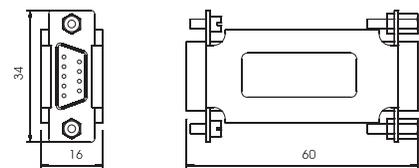
Data cable protection devices, serial interfaces

- Various connection technologies available
- Low protection level

Application: PLC, alarm systems, controllers



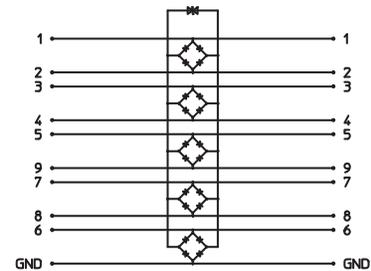
Dimensions



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

Connection options



MCR protection for 2-pole power supply, 12 V



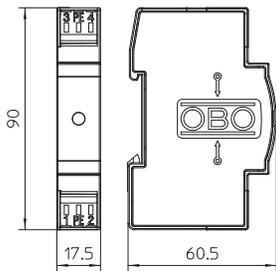
Highest continuous voltage V

Type	Highest continuous voltage V	Pack. pcs	Weight kg/100 pcs.	Item No.
VF12-AC DC	13.5	1	9.000	5097453

Surge protection device / fine protection type 3 to EN 61643-11

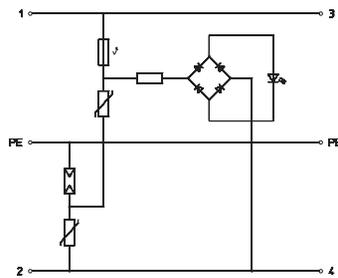
- Suitable for DC and AC voltage systems
- With visual function display
- With installation-friendly, screwless connection terminals
- In a space-saving 17.5 mm grid
- Y circuit

Dimensions



Application: Universal use on 35 mm DIN profile rail in every normal commercially available distributor housing.

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		—

MCR protection for 2-pole for power supply, 24 V



Highest
continu-
ous
voltage
V

Type

VF24-AC/DC | 34

Pack. Weight
pcs kg/100 pcs. Item No.

1 | 8.000 | 5097607

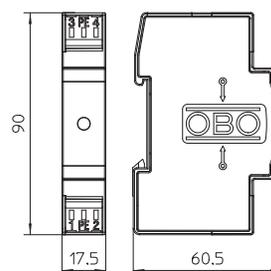
Surge protection device / fine protection type 3 to EN 61643-11

- 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

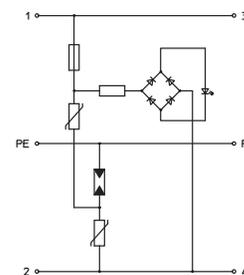
Application: Universal use on 35 mm DIN profile rail in every normal commercially available distributor housing.



Dimensions



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		—



MCR protection for 2-pole for power supply, 48 V



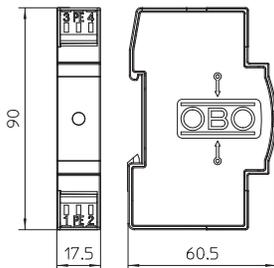
Highest continuous voltage V

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

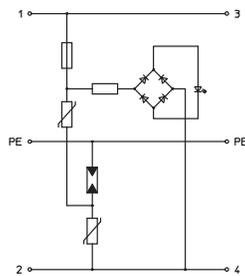
- Suitable for DC and AC voltage systems
- With visual function display
- With installation-friendly, screwless connection terminals
- In a space-saving 17.5 mm grid
- Y circuit

Dimensions



Application: Universal use on 35 mm DIN profile rail in every normal commercially available distributor housing.

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		—



MCR protection for 2-pole for power supply, 60 V



Highest
continu-
ous
voltage
V

Type

VF60-AC/DC | 80

Pack. Weight
pcs kg/100 pcs.

1 | 8.000 | 5097623

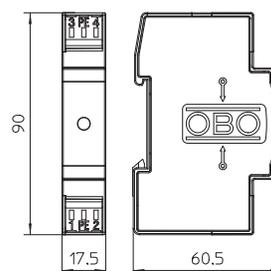
Surge protection device / fine protection type 3 to EN 61643-11

- 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

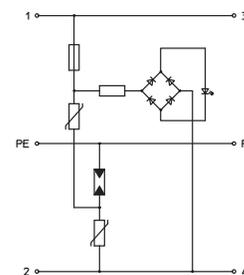
Application: Universal use on 35 mm DIN profile rail in every normal commercially available distributor housing.



Dimensions



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



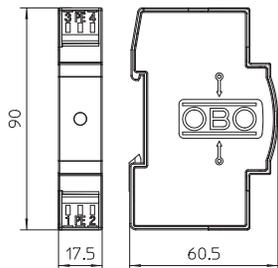
Highest continuous voltage V

Type	Highest continuous voltage V	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

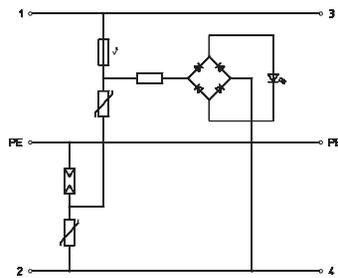
- Suitable for DC and AC voltage systems
- With visual function display
- With installation-friendly, screwless connection terminals
- In a space-saving 17.5 mm grid
- Y circuit

Dimensions



Application: Universal use on 35 mm DIN profile rail in every normal commercially available distributor housing.

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	Pack. pcs	Weight kg/100 pcs.	Item No.
VF230-AC/DC 255	1	8.000	5097650

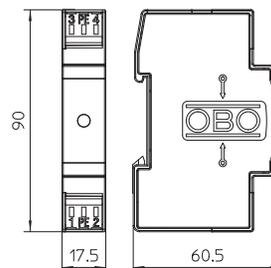
Surge protection device / fine protection type 3 to EN 61643-11

- 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

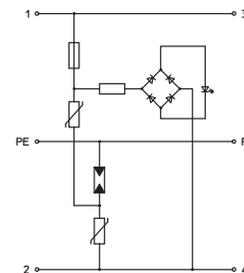
Application: Universal use on 35 mm DIN profile rail in every normal commercially available distributor housing.



Dimensions



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



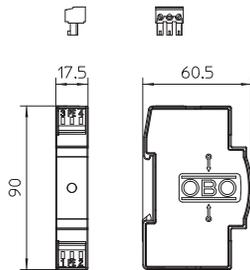
Highest continuous voltage V

Type	U _c	Pack. pcs	Weight kg/100 pcs.	Item No.
VF12-AC/DC-FS	13.5	1	6.400	5097454

Surge protection / fine power protection, type 3, to EN 61643-11 with remote signalling

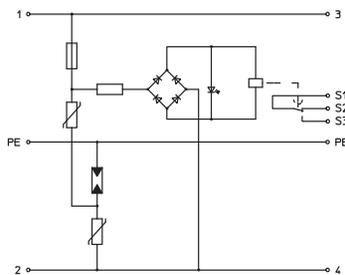
- With remote signalling, potential-free changeover contact, for function monitoring
- Suitable for DC and AC systems
- With visual function display
- With easy mounting, screwless connection terminals
- In space-saving 17.5 mm grid
- Y circuit

Dimensions



Application: Universal use on 35 mm DIN profile rails in any standard distributor housing.

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



Highest continuous voltage V

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
VF24-AC/DC-FS 34	1	6.620	5097820

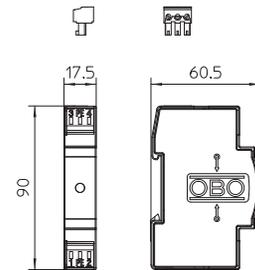
Surge protection / fine power protection, type 3, to EN 61643-11 with remote signalling

- 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

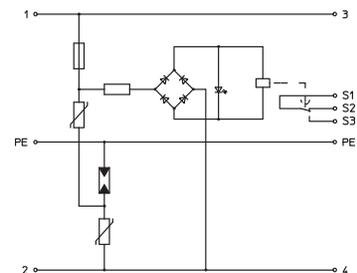
Application: Universal use on 35 mm DIN profile rails in any standard distributor housing.



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 _n	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



Highest continuous voltage V

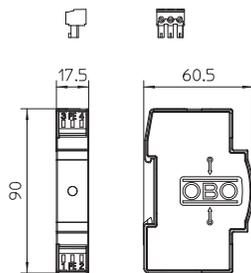
Pack. Weight
pcs kg/100 pcs. Item No.

Type	VF48-AC/DC-FS 60	1	6.630	5097822
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Surge protection / fine power protection, type 3, to EN 61643-11 with remote signalling

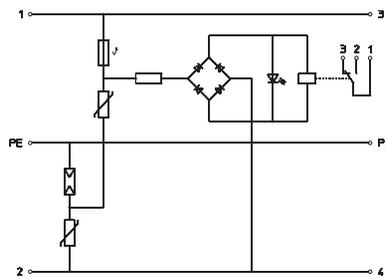
- With remote signalling, potential-free changeover contact, for function monitoring
- Suitable for DC and AC systems
- With visual function display
- With easy mounting, screwless connection terminals
- In space-saving 17.5 mm grid
- Y circuit

Dimensions



Application: Universal use on 35 mm DIN profile rails in any standard distributor housing.

Connection options



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 V

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
VF230-AC-FS 255	1	6.910	5097858

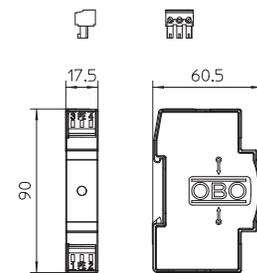
Surge protection / fine power protection, type 3, to EN 61643-11 with remote signalling

- 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

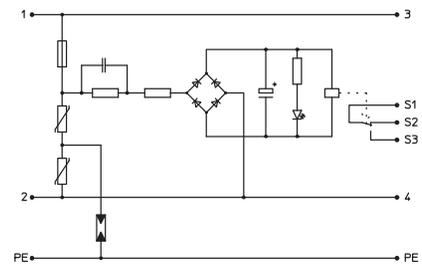
Application: Universal use on 35 mm DIN profile rails in any standard distributor housing.



Dimensions



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-pole for power supply with leak current-free remote signalling

MCR protection for 2-pin for power supply with leak current-free remote signalling, 230 V AC/DC



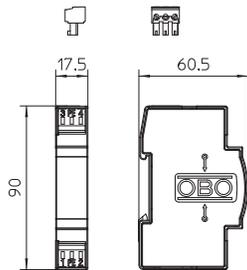
Type	U max		Pack. pcs	Weight kg/100 pcs.	Item No.
	AC V	DC V			
VF2-230-AC/DC-FS	255	350	1	6.000	5097939

Type 3 surge protection/fine network protection to EN 61643-11 with leak current-free remote signalling

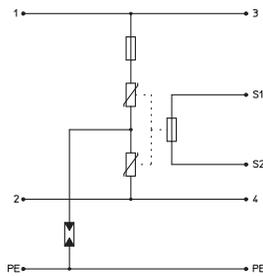
- With remote signalling: potential-free NC contact for function monitoring
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid
- Y circuit

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



Basic protection for two-core systems with HF applications 120 V



Type	AC voltage V	DC voltage V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
TKS-B	120	170	2	Terminal	1	4.400	5097976

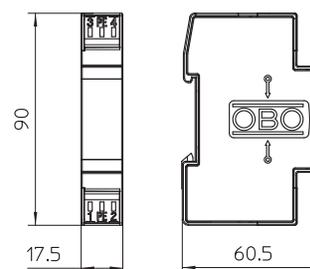
Basic protection for measuring, control and regulation technology and telecommunication systems.

- 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

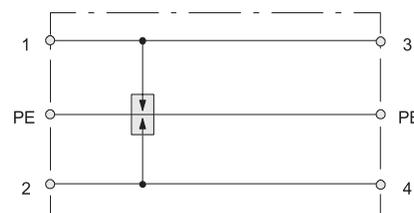
Application: Universal use on 35 mm DIN rails in standard distributor housings.



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

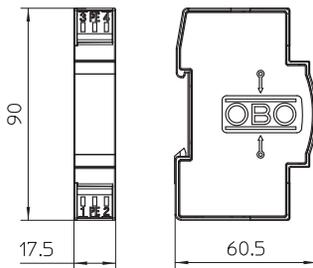


Type	Highest continuous AC voltage V	Highest continuous DC voltage V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FRD 5 HF	4	6	2	Terminal	1	4.400	5098571

Surge protection for use in measuring, control and regulation systems.

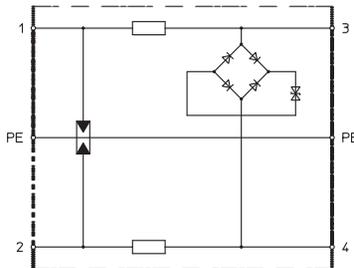
- Basic, medium and fine protection
- Two-stage protection circuit with high lightning current carrying capacity
- High transmission frequency up to 100 MHz
- Suitable for all bus systems (e.g. Profibus)
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid

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		Hat 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

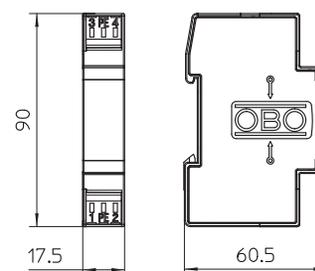
Surge protection for use in measuring, control and regulation systems.

- 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

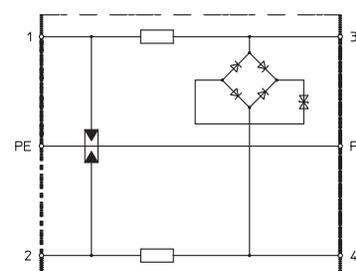
Application: Multipurpose use on any 35 mm DIN profile rail in every commercially available distribution housing.



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		Hat 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

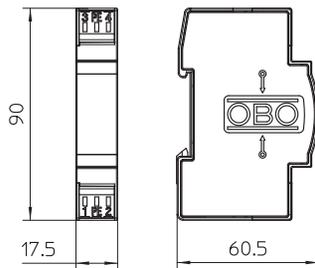


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FRD 5	5	8	2	Terminal	1	5.100	5098492

Surge protection for use in measurement and control technology

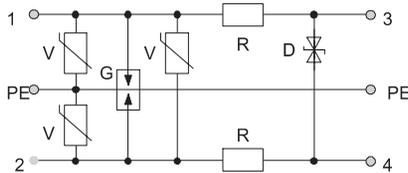
- Medium and fine protection
- Standard design for double core systems
- Two-stage protection circuit
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid
- With ohmic decoupling in the longitudinal branch

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		Hat 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

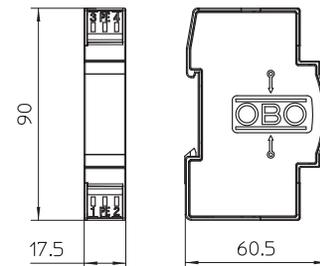
Surge protection for use in measurement and control technology

- 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

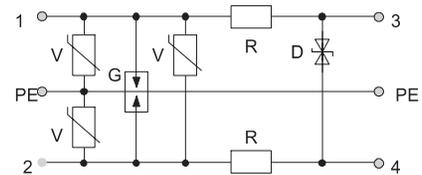
Application: Universal use on any 35 mm DIN profile rail in every commercially available distributor housing.



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		Hat 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

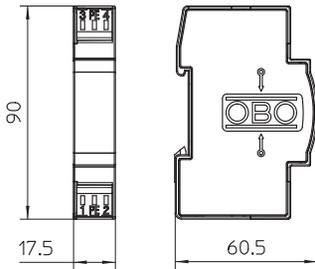


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FRD 24	19	28	2	Terminal	1	5.100	5098514

Surge protection for use in measurement and control technology

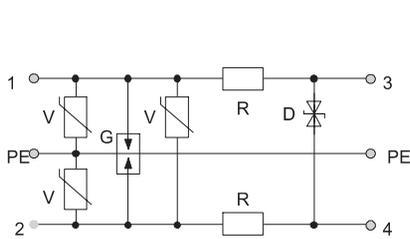
- Medium and fine protection
- Standard design for double core systems
- Two-stage protection circuit
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid
- With ohmic decoupling in the longitudinal branch

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		Hat 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 AC voltage V	Highest continuous DC voltage V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FRD 48	37	53	2	Terminal	1	5.100	5098522

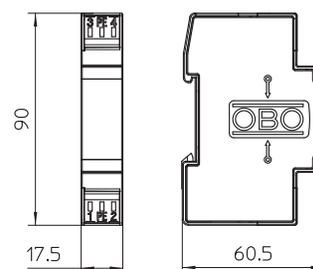
Surge protection for use in measurement and control technology

- 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

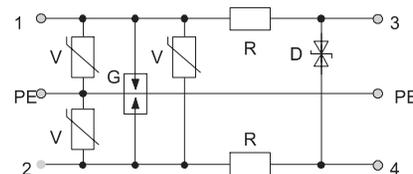
Application: Universal use on any 35 mm DIN profile rail in every commercially available distributor housing.



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 $\Omega \pm 10\%$
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		Hat 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

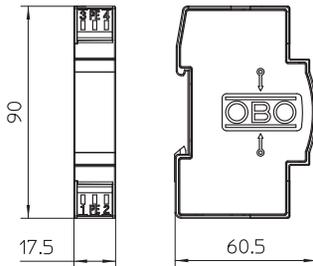


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FRD 110	86	122	2	Terminal	1	5.100	5098557

Surge protection for use in measurement and control technology

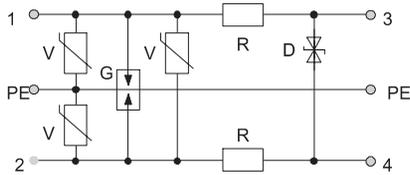
- Medium and fine protection
- Standard design for double core systems
- Two-stage protection circuit
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid
- With ohmic decoupling in the longitudinal branch

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		Hat 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

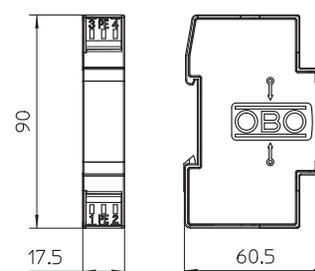
Surge protection for use in measurement and control technology

- 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

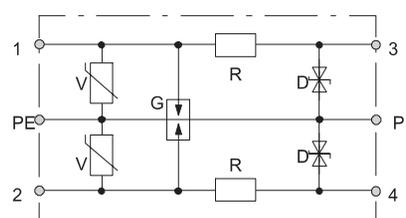
Application: Universal use on any 35 mm DIN profile rail in every commercially available distributor housing.



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 Ω \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		Hat 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

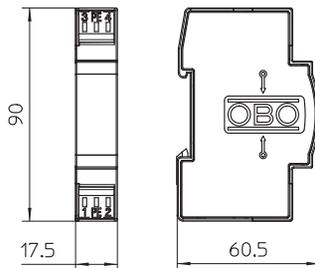


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FLD 5	5	8	2	Terminal	1	5.200	5098600

Surge protection for use in measurement and control technology

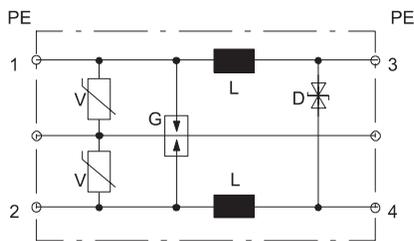
- Medium and fine protection
- Standard design for single core systems
- Two-stage protection circuit
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid
- With inductive decoupling in the longitudinal branch

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		Hat 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

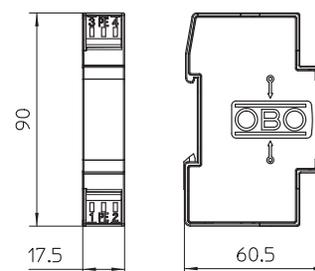
Surge protection for use in measurement and control technology

- 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

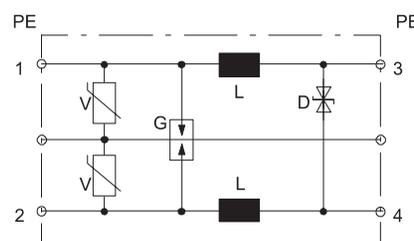
Application: Universal use on any 35 mm DIN profile rail in every commercially available distributor housing.



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		Hat 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

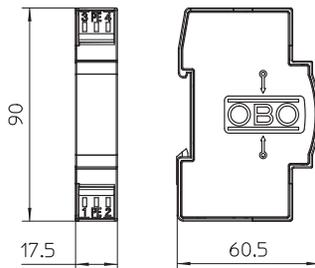


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FLD 24	19	28	2	Terminal	1	5.200	5098611

Surge protection for use in measurement and control technology

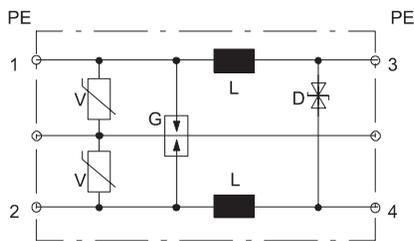
- Medium and fine protection
- Standard design for single core systems
- Two-stage protection circuit
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid
- With inductive decoupling in the longitudinal branch

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		Hat 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

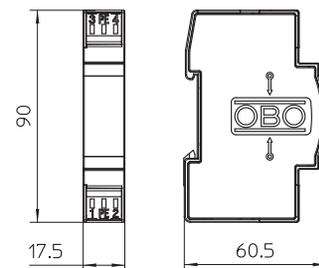
Surge protection for use in measurement and control technology

- 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

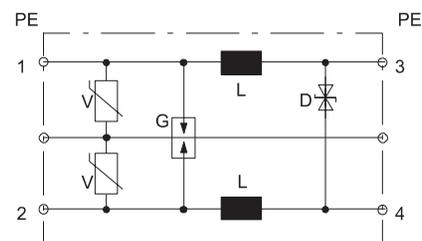
Application: Universal use on any 35 mm DIN profile rail in every commercially available distributor housing.



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		Hat 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

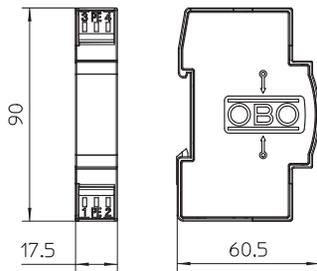


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FLD 110	86	122	2	Terminal	1	5.200	5098646

Surge protection for use in measurement and control technology

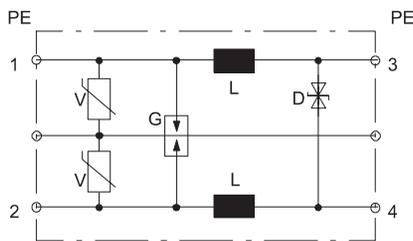
- Medium and fine protection
- Standard design for single core systems
- Two-stage protection circuit
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid
- With inductive decoupling in the longitudinal branch

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		Hat 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

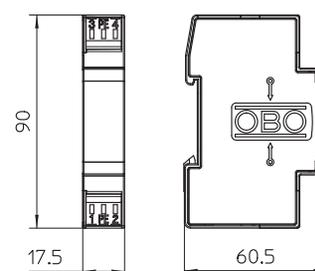
Surge protection for use in measurement and control technology

- 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

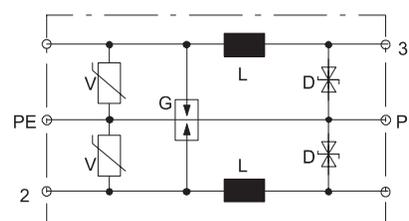
Application: Universal use on any 35 mm DIN profile rail in every commercially available distributor housing.



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		Hat 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

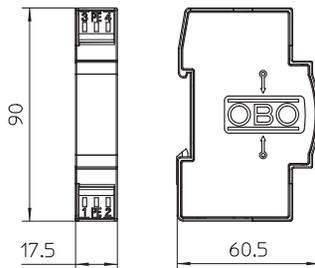


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FLD 2-24	19	28	2	Terminal	1	5.100	5098816

Surge protection for use in measurement and control technology

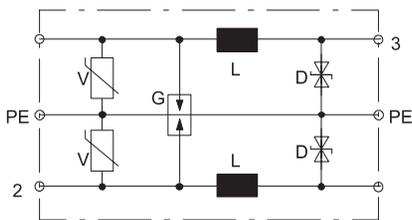
- Medium and fine protection
- Standard design for single core systems
- Two-stage protection circuit
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid
- With inductive decoupling in the longitudinal branch

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	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	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		Hat 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

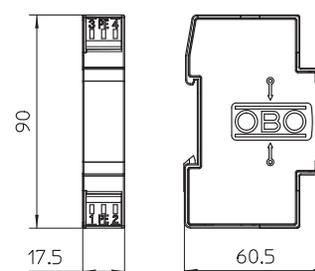
Surge protection for use in measurement and control technology

- 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

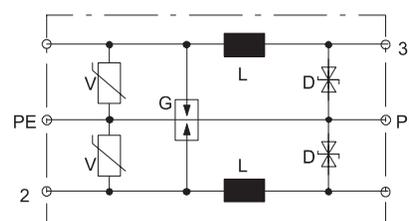
Application: Universal use on any 35 mm DIN profile rail in every commercially available distributor housing.



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		Hat 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

Series protection device, 2-pole, 5 V version

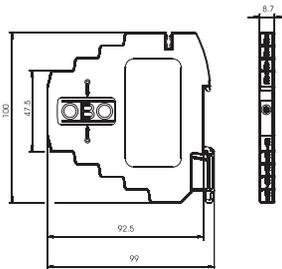


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-2 D-5-T	7	10	2	Terminal	1	6.000	5098404

MDP... D-5-T: Lightning barrier with test function; 5 V version

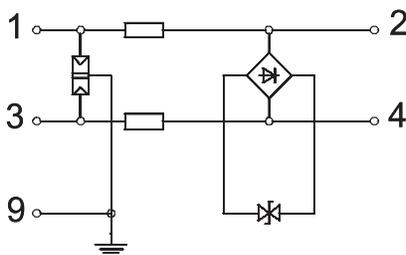
- Nominal load current 0.58 A
- Protection device for multi-wire systems
- Direct shield earthing and screwless connection terminals
- Space-saving width of just 8.7 mm
- Protection circuit testable with Life Control
- High frequency range of 0–100 MHz
- UL-listed (4DG1)

Dimensions



Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.

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 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		<35 V
Protection level wire-earth		<800 V
Frequency range		0 - 100 MHz
Temperature range	ϑ	-40 - +80 °C
Installation type		Hat 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

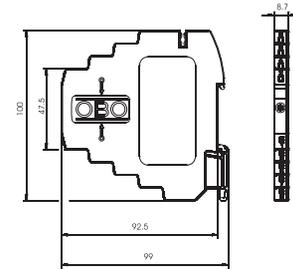
MDP... D-5-T: Lightning barrier with test function; 5 V version

- 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)

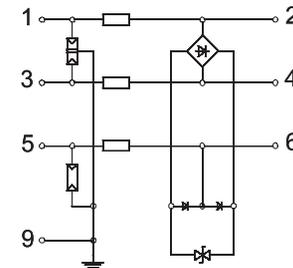
Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.



Dimensions



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		Hat 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

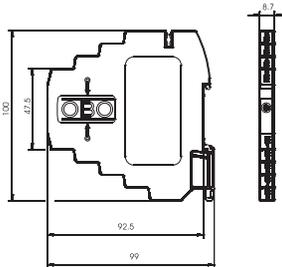


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-4 D-5-T	7	10	4	Terminal	1	6.000	5098411

MDP... D-5-T: Lightning barrier with test function; 5 V version

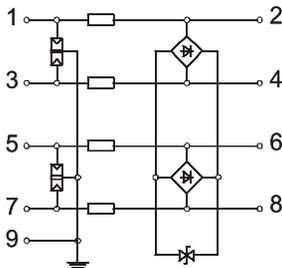
- Nominal load current 0.58 A
- Protection device for multi-wire systems
- Direct shield earthing and screwless connection terminals
- Space-saving width of just 8.7 mm
- Protection circuit testable with Life Control
- High frequency range of 0–100 MHz
- UL-listed (4DG1)

Dimensions



Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.

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 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)		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		Hat 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

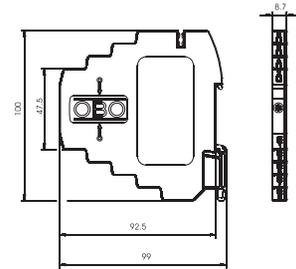
MDP... D-24-T: Lightning barrier with test function; 24 V version

- 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)

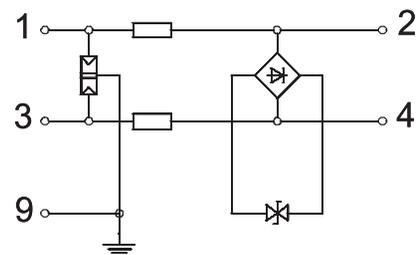
Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.



Dimensions



Connection options



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 $\Omega \pm 5\%$
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		<55 V
Protection level wire-earth		<800 V
Frequency range		0 - 100 MHz
Temperature range	ϑ	-40 - +80 °C
Installation type		Hat 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

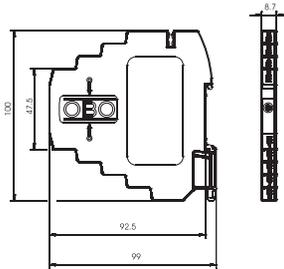


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-3 D-24-T	20	28	3	Terminal	1	6.000	5098427

MDP... D-24-T: Lightning barrier with test function; 24 V version

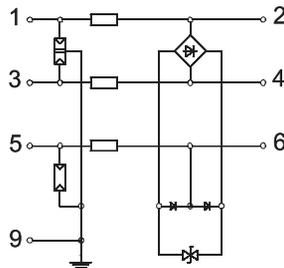
- Nominal load current 0.58 A
- Protection device for multi-wire systems
- Direct shield earthing and screwless connection terminals
- Space-saving width of just 8.7 mm
- Protection circuit testable with Life Control
- High bandwidth to 100 MHz
- UL-listed (4DG1)

Dimensions



Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.

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		Hat 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

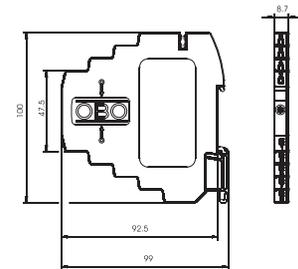
MDP... D-24-T: Lightning barrier with test function; 24 V version

- 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)

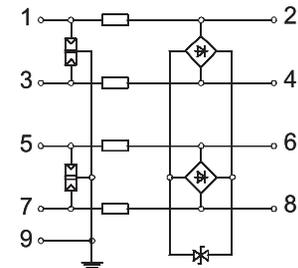
Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.



Dimensions



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		Hat 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

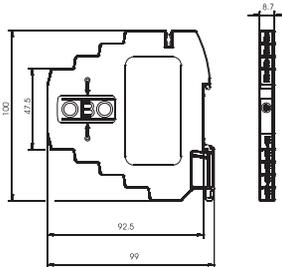


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-2 D-48-T	41	58	2	Terminal	1	6.000	5098442

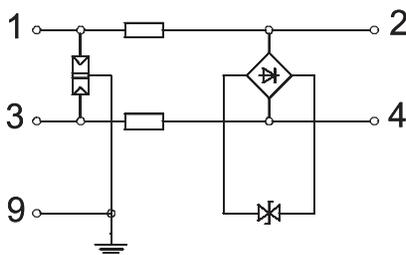
MDP... D-48-T: Lightning barrier with test function; 48 V version

- 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)

Dimensions



Connection options



Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.

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		Hat 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

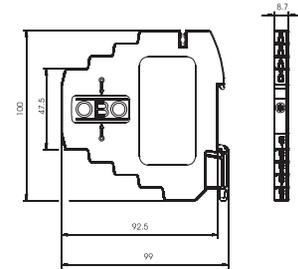
MDP... D-48-T: Lightning barrier with test function; 48 V version

- 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)

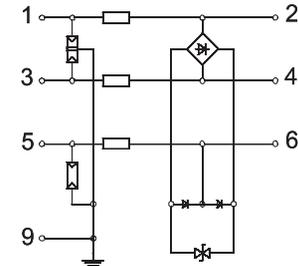
Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.



Dimensions



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		Hat 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

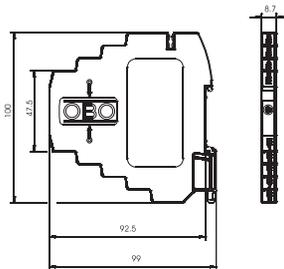


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-4 D-48-T	41	58	4	Terminal	1	5.800	5098450

MDP... D-48-T: Lightning barrier with test function; 48 V version

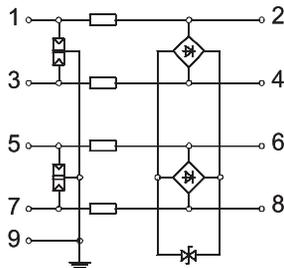
- Nominal load current 0.58 A
- Protection device for multi-wire systems
- Direct shield earthing and screwless connection terminals
- Space-saving width of just 8.7 mm
- Protection circuit testable with Life Control
- High bandwidth to 100 MHz
- UL-listed (4DG1)

Dimensions



Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.

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 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)	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	Hat 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

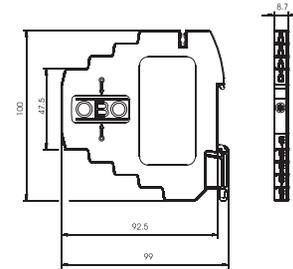
MDP-4 D-5-T-10: Lightning barrier with test function; 5 V version

- 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)

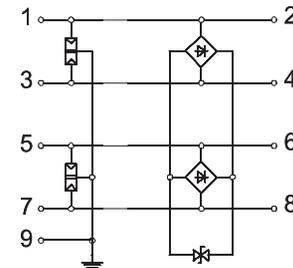
Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.



Dimensions



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

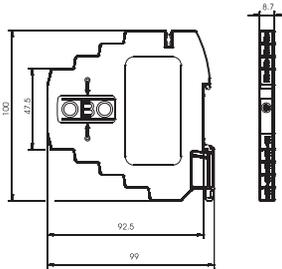


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-2 D-12-T-10	10.5	15	2	Terminal	1	6.000	5098415

MDP... D-12-T-10: Lightning barrier with test function; 12 V version

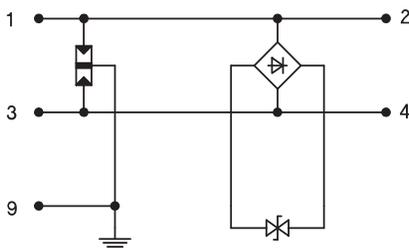
- Nominal load current 10 A
- Protection device for multi-wire systems
- Direct shield earthing and screwless connection terminals
- Space-saving width of just 8.7 mm
- Protection circuit testable with Life Control
- High bandwidth to 100 MHz
- UL-listed (4DG1)

Dimensions



Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.

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

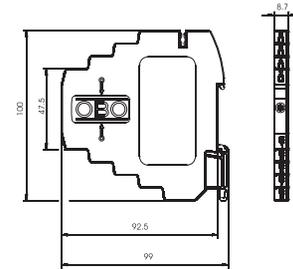
MDP... D-12-T-10: Lightning barrier with test function; 12 V version

- 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)

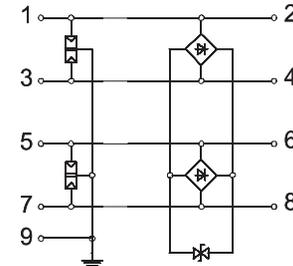
Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.



Dimensions



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

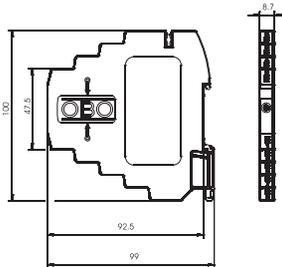


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-2 D-24-T-10	20	28	2	Terminal	1	6.000	5098425

MDP... D-24-T-10: Lightning barrier with test function; 24 V version

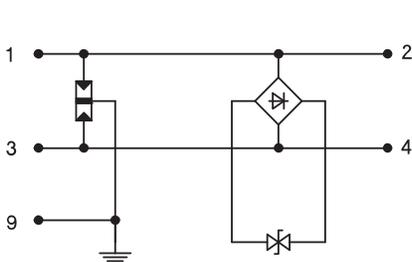
- Nominal load current 10 A
- Protection device for multi-wire systems
- Direct shield earthing and screwless connection terminals
- Space-saving width of just 8.7 mm
- Protection circuit testable with Life Control
- High bandwidth to 100 MHz
- UL-listed (4DG1)

Dimensions



Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.

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

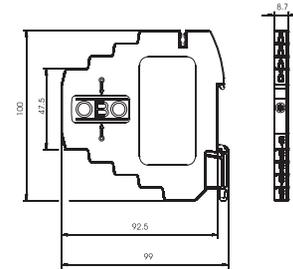
MDP... D-24-T-10: Lightning barrier with test function; 24 V version

- 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)

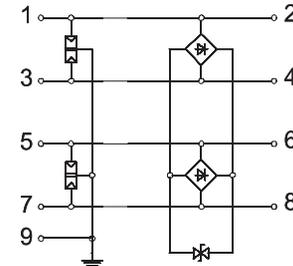
Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.



Dimensions



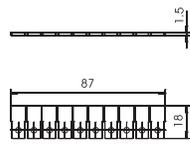
Connection options



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

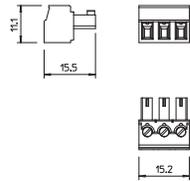
Connecting bridge for 8 mm lightning barriers

- Length of bridge can be adjusted
- Material: Copper
- Allows quick equipotential bonding

Application: Parallel switching of the MDP lightning barriers

Pack. pcs	Weight kg/100 pcs.	Item No.
1	2.300	5098470

Replacement connector for VF remote signalling



Version

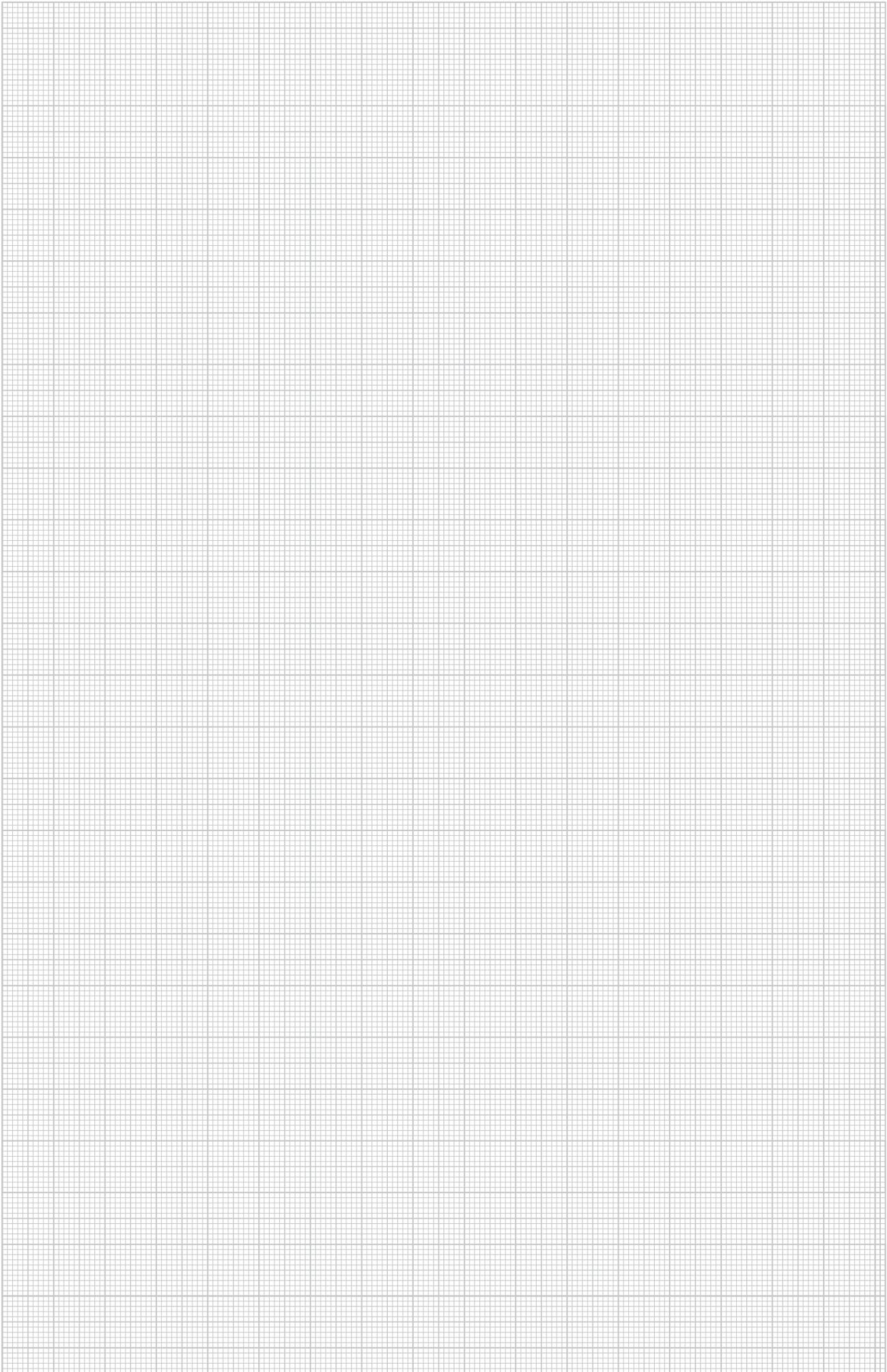
Type

VF-FS | 3-pole

Replacement telephony connector, 3-pin version, for VF variant

Pack. pcs	Weight kg/100 pcs.	Item No.
25	0.320	5098475





Surge protection, Ex protection

	Series protection device, 4-pole, 5 V	296
	Series protection device, 4-pole, 24 V	297
	Series protection device, 4-pole, 48 V	298
	MCR protection, 2-pole 24 V	299
	MCR protection, 3-pole 24 V	300

Series protection device, 4-pole, 5 V version, Ex-tested

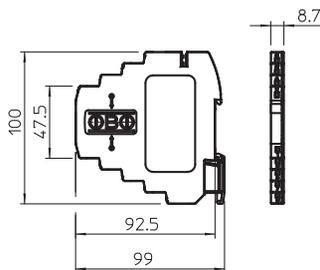


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-4 D-5-EX	7	10	4	1	5.800	5098412

MDP-4 D...-EX : Lightning barrier for intrinsically safe measuring circuits

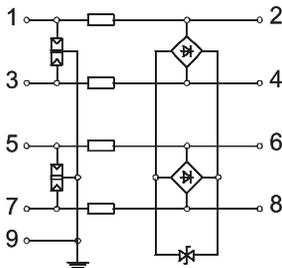
- Protection device for multi-wire systems
- Direct shield earthing and screwless connection terminals
- Space-saving width of just 8.7 mm
- High frequency range of 0-100 MHz
- ATEX approval: II 2(1) G Ex ia [ia Ga] IIC T4 (BVS 11 ATEX E 131 X)
- UL-listed (4UM2)

Dimensions



Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.

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

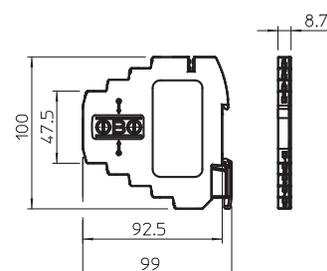
MDP-4 D...-EX : Lightning barrier for intrinsically safe measuring circuits

- 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)

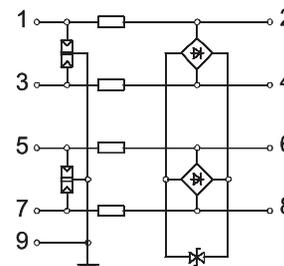
Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.



Dimensions



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

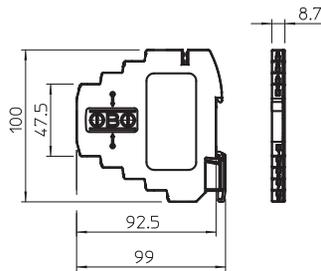


Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Number of poles	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-4 D-48-EX	41	58	4	1	5.800	5098452

MDP-4 D...-EX : Lightning barrier for intrinsically safe measuring circuits

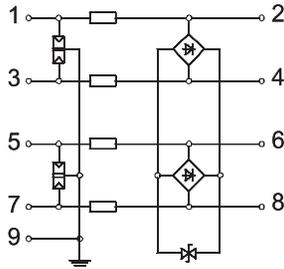
- Protection device for multi-wire systems
- Direct shield earthing and screwless connection terminals
- Space-saving width of just 8.7 mm
- High frequency range of 0-100 MHz
- ATEX approval: II 2(1) G Ex ia [ia Ga] IIC T4 (BVS 11 ATEX E 131 X)
- UL-listed (4UM2)

Dimensions



Application: Universal use on 35 mm DIN profile rail in any standard distribution housing.

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 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)		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, 2-pole, 24 V



Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
FDB-2 24-M	22	32	2-pole; metric	1	18.500	5098380

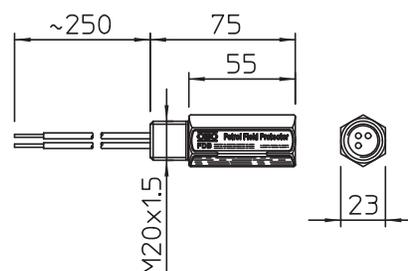
Petrol Field Protector FDB for intrinsically safe measuring circuits and bus systems

- 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)

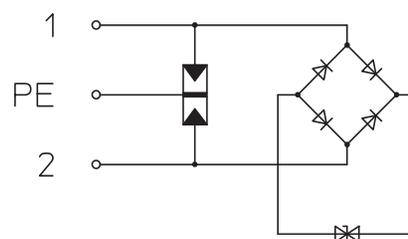
Application: Flow sensors, temperature sensors



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



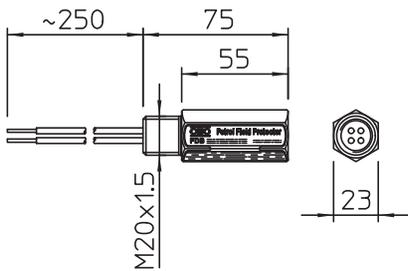
Type	Highest continuous voltage AC V	Highest continuous voltage DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
FDB-3 24-M	22	32	3-pole; metric	1	19.000	5098382

Petrol Field Protector FDB for intrinsically safe measuring circuits and bus systems

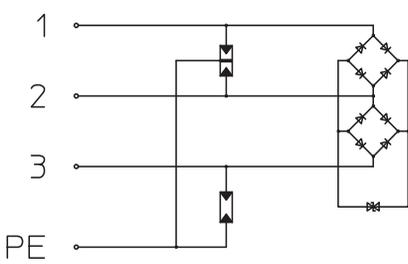
- Different connection technologies available (metric/NPT)
- Low protection level at high current load
- Easy mounting on field devices
- Negligible internal capacitance and inductance
- Stainless steel housing with pressure-resistant encapsulation
- ATEX approval: II 2(1) G Ex ia [ia Ga] IIC T4..T6 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

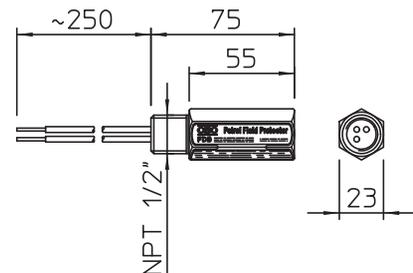
Petrol Field Protector FDB for intrinsically safe measuring circuits and bus systems

- 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)

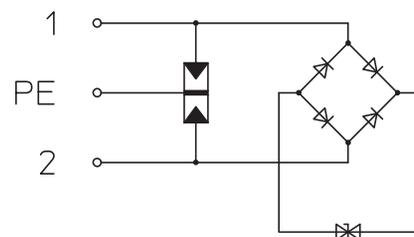
Application: Flow sensors, temperature sensors



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



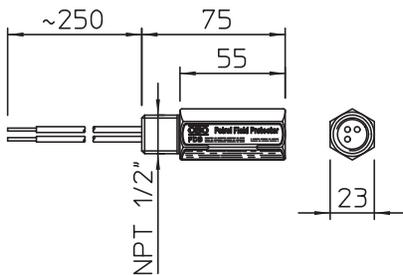
Type	AC	DC	Version	Pack.	Weight	Item No.
	V	V		pcs	kg/100 pcs.	
FDB-3 24-N	22	32	3-pole; NPT	1	19.500	5098392

Petrol Field Protector FDB for intrinsically safe measuring circuits and bus systems

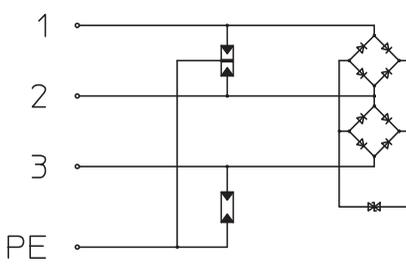
- Different connection technologies available (metric/NPT)
- Low protection level at high current load
- Easy mounting on field devices
- Negligible internal capacitance and inductance
- Stainless steel housing with pressure-resistant encapsulation
- ATEX approval: II 2(1) G Ex ia [ia Ga] IIC T4..T6 Gb (BVS 10 ATEX E 48)

Application: Flow sensors, temperature sensors

Dimensions

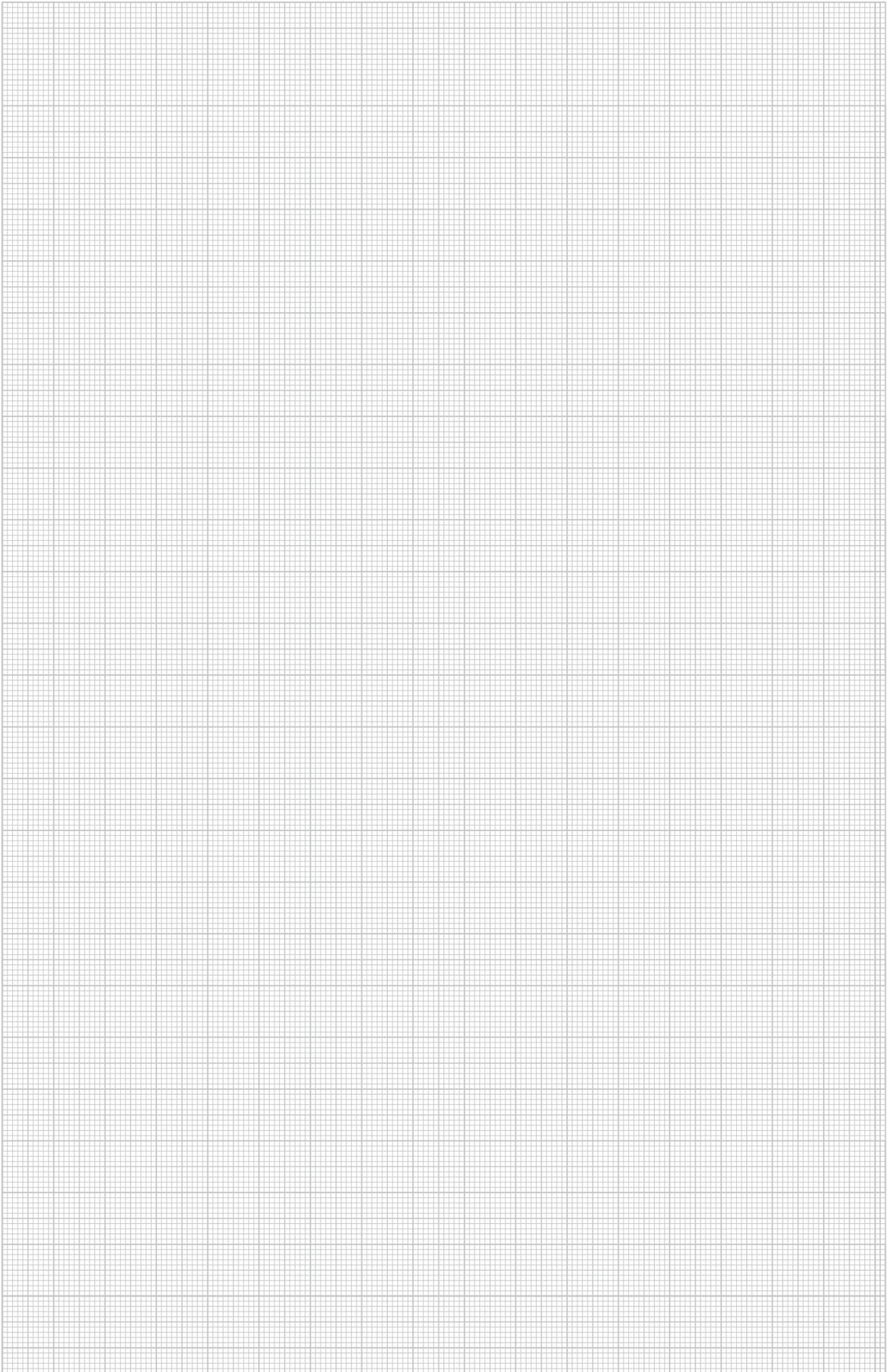


Connection options



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





Surge protection, protection and spark gaps



Isolating spark gap

306



Connection straps

309

Spark gap EX ISG

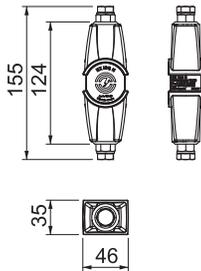


Type	Conne- tion cable length m	Contact voltage kV	Lightning current carrying capacity kA	Temperature range °C	Pack. pcs	Weight kg/100 pcs.	Item No.
EX ISG H	0	1.25	100	-20 - +60	1	41.360	5240030
EX ISG H 350	0.35	1.25	100	-20 - +60	1	57.260	5240031
EX ISG H 350 2L	0.35	1.25	100	-20 - +60	1	57.260	5240033
EX ISG H KU	0.35	1.25	100	-20 - +60	1	210.300	5240032

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



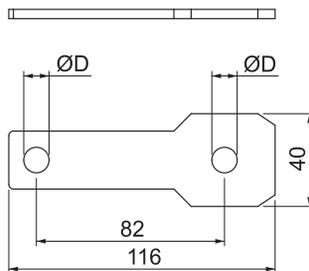
Type	Bore hole Ø mm	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
AB EX ISG S M10	11	For M10 bolt	2	9.000	5240360
AB EX ISG S M12	14	For M12 bolt	2	8.900	5240362
AB EX ISG S M16	18	For M16 bolt	2	8.600	5240366
AB EX ISG S M20	22	For M20 bolt	2	8.200	5240370
AB EX ISG S M24	26	For M24 bolt	2	7.800	5240374

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 mm	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
AB EX ISG SW M10	11	For M10 bolt	2	10.900	5240380
AB EX ISG SW M12	14	For M12 bolt	2	10.800	5240382
AB EX ISG SW M16	18	For M16 bolt	2	10.500	5240386
AB EX ISG SW M20	22	For M20 bolt	2	10.100	5240390
AB EX ISG SW M24	26	For M24 bolt	2	9.700	5240394

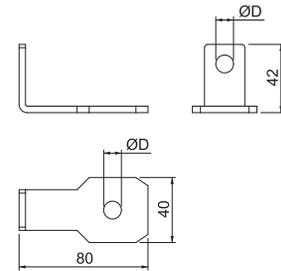
St Steel

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

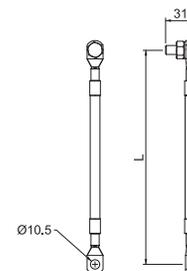
Type	Dimension mm	Pack. pcs	Weight kg/100 pcs.	Item No.
AL EX ISG 100	100	1	9.600	5240102
AL EX ISG 200	200	1	12.300	5240104
AL EX ISG 300	300	1	15.200	5240106

Cu Copper

UV-resistant connection cable for mounting the OBO Ex spark gap, type EX ISG, on insulating flanges and insulating pieces.



Dimensions



Spark gap - 483 SN with connection cable for SNAM

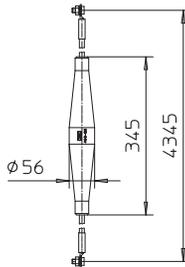


Type	Con- nec- tion cable length m	Contact voltage kV	Impulse current (10/350) kA	Nominal discharge current (8/20) kA	Protec- tion level kV	Temperature range °C	Pack. pcs	Weight kg/100 pcs.	Item No.
483 SN	2	0.07	75	100	0,6 - 0,9	-20 - +50	1	200.000	5239914

- 2 connector cables 25 mm² Cu, highly-flexible, with cable lug
- Waterproof enclosure
- Screw (M10), nut and lock washer
- Pulsed current 75 kA (10/350 μs)
- BET-tested

Application: Above and below-ground installation

Dimensions



Explosion-proof, Parex closed spark gap

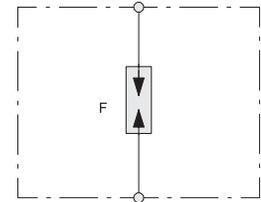
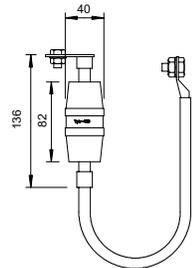


Type	Connection cable length m	Dimension mm	Pack. pcs	Weight kg/100 pcs.	Item No.
480 180	0.18	180	1	48.000	5240034
480 250	0.25	250	1	50.000	5240077
480 350	0.35	350	1	53.000	5240069



- 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

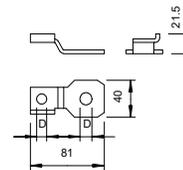


Connection bracket for Parex spark gap

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.

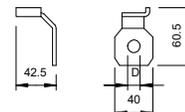


Connection bracket for Parex spark gap

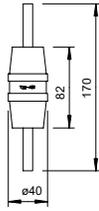
Type	Bore hole Ø mm	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
485 M12	13	For M12 bolt	2	8.100	5240328
485 M10	11	For M10 bolt	2	8.300	5240301
485 M16	17	For M16 bolt	2	7.700	5240336

- 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



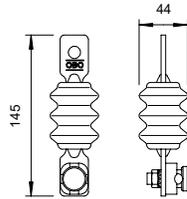
Type	Impulse current (10/350) kA	Nominal discharge current (8/20) kA	Protection level kV	Contact voltage kV	Temperature range °C	Pack. pcs	Weight kg/100 pcs.	Item No.
481	50	100	< 5,0	2,5	-20 - +50	1	26.500	5240085

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).

Protective spark gap

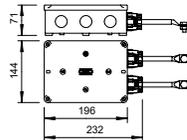


Type	Protection level kV	Nominal discharge current (8/20) kA	Contact voltage kV	Pack. pcs	Weight kg/100 pcs.	Item No.
482	< 10 kV	25 kA	10	1	56.000	5240050

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

Spark gap / surge voltage protection for coupling earthing systems



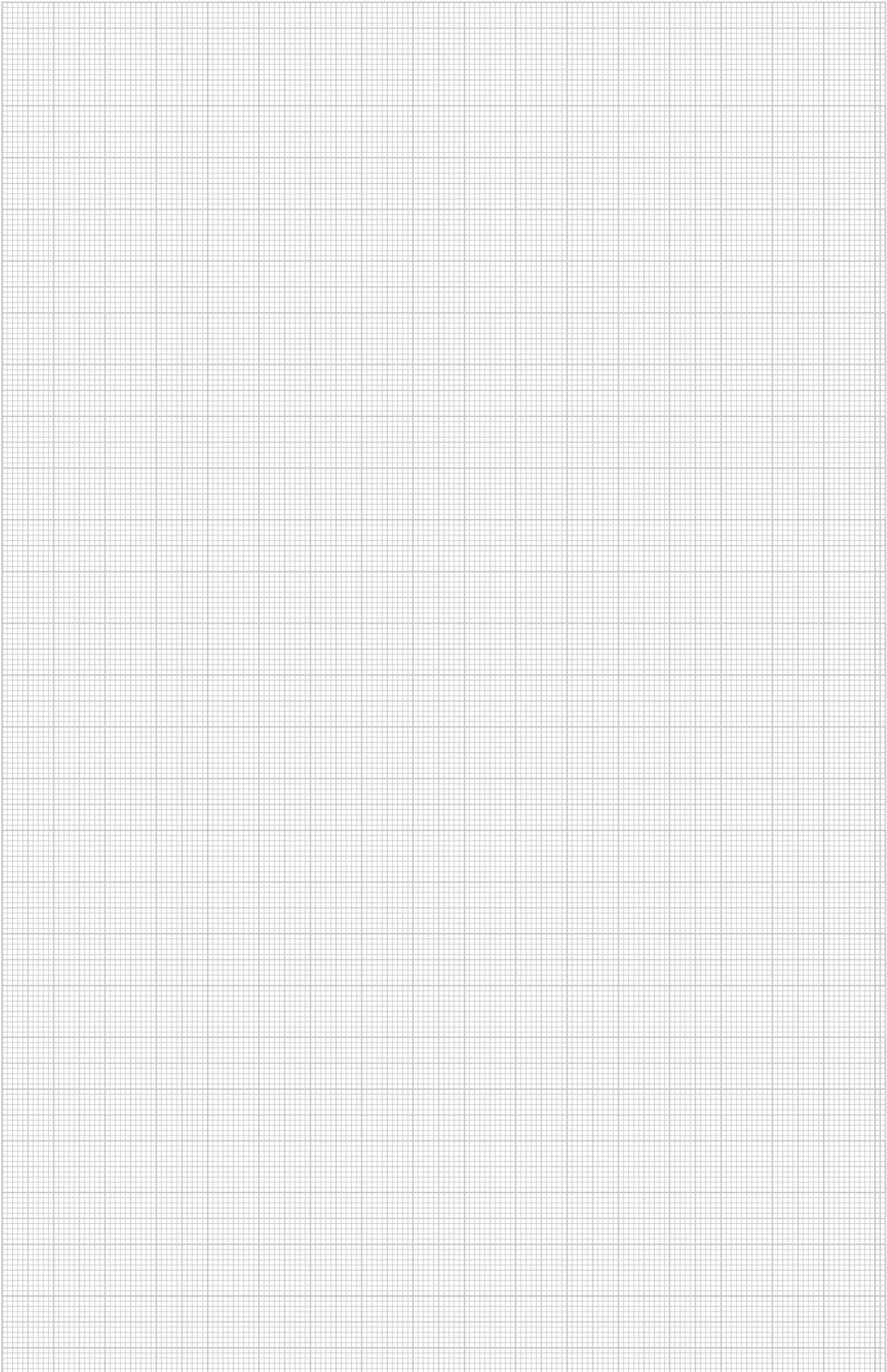
Type	Rated power frequency withstand voltage V	Rated DC withstand voltage V	Impulse current (10/350) kA	Nominal discharge current (8/20) kA	Pack. pcs	Weight kg/100 pcs.	Item No.
FS-V20	280	280	100	100	1	170.000	5099803

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)



HINWEIS!
**Isolierter Blitzschutz mit dem
OBO isCon®-System.**
**Änderungen sind nur von einer
Blitzschutzfachkraft
durchzuführen!**



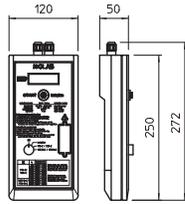
Messtelle No. 13

OBO
LSC I+II
Lightning Strike
and Surge Counter
Art-Nr.: 5091 72 2
CE IP65

Measuring and testing systems

	ISOLAB measuring system arrester tester	314
	Testing unit for lightning barriers	314
	Magnetic card PCS	314
	Magnetic card holder PCS-H	315
	Card reader PCS-CS..	315
	Lightning current meter LSC	315

ISOLAB measuring system arrestor tester



Type	Country version	Nom. voltage V	Measuring range	Pack. Weight		Item No.
				pcs	kg/100 pcs.	
ISOLAB	D/GB	6	0 V - 999 V	1	75.000	5096812

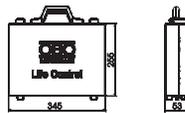
To test the insulation resistance to DIN VDE 0100 Part 610 and the characteristic curve behaviour of the following surge voltage and lightning current arrestors:

• 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. Weight		Item No.
	pcs	kg/100 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. Weight		Item No.
	PU	kg/100 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).

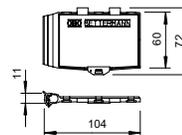
- Contents = 10 units
- Digital evaluation via the PCS card reading device
- Can be used in addition to the OBO lightning current meter LSC I+II
- With separate labelling panels: "Erected by", "Tested by", "Card code"
- Integrated maintenance circuit (year/month)

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

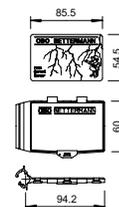


Magnetic card and holder MK-B

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



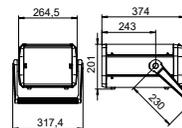
Card reader PCS-CS..



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

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

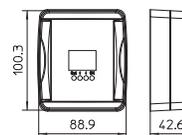


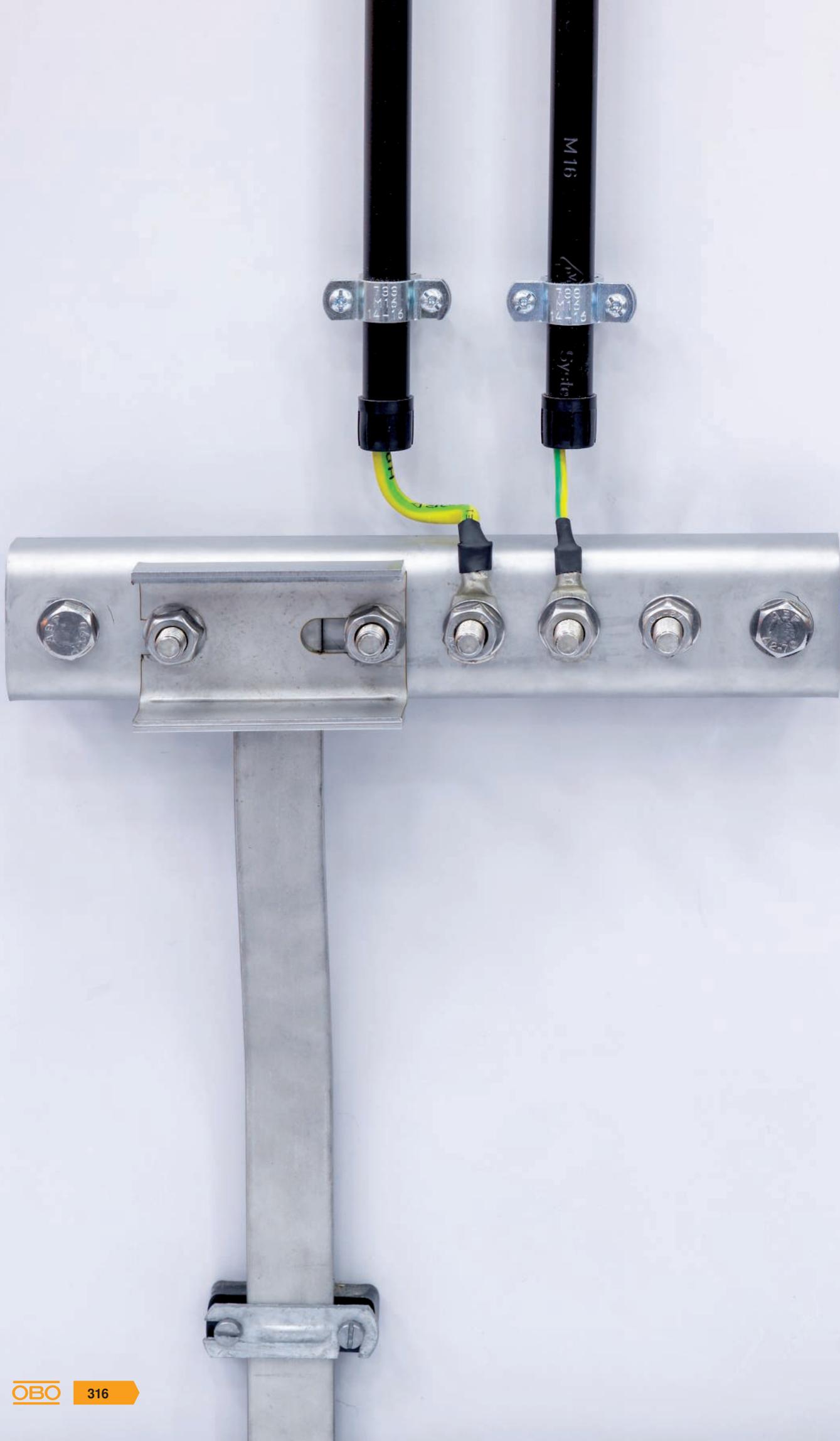
Type	Measuring range	Pack. pcs	Weight kg/100 pcs.	Item No.
LSC I+II	1 kA - 100 kA	1	32.500	5091722

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	318
	Equipotential busbars for outdoor areas	323
	Equipotential busbars for industrial areas	324
	Equipotential busbars for Ex area	327
	Earthing clamps	330
	Earthing clamps	331



Equipotential bonding rail for indoors, VDE-tested

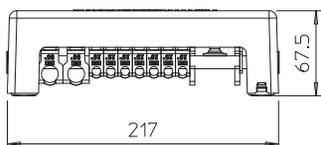


Type	Colour	Pack. Weight		Item No.
		pcs	kg/100 pcs.	
1801 VDE	Grey	1	55.000	5015650

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

Dimensions

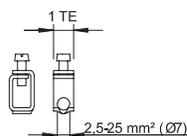


- According to VDE 0618, Part 1
- With 10 x 10 mm clamping rail made of nickel-plated brass
- With contact-secure series terminals made of electrogalvanised steel
- Cover and rail stands made of grey polystyrene
- Sealable / labellable cover
- Lightning current carrying capacity 100 kA (10/350)
- Tension 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

Round conductor terminal to 25 mm² for 1801 VDE



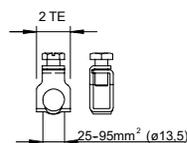
Type	Connection option	Pack. Weight		Item No.
		pcs	kg/100 pcs.	
1801 RK25	2.5–25 mm ²	10	2.080	5015758

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



Type	Connection option	Pack. Weight		Item No.
		pcs	kg/100 pcs.	
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)

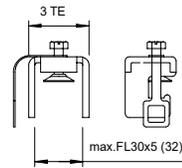
Flat conductor terminal to FL 30 for 1801 VDE



Type	Connection option	Pack. pcs	Weight kg/100 pcs.	Item No.
1801 RK30	FL30 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



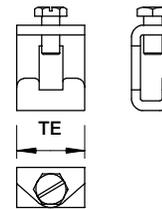
Flat conductor terminal from FL 30 for 1801 VDE



Type	Connection option	Pack. pcs	Weight kg/100 pcs.	Item No.
1801 RK40	FL40 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

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

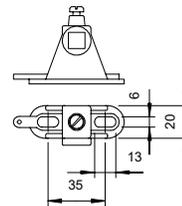


Busbar stands for 1801 VDE

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

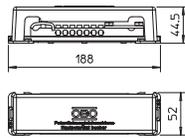
Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
1801 AH	Grey	1	6.450	5015707

- PS** Polystyrene

- 1 covering hood required per 14 division units
- Fastening to rail stands 1801/Sch
- Sealable



Equipotential bonding rail with plastic base plate



Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
1809	Grey	1	23.000	5015073

CuZn Brass

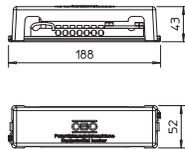
Equipotential busbar for equipotential bonding according to DIN VDE 0100-410/-540 and lightning protection equipotential bonding according to DIN VDE 0185-305

- 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



Type	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
1809 M	H/100	1	28.100	5015081

CuZn Brass

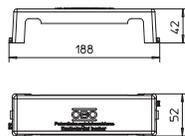
Equipotential busbar with metal foot for equipotential bonding according to DIN VDE 0100-410/-540 and lightning protection equipotential bonding according to DIN VDE 0185-305

- 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



Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
1809 30 AH	Grey	50	3.700	5015200

PS Polystyrene

- Replacement cover hood for equipotential busbar, type 1809

Equipotential busbar OBO Green



Lightning current
carrying capacity

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
1809 NR N/50	1	22.300	5015075

CuZn Brass

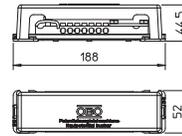
Natural product protects against natural influences.

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 conductor Rd 8–10



Equipotential bonding rail for small systems



Colour

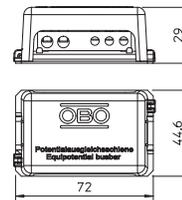
Type	Pack. pcs	Weight kg/100 pcs.	Item No.
1809 BG Grey	1	9.000	5015502

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



Equipotential bonding rail, simple version

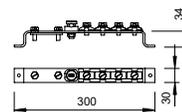
Type	Pack. pcs	Weight kg/100 pcs.	Item No.
1808	1	67.000	5015014

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



Equipotential bonding bar for bathrooms

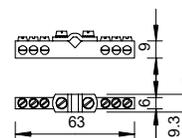
Type	Pack. pcs	Weight kg/100 pcs.	Item No.
1804	5	3.000	5015553

CuZn Brass

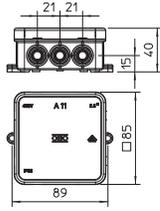
- Nickel-plated brass contact strip
- Screws and clamp made of electrogalvanised steel

Connection options:

- 6 cables 1.5-10 mm²
- 1 cable 6-16 mm²



Equipotential bonding rail for surface mounting with 1804



Type
1804 AP

PE Polyethylene

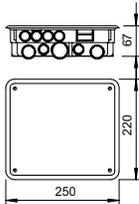
A 10/BP: Equipotential busbar for bathroom in housing

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

Pack. pcs	Weight kg/100 pcs.	Item No.
10	8.077	5015557

Equipotential bonding rail for flush-mounting with 1809



Type
1809 UP

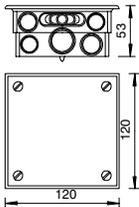
CuZn Brass

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

Pack. pcs	Weight kg/100 pcs.	Item No.
1	74.500	5015065

Equipotential bonding rail for flush-mounting with 1804



Type
1804 UP

CuZn Brass

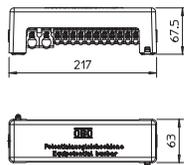
A 10/BP: Equipotential busbars for bathroom in housing

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

Pack. pcs	Weight kg/100 pcs.	Item No.
5	20.700	5015545

Equipotential bonding rail for indoors, VDE-tested



Colour

Type
1801 FIN

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

Pack. pcs	Weight kg/100 pcs.	Item No.
1	55.000	5015680

Equipotential bonding rail for outside installation



Type	Colour	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
1809 A	Black	N/50	1	23.000	5015111
1809 AM	Black	H/100	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

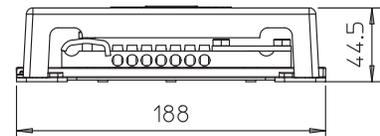
- Cover hood and base plate made of polystyrene
- Colour: Black, UV-resistant
- Screws and crossbar made of VA
- Capable of carrying lightning current 50 kA (10/350)

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 kg/100 pcs.	Item No.
1810	1	173.000	5015057

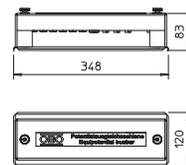
St Steel

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 busbar for industrial application

Equipotential bonding rail BigBar for industrial application

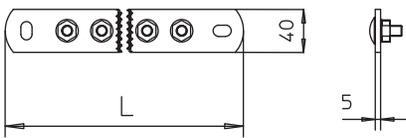


Type	Number of connections	Width mm	Length mm	Height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1802 5 VA	5	40	246	5	1	90.000	5015854
1802 10 VA	10	40	408.5	5	1	190.000	5015866

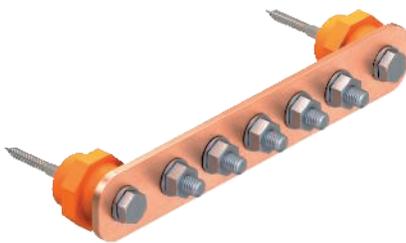
V2A Stainless steel, grade 304

- 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

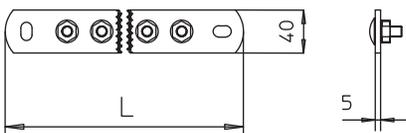


Type	Number of connections	Width mm	Length mm	Height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1802 5 CU	5	40	246	5	1	80.000	5015830
1802 6 CU	6	40	278.5	5	1	98.400	5015832
1802 8 CU	8	40	343.5	5	1	116.550	5015836
1802 10 CU	10	40	408.5	5	1	180.000	5015842
1802 12 CU	12	40	473.5	5	1	152.850	5015844
1802 14 CU	14	40	538.5	5	1	171.000	5015847
1802 20 CU	20	40	733.5	5	1	225.450	5015849

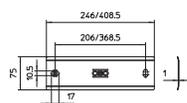
Cu Copper

- 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

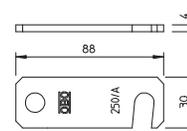
- Complete with all mounting components
- Labellable

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

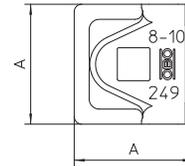


Connection terminal, equipotential bonding, Rd 8–10 mm

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

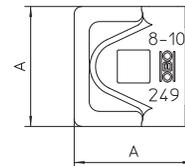


Connection terminal, equipotential bonding, Rd 8–10 mm

Type	Fit mm	Dimension 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



Earthing connection bar



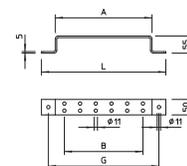
Type	Dimension L mm	Dimension A mm	Dimension B mm	Dimension G mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1805 2 FT	200	110	51	155	1	54.800	5016029
1805 4 FT	302	212	153	257	1	77.000	5016037
1805 6 FT	404	314	255	359	1	97.100	5016045

St Steel

FT Hot-dip galvanised

1805/...: For connecting different earthing systems

- With 2 mounting holes \varnothing 11 mm
- 1805/2: With 4 attaching holes
- 1805/4: With 8 attaching holes
- 1805/6: With 12 attaching holes



Earthing connection bar

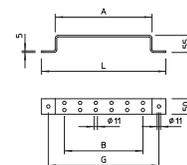


Type	Dimension L mm	Dimension A mm	Dimension B mm	Dimension G mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1805 2 VA	200	110	51	155	1	54.800	5016096
1805 4 VA	302	212	153	257	1	77.000	5016118
1805 6 VA	404	314	255	359	1	97.100	5016126

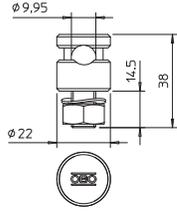
V4A Stainless steel, grade 316 Ti

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



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)



Equipotential busbar for EX zone 1/21, 2/22



Type	Number of connections	Width mm	Length mm	Height mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
EX PAS 5	5	54	279	4	H/100	1	152.000	5015265
EX PAS 10	10	54	441	4	H/100	1	214.000	5015270

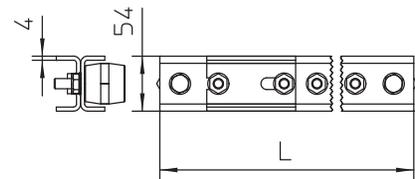
V2A Stainless steel, grade 304

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 EN 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



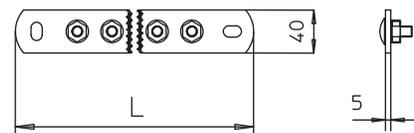
Type	Number of connections	Width mm	Length mm	Height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1802 5 VA	5	40	246	5	1	90.000	5015854
1802 10 VA	10	40	408.5	5	1	190.000	5015866

V2A Stainless steel, grade 304

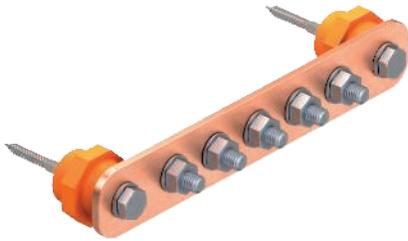
- Main potential equalisation to VDE 0100 Part 410 and Part 540, and also lightning protection potential equalisation to VDE 0185-305 (IEC 62305)
- Insulation feet
- Quick, simple assembly of connection conductors to the contact rail using lock bolts M10
- The high-grade stainless steel versions (V2A) 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

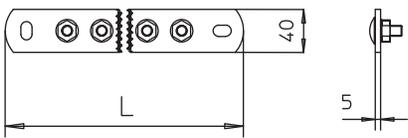


Type	Number of connections	Width mm	Length mm	Height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1802 5 CU	5	40	246	5	1	80.000	5015830
1802 6 CU	6	40	278.5	5	1	98.400	5015832
1802 8 CU	8	40	343.5	5	1	116.550	5015836
1802 10 CU	10	40	408.5	5	1	180.000	5015842
1802 12 CU	12	40	473.5	5	1	152.850	5015844
1802 14 CU	14	40	538.5	5	1	171.000	5015847
1802 20 CU	20	40	733.5	5	1	225.450	5015849

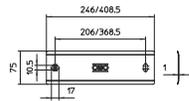
Cu Copper

- 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

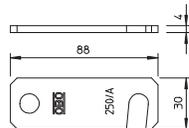


Type	Number of connections	Pack. pcs	Weight kg/100 pcs.	Item No.
1802 AH 5	5	1	25.800	5015880
1802 AH 10	10	1	36.300	5015884

V2A Stainless steel, grade 304

- Complete with all mounting components
- Labellable

Crossbar for equipotential bonding rail

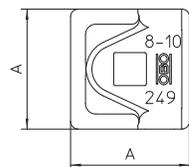


Type	Connection option	Pack. pcs	Weight kg/100 pcs.	Item No.
1802 KL	FL20-FL40	1	7.000	5015890

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

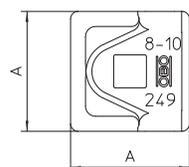


Type	Fit mm	Dimension A mm	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 VA-OT	Rd 8-10	40	100	3.130	5311554

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	Dimension 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

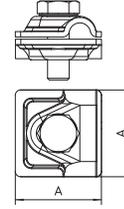
Vario quick connector



Type	Fit mm	Dimen- sion 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)



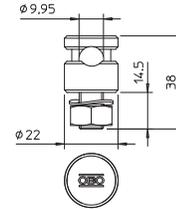
Connector, Rd 8–10 mm with pressure trough



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)



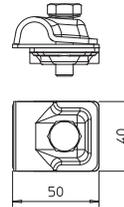
Vario quick connector Rd 8-10x16



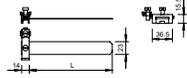
Type	Fit mm	Dimen- sion A mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10X16 VA	8-10X16	40	H/100	10	16.300	5311590

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)



Earthing pipe clamp VA

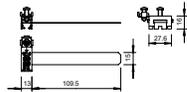


Type	for pipe Ø inch	Dimension L mm	for pipe Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
927 1	3/8-1 1/2	200	17.2 - 48	10	7.780	5057515
927 2	3/8-4	395	17.2 - 114	10	8.550	5057523
927 4	3/8-6	555	17.2 - 185	10	8.900	5057558
927 S 1	3/8 - 1 1/2	—	—	30	6.000	5057582
927 1 6-K	3/8-1 1/2	—	—	10	6.000	5057595

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



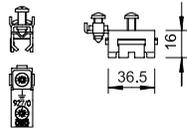
Type	for pipe Ø mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
927 0	8 - 22	109.5	10	5.000	5057507

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

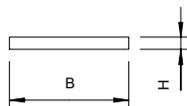


Type	Pack. pcs	Weight kg/100 pcs.	Item No.
927 SCH-K-VA	20	4.700	5057930

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 mm	Dimension H mm	Pack. m	Weight kg/100 m	Item No.
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

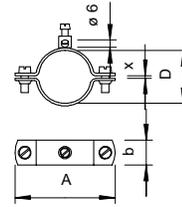
Earthing clamp, type 925

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)



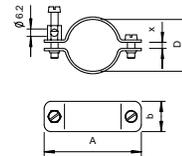
Earthing clamp, type 942

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: Cables up to 25 mm²
- With connection clip and cylinder bolt M6 x 16 made of brass, nickel-plated
- Clip cover and base made of copper, nickel-plated



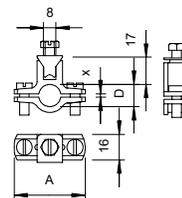
Earthing clamp, type 950

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

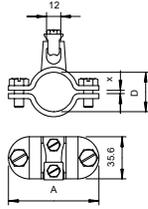
Zn Die-cast zinc

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



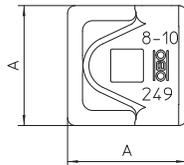
Type	Dimension A mm	Clamping range D mm	Dim. X mm	for pipe Ø inch	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
952 Z 1/2	65	18.5 - 21.5	3	1/2	50	5	24.880	5052076
952 Z 3/4	71	24 - 27	3	3/4	50	5	26.780	5052092
952 Z 1	77	30.5 - 33.5	3	1	50	5	28.560	5052114
952 Z 1 1/4	87	39.5 - 42.5	3	1 1/4	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

Connection terminal, equipotential bonding, Rd 8–10 mm



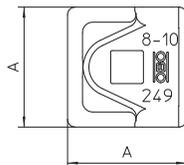
Type	Fit mm	Dimension A mm	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 ST-OT	Rd 8-10	40	100	3.240	5311503

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

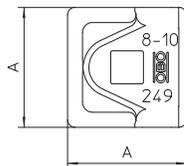


Type	Dimension A mm	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 ALU-OT	44	Rd 8-10	100	2.100	5311585

Alu Aluminium

- For round conductor fastening RD 8-10
- Suitable for M10 bolts

Connection terminal, equipotential bonding, Rd 8–10 mm

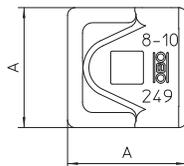


Type	Fit mm	Dimension A mm	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 VA-OT	Rd 8-10	40	100	3.130	5311554

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	Dimension 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

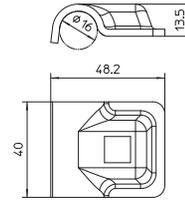
- For round conductor fastening RD 8-10
- Suitable for M10 bolts

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



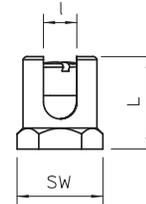
Earthing terminal with fastening thread



Type	Dimen- sion L mm	Dimen- sion l 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



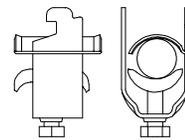
Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2056N SAS 8 A2	4 - 8	50	2.900	1167006
2056N SAS 12 A2	8 - 12	50	3.700	1167014
2056N SAS 16 A2	12 - 16	50	4.200	1167022
2056N SAS 22 A2	16 - 22	50	4.850	1167030
2056N SAS 28 A2	22 - 28	50	6.600	1167049

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.



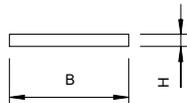


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Earthing systems

	Conductor material	336
	Earth rods and plates	339
	Connection material	345
	Holders and accessories	359

Galvanised steel flat conductor for earth



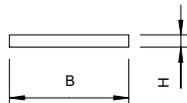
Type	Dimension W x H mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
5052 DIN 20X2.5	20 x 2,5	50	122	50	122	41.000	5019340
5052 DIN 30X3.5	30 x 3,5	105	30	25	30	84.000	5019345
5052 DIN 40X4	40 x 4	160	40	51	40	128.000	5019355
5052 DIN 40X5	40 x 5	200	30	50	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

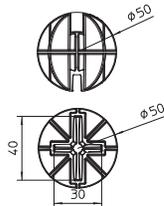


Type	Dimension W x H mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
5052 V2A 30X3.5	30 x 3,5	105	50	42	50	82.500	5018501
5052 V4A 30X3.5	30 x 3,5	105	50	42	50	82.425	5018706
5052 V4A 30X3.5	30 x 3,5	105	25	21	25	82.425	5018730

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 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

Protective cap for connection lugs, reflective

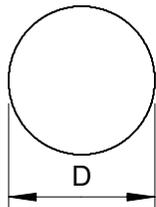


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
ProtectionBall	RD 8-10/ FL 25/ 30/ 40	25	2.050	5018014

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 jacking

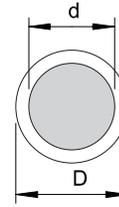


Type	Colour	Dimen- sion d mm	Dimen- sion D mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
RD 10-PVC	Black	10	13	78	75	50	75	67.000	5021162

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



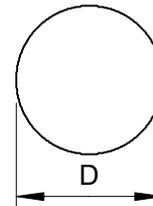
Round conductor, aluminium



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



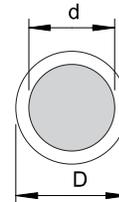
Round conductor, aluminium, with PVC sheathing



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



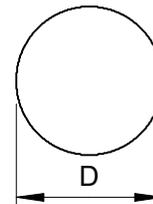
Round conductor, stainless steel A2



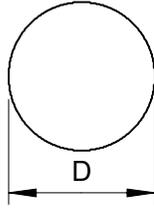
Type	Nominal size Ø mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
RD 8-V2A	8	50	125	50	125	40.000	5021235
RD 10-V2A	10	78	50	32	50	63.000	5021227
RD 10-V2A	10	78	80	50	80	63.000	5021239
RD 8-V4A	8	50	125	50	125	40.000	5021644
RD 10-V4A 20	10	78	20	12	20	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 earthing 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)



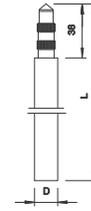
Earthing rod for standard applications

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 ST FT	1000	20	7.9	H/100	5	250.000	5000742
219 20 ST FT	1500	20	7.9	H/100	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)



BP earthing rod

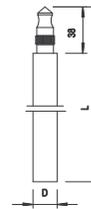


Type	Length mm	Outer-Ø mm	Short-circuit current (50 Hz) (1 s; ≤300 °C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
219 20 BP FT	1500	20	7.9	H/100	5	360.000	5000947

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)



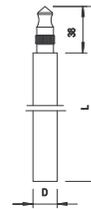
BP earthing rod



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

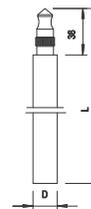


Type	Length mm	Outer-Ø mm	Short-circuit current (50 Hz) (1 s; ≤300 °C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
219 20 BP CU	1500	20	7.9	H/100	5	365.400	5000500

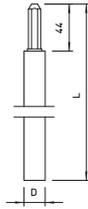
St Steel

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)



OMEX earthing rod

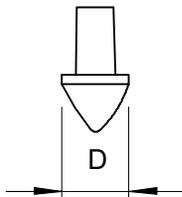


Type	Length mm	Outer-Ø mm	Short-circuit current (50 Hz) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
219 20 OMEX FT	1500	20	7.9	H/100	5	365.400	5000017
219 20 OMEX FT	2000	20	7.9	H/100	5	491.400	5000203

- 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

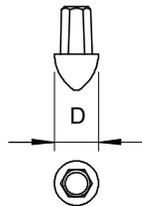
Driving spike for ST and BP earth rod



Type	For earth rods Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1819 20BP	20	5	3.800	3041212

- TG** Cast iron
- FT** Hot-dip galvanised
- Suitable for ST and BP system

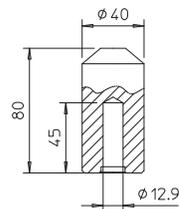
Driving spike for OMEX earth rod



Type	For earth rods Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1819 20	20	5	3.300	3041204

- TG** Cast iron
- FT** Hot-dip galvanised
- Suitable for OMEX system
- DIN 48852, Form SP

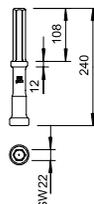
Impact head for earthing rods ST, BP and OMEX



Type	Material symbol	For earth rods Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1820 20	St	20	1	62.600	3042200

- St** Steel
- Suitable for ST, BP and OMEX systems
- Hardened
- DIN 48852, Form SP

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

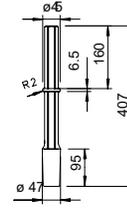
- St** Steel
- Manufactured by Cobra BBM 47 SPA-Super, Tex11 and COBRA 248
- Fits earth rod system ST, BP and OMEX
- Hardened

Hammer insert, type 2510, for earthing rods ST, BP and OMEX

Type	For earth rods Ø mm	Pack. pcs	Weight		Item No.
			kg/100 pcs.	pcs.	
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

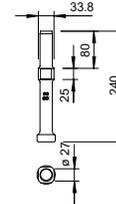


Hammer insert, type 2520, for earthing rods ST, BP and OMEX

Type	For earth rods Ø mm	Pack. pcs	Weight		Item No.
			kg/100 pcs.	pcs.	
2520 20	20	1	197.000	3043703	

St Steel

- Manufactured by Wacker BHF 25, BHF 30S, EHU 25/220
- Fits earth rod system ST, BP and OMEX
- Hardened

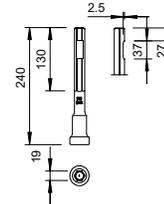


Hammer insert, type 2530, for earthing rods ST, BP and OMEX

Type	For earth rods Ø mm	Pack. pcs	Weight		Item No.
			kg/100 pcs.	pcs.	
2530 20	20	1	125.000	3043401	

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		Item No.
			kg/100 pcs.	pcs.	
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

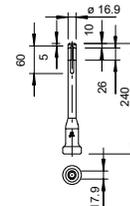


Hammer insert, type 2535, for earthing rods ST, BP and OMEX

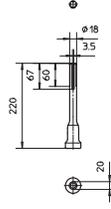
Type	For earth rods Ø mm	Pack. pcs	Weight		Item No.
			kg/100 pcs.	pcs.	
2535 20	20	1	100.000	3043916	

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



For
earth
rods

Type
2536 20 | 20

Pack. pcs	Weight kg/100 pcs.	Item No.
1	55.000	3044904

St Steel

- Fits earth rod system ST, BP and OMEX
- For vibration hammers with SDS- Max/TEY- mounting
- Hardened

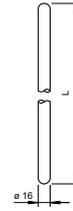


Air-termination/earth entry rod, rounded-off on both ends

Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight		Item No.
				kg/100	pcs.	
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
- Both ends rounded

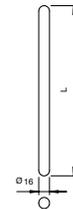


Air-termination/earth entry rod, rounded-off on both ends

Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight		Item No.
				kg/100	pcs.	
101 A-CU	1500	16	10	272.100	5400627	

Cu Copper

- Full material Ø 16 mm
- Both ends rounded



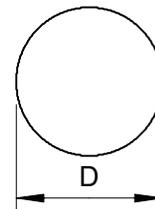
Connection lug/earth entry rod made of stainless steel



Type	Nominal size Ø mm	Cross- section mm ²	Pack. pcs	Weight		Item No.
				kg/100	pcs.	
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		Item No.
				kg/100	pcs.	
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)

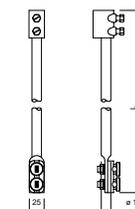


Earth entry rod with separating piece and connector

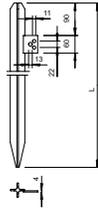
Type	Fit mm	Pack. pcs	Weight		Item No.
			kg/100	pcs.	
204 KL-1500	Rd 8-10	10	260.700	5430151	

Sl Steel

- With separating piece type 223 DIN and connector type 5002 DIN



Profile earthing rod with connecting lug



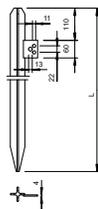
Type	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
213 1000 DIN	1000	5	240.500	5003008
213 1500 DIN	1500	5	364.500	5003016
213 2000 DIN	2000	5	488.400	5003024
213 2500 DIN	2500	3	612.400	5003032
213 3000 DIN	3000	3	736.400	5003040

St 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

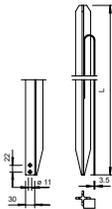
Profile earthing rod with connecting lug



Type	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
213 750 DIN	—	5	178.500	5002974

213/...: Profile rod earth connection

Profile earth rod connection with strip steel lug



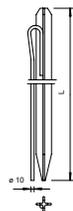
Type	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
213 1500 M	1500	3	527.600	5003261
213 2000 M	2000	3	651.600	5003288
213 2500 M	2500	3	783.800	5003296
213 3000 M	3000	3	899.500	5003318

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



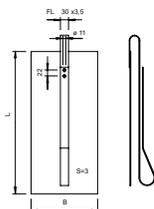
Type	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
213 1500 F	1500	3	486.900	5003776
213 2000 F	2000	3	610.900	5003784

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

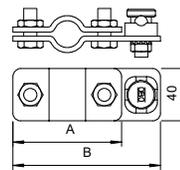
Connection clamp for earth rod to round conductors Rd 8-10

Type	For earth rods			Pack. pcs	Weight kg/100 pcs.	Item No.
	Ø mm	Dimension A mm	Dimension B mm			
2710 20	20	84	114	5	39.900	5001218

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

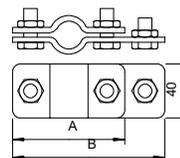


Type	For earth rods		Short-circuit current (50 HZ) (1 s; ≤300°C) kA	Dimension B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
	Ø mm	Dimension A mm					
2730 20 FT	20	84	7.9	114	5	35.900	5001404

St Steel

FT Hot-dip galvanised

- ST, BP, OMEX and LightEarth systems
- On flat conductors
- Including hex-head screw for attaching flat conductors



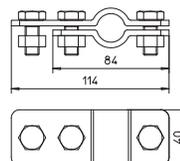
Connection clamp for earth rod on flat conductor



Type	For earth rods			Pack. pcs	Weight kg/100 pcs.	Item No.
	Ø mm	Dimension A mm	Dimension B mm			
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

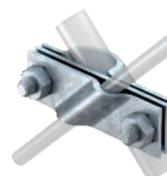
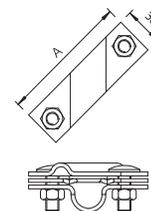


Type	Dimension A mm	For earth rods		Short-circuit current (50 HZ) (1 s; ≤300°C) kA	Pack. pcs	Weight kg/100 pcs.	Item No.
		Ø mm	Fit				
2760 20 FT	101	20	Rd 8-10/FL40	—	5	32.400	5001641

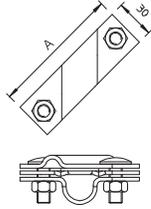
St Steel

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

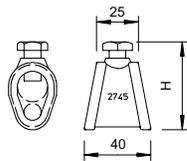


Type	For earth rods			Pack. pcs	Weight kg/100 pcs.	Item No.
	Dimension A mm	rods Ø mm	Fit mm			
2760 20 VA	101	20	Rd 8-10/FL40	5	32.400	5001617
2760 B-20 VA	101	20	Rd 8-10/FL40	20	32.400	5001625
2760 20 V4A	101	20	Rd 8-10/FL40	5	32.400	5001633

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

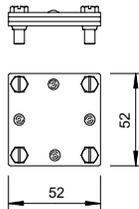
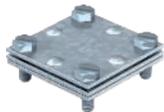


Type	For earth rods		Pack. pcs	Weight kg/100 pcs.	Item No.
	rods Ø mm	Fit mm			
2745 20 MS	20	7-12,5/S95 mm ²	5	16.000	5001560

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)

Cross-connector for flat conductor, with intermediate plate

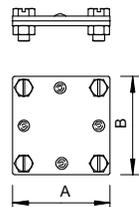
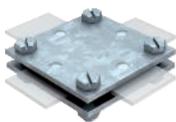


Type	Fit mm	Dimension A mm	Dimension B mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
255 30	max. FL30	52	52	H/100	20	16.650	5314518

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)

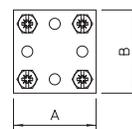
DIN cross-connector for flat conductor



Type	Fit mm	Dimen- sion A mm	Dimen- sion 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

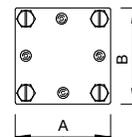


Type	Fit mm	Dimen- sion A mm	Dimen- sion B mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
256 DIN 30 FT	max. FL30	60	60	H/100	10	35.860	5314615
256 DIN 40 FT	max. FL40	80	80	H/100	10	54.650	5314623

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



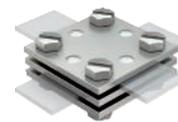
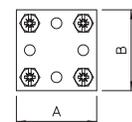
DIN cross-connector for flat conductor, with intermediate plate



Type	Fit mm	Dimen- 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

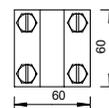
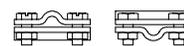


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
253 8X8	Rd 8-10	H/100	25	30.700	5312604

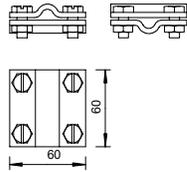
St Steel

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)



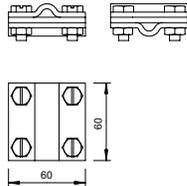
Cross-connector round/round without intermediate plate



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)

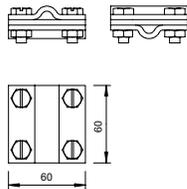
Cross-connector with intermediate plate for Rd 8–10 mm, wide version



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)

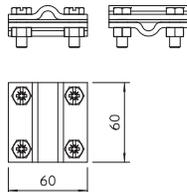
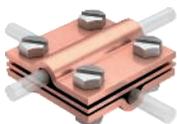
Cross-connector with intermediate plate for Rd 8–10 mm, wide version



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

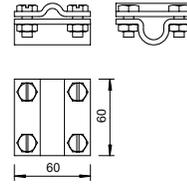


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
253 10X16	Rd 8-10 x 16	H/100	25	29.800	5312809

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

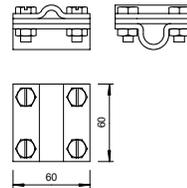


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10X16 FT	Rd 8-10 x 16	H/100	25	38.800	5312345

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



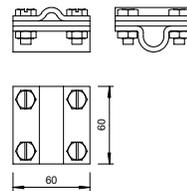
Cross-connector with intermediate plate for Rd 8–10 x Rd 16 mm



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



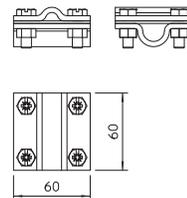
Cross-connector with intermediate plate for Rd 8–10 x Rd 16 mm



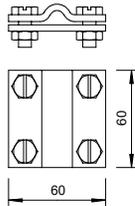
Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10X16 CU	Rd 8-10 x 16	H/100	10	43.985	5312442

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



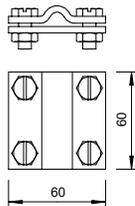
Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10xFL30 FT	8-10 x FL30	H/100	25	28.500	5312655

SI 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

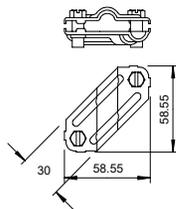


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10xFL30V4A	8-10 x FL30	H/100	10	28.500	5312656

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



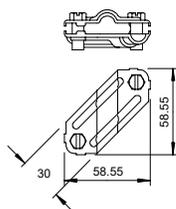
Type	Fit mm	Short-circuit current (50 Hz) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
250	Rd 8-10/FL30	5.6	N/50	25	10.260	5312906

SI 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

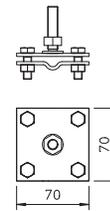


Type	Fit mm	Short-circuit current (50 Hz) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 GB 10x45	8-10 x FL30	4.2	H/100	10	34.800	5312657

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

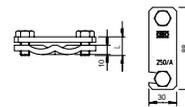


Type	Fit mm	Short-circuit current (50 Hz) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
250 A-FT	Rd 6-22/max. FL50	7.3	H/100	25	28.800	5313015
250 A	Rd 6-22/max. FL50	7.3	H/100	25	28.800	5313058

St 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



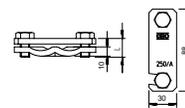
Diagonal clamp for flat conductors and round conductors



Type	Dimen- sion 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

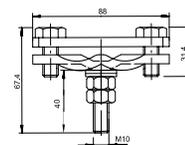


Type	Dimen- sion L mm	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
250 A-BO	25	Rd 6-22/max. FL50	H/100	25	33.000	5313066

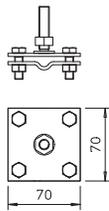
St Steel

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



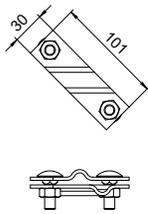
Type	Fit mm	Short-circuit current (50 Hz) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 GB 10x45	8-10 x FL30	4.2	H/100	10	34.800	5312657

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

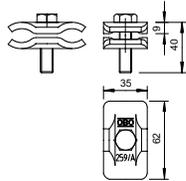


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
2760 8-10 V4A	Rd 8-10	H/100	25	20.600	5313013
2760 8	Rd 8-10	H/100	5	27.120	5001612

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



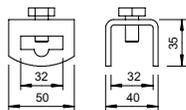
Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
259 A ST	∅ 10-20	H/100	25	18.800	5315557
259 A FT	∅ 10-20	H/100	25	18.800	5315514
259 A VA	∅ 10-20	H/100	10	18.800	5315522

St Steel V2A Stainless steel, grade 304

FT Hot-dip galvanised

- For connecting reinforced steels ∅ 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 reinforced steels

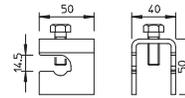


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
1814 ST	FL30x5 x Rd8-14	N/50	25	20.000	5014476
1814 FT	FL30x5 x Rd8-14	N/50	25	20.000	5014468

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

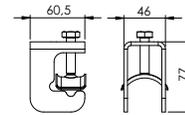


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
1814 ST D37	FL30x3-4mm / Rd 10 x Rd 16-37	H/100	25	30.000	5014477
1814 FT D37	FL30x3-4mm / Rd 10 x Rd 16-37	H/100	25	30.000	5014469

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

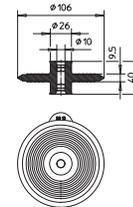


Sealing sleeve for round conductors

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

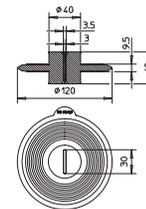


Sealing sleeve for flat conductors

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

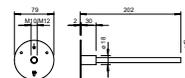


Fixed earthing point

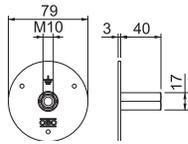
Type	Thread	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
205 B-M10 VA	M10	—	10	25.500	5420008
205 B-M12 VA	M12	—	10	25.500	5420016

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



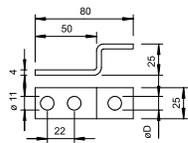
Type	Thread	Short-circuit current (50 Hz) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
205 DG V4A	M10/M12	6.2	H/100	10	14.800	5420020
205 DG L180 V4A	M10/M12	3.3	H/100	10	23.900	5420022
205 DG L180 FT	M10/M12	4.9	H/100	10	23.900	5420024

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



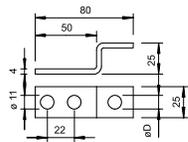
Type	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
5011	11	10	7.064	5304997

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

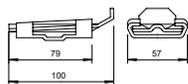


Type	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
5011 VA M10	11	10	7.064	5334934
5011 VA M12	13	10	7.048	5334942

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

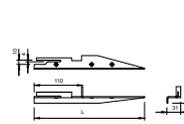


Spacer

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

- St 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

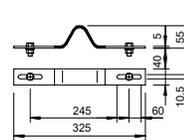


Expansion piece

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

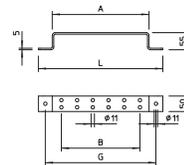


Type	Dimen- sion L mm	Dimen- sion A mm	Dimen- sion B mm	Dimen- sion G mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1805 2 FT	200	110	51	155	1	54.800	5016029
1805 4 FT	302	212	153	257	1	77.000	5016037
1805 6 FT	404	314	255	359	1	97.100	5016045

- 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

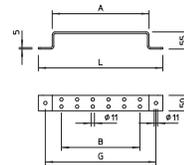


Type	Dimen- sion L mm	Dimen- sion A mm	Dimen- sion B mm	Dimen- sion G mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1805 2 VA	200	110	51	155	1	54.800	5016096
1805 4 VA	302	212	153	257	1	77.000	5016118
1805 6 VA	404	314	255	359	1	97.100	5016126

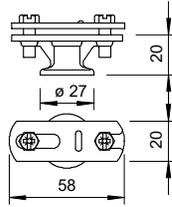
- V4A Stainless steel, grade 316 Ti

1805/...: For connecting different earthing systems

- With 2 mounting holes Ø 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



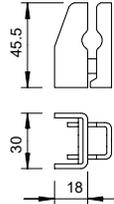
Type
113 BZ-FL

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

Pack. pcs	Weight kg/100 pcs.	Item No.
100	6.280	5230446

Cable bracket for Rd 8–10 and FL 30



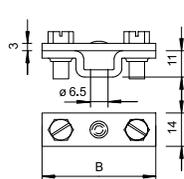
Type Fit mm
835 | Rd 8/10/ FL 30x3,5

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

Pack. pcs	Weight kg/100 pcs.	Item No.
1	12.100	5033209

Spacer clip for flat conductor with fastening hole Ø 6.5



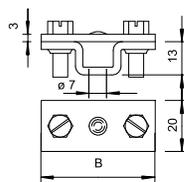
Type Fit mm Dimension B mm
831 30 | max. FL30 | 54
831 40 | max. FL40 | 65

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)

Pack. pcs	Weight kg/100 pcs.	Item No.
25	3.580	5032032
25	3.894	5032040

Spacer clip for flat conductor, with fastening hole Ø 7



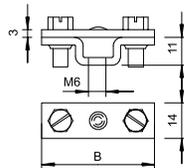
Type Fit mm Dimension B mm
832 30 | max. FL30 | 55
832 40 | max. FL40 | 65

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

Pack. pcs	Weight kg/100 pcs.	Item No.
25	7.416	5032539
25	7.612	5032547

Spacer clip for flat conductor, with threaded connection M6



Type Fit mm Dimension B mm
831 30 M6 | max. FL30 | 54
831 40 M6 | max. FL40 | 65

St Steel
FT Hot-dip galvanised

- Fit: FL 30 and FL 40
- With attaching thread M6 and 2 hexagonal bolts M6 x 16 (F)

Pack. pcs	Weight kg/100 pcs.	Item No.
25	3.712	5032237
25	3.880	5032245



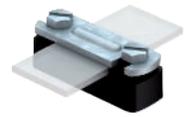
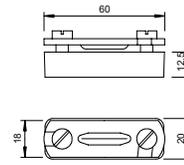
Spacer clip for flat conductor, with polyamide base

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



Diagonal clamp for flat conductors and round conductors

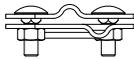
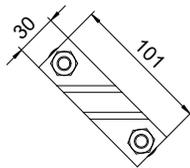


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
2760 S8 V4A	Rd 8-10	H/100	3600	20.600	5313012

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

Dimensions



Earthing enhancing compound



Type	Dimension		Pack. pcs	Weight		Item No.
	mm	m		kg/100 pcs.	kg	
OEC 25	25	10	1	2,500.000	25	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)

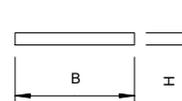


Plastic corrosion protection strip

Type	Width		Pack. pcs	Weight		Item No.
	mm	m		kg/100 pcs.	kg	
356 50	50	10	1	71.500	71.5	2360055

PETRO Petrolatum

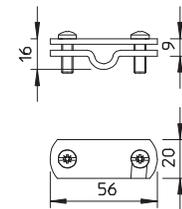
- Approx. 1.1 mm thick
- Width: 50 mm or 100 mm, made of petrolatum-coated chemical fibre fabric
- Can be processed cold



Number plates

Type	Fit mm	Pack. pcs	Weight		Item No.
			kg/100 pcs.	kg	
311 N-ALU 8-10	RD 8 - 10 / FL30	5	2.500	12.5	3049256
311 N-ALU 16	RD 16 - FL30	5	2.800	14.0	3049345

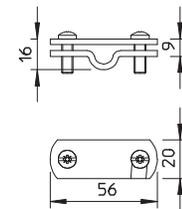
- To identify the point of separation to DIN 48821
- Suitable for universal labelling (e.g. stamped numbers)



Number plates

Type	Fit mm	Pack. pcs	Weight		Item No.
			kg/100 pcs.	kg	
311 N-VA 8-10	RD 8 - 10 / FL30	5	5.600	28.0	3049221
311 N-VA 16	RD 16 - FL30	5	6.400	32.0	3049329

- To identify the point of separation to DIN 48821
- Suitable for universal labelling (e.g. stamped numbers)

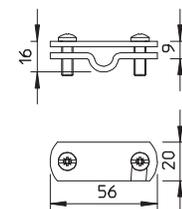


Number plates

Type	Fit mm	Pack. pcs	Weight		Item No.
			kg/100 pcs.	kg	
311 N-CU 8-10	RD 8 - 10 / FL30	5	6.400	32.0	3049205

Cu Copper

- To identify the point of separation to DIN 48821
- Suitable for universal labelling (e.g. stamped numbers)



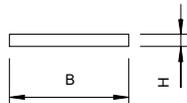


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Air-termination and down conductor systems

	Conductor material	362
	Air-termination systems	365
	Air-termination rods	370
	Cable bracket	386
	Connectors and connection terminals	390
	Connection and separating terminals	408
	Earth entries	411
	Accessories	412

Galvanised steel flat conductor for earth



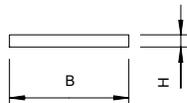
Type	Dimension W x H mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
5052 DIN 20X2.5	20 x 2,5	50	122	50	122	41.000	5019340
5052 DIN 30X3.5	30 x 3,5	105	30	25	30	84.000	5019345
5052 DIN 40X4	40 x 4	160	40	51	40	128.000	5019355
5052 DIN 40X5	40 x 5	200	30	50	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

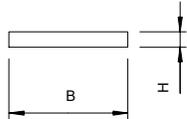


Type	Dimension W x H mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
5052 V2A 30X3.5	30 x 3,5	105	50	42	50	82.500	5018501
5052 V4A 30X3.5	30 x 3,5	105	50	42	50	82.425	5018706
5052 V4A 30X3.5	30 x 3,5	105	25	21	25	82.425	5018730

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 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

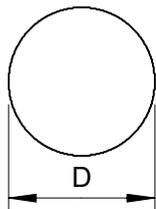


Type	Dimension W x H mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
FL 25-CU	25 x 3	75	50	33	50	67.000	5021830

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 jacking

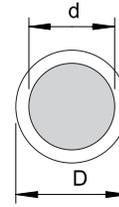


Type	Colour	Dimen- sion d mm	Dimen- sion D mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
RD 10-PVC	Black	10	13	78	75	50	75	67.000	5021162

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



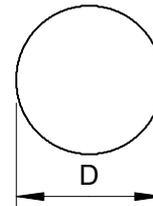
Round conductor, aluminium



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



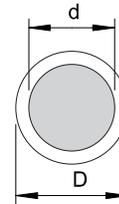
Round conductor, aluminium, with PVC sheathing



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



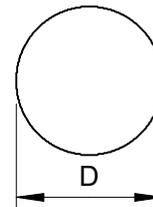
Round conductor, stainless steel A2



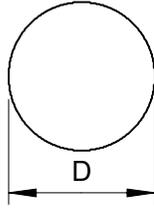
Type	Nominal size Ø mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
RD 8-V2A	8	50	125	50	125	40.000	5021235
RD 10-V2A	10	78	50	32	50	63.000	5021227
RD 10-V2A	10	78	80	50	80	63.000	5021239
RD 8-V4A	8	50	125	50	125	40.000	5021644
RD 10-V4A 20	10	78	20	12	20	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)



Stand for FangFix Junior system

Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.

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

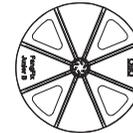
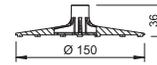


Base for FangFix Junior

Type	Pack. pcs	Weight kg/100 pcs.	Item No.

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



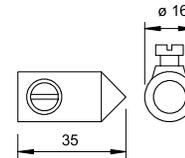
Air-termination tip

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.

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 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

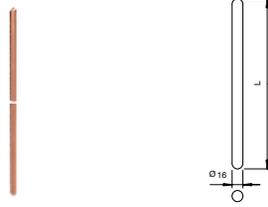
Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
200 V4A-2000	2000	16	10	320.000	5420539

V4A Stainless steel, grade 316 Ti

- Full material Ø 16 mm
- Both ends rounded



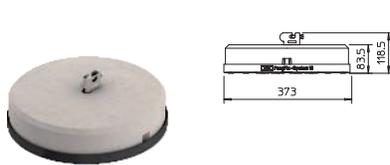
Air-termination/earth entry rod, rounded-off on both ends



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
 - Both ends rounded

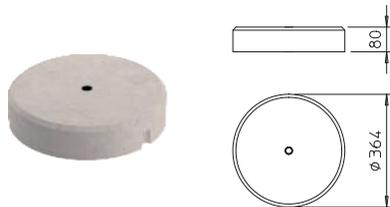
Stand for FangFix system 16 kg



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

- BET** Concrete
- System consists of FangFix stone with edge protection and clamp
 - FangFix clamp made of VA; lightning current tested to VDE 0185-305 (IEC 62305)
 - 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
 - Suitable for Ø 16 mm pipe air-termination rods

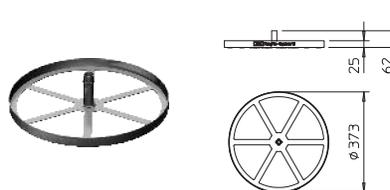
Concrete block for FangFix-System 16 kg



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

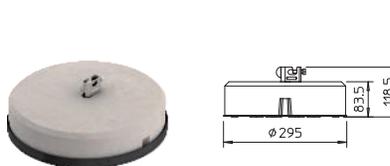
Base for FangFix system 16 kg



Type	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
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 kg/100 pcs.	Item No.
F-FIX-10	Rd 8	295	1	1,058.000	5403103

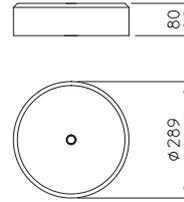
- BET** Concrete
- System consists of FangFix stone with base and clamp
 - FangFix clamp made of VA; lightning current tested with 0185 kA (305/62305)
 - 10 kg stone of Ø 289 mm, high level of stability
 - Quick and easy mounting of air-termination rod using anchors
 - Concrete, frost-resistant
 - The FangFix stone can be stacked
 - Suitable for Ø 16 mm pipe air-termination rods

Concrete block for FangFix system 10 kg

Type	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	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

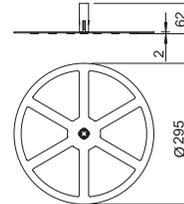


Base for FangFix system 10 kg

Type	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
F-FIX-B10	295	10	7.600	5403124

PP Polypropylene

Edge protection with integrated dowel (basic) suitable for FangFix 10 system.



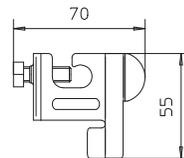
Terminal for FangFix system



Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
F-FIX-KL	Rd 8	5	8.700	5403219

V2A Stainless steel, grade 304

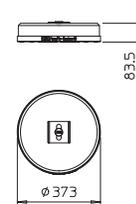
- FangFix terminal, VA for RD 8 mm
- Tested with H (100 kA) to DIN EN 50164-1
- Round conductor installed on the air-termination rod with only one screw



Stand - TrayFix set 16 L

Type	From tray width mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TrayFix-16-L	100	1	1,700.000	5403098

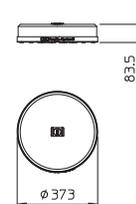
- Mounting system for the fastening of mesh cable trays with the FangFix stone, e.g. cable routing on a flat roof.
- Matched to OBO cable tray systems MKSM and SKSM.
- Matched to OBO mesh cable systems with a minimum width of 100 mm.
- Set consisting of TrayFix mounting adapter and concrete block including base for FangFix system 16 kg



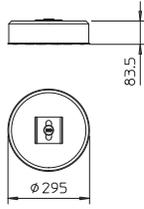
Stand - TrayFix set 16 S

Type	From tray width mm	Pack. pcs	Weight kg/100 pcs.	Item No.
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



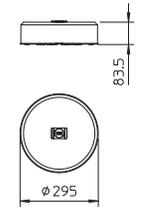
Stand - TrayFix set 10 L



Type	From tray width mm	Pack. pcs	Weight kg/100 pcs.	Item No.
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 10 kg

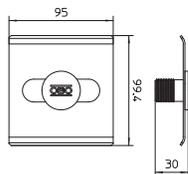
Stand - TrayFix set 10 S



Type	From tray width mm	Pack. pcs	Weight kg/100 pcs.	Item No.
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

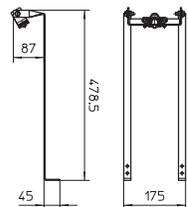
TrayFix mounting adapter for mesh cable trays on FangFix system



Type	Dimension	Pack. pcs	Weight kg/100 pcs.	Item No.
TrayFix	∅20mm	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 holder for sloping roof

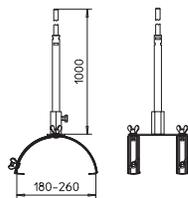


Type	Dimension	Pack. pcs	Weight kg/100 pcs.	Item No.
SD-Fix	V2A Stainless steel, grade 304	1	81.000	5403335

Stand system: rod holder for sloping roofs, for simple, quick and secure fastening of ∅ 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	Dimension 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 ∅ 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.



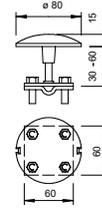
Mushroom-shaped air-termination with connectors

Type	Fit mm	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
128 F	Rd 8-10/ FL30	80	5	40.000	5405769

St 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

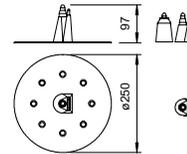


Roof penetration

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

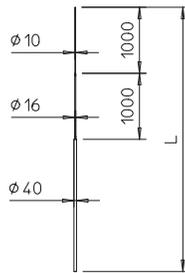


Type	Dimension B mm	Dimension D mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 3B-4000	2000	1000	4000	1	400.000	5402864
101 3B-4500	2500	1000	4500	1	480.000	5402866
101 3B-5000	3000	1000	5000	1	550.000	5402868
101 3B-5500	3000	1500	5500	1	630.000	5402870
101 3B-6000	4000	1000	6000	1	700.000	5402872
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



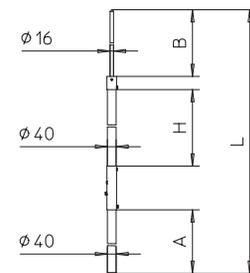
Type	Dimension A mm	Dimension H mm	Dimension B mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang 4000 AL	1240	1500	1000	4000	1	580.000	5408943
isFang 6000 AL	3340	1500	1000	6000	1	600.000	5408947
isFang 4000	1240	1500	1000	4000	1	680.000	5408942
isFang 6000	3340	1500	1000	6000	1	680.000	5408946

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



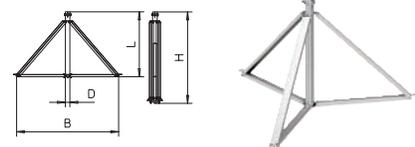
isFang air-termination rod stand



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

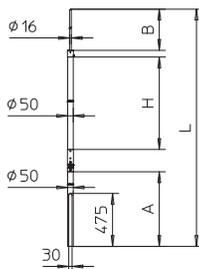


Type	Dimension D Ø mm	Dimension A mm	Dimension H mm	Dimension B mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang IN-A 4000	50	1325	1500	1000	4000	1	535.000	5408938
isFang IN-A 6000	50	3325	1500	1000	6000	1	835.000	5408940
isFang IN-A 8000	50	5335	1500	1000	8000	1	1,385.000	5408888
isFang IN-A10000	50	6000	1733	2000	10000	1	1,540.000	5408890

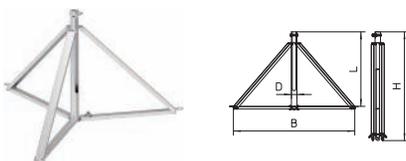
GFK Fibre-glass-reinforced plastic

- 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

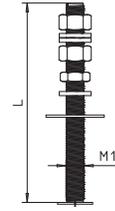


isFang-3B threaded rod

Type	Dimension L mm	Pack. pcs	Weight 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

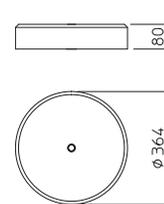


Concrete block for FangFix-System 16 kg

Type	Nominal size Ø mm	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

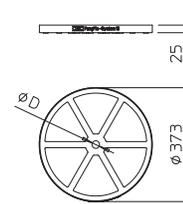


Base for FangFix system 16 kg for mounting the isFang tripod

Type	Nominal size Ø mm	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
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

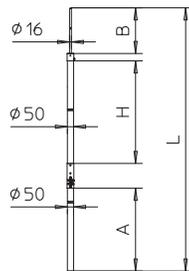


Type	Dimension D Ø mm	Dimension A mm	Dimension H mm	Dimension B mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang IN 4000	50	1325	1500	1000	4000	1	535.000	5408934
isFang IN 6000	50	3325	1500	1000	6000	1	835.000	5408936
isFang IN 8000	50	5335	1500	1000	8000	1	1,315.000	5408868
isFang IN 10000	50	6000	1733	2000	10000	1	1,540.000	5408870

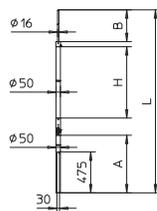
GFK Fibre-glass-reinforced plastic

- 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, insulated air-termination rod for inner-routed isCon conductor with side exit



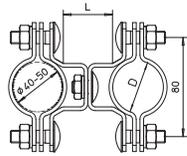
Type	Dimension D Ø mm	Dimension A mm	Dimension H mm	Dimension B mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang IN-A 4000	50	1325	1500	1000	4000	1	535.000	5408938
isFang IN-A 6000	50	3325	1500	1000	6000	1	835.000	5408940
isFang IN-A 8000	50	5335	1500	1000	8000	1	1,385.000	5408888
isFang IN-A 10000	50	6000	1733	2000	10000	1	1,540.000	5408890
isFang IN-A L4	50	1325	1500	1000	4000	1	535.000	5408874
isFang IN-A L6	50	3325	1500	1000	6000	1	835.000	5408876
isFang IN-A L8	50	5335	1500	1000	8000	1	1,385.000	5408878
isFang IN-A L10	50	6000	1733	2000	10000	1	1,540.000	5408880
isFang IN L4	50	1325	1500	1000	4000	1	535.000	5408854
isFang IN L6	50	3325	1500	1000	6000	1	835.000	5408856
isFang IN L8	50	5335	1500	1000	8000	1	1,350.000	5408858
isFang IN L10	50	6000	1733	2000	10000	1	1,540.000	5408860

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)



isFang support for pipe mounting, ø 40–50 mm

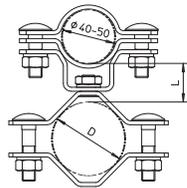


Type	Dimension D Ø mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang TS40-50	50	40	2	90.000	5408958

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 ø 40–50 mm.

isFang support for pipe mounting, ø 50–60 mm

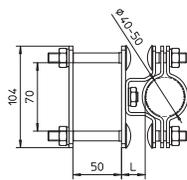


Type	Dimension D Ø mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang TS50-60	60	30	2	76.000	5408960

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 ø 50–60 mm.

isFang support for corner pipe mounting, 50 x 50 mm



Type	Dimension D Ø mm	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

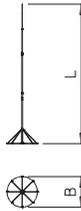


14 m air-termination rod with 8-legged air-termination rod stand

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

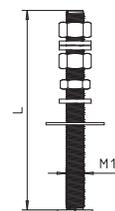


isFang-3B threaded rod

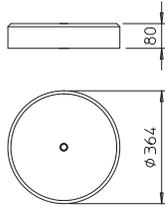
Type	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang 3B-G1	270	3	48.000	5408971
isFang 3B-G2	340	3	60.400	5408972
isFang 3B-G3	430	3	69.500	5408973
isFang 3B-G4	500	3	75.000	5408905

V2A Stainless steel, grade 304

- For fastening on one, two, three or four FangFix concrete bases with tripod stand

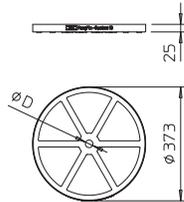


Concrete block for FangFix-System 16 kg



Type	Nominal size Ø mm	Pack.	Weight	Item No.
		pcs	kg/100 pcs.	
F-FIX-S16	365	1	1,700.000	5403227
BET Concrete				
<ul style="list-style-type: none"> • 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.	Weight	Item No.
			pcs	kg/100 pcs.	
F-FIX-B16 3B	373	25	10	15.800	5403238
PP Polypropylene					
<ul style="list-style-type: none"> • Edge protection with through hole • For mounting isFang-3B threaded rod and FangFix concrete block F-FIX-S16 					

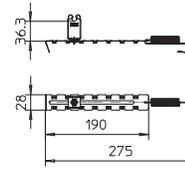


Ridge conductor holder with tensioning spring 35 mm

Type	Installation		Pack. pcs	Weight		Item No.
	Fit mm	height mm		kg/100 pcs.	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

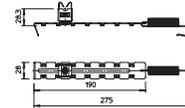


Ridge conductor holder with tensioning spring 8 mm

Type	Installation		Pack. pcs	Weight		Item No.
	Fit mm	height mm		kg/100 pcs.	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



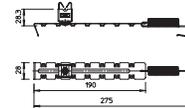
Ridge conductor holder with tensioning spring 8 mm copper-plated

Type	Installation		Pack. pcs	Weight		Item No.
	Fit mm	height mm		kg/100 pcs.	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

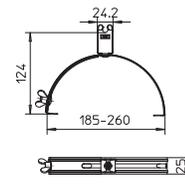


Roof conductor holder for ridge tiles, 185–260 mm, Rd 8, A2 35 mm

Type	Installation		Pack. pcs	Weight		Item No.
	Fit mm	height mm		kg/100 pcs.	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

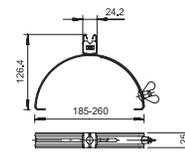


Roof conductor holder for ridge tiles, 185–260 mm, Rd 8, A2 8mm

Type	Installation		Pack. pcs	Weight		Item No.
	Fit mm	height mm		kg/100 pcs.	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

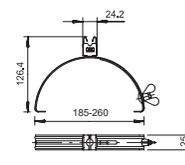


Roof conductor holder for ridge tiles, 185–260 mm, Rd 8. CU 8 mm

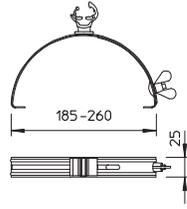
Type	Installation		Pack. pcs	Weight		Item No.
	Fit mm	height mm		kg/100 pcs.	pcs.	
132 CU	Rd 8	20	10	13.400		5202868

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

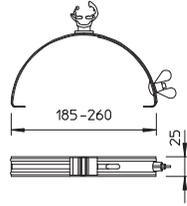


Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
132 K-VA	Rd 8-10	20	20	10.900	5202515

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

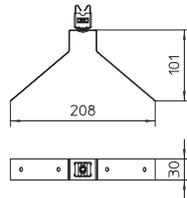


Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
132 K-CU	Rd 8-10	20	10	11.600	5202590

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, 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

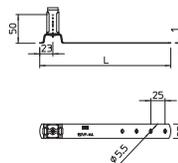


Roof conductor holder for tiled roofs, Rd 8, A2 35 mm

Type	Fit mm	Installation		Pack. pcs	Weight		Item No.
		height mm	Length mm		kg/100	pcs.	
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

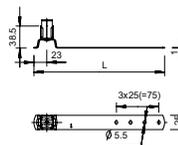


Roof conductor holder for tiled roofs, Rd 8, A2 8 mm

Type	Fit mm	Installation		Pack. pcs	Weight		Item No.
		height mm	Length mm		kg/100	pcs.	
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

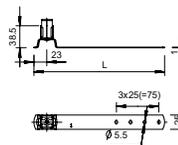


Roof conductor holder for tiled roofs, Rd 8, CU 8mm

Type	Fit mm	Installation		Pack. pcs	Weight		Item No.
		height mm	Length mm		kg/100	pcs.	
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

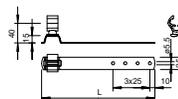


Roof conductor holder for tiled roofs, Rd 8-10, A2 8 mm

Type	Fit mm	Installation		Pack. pcs	Weight		Item No.
		height mm	Length mm		kg/100	pcs.	
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

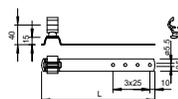


Roof conductor holder for tiled roofs, Rd 8-10, CU 8 mm

Type	Fit mm	Installation		Pack. pcs	Weight		Item No.
		height mm	Length mm		kg/100	pcs.	
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

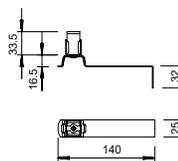


Roof conductor holder for tiled roofs, angled, Rd 8, A2 8 mm

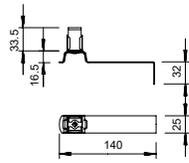
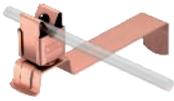
Type	Fit mm	Installation		Pack. pcs	Weight		Item No.
		height mm	Length mm		kg/100	pcs.	
157 I-VA	Rd 8	26.5	140	20	7.150		5215625

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

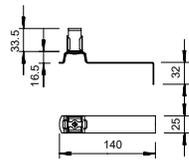


Type	Fit mm	Installation		Pack. pcs	Weight kg/100 pcs.	Item No.
		height mm	Length mm			
157 I-CU	Rd 8	26.5	140	10	7.800	5215749

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

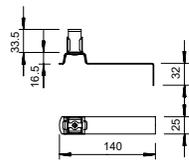
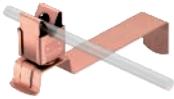


Type	Fit mm	Installation		Pack. pcs	Weight kg/100 pcs.	Item No.
		height mm	Length mm			
157 FX-AL	Rd 8	26.5	140	20	3.900	5215875

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

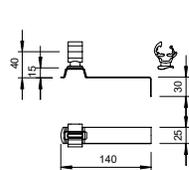


Type	Fit mm	Installation		Pack. pcs	Weight kg/100 pcs.	Item No.
		height mm	Length mm			
157 FX-CU	Rd 8	26.5	140	10	7.500	5215879

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 kg/100 pcs.	Item No.
		height mm	Length mm			
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

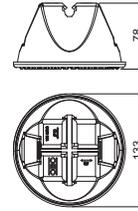


Roof cable holder for flat roofs, black

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 MBG-8-10	Rd 8-10	12	100.000	5218700
165 MBG-8-10 FO	Rd 8-10	12	100.000	5218704

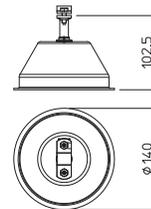
PA/PE Polyamide/Polyethylene

- 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 all roofing felt systems (bitumen, PVC)
- Types 165 MBG...FO: Packed in foil bag


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

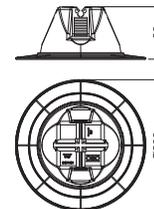
- Closed form with base
- With double conductor holder
- Filling weight 1 kg (frost-resistant concrete)
- Sleeve made of polyethylene, black, bottom polypropylene, black
- Base made of polyamide PA 6, black, UV-stabilised and weather-resistant
- Base can be used on almost all roofing felt systems (bitumen, PVC)
- Types 165 MBG...FO: Packed in foil bag


Roof conductor holder for flat roofs, with increased base section

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 MBG-8 200	Rd 8	12	111.000	5218748
165 MBG-10 200	Rd 10	12	111.000	5218756
165 MBG-8-10 200	Rd 8-10	12	100.000	5218716

PE Polyethylene PA/PE Polyamide/Polyethylene

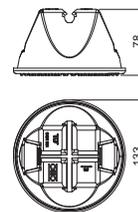
- DIN 48829 Form B 1
- Closed form with bottom
- With double conductor holder
- Filling weight 1 kg (frost-resistant concrete)
- Sleeve from polyethylene, black, bottom polypropylene, black
- With larger bottom section (Ø 200 mm) for improved stability


Roof conductor holder for flat roofs, grey

Type	Fit mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
165 MBG-8-10 GR	Rd 8-10	Grey	12	100.000	5218708

PA/PE Polyamide/Polyethylene

- Closed form with base
- With double cable holder
- Filling weight 1 kg (frost resistant concrete)
- Case made from polyethylene, light grey, UV-stabilised and weatherproof
- Base made from polyamide PA 6, light grey, UV-stabilised and weatherproof
- Base suitable for nearly all roofing membrane systems (Bitumen, PVC)


Flat conductor adapter for roof conductor holder, type 165/MBG

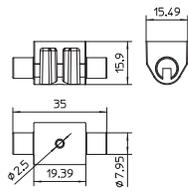
Type	Fit mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
165 MBG HFL	Rd 8	Black	12	0.670	5218885

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

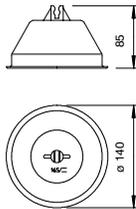


Type	Colour	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 MBG UH	Black	Rd 8	25	0.254	5218882

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

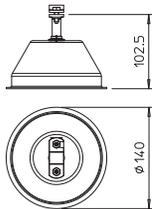


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 KR	Rd 8	50	5.449	5218861

PE Polyethylene

- For self-filling with concrete
- Potential filling weight: approx. 1.3 kg
- Sleeve from polyethylene, black

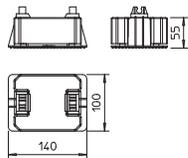
Roof conductor holder for flat roofs, with raised cable bracket



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

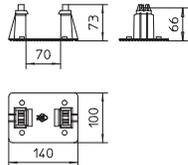


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 R-8-10	Rd 8-10	10	106.000	5218997

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

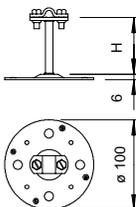


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 R-8-10 OBG	Rd 8-10	100	6.760	5218999

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 \varnothing 100 mm

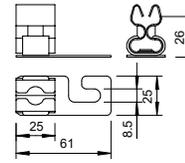


Roof conductor holder for tiled, slated and corrugated roofs, Rd 8

Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.

V2A Stainless steel, grade 304

- Bottom section and conductor holder stainless steel (V2A)
- Bottom section with Ø 8.5 mm slot

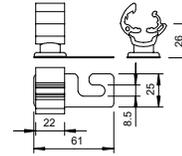


Roof conductor holder for tiled, slated and corrugated roofs, Rd 8-10

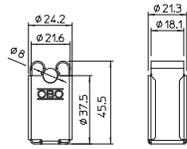
Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.

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

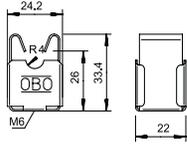


Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.

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

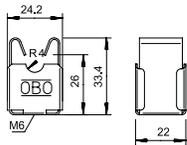


Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.

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



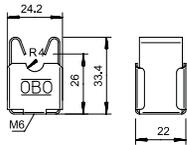
Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.

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

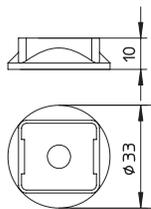


Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.

V2A Stainless steel, grade 304

- With female thread M8 or through hole Ø 5 mm
- From stainless steel (V2A)

Washer for cable bracket, type 177

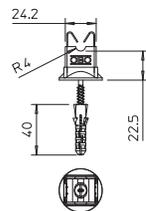


Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.

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.

V2A Stainless steel, grade 304

- With female thread M8 or through hole Ø 5 mm
- From stainless steel (V2A)
- With pre-mounted wood screws (5 x 60) and plastic dowels (8 x 40).

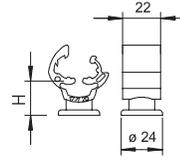


Universal cable bracket Rd 8–10 mm

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 Ø 7 mm
- Weather and temperature-resistant from -35 °C to +90 °C

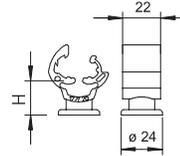


Universal cable bracket Rd 8–10 mm, copper-plated

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

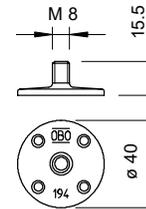


Bonding base

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

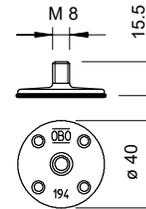


Bonding base including industrial bonding pad

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

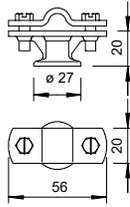
Type	Dimension H mm	Pack. pcs	Weight kg/100 pcs.	Item No.
177 20 KL	25	50	1.239	5207451

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

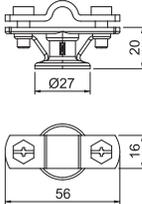


Cable bracket with crossbar Rd 8–10 mm



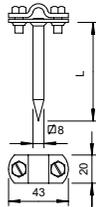
Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
113 Z8-10	Rd 8-10	20	6.202	5229960
Zn Die-cast zinc G Electrogalvanised				
<ul style="list-style-type: none"> • With female thread M8 or through hole Ø 7 mm • Over-piece installed with 2 hexagonal bolts • Version HD with wood screws (5 x 60) and plastic dowels (8 x 40) 				

Cable bracket with crossbar Rd 8–10 mm copper-plated



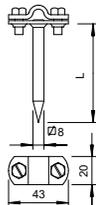
Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
113 8-10	Rd 8-10	20	9.600	5230217
Zn Die-cast zinc Cu Copper-plated				
<ul style="list-style-type: none"> • With female thread M8 or through hole Ø 7 mm • Over-piece installed with 2 hexagonal bolts 				

Cable bracket with crossbar Rd 8–10 mm, with square pin



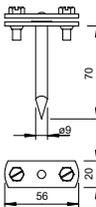
Type	Fit mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
163 70 FT	Rd 8-10	70	50	8.476	5223075
163 100 FT	Rd 8-10	100	50	10.056	5223105
163 150 FT	Rd 8-10	150	50	14.400	5223156
163 200 FT	Rd 8-10	200	20	18.880	5223202
Si Steel FT Hot-dip galvanised					
<ul style="list-style-type: none"> • Complete 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



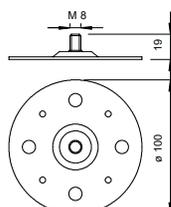
Type	Fit mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
163 100 CU	Rd 8-10	100	10	10.840	5223601
Cu Copper					
<ul style="list-style-type: none"> • Complete with crossbar and hexagonal bolts • With square pin for rapid mounting • With hexagonal bolts made of VA 					

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
Si Steel FT Hot-dip galvanised					
<ul style="list-style-type: none"> • With crossbar and 2 hexagonal bolts (VA) • With loose round pin Ø 9 mm 					

Base plate



Type	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
199 DIN	M8	10	14.200	5208017
Si Steel FS Strip-galvanised				
<ul style="list-style-type: none"> • With threaded pin M8 • Suitable for direct bonding • Threaded pin brass and base plate hot-dip galvanised steel 				

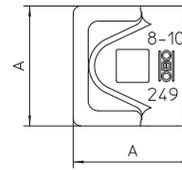


Connection terminal, equipotential bonding, Rd 8-10 mm

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



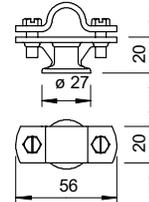
Rod holder for 16 mm air-termination and earth entry rods, galvanised

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



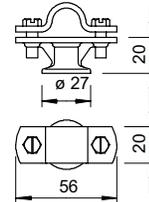
Rod holder for 16 mm air-termination and earth entry rods, copper-plated

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 Ø 7 mm



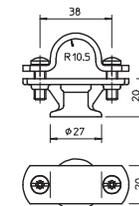
Rod holder

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
113 Z-20	Rd 20	20	8.200	5230527

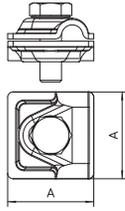
Zn Die-cast zinc

VZ Galvanised

- Installed with over-piece and hex-head screws M6 x 16
- With female thread M8 or through hole Ø 7 mm



Vario quick connector



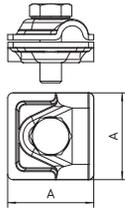
Type	Fit mm	Dimension A mm	Short-circuit current (50 Hz) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 ST	Rd 8-10	40	5.6	H/100	20	10.800	5311500
249 B ST	Rd 8-10	40	5.6	H/100	100	10.800	5311705

St Steel

FI 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

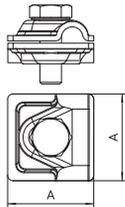


Type	Fit mm	Dimension A mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 ALU	Rd 8-10	44	H/100	30	6.600	5311519
249 B ALU	Rd 8-10	44	H/100	100	7.250	5311713

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

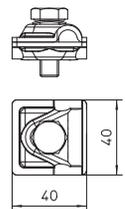


Type	Fit mm	Dimension A mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 VA	Rd 8-10	40	H/100	10	10.700	5311551

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

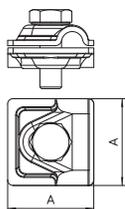


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 V4A	Rd 8-10	H/100	10	9.500	5311404

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	Dimension 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)



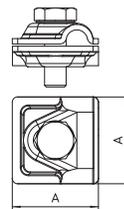
Variable bi-metal quick connector



Type	Fit mm	Lightning current carrying capacity kA	Dimen- 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)



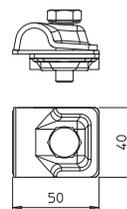
Vario quick connector Rd 8-10x16



Type	Fit mm	Dimen- 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, single

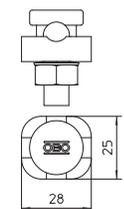


Type	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5001 DIN-FT	H/100	20	7.450	5304105
5001 DIN-FT+VA	H/100	20	7.450	5304107

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

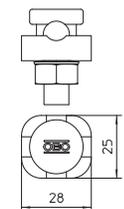


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5001 ZN-CU	Rd 8-10	H/100	10	8.760	5304113

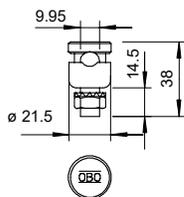
Zn Die-cast zinc

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 with pressure trough



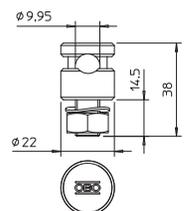
Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5001 N-FT	Rd 8-10	N/50	20	5.900	5304164

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

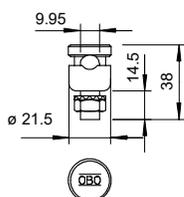


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5001 N-VA	Rd 8-10	N/50	10	6.800	5304176

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

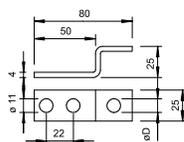


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5001 N-CU	Rd 8-10	H/100	10	6.750	5304172

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)

Connection and end piece



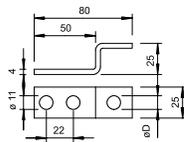
Type	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
5011	11	10	7.064	5304997

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

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)



Cross-connector for flat conductors and round conductors

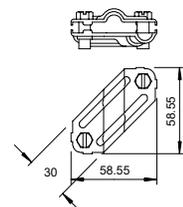


Type	Fit mm	Short-circuit current (50 HZ) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
250	Rd 8-10/FL30	5.6	N/50	25	10.260	5312906

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)



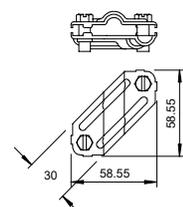
Cross-connector for flat conductors and round conductors



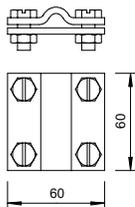
Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
250 VA	Rd 8-10/FL30	H/100	25	10.260	5312922
250 V4A	Rd 8-10/FL30	H/100	10	10.260	5312925

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



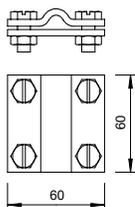
Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10xFL30 FT	8-10 x FL30	H/100	25	28.500	5312655

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

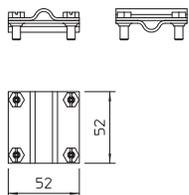


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10xFL30V4A	8-10 x FL30	H/100	10	28.500	5312656

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 Rd 8–10 mm



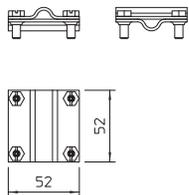
Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
251 8-10	Rd 8-10	H/100	25	11.690	5312035

St 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

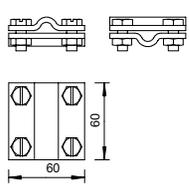


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
251 CU	Rd 8-10	H/100	10	12.400	5312132

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	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 with intermediate plate for Rd 8–10 mm

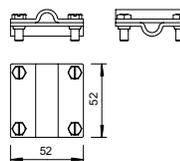


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
254 DIN 8-10 FT	Rd 8-10	H/100	25	16.660	5314038

St 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 adapter plate
- Mounted with 4 hexagonal bolts M6 x 20 and 4 hexagonal nuts M6



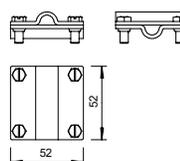
Cross-connector with intermediate plate for Rd 8–10 mm



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
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

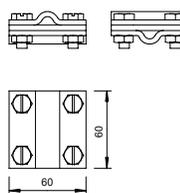


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10 FT	Rd 8-10	H/100	25	33.530	5312310

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)



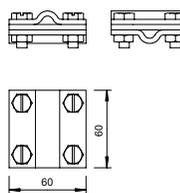
Cross-connector with intermediate plate for Rd 8–10 mm, wide version



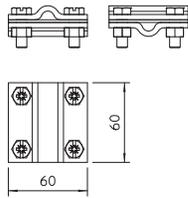
Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10 V4A	Rd 8-10	H/100	10	33.530	5312318

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

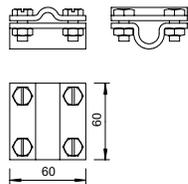


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10 CU	Rd 8-10	H/100	10	38.940	5312418

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

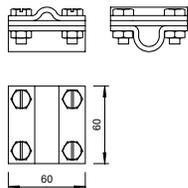


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
253 10X16	Rd 8-10 x 16	H/100	25	29.800	5312809

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

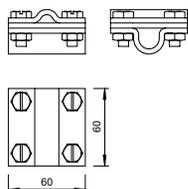


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10X16 FT	Rd 8-10 x 16	H/100	25	38.800	5312345

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



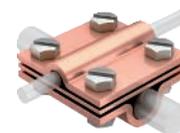
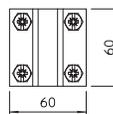
Cross-connector with intermediate plate for Rd 8–10 x Rd 16 mm



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



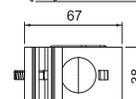
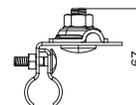
Folding and construction clamp



Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
RSF 249 8-10 VA	Rd 8-10	max. 10	N/50	50	14.200	5317502

V2A Stainless steel, grade 304

- Metal thickness to 10 mm
- For cable routing transverse and in parallel to the plate
- Corresponds to the requirements to DIN V VDE V 0185-3 section 4.5



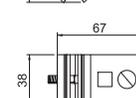
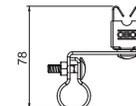
Folding and construction clamp



Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
RSF 177 20 VA M8	8	8	N/50	50	13.400	5317512

V2A Stainless steel, grade 304

- Metal thickness to 10 mm
- For cable routing transverse and in parallel to the plate
- Corresponds to the requirements to DIN V VDE V 0185-3 section 4.5



Folding and construction clamp, 10–20 mm

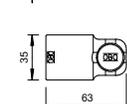
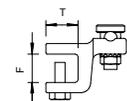


Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5004 DIN-FT 12	Rd 8-10	max. 12	N/50	10	18.730	5304407
5004 DIN-FT 20	Rd 8-10	10 - 20	N/50	10	30.600	5304504

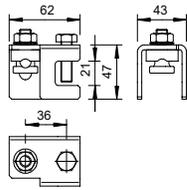
TG Cast iron

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



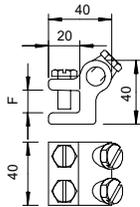
Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5010 20 FT	Rd 8-10	4 - 20	N/50	10	30.600	5304520

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



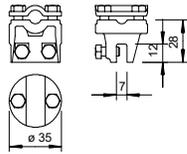
Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
272 8	Rd 8-10	max. 8	N/50	20	22.800	5318084
272 14	Rd 8-10	max. 14	N/50	20	25.230	5318149

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



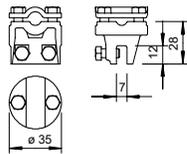
Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
269 8-10	Rd 8-10	max. 7	N/50	20	14.460	5317010

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

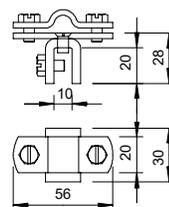


Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
270 8-10 FT	Rd 8-10	max. 10	N/50	20	13.810	5317207

St Steel

FT 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



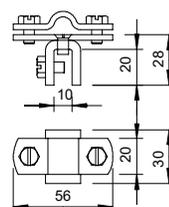
Folding clamp Rd 8-10 up to 10 mm plate thickness



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



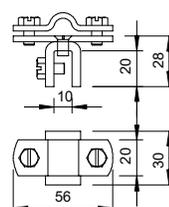
Folding clamp Rd 8-10 up to 10 mm plate thickness



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

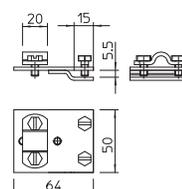


Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
271 8-10	Rd 8-10	max. 5	N/50	20	14.060	5317401

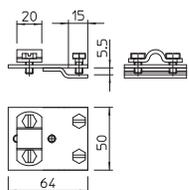
St Steel

FT 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

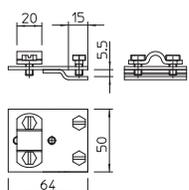
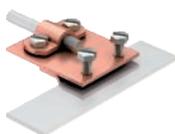


Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
271 8-10 VA	Rd 8-10	max. 5	N/50	10	15.000	5317481

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

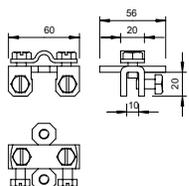


Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
271 CU	Rd 8-10	max. 5	N/50	10	15.230	5317452

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

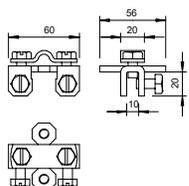


Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
273 8-10	Rd 8-10	max. 10	N/50	50	17.200	5317223

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

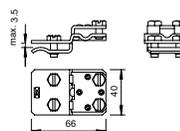


Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
274 8-10	Rd 8-10	max. 10	N/50	20	10.400	5317428

Sl 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)



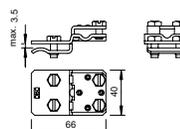
Folding clamp and connection terminal up to 10 mm plate thickness



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)



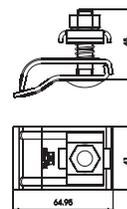
Gutter clamp RK-FIX

Type	Fit mm	Material symbol	Inter- face	Pack. pcs	Weight kg/100 pcs.	Item No.
RK-FIX	2 x Rd 8	St	FT	25	19.100	5316450

Sl 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



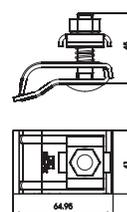
Gutter clamp RK-FIX



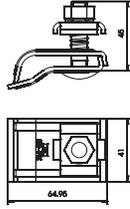
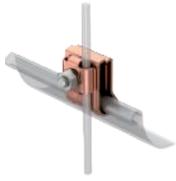
Type	Fit mm	Material symbol	Pack. pcs	Weight kg/100 pcs.	Item No.
RK-FIX VA	2 x Rd 8	V2A	10	19.100	5316459

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



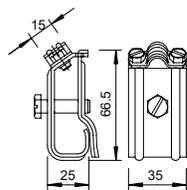
Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
RK-FIX CU	2 x Rd 8	H/100	10	21.000	5316468

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



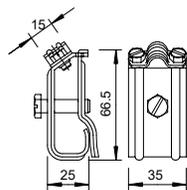
Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
267	Rd 8-10	25	13.950	5316308

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

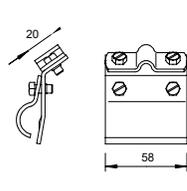


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
267 VA	Rd 8-10	10	11.360	5316324

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



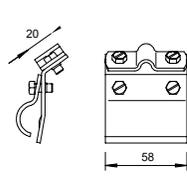
Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
262 A-DIN FT	Rd 8-10	25	19.610	5316219

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	Pack. pcs	Weight kg/100 pcs.	Item No.
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)



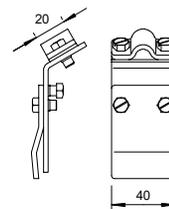
Roof gutter clamp for all bead thicknesses

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
262	Rd 8-10	25	20.300	5316014

St Steel

FT Hot-dip galvanised

- With 4 hexagonal bolts M6 x 16
- Fits all bead thicknesses

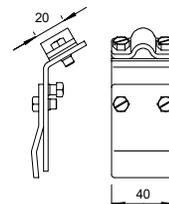


Roof gutter clamp for all bead thicknesses

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
262 CU	Rd 8-10	10	20.940	5316154

Cu Copper

- With 4 hexagonal bolts M6 x 16
- Fits all bead thicknesses



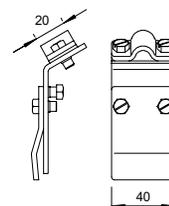
Bi-metal roof gutter clamp for all bead thicknesses

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
262 ZM	Rd 8-10	10	23.100	5316170

St Steel

FT Hot-dip galvanised

- Fits all bead thicknesses
- Bi-metal for attaching round conductors aluminium or steel to roof gutters without corrosion to different metals



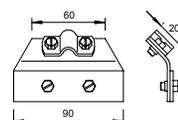
Snow catching grate clamp

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
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

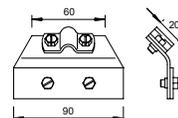


Snow catching grate clamp

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
264 CU	Rd 8-10	10	21.140	5316553

Cu Copper

- Plate thickness to 8 mm
- With 4 hexagonal bolts M6 x 16

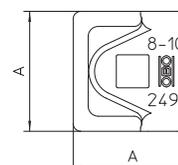


Connection terminal, equipotential bonding, Rd 8–10 mm

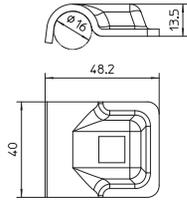
Type	Fit mm	Dimension A mm	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 VA-OT	Rd 8-10	40	100	3.130	5311554

V2A Stainless steel, grade 304

- For round conductor Rd 8-10
- Suitable for M10 bolts



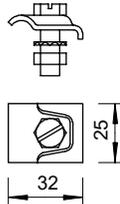
Connection terminal, equipotential bonding, Rd 16 mm



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

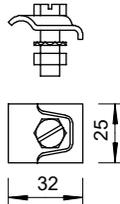
Universal clamping block Rd 8–10 mm



Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
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

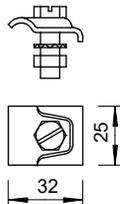
Universal clamping block Rd 8–10 mm



Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
324 S-VA	Rd 8-10	10	3.400	5326311

- V2A Stainless steel, grade 304
- Including hexagonal bolt M8 x 25, washer and nuts

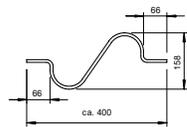
Universal clamping block Rd 8–10 mm



Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
324 S-CU	Rd 8-10	10	3.660	5326338

- Cu Copper
- Including hexagonal bolt M8 x 25, washer and nuts

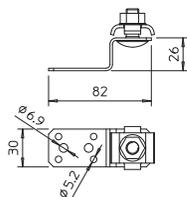
Expansion piece



Type	Pack. pcs	Weight kg/100 pcs.	Item No.
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 kg/100 pcs.	Item No.
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

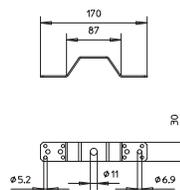


Connection and bridging component

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
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

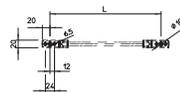


Bridging cable

Type	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
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

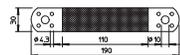


Connection and expansion strip

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
856	10	8.125	5331501

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



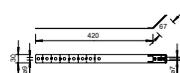
Universal downspout clamp 60–130 mm

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
301 V	5	11.900	5350867

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

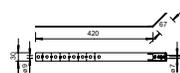


Universal downspout clamp 60–130 mm

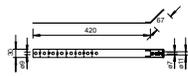
Type	Pack. pcs	Weight kg/100 pcs.	Item No.
301 V-VA	5	11.800	5350905

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



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. pcs	Weight kg/100 pcs.	Item No.
5	13.500	5350883

Downspout clamp for routing Rd 8–10 mm behind pipe



Type

301 S-100

301 S-120

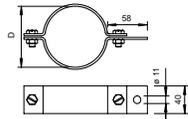
St Steel

FS Strip-galvanised

- With beading
- For round conductor Rd 8-10
- Including hexagonal bolt M6 x 20 and nuts M6

For pipe mm	Pack. pcs	Weight kg/100 pcs.	Item No.
100	10	5.200	5351057
120	10	5.950	5351073

Pipe clamp



Type

303 DIN-3/8

303 DIN-1/2

303 DIN-3/4

303 DIN-1

303 DIN-1 1/4

303 DIN-1 1/2

303 DIN-2

303 DIN-2 1/2

303 DIN-3

303 DIN-3 1/2

303 DIN-4

St 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)

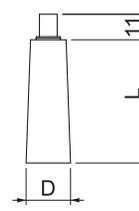
For pipe mm	For pipe inch	Pack. pcs	Weight kg/100 pcs.	Item No.
17.2	3/8	5	22.600	5102057
21.3	1/2	5	23.280	5102073
26.9	3/4	5	25.640	5102081
33.7	1	5	28.300	5102111
42.4	1 1/4	5	31.300	5102138
48.3	1 1/2	5	33.220	5102154
60.3	2	5	36.840	5102197
76.1	2 1/2	10	39.400	5102219
88.9	3	10	43.300	5102235
100	3 1/2	10	64.900	5102251
114.3	4	10	66.800	5102278



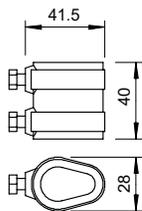
Spacer

Type	Dimension	Pack.		Weight	Item No.
		pcs	kg/100 pcs.		
196 55	55mm	20	1.840		5207541

Grey plastic extension for M8 thread, e.g. to mount cable brackets



Separating piece, open

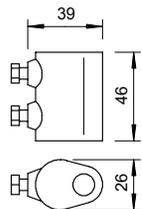


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
223 O DIN ZN	Rd 8-10/16	20	12.500	5335140

Zn Die-cast zinc
G Electrogalvanised

- With 2 hexagonal bolts, stainless steel (VA)
- Clamping element, die-cast zinc

Separating piece, closed

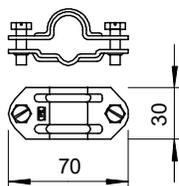


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
223 DIN ZN	Rd 8-10/16	20	10.500	5335205

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)

Universal separating piece

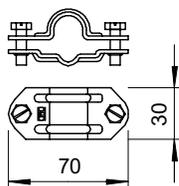


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
226 8-10	Rd 8-10/FL30 x 16	20	8.600	5336007

St Steel
Fl 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)

Universal separating piece

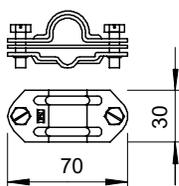


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
226 VA	Rd 8-10/FL30 x 16	10	8.700	5336058

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)

Universal bi-metal separating piece



Type	Fit mm	Material upper part	Material lower part	Pack. pcs	Weight kg/100 pcs.	Item No.
226 VA 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

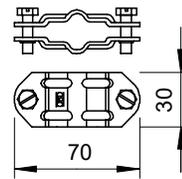
Separating piece for Rd 8–10 and FL 30 mm

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
233 8	Rd 8-10/FL30 x Rd 8-10/FL30	20	8.200	5336309

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

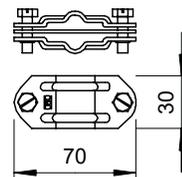


Bi-metal separating piece for Rd 8–10 and FL 30 mm

Type	Fit mm	Material upper part	Material lower part	Pack. pcs	Weight 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

- 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

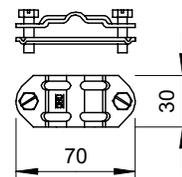


Separating piece for Rd 8–10 and FL 30–40 mm

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
233 A VA	8-10xFL30-40	10	8.300	5336457

V2A Stainless steel, grade 304

- Fit: Rd 8-10 x FL 30-40
- With 2 hexagonal bolts M8 x 20 (VA)

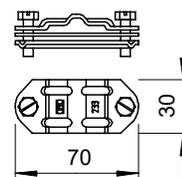


Bi-metal separating piece for Rd 8–10 and FL 30–40 mm

Type	Fit mm	Material upper part	Material lower part	Pack. pcs	Weight kg/100 pcs.	Item No.
233 A ZV	Rd 8-10 x FL30-40	Cu	VA	10	10.400	5336503

Cu Copper

- 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



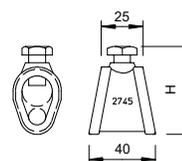
Connection clamp for earth rod or cables

Type	For earth rods Ø mm	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2745 20 MS	20	7-12,5/S95 mm ²	5	16.000	5001560

CuZn Brass

Cu Copper-plated

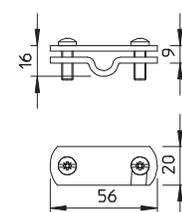
- For earth rod connectors Ø 20 or conductors 95 mm²
- For round conductor attachments Rd 7-12.5 with hexagonal bolts M10 x 25, copper (Cu)



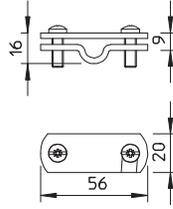
Number plates

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
311 N-ALU 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)



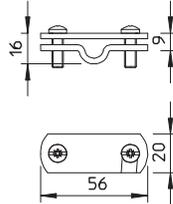
Number plates



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)

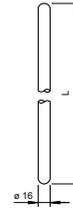


Air-termination/earth entry rod, rounded-off on both ends

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
- Both ends rounded

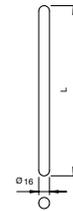


Air-termination/earth entry rod, rounded-off on both ends

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
- Both ends rounded



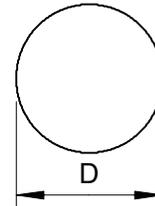
Connection lug/earth entry rod made of stainless steel



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)

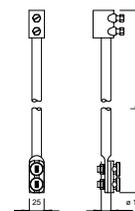


Earth entry rod with separating piece and connector

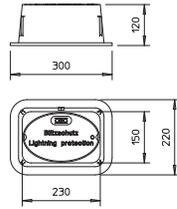
Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
204 KL-1500	Rd 8-10	10	260.700	5430151

Sl Steel

- With separating piece type 223 DIN and connector type 5002 DIN



Underfloor test box



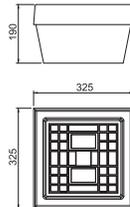
Type
5700

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 kg/100 pcs.	Item No.
1	720.000	5106002

Underfloor test box



Type

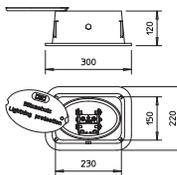
5700 CIP

BET Concrete

- Made of concrete
- Without separating piece
- According to VDE 0185-561-5 (IEC 62561-5)

Pack. pcs	Weight kg/100 pcs.	Item No.
1	3,000.000	5106041

Inspection pit with integrated separation piece



Type

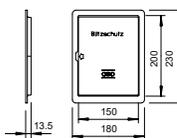
5700 SP

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 kg/100 pcs.	Item No.
1	770.000	5106003

Inspection door



Type

5800 VZ

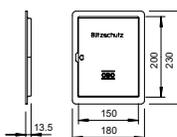
SI Steel

FS Strip-galvanised

- Lightweight design for flush-mounted separation points
- Claw length approx. 80 mm

Pack. pcs	Weight kg/100 pcs.	Item No.
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 kg/100 pcs.	Item No.
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)

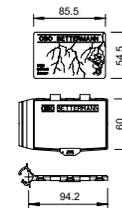


Magnetic card and holder MK-B

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

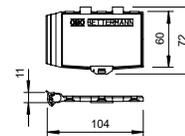


Magnetic card holder PCS-H

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



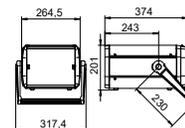
Card reader PCS-CS..



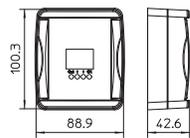
Type	Country version	Nom. voltage V	Measuring range	Measuring tolerances	Pack. pcs	Weight kg/100 pcs.	Item No.
PCS-CS-D	EN	230	3 -- 120 kA	< 2 kA (< 2%)	1	750.000	5091683

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



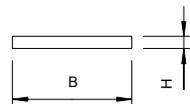
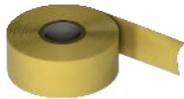
Type	Measuring range	Pack. pcs	Weight kg/100 pcs.	Item No.
LSC I+II	1 kA - 100 kA	1	32.500	5091722

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)

Plastic corrosion protection strip

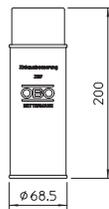


Type	Width mm	Length m	Pack. pcs	Weight kg/100 pcs.	Item No.
356 50	50	10	1	71.500	2360055

PETRO Petrolatum

- Approx. 1.1 mm thick
- Width: 50 mm or 100 mm, made of petrolatum-coated chemical fibre fabric
- Can be processed cold

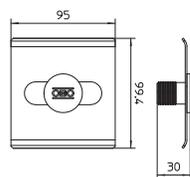
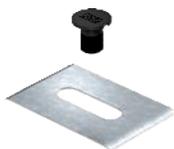
Zinc repairs



Type	Dimension	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.

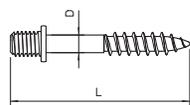
TrayFix mounting adapter for mesh cable trays on FangFix system



Type	Dimension	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

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

- Si** Steel
- G** Electrogalvanised

With wood screw shank and M6 thread.

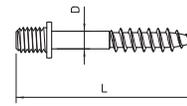
Screw-in anchor with M8 thread



Type	Wood thread	Shipping	Pack.	Weight	Item No.
	outer-Ø	box			
985 M8 35	6	1200	100	1.288	3133230

- St** Steel
- G** Electrogalvanised

With wood screw shank and M8 thread.

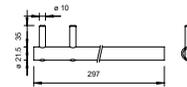


Directional irons

Type	Length	Pack.	Weight	Item No.
	mm			
364	297	1	35.000	3051013

- St** Steel
- FT** Hot-dip galvanised

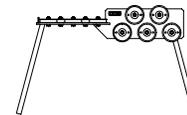
• Directional iron for bending and aligning conductors



Wire straightening machine

Type	Pack.	Weight	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



Straightening roller for wire straightening machine

Type	Pack.	Weight	Item No.
5900 R	1	120.000	3059014

5900/R: For wire straightening machine 5900, complete with axis, roller made of galvanised cast iron





Insulated lightning protection



Insulated lightning protection

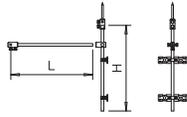
418



OBO isCon® system

424

Insulated lightning protection set, 3-corner fastening

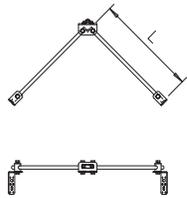


Type	Dimen- sion D Ø mm	Dimen- sion L mm	Dimen- sion H mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 3-ES-16	16	750	1500	1	207.100	5408976

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

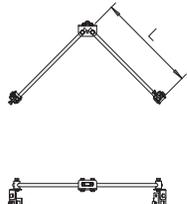


Type	Dimen- sion D Ø mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 VS-16	16	750	1	201.800	5408978

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

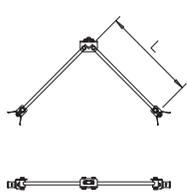


Type	Dimen- sion D Ø mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 FS-16	16	750	1	235.500	5408980

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	Dimen- sion D Ø mm	Dimen- sion 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.

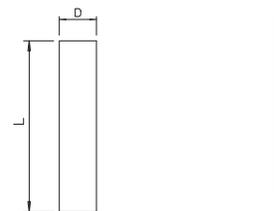
- Mounting on pipes with two pipe clips
- Including 2 m tightening strip and tension jack
- For maintenance of the separation distance to electrically conductive parts according to VDE 0185-305-3 (IEC 62305-3)
- Acceptance of air-termination rods and round conductors with 8, 16 and 20 mm diameter
- UV-stabilised 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 $k_m = 0.7$

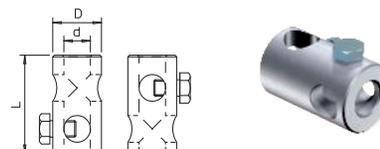


T connector

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

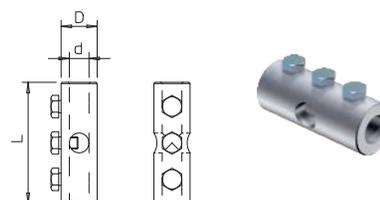


K connector

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

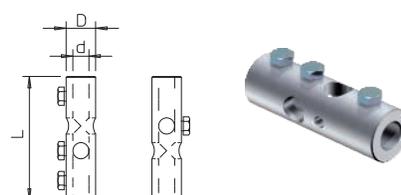


DK connector

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

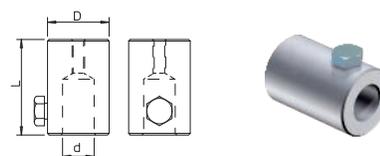


Wall connection

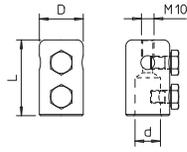
Type	Dimension d Ø mm	Length mm	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 IW-M10	20	60	40	10	20.000	5408687
101 W-16	16	60	30	10	14.200	5408689

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

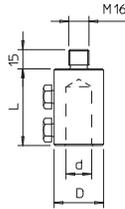


Type	Dimension d Ø mm	Length mm	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 IES	20	60	35	10	20.000	5408393
101 IES-16	16	60	30	10	10.000	5408395

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

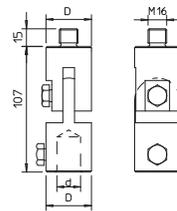


Type	Dimension d Ø mm	Length mm	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 A-M16	20	60	40	10	20.000	5408350
101 A-16	16	60	30	10	13.000	5408352

Alu Aluminium

- Fitting with M16 thread
- For mounting on stands with M16 female thread such as type 101 (5402891,5402958)
- With M10 bolts

Connection joint

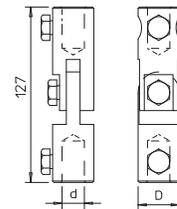


Type	Dimension d Ø mm	Length mm	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 IAG	20	107	40	10	40.000	5408504

Alu Aluminium

- Attaching link for installation on concrete stones
- With thread M16 on slanting roof surfaces
- With M10 bolts

Articulated connector

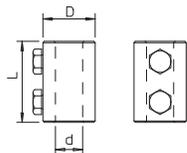


Type	Dimension d Ø mm	Length mm	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 IGL-16	16	127	30	10	32.000	5408630

Alu Aluminium

Link for installation of insulation pipes, including M10 screws.

Extension

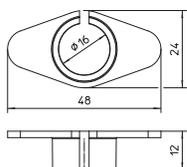


Type	Dimension d Ø mm	Length mm	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 IV-16	16	60	30	10	16.000	5408557

Alu Aluminium

- Extension of insulating rods
- With M10 bolts

FangFix reducing sleeve



Type	Fit Colour	mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 RH-16	Black	16	25	0.182	5408101

PA Polyamide

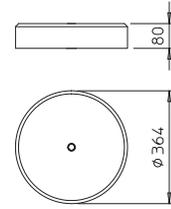
Reduces the drill hole of the FangFix block from Ø 20 mm to Ø 16 mm. Suitable for the installation of GFK insulating rods of Ø 16 mm.

Concrete block for FangFix-System 16 kg

Type	Nominal size Ø 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

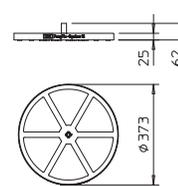


Base for FangFix system 16 kg

Type	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
F-FIX-B16	373	10	16.400	5403235

PP Polypropylene

Edge protection with integrated dowel (basic) suitable for FangFix system.

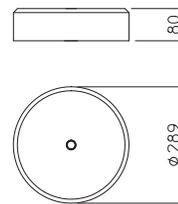


Concrete block for FangFix system 10 kg

Type	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	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

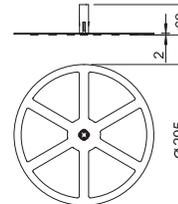


Base for FangFix system 10 kg

Type	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
F-FIX-B10	295	10	7.600	5403124

PP Polypropylene

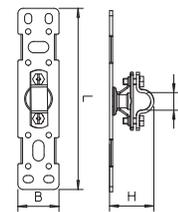
Edge protection with integrated dowel (basic) suitable for FangFix 10 system.



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

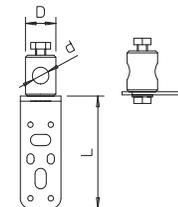


Wall connection, angled

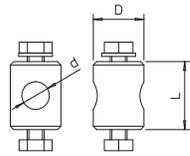
Type	Dimen- sion d mm	Dimen- sion L mm	Dimen- sion D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 WG-16	16	110	30	1	27.960	5408986

V2A Stainless steel, grade 304

- Wall connection for GFK rods
- Dimension D Ø: 16 mm



Fastening bolts

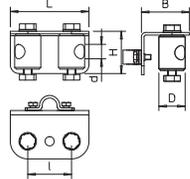


Type	Dimension d mm	Dimension L mm	Dimension D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 BB-16	16	40	30	1	13.920	5408988

Alu Aluminium

For GFK rods, Dimension D Ø: 16 mm

Holder, V support

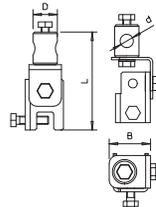


Type	Dimension d mm	Dimension L mm	Dimension H mm	Dimension B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 HV-16	16	90	55	48	1	50.700	5408990

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

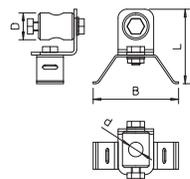


Type	Dimension d mm	Dimension L mm	Dimension D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 F-16	16	121	30	1	45.120	5408992

V2A Stainless steel, grade 304

To fasten a GFK rod on constructions of 4 to 20 mm, Dimension D Ø: 16 mm

Pipe fastening

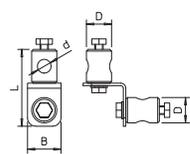


Type	Dimension d mm	Dimension L mm	Dimension D mm	Dimension B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 R-16	16	81	30	96	1	26.830	5408994

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

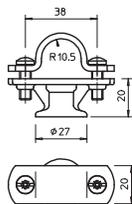


Type	Dimension d mm	Dimension L mm	Dimension D mm	Dimension B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 MA-16	16	91	30	40	1	36.280	5408996

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

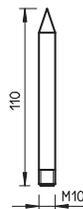
- Installed with over-piece and hex-head screws M6 x 16
- With female thread M8 or through hole Ø 7 mm

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

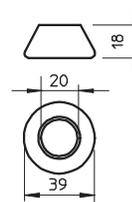


Water repellent

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)

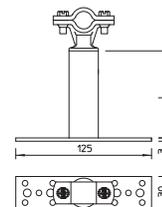


Insulated spacer

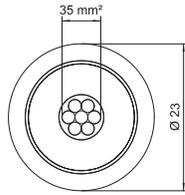
Type	Length mm	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
ISO-A-500	500	Rd 16	15	36.000	5408806
ISO-A-800	800	Rd 16	15	55.000	5408814
ISO-A-1030	1030	Rd 16	15	68.000	5408820
ISO-A-150 8	150	Rd 8	15	13.800	5408800

Alu Aluminium PA Polyamide

- Mounting foot with 10 connection holes Ø 6.5 mm and 4 connection holes Ø 8.5 mm
- Type ...150 8 with holder suitable for round conductor RD 8
- Application for shelters e.g. golf, barbecue or mountain huts



isCon® arrester, professional plus black

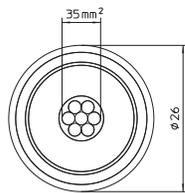


Type	Cross-section mm ²	Nominal size Ø mm	Equivalent separation distance m	Pack. m	Weight kg/100 m	Item No.
isCon Pro+ 75 SW	35	23	0.75	25	69.400	5408002
isCon Pro+ 75 SW	35	23	0.75	100	69.400	5408004
isCon Pro+ 75 SW	35	23	0.75	250	69.400	5408006

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

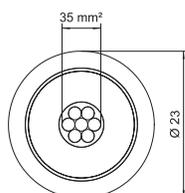


Type	Cross-section mm ²	Nominal size Ø mm	Equivalent separation distance m	Pack. m	Weight kg/100 m	Item No.
isCon Pro+ 75 GR	35	26	0.75	25	86.800	5407995
isCon Pro+ 75 GR	35	26	0.75	100	86.800	5407997

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

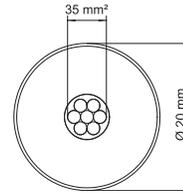
isCon® conductor, professional black



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 $se \leq 0.75$ m (air) and $se \leq 1.5$ m (solid material)
- Tested according to IEC TS 62561-8
- Halogen-free
- Fire load 3.3 kWh/m



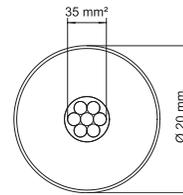
isCon® conductor, basic black



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 $se \leq 0.45$ m (air) and $se \leq 0.90$ m (solid material)
- Tested according to IEC TS 62561-8
- Halogen-free
- Fire load 3.3 kWh/m



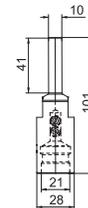
isCon®-Connection element



Type	Dimension 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)

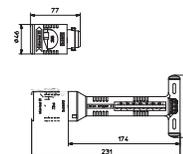


Stripping tool for isCon conductor

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.



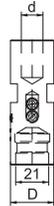
isCon cut stripping tool



Type	Dimension	Pack.	Weight	Item No.
		pcs	kg/100 pcs.	
isCon cut	34mm	5	1.200	5408011

- Replacement blade for replacing the isCon® stripping pliers

Connection element for installation in the insulated air-termination rod isFang IN

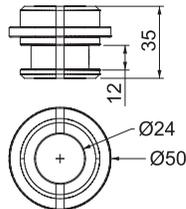


Type	Dimension D Ø mm	Lightning current carrying capacity kA	Pack.	Weight	Item No.
			pcs	kg/100 pcs.	
isCon IN con 2	20	H1/150	1	27.800	5408019
isCon IN con PRE	23	H2/200	1	27.800	5408020

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

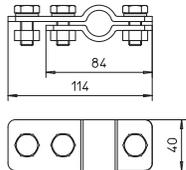


Type	Dimension D Ø mm	Dimension d mm	Dimension L mm	Pack.	Weight	Item No.
				pcs	kg/100 pcs.	
isCon IN PAE	23	49.9	35	1	5.900	5408031

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

Potential connection



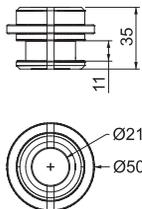
Type	Fit mm	Pack.	Weight	Item No.
		pcs	kg/100 pcs.	
isCon PAE	Ø 17-25mm	2	36.500	5408036

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.	Weight	Item No.
				pcs	kg/100 pcs.	
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

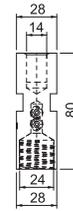
Connection element for installation in the insulated air-termination rod isFang IN



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)

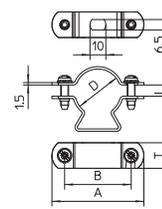


VA cable bracket for isCon® conductor for mounting on roof/wall structures

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



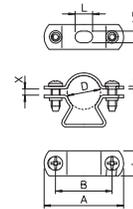
Conductor and pipe spacer clip 733 V2A



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

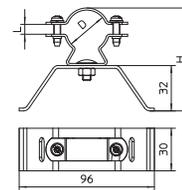


VA cable bracket with tightening strap

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

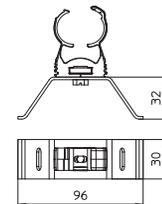


PA cable bracket with tightening strap

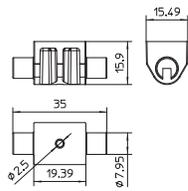
Type	Colour	Dimension Ø mm	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isCon HS 26 PA	Light grey	Ø 26mm	26	10	23.200	5408066

PA Polyamide

For isCon® conductor for pipe mounting including 2 m tightening strap.



Universal flat conductor adapter for roof conductor holder, type 165/MBG

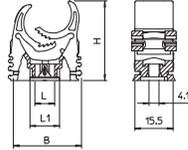


Type	Colour	Fit	Pack. pcs	Weight kg/100 pcs.	Item No.
165 MBG UH	Black	Rd 8	25	0.254	5218882

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

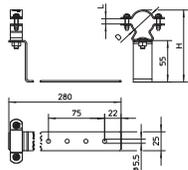


Type	Clamping range D mm	Pull-out value N	Colour	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
M-Quick M32 LGR	25 - 32	60	Light grey	600	50	1.390	2153734

PA Polyamide

- Multi-quick metric
- Simple fastening
- Secure locking
- Radial arrangement
- Simplified storage
- Universally applicable

VA roof conductor holder, sloping roof

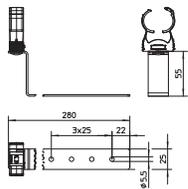


Type	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isCon H280 VA	55	25	16.100	5408047
isCon H280 26 VA	55	25	16.900	5408074

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

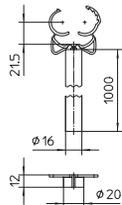


Type	Colour	Dimension	Pack. pcs	Weight kg/100 pcs.	Item No.
isCon H280 PA	Black	280mm	25	13.950	5408049
isCon H280 26 PA	Light grey	280mm	25	14.060	5408072

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



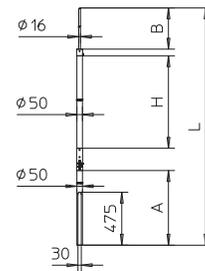
Type	Dimension D Ø mm	Dimension A mm	Dimension H mm	Dimension B mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang IN-A 4000	50	1325	1500	1000	4000	1	535.000	5408938
isFang IN-A 6000	50	3325	1500	1000	6000	1	835.000	5408940
isFang IN-A 8000	50	5335	1500	1000	8000	1	1,385.000	5408888
isFang IN-A10000	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



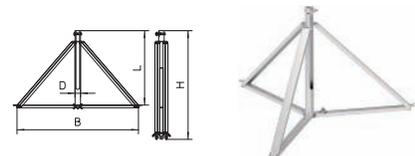
isFang air-termination rod stand with side exit



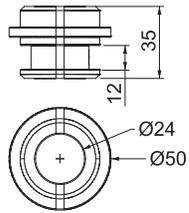
Type	Dimension B mm	Dimension D Ø mm	Dimension L mm	Dimension H mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang 3B-100-A	1026	50	600	885	1	610.000	5408930
isFang 3B-150-A	1500	50	900	1275	1	950.000	5408932
isFang 3B-250-A	2900	50	1450	2055	1	2,500.000	5408902

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

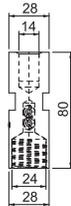


Type	Dimension D Ø mm	Dimension d mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isCon IN PAE	23	49.9	35	1	5.900	5408031

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

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)

Insulated air-termination rod



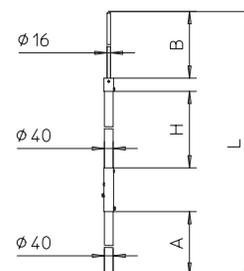
Type	Dimension A mm	Dimension H mm	Dimension B mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang 4000 AL	1240	1500	1000	4000	1	580.000	5408943
isFang 6000 AL	3340	1500	1000	6000	1	600.000	5408947
isFang 4000	1240	1500	1000	4000	1	680.000	5408942
isFang 6000	3340	1500	1000	6000	1	680.000	5408946

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



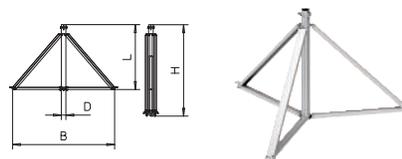
isFang air-termination rod stand



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.

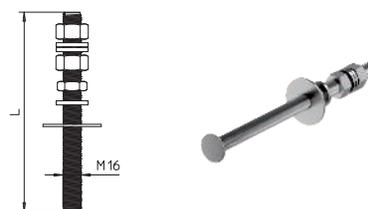


isFang-3B threaded rod

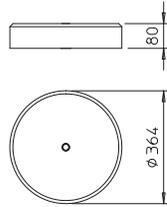
Type	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang 3B-G1	270	3	48.000	5408971
isFang 3B-G2	340	3	60.400	5408972
isFang 3B-G3	430	3	69.500	5408973
isFang 3B-G4	500	3	75.000	5408905

V2A Stainless steel, grade 304

- For fastening on one, two, three or four FangFix concrete bases with tripod stand



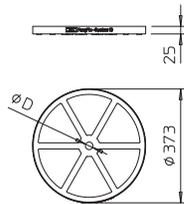
Concrete block for FangFix-System 16 kg



Type	Nominal size Ø mm	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

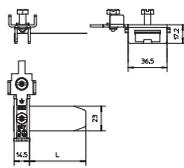
Base for FangFix system 16 kg for mounting the isFang tripod



Type	Nominal size Ø mm	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
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

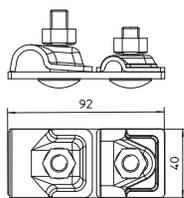
Potential connection clamp for mounting on isFang



Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
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.

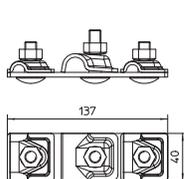
Connection plate for one isCon® conductor



Type	Dimension	Pack. pcs	Weight kg/100 pcs.	Item No.
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	Pack. pcs	Weight kg/100 pcs.	Item No.
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	Pack. pcs	Weight kg/100 pcs.	Item No.
565 7.6x380 SWUV	7.6	380	1.8	105	Black	100	0.533	2331924
PA Polyamide								

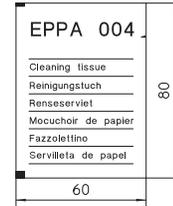
Cable ties are used for quick, uncomplicated fixing or bundling of cables and pipes to cable support systems or other mounting structures.

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

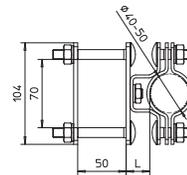


isFang support for corner pipe mounting, 50 x 50 mm

Type	Dimen- sion D Ø mm	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.

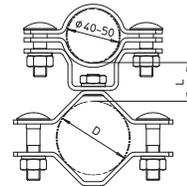


isFang support for pipe mounting, \varnothing 50–60 mm

Type	Dimen- sion D Ø 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.

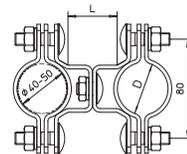


isFang support for pipe mounting, \varnothing 40–50 mm

Type	Dimen- sion D Ø 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.

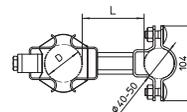


isFang support for spaced pipe mounting, \varnothing 50–300 mm

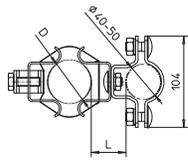
Type	Dimen- sion D Ø mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang TR100 100	300	100	2	95.500	5408955
isFang TR100 200	300	200	2	121.000	5408957
isFang TR100 300	300	300	2	146.000	5408959

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

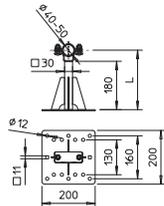


Type	Dimension D Ø mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang TR100	300	40	2	77.000	5408956

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 ø 50–300mm.

Support for wall mounting, 200 mm spacing

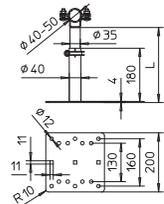


Type	Dimension D Ø mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang TW200 12	50	200	2	240.000	5408910

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 wall mounting, 200–300 mm spacing

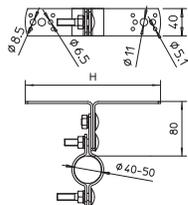


Type	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang TW200	300	2	230.000	5408954

V2A Stainless steel, grade 304

Fastening clip to fasten the insulated support pipes on the structure to be protected or on the wall.

isFang support for wall mounting, 80 mm spacing

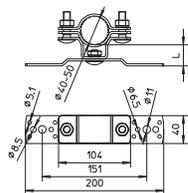


Type	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang TW80	80	2	63.000	5408950

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, 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.

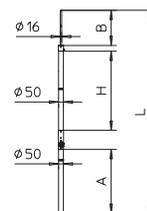
Insulated air-termination rod for inner-routed isCon conductor



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

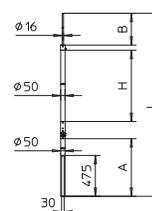
isFang, insulated air-termination rod for inner-routed isCon conductor with side exit

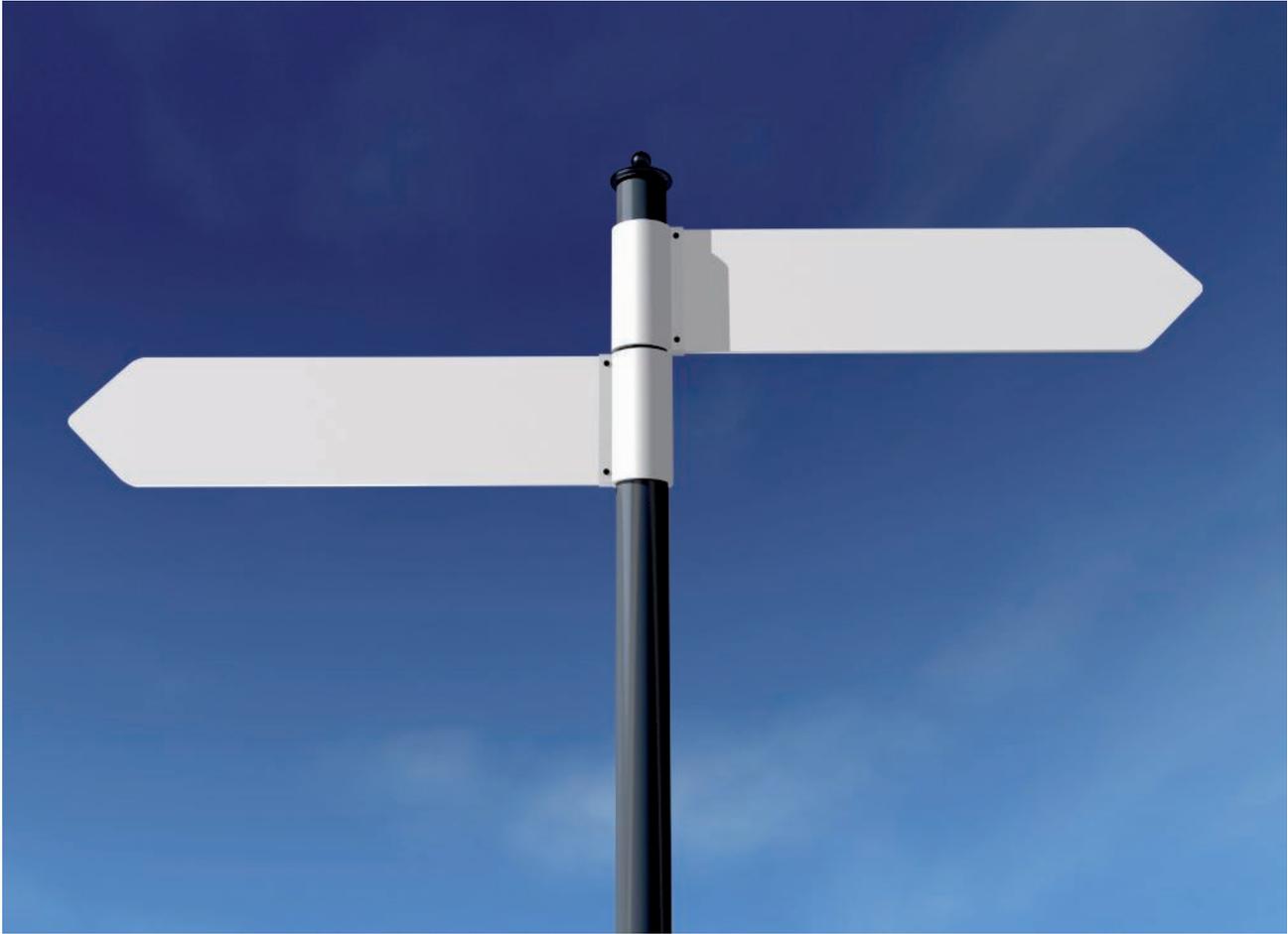


Type	Dimension D Ø mm	Dimension A mm	Dimension H mm	Dimension B mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang IN-A 4000	50	1325	1500	1000	4000	1	535.000	5408938
isFang IN-A 6000	50	3325	1500	1000	6000	1	835.000	5408940
isFang IN-A 8000	50	5335	1500	1000	8000	1	1,385.000	5408888
isFang IN-A 10000	50	6000	1733	2000	10000	1	1,540.000	5408890
isFang IN-A L4	50	1325	1500	1000	4000	1	535.000	5408874
isFang IN-A L6	50	3325	1500	1000	6000	1	835.000	5408876
isFang IN-A L8	50	5335	1500	1000	8000	1	1,385.000	5408878
isFang IN-A L10	50	6000	1733	2000	10000	1	1,540.000	5408880
isFang IN L4	50	1325	1500	1000	4000	1	535.000	5408854
isFang IN L6	50	3325	1500	1000	6000	1	835.000	5408856
isFang IN L8	50	5335	1500	1000	8000	1	1,350.000	5408858
isFang IN L10	50	6000	1733	2000	10000	1	1,540.000	5408860

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)





Directories



Numeric directory

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Type listing

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5432494	1167022	333	5376996	5009235	344	5381976	5021308	337	6415687	5081984	214	6159659	5093518	38
5432555	1167030	333				5067474	5021332	337	6415694	5081990	235	6159666	5093522	39
5432616	1167049	333		/100 pc.		5382034	5021480	338				6159680	5093524	41
5116837	1362046	427	6190386	5012010	132	5382096	5021502	338	5685333	5082382	239	6159697	5093526	42
5741671	2153734	428		/pc.		6282425	5021640	337	6415717	5082430	237	6159703	5093531	40
6417353	2331924	432	5377894	5014018	355	5902058	5021642	337	6415724	5082432	236	6159710	5093533	43
6421046	2360041	353	5377955	5014026	355	5680574	5021644	337	6415731	5082434	238	6398447	5093540	44
6421053	2360043	353	5378013	5014212	354	5680581	5021647	337				6398461	5093542	46
5230533	/pc. 2360055	359	5901938	5014425	352	6431199	5021830	362	5022978	5083400	233	6398454	5093546	45
5518419	2362970	414	5105015	5014468	353				5525134	5084008	218	6398508	5093548	47
5242710	3041204	340	6391059	5014469	353	5383833	/100 pc. 5032032	356	5525196	5084012	218	6398515	5093552	48
5242772	3041212	340	5105077	5014476	353	5383895	5032040	356	5525257	5084016	218	6398522	5093554	50
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5717492	3043312	341	5378075	5015014	321	5384137	5032539	356	5525431	5084028	217	5478546	5093623	196
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5642312	3043908	341	5378259	5015073	320	5384434	5033039	357	5525615	5084040	219	5361916	5093643	58
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5921738	5096812	314	5399971	5102111	406	5952213	5218977	384	5418214	5312418	348	5423614	5335205	408
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5480792	5096839	32	5400158	5102197	406				5418337	5312604	347	5424338	5336058	408
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5613572	5403330	368	6647873	5408860	374			
5813903	5403333	368	6219391	5408868	374			
5670735	5403335	368	6219407	5408870	374			
	/100 pc.		6647804	5408874	374			
5428657	5405068	365	6647811	5408876	374			
5428718	5405769	369	6647828	5408878	374			
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