

TBS BSS



Transient and lightning protection systems

Fire protection systems

Belgium

2019/2020

Building Connections

OBO
BETTERMANN



Contact
Customer Service
+32 (0)3 870 74 00

+32 (0)3 887 40 00

info@obo.be
www.obo.be





Transient and lightning protection systems



Surge protection systems, protection and isolating spark gaps, equipotential bonding systems, earthing systems, interceptor and systems, insulated lightning protection

see page 21



Fire protection systems



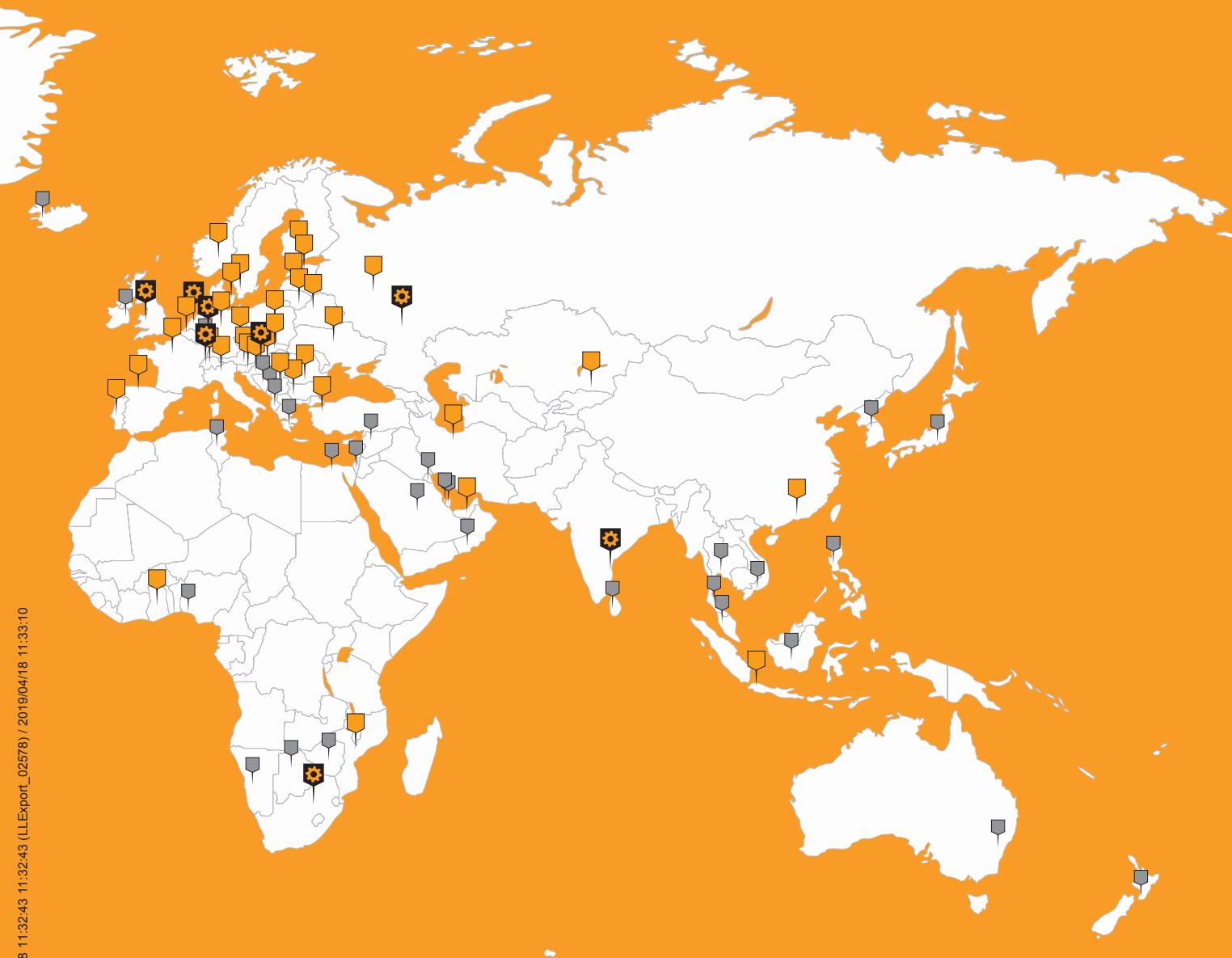
Insulation, escape route installations, fire protection ducts, cable bandages, function maintenance systems

see page 265



Welcome to the World of OBO

New solutions to improve functionality and the ease of installation – OBO employees all around the world use their knowledge, experience and creativity to make this happen. Because we know that each individual market has its special characteristics and that the requirements for our products change within each market, we have paid particular attention to the compatibility of products in their Country of use. We always offer our customers intelligent, smart solutions. Our brands always keep this promise. The OBO global team wishes to make the work of electrical planners and operatives around the world as easy as possible.



-  Production location
-  Subsidiary
-  Representative office

OBO
BETTERMANN



Building Connections

Operating globally OBO Bettermann is proud to be a family owned business. The core of our success is based on mutual trust and the committed interaction between our employees, our customers and suppliers alike. We stand by these connections and it is the benchmark of our everyday activities and is supported by all employees within the OBO Group. Our aim is to be your first port of call for the most innovative connections for electrical and data technology infrastructure.

Through continuous investment, research & development we continue to grow offering innovative, quality products. We embrace change and look to create effective, modern electrical installation products that integrate discreetly into the architecture of a building.

We use the latest digital technology to expand links between countries in many ways between both people and products to overcome distance and cultural barriers. At the heart of the business is the solution motif:

Conducting Electricity, Routing Data & Controlling Energy.

since 1977

Ohne BÖhren – OBO

The first metal OBO anchor gave the company, 40 years after its foundation, the additional name OBO – ohne Bohren (without drilling). Up to that point, it was accepted that an anchor had to be drilled into the wall. However, an OBO engineer had a groundbreaking idea: He developed a metallic anchor, the innovative construction of which permitted it to be knocked directly into the wall without any drilling.

This was a huge mounting advantage, considerably simplifying the work of the tradesmen of the time and, as such, becoming one of the biggest milestones in the history of the company.

Only the continuous dedication and spirit of innovation of each individual employee has made it possible to expand the product range to more than 30,000 products today.



Service

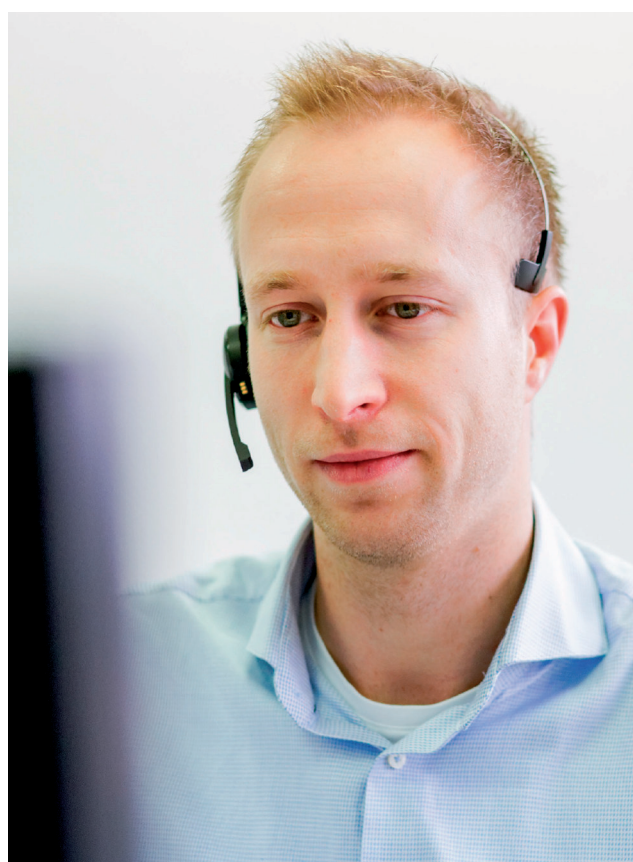
OBO Bettermann has both sales & manufacturing companies placed strategically around the globe to ensure we can guarantee the highest possible customer service levels locally. We provide competent regional advice, reliability and approachability creating a high level of acceptance and credibility leading to long standing working partnerships. Our aim is to continually align our company to the requirements of the current marketplace.

Reliability

Operating in more than 60 countries allows us to give consistent customer service. With local stock and continuous improvement to manufacturing techniques our business locations ensure that we have the local knowledge and products in the right place at the right time.

Flexibility

We strive for the best possible transparency for all of our divisions and companies within the OBO Bettermann Group. All of our objectives, processes and data are continually measured, assessed and if required improved upon. We listen to our local businesses as we understand that the needs for their local market may differ greatly from ours and we both encourage and support them fully.



Discover the world of OBO systems

OBO systems provide connections. The high production depth and strong process automation make it possible to deal with the enquiries and requirements of our customers in a flexible and targeted manner.

Reliable, safe and of the highest quality: Product features such as installation speed, load capacity, functionality, availability and safety are at the forefront of every innovation.

Discover the world of OBO systems.



Connection and fastening systems



Transient and lightning protection systems



Cable support systems



Fire protection systems



Cable routing systems



Device systems

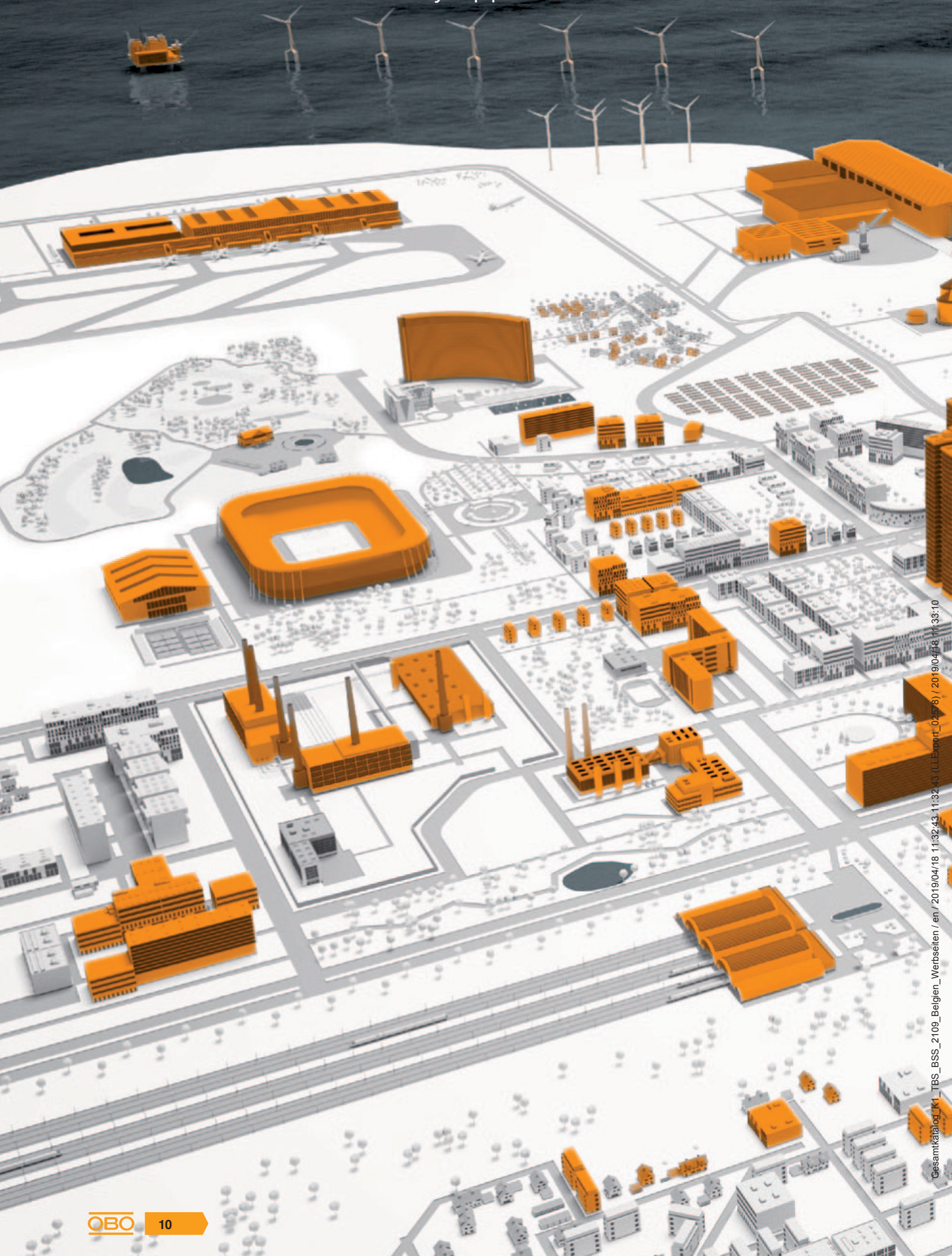


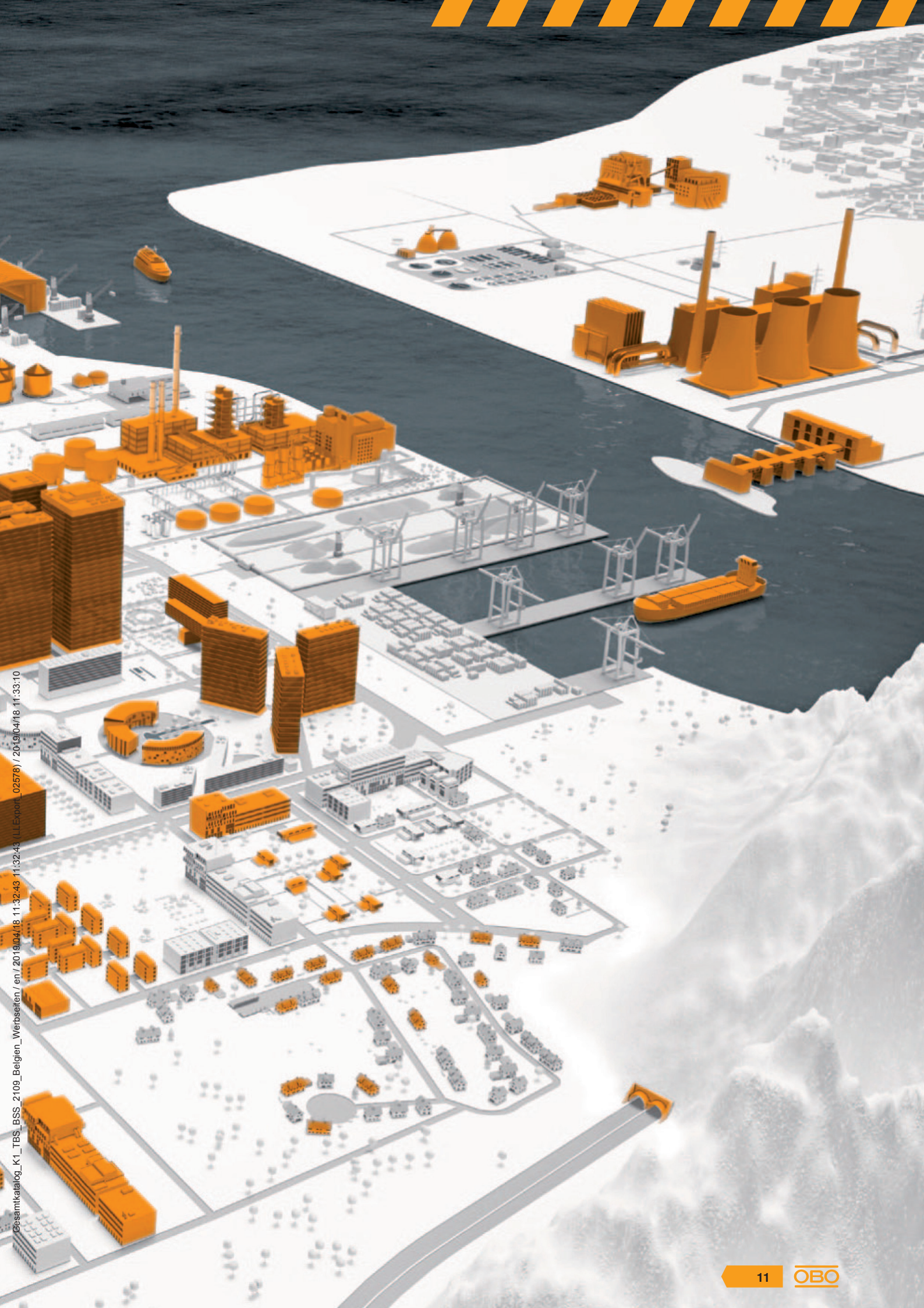
Underfloor systems





We offer solutions for every application



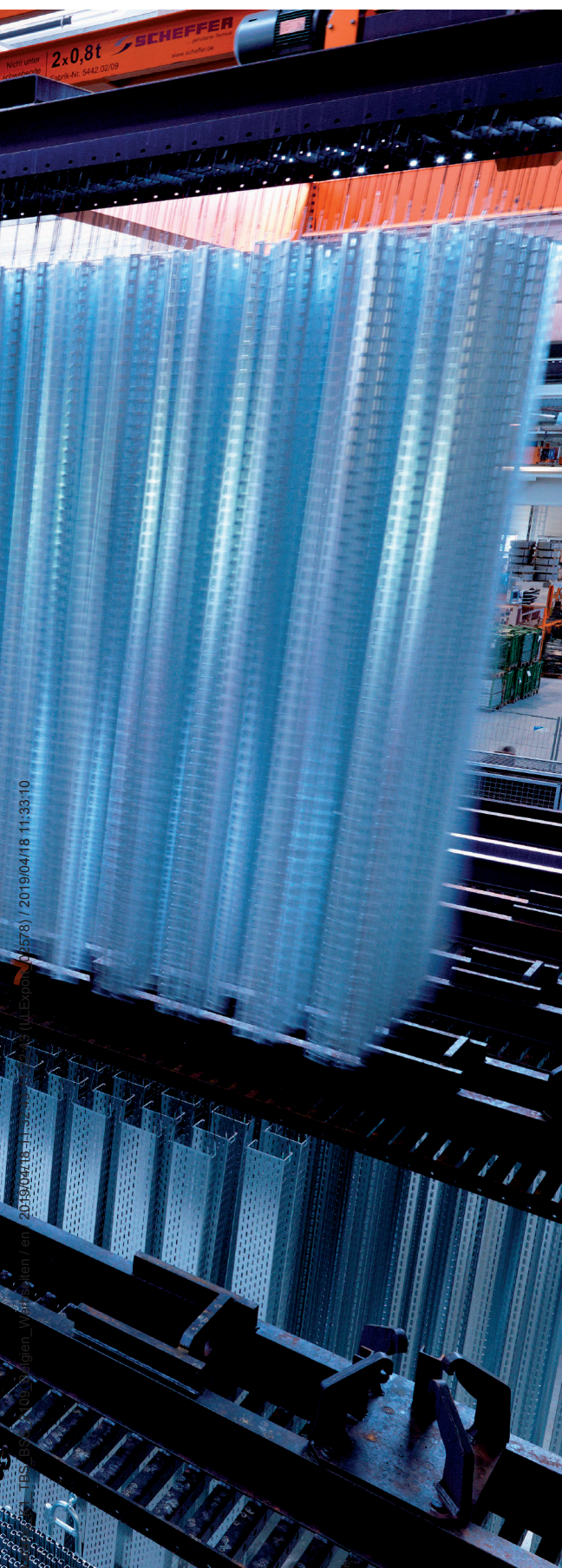


Welcome to one of Europe's most advanced galvanising plants



At its Menden facilities, OBO operates one of Europe's most advanced hot galvanising plants. The zinc bath at the plant is 7.5 metres long, 3.5 metres deep and 1.4 metres wide, and contains up to 260 tons of zinc. The latest filter technologies and heat exchangers ensure that the production process uses resources such as gas, electricity, zinc and acid sustainably.

Hot galvanising means applying a metallic zinc coating to iron or steel. Individual parts, such as those used for electrical cable trays, are immersed in molten zinc at 450 degrees Celsius. A resistant alloy forms which provides protection against corrosion. OBO's unique way of treating galvanised goods, called 'passivation', prevents the formation of white rust.



BET Test Centre

Where raw forces can be used sensibly.

**BET
TESTED**



Tested quality

The in-house BET Test Centre continually monitors and tests the quality of OBO products. Here, OBO simulates the loads that for example the mesh cable tray systems have to withstand on a constant basis. We determine the maximum load capacity and carrying capacity of the system, as well as its resistance to corrosion. We are able to prove standardised testing of EMC properties using test reports. In other words, OBO places paramount importance on safety.

Standard-compliant tests:

- Lightning protection components to EN 50164-1
- Spark gaps to EN 50164-3
- Surge protection devices to EN 61643-11
- Data cable protection devices to EN 61643-21
- Cable support systems to EN 61537
- Electrical installation duct systems to EN 50085-1
- Connection sockets and housings to EN 60670-1/-22
- Environmental testing to EN ISO 9227
- Environmental testing to EN 60068-2-52
- Environmental testing to EN ISO 6988
- Protection rating to EN 60592
- Tensile strength to EN 10002-1

However, customer-specific requirements and tests not covered by standards can be tested.



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. In addition, OBO has run certified energy management according to ISO 50001 and is a long-standing member of Industrieverband Feuerverzinken e.V.



OBO CONSTRUCT

Planning software and product configurators



The OBO Construct programs are electronic planning aids – developed in order to support electrical engineers and planners in their planning of electrical installation projects.

Due to the systematic search of technically relevant planning parameters, these programs simplify the search for suitable products and the appropriate accessories.

All new OBO Construct apps have a responsive design. They can be opened on any device, independent from the operating system.

Advantages

- ✓ A tool that can be used in any place at any time
- ✓ Planning requirements can be transferred into complete product systems
- ✓ Suitable products can be found easily and quickly
- ✓ The correct quantity of products can be calculated automatically
- ✓ Configuration results can be downloaded as an Excel or Word file

Versions currently available



Cable support systems
AutoCAD Plug-in Version 3.0
(AutoCAD full version from 2013)



Underfloor systems
Planning Tool Version 3.0
(Web app for all devices)



Transient and lightning protection systems
Earthing Systems Version 1.0
(Web app for all devices)



Fire protection systems
Selection Aid Sealing Systems Version 2.5
(Web app, iOS and Android app)



Transient and lightning protection systems
Surge Protection Version 1.0
(Web app)



Cable support systems
Cable Filling Version 3.0
(Windows PC app)



All programs in summary

Construct programs for the planning of sections as well as for the calculation of loads of cable support systems

- AutoCAD Add-in
- Cable filling



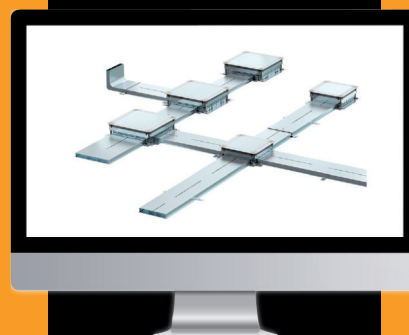
Construct online selection aids

- For the configuration of approval-compliant fire protection sealing systems
- For the calculation of lightning and surge protection systems
- For the construction of norm-conforming earthing systems



Construct planning software for underfloor systems

- Structured configuration of floor box types according to areas of use
- Equipping of the floor boxes with sockets and data technology





OBO Support Plus

Even more solutions for you



What is OBO Support Plus?

Every OBO product has a plus. Highly innovative quality products tested and manufactured to a high level of competence giving you complete confidence in the products you are selecting. In addition our technical specialists can assist you in product selection and training throughout the process of product selection through to installation.

Together with you, we plan your project, jointly choose the right products and are also available to you should you need us there with you. From flawless logistics through to practical information – we can provide support at every level. We can offer security through certificates on the conformity of our products with the most important standards and directives. We are as flexible as you are – because we know how practical people work and what is important to them. Each step is a plus – that is the OBO Support Plus concept.

OBO Support Plus

Even more solutions for you

Training



Service



Handling



Certification



Training courses from OBO

- Seminars and workshops
- Local consultation and training courses
- Planner days

Service – OBO can help

Everywhere and in every project phase:

- Competent hotline
- Product and system information, digital or printed
- Selection and planning aids on the web, as an app, as a CAD application or in printed form
- 2D and 3D product data for planning
- Field service, branch offices and subsidiary companies in 60 countries
- Engineering services for major projects

Handling – OBO delivers reliably

- With optimised delivery processes:
- Reliable logistics
- Practical transport systems and packaging
- Loading gear handling and disposal concepts

Certification and guarantee

OBO offers safety. Our products fulfil the most important country-specific regulations:

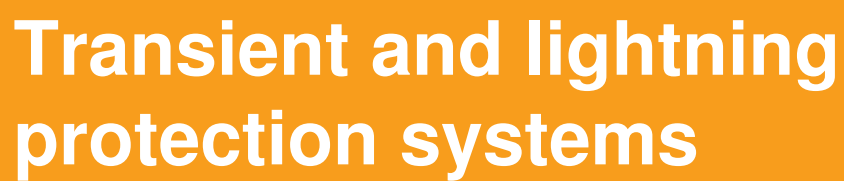
- Conformity (e.g. IEC, VDE, CE, KEMA, KEUR, UL)
- Certification (e.g. DIN EN, DGNB)
- 5-year warranty on surge protection products
- Guarantee management

Support

Contact our Customer Service department on:

+32 3 870 - 74 00







Transient and lightning protection systems

Surge protection energy technology, arrester type 1+2

Surge protection energy technology, type 2 arrester

Surge protection energy technology, arrester, type 2+3

Surge protection
Energy technology, type 3 arrester

Photovoltaic systems

Surge protection, data and information technology

Surge protection, protection and spark gaps

Measuring and testing systems

Equipotential bonding systems

Earthing systems

Air-termination and down conductor systems

Insulated lightning protection



see page 20



see page 42



see page 54



see page 64



see page 70



see page 84



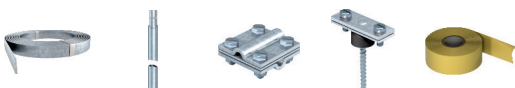
see page 112



see page 116



see page 120



see page 142



see page 172



see page 242

LightningController Compact - MCF100

Surge protection energy technology, arrester type 1+2



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

LightningController Compact - 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

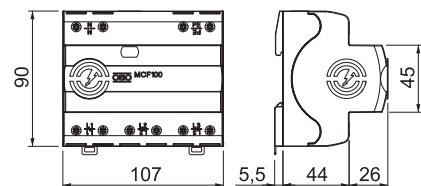
Combination arrestor, lightning current and surge arrestor, type 1+2

- Protection level < 1.5 kV
- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity to 100 kA (10/350), 3+NPE
- Line following current quenching 50 kA I_{peak}, arrestor 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 arrestor for use in distributor housings

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



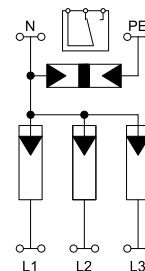
Dimensions



MCF100-3+NPE+FS

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 255 V
Nominal discharge current (8/20 μ s)	I_n / I_{L-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
Arrestor surge current (8/20 μ s) [total]	I_{total} 100 kA
Protection level [L-N]	U_n 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



LightningController Compact - MCF75



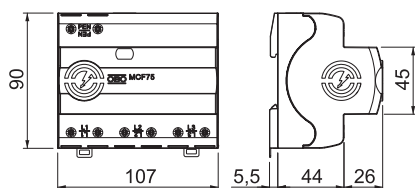
Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
MCF75-3+FS	255	3	IP20	1	75.000	5096981

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

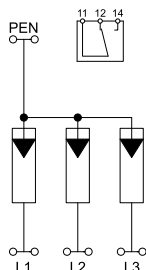
- Protection level < 1.5 kV
- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity to 75 kA (10/350), 3-pole
- Line following current quenching 50 kA I_{peak}, arrester backup fuse to 315 A gL/gG
- Fulfills the requirements of the VDEW directive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

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

Dimensions



Connection options



MCF75-3+FS

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U _n 230 V
Maximum continuous voltage AC	U _c 255 V
Nominal discharge current (8/20 μs)	I _n / L-N 35 kA
Maximum discharge current (8/20 μs)	I _{max} 50 kA
Lightning surge current (10/350 μs)	I _{imp} 25 kA
Total discharge current (10/350)	I _{total} 75 kA
Arrester surge current (8/20 μs) [total]	I _{total} 75 kA
Max. mains-side overcurrent protection	315 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

Combination lightning current arrester MCD 50

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



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

The combination lightning current arresters MCD 50 meet the type 1 requirement class according to IEC 61643-11. These devices protect low-voltage consumer systems from overvoltages of all types and are available in single-pole to four-pole versions. The volt-

age-limiting, high-performance spark gaps provide several benefits. A short response time, a low protection level and high current leakage capability with long service life.



Combination arrester, 3-pole + NPE



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

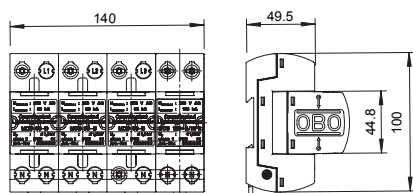
Combination arrester, lightning current arrester, type 1+2, 4-pole, for use in TT and TN-S networks.

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

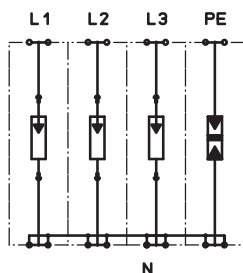
- Lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity to 50 kA (10/350) per pole and up to 125 kA (10/350) in total
- Protection level < 1.7 kV allows device protection
- Short-circuit resistance 10 kA, arrester backup fuse to 500 A gL/gG
- Suitable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

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

Dimensions



Connection options



MCD 50-B 3+1

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

Combination arrestor, 3-pole + NPE with function display

Type
1+2LPZ
0→2230/
400 V
SystemHighest
continu-
ous
voltage

Version

Pack. Weight
pcs kg/100 pcs.

Item No.

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

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

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

3 x MCD 50-B_OS: Type 1+2 (Class B) coordinated lightning current arrestor EN 61643-11.

1 x MCD 125-B/NPE: Coordinated N-PE spark gap, type 1+2 EN 61643-11 for use in TN-S and TT systems.

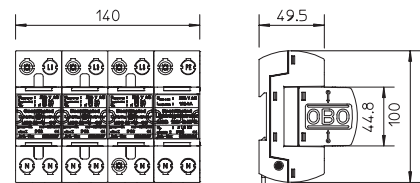
Interface 0 to 1 according to lightning protection zone concept according to IEC 61312-1 and VDE 0185-305.

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

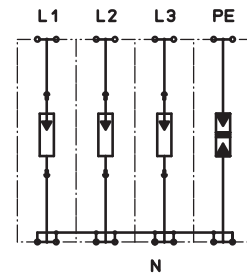
Application: Industrial systems and buildings with external lightning protection of Classes I to IV.



Dimensions



Connection options



MCD 50-B 3+1-OS

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

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

Combination arrester, 3-pole



Type
1+2

LPZ
0→2

230/
400 V
System



Highest
continuous
voltage

V

Version

Pack. Weight
pcs kg/100 pcs.

Item No.

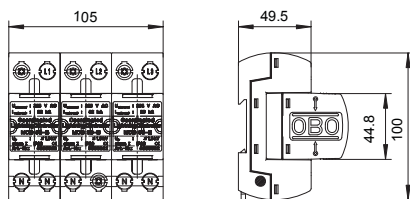
Type	V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
MCD 50-B 3	255	3-pole	1	117.000	5096877

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.

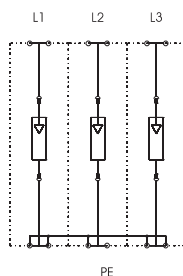
Dimensions



- Lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity to 50 kA (10/350) per pole and up to 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.

Connection options



MCD 50-B 3

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class I+II
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I_{imp}	50 kA
Total discharge current (10/350)	I_{total}	150 kA
Nominal discharge current (8/20)	I_n	50 kA
Arrester surge current (8/20) [total]	$I_{Ttotal 8/20}$	150 kA
Voltage protection level	U_p	< 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)		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 arrestor, 3-pole with function display



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

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

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

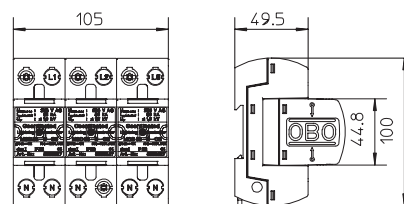
3 x MCD 50-B-OS: Type 1+2 coordinated lightning current arrestors to DIN EN 61643-11. For interface 0 to 2 (LPZ) in accordance with lightning protection zone concept to IEC 61312-1 and/or VDE 0185-305.

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

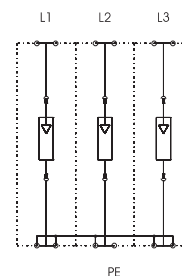
Application: Industrial systems and buildings with external lightning protection of Classes I to IV.



Dimensions



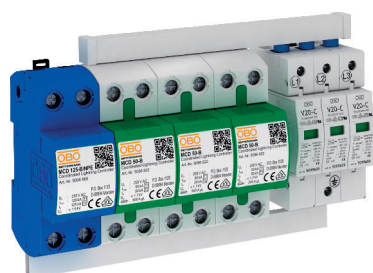
Connection options



MCD 50-B 3-OS

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class I+II
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I_{imp}	50 kA
Total discharge current (10/350)	I_{total}	150 kA
Nominal discharge current (8/20)	I_n	50 kA
Arrestor surge current (8/20) [total]	$I_{Total\ 8/20}$	150 kA
Voltage protection level	U_n	< 1,7 kV
Response time	t_A	<100 ns
Follow current quenching capacity 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)		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

Protection set MCD + V20 3-pole + NPE



Highest continuous voltage

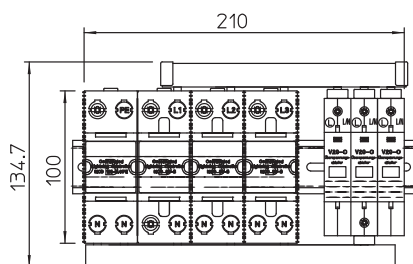
Type	V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
PS4-B+C TT+TNS	255	3 + NPE	1	206.000	5089761

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

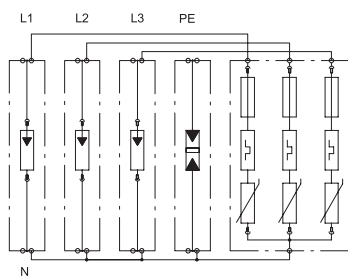
- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity to 50 kA (10/350) per pole and up to 125 kA (10/350) N-PE
- Arrester, connectable, including connecting bridges, labelled connection terminals
- Encapsulated, non-extinguishing arrester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

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

Dimensions



Connection options



PS4-B+C TT+TNS

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

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

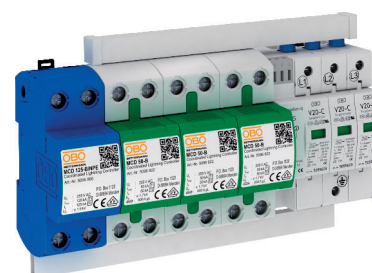


Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
PS4-B+C TNS+FS	255	3 + NPE	1	211.000	5089763

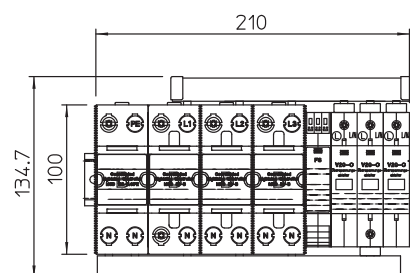
Series PS...: Protection Set, Type 1+2 (Class B+C) lightning and surge arrestor to VDE 0675 Part 6-11 (DIN EN 61643-11).

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

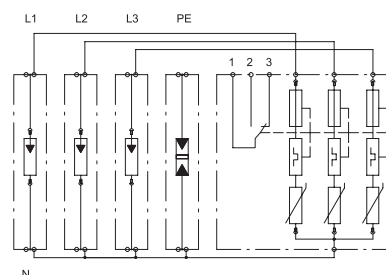
Note: Max. backup fuse (required only if not already fitted in network) 125 A gL/gG.



Dimensions



Connection options



PS4-B+C TNS+FS

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

MCD accessories, covers and bases

Upper part, combination arrestor with function display



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

Combination arrestor, lightning current arrestor, 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.



Surge protection energy technology, arrester type 1+2



- Type 1 + 2 SPD: Imp = 12.5 kA per pole and up to 50 kA in total
- Usable in buildings with lightning protection class 3+4
- Protection level: < 1.5 kV, coordinated to Type 3 SPD
- Quality according to EN 61643-11 certified by an external testing institute
- Universally usable for offices, commercial and residential buildings
- Can be installed universally through 90° labelling
- System protection up to 160 A usable without separate fusing
- Locking function with vibration protection
- Voltage variants: 150 V, 280 V, 320 V, 385 V
- Optional remote signalling, potential-free changeover (RS)
- Variants in one to four-pole versions
- Operating instructions always available online via QR code

Combination arrestor V50, 3-pole 280 V



Highest
continuous
voltage

Protec-
tion
rating

Type	AC V	Pole version	Protec- tion rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V50-3-280	280	3	IP20	1	46.500	5093511

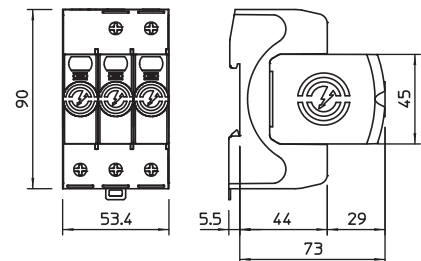
Lightning current combination arrestor, type 1+2

- 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 arrestor 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

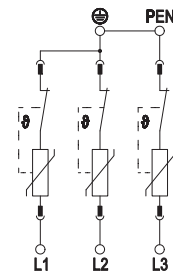
Application: Lightning current equipotential bonding for buildings of class III and IV.



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)	$I_n / L-N$ 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} 37.5 kA
Arrestor surge current (8/20 μ s) [total]	I_{total} 120 kA
Protection level [L-N]	U_n 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
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

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

Combination arrester V50, 3-pole with FS 280 V



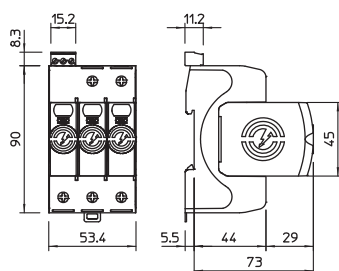
Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V50-3+FS-280	280	3	IP20	1	46.900	5093516

Lightning current combination arrester, type 1+2

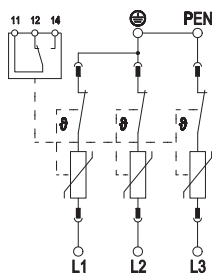
- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage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

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

Dimensions



Connection options



V50-3+FS-280

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 280 V
Nominal discharge current (8/20 μ s)	$I_n / L-N$ 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} 37.5 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 120 kA
Protection level [L-N]	U_n 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



Highest
continuous
voltage

AC

Pole
version

Protec-
tion
rating

Pack.
pcs

Weight
kg/100 pcs.

Item No.

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

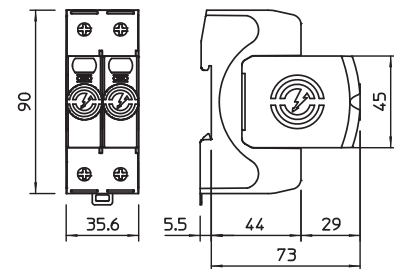
Lightning current combination arrester, type 1+2

- 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

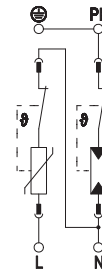
Application: Lightning current equipotential bonding for buildings of class III and IV.



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)	$I_n / L-N$ 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} 25 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 80 kA
Protection level [L-N]	U_n 1.3 kV
Combined voltage protection level [L-PE]	$U_d / L-PE$ 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_{II} -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

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

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



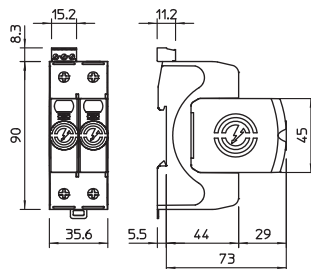
Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V50-1+NPE+FS-280	280	1+N/PE	IP20	1	30.600	5093531

Lightning current combination arrester, type 1+2

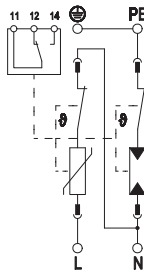
- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage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

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

Dimensions



Connection options



V50-1+NPE+FS-280

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 280 V
Nominal discharge current (8/20 μ s)	$I_n / L-N$ 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} 25 kA
Arrester surge current (8/20 μ s) [total]	I_{total} 80 kA
Protection level [L-N]	U_n 1.3 kV
Combined voltage protection level [L-PE]	$U_D / L-PE$ 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_{II} -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 + NPE 280 V



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

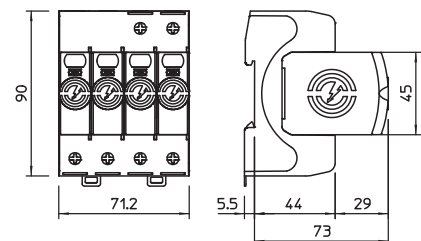
Lightning current combination arrester, type 1+2

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

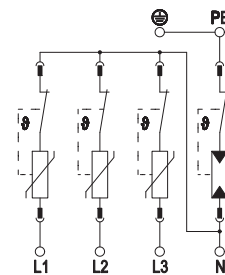
Application: Lightning current equipotential bonding for buildings of class III and IV.



Dimensions



Connection options



V50-3+NPE-280

SPD to EN 61643-11	Type 1+2
SPD to IEC 61643-11	Class I+II
SPD to UL 1449	Type 4
Nominal voltage AC (50 / 60 Hz)	U_n 230 V
Maximum continuous voltage AC	U_c 280 V
Nominal discharge current (8/20 μ s)	$I_n / L-N$ 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_n 1.3 kV
Combined voltage protection level [L-PE]	$U_d / L-PE$ 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_{II} -40 - +80 °C
Protection rating	IP20
Approvals	UL, KEMA, ÖVE, VDE
Cable cross-section, flexible (fine-wire)	1.5 - 35 mm ²
Rigid cable cross-section (single wire/multiwire)	1.5 - 35 mm ²
Cable cross-section, flexible (fine-wire)	16 - 2 AWG
Rigid cable cross-section (single wire/multiwire)	16 - 2 AWG

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

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



Highest continuous voltage AC

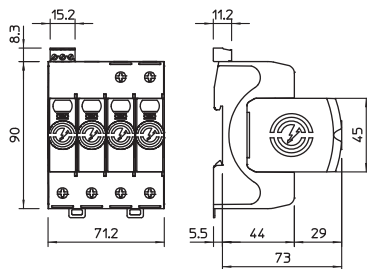
Type	AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V50-3+NPE+FS-280	280	3+N/PE	IP20	1	59.300	5093533

Lightning current combination arrester, type 1+2

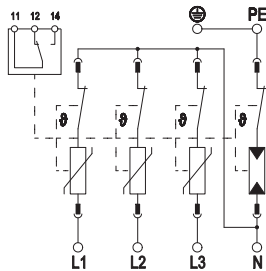
- For lightning current equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity of 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Modular, plug-in arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage 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

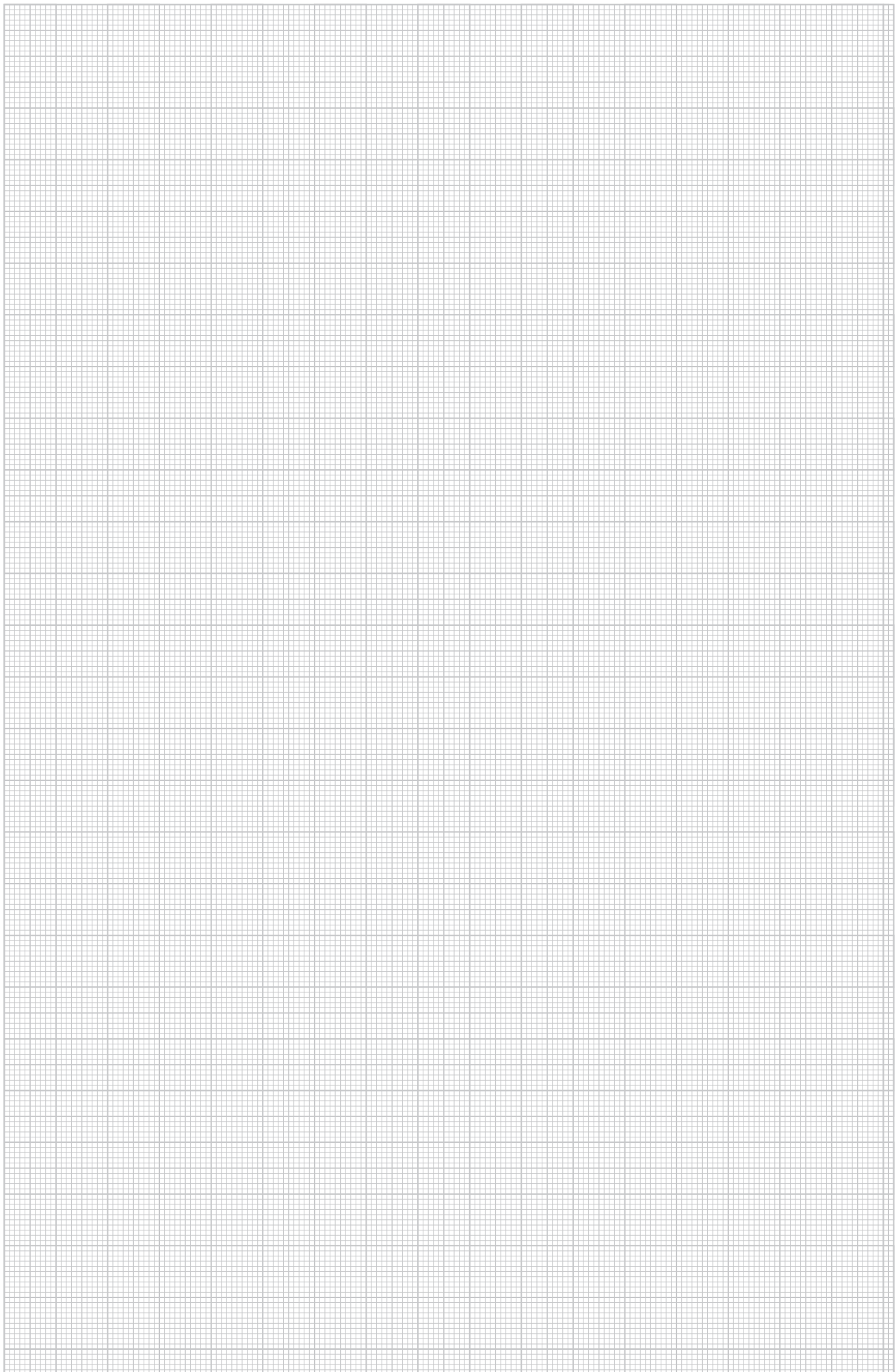


Connection options



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)	$I_n / L-N$ 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_n 1.3 kV
Combined voltage protection level [L-PE]	$U_D / L-PE$ 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_{II} -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





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 Kombiableiter Typ 2

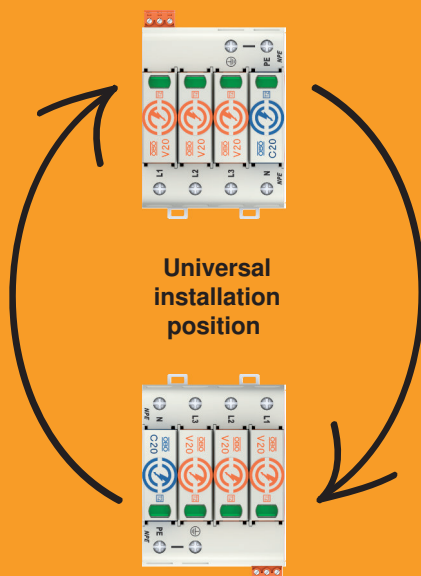
Combination arrester class II

Surge arrester V20

Surge protection energy technology, type 2 arrester



- Type 2 SPD: $I_n = 20 \text{ kA (L-N)} / 40 \text{ kA (N-PE)}$ and up to 60 kA per pole
- Protection level: $< 1.5 \text{ kV}$, coordinated to Type 3 SPD
- Exceeds the increased requirements according to IEC 60364-4-44
- Quality according to EN 61643-11 certified by an external testing institute
- Universally usable for industry, offices, commercial and residential buildings
- Locking function with vibration protection
- System protection up to 160 A usable without separate fusing
- Can be installed universally through 90° labelling
- Voltage variants: 75 V, 150 V, 280 V, 320 V, 385 V, 440 V, 550 V
- Optional remote signalling, potential-free changeover (RS)
- Variants in one to four-pole versions
- Operating instructions always available online via QR code



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

Surge arrester V20, 3-pole, 280 V



Highest
continuous
voltage

Protec-
tion
rating

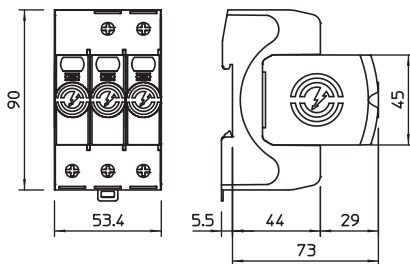
Type	AC V	Pole version	Weight kg/100 pcs.	Pack. pcs.	Item No.
V20-3-280	280	3	36.000	1	5095163

Surge arrester, type 2

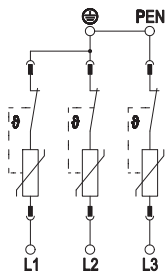
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying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

Application: Equipotential bonding in main and sub-distributions.

Dimensions



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)	$I_n / L-N$ 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrestor 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} 0,8 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
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 arrestor 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

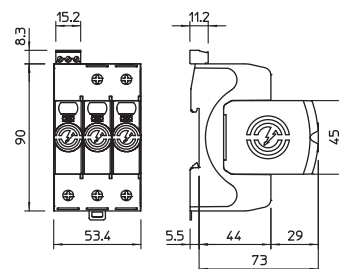
Surge arrestor, type 2

- 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 arrestor 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

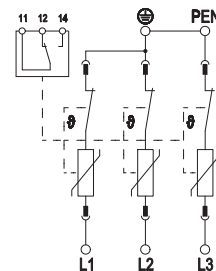
Application: Equipotential bonding in main and sub-distributions.



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)	$I_n / L-N$ 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrestor surge current (8/20 μ s) [total]	I_{total} 120 kA
Protection level [L-N]	U_o 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, TN-S and TT networks

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



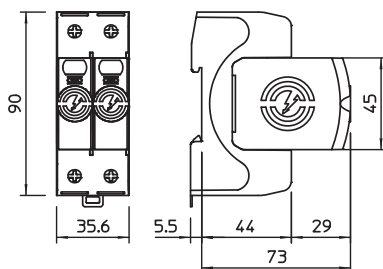
Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-1+NPE-280	280	1+N/PE	IP20	1	24.300	5095251

Surge arrester, type 2

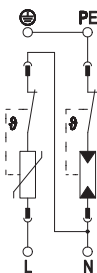
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying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

Application: Equipotential bonding in main and sub-distributions.

Dimensions



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)	$I_n / L-N$ 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Arrestor surge current (8/20 μ s) [total]	I_{total} 60 kA
Protection level [L-N]	U_d 1.3 kV
Combined voltage protection level [L-PE]	$U_{d / L-PE}$ 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_u -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

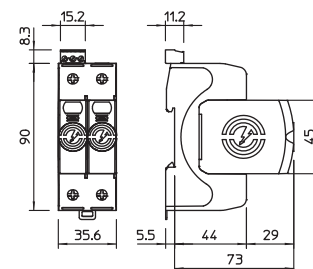
Surge arrester, type 2

- 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

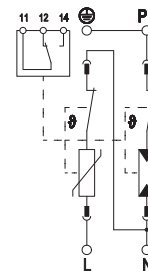
Application: Equipotential bonding in main and sub-distributions.



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)	$I_n / L-N$ 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_o 1.3 kV
Combined voltage protection level [L-PE]	$U_d / L-PE$ 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_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, TN-S and TT networks

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



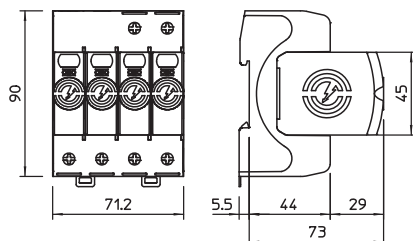
Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-3+NPE-280	280	3+N/PE	IP20	1	45.800	5095253

Surge arrester, type 2

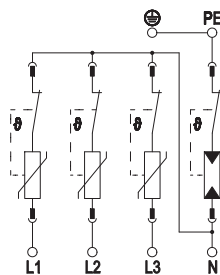
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity to 40 kA (8/20) per pole through high-performance varistors
- Modular connectable arrester with cut-off unit and visual status display
- Locking mechanism with vibration protection and voltage keying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

Application: Equipotential bonding in main and sub-distributions.

Dimensions



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)	$I_n / L-N$ 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_d 1.3 kV
Combined voltage protection level [L-PE]	$U_{d / L-PE}$ 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_u -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

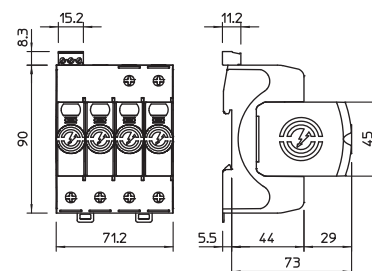
Surge arrester, type 2

- 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

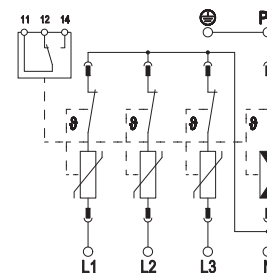
Application: Equipotential bonding in main and sub-distributions.



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)	$I_n / L-N$ 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_o 1.3 kV
Combined voltage protection level [L-PE]	$U_d / L-PE$ 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_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 arrestor V20 upper parts, type 2

Upper part V20 280 V

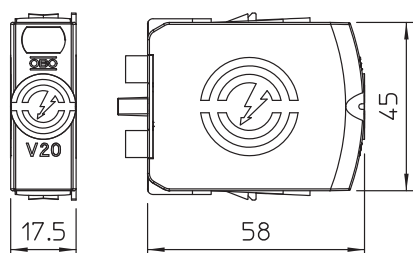


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-0-280	280	1	IP20	1	5.000	5095364

Upper part, surge arrestor, 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



NPE discharge gap C20 in 280 V, type 2

Upper part C20 280 V

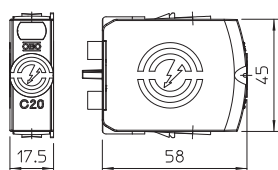


Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
C20-0-255	255	N/PE	IP20	1	3.680	5095600

Upper part, N-PE surge arrestor, 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_{L-N} 20 kA
Maximum discharge current (8/20 μ s)	I_{max} 40 kA
Operating temperature range	T_u -40 - +80 °C
Protection rating	IP20
Approvals	UL, ÖVE, VDE, KEMA

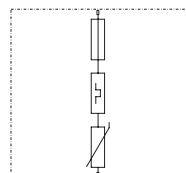
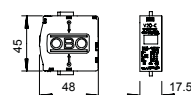
Cover, surge arrester 280 V



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



Connection options

V20-C 0-280

Max. continuous operating voltage	U_c	280 V
U max DC	U_c DC	350 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Maximum discharge current (8/20 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
Protection rating		IP 20
Division unit TE (17.5 mm)		1

Accessories, upper parts and bases V20

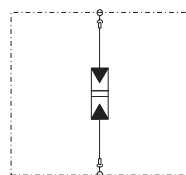
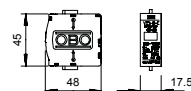
Cover, total spark gap between N and PE 255 V



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

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

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

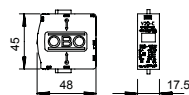


Connection options

C 25-B+C 0

Nominal voltage	U_N	230 V
SPD to EN 61643-11		Type 1+2
SPD to IEC 61643-11		Class I+II
Lightning protection zone LPZ		0→2
Lightning impulse current (10/350) (N-PE)	I_{imp}	25 kA
Nominal discharge current (8/20)	I_n	30 kA
Maximum discharge current (8/20 μ s)	I_{max}	50 kA
Voltage protection level	U_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		160 A
Temperature range	ϑ	-40 - +80 °C
Division unit TE (17.5 mm)		1
Protection rating		IP20
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

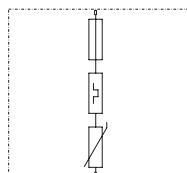
Cover, surge arrester 440 V



Type	Highest continuous voltage V	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 0-440	440	585	1-pole	1	6.452	5099706

Upper part – type 2 surge arrester

- Plug-in upper part: upper part can be separated from base without tools
- Including thermal and dynamic separating device and visual status display
- High current conductivity and long service life

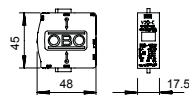


Connection options

V20-C 0-440

Max. continuous operating voltage	U_C	440 V
U max DC	U_C DC	585 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_D	< 2,0 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1

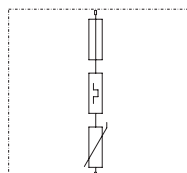
Cover, surge arrester 550 V



Type	Highest continuous voltage V	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 0-550	550	745	1-pole	1	6.452	5099617

Upper part – type 2 surge arrester

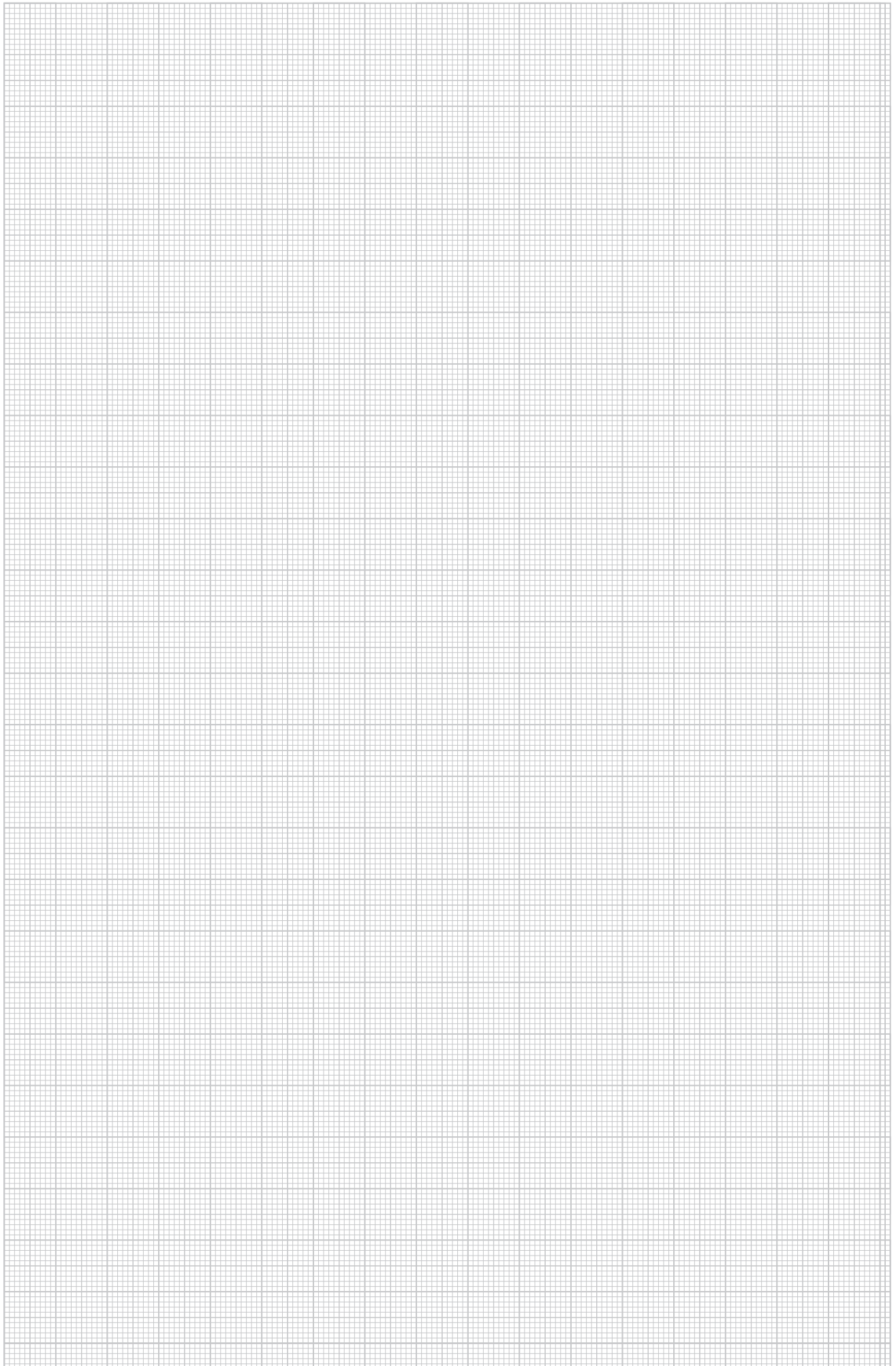
- Plug-in upper part: upper part can be separated from base without tools
- Including thermal and dynamic separating device and visual status display
- High current conductivity and long service life



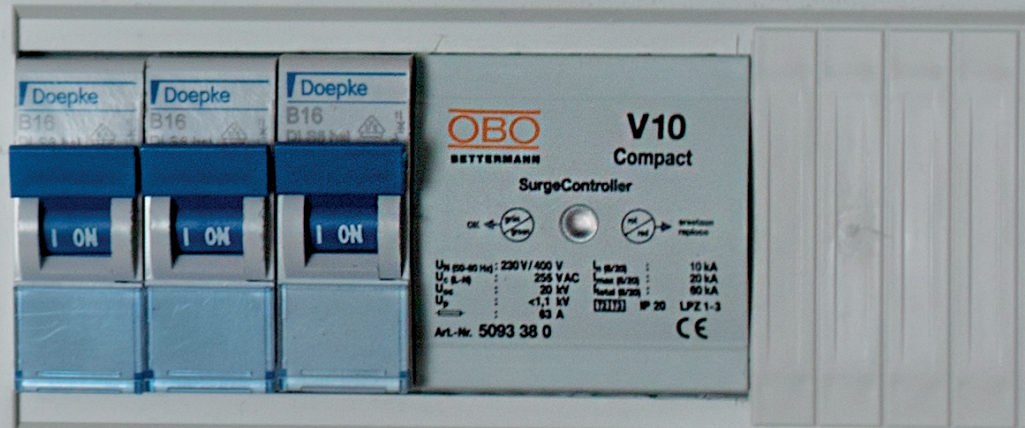
Connection options

V20-C 0-550

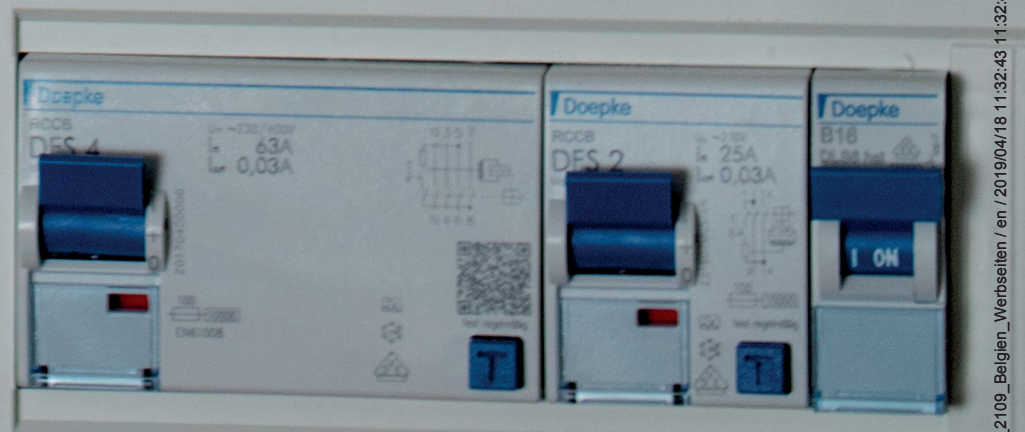
Max. continuous operating voltage	U_C	550 V
U max DC	U_C DC	745 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	15 kA
Maximum discharge current (8/20 μ s)	I_{max}	40 kA
Voltage protection level	U_D	< 2,4 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	ϑ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1



Keller 1 Wasch- maschine	Keller 2 Trockner	Keller 3 Licht	Keller 4 Steckdosen	Keller 5 Heizung und Pumpe	Keller 6 Garage	EG/OG DG 1 Licht	EG/OG/ Steckdo



Herd 1	Herd 2	Herd 3					



FI-Schalter 1.1 allgemein	FI-Schalter 1.2 allgemein	FI-Schalter 1.3 allgemein	FI-Schalter 1.4 allgemein	FI-Schalter 2.1 Bad/WC	FI-Schalter 2.2 Bad/WC	LS 16A Bad/WC	

Surge arrester Compact 255 V



Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs	Item No.
V10 COMPACT 255	255	3 + NPE	1	15.800	5093380

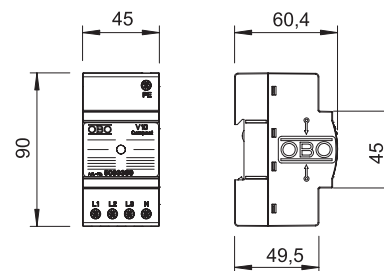
Surge protection device, compact module, type 2+3

- 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

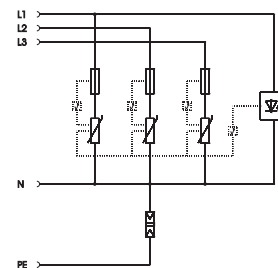
Application: Sub/storey distribution as well as device protection in rotational current systems.



Dimensions



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_o	< 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 acoustic signalling



Highest
continu-
ous
voltage
V

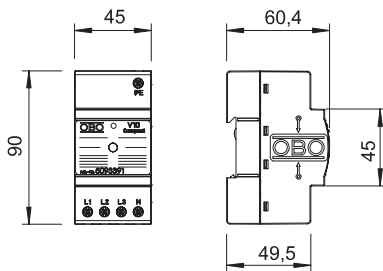
Type	Version	Designation	Pack. pcs	Weight kg/100 pcs.	Item No.
V10 COMPACT-AS	255	3 + NPE with acoustic signalling	1	15.800	5093391

Surge protection device, compact module, type 2+3

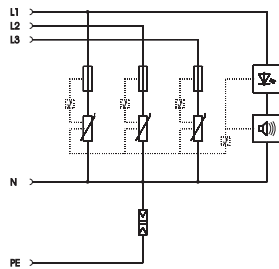
- Surge protection in sub-distributors to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity up to 60 kA (8/20) in total
- Integrated 3+1 solution for TN and TT network systems on 45 mm module width
- High-performance varistor technology
- Including thermic and dynamic cut-off unit and visual function display
- ...-AS version with additional acoustic defect signalling (switchable)

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

Dimensions



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 μs)	I_{max}	20 kA
Voltage protection level	U_o	< 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



	Highest continuous voltage		Pack. pcs	Weight kg/100 pcs.	Item No.
Type	V	Version			
V10 COMPACT-FS	255	3 + NPE	1	17.300	5093382

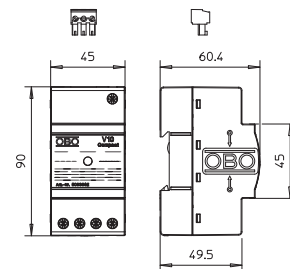
Surge protection device, compact module, type 2+3

- 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

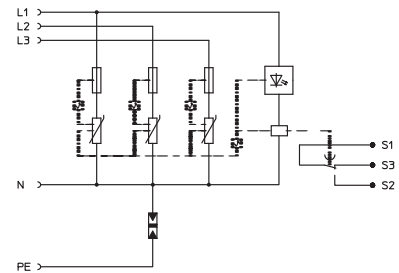
Application: Sub/storey distribution as well as device protection in rotational current systems.



Dimensions



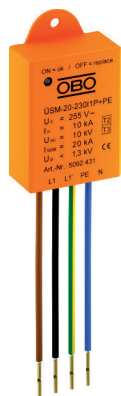
Connection options



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_o	< 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 protection for LED systems ÜSM-20-230I1P+PE



Highest
continu-
ous
voltage
V

Version

Pack. Weight
pcs kg/100 pcs.

Item No.

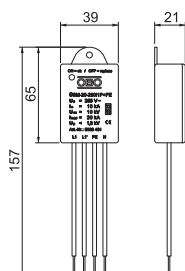
Type	255	1-pole + NPE for PC I	1	4.100	5092431
------	-----	-----------------------	---	-------	---------

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

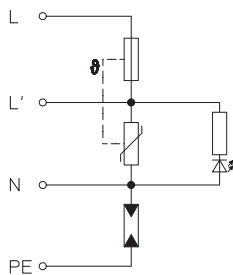
- With function display and switch-off of the load circuit when a SPD fails
- Small size for the installation in the pole connection box or upstream of the LED driver
- 1+NPE protective circuit with a maximum discharge capacity of 20 kA
- Reduction of overvoltage to under 1,300 V or 1,000 V @ 5 kA
- With or without luminaire switch-off in case of defect

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

Dimensions



Connection options



ÜSM-20-230I1P+PE

Nominal voltage	U_N	230 V
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_o	1,3 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		16 A
Temperature range	ϑ	-15 - +60 °C
Protection rating		IP20
Connecting cable length		0.09 m

Surge protection for LED systems ÜSM-20-230I1PE65



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.

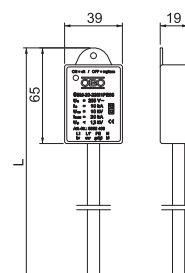
Appropriate for the protection of LED lighting.

- 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

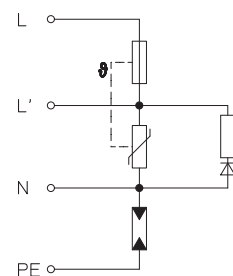
Application: In the cable transition box, junction boxes, cable duct to underfloor systems



Dimensions



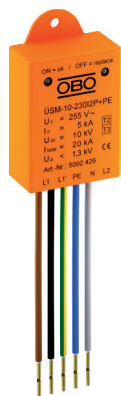
Connection options



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_o	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
continu-
ous
voltage

Type

V

Version

Pack. Weight
pcs kg/100 pcs.

Item No.

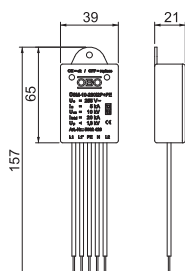
Type	V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
ÜSM-10-230I2P+PE	255	2-pole + NPE for PC I	1	4.400	5092426

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.

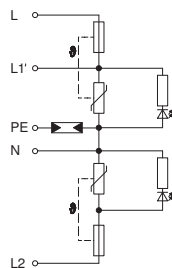
- For luminaires with 2 phases (power reduction)
- With function display and switch-off of the load circuit when a SPD fails
- Small size for the installation in the pole connection box or upstream of the LED driver
- Protective circuit with a maximum arresting capacity of 10 kA
- Reduction of overvoltage to under 1,300 V (protection level)
- For LED luminaires with PE connection

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

Dimensions



Connection options



ÜSM-10-230I2P+PE

Nominal voltage	U_N	230 V
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_o	1,3 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		16 A
Temperature range	ϑ	-15 - +60 °C
Protection rating		IP20
Connecting cable length		0.09 m

Surge protection module ÜSM-10-230I2P-0



Highest
continu-
ous
voltage

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

ÜSM-10-230I2P-0	255	2-pole without NPE for PC II	1	4.100	5092424
-----------------	-----	------------------------------	---	-------	---------

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

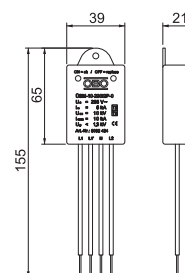
Appropriate for the protection of electronic devices and LED drivers.

- For luminaires with 2 phases (power reduction)
- With function display and switch-off of the load circuit when a SPD fails
- Small size for the installation in the pole connection box or upstream of the LED driver
- Protective circuit with a maximum arresting capacity of 10 kA
- Reduction of overvoltage to under 1,300 V (protection level)
- For protection insulated luminaires (PC II) without PE connection

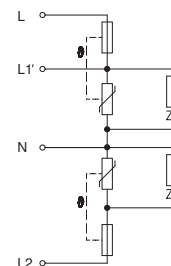
Application: In the cable transition box, junction boxes, cable duct to underfloor systems



Dimensions



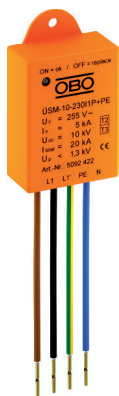
Connection options



ÜSM-10-230I2P-0

Nominal voltage	U_N	230 V
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_o	1,3 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		16 A
Temperature range	ϑ	-15 - +60 °C
Protection rating		IP20
Connecting cable length		0.09 m

Surge protection module ÜSM-10-230I1P+PE



Highest
continu-
ous
voltage

V Version

Pack. Weight
pcs kg/100 pcs.

Type

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

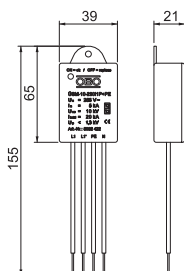
ÜSM-10-230I1P+PE	255	1-pole + NPE for PC I	1	3.500	5092422
------------------	-----	-----------------------	---	-------	---------

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

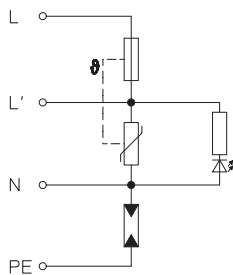
- With function display and switch-off of the load circuit when a SPD fails
- Small size for the installation in the pole connection box or upstream of the LED driver
- Use in the LED luminaire head upstream of the electronic LED driver
- Protective circuit with a maximum arresting capacity of 10 kA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

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

Dimensions



Connection options



ÜSM-10-230I1P+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	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_o	1,3 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		16 A
Temperature range	ϑ	-15 - +60 °C
Protection rating		IP20
Connecting cable length		0.09 m

Surge protection module ÜSM-10-230I1P-0



Highest
continu-
ous
voltage

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

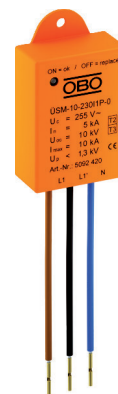
ÜSM-10-230I1P-0	255	1-pole without NPE for PC II	1	3.200	5092420
------------------------	-----	------------------------------	---	-------	----------------

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

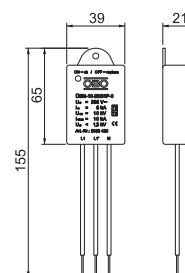
Appropriate for the protection of electronic devices and LED drivers.

- 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

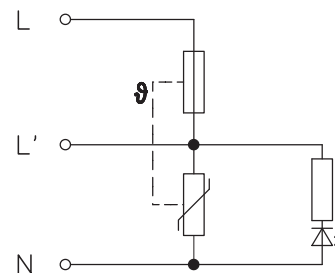
Application: In the cable transition box, junction boxes, cable duct to underfloor systems



Dimensions



Connection options

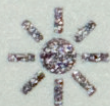


ÜSM-10-230I1P-0

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_o	1,3 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		16 A
Temperature range	ϑ	-15 - +60 °C
Protection rating		IP20
Connecting cable length		0.09 m

OBO

**Blitzbarriere
VF
24
AC/DC**



OK



Replace

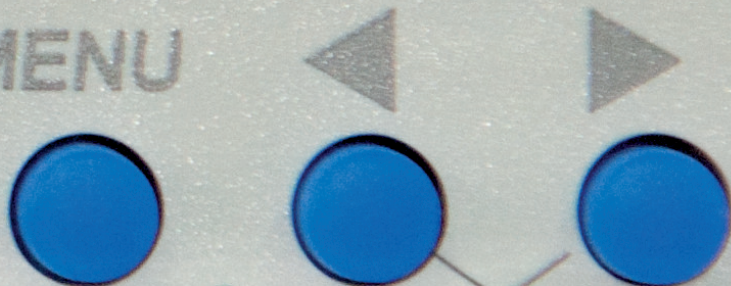
U_N : 24 V
 I_L : 20 A
 I_n (8/20) : 700 A
 I_{max} (8/20) : 2 kA
 U_p : ≤ 130 V
 IP20 CE

Art.-Nr. 5097 60 7

theben



MENU



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

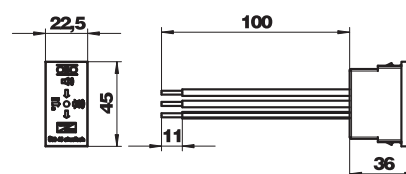
Surge protection / network fine protection, type 3, according to EN 61643-11 for installation in Rapid 45 trunking, device installation trunking and underfloor systems.

- 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.



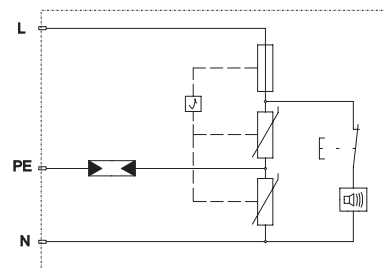
Dimensions



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



Surge protection for LED systems ÜSM-20-230I1PE65



Highest
continu-
ous
voltage
V

Version

Pack. Weight
pcs kg/100 pcs.

Item No.

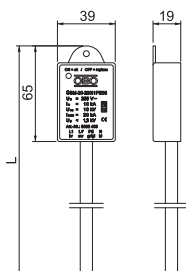
Type	ÜSM-20-230I1PE65	255	1-pole + NPE for PC I	1	8.300	5092433
------	------------------	-----	-----------------------	---	-------	---------

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

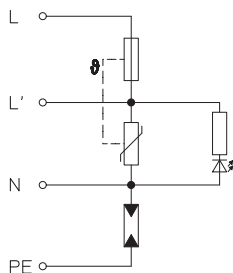
- With function display and switch-off of the load circuit when a SPD fails
- Small size for the installation in the pole connection box or upstream of the LED driver
- 1+NPE protective circuit with a maximum discharge capacity of 20 kA
- Reduction of overvoltage to under 1,300 V or 1,000 V @ 5 kA
- 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_o	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 for power supply, 24 V



Highest
continu-
ous
voltage
V

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

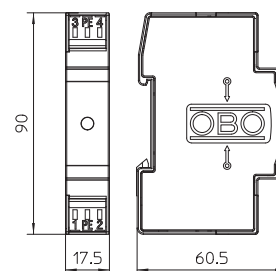
Surge protection device / fine protection type 3 to EN 61643-11

- 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

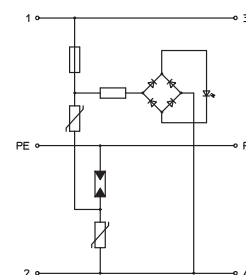
Application: Universal use on 35 mm DIN profile rail in every normal commercially available distributor housing.



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, 230 V



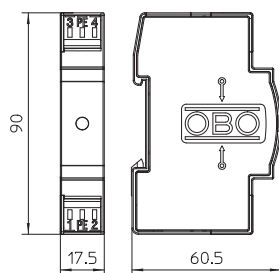
Highest
continu-
ous
voltage
V

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

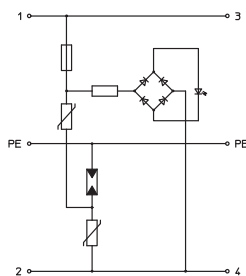
Surge protection device / fine protection type 3 to EN 61643-11

- 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

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 power supply with remote signalling, 230 V AC



Highest
continu-
ous
voltage
V

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

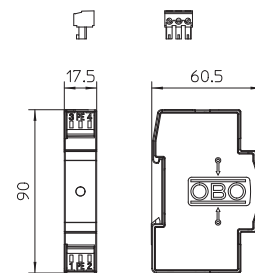
Surge protection / fine power protection, type 3, to EN 61643-11 with remote signalling

- 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

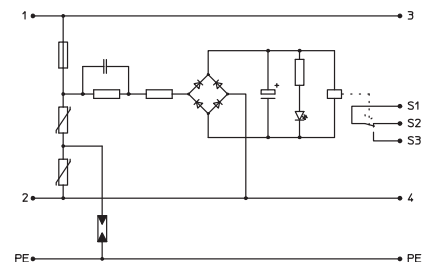
Application: Universal use on 35 mm DIN profile rails in any standard distributor housing.



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



Surge protection devices for photovoltaic applications

Type 1+2 and type 2 for 1,000 V and 1,500 V DC



- Surge protection according to IEC 60364-7-712 (VDE 0100-712)
- Error-resistant Y circuit with status display
- The FS variant has a potential-free changeover contact for remote signalling



Type 1+2 1000 V



Type 2 1500 V

PV complete block 1500V DC



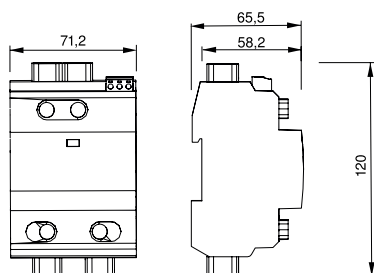
	U max				
	DC		Pack.	Weight	
Type	V	Version	pcs	kg/100 pcs.	Item No.
V-PV-T1+2-1500	1500	Y configuration	1	49.200	5094240

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

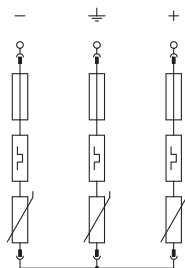
- Lightning protection equipotential bonding according to IEC 62305 (VDE 0185-305)
- Surge protection according to IEC 60364-7-712 (VDE 0100-712)
- Arresting capacity to 12.5 kA (10/350) and 40 kA (8/20)
- Error-resistant Y circuit with status display
- The FS variant possesses a potential-free changeover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

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

Dimensions



Connection options



V-PV-T1+2-1500

U max DC	U _c DC	1500 V
SPD to EN 61643-11	Type	1+2
Lightning protection zone LPZ		0→3
Impulse discharge current (10/350)	I _{imp}	6.25 kA
Nominal discharge current (8/20)	I _n	20 kA
Maximum discharge current (8/20 μs)	I _{max}	40 kA
Voltage protection level	U _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-T1+2-1500FS	1500	Y configuration + RS	1	49.600	5094242

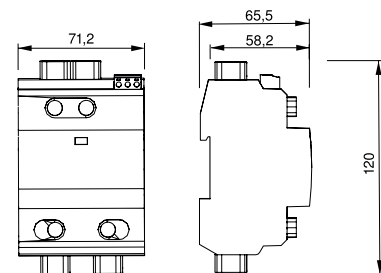
Type 1+2 combination arrester for lightning and surge protection of PV systems.

- 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

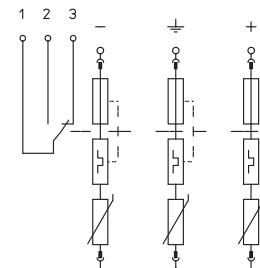
Application: Lightning current and surge protection devices for PV systems.



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 _{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 _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 1000V DC



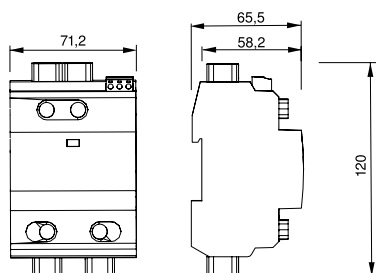
U max DC		Pack.	Weight	Item No.
Type	V	pcs	kg/100 pcs.	
V-PV-T1+2-1000 1000 Y configuration		1	40.700	5094230

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

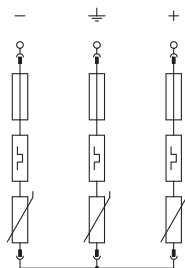
- Lightning protection equipotential bonding according to IEC 62305 (VDE 0185-305)
- Surge protection according to IEC 60364-7-712 (VDE 0100-712)
- Arresting capacity to 12.5 kA (10/350) and 40 kA (8/20)
- Error-resistant Y circuit with status display
- The FS variant possesses a potential-free changeover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

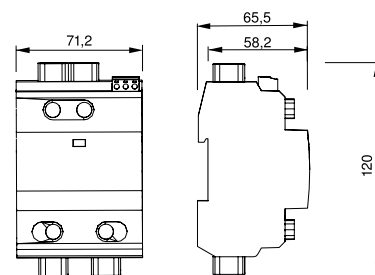
Type 1+2 combination arrester according to EN 50539-11 for lightning and surge protection of PV systems.

- 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

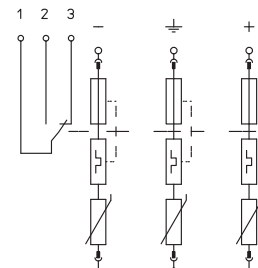
Application: Lightning current and surge protection devices for PV systems.



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 _{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 _n	< 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 1500V DC



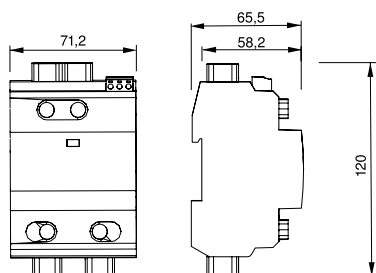
Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V-PV-T2-1500	1500	Y configuration	1	33.800	5094210

Type 2 surge protection for PV plants.

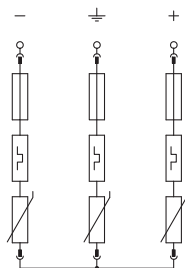
- Surge protection according to IEC 60364-7-712 (VDE 0100-712)
- Arresting capacity of 20 kA per pole and up to 40 kA (8/20)
- Error-resistant Y circuit with status display
- The FS variant possesses a potential-free changeover contact for remote signalling

Application: Surge protection devices for PV systems.

Dimensions



Connection options



V-PV-T2-1500

U max DC	U _n 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

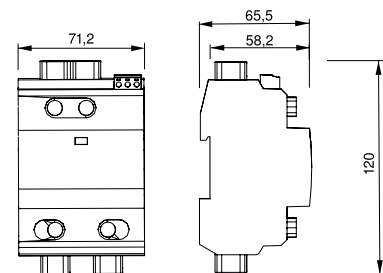
Type 2 surge protection for PV plants.

- 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

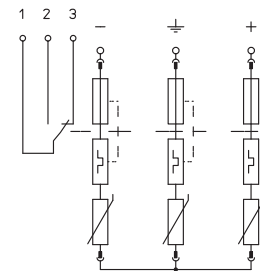
Application: Surge protection devices for PV systems.



Dimensions



Connection options



V-PV-T2-1500+FS

U max DC	U _c DC	1500 V
SPD to EN 61643-11	Type	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 _p	< 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



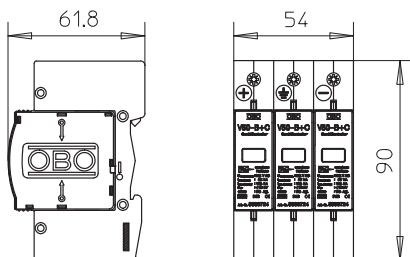
Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 3-PH-1000	1000	3-pole for PV systems	1	36.500	5094608

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

Application: PV systems with or without separate lightning protection system

Dimensions



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

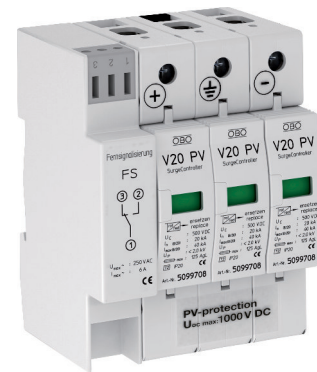


Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 3PHFS-1000	1000	3-pole for PV systems with FS	1	44.500	5094574

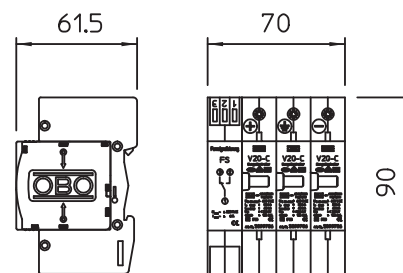
V20 surge arrester, type 2, for photovoltaic systems

- 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



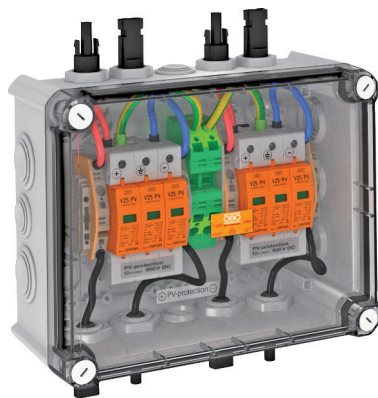
Dimensions



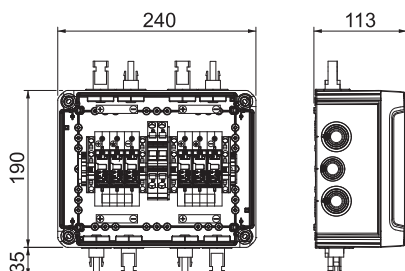
Connection options

V20-C 3PHFS-1000

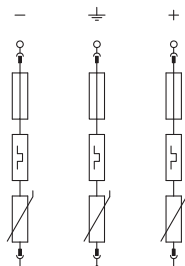
U max DC	U _c DC	1000 V
SPD to EN 61643-11		Type 2
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I _n	20 kA
Maximum discharge current (8/20 μs)	I _{max}	40 kA
Voltage protection level	U _p	< 4,0 kV
Response time	t _A	< 25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP 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



Dimensions



Connection options



Type
1+2

LPZ
0→2



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs	Item No.
VG-BC900S11	—	—	IP66	1	199.000	5088565

System solution, type 1+2, with MC4 connector for photovoltaic inverter with two separate MPP trackers

- Varistor arrester, connectable with cut-off unit in error-resistant Y circuit to VDE 0100-712 (50539-12)
- Type 1+2 combination arrester for lightning protection equipotential bonding to EN 62305 (VDE 0185-305)
- Low DC protection level: < 3.0 kV (Voc max = 900 V DC with V25-B+C/0-450PV)
- One PV string input (MC4 plug connector) at one MPP inverter input, up to 30 A DC per terminal
- Pre-mounted in polycarbonate housing (IP65), UV-resistant for use outside

For DC protection of the inverter of photovoltaic systems.

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

VG-BC900S11

U max DC	U _c DC	900 V
SPD to EN 61643-11		Type 1+2
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I _{imp}	7 kA
Nominal discharge current (8/20)	I _n	30 kA
Maximum discharge current (8/20 μs)	I _{max}	50 kA
Voltage protection level	U _d	< 3,0 kV
Response time	t _A	< 25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP66

Photovoltaic housing, type 1+2, with MC4 connector for PV inverter with one/two MPP tracker



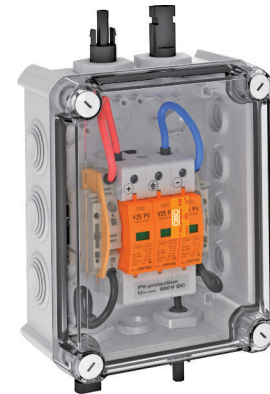
Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
VG-BC900S1	900	For one MPP and with MC4 connection	1	105.000	5088564

System solution, type 1+2, with MC4 connector for photovoltaic inverter with one MPP tracker

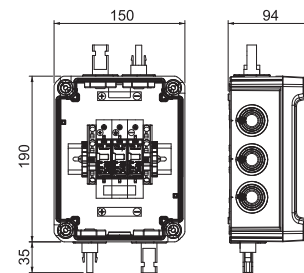
- Varistor arrestor, connectable with cut-off unit in error-resistant Y circuit to VDE 0100-712 (50539-12)
- Type 1+2 combination arrestor for lightning protection equipotential bonding to EN 62305 (VDE 0185-305)
- Low DC protection level: < 3.0 kV (Voc max = 900 V DC with V25-B+C/0-450PV)
- One PV string input (MC4 plug connector) at one MPP inverter input, up to 30 A DC per terminal
- Pre-mounted in polycarbonate housing (IP65), UV-resistant for use outside

For DC protection of the inverter of photovoltaic systems.

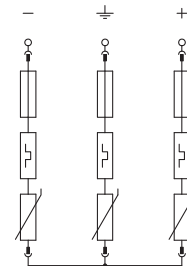
If there is a danger of condensation forming through wind, ice, temperature or sunlight, further measures may be necessary!



Dimensions



Connection options



VG-BC900S1

U max DC	U _c DC	900 V
SPD to EN 61643-11	Type	1+2
Lightning protection zone LPZ		0→2
Impulse discharge current (10/350)	I _{imp}	7 kA
Nominal discharge current (8/20)	I _n	30 kA
Maximum discharge current (8/20 μs)	I _{max}	50 kA
Voltage protection level	U _o	< 3,0 kV
Response time	t _A	< 25 ns
Temperature range	θ	-40 - +80 °C
Protection rating		IP66



PV base, 3-pole in Y circuit



Version

Type

V20-C U-3PH-Y | 3-pole Y circuit for PV

Pack. Weight
pcs kg/100 pcs.

Item No.

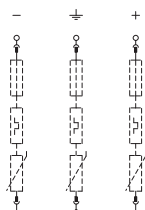
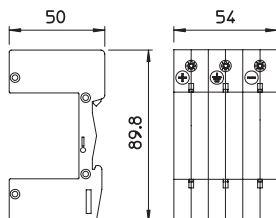
1 17.000 5096647

V 20-C/3-PH-Y: Bottom part for photovoltaic systems up to $U_{oc} = 1,000$ V (Y-circuit)

- Suitable for V 25-B+C upper parts type 1+2 combination arrestor
- Suitable for V 20-C upper parts type 2 surge arrestor
- Protection circuit against transverse and longitudinal voltages
- Y-protection circuit
- Low protection level < 4.0 kV (U_{oc} max = 1,000 V DC with V20-C/0-440)
- Low protection level < 3.0 kV (U_{oc} max = 900 V DC with V25-B+C/0-385)
- Low protection level < 2.6 kV (U_{oc} max = 600 V DC with V50-C/0-280)

Indicated connectors

Application: In photovoltaic systems between PH modules and inverters.



V20-C U-3PH-Y

Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		3
Connection cross-section rigid		2.5 - 35 mm ²
Connection cross-section, multi-wire		2.5 - 35 mm ²
Connection cross-section, flexible		2.5 - 25 mm ²

PV cover - surge arrestor, type 2


U max
DC
V

Version

Type

V20-C 0-500PV | 500 1-pole, PV upper part
with Y base to 1,000 V DC

Pack. Weight
pcs kg/100 pcs.

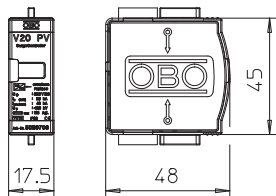
Item No.

1 6.500 5099708

V20-C/...PV: SurgeController upper part, type 2, surge arrestor for photovoltaic systems

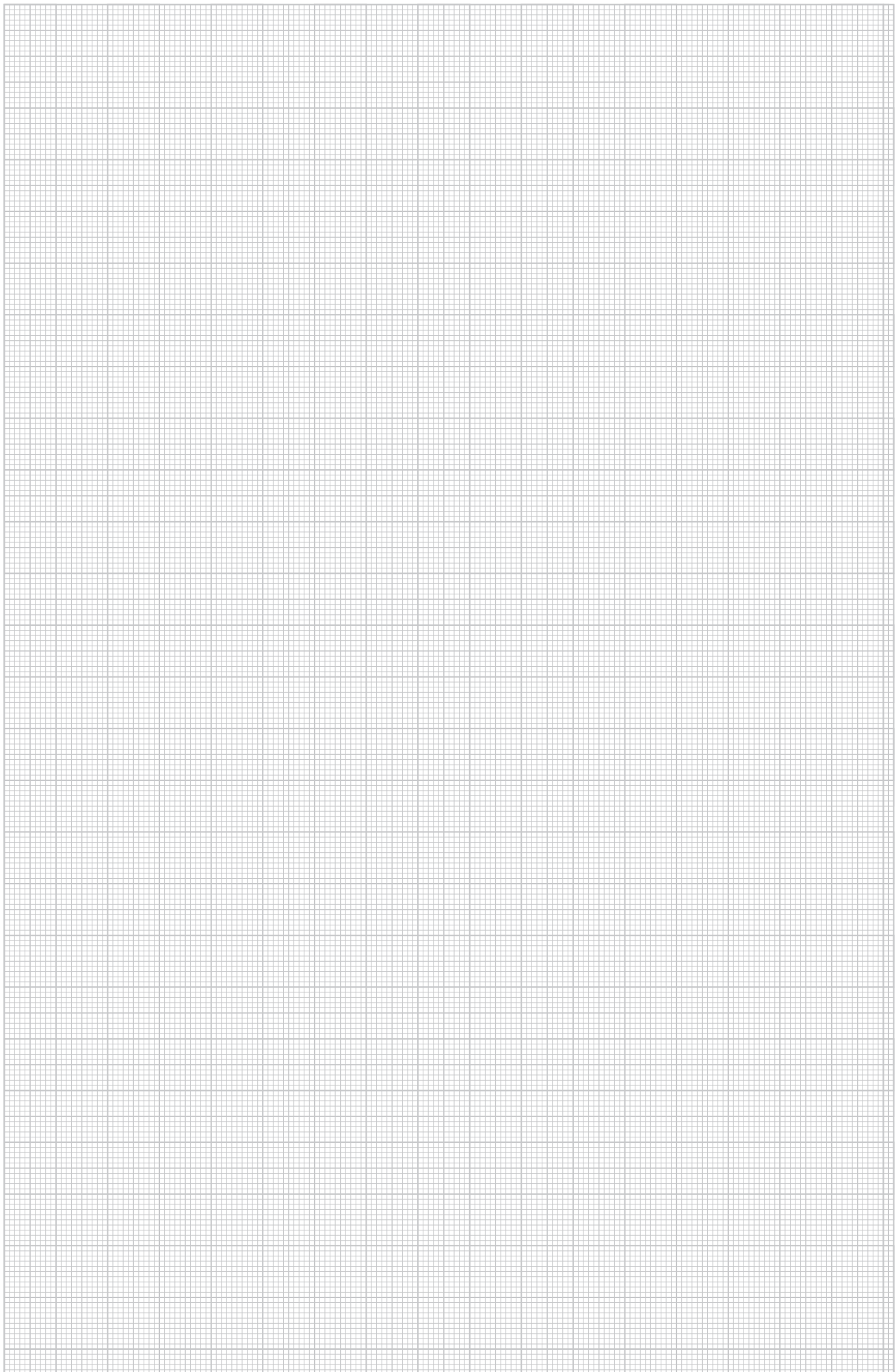
- For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity to 40 kA (8/20) per pin
- Low DC protection level: < 1.3 kV per pole (Y circuit: 2.6 kV and V_{oc} max = 600 V DC)
- Arrestor, connectable with thermodynamic cut-off unit and visual status display
- Encapsulated, non-extinguishing zinc oxide varistor arrestor for use in distributor housings
- High current carrying capacity with long lifespan

Application example: PV systems with or without separated insulated lightning protection system



V20-C 0-500PV

U max DC	U_n DC	500 V
SPD to EN 61643-11		Type 2
SPD to IEC 61643-11		Class II
Lightning protection zone LPZ		1→2
Nominal discharge current (8/20)	I_n	20 kA
Maximum discharge current (8/20 μs)	I_{max}	40 kA
Voltage protection level	U_n	< 2,0 kV
Response time	t_A	< 25 ns
Maximum back-up fuse		125 A
Temperature range	θ	-40 - +80 °C
Protection rating		IP 20
Division unit TE (17.5 mm)		1





Gesamtheitliche BSS-BSS-2109-Beispiel-Werkskennung / 2019/04/18 11:32:49 - 192.43.142.43 (id:Export_02578) - 2019/04/18 11:32:49

Tele Defender

Combined protection device for VDSL, ISDN and DSL systems



- 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

The data cable protection devices for telecommunications applications are available as combination protection and fine protection. Depending on the application, from DSL through to analogue communication, the devices are used for direct intermediate switching into the data cable, meaning that they can easily be

retrofitted in existing installations. The devices differ in their connection technology and transmission cable and are thus optimised for their appropriate applications, in order to cause the lowest attenuation level possible.



Combination protection device 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

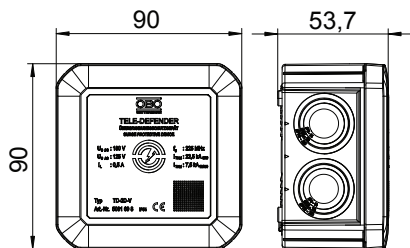
Plastic

Data cable protection device for telecommunications equipment

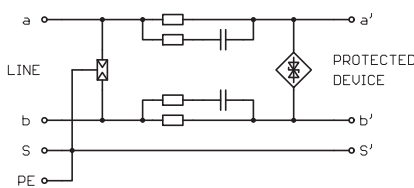
- Low protection level at a high current load
- "Push-in" clamps for quick installation
- Bandwidth-optimised for secure transmission up to 225 MHz
- Surface mounting

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

Dimensions



Connection options



TD-2D-V

Maximum continuous voltage AC	U_c	125 V
Maximum continuous voltage DC	U_c	180 V
Category		Type 1+2+3 / D1+C2+C1
Lightning protection zone LPZ		0-3
Number of poles		2
Rated current	I_L	0.5 A
Capacity (wire-wire)		<10 pF
Capacity (wire-earth)		<20 pF
Series resistance per wire		2,2 $\Omega \pm 5\%$
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}	≤ 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

Tele Defender

Combination and fine protection devices RJ11-Tele and RJ45 Tele for analogue cables



- 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)

The data cable protection devices for telecommunications applications are available as combination protection and fine protection. Depending on the application, from DSL through to analogue communication, the devices are used for direct intermediate switching into the data cable, meaning that they can easily be

retrofitted in existing installations. The devices differ in their connection technology and transmission cable and are thus optimised for their appropriate applications, in order to cause the lowest attenuation level possible.



Combination protection device 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

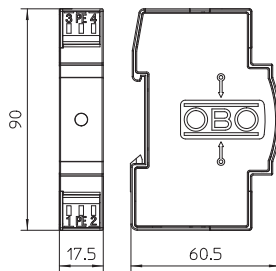
Plastic

Data cable protection devices for telecommunication systems

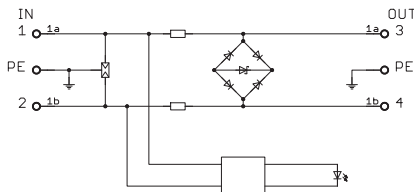
- Low protection level at high current load
- Screwless terminals or connectable
- Bandwidth-optimised for secure transmission
- Quick mounting onto DIN rail for a telephone line
- Visual function display

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_L	0.2 A
Capacity (wire-wire)	<50 pF	
Capacity (wire-earth)	<50 pF	
Series resistance per wire	9 Ω ± 10 %	
Impulse durability wire-wire	C2: 18 kV / 9 kA (8/20μs)	
Impulse durability wire-earth	C2: 18 kV / 9 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)	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	

Fine protection device TELE 4-F for ISDN RJ11



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

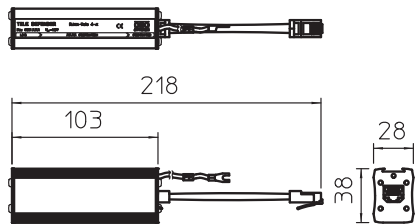
Data line protection device for analogue telecommunications systems

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

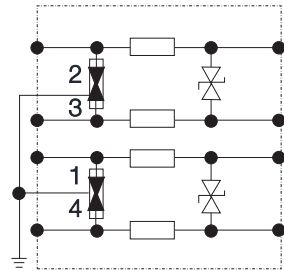
Application: For analogue telecommunication systems



Dimensions



Connection options



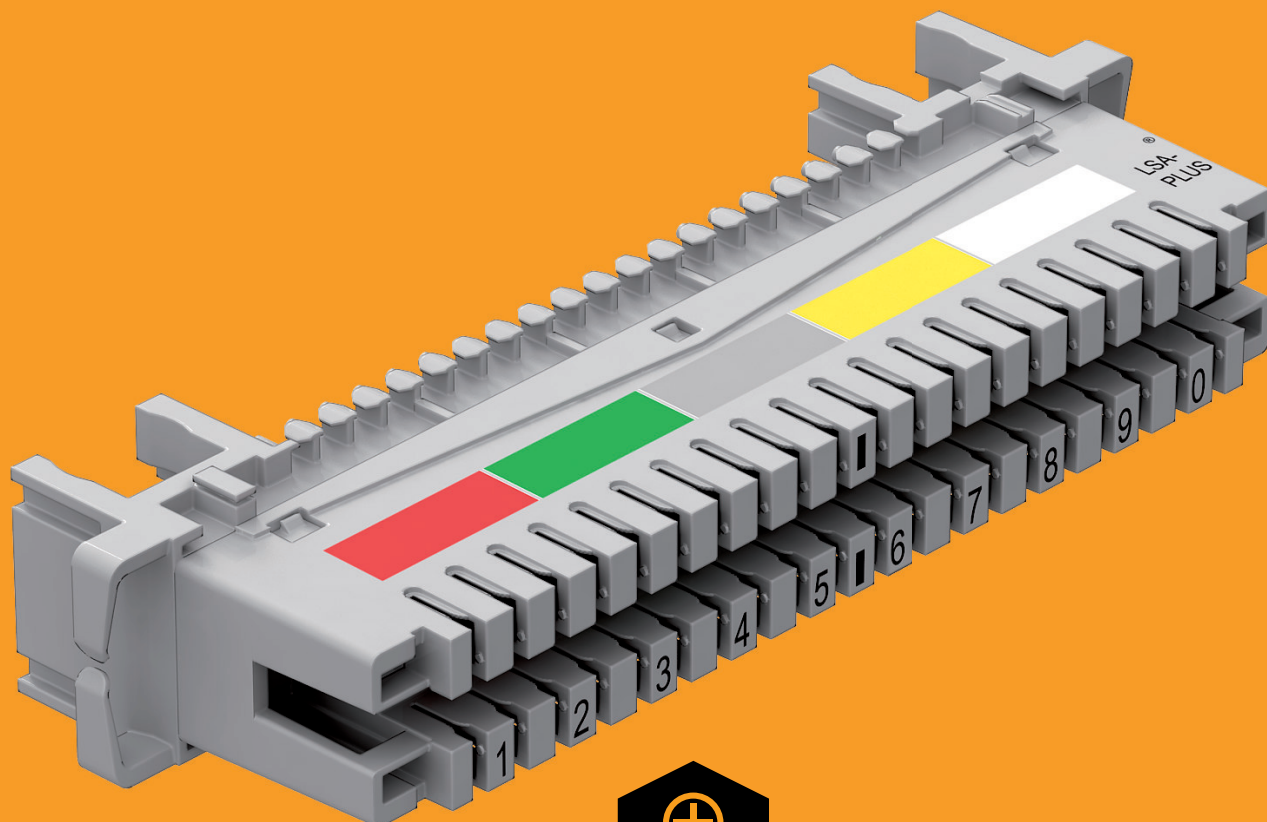
RJ11-TELE 4-F

Maximum continuous voltage AC	U_C	120 V
Maximum continuous voltage DC	U_C	170 V
Category		Type 2+3 / C2+C1
Lightning protection zone LPZ		1→3
Number of poles		4
Series resistance per wire		$2,2 \Omega \pm 10 \%$
Total discharge current (8/20)		4 kA
Total discharge current (10/350)		— kA
Protection level wire-wire		<300 V
Protection level wire-earth		<600 V
Protection level, wire-earth at 1 kV/μs (C3)	U_n	<245 V
Frequency range		0 - 18 MHz
Insertion loss	S_{21}	≤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

LSA-Plus technology

Basic and fine protection

Surge protection devices for industrial telecommunications applications



- Simple installation
- Protection up to ten two-core wires
- Low protection level
- High arresting capacity
- High broadband in basic protection
- Wide range of uses

In particular with multi-wire cable systems, such as telecommunications distribution systems, the LSA surge voltage components offer rapid, adequate protection. The LSA system offers both basic protection modules and fine protection modules to protect up to

ten two-core wires per connection strip. These are split up into separating and connection strips and must be selected according to the application.



LSA basic protection magazine

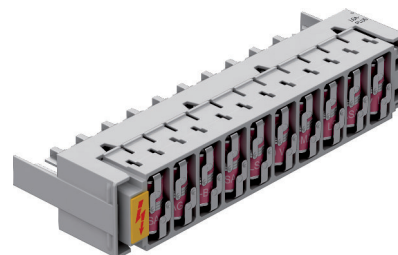


Type	Installation type	Number of poles	Pack. pcs	Weight kg/100 pcs.	Item No.
LSA-B-MAG	LSA-Plus, connectable	20	1	8.600	5084020

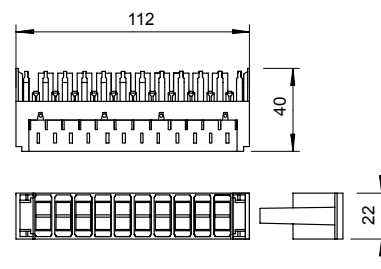
LSA-B-MAG: LSA basic protection magazine for use in multi-core data cable systems, MCR systems and telephone switchboards.

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

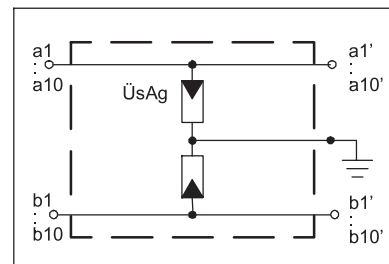
Application: Directly on LSA-Plus separating strips or connection strips (e.g. OBO LSA-A-LEI (5084 00 8) or OBO LSA-T-LEI (5084 01 2)).



Dimensions



Connection options

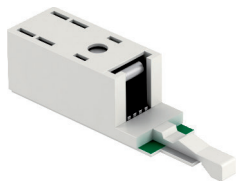


LSA-B-MAG

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 (8/20µs)
Impulse durability wire-earth	C2: 10 kV / 5 kA (8/20µs)
Total discharge current (8/20)	10 kA
Total discharge current (10/350)	1 kA
Protection level @ C1	<750 V
Temperature range	-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



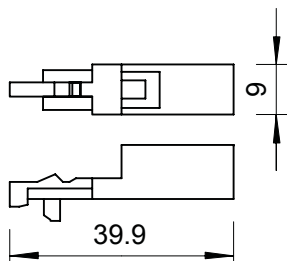
Type	Installation type	Number of poles	Pack. pcs	Weight kg/100 pcs.	Item No.
LSA-BF-180	LSA-Plus, connectable	2	1	0.500	5084024

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

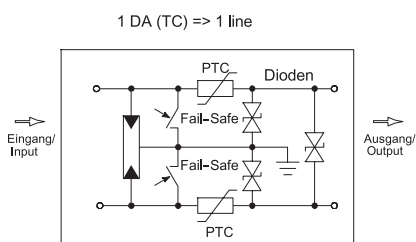
- Basic and fine protection
- Rough protection using fail-safe technology.
- With PTC protection components against overcurrent.
- Max. voltage: 24 V

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_L	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

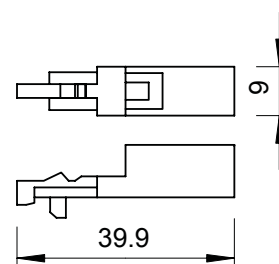
LSA-BF 24: LSA basic and fine protection, for application in MCR systems

- 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))

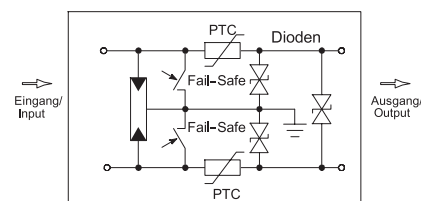


Dimensions



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

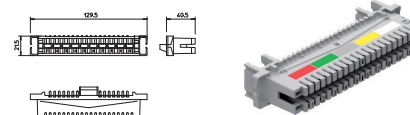
LSA connection strip



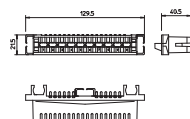
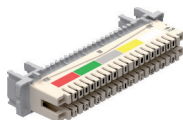
Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
LSA-A-LEI	Grey	1	5.100	5084008

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



Colour

Type

LSA-T-LEI | White

Pack. Weight
pcs kg/100 pcs.

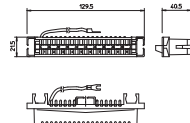
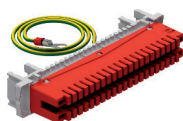
Item No.

1 | 5.400 | 5084012

LSA-T-LEI: LSA separating strip 2/10 for attaching up to ten double-cores.

- For use with protection element LSA-BF-180, LSA-BF-24, LSA-B-MAG
- Fastening to mounting trough LSA-M
- Colour: white
- Clampable cross-sections 0.14-0.5 (AWG 26 to 20)

LSA earthing strip



Colour

Type

LSA-E-LEI | Red

Pack. Weight
pcs kg/100 pcs.

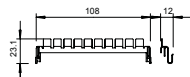
Item No.

1 | 6.500 | 5084016

LSA-E-LEI: LSA earthing strip, 40-pin for attaching earth lines or screens to the earth connection.

- Complete with connection line, green-yellow, 1.5 mm²
- Colour: red

LSA earthing rail



Type

LSA-E

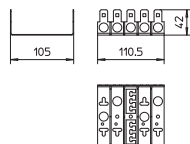
Pack. Weight
pcs kg/100 pcs.

Item No.

1 | 1.000 | 5084032

LSA-E: Earth rail as earth connection between overvoltage protectors LFS-BF... (1 DA) and distributor connector LSA-...-LEI.

LSA installation trough



Type

LSA-M

Pack. Weight
pcs kg/100 pcs.

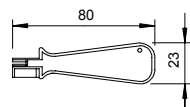
Item No.

1 | 7.800 | 5084036

St Steel

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

LSA simple tool



Type

LSA-TOOL

Pack. Weight
pcs kg/100 pcs.

Item No.

1 | 0.600 | 5084040

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

LSA protective housing

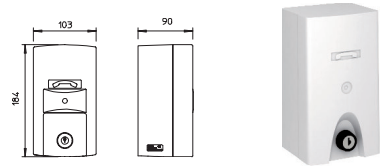


Type		Colour		Pack. pcs	Weight kg/100 pcs.	Item No.
LSA-G	Light grey			1	57.500	5084048

PA Polyamide

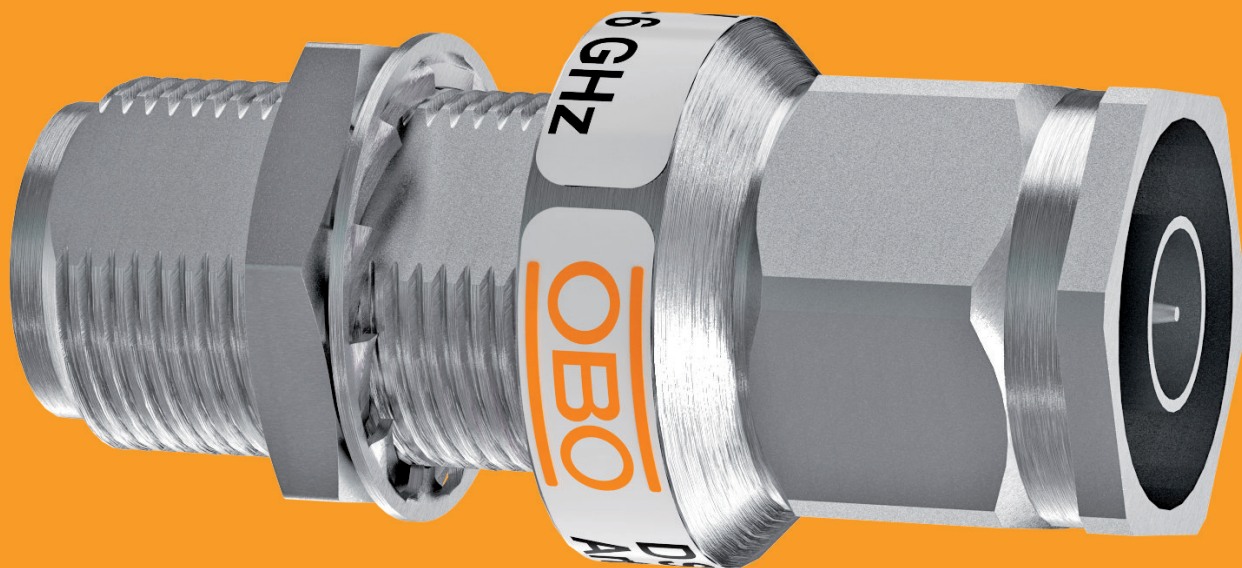
Protective housing for a LSA 10 DA bar

- Protective housing for 10 wire pairs
- Housing can be locked
- Incl. key
- 4x cable fixing
- Light grey



DS family

Coaxial protection devices for S-UHF, BNC, N, TNC, F and SMA connection



- Coaxial protection devices
- Optimum protection for sensitive systems
- Low insertion attenuation and low return loss at different wave resistances
- High bandwidth

The coaxial protection devices of type DS offer optimum protection of sensitive systems, based on coaxial plug connections. The low insertion attenuation and low return attenuation at different wave resistances offer ideal protection for any application. In accordance with their structure, the protection devices are

switched into the application in series, and are connected to the local equipotential bonding. The direct shield earthing avoids reducing of the shield performance.

Coaxial protection device for N connection up to 6 GHz: Male/female



Type	Con- nection system	Frequency range	Pack. pcs	Weight kg/100 pcs.	Item No.
DS-N-6 M/W	N	0 - 6 GHz	1	7.830	5093998

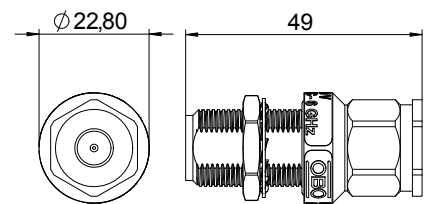
Coaxial data cable protection devices for transmission and reception technology

- With N-Connector, male/female
- High impulse current load capacity: 2.5 kA (10/350)
- Simple mounting (adapter), m = connector, w = socket
- Low protection level at high current loads
- Optimum transmission behaviour:
 - Low reflection behaviour
 - Bandwidth-optimised for secure transmission up to 6 GHz
- Available in 50 Ω technology

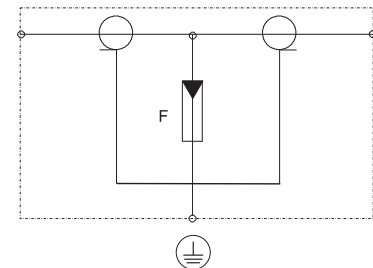
Application: For example: SAT-TV C band, WiMAX, WLAN applications, DVB-T2



Dimensions



Connection options



DS-N-6 M/W

Maximum continuous voltage AC	U_c	50 V
Maximum continuous voltage DC	U_n	70 V
Category		Type 1+2 / D1+C2
Lightning protection zone LPZ		0-2
Number of poles		1
Rated current	I_L	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
Protection level		<750 V
Frequency range		0 - 6 GHz
Insertion loss	$S_{2,1}$	$\leq 0,1$ dB
Return loss	$S_{1,1}$	≥ 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

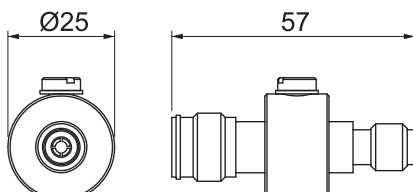


Type	Connection system	Frequency range	Pack. pcs	Weight kg/100 pcs.	Item No.
DS-TNC M/W	TNC	0 - 4 GHz	1	9.000	5093270

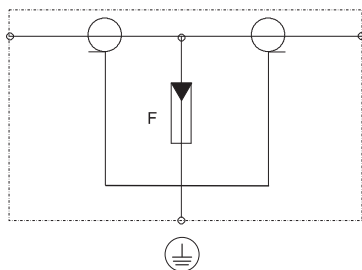
Coaxial data cable protection devices

- Basic protection
- High pulsed current carrying capacity 2 x 2.5 kA (10/350 µs)
- 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_L	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 - 4 GHz
Insertion loss	S_{21}	≤0,5 dB
Return loss	S_{11}	≥14 dB
Temperature range	θ	-40 - +80 °C
Installation type		Connector/cable adapter
Connection system		TNC
Protection rating		IP40
Shielding connection available		Yes
Shield connection		Direct
Testing standard		IEC 61643-21

Coaxial protection device for 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

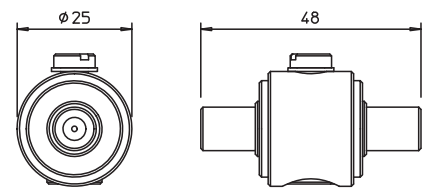
Coaxial data cable protection devices

- Basic protection
- High pulsed current carrying capacity $2 \times 2.5 \text{ kA}$ (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)



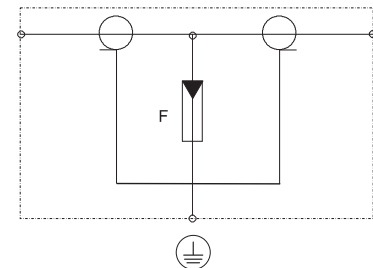
Dimensions



DS-F M/W

Maximum continuous voltage AC	U_c	130 V
Maximum continuous voltage DC	U_n	185 V
Category		Type 1+2 / D1+C2
Lightning protection zone LPZ		0-2
Number of poles		1
Rated current	I_L	5 A
Wave resistance	Z_L	75 Ω
Impulse durability wire-wire		C2: 10 kV / 5 kA (8/20 μs)
Impulse durability wire-earth		C2: 10 kV / 5 kA (8/20 μs)
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}	$\leq 0,9 \text{ dB}$
Return loss	S_{11}	$\geq 14 \text{ dB}$
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

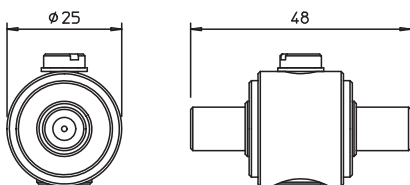
Connection options



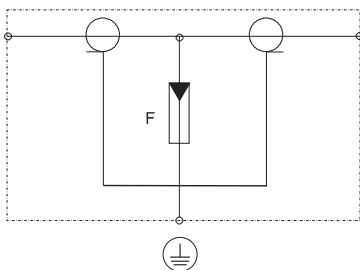
Coaxial protection device for F connection: female/female



Dimensions



Connection options



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

Coaxial data cable protection devices

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

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

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_L	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 SAT and cable multiswitch



Type	Con- nection system	Frequency range	Con- nection system	Pack. pcs	Weight kg/100 pcs.	Item No.
TV 4+1	F	0,5 - 2,8 GHz	F	1	37.000	5083400

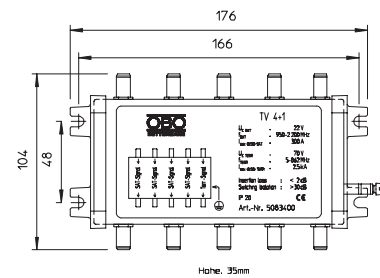
Coaxial data line protection for TV reception systems

- Protects up to four SAT lines
- Protects one terrestrial line, e.g. DVB-T.
- Simple mounting using screws and holder
- With F-connector
- Optimum transmission behaviour with 75 Ohm technology.

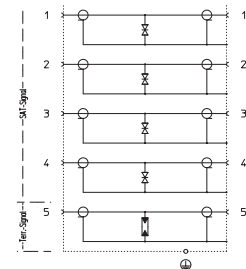
Application: Protection of TV and SAT systems, multi-switches, receivers and DVB-T receivers



Dimensions



Connection options



TV 4+1

Maximum continuous voltage V_c SAT inputs	U_c	22 V
Maximum continuous voltage V_c terrestrial input	U_c	70 V
Category		Type 2+3 / C2+C1
Lightning protection zone LPZ		1→3
Number of poles		5
Rated current	I_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_n	<45 V
Protection level terrestrial input at I_n		<500 V
Frequency range		0,5 - 2,8 GHz
Insertion loss	S_{21}	≤3 dB
Return loss	S_{11}	>30 dB
Temperature range	θ	-40 - +80 °C
Installation type		Surface-mounted
Connection system		F
Protection rating		IP10
Shielding connection available		Yes
Shield connection		Direct
Earthing via:		Connection cable
Testing standard		IEC 61643-21

Net Defender

Surge protection for data and network technology



- Connectable protection device
- High-performance surge protection
- Usable in the "Channel Link" up to 10 GBit
- Supports Power over Ethernet to 1 A
- Testing protocol available

The "Net Defender" permits the use of Power over Ethernet with nominal currents of up to 1 A and optimised surge protection in the channel up to 10 GBit/s. This corresponds to a Channel Performance according to ISO/IEC 11801 Amd. 2 of Class EA or CAT 6A to TIA/ANSI. Of course, reverse compatibility

is also guaranteed. To ensure easy installation, the "Net Defender" can be snapped directly onto the DIN rail and uses it to create the necessary equipotential bonding. Alternatively, terminal protection using a separately connectable earthing line is possible.

Surge protection for high-speed networks up to 10 GBit (Class EA/CAT6A)



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

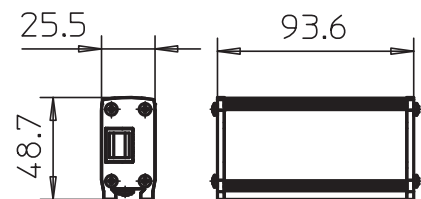
Data cable protection device for high-speed networks

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

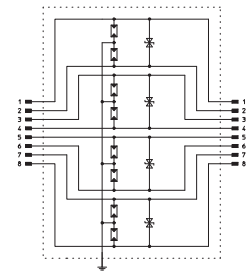
Application example: 10 GBit Ethernet, 10/100 MBit Ethernet, PoE applications, IP camera systems, ISDN S0 interfaces



Dimensions



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_L	1 A
Impulse durability wire-wire	C1: 0,3 kV / 0,15 kA (8/20μs)
Impulse durability wire-earth	C2: 2 kV / 1 kA (8/20μs)
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)



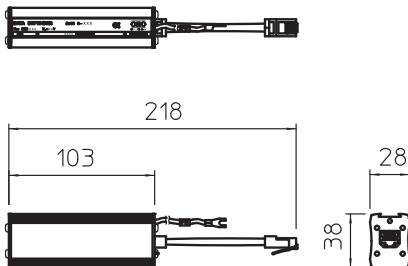
Type	Version	Con- nec- tion system	Pack. pcs	Weight kg/100 pcs.	Item No.
RJ45 S-ATM 8-F	Fine protection, 8 wires + shield	RJ45 8(8)	1	14.000	5081990

Universal data cable protection device for network technology and telecommunication systems

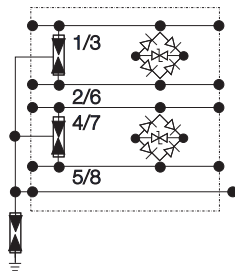
- In aluminium housing
- Protection for 8 cores
- With two-stage protective circuit
- Simple mounting
- With RJ45 Western connector
- Incl. 150 mm connection cable with RJ45 connectors
- Cat 5e network technology, 10BaseT, 100BaseT, 1000BaseT
- DIN rail mounting with accessories DLS-BS (5082 38 2)

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 (8/20μs)
Impulse durability wire-earth		C2: 3 kV / 1,5 kA (8/20μs)
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

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

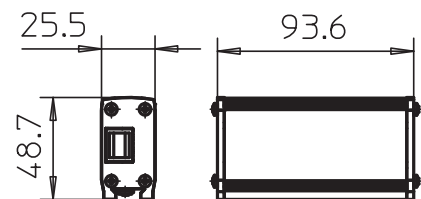
Data cable protection device for high-speed networks

- 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

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



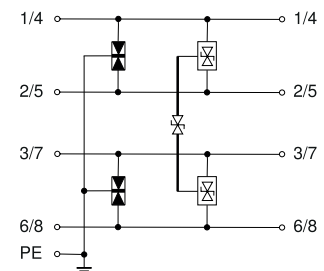
Dimensions



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

Connection options



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

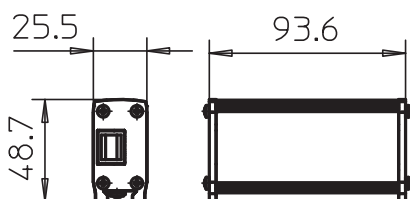
Alu Aluminium

Data cable protection device for high-speed networks

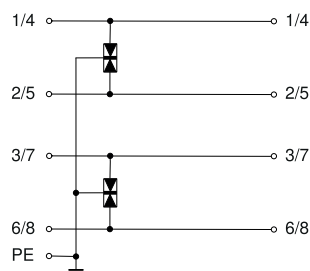
- High-quality RJ45 sockets
- Low protection level at high current load
- Earthing via DIN rail or connection cable
- Support of Power over Ethernet + to 1 A
- Tested transmission quality in networks up to 10 GBit (Class EA) or CAT6A
- Rapid installation through plug-in version
- Incl. DIN rail fastening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

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

Dimensions



Connection options



ND-CAT6/E-B

Maximum continuous voltage AC U_C	46 V
Maximum continuous voltage DC U_C	65 V
Category	Type 1 / D1
Lightning protection zone LPZ	0→1
Channel performance ISO/IEC	Class E
Channel performance Ansi/EA	CAT 6
Number of poles	8
Rated current I_L	1 A
Impulse durability wire-wire	C2: 3 kV / 1,5 kA (8/20μs)
Impulse durability wire-earth	C2: 3 kV / 1,5 kA (8/20μs)
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

Combined protection device 2in1 for CCTV camera systems



Type	Maximum continuous voltage (L-N) V	Maximum discharge current (8/20 μ s) kA	Pack. pcs	Weight kg/100 pcs.	Item No.
	PND-2in1-C-RS 230	10	1	27.000	5081064

Combination protection device

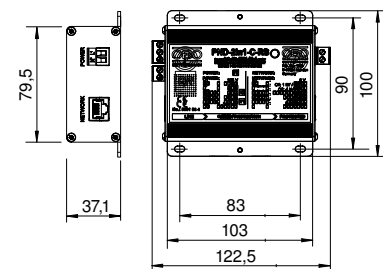
Data cable protection devices for coaxial and IP-based TV / camera systems

- 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

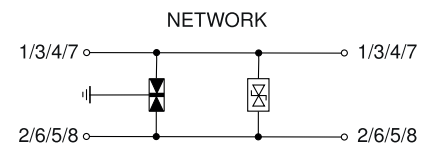
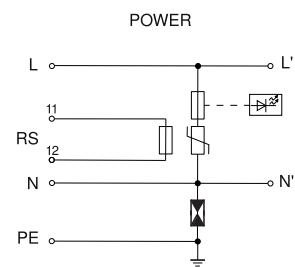
Application: Protection of CCTV, video signals; (IP) cameras and/or TV systems



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_L	10 A
Voltage protection level	U_p	<1,2 kV
Idle voltage	U_{OC}	10 kV
Nominal discharge current (8/20 μ s)	I_n / I_{L-N}	5 kA
Maximum discharge current (8/20 μ s)	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 (8/20 μ s)
Impulse durability wire-earth		C2: 4 kV / 2 kA (8/20 μ s)
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



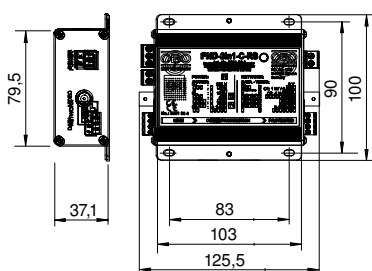
Type	Maximum continuous voltage (L-N) V	Maximum discharge current (8/20 μ s) kA	Pack. pcs	Weight kg/100 pcs.	Item No.
PND-3in1-C-RS	230	10	1	29.900	5081066

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

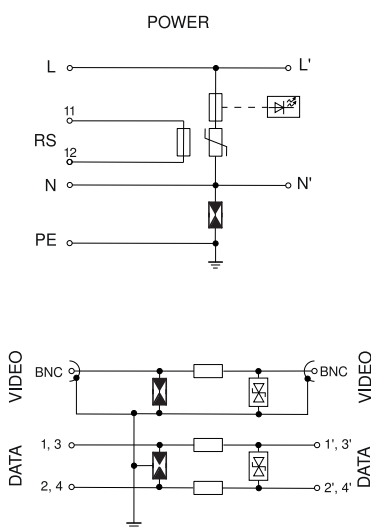
- Protection of power and data interfaces in a single device
- In aluminium housing
- Simple mounting with adapter plug
- Two-stage protection circuit
- Two-pole power connection for the power interface
- Screwless terminal and BNC connection for the data and video interface
- With remote signalling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

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

Dimensions



Connection options



PND-3in1-C-RS

Lightning protection zone LPZ	0→2
Earthing via:	Connection cable / 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_n 10 A
Voltage protection level	U_o <1,2 kV
Nominal discharge current (8/20 μ s)	$I_n / L-N$ 5 kA
Maximum discharge current (8/20 μ s)	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 (8/20 μ s)
Impulse durability wire-earth	C2: 10 kV / 5 kA (8/20 μ s)
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 (8/20 μ s)
Impulse durability wire-wire	C2: 10 kV / 5 kA (8/20 μ s)
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

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



Highest
continu-
ous
voltage
V

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

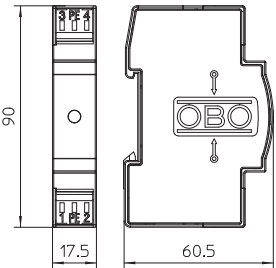
Surge protection device / fine protection type 3 to EN 61643-11

- 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

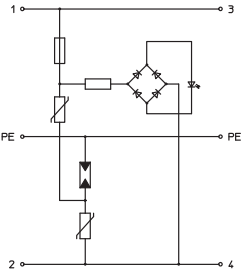
Application: Universal use on 35 mm DIN profile rail in every normal commercially available distrib-
utor housing.



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, 230 V



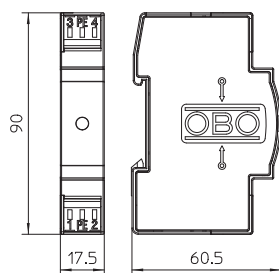
Highest
continu-
ous
voltage
V

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

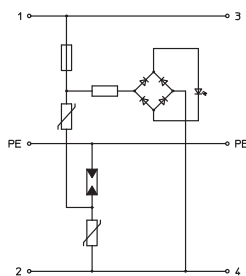
Surge protection device / fine protection type 3 to EN 61643-11

- 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

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 power supply with remote signalling, 230 V AC



Highest
continu-
ous
voltage
V

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

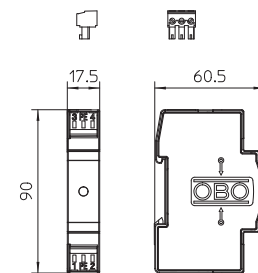
Surge protection / fine power protection, type 3, to EN 61643-11 with remote signalling

- 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

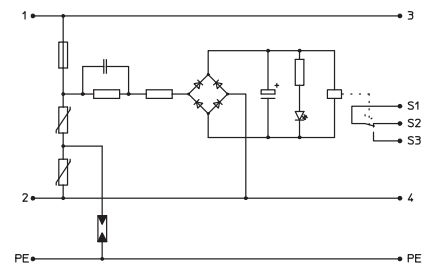
Application: Universal use on 35 mm DIN profile rails in any standard distributor housing.



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



Gesamtkatalog_K1_TBS_BSS_2109_Belgien_Werbseiten / en / 2019/04/18 11:32:43 (LLExport_02578) / 2019/04/18 11:33:10

Spark gap for EX areas: EX ISG

For the bridging of insulating flanges and insulation pieces, such as for pipe sections with cathodic protection (CCP).



- Tested with 100 kA Iimp IEC/DIN-EN 62561-3
- ATEX / IECEx certified
- Compliant to AFK recommendation no. 5 (DVGW worksheet GW 24)
- Wear-free graphite electrodes
- Tested connection accessories



Spark gap EX ISG



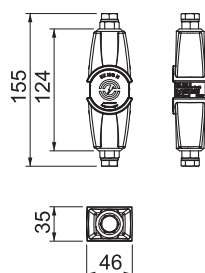
Type	Connection cable length m	Contact voltage kV	Lightning current carrying capacity kA	Temperature range °C	Pack. pcs	Weight kg/100 pcs.	Item No.
EX ISG H	0	1.25	100	-20 - +60	1	41.360	5240030
EX ISG H 350 2L	0.35	1.25	100	-20 - +60	1	57.260	5240033
EX ISG H KU	0.35	1.25	100	-20 - +60	1	210.300	5240032

Hotmelt

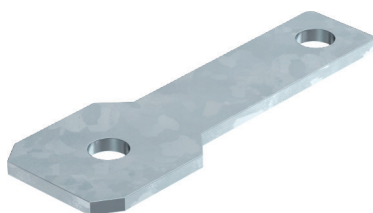
- Spark gap to VDE 0185-561-3 (IEC 62561-3)
- Ex certificate to ATEX
- Labelling to EN 60079-0/-1: II 2G Ex db IIC T6 Gb
- Labelling to EN 60079-0/-31: II 2 D Ex td IIIC T80 °C Db IP67
- Ex certificate to IECEx
- Labelling to EN 60079-0/-1: Ex db IIC T6 Gb
- Labelling to EN 60079-0/-31: Ex td IIIC T80 °C Db IP67

Application: In potentially explosive areas, indirect bridging of insulating flanges and insulating glands, e.g. in cathodic, corrosion-protected (KKS) systems

Dimensions



Connection clamp AB EX ISG straight



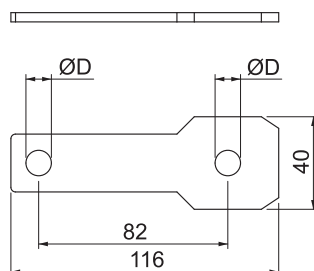
Type	Bore hole Ø mm	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
AB EX ISG S M10	11	For M10 bolt	2	9.000	5240360
AB EX ISG S M12	14	For M12 bolt	2	8.900	5240362
AB EX ISG S M16	18	For M16 bolt	2	8.600	5240366
AB EX ISG S M20	22	For M20 bolt	2	8.200	5240370
AB EX ISG S M24	26	For M24 bolt	2	7.800	5240374

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

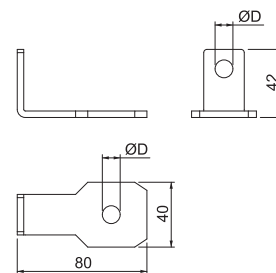
St Steel

FT Hot-dip galvanised

Connection straps for mounting the OBO Ex spark gap, type EX ISG, on insulating flanges and insulating pieces.



Dimensions



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

Messtelle No. 13



LSC I+II lightning strike and surge counter

Lightning strike and surge counter for the recording of lightning and impulse currents with date and time



IP64 - suitable for outdoor areas

Tested to VDE 0185-561-6

Lightning strike and surge counter can count up to 999 lightning occurrences noting date and time

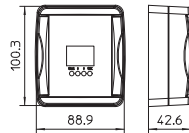
Exchangeable lithium battery with a life-span of up to 5 years

Metering range 1 to 100 kA

The LSC I+II lightning strike and surge counter records lightning and impulse currents (10/350, 8/20) and saves the result, including date and time, securely. In this way it's continuously checked if lightning has struck the lightning protection system or if

surges in the system have occurred. When a lightning strike or surge incident has occurred, the complete lightning protection system must be serviced according to VDE 0185-305 (IEC 62305).

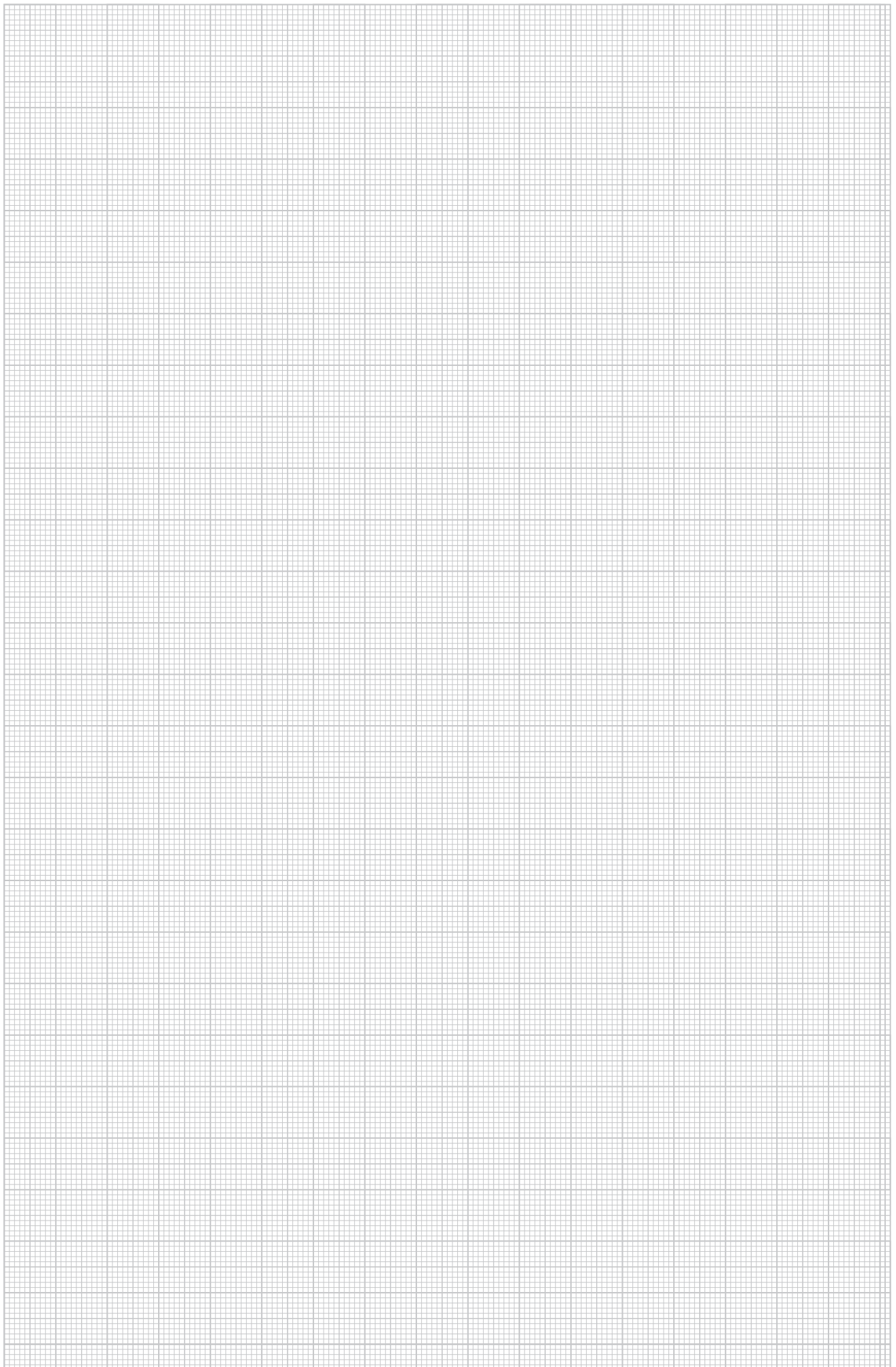
Lightning strike counter

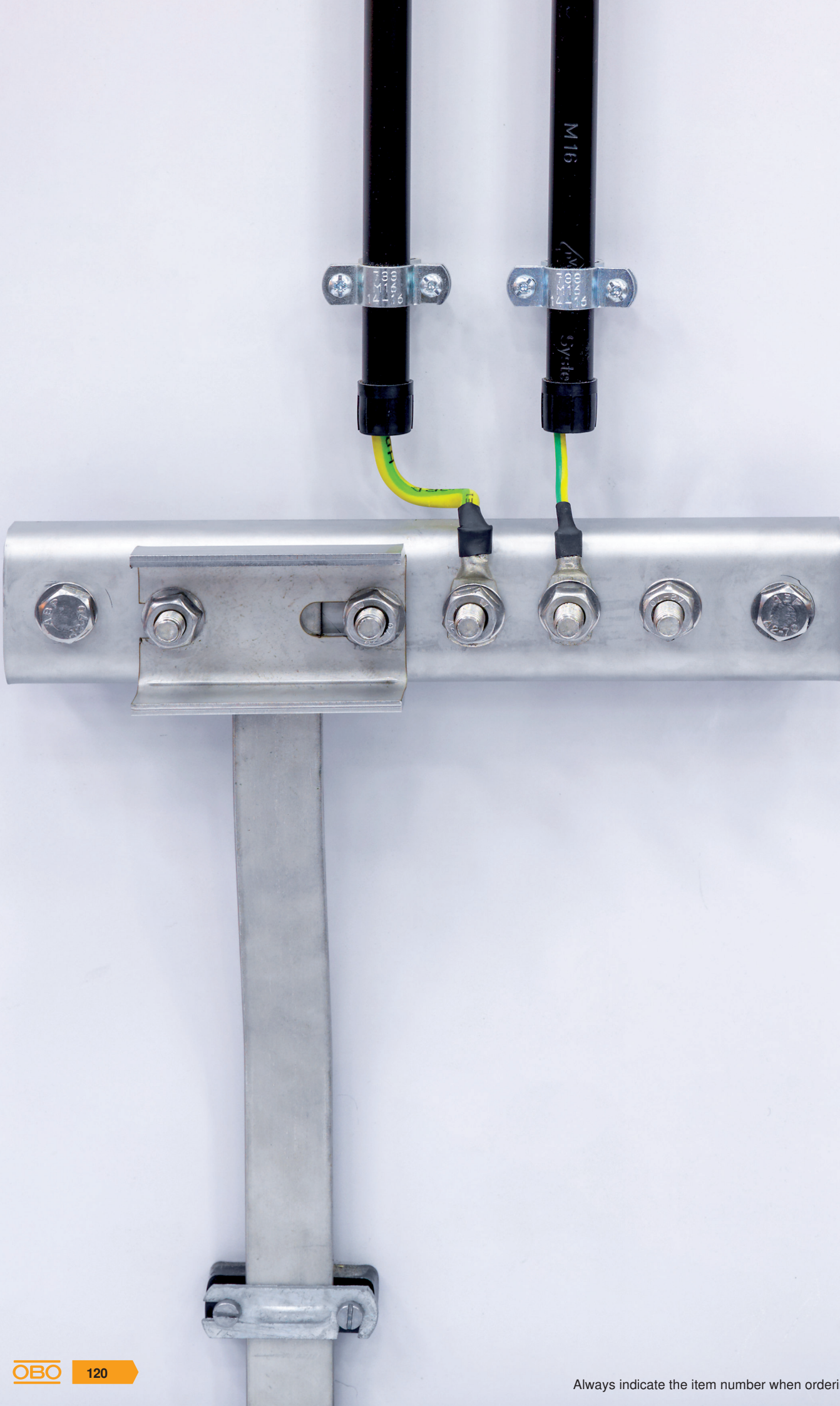


Type	Measuring range	Pack. Weight		Item No.
		pcs	kg/100 pcs	
LSC I+II	1 kA - 100 kA	1	32.500	5091722
Plastic				

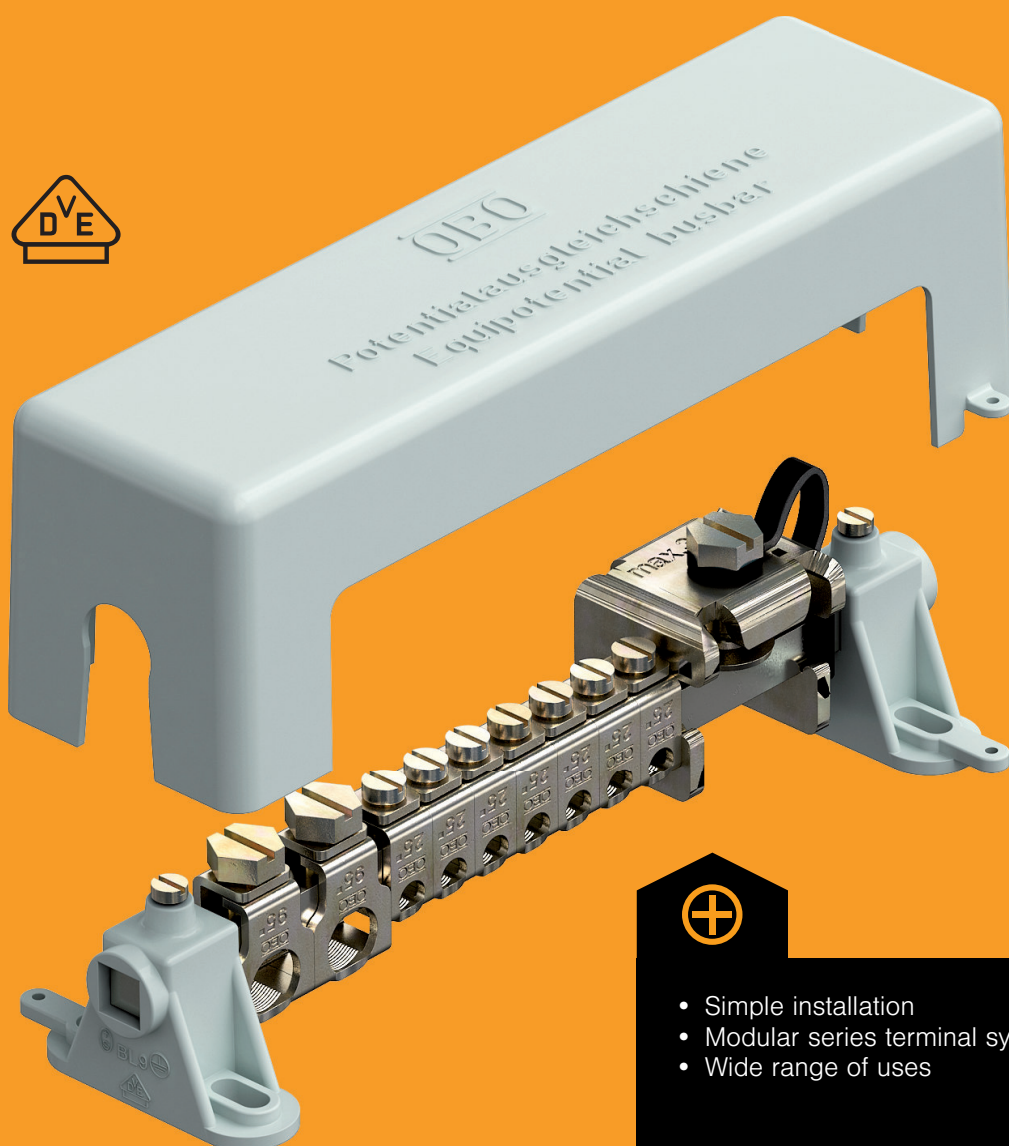
The LSC I+II lightning current meter measures and permanently saves pulse currents, together with the date and time. This ensures constant monitoring in order to notice if any lightning has struck the lightning protection system. Should this be the case, then the lightning protection system must be maintained 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 busbars for indoor use



- Simple installation
- Modular series terminal system
- Wide range of uses

The equipotential busbars for interior areas are available as a modular, VDE-tested series terminal system 1801 or as a ready-for-installation equipotential busbar 1809 with plastic or metal footplate. The OBO Green 1809 is a solution made from renewable resources. The simple versions of the 1809 and 1804 are available as both surface-mounted and concealed

versions. The equipotential busbars are used for installation the protection and functional equipotential bonding according to DIN VDE 0100-410/540 and the lightning equipotential bonding according to VDE 0185-305 (IEC 62305).



Equipotential bonding rail for indoors, VDE-tested



Colour

Type

1801 VDE Grey

Pack. Weight

pcs

kg/100 pcs.

Item No.

1

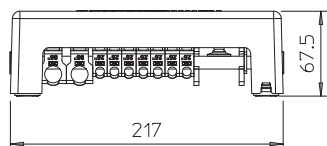
55.000

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

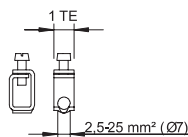
Dimensions



- 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

1801 RK25 2.5–25 mm²

Pack. Weight

pcs

kg/100 pcs.

Item No.

10

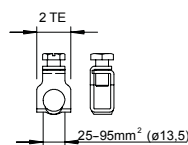
2.080

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

1801 RK95 25–95 mm²

Pack. Weight

pcs

kg/100 pcs.

Item No.

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)

Contact strip for 1801 VDE



Type

Length mm

1801 KL1 212

Pack. Weight

pcs

kg/100 pcs.

Item No.

1

18.000

5015723

CuZn Brass

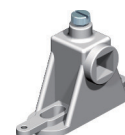
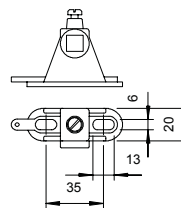
- 10 x 10 mm made of nickel-plated brass
- 1801 KL1: 14 subunits
- 1801 KL2: 28 subunits
- 1801 KL3: 42 subunits

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

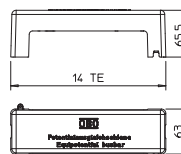


Cover hood for 1801 VDE

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

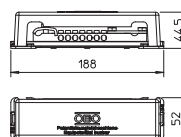
CuZn Brass

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

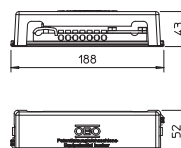
CuZn Brass

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

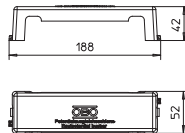
- Cover hood from polystyrene, grey
- Sealable / labellable cover
- Base plate made of strip-galvanised steel
- Contact strip made of nickel-plated brass
- Screws and crossbar made of electrogalvanised steel
- Capable of carrying lightning current 50 kA (10/350)

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

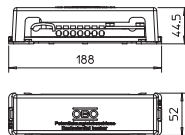


Type	Colour	Pack. pcs	Weight kg/100 pcs	Item No.
1809 30 AH	Grey	50	3.700	5015200

PS Polystyrene

- Replacement cover hood for equipotential busbar, type 1809

Equipotential busbar OBO Green



Type	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs	Item No.
1809 NR	N/50	1	22.300	5015075

CuZn Brass

Natural product protects against natural influences.

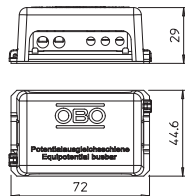
The OBO Green equipotential busbar is a solution manufactured from cellulose acetate CA for the installation of the equipotential bonding according to DIN VDE 0100-410/-540 and lightning protection equipotential bonding according to DIN VDE 0185-305. The basic material is widely used in the paper industry.

- 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



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

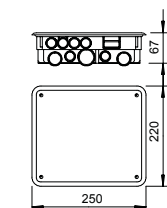
CuZn Brass

- 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 for flush-mounting with 1809



Type	Pack. pcs	Weight kg/100 pcs	Item No.
1809 UP	1	74.500	5015065

CuZn Brass

Connection options:

- 7 conductors to 25 mm²
- 1 round conductor Rd 8-10
- 1 flat conductor to FL30 or round conductor Rd 8-10
- With mounted potential equalisation rail 1809 (without covering hood)
- Pre-marked boxes for inserting required conductors and cover

Equipotential busbars for outdoor areas



- UV-stabilised
- Corrosion-resistant
- Simple installation
- Sealable
- Labelling in the lid

The equipotential busbar for outdoor areas, 1809 A, is used for installation the protection and functional equipotential bonding according to DIN VDE 0100-410/540 and the lightning protection equipotential bonding according to VDE 0185-305 (IEC 62305).

Thanks to corrosion-resistant and UV-stabilised materials, the equipotential busbar is suitable for both outdoor areas and systems in aggressive environments.



Equipotential bonding rail for outside installation



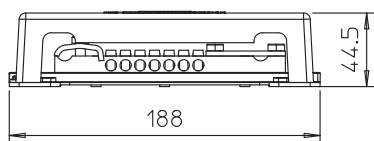
Type	Colour	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
1809 A	Black	N/50	1	23.000	5015111
1809 AM	Black	H/100	1	23.000	5015105

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)

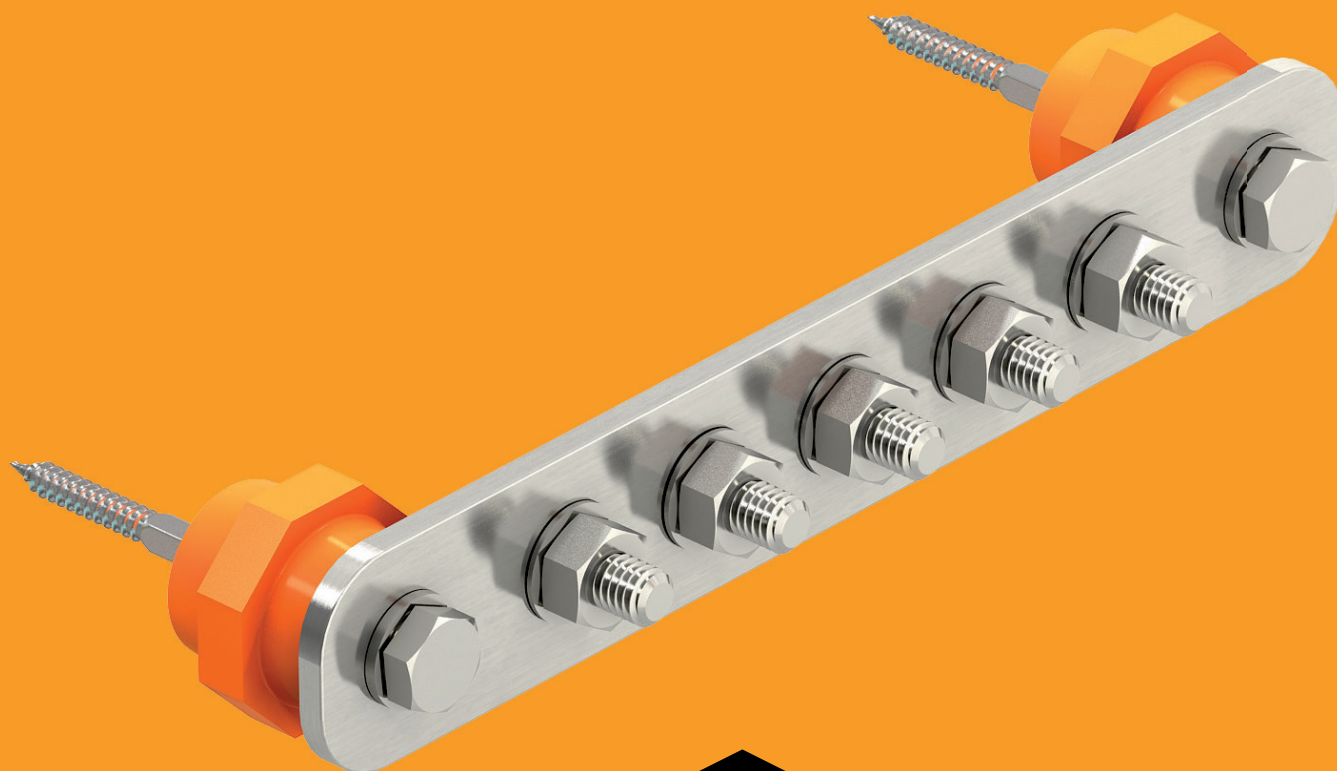
Dimensions



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 busbars for industrial areas



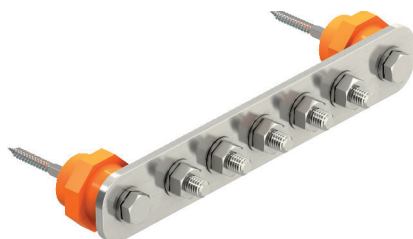
- Corrosion-resistant
- UV-stabilised
- Quick and easy mounting

The equipotential busbars for industry, BigBar (1802) and 1805, are used for the installation of protection and functional equipotential bonding according to DIN VDE 0100-410/540 and the lightning protection equipotential bonding according to VDE 0185-305 (IEC 62305). Due to the combination of corrosion resistance materials and their simple installation, the

equipotential busbars are especially suitable for use in the industrial sector. The stainless steel (V4A, 1.4571, 316 Ti) variants of the 1805 can be used in a wide range of applications thanks to the fastening holes with their 11 mm diameter.



Equipotential bonding rail BigBar for industrial application

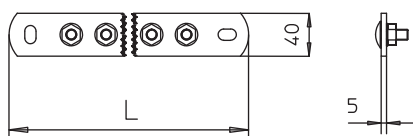


Type	Number of connections	Width mm	Length mm	Height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1802 5 VA	5	40	246	5	1	90.000	5015854
1802 10 VA	10	40	408.5	5	1	190.000	5015866

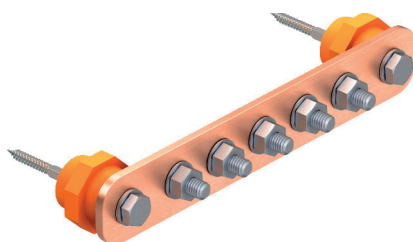
V2A Stainless steel, grade 304

- Main potential equalisation to VDE 0100 Part 410 and Part 540, and also lightning protection potential equalisation to VDE 0185-305 (IEC 62305)
- Insulation feet
- Quick, simple assembly of connection conductors to the contact rail using lock bolts M10
- The high-grade stainless steel versions (V2A) are suitable for outdoor use
- Complete with anchors and bolts for wall mounting
- With lock washer (DIN 137) for bolt locking against loosening (e.g. required in industry and explosion-protected areas)

Dimensions



Equipotential bonding rail BigBar for industrial application

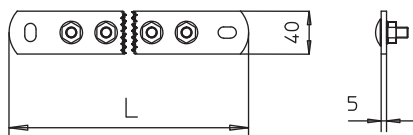


Type	Number of connections	Width mm	Length mm	Height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1802 5 CU	5	40	246	5	1	80.000	5015830
1802 6 CU	6	40	278.5	5	1	98.400	5015832
1802 8 CU	8	40	343.5	5	1	116.550	5015836
1802 10 CU	10	40	408.5	5	1	180.000	5015842
1802 12 CU	12	40	473.5	5	1	152.850	5015844
1802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

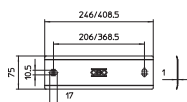
Cu Copper

- Main potential equalisation to VDE 0100 Part 410 and Part 540, and also lightning protection potential equalisation to VDE 0185-305 (IEC 62305)
- Insulation feet
- Quick, simple assembly of connection conductors to the contact rail using lock bolts M10
- The high-grade stainless steel versions (V2A) are suitable for outdoor use
- Complete with anchors and bolts for wall mounting
- With lock washer (DIN 137) for bolt locking against loosening (e.g. required in industry and explosion-protected areas)

Dimensions



Cover for BigBar equipotential bonding rail



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

V2A Stainless steel, grade 304

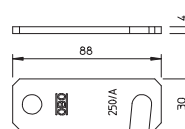
- Complete with all mounting components
- Labellable

Crossbar for equipotential bonding rail

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

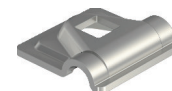
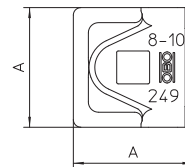


Connection terminal, equipotential bonding, Rd 8–10 mm

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

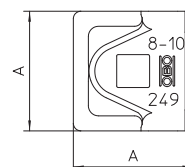


Connection terminal, equipotential bonding, Rd 8–10 mm

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



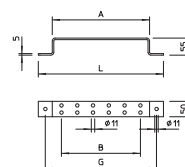
Type	Dimension L mm	Dimension A mm	Dimension B mm	Dimension G mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1805 4 FT	302	212	153	257	1	77.000	5016037

St Steel

FT Hot-dip galvanised

1805/...: For connecting different earthing systems

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



Earthing connection bar

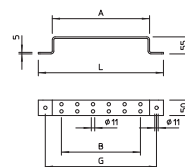


Type	Dimension L mm	Dimension A mm	Dimension B mm	Dimension G mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1805 2 VA	200	110	51	155	1	54.800	5016096
1805 6 VA	404	314	255	359	1	97.100	5016126

V4A Stainless steel, grade 316 Ti

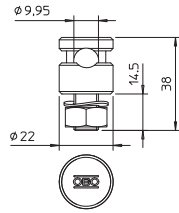
1805/...: For connecting different earthing systems

- 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





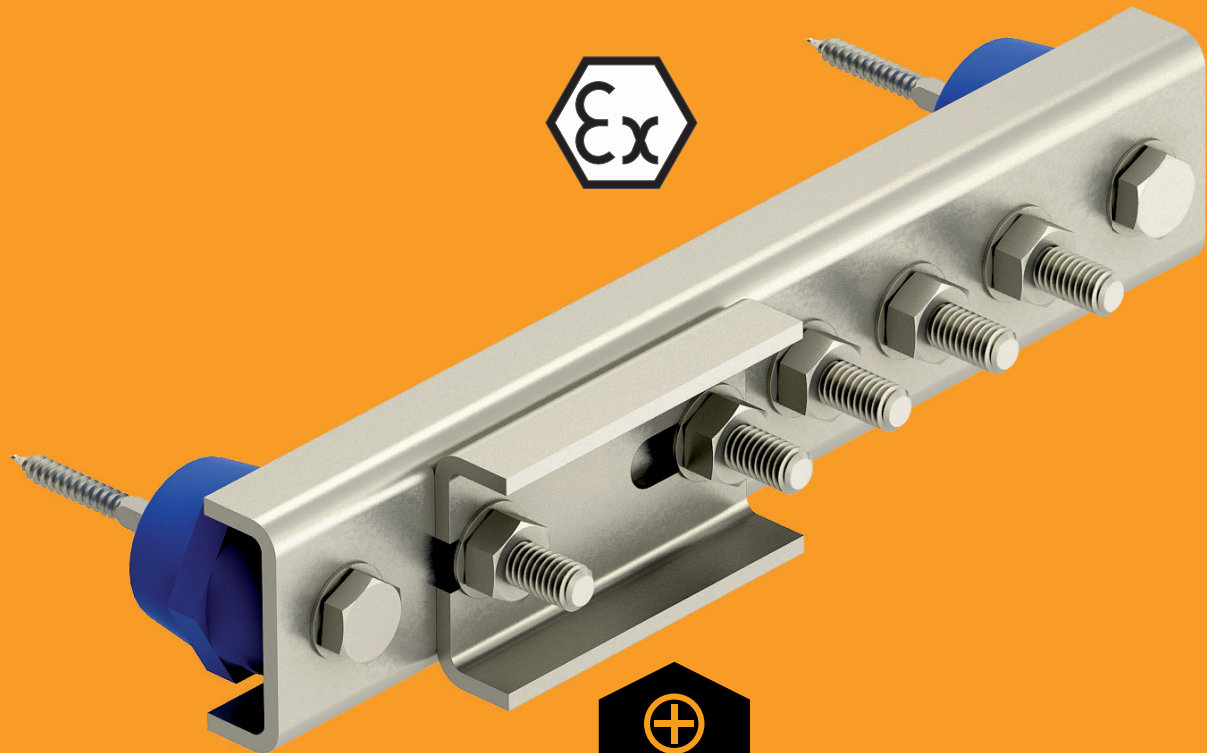
Connector, Rd 8–10 mm with pressure trough



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 bonding for Ex areas



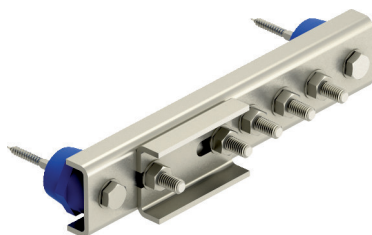
- Manufacturer declaration for use in potentially explosive areas
- Protected against self-loosening
- UV-stabilised and halogen-free insulation feet
- For single, multi and fine-wire connection cables and flat conductors
- Suitable for FT, VA, CU and AL material
- Corrosion-resistant

The lightning protection components for equipotential bonding in Ex areas can be used as part of the erection according to VDE 0165 Part 1 (IEC 60079-14) and VDE 0185-305-3 (IEC 62305-3). They are secured against self-loosening in accordance with VDE 0185-305-3 Supplementary Sheet 2 (DIN EN 62305-3 Supplementary Sheet 2). The equipotential busbars are used for lightning protection equipotential bonding according to VDE 0185-305-3 (IEC 62305-3) and protective/function equipotential bonding according to DIN VDE 0100 Part 410/540. The Vario quick connectors and the connectors with pressure trough are

connected with lightning current carrying capacity according to VDE 0185-305-3 (IEC 62305-3) and VDE 0185-561-1 (IEC 62561-1). The components are suitable for use in potentially explosive areas of Zone 2 (gases, vapours, mist) as well as Zone 22 (dusts). They do not possess their own potential source of ignition and thus cannot be evaluated according to the European Directive 94/9/EC. This means that an approval according to the European Directive 94/9/EC is not legally possible and also not required in the context of explosion protection.



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



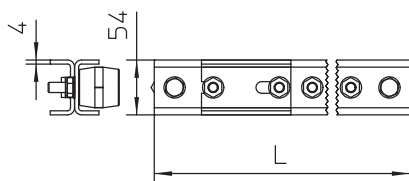
Type	Number of connections	Width mm	Length mm	Height mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
EX PAS 5	5	54	279	4	H/100	1	152.000	5015265
EX PAS 10	10	54	441	4	H/100	1	214.000	5015270

V2A Stainless steel, grade 304

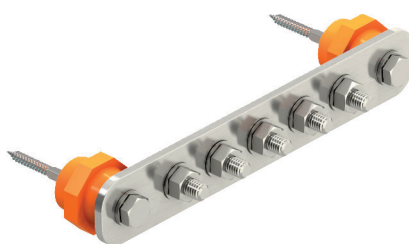
For ignition spark-free protection/functional equipotential bonding to DIN VDE 0100-410/-540 as well as ignition spark-free lightning protection equipotential bonding to DIN EN 0185-305 (IEC 62305) in systems to VDE 0165-1 (IEC/ EN 60079-14)

- 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

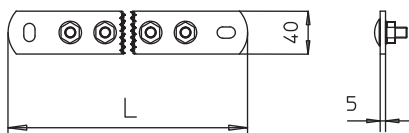


Type	Number of connections	Width mm	Length mm	Height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1802 5 VA	5	40	246	5	1	90.000	5015854
1802 10 VA	10	40	408.5	5	1	190.000	5015866

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



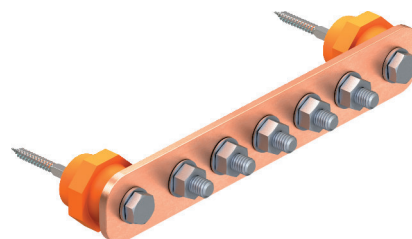
Equipotential bonding rail BigBar for industrial application



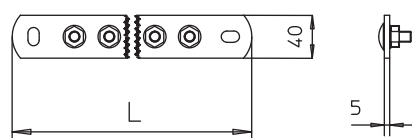
Type	Number of connections	Width mm	Length mm	Height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1802 5 CU	5	40	246	5	1	80.000	5015830
1802 6 CU	6	40	278.5	5	1	98.400	5015832
1802 8 CU	8	40	343.5	5	1	116.550	5015836
1802 10 CU	10	40	408.5	5	1	180.000	5015842
1802 12 CU	12	40	473.5	5	1	152.850	5015844
1802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

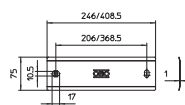


Cover for BigBar equipotential bonding rail

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

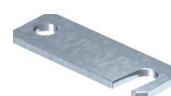
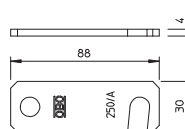


Crossbar for equipotential bonding rail

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

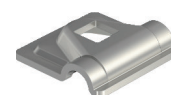
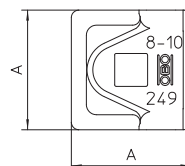


Connection terminal, equipotential bonding, Rd 8–10 mm

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

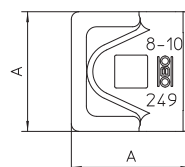


Connection terminal, equipotential bonding, Rd 8–10 mm

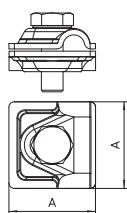
Type	Fit mm	Dimension A mm	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 CU-OT	Rd 8-10	40	100	3.580	5311530

Cu Copper

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



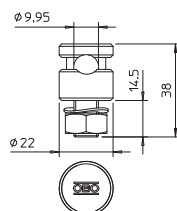
Vario quick connector



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)

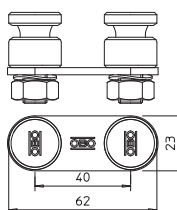
Connector, Rd 8–10 mm with pressure trough



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)

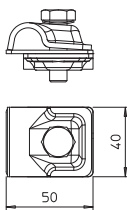
Connector, Rd 8–10 mm, double, with pressure trough



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5002 N-VA	Rd 8-10	N/50	10	16.200	5304270
V2A Stainless steel, grade 304					

- With 2 Fix-Kontakt clamping bolts, nuts and serrated washers
- With pre-mounted pressure trough made of VA
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)

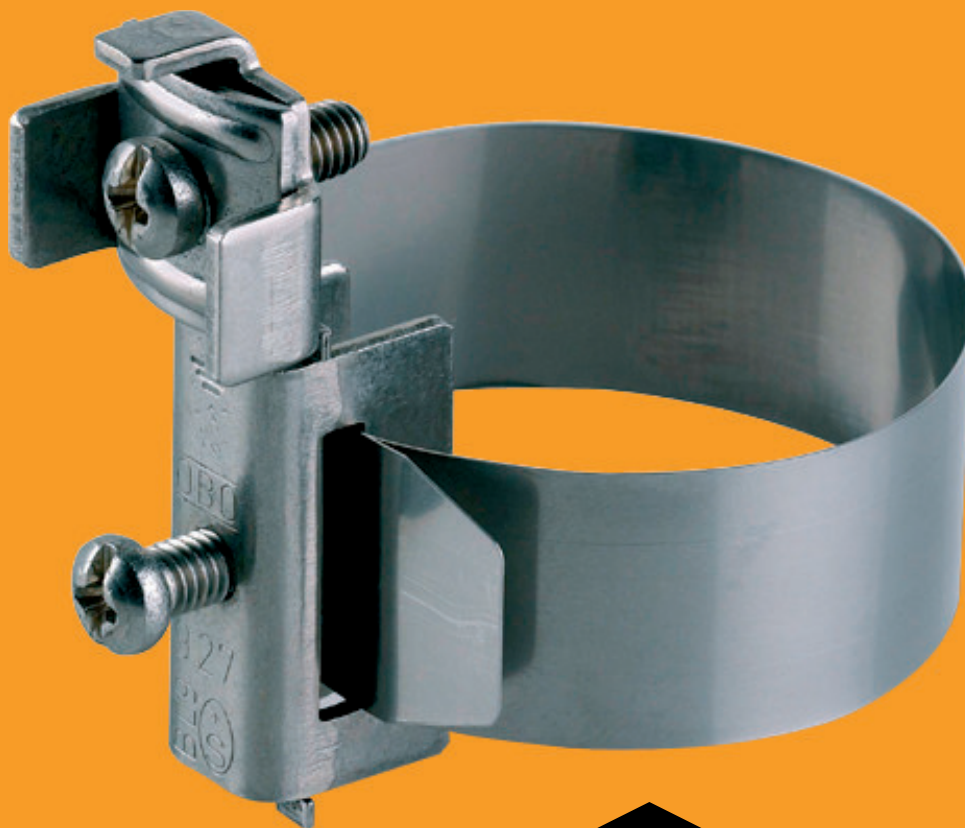
Vario quick connector Rd 8-10x16



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 clamps



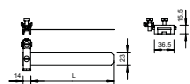
- Varied connection options
- Adjustable mounting strip
- Suitable for many pipe diameters

Each system has different environmental and normative requirements relating to equipotential bonding. To implement equipotential bonding correctly, it is therefore necessary to select the right components to use. Equipotential busbars and earthing pipe clamps are key components of this kind of installation. In the context of lightning protection equipotential bonding, these must fulfil the requirements and undergo tests as defined in VDE 0185-561-1 (IEC 62561-1). When

connecting metallic pipes to the equipotential bonding, strip earthing pipe clamps such as OBO type 927 are generally used. These offer a wide range of advantages over pipe clamps during assembly. With their rustproof stainless steel tightening strap, they are suitable for a wide range of pipe diameters and materials.



Earthing pipe clamp VA

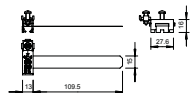


Type	for pipe Ø inch	Dimen- sion L mm	for pipe Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
927 1	3/8-1 1/2	200	17.2 - 48	10	7.780	5057515
927 2	3/8-4	395	17.2 - 114	10	8.550	5057523
927 4	3/8-6	555	17.2 - 185	10	8.900	5057558

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



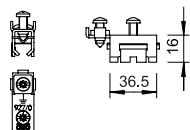
Type	for Dimen- sion L mm	for pipe Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
927 0	109.5	8 - 22	10	5.000	5057507

CuZn Brass

N Nickel-plated

- For pipe Ø 8-22 mm
- Connection options: max. 2 conductors 2.5-10 mm²
- Clip elements and screws from nickel-plated brass
- Tightening strip from high-grade stainless steel (V2A)

Clamp lock for earthing pipe clamp

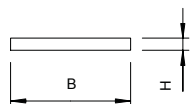


Type	Pack. pcs	Weight kg/100 pcs.	Item No.
927 SCH-K-VA	20	4.700	5057930

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	Dimen- sion B mm	Dimen- sion 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

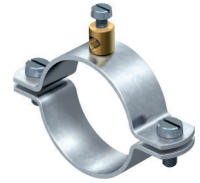
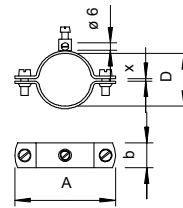
Earthing clamp, type 925

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 terminal for fastening on earthing strap

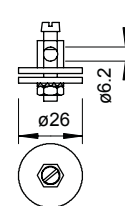


Type	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
928	240	10	5.700	5040507

CuZn Brass

N Nickel-plated

- For use in bathtubs or shower tubs etc.
- Connection option: conductors to 16 mm²
- Clamping element with threaded connection M6, 1 hexagonal nut M6, 1 serrated dimension washer and 1 cylinder screw M5 x 8
- Clamping element, nut and screws from copper-plated brass
- Serrated washer from stainless steel; 2 washers from galvanised steel



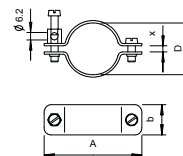
Earthing clamp, type 942

Type	Dimension A mm	Clamping range D mm	Dim. X mm	for pipe Ø inch	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
942 11	44	8 - 11	3.5	1/8	420	10	4.480	5038014
942 15	50	13 - 15	3	1/4	320	10	4.800	5038030
942 18	52	16 - 18	2	3/8	200	10	5.170	5038057
942 22	55	19 - 22	3	1/2	180	10	5.550	5038073
942 28	63	24 - 28	3	3/4	180	10	6.170	5038081
942 35	71	30 - 35	5	1	120	10	8.570	5038111
942 43	81	39 - 43	5	1 1/4	100	10	9.740	5038138
942 49	86	44 - 49	5	1 1/2	100	10	10.540	5038154

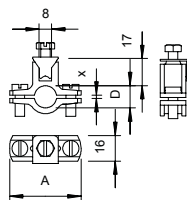
Cu Copper

N Nickel-plated

- For pipes 1/8–1 1/2" or Ø 8–49 mm
- Connection options: 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



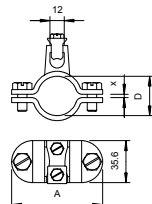
Type	Dimension A mm	Clamping range D mm	Dim. X mm	for pipe Ø inch	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
950 Z 1/4	45	12 - 14	2	1/4	300	10	5.830	5050030
950 Z 3/8	50	15.5 - 17.5	2	3/8	180	10	6.020	5050057
950 Z 1/2	54	20 - 22.5	2.5	1/2	120	10	7.000	5050073
950 Z 3/4	61	25 - 28	3	3/4	120	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 Electroplated

- For pipes Ø 1/4"-2"
- Connection options: conductors to 35 mm² or round conductors to Ø 6 mm
- With captive pressure strip, 2 cylinder screws M6 x 16 and 1 hex-head screw M6 x 16 from galvanised steel, top and bottom part of clip from die-cast zinc

Earthing clamp, type 952



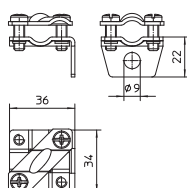
Type	Dimension A mm	Clamping range D mm	Dim. X mm	for pipe Ø inch	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
952 Z 1/2	65	18.5 - 21.5	3	1/2	50	5	24.880	5052076
952 Z 3/4	71	24 - 27	3	3/4	50	5	26.780	5052092
952 Z 1	77	30.5 - 33.5	3	1	50	5	28.560	5052114
952 Z 1 1/4	87	39.5 - 42.5	3	1 1/4	50	5	32.200	5052130
952 Z 1 1/2	94	45.5 - 48.5	3	1 1/2	20	5	34.720	5052157
952 Z 2	105	57 - 60	3	2	30	5	38.520	5052181

St Steel

FT Hot-dip galvanised

- For pipes 1/2-2" or Ø 11.5-60 mm
- Connection options: conductors 16-70 mm² and/or round conductors to Rd 10 with captive pressure strip from stainless steel
- With 2 hexagonal bolts M6 x 16 and 2 hexagonal bolts M6 x 20 from hot-dip galvanised steel
- Top section of clip with cast contact point from die-cast zinc, bottom section of clip from hot-dip galvanised steel

Earthing terminal type 951

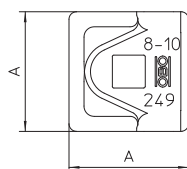
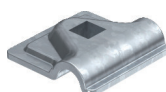


Type	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
951	120	10	5.400	5051509

V2A Stainless steel, grade 304

- Longitudinal and transverse conductor routing
- With 1 attaching hole Ø 9 mm
- With 2 cylinder bolts M6 x 16

Connection terminal, equipotential bonding, Rd 8-10 mm



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

St Steel

FT Hot-dip galvanised

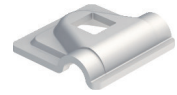
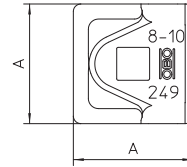
- For round conductor fastening RD 8-10
- Suitable for M10 bolts

Connection terminal, equipotential bonding, Rd 8–10 mm

Type	Dimen- sion 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

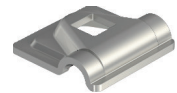
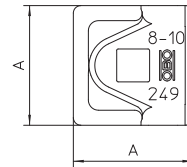


Connection terminal, equipotential bonding, Rd 8–10 mm

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

V2A Stainless steel, grade 304

- For round conductor Rd 8-10
- Suitable for M10 bolts

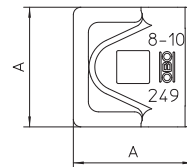


Connection terminal, equipotential bonding, Rd 8–10 mm

Type	Fit mm	Dimen- sion A mm	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 CU-OT	Rd 8-10	40	100	3.580	5311530

Cu Copper

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

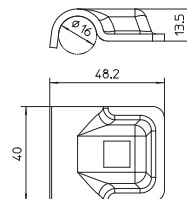


Connection terminal, equipotential bonding, Rd 16 mm

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
249 VA-OT	16	100	5.700	5311573

V2A Stainless steel, grade 304

- For round conductor fastening RD 16
- Suitable for M10 bolts



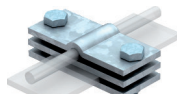
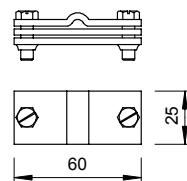
Earth connection terminal for round conductor and flat conductor

Type	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
937 50	100	10	11.750	5043018

St Steel

FT Hot-dip galvanised

- For round and flat conductors
- Fit: cable 50 mm² x max. FL 40
- Rd 8 x max. FL 40
- With 2 hexagonal bolts M6 x 20 (F)



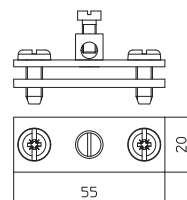
Earthing terminal for cables and flat conductors

Type	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
939	150	25	5.932	5043107

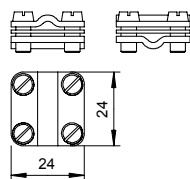
St Steel

G Electro galvanised

- For cables to 16 mm² and flat conductors
- Fit: cable to 16 mm² x max. FL 30
- With riveted brass connection terminal and one cylinder bolt, M5 x 12, with two cylinder bolts, M6 x 16



Clip branch terminal



Type

470 4-16

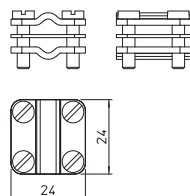
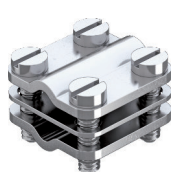
CuZn Brass

N Nickel-plated

- Seat: 4-8 mm x 4-8 mm
- With 4 cylinder bolts M4 x 16

Pack. pcs	Weight kg/100 pcs.	Item No.
50	2.856	5064015

Clip branch terminal, parallel



Type

471 4-16 P

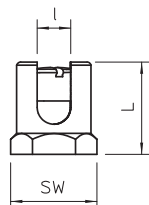
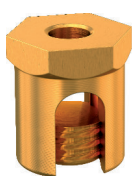
CuZn Brass

N Nickel-plated

- Seat: 4-8 mm x 4-8 mm
- With 4 cylinder bolts M4 x 16

Pack. pcs	Weight kg/100 pcs.	Item No.
50	2.900	5064017

Earthing terminal with fastening thread

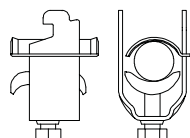


Type	Dimension L mm	Dimension I mm	Cross-section mm²	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
EKL 25 M6	22	8	25	M6	50	3.100	6404006
EKL 35 M6	26	10	35	M6	50	4.800	6404014
EKL 25 M8	26	10	25	M8	50	3.970	6404001

CuZn Brass

Earthing terminal for fastening the equipotential bonding conductor to the cable support system.

Clamp clips for screen connection



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

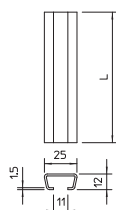
V2A Stainless steel, A2

For electrical connection of the braided shield of stripped cables.

Delivery complete with counter-trough; pressure trough and VA counter-trough.

A cable screen for protection against electromagnetic influences, can also contribute towards equipotential bonding as both ends are connected to the reference potential.

Profile rail CL2512, slot 11 mm, unperforated

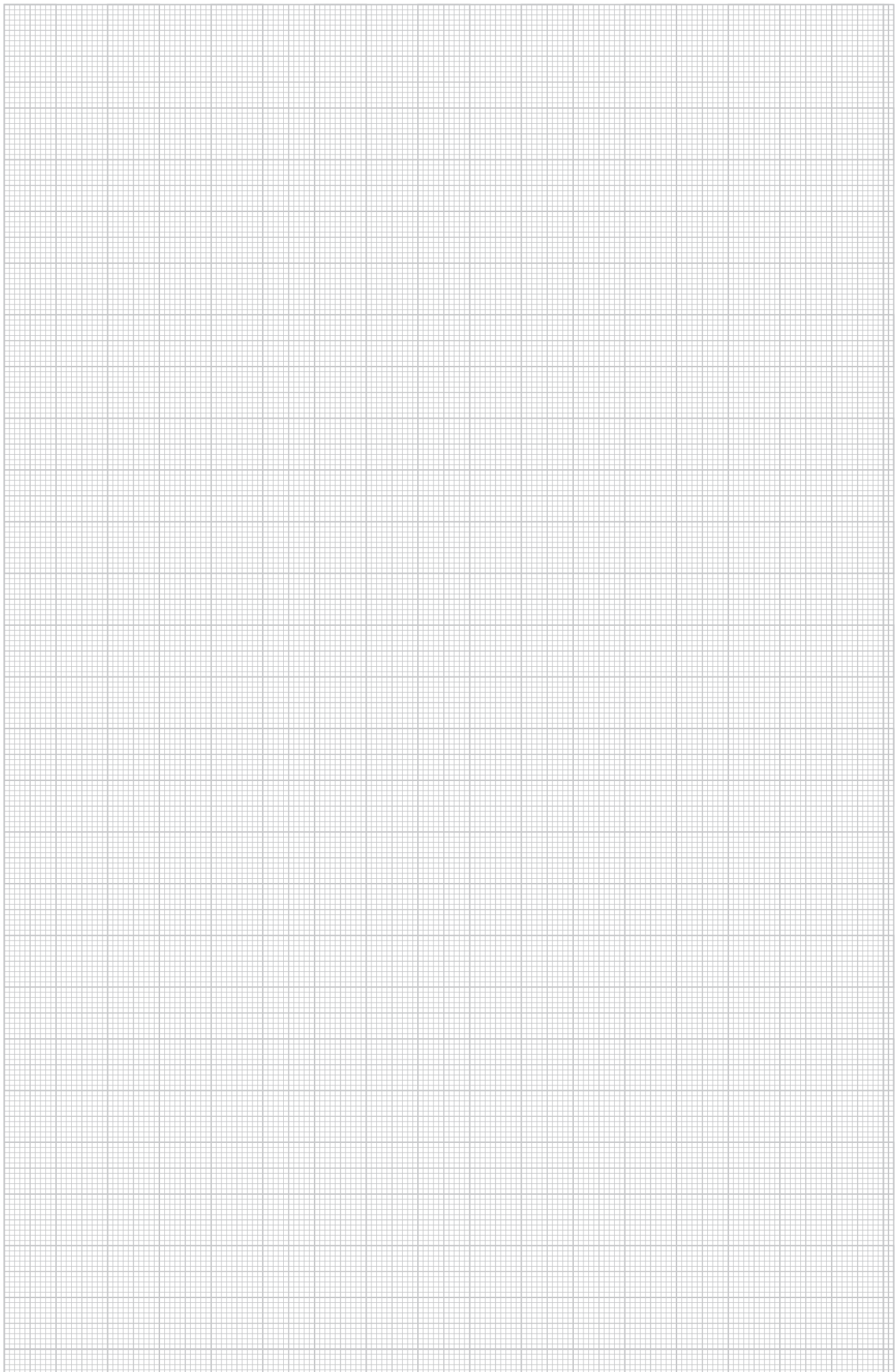


Type	Length mm	Dimension W x H mm	Material thickness mm	Dimension L mm	Pack. m	Weight kg/100 m	Item No.
CL2512UP2000FT	2000	25 x 12	1.5	2000	20	65.000	1117025
CL2512UP2000FS	2000	25 x 12	1.5	2000	20	58.300	1117033

St Steel

FS Strip-galvanised **FT** Hot-dip galvanised

Light-duty C profile rail for cable routing, in conjunction with series clips or clamp clips with N foot. Can also be used in building of control cabinets.





Galvanised steel flat conductor for earth

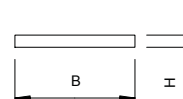


Type	Dimension W x H mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
5052 DIN 30X3.5	30 x 3,5	105	30	25	30	84.000	5019345
5052 DIN 30X3.5	30 x 3,5	105	60	50	60	84.000	5019347
5052 DIN 40X4	40 x 4	160	40	51	40	128.000	5019355
5052 DIN 40X5	40 x 5	200	30	50	30	162.000	5019360

St Steel

FI 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



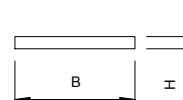
Stainless steel flat conductor



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 earthing standard DIN 18014, V4A is required in the earth
- For use in areas at risk of corrosion
- For lightning protection, earthing systems and ring equipotential bonding



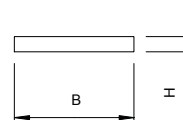
Flat conductor, copper



Type	Dimension W x H mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
FL 20-CU	20 x 2,5	50	45	20	45	44.500	5021804

Cu Copper

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Meets the requirements of VDE 0185-305 (IEC 62305)
- For lightning protection, earthing systems and ring equipotential bonding

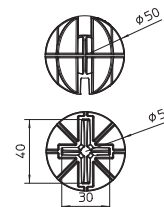


Protective cap for connection lugs, reflective

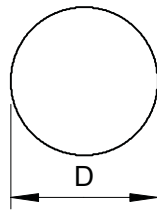
Type	Fit mm	Pack. pcs	Weight kg/100 pcs	Item No.
ProtectionBall	RD 8-10/ FL 25/ 30/ 40	25	2.050	5018014

PE Polyethylene

- For snapping onto round conductors or flat conductors
- Noticeable, reflective label
- For accident protection during the construction phase



Round conductor, galvanised steel



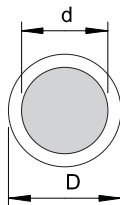
Type	Nominal size Ø mm	Cross-section mm²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
RD 8-FT	8	50	125	50	125	40.000	5021081
RD 10	10	78	80	50	80	52.500	5021103

St Steel

FT Hot-dip galvanised

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)
- RD 10 can also be used in the earth
- Zinc coating: 350 g/m² (approx. 50 µm)

Round conductor, galvanised steel with PVC jacketing



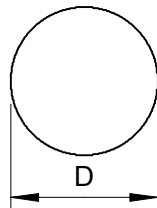
Type	Colour	Dimen- sion d mm	Dimen- sion D mm	Cross-section mm²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
RD 10-PVC	Black	10	13	78	75	50	75	67.000	5021162

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

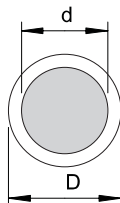


Type	Nominal size Ø mm	Cross-section mm²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
RD 8-ALU	8	50	150	20	150	13.500	5021286
RD 8-ALU-T	8	50	150	20	150	13.500	5021294
RD 8-ALU-T 75	8	50	75	10	75	13.500	5021296
RD 10-ALU	10	78	95	20	95	21.000	5021308

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 mm²	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

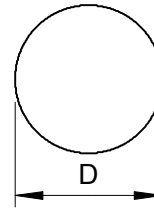
Round conductor, stainless steel A2



Type	Nominal size Ø mm	Cross-section mm²	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



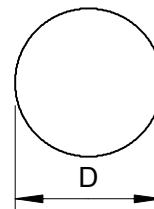
Round conductor, copper



Type	Nominal size Ø mm	Cross-section mm²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
RD 8-CU	8	50	100	45	100	45.000	5021480
RD 10-CU	10	78	50	35	50	70.000	5021502

Cu Copper

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)



Copper cable

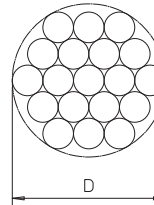


Type	Dimension D mm	Individual wires	Cross-section mm²	Normal ring ca. m	Normal ring ca. kg	Weight kg/100 m	Item No.
S 11-CU	10.5	19x Ø 2,1	70	50	30	58.600	5021654
S 9-CU	9	19x Ø 1,8	50	100	45	45.000	5021652
S-11-CU SN	10.5	19x Ø 2,1	70	50	30	58.600	5021656

Cu Copper

Sn Tin-plated

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)



Round conductor, copper sheathed



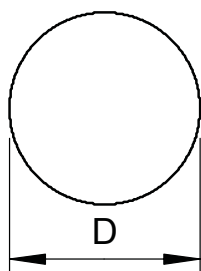
Type	Nominal size Ø mm	Cross-section mm²	Pack. m	Weight kg/100 m	Item No.
RD 8-ST CU	8	50	100	40.000	5021380

St Steel

Cu Copper-plated

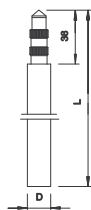
- According to IEC/ EN 62561-2 (VDE 0185-561-2)
- Meets the requirements of VDE 0185-305 (IEC 62305)
- Copper layer thickness: Min. 70 µm

Dimensions



Earth rods and plates

Earthing rod for standard applications



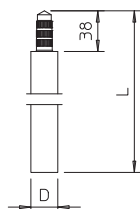
Type	Length mm	Outer-Ø mm	Short-circuit current (50 Hz) (1 s; ≤300 °C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
219 20 ST FT	1000	20	7.9	H/100	5	250.000	5000742
219 20 ST FT	1500	20	7.9	H/100	5	360.000	5000750

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)

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 25 ST FT	1500	25	12.3	H/100	5	573.000	5000769

St Steel

FT Hot-dip galvanised

- High corrosion resistance
- Zinc support approx. 130 µm
- With peg and bore for linking together
- Round pegs with three knurls
- Conforms to the requirements according to VDE 0185-305 (IEC 62305)
- Short-circuit current I_k (50 Hz), time 1 s, temp. max. 300 °C: 12.3 kA

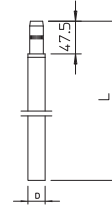
LightEarth earthing rod

Type	Length mm	Outer-Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
LE ERDER FT	1500	25	5	235.000	5000300

St Steel

FT Hot-dip galvanised

- Expandable earth rod system for erecting earthing connections (type A)
- Also suitable for difficult soil conditions
- The LightEarth earthing system is connected using the pre-mounted sleeve
- Satisfies requirements according to DIN VDE 0185-305 (IEC 62305)
- For use with antenna earthing systems, lightning earthing systems, etc.

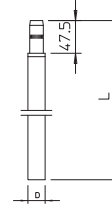


LightEarth earthing rod

Type	Length mm	Outer-Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
LE ERDER V4A	1500	25	5	235.000	5000335

V4A Stainless steel, grade 316 L

- Expandable earth rod system for erecting earthing connections (type A)
- Also suitable for difficult soil conditions
- The LightEarth earthing system is connected using the pre-mounted sleeve
- Satisfies requirements according to DIN VDE 0185-305 (IEC 62305)
- For use with antenna earthing systems, lightning earthing systems, etc.



BP earthing rod

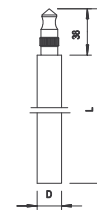


Type	Length mm	Outer-Ø mm	Short-circuit current (50 Hz) (1 s; ≤300 °C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
219 20 BP FT	1500	20	7.9	H/100	5	360.000	5000947
219 25 BP FT	1500	25	12.3	H/100	5	573.000	5000955

St Steel

FT Hot-dip galvanised

- "BP" system (Bundespost)
- Very good contacting properties with soft metal inlay in the bore hole
- With peg and bore for linking together
- FT version with zinc coating approx. 130 µm
- Conforms to the requirements according to VDE 0185-305 (IEC 62305)



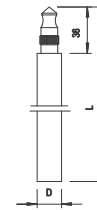
BP earthing rod



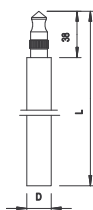
Type	Length mm	Outer-Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
219 20 BP V4A	1000	20	5	250.000	5000858
219 20 BP V4A	1500	20	5	365.000	5000866

V4A Stainless steel, grade 316

- "BP" system (Bundespost)
- Very good contacting properties with soft metal inlay in the bore hole
- With peg and bore for linking together
- Conforms to the requirements according to VDE 0185-305 (IEC 62305)
- Short circuit current I_k (50 Hz), time 1 s, max. temp. 300 °C: 4.5 kA (219 20 BP V4A)



BP earthing rod with copper sheath



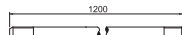
Type	Length mm	Outer-Ø mm	Short-circuit current (50 Hz) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
219 20 BP CU	1500	20	7.9	H/100	5	365.400	5000500

St Steel

Cu Copper-plated

- "BP" system (Bundespost)
- Made of steel with a copper jacket of min. 0.25 mm
- Very good contacting properties with soft metal inlay in the bore hole
- With peg and bore for linking together
- Tensile strength min. 600 N/mm²
- Conforms to the requirements according to VDE 0185-305 (IEC 62305)

BP earth rod with copper sheath



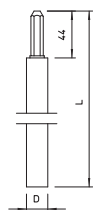
Type	Length mm	Outer-Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
219 16 CU	1200	14.2	5	192.000	5000481

St Steel

Cu Copper-plated

- Made of steel with a copper jacket of min. 0.25 mm
- With thread for linking together
- Tensile strength min. 600 N/mm²
- Meets the requirements of VDE 0185-305 (IEC 62305)

OMEX earthing rod



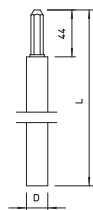
Type	Length mm	Outer-Ø mm	Short-circuit current (50 Hz) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
219 20 OMEX FT	1500	20	7.9	H/100	5	365.400	5000017
219 20 OMEX FT	2000	20	7.9	H/100	5	491.400	5000203

St Steel

FT Hot-dip galvanised

- OMEX system
- With peg and bore for linking together
- With hardened hexagonal pins
- Min. zinc coating 60 µm
- Very good contacting properties with soft metal inlay in the bore hole
- Conforms to the requirements according to VDE 0185-305 (IEC 62305) and DIN EN 62561-2

OMEX earthing rod



Type	Length mm	Outer-Ø mm	Short-circuit current (50 Hz) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
219 25 OMEX FT	1500	25	12.3	H/100	5	577.200	5000025

St Steel

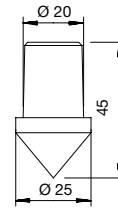
FT Hot-dip galvanised

- OMEX system
- With peg and bore for linking together
- With hardened hexagonal pins
- Min. zinc coating 60 µm
- Very good contacting properties with soft metal inlay in the bore hole
- Conforms to the requirements according to VDE 0185-305 (IEC 62305) and DIN EN 62561-2

Driving spike for LightEarth earth rod

Type	For earth rods Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
LE SPITZE	25	5	10.000	3041409
St Steel FT Hot-dip galvanised				

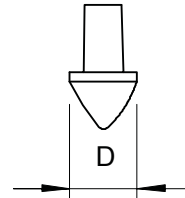
• Suitable for LightEarth system



Driving spike for ST and BP earth rod

Type	For earth rods Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1819 20BP	20	5	3.800	3041212
1819 25BP	25	5	6.700	3041956
TG Cast iron FT Hot-dip galvanised				

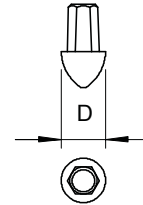
• Suitable for ST and BP system



Driving spike for OMEX earth rod

Type	For earth rods Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1819 20	20	5	3.300	3041204
1819 25	25	5	4.900	3041255
TG Cast iron FT Hot-dip galvanised				

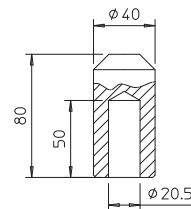
• Suitable for OMEX system
• DIN 48852, Form SP



Impact head for LightEarth earthing rod

Type	Material symbol	For earth rods Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
LE KOPF	St	25	1	0.550	3042308
St Steel FT Hot-dip galvanised					

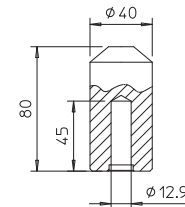
• Suitable for LightEarth system
• For driving earth rods using hand-held hammer
• Hardened



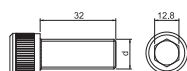
Impact head for earthing rods ST, BP and OMEX

Type	Material symbol	For earth rods Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1820 20	St	20	1	62.600	3042200
1820 25	St	25	1	70.000	3042251
St Steel					

• Suitable for ST, BP and OMEX systems
• Hardened
• DIN 48852, Form SP



Impact head for earthing rod with thread

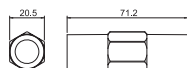


Type	Material symbol	For earth rods Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1820 16	V2A	14.2	5	5.800	3042270

V2A Stainless steel, grade 304

- Suitable for earth rods, type 2019 16 CU

Coupling for earth rod with thread

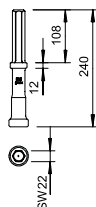


Type	Material symbol	For earth rods Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2019 16	CuSn	14.2	10	8.000	5001190

CuSn Red bronze

- Suitable for earth rods, type 2019 16 CU

Hammer insert, type 2500, for earthing rods ST, BP and OMEX

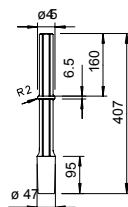


Type	Material symbol	For earth rods Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2500 20	St	20	1	120.000	3043207
2500 25	St	25	1	140.000	3043258

St Steel

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

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

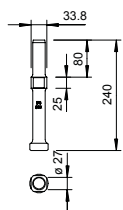


Type	Material symbol	For earth rods Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2510 20	St	20	1	310.000	3043312

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	Material symbol	For earth rods Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2520 20	St	20	1	197.000	3043703
2520 25	St	25	1	197.000	3043754

St Steel

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

Technical drawing of a stainless steel rod. The main view shows a rod with a total length of 1000mm, a threaded section of 130mm, and a base diameter of 19mm. A detail view shows a cross-section of the rod with a 25mm diameter and a 37mm length.



- Manufactured by Bosch UH 10, HSH 10
- Fits earth rod system ST, BP and OMEX
- Hardened



- Make: Bosch GSH 27, USH 27 (WAF 28 mm)
- Suitable for ST, BP and OMEX earth rod systems
- Hardened

Technical drawing of a shaft with dimensions: 60, 5, 16.9, 10, 26, 240, 17.9.



- Manufactured by Hilti TE 52/42, TE 72/60, TE 92
- Fits earth rod system ST, BP and OMEX
- Hardened

© 2006 The Authors
Journal compilation © 2006 Blackwell Publishing Ltd



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

Hammer insert for LightEarth earthing rod



Type	Seat systems	Pack. pcs	Weight kg/100 pcs.	Item No.
LE HAMMER-W	Wacker	1	132.000	3043606
LE HAMMER-H	Hilti	1	76.000	3043610
LE HAMMER-B	Bosch	1	87.000	3043614
LE HAMMER-SDS-M	SDS-max	1	76.000	3043602
LE HAMMER-AC	Atlas Copco	1	76.000	3043618
LE HAMMER-B-II	Other	1	200.000	3043628

St Steel

- Suitable for LightEarth system
- 3043606 for Wacker (BHF 25, BHF 30S)
- 3043610 for Hilti (TE 52/42, TE72/60, TE92)
- 3043614 for Bosch (USH 10, HSH 10)
- 3043602 for SDS-Max
- 3043618 for Atlas Copco (Hexagon seat)
- 3043628 for Bosch GSH27/UH27 (11304) / HS28 (12314)
Hitachi H65SD
Makita HM 1500B / HM1800
- Hardened

Earth rods and plates

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



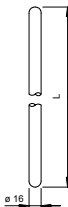
Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 A-1500	1500	16	10	240.000	5400155

St Steel

FT Hot-dip galvanised

- Full material Ø 16 mm
- Rounded on both ends
- Suitable for FangFix stand system

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



Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
200 V4A-1500	1500	16	10	242.000	5420504
200 V4A-2000	2000	16	10	320.000	5420539

V4A Stainless steel, grade 316 Ti

- Full material Ø 16 mm
- Both ends rounded

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

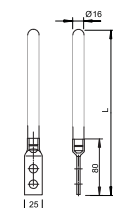


Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 A-CU	1500	16	10	272.100	5400627

Cu Copper

- Full material Ø 16 mm
- Both ends rounded

Air-termination/earth entry rod with connection tabs



Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 F1500	1500	16	10	240.000	5424151
101 F2000	2000	16	10	320.000	5424208

St Steel

FT Hot-dip galvanised

- With 2 attaching holes Ø 12 mm
- One end rounded

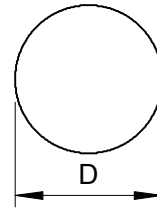
Connection lug/earth entry rod made of stainless steel



Type	Nominal size Ø mm	Cross-section mm²	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 earthing standard DIN 18014, V4A is required in the earth



Earth entry rod, tapered and partially insulated

Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
204 KS-2000	2000	16/10	1	230.000	5430011
204 KS-2500	2500	16/10	1	310.000	5430062

St Steel

F Hot-dip galvanised

- 16 mm earth entry with 10 mm connection
- With mounted heat-shrinkable sleeve (corrosion protection)

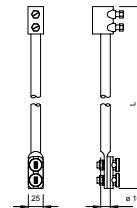


Earth entry rod with separating piece and connector

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

St Steel

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



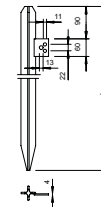
Profile earthing rod with connecting lug

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

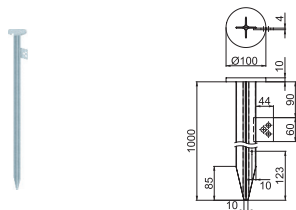
St Steel

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

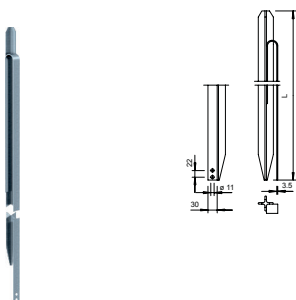


Profile earthing rod with connection strap/hand protection



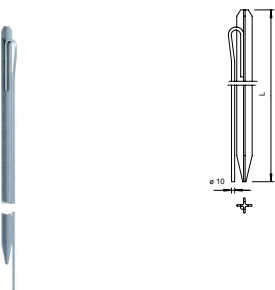
Type	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
213 1000 DIN HS	1000	5	300.000	5003081
St Steel FT Hot-dip galvanised				
• Cross-profile 50 x 50 x 3 mm • Hand protection Ø 100 mm • With connecting strap • 1 gland hole Ø 13 mm • 2 gland holes Ø 11 mm • Round cable fastening e.g. with type 5001 DIN-FT possible • For the construction of earthing systems e.g. antennas or earthing of building site distribution boards				

Profile earth rod connection with strip steel lug



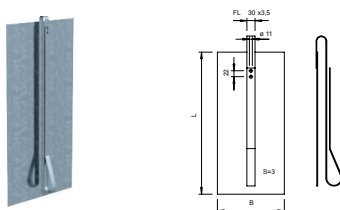
Type	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
213 1500 M	1500	3	527.600	5003261
213 2000 M	2000	3	651.600	5003288
213 2500 M	2500	3	783.800	5003296
213 3000 M	3000	3	899.500	5003318
St Steel FT Hot-dip galvanised				
• With 2 m strip steel section FL 30 x 3.5 • With 2 through holes Ø 11 mm • For the construction of earthing systems e.g. antenna or earthing of building site distribution boards				

Profile earth rod connection with round conductor lug



Type	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
213 1500 F	1500	3	486.900	5003776
213 2000 F	2000	3	610.900	5003784
St Steel FT Hot-dip galvanised				
• With 2 m round conductor lugs Rd 10 • For the construction of earthing systems e.g. antenna or earthing of building site distribution boards				

Earthing plate



Type	Dimension B x L x S mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1816 F-500X1000	500 x 1000 x 3	1	1,329.300	5009227
1816 F-1000X1000	1000 x 1000 x 3	1	2,700.000	5009235
St Steel FT Hot-dip galvanised				
• With 3 m strip steel section FL30 x 3.5 • With 2 attaching holes Ø 11 mm				

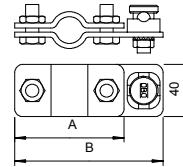
Connection clamp for earth rod to round conductors Rd 8–10

Type	For earth rods Ø mm	Dimension A mm	Dimension B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2710 20	20	84	114	5	39.900	5001218
2710 25	25	89	119	5	42.300	5001226

St Steel

FT Hot-dip galvanised

- ST, BP, OMEX and LightEarth system
- On round conductor Rd 8-10
- Incl. connector, type 5001 DIN



Connection clamp for earth rod on flat conductor

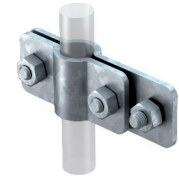
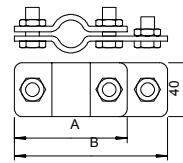


Type	For earth rods Ø mm	Dimension A mm	Short-circuit current (50 Hz) (1 s; ≤300°C) kA	Dimension B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2730 25 FT	25	89	8.5	119	5	38.800	5001412
2730 20 FT	20	84	7.9	114	5	35.900	5001404

St Steel

FT Hot-dip galvanised

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



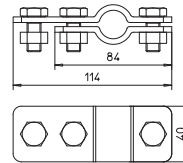
Connection clamp for earth rod on flat conductor



Type	For earth rods Ø mm	Dimension A mm	Dimension B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2730 20 VA	20	84	114	5	35.900	5001366

V2A Stainless steel, grade 304

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



Connection clamp for earth rod, universal

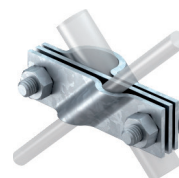
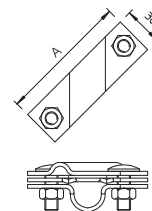


Type	Dimension A mm	For earth rods Ø mm	Fit mm	Short-circuit current (50 Hz) (1 s; ≤300°C) kA	Pack. pcs	Weight kg/100 pcs.	Item No.
2760 20 FT	101	20	Rd 8-10/FL40	—	5	32.400	5001641
2760 B-20 FT	101	20	Rd 8-10/FL40	—	20	32.400	5001749
2760 25 FT	110	25	Rd 8-10/FL40	8.5	5	38.400	5001668

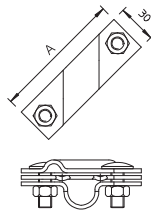
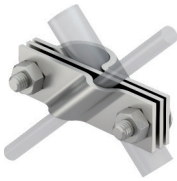
St Steel

FT Hot-dip galvanised

- Suitable for attaching round conductors Rd 8-10 or flat conductors to FL 40
- With separator plate
- Installed with 2 hexagonal bolts M10 x 30 and 2 hexagonal nuts M10



Connection clamp for earth rod, universal

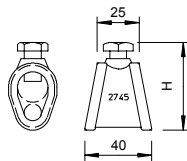


Type	Dimension A mm	For earth rods Ø mm	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2760 20 VA	101	20	Rd 8-10/FL40	5	32.400	5001617
2760 B-20 VA	101	20	Rd 8-10/FL40	20	32.400	5001625
2760 20 V4A	101	20	Rd 8-10/FL40	5	32.400	5001633
2760 25 V4A	110	25	Rd 8-10/FL40	5	32.400	5001672

V2A Stainless steel, grade 304 V4A Stainless steel, grade 316 L

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Suitable for connecting round conductors Rd 8-10 or flat conductors to FL 40
- With adapter plate
- Mounted with 2 hexagonal bolts M10 x 30 and 2 hexagonal bolts M10

Connection clamp for earth rod or cables



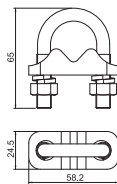
Type	For earth rods Ø mm	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2745 20 MS	20	7-12,5/S95 mm ²	5	16.000	5001560

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)

Connection clamp for RD16 / FL25

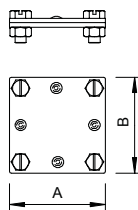
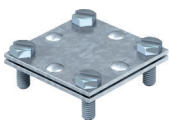


Type	For earth rods Ø mm	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2740 16	14.2	FL/ Rd	10	12.900	5001511
2740 16 KL	14.2	Rd 8-10/FL max. 26	10	17.500	5001513

CuSn Red bronze

- Suitable for connecting round conductors Rd 8-10 or flat conductors with earth rod 219 16 CU

Cross-connector for flat conductor



Type	Fit mm	Dimension A mm	Dimension B mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
255 A-FL30 FT	max. FL30	52	52	H/100	20	11.500	5314534

St Steel

FT Hot-dip galvanised

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Max FL 30 x FL 30
- Without adapter plate
- Mounted with 4 hexagonal bolts M6 x 20 (F)

Cross-connector for flat conductor, with intermediate plate

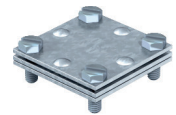
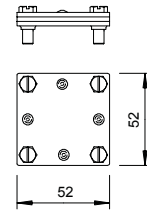


Type	Fit mm	Dimen- sion A mm	Dimen- sion B mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
255 30	max. FL30	52	52	H/100	20	16.650	5314518

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

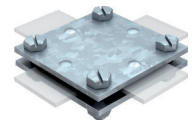
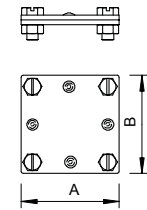


Type	Fit mm	Dimen- sion A mm	Dimen- sion B mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
256 A-DIN 30 FT	max. FL30	60	60	H/100	10	27.800	5314658
256 A-DIN 40 FT	max. FL40	80	80	H/100	10	38.800	5314666

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)



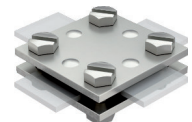
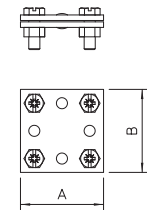
DIN cross-connector for flat conductor



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

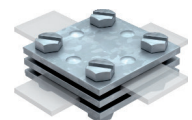
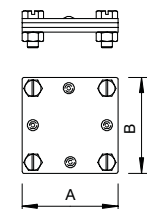


Type	Fit mm	Dimen- sion A mm	Dimen- sion B mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
256 DIN 30 FT	max. FL30	60	60	H/100	10	35.860	5314615
256 DIN 40 FT	max. FL40	80	80	H/100	10	54.650	5314623

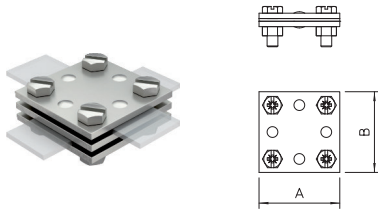
St Steel

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

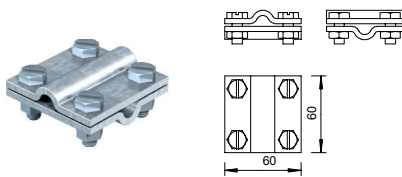


Type	Fit mm	Dimen- sion A mm	Dimen- sion B mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
256 DIN 30 V4A	max. FL 30	60	60	H/100	10	29.100	5314616

V4A Stainless steel, grade 316 Ti

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Max. FL 30 x FL 30
- With adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8

Cross-connector Rd 8–10 mm, wide version



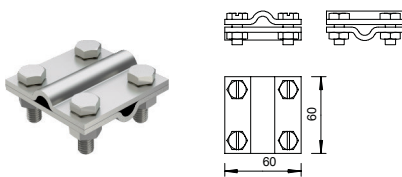
Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
253 8X8	Rd 8-10	H/100	25	30.700	5312604

St Steel

FT Hot-dip galvanised

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10 / FL 30
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8 (F)

Cross-connector round/round without intermediate plate

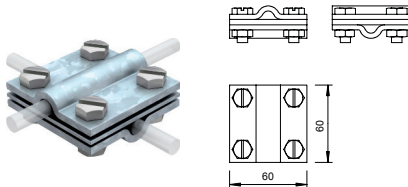


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
253 8-10 V4A	Rd 8-10	H/100	25	23.650	5312582

V4A Stainless steel, 316Ti / 316L

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10 / FL 30
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8 (F)

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



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10 FT	Rd 8-10	H/100	25	33.530	5312310

St Steel

FT Hot-dip galvanised

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10 / FL 30
- With adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8 (F)

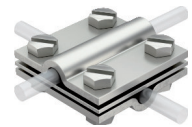
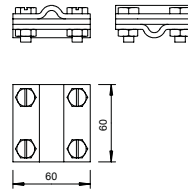
Cross-connector with intermediate plate for Rd 8–10 mm, wide version



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10 V4A	Rd 8-10	H/100	10	33.530	5312318

V4A Stainless steel, grade 316 Ti

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10 / FL 30
- With adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8



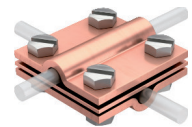
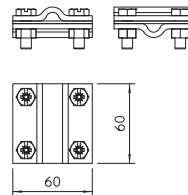
Cross-connector with intermediate plate for Rd 8–10 mm, wide version



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10 CU	Rd 8-10	H/100	10	38.940	5312418

Cu Copper

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10 / FL 30
- With adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8



Cross-connector for Rd 8–10 x Rd 16 mm

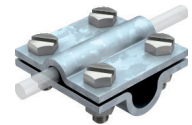
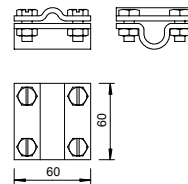


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
253 10X16	Rd 8-10 x 16	H/100	25	29.800	5312809

St Steel

FT Hot-dip galvanised

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 16 / FL 30
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8 (F)



Cross-connector with intermediate plate for Rd 8–10 x Rd 16 mm

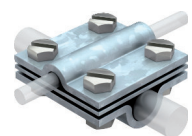
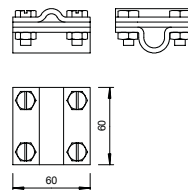


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10X16 FT	Rd 8-10 x 16	H/100	25	38.800	5312345

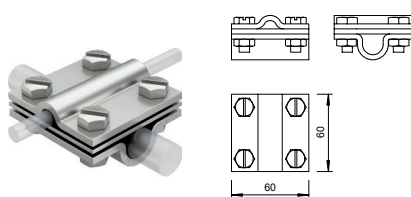
St Steel

FT Hot-dip galvanised

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 16 / FL 30
- With adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8



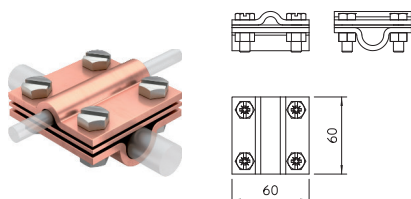
Cross-connector with intermediate plate for Rd 8–10 x Rd 16 mm



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10x16 V4A	Rd 8-10 x 16	H/100	10	39.000	5312346
V4A Stainless steel, grade 316 Ti					

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 16 / FL 30
- With adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8

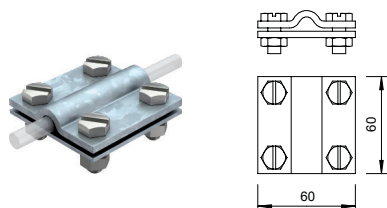
Cross-connector with intermediate plate for Rd 8–10 x Rd 16 mm



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10x16 CU	Rd 8-10 x 16	H/100	10	43.985	5312442
Cu Copper					

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 16 / FL 30
- With adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8

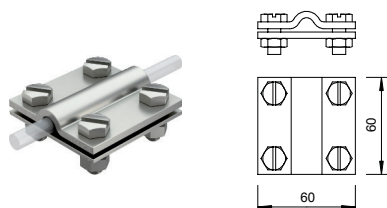
Cross-connector for round cables and flat conductors DIN



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10xFL30 FT	8-10 x FL30	H/100	25	28.500	5312655
St Steel					
FT Hot-dip galvanised					

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x FL 30
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8

Cross-connector for round cables and flat conductors



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10xFL30V4A	8-10 x FL30	H/100	10	28.500	5312656
V4A Stainless steel, grade 316 Ti					

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x FL 30
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8

Cross-connector for flat conductors and round conductors

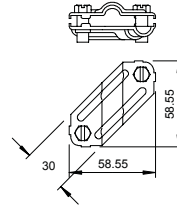


Type	Fit mm	Short-circuit current (50 Hz) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
250	Rd 8-10/FL30	5.6	N/50	25	10.260	5312906

St Steel

FT Hot-dip galvanised

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10
- Fit: Rd 8-10 x FL 30
- Fit: FL 30 x FL 30
- Mounted with 2 hexagonal bolts M8 x 20 (F)



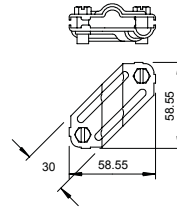
Cross-connector for flat conductors and round conductors



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
250 VA	Rd 8-10/FL30	H/100	25	10.260	5312922
250 V4A	Rd 8-10/FL30	H/100	10	10.260	5312925

V2A Stainless steel, grade 304 V4A Stainless steel, grade 316 Ti

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10
- Fit: Rd 8-10 x FL 30
- Fit: FL 30 x FL 30
- Mounted with 2 hexagonal bolts M8 x 20



Cross-connector for flat conductors and round conductors with threaded bolt M10x45

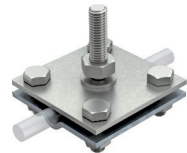
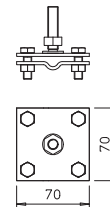


Type	Fit mm	Short-circuit current (50 Hz) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 GB 10x45	8-10 x FL30	4.2	H/100	10	34.800	5312657

V2A Stainless steel, grade 304

FT/V4A Hot-dip galvanised/stainless steel, grade 304

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x FL 30
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8



Diagonal clamp for flat conductors and round conductors

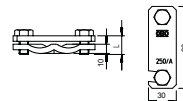


Type	Fit mm	Short-circuit current (50 Hz) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
250 A-FT	Rd 6-22/max. FL50	7.3	H/100	25	28.800	5313015
250 AS-FT	Rd 6-22/max. FL50	7.3	H/100	25	26.000	5313031
250 A	Rd 6-22/max. FL50	7.3	H/100	25	28.800	5313058

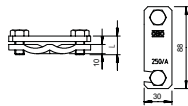
St Steel

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

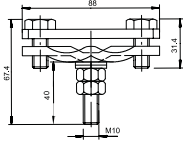


Type	Dimension L mm	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
250 A-VA	40	Rd 6-22/max. FL50	H/100	10	28.800	5313023

V2A Stainless steel, grade 304

- For reinforced steels Ø 6-22 mm and flat conductor 50 x 4
- Installed with screws M10 x 40
- AS version with screws M10 x 20
- Simple installation with open slot

Diagonal clamp with bolt



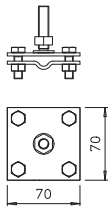
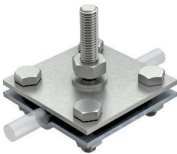
Type	Dimension L mm	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
250 A-BO	25	Rd 6-22/max. FL50	H/100	25	33.000	5313066

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



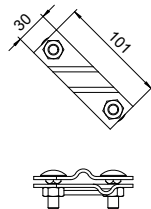
Type	Fit mm	Short-circuit current (50 HZ) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 GB 10x45	8-10 x FL30	4.2	H/100	10	34.800	5312657

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

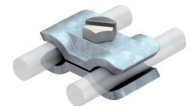
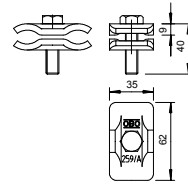


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
259 A ST	Ø 10-20	H/100	25	18.800	5315557
259 A FT	Ø 10-20	H/100	25	18.800	5315514
259 A VA	Ø 10-20	H/100	10	18.800	5315522

St Steel **V2A** Stainless steel, grade 304

FT Hot-dip galvanised

- For connecting reinforced steels Ø 10–20 mm
- Mounted with M10 x 40 bolts



Variable earthing terminal

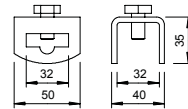


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
1813 KL	FL30 x Rd 8-10	H/100	50	18.000	5014425

St Steel

FT Hot-dip galvanised

- Suitable for connection for Rd 10 x FL 30, FL 30 x FL 30
- Quick mounting using a hexagonal bolt M10 x 20 (F)



Connection terminal for round cable

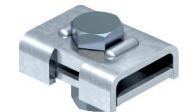
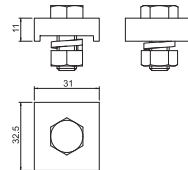


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
1818	Rd 8-10	N/50	10	17.600	5012015

St Steel

FT Hot-dip galvanised

- For connecting round conductor Rd 8-10
- With 1 hexagonal bolt M12 x 40, 1 hexagonal nut M12 and 1 lock washer, stainless steel



Connection terminal for reinforced steels

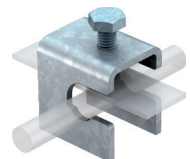
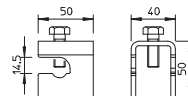


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
1814 ST	FL30x5 x Rd8-14	N/50	25	20.000	5014476
1814 FT	FL30x5 x Rd8-14	N/50	25	20.000	5014468

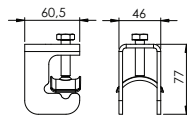
St Steel

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



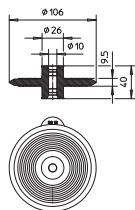
Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
1814 ST D37	FL30x3-4mm / Rd 10 x Rd 16-37	H/100	25	30.000	5014477
1814 FT D37	FL30x3-4mm / Rd 10 x Rd 16-37	H/100	25	30.000	5014469

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

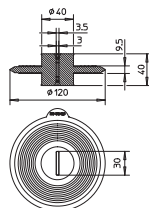
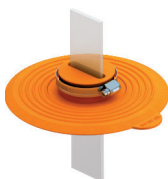


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
DW RD10	RD 10	1	13.000	2360041

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

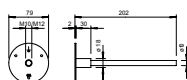


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
DW FL30x3,5	FL 30x3,5	1	18.000	2360043

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

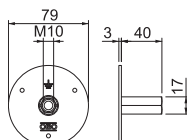


Type	Thread	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
205 B-M10 VA	M10	—	10	25.500	5420008
205 B-M12 VA	M12	—	10	25.500	5420016

V4A Stainless steel, grade 316 L

- Connection to earthing systems, conductors and reinforcement
- Contact plate: Ø 79 mm, made of rustproof stainless steel (V4A)
- Clamping bolt Ø 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

Technical drawing of a mechanical part with dimensions:

- Overall length: 80
- Distance from left end to start of bend: 50
- Radius of bend: 25
- Thickness of part: 4
- Inner diameter of hole: $\phi 11$
- Distance between holes: 22
- Outer diameter of hole: ϕD
- Distance from right end to start of bend: 25
- Distance from right end to center of hole: 25



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



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



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

Technical drawing of a mechanical part, likely a bracket or support. The drawing shows a side view with a base of 110 and a height of 10. A detail view on the right shows a cross-section with a width of 31.



FT Hot-dip galvanised

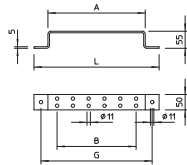
- For professional laying of round conductors and flat conductors according to DIN VDE 0185-305 (IEC 62305)
- DIN 48833
- Suitable for mounting round conductors Rd 10 or flat conductors FL 30 x 3.5



Alu Aluminium

- For expansion joints, for a connection of the foundation earthen 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 4 FT	302	212	153	257	1	77.000	5016037

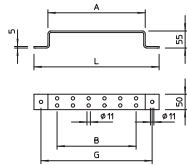
St Steel

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



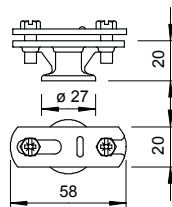
Type	Dimen- sion L mm	Dimen- sion A mm	Dimen- sion B mm	Dimen- sion G mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1805 2 VA	200	110	51	155	1	54.800	5016096
1805 6 VA	404	314	255	359	1	97.100	5016126

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



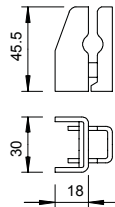
Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
113 BZ-FL		100	6.280	5230446
113 B-Z-HD-FL		100	7.000	5230462

Zn Die-cast zinc

G Electrogalvanised

- With female thread M8 or through hole for wood screws
- For flat conductor FL 30
- Sliding over-piece for quick installation

Cable bracket for Rd 8–10 and FL 30



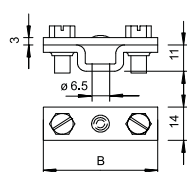
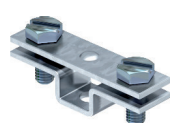
Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
835	Rd 8/10/ FL 30x3,5	1	12.100	5033209

St Steel

FT Hot-dip galvanised

- For round conductor Rd 8-10 and flat conductor FL 30 x 3.5
- Supplied with hexagonal wood bolt 6 x 70 and straddling dowel 910/N

Spacer clip for flat conductor with fastening hole Ø 6.5



Type	Fit mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
831 30	max. FL30	54	25	3.580	5032032
831 40	max. FL40	65	25	3.894	5032040

St Steel

FT Hot-dip galvanised

- Fit: FL 30 and FL 40
- With mounting hole Ø 6.5 and 2 hexagonal bolts M6 x 16 (F)

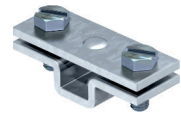
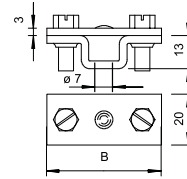
Spacer clip for flat conductor, with fastening hole Ø 7

Type	Fit mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
832 30	max. FL30	55	25	7.416	5032539
832 40	max. FL40	65	25	7.612	5032547

St Steel

FT Hot-dip galvanised

- Fit: FL 30 and FL 40
- With mounting hole Ø 7 mm and 2 hexagonal bolts M6 x 16



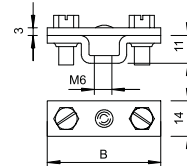
Spacer clip for flat conductor, with threaded connection M6

Type	Fit mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
831 30 M6	max. FL30	54	25	3.712	5032237
831 40 M6	max. FL40	65	25	3.880	5032245

St Steel

FT Hot-dip galvanised

- Fit: FL 30 and FL 40
- With attaching thread M6 and 2 hexagonal bolts M6 x 16 (F)



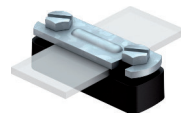
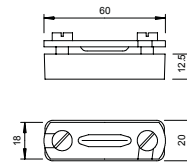
Spacer clip for flat conductor, with polyamide base

Type	Fit mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
833 35	max. FL30	60	25	4.228	5033039

St Steel

FT Hot-dip galvanised

- Fit: FL 30
- With mounting hole 6.2 x 22 mm
- With 2 cylinder bolts M6 x 16 and over-piece from hot-dip galvanised steel
- Bottom section from polyamide, black



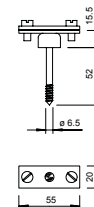
Spacer clip for flat conductor, with wood screw and spacer

Type	Fit mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
370 H	max. FL30	55	100	10.200	5025206

St Steel

FT Hot-dip galvanised

- Fit: FL 30
- With spacer and cylinder bolts M6 x 16 (G)
- With wood bolts



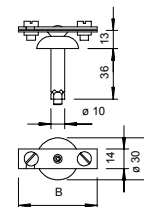
Spacer clip for flat conductor, with steel spreading anchor Ø 10

Type	Fit mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
710 30	max. FL30	52	25	5.044	5028035
710 40	max. FL40	62	25	5.360	5028043

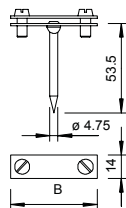
St Steel

G Electrogalvanised

- Fit: FL 30 and FL 40
- With steel straddling dowel Ø 10 mm, spacer and 2 cylinder bolts M5 x 14 (G)

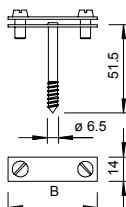


Spacer clip for flat conductor, with square pin



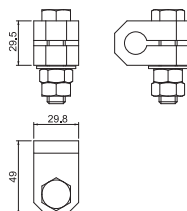
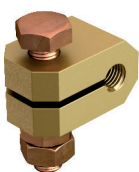
Type	Fit mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
708 30 SP	max. FL30	52	50	3.148	5030021
SI Steel G Electrogalvanised					
• Fit: FL 30 and FL 40 • With 2 cylinder bolts M5 x 12 (G) and over-piece • With square pin					

Spacer clip for flat conductor, with wood screw



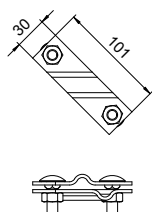
Type	Fit mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
708 30 HG	max. FL30	52	50	3.148	5030234
708 40 HG	max. FL40	52	50	3.474	5030242
SI Steel G Electrogalvanised					
• Fit: FL 30 and FL 40 • With 2 cylinder bolts M5 x 12 (G) and over-piece • With wood screw					

Connection clamp for round conductors RD 16



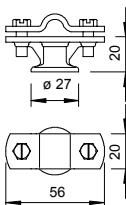
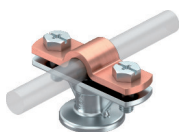
Type	For earth rods Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2760 16	14.2	5	35.000	5001601
CuSn Red bronze				
• For the connection of conductor materials with conductor shoes to earth rod 219 16 CU				

Diagonal clamp for flat conductors and round conductors



Type	Fit 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					

Conductor bracket with crossbar Rd 8–10 mm



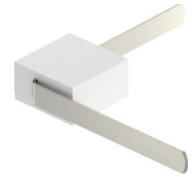
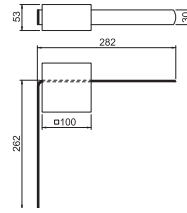
Type	Material symbol	Inter- face	Pack. pcs	Weight kg/100 pcs.	Item No.
113 B-Z16	Zn	VZ	100	6.000	5412706
Zn Die-cast zinc VZ Galvanised					

Expansion strip for foundation earther systems

Type	Dimension W x H mm		Pack. pcs	Weight kg/100 pcs.		Item No.
1807 DB	30	3,5	1	40.000		5016160

V2A Stainless steel, grade 304

- Expansion strip according to VDE 0185-561-2 (IEC 62561-2)
- To pass the foundation earther through movement joints



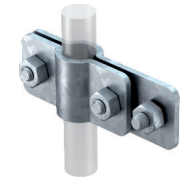
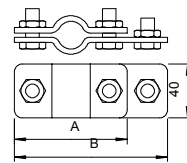
Connection clamp for earth rod on flat conductor



Type	For earth rods Ø mm		Dimen- sion A mm	Short-circuit current (50 Hz) (1 s; ≤300°C) kA	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.		Item No.
2730 25 M12 FT	—	—	8.5	—	—	5	46.280		5001416

St Steel
FT Hot-dip galvanised

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



Earthing enhancing compound



Type	Dimension mm		Pack. pcs	Weight kg/100 pcs.		Item No.
OEC 25	25	kg	1	2,500.000		5009200

- To improve and maintain a constant earth electrode resistance
- Highly swellable and powdery special clay
- Tested according to IEC 62561-7 (VDE 0185-561-7)

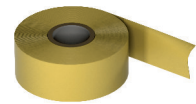
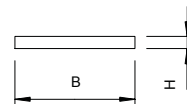


Plastic corrosion protection strip

Type	Width Length mm 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

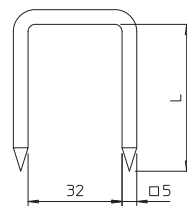


Strip steel crimp

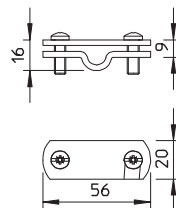
Type	Length Fit mm mm		Pack. pcs	Weight kg/100 pcs.		Item No.
366 35	35	max. FL30	100	1.737		5059356
366 50	50	max. FL30	100	2.300		5059496

- St Steel
FT Hot-dip galvanised

- Fit: FL 30



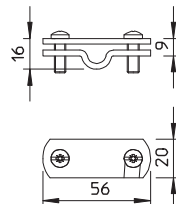
Number plates



Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
311 N-ALU 8-10	RD 8 - 10 / FL30	5	2.500	3049256
311 N-ALU 16	RD 16 - FL30	5	2.800	3049345

- To identify the point of separation to DIN 48821
- Suitable for universal labelling (e.g. stamped numbers)

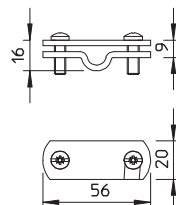
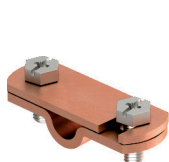
Number plates



Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
311 N-VA 8-10	RD 8 - 10 / FL30	5	5.600	3049221
311 N-VA 16	RD 16 - FL30	5	6.400	3049329

- To identify the point of separation to DIN 48821
- Suitable for universal labelling (e.g. stamped numbers)

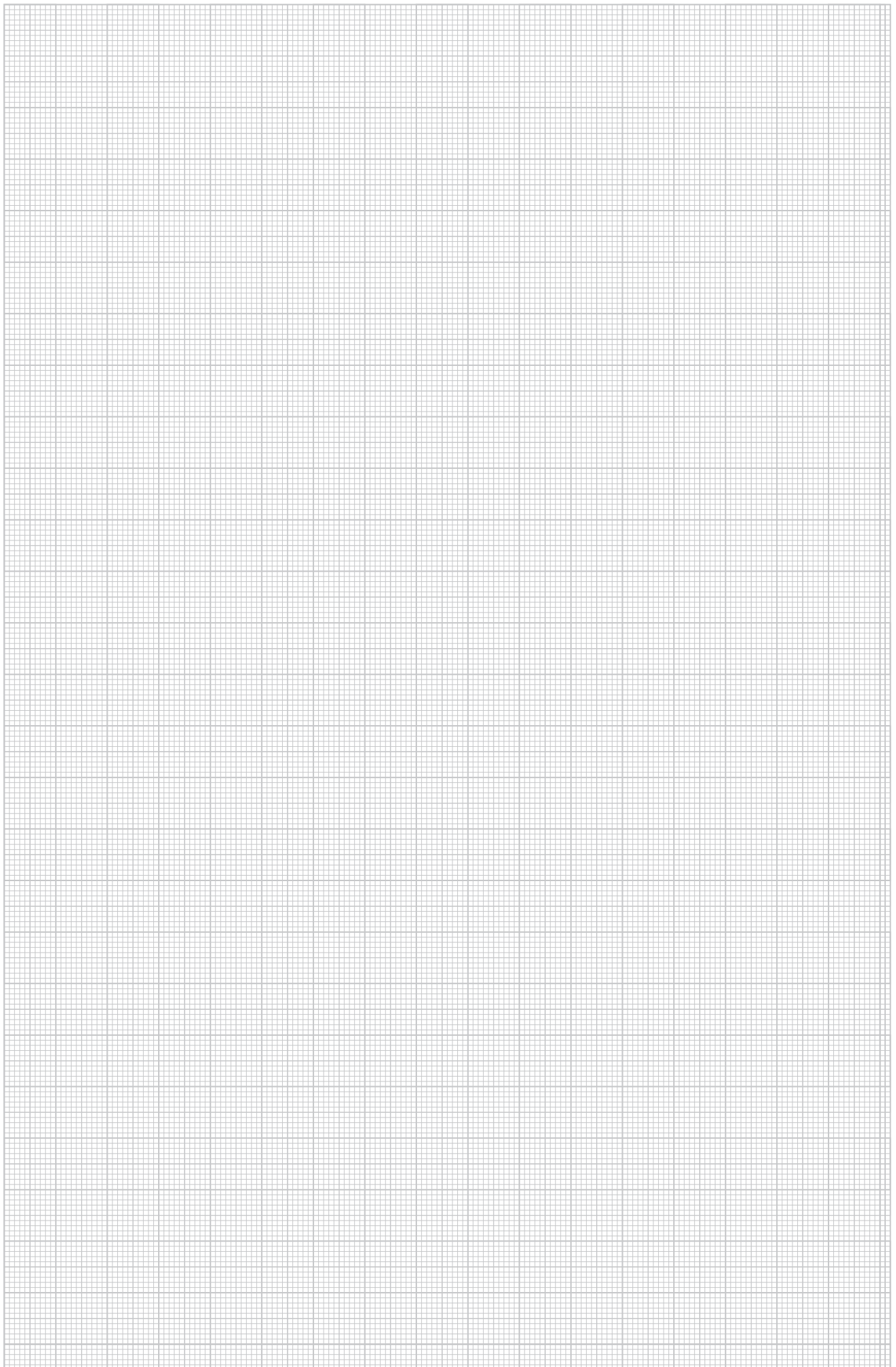
Number plates



Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
311 N-CU 8-10	RD 8 -10 / FL30	5	6.400	3049205

Cu Copper

- To identify the point of separation to DIN 48821
- Suitable for universal labelling (e.g. stamped numbers)





Galvanised steel flat conductor for earth

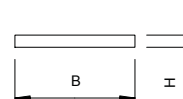


Type	Dimension W x H mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
5052 DIN 30X3.5	30 x 3,5	105	30	25	30	84.000	5019345
5052 DIN 30X3.5	30 x 3,5	105	60	50	60	84.000	5019347
5052 DIN 40X4	40 x 4	160	40	51	40	128.000	5019355
5052 DIN 40X5	40 x 5	200	30	50	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



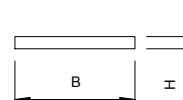
Stainless steel flat conductor



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 earthing standard DIN 18014, V4A is required in the earth
- For use in areas at risk of corrosion
- For lightning protection, earthing systems and ring equipotential bonding



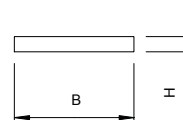
Flat conductor, copper



Type	Dimension W x H mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
FL 20-CU	20 x 2,5	50	45	20	45	44.500	5021804
FL 25-CU	25 x 3	75	50	33	50	67.000	5021830

Cu Copper

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Meets the requirements of VDE 0185-305 (IEC 62305)
- For lightning protection, earthing systems and ring equipotential bonding



Round conductor, galvanised steel

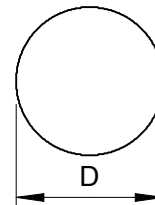


Type	Nominal size Ø mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
RD 8-FT	8	50	125	50	125	40.000	5021081
RD 10	10	78	80	50	80	52.500	5021103

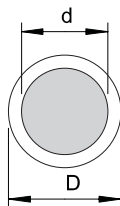
St Steel

FT Hot-dip galvanised

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)
- RD 10 can also be used in the earth
- Zinc coating: 350 g/m² (approx. 50 µm)



Round conductor, galvanised steel with PVC jacketing



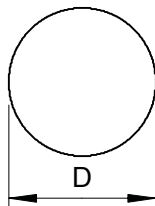
Type	Colour	Dimen- sion d mm	Dimen- sion D mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
RD 10-PVC	Black	10	13	78	75	50	75	67.000	5021162

St Steel

FT Hot-dip galvanised

- Conforms to the requirements according to VDE V 0185-305, (IEC 62305)
- Zinc coating: 350 g/m² (approx. 50 µm)
- With PVC sheathing

Round conductor, aluminium

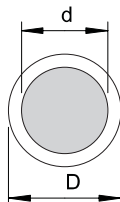


Type	Nominal size Ø mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
RD 8-ALU	8	50	150	20	150	13.500	5021286
RD 8-ALU-T	8	50	150	20	150	13.500	5021294
RD 8-ALU-T 75	8	50	75	10	75	13.500	5021296
RD 10-ALU	10	78	95	20	95	21.000	5021308

Alu Aluminium

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)
- RD 8 ALU: Semi-hard (E-AlMgSi0.5 corresponds to DIN 48801)
- RD 8 ALU-T: Can be subjected to torsion (E-AlMgSi0.5 corresponds to DIN 48801)
- RD 10 ALU: Pure aluminium (E-Al corresponds to DIN 48801)
- AL and ALMgSi may not be routed directly on, in or under plaster, mortar or concrete, nor routed in the earth

Round conductor, aluminium, with PVC sheathing

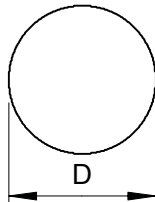


Type	Nominal size Ø mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
RD 8-PVC	8/11	50	100	20	100	20.000	5021332

Alu Aluminium

- Meets the requirements of VDE 0185-305 (IEC 62305)
- With PVC jacketing (halogen-free)
- Suitable for routing on, in or under plasterwork, mortar or concrete

Round conductor, stainless steel A2



Type	Nominal size Ø mm	Cross- section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
RD 8-V2A	8	50	125	50	125	40.000	5021235
RD 10-V2A	10	78	50	32	50	63.000	5021227
RD 10-V2A	10	78	80	50	80	63.000	5021239
RD 8-V4A	8	50	125	50	125	40.000	5021644
RD 10-V4A 20	10	78	20	12	20	63.000	5021640
RD 10-V4A	10	78	50	32	50	63.000	5021642
RD 10-V4A	10	78	80	50	80	63.000	5021647

V2A Stainless steel, grade 304 **V4A** Stainless steel, 316Ti / 316L

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)
- RD 10-V4A for applications in the earth
- According to the foundation earther standard DIN 18014, V4A is required in the earth

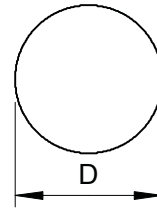
Round conductor, copper



Type	Nominal size Ø mm	Cross-section mm ²	Normal ring ca. m	Normal ring ca. kg	Pack. m	Weight kg/100 m	Item No.
RD 8-CU	8	50	100	45	100	45.000	5021480
RD 10-CU	10	78	50	35	50	70.000	5021502

Cu Copper

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)



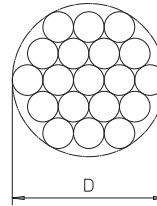
Copper cable

Type	Dimension D mm	Individual wires	Cross-section mm ²	Normal ring ca. m	Normal ring ca. kg	Weight kg/100 m	Item No.
S 11-CU	10.5	19x Ø 2,1	70	50	30	58.600	5021654
S 9-CU	9	19x Ø 1,8	50	100	45	45.000	5021652
S-11-CU SN	10.5	19x Ø 2,1	70	50	30	58.600	5021656

Cu Copper

Sn Tin-plated

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)



Air-termination system

Stand for FangFix Junior system

Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
F-FIX-JUNIOR	1000	10	10	32.000	5403308

Alu Aluminium

- Incl. aluminium air-termination rod 1,000 mm long (Ø 10 mm)
- Quick mounting of the air-termination rod in the base using plug technology
- With Vario quick connector 249

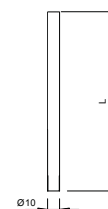


Air-termination rod for FangFix-Junior

Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 J1000	1000	10	10	21.800	5401970

Alu Aluminium

- Suitable for wind loads according to Eurocode 1: DIN EN 1991-1-4
- Ø 10 mm, aluminium
- Without thread
- Suitable for use in FangFix-Junior

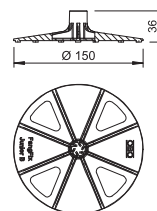


Base for FangFix Junior

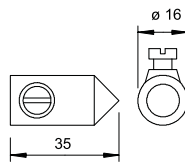
Type	Pack. pcs	Weight kg/100 pcs.	Item No.
F-FIX-BASIS	10	3.790	5403324

PP Polypropylene

- For mounting Ø 10 mm air-termination rods up to an overall length of 1,000 mm
- Quick installation of air-termination rod in base using plug-in system
- Quick and easy installation



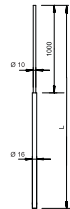
Air-termination tip



Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
120 A	Rd 8-10	10	2.500	5405068
Zn Die-cast zinc				
G Electrogalvanised				

- To be used for Rd 8–10 (corrosion protection)
- With cylinder bolt M6 x 10
- Made of die-cast zinc, bolts made of hot-galvanised steel

Tapered pipe air-termination rod



Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 VL1500	1500	10/16	10	38.000	5401980
101 VL2000	2000	10/16	10	55.000	5401983
101 VL2500	2500	10/16	10	72.000	5401986
101 VL3000	3000	10/16	10	88.000	5401989
101 VL3500	3500	10/16	10	105.000	5401993
101 VL4000	4000	10/16	10	120.000	5401995

Alu Aluminium

- Suitable for wind loads according to Eurocode 1: DIN EN 1991-1-4
- From a free length of > 2.5 m, an additional fastening, e.g. insulated spacer is recommended
- Last metre is tapered from Ø 16 mm to Ø 10 mm, material: AlMgSi
- Matches stand system FangFix

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

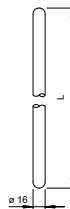


Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 A-1500	1500	16	10	240.000	5400155

St Steel
FT Hot-dip galvanised

- Full material Ø 16 mm
- Rounded on both ends
- Suitable for FangFix stand system

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



Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
200 V4A-1500	1500	16	10	242.000	5420504
200 V4A-2000	2000	16	10	320.000	5420539

V4A Stainless steel, grade 316 Ti

- Full material Ø 16 mm
- Both ends rounded

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

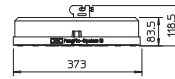


Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 A-CU	1500	16	10	272.100	5400627

Cu Copper

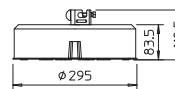
- Full material Ø 16 mm
- Both ends rounded

© 2006 The Authors
Journal compilation © 2006 Blackwell Publishing Ltd





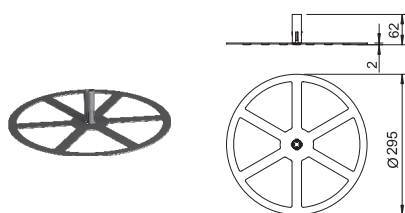
Page 10 of 10



Page 10 of 10



Base for FangFix system 10 kg

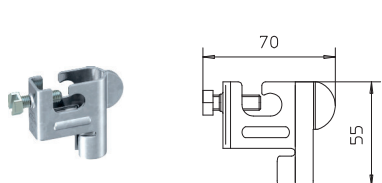


Type	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
F-FIX-B10	295	10	7.600	5403124

PP Polypropylene

Edge protection with integrated dowel (basic) suitable for FangFix 10 system.

Terminal for FangFix system

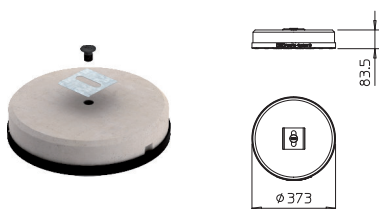


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
F-FIX-KL	Rd 8	5	8.700	5403219

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

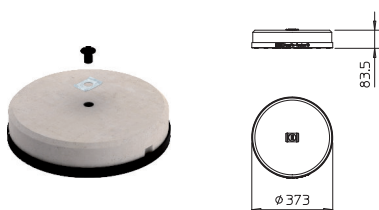
Stand - TrayFix set 16 L



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

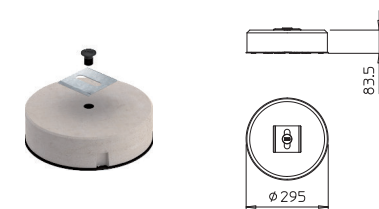
Stand - TrayFix set 16 S



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



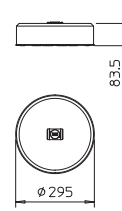
Type	From tray width mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TrayFix-10-L	100	1	1,100.000	5403101

- 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

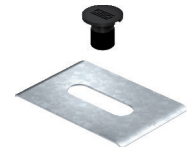
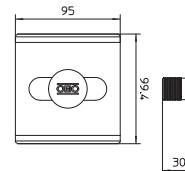
- Mounting system for the fastening of mesh cable trays with the FangFix stone, e.g. cable routing on a flat roof.
- Matches OBO mesh cable tray systems with a minimum width of 100 mm
- Set consisting of TrayFix mounting adapter and concrete block including base for FangFix system 10 kg



TrayFix mounting adapter for mesh cable trays on FangFix system

Type	Dimension mm	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



Air-termination rod, one end rounded Aluminium

Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 ALU-1000	1000	16	10	55.000	5401771
101 ALU-1500	1500	16	10	81.000	5401801
101 ALU-2000	2000	16	10	109.000	5401836
101 ALU-2500	2500	16	10	136.000	5401852
101 ALU-3000	3000	16	5	162.000	5401879

Alu Aluminium

- Suitable for wind loads according to Eurocode 1: DIN EN 1991-1-4
- From a free length of > 2.5 m, an additional fastening, e.g. insulated spacer is recommended
- Ø 16 mm, aluminium
- For stand system with M16 internal thread



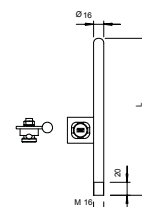
Air-termination rod, one end rounded with connection strap

Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 A-L100	1000	16	10	160.000	5402808
101 A-L150	1500	16	10	240.000	5402859

St Steel

FT Hot-dip galvanised

- With thread M16 x 20
- With connecting strap
- Including pre-mounted connector type 5001 DIN for round conductor Rd 8-10
- For stands with female thread M16

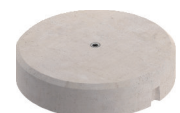
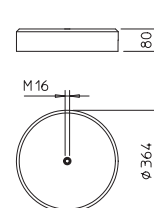


Stand 16 kg with female thread

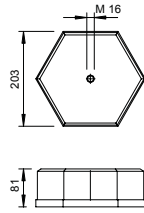
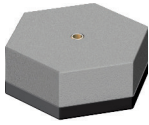
Type	Nominal size Ø mm	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
101 B2-16 M16	364	M16	1	1,600.000	5402958

BET Concrete

- Weight 16 kg
- Frost-resistant concrete
- Female thread M16
- Recommended air-termination rod length max. 3.0 m, depending on wind load zone



Stand 6.9 kg with female thread

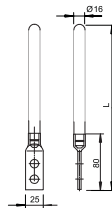


Type	Thread	Pack.		Weight	Item No.
		pcs	kg/100 pcs.		
101 ST	M16	4	690.000		5402891

BET Concrete

- Weight 6.9 kg
- Frost-resistant concrete
- Female thread M16
- Recommended air-termination rod length max. 1.0 m

Air-termination/earth entry rod with connection tabs

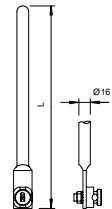


Type	Length mm	Nominal size Ø mm	Pack.		Weight	Item No.
			pcs	kg/100 pcs.		
101 F1000	1000	16	10	160.000		5424100
101 F1500	1500	16	10	240.000		5424151
101 F2000	2000	16	10	320.000		5424208

St Steel
FT Hot-dip galvanised

- With 2 attaching holes Ø 12 mm
- One end rounded

Air-termination/earth entry rod with connection tabs and connector

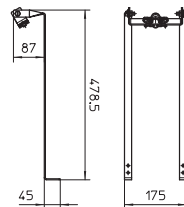


Type	Length mm	Nominal size Ø mm	Pack.		Weight	Item No.
			pcs	kg/100 pcs.		
101 G1000	1000	16	10	164.300		5402107
101 G1500	1500	16	10	240.000		5402158

St Steel
FT Hot-dip galvanised

- 1 attaching hole Ø 12 mm
- With pre-mounted conductor for Rd 8-10
- One end rounded

Air-termination rod holder for sloping roof



Type	Pack.		Weight	Item No.
	pcs	kg/100 pcs.		
SD-Fix	1	81.000		5403335

V2A Stainless steel, grade 304

Stand system: rod holder for sloping roofs, for simple, quick and secure fastening of Ø 16 mm air-termination rods.

- System consists of a bracket made of V2A stainless steel
- Quick and easy mounting
- Adjustable angle
- In the case of high air-termination rods (> 1 m), additional fastening with insulated spaces is necessary

Air-termination rod holder for ridge tiles

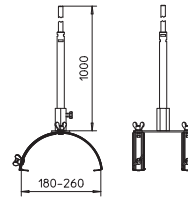
Type	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
F-FIX-132	110	1	62.000	5403330
F-Fix-132-300	300	1	78.000	5403333

V2A Stainless steel, grade 304

Rod holder for ridge tiles, for simple, quick and safe fastening of Ø 16 mm air-termination rods

- System consisting of holder made of V2A stainless steel and aluminium air-termination rods
- Quick and easy mounting thanks to pre-mounted air-termination rod
- Air-termination rod length:
- Air-termination rod length: 1,000 mm
- Width adjustable between 180–260 mm
- Spacing of the ridge holders: 110 mm (5403330)
- Spacing of the ridge holders: 300 mm (5403333)

Application: To protect roof structures such as photovoltaic and TV/SAT systems.



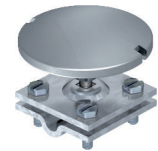
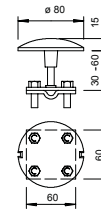
Mushroom-shaped air-termination with connectors

Type	Fit mm	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

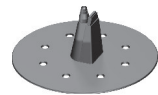
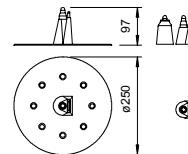


Roof penetration

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

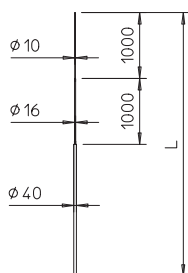


Type	Dimension B mm	Dimension D mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 3B-4000	2000	1000	4000	1	400.000	5402864
101 3B-4500	2500	1000	4500	1	480.000	5402866
101 3B-5000	3000	1000	5000	1	550.000	5402868
101 3B-5500	3000	1500	5500	1	630.000	5402870
101 3B-6000	4000	1000	6000	1	700.000	5402872
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

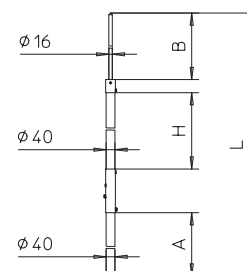


Type	Dimension A mm	Dimension H mm	Dimension B mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang 4000 AL	1240	1500	1000	4000	1	580.000	5408943
isFang 6000 AL	3340	1500	1000	6000	1	600.000	5408947
isFang 4000	1240	1500	1000	4000	1	680.000	5408942
isFang 6000	3340	1500	1000	6000	1	680.000	5408946

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



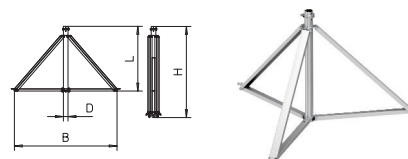
isFang air-termination rod stand



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

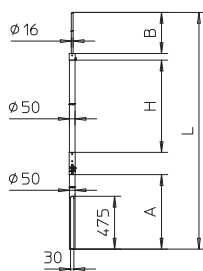


Type	Dimen- sion D Ø mm	Dimen- sion A mm	Dimen- sion H mm	Dimen- sion B mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang IN-A 4000	50	1325	1500	1000	4000	1	535.000	5408938
isFang IN-A 6000	50	3325	1500	1000	6000	1	835.000	5408940
isFang IN-A 8000	50	5335	1500	1000	8000	1	1,385.000	5408888
isFang IN-A10000	50	6000	1733	2000	10000	1	1,540.000	5408890

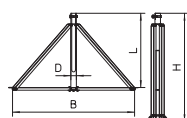
GfK Fibre-glass-reinforced plastic

- 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	Dimen- sion B mm	Dimen- sion D Ø mm	Dimen- sion L mm	Dimen- sion 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

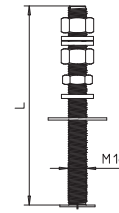
- Screwless installation of freestanding air-termination rods as well as insulated air-termination rods with 50 mm diameter
- E.g. for internal OBO isCon® conductor
- Roof slope to max. 5 degrees
- Incl. Rd 8–10 crossbar for quick round conductor fastening
- Concrete plinths as well as threaded rods 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

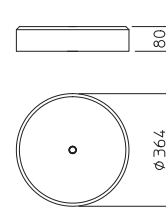


Concrete block for FangFix-System 16 kg

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

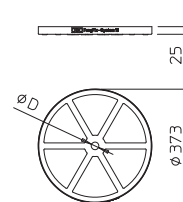


Base for FangFix system 16 kg for mounting the isFang tripod

Type	Nominal size Ø mm	Dimension D 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

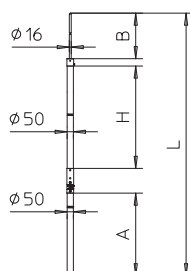


Type	Dimen- sion D Ø mm	Dimen- sion A mm	Dimen- sion H mm	Dimen- sion B mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang IN 4000	50	1325	1500	1000	4000	1	535.000	5408934
isFang IN 6000	50	3325	1500	1000	6000	1	835.000	5408936
isFang IN 8000	50	5335	1500	1000	8000	1	1,315.000	5408868
isFang IN 10000	50	6000	1733	2000	10000	1	1,540.000	5408870

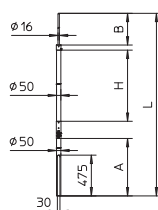
GFK Fibre-glass-reinforced plastic

- 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

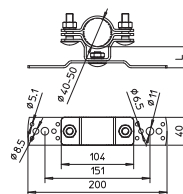


Type	Dimen- sion D Ø mm	Dimen- sion A mm	Dimen- sion H mm	Dimen- sion B mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang IN-A 4000	50	1325	1500	1000	4000	1	535.000	5408938
isFang IN-A 6000	50	3325	1500	1000	6000	1	835.000	5408940
isFang IN-A 8000	50	5335	1500	1000	8000	1	1,385.000	5408888
isFang 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

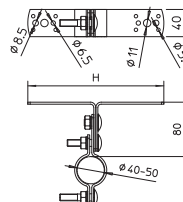
GFK Fibre-glass-reinforced plastic

- 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)

Fastening clip to fasten the insulated support pipes on the structure to be protected or on the wall.

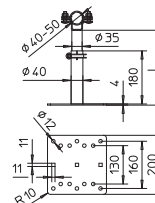


Fastening clip to fasten the insulated support pipes on the structure to be protected or on the wall.

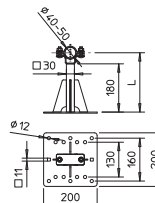


© 2007 The Authors
Journal compilation © 2007 Blackwell Publishing Ltd

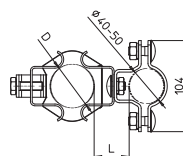
Fastening clip to fasten the insulated support pipes on the structure to be protected or on the wall.



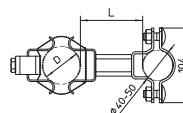
Fastening clip to fasten the insulated support pipes on the structure to be protected or on the wall.



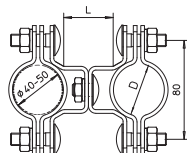
Tightening strap clip to fasten the insulated support pipes on the structure to be protected or for construction-side pipes of $\varnothing$ 50–300mm.



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.



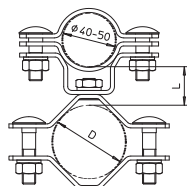
isFang support for pipe mounting, ø 40–50 mm



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.

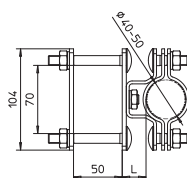
isFang support for pipe mounting, ø 50–60 mm



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 mounting, 50 x 50 mm

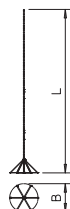


Type	Dimension D Ø mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang TS50x50	—	30	2	82.000	5408964
V2A Stainless steel, grade 304					

Fastening clip to fasten the insulated support pipes on the structure to be protected or for construction-side corner pipes of 50x50 mm.

Tele air-termination rod systems irod

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						

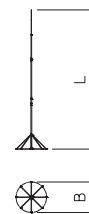
- Tele lightning protection system against direct lightning strikes into plants, such as biogas plants
- Consisting of air-termination rod and air-termination rod stand
- Please order concrete foot, edge protection and threaded rods separately

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

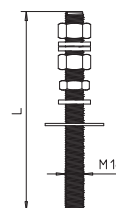


isFang-3B threaded rod

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

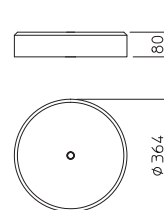


Concrete block for FangFix-System 16 kg

Type	Nominal size Ø mm	Pack. 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

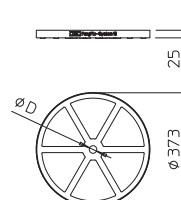


Base for FangFix system 16 kg for mounting the isFang tripod

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

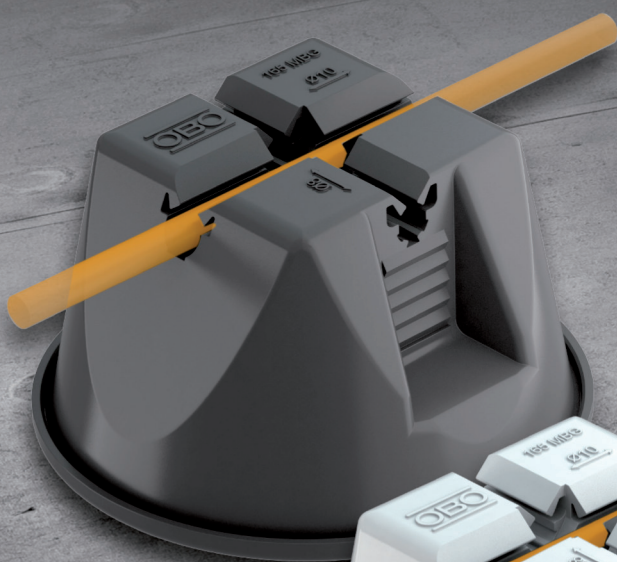
- Edge protection with through hole
- For mounting isFang-3B threaded rod and FangFix concrete block F-FIX-S16



Type 165 MBG 8-10

Roof conductor holder

For both 8 and 10 mm round wire



Now with larger base for green (living) flat roofs



Mounting of any round conductor of Rd 8 mm or Rd 10 mm

UV-stabilised and weather-resistant closed shape with base

Can be used on almost all roofing felt systems

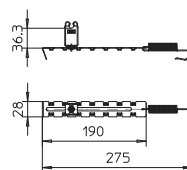


Ridge conductor holder with tensioning spring 35 mm

Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
132 U 35	RD 8	35	20	6.800	5203018

V2A Stainless steel, grade 304

- For round conductor Rd 8
- Clamping range 280-380 mm

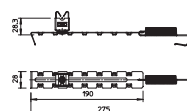


Ridge conductor holder with tensioning spring 8 mm

Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
132 U	RD 8	20	20	6.000	5203015

V2A Stainless steel, grade 304

- For round conductor Rd 8
- Clamping range 280-380 mm



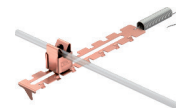
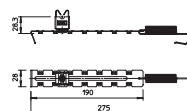
Ridge conductor holder with tensioning spring 8 mm copper-plated

Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
132 U-CU	RD 8	20	10	0.600	5203023

V2A Stainless steel, grade 304

Cu Copper-plated

- For round conductor Rd 8
- Clamping range 280-380 mm

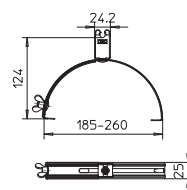


Roof conductor holder for ridge tiles, 185–260 mm, Rd 8, A2 35 mm

Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
132 VA 35	Rd 8	35	20	13.700	5202836

V2A Stainless steel, grade 304

- Adjustable width from 185-260 mm
- Fast installation using wing screw

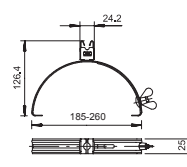


Roof conductor holder for ridge tiles, 185–260 mm, Rd 8, A2 8mm

Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
132 VA	Rd 8	20	20	12.900	5202833

V2A Stainless steel, grade 304

- Adjustable width from 185-260 mm
- Fast installation using wing screw

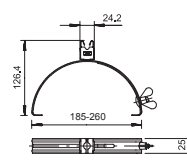


Roof conductor holder for ridge tiles, 185–260 mm, Rd 8. CU 8 mm

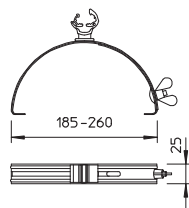
Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
132 CU	Rd 8	20	10	13.400	5202868

Cu Copper

- Adjustable width from 185-260 mm
- Fast installation using wing screw



Roof conductor holder for ridge tiles, 185–260 mm, Rd 8–10, A2 8mm

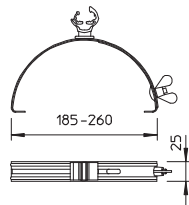


Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
132 K-VA	Rd 8-10	20	20	10.900	5202515

V2A Stainless steel, grade 304

- Adjustable width from 185-260 mm
- Bottom part made of non-rusting stainless steel (V2A)
- Infinitely adjustable conductor holder
- Conductor holder of polyamide
- Fast installation using wing screw

Roof conductor holder for ridge tiles, 185–260 mm, Rd 8–10, CU 8 mm

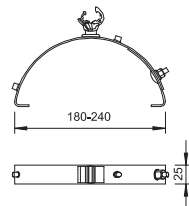


Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
132 K-CU	Rd 8-10	20	10	11.600	5202590

Cu Copper

- Adjustable width from 185-260 mm
- Bottom part made of copper
- Infinitely adjustable conductor holder
- Conductor holder of polyamide
- Fast installation using wing screw

Roof conductor holder for ridge tiles, 180–240 mm, Rd 8–10, FT 8 mm



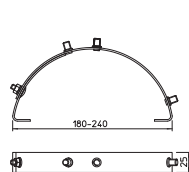
Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
132 N-DK	Rd 8-10	20	20	19.700	5202566

St Steel

FT Hot-dip galvanised

- Adjustable from 180–240 mm
- With conductor 177/20, polyamide, grey
- With 3 M8 threaded nipples for positioning the holder

Roof conductor holder for ridge tiles with M8 threaded bolts



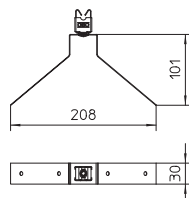
Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
132 GB-M8	—	20	20	18.700	5202568

St Steel

FT Hot-dip galvanised

- Adjustable from 180–240 mm
- With conductor 177/20, polyamide, grey
- With 3 M8 threaded nipples for positioning the holder

Roof conductor holder for ridge tiles, metal roofs, Rd 8



Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
132 P VA	Rd 8	20	20	8.420	5202510

V2A Stainless steel, grade 304

- For round conductors Rd 8
- Suitable for metal roofs

Roof conductor holder for tiled roofs, Rd 8, A2 35 mm

Type	Fit mm	Installation height mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
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

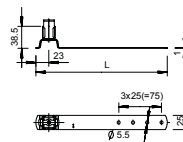


Roof conductor holder for tiled roofs, Rd 8, A2 8 mm

Type	Fit mm	Installation height mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
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

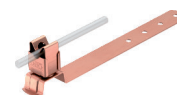
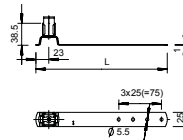


Roof conductor holder for tiled roofs, Rd 8, CU 8mm

Type	Fit mm	Installation height mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
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

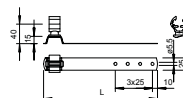


Roof conductor holder for tiled roofs, Rd 8-10, A2 8 mm

Type	Fit mm	Installation height mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
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

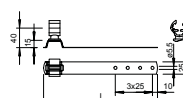


Roof conductor holder for tiled roofs, Rd 8-10, CU 8 mm

Type	Fit mm	Installation height mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
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

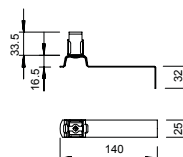


Roof conductor holder for tiled roofs, angled, Rd 8, A2 8 mm

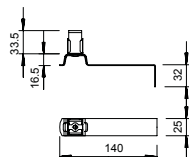
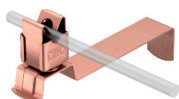
Type	Fit mm	Installation height mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
157 I-VA	Rd 8	26.5	140	20	7.150	5215625

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

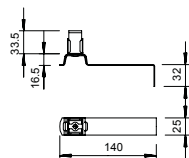


Type	Fit mm	Installation height mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
157 I-CU	Rd 8	26.5	140	10	7.800	5215749

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

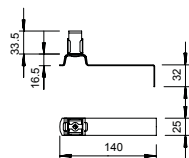
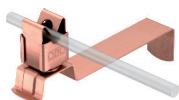


Type	Fit mm	Installation height mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
157 FX-AL	Rd 8	26.5	140	20	3.900	5215875

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

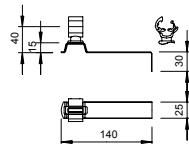


Type	Fit mm	Installation height mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
157 FX-CU	Rd 8	26.5	140	10	7.500	5215879

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



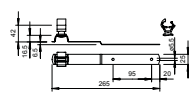
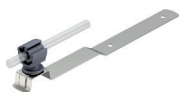
Type	Fit mm	Installation height mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
157 IK-VA	Rd 8-10	40	140	20	7.150	5215668

V2A Stainless steel, grade 304

- Conductor holder of polyamide
- Curved bottom strip for quick installation

Roof conductor holder, slate roof

Roof conductor holder for slated roofs, crimped, Rd 8–10, A2

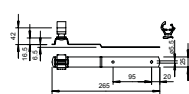
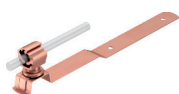


Type	Fit mm	Length mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
157 EK-VA	Rd 8-10	265	42	20	7.800	5215838

V2A Stainless steel, grade 304

- Conductor holder of polyamide
- With Ø 5.5 mm drill hole

Roof cable holder for slated roofs, crimped, Rd 8–10, CU



Type	Fit mm	Length mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
157 EK-CU	Rd 8-10	265	42	10	8.800	5215854

Cu Copper

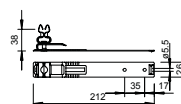
- Conductor holder of polyamide
- With Ø 5.5 mm drill hole

Roof conductor holder for slated roofs, Rd 8, A2

Type	Fit mm	Length mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
157 L-VA	Rd 8	212	32	20	8.000	5215439

V2A Stainless steel, grade 304

- With Ø 5.5 mm drill hole and beading

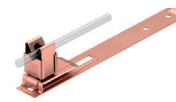
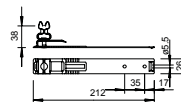


Roof conductor holder for slated roofs, Rd 8, CU

Type	Fit mm	Length mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
157 L-CU	Rd 8	212	32	10	9.900	5215471

Cu Copper

- With Ø 5.5 mm drill hole and beading

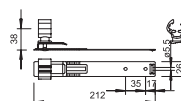


Roof conductor holder for slated roofs, Rd 8–10, A2

Type	Fit mm	Length mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
157 LK-VA	Rd 8-10	212	38	20	8.000	5215374

V2A Stainless steel, grade 304

- With Ø 5.5 mm drill hole and beading
- Conductor holder of polyamide

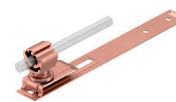
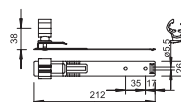


Roof cable holder for slated roofs, Rd 8–10, CU

Type	Fit mm	Length mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
157 LK-CU	Rd 8-10	212	38	10	8.400	5215382

Cu Copper

- With Ø 5.5 mm drill hole and beading
- Conductor holder of polyamide

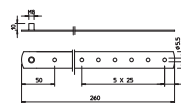


Roof conductor holder for slated roofs with M8 threaded bolts

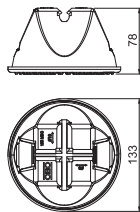
Type	Fit mm	Length mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
157 GB-M8	Rd 8-10	260	27	20	5.000	5202569

V2A Stainless steel, grade 304

- With Ø 5.5 mm drill hole
- With 3 M8 threaded nipples for positioning the holder



Roof cable holder for flat roofs, black

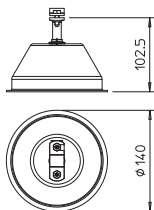


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 MBG-8	Rd 8	12	106.000	5218691
165 MBG-8 FO	Rd 8	12	106.000	5218692
165 MBG-10	Rd 10	12	106.000	5218675
165 MBG-8-10	Rd 8-10	12	100.000	5218700
165 MBG-8-10 FO	Rd 8-10	12	100.000	5218704

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

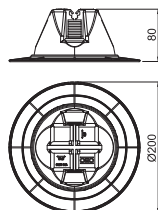
Roof cable holder for flat roofs, with raised cable bracket



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

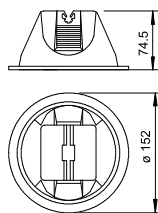
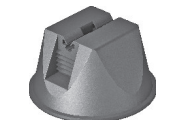


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 MBG-8 200	Rd 8	12	111.000	5218748
165 MBG-10 200	Rd 10	12	111.000	5218756
165 MBG-8-10 200	Rd 8-10	12	100.000	5218716

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, without base

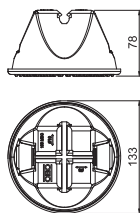


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 OBG-8	Rd 8	12	100.000	5218683

PE Polyethylene

- Without bottom
- With double conductor holder
- Filling weight 1 kg (frost-resistant concrete)
- Sleeve from polyethylene, black

Roof conductor holder for flat roofs, grey



Type	Fit mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
165 MBG-8 GR	Rd 8	Grey	12	106.000	5218693
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	Colour	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 MBG HFL	Black	Rd 8	12	0.670	5218885

PP Polypropylene

- Flat conductor holder FL 30 x 3.5 mm
- For fastening to 165/MBG in fit Rd 8

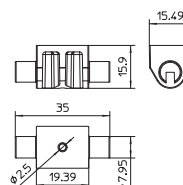


Universal flat conductor adapter for roof conductor holder, type 165/MBG

Type	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 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

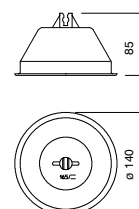


Roof conductor holder for flat roofs, plastic sleeve

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 KR	Rd 8	50	5.449	5218861

PE Polyethylene

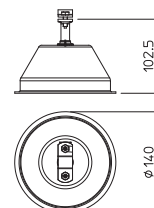
- For self-filling with concrete
- Potential filling weight: approx. 1.3 kg
- Sleeve from polyethylene, black



Roof conductor holder for flat roofs, with raised cable bracket

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 KRB SO	Rd 8-10	9	144.000	5218977

- Filling weight 1.3 kg (frost-resistant concrete)
- With conductor holder, type 168 DIN-K
- Die-cast zinc conductor holder, electrogalvanised
- Polyethylene sleeve, black

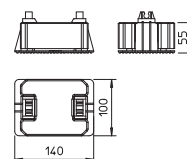


Roof conductor holder for flat roofs, recyclable

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 R-8-10	Rd 8-10	10	106.000	5218997

PE Polyethylene

- For round conductors Rd 8 to 10
- With polyethylene plastic holder, black
- Block made of frost-resistant concrete
- Weight 1 kg
- Block can be split into plastic and concrete (recyclable)

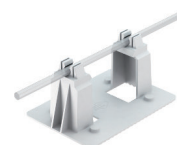
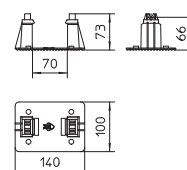


Roof conductor holder, for plastic film roofs

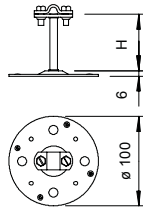
Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 R-8-10 OBG	Rd 8-10	100	6.760	5218999

PE Polyethylene

- For flat roofs
- For round conductors Rd 8 to 10
- Polyethylene plastic holder, light grey
- For clamping in roof strips



Roof conductor holder, suitable for bonding straight to flat roofs



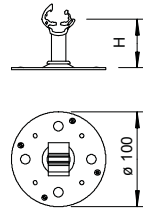
Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 B 60	Rd 8-10	60	50	26.100	5218810
165 B 100	Rd 8-10	100	50	27.700	5218829

St Steel

FT Hot-dip galvanised

- With conductor holder and bottom section, hot-dip galvanised steel
- Bottom section Ø 100 mm

Roof conductor holder, 55 mm, suitable for bonding straight to flat roofs



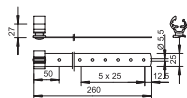
Type	Fit mm	Dimension H mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 NBK 55	Rd 8-10	55	100	75	17.060	5218314

PA Polyamide

- Suitable for bonding straight to flat roofs
- Conductor holder of polyamide
- Bottom section, hot-dip galvanised steel
- Bottom section Ø 100 mm

Roof conductor holder, tiled, slated and corrugated roofs

Roof conductor holder for tiled and slated roofs, Rd 8–10

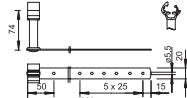
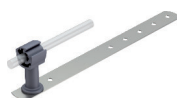


Type	Fit mm	Length mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
157 NB-VA	Rd 8-10	260	27	20	6.000	5215277

V2A Stainless steel, grade 304

- With Ø 5.5 mm drill hole
- Conductor holder of polyamide

Roof conductor holder for tiled and slated roofs, 74 mm height

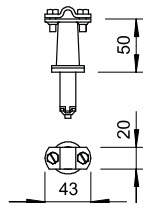


Type	Fit mm	Length mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
157 ND-VA	Rd 8-10	260	74	20	6.000	5215307

V2A Stainless steel, grade 304

- High roof conductor holder: 74 mm
- With perforation Ø 5.5 mm
- Polyamide cable bracket

Roof conductor holder for tiled, slated and corrugated roofs, with crossbar



Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
133 A	Rd 8-10	50	20	8.217	5202248

PA Polyamide

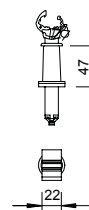
- With weatherproof clamping collar from soft PVC
- Required drill hole Ø = 16 mm
- Spacer from polyamide, grey

Roof conductor holder for tiled, slated and corrugated roofs, with cable bracket

Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
133 NB	Rd 8-10	67	20	4.338	5202213

PA Polyamide

- With weather-proof clamping collar from soft-PVC
- Required drill hole $\varnothing = 16$ mm
- Spacer and conductor holder from polyamide, grey

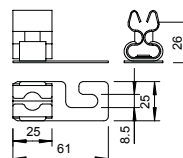


Roof conductor holder for tiled, slated and corrugated roofs, Rd 8

Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
159 VA-V	Rd 8	21	20	3.900	5217075

V2A Stainless steel, grade 304

- Bottom section and conductor holder stainless steel (V2A)
- Bottom section with $\varnothing 8.5$ mm slot

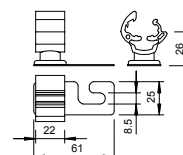


Roof conductor holder for tiled, slated and corrugated roofs, Rd 8-10

Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
159 K-VA	Rd 8-10	21	20	2.540	5216818

V2A Stainless steel, grade 304

- Bottom section stainless steel (V2A)
- Bottom section with $\varnothing 8.5$ mm slot
- Conductor holder of polyamide



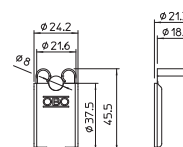
Conductor bracket

Screwless cable bracket, raised construction type, for Rd 8 mm, through-way $\varnothing 5$ mm

Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
177 35 VA M6	Rd 8	35	20	2.680	5207342

V2A Stainless steel, grade 304

- With female thread M6 or through hole $\varnothing 5$ mm
- From stainless steel (V2A)

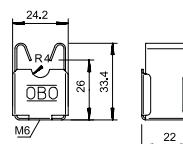


Screwless cable bracket for Rd 8 mm, through-way $\varnothing 5$ mm

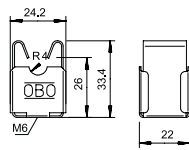
Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
177 20 VA M6	Rd 8	20	20	2.500	5207339

V2A Stainless steel, grade 304

- With female thread M6 or through hole $\varnothing 5$ mm
- From stainless steel (V2A)

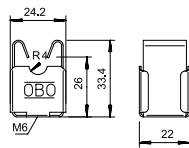


Screwless cable bracket for Rd 8 mm, through-way Ø 5 mm copper-plated



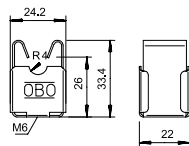
Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
177 20 VA-VK M6	Rd 8	20	20	2.500	5207800
V2A Stainless steel, grade 304 Cu Copper-plated					
• With female thread M6 or through hole Ø 5 mm • From stainless steel (V2A) • VA-VK: copper-plated					

Screwless cable bracket for Rd 8 mm, through-way Ø 7 mm



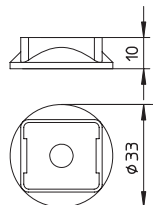
Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
177 20 VA M8	Rd 8	20	20	1.900	5207347
V2A Stainless steel, grade 304					
• With female thread M8 or through hole Ø 5 mm • From stainless steel (V2A)					

Screwless cable bracket for Rd 8 mm, through-way Ø 7 mm copper-plated



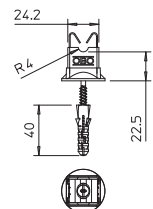
Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
177 20 VA-VK M8	Rd 8	20	20	1.900	5207819
V2A Stainless steel, grade 304 Cu Copper-plated					
• With female thread M8 or through hole Ø 5 mm • From stainless steel (V2A) • VA-VK: copper-plated					

Washer for cable bracket, type 177



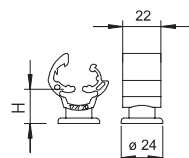
Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
177 U	Light grey	20	0.286	5207371
PP Polypropylene				
• For simple wall installation • UV-resistant				

Screwless cable bracket for Rd 8 mm, fastening with screw and anchor



Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
177 20 VA B-HD	Rd 8	20	50	2.900	5207901
V2A Stainless steel, grade 304					
• With female thread M8 or through hole 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



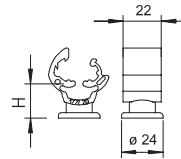
Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
177 20 M8	Rd 8-10	20	20	0.723	5207444
177 30 M8	Rd 8-10	30	20	0.790	5207460
177 55 M8	Rd 8-10	55	20	1.007	5207487
PA Polyamide					
• With female thread M8 or through hole Ø 7 mm • Weather and temperature-resistant from -35 °C to +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

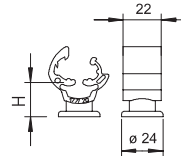


Universal cable bracket Rd 8–10 mm with pre-mounted wood screw

Type	Fit mm	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
177 B-HD20	Rd 8-10	20	50	1.930	5207851
177 B-HD30	Rd 8-10	30	50	1.503	5207878

PA Polyamide

- With female thread M8 for screwing and through hole for wood screws
- For round conductor Rd 8-10
- Weather and temperature-resistant from -35 °C to +90 °C
- With pre-mounted wood screws (5 x 60) and plastic dowels (8 x 40).

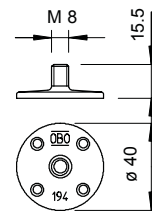


Bonding base

Type	Colour	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
194	Grey	M8	100	0.389	5207258

PA Polyamide

- With threaded stem M8
- For mounting conductor supports with M8 female thread
- For bonding to concrete, steel or brickwork

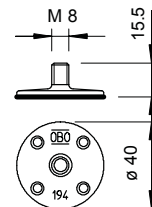


Bonding base including industrial bonding pad

Type	Colour	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
194 K	Grey	M8	20	0.600	5207266

PA Polyamide

- With threaded pin M8
- To accept conductor supports with M8 internal thread
- For bonding to concrete, steel or smooth substrates
- Not suitable for rough surfaces such as plaster, wood, bitumen strips
- Processing at > +15 °C and on cleaned substrate
- To route the conductor, cannot be used on the roof
- Use on sheet roofs after agreement with the responsible roofing contractors

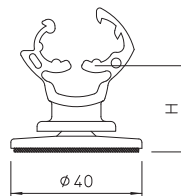


Cable bracket, Rd 8–10 mm with bonding base

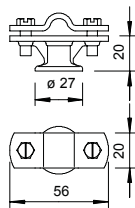
Type	Dimension H mm	Pack. pcs	Weight kg/100 pcs.	Item No.
177 20 KL	25	50	1.239	5207451

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

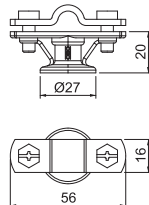
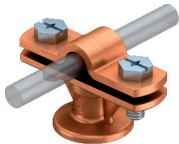


Cable bracket with crossbar Rd 8–10 mm



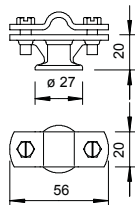
Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
113 Z8-10	Rd 8-10	20	6.202	5229960
Zn Die-cast zinc G Electrogalvanised				
• With female thread M8 or through hole Ø 7 mm • Over-piece installed with 2 hexagonal bolts • Version HD with wood screws (5 x 60) and plastic dowels (8 x 40)				

Cable bracket with crossbar Rd 8–10 mm copper-plated



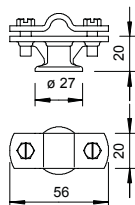
Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
113 8-10	Rd 8-10	20	9.600	5230217
Zn Die-cast zinc Cu Copper-plated				
• With female thread M8 or through hole Ø 7 mm • Over-piece installed with 2 hexagonal bolts				

Cable bracket with crossbar, wood screw, plastic anchor Rd 8-10 mm galvanised



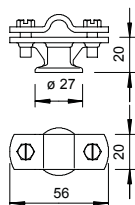
Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
113 B-Z-HD	Rd 8-10	100	6.580	5230322
Zn Die-cast zinc VZ Galvanised				
• With female thread M8 or through hole Ø 7 mm • Over-piece installed with 2 hexagonal bolts • Version HD with wood screws (5 x 60) and plastic dowels (8 x 40)				

Conductor bracket with crossbar, wood screw, plastic anchor Rd 8-10 mm copper-plated



Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
113 B-MS-HD 8-10	Rd 8-10	100	7.280	5230365
Zn Die-cast zinc Cu Copper-plated				
• With female thread M8 or through hole 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 hinged crossbar Rd 8–10 mm



Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
113 Z-K 8-10	Rd 8-10	20	6.202	5229961
Zn Die-cast zinc G Electrogalvanised				
• With female thread M8 or through hole Ø 7 mm • Hinge crossbar for quick swivel mounting • Crossbar mounted with 2 hexagonal bolts				

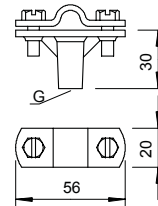
Cable bracket with hinged crossbar Rd 8–10, 30 mm mounting height, galvanised

Type	Fit mm	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
168 8-10 M6	Rd 8-10	M6	20	7.800	5229162
168 DIN-K-M8	Rd 8-10	M8	20	7.780	5229839

Zn Die-cast zinc

G Electrogalvanised

- With female thread (G)
- With over-piece and 2 hexagonal bolts
- Installed height 30 mm



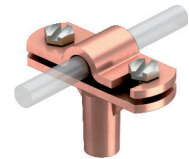
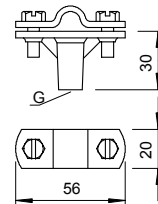
Cable bracket with hinged crossbar Rd 8–10, 30 mm mounting height, copper-plated

Type	Fit mm	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
168 ZN-M6	Rd 8-10	M6	20	8.660	5229367
168 DIN-K-M8	Rd 8-10	M8	20	8.440	5229383

Zn Die-cast zinc

Cu Copper-plated

- With female thread (G)
- With over-piece and 2 hexagonal bolts
- Installed height 30 mm



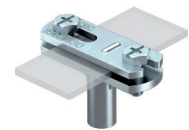
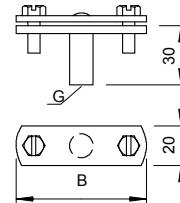
Cable bracket with crossbar FL, 30 mm mounting height FT

Type	Dimen- sion B mm	Fit mm	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
168 FL40-M8	66	FL 40	M8	20	8.200	5229553

TG Cast iron

FT Hot-dip galvanised

- For flat strip
- With female thread (G)
- Installed height 30 mm



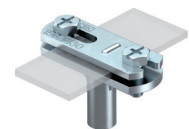
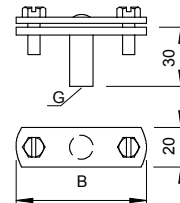
Cable bracket with crossbar FL, 30 mm mounting height galvanised

Type	Dimen- sion B mm	Fit mm	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
168 FL30-M6	56	FL 30	M6	20	7.640	5229464
168 DIN 30	56	FL 30	M8	20	7.320	5229480

Zn Die-cast zinc

G Electrogalvanised **VZ** Galvanised

- For flat strip
- With female thread (G)
- Installed height 30 mm



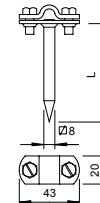
Cable bracket with crossbar Rd 8–10 mm, with square pin

Type	Fit mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
163 70 FT	Rd 8-10	70	50	8.476	5223075
163 100 FT	Rd 8-10	100	50	10.056	5223105
163 150 FT	Rd 8-10	150	50	14.400	5223156
163 200 FT	Rd 8-10	200	20	18.880	5223202

St Steel

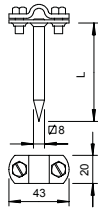
FT Hot-dip galvanised

- Complete with crossbar and hexagonal bolts
- With square pin for rapid mounting
- With hexagonal bolts made of VA





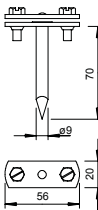
Cable bracket with crossbar Rd 8–10 mm, with square pin, copper-plated



Type	Fit mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
163 100 CU	Rd 8-10	100	10	10.840	5223601

CU Copper

- Complete with crossbar and hexagonal bolts
- With square pin for rapid mounting
- With hexagonal bolts made of VA

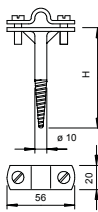


Type	Fit mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
166 LS 70	FL30	70	50	9.140	5226570

St Steel

FT Hot-dip galvanised

- With crossbar and 2 hexagonal bolts (VA)
- With loose round pin Ø 9 mm



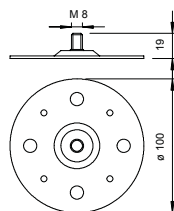
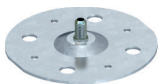
Type	Fit mm	Dimension H mm	Pack. pcs	Weight kg/100 pcs.	Item No.
176 A 65	Rd 8-10	65	50	9.536	5227070
176 A 80	Rd 8-10	80	50	10.025	5227089
176 A 100	Rd 8-10	100	50	11.500	5227100
176 A 150	Rd 8-10	150	20	13.100	5227151

TG Cast iron

F Hot-dip galvanised

- Also for flat conductor to FL 30
- With wood screw thread
- Bottom section, hot-dip galvanised cast iron
- Over-piece and screws, hot dipped galvanised steel

Base plate



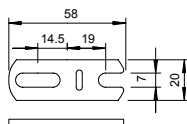
Type	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
199 DIN	M8	10	14.200	5208017

St Steel

FS Strip-galvanised

- With threaded pin M8
- Suitable for direct bonding
- Threaded pin brass and base plate hot-dip galvanised steel

Hinge crossbar for FL 30 mm



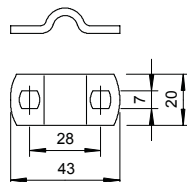
Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
156 FL	FL30	50	2.460	5228328

St Steel

FT Hot-dip galvanised

- With slot for quick installation

Crossbar for Rd 8–10 mm, steel



Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
156 K8-10 ST	Rd 8-10	100	2.000	5228123

St Steel

FT Hot-dip galvanised

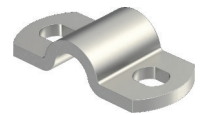
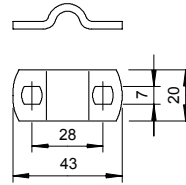
- For round conductor Rd 8-10

Crossbar for Rd 8–10 mm, stainless steel

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
156 K8-10 VA	Rd 8-10	100	2.100	5228134

V2A Stainless steel, grade 304

- For round conductor Rd 8-10

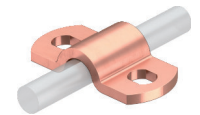
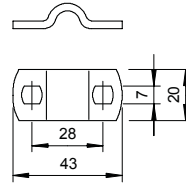


Crossbar for Rd 8–10 mm, copper

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
156 K8-10 CU	Rd 8-10	100	2.260	5228131

Cu Copper

- For round conductor Rd 8-10

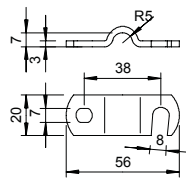


Hinge crossbar for Rd 8-10 mm

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
156 8-10	Rd 8-10	100	2.680	5228026

St Steel
FT Hot-dip galvanised

- With open slot for quick installation

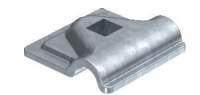
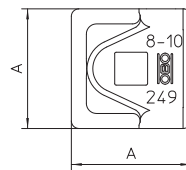


Connection terminal, equipotential bonding, Rd 8–10 mm

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

St Steel
FT Hot-dip galvanised

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

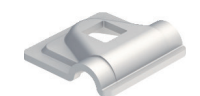
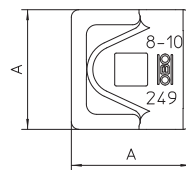


Connection terminal, equipotential bonding, Rd 8–10 mm

Type	Dimen- sion 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

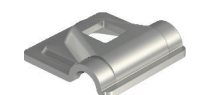
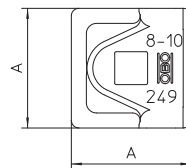


Connection terminal, equipotential bonding, Rd 8–10 mm

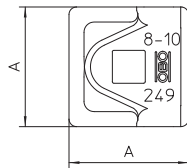
Type	Fit mm	Dimen- sion A mm	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 VA-OT	Rd 8-10	40	100	3.130	5311554

V2A Stainless steel, grade 304

- For round conductor Rd 8-10
- Suitable for M10 bolts



Connection terminal, equipotential bonding, Rd 8–10 mm

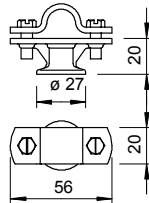


Type	Fit mm	Dimension A mm	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 CU-OT	Rd 8-10	40	100	3.580	5311530

Cu Copper

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

Rod holder for 16 mm air-termination and earth entry rods, galvanised



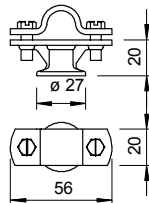
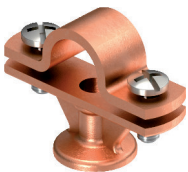
Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
113 Z-16	Rd 16	10	6.000	5412609

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



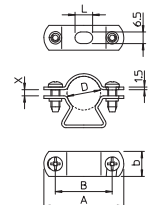
Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
113 ZN-16	Rd 16	10	10.100	5412633

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

Cable and pipe spacer clip 733 V2A



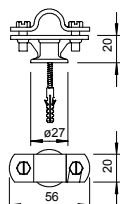
Type	Clamping range D mm	Hole size mm	Bolt	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
733 16 A2	14 - 16	6,5 x 10	M5 x 12	500	50	2.430	1362011

V2A Stainless steel, A2

* Size M16 is not suitable for nail device

* Sizes M16 - PG16 are not suitable for bolt-firing tool

Rod holder for 16 mm air-termination and earth entry rods, with screw and anchor



Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
113 B-Z-HD	Rd 16	100	6.000	5412803

Zn Die-cast zinc

VZ Galvanised

- For lightning and ground insertion rods Rd 16
- Installed with over-piece and hexagonal bolts M6 x 16 (VA)
- Female thread M8 for screwing and through hole for wood screws
- Pre-mounted with wood screw 5 x 60 and plastic dowels 8 x 40

© 2006 The Authors
Journal compilation © 2006 Blackwell Publishing Ltd



© 2006 The Authors
Journal compilation © 2006 Blackwell Publishing Ltd



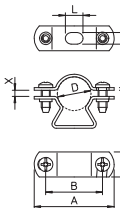
© 2006 The Authors
Journal compilation © 2006 Blackwell Publishing Ltd

Technical drawing of a mechanical part with dimensions: 14, 3, 20, 7, 38, R8, 8, 56.

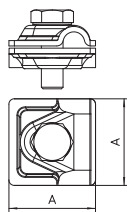
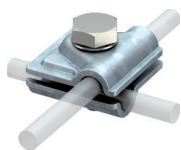








Vario quick connector



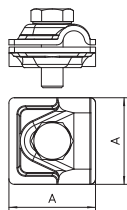
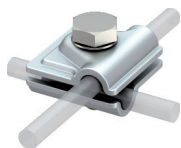
Type	Fit mm	Dimen- sion A mm	Short-circuit current (50 Hz) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 ST	Rd 8-10	40	5.6	H/100	20	10.800	5311500
249 B ST	Rd 8-10	40	5.6	H/100	100	10.800	5311705

St Steel

FT Hot-dip galvanised

- For T, cross and parallel connectors
- Quick installation using hexagonal bolt M10 x 30, high-grade stainless steel
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)

Vario quick connector

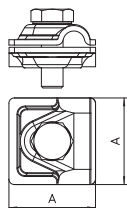


Type	Fit mm	Dimen- sion A mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 ALU	Rd 8-10	44	H/100	30	6.600	5311519
249 B ALU	Rd 8-10	44	H/100	100	7.250	5311713

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

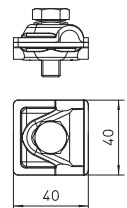


Type	Fit mm	Dimen- sion A mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 VA	Rd 8-10	40	H/100	10	10.700	5311551

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)

Vario quick connector

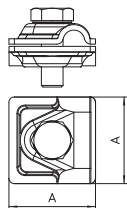
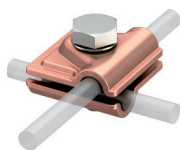


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 V4A	Rd 8-10	H/100	10	9.500	5311404

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	Dimen- sion A mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 CU	Rd 8-10	40	H/100	10	11.900	5311527

Cu Copper

- For T, cross and parallel connectors
- Quick installation using hexagonal bolt M10 x 30, high-grade stainless steel
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)

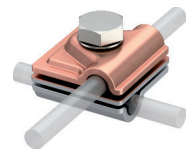
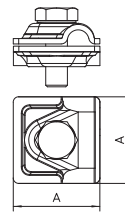
Variable bi-metal quick connector



Type	Fit mm	Lightning current carrying capacity kA	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)



Variable earthing connector Rd 6-8 / 8-10 mm

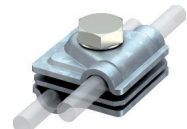
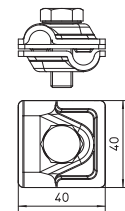


Type	Fit mm	Dimen- sion A mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
249 6-10 ST	RD 6-8 / 8-10	40	H/100	20	13.100	5311410

St Steel

FT Hot-dip galvanised

- For T, intersection and parallel connections with adapter plates
- Quick mounting using an M10 x 30 bolt, made from rustproof stainless steel
- With sprung washer to DIN 137
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)



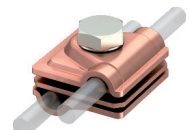
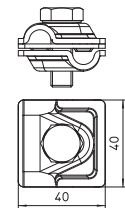
Variable earthing connector Rd 6-8 / 8-10 mm



Type	Fit mm	Dimen- sion A mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
249 6-10 CU	RD 6-8 / 8-10	40	H/100	10	14.540	5311417

Cu Copper

- For T, intersection and parallel connections with adapter plates
- Quick mounting using an M10 x 30 bolt, made from rustproof stainless steel
- With sprung washer to DIN 137
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)



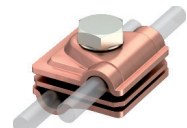
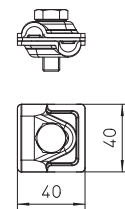
Vario quick connector Rd 6-8 / Rd 6-8 mm



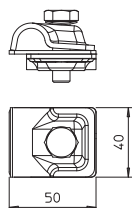
Type	Fit mm	Dimen- sion A mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
249 6-8 CU	RD 6-8 / 6-8	40	H/100	10	12.710	5311407

Cu Copper

- For T, intersection and parallel connections with adapter plates
- Quick mounting using an M10 x 30 bolt, made from rustproof stainless steel
- With sprung washer to DIN 137
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)



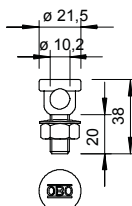
Vario quick connector Rd 8-10x16



Type	Fit mm	Dimension A mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10X16 VA	8-10X16	40	H/100	10	16.300	5311590
V2A Stainless steel, grade 304						

- For T, intersection and parallel connections with adapter plates
- Quick mounting using an M10 x 30 bolt, made from rustproof stainless steel
- With sprung washer to DIN 137
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)

Connector, Rd 8–10 mm with M10 thread



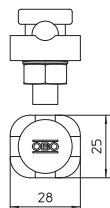
Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
5000	Rd 8-10	20	4.630	5304008

St Steel

F Hot-dip galvanised

- With bore hole 10.2 mm
- With thread M10
- Including pre-mounted nut M10 and serrated washer
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)

Connector Rd 8–10 mm, single



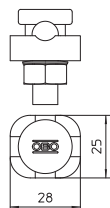
Type	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5001 DIN-FT	H/100	20	7.450	5304105
5001 DIN-FT+VA	H/100	20	7.450	5304107

St Steel

FT Hot-dip galvanised

- With fix contact clamping screw, nut and serrated washer
- With bore hole 10.2 mm
- With pre-mounted pressure piece, die-cast zinc
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)

Connector Rd 8–10 mm, single, copper



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5001 ZN-CU	Rd 8-10	H/100	10	8.760	5304113

Zn Die-cast zinc

Cu Copper-plated

- With fix contact clamping screw, nut and serrated washer
- With bore hole 10.2 mm
- With pre-mounted pressure piece, die-cast zinc
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)

Connector Rd 8–10 mm, double

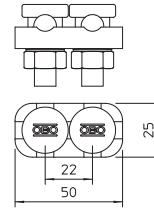


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5002 DIN-FT	Rd 8-10	H/100	20	14.240	5304202

St Steel

FT Hot-dip galvanised

- With 2 fix contact clamping screws, nut and serrated washer
- Including pre-mounted connecting pressure piece, die-cast zinc or copper-plated die-cast zinc
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)



Connector Rd 8–10 mm, triple

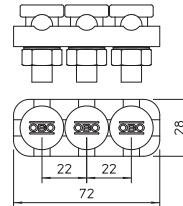


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5003	Rd 8-10	H/100	10	22.420	5304318

TG Cast iron

FT Hot-dip galvanised

- With 3 fix contact clamping screws, nut and serrated washer
- With pre-mounted connecting pressure piece, die-cast zinc
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)



Connector, Rd 8–10 mm with pressure trough

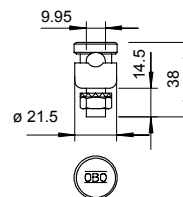


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5001 N-FT	Rd 8-10	N/50	20	5.900	5304164

St Steel

FT Hot-dip galvanised

- With 1 fix contact clamping screw, nut and serrated washer
- Including pre-mounted pressure sump, steel
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)



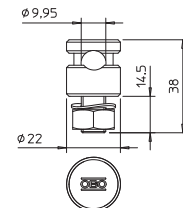
Connector, Rd 8–10 mm with pressure trough



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5001 N-VA	Rd 8-10	N/50	10	6.800	5304176

V2A Stainless steel, grade 304

- With 1 fix contact clamping screw, nut and serrated washer
- Including pre-mounted pressure sump, steel
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)



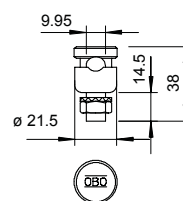
Connector, Rd 8–10 mm with pressure trough



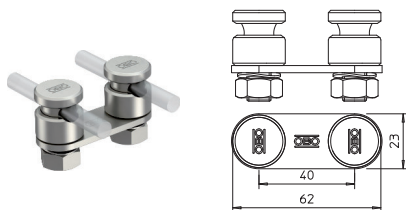
Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5001 N-CU	Rd 8-10	H/100	10	6.750	5304172

Cu Copper

- With 1 fix contact clamping screw, nut and serrated washer
- Including pre-mounted pressure sump, steel
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)



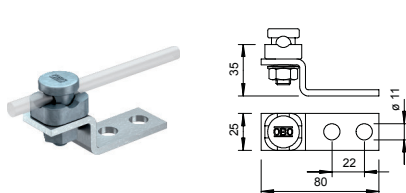
Connector, Rd 8–10 mm, double, with pressure trough



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5002 N-VA	Rd 8-10	N/50	10	16.200	5304270
V2A Stainless steel, grade 304					

- With 2 Fix-Kontakt clamping bolts, nuts and serrated washers
- With pre-mounted pressure trough made of VA
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)

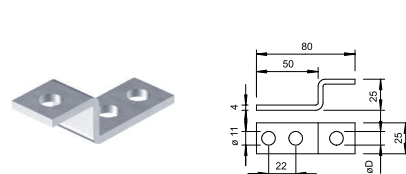
Connection and end piece with connector



Type	Material symbol	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5009	St	Rd 8-10	H/100	10	14.500	5304970
St Steel						
F Hot-dip galvanised						

- With 2 attaching holes Ø 11 mm
- Installed with connector (single-piece) type 5001 DIN-FT
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)

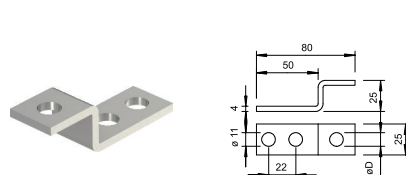
Connection and end piece



Type	Dimen- sion 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

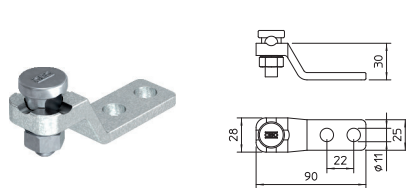
Connection and end piece



Type	Dimen- sion D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
5011 VA M10	11	10	7.064	5334934
5011 VA M12	13	10	7.048	5334942
V4A Stainless steel, grade 316 Ti				

- For attaching to steel structures or bolting to fixed earthing terminals
- For attachments: Round conductor Rd 8-10 and flat conductor FL 30 x 3.5
- 2 attaching holes Ø 11 mm
- 1 attaching holes Ø D mm

Connection and end piece, DIN version



Type	Fit mm	Material symbol	Pack. pcs	Weight kg/100 pcs.	Item No.
5005 DIN-FT	Rd 8-10	St	10	15.518	5304601
St Steel					
F Hot-dip galvanised					

- With 2 attaching holes and 1 fix contact clamping screw 5000...
- With 2 attaching holes Ø 11 mm
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)

Connection and end piece with connector and pressure trough

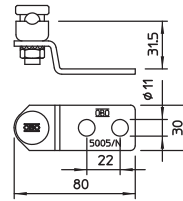


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
5005 N-FT	Rd 8-10	10	11.600	5304660

St Steel

FT Hot-dip galvanised

- With 2 attaching holes Ø 11 mm
- Including pre-mounted connector 5001 N
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)



Parallel connector Rd 8–10 mm, M8 x 25

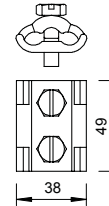


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
259 8-10	Rd 8-10	N/50	25	13.230	5315506

TG Cast iron

FT Hot-dip galvanised

- With 2 hex-head screws M8 x 25, hot-dip galvanised steel



Parallel connector Rd 8 mm, M10 x 30

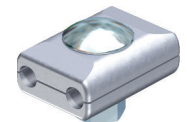
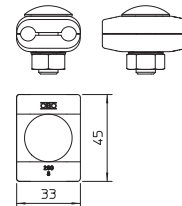


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
260 8	Rd 8	H/100	50	13.930	5315700

Zn Die-cast zinc

G Electrogalvanised

- With flat, round screw M10 x 30 and hexagonal nut, hot-dip galvanised steel



Parallel connector Rd 8–10 mm, M6 x 20

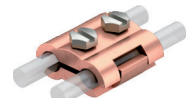
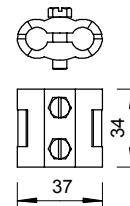


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
260 8-10 MS	Rd 6-10	50	15.820	5315654

CuZn Brass

Cu Copper-plated

- With 2 hexagonal bolts M6 x 20 made of stainless steel (V2A)



Straight connector Rd 8 mm

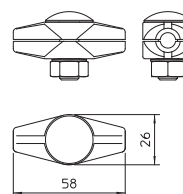


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
239	Rd 8	N/50	20	12.510	5329078

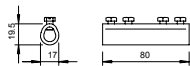
Zn Die-cast zinc

G Electrogalvanised

- With truss-head bolt M10 x 30 and hexagonal nut M10
- Complies with the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)



Straight connector Rd 8–10 mm



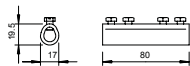
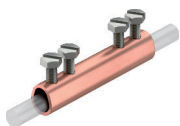
Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
237 N FT	Rd 8-10	H/100	20	8.560	5328209

St Steel

F Hot-dip galvanised

- With 4 hexagonal bolts M6 x 10
- Complies with the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)

Straight connector Rd 8–10 mm

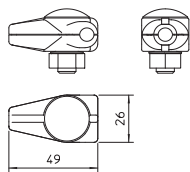
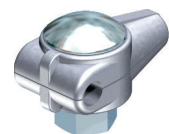


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
237 N CU	Rd 8-10	H/100	10	8.760	5328284

Cu Copper

- With 4 hexagonal bolts M6 x 10
- Complies with the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)

T connector Rd 8 mm



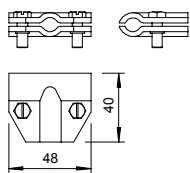
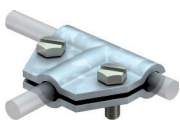
Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
244	Rd 8	N/50	10	11.580	5311039

Zn Die-cast zinc

G Electroplated

- With truss-head bolt M10 x 30 and hexagonal nut M10
- Complies with the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)

T connector Rd 8–10 mm



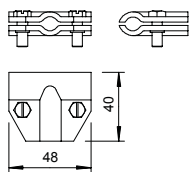
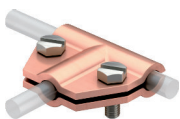
Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
245 8-10 FT	Rd 8-10	N/50	10	9.401	5311101

St Steel

FT Hot-dip galvanised

- With 2 hexagonal bolts M6 x 16 (VA)
- Complies with the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)

T connector Rd 8–10 mm



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
245 8-10 CU	Rd 8-10	N/50	10	11.560	5311152

Cu Copper

- With 2 hexagonal bolts M6 x 16 (VA)
- Complies with the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)

T connector Rd 8-10 mm, triple-screwed

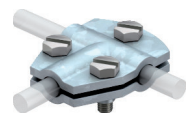
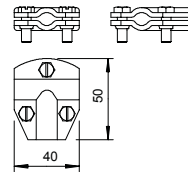


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
247 8-10 FT	Rd 8-10	N/50	10	10.934	5311209

St Steel

FT Hot-dip galvanised

- With 3 hexagonal bolts M6 x 16 (VA)



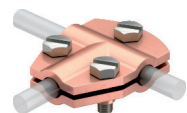
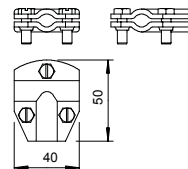
T connector Rd 8-10 mm, triple-screwed



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
247 8-10 CU	Rd 8-10	N/50	10	10.750	5311268

CU Copper

- With 3 hexagonal bolts M6 x 16 (VA)
- Complies with the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)



Cross-connector for flat conductors and round conductors

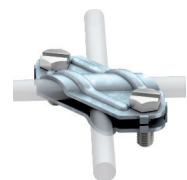
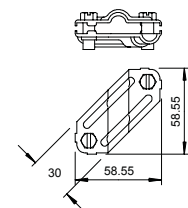


Type	Fit mm	Short-circuit current (50 HZ) (1 s; ≤300°C) kA	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
250	Rd 8-10/FL30	5.6	N/50	25	10.260	5312906

St Steel

FT Hot-dip galvanised

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10
- Fit: Rd 8-10 x FL 30
- Fit: FL 30 x FL 30
- Mounted with 2 hexagonal bolts M8 x 20 (F)



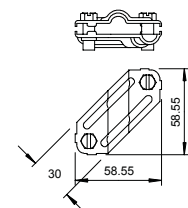
Cross-connector for flat conductors and round conductors



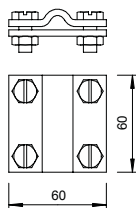
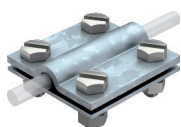
Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
250 VA	Rd 8-10/FL30	H/100	25	10.260	5312922
250 V4A	Rd 8-10/FL30	H/100	10	10.260	5312925

V2A Stainless steel, grade 304 **V4A** Stainless steel, grade 316 Ti

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10
- Fit: Rd 8-10 x FL 30
- Fit: FL 30 x FL 30
- Mounted with 2 hexagonal bolts M8 x 20



Cross-connector for round cables and flat conductors DIN



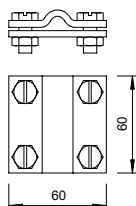
Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10XFL30 FT	8-10 x FL30	H/100	25	28.500	5312655

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

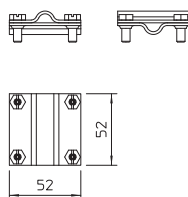
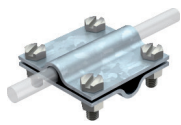


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10xFL30V4A	8-10 x FL30	H/100	10	28.500	5312656

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



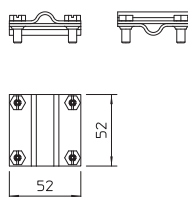
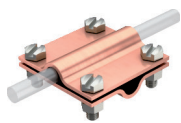
Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
251 8-10	Rd 8-10	H/100	25	11.690	5312035

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

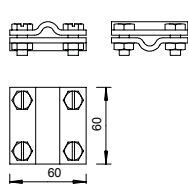
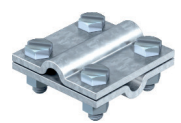


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
251 CU	Rd 8-10	H/100	10	12.400	5312132

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

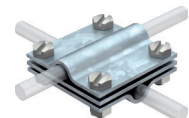
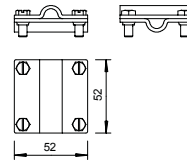


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
254 DIN 8-10 FT	Rd 8-10	H/100	25	16.660	5314038

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



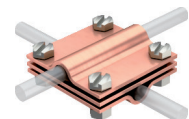
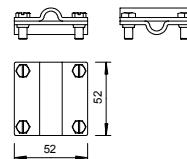
Cross-connector with intermediate plate for Rd 8–10 mm



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

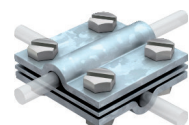
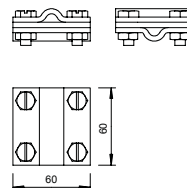


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10 FT	Rd 8-10	H/100	25	33.530	5312310

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)



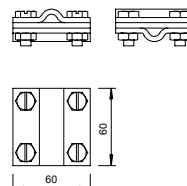
Cross-connector with intermediate plate for Rd 8–10 mm, wide version



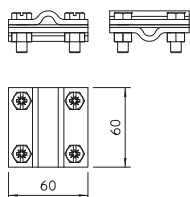
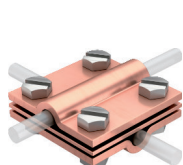
Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 8-10 V4A	Rd 8-10	H/100	10	33.530	5312318

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



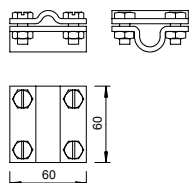
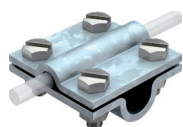
Cross-connector with intermediate plate for Rd 8–10 mm, wide version



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

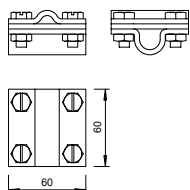
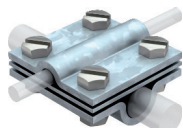
Cross-connector for Rd 8–10 x Rd 16 mm



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)

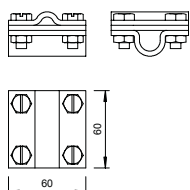
Cross-connector with intermediate plate for Rd 8–10 x Rd 16 mm



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

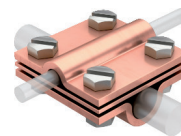
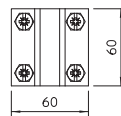
Cross-connector with intermediate plate for Rd 8–10 x Rd 16 mm



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, 10–20 mm

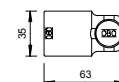
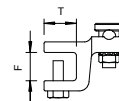


Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5004 DIN-FT 12	Rd 8-10	max. 12	N/50	10	18.730	5304407
5004 DIN-FT 20	Rd 8-10	10 - 20	N/50	10	30.600	5304504

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

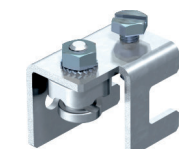
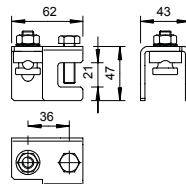


Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
5010 20 FT	Rd 8-10	4 - 20	N/50	10	30.600	5304520

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

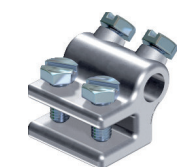
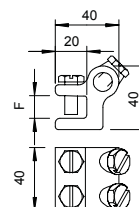


Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
272 8	Rd 8-10	max. 8	N/50	20	22.800	5318084
272 14	Rd 8-10	max. 14	N/50	20	25.230	5318149

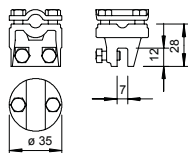
TG Cast iron

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



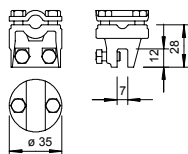
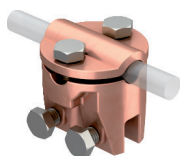
Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
269 8-10	Rd 8-10	max. 7	N/50	20	14.460	5317010

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



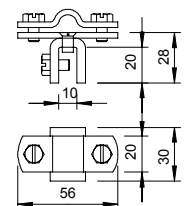
Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
269 MS	Rd 8-10	max. 7	H/100	10	14.480	5317053

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



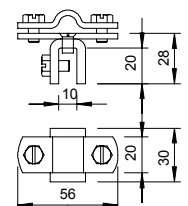
Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
270 8-10 FT	Rd 8-10	max. 10	N/50	20	13.810	5317207

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

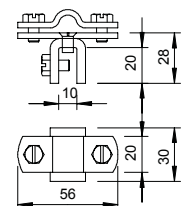
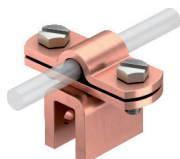


Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
270 8-10 VA	Rd 8-10	max. 10	N/50	10	13.800	5317208

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

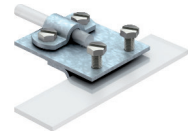
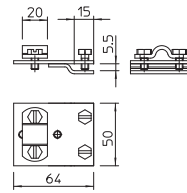


Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
271 8-10	Rd 8-10	max. 5	N/50	20	14.060	5317401

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)



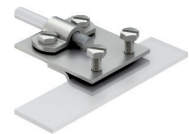
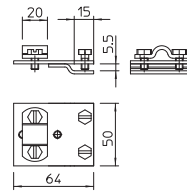
Folding clamp up to 5 mm plate thickness



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)



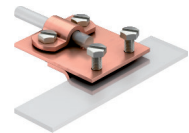
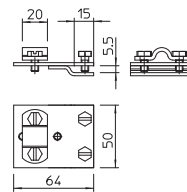
Folding clamp up to 5 mm plate thickness



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

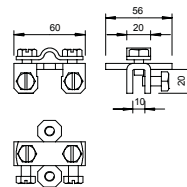


Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
273 8-10	Rd 8-10	max. 10	N/50	50	17.200	5317223

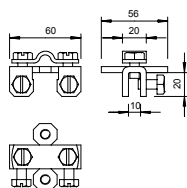
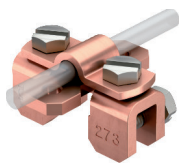
St Steel

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)



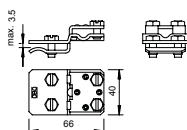
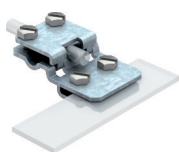
Folding clamp up to 10 mm plate thickness



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)

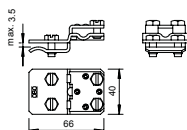
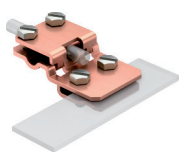
Folding clamp and connection terminal up to 10 mm plate thickness



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
St Steel						
FT Hot-dip galvanised						

- Plate thickness to 10 mm
- For conductor routing transverse and longitudinal to plate
- 4 hexagonal bolts M6 x 16
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)

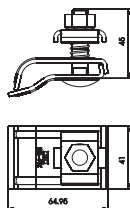
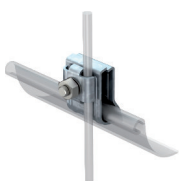
Folding clamp and connection terminal up to 10 mm plate thickness



Type	Fit mm	Clamping range mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
274 CU	Rd 8-10	max. 10	N/50	10	11.340	5317479
Cu Copper						

- Plate thickness to 10 mm
- For conductor routing transverse and longitudinal to plate
- 4 hexagonal bolts M6 x 16
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)

Gutter clamp RK-FIX



Type	Fit mm	Material symbol	Inter- face	Pack. pcs	Weight kg/100 pcs.	Item No.
RK-FIX	2 x Rd 8	St	FT	25	19.100	5316450
St Steel						
FT Hot-dip galvanised						

- For up to 2 conductors Rd 8
- With double crossbar
- Suitable for all bead thicknesses (15–25 mm)
- With 1 truss-head bolt M10 x 45
- Nut and bolt made of VA stainless steel
- With spring for prefiring for rain gutter

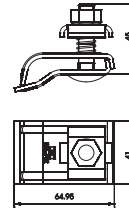
Gutter clamp RK-FIX



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 prefiring for rain gutter
- Tested to DIN EN 50164-1



Gutter clamp RK-FIX

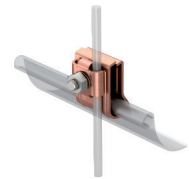
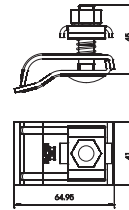


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
RK-FIX CU	2 x Rd 8	H/100	10	21.000	5316468

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 prefiring for rain gutter
- Tested to DIN EN 50164-1



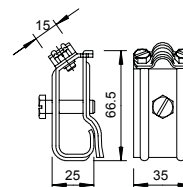
Gutter clamp for all bead thicknesses

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

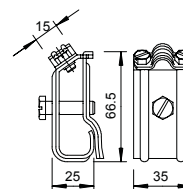


Gutter clamp for all bead thicknesses

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)



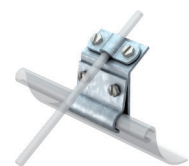
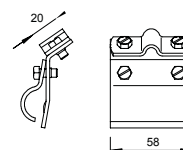
Gutter clamp for bead thickness 15–22 mm

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
262 A-DIN FT	Rd 8-10	25	19.610	5316219

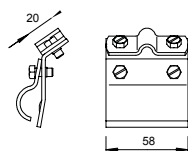
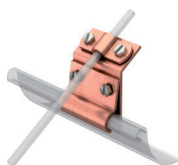
St Steel

FT Hot-dip galvanised

- Suitable for bulge thickness 15–22 mm
- With 4 hexagonal bolts M6 x 16 (VA)

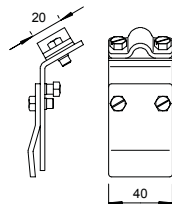
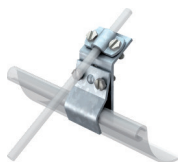


Gutter clamp for bead thickness 15–22 mm



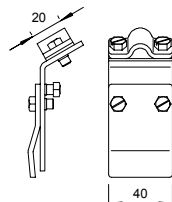
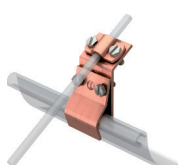
Type	Fit mm	Pack. pcs	Weight kg/100 pcs	Item No.
262 A-DIN CU	Rd 8-10	10	20.840	5316251
Cu Copper • Suitable for bulge thickness 15–22 mm • With 4 hexagonal bolts M6 x 16 (VA)				

Roof gutter clamp for all bead thicknesses



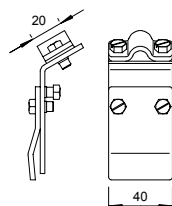
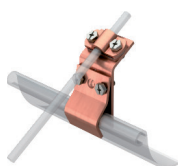
Type	Fit mm	Pack. pcs	Weight kg/100 pcs	Item No.
262	Rd 8-10	25	20.300	5316014
St Steel FT Hot-dip galvanised • With 4 hexagonal bolts M6 x 16 • Fits all bead thicknesses				

Roof gutter clamp for all bead thicknesses



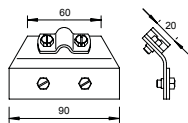
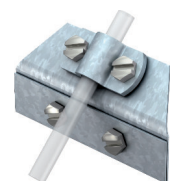
Type	Fit mm	Pack. pcs	Weight kg/100 pcs	Item No.
262 CU	Rd 8-10	10	20.940	5316154
Cu Copper • With 4 hexagonal bolts M6 x 16 • Fits all bead thicknesses				

Bi-metal roof gutter clamp for all bead thicknesses



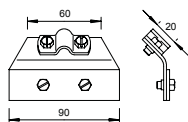
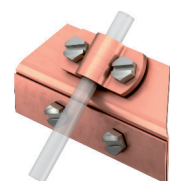
Type	Fit mm	Pack. pcs	Weight kg/100 pcs	Item No.
262 ZM	Rd 8-10	10	23.100	5316170
St Steel FT Hot-dip galvanised • Fits all bead thicknesses • Bi-metal for attaching round conductors aluminium or steel to roof gutters without corrosion to different metals				

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				

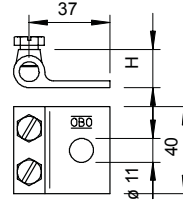
Clamping shoe

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
319 8	Rd 8	25	7.800	5325307
319 10	Rd 10	25	9.650	5325315

TG Cast iron

F Hot-dip galvanised

- With Ø 11 mm attaching hole
- 2 hexagonal bolts M8 x 16
- Bolts hot-dip galvanised steel and clamping element hot dipped galvanised cast steel



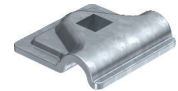
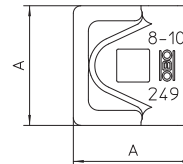
Connection terminal, equipotential bonding, Rd 8–10 mm

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

St Steel

FT Hot-dip galvanised

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

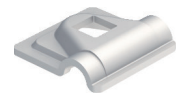
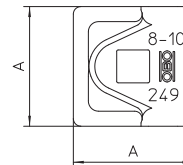


Connection terminal, equipotential bonding, Rd 8–10 mm

Type	Fit mm	Dimen- sion A 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

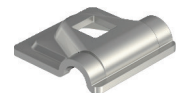
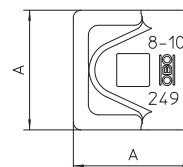


Connection terminal, equipotential bonding, Rd 8–10 mm

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

V2A Stainless steel, grade 304

- For round conductor Rd 8-10
- Suitable for M10 bolts

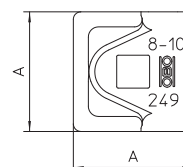


Connection terminal, equipotential bonding, Rd 8–10 mm

Type	Fit mm	Dimen- sion A mm	Pack. pcs	Weight kg/100 pcs.	Item No.
249 8-10 CU-OT	Rd 8-10	40	100	3.580	5311530

Cu Copper

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

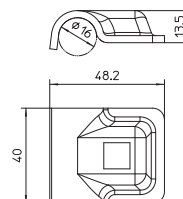


Connection terminal, equipotential bonding, Rd 16 mm

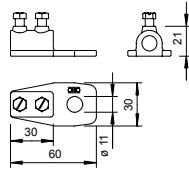
Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
249 VA-OT	16	100	5.700	5311573

V2A Stainless steel, grade 304

- For round conductor fastening RD 16
- Suitable for M10 bolts

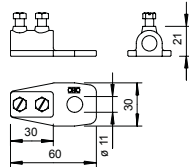


End piece



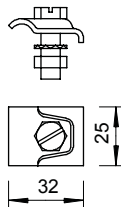
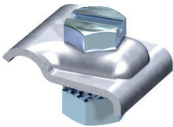
Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
280 8-10	Rd 8-10	20	6.300	5320011
Zn Die-cast zinc G Electrogalvanised				
• With Ø 11 mm attaching hole • 2 hexagonal bolts M6 x 12, bolts hot-dip galvanised steel or VA • Clamping element from die-cast zinc or copper-plated die-cast zinc				

End piece



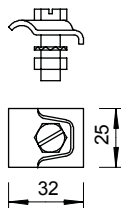
Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
280 VK	Rd 8-10	20	9.000	5320054
Zn Die-cast zinc				
• With Ø 11 mm attaching hole • 2 hexagonal bolts M6 x 12, bolts hot-dip galvanised steel or VA • Clamping element from die-cast zinc or copper-plated die-cast zinc				

Universal clamping block Rd 8–10 mm



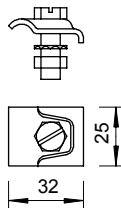
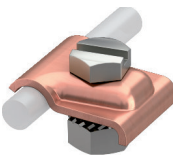
Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
324 S-FT	Rd 8-10	20	3.400	5326303
St Steel FT Hot-dip galvanised				
• Including hexagonal bolt M8 x 25, washer and nuts				

Universal clamping block Rd 8–10 mm



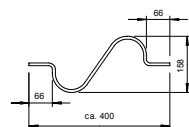
Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
324 S-VA	Rd 8-10	10	3.400	5326311
v2A Stainless steel, grade 304				
• Including hexagonal bolt M8 x 25, washer and nuts				

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				

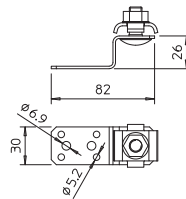
Expansion piece



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			

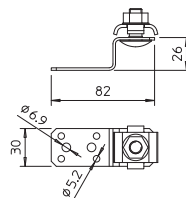
Connection component

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			



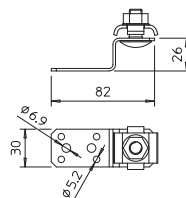
Connection component

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
287 CU	10	5.600	5320690
Cu Copper			
• With 1 attaching hole Ø 11 mm • 4 mounting holes Ø 5.2 mm • 2 mounting holes Ø 6.9 mm			



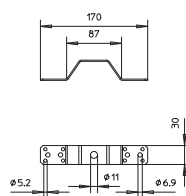
Connection component with double crossbar

Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
287 DCT	Rd 8	N/50	10	6.450	5320707
Alu Aluminium					
• Conforming to VDE 0185-305 (IEC 62305) standards • Quick mounting thanks to an M10x30 screw from rustproof stainless steel • 4 mounting holes Ø 5.2 mm • 2 mounting holes Ø 6.9 mm					



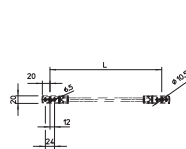
Connection and bridging component

Type	Pack. pcs	Weight 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			



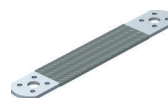
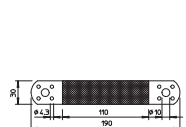
Bridging cable

Type	Dimen- sion 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				

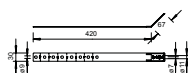


Connection and expansion strip

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

301 V

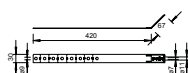
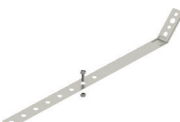
St Steel

FS Strip-galvanised

- Adjustable for pipes from 60-130 mm
- With 2x attaching holes Ø 7 mm
- With 1x attaching hole Ø 9 mm
- With 1x attaching hole Ø 11 mm
- Including hexagonal bolt M6 x 20 and nuts M6

Pack. pcs	Weight kg/100 pcs.	Item No.
5	11.900	5350867

Universal downspout clamp 60–130 mm



Type

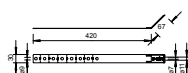
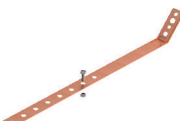
301 V-VA

V2A Stainless steel, grade 304

- Adjustable for pipes from 60-130 mm
- With 2x attaching holes Ø 7 mm
- With 1x attaching hole Ø 9 mm
- With 1x attaching hole Ø 11 mm
- Including hexagonal bolt M6 x 20 and nuts M6

Pack. pcs	Weight kg/100 pcs.	Item No.
5	11.800	5350905

Universal downspout clamp 60–130 mm



Type

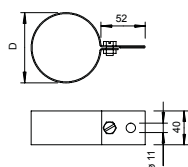
301 V-CU

Cu Copper

- Adjustable for pipes from 60-130 mm
- With 2x attaching holes Ø 7 mm
- With 1x attaching hole Ø 9 mm
- With 1x attaching hole Ø 11 mm
- Including hexagonal bolt M6 x 20 and nuts M6

Pack. pcs	Weight kg/100 pcs.	Item No.
5	13.500	5350883

Downspout clamp



Type

301 DIN-80

301 DIN-90

301 DIN-100

301 DIN-110

301 DIN-120

St Steel

FS Strip-galvanised

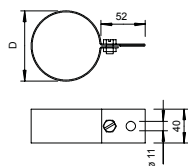
- To connect conductors and downspouts
- Similar to DIN 48818 C
- Strip galvanised (rd. 275 g/m² = 40 µm average value)
- With 1x hexagonal bolt M8 x 20
- With 1x hexagonal nut M8 and 1 stainless steel serrated washer
- With connection hole Ø 11 mm

For
pipe
mm

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

10	19.580	5350085
10	21.880	5350093
10	19.880	5350107
10	24.920	5350115
10	26.240	5350123

Downspout clamp



Type

301 CU-80

301 CU-100

301 CU-110

301 CU-120

Cu Copper

- With 1x hexagonal bolt M8 x 20
- With 1x hexagonal nut M8 and 1 serrated disc made of rustproof steel
- With connection hole Ø 11 mm

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

10	22.500	5350689
10	26.230	5350700
10	30.400	5350719
10	31.400	5350727

Downspout clamp for routing Rd 8–10 mm behind pipe

Type	For pipe mm	Pack. pcs	Weight kg/100 pcs.	Item No.
301 S-100	100	10	5.200	5351057
301 S-120	120	10	5.950	5351073

St Steel

FS Strip-galvanised

- With beading
- For round conductor Rd 8-10
- Including hexagonal bolt M6 x 20 and nuts M6

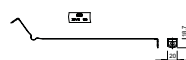


Downspout clamp for routing Rd 8–10 mm behind pipe

Type	For pipe mm	Pack. pcs	Weight kg/100 pcs.	Item No.
301 S-AL-100	100	10	4.100	5351359
301 S-AL-120	120	10	4.600	5351375

Alu Aluminium

- With beading
- For round conductor Rd 8-10
- Including hexagonal bolt M6 x 20 and nuts M6



Downspout clamp for routing Rd 8–10 mm behind pipe

Type	For pipe mm	Pack. pcs	Weight kg/100 pcs.	Item No.
301 S-VA-100	100	10	5.200	5351251
301 S-VA-120	120	10	5.950	5351286

V2A Stainless steel, grade 304

- With beading
- For round conductor Rd 8-10
- Including hexagonal bolt M6 x 20 and nuts M6



Downspout clamp for routing Rd 8–10 mm behind pipe

Type	For pipe mm	Pack. pcs	Weight kg/100 pcs.	Item No.
301 S-CU-100	100	10	5.850	5351456
301 S-CU-120	120	10	6.700	5351472

Cu Copper

- With beading
- For round conductor Rd 8-10
- Including hexagonal bolt M6 x 20 and nuts M6



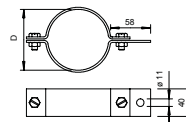
Pipe clamp

Type	For pipe mm	For pipe inch	Pack. pcs	Weight kg/100 pcs.	Item No.
303 DIN-3/8	17.2	3/8	5	22.600	5102057
303 DIN-1/2	21.3	1/2	5	23.280	5102073
303 DIN-3/4	26.9	3/4	5	25.640	5102081
303 DIN-1	33.7	1	5	28.300	5102111
303 DIN-1 1/4	42.4	1 1/4	5	31.300	5102138
303 DIN-1 1/2	48.3	1 1/2	5	33.220	5102154
303 DIN-2	60.3	2	5	36.840	5102197
303 DIN-2 1/2	76.1	2 1/2	10	39.400	5102219
303 DIN-3	88.9	3	10	43.300	5102235
303 DIN-3 1/2	100	3 1/2	10	64.900	5102251
303 DIN-4	114.3	4	10	66.800	5102278

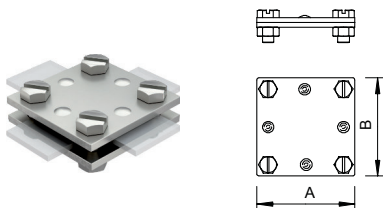
St Steel

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)



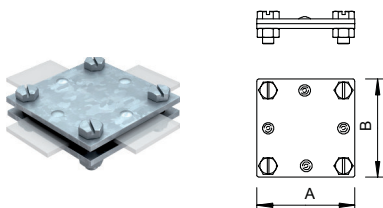
Cross-connector flat/flat without adapter plate A4



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 S6 V4A	max. FL30	60	60	H/100	3600	24.100	5314574
V4A Stainless steel, grade 316							

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Max. FL 30 x FL 30
- Without adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8

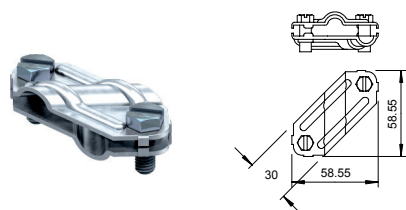
Cross-connector flat/flat without adapter plate FT



Type	Fit mm	Dimen- sion A mm	Dimen- sion B mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
256 S6 FT	max. FL30	—	—	H/100	3600	24.100	5314572
St Steel FT Hot-dip galvanised							

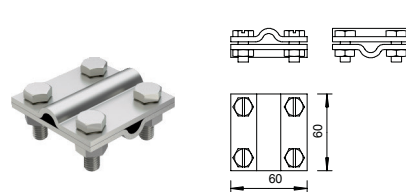
- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Max. FL 30 x FL 30 or max. FL 40 x FL 40
- Without adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8 (F)

Cross-connector 250 VA



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
250 VA-FR	Rd 8-10/FL30	H/100	25	8.700	5312930
V4A Stainless steel, grade 316 Ti					

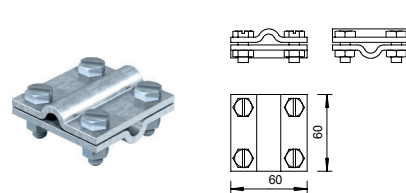
Cross-connector round/round without intermediate plate



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
253 S3 V4A	Rd 8-10	H/100	3400	25.900	5312594
V4A Stainless steel, grade 316					

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10 / FL 30
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8 (F)

Cross-connector Rd 8–10 mm, wide version



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
253 S3 FT	Rd 8-10	H/100	3400	23.300	5312592
St Steel FT Hot-dip galvanised					

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10 / FL 30
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8 (F)

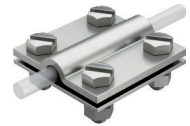
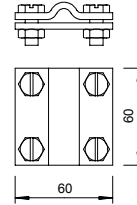
Cross-connector for round cables and flat conductors



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 S4 V4A	8-10 x FL30	H/100	3600	25.000	5312308

V4A Stainless steel, grade 316

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x FL 30
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8



Cross-connector for round cables and flat conductors DIN

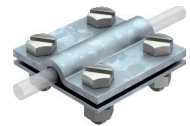
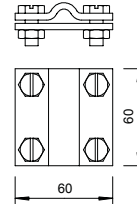


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 S4 FT	8-10 x FL30	H/100	3600	25.000	5312302

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



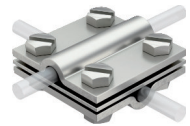
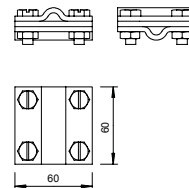
Cross-connector with intermediate plate for Rd 8–10 mm, wide version



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 S1 V4A	Rd 8-10	H/100	2800	28.800	5312294

V4A Stainless steel, grade 316

- Meets the requirements of VDE 0185-305-3 (IEC/ EN 62305-3)
- Fit: Rd 8-10 x Rd 8-10 / FL 30
- With adapter plate
- Mounted with 4 hexagonal bolts M8 x 25 and 4 hexagonal nuts M8



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

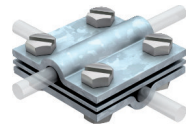
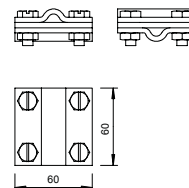


Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
252 S1 FT	Rd 8-10	H/100	2800	28.600	5312292

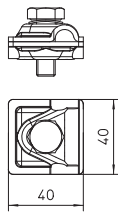
St Steel

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)



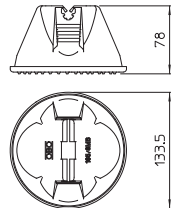
Vario quick connector



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
249 S7 V4A	Rd 8-10	H/100	5000	9.500	5311405
V4A Stainless steel, grade 316					

- 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)

Roof cable holder for flat roofs, black

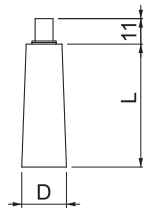


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 MBL-10	RD 10	50	8.482	5218578
165 MBL	Rd 8	100	7.679	5218616
165 MBG-6SO	Rd 6	12	106.000	5218780

PE Polyethylene

- Closed form with base
- With double conductor holder
- Filling weight 1 kg (frost-resistant concrete)
- Sleeve made of polyethylene, black, bottom polypropylene, black
- Base made of polyamide PA 6, black, UV-stabilised and weather-resistant
- Base can be used on almost all roofing felt systems (bitumen, PVC)
- Types 165 MBG...FO: Packed in foil bag

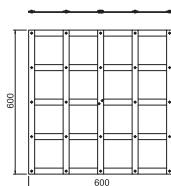
Spacer



Type	Dimension	Pack. pcs	Weight kg/100 pcs.	Item No.
196 55	55mm	20	1.840	5207541

Grey plastic extension for M8 thread, e.g. to mount cable brackets

Earth mats

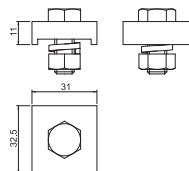
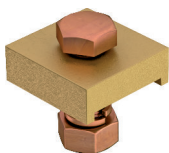


Type	Length mm	Width mm	Height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1816 CU 6	600	600	3	1	403.000	5009250
1816 CU 9	900	900	3	1	605.000	5009256

Cu Copper

- To reduce the step and contact voltage
- In accordance with IEC 62561-2 and IEC 62305-3

Connection terminal for round cable



Type	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
1818 FL CU	FL 20 ÷ FL 26	—	10	10.000	5012270

Cu Copper

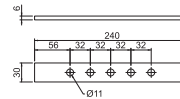
- For connecting round conductor Rd 8-10
- With 1 hexagonal bolt M12 x 40, 1 hexagonal nut M12 and 1 lock washer, stainless steel

Earthing rail for UF separation point

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
5700 PIP EB	1	38.000	5106050
5700 CIP EB	1	46.000	5106071

Cu Copper

- For UF test box 5700 CIP/PIP
- With 5 connection holes
- Diameter of drill hole 11 mm



Connection and separating terminals

Separating piece, open

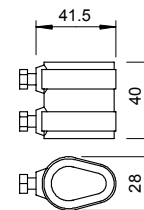


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
223 O DIN ZN	Rd 8-10/16	20	12.500	5335140

Zn Die-cast zinc

G Electrogalvanised

- With 2 hexagonal bolts, stainless steel (VA)
- Clamping element, die-cast zinc



Separating piece, open

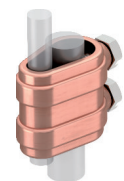
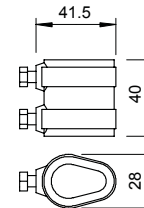


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
223 O DIN MS	Rd 8-10/16	20	14.900	5335167

Zn Die-cast zinc

Cu Copper-plated

- With 2 hexagonal bolts, stainless steel (VA)
- Clamping element, copper-plated die-cast zinc



Separating piece, closed

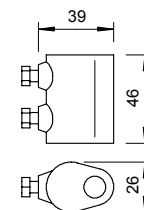


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
223 DIN ZN	Rd 8-10/16	20	10.500	5335205

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)



Separating piece, closed

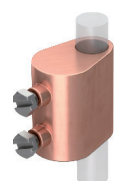
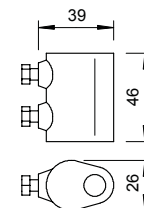


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
223 DIN MS	Rd 8-10/16	10	11.700	5335256

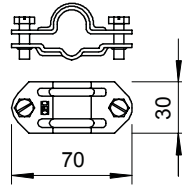
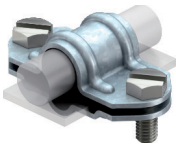
Zn Die-cast zinc

Cu Copper-plated

- For fitting round conductors Rd 8-10 to ground insertion rods Rd 16
- Including 2 hexagonal bolts, high-grade stainless steel (V2A)
- Conforms to the requirements according to DIN VDE 0185-305 (IEC 62305)



Universal separating piece

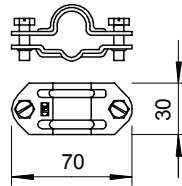
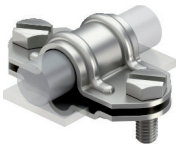


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
226 8-10	Rd 8-10/FL30 x 16	20	8.600	5336007

St Steel
FI 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

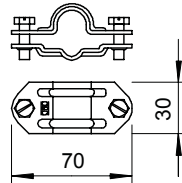
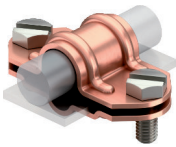


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
226 VA	Rd 8-10/FL30 x 16	10	8.700	5336058

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 separating piece

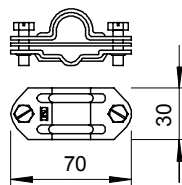
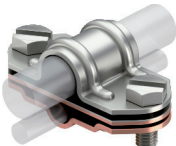


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
226 CU	Rd 8-10/FL30 x 16	10	9.700	5336023

Cu Copper

- For fitting round conductors Rd 8–10 to Rd 16 or flat conductors FL30
- Including 2 hexagonal bolts M8 x 20 high-grade stainless steel (V2A)
- Conforms to the requirements according to VDE 0185-305 (IEC 62305)

Universal bi-metal separating piece

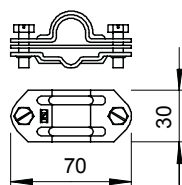
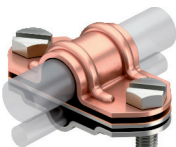


Type	Fit mm	Material upper part	Material lower part	Pack. pcs	Weight kg/100 pcs.	Item No.
226 ZV VA	Rd 8-10/FL30 x 16	VA	Cu	10	11.000	5336074

Cu Copper

- Fit: Rd 8-10 x 16, FL 30 x Rd 16
- With 2 hexagonal bolts M8 x 20, stainless steel (VA)
- Intermediate plate, aluminium/copper

Universal bi-metal separating piece



Type	Fit mm	Material upper part	Material lower part	Pack. pcs	Weight kg/100 pcs.	Item No.
226 ZV CU	Rd 8-10/FL30 x 16	Cu	VA	10	11.900	5336090

V2A Stainless steel, grade 304

- Fit: Rd 8-10 x 16, FL 30 x Rd 16
- With 2 hexagonal bolts M8 x 20, stainless steel (VA)
- Intermediate plate, aluminium/copper

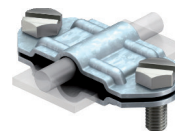
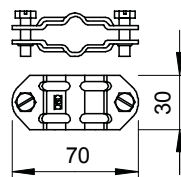
Separating piece for Rd 8–10 and FL 30 mm

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
233 8	Rd 8-10/FL30 x Rd 8-10/FL30	20	8.200	5336309

St Steel

FI Hot-dip galvanised

- To fit round conductors Rd 8-10 or flat conductors FL 30
- With 2 hexagonal bolts M8 x 20 made of rustproof steel (VA)
- Short-circuit current I_k (50 Hz), time 0.6 s, temp. max. 300 °C: 8.5 kA

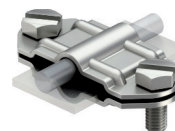
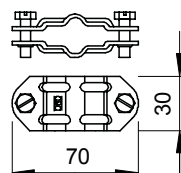


Separating piece for Rd 8–10 and FL 30 mm

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
233 VA	Rd 8-10/FL30 x Rd 8-10/FL30	10	8.300	5336341

V2A Stainless steel, grade 304

- For fitting round conductors Rd 8-10 or flat conductors FL 30
- With 2 hexagonal bolts M8 x 20, stainless steel (VA)

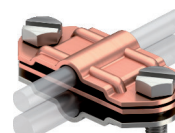
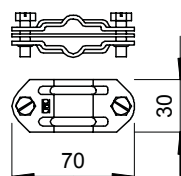


Bi-metal separating piece for Rd 8–10 and FL 30 mm

Type	Fit mm	Material upper part	Material lower part	Pack. pcs	Weight 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

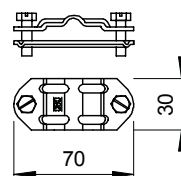


Separating piece for Rd 8–10 and FL 30–40 mm

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)

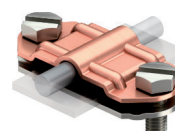
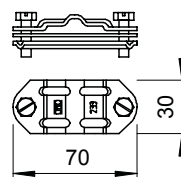


Bi-metal separating piece for Rd 8–10 and FL 30–40 mm

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



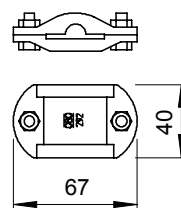
Malleable iron separating piece

Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
292 DIN	Rd 8-10 x FL30	10	19.259	5340012

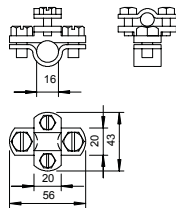
TG Cast iron

F Hot-dip galvanised

- For round conductor/flat conductor
- Fit: Rd 8-10 x FL 30
- With 2 hexagonal bolts M8 x 25 and 2 hexagonal nuts M8, stainless steel (VA)
- Clamping parts, hot-dip galvanised cast iron



Rod clamp



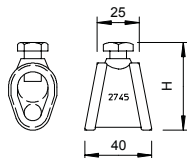
Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
108 B DIN	Rd 8-10/16	10	13.970	5416566

St Steel

FI Hot-dip galvanised

- Rod clamp for connecting round conductors Rd 8–10 to connector rods Rd 16
- Mounted with 2 hexagonal bolts M8 x 16 and M6 x 12
- Adapter from malleable iron
- Crossbar and bolts from hot dip galvanized steel

Connection clamp for earth rod or cables



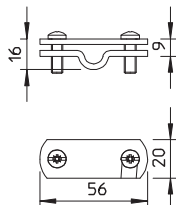
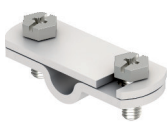
Type	For earth rods Ø mm	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2745 20 MS	20	7-12,5/S95 mm ²	5	16.000	5001560

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)

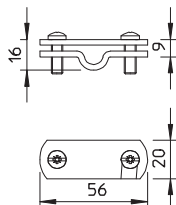
Number plates



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)

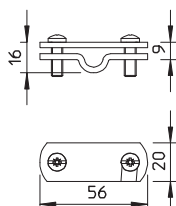
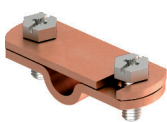
Number plates



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.
101 A-1500	1500	16	10	240.000	5400155

St Steel

FT Hot-dip galvanised

- Full material Ø 16 mm
- Rounded on both ends
- Suitable for FangFix stand system

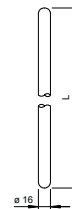


Air-termination/earth entry rod, rounded-off on both ends

Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
200 V4A-1500	1500	16	10	242.000	5420504
200 V4A-2000	2000	16	10	320.000	5420539

V4A Stainless steel, grade 316 Ti

- Full material Ø 16 mm
- 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



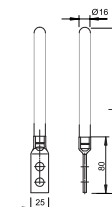
Air-termination/earth entry rod with connection tabs

Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 F1500	1500	16	10	240.000	5424151
101 F2000	2000	16	10	320.000	5424208

St Steel

FT Hot-dip galvanised

- With 2 attaching holes Ø 12 mm
- One end rounded



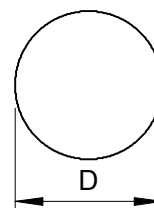
Connection lug/earth entry rod made of stainless steel



Type	Nominal size Ø mm	Cross- section mm²	Pack. pcs	Weight kg/100 pcs.	Item No.
AF RD 10 V4A	10	75	5	123.600	5430720

V4A Stainless steel, 316Ti / 316L

- According to DIN EN 62561-2 (VDE 0185-561-2)
- Corresponds to the requirements of VDE 0185-305 (IEC 62305)
- RD 10-V4A for applications in the earth
- According to the foundation earther standard DIN 18014, V4A is required in the earth



Earth entry rod, tapered and partially insulated



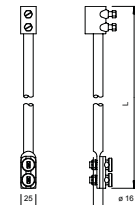
Type	Length mm	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
204 KS-2000	2000	16/10	1	230.000	5430011
204 KS-2500	2500	16/10	1	310.000	5430062

St Steel

F Hot-dip galvanised

- 16 mm earth entry with 10 mm connection
- With mounted heat-shrinkable sleeve (corrosion protection)

Earth entry rod with separating piece and connector



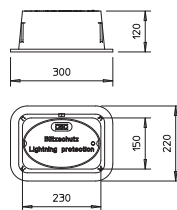
Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
204 KL-1500	Rd 8-10	10	260.700	5430151

St Steel

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

Accessories

Underfloor test box

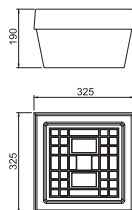


Type	Pack. pcs	Weight kg/100 pcs.	Item No.
5700	1	720.000	5106002

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)

Underfloor test box

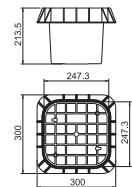


Type	Pack. pcs	Weight kg/100 pcs.	Item No.
5700 CIP	1	3,000.000	5106041

BET Concrete

- Made of concrete
- Without separating piece
- According to VDE 0185-561-5 (IEC 62561-5)

Underfloor test box



Type	Pack. pcs	Weight kg/100 pcs.	Item No.
5700 PIP	1	180.000	5106045

Plastic

- Made of plastic
- Without separating piece
- According to VDE 0185-561-5 (IEC 62561-5)

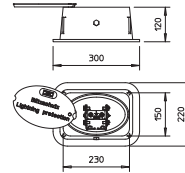
Inspection pit with integrated separation piece



Type	Pack. pcs	Weight kg/100 pcs.	Item No.
5700 SP	1	770.000	5106003

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)



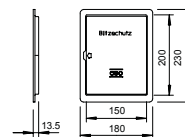
Inspection door

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
5800 VZ	1	46.000	5106133

St Steel

FS Strip-galvanised

- Lightweight design for flush-mounted separation points
- Claw length approx. 80 mm

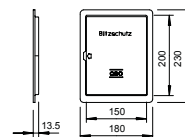


Inspection door

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
5800 VA	1	46.000	5106141

V2A Stainless steel, grade 304

- Lightweight design for flush-mounted separation points
- Claw length approx. 80 mm



Lightning strike counter

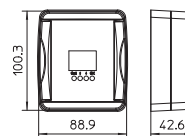


Type	Measuring range	Pack. pcs	Weight kg/100 pcs.	Item No.
LSC I-II	1 kA - 100 kA	1	32.500	5091722

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)

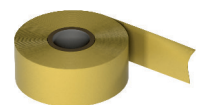
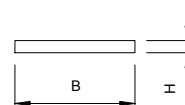


Plastic corrosion protection strip

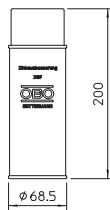
Type	Width mm	Length m	Pack. pcs	Weight kg/100 pcs.	Item No.
356 50	50	10	1	71.500	2360055

PETRO Petrolatum

- Approx. 1.1 mm thick
- Width: 50 mm or 100 mm, made of petrolatum-coated chemical fibre fabric
- Can be processed cold



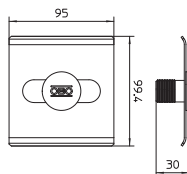
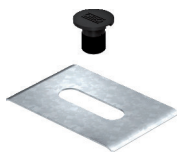
Zinc repairs



Dimension		Pack.	Weight	Item No.
Type		pcs	kg/100 pcs.	
ZSF	400ml	1	45.000	2362970

Zinc spray for treatment of unprotected surfaces and cutting edges. Can contents: 400 ml.

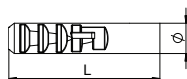
TrayFix mounting adapter for mesh cable trays on FangFix system



Dimension		Pack.	Weight	Item No.
Type		pcs	kg/100 pcs.	
TrayFix	ø20mm	25	9.850	5403100

- Mounting system for the fastening of mesh cable trays and cable trays on FangFix stone e.g. cable routing on a flat roof.
- Adapted to OBO cable tray systems MKSM, SKSM and IKSM
- Adapted to OBO mesh cable tray systems with a minimum width of 100 mm

Angler spreading anchor



Type	Dowel Ø mm	Dimension L mm	Bore hole depth mm	Bore hole Ø mm	Wood screws Ø mm	Pull-out value N	Pack. pcs	Weight kg/100 pcs.	Item No.
910 N 6x30 GRW	6	30	35	6	3,5-5	3300	100	0.052	2349051

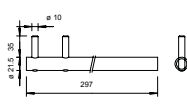
PA Polyamide

Required minimum bolt length = anchor length + component thickness + 1 x bolt Ø.

Withdrawal force applies to wood screws of the largest bolt diameter in concrete of class B25.

Our safety value recommendation: 5x

Directional irons

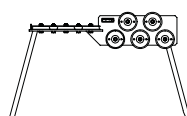


Type	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
364	297	1	35.000	3051013

- St Steel
- Fl Hot-dip galvanised

- Directional iron for bending and aligning conductors

Wire straightening machine



Type	Pack. pcs	Weight kg/100 pcs.	Item No.
5900	1	3,300.000	3059006

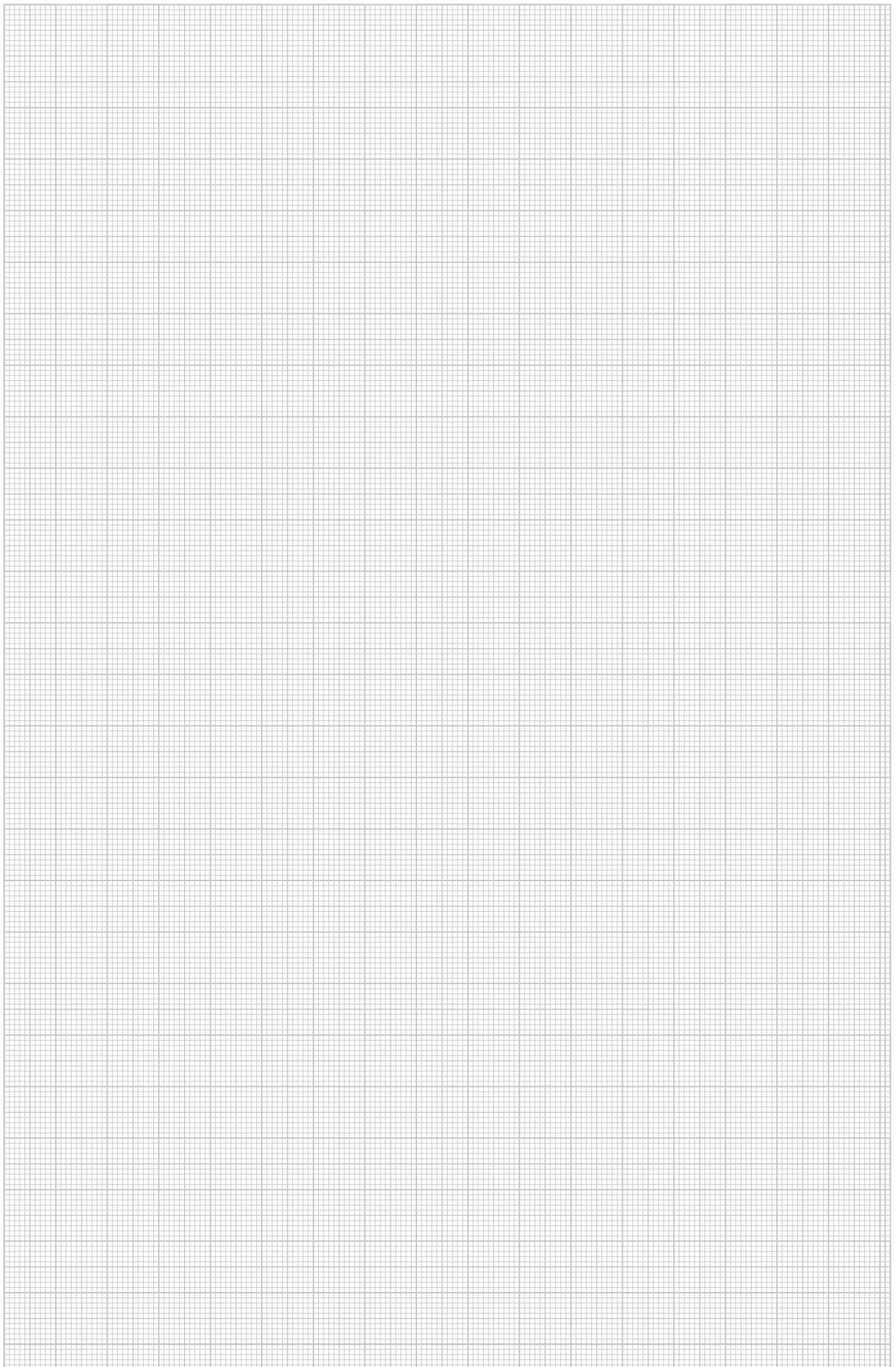
- St Steel
- Factory-set for round conductor Rd 8
- Structure, steel, painted
- Straightening rolls, galvanised cast iron

Straightening roller for wire straightening machine



Type	Pack. pcs	Weight kg/100 pcs.	Item No.
5900 R	1	120.000	3059014

5900/R: For wire straightening machine 5900, complete with axis, roller made of galvanised cast iron

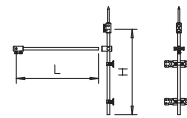




Insulated lightning protection set, 3-corner fastening

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.

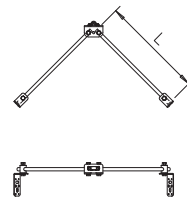


- Mounting on walls and roof structures with two fastening plates
- For maintenance of the separation distance to electrically conductive parts according to VDE 0185-305-3 (IEC 62305-3)
- Acceptance of air-termination rods and round conductors with 8, 16 and 20 mm diameter
- UV-stabilised and weatherproof
- Continuous temperature range -50°C to +100°C
- Material factor km = 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.

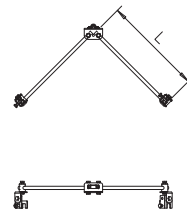


- Mounting on walls and roof structures with two wall connection brackets
- For maintenance of the separation distance to electrically conductive parts according to VDE 0185-305-3 (IEC 62305-3)
- Acceptance of air-termination rods and round conductors with 8, 16 and 20 mm diameter
- UV-stabilised and weatherproof
- Continuous temperature range -50°C to +100°C
- Material factor km = 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.

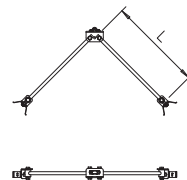


- Mounting on folds with a thickness of up to 20 mm
- For maintenance of the separation distance to electrically conductive parts according to VDE 0185-305-3 (IEC 62305-3)
- Acceptance of air-termination rods and round conductors with 8, 16 and 20 mm diameter
- UV-stabilised and weatherproof
- Continuous temperature range -50°C to +100°C
- Material factor km = 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

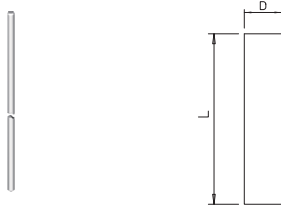
Pipe V fastening for an insulated air-termination unit at the separating distance s.



- 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 km = 0.7



Insulating rod

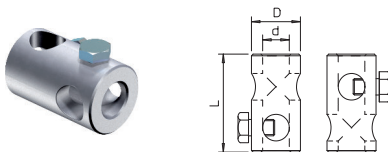


Type	Nominal size Ø mm	Length mm	Pack. pcs	Weight kg/100 pcs	Item No.
101 20-3000	20	3000	5	190.000	5408105
101 20-6000	20	6000	5	380.000	5408148
101 16-750	16	750	5	30.000	5408107
101 16-1500	16	1500	5	60.000	5408108
101 16-3000	16	3000	5	120.000	5408109

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 km = 0.7

T connector

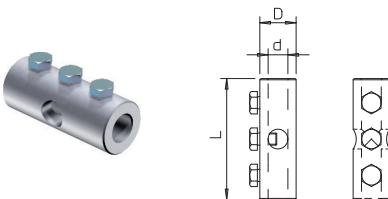


Type	Dimension d Ø mm	Length mm	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs	Item No.
101 IT	20	65	40	10	20.000	5408156
101 IT-16	16	60	30	10	11.475	5408158

Alu Aluminium

- T connector for installation of insulating rods
- With M10 bolts

K connector

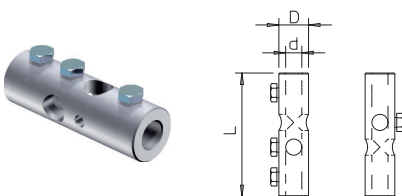


Type	Dimension d Ø mm	Length mm	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs	Item No.
101 IK	20	100	40	10	20.000	5408296
101 IK-16	16	100	30	10	17.500	5408298

Alu Aluminium

- K connector for installation of insulating rods
- With M10 bolts

DK connector

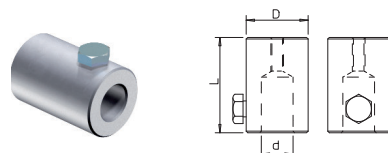


Type	Dimension d Ø mm	Length mm	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs	Item No.
101 IDK	20	125	40	10	40.000	5408245

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

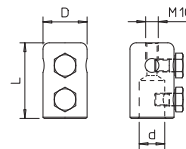
- For mounting insulating rods to structures or walls
- With M8 internal thread, e.g. for mounting the cable bracket type 177 (5207347) for loose conductor routing of round conductors
- Incl. M10 bolts

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

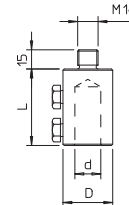


Connection piece

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

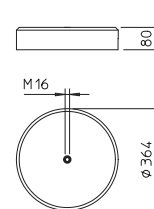


Stand 16 kg with female thread

Type	Nominal size Ø mm	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
101 B2-16 M16	364	M16	1	1,600.000	5402958

BET Concrete

- Weight 16 kg
- Frost-resistant concrete
- Female thread M16
- Recommended air-termination rod length max. 3.0 m, depending on wind load zone

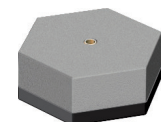
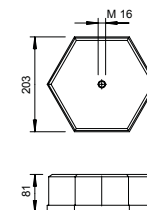


Stand 6.9 kg with female thread

Type	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
101 ST	M16	4	690.000	5402891

BET Concrete

- Weight 6.9 kg
- Frost-resistant concrete
- Female thread M16
- Recommended air-termination rod length max. 1.0 m

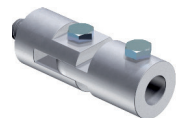
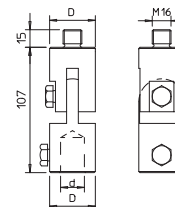


Connection joint

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

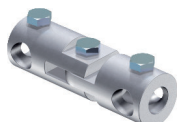
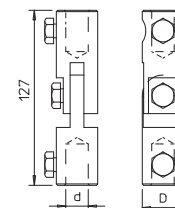


Articulated connector

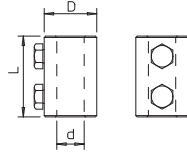
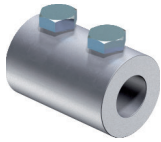
Type	Dimension d Ø mm	Length mm	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 IGL-16	16	127	30	10	32.000	5408630

Alu Aluminium

- Link for installation of insulation pipes, including M10 screws.

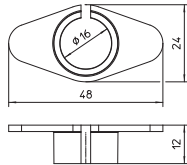


Extension



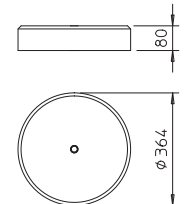
Type	Dimension d Ø mm	Length mm	Dimension D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 IV-16	16	60	30	10	16.000	5408557
Alu Aluminium						
• Extension of insulating rods • With M10 bolts						

FangFix reducing sleeve



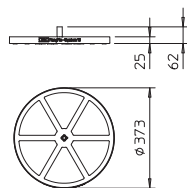
Type	Fit Colour	mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 RH-16	Black	16	25	0.182	5408101
PA Polyamide					
Reduces the drill hole of the FangFix block from Ø 20 mm to Ø 16 mm. Suitable for the installation of GFK insulating rods of Ø 16 mm.					

Concrete block for FangFix-System 16 kg



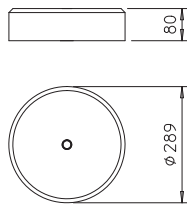
Type	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
F-FIX-S16	365	1	1,700.000	5403227
BET Concrete				
• 16 kg stone of Ø 365 mm, high level of stability • Frost-resistant concrete • Stackable				

Base for FangFix system 16 kg



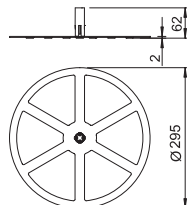
Type	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
F-FIX-B16	373	10	16.400	5403235
PP Polypropylene				
Edge protection with integrated dowel (basic) suitable for FangFix system.				

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



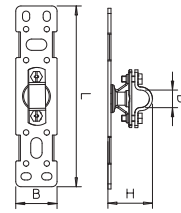
Type	Nominal size Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
F-FIX-B10	295	10	7.600	5403124
PP Polypropylene				
Edge protection with integrated dowel (basic) suitable for FangFix 10 system.				

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

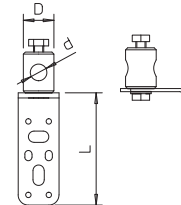


Wall connection, angled

Type	Dimen- sion d Ø mm	Dimen- sion L mm	Dimen- sion D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 WG-16	16	110	30	1	27.960	5408986

V2A Stainless steel, grade 304

- Wall connection for GFK rods
- Dimension D Ø: 16 mm

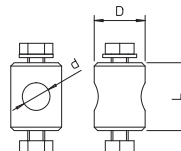


Fastening bolts

Type	Dimen- sion d Ø mm	Dimen- sion L mm	Dimen- sion D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 BB-16	16	40	30	1	13.920	5408988

Alu Aluminium

For GFK rods, Dimension D Ø: 16 mm

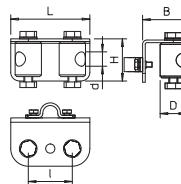


Holder, V support

Type	Dimen- sion d Ø mm	Dimen- sion L mm	Dimen- sion H mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 HV-16	16	90	55	48	1	50.700	5408990

V2A Stainless steel, grade 304

- Rod holder to accept two GRP rods
- Bracket and crossbar for 16 and 20 mm rods and Rd 8-10 mm

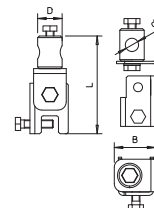


Fold fastening

Type	Dimen- sion d Ø mm	Dimen- sion L mm	Dimen- sion D Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 F-16	16	121	30	1	45.120	5408992

V2A Stainless steel, grade 304

To fasten a GFK rod on constructions of 4 to 20 mm, Dimension D Ø: 16 mm

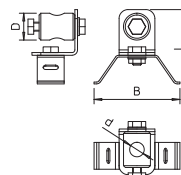


Pipe fastening

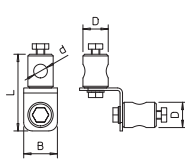
Type	Dimen- sion d Ø mm	Dimen- sion L mm	Dimen- sion D Ø mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 R-16	16	81	30	96	1	26.830	5408994

V2A Stainless steel, grade 304

- For pipe fastening of a GRP rod using a tightening strap
- Slot width (l x w) 17 x 6 mm

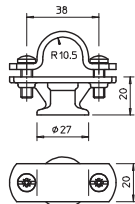


Multi adapter



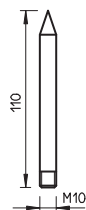
Type	Dimension d Ø mm	Dimension L mm	Dimension D Ø mm	Dimension B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 MA-16	16	91	30	40	1	36.280	5408996
V2A Stainless steel, grade 304							
• Connector for two GFK rods • Dimension D Ø: 16 mm							

Rod holder



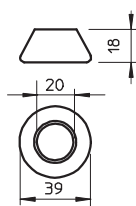
Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
113 Z-20	Rd 20	20	8.200	5230527
Zn Die-cast zinc				
VZ Galvanised				
• Installed with over-piece and hex-head screws M6 x 16 • With female thread M8 or through hole Ø 7 mm				

Air-termination tip



Type	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 ISP M10	110	10	10.000	5408458
Alu Aluminium				
Air-termination tip for attaching to end piece, type 101 IES, with M10 thread				

Water repellent



Type	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
101 IAB	18	10	2.000	5408733
Alu Aluminium				
Water repellent for mounting on insulation rods with d = 20 mm				

Adjustable insulating beam – pipe



Type	Pack. pcs	Weight kg/100 pcs.	Item No.
ISAV1000R	1	130.000	5408849
GFK Fibre-glass-reinforced plastic			
Variable spacer for conductors and air-termination rods to maintain the separation distance.			
• Infinitely adjustable distance range (L = 550–1,000 mm) • Made of fibre-glass-reinforced plastic (km = 0.7) • For pipe mounting (including 2 m tightening strap and tension jack)			

Adjustable insulating beam – wall

Type

ISAV1000W

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

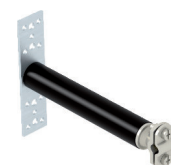
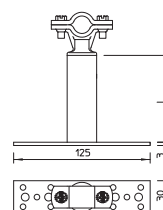


Insulated spacer

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®



The high-voltage-resistant, insulated isCon® conductor is the modern solution for planners and constructors of lightning protection systems that conform to the required spark gaps according to VDE 0185-305-3 (IEC/EN 62305-3).

As an innovative international provider of complete lightning and surge protection systems, OBO has adjusted its product range according to the different demands of our customers in the area of insulated lightning protection.

The result: We can now offer the appropriate isCon® conductor system with external certification according to the most recent testing norms (IEC TS 62561-8) for any lightning protection project.

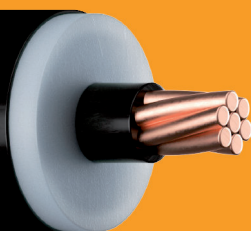
BASIC



$s_e \leq 45 \text{ cm}$



PROFESSIONAL



$s_e \leq 75 \text{ cm}$



EX

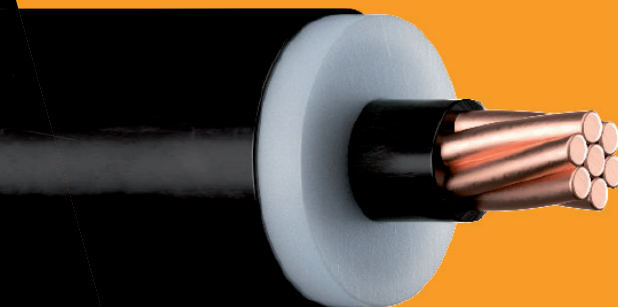
PROFESSIONAL+



$s_e \leq 75 \text{ cm}$



PREMIUM



$s_e \leq 90 \text{ cm}$



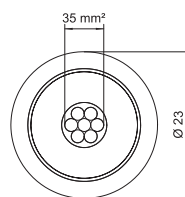
isCon® arrester, professional plus black



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



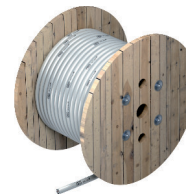
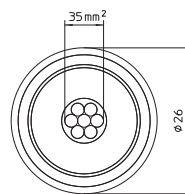
isCon® arrester, professional plus light grey



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



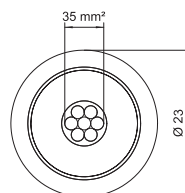
isCon® conductor, premium black



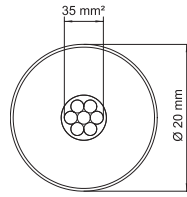
Type	Cross-section mm ²	Nominal size Ø mm	Equivalent separation distance m	Pack. m	Weight kg/100 m	Item No.
isCon PR 90 SW	35	23	0.9	100	66.600	5408018

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

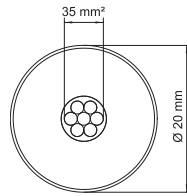


Type	Cross-section mm²	Nominal size Ø mm	Equivalent separation distance m	Pack. m	Weight kg/100 m	Item No.
isCon Pro 75 SW	35	20	0.75	100	57.000	5408008

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

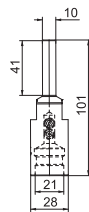


Type	Cross-section mm²	Nominal size Ø mm	Equivalent separation distance m	Pack. m	Weight kg/100 m	Item No.
isCon BA 45 SW	35	20	0.45	100	57.000	5408014

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

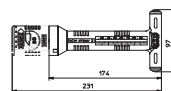


Type	Dimension D Ø mm	Fit mm	Lightning current carrying capacity kA	Pack. pcs	Weight kg/100 pcs.	Item No.
isCon con 2	20	10	H1/150	2	21.500	5408021
isCon connect	23	10	H1/150	2	21.500	5408022
isCon con PRE	23	10	H2/200	2	21.500	5408023

V2A Stainless steel, grade 304

- Screw-on termination of the connection for the isCon® conductor
- Incl. heat-shrinkable sleeve, hexagonal
- Tested up to 200 kA (lightning protection class I)

Stripping tool for isCon conductor



Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isCon stripper 2	20 - 23	1	170.000	5408013

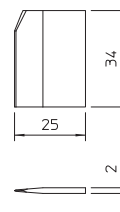
PA/PE Polyamide/Polyethylene

Stripping tool to remove the insulation of OBO isCon® conductor.

isCon cut stripping tool

Type	Dimension	Pack. pcs	Weight kg/100 pcs.	Item No.
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. pcs	Weight kg/100 pcs.	Item No.
isCon IN con 2	20	H1/150	1	27.800	5408019
isCon IN con PRE	23	H2/200	1	27.800	5408020

V2A Stainless steel, grade 304

- Screw-on termination of the connection for the isCon® conductor
- Connection and installation of the conductor in the insulated air-termination rod
- Tested up to 200 kA (lightning protection Class II)



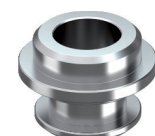
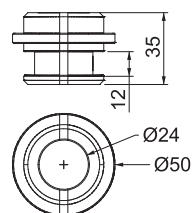
Potential connection for installation in the insulated air-termination rod isFang IN



Type	Dimension D Ø mm	Dimension d mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isCon IN PAE	23	49.9	35	1	5.900	5408031

Alu. Aluminium

- To avoid surface discharges on the isCon® conductor
- Installation takes place after the first 1.5 metres in the insulated air-termination rod type isFang IN



Potential connection

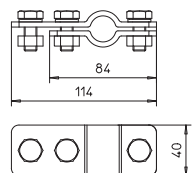


Type	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isCon PAE	Ø 17-25mm	2	36.500	5408036

V2A Stainless steel, grade 304

Potential connection

- To avoid floating discharges on the isCon® conductor
- With sprung discs to protect screws against loosening



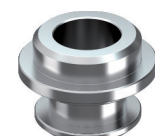
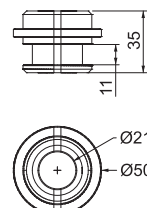
Potential connection for installation in the insulated air-termination rod isFang IN



Type	Dimension D Ø mm	Dimension d mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isCon IN PAE 2	20	49.9	35	1	5.900	5408032

Alu. Aluminium

- To avoid surface discharges on the isCon® conductor
- Installation takes place after the first 1.5 metres in the insulated air-termination rod type isFang IN

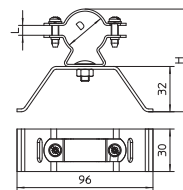


VA cable bracket with tightening strap

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

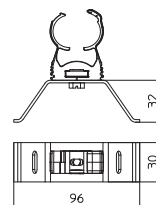


PA cable bracket with tightening strap

Type	Colour	Dimension Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isCon HS 26 PA	Light grey	ø 26mm	10	23.200	5408066

PA Polyamide

For isCon® conductor for pipe mounting including 2 m tightening strap.

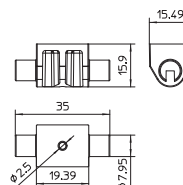


Universal flat conductor adapter for roof conductor holder, type 165/MBG

Type	Colour	Fit mm	Pack. pcs	Weight kg/100 pcs.	Item No.
165 MBG UH	Black	Rd 8	25	0.254	5218882

PP Polypropylene

- Universal adapter with drill hole Ø 2.5 mm
- E.g. for OBO Golden Sprint screw, type 4758 4 x L (L = depending on application)
- For fastening to 165/MBG



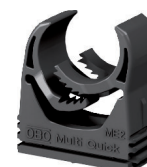
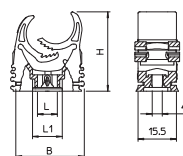
Multi-Quick clip, metric



Type	Clamping range D mm	Pull- out value N	Colour	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
M-Quick M32 LGR	25 - 32	60	Light grey	600	50	1.390	2153734

PA Polyamide

- Multi-quick metric
- Simple fastening
- Secure locking
- Radial arrangement
- Simplified storage
- Universally applicable

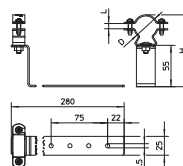


VA roof conductor holder, sloping roof

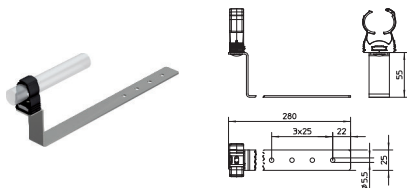
Type	Installation height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isCon H280 VA	55	25	16.100	5408047
isCon H280 26 VA	55	25	16.900	5408074

V2A Stainless steel, grade 304

- For routing of the isCon® conductor on pitched roofs
- Cable bracket with sprung discs to protect the screws against loosening



PA roof conductor holder, sloping roof

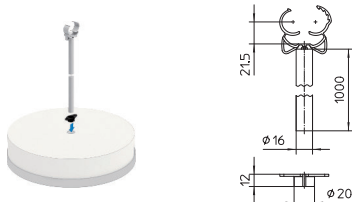


Type	Colour	Dimension	Pack. pcs	Weight kg/100 pcs.	Item No.
isCon H280 PA	Black	280mm	25	13.950	5408049
isCon H280 26 PA	Light grey	280mm	25	14.060	5408072

PA Polyamide

To route the isCon® conductor on pitched roofs.

Spacer



Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isCon DH	23 - 26	2	41.400	5408043

GFR 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

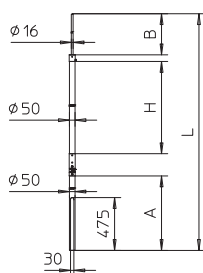


Type	Dimen- sion D Ø mm	Dimen- sion A mm	Dimen- sion H mm	Dimen- sion B mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang IN-A 4000	50	1325	1500	1000	4000	1	535.000	5408938
isFang IN-A 6000	50	3325	1500	1000	6000	1	835.000	5408940
isFang IN-A 8000	50	5335	1500	1000	8000	1	1,385.000	5408888
isFang IN-A10000	50	6000	1733	2000	10000	1	1,540.000	5408890

GFR 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



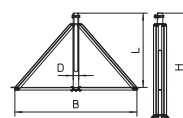
isFang air-termination rod stand with side exit



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



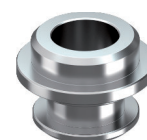
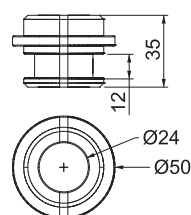
Potential connection for installation in the insulated air-termination rod isFang IN



Type	Dimension D Ø mm	Dimension d Ø 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



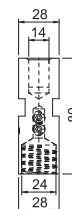
Connection element for installation in the insulated air-termination rod isFang IN



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

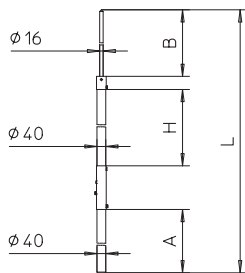


Type	Dimension A mm	Dimension H mm	Dimension B mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang 4000 AL	1240	1500	1000	4000	1	580.000	5408943
isFang 6000 AL	3340	1500	1000	6000	1	600.000	5408947
isFang 4000	1240	1500	1000	4000	1	680.000	5408942
isFang 6000	3340	1500	1000	6000	1	680.000	5408946

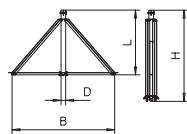
GFK Fibre-glass-reinforced plastic

- 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

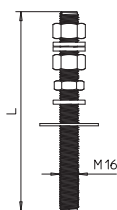


Type	Dimension B mm	Dimension D Ø mm	Dimension L mm	Dimension H mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang 3B-100 AL	1000	40	600	885	1	380.000	5408966
isFang 3B-150 AL	1500	40	900	1275	1	560.000	5408967
isFang 3B-100	1000	40	600	885	1	620.000	5408968
isFang 3B-150	1500	40	900	1275	1	950.000	5408969

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

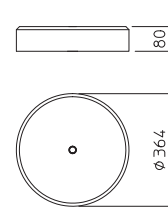
- For fastening on one, two, three or four FangFix concrete bases with tripod stand

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

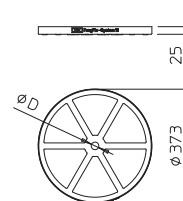


Base for FangFix system 16 kg for mounting the isFang tripod

Type	Nominal size Ø mm	Dimension D 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

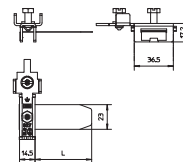


Potential connection clamp for mounting on isFang

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.



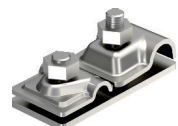
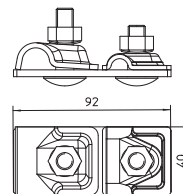
Connection plate for one isCon® conductor



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)



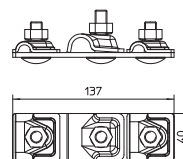
Connection plate for two isCon® conductors



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)

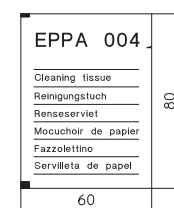


Cleaning cloth

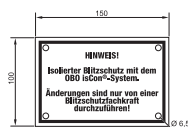
Type	Width mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isCon EPPA 004	140	200	50	0.420	5408060

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

isCon HWS

isCon HWS EN

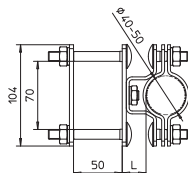
PS Polystyrene

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

Pack. pcs	Weight kg/100 pcs.	Item No.
1	2.000	5408058
1	2.000	5408059

isFang support for corner pipe mounting, 50 x 50 mm



Type

isFang TS50x50

V2A Stainless steel, grade 304

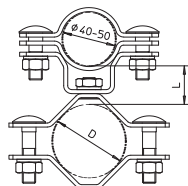
Fastening clip to fasten the insulated support pipes on the structure to be protected or for construction-side corner pipes of 50x50 mm.

Dimen-
sion D
Ø mm

Dimen-
sion L
mm

Pack. pcs	Weight kg/100 pcs.	Item No.
2	82.000	5408964

isFang support for pipe mounting, $\varnothing$ 50–60 mm



Type

isFang TS50-60

V2A Stainless steel, grade 304

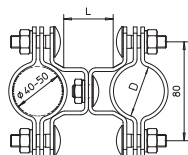
Tightening strap clip to fasten the insulated support pipes on the structure to be protected or for construction-side pipes of $\varnothing$ 50–60 mm.

Dimen-
sion D
Ø mm

Dimen-
sion L
mm

Pack. pcs	Weight kg/100 pcs.	Item No.
2	76.000	5408960

isFang support for pipe mounting, $\varnothing$ 40–50 mm



Type

isFang TS40-50

V2A Stainless steel, grade 304

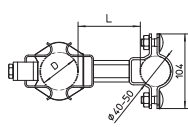
Tightening strap clip to fasten the insulated support pipes on the structure to be protected or for construction-side pipes of $\varnothing$ 40–50 mm.

Dimen-
sion D
Ø mm

Dimen-
sion L
mm

Pack. pcs	Weight kg/100 pcs.	Item No.
2	90.000	5408958

isFang support for spaced pipe mounting, $\varnothing$ 50–300 mm



Type

isFang TR100 100

isFang TR100 200

isFang TR100 300

V2A Stainless steel, grade 304

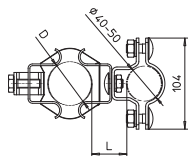
Tightening strap clip to fasten the insulated support pipes on the structure to be protected or for construction-side pipes of $\varnothing$ 50–300 mm.

Dimen-
sion D
Ø mm

Dimen-
sion L
mm

Pack. pcs	Weight kg/100 pcs.	Item No.
2	95.500	5408955
2	121.000	5408957
2	146.000	5408959

isFang support for pipe mounting, $\varnothing$ 50–300 mm



Type

isFang TR100

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.

Dimen-
sion D
Ø mm

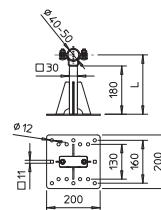
Dimen-
sion L
mm

Pack. pcs	Weight kg/100 pcs.	Item No.
2	77.000	5408956

Support for wall mounting, 200 mm spacing

Type	Dimen- sion D Ø mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang TW200 12	50	200	2	240.000	5408910
V2A Stainless steel, grade 304					

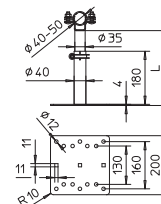
Fastening clip to fasten the insulated support pipes on the structure to be protected or on the wall.



isFang support for wall mounting, 200–300 mm spacing

Type	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang TW200	300	2	230.000	5408954
V2A Stainless steel, grade 304				

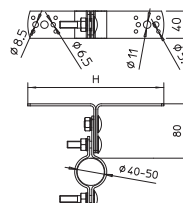
Fastening clip to fasten the insulated support pipes on the structure to be protected or on the wall.



isFang support for wall mounting, 80 mm spacing

Type	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
isFang TW80	80	2	63.000	5408950
V2A Stainless steel, grade 304				

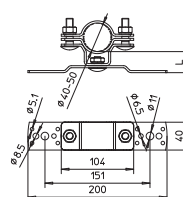
Fastening clip to fasten the insulated support pipes on the structure to be protected or on the wall.



isFang support for wall mounting, 30 mm spacing

Type	Dimen- sion 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.

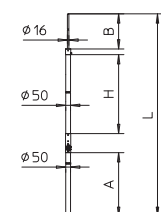


Insulated air-termination rod for inner-routed isCon conductor

Type	Dimen- sion D Ø mm	Dimen- sion A mm	Dimen- sion H mm	Dimen- sion 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

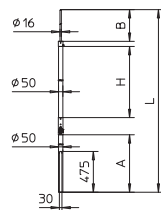
- For installation of the OBO isCon® Pro+ conductor in the pipe
- For mounting on the building structure with isFang support
- Suitable for wind loads according to Eurocode 1: DIN EN 1991-1-4
- Inclusive connection element (type isCon IN connect)
- Inclusive potential connection (type isCon IN PAE)



Dimensions



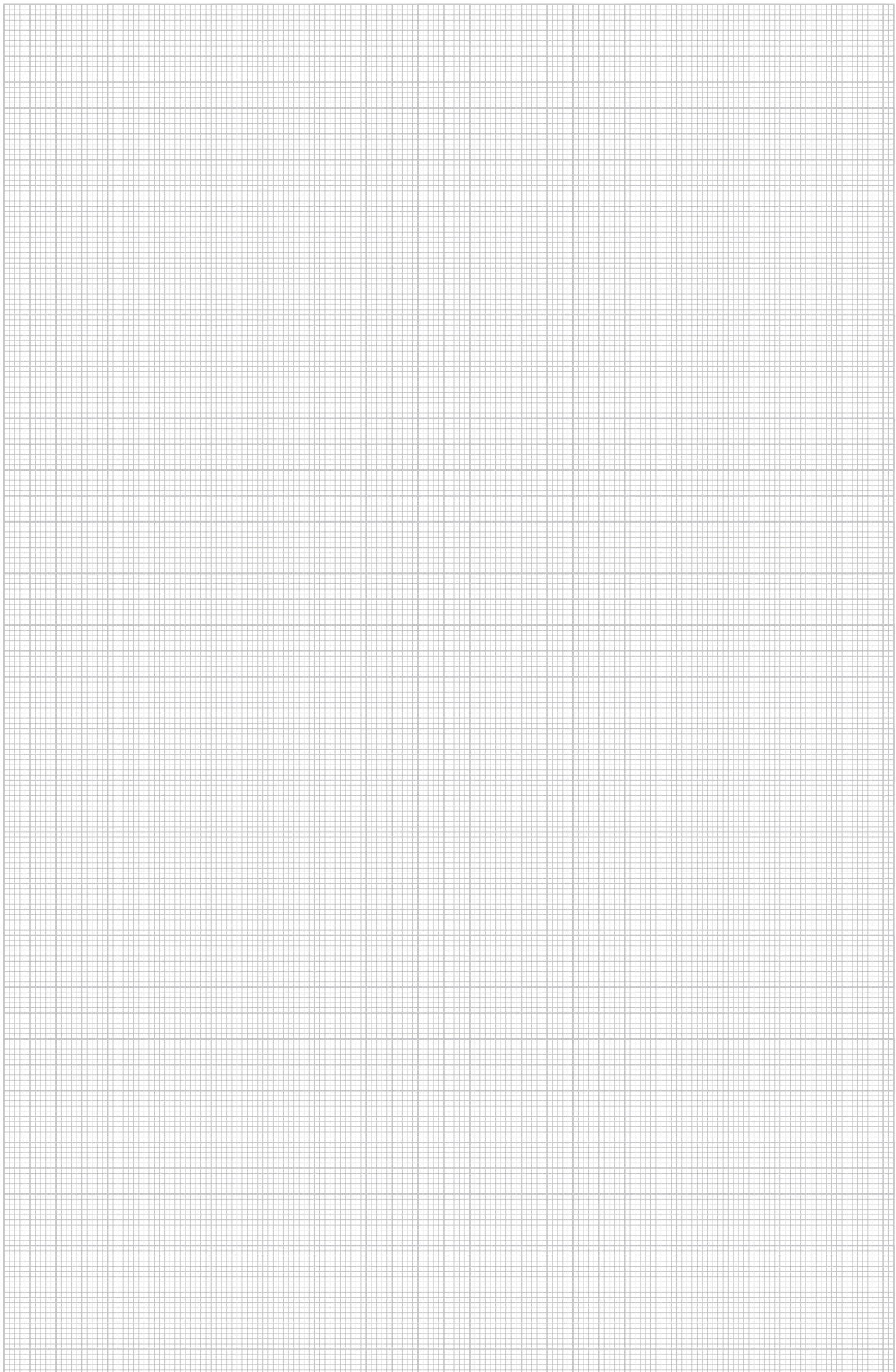
isFang, insulated air-termination rod for inner-routed isCon conductor with side exit



Type	Dimen- sion D Ø mm	Dimen- sion A mm	Dimen- sion H mm	Dimen- sion 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
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)









Fire protection systems

Mortar insulation PYROMIX®

Soft insulation, PYROPLATE® Fibre

Bag insulation PYROBAG®

Fire protection foam PYROSIT® NG

Foam series PYROPLUG®

Pipe seal PYROCOMB® Tubes

Pipe shell PYROCOMB® Intube

Materials for small insulation and individual cables acc. to MLAR

Escape route installations for hollow ceilings

Fire protection ducts

Maintaining electrical function– cable-specific support structures

Function maintenance for standard support structures

Function maintenance: junction boxes

Anchoring

Directories



see page 264



see page 272



see page 278



see page 282



see page 286



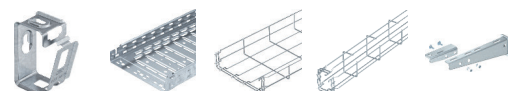
see page 290



see page 296



see page 300



see page 304



see page 320



see page 346



see page 368



see page 390



see page 424



see page 437

Cable insulation

Mortar insulation PYROMIX®



S30

S60

S90

The PYROMIX® system from OBO is used to create cable and combination insulation made of a mineral fibre-free special mortar. Depending on the amount of water added, the finished compound can be applied to openings by hand, with pumps or with presses. The high level of substrate adhesion makes lining unnecessary for small insulation areas. The porous consistency of the mortar means that retroinstallation is easy. If there is a fire, the fire protection mortar reliably prevents the spread of fire and smoke.



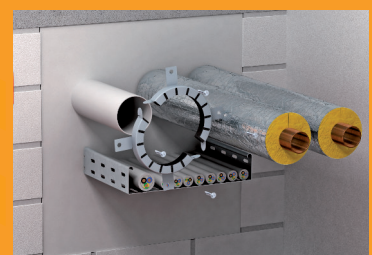
Stir the mortar with water until the desired consistency is reached.



Apply mortar to the opening, use lining as necessary.



Use approved section insulation for metal pipes.



Mount pipe sleeves for combustible pipes on both sides of the wall.



Apply labelling to combination insulation for various structures.

PYROMIX® dry mortar in paper sack

Type	Contents kg	Pack. pcs	Weight kg/100 pcs.	Item No.
MSX-S1	20	1	2,000.000	7206104



Special mortar

Mortar to create cable and combination insulation in solid walls and ceilings. Suitable for pumping, pressing and for manual installation. Adding approx. 6 litres of water to 20 kg of dry mortar produces about 20 litres of workable compound.

In dry, frost-free rooms, the dry mortar can be stored for at least 12 months in closed original containers.

PYROMIX® dry mortar in bucket

Type	Contents kg	Pack. pcs	Weight kg/100 pcs.	Item No.
MSX-E1	10	1	1,000.000	7206058



Special mortar

Mortar to create cable and combination insulation in solid walls and ceilings. Suitable for pumping, pressing and for manual installation. Adding approx. 3 litres of water to 10 kg of dry mortar produces about 10 litres of workable compound.

In dry, frost-free rooms, the dry mortar can be stored for at least 12 months in closed original containers.

Insulation layer creator in a cartridge

Type	Contents ml	Pack. pcs	Weight kg/100 pcs.	Item No.
DSX-K	300	1	50.000	7202300



Intumescent material

Dispersion-based fire protection compound for interior areas, to fill residual joints and close openings. Approved material for closing core drill holes for individual cable glands.

Material class DIN 4102 - B2, normally flammable.

In dry, frost-free rooms, the compound can be stored at temperatures from +5 °C to +25 °C for up to 18 months in closed, upright original containers.

Insulation layer creator in a bucket

Type	Contents kg	Pack. pcs	Weight kg/100 pcs.	Item No.
DSX-E	5	1	500.000	7202302



Intumescent material

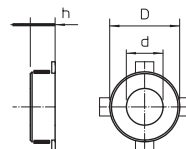
Dispersion-based fire protection compound for interior areas, to fill residual joints and close openings. Approved material for closing core drill holes for individual cable glands.

Material class DIN 4102 - B2, normally flammable.

In dry, frost-free rooms, the compound can be stored at temperatures from +5 °C to +25 °C for up to 18 months in closed, upright original containers.

Pipe sleeve with 2 fastening straps

Type	Pipe Ø mm	Dimen- sion h mm	Dimen- sion D mm	Dimen- sion d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TCX-032	32 - 34	26	50	36	1	6.500	7202200
TCX-040	40 - 42	26	58	44	1	7.000	7202201
TCX-050	50 - 52	26	68	54	1	8.000	7202203



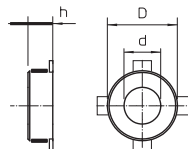
Intumescent material

Pipe sleeve for combustible pipes.

If there is a fire, fire protection inserts inside the sheet steel housing expand, exerting a very great pressure onto the burning thermoplastic pipes.

Fastening with anchors or M6 threaded rods.

Pipe sleeve with 4 fastening straps



Type	Pipe Ø mm	Dimension h mm	Dimension D mm	Dimension d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TCX-063	63 - 65	26	94	67	1	15.500	7202204
TCX-075	75 - 77	26	106	79	1	19.000	7202205
TCX-090	90 - 92	26.6	132	94	1	37.000	7202206
TCX-110	110 - 112	26.6	155	114	1	46.000	7202207
TCX-125	125 - 127	40	172	129	1	70.000	7202208

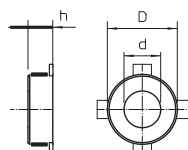
Intumescent material

Pipe sleeve for combustible pipes.

If there is a fire, fire protection inserts inside the sheet steel housing expand, exerting a very great pressure onto the burning thermoplastic pipes.

Fastening with anchors of M6 threaded rods up to size 75 mm, then M8.

Pipe sleeve with 6 fastening straps



Type	Pipe Ø mm	Dimension h mm	Dimension D mm	Dimension d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TCX-140	140 - 142	40	200	144	1	106.000	7202209
TCX-160	160 - 162	40	220	164	1	107.000	7202210

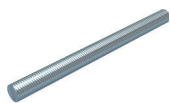
Intumescent material

Pipe sleeve for combustible pipes.

If there is a fire, fire protection inserts inside the sheet steel housing expand, exerting a very great pressure onto the burning thermoplastic pipes.

Fastening with anchors or M8 threaded rods.

Threaded rod



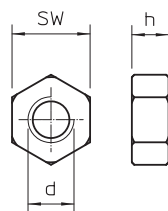
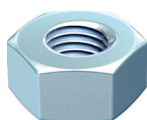
Type	Thread	Dimension d mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TR M6 1M G	M6	6	1000	10	18.300	3141047
TR M8 1M G	M8	8	1000	10	30.000	3141128

St Steel

G Electrogalvanised

Threaded rod to DIN 976.

Hexagonal nut DIN 934



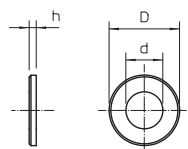
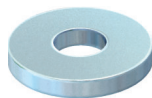
Type	Thread	SW mm	Dimension h mm	Dimension d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
HN M6 G	M6	10	5.2	6	100	0.225	3400069
HN M8 G	M8	13	6.8	8	100	0.474	3400085

St Steel

G Electrogalvanised

Hexagonal nut to DIN 934 with metric thread.

Washer ISO 7093



Type	Thread	Dimension d mm	Dimension D mm	Dimension h mm	Pack. pcs	Weight kg/100 pcs.	Item No.
WS M6 D28 G	M6	6.5	28	2.5	100	1.150	3402207
WS M8 D28 G	M8	8.5	28	2.5	100	1.100	3402215

St Steel

G Electrogalvanised

Washer of large outer diameter for universal use.

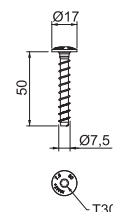
Fire protection screw tie

Type	Dimension mm	Bore hole Ø mm	Head Ø mm	Screw system	Pack. pcs	Weight kg/100 pcs.	Item No.
MMS-plus 7.5X50	7,5 x 50	6	17	Torx	100	1.500	3498261

St Steel

G Electrogalvanised

Fire protection bolt tie with large pan head for direct mounting without additional anchors. Drive T30, drill hole 6 mm. Tested anchor according to ETAG 001 - Part 3. Fire resistance class to R120 for concrete and masonry.



Mineral wool

Type	Dimension	Pack. pcs	Weight kg/100 pcs.	Item No.
MIW-S	25 Liter	1	250.000	7202306

Mineral fibres

Universal filling wool for various fire protection applications, packed in compressed form. Material class EN 13 501 - A1, non-combustible; melting point ≥ 1.000 °C.



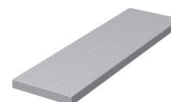
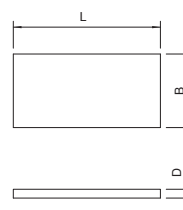
Calcium silicate plate

Type	Dimen- sion L mm	Dimen- sion B mm	Dimen- sion D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
KSI-P1	500	150	20	1	42.000	7202283
KSI-P2	500	250	30	1	111.000	7202904
KSI-P3	1000	250	30	1	222.000	7202912

Calcium silicate

Calcium silicate plate, as support plate, for the construction of frames in the penetration and to double thin wall thicknesses.

Materials class EN 13501 - A1 non-combustible.

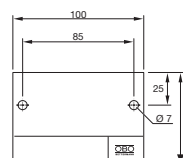


Identification plate

Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-S DE	German	1	2.400	7205425
KS-S EN	English	1	2.400	7205429
KS-S FR	French	1	2.400	7205430
KS-S NL	Dutch	1	2.400	7205431

PS Polystyrene

Universal identification plate to be written on with waterproof and light-resistant felt-tip pen for all types of OBO insulation. For approved identification, including two push-fit anchors.





Cable insulation Soft insula- tion PYROPLATE® Fibre



S30

S60

S90

The PYROPLATE® Fibre system from OBO is used to create cable and combination insulation. The core of the system is the mineral fibre plate coated with a moisture-resistant ablation coating. When there is a fire, the fire protection coating creates an insulating carbon foam and, in combination with the mineral fibre plate, prevents the spread of fire and smoke. According to the construction approval, in addition to the cables, pipes made of steel, copper or various plastics may also be run through the same insulation. For pipelines, additional fire protection measures, such as section insulation and pipe sleeves, are required. The mortar or soft insulation made of PYROPLATE® Fibre is thus combination insulation which is appropriate for diverse structures.



The installation is possible in light-duty partition walls or in solid walls.



Moisten the component layer and apply the coating to the cut edges for adhesion.



Use approved section insulation for metal pipes.



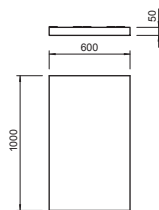
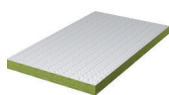
Apply the final coating to the surface and the installations.



Fix pipe sleeves for combustible pipes with threaded rods on both sides.



Mineral fibre plate, pre-coated



Type	Length mm	Width mm	Height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
PSX-P	1000	600	50	4	625.000	7202295

Mineral fibres

Mineral fibre plate, pre-coated with the ablation coating ASX, as the basis for the soft insulation.

Ablation coating in a cartridge



Type	Contents ml	Pack. pcs	Weight kg/100 pcs.	Item No.
ASX-K	310	1	50.000	7202310

Intumescent material

Combined, endothermic and weatherproof coating for internal and external areas. Universal protection coating for cable and cable support structures. Use as direct filler, and as paint when stirred.

Material class DIN 4102 - B2, normally flammable.

In dry, frost-free rooms, the coating can be stored at temperatures from +5 °C to +25 °C for up to 18 months in closed, upright original containers.

Ablation coating in a bucket



Type	Contents kg	Pack. pcs	Weight kg/100 pcs.	Item No.
ASX-E	5	1	500.000	7202312

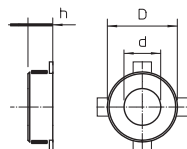
Intumescent material

Combined, endothermic and weatherproof coating for internal and external areas. Universal protection coating for cable and cable support structures. Use as direct filler, and as paint when stirred. Sufficient for an area of 4 m².

Material class DIN 4102 - B2, normally flammable.

In dry, frost-free rooms, the coating can be stored at temperatures from +5 °C to +25 °C for up to 18 months in closed, upright original containers.

Pipe sleeve with 2 fastening straps



Type	Pipe Ø mm	Dimen- sion h mm	Dimen- sion D mm	Dimen- sion d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TCX-032	32 - 34	26	50	36	1	6.500	7202200
TCX-040	40 - 42	26	58	44	1	7.000	7202201
TCX-050	50 - 52	26	68	54	1	8.000	7202203

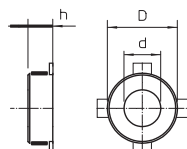
Intumescent material

Pipe sleeve for combustible pipes.

If there is a fire, fire protection inserts inside the sheet steel housing expand, exerting a very great pressure onto the burning thermoplastic pipes.

Fastening with anchors or M6 threaded rods.

Pipe sleeve with 4 fastening straps



Type	Pipe Ø mm	Dimen- sion h mm	Dimen- sion D mm	Dimen- sion d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TCX-063	63 - 65	26	94	67	1	15.500	7202204
TCX-075	75 - 77	26	106	79	1	19.000	7202205
TCX-090	90 - 92	26.6	132	94	1	37.000	7202206
TCX-110	110 - 112	26.6	155	114	1	46.000	7202207
TCX-125	125 - 127	40	172	129	1	70.000	7202208

Intumescent material

Pipe sleeve for combustible pipes.

If there is a fire, fire protection inserts inside the sheet steel housing expand, exerting a very great pressure onto the burning thermoplastic pipes.

Fastening with anchors of M6 threaded rods up to size 75 mm, then M8.

Pipe sleeve with 6 fastening straps

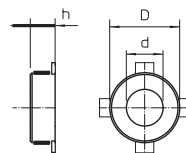
Type	Pipe Ø mm	Dimension h mm	Dimension D mm	Dimension d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TCX-140	140 - 142	40	200	144	1	106.000	7202209
TCX-160	160 - 162	40	220	164	1	107.000	7202210

Intumescent material

Pipe sleeve for combustible pipes.

If there is a fire, fire protection inserts inside the sheet steel housing expand, exerting a very great pressure onto the burning thermoplastic pipes.

Fastening with anchors or M8 threaded rods.



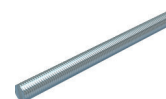
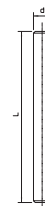
Threaded rod

Type	Thread	Dimension mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TR M6 1M G	M6	6	1000	10	18.300	3141047
TR M8 1M G	M8	8	1000	10	30.000	3141128

St Steel

G Electrogalvanised

Threaded rod to DIN 976.



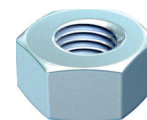
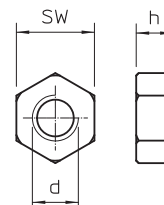
Hexagonal nut DIN 934

Type	Thread	SW mm	Dimension h mm	Dimension d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
HN M6 G	M6	10	5.2	6	100	0.225	3400069
HN M8 G	M8	13	6.8	8	100	0.474	3400085

St Steel

G Electrogalvanised

Hexagonal nut to DIN 934 with metric thread.



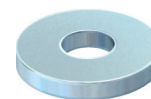
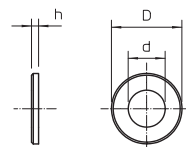
Washer ISO 7093

Type	Thread	Dimension d mm	Dimension D mm	Dimension h mm	Pack. pcs	Weight kg/100 pcs.	Item No.
WS M6 D28 G	M6	6.5	28	2.5	100	1.150	3402207
WS M8 D28 G	M8	8.5	28	2.5	100	1.100	3402215

St Steel

G Electrogalvanised

Washer of large outer diameter for universal use.

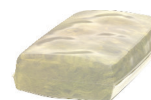


Mineral wool

Type	Dimension	Pack. pcs	Weight kg/100 pcs.	Item No.
MIW-S	25 Liter	1	250.000	7202306

Mineral fibres

Universal filling wool for various fire protection applications, packed in compressed form.

Material class EN 13 501 - A1, non-combustible; melting point $\geq 1.000^{\circ}\text{C}$.

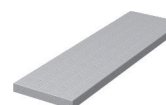
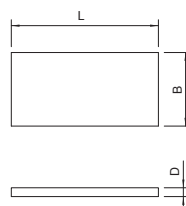
Calcium silicate plate

Type	Dimension L mm	Dimension B mm	Dimension D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
KSI-P1	500	150	20	1	42.000	7202283
KSI-P2	500	250	30	1	111.000	7202904
KSI-P3	1000	250	30	1	222.000	7202912

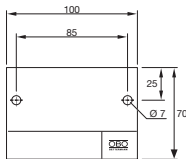
Calcium silicate

Calcium silicate plate, as support plate, for the construction of frames in the penetration and to double thin wall thicknesses.

Materials class EN 13501 - A1 non-combustible.



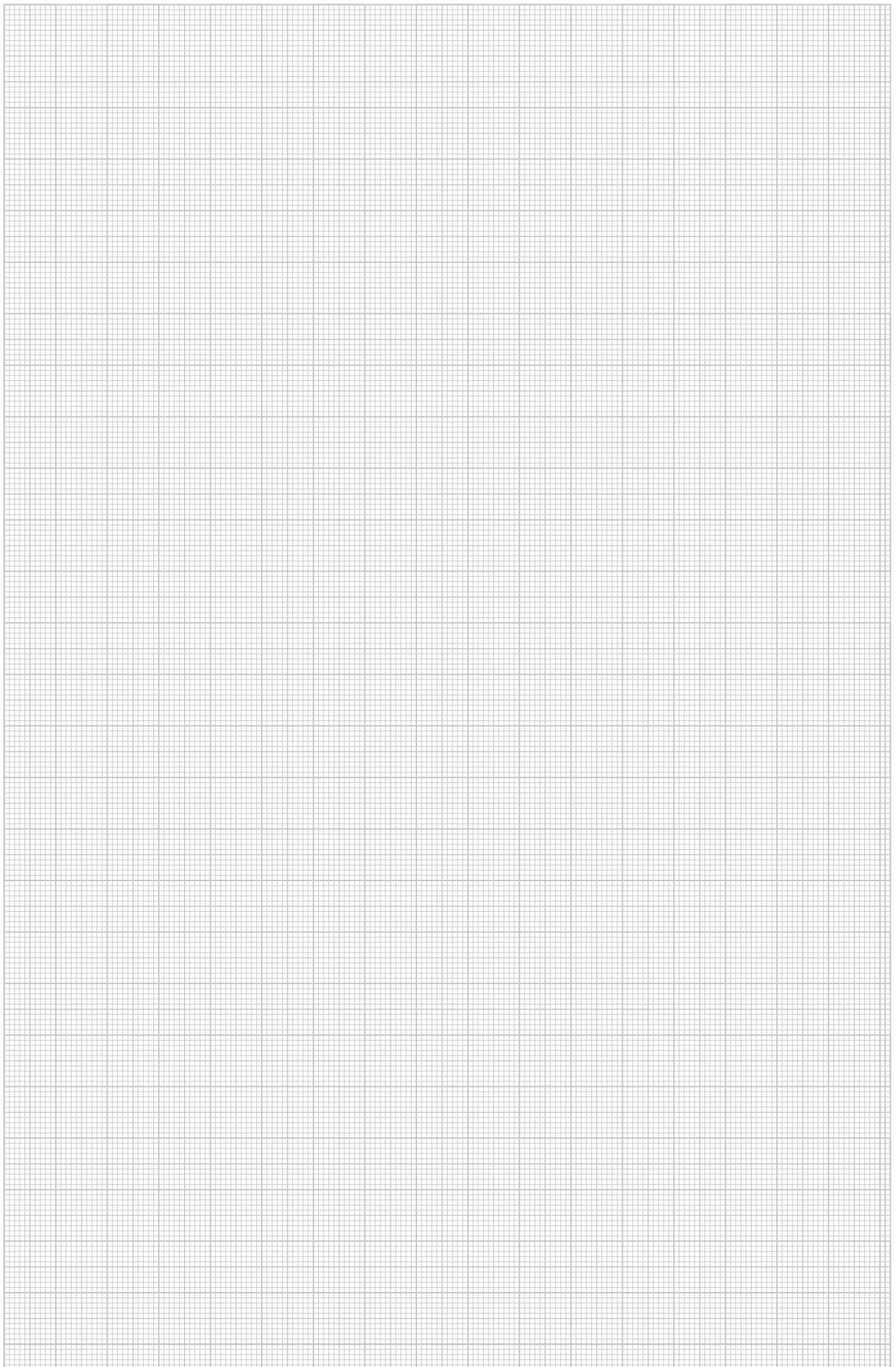
Identification plate

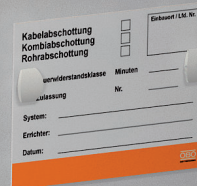


Type	Language	Pack.		Weight	Item No.
		pcs	kg/100	pcs.	
KS-S DE	German	1	2.400		7205425
KS-S EN	English	1	2.400		7205429
KS-S FR	French	1	2.400		7205430
KS-S NL	Dutch	1	2.400		7205431

PS Polystyrene

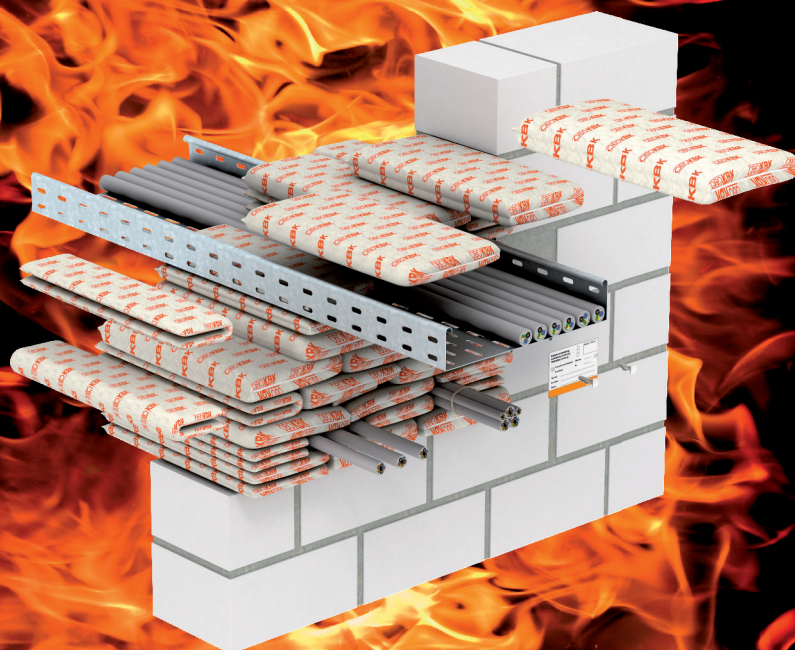
Universal identification plate to be written on with waterproof and light-resistant felt-tip pen for all types of OBO insulation. For approved identification, including two push-fit anchors.





Cable insulation

Bag insulation PYROBAG®



S30

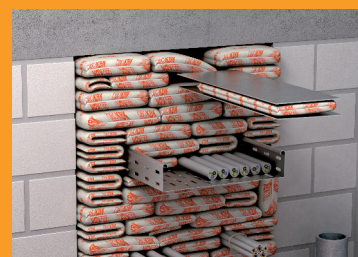
S60

S90

The PYROBAG® system from OBO is used to create cable insulation from fire protection cushions. The fire protection cushions, which can be shaped in any way, are stacked simply and quickly on top of each other, allowing absolutely tidy and dust-free mounting. The cushions can be used for permanent or temporary insulation in walls and ceilings, e.g. during renovations. The fire protection cushions are an ideal solution for frequent retroinstallations. Additional cables can be installed quickly, neatly and economically at a later date because the cushions can be used several times over. The cushions consist of a close-knit, dense and mechanically solid glass fabric with a special filling. The shell and the filling are free of mineral fibres and are also weatherproof and waterproof. Neither painting nor the use of filler are required.



Closing of the opening with cushions – without filler or coating.



Panels as mounting aid for the last cushion layer.



Lock against falling out during ceiling mounting.

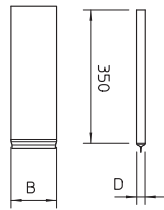


Lock against slippage above the floor.



Cushions arranged in the trunking.

PYROBAG® fire protection cushion



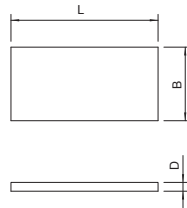
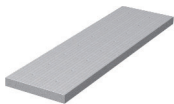
Type	Dimension B mm	Dimension D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
KBK-1	120	10	20	18.000	7202709
KBK-2	170	23	20	33.000	7202725
KBK-3	170	40	10	63.000	7202741

Glass mesh with special fire protection filling

Cable fire protection cushions made of dense, closely-knit and mechanically solid glass mesh with a special filling. Free from mineral fibres, weatherproof and water-resistant.

Can be stored for an unlimited period of time in dry, frost-free rooms.

Calcium silicate plate



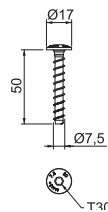
Type	Dimension L mm	Dimension B mm	Dimension D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
KSI-P1	500	150	20	1	42.000	7202283
KSI-P2	500	250	30	1	111.000	7202904
KSI-P3	1000	250	30	1	222.000	7202912

Calcium silicate

Calcium silicate plate, as support plate, for the construction of frames in the penetration and to double thin wall thicknesses.

Materials class EN 13501 - A1 non-combustible.

Fire protection screw tie



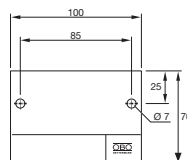
Type	Dimension mm	Bore hole Ø mm	Head Ø mm	Screw system	Pack. pcs	Weight kg/100 pcs.	Item No.
MMS-plus 7.5X50	7,5 x 50	6	17	Torx	100	1.500	3498261

St Steel

G Electrogalvanised

Fire protection bolt tie with large pan head for direct mounting without additional anchors. Drive T30, drill hole 6 mm. Tested anchor according to ETAG 001 - Part 3. Fire resistance class to R120 for concrete and masonry.

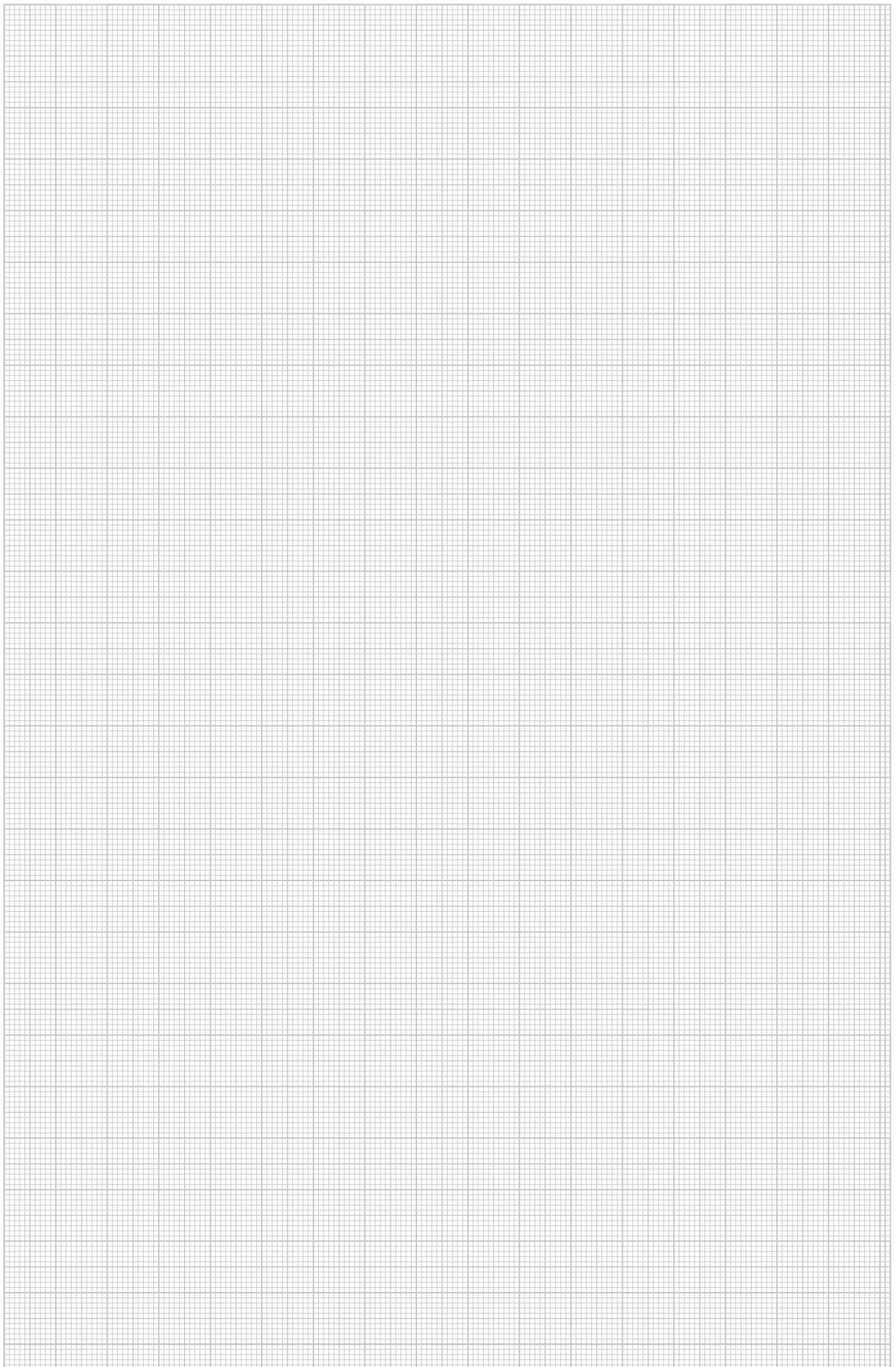
Identification plate



Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-S DE	German	1	2.400	7205425
KS-S EN	English	1	2.400	7205429
KS-S FR	French	1	2.400	7205430
KS-S NL	Dutch	1	2.400	7205431

PS Polystyrene

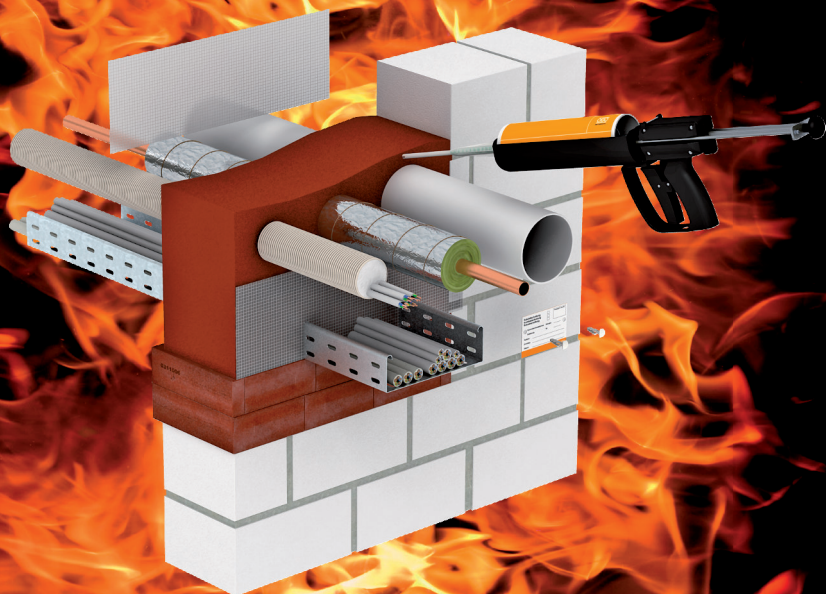
Universal identification plate to be written on with waterproof and light-resistant felt-tip pen for all types of OBO insulation. For approved identification, including two push-fit anchors.



Cable insulation

Fire protection foam

PYROKIT® NG



EI15

EI30

EI45

EI60

EI90

EI120

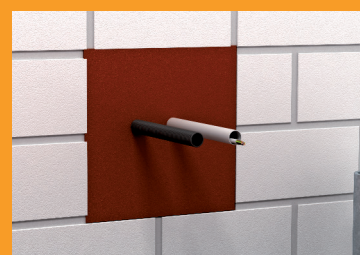
The PYROKIT® NG system from OBO is used to create cable and combination insulation made of fire protection foam. The special recipe of the 2-component foam allows simple, "pinpointed" processing. The good substrate adhesion prevents the foam from running out of the opening. Work can easily be interrupted to carry out checks. The system can be installed without dust and fibres. Surface coating is not necessary. According to the construction approval, in addition to the cables, pipes made of steel, copper or various plastics may also be run through the same insulation. The PYROKIT® NG insulation is suitable as combination insulation for different units. Due to the soft consistency, the insulation made of PYROKIT® NG can be reassigned simply. The insulation system can be combined with the PYROKIT® Block foam block.



Apply the foam from the rear to the front, and remove residues as necessary.



Use approved section insulation for metal pipes.



Electrical installation pipes up to M40, filled with cables or empty.



Combustible pipes up to Ø 50 mm can be run through without additional measures.



Combination insulation for various structures with labelling.



2-component fire protection foam PYROSIT® NG



Type	Contents ml	Pack.		Weight kg/100 pcs.	Item No.
		pcs			
FBS-S	380	1		64.600	7203800

PYROSIT® NG 2-component fire protection foam in a cartridge, including 2 mixing tubes.
To create cable and combination insulation; always process with the cartridge pistols FBS-PH or FBS-PA.

In dry, frost-free rooms, the cartridge can be stored closed and standing upright at temperatures from +5 °C to +30 °C for up to 12 months.

Mixer pipe set



Type	PU	Pack.		Weight kg/100 PUs	Item No.
FBS-M		1		10.000	7203803

10 mixing tubes and 5 extension tubes in the set for PYROSIT® NG fire protection foam.

Fire protection case



Type	pcs	Pack.		Weight kg/100 pcs.	Item No.
FBS-K	1			420.000	7203809

The PYROSIT® NG fire protection case contains all the required products to create foam insulations. The complete set consists of: 3 x FBS-S, 1 x FBS-PH, 6 mixing and 5 extension pipes.

PYROSIT® NG Starter Set



Type	pcs	Pack.		Weight kg/100 pcs.	Item No.
FBS-ST	1			188.700	7203805

The PYROSIT® NG Starter Set contains all the required products to create foam insulations. The complete set consists of a cartridge of PYROSIT® NG and a cartridge pistol.

Professional cartridge pistol



Type	pcs	Pack.		Weight kg/100 pcs.	Item No.
FBS-PH	1			120.000	7203806

High-quality 2-component cartridge pistol for use with the PYROSIT® NG fire protection foam. The parallel movement of the outlet to the holding grip ensures easy working.

PYROPLUG® Block foam block



Type	Dimension mm	Pack.		Weight kg/100 pcs.	Item No.
		pcs			
FBA-B200-14	200x144x60	4		44.800	7202505

Permanently elastic, closed-pore foam

Foam block for cable and combination insulation, can also be used as a filler block in the PYROSIT® NG fire protection foam system.

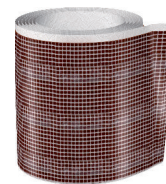
The blocks must be protected against water in order to guarantee safe expansion in the case of fire.

Cable coil

Type	Width mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
FBA-WI	150	5000	1	384.000	7202510

Intumescent material

Self-adhesive, intumescent cable protector, 5 mm thick, for the use with large cable diameters and penetrated cable support systems, applicable in PYROPLUG® systems and PYROSIT® NG.

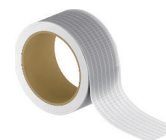


Adhesive tape

Type	Width mm	Pack. pcs	Weight kg/100 pcs.	Item No.
SHT	50	5	12.000	7202521

PE Polyethylene

Fibre-reinforced, transparent adhesive tape as lining aid for applications with PYROSIT® NG fire protection foam and for universal fix. One roll contains 25 m².



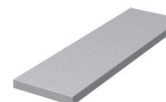
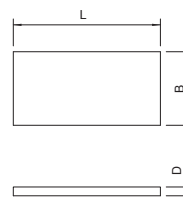
Calcium silicate plate

Type	Dimen- sion L mm	Dimen- sion B mm	Dimen- sion D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
KSI-P1	500	150	20	1	42.000	7202283
KSI-P2	500	250	30	1	111.000	7202904
KSI-P3	1000	250	30	1	222.000	7202912

Calcium silicate

Calcium silicate plate, as support plate, for the construction of frames in the penetration and to double thin wall thicknesses.

Materials class EN 13501 - A1 non-combustible.

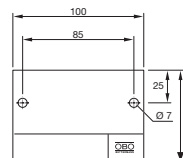


Identification plate

Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-S DE	German	1	2.400	7205425
KS-S EN	English	1	2.400	7205429
KS-S FR	French	1	2.400	7205430
KS-S NL	Dutch	1	2.400	7205431

PS Polystyrene

Universal identification plate to be written on with waterproof and light-resistant felt-tip pen for all types of OBO insulation. For approved identification, including two push-fit anchors.





Cable insulation

PYROPLUG® Block



S30

S60

S90

The OBO PYROPLUG® Block combination insulation is created from foam blocks, which, if there is a fire, expand without any noticeable pressure creation. In so doing, they form an insulating carbon foam. This reliably prevents the penetration of fire and smoke through the cable insulation. Combustible pipes can be run in this insulation without an additional sleeve. Copper and steel pipes can be insulated either with or without section insulation. All the PYROPLUG® Block insulation is completely dust and fibre-free. This also applies to any installations at a later date. This is an aspect, which is particularly important for installation in IT and laboratory rooms.



Mounting of the cut blocks.



Vacuum blocks for simple residual gap closing.



Simple retroinstallation through removal of individual blocks.



Running of combustible pipes without additional measures.



Run-through, non-combustible pipes with section insulation.



PYROPLUG® Block foam block



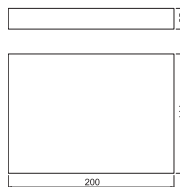
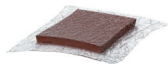
Type	Dimension mm	Pack. pcs	Weight kg/100 pcs	Item No.
FBA-B200-14	200x144x60	4	44.800	7202505

Permanently elastic, closed-pore foam

Foam block for cable and combination insulation, can also be used as a filler block in the PYROSIT® NG fire protection foam system.

The blocks must be protected against water in order to guarantee safe expansion in the case of fire.

PYROPLUG® Block vacuum block



Type	Dimension mm	Pack. pcs	Weight kg/100 pcs	Item No.
FBA-BV200-14	200x144x25	1	40.000	7202515

Permanently elastic, closed-pore foam

Vacuum block for cable and combination insulation.

After cutting into the foil, the vacuum block expands to its original size. It can be used with or without foil.

The blocks must be protected against water in order to guarantee safe expansion in the case of fire.

2-component fire protection foam PYROSIT® NG



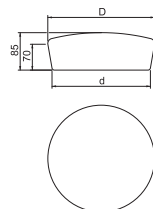
Type	Contents ml	Pack. pcs	Weight kg/100 pcs	Item No.
FBS-S	380	1	64.600	7203800

PYROSIT® NG 2-component fire protection foam in a cartridge, including 2 mixing tubes.

To create cable and combination insulation; always process with the cartridge pistols FBS-PH or FBS-PA.

In dry, frost-free rooms, the cartridge can be stored closed and standing upright at temperatures from +5 °C to +30 °C for up to 12 months.

PYROPLUG® Peg plugs



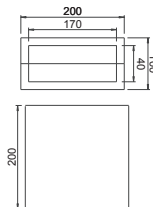
Type	For opening Ø mm	Dimen- sion D mm	Dimen- sion d mm	Pack. pcs	Weight kg/100 pcs	Item No.
FBA-SN78	68 - 78	87	78	4	12.600	7202557
FBA-SN107	97 - 107	117	107	4	21.600	7202561
FBA-SN122	112 - 122	132	122	4	28.600	7202565
FBA-SN134	124 - 134	144	134	4	32.900	7202569
FBA-SN165	155 - 165	175	165	2	49.700	7202573
FBA-SN200	190 - 200	210	200	2	74.400	7202577
FBA-SN250	240 - 250	260	250	2	101.400	7202581

Permanently elastic, closed-pore foam

Plug for cable insulation

Protect the FBA plugs against water in order to guarantee safe foaming in case of fire.

PYROPLUG® Box box insulation



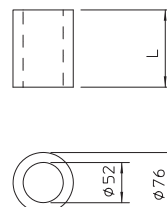
Type	Dimension mm	Pack. pcs	Weight kg/100 pcs	Item No.
FBA-F	200 x 200 x 100	1	122.000	7202660

Permanently elastic, closed-pore foam

Box for cable insulation.

Consisting of a two-part, hard frame and two soft internal pieces. Protect the frame and internal pieces against water in order to guarantee safe foaming in case of fire.

PYROPLUG® Shell drill crown insulation



Type	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs	Item No.
FBA-D100	100	1	15.500	7202624
FBA-D150	150	1	19.200	7202628

Permanently elastic, closed-pore foam

PYROPLUG® Screed filler

Type	Contents ml	Pack. pcs	Weight kg/100 pcs.	Item No.
FBA-SP	310	1	46.000	7202322

Intumescent material

Fire protection filler in a cartridge.

Usable as small insulation and as joint closing compound in all insulation of the PYROPLUG® series.

In dry, frost-free rooms, the fire protection filler can be stored for up to 12 months at a temperature of +5 °C to +30 °C.

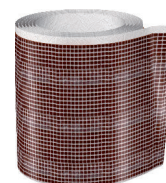


Cable coil

Type	Width mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
FBA-WI	150	5000	1	384.000	7202510

Intumescent material

Self-adhesive, intumescent cable protector, 5 mm thick, for the use with large cable diameters and penetrated cable support systems, applicable in PYROPLUG® systems and PYROSIT® NG.



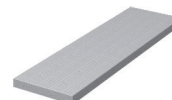
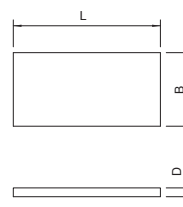
Calcium silicate plate

Type	Dimen- sion L mm	Dimen- sion B mm	Dimen- sion D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
KSI-P1	500	150	20	1	42.000	7202283
KSI-P2	500	250	30	1	111.000	7202904
KSI-P3	1000	250	30	1	222.000	7202912

Calcium silicate

Calcium silicate plate, as support plate, for the construction of frames in the penetration and to double thin wall thicknesses.

Materials class EN 13501 - A1 non-combustible.



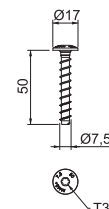
Fire protection screw tie

Type	Dimension mm	Bore hole Ø mm	Head Ø mm	Screw system	Pack. pcs	Weight kg/100 pcs.	Item No.
MMS-plus 7.5X50	7,5 x 50	6	17	Torx	100	1.500	3498261

St Steel

G Electrogalvanised

Fire protection bolt tie with large pan head for direct mounting without additional anchors. Drive T30, drill hole 6 mm. Tested anchor according to ETAG 001 - Part 3. Fire resistance class to R120 for concrete and masonry.

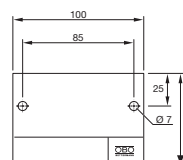


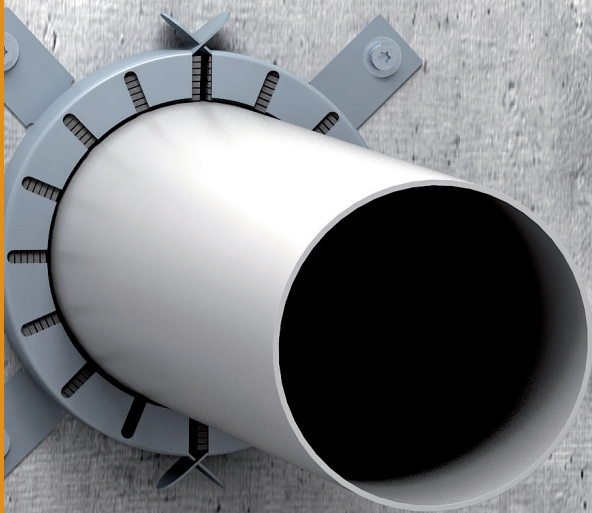
Identification plate

Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-S DE	German	1	2.400	7205425
KS-S EN	English	1	2.400	7205429
KS-S FR	French	1	2.400	7205430
KS-S NL	Dutch	1	2.400	7205431

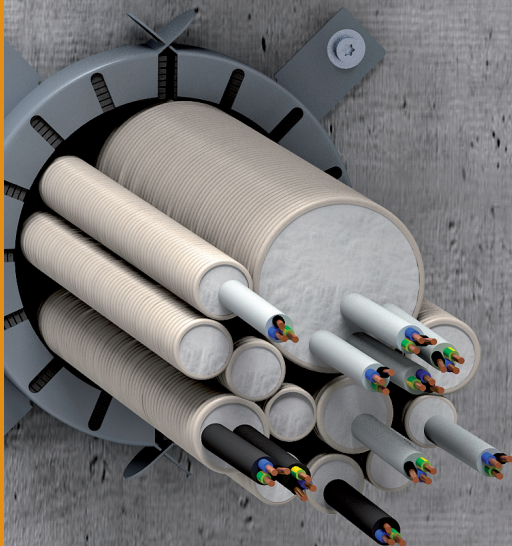
PS Polystyrene

Universal identification plate to be written on with waterproof and light-resistant felt-tip pen for all types of OBO insulation. For approved identification, including two push-fit anchors.





Kabelabschottung	☐	Einbauport / L.M. Nr.
Komblabschottung	☐	
Rohrabschottung	☐	
Leitungsstandklasse	Minuten	
Zulassung	Nr.	
System:		
Errichter:		
Datum:		



Kabelabschottung	☐	Einbauport / L.M. Nr.
Komblabschottung	☐	
Rohrabschottung	☐	
Leitungsstandklasse	Minuten	
Zulassung	Nr.	
System:		
Errichter:		
Datum:		



Cable insulation

PYROCOMB® pipe sleeve



S30

S60

S90

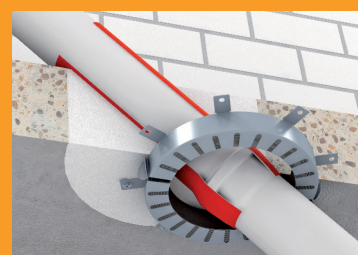
The PYROCOMB® system can be used as independent pipe sealing for combustible pipes (e.g. sanitary wastewater pipes). It is primarily made up of the pipe sleeves, type TCX. In the event of fire, the fire protection material inserted within the seal foams up after a few minutes under high pressure, closing the soft plastic pipes. This safely prevents the spread of fire and smoke, should a fire occur. With wall mounting, the pipe sleeves are mounted on both sides of the wall with metal anchors. Ceiling penetrations only have a tube seal from the underside. In light-duty partitions, the pipe sleeves are fastened on passed-through threaded rods and connected together.



Two-sided arrangement of the pipe sleeves for wall mounting.



Mounting on the underside of the ceiling with metal anchors.



Sloping pipe penetration up to an angle of 39°.



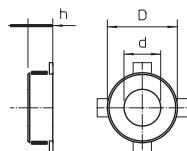
Pipe sleeves in the area of the penetration.



Eccentric arrangement with max. 3 levels of larger pipe sleeves.



Pipe sleeve with 2 fastening straps



Type	Pipe Ø mm	Dimension h mm	Dimension D mm	Dimension d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TCX-032	32 - 34	26	50	36	1	6.500	7202200
TCX-040	40 - 42	26	58	44	1	7.000	7202201
TCX-050	50 - 52	26	68	54	1	8.000	7202203

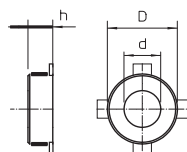
Intumescent material

Pipe sleeve for combustible pipes.

If there is a fire, fire protection inserts inside the sheet steel housing expand, exerting a very great pressure onto the burning thermoplastic pipes.

Fastening with anchors or M6 threaded rods.

Pipe sleeve with 4 fastening straps



Type	Pipe Ø mm	Dimension h mm	Dimension D mm	Dimension d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TCX-063	63 - 65	26	94	67	1	15.500	7202204
TCX-075	75 - 77	26	106	79	1	19.000	7202205
TCX-090	90 - 92	26.6	132	94	1	37.000	7202206
TCX-110	110 - 112	26.6	155	114	1	46.000	7202207
TCX-125	125 - 127	40	172	129	1	70.000	7202208

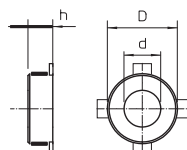
Intumescent material

Pipe sleeve for combustible pipes.

If there is a fire, fire protection inserts inside the sheet steel housing expand, exerting a very great pressure onto the burning thermoplastic pipes.

Fastening with anchors of M6 threaded rods up to size 75 mm, then M8.

Pipe sleeve with 6 fastening straps



Type	Pipe Ø mm	Dimension h mm	Dimension D mm	Dimension d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TCX-140	140 - 142	40	200	144	1	106.000	7202209
TCX-160	160 - 162	40	220	164	1	107.000	7202210

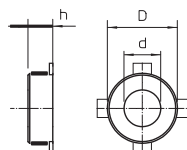
Intumescent material

Pipe sleeve for combustible pipes.

If there is a fire, fire protection inserts inside the sheet steel housing expand, exerting a very great pressure onto the burning thermoplastic pipes.

Fastening with anchors or M8 threaded rods.

Pipe sleeve with 8 fastening straps



Type	Pipe Ø mm	Dimension h mm	Dimension D mm	Dimension d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TCX-180	180 - 182	40	264	184	1	175.000	7202212
TCX-200	200 - 202	40	284	204	1	242.000	7202214

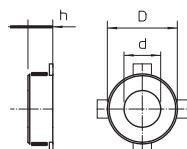
Intumescent material

Pipe sleeve for combustible pipes.

If there is a fire, fire protection inserts inside the sheet steel housing expand, exerting a very great pressure onto the burning thermoplastic pipes.

Fastening with anchors or M8 threaded rods.

Pipe sleeve with 10 fastening straps



Type	Pipe Ø mm	Dimension h mm	Dimension D mm	Dimension d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TCX-225	225 - 227	51.5	328	239	1	306.000	7202213
TCX-250	250 - 252	51.5	353	264	1	346.000	7202215

Intumescent material

FS Strip-galvanised

Pipe sleeve for combustible pipes.

If there is a fire, fire protection inserts inside the sheet steel housing expand, exerting a very great pressure onto the burning thermoplastic pipes.

Fastening with anchors or M8 threaded rods.

Pipe sleeve with 12 fastening straps

Type	Pipe Ø mm	Dimension h mm	Dimension D mm	Dimension d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TCX-280	280 - 282	51.5	378	289	1	398.000	7202216
TCX-300	300 - 302	51.5	403	314	1	405.000	7202217
TCX-315	315 - 317	51.5	417	328	1	425.000	7202218
TCX-355	355 - 357	51.5	459	370	1	460.000	7202219
TCX-400	400 - 402	51.5	504	415	1	520.000	7202220

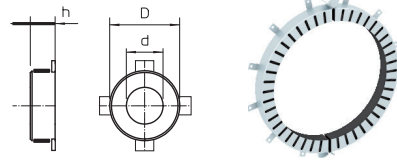
Intumescent material

FS Strip-galvanised

Pipe sleeve for combustible pipes.

If there is a fire, fire protection inserts inside the sheet steel housing expand, exerting a very great pressure onto the burning thermoplastic pipes.

Fastening with anchors or M8 threaded rods.



Insulation layer creator in a cartridge

Type	Contents ml	Pack. pcs	Weight kg/100 pcs.	Item No.
DSX-K	300	1	50.000	7202300

Intumescent material

Dispersion-based fire protection compound for interior areas, to fill residual joints and close openings. Approved material for closing core drill holes for individual cable glands.

Material class DIN 4102 - B2, normally flammable.

In dry, frost-free rooms, the compound can be stored at temperatures from +5 °C to +25 °C for up to 18 months in closed, upright original containers.



Mineral wool

Type	Dimension	Pack. pcs	Weight kg/100 pcs.	Item No.
MIW-S	25 Liter	1	250.000	7202306

Mineral fibres

Universal filling wool for various fire protection applications, packed in compressed form.

Material class EN 13 501 - A1, non-combustible; melting point ≥ 1.000 °C.



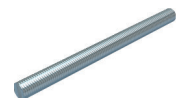
Threaded rod

Type	Thread	Dimension d mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TR M6 1M G	M6	6	1000	10	18.300	3141047
TR M8 1M G	M8	8	1000	10	30.000	3141128

St Steel

G Electro-galvanised

Threaded rod to DIN 976.



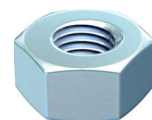
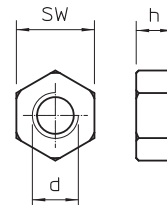
Hexagonal nut DIN 934

Type	Thread	SW mm	Dimension h mm	Dimension d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
HN M6 G	M6	10	5.2	6	100	0.225	3400069
HN M8 G	M8	13	6.8	8	100	0.474	3400085

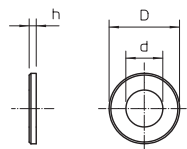
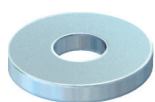
St Steel

G Electro-galvanised

Hexagonal nut to DIN 934 with metric thread.



Washer ISO 7093



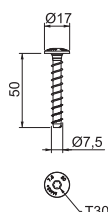
Type	Thread	Dimension d mm	Dimension D mm	Dimension h mm	Pack. pcs	Weight kg/100 pcs.	Item No.
WS M6 D28 G	M6	6.5	28	2.5	100	1.150	3402207
WS M8 D28 G	M8	8.5	28	2.5	100	1.100	3402215

St Steel

G Electrogalvanised

Washer of large outer diameter for universal use.

Fire protection screw tie



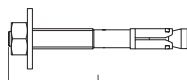
Type	Dimension mm	Bore hole Ø mm	Head Ø mm	Screw system	Pack. pcs	Weight kg/100 pcs.	Item No.
MMS-plus 7.5X50	7,5 x 50	6	17	Torx	100	1.500	3498261

St Steel

G Electrogalvanised

Fire protection bolt tie with large pan head for direct mounting without additional anchors. Drive T30, drill hole 6 mm. Tested anchor according to ETAG 001 - Part 3. Fire resistance class to R120 for concrete and masonry.

Bolt tie BZ-U



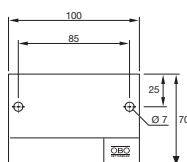
Type	Thread	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
BZ-U 8-10-21/75	M8	75	50	3.460	3498320

St Steel

G Electrogalvanised

Bolt tie BZ for the anchoring of medium-duty to heavy-duty loads, both in cracked and non-cracked concrete. It combines high approved loads with small edge distances and axial spacings.

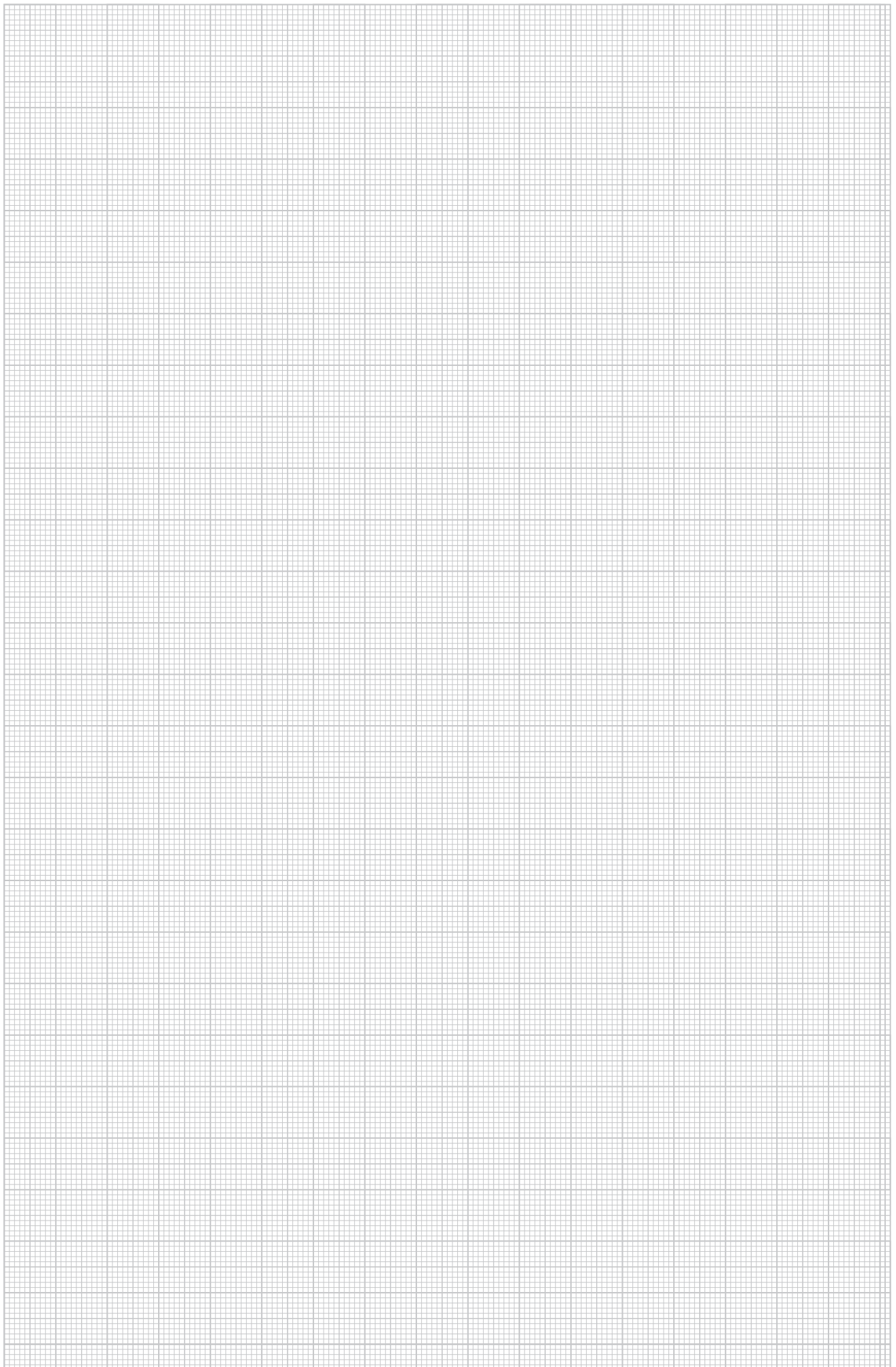
Identification plate



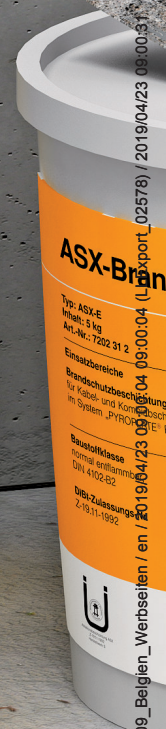
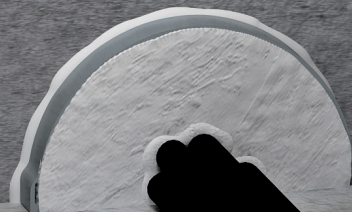
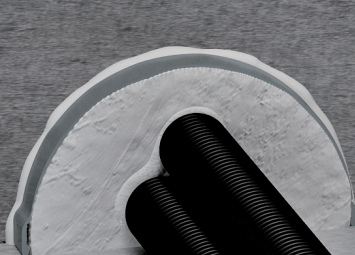
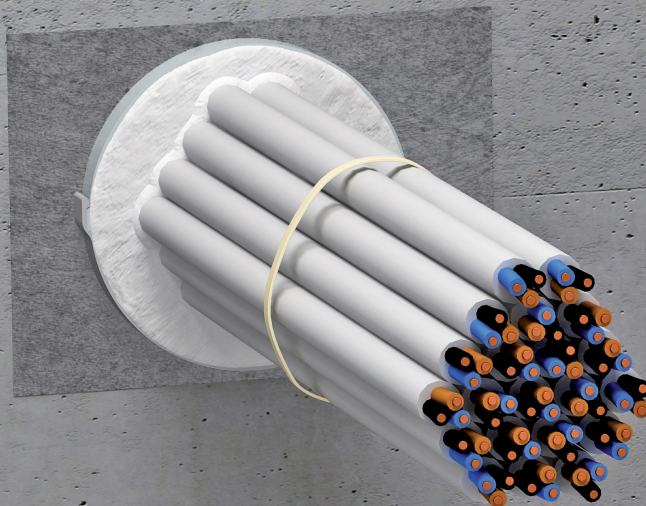
Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-S DE	German	1	2.400	7205425
KS-S EN	English	1	2.400	7205429
KS-S FR	French	1	2.400	7205430
KS-S NL	Dutch	1	2.400	7205431

PS Polystyrene

Universal identification plate to be written on with waterproof and light-resistant felt-tip pen for all types of OBO insulation. For approved identification, including two push-fit anchors.



Kabelabschottung		☐		Einbaort / L.M. Nr.	
Kombiabschottung		☐			
Rohrabschottung		☐			
Lebensdauerklasse	Minuten				
zulassung	Nr.				
System:					
Errichter:					
Datum:					



Cable insulation **PYROCOMB® Intube pipe shell**

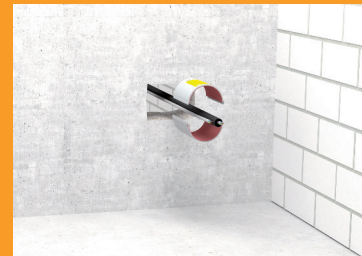


S30

S60

S90

The PYROCOMB® Intube system is used to create cable insulation with pipe shells or half shells. The pipe shell is particularly suitable for core drill holes and can very easily be installed in solid ceilings or walls and also light-duty partitions. For this, two half pipe sleeves are clicked together and bedded in mortar in the core hole. Then the pipe sleeves are closed with seals and the surface is sealed with ASX ablation coating. The cables don't require any coating. The half shell can be used particularly well in the underfloor area. It is sealed on one side with fire protection plugs and sealed with ASX ablation coating. In case of a fire, the inner coating of the pipe shells or the half shell expands and, in so doing, closes the opening cross-section completely. The transfer of fire and smoke is thus safely prevented. With the PYROCOMB® Intube system, 100% assignment of the interior is possible.



Mounting of the pipe shell by clicking the half shells together around the existing installation.



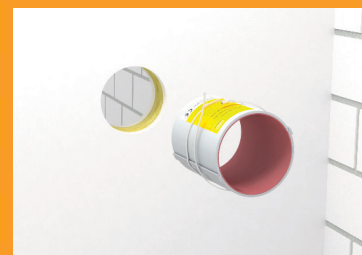
Closing of the opening with PYROMIX® mortar.



Adjust the foam plugs to installations using a knife and create smoke gas-tight sealing of the sealings using the ASX coating compound.



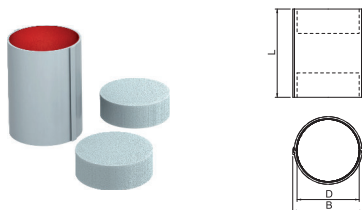
With ceiling mounting, use a lined body to prevent the pipe shell from falling out.



In certain applications, security with metal tensioning straps in light-duty partitions is necessary.



Pipe shell PYROCOMB® Intube



Type	Dimen- sion D mm	Dimen- sion L mm	Dimen- sion B mm	For opening Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
CTS-150	106	150	120	125 - 165	1	35.200	7204300
CTS-300	106	300	120	125 - 165	1	70.000	7204304

PVC Polyvinylchloride

Internally coated pipe shells with click lock. The inner space can be fitted with cables and electrical installation pipes completely. Approved in Europe with ETA-13/0904. Fire resistance classes to EI120.

Closing with 2 foam plugs included in the delivery. The surface seal is created with the ASX coating.

In some applications, the use of metallic tightening strips is prescribed to secure the pipe shells in light-duty partitions. Details can be found in the mounting instructions/approval.

Ablation coating in a cartridge



Type	Contents ml	Pack. pcs	Weight kg/100 pcs.	Item No.
ASX-K	310	1	50.000	7202310

Intumescent material

Combined, endothermic and weatherproof coating for internal and external areas. Universal protection coating for cable and cable support structures. Use as direct filler, and as paint when stirred.

Material class DIN 4102 - B2, normally flammable.

In dry, frost-free rooms, the coating can be stored at temperatures from +5 °C to +25 °C for up to 18 months in closed, upright original containers.

Ablation coating in a bucket



Type	Contents kg	Pack. pcs	Weight kg/100 pcs.	Item No.
ASX-E	5	1	500.000	7202312

Intumescent material

Combined, endothermic and weatherproof coating for internal and external areas. Universal protection coating for cable and cable support structures. Use as direct filler, and as paint when stirred. Sufficient for an area of 4 m².

Material class DIN 4102 - B2, normally flammable.

In dry, frost-free rooms, the coating can be stored at temperatures from +5 °C to +25 °C for up to 18 months in closed, upright original containers.

PYROMIX® dry mortar in bucket



Type	Contents kg	Pack. pcs	Weight kg/100 pcs.	Item No.
MSX-E1	10	1	1,000.000	7206058

Special mortar

Mortar to create cable and combination insulation in solid walls and ceilings. Suitable for pumping, pressing and for manual installation. Adding approx. 3 litres of water to 10 kg of dry mortar produces about 10 litres of workable compound.

In dry, frost-free rooms, the dry mortar can be stored for at least 12 months in closed original containers.

PYROMIX® dry mortar in paper sack



Type	Contents kg	Pack. pcs	Weight kg/100 pcs.	Item No.
MSX-S1	20	1	2,000.000	7206104

Special mortar

Mortar to create cable and combination insulation in solid walls and ceilings. Suitable for pumping, pressing and for manual installation. Adding approx. 6 litres of water to 20 kg of dry mortar produces about 20 litres of workable compound.

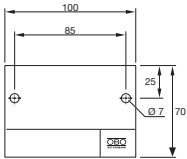
In dry, frost-free rooms, the dry mortar can be stored for at least 12 months in closed original containers.

Identification plate

Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-S DE	German	1	2.400	7205425
KS-S EN	English	1	2.400	7205429
KS-S FR	French	1	2.400	7205430
KS-S NL	Dutch	1	2.400	7205431

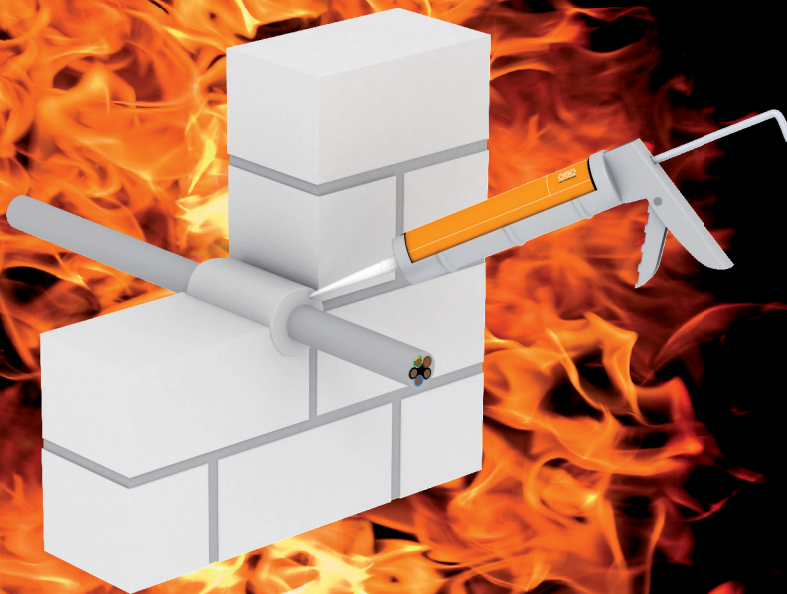
PS Polystyrene

Universal identification plate to be written on with waterproof and light-resistant felt-tip pen for all types of OBO insulation. For approved identification, including two push-fit anchors.



Cable insulation

Insulation layer creator type DSX



S30

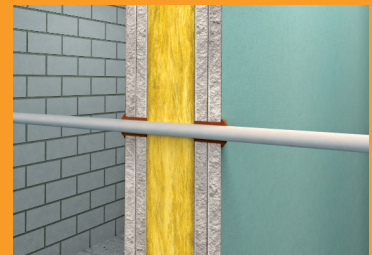
S60

S90

The type DSX insulation forming material from OBO can be used to fill ring gaps around individual cables or multiple cables of a small cross-section routed alongside one another. The ring gap around the cable must be filled with fire protection filler along the entire wall thickness. If there is a fire, the filler foams up, preventing penetration by fire and smoke. When the material foams up, heat is also drawn from the cables, thus considerably reducing the transfer of heat via the copper cores.



DSX insulation layer creator, suitable for full-wall ring gap closure in solid walls and ceilings.



With light-duty partitions, filling the double plates to both sides is sufficient.

Small insulation, bandage and individual cables acc. to MLAR



Insulation layer creator in a cartridge



Type	Contents ml	Pack. pcs	Weight		Item No.
			kg/100	pcs.	
DSX-K	300	1	50.000		7202300

Intumescent material

Dispersion-based fire protection compound for interior areas, to fill residual joints and close openings. Approved material for closing core drill holes for individual cable glands.

Material class DIN 4102 - B2, normally flammable.

In dry, frost-free rooms, the compound can be stored at temperatures from +5 °C to +25 °C for up to 18 months in closed, upright original containers.

Insulation layer creator in a bucket



Type	Contents kg	Pack. pcs	Weight		Item No.
			kg/100	pcs.	
DSX-E	5	1	500.000		7202302

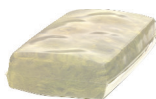
Intumescent material

Dispersion-based fire protection compound for interior areas, to fill residual joints and close openings. Approved material for closing core drill holes for individual cable glands.

Material class DIN 4102 - B2, normally flammable.

In dry, frost-free rooms, the compound can be stored at temperatures from +5 °C to +25 °C for up to 18 months in closed, upright original containers.

Mineral wool



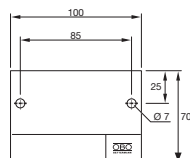
Type	Dimension	Pack. pcs	Weight		Item No.
			kg/100	pcs.	
MIW-S	25 Liter	1	250.000		7202306

Mineral fibres

Universal filling wool for various fire protection applications, packed in compressed form.

Material class EN 13 501 - A1, non-combustible; melting point ≥ 1.000 °C.

Identification plate

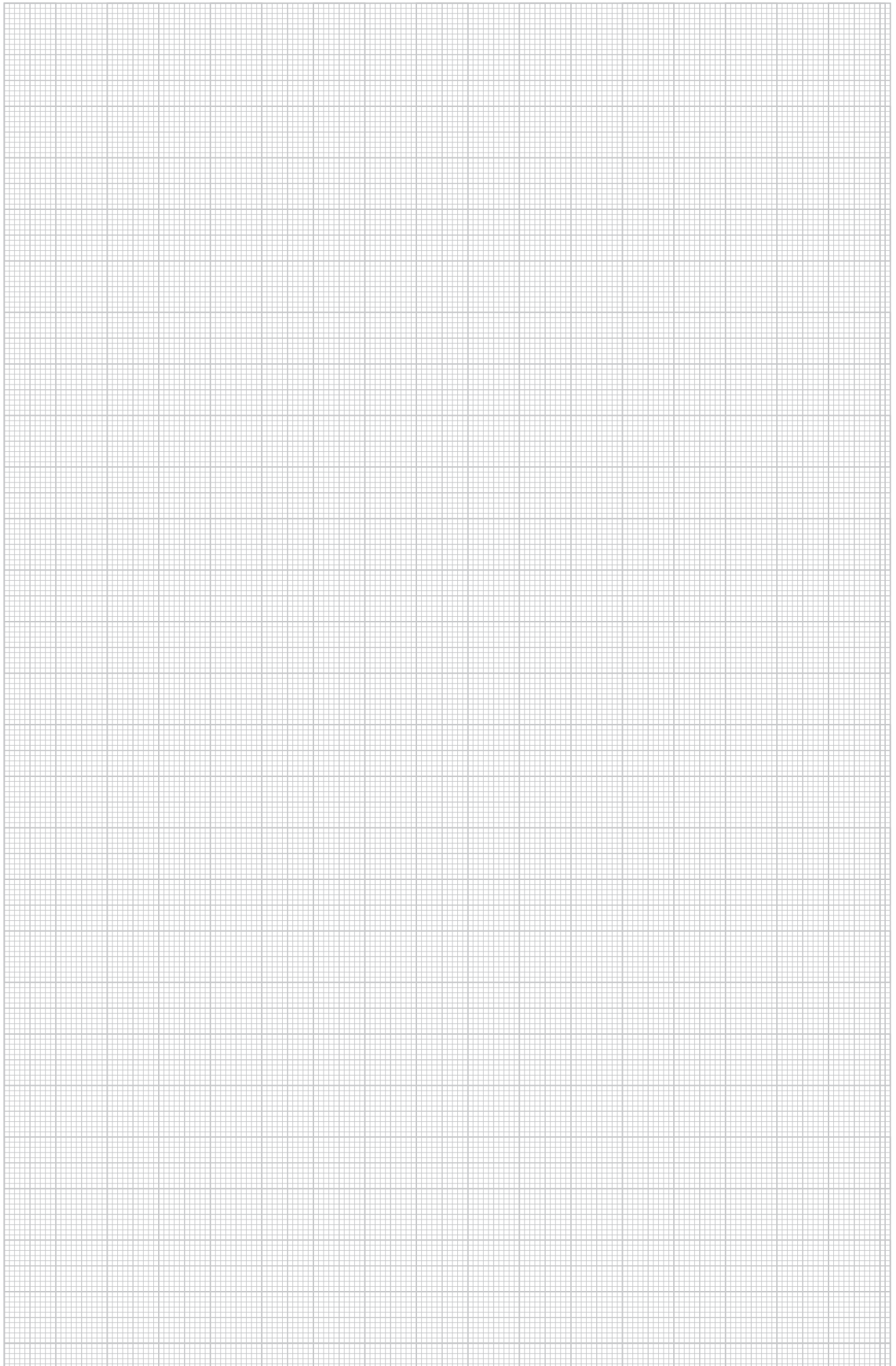


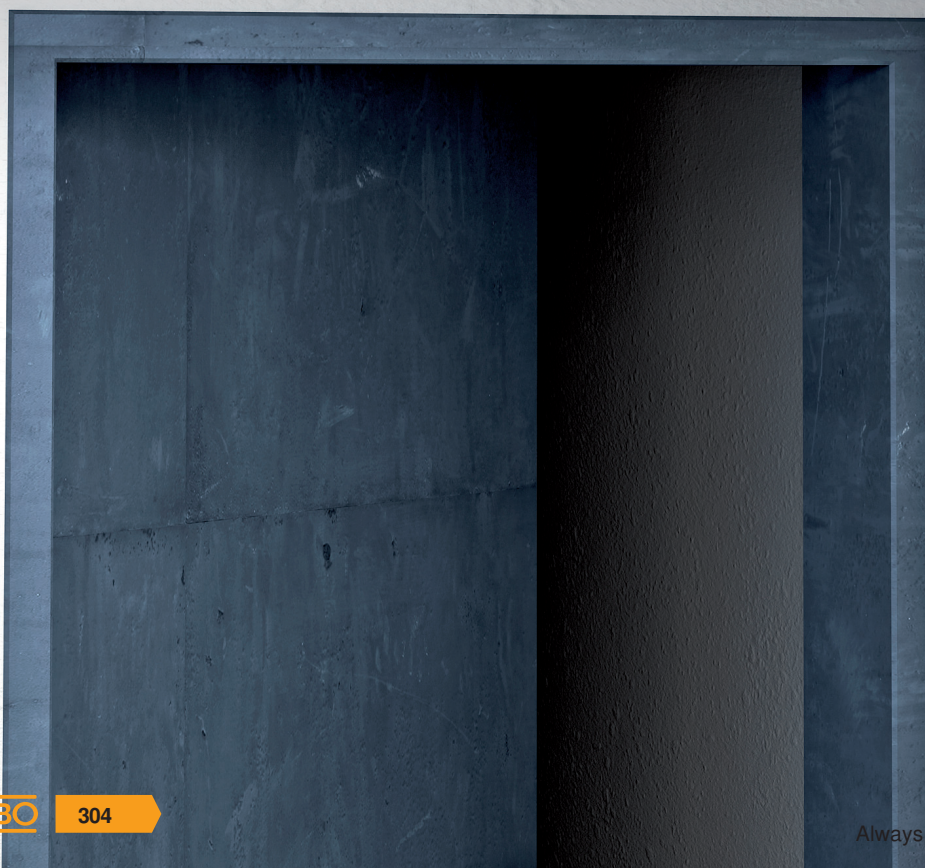
Type	Language	Pack. pcs	Weight		Item No.
			kg/100	pcs.	
KS-S DE	German	1	2.400		7205425
KS-S EN	English	1	2.400		7205429
KS-S FR	French	1	2.400		7205430
KS-S NL	Dutch	1	2.400		7205431

PS Polystyrene

Universal identification plate to be written on with waterproof and light-resistant felt-tip pen for all types of OBO insulation. For approved identification, including two push-fit anchors.







Escape route installations false ceiling mounting **RKS-Magic® cable tray**



The tested RKS-Magic® cable tray system is suitable for installation in the false ceiling area of escape and rescue routes. In the event of fire, the system has a proven mechanical stability of 30 minutes. The RKS-Magic® cable tray can be mounted under the ceiling or on the wall with brackets. The brackets are additionally secured on the ceiling with a threaded rod to prevent them from bending if there is a fire. A further option for ceiling mounting is the support of the cable tray on profile rails, each mounted under the ceiling with two threaded rods. As the cable tray deforms in the event of fire, sufficient distance to the false ceiling must be maintained. This minimum distance is documented in the proof of testing for the various versions of the RKS-Magic® cable trays. If the cable loads and tray widths listed in the proof of testing are maintained and the minimum spacings to the false ceiling taken into account, then multi-layer variants can also be implemented.



Single-layer ceiling suspension.



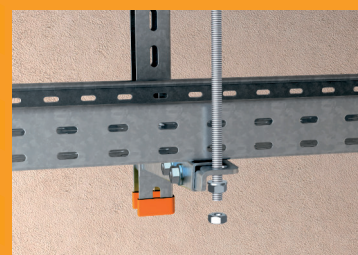
Two-layer ceiling suspension with bracket arrangement on one side.



Two-layer ceiling suspension with bracket arrangement on both sides.



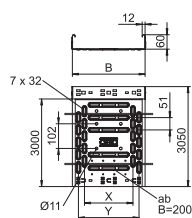
Wall mounting, one and two-layer possible.



Mounting of the threaded rod lock through the connection bracket on the tip of the bracket.



Cable tray RKS-Magic® 60



Type	Width mm	Plate thickness mm	Dimen- sion B mm	Dimen- sion x mm	Dimen- sion y mm	Pack. m	Weight kg/100 m	Item No.
RKSM 610 FS	100	0.75	100	—	50	3	132.131	6047611
RKSM 620 FS	200	0.75	200	100	150	3	183.000	6047638
RKSM 630 FS	300	0.75	300	200	250	3	235.080	6047654
RKSM 640 FS	400	0.90	400	300	350	3	331.340	6047689

St Steel

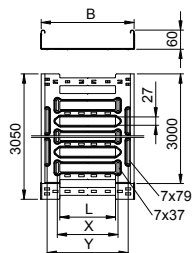
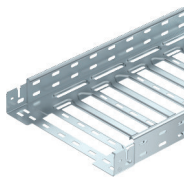
FS Strip-galvanised

Cable tray with integrated quick fastening system. The usable length of the cable tray is 3,000 mm.

The cable tray possesses continuous side perforations of 7 x 20 mm for the installation of additional connection and mounting components.

The perforation for direct threaded rod suspension has a diameter of 11 mm.

Cable tray MKS-Magic® 60



Type	Width mm	Plate thickness mm	Dimen- sion B mm	Dimen- sion x mm	Dimen- sion y mm	Dimen- sion L mm	Pack. m	Weight kg/100 m	Item No.
MKSM 610 FS	100	1.00	100	—	62	30	3	165.000	6059000
MKSM 620 FS	200	1.00	200	96	162	80	3	219.340	6059004
MKSM 630 FS	300	1.00	300	196	262	180	3	256.720	6059006
MKSM 640 FS	400	1.00	400	296	362	280	3	294.000	6059008

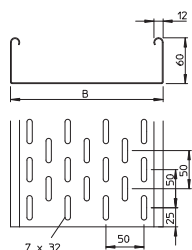
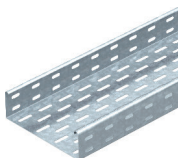
St Steel

FS Strip-galvanised

Cable tray with integrated quick fastening system. The usable length of the cable tray is 3,000 mm.

The cable tray possesses continuous side perforations of 7 x 20 mm for the installation of additional connection and mounting components.

Cable tray MKS 60



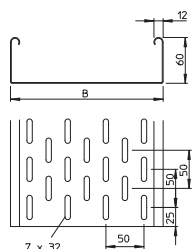
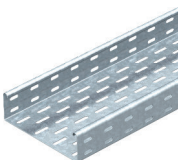
Type	Width mm	Plate thickness mm	Dimen- sion B mm	Pack. m	Weight kg/100 m	Item No.
MKS 610 FS	100	1.00	100	3	173.000	6055109
MKS 620 FS	200	1.00	200	3	246.700	6055206
MKS 630 FS	300	1.00	300	3	312.667	6055303
MKS 640 FS	400	1.00	400	3	380.000	6055400

St Steel

FS Strip-galvanised

MKS 60 = medium-duty cable tray system with a side height of 60 mm. FS version includes RV 60 straight connector set.

Cable tray SKS 60



Type	Width mm	Plate thickness mm	Dimen- sion B mm	Pack. m	Weight kg/100 m	Item No.
SKS 610 FS	100	1.50	100	3	239.400	6056105
SKS 620 FS	200	1.50	200	3	364.000	6056202
SKS 630 FS	300	1.50	300	3	463.670	6056296

St Steel

FS Strip-galvanised

SKS 60 = Heavy-duty cable tray system with 60 mm side height.

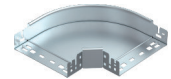
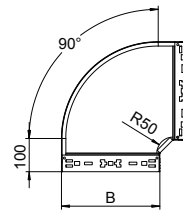
90° Magic bend

Type	Width mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
RBM 90 610 FS	100	100	1	65.700	6041130
RBM 90 620 FS	200	200	1	121.900	6041134
RBM 90 630 FS	300	300	1	192.200	6041136
RBM 90 640 FS	400	400	1	274.700	6041138

St Steel

FS Strip-galvanised

90° bend with quick connector system. For all cable tray types of 60 mm side height.



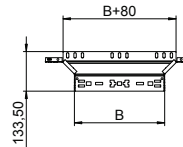
Magic add-on tee

Type	Width mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
RAAM 610 FS	100	100	1	37.700	6041230
RAAM 620 FS	200	200	1	50.100	6041234
RAAM 630 FS	300	300	1	62.900	6041236
RAAM 640 FS	400	400	1	75.700	6041238

St Steel

FS Strip-galvanised

Magic add-on tee with quick connector system. For all cable tray types of 60 mm side height.



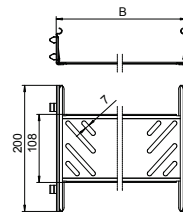
Magic straight connector set FS

Type	Width mm	Side height mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
KTSMV 610 FS	100	60	100	1	30.500	6068914
KTSMV 620 FS	200	60	200	1	37.200	6068918
KTSMV 630 FS	300	60	300	1	44.000	6068920
KTSMV 640 FS	400	60	400	1	50.700	6068922

St Steel

FS Strip-galvanised

Cable tray connector with quick fastening for the screwless connection of perforated cable trays with a side height of 60 mm.



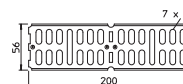
Straight and angle connector 60

Type	Dimension mm	Pack. pcs	Weight kg/100 pcs.	Item No.
RWVL 60 FS	200 x 56	10	16.400	6067115

St Steel

FS Strip-galvanised

Straight and angle connector for cable trays and fittings with a side height of 60 mm.



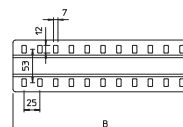
Joint plate

Type	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
SSLB 100 FS	100	20	7.700	7070205
SSLB 200 FS	200	20	16.700	7070213
SSLB 300 FS	300	20	25.700	7070217
SSLB 400 FS	400	20	34.700	7070221

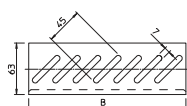
St Steel

FS Strip-galvanised

Wide joint plate for use in all cable trays and wide span cable trays.



Bottom end plate



Type	Width mm	Dimension B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
BEB 100 FS	100	100	100	5.400	7083106
BEB 200 FS	200	200	100	11.400	7083203
BEB 300 FS	300	300	100	17.200	7083300
BEB 400 FS	400	400	100	23.100	7083408

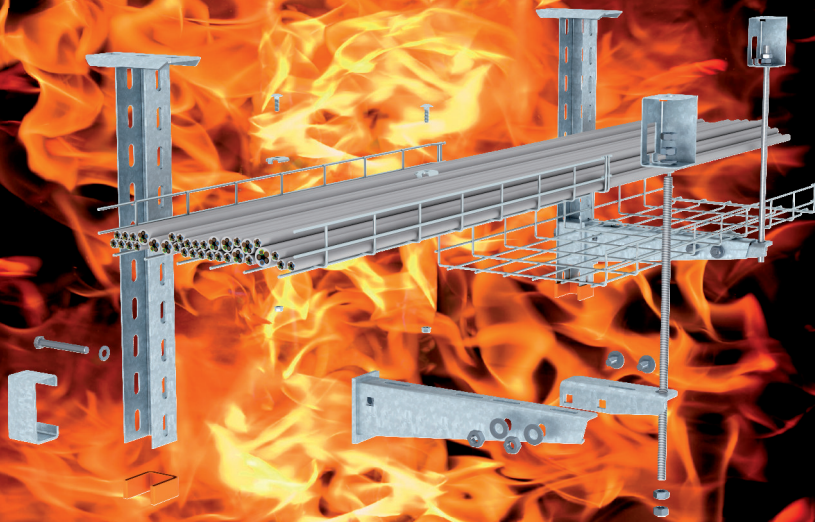
St Steel

FS Strip-galvanised

Bottom end plate for floor reinforcement at the ends of the cable tray and as cable protection.

Escape route installations
false ceiling mounting

GR-Magic® mesh cable tray



The tested GR-Magic® mesh cable tray system is suitable for installation in the false ceiling area of escape and rescue routes. In the event of fire, the system has a proven mechanical stability of 30 minutes. The GR-Magic® mesh cable tray can be mounted under the ceiling or on the wall with brackets. The brackets are additionally secured on the ceiling with a threaded rod to prevent them from bending in a fire. As the mesh cable tray deforms in a fire, sufficient distance to the false ceiling must be maintained. This minimum distance is documented in the proof of testing for the various versions of the GR-Magic® mesh cable tray. If the cable loads and tray widths listed in the proof of testing are maintained and the minimum spacings to the false ceiling taken into account, then multi-layer variants can also be implemented. A further option for ceiling mounting is the support of the mesh cable tray on profile rails, each mounted under the ceiling with two threaded rods. With this mounting variant, sufficient distances to the false ceiling must be maintained. A two-layer arrangement of the cable trays is possible, providing that the approved tensile stress in the threaded rods is also maintained in the event of fire.



Single-layer ceiling suspension.



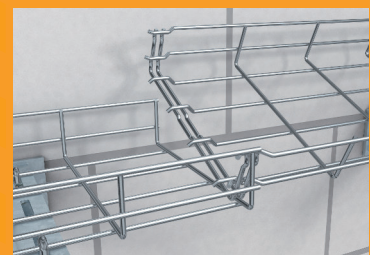
Two-layer ceiling suspension with bracket arrangement on one side.



Two-layer ceiling suspension with bracket arrangement on both sides.



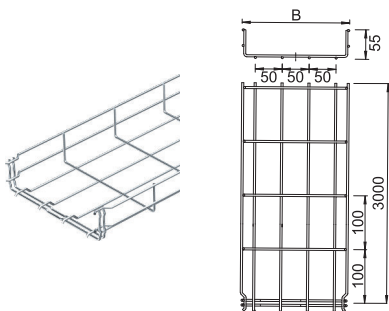
Wall mounting, one and two-layer possible.



Interconnecting of two stock lengths of the mesh cable tray.



Mesh cable tray GRM 55



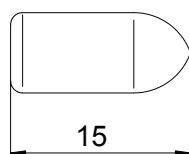
Type	Width mm	Wire Ø mm	Dimen- sion B mm	Pack. m	Weight kg/100 m	Item No.
GRM 55 100 G	100	3.9	100	3	72.400	6001442
GRM 55 200 G	200	3.9	200	3	100.667	6001446
GRM 55 300 G	300	4.8	300	3	194.900	6001448
GRM 55 400 G	400	4.8	400	3	236.700	6001450

St Steel

G Electrogalvanised

Mesh cable tray with shaped connector of side height 55 mm.

End cap

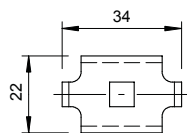


Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
GR KS 3.9 OR	Pure orange	500	0.025	6003750
GR KS 4.8 OR	Pure orange	500	0.030	6003754

PVC Polyvinylchloride

End cap to cover cut wire ends of mesh cable trays.

Clamping piece



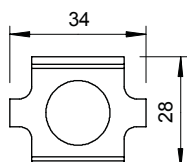
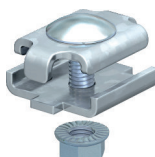
Type	Pack. pcs	Weight kg/100 pcs.	Item No.
GKS 34 G	20	2.000	6016855

St Steel

G Electrogalvanised

Clamp for fixing mesh cable trays to wall or support brackets.

Connector



Type	Pack. pcs	Weight kg/100 pcs.	Item No.
GSV 34 G	20	3.000	6016596

St Steel

G Electrogalvanised

Screwed version of joint connector for mesh cable trays.

Bolt cutter



Type	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
GR BS	450	1	160.000	6017700

St Steel

Bolt cutter for cutting mesh cable trays.

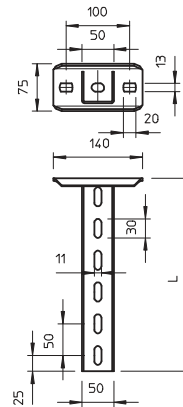
US 5 support

Type	Length mm	Material thickness mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
US 5 K 20 FT	200	2.5	200	1	85.000	6341527
US 5 K 30 FT	300	2.5	300	1	110.000	6341535
US 5 K 40 FT	400	2.5	400	1	136.000	6341543
US 5 K 50 FT	500	2.5	500	1	161.000	6341551
US 5 K 60 FT	600	2.5	600	1	185.000	6341578
US 5 K 70 FT	700	2.5	700	1	210.000	6341586
US 5 K 80 FT	800	2.5	800	1	236.000	6341594
US 5 K 90 FT	900	2.5	900	1	261.000	6341608
US 5 K 100 FT	1000	2.5	1000	1	286.000	6341616
US 5 K 110 FT	1100	2.5	1100	1	311.000	6341624
US 5 K 120 FT	1200	2.5	1200	1	337.000	6341632

St Steel

FT Hot-dip galvanised

U support of dimensions 50 x 50 mm with welded head plate.

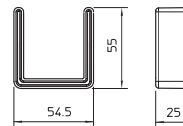


End cap

Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
US 5 KS OR	Pastel orange	20	1.300	6338462

PE Polyethylene

End cap to cover the ends of US 5 supports.



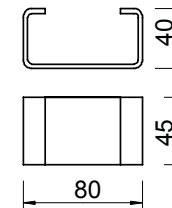
Spacer

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
DSK 45 FT	20	18.000	6416500

St Steel

FT Hot-dip galvanised

Spacer for use in U 5 support and in the head plate, type KU 7 VQP.



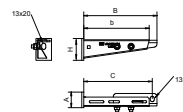
Wall and support bracket AW 30 F

Type	For width mm	Dimen- sion b mm	Dimen- sion B mm	Dimen- sion C mm	Dimen- sion H mm	Dimen- sion A mm	Pack. pcs	Weight kg/100 pcs.	Item No.
AW30F21 FT	200	210	235	220	70	50	1	79.000	6417027
AW30F31 FT	300	310	335	320	80	50	1	100.000	6417043
AW30F41 FT	400	410	435	420	80	50	1	127.000	6417078

St Steel

FT Hot-dip galvanised

Bracket for mounting on suspended supports or as wall bracket for cable tray routing type above fire protection ceilings and for routing types with cable ladders and cable trays for the maintenance of electrical function according to DIN 4102 Part 12. The brackets are supplied ready-mounted.



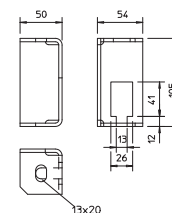
Fire protection clamp

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
BSB FT	20	42.400	6418198

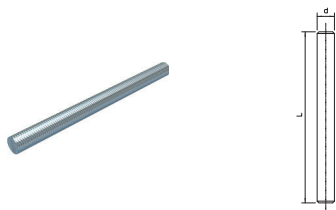
St Steel

FT Hot-dip galvanised

Fire protection clamp for ceiling fastening of the threaded rod lock for routing types with cable ladders and cable trays for the maintenance of electrical function to DIN 4102 Part 12.



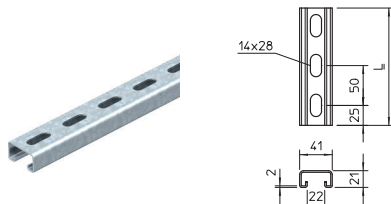
Threaded rod



Type	Thread	Dimension d mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TR M12 1M G	M12	12	1000	10	62.000	3141306
SI Steel						
G Electrogalvanised						

Threaded rod to DIN 976.

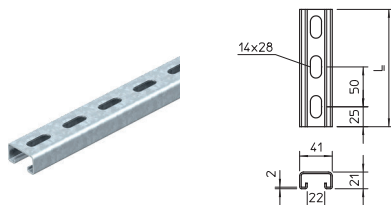
MS4121 mounting rail, slot width 22 mm, perforated



Type	Length mm	Dimension W x H mm	Material thickness mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
MS4121P0200FT	200	41x21	2	200	1	35.100	1122933
MS4121P0300FT	300	41x21	2	300	1	53.000	1122934
MS4121P0400FT	400	41x21	2	400	1	70.000	1122935
MS4121P0500FT	500	41x21	2	500	1	87.000	1122936
SI Steel							
FT Hot-dip galvanised							

Heavy-duty C profile rail for individual installation of support constructions, e.g. for cable trays or as a panel for switchgear cabinets. Can also be used for cable routing, in conjunction with clamp clips with a U foot.

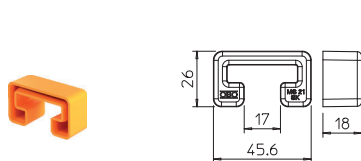
MS4121 mounting rail, slot width 22 mm, perforated



Type	Length mm	Dimension W x H mm	Material thickness mm	Dimension L mm	Pack. m	Weight kg/100 m	Item No.
MS4121P2000FS	2000	41x21	2	2000	2	175.000	1122918
MS4121P3000FS	3000	41x21	2	3000	3	141.900	1122920
MS4121P2000FT	2000	41x21	2	2000	2	183.000	1122923
MS4121P3000FT	3000	41x21	2	3000	3	151.300	1122924
SI Steel							
FS Strip-galvanised FT Hot-dip galvanised							

Heavy-duty C profile rail for individual installation of support constructions, e.g. for cable trays or as a panel for switchgear cabinets. Can also be used for cable routing, in conjunction with clamp clips with a U foot.

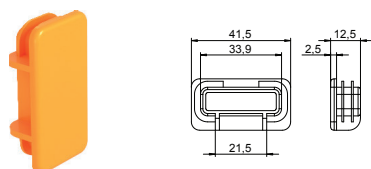
Protective cap MS4121



Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
MS4121 SK	Pastel orange	25	0.650	1122902
PE Polyethylene				

Protective caps for profile rail, type MS4121.

End cap MS4121



Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
MS4121 EK	Pastel orange	50	0.645	1122904
PE Polyethylene				

End cap for profile rail, type MS4121.



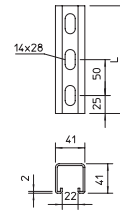
MS4141 mounting rail, slot width 22 mm, perforated

Type	Length mm	Dimension W x H mm	Material thickness mm	Dimension L mm	Pack. m	Weight kg/100 m	Item No.
MSL4141P1000FS	1000	41x41	2	1000	1	201.100	1122970
MSL4141P3000FS	3000	41x41	2	3000	3	201.100	1122972
MSL4141P1000FT	1000	41x41	2	1000	1	214.700	1122962
MSL4141P3000FT	3000	41x41	2	3000	3	214.700	1122964

St Steel

FS Strip-galvanised FT Hot-dip galvanised

Heavy-duty C profile rail for individual installation of support constructions, e.g. for cable trays or as a panel for switchgear cabinets. Can also be used for cable routing, in conjunction with clamp clips with a U foot.



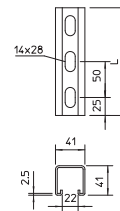
MS4141 mounting rail, slot width 22 mm, perforated

Type	Length mm	Dimension W x H mm	Material thickness mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
MS4141P0400FT	400	41x41	2.5	400	1	104.700	1122525
MS4141P0500FT	500	41x41	2.5	500	1	130.800	1122533
MS4141P0600FT	600	41x41	2.5	600	1	156.900	1122541
MS4141P0700FT	700	41x41	2.5	700	1	183.000	1122568

St Steel

FT Hot-dip galvanised

Heavy-duty C profile rail for individual installation of support constructions, e.g. for cable trays or as a panel for switchgear cabinets. Can also be used for cable routing, in conjunction with clamp clips with a U foot.



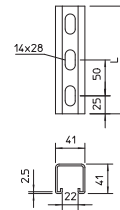
MS4141 mounting rail, slot width 22 mm, perforated

Type	Length mm	Dimension W x H mm	Material thickness mm	Dimension L mm	Pack. m	Weight kg/100 m	Item No.
MS4141P1000FS	1000	41x41	2.5	1000	1	247.500	1122908
MS4141P3000FS	3000	41x41	2.5	3000	3	247.500	1122910
MS4141P1000FT	1000	41x41	2.5	1000	1	261.400	1122606
MS4141P3000FT	3000	41x41	2.5	3000	3	261.400	1122622

St Steel

FS Strip-galvanised FT Hot-dip galvanised

Heavy-duty C profile rail for individual installation of support constructions, e.g. for cable trays or as a panel for switchgear cabinets. Can also be used for cable routing, in conjunction with clamp clips with a U foot.

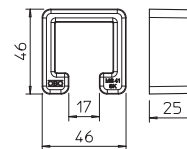


Protective cap MS4141

Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
MS4141 SK	Pastel orange	25	1.320	1122900

PE Polyethylene

Protective caps for profile rail, type MS4141.

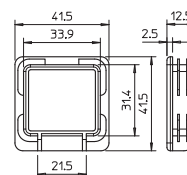


End cap MS4141

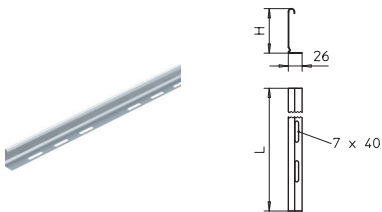
Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
MS4141 EK	Pastel orange	50	0.670	1122906

PE Polyethylene

End cap for profile rail, type MS4141.



Barrier strip 45



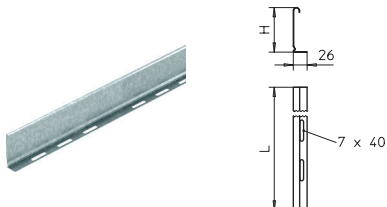
Type	Dimension H mm	Plate thickness mm	Dimension L mm	Pack. m	Weight kg/100 m	Item No.
TSG 45 FS	45	0.75	3000	3	46.700	6062033

St Steel

FS Strip-galvanised

Separating retainer for separation of cables of different voltages or functions.

Barrier strip 60



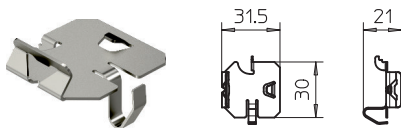
Type	Dimension H mm	Plate thickness mm	Dimension L mm	Pack. m	Weight kg/100 m	Item No.
TSG 60 FS	60	0.75	3000	3	55.700	6062068

St Steel

FS Strip-galvanised

Separating retainer for separation of cables of different voltages or functions.

Hold-down clamp for separating retainer fastening in RKSM

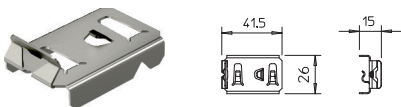


Type	Pack. pcs	Weight kg/100 pcs.	Item No.
KS KR A2	30	0.537	6062280

V2A Stainless steel, A2

Clamping piece for screwless fastening of separating retainer in the cable tray types RKSM, MKS and SKS.

Hold-down clamp for separating retainer fastening

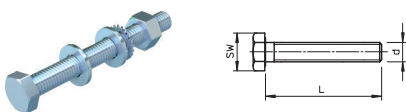


Type	Pack. pcs	Weight kg/100 pcs.	Item No.
KS GR A2	30	0.830	6062282

V2A Stainless steel, A2

Hold-down clamp for fastening separating retainer in mesh cable trays.

Hexagonal bolt with nut and washer



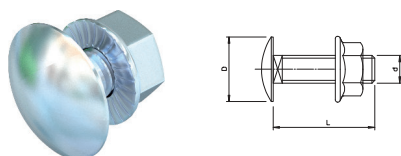
Type	Dimension mm	Dimension L mm	Dimension D mm	SW mm	Resistance class	Pack. pcs	Weight kg/100 pcs.	Item No.
SKS 10x90 F	M10 x 90	90	10	17	8.8	20	7.800	6418252

St Steel

F Hot-dip galvanised

Hexagonal bolt for universal fixing of structure components.

Truss-head bolt with flange nut



Type	Dimension mm	Dimension L mm	Dimension D mm	Dimension d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
FRSB 6x12 F	M 6 x 12	12	13.5	6	100	0.990	6406122
FRSB 6x16 F	M 6 x 16	16	13.5	6	100	0.800	6406157
FRSB 6x20 F	M 6 x 20	20	13.5	6	100	1.000	6406203

St Steel

F Hot-dip galvanised

Truss-head bolt with square neck including flange nut.

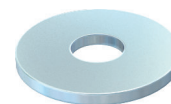
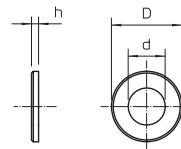
Large washer

Type	Dimension D mm	Dimension d mm	Dimension h mm	Pack. pcs	Weight kg/100 pcs.	Item No.
DIN440 7 F	22	6.6	2	100	0.550	6408702
DIN440 14 F	44	13.5	4	50	4.736	6408737

St Steel

F Hot-dip galvanised

Washer of particularly large outer diameter.



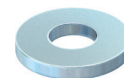
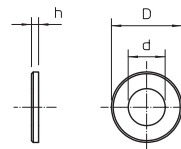
Washer

Type	Thread	Dimension d mm	Dimension D mm	Dimension h mm	Pack. pcs	Weight kg/100 pcs.	Item No.
WS M12 D24 G	M12	13	24	2.5	100	0.627	3402126

St Steel

G Electrogalvanised

Washer according to DIN 125, shape A, for universal use.



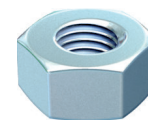
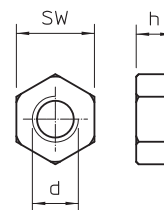
Hexagonal nut DIN 934

Type	Thread	SW mm	Dimension L mm	Dimension h mm	Pack. pcs	Weight kg/100 pcs.	Item No.
HN M12 G	M12	19	10.8	12	100	1.730	3400123

St Steel

G Electrogalvanised

Hexagonal nut to DIN 934 with metric thread.



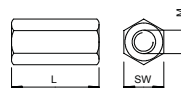
Connection sleeve

Type	Thread	Dimension L mm	SW mm	Pack. pcs	Weight kg/100 pcs.	Item No.
CSTR M12 G	M12	40	19	25	7.000	6410111

St Steel

G Electrogalvanised

Connection sleeve with continuous internal thread.



Escape route installations false ceiling mounting **Grip M grouped support**



Ceiling mounting of the grouped supports 2031 M15 and 2031 M 30.



Wall-mounted grouped supports 2031 M15 and 2031 M 30.



Grouped support 2031 M 70 as wall and ceiling mounting for large cable volume.



Opening of the grouped support and insertion of the cables.



Simple insertion the cables in the opened grouped support.

The tested Grip M grouped supports are suitable for installation in the false ceiling area of escape and rescue routes. In the event of a fire, the grouped supports have a proven mechanical stability of 30 to 90 minutes. They can be mounted under the ceiling or on the wall. The grouped supports are made of sheet steel and can be opened and closed easily without the use of tools. To allow simple cable insertion, the supports remain open during cable routing. Then, the grouped supports are closed through simple locking. The construction of the grouped support and weight of the installed cables prevent the lock from opening itself unintentionally.



Escape route installations false ceiling mounting **Metal pressure clip**



Ceiling mounting with pressure clip 2034M.



Deckenmontage mit Kabelklammer 2033 M.



Ceiling mounting with pressure clip 2035 M.



Simple cable installation through side insertion of the cables.

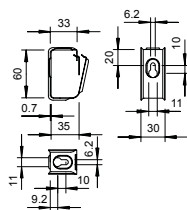


Space-saving and fireproof mounting of cables above a fire protection ceiling.

The tested pressure clips are suitable for installation in the false ceiling area of escape and rescue routes. In the event of fire, the pressure clips have a proven mechanical stability of 30 minutes. They are mounted under the ceiling. The pressure clips are made of sprung, rustproof steel. For installation, the hips of the pressure clips are simply bent downwards without tools and the cables pushed in from the side. The edges of the clip are sloping to exclude the possibility of damage to the cables.



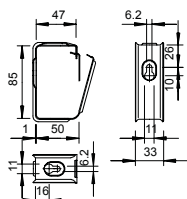
GRIP "M" 15



Type	No. of conductors	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
2031 M 15 FS	15	50	50	3.700	2207028
St Steel					
FS Strip-galvanised					

Metal cable tidy for high mechanical stability, even in case of fire. Suitable for safe mounting above fire protection ceilings. Also approved as a cable-specific variant for the maintenance of electrical function to DIN 4102 part 12. For wall and ceiling mounting. Lock can be opened without tools. Detailed information on the approved routing variants can be found in the appropriate testing documentation.

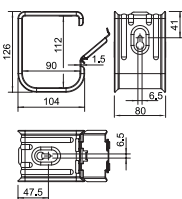
GRIP "M" 30



Type	No. of conductors	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
2031 M 30 FS	30	25	25	6.200	2207036
St Steel					
FS Strip-galvanised					

Metal cable tidy for high mechanical stability, even in case of fire. Suitable for safe mounting above fire protection ceilings. Also approved as a cable-specific variant for the maintenance of electrical function to DIN 4102 part 12. For wall and ceiling mounting. Lock can be opened without tools. Detailed information on the approved routing variants can be found in the appropriate testing documentation.

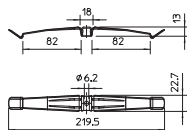
GRIP "M" 70



Type	No. of conductors	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
2031 M 70 FS	70	10	10	34.500	2207060
St Steel					
FS Strip-galvanised					

Metal cable tidy for high mechanical stability, even in case of fire. Suitable for safe mounting above fire protection ceilings. Also approved as a cable-specific variant for the maintenance of electrical function to DIN 4102 part 12. For wall and ceiling mounting. Lock can be opened without tools. Detailed information on the approved routing variants can be found in the appropriate testing documentation.

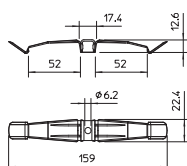
Pressure clip for 16 cables



Type	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
2033 M A2	25	25	2.310	2204000
V2A Stainless steel, A2				

The metal pressure clip is halogen- and fire load-free, and maintains a good mechanical stability even in fires. The pressure clip is also approved as a cable-specific variant for electrical function maintenance to DIN 4102 Part 12. In pressure clips with larger cross-sections, the spacer 2033 D 15 x 3 G (must be ordered separately) increases the clamping height from 10 to 13 mm. The pressure clips are suitable for fireproof mounting above suspended fire protection ceilings in accordance with DIN 4102.

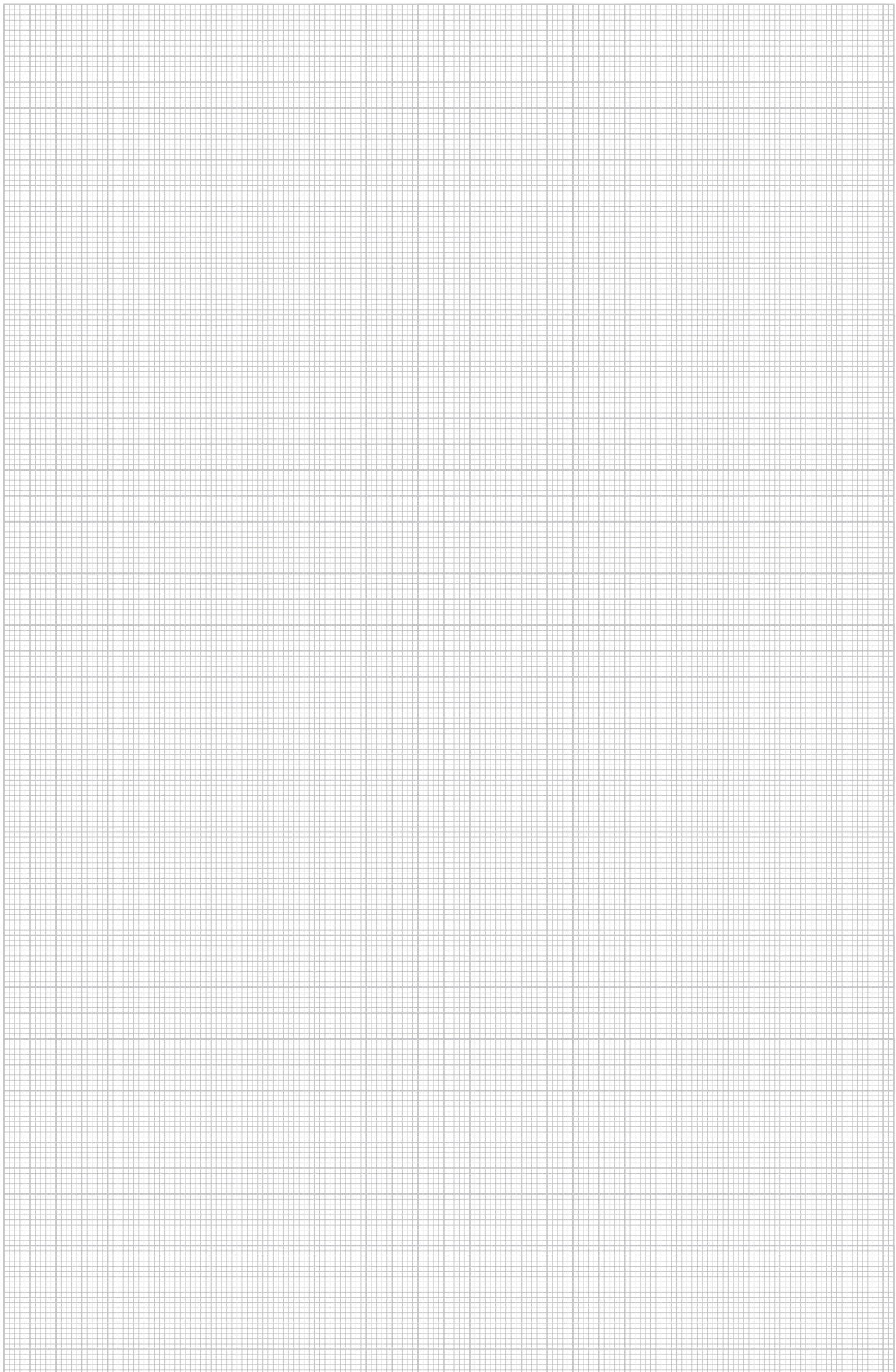
Pressure clip for 10 cables



Type	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
2034 M A2	50	50	1.860	2204010
V2A Stainless steel, A2				

The metal pressure clip is halogen- and fire load-free, and maintains a good mechanical stability even in fires. The pressure clip is also approved as a cable-specific variant for electrical function maintenance to DIN 4102 Part 12. In pressure clips with larger cross-sections, the spacer 2033 D 15 x 3 G (must be ordered separately) increases the clamping height from 10 to 13 mm. The pressure clips are suitable for fireproof mounting above suspended fire protection ceilings in accordance with DIN 4102.







Achtung!
 Trasse nur
 für elektrischen
 Funktionseinsatz!

Kabelanlage gemäß DIN 4102 Teil 2
 Funktioneinheit E ... OBO Konformität 020705-103

Zeichnungs-Nr.	Druckjahr
Druckjahr	Druckjahr

OBO
 OBO Engineering

Fire protection duct **PYROLINE® Rapid**



I30

I60

I90

I120

OBO's PYROLINE® Rapid fire protection duct is made from sheet steel with a profiled lid closing contour and an intumescent interior coating. If there is a fire, this provides active fire load encapsulation and safe prevention of the fire spread. This means that the escape and rescue routes remain free from fire and smoke. The PYROLINE® Rapid is tested and approved as an escape route duct for the classes I 30 to I 120. The shape matches the standard Rapid 80 cable routing duct. The fire protection duct can be installed directly on the wall or the ceiling. Mounting on wall brackets or on a support system suspended from the ceiling is also possible. The lids can be engaged easily in the base, simultaneously creating the equipotential bonding. The connectors can also be used for suspension. Even overhead mounting is possible, as special brackets keep the cable load away from engaged lids. All the components are prefabricated. There are also no screw ends in the interior of the ducts, meaning that cables cannot be damaged.



Direct wall and ceiling mounting.



Mounting on raw concrete in system base.



Suspended mounting with vertical bends.



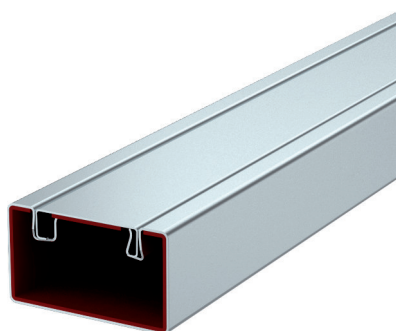
Cable outlet with V-TEC glands, singly or with multiple sealing ring.



Retaining clamps as installation aid to prevent cables from falling out.



Metal fire protection duct, I30 to I120



Type	Dimension B mm	Dimension H mm	Dimension i mm	Length mm	Colour	Pack. m	Weight kg/100 m	Item No.
BSKM 0407	70	40	30	2000	—	2	254.650	7216500
BSKM 0407 RW	70	40	30	2000	Pure white	2	254.650	7216501

St Steel

FS Strip-galvanised **L** Painted

Sheet steel duct with intumescent inner coating.

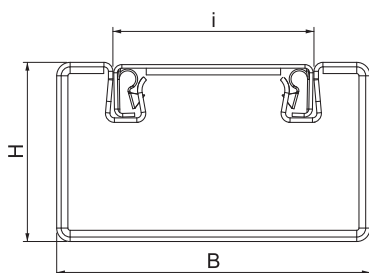
In case of fire, actively prevents the spread of fire in the duct and protects emergency and escape routes against the impacts of a cable fire. The cover and base are securely interconnected using the self-contacting patented locking brackets. This also creates the equipotential bonding.

Fire resistance classes I30 to I120 according to DIN 4102 Part 11.

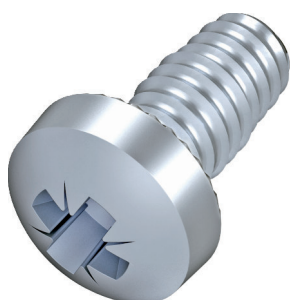
Mounting options: directly on the wall or under the ceiling, beneath system floors on the raw floor, or suspended on support systems or using connector elements (support spacing, max. 1 m).

Included in the delivery: Cover and base as a unit, complete.

Dimensions



Connector screw



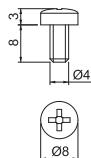
Type	Dimension	Pack. pcs	Weight kg/100 pcs	Item No.
BSKM-S4008	M4x8	100	0.160	3498092

St Steel

G Electro-galvanised

Self-tapping screw for the fastening of BSKM fire protection ducts on supports and all lock plates with suspended mounting.

Dimensions



Metal fire protection duct, I30 to I120

Type	Dimension B mm	Dimension H mm	Dimension i mm	Length mm	Colour	Pack. m	Weight kg/100 m	Item No.
BSKM 0711	110	70	60	2000	—	2	387.000	7216300
BSKM 0711RW	110	70	60	2000	Pure white	2	387.000	7216600

St Steel

FS Strip-galvanised **L** Painted

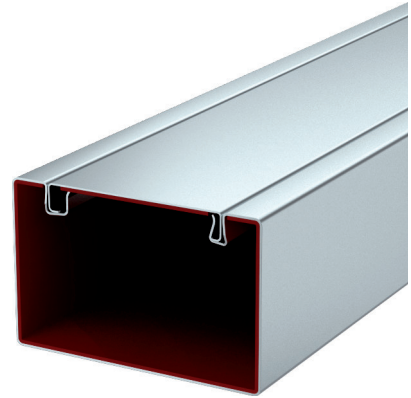
Sheet steel duct with intumescent inner coating.

In case of fire, actively prevents the spread of fire in the duct and protects emergency and escape routes against the impacts of a cable fire. The cover and base are securely interconnected using the self-contacting patented locking brackets. This also creates the equipotential bonding.

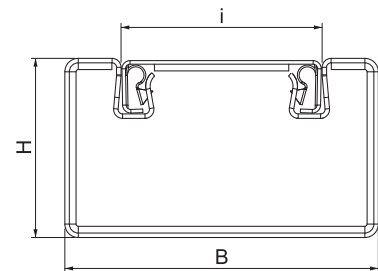
Fire resistance classes I30 to I120 according to DIN 4102 Part 11.

Mounting options: directly on the wall or under the ceiling, beneath system floors on the raw floor, or suspended on support systems or using connector elements (support spacing, max. 1 m).

Included in the delivery: Cover and base as a unit, complete.



Dimensions



Foam seal for BSKM 0711 cable exit

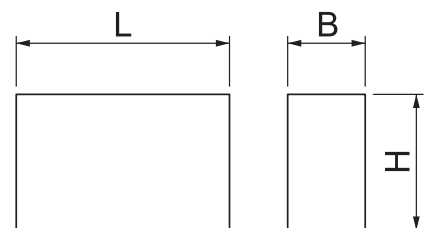
Type	Dimension L mm	Dimension B mm	Dimension H mm	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-KA 0711	110	40	70	1	0.300	7216390

Foam

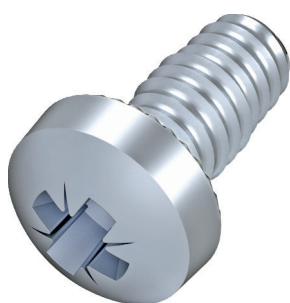
Flexible adjustable foam seal for the sealing of cable bundles or cables with a large outer diameter when conducting them out of the cable end or a BSKM 0711 T branch. To seal the surface ASX ablation coating is required.



Dimensions



Connector screw



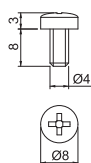
Type	Dimension	Pack.		Weight		Item No.
		pcs	kg/100 pcs	pcs	kg/100 pcs	
BSKM-S4008	M4x8	100	0.160			3498092

St Steel

G Electrogalvanised

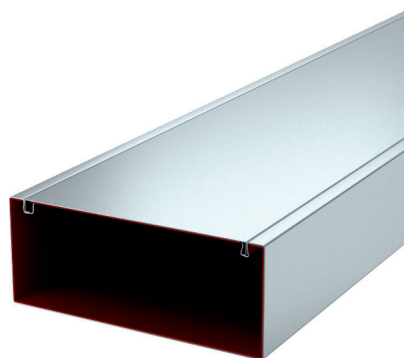
Self-tapping screw for the fastening of BSKM fire protection ducts on supports and all lock plates with suspended mounting.

Dimensions



Fire protection duct PYROLINE® Rapid - BSKM 1025

Metal fire protection duct, I30 to I120



Type	Dimension B mm	Dimension H mm	Dimension i mm	Length mm	Colour	Pack. m	Weight kg/100 m	Item No.
BSKM 1025	250	100	200	2000	—	2	710.600	7216400
BSKM 1025RW	250	100	200	2000	Pure white	2	638.750	7216630

St Steel

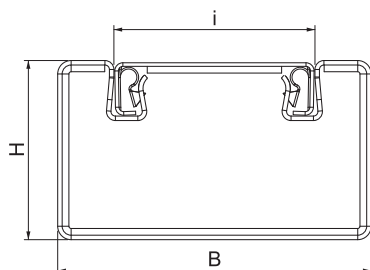
FS Strip-galvanised **L** Painted

Sheet steel duct with intumescent inner coating.

In case of fire, actively prevents the spread of fire in the duct and protects emergency and escape routes against the impacts of a cable fire. The cover and base are securely interconnected using the self-contacting patented locking brackets. This also creates the equipotential bonding. Fire resistance classes I30 to I120 according to DIN 4102 Part 11.

Mounting options: directly on the wall or under the ceiling, beneath system floors on the raw floor, or suspended on support systems or using connector elements (support spacing, max. 1 m).

Dimensions



Included in the delivery: Cover and base as a unit, complete.

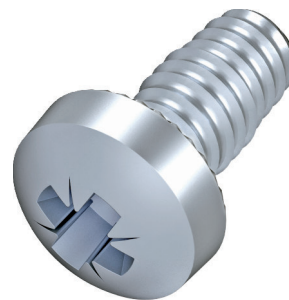
Connector screw

Type	Dimension	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-S4008	M4x8	100	0.160	3498092

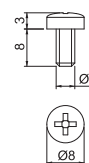
St Steel

G Electrogalvanised

Self-tapping screw for the fastening of BSKM fire protection ducts on supports and all lock plates with suspended mounting.



Dimensions



Fire protection duct PYROLINE® Rapid - BSKM accessories

Cable gland, metric thread

Type	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC VM12 MS	M12 x 1,5	50	1.200	2086018
V-TEC VM16 MS	M16 x 1,5	50	1.640	2086024
V-TEC VM20 MS	M20 x 1,5	25	3.140	2086030
V-TEC VM25 MS	M25 x 1,5	25	4.260	2086036
V-TEC VM32 MS	M32 x 1,5	20	7.160	2086042
V-TEC VM40 MS	M40 x 1,5	5	12.240	2086048
V-TEC VM50 MS	M50 x 1,5	5	22.700	2086054

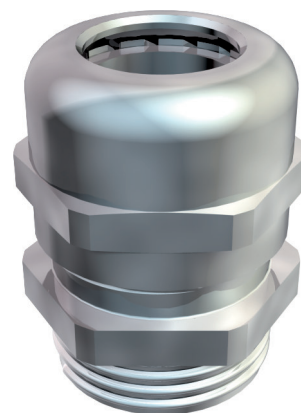
CuZn Brass

N Nickel-plated

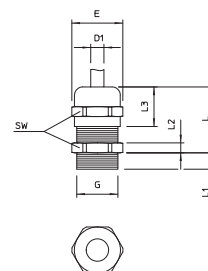
With metric connecting thread to IEC 423, robust cap-nut cable gland with large sealing area. Strain relief, wringing protection and tightness over the whole clamping area. Neoprene sealing ring. Polyamide terminal insert. With pre-mounted O sealing ring on connection thread, VDE-tested to DIN EN 50262, protection rating IP68 at 5 bar for 1 hr, max. permitted ambient temperature -20 - 100°C.

* Prices according to DEL notation.

G	D1 mm	WAF mm	e mm	L max. mm	L 1 mm	L2 mm	L3 mm
M 12 x 1.5	3-6	14	15.5	20	5	11.5	3
M16 x 1.5	5-9	17	19	24	5	15	3
M20 x 1.5	9-13	22	24	27	6	16.5	3.5
M25 x 1.5	11-16	27	30	29.5	7		
M32 x 1.5	14-21	34	36	30	8	18.5	4.5
M40 x 1.5	19-27	43	46	33	8	21	4.5
M50 x 1.5	24-35	55	77	38.5	9	25	4.5



Dimensions



Locknut, metric thread



Type	Thread	SW mm	Dimen- sion E mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
169 MS M12	M12 x 1,5	15	16.6	3	100	0.220	2091607
169 MS M16	M16 x 1,5	20	22.1	2.8	100	0.310	2091615
169 MS M20	M20 x 1,5	24	25.6	3	100	0.580	2091623
169 MS M25	M25 x 1,5	30	33.2	3.5	100	0.880	2091631
169 MS M32	M32 x 1,5	35	38.7	4	100	1.120	2091658
169 MS M40	M40 x 1,5	45	49.8	4.5	50	1.920	2091666
169 MS M50	M50 x 1,5	55	60.4	5.5	50	3.070	2091674

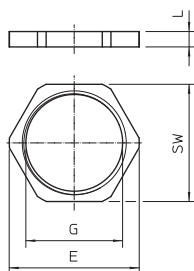
CuZn Brass

N Nickel-plated

Locknuts DIN 46319 with metric thread IEC 423.

* Prices according to DEL notation.

Dimensions



Cable gland, metric thread, silver grey



Type	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC VM12 SGR	M12 x 1,5	50	0.318	2022843
V-TEC VM16 SGR	M16 x 1,5	50	0.638	2022845
V-TEC VM20 SGR	M20 x 1,5	50	0.856	2022847
V-TEC VM25 SGR	M25 x 1,5	25	1.360	2022849
V-TEC VM32 SGR	M32 x 1,5	20	2.230	2022851
V-TEC VM40 SGR	M40 x 1,5	10	3.467	2022853
V-TEC VM50 SGR	M50 x 1,5	5	5.466	2022855

PA Polyamide

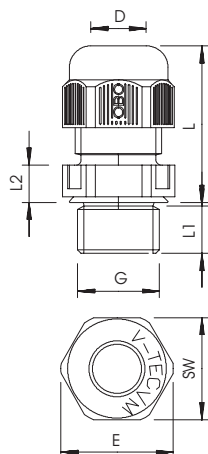
The quickest and most convenient way of providing strain relief and tightness with cable glands on junction boxes and housings is with the tried-and-trusted V-TEC VM cable glands from OBO. With the integrated sealing lip and the special OBO slat technology, protection class IP68 is achieved. Strain relief and tightness have been tested to DIN EN 62444.

The connecting threads of the cable glands are metric or PG and are therefore suitable for universal use. Once screwed in place, the installation is there forever, as the optimum thread adjustment with the right pitch ensures permanent resistance to shaking.

Applications: From private housing with junction boxes up to industrial applications in the distributor cabinet.

Temperature range: -20 °C to +65 °C.

Dimensions



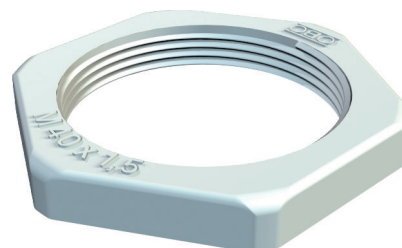
G	D	WAF	E	L min. mm	L max. mm	L1	L2
	mm	mm	mm			mm	mm
M12 x 1.5	3.5-7	15	16.5	18.5	23.5	8	5
M16 x 1.5	4.5-10	20	22	21.5	29	8	5
M20 x 1.5	6-13	24	27	23.5	30.5	10	6
M25 x 1.5	9-17	29	32	26	35	10	6
M32 x 1.5	15-21	36	41	29	40	11	6
M40 x 1.5	16-28	44	50	36	46	11	7
M50 x 1.5	23-35	54	60	43	52	12	8

Cable outlet, plastic locknut

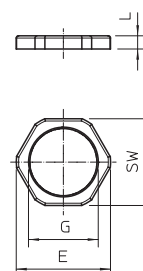
Type	Thread	Colour	SW mm	Dimen- sion E mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
116 M12 SGR PA	M12x1,5	Silver grey	17	19	5	100	0.078	2048752
116 M16 SGR PA	M16x1,5	Silver grey	22	25	5	100	0.160	2048760
116 M20 SGR PA	M20x1,5	Silver grey	26	29	6	100	0.177	2048779
116 M25 SGR PA	M25x1,5	Silver grey	32	36	6.5	100	0.266	2048787
116 M32 SGR PA	M32x1,5	Silver grey	41	46	7	50	0.610	2048795
116 M40 SGR PA	M40x1,5	Silver grey	50	56	7	25	0.466	2048809
116 M50 SGR PA	M50x1,5	Silver grey	60	68	8	25	1.756	2048817

PA Polyamide

Locknut DIN 46319, with metric thread IEC 423.



Dimensions

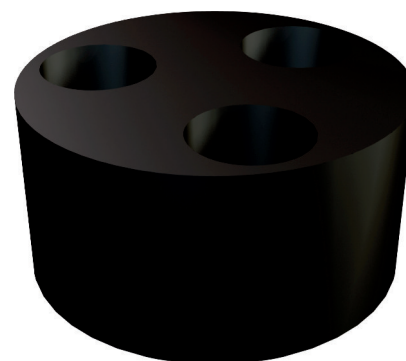


Multiple sealing insert, metric

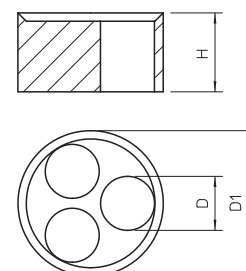
Type	Size mm	Dimen- sion D mm	Dimen- sion H mm	Dimen- sion D1 mm	Number of drill holes	Pack. pcs	Weight kg/100 pcs.	Item No.
107 C VM 20 2x4	M20	4	8.1	15.1	2	50	0.130	2029672
107 C VM 20 4x5	M20	5	8.1	15.1	4	50	0.080	2029675
107 C VM 20 2x6	M20	6	8.1	15.1	2	50	0.100	2029677
107 C VM 25 5x4	M25	4	10	19.8	5	50	0.180	2029679
107 C VM 25 3x6	M25	6	10	19.8	3	50	0.210	2029682
107 C VM 25 2x6	M25	6	10	19.8	2	50	0.260	2029685
107 C VM 25 3x7	M25	7	10	19.8	3	50	0.180	2029688
107 C VM 25 2x8	M25	8	10	19.8	2	50	0.200	2029690
107 C VM 32 2x8	M32	8	13.4	25.1	2	25	0.530	2029693
107 C VM 32 4x8	M32	8	13.4	25.1	4	25	0.400	2029696

NBR-SBR Rubber mixture

Use to insert multiple thin cables in the V-TEC VM cable glands, is replaced with the simple sealing ring of the cable gland.



Dimensions



Ablation coating in a cartridge

Type	Contents ml	Pack. pcs	Weight kg/100 pcs.	Item No.
ASX-K	310	1	50.000	7202310

Intumescent material

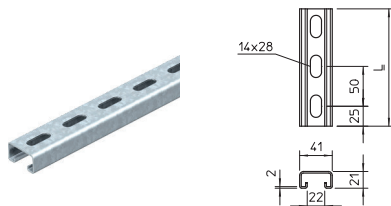
Combined, endothermic and weatherproof coating for internal and external areas. Universal protection coating for cable and cable support structures. Use as direct filler, and as paint when stirred.

Material class DIN 4102 - B2, normally flammable.

In dry, frost-free rooms, the coating can be stored at temperatures from +5 °C to +25 °C for up to 18 months in closed, upright original containers.



MS4121 mounting rail, slot width 22 mm, perforated



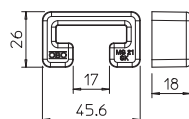
Type	Length mm	Dimension W x H mm	Material thickness mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
MS4121P0200FT	200	41x21	2	200	1	35.100	1122933
MS4121P0400FT	400	41x21	2	400	1	70.000	1122935

St Steel

FT Hot-dip galvanised

Heavy-duty C profile rail for individual installation of support constructions, e.g. for cable trays or as a panel for switchgear cabinets. Can also be used for cable routing, in conjunction with clamp clips with a U foot.

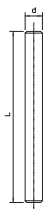
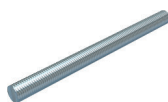
Protective cap MS4121



Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
MS4121 SK	Pastel orange	25	0.650	1122902
PE	Polyethylene			

Protective caps for profile rail, type MS4121.

Threaded rod



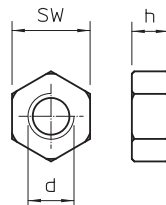
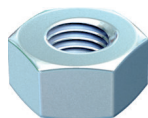
Type	Thread	Dimension d mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TR M10 1M G	M10	10	1000	10	49.000	3141209

St Steel

G Electrogalvanised

Threaded rod to DIN 976.

Hexagonal nut DIN 934



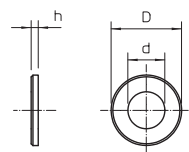
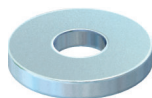
Type	Thread	SW mm	Dimension h mm	Dimension d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
HN M10 G	M10	17	8.4	10	100	1.084	3400107

St Steel

G Electrogalvanised

Hexagonal nut to DIN 934 with metric thread.

Washer ISO 7093



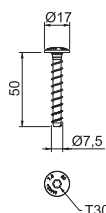
Type	Thread	Dimension d mm	Dimension D mm	Dimension h mm	Pack. pcs	Weight kg/100 pcs.	Item No.
WS M10 D28 G	M10	11	28	2.5	100	1.020	3402223

St Steel

G Electrogalvanised

Washer of large outer diameter for universal use.

Fire protection screw tie



Type	Dimension mm	Bore hole Ø mm	Head Ø mm	Screw system	Pack. pcs	Weight kg/100 pcs.	Item No.
MMS-plus 7.5X50	7,5 x 50	6	17	Torx	100	1.500	3498261

St Steel

G Electrogalvanised

Fire protection bolt tie with large pan head for direct mounting without additional anchors. Drive T30, drill hole 6 mm. Tested anchor according to ETAG 001 - Part 3. Fire resistance class to R120 for concrete and masonry.

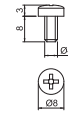
Connector screw

Type	Dimension	Pack.	Weight	Item No.
		pcs	kg/100 pcs.	
BSKM-S4008	M4x8	100	0.160	3498092

St Steel

G Electrogalvanised

Self-tapping screw for the fastening of BSKM fire protection ducts on supports and all lock plates with suspended mounting.



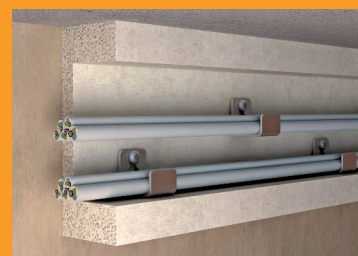
Fire protection duct **PYROLINE® Con D**



Mounted fire protection duct on wall and ceiling as I and E duct.



Flexible duct routing through individually creatable fittings.



Retaining profile and retaining clamp as mounting aid for cable insertion.



Cable fastening for vertical duct mounting with clips.



Closing surface treatment through painting or papering.

The PYROLINE® Con D fire protection duct consists of fibreglass light concrete fire protection plates which are resistant to water and frost. The fire protection plates, which are classed as non-combustible (material class A1), have a compacted surface, which is hard, smooth and wear-resistant. The OBO PYROLINE® Con D is used as an I duct to protect escape and rescue routes against the effects of a possible cable fire. This means that the escape and rescue routes remain free from fire, smoke and heat. As an E duct, PYROLINE® Con D allows the maintenance of electrical functionality of the safety-relevant circuits. The fire protection duct is mounted directly on solid walls and ceilings. Possibly necessary fittings can be created simply and flexibly on-site according to requirements. The fire protection ducts can be painted or papered over, as required.

I90

I120

E30

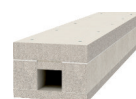
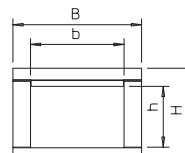
E90

Fire protection duct I120/E90, internal height 50 mm

Type	Dimension h mm	Dimension b mm	Dimension H mm	Dimension B mm	Length mm	Pack. m	Weight kg/100 m	Item No.
BSK 120506	50	60	130	180	1000	1	1,490.000	7215210

Glass-fibre lightweight concrete

Fire protection duct I120/E90, to DIN 4102 part 11 and part 12, including 12 x countersunk head screws and 3 x 1 m sealing strip.

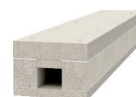
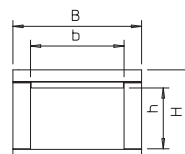


Fire protection duct I120/E90, internal height 105 mm

Type	Dimension h mm	Dimension b mm	Dimension H mm	Dimension B mm	Length mm	Pack. m	Weight kg/100 m	Item No.
BSK 121026	105	260	185	380	1000	1	3,190.000	7215234

Glass-fibre lightweight concrete

Fire protection duct I120/E90, to DIN 4102 part 11 and part 12, including 12 x countersunk head screws and 3 x 1 m sealing strip.



Fire protection duct PYROLINE® Con D - BSK accessories

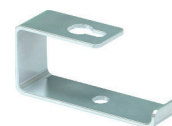
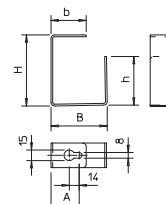
Separating clamp for ceiling mounting

Type	Dimension H mm	Dimension h mm	Dimension B mm	Dimension b mm	Dimension A mm	Pack. pcs	Weight kg/100 pcs	Item No.
BSK-B1026	101	69	130	75	65	25	29.000	7215374

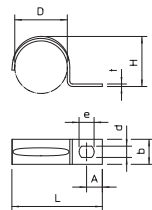
St Steel

FS Strip-galvanised

Separating clamp for BSK fire protection duct, as installation aid for ceiling mounting. Fastening by clamping under the fire protection bolt tie.



Fastening clip 604, light-duty



Type	For Ø mm	Hole size mm	Material thickness mm	Pack. pcs	Weight kg/100 pcs.	Item No.
604 3 G	3	4,5 x 6	0.7	100	0.052	1003038
604 4 G	4	4,5 x 6	0.7	100	0.067	1003046
604 5 G	5	4,5 x 6	0.7	100	0.084	1003054
604 6 G	6	4,5 x 6	0.7	100	0.099	1003062
604 7 G	7	4,5 x 6	0.7	100	0.120	1003070
604 8 G	8	4,5 x 6	0.7	100	0.123	1003089
604 9 G	9	4,5 x 6	0.7	100	0.139	1003097
604 10 G	10	4,5 x 6	0.7	100	0.150	1003100
604 11 G	11	4,5 x 6	1	100	0.270	1003119
604 12 G	12	4,5 x 6	0.7	100	0.240	1003127
604 13 G	13	4,5 x 6	1	100	0.280	1003135
604 16 G	16	4,5 x 6	1	100	0.348	1003178
604 19 G	19	4,5 x 6	1	100	0.411	1003194
604 20 G	20	4,5 x 6	1	100	0.431	1003208
604 21 G	21	4,5 x 6	1	100	0.447	1003216
604 23 G	23	4,5 x 6	1	100	0.490	1003232
604 25 G	25	4,5 x 6	1	100	0.900	1003259
604 28 G	28	4,5 x 6	1	100	0.874	1003283
604 32 G	32	4,5 x 6	1	100	1.462	1003321
604 35 G	35	5,5 x 7	1.5	100	1.355	1003356
604 37 G	37	5,5 x 7	1.5	100	1.567	1003372
604 40 G	40	5,5 x 7	1.5	100	1.860	1003402
604 47 G	47	5,5 x 7	1.5	50	2.484	1003461

Sl Steel

G Electrogalvanised

Single-lobe fastening clip for cables and pipes.

* Sizes 3 and 4 are not suitable for nail device

* Sizes 3 to 21 are not suitable for bolt-firing tool

Dimensions

D mm	L mm	H mm	b mm	t mm	d mm	e mm	A mm
3	12	2.4	7	0.7	4.5	6	4
4	14	3.3	7	0.7	4.5	6	4
5	16.5	4.5	7	0.7	4.5	6	5
6	17.5	5.2	8	0.7	4.5	6	5
7	19.5	6.5	8	0.7	4.5	6	5
8	21	7	8	0.7	4.5	6	5.5
9	21.5	8	8	0.7	4.5	6	5.75
10	22	9	8	0.7	4.5	6	5
11	24	10	10	1	4.5	6	5.5
12	27	11	10	0.7	4.5	6	6.5
13	27	11.5	10	1	4.5	6	6
16	31	14.5	10	1	4.5	6	6.5
19	33	17	10	1	4.5	6	6.5
20	35	18	10	1	4.5	6	6.3
21	36	19	10	1	4.5	6	6.3
23	39	21.5	10	1	4.5	6	7
25	41.3	23	15	1	4.5	6	7
28	45	24.8	15	1	4.5	6	7
32	48.8	30	15	1.5	5.5	7	8
35	54	30	14	1.5	5.5	7	8.75
37	56	34	14	1.5	5.5	7	7.5
40	63	38	14	1.5	5.5	7	10.5
47	69	43.8	14	1.5	5.5	7	10

Bolt for cable fastening



Type	Dimension	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKP-S5016	5x16	100	0.240	3498096
BSKP-S5020	5x20	100	0.260	3498098

Sl Steel

GTP Electrogalvanised, transparently passivated

Bolt with special milled ribs for universal fastening of cable clips, connector elements and separating retainers in fibre glass light-weight concrete of the BSK fire protection ducts.

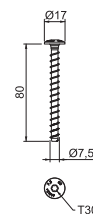
Type	Dimension mm	Bore hole Ø mm	Head Ø mm	Screw system	Pack. pcs	Weight kg/100 pcs.	Item No.
MMS-plus 7.5X80	7,5 x 80	6	13.2	Torx	50	1.600	3498272

S Steel

G Electrogalvanised

Fire protection bolt tie with pan head for direct mounting without anchors. Drive T40, drill hole 6 mm. Tested anchor according to ETAG 001 - Part 3. Fire resistance class to R120 for concrete and masonry.

Bolt tie



Mortar

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
BSK-M	1	350.000	7215500

Special mortar

Fire protection duct mortar, dried ready-to-use mortar in a bucket for filling joints and small cracks when mounting the fire protection ducts BSK and BSKH.

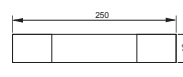


Identification plate for function maintenance

Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-E DE	German	10	0.600	7205423
KS-E EN	English	10	0.600	7205432
KS-E NL	Dutch	10	0.600	7205405

PVC Polyvinylchloride

Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.



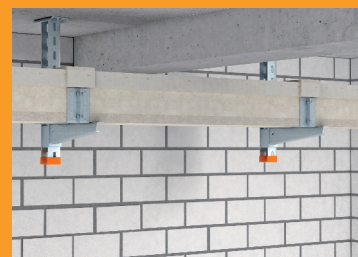
Fire protection duct **PYROLINE® Con S**



I90

E30

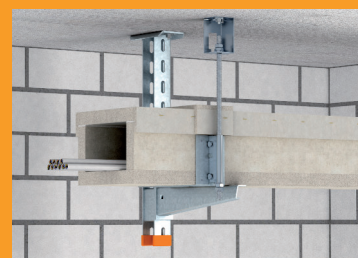
The PYROLINE® Con S like the PYROLINE® Con D, fire protection duct consists of fibreglass light concrete fire protection plates which are resistant to water and frost. The OBO PYROLINE® Con S is used as an I duct to protect escape and rescue routes against a possible cable fire. This means that the escape and rescue routes remain free from fire, smoke and heat. As an E duct, it allows maintains the electrical function of the safety-relevant circuits. The fire protection duct can be installed on wall brackets or on one of the support systems suspended from the ceiling. Mounted connectors permit quick connection of the duct sections in situ, while loosely placed covers permit quick inspection and reassignment. The duct allows elegant avoidance of objects from other areas such as heating, ventilation and sanitary applications.



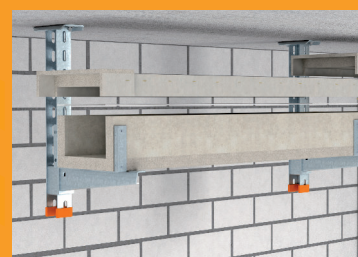
Suspended ceiling mounting as I duct.



Wall mounting as I duct.



Mounting as E duct with additional threaded rod locking.



Secure joint connection by screwing on the pre-mounted armatures.



Loose-fitting lid for quick inspection and retro-assignment.

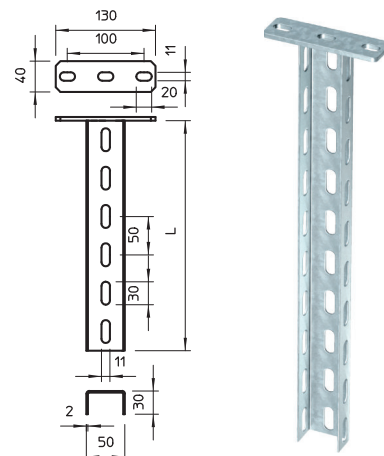
US 3 support

Type	Length mm	Material thickness mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
US 3 K 20 FT	200	2	200	1	50.500	6342351
US 3 K 30 FT	300	2	300	1	64.400	6342353
US 3 K 40 FT	400	2	400	1	78.300	6342355
US 3 K 50 FT	500	2	500	1	92.300	6342357
US 3 K 60 FT	600	2	600	1	106.200	6342359
US 3 K 70 FT	700	2	700	1	120.200	6342362
US 3 K 80 FT	800	2	800	1	134.100	6342364
US 3 K 90 FT	900	2	900	1	147.800	6342366
US 3 K 100 FT	1000	2	1000	1	162.000	6342368
US 3 K 110 FT	1100	2	1100	1	175.900	6342370
US 3 K 120 FT	1200	2	1200	1	189.900	6342372

St Steel

FT Hot-dip galvanised

Suspended support (U profile) of dimensions 50 x 30 mm with welded head plate.



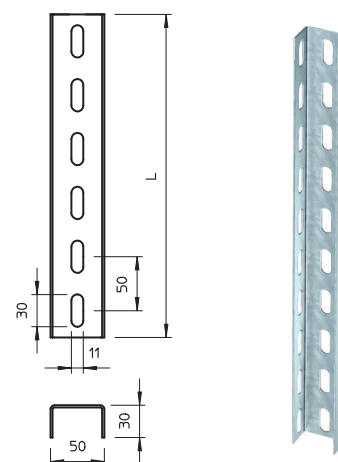
US 3 support

Type	Length mm	Material thickness mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
US 3 20 FS	200	2	200	1	27.000	6342302
US 3 30 FS	300	2	300	1	40.000	6342304
US 3 40 FS	400	2	400	1	53.000	6342306

St Steel

FS Strip-galvanised

U support in fixed lengths. Dimensions 30 x 50 mm.

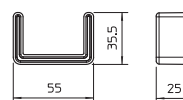


End cap

Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
US 3 KS OR	Pastel orange	20	1.068	6338458

PE Polyethylene

End cap to cover the ends of US 3 supports.



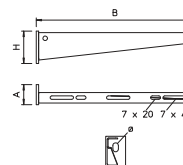
Wall and support bracket AW 15

Type	Width mm	Dimen- sion H mm	Dimen- sion A mm	Dimen- sion B mm	Hole Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
AW 15 16 FT	160	55	40	160	11	30	20.000	6420664
AW 15 21 FT	210	60	40	210	11	30	24.000	6420680
AW 15 31 FT	310	65	40	310	11	30	39.900	6420710
AW 15 41 FT	410	70	40	410	11	30	54.000	6420745

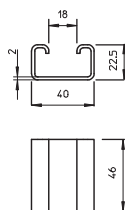
St Steel

FT Hot-dip galvanised

Light-duty wall and support bracket with welded head plate.



Spacer



Type

DSK 25 FT

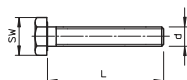
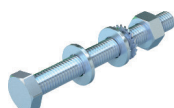
St Steel

FT Hot-dip galvanised

Spacer for use in U 3 supports.

Pack.	Weight		
pcs	kg/100 pcs.	Item No.	
20	7.500	6416446	

Hexagonal bolt with nut and washer



Type

SKS 10x80 F

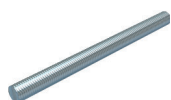
St Steel

F Hot-dip galvanised

Hexagonal bolt for universal fixing of structure components.

Type	Dimension mm	Dimension L mm	Dimension d mm	SW mm	Resistance class	Pack. pcs	Weight kg/100 pcs.	Item No.
SKS 10x80 F	M10 x 80	80	10	17	8.8	20	7.700	6418250

Threaded rod



Type

TR M10 1M G

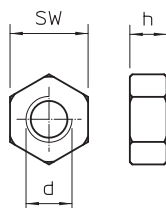
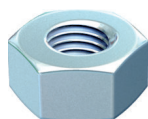
St Steel

G Electrogalvanised

Threaded rod to DIN 976.

Type	Thread	Dimension d mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TR M10 1M G	M10	10	1000	10	49.000	3141209

Hexagonal nut DIN 934



Type

HN M10 G

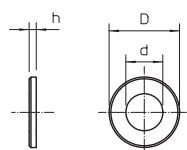
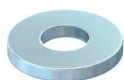
St Steel

G Electrogalvanised

Hexagonal nut to DIN 934 with metric thread.

Type	Thread	SW mm	Dimension h mm	Dimension d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
HN M10 G	M10	17	8.4	10	100	1.084	3400107

Washer



Type

WS M10 D20 G

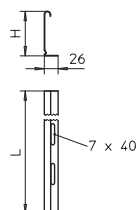
St Steel

G Electrogalvanised

Washer according to DIN 125, shape A, for universal use.

Type	Thread	Dimension d mm	Dimension D mm	Dimension h mm	Pack. pcs	Weight kg/100 pcs.	Item No.
WS M10 D20 G	M10	10.5	20	2	100	0.408	3402096

Barrier strip 45



Type

TSG 45 FS

St Steel

FS Strip-galvanised

Separating retainer for separation of cables of different voltages or functions.

Type	Dimension H mm	Plate thickness mm	Dimension L mm	Pack. m	Weight kg/100 m	Item No.
TSG 45 FS	45	0.75	3000	3	46.700	6062033

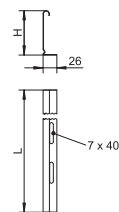
Barrier strip 85

Type	Dimension H mm	Plate thickness mm	Dimension L mm	Pack. m	Weight kg/100 m	Item No.
TSG 85 FS	85	0.75	3000	3	70.300	6062114

St Steel

FS Strip-galvanised

Separating retainer for separation of cables of different voltages or functions.



Bolt for separating retainer and fittings

Type	Dimension	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKH-S6030	6x30	200	0.276	3498100

St Steel

GTP Electro-galvanised, transparently passivated

Bolt with special milled ribs for universal fastening of cable clips, connector elements and separating retainers in fibre glass light-weight concrete of the BSK fire protection ducts.

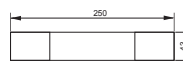


Identification plate for function maintenance

Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-E DE	German	10	0.600	7205423
KS-E EN	English	10	0.600	7205432
KS-E NL	Dutch	10	0.600	7205405

PVC Polyvinylchloride

Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.



Fire protection duct **PYROLINE® Fibre Optics**



E30

E60

E90

Communication systems must continue to function even if there is a fire. Increasingly often, they are equipped with fibre optic cables, in order to process large data volumes securely. In industrial systems too, optical data transmission systems are used for process control. In the case of a fire, the processes must be ended in a controlled fashion, in order to prevent damage to people and the environment. For this reason, the fibre optic cables must be routed with special protection in the event of fire.

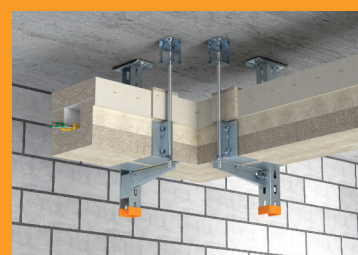
Fibre optic cables cannot be evaluated according to the testing standard DIN 4102 Part 12, as the basic criteria only relate to copper conductors. The PYROLINE® Fibre Optics fire protection duct protects the fibre optic cables against an external fire for a period of 90 minutes. The achieved maintenance of electrical functionality class is "E 90".



Direct wall and ceiling mounting.



Wall mounting on brackets and additional threaded rod lock.



Suspended ceiling mounting with additional threaded rod lock.



Retaining profile as mounting aid for insertion of the fibre optic cables.

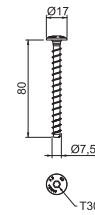


With direct mounting, flexible duct routing through individually creatable fittings.

Type	Dimension mm	Bore hole Ø mm	Head Ø mm	Screw system	Pack. pcs	Weight kg/100 pcs.	Item No.
MMS-plus 7.5X80	7,5 x 80	6	13.2	Torx	50	1.600	3498272
St Steel							
G Electrogalvanised							

Fire protection bolt tie with pan head for direct mounting without anchors. Drive T40, drill hole 6 mm. Tested anchor according to ETAG 001 - Part 3. Fire resistance class to R120 for concrete and masonry.

Bolt tie



Mortar

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
BSK-M	1	350.000	7215500

Special mortar

Fire protection duct mortar, dried ready-to-use mortar in a bucket for filling joints and small cracks when mounting the fire protection ducts BSK and BSKH.

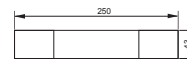


Identification plate for function maintenance

Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-E DE	German	10	0.600	7205423
KS-E EN	English	10	0.600	7205432
KS-E NL	Dutch	10	0.600	7205405

PVC Polyvinylchloride

Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.



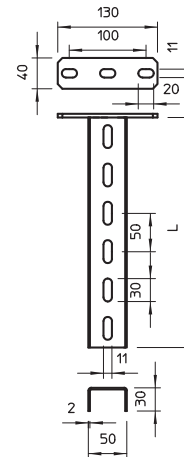
Type	Length mm	Material thickness mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
US 3 K 20 FT	200	2	200	1	50.500	6342351
US 3 K 30 FT	300	2	300	1	64.400	6342353
US 3 K 40 FT	400	2	400	1	78.300	6342355
US 3 K 50 FT	500	2	500	1	92.300	6342357
US 3 K 60 FT	600	2	600	1	106.200	6342359
US 3 K 70 FT	700	2	700	1	120.200	6342362
US 3 K 80 FT	800	2	800	1	134.100	6342364
US 3 K 90 FT	900	2	900	1	147.800	6342366
US 3 K 100 FT	1000	2	1000	1	162.000	6342368
US 3 K 110 FT	1100	2	1100	1	175.900	6342370
US 3 K 120 FT	1200	2	1200	1	189.900	6342372

St Steel

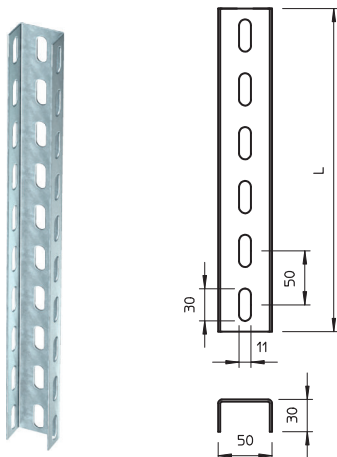
FT Hot-dip galvanised

Suspended support (U profile) of dimensions 50 x 30 mm with welded head plate.

US 3 support



US 3 support



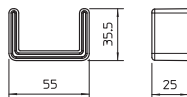
Type	Length mm	Material thickness mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
US 3 20 FS	200	2	200	1	27.000	6342302
US 3 30 FS	300	2	300	1	40.000	6342304
US 3 40 FS	400	2	400	1	53.000	6342306

St Steel

FS Strip-galvanised

U support in fixed lengths. Dimensions 30 x 50 mm.

End cap

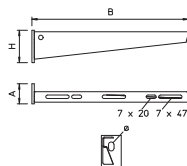


Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
US 3 KS OR	Pastel orange	20	1.068	6338458

PE Polyethylene

End cap to cover the ends of US 3 supports.

Wall and support bracket AW 15



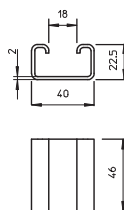
Type	Width mm	Dimen- sion H mm	Dimen- sion A mm	Dimen- sion B mm	Hole Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
AW 15 21 FT	210	60	40	210	11	30	24.000	6420680

St Steel

FT Hot-dip galvanised

Light-duty wall and support bracket with welded head plate.

Spacer



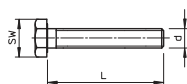
Type	Pack. pcs	Weight kg/100 pcs.	Item No.
DSK 25 FT	20	7.500	6416446

St Steel

FT Hot-dip galvanised

Spacer for use in U 3 supports.

Hexagonal bolt with nut and washer



Type	Dimension mm	Dimen- sion L mm	Dimen- sion d mm	SW mm	Resistance class	Pack. pcs	Weight kg/100 pcs.	Item No.
SKS 10x80 F	M10 x 80	80	10	17	8.8	20	7.700	6418250

St Steel

F Hot-dip galvanised

Hexagonal bolt for universal fixing of structure components.

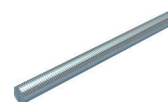
Threaded rod

Type	Thread	Dimension d mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TR M10 1M G	M10	10	1000	10	49.000	3141209

St Steel

G Electrogalvanised

Threaded rod to DIN 976.



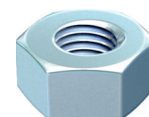
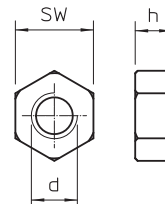
Hexagonal nut DIN 934

Type	Thread	SW mm	Dimension h mm	Dimension d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
HN M10 G	M10	17	8.4	10	100	1.084	3400107

St Steel

G Electrogalvanised

Hexagonal nut to DIN 934 with metric thread.



Fire protection duct **PYROLINE® Sun PV**



E30

E60

E90

The PYROLINE® Sun PV fire protection duct is the ideal fire protection duct for fireproof routing of photovoltaic DC cables. If there is a fire, its non-conductive surface ensures protection against dangerous contact voltages. In addition, the duct fulfils the requirements as an I duct according to DIN 4102 Part 11 for cable installations in emergency and escape routes. In addition, it meets the requirements of the VDE application rule AR 2100-712. The fire protection duct can be installed directly on the wall or the ceiling. The appropriate connection armatures mean that suspended mounting is also possible. The duct is made of water and frost-resistant glass fibre lightweight concrete fire protection plates (non-combustible, material class A1), meaning that it is suitable for external areas.



Direct wall and ceiling mounting.



Flexible duct routing through individually creatable fittings.



Can be painted or papered over, to permit discreet integration in the building.



Suspended mounting on the connector elements.



Contact protection begins directly with the converter.

Bolt for cable fastening

Type	Dimension	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKP-S5020	5x20	100	0.260	3498098

St Steel

GTP Electrogalvanised, transparently passivated

Bolt with special milled ribs for universal fastening of cable clips, connector elements and separating retainers in fibre glass light-weight concrete of the BSK fire protection ducts.



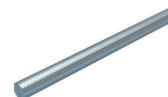
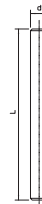
Threaded rod

Type	Thread	Dimension d mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TR M10 1M G	M10	10	1000	10	49.000	3141209

St Steel

G Electrogalvanised

Threaded rod to DIN 976.



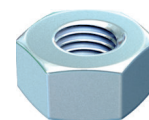
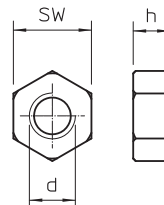
Hexagonal nut DIN 934

Type	Thread	SW mm	Dimension h mm	Dimension d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
HN M10 G	M10	17	8.4	10	100	1.084	3400107

St Steel

G Electrogalvanised

Hexagonal nut to DIN 934 with metric thread.



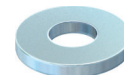
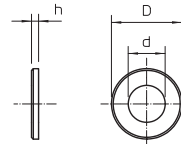
Washer

Type	Thread	Dimension d mm	Dimension D mm	Dimension h mm	Pack. pcs	Weight kg/100 pcs.	Item No.
WS M10 D20 G	M10	10.5	20	2	100	0.408	3402096

St Steel

G Electrogalvanised

Washer according to DIN 125, shape A, for universal use.



Fastening clip 604, light-duty

Type	For Ø mm	Hole size mm	Material thickness mm	Pack. pcs	Weight kg/100 pcs.	Item No.
604 4 G	4	4,5 x 6	0.7	100	0.067	1003046
604 5 G	5	4,5 x 6	0.7	100	0.084	1003054
604 6 G	6	4,5 x 6	0.7	100	0.099	1003062
604 7 G	7	4,5 x 6	0.7	100	0.120	1003070
604 8 G	8	4,5 x 6	0.7	100	0.123	1003089
604 9 G	9	4,5 x 6	0.7	100	0.139	1003097
604 10 G	10	4,5 x 6	0.7	100	0.150	1003100

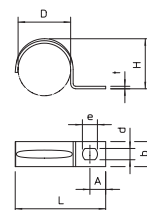
St Steel

G Electrogalvanised

Single-lobe fastening clip for cables and pipes.

* Sizes 3 and 4 are not suitable for nail device

* Sizes 3 to 21 are not suitable for bolt-firing tool



Dimensions

D mm	L mm	H mm	b mm	t mm	d mm	e mm	A mm
4	14	3.3	7	0.7	4.5	6	4
5	16.5	4.5	7	0.7	4.5	6	5
6	17.5	5.2	8	0.7	4.5	6	5
7	19.5	6.5	8	0.7	4.5	6	5
8	21	7	8	0.7	4.5	6	5.5
9	21.5	8	8	0.7	4.5	6	5.75
10	22	9	8	0.7	4.5	6	5



Bolt for cable fastening



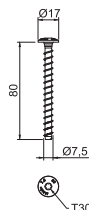
Type	Dimension	Pack. Weight		Item No.
		pcs	kg/100 pcs.	
BSKP-S5016	5x16	100	0.240	3498096

St Steel

GTP Electrogalvanised, transparently passivated

Bolt with special milled ribs for universal fastening of cable clips, connector elements and separating retainers in fibre glass light-weight concrete of the BSK fire protection ducts.

Bolt tie



Type	Dimension mm	Bore		Screw system	Pack. Weight		Item No.
		hole Ø mm	Head Ø mm		pcs	kg/100 pcs.	
MMS-plus 7.5X80	7,5 x 80	6	13.2	Torx	50	1.600	3498272

St Steel

G Electrogalvanised

Fire protection bolt tie with pan head for direct mounting without anchors. Drive T40, drill hole 6 mm. Tested anchor according to ETAG 001 - Part 3. Fire resistance class to R120 for concrete and masonry.

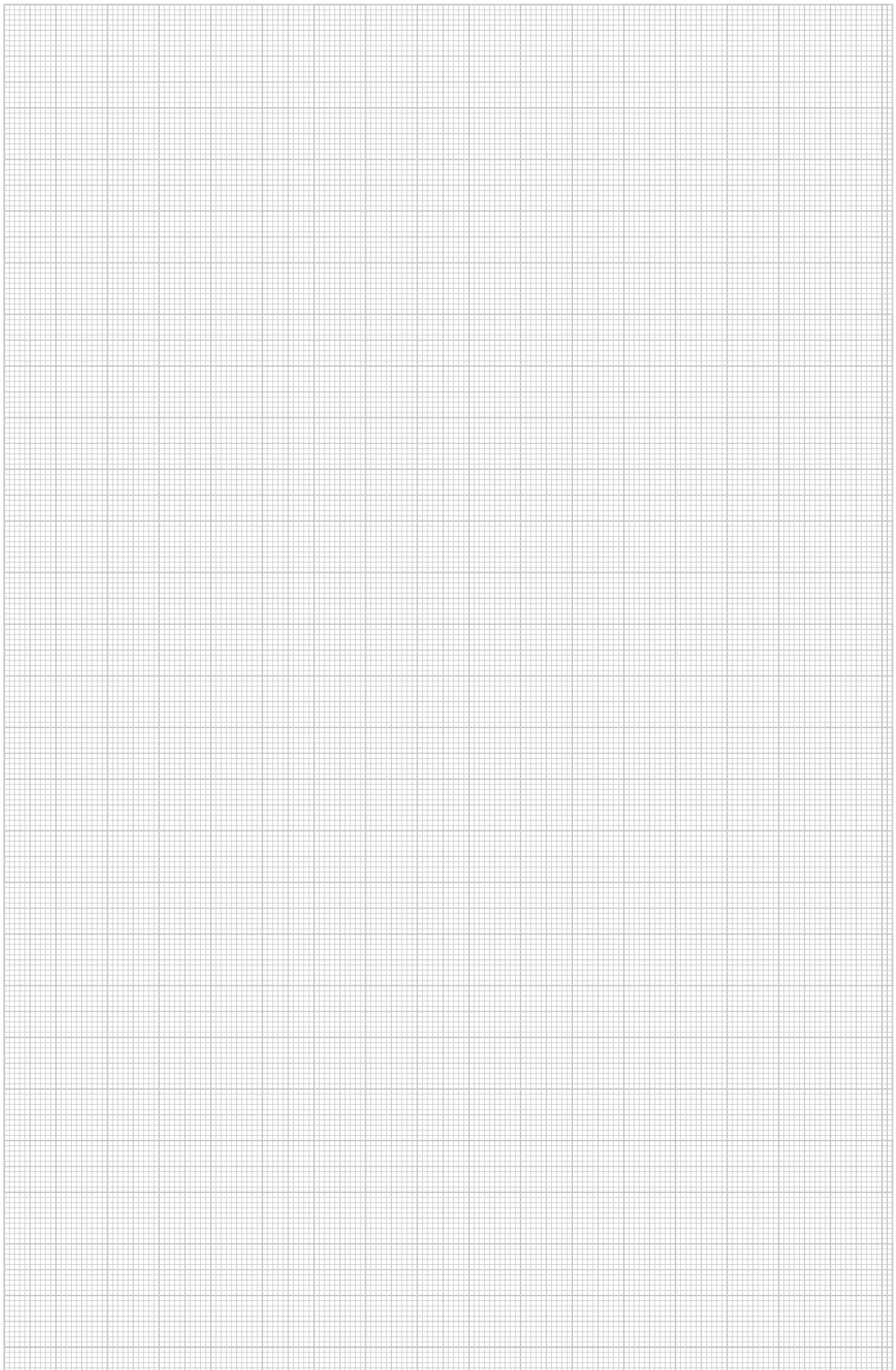
Mortar

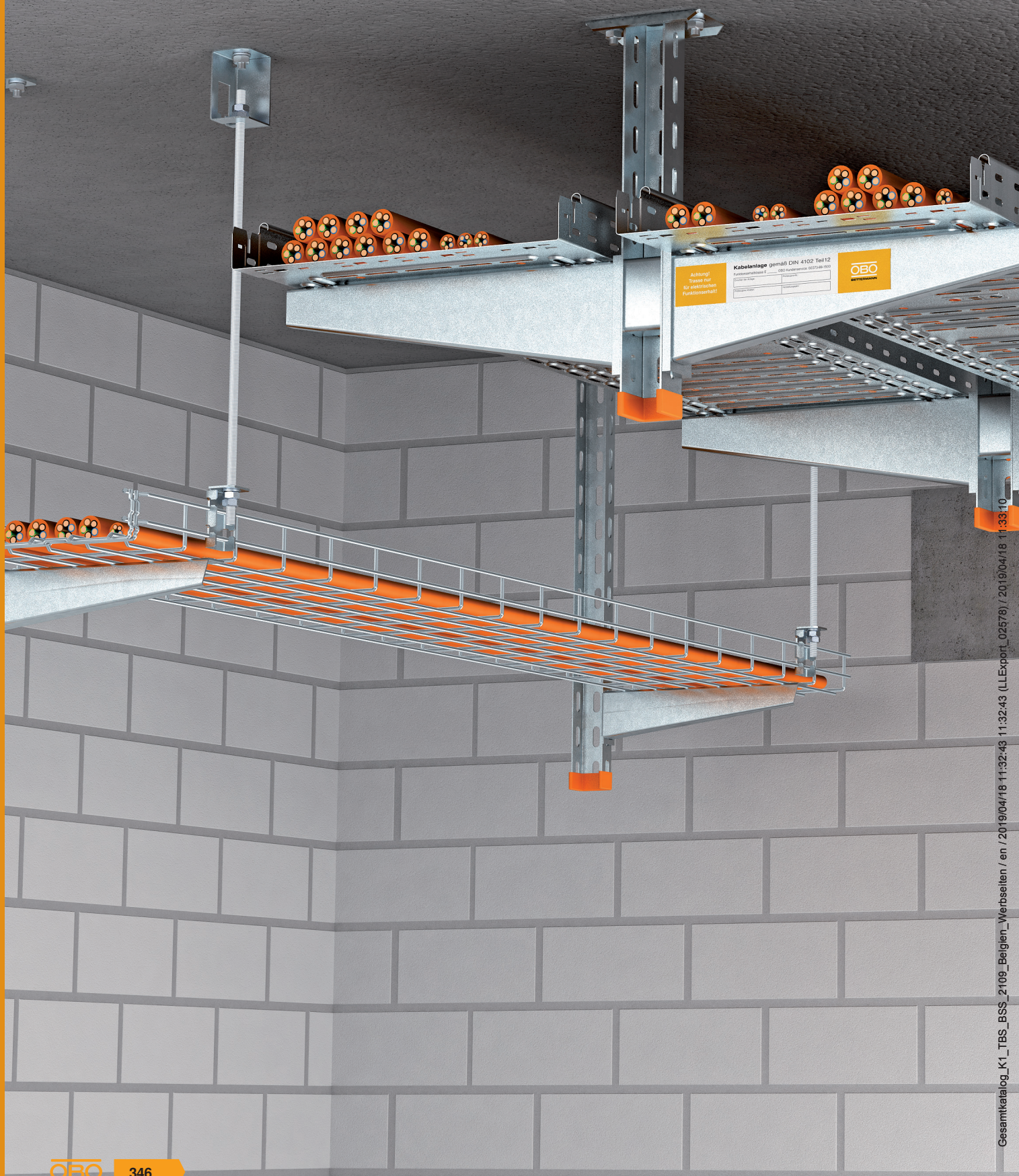


Type	Pack. Weight		Item No.
	pcs	kg/100 pcs.	
BSK-M	1	350.000	7215500

Special mortar

Fire protection duct mortar, dried ready-to-use mortar in a bucket for filling joints and small cracks when mounting the fire protection ducts BSK and BSKH.





Function maintenance Cable-specific support constructions

Cable tray systems RKS-Magic®



S30

S60

S90

The RKS-Magic® cable tray has been tested as a cable-specific support construction for the maintenance of electrical functionality according to DIN 4102 Part 12 and approved for the maintenance of electrical functionality classes E 30 to E 90. Threaded rod locking is not required at the tip of the bracket. This saves not just material but also considerably simplifies and speeds up the installation of cables. The screwless connection system allows interconnection of the RKS-Magic® cable trays without tools and in a particularly quick and economic manner. To ensure the maintenance of electrical functionality, only the locking lugs in the base need to be bent after the trays have been connected. The double material thickness in the joint area and the beading in the base mean that the cable tray has a very high load capacity. The installation of fittings in the section route is permitted, as is the mounting of separating retainers.



Ceiling mounting on both sides with max. three layers (2+1).



One-sided arrangement with max. two layers.



Wall mounting.



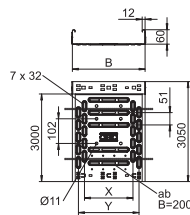
Creation of a straight connector through interconnection of the cable trays.



Bending the locking straps in the base.



Cable tray RKS-Magic® 60



Type	Width mm	Plate thickness mm	Dimen- sion B mm	Dimen- sion x mm	Dimen- sion y mm	Pack. m	Weight kg/100 m	Item No.
RKSM 610 FS	100	0.75	100	—	50	3	132.131	6047611
RKSM 620 FS	200	0.75	200	100	150	3	183.000	6047638
RKSM 630 FS	300	0.75	300	200	250	3	235.080	6047654
RKSM 640 FS	400	0.90	400	300	350	3	331.340	6047689
RKSM 610 FT	100	1.00	100	—	50	3	197.409	6047612
RKSM 620 FT	200	1.00	200	100	150	3	251.111	6047639
RKSM 630 FT	300	1.00	300	200	250	3	356.295	6047655
RKSM 640 FT	400	1.00	400	300	350	3	419.350	6047690

St Steel

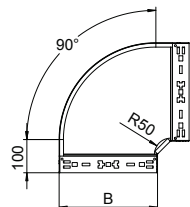
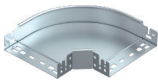
FS Strip-galvanised **FT** Hot-dip galvanised

Cable tray with integrated quick fastening system. The usable length of the cable tray is 3,000 mm.

The cable tray possesses continuous side perforations of 7 x 20 mm for the installation of additional connection and mounting components.

The perforation for direct threaded rod suspension has a diameter of 11 mm.

90° Magic bend



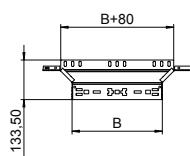
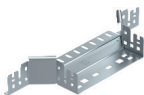
Type	Width mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
RBM 90 610 FS	100	100	1	65.700	6041130
RBM 90 620 FS	200	200	1	121.900	6041134
RBM 90 630 FS	300	300	1	192.200	6041136
RBM 90 640 FS	400	400	1	274.700	6041138
RBM 90 610 FT	100	100	1	70.700	6041150
RBM 90 620 FT	200	200	1	131.300	6041154
RBM 90 630 FT	300	300	1	207.500	6041156
RBM 90 640 FT	400	400	1	296.300	6041158

St Steel

FS Strip-galvanised **FT** Hot-dip galvanised

90° bend with quick connector system. For all cable tray types of 60 mm side height.

Magic add-on tee



Type	Width mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
RAAM 610 FS	100	100	1	37.700	6041230
RAAM 620 FS	200	200	1	50.100	6041234
RAAM 630 FS	300	300	1	62.900	6041236
RAAM 640 FS	400	400	1	75.700	6041238
RAAM 610 FT	100	100	1	40.800	6041250
RAAM 620 FT	200	200	1	54.200	6041254
RAAM 630 FT	300	300	1	68.000	6041257
RAAM 640 FT	400	400	1	81.800	6041259

St Steel

FS Strip-galvanised **FT** Hot-dip galvanised

Magic add-on tee with quick connector system. For all cable tray types of 60 mm side height.

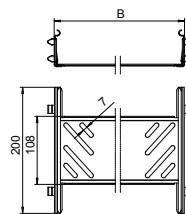
Magic straight connector set FS

Type	Width mm	Side height mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
KTSMV 610 FS	100	60	100	1	30.500	6068914
KTSMV 620 FS	200	60	200	1	37.200	6068918
KTSMV 630 FS	300	60	300	1	44.000	6068920
KTSMV 640 FS	400	60	400	1	50.700	6068922
KTSMV 610 DD	100	60	100	1	30.500	6068936
KTSMV 620 DD	200	60	200	1	37.200	6068940
KTSMV 630 DD	300	60	300	1	44.000	6068942
KTSMV 640 DD	400	60	400	1	50.700	6068944

St Steel

FS Strip-galvanised DD Strip galvanised zinc/aluminium, Double Dip

Cable tray connector with quick fastening for the screwless connection of perforated cable trays with a side height of 60 mm.



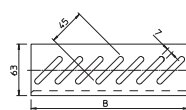
Bottom end plate

Type	Width mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
BEB 100 FS	100	100	100	5.400	7083106
BEB 200 FS	200	200	100	11.400	7083203
BEB 300 FS	300	300	100	17.200	7083300
BEB 400 FS	400	400	100	23.100	7083408

St Steel

FS Strip-galvanised

Bottom end plate for floor reinforcement at the ends of the cable tray and as cable protection.

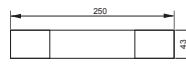


Identification plate for function maintenance

Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-E DE	German	10	0.600	7205423
KS-E EN	English	10	0.600	7205432
KS-E NL	Dutch	10	0.600	7205405

PVC Polyvinylchloride

Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.



Function maintenance Cable-specific support constructions

GR-Magic® mesh cable trays

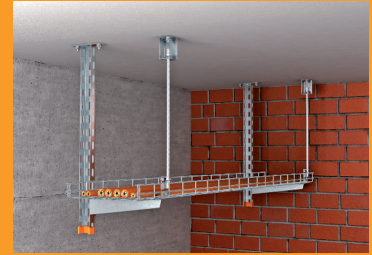


S30

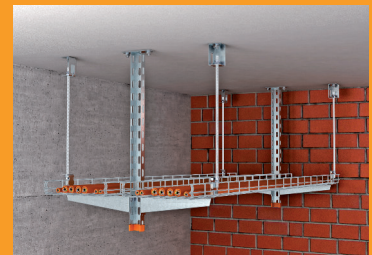
S60

S90

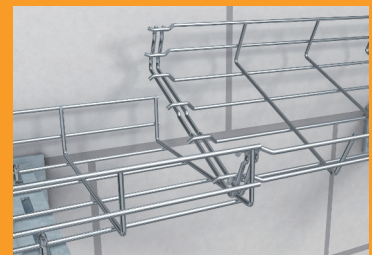
The GR-Magic® mesh cable tray has been tested as a cable-specific support construction for the maintenance of electrical functionality according to DIN 4102 Part 12 and approved for the maintenance of electrical functionality classes E 30 to E 90. The threaded rod lock is mounted directly on the tray rail, using the ABG connection component. This is just attached to the side lengthwise wires of the mesh cable tray. When the threaded rod has been mounted, the component is secured against unintentional release. The screwless connection system of the GR-Magic® mesh cable trays ensures toolless, and thus particularly rapid and economic, mounting.



Ceiling mounting with brackets mounted on one side.



Ceiling mounting with brackets arranged on both sides.



Interconnecting of two stock lengths of the mesh cable tray.



Finished screwless joint connection.



Screwless mesh cable tray fastening on the bracket.

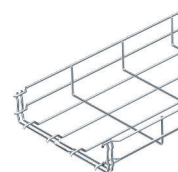
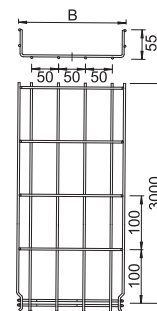
Mesh cable tray GRM 55

Type	Width mm	Wire Ø mm	Dimension B mm	Pack. m	Weight kg/100 m	Item No.
GRM 55 200 4.8 G	200	4.8	200	3	151.000	6001447
GRM 55 300 G	300	4.8	300	3	194.900	6001448
GRM 55 400 G	400	4.8	400	3	236.700	6001450

St Steel

G Electrogalvanised

Mesh cable tray with shaped connector of side height 55 mm.

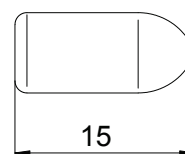


End cap

Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
GR KS 4.8 OR	Pure orange	500	0.030	6003754

PVC Polyvinylchloride

End cap to cover cut wire ends of mesh cable trays.



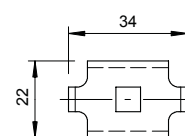
Clamping piece

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
GKS 34 G	20	2.000	6016855

St Steel

G Electrogalvanised

Clamp for fixing mesh cable trays to wall or support brackets.



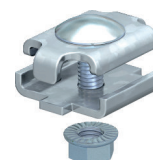
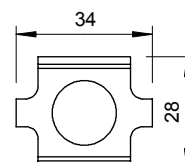
Connector

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
GSV 34 G	20	3.000	6016596

St Steel

G Electrogalvanised

Screwed version of joint connector for mesh cable trays.



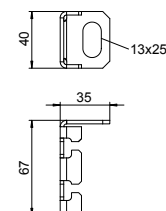
Connection component

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
ABG FT	20	8.500	6015345

St Steel

FT Hot-dip galvanised

Seat for threaded rod on mesh cable tray.



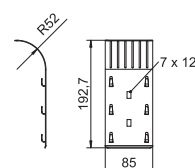
Drop-out plate

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
KAB GR FS	10	14.100	6220139

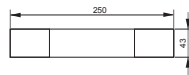
St Steel

FS Strip-galvanised

Drop-out plate for mesh cable trays.



Identification plate for function maintenance



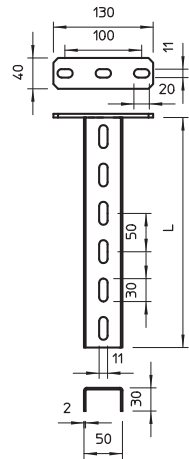
Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-E DE	German	10	0.600	7205423
KS-E EN	English	10	0.600	7205432
KS-E NL	Dutch	10	0.600	7205405

PVC Polyvinylchloride

Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.

Mounting systems

US 3 support



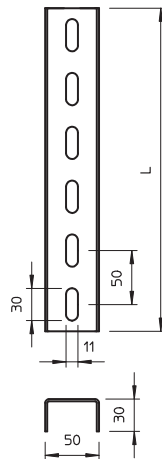
Type	Length mm	Material thickness mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
US 3 K 20 FT	200	2	200	1	50.500	6342351
US 3 K 30 FT	300	2	300	1	64.400	6342353
US 3 K 40 FT	400	2	400	1	78.300	6342355
US 3 K 50 FT	500	2	500	1	92.300	6342357
US 3 K 60 FT	600	2	600	1	106.200	6342359
US 3 K 70 FT	700	2	700	1	120.200	6342362
US 3 K 80 FT	800	2	800	1	134.100	6342364
US 3 K 90 FT	900	2	900	1	147.800	6342366
US 3 K 100 FT	1000	2	1000	1	162.000	6342368
US 3 K 110 FT	1100	2	1100	1	175.900	6342370
US 3 K 120 FT	1200	2	1200	1	189.900	6342372

St Steel

FT Hot-dip galvanised

Suspended support (U profile) of dimensions 50 x 30 mm with welded head plate.

US 3 support



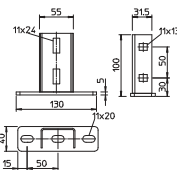
Type	Length mm	Material thickness mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
US 3 20 FS	200	2	200	1	27.000	6342302
US 3 30 FS	300	2	300	1	40.000	6342304
US 3 40 FS	400	2	400	1	53.000	6342306
US 3 50 FS	500	2	500	1	67.000	6342308
US 3 60 FS	600	2	600	1	80.000	6342310
US 3 70 FS	700	2	700	1	93.000	6342312
US 3 80 FS	800	2	800	1	107.000	6342314
US 3 90 FS	900	2	900	1	120.000	6342316
US 3 100 FS	1000	2	1000	1	133.000	6342318

St Steel

FS Strip-galvanised

U support in fixed lengths. Dimensions 30 x 50 mm.

Head plate



Type	Pack. pcs	Weight kg/100 pcs.	Item No.
KU 3 FT	10	42.300	6348874

St Steel

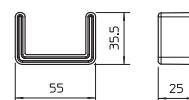
FT Hot-dip galvanised

Head plate for mounting on US 3 supports.

Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
US 3 KS OR	Pastel orange	20	1.068	6338458

PE Polyethylene

End cap to cover the ends of US 3 supports.



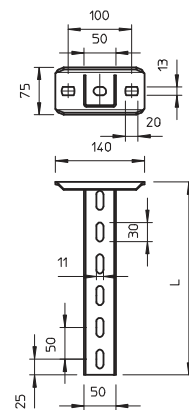
End cap

Type	Length mm	Material thickness mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
US 5 K 20 FT	200	2.5	200	1	85.000	6341527
US 5 K 30 FT	300	2.5	300	1	110.000	6341535
US 5 K 40 FT	400	2.5	400	1	136.000	6341543
US 5 K 50 FT	500	2.5	500	1	161.000	6341551
US 5 K 60 FT	600	2.5	600	1	185.000	6341578
US 5 K 70 FT	700	2.5	700	1	210.000	6341586
US 5 K 80 FT	800	2.5	800	1	236.000	6341594
US 5 K 90 FT	900	2.5	900	1	261.000	6341608
US 5 K 100 FT	1000	2.5	1000	1	286.000	6341616
US 5 K 110 FT	1100	2.5	1100	1	311.000	6341624
US 5 K 120 FT	1200	2.5	1200	1	337.000	6341632

St Steel

FT Hot-dip galvanised

U support of dimensions 50 x 50 mm with welded head plate.



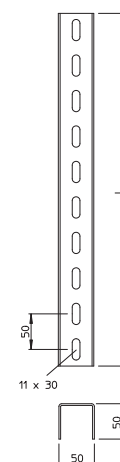
US 5 support

Type	Length mm	Material thickness mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
US 5 20 FT	200	2.5	200	1	51.000	6340881
US 5 30 FT	300	2.5	300	1	79.000	6340903
US 5 40 FT	400	2.5	400	1	106.000	6340911
US 5 50 FT	500	2.5	500	1	133.000	6340938
US 5 60 FT	600	2.5	600	1	160.000	6340946
US 5 70 FT	700	2.5	700	1	175.000	6340950
US 5 80 FT	800	2.5	800	1	200.000	6340954
US 5 90 FT	900	2.5	900	1	227.000	6340958
US 5 100 FT	1000	2.5	1000	1	265.000	6340962
US 5 150 FT	1500	2.5	1500	1	395.000	6340966
US 5 200 FT	2000	2.5	2000	1	506.000	6340970

St Steel

FT Hot-dip galvanised

U support in fixed lengths. Dimensions 50 x 50 mm.



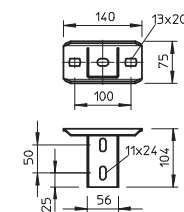
US 5 support

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
KUS 5 FT	10	61.000	6348904

St Steel

FT Hot-dip galvanised

Head plate for installation in US 5 support.



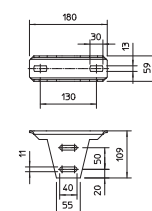
Head plate US 5

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
KU 5 V FT	4	82.000	6348920

St Steel

FT Hot-dip galvanised

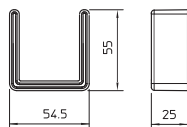
Variable head plate for installation on US 5 support.



Head plate, variable FT



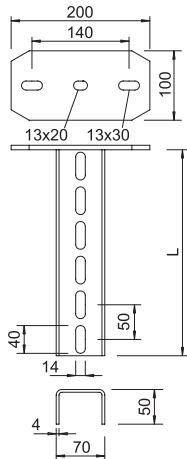
End cap



Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
US 5 KS OR	Pastel orange	20	1.300	6338462
PE Polyethylene				

End cap to cover the ends of US 5 supports.

US 7 support



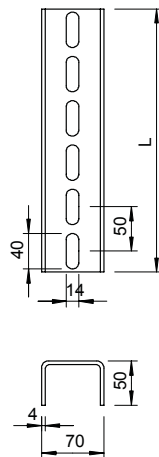
Type	Length mm	Material thickness mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
US 7 K 20 FT	200	4	200	1	177.000	6339018
US 7 K 30 FT	300	4	300	1	218.000	6339034
US 7 K 40 FT	400	4	400	1	261.000	6339050
US 7 K 50 FT	500	4	500	1	302.000	6339077
US 7 K 60 FT	600	4	600	1	344.000	6339093
US 7 K 70 FT	700	4	700	1	387.000	6339115
US 7 K 80 FT	800	4	800	1	418.000	6339131
US 7 K 90 FT	900	4	900	1	470.000	6339166
US 7 K 100 FT	1000	4	1000	1	499.000	6339182
US 7 K 110 FT	1100	4	1100	1	550.000	6339190
US 7 K 120 FT	1200	4	1200	1	591.000	6339204
US 7 K 130 FT	1300	4	1300	1	636.000	6339212
US 7 K 140 FT	1400	4	1400	1	675.000	6339220
US 7 K 150 FT	1500	4	1500	1	718.000	6339239
US 7 K 160 FT	1600	4	1600	1	760.000	6339247
US 7 K 170 FT	1700	4	1700	1	802.000	6339255
US 7 K 180 FT	1800	4	1800	1	843.000	6339263
US 7 K 190 FT	1900	4	1900	1	884.000	6339271
US 7 K 200 FT	2000	4	2000	1	927.000	6339298

St Steel

FT Hot-dip galvanised

Suspended support (U profile) of dimensions 70 x 50 mm with welded head plate.

US 7 support



Type	Length mm	Material thickness mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
US 7 20 FT	200	4	200	1	81.000	6340016
US 7 30 FT	300	4	300	1	121.000	6340032
US 7 40 FT	400	4	400	1	166.000	6340059
US 7 50 FT	500	4	500	1	208.000	6340075
US 7 60 FT	600	4	600	1	249.000	6340091
US 7 70 FT	700	4	700	1	290.000	6340113
US 7 80 FT	800	4	800	1	323.000	6340148
US 7 90 FT	900	4	900	1	370.000	6340164
US 7 100 FT	1000	4	1000	1	416.000	6340180
US 7 110 FT	1100	4	1100	1	457.000	6340199
US 7 120 FT	1200	4	1200	1	484.000	6340202
US 7 130 FT	1300	4	1300	1	540.000	6340210
US 7 140 FT	1400	4	1400	1	580.000	6340229
US 7 150 FT	1500	4	1500	1	620.000	6340237
US 7 160 FT	1600	4	1600	1	660.000	6340245
US 7 180 FT	1800	4	1800	1	750.000	6340261
US 7 190 FT	1900	4	1900	1	790.000	6340288
US 7 200 FT	2000	4	2000	1	803.700	6340296

St Steel

FT Hot-dip galvanised

U support in fixed lengths. Dimensions 70 x 50 mm.

Head plate for US 7 support

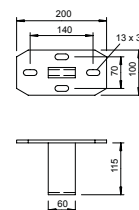
Type

KU 7 FT
St Steel

FT Hot-dip galvanised

Light-duty head plate for mounting on US 7 support.

Pack.	Weight	Item No.
pcs	kg/100 pcs.	
10	148.000	6349102



Head plate, variable

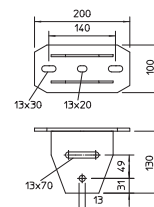
Type

KU 7 VQP FT
St Steel

FT Hot-dip galvanised

Variable head plate for installation on US 7 support.

Pack.	Weight	Item No.
pcs	kg/100 pcs.	
10	181.600	6349153



End cap

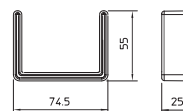
Type

US 7 KS OR Pastel orange

PE Polyethylene

End cap to cover the ends of US 7 supports.

Pack.	Weight	Item No.
pcs	kg/100 pcs.	
20	1.806	6338497



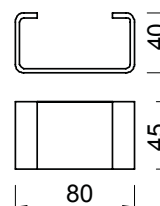
Type

DSK 45 FT
St Steel

FT Hot-dip galvanised

Spacer for use in U 5 support and in the head plate, type KU 7 VQP.

Pack.	Weight	Item No.
pcs	kg/100 pcs.	
20	18.000	6416500



Spacer

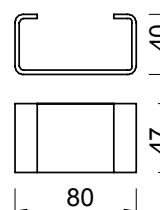
Type

DSK 47 FT
St Steel

FT Hot-dip galvanised

Spacer for use in head plate, type KU 5 V.

Pack.	Weight	Item No.
pcs	kg/100 pcs.	
20	19.000	6416504



Spacer

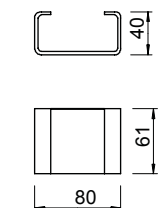
Type

DSK 61 FT
St Steel

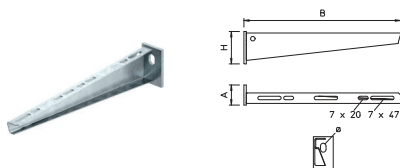
FT Hot-dip galvanised

Spacer for use in U 7 supports.

Pack.	Weight	Item No.
pcs	kg/100 pcs.	
20	25.000	6416519



Wall and support bracket AW 15



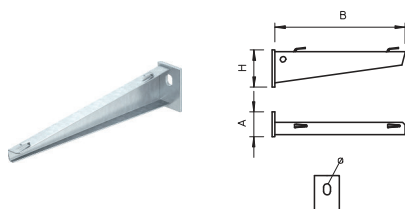
Type	Width mm	Dimen- sion H mm	Dimen- sion A mm	Dimen- sion B mm	Hole Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
AW 15 21 FT	210	60	40	210	11	30	24.000	6420680
AW 15 31 FT	310	65	40	310	11	30	39.900	6420710
AW 15 41 FT	410	70	40	410	11	30	54.000	6420745

St Steel

FT Hot-dip galvanised

Light-duty wall and support bracket with welded head plate.

Wall and support bracket AWG 15



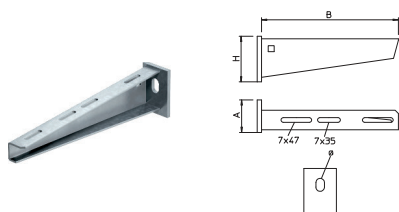
Type	Width mm	Dimen- sion H mm	Dimen- sion A mm	Dimen- sion B mm	Hole Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
AW G 15 21 FT	210	60	40	210	11	30	26.000	6420608
AW G 15 31 FT	310	65	40	310	11	30	35.000	6420610
AW G 15 41 FT	410	70	40	410	11	30	56.000	6420612

St Steel

FT Hot-dip galvanised

Light-duty wall and support bracket with welded head plate for screwless mesh cable tray fastening.

Wall and support bracket AW 30



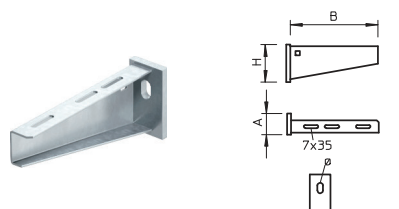
Type	Width mm	Dimen- sion H mm	Dimen- sion A mm	Dimen- sion B mm	Hole Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
AW 30 11 FT	110	60	50	110	11	1	22.000	6419704

St Steel

FT Hot-dip galvanised

Medium-duty wall and support bracket with welded head plate.

Wall and support bracket AW 55



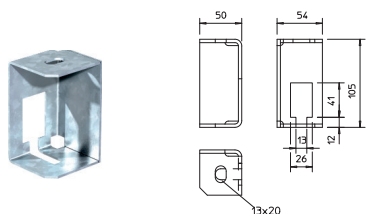
Type	Width mm	Dimen- sion B mm	Dimen- sion H mm	Dimen- sion A mm	Hole Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
AW 55 21 FT	210	210	90	50	13.5	1	75.700	6418554
AW 55 31 FT	310	310	110	50	13.5	1	123.000	6418570
AW 55 41 FT	410	410	130	50	13.5	1	167.000	6418597

St Steel

FT Hot-dip galvanised

Heavy-duty wall and support bracket with welded head plate.

Fire protection clamp



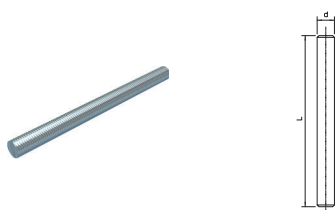
Type	Pack. pcs	Weight kg/100 pcs.	Item No.
BSB FT	20	42.400	6418198

St Steel

FT Hot-dip galvanised

Fire protection clamp for ceiling fastening of the threaded rod lock for routing types with cable ladders and cable trays for the maintenance of electrical function to DIN 4102 Part 12.

Threaded rod



Type	Thread	Dimen- sion d mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TR M10 1M G	M10	10	1000	10	49.000	3141209
TR M12 1M G	M12	12	1000	10	62.000	3141306

St Steel

G Electro galvanised

Threaded rod to DIN 976.

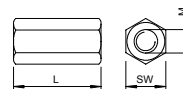
Connection sleeve

Type	Thread	Dimension L mm	SW mm	Pack. pcs	Weight kg/100 pcs.	Item No.
CSTR M10 G	M10	30	17	50	4.150	6410103
CSTR M12 G	M12	40	19	25	7.000	6410111

St Steel

G Electrogalvanised

Connection sleeve with continuous internal thread.



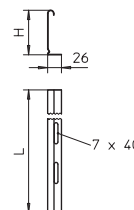
Barrier strip 45

Type	Dimension H mm	Plate thickness mm	Dimension L mm	Pack. m	Weight kg/100 m	Item No.
TSG 45 FS	45	0.75	3000	3	46.700	6062033

St Steel

FS Strip-galvanised

Separating retainer for separation of cables of different voltages or functions.



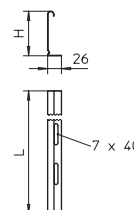
Barrier strip 60

Type	Dimension H mm	Plate thickness mm	Dimension L mm	Pack. m	Weight kg/100 m	Item No.
TSG 60 FS	60	0.75	3000	3	55.700	6062068

St Steel

FS Strip-galvanised

Separating retainer for separation of cables of different voltages or functions.

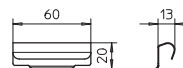


Separating retainer connector

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
TSGV A2	10	0.923	6067970

V2A Stainless steel, A2

Separating retainer connector for screwless connection of the TSG separating retainer in all side heights.

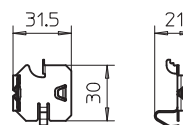


Hold-down clamp for separating retainer fastening in RKSM

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
KS KR A2	30	0.537	6062280

V2A Stainless steel, A2

Clamping piece for screwless fastening of separating retainer in the cable tray types RKSM, MKS and SKS.

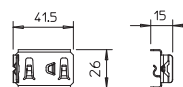


Hold-down clamp for separating retainer fastening

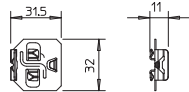
Type	Pack. pcs	Weight kg/100 pcs.	Item No.
KS GR A2	30	0.830	6062282

V2A Stainless steel, A2

Hold-down clamp for fastening separating retainer in mesh cable trays.



Hold-down clamp for separating retainer fastening VA



Type

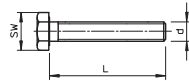
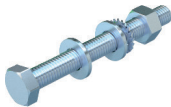
KS KL A2

V2A Stainless steel, A2

Hold-down clamp for screwless fastening of separating retainer in cable ladders.

Pack.	Weight		
pcs	kg/100 pcs.	Item No.	
30	0.512	6062284	

Hexagonal bolt with nut and washer



Type

SKS 10x80 F

SKS 10x90 F

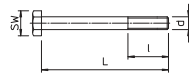
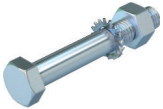
St Steel

F Hot-dip galvanised

Hexagonal bolt for universal fixing of structure components.

Type	Dimension mm	Dimension L mm	Dimension d mm	SW mm	Resistance class	Pack. pcs	Weight kg/100 pcs.	Item No.
SKS 10x80 F	M10 x 80	80	10	17	8.8	20	7.700	6418250
SKS 10x90 F	M10 x 90	90	10	17	8.8	20	7.800	6418252

Hexagonal bolt with hexagonal nut, washer and tooth lock washer



Type

SKS 12x80 F

SKS 12x100 F

SKS 12x110 F

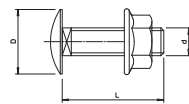
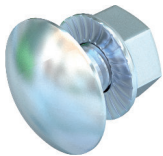
St Steel

F Hot-dip galvanised

Hexagonal bolt with hexagonal nut, washer and tooth lock washer.

Type	Dimension mm	Dimension L mm	Dimension d mm	Dimension d1 mm	SW mm	Resistance class	Pack. pcs	Weight kg/100 pcs.	Item No.
SKS 12x80 F	M12 x 80	80	30	12	19	8.8	20	11.800	6418287
SKS 12x100 F	M12 x 100	100	30	12	19	8.8	20	12.600	6418295
SKS 12x110 F	M12 x 110	110	30	12	19	8.8	20	14.500	6418317

Truss-head bolt with flange nut



Type

FRSB 6x12 F

FRSB 6x16 F

FRSB 6x20 F

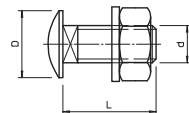
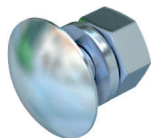
St Steel

F Hot-dip galvanised

Truss-head bolt with square neck including flange nut.

Type	Dimension mm	Dimension L mm	Dimension D mm	Dimension d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
FRSB 6x12 F	M 6 x 12	12	13.5	6	100	0.990	6406122
FRSB 6x16 F	M 6 x 16	16	13.5	6	100	0.800	6406157
FRSB 6x20 F	M 6 x 20	20	13.5	6	100	1.000	6406203

Truss-head bolt with nut and washer



Type

FRS 10x25 F

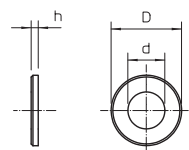
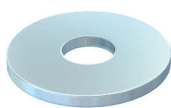
St Steel

F Hot-dip galvanised

Truss-head bolt with square neck. With washer and hexagonal nut.

Type	Dimension mm	Dimension L mm	Dimension D mm	Dimension d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
FRS 10x25 F	M 10 x 25	25	24	10	50	4.500	6407528

Large washer



Type

DIN440 11 F

DIN440 14 F

St Steel

F Hot-dip galvanised

Washer of particularly large outer diameter.

Type	Dimension D mm	Dimension d mm	Dimension h mm	Pack. pcs	Weight kg/100 pcs.	Item No.
DIN440 11 F	34	11	3	100	1.985	6408729
DIN440 14 F	44	13.5	4	50	4.736	6408737

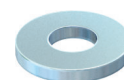
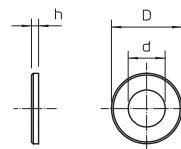
Washer

Type	Thread	Dimension d mm	Dimension D mm	Dimension h mm	Pack. pcs	Weight kg/100 pcs.	Item No.
WS M10 D20 G	M10	10.5	20	2	100	0.408	3402096
WS M12 D24 G	M12	13	24	2.5	100	0.627	3402126

St Steel

G Electrogalvanised

Washer according to DIN 125, shape A, for universal use.



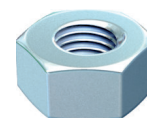
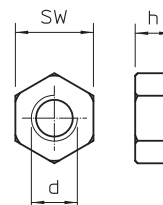
Hexagonal nut DIN 934

Type	Thread	SW mm	Dimension h mm	Dimension d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
HN M10 G	M10	17	8.4	10	100	1.084	3400107
HN M12 G	M12	19	10.8	12	100	1.730	3400123

St Steel

G Electrogalvanised

Hexagonal nut to DIN 934 with metric thread.



Function maintenance Cable-specific support constructions

Cable trays, RKS-Magic® VA



Single-layer ceiling mounting with suspension clamp.



Mounting under sloping ceiling with individually adapted suspension clamp.



Two-layer ceiling mounting with suspension clamp and intermediate clamp.



Two-layer ceiling mounting with suspension clamp and extension.



Fastening of the cable tray with truss-head bolts.

S30

S60

S90

The RKS-Magic® cable tray has been tested as a cable-specific support construction for the maintenance of electrical functionality according to DIN 4102 Part 12 and approved for the maintenance of electrical functionality classes E 30 to E 90. Threaded rod locking is not required at the tip of the bracket. This saves not just material but also considerably simplifies and speeds up the installation of cables. The screwless connection system allows interconnection of the RKS-Magic® cable trays without tools and in a particularly quick and economic manner. To ensure the maintenance of electrical functionality, only the locking lugs in the base need to be bent after the trays have been connected. The double material thickness in the joint area and the beading in the base mean that the cable tray has a very high load capacity. The installation of fittings in the section route is permitted, as is the mounting of separating retainers.

Cable tray RKS-Magic® 60

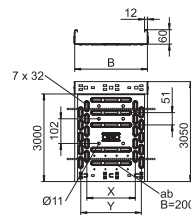
Type	Width mm	Plate thickness mm	Dimen- sion B mm	Dimen- sion x mm	Dimen- sion y mm	Pack. m	Weight kg/100 m	Item No.
RKSM 610 A2	100	0.75	100	—	50	3	132.130	6047613
RKSM 620 A2	200	0.75	200	100	150	3	184.533	6047640
RKSM 630 A2	300	0.75	300	200	250	3	237.700	6047656
RKSM 610 A4	100	0.75	100	—	50	3	132.130	6047614
RKSM 620 A4	200	0.75	200	100	150	3	184.533	6047641
RKSM 630 A4	300	0.75	300	200	250	3	237.700	6047657

V2A Stainless steel, A2 V4A Stainless steel, A4

Cable tray with integrated quick fastening system. The usable length of the cable tray is 3,000 mm.

The cable tray possesses continuous side perforations of 7 x 20 mm for the installation of additional connection and mounting components.

The perforation for direct threaded rod suspension has a diameter of 11 mm.

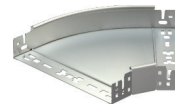
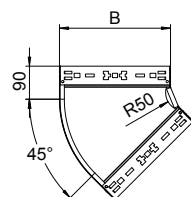


45° Magic bend

Type	Width mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
RBM 45 610 A2	100	100	1	50.400	6041080
RBM 45 620 A2	200	200	1	86.000	6041084
RBM 45 630 A2	300	300	1	127.700	6041086

V2A Stainless steel, A2

45° bend with quick connector system. For all cable tray types of 60 mm side height.

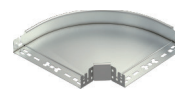
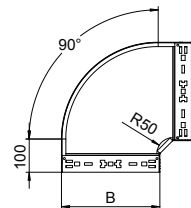


90° Magic bend

Type	Width mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
RBM 90 610 A2	100	100	1	65.700	6041180
RBM 90 620 A2	200	200	1	121.900	6041184
RBM 90 630 A2	300	300	1	192.200	6041186
RBM 90 610 A4	100	100	1	65.700	6041200
RBM 90 620 A4	200	200	1	121.900	6041204
RBM 90 630 A4	300	300	1	192.200	6041206

V2A Stainless steel, A2 V4A Stainless steel, A4

90° bend with quick connector system. For all cable tray types of 60 mm side height.

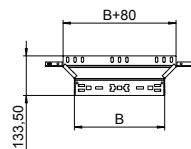


Magic add-on tee

Type	Width mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
RAAM 610 A2	100	100	1	37.700	6041270
RAAM 620 A2	200	200	1	50.100	6041275
RAAM 630 A2	300	300	1	62.900	6041277
RAAM 610 A4	100	100	1	37.700	6041290
RAAM 620 A4	200	200	1	50.100	6041294
RAAM 630 A4	300	300	1	62.900	6041296

V2A Stainless steel, A2 V4A Stainless steel, A4

Add-on tee with quick connector system. For all cable tray types of 60 mm side height.

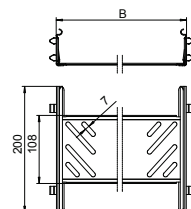


Magic straight connector set

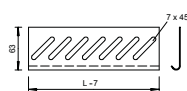
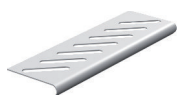
Type	Width mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
KTSMV 610 A2	100	100	1	30.500	6068958
KTSMV 620 A2	200	200	1	37.200	6068962
KTSMV 630 A2	300	300	1	44.000	6068964

V2A Stainless steel, A2

Cable tray connector with quick fastening for the screwless connection of perforated cable trays with a side height of 60 mm.



Bottom end plate

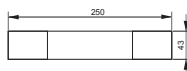


Type	Dimension		Pack. pcs	Weight kg/100 pcs.	Item No.
	Width mm	Height B mm			
BEB 100 A2	100	100	100	5.400	7084013
BEB 200 A2	200	200	100	11.400	7084048
BEB 300 A2	300	300	100	17.200	7084064

V2A Stainless steel, A2

For base reinforcement at the ends of the tray and as cable protection.

Identification plate for function maintenance



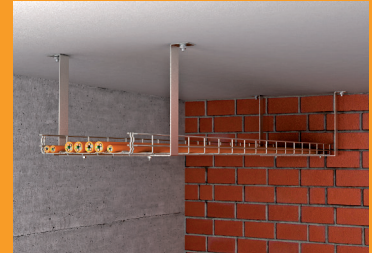
Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-E DE	German	10	0.600	7205423
KS-E EN	English	10	0.600	7205432
KS-E NL	Dutch	10	0.600	7205405

PVC Polyvinylchloride

Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.

Function maintenance Cable-specific support constructions

GR-Magic® mesh cable trays VA



Single-layer ceiling mounting with suspension clamp.



Mounting under sloping ceiling with individually adapted suspension clamp.



Two-layer ceiling mounting with suspension clamp and intermediate clamp.



Two-layer ceiling mounting with suspension clamp and extension.



Fastening of the mesh cable tray with clamping piece and truss-head bolts.

S30

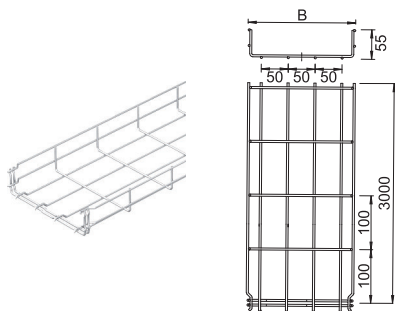
S60

S90

The GR-Magic® mesh cable tray, made from rustproof steel, has been tested as a cable-specific support structure for the maintenance of electrical functionality according to DIN 4102 Part 12 and approved for the maintenance of electrical functionality classes E 30 to E 90. The rustproof steel version permits mounting in areas with more aggressive ambient conditions. The design of the AHB-T suspension clamp means that it can be mounted on straight, slanting or curved ceilings, thus allowing simple, space-saving installation of the mesh cable tray. The benefits of the screwless connection systems of the GR-Magic® mesh cable trays also apply to this routing type. This makes mounting of mesh cable trays, for example in the installation of long sections in increased corrosion protection requirements, an economically viable routing variant. With this system, the mounting of separating retainers and lids is permitted.



Mesh cable tray GR-Magic® 55



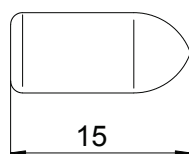
Type	Width mm	Wire Ø mm	Dimension B mm	Pack. m	Weight kg/100 m	Item No.
GRM 55 300 A2	300	4.8	300	3	191.100	6001078
GRM 55 300 A4	300	4.8	300	3	191.100	6001093

V2A Stainless steel, A2 V4A Stainless steel, A4

GB Stained

Mesh cable tray with shaped connector of side height 55 mm.

End cap

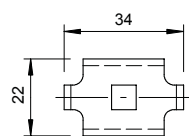


Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
GR KS 4.8 OR	Pure orange	500	0.030	6003754

PVC Polyvinylchloride

End cap to cover cut wire ends of mesh cable trays.

Clamping piece

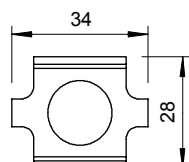


Type	Pack. pcs	Weight kg/100 pcs.	Item No.
GKS 34 A2	20	2.000	6016839
GKS 34 A4	10	2.000	6016859

V2A Stainless steel, A2 V4A Stainless steel, A4

Hold-down clamp for fixing mesh cable trays to wall or support brackets.

Joint connector

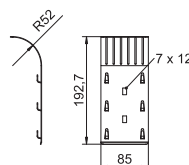


Type	Pack. pcs	Weight kg/100 pcs.	Item No.
GSV 34 A2	20	3.000	6016642
GSV 34 A4	20	3.000	6016648

V2A Stainless steel, A2 V4A Stainless steel, A4

Screwed version of joint connector for mesh cable trays.

Drop-out plate

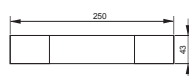


Type	Pack. pcs	Weight kg/100 pcs.	Item No.
KAB GR A2	10	14.100	6220145

V2A Stainless steel, A2

Drop-out plate for mesh cable trays.

Identification plate for function maintenance



Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-E DE	German	10	0.600	7205423
KS-E EN	English	10	0.600	7205432
KS-E NL	Dutch	10	0.600	7205405

PVC Polyvinylchloride

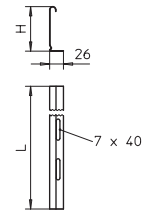
Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.

Barrier strip 45

Type	Dimension H mm	Plate thickness mm	Dimension L mm	Pack. m	Weight kg/100 m	Item No.
TSG 45 A2	45	0.75	3000	3	47.000	6062025
TSG 45 A4	45	0.75	3000	3	48.000	6062028

V2A Stainless steel, A2 V4A Stainless steel, A4

Separating retainer for separation of cables of different voltages or functions.

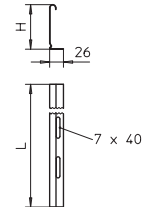


Barrier strip 60

Type	Dimension H mm	Plate thickness mm	Dimension L mm	Pack. m	Weight kg/100 m	Item No.
TSG 60 A2	60	0.75	3000	3	55.000	6062084
TSG 60 A4	60	0.75	3000	3	56.670	6062086

V2A Stainless steel, A2 V4A Stainless steel, A4

Separating retainer for separation of cables of different voltages or functions.

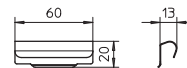


Separating retainer connector

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
TSGV A2	10	0.923	6067970

V2A Stainless steel, A2

Separating retainer connector for screwless connection of the TSG separating retainer in all side heights.

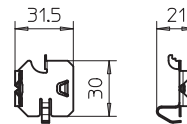


Hold-down clamp for separating retainer fastening in RKSM

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
KS KR A2	30	0.537	6062280

V2A Stainless steel, A2

Clamping piece for screwless fastening of separating retainer in the cable tray types RKSM, MKS and SKS.

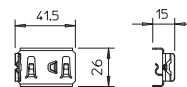


Hold-down clamp for separating retainer fastening

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
KS GR A2	30	0.830	6062282

V2A Stainless steel, A2

Hold-down clamp for fastening separating retainer in mesh cable trays.

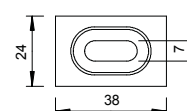


Hold-down clamp

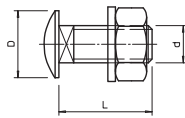
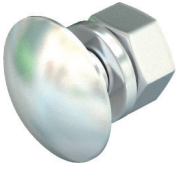
Type	Pack. pcs	Weight kg/100 pcs.	Item No.
GKT 38 A2	20	2.200	6017045
GKT 38 A4	10	2.200	6017092

V2A Stainless steel, A2 V4A Stainless steel, A4

Clamp for fastening barrier strip in mesh cable trays.



Truss-head bolt with nut and washer

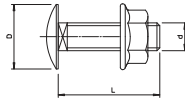
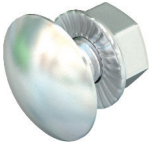


Type	Dimension mm	Dimen- sion L mm	Dimen- sion D mm	Dimen- sion d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
FRS 6x12 A2	M 6 x 12	12	13.5	6	100	0.760	6406521
FRS 6x16 A2	M 6 x 16	15	13.5	6	100	0.900	6406556

V2A Stainless steel, A2

Truss-head bolt with square neck including washer and hexagonal nut.

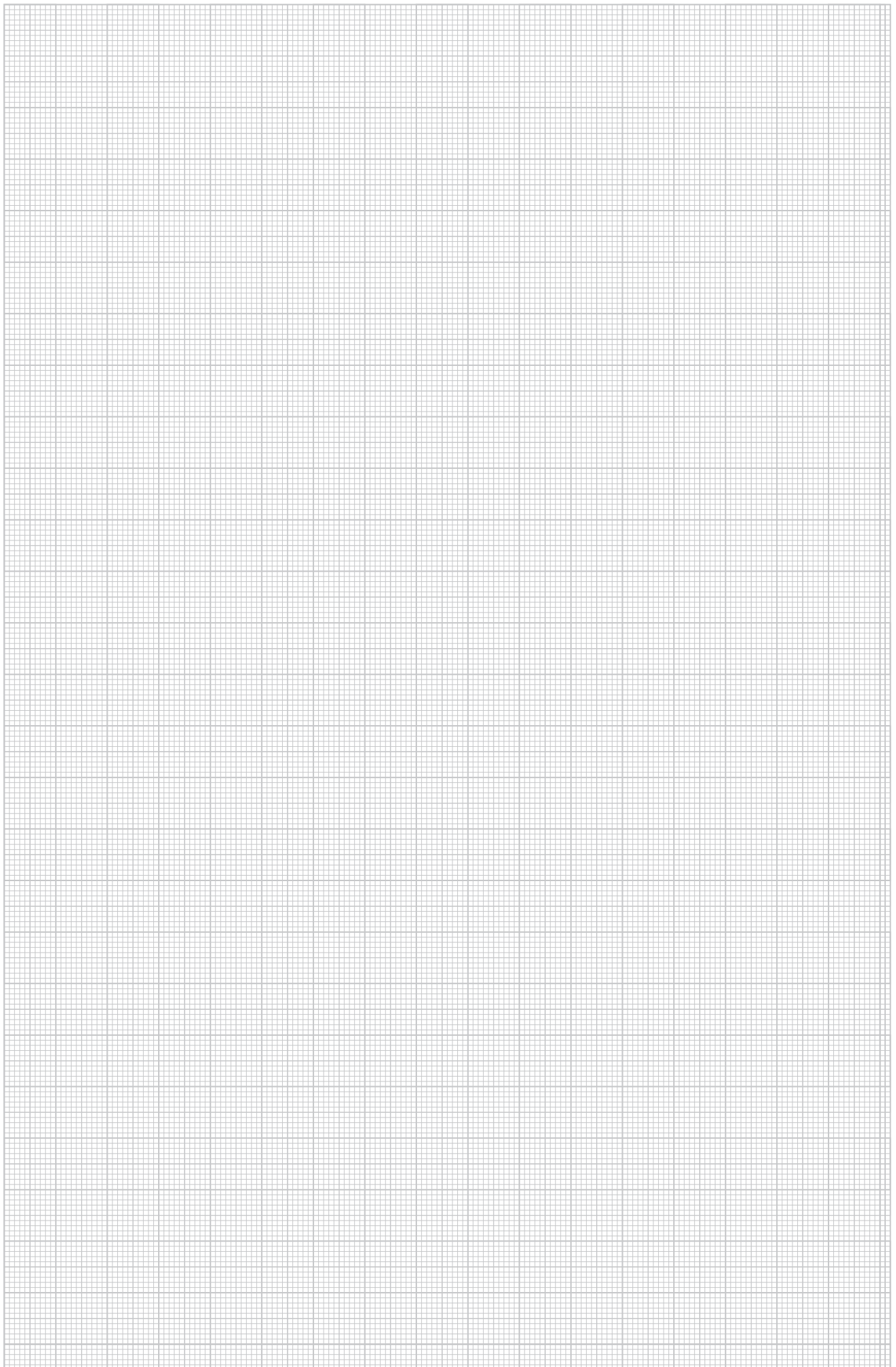
Truss-head bolt with flange nut



Type	Dimension mm	Dimen- sion L mm	Dimen- sion D mm	Dimen- sion d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
FRSB 6x12 A4	M 6 x 12	12	13.5	6	100	0.796	6406142
FRSB 6x16 A4	M 6 x 16	16	13.5	6	100	0.800	6406193

V4A Stainless steel, A4

Truss-head bolt with square neck including flange nut.



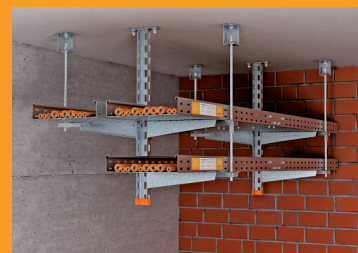


Function maintenance
Standard support structures

Cable trays SKS6..., ceiling mounting



Ceiling suspension with bracket arrangement on one side.



Ceiling suspension with bracket arrangement on both sides.



Mounting under sloping ceiling with variable head plate.



Bracket mounting on suspended support with truss-head bolt.



Fasten straight connectors and joint plate using truss-head bolts.



S30

S60

S90

The routing type under the ceiling of cable trays of types SKS with U suspended supports and SKS on U transverse profiles fulfils all the requirements of DIN 4102 Part 12 as a standard support structure for the maintenance of electrical functionality classes E 30 to E 90.

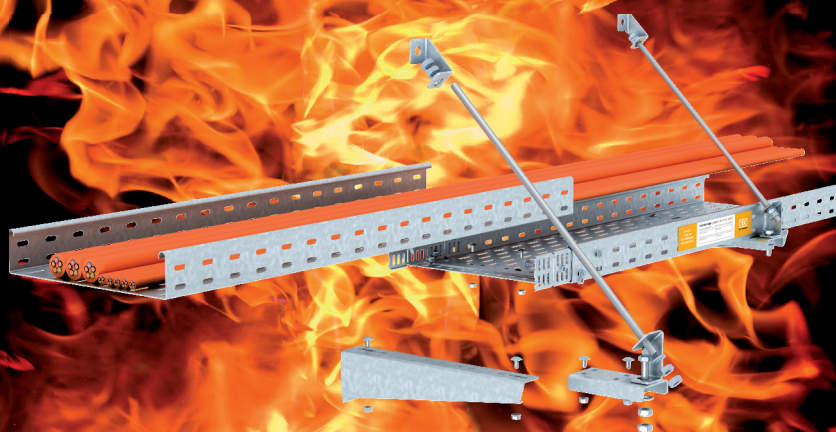
The cable trays can be mounted on the U suspended support on one or both sides with up to six tray layers. The threaded rod lock is fastened with a maximum spacing of 100 mm beside the bracket. For this, the ABR connection component should be screwed under the tray base.

Due to the low construction height of the U transverse profiles of just 30 mm, the routing variant with U transverse profile and threaded rod suspension on both sides saves a lot of space. Versions with one or two-layer mounting variants are approved.

With both types, the position of the joints between the individual support points can be chosen freely. The cable trays are screwed on using connectors in the side rail and an additional joint plate in the base of the tray.

Function maintenance
Standard support structures

Cable trays SKS6..., wall mounting



S30

S60

S90

The routing type of cable trays of type SKS with wall brackets on the wall fulfils all the requirements of DIN 4102 Part 12 as a standard support structure for the maintenance of electrical functionality classes E 30 to E 90. When the cable trays are mounted on the wall, up to three tray layers can be arranged vertically. The threaded rod lock is fastened vertically under the ceiling with a maximum spacing of 100 mm beside the bracket using an ABR connection component screwed on beneath the tray base. In the case of one-layer section mounting, the threaded rod lock can alternatively be created using sloping connection components at an angle of 45° to the wall. Joints can be positioned freely between the individual support points. Connectors are screwed into the side rails and an additional joint plate to the base, in order to connect the cable trays.



Wall mounting, multi-layer, with vertical threaded rod locking.



Wall mounting with diagonal threaded rod locking.



Ceiling fastening of the threaded rods with fire protection clamps.



Threaded rod fastening on the cable tray with multilayer arrangement.



Fastening of the vertical threaded rod on the lowest cable tray.

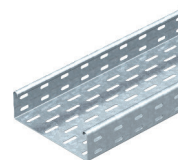
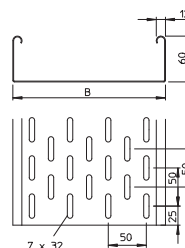
Cable tray SKS 60

Type	Width mm	Plate thickness mm	Dimen- sion B mm	Pack. m	Weight kg/100 m	Item No.
SKS 610 FS	100	1.50	100	3	239.400	6056105
SKS 620 FS	200	1.50	200	3	364.000	6056202
SKS 630 FS	300	1.50	300	3	463.670	6056296

St Steel

FS Strip-galvanised

SKS 60 = Heavy-duty cable tray system with 60 mm side height.



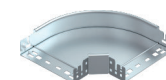
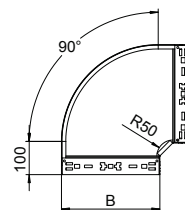
90° Magic bend

Type	Width mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
RBM 90 610 FS	100	100	1	65.700	6041130
RBM 90 620 FS	200	200	1	121.900	6041134
RBM 90 630 FS	300	300	1	192.200	6041136

St Steel

FS Strip-galvanised

90° bend with quick connector system. For all cable tray types of 60 mm side height.



Magic add-on tee

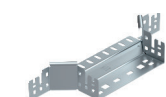
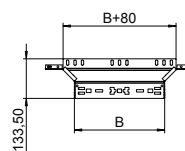


Type	Width mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
RAAM 610 FS	100	100	1	37.700	6041230
RAAM 620 FS	200	200	1	50.100	6041234
RAAM 630 FS	300	300	1	62.900	6041236

St Steel

FS Strip-galvanised

Magic add-on tee with quick connector system. For all cable tray types of 60 mm side height.



Straight and angle connector 60

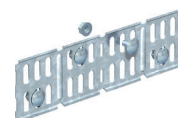
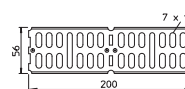


Type	Dimension mm	Pack. pcs	Weight kg/100 pcs.	Item No.
RWVL 60 FS	200 x 56	10	16.400	6067115

St Steel

FS Strip-galvanised

Straight and angle connector for cable trays and fittings with a side height of 60 mm.



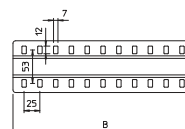
Joint plate

Type	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
SSLB 100 FS	100	20	7.700	7070205
SSLB 200 FS	200	20	16.700	7070213
SSLB 300 FS	300	20	25.700	7070217

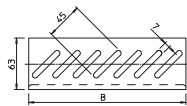
St Steel

FS Strip-galvanised

Wide joint plate for use in all cable trays and wide span cable trays.



Bottom end plate



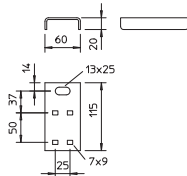
Type	Width mm	Dimension B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
BEB 100 FS	100	100	100	5.400	7083106
BEB 200 FS	200	200	100	11.400	7083203
BEB 300 FS	300	300	100	17.200	7083300

St Steel

FS Strip-galvanised

Bottom end plate for floor reinforcement at the ends of the cable tray and as cable protection.

Connection component



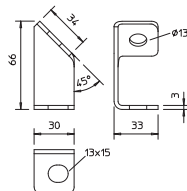
Type	Pack. pcs	Weight kg/100 pcs.	Item No.
ABR FT	20	23.000	6364942
ABR VA4571	20	22.000	6364947

St Steel **V4A** Stainless steel, grade 316 Ti

FT Hot-dip galvanised

The connection component is the connection between the threaded rod lock and the suspension system for the routing types with cable trays for the maintenance of electrical function to DIN 4102 Part 12. Including bolts and nuts.

Connection component, sloping



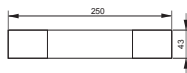
Type	Pack. pcs	Weight kg/100 pcs.	Item No.
ABS FS	20	7.200	6365027
ABS FT	20	7.800	6365035

St Steel

FS Strip-galvanised **FT** Hot-dip galvanised

The connection component is the connecting element for the sloping arrangement of the threaded rod locking for wall mounting of the standard routing types with cable ladders and cable trays for the maintenance of electrical function to DIN 4102 Part 12.

Identification plate for function maintenance



Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-E DE	German	10	0.600	7205423
KS-E EN	English	10	0.600	7205432
KS-E NL	Dutch	10	0.600	7205405

PVC Polyvinylchloride

Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.

Function maintenance
Standard support structures

Cable ladders LG6...VSF, ceiling mounting



S30

S60

S90

The routing type under the ceiling of cable ladders of types LG with U suspended supports and LG with U transverse profiles fulfils all the requirements of DIN 4102 Part 12 as a standard support structure for the maintenance of electrical functionality classes E 30 to E 90.

The cable ladders can be mounted on the U suspended support on one or both sides with up to three layers. The threaded rod lock is fastened with a maximum spacing of 100 mm beside the bracket. The ABL connection component need simply be attached to the lower flange of the ladder rail. Mounting of the threaded rod secures the connection component against slipping.

Due to the low construction height of the transverse profile of just 30 mm, the routing variant with U transverse profile and threaded rod suspension on both sides saves a lot of space. Versions with one or two-layer mounting variants are approved.

With both cable ladder types, the joints of the ladder rails are connected using external connectors, which are screwed to the rails. The position of the joints between the individual support points can be chosen freely. The rung spacing for both cable ladder types is 150 mm. Therefore, no additional rung support plates are required.



Ceiling suspension with bracket arrangement on one side.



Ceiling suspension with bracket arrangement on both sides.



Mounting under sloping ceiling with variable head plate.



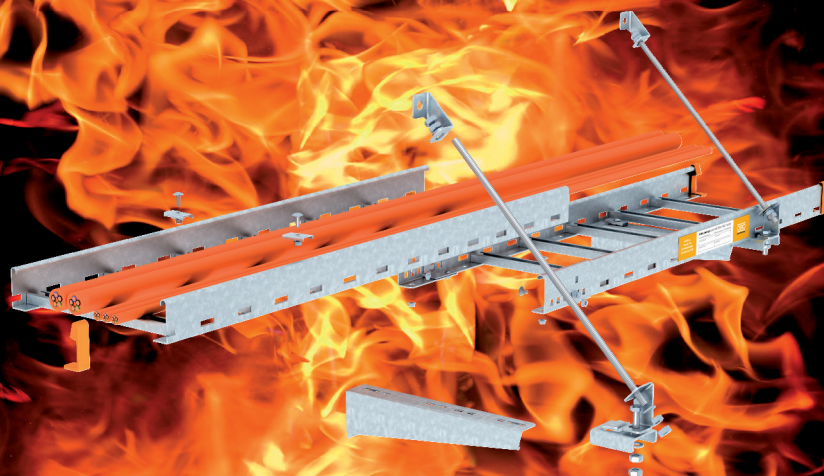
Mounting of the straight connectors using truss-head bolts.



Attachment of the connection component on the lower flange of the ladder rail.

Function maintenance
Standard support structures

Cable ladders LG6...VSF, wall mounting



S30

S60

S90

The routing type of cable ladders of type LG with wall brackets on the wall fulfils all the requirements of DIN 4102 Part 12 as a standard support structure. When cable ladders are mounted on the wall, up to two layers can be arranged on top of one another. The threaded rod lock to the ceiling is fastened vertically without screws using the ABL connection component attached to the lower flange of the ladder rail. The maximum distance between the connection component and the bracket may be 100 mm. When only one cable ladder is mounted on the wall, the threaded rod lock can alternatively be created using sloping connection components at an angle of 45° to the wall.



Wall mounting, multi-layer, with vertical threaded rod locking.



Wall mounting with diagonal threaded rod locking.



Ceiling fastening of the threaded rods with fire protection clamps.



Threaded rod fastening on the cable ladder with multilayer arrangement.



Fastening of the vertical threaded rod on the connection component.

Cable ladder

Type	Width mm	Length mm	Rung spacing mm	Dimen- sion B mm	Pack. m	Weight kg/100 m	Item No.
LG 620 VSF6000FS	200	6000	150	200	6	324.700	6207501
LG 630 VSF6000FS	300	6000	150	300	6	373.300	6207505
LG 640 VSF6000FS	400	6000	150	400	6	422.000	6207509
LG 620 VSF FT	200	6000	150	200	6	351.700	6207523
LG 630 VSF FT	300	6000	150	300	6	403.300	6207527
LG 640 VSF FT	400	6000	150	400	6	455.000	6207531

St Steel

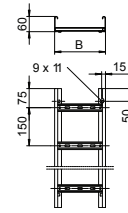
FS Strip-galvanised FT Hot-dip galvanised

Maintenance of electrical function class E30 to E90

Standard routing system DIN 4102 Part 12

For the cable ladder routing type, a cable ladder is used with a rail height of 60 mm, a material thickness of 1.5 mm and a rung distance of 150 mm.

Cable ladder with riveted C profile rungs which are open in an upwards direction. Rolled side rail for reinforcement and as edge protection.

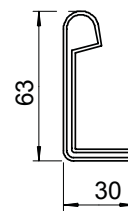


End cap

Type	Colour	Pack. pair	Weight kg/100 pairs	Item No.
SKH 60 OR	Pastel orange	40	1.072	6222537

PE Polyethylene

End cap to cover cable ladder ends of side height 60 mm.



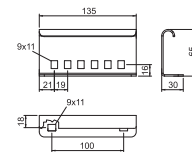
External connector

Type	Width mm	Side height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
AVL 60 FS	135	65	10	23.200	6208770
AVL 60 FT	135	65	10	23.400	6208778

St Steel

FS Strip-galvanised FT Hot-dip galvanised

External connector for mechanical connection of cable ladder sections for routing types with cable ladders for the maintenance of electrical function to DIN 4102 Part 12. Including bolts.



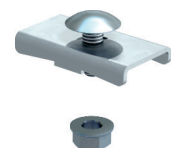
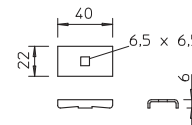
Clamping piece

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
LKS 40 FS	10	2.300	6221076

St Steel

FS Strip-galvanised

Hold-down clamp for fastening cable ladders.



Connection component

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
ABL FT	20	14.300	6221467

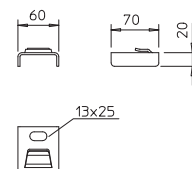
St Steel

FT Hot-dip galvanised

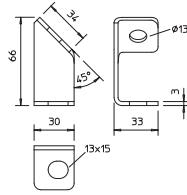
The connection component is the connection between the threaded rod lock and the suspension system for the routing types with cable ladders for that maintain electrical function to DIN 4102 Part 12.

It is attached to the under-belt of the ladder rail at a distance of max. 100 mm from the bracket.

When the threaded rod has been mounted, the connection component is secured against slipping.



Connection component, sloping



Type

ABS FS

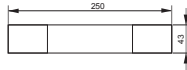
St Steel

FS Strip-galvanised

The connection component is the connecting element for the sloping arrangement of the threaded rod locking for wall mounting of the standard routing types with cable ladders and cable trays for the maintenance of electrical function to DIN 4102 Part 12.

Pack. pcs	Weight kg/100 pcs.	Item No.
20	7.200	6365027

Identification plate for function maintenance



Type

KS-E DE German

KS-E EN English

KS-E NL Dutch

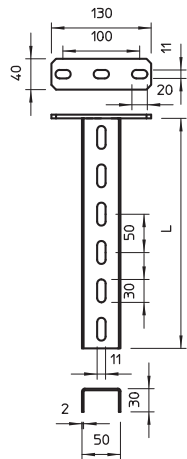
PVC Polyvinylchloride

Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.

Language	Pack. pcs	Weight kg/100 pcs.	Item No.
German	10	0.600	7205423
English	10	0.600	7205432
Dutch	10	0.600	7205405

Mounting systems

US 3 support



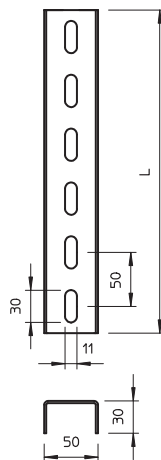
Type	Length mm	Material thickness mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
US 3 K 20 FT	200	2	200	1	50.500	6342351
US 3 K 30 FT	300	2	300	1	64.400	6342353
US 3 K 40 FT	400	2	400	1	78.300	6342355
US 3 K 50 FT	500	2	500	1	92.300	6342357
US 3 K 60 FT	600	2	600	1	106.200	6342359
US 3 K 70 FT	700	2	700	1	120.200	6342362
US 3 K 80 FT	800	2	800	1	134.100	6342364
US 3 K 90 FT	900	2	900	1	147.800	6342366
US 3 K 100 FT	1000	2	1000	1	162.000	6342368
US 3 K 110 FT	1100	2	1100	1	175.900	6342370
US 3 K 120 FT	1200	2	1200	1	189.900	6342372

St Steel

FT Hot-dip galvanised

Suspended support (U profile) of dimensions 50 x 30 mm with welded head plate.

US 3 support



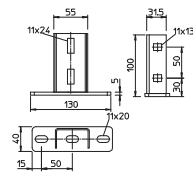
Type	Length mm	Material thickness mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
US 3 20 FS	200	2	200	1	27.000	6342302
US 3 30 FS	300	2	300	1	40.000	6342304
US 3 40 FS	400	2	400	1	53.000	6342306
US 3 50 FS	500	2	500	1	67.000	6342308
US 3 60 FS	600	2	600	1	80.000	6342310
US 3 70 FS	700	2	700	1	93.000	6342312
US 3 80 FS	800	2	800	1	107.000	6342314
US 3 90 FS	900	2	900	1	120.000	6342316
US 3 100 FS	1000	2	1000	1	133.000	6342318
US 3 150 FS	1500	2	1500	1	200.000	6342328
US 3 200 FS	2000	2	2000	1	266.000	6342338

St Steel

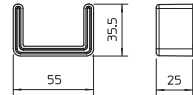
FS Strip-galvanised

U support in fixed lengths. Dimensions 30 x 50 mm.

Head plate for mounting on US 3 supports.

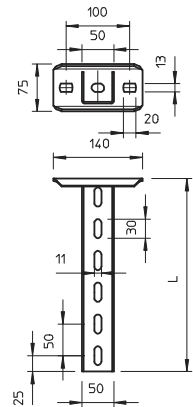


End cap to cover the ends of US 3 supports.



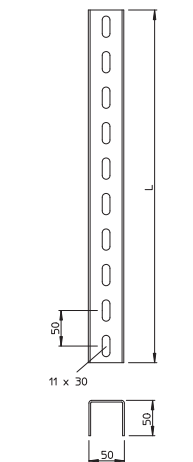
© 2006 The Authors
Journal compilation © 2006 Blackwell Publishing Ltd

U support of dimensions 50 x 50 mm with welded head plate.



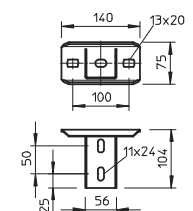
© 2006 The Authors

U support in fixed lengths. Dimensions 50 x 50 mm.

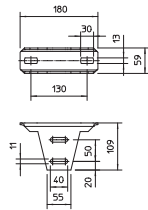


© 2006 The Authors
Journal compilation © 2006 Blackwell Publishing Ltd

Head plate for installation in US 5 support.



Head plate, variable FT



Type

KU 5 V FT

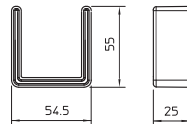
St Steel

FT Hot-dip galvanised

Variable head plate for installation on US 5 support.

Pack.	Weight		Item No.
pcs	kg/100 pcs.		
4	82.000		6348920

End cap



Colour

Type

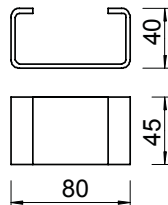
US 5 KS OR **Pastel orange**

PE Polyethylene

End cap to cover the ends of US 5 supports.

Pack.	Weight		Item No.
pcs	kg/100 pcs.		
20	1.300		6338462

Spacer



Type

DSK 45 FT

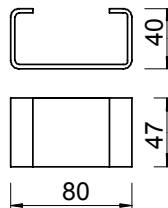
St Steel

FT Hot-dip galvanised

Spacer for use in U 5 support and in the head plate, type KU 7 VQP.

Pack.	Weight		Item No.
pcs	kg/100 pcs.		
20	18.000		6416500

Spacer



Type

DSK 47 FT

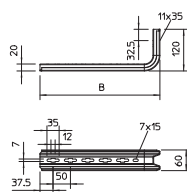
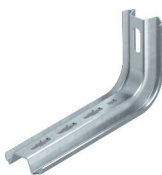
St Steel

FT Hot-dip galvanised

Spacer for use in head plate, type KU 5 V.

Pack.	Weight		Item No.
pcs	kg/100 pcs.		
20	19.000		6416504

Bracket TPSA



Type

TPSA 195 FS

TPSA 295 FS

TPSA 395 FS

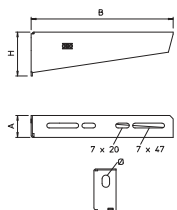
St Steel

FS Strip-galvanised

Bracket for mounting on TPS suspended supports or as wall bracket for standard cable tray routing type for function maintenance to DIN 4102 Part 12.

Pack.	Weight		Item No.
pcs	kg/100 pcs.		
1	38.000		6364152
1	52.000		6364268
1	65.000		6364276

Wall and support bracket MWA 12



Type

MWA 12 11S FS

MWA 12 21S FS

MWA 12 31S FS

MWA 12 41S FS

St Steel

FS Strip-galvanised

Light-duty wall and support bracket.

Type	Width mm	Dimen- sion H mm	Dimen- sion A mm	Dimen- sion B mm	Hole Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
MWA 12 11S FS	110	53	32.5	110	11	30	17.200	6424716
MWA 12 21S FS	210	65	32.5	210	11	30	29.000	6424732
MWA 12 31S FS	310	75	38	310	11	30	50.300	6424740
MWA 12 41S FS	410	83	38	410	11	30	68.000	6424759

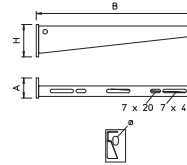
Wall and support bracket AW 15

Type	Width mm	Dimen- sion H mm	Dimen- sion A mm	Dimen- sion B mm	Hole Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
AW 15 11 FT	110	50	40	110	11	30	14.000	6420656
AW 15 21 FT	210	60	40	210	11	30	24.000	6420680
AW 15 31 FT	310	65	40	310	11	30	39.900	6420710
AW 15 41 FT	410	70	40	410	11	30	54.000	6420745

St Steel

FT Hot-dip galvanised

Light-duty wall and support bracket with welded head plate.



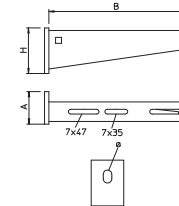
Wall and support bracket AW 30

Type	Width mm	Dimen- sion H mm	Dimen- sion A mm	Dimen- sion B mm	Hole Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
AW 30 21 FT	210	70	50	210	13	1	39.300	6419720
AW 30 31 FT	310	80	50	310	13	1	63.000	6419747
AW 30 41 FT	410	80	50	410	13	1	89.000	6419763

St Steel

FT Hot-dip galvanised

Medium-duty wall and support bracket with welded head plate.



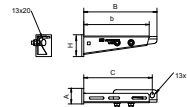
Wall and support bracket AW 30 F

Type	For width mm	Dimen- sion b mm	Dimen- sion B mm	Dimen- sion C mm	Dimen- sion H mm	Dimen- sion A mm	Pack. pcs	Weight kg/100 pcs.	Item No.
AW30F21 FT	200	210	235	220	70	50	1	79.000	6417027
AW30F31 FT	300	310	335	320	80	50	1	100.000	6417043
AW30F41 FT	400	410	435	420	80	50	1	127.000	6417078

St Steel

FT Hot-dip galvanised

Bracket for mounting on suspended supports or as wall bracket for cable tray routing type above fire protection ceilings and for routing types with cable ladders and cable trays for the maintenance of electrical function according to DIN 4102 Part 12. The brackets are supplied ready-mounted.



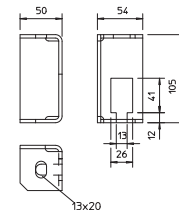
Fire protection clamp

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
BSB FT	20	42.400	6418198

St Steel

FT Hot-dip galvanised

Fire protection clamp for ceiling fastening of the threaded rod lock for routing types with cable ladders and cable trays for the maintenance of electrical function to DIN 4102 Part 12.



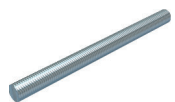
Threaded rod

Type	Thread	Dimen- sion d mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TR M8 1M G	M8	8	1000	10	30.000	3141128
TR M10 1M G	M10	10	1000	10	49.000	3141209
TR M12 1M G	M12	12	1000	10	62.000	3141306

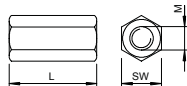
St Steel

G Electrogalvanised

Threaded rod to DIN 976.



Connection sleeve



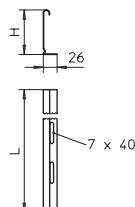
Type	Thread	Dimension L mm	SW mm	Pack. pcs	Weight kg/100 pcs.	Item No.
CSTR M8 G	M8	24	13	50	1.880	6410081
CSTR M10 G	M10	30	17	50	4.150	6410103
CSTR M12 G	M12	40	19	25	7.000	6410111

St Steel

G Electrogalvanised

Connection sleeve with continuous internal thread.

Barrier strip 45



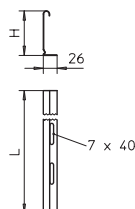
Type	Dimension H mm	Plate thickness mm	Dimension L mm	Pack. m	Weight kg/100 m	Item No.
TSG 45 FS	45	0.75	3000	3	46.700	6062033

St Steel

FS Strip-galvanised

Separating retainer for separation of cables of different voltages or functions.

Barrier strip 60



Type	Dimension H mm	Plate thickness mm	Dimension L mm	Pack. m	Weight kg/100 m	Item No.
TSG 60 FS	60	0.75	3000	3	55.700	6062068

St Steel

FS Strip-galvanised

Separating retainer for separation of cables of different voltages or functions.

Separating retainer connector

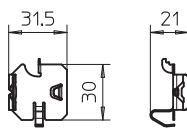


Type	Pack. pcs	Weight kg/100 pcs.	Item No.
TSGV A2	10	0.923	6067970

V2A Stainless steel, A2

Separating retainer connector for screwless connection of the TSG separating retainer in all side heights.

Hold-down clamp for separating retainer fastening in RKSM

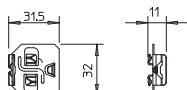


Type	Pack. pcs	Weight kg/100 pcs.	Item No.
KS KR A2	30	0.537	6062280

V2A Stainless steel, A2

Clamping piece for screwless fastening of separating retainer in the cable tray types RKSM, MKS and SKS.

Hold-down clamp for separating retainer fastening VA



Type	Pack. pcs	Weight kg/100 pcs.	Item No.
KS KL A2	30	0.512	6062284

V2A Stainless steel, A2

Hold-down clamp for screwless fastening of separating retainer in cable ladders.

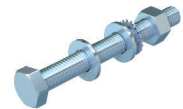
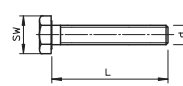
Hexagonal bolt with nut and washer

Type	Dimension mm	Dimen- sion L mm	Dimen- sion d mm	SW mm	Resistance class	Pack. pcs	Weight kg/100 pcs.	Item No.
SKS 10x60 F	M10 x 60	60	10	17	8.8	20	6.000	6408516
SKS 10x80 F	M10 x 80	80	10	17	8.8	20	7.700	6418250

St Steel

F Hot-dip galvanised

Hexagonal bolt for universal fixing of structure components.



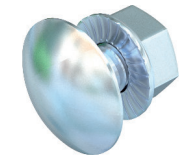
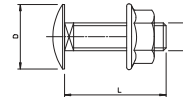
Truss-head bolt with flange nut

Type	Dimension mm	Dimen- sion L mm	Dimen- sion D mm	Dimen- sion d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
FRSB 6x12 F	M 6 x 12	12	13.5	6	100	0.990	6406122
FRSB 6x16 F	M 6 x 16	16	13.5	6	100	0.800	6406157
FRSB 6x20 F	M 6 x 20	20	13.5	6	100	1.000	6406203

St Steel

F Hot-dip galvanised

Truss-head bolt with square neck including flange nut.



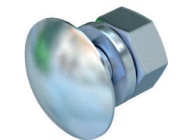
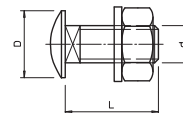
Truss-head bolt with nut and washer

Type	Dimension mm	Dimen- sion L mm	Dimen- sion D mm	Dimen- sion d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
FRS 10x25 F	M 10 x 25	25	24	10	50	4.500	6407528
FRS 10x25 TPS F	M10 x 25	25	18	10	50	4.300	6407536
FRS 12x25 F	M12 x 25	25	30	12	10	6.400	6406254

St Steel

F Hot-dip galvanised

Truss-head bolt with square neck. With washer and hexagonal nut.



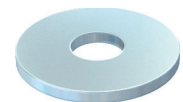
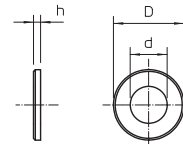
Large washer

Type	Dimension D mm	Dimension d mm	Dimension h mm	Pack. pcs	Weight kg/100 pcs.	Item No.
DIN440 7 F	22	6.6	2	100	0.550	6408702
DIN440 11 F	34	11	3	100	1.985	6408729

St Steel

F Hot-dip galvanised

Washer of particularly large outer diameter.



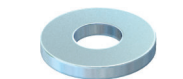
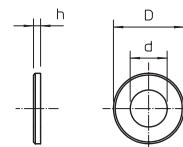
Washer

Type	Thread	Dimension d mm	Dimension D mm	Dimension h mm	Pack. pcs	Weight kg/100 pcs.	Item No.
WS M8 D16 G	M8	8.4	16	1.6	100	0.214	3402088
WS M10 D20 G	M10	10.5	20	2	100	0.408	3402096
WS M12 D24 G	M12	13	24	2.5	100	0.627	3402126

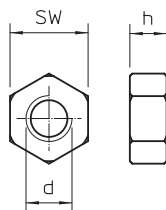
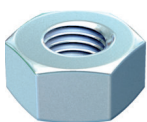
St Steel

G Electroplated

Washer according to DIN 125, shape A, for universal use.



Hexagonal nut DIN 934



Type	Thread	SW mm	Dimen- sion h mm	Dimen- sion d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
HN M8 G	M8	13	6.8	8	100	0.474	3400085
HN M10 G	M10	17	8.4	10	100	1.084	3400107
HN M12 G	M12	19	10.8	12	100	1.730	3400123

St Steel

G Electrogalvanised

Hexagonal nut to DIN 934 with metric thread.

Function maintenance

Vertical ladders



S30

S60

S90

Vertical ladders of type LM, type SLM and type SLS fulfil all the requirements of DIN 4102 Part 12 as a standard support structure for the maintenance of electrical functionality classes E30, E60 and E90. They are available in the widths 200 to 400 mm (type LG) and in the widths 400 to 600 mm (type SLM and type SLS). The vertical ladders are made up of straight profiles with riveted or screwed rungs. The rung spacing is 30 mm.

The vertical ladders are fastened directly to the wall through the ladder rails (type LG and type SLM) or with fastening brackets (type SLS) at a spacing of maximum 1.2 m. Mounting of screwed-on connectors is approved and they can be positioned freely.

The cables must be fastened on each rung with clamp clips with a riveted metal pressure sleeve. Mounting of the strain relief, type ZSE90..., is approved for storey heights of more than 3.5 m. The vertical ladder need not be interrupted as the strain relief is mounted via the continuous vertical ladder.



Direct mounting of the vertical ladder on solid walls.



Joint connection with screwed-on connector.



Fastening of the cables, either individually or as a bundle with clamp clips.

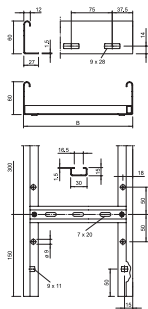
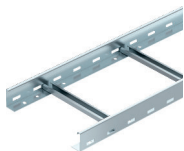


Direct mounting of the rising section on solid walls.



Direct mounting of the vertical ladder on solid walls.

Cable ladder LG 60, 3 m VS



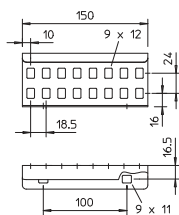
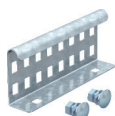
Type	Width mm	Rail thickness mm	Rung spacing mm	Dimen- sion B mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LG 620 VS 3 FS	200	1.5	300	200	3000	3	281.700	6208538
LG 630 VS 3 FS	300	1.5	300	300	3000	3	306.000	6208541
LG 640 VS 3 FS	400	1.5	300	400	3000	3	330.000	6208544
LG 620 VS 6 FS	200	1.5	300	200	6000	6	269.750	6208627
LG 630 VS 6 FS	300	1.5	300	300	6000	6	293.380	6208630
LG 640 VS 6 FS	400	1.5	300	400	6000	6	317.083	6208633

St Steel

FS Strip-galvanised

Cable ladder with perforated side rail of side height 60 mm with riveted C profile frames, open in an upwards direction (VS version).

Straight connector



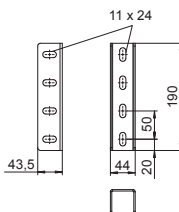
Type	Pack. pcs	Weight kg/100 pcs.	Item No.
LVG 60 FS	10	22.000	6208840

St Steel

FS Strip-galvanised

Straight connector as external connector to connect cable ladders and fittings with a side height of 60 mm and continuous rail perforation.

U support connector



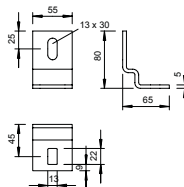
Type	Pack. pcs	Weight kg/100 pcs.	Item No.
VUS 5 FT	10	44.000	6018505

St Steel

FT Hot-dip galvanised

U support connector to connect US 5 supports.

Mounting angle BW 80



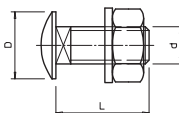
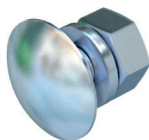
Type	Pack. pcs	Weight kg/100 pcs.	Item No.
BW 80 55 FT	10	32.900	6019528

St Steel

FT Hot-dip galvanised

Mounting angle for mounting IS 8 supports on the wall.

Truss-head bolt with nut and washer



Type	Dimension mm	Dimen- sion L mm	Dimen- sion D mm	Dimen- sion d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
FRS 8x16 F 8.8	M 8 x 16	16	20	8	50	2.200	6406963
FRS 8x25 F	M 8 x 25	25	20	8	50	2.300	6406998
FRS 10x25 F 8.8	M10 x 25	25	24	10	50	4.500	6407560
FRS 12x25 F	M12 x 25	25	30	12	10	6.400	6406254

St Steel

F Hot-dip galvanised

Truss-head bolt with square neck. With washer and hexagonal nut.

Clamp clip, single, metal pressure trough

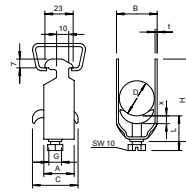
Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2056 M 12 FT	8 - 12	100	3.200	1156004
2056 M 16 FT	12 - 16	100	3.500	1156012
2056 M 22 FT	16 - 22	100	4.400	1156020
2056 M 28 FT	22 - 28	100	6.100	1156039
2056 M 34 FT	28 - 34	100	7.700	1156047
2056 M 40 FT	34 - 40	100	8.600	1156055
2056 M 46 FT	40 - 46	100	9.600	1156063
2056 M 52 FT	46 - 52	100	10.400	1156071
2056 M 58 FT	52 - 58	100	13.100	1156098
2056 M 64 FT	58 - 64	100	14.500	1156101
2056 M 70 FT	64 - 70	50	16.100	1156128
2056 M 76 FT	70 - 76	25	18.300	1156136
2056 M 82 FT	76 - 82	25	19.100	1156144
2056 M 90 FT	82 - 90	25	23.300	1156152
2056 M 100 FT	90 - 100	25	24.500	1156160

St Steel

FT Hot-dip galvanised

Suitable for all C profile rails with slot width 16–17 mm.

Clip, bolt and pressure trough made of hot-dip galvanised steel.



Dimensions

D mm	A mm	B mm	C mm	G	t mm	x mm	H mm	L mm
8 - 12	23	16	30	M6	1.5	3.5	40	32.5
12 - 16	23	20	30	M6	1.5	3.5	44	32.5
16 - 22	23	27	30	M6	1.5	4.5	50	46.5
22 - 28	23	33	30	M6	2	4.5	58	46.5
28 - 34	23	39	35	M8	2	5	66	44
34 - 40	23	45	35	M8	2	5	72	44
40 - 46	23	51	35	M8	2	5	79	44
46 - 52	23	57	35	M8	2	5	86	44
52 - 58	23	64	35	M8	2.5	5	93	44
58 - 64	23	70	35	M8	2.5	5	99	56
64 - 70	25	76	35	M8	2.5	5	106	56
70 - 76	25	82	40	M8	2.5	5	114	56
76 - 82	25	88	40	M8	2.5	5	121	56
82 - 90	25	97	40	M8	3	5	130	56
90 - 100	25	107	40	M8	3	5	140	56

Clamp clip, double, metal pressure trough

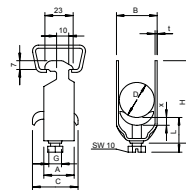
Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2056 M2 12 FT	8 - 12	50	3.980	1156179
2056 M2 16 FT	12 - 16	50	4.750	1156187
2056 M2 22 FT	16 - 22	50	6.900	1156195
2056 M2 28 FT	22 - 28	50	7.800	1156209

St Steel

FT Hot-dip galvanised

Suitable for all C profile rails with slot width 16–17 mm.

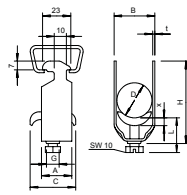
Clip, bolt and pressure trough made of hot-dip galvanised steel.



Dimensions

D mm	A mm	B mm	C mm	G	t mm	x mm	H mm	L mm
8-12	23	16	34	M6	1.5	5	52	34
12-16	23	20	34	M6	1.5	5	61	34
16-22	23	27	34	M6	1.5	5	73	47
22-28	23	33	34	M6	2	5	87	47

Clamp clip, triple, metal pressure trough



Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2056 M3 12 FT	8 - 12	50	4.050	1156241
2056 M3 16 FT	12 - 16	50	5.800	1156268
2056 M3 22 FT	16 - 22	50	6.500	1156276
2056 M3 28 FT	22 - 28	50	9.500	1156284

St Steel

FT Hot-dip galvanised

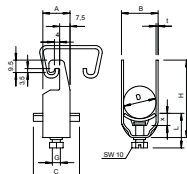
Suitable for all C profile rails with slot width 16–17 mm.

Clip, bolt and pressure trough made of hot-dip galvanised steel.

Dimensions

D mm	A mm	B mm	C mm	G	t mm	x mm	H mm	L mm
8–12	23	16	34	M6	1.2	5	70	47
12–16	23	20	34	M6	1.5	5	82	47
16–22	23	27	34	M6	1.5	5	101	47
22–28	23	33	34	M6	2	5	121	47

Clamp clip, single, metal pressure trough



Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2056U M 12 FT	8 - 12	100	3.300	1158007
2056U M 16 FT	12 - 16	100	3.520	1158015
2056U M 22 FT	16 - 22	100	3.960	1158023
2056U M 28 FT	22 - 28	100	5.890	1158031
2056U M 34 FT	28 - 34	100	7.650	1158058
2056U M 40 FT	34 - 40	100	8.360	1158066
2056U M 46 FT	40 - 46	100	10.890	1158074
2056U M 52 FT	46 - 52	100	11.660	1158082
2056U M 58 FT	52 - 58	100	14.740	1158090
2056U M 64 FT	58 - 64	100	15.730	1158104
2056U M 70 FT	64 - 70	50	18.200	1158112
2056U M 76 FT	70 - 76	25	20.600	1158120

St Steel

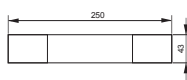
FT Hot-dip galvanised

Suitable for all C profile rails with slot width 18 mm and 22 mm.

Dimensions

D mm	A mm	B mm	C mm	G	t mm	x mm	H mm	L mm
8-12	20	16	34	M6	1.5	5	42	34
12-16	20	20	34	M6	1.5	5	46	34
16-22	20	27	34	M6	1.5	5	53	34
22-28	20	33	34	M6	2	5	59	34
28-34	20	39	34	M8	2	5.5	67	37.5
34-40	20	45	34	M8	2	5.5	73	37.5
40-46	20	51	40	M8	2	5.5	79	37.5
46-52	20	57	40	M8	2	6.5	85	38.5
52-58	23	64	40	M8	2.5	6.5	91	38.5
58-64	23	70	40	M8	2.5	6.5	97	38.5
64-70	23	76	40	M8	2.5	6.5	103	38.5
70-76	25	82	40	M8	2.5	6.5	110	45.5

Identification plate for function maintenance



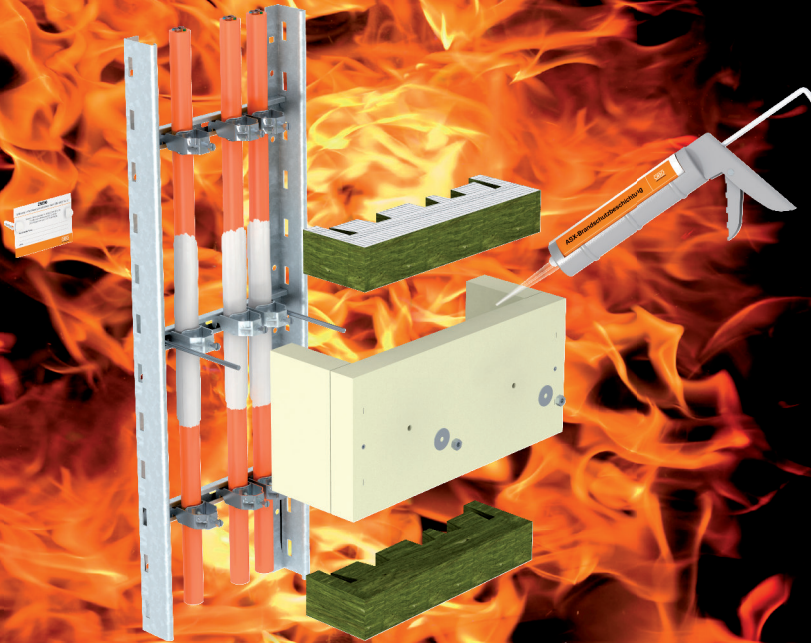
Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-E DE	German	10	0.600	7205423
KS-E EN	English	10	0.600	7205432
KS-E NL	Dutch	10	0.600	7205405

PVC Polyvinylchloride

Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.

Function maintenance

Strain relief ZSE90

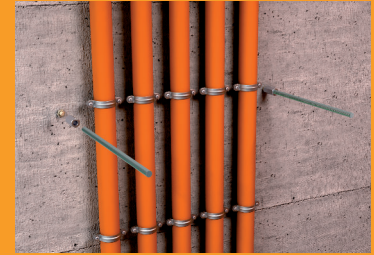


S30

S60

S90

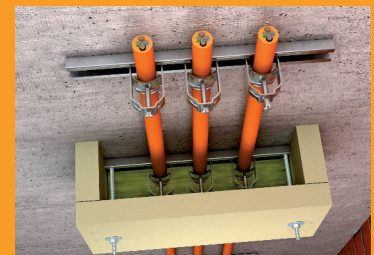
In the case of continuous, vertical routing of cables to maintain electrical functionality according to DIN 4102 Part 12, the standard requires effective cable support at a maximum spacing of 3.5 m. This requirement can be fulfilled with the OBO ZSE90 strain relief. The ZSE90 is approved for all classes ensuring the maintenance of electrical functionality from E30 to E90 in combination with standard support structures. It can be used for all rising section widths and also for vertical single-clip installations. The ZSE90 strain relief covers the fastening point of the cables on profile rails, rungs or with single clips. In the event of fire, it prevents direct fire loads on the clips, meaning that they stay "relatively" cold. The weight of the cable is dissipated safely. There is no risk of the cables tearing through their intrinsic weight if there is a fire. This guarantees secure maintenance of electrical functionality. The strain relief can be fastened using slide nuts on profile rails, on the rungs of vertical ladders or on the wall next to installed cables.



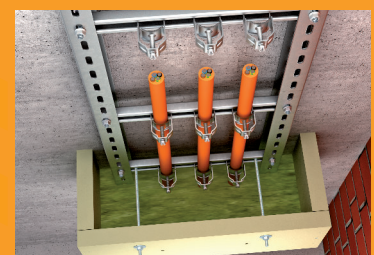
Fastening points next to the cables directly on the wall.



Fastening with threaded rods and slide nuts in the rungs.



Mounting of the strain relief in combination with cable routing on profile rails.

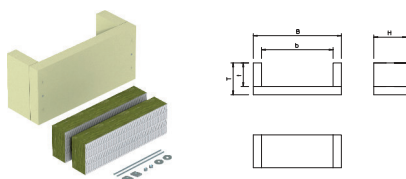


Effective support measure with ZSE90 strain relief.



Mineral wool filling for flexible cable assignment.

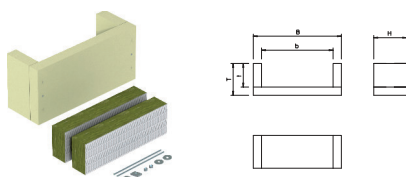
Strain relief, internal height 115 mm



Type	Dimen- sion b mm	Dimen- sion t mm	Dimen- sion H mm	Dimen- sion B mm	Dimen- sion T mm	Pack. pcs	Weight kg/100 pcs.	Item No.
ZSE90-25-11	250	115	140	340	160	1	199.500	7215702
ZSE90-35-11	350	115	140	440	160	1	252.000	7215706
ZSE90-45-11	450	115	140	540	160	1	273.000	7215709

Strain relief as an effective support measure for vertical cable routing, according to DIN 4102 part 12, approved for all cable types and all vertical routing systems. Maintenance of electrical function classes E30 to E90. Housing including mineral fibre panels, fastening material, ASX fire protection coating in cartridge and identification plate.

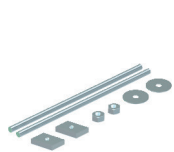
Strain relief, internal height 175 mm



Type	Dimen- sion b mm	Dimen- sion t mm	Dimen- sion H mm	Dimen- sion B mm	Dimen- sion T mm	Pack. pcs	Weight kg/100 pcs.	Item No.
ZSE90-25-17	250	175	160	340	220	1	500.000	7215713
ZSE90-35-17	350	175	160	440	220	1	600.000	7215716
ZSE90-45-17	450	175	160	540	220	1	700.000	7215719
ZSE90-55-17	550	175	160	640	220	1	722.000	7215726
ZSE90-65-17	650	175	160	740	220	1	441.000	7215730

Strain relief as an effective support measure for vertical cable routing, according to DIN 4102 part 12, approved for all cable types and all vertical routing systems. Maintenance of electrical function classes E30 to E90. Housing including mineral fibre panels, fastening material, ASX fire protection coating in cartridge and identification plate.

Mounting set, strain relief ZSE90



Type	Pack. pcs	Weight kg/100 pcs.	Item No.
ZSE90 M1	1	32.000	7215741
ZSE90 M2	1	35.000	7215745

Spare parts in mounting set with all the small parts for mounting the ZSE 90 strain relief on and next to rising tracks for function maintenance. Type ZSE90 M1 for strain relief with construction height 115 mm, type ZSE90 M2 for strain relief with construction height 175 mm.

Ablation coating in a cartridge



Type	Contents ml	Pack. pcs	Weight kg/100 pcs.	Item No.
ASX-K	310	1	50.000	7202310

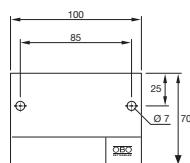
Intumescent material

Combined, endothermic and weatherproof coating for internal and external areas. Universal protection coating for cable and cable support structures. Use as direct filler, and as paint when stirred.

Material class DIN 4102 - B2, normally flammable.

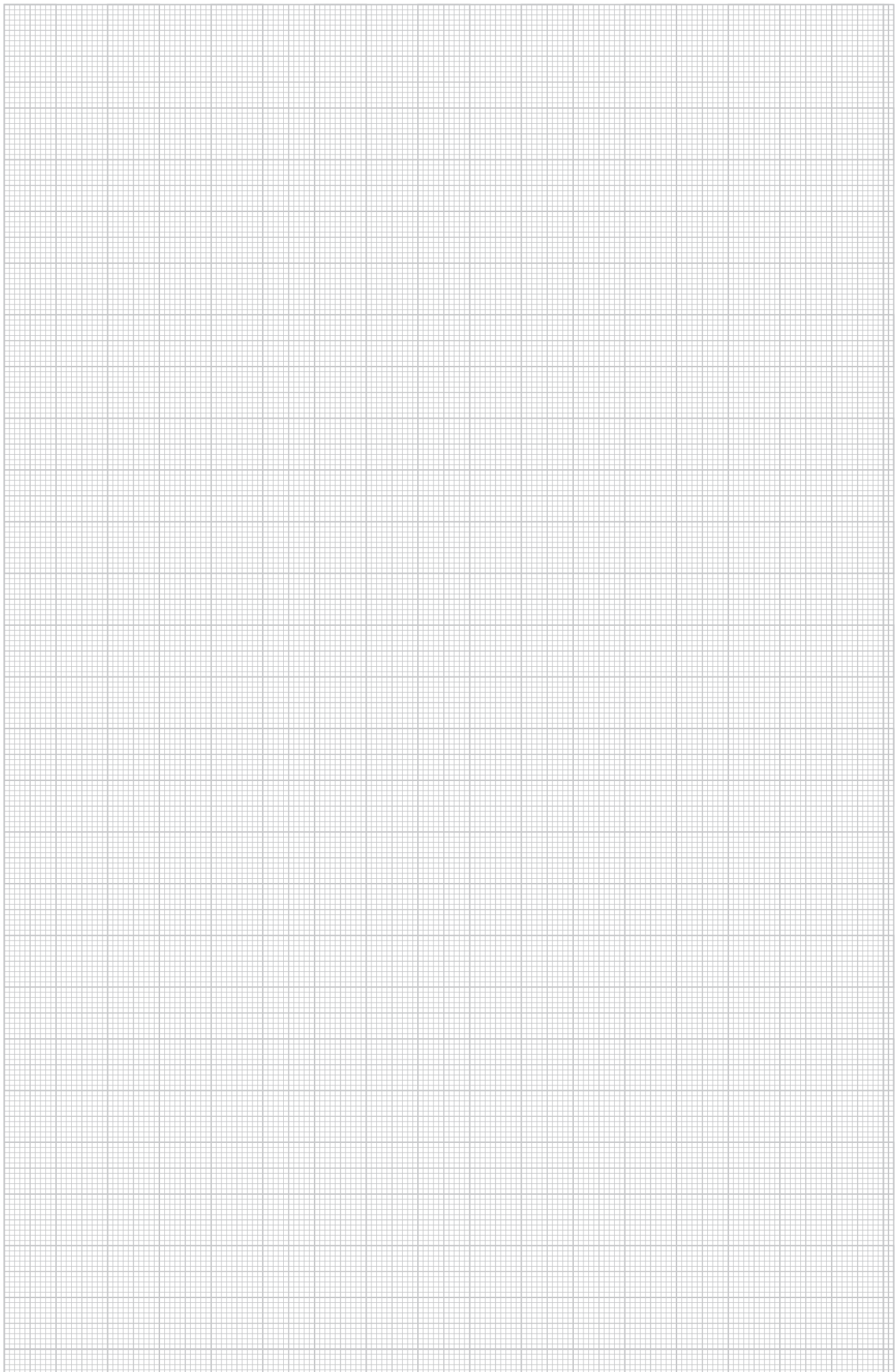
In dry, frost-free rooms, the coating can be stored at temperatures from +5 °C to +25 °C for up to 18 months in closed, upright original containers.

Identification plate for strain relief



Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-ZSE DE	German	1	2.400	7215750
PVC	Polyvinylchloride			

Universal identification plate to be written on with waterproof and light-resistant felt-tip pen for the ZSE90 strain relief. For approved identification, according to DIN 4102 Part 12. Incl. two push-fit anchors.





Function maintenance

Junction box, FireBox



S30

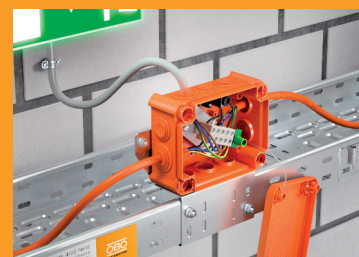
S60

S90

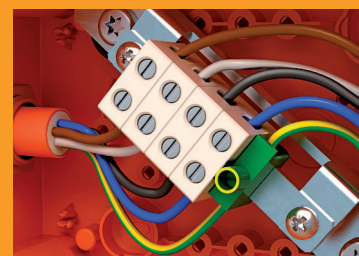
Junction boxes of the FireBox series are available for connecting and branching safety cables. These are equipped with a high-temperature-resistant connection unit with ceramic terminals and offer terminal areas of 0.5 mm² to 16 mm² of copper cross-section. The T series FireBoxes possesses all the benefits of thermoplastic cable junction boxes. These include the high IP protection rating of up to IP66 and the maximum impact resistance of up to IK10 and a high resistance to breakage. Boxes with soft plug-in seals or closed variants are available. Here, the cable glands can be located freely. Fastening either takes place on the outer straps or through the box base with fire protection bolt ties. The high-temperature-resistant terminals are pre-mounted on the connection unit. The protective conductor terminal is connected to the support clamp, meaning that covers of the metal parts are not required. The FireBox is tested and approved as a connection socket for maintenance of electrical functionality to DIN 4102 Part 12 with the classes E30, E60 and E90. A separate fuse holder allows protection of a branch.



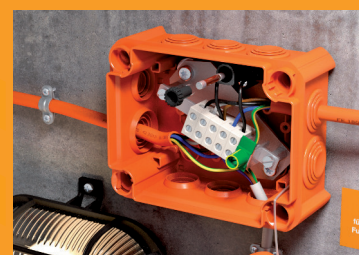
Fully installed FireBox with identification plate.



FireBox mounting with mounting plate on cable tray.



Version with 4 terminals and protective conductor terminal for power cables.



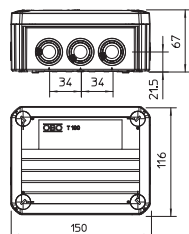
Cable entry with plug-in seals.



Mounting with fire protection bolt tie through the clamp and base of the FireBox.



FireBox T100ED with plug-in seal and internal fastening



Type	Nominal cross-section mm ²	Number of terminals	Entries	Pack. pcs	Weight kg/100 pcs.	Item No.
T 100 ED 6-5	6	5	8x M25 2x M32	1	34.000	7205530
T 100 ED 10-5	10	5	8x M25 2x M32	1	35.900	7205533

PP Polypropylene

Halogen-free junction box with pre-mounted, soft plug-in seals, approved for maintaining electrical functionality according to DIN 4102 Part 12.

Maintenance of electrical functionality to classes E30 to E90.

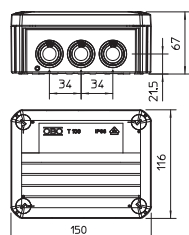
Colour: Pastel orange.

Including pre-mounted connection unit made of high temperature-resistant special ceramic and labelled protective conductor terminal. Supplied with 2 MMS 6x50 fire protection screw ties for anchorless fastening.

Power cable nominal cross-sections: 1.5 to 10 mm² depending on the type, data cables with 0.8 mm wire Ø. Several rigid copper wires with smaller cross-sections per terminal possible. High protection rating IP66, impact resistance class IK08.

Details on the cable types and manufacturers can be found in the general construction test certificate of the material testing institute NRW, Erwitte.

FireBox T100ED with internal fastening and fuse holder



Type	Nominal cross-section mm ²	Number of terminals	Entries	Pack. pcs	Weight kg/100 pcs.	Item No.
T 100 ED 6-6 F	6	6	8x M25 2x M32	1	38.650	7205550
T 100 ED 10-6 F	10	6	8x M25 2x M32	1	38.650	7205553

PP Polypropylene

Halogen-free junction box with pre-mounted, soft plug-in seals, approved for maintaining electrical functionality according to DIN 4102 Part 12. Maintenance of electrical functionality to classes E30 to E90.

Colour: Pastel orange.

Including pre-mounted connection unit made of high temperature-resistant special ceramic and labelled protective conductor terminal. Supplied with fuse holder TE-FH 520 for VDE-conformant, reaction-free protection of consumers and 2 fire protection screw ties MMS 6x50 for anchorless fastening.

Power cable nominal cross-sections: 1.5 to 10 mm² depending on the type, data cables with 0.8 mm wire Ø. Several rigid copper wires with smaller cross-sections per terminal possible. High protection rating IP66, impact resistance class IK08.

Details on the cable types and manufacturers can be found in the general construction test certificate of the material testing institute NRW, Erwitte.

FireBox T160ED with internal fastening and fuse holder

Type	Nominal cross-section mm ²	Number of terminals	Entries	Pack. pcs	Weight kg/100 pcs.	Item No.
T 160 ED 16-6 F	16	6	7x M25 5x M32	1	64.000	7205556

PP Polypropylene

Halogen-free junction box with pre-mounted, soft plug-in seals, approved for maintaining electrical functionality according to DIN 4102 Part 12. Maintenance of electrical functionality to classes E30 to E90.

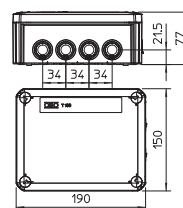
Colour: Pastel orange.

Including pre-mounted connection unit made of high temperature-resistant special ceramic and labelled protective conductor terminal. Supplied with fuse holder TE-FH 520 for VDE-conformant, reaction-free protection of consumers and 2 fire protection screw ties MMS 6x50 for anchorless fastening.

Power cable nominal cross-sections: Up to 16 mm². Several rigid copper wires with smaller cross-sections per terminal possible.

High protection rating IP66, impact resistance class IK05.

Details on the cable types and manufacturers can be found in the general construction test certificate of the material testing institute NRW, Erwitte.



FireBox T160ED with internal fastening

Type	Nominal cross-section mm ²	Number of terminals	Entries	Pack. pcs	Weight kg/100 pcs.	Item No.
T 160 ED 16-5	16	5	7x M25 5x M32	1	62.500	7205536

PP Polypropylene

Halogen-free junction box with pre-mounted, soft plug-in seals, approved for maintaining electrical functionality according to DIN 4102 Part 12. Maintenance of electrical functionality to classes E30 to E90.

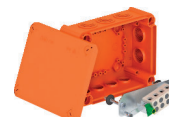
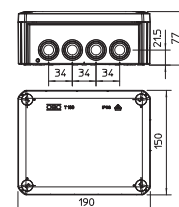
Colour: Pastel orange.

Including pre-mounted connection unit made of high temperature-resistant special ceramic and labelled protective conductor terminal. Supplied with 2 MMS 6x50 fire protection screw ties for anchorless fastening.

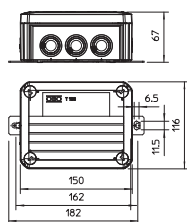
Power cable nominal cross-sections: Up to 16 mm². Several rigid copper wires with smaller cross-sections per terminal possible.

High protection rating IP66, impact resistance class IK05.

Details on the cable types and manufacturers can be found in the general construction test certificate of the material testing institute NRW, Erwitte.



FireBox T100ED with external fastening



Type	Nominal cross-section mm ²	Number of terminals	Entries	Pack. pcs	Weight kg/100 pcs.	Item No.
T 100 ED 6-5 A	6	5	8x M25 2x M32	1	38.500	7205540
T 100 ED 10-5 A	10	5	8x M25 2x M32	1	40.600	7205543

PP Polypropylene

Halogen-free junction box with pre-mounted, soft plug-in seals, approved for maintaining electrical functionality according to DIN 4102 Part 12. Maintenance of electrical functionality to classes E30 to E90.

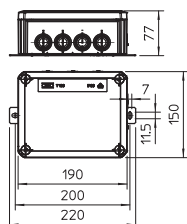
Colour: Pastel orange.

Fully mounted connection unit made of high temperature-resistant special ceramic and labelled protective conductor terminal. Supplied with 2 MMS 6x50 fire protection screw ties for anchorless fastening on the external straps.

Power cable nominal cross-sections: 1.5 to 10 mm² depending on the type, data cables with 0.8 mm wire Ø. Several rigid copper wires with smaller cross-sections per terminal possible. High protection rating IP66, impact resistance class IK08.

Details on the cable types and manufacturers can be found in the general construction test certificate of the material testing institute NRW, Erwitte.

FireBox T160ED with external fastening



Type	Nominal cross-section mm ²	Number of terminals	Entries	Pack. pcs	Weight kg/100 pcs.	Item No.
T 160 ED 16-5 A	16	5	7x M25 5x M32	1	60.000	7205546

PP Polypropylene

Halogen-free junction box with pre-mounted, soft plug-in seals, approved for maintaining electrical functionality according to DIN 4102 Part 12. Maintenance of electrical functionality to classes E30 to E90.

Colour: Pastel orange.

Fully mounted connection unit made of high temperature-resistant special ceramic and labelled protective conductor terminal. Supplied with 2 MMS 6x50 fire protection screw ties for anchorless fastening on the external straps.

Power cable nominal cross-sections: Up to 16 mm². Several rigid copper wires with smaller cross-sections per terminal possible. High protection rating IP66, impact resistance class IK05.

Details on the cable types and manufacturers can be found in the general construction test certificate of the material testing institute NRW, Erwitte.

FireBox T100ED external fastening with fuse holder

Type	Nominal cross-section mm ²	Number of terminals	Entries	Pack. pcs	Weight kg/100 pcs.	Item No.
T 100 ED 6-6 AF	6	6	8x M25 2x M32	1	43.330	7205560
T 100 ED 10-6 AF	10	6	8x M25 2x M32	1	43.340	7205563

PP Polypropylene

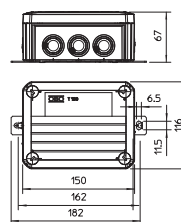
Halogen-free junction box with pre-mounted, soft plug-in seals, approved for maintaining electrical functionality according to DIN 4102 Part 12. Maintenance of electrical functionality to classes E30 to E90.

Colour: Pastel orange.

Fully mounted connection unit made of high temperature-resistant special ceramic and labelled protective conductor terminal. Supplied with fuse holder TE-FH 520 for VDE-conformant, reaction-free protection of consumers and 2 fire protection screw ties MMS 6x50 for anchorless fastening on the external shackles.

Power cable nominal cross-sections: 1.5 to 10 mm² depending on the type, data cables with 0.8 mm wire Ø. Several rigid copper wires with smaller cross-sections per terminal possible. High protection rating IP66, impact resistance class IK08.

Details on the cable types and manufacturers can be found in the general construction test certificate of the material testing institute NRW, Erwitte.



FireBox T160ED with external fastening and fuse holder

Type	Nominal cross-section mm ²	Number of terminals	Entries	Pack. pcs	Weight kg/100 pcs.	Item No.
T 160 ED 16-6 AF	16	6	7x M25 5x M32	1	60.000	7205566

PP Polypropylene

Halogen-free junction box with pre-mounted, soft plug-in seals, approved for maintaining electrical functionality according to DIN 4102 Part 12. Maintenance of electrical functionality to classes E30 to E90.

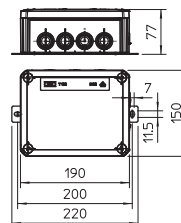
Colour: Pastel orange.

Fully mounted connection unit made of high temperature-resistant special ceramic and labelled protective conductor terminal. Supplied with fuse holder TE-FH 520 for VDE-conformant, reaction-free protection of consumers and 2 fire protection screw ties MMS 6x50 for anchorless fastening on the external shackles.

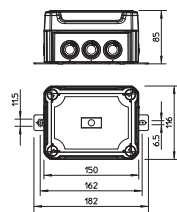
Power cable nominal cross-sections: Up to 16 mm². Several rigid copper wires with smaller cross-sections per terminal possible.

High protection rating IP66, impact resistance class IK05.

Details on the cable types and manufacturers can be found in the general construction test certificate of the material testing institute NRW, Erwitte.



FireBox T100ED with external fastening and impact-proof cover



Type	Nominal cross-section mm ²	Number of terminals	Entries	Pack. pcs	Weight kg/100 pcs.	Item No.
T100ED 6-5 AS	6	5	8x M25 2x M32	1	44.500	7205620
T100ED 10-5 AS	10	5	8x M25 2x M32	1	46.600	7205623

PP/PC Polypropylene / polycarbonate

Halogen-free junction box with impact-proof cover and pre-mounted, soft plug-in seals, approved for the maintenance of electrical functionality according to DIN 4102 Part 12. Maintenance of electrical functionality to classes E30 to E90.

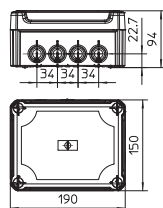
Colour: Pastel orange.

Fully mounted connection unit made of high temperature-resistant special ceramic and labelled protective conductor terminal. Supplied with 2 MMS 6x50 fire protection screw ties for anchorless fastening on the external straps.

Power cable nominal cross-sections: 1.5 to 10 mm² depending on the type, data cables with 0.8 mm wire Ø. Several rigid copper wires with smaller cross-sections per terminal possible. High protection rating IP66, impact resistance class IK09.

Details on the cable types and manufacturers can be found in the general construction test certificate of the material testing institute NRW, Erwitte.

FireBox T160ED with external fastening and impact-proof cover



Type	Nominal cross-section mm ²	Number of terminals	Entries	Pack. pcs	Weight kg/100 pcs.	Item No.
T160ED 16-5 AS	16	5	7x M25 5x M32	1	65.000	7205626

PP/PC Polypropylene / polycarbonate

Halogen-free junction box with impact-proof cover and pre-mounted, soft plug-in seals, approved for the maintenance of electrical functionality according to DIN 4102 Part 12. Maintenance of electrical functionality to classes E30 to E90.

Colour: Pastel orange.

Fully mounted connection unit made of high temperature-resistant special ceramic and labelled protective conductor terminal. Supplied with 2 MMS 6x50 fire protection screw ties for anchorless fastening on the external straps.

Power cable nominal cross-sections: Up to 16 mm². Several rigid copper wires with smaller cross-sections per terminal possible. High protection rating IP66, impact resistance class IK10.

Details on the cable types and manufacturers can be found in the general construction test certificate of the material testing institute NRW, Erwitte.

FireBox T100ED with external fastening, fuse holder and impact-proof cover

Type	Nominal cross-section mm ²	Number of terminals	Entries	Pack. pcs	Weight kg/100 pcs.	Item No.
T100ED 6-6 AFS	6	6	8x M25 2x M32	1	49.200	7205630
T100ED 10-6 AFS	10	6	8x M25 2x M32	1	49.300	7205633

PP/PC Polypropylene / polycarbonate

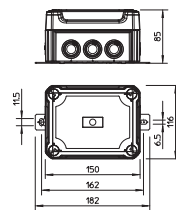
Halogen-free junction box with impact-proof cover and pre-mounted, soft plug-in seals, approved for the maintenance of electrical functionality according to DIN 4102 Part 12. Maintenance of electrical functionality to classes E30 to E90.

Colour: Pastel orange.

Fully mounted connection unit made of high temperature-resistant special ceramic and labelled protective conductor terminal. Supplied with fuse holder TE-FH 520 for VDE-conformant, reaction-free protection of consumers and 2 fire protection screw ties MMS 6x50 for anchorless fastening on the external shackles.

Power cable nominal cross-sections: 1.5 to 10 mm² depending on the type, data cables with 0.8 mm wire Ø. Several rigid copper wires with smaller cross-sections per terminal possible. High protection rating IP66, impact resistance class IK09.

Details on the cable types and manufacturers can be found in the general construction test certificate of the material testing institute NRW, Erwitte.



FireBox with plug-in seal for data technology

FireBox T100ED for data technology with internal fastening

Type	Nominal cross-section mm ²	Number of terminals	Entries	Pack. pcs	Weight kg/100 pcs.	Item No.
T 100 ED 4-10 D	4	10	8x M25 2x M32	1	38.300	7205580

PP Polypropylene

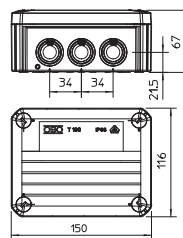
Halogen-free junction box with pre-mounted, soft plug-in seals, approved for maintaining electrical functionality according to DIN 4102 Part 12. Maintenance of electrical functionality to classes E30 to E90.

Colour: Pastel orange.

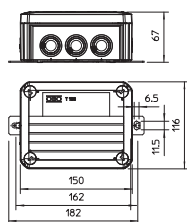
Fully mounted connection unit made of high temperature-resistant special ceramic and labelled protective conductor terminals. Supplied with 2 MMS 6x50 fire protection screw ties for anchorless fastening on the external straps.

For data cables with wire Ø 0.8 mm. Up to 6 rigid copper wires (0.5 mm²) possible on each terminal. High protection rating IP66, impact resistance class IK08.

Details on the cable types and manufacturers can be found in the general construction test certificate of the material testing institute NRW, Erwitte.



FireBox T100ED for data technology with external fastening



Type	Nominal cross-section mm²	Number of terminals	Entries	Pack. pcs	Weight kg/100 pcs.	Item No.
T 100 ED 4-10 AD	4	10	8x M25 2x M32	1	45.600	7205583

PP Polypropylene

Halogen-free junction box with pre-mounted, soft plug-in seals, approved for maintaining electrical functionality according to DIN 4102 Part 12. Maintenance of electrical functionality to classes E30 to E90.

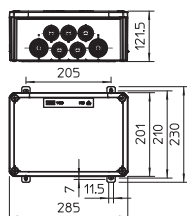
Colour: Pastel orange.

Fully mounted connection unit made of high temperature-resistant special ceramic and labelled protective conductor terminals. Supplied with 2 MMS 6x50 fire protection screw ties for anchorless fastening on the external straps.

For data cables with wire Ø 0.8 mm. Up to 6 rigid copper wires (0.5 mm²) possible on each terminal. High protection rating IP66, impact resistance class IK08.

Details on the cable types and manufacturers can be found in the general construction test certificate of the material testing institute NRW, Erwitte.

FireBox T350ED for data technology with external fastening



Type	Nominal cross-section mm²	Number of terminals	Entries	Pack. pcs	Weight kg/100 pcs.	Item No.
T 350 ED 4-28 AD	4	28	16x M32 8x M40	1	163.000	7205590

PP Polypropylene

Halogen-free junction box as small data distributor with pre-mounted, soft plug-in seals, approved for the maintenance of electrical functionality according to DIN 4102 Part 12. Maintenance of electrical functionality to classes E30 to E90.

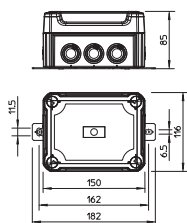
Colour: Pastel orange.

Fully mounted connection unit made of high temperature-resistant special ceramic and labelled protective conductor terminals. Supplied with 4 MMS 6x50 fire protection screw ties for anchorless fastening on the external straps.

For data cables with wire Ø 0.8 mm. Up to 6 rigid copper wires (0.5 mm²) possible on each terminal. High protection rating IP66, impact resistance class IK06.

Details on the cable types and manufacturers can be found in the general construction test certificate of the material testing institute NRW, Erwitte.

FireBox T100ED for data equipment, external fastening and impact-proof cover



Type	Nominal cross-section mm²	Number of terminals	Entries	Pack. pcs	Weight kg/100 pcs.	Item No.
T100ED 4-10 ADS	4	10	8x M25 2x M32	1	51.600	7205640

PP/PC Polypropylene / polycarbonate

Halogen-free junction box with impact-proof cover and pre-mounted, soft plug-in seals, approved for the maintenance of electrical functionality according to DIN 4102 Part 12. Maintenance of electrical functionality to classes E30 to E90.

Colour: Pastel orange.

Fully mounted connection unit made of high temperature-resistant special ceramic and labelled protective conductor terminals. Supplied with 2 MMS 6x50 fire protection screw ties for anchorless fastening on the external straps.

For data cables with wire Ø 0.8 mm. Up to 6 rigid copper wires (0.5 mm²) possible on each terminal. High protection rating IP66, impact resistance class IK09.

Details on the cable types and manufacturers can be found in the general construction test certificate of the material testing institute NRW, Erwitte.

FireBox T100E with internal fastening

Type	Nominal cross-section mm ²	Number of terminals	Pack. pcs	Weight kg/100 pcs	Item No.
T 100 E 4-5	4	5	1	27.400	7205510

PP Polypropylene

Halogen-free junction box, approved for the maintenance of electrical functionality according to DIN 4102 Part 12. Maintenance of electrical functionality to classes E30 to E90.

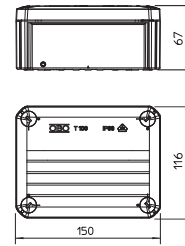
Colour: Pastel orange.

Including pre-mounted connection unit made of high temperature-resistant special ceramic and labelled protective conductor terminal. Supplied with fire protection screw ties for anchorless fastening.

Power cable nominal cross-sections: 1.5 to 4 mm², data cables with 0.8 mm wire Ø. Maximum of two 1.5 mm² rigid copper cables per terminal (remove wire protection).

High protection rating IP66, impact resistance class IK07.

Details on the cable types and manufacturers can be found in the general construction test certificate of the material testing institute NRW, Erwitte.



FireBox T160E with internal fastening

Type	Nominal cross-section mm ²	Number of terminals	Pack. pcs	Weight kg/100 pcs	Item No.
T 160 E 10-5	10	5	1	48.700	7205524
T 160 E 16-5	16	5	1	53.800	7205528

PP Polypropylene

Halogen-free junction box, approved for the maintenance of electrical functionality according to DIN 4102 Part 12. Maintenance of electrical functionality to classes E30 to E90.

Colour: Pastel orange.

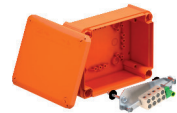
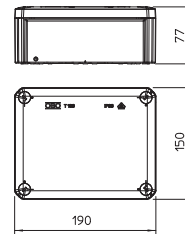
Including pre-mounted connection unit made of high temperature-resistant special ceramic and labelled protective conductor terminal. Supplied with fire protection screw ties for anchorless fastening.

Nominal cross-sections of the power cable: 10 or 16 mm²

A maximum of 2 rigid copper cables of 2.5 mm² or 4 mm² per terminal (remove wire protection).

High protection rating IP66, impact resistance class IK06.

Details on the cable types and manufacturers can be found in the general construction test certificate of the material testing institute NRW, Erwitte.



FireBox T160E for data technology with internal fastening

Type	Nominal cross-section mm ²	Number of terminals	Pack. pcs	Weight kg/100 pcs	Item No.
T 160 E 4-8D	4	8	1	46.500	7205520

PP Polypropylene

Halogen-free junction box, approved for the maintenance of electrical functionality according to DIN 4102 Part 12. Maintenance of electrical functionality to classes E30 to E90.

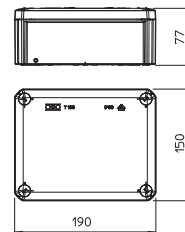
Colour: Pastel orange.

Including pre-mounted connection unit made of high temperature-resistant special ceramic with fire protection screw ties for anchorless fastening.

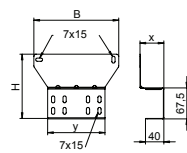
Nominal cross-section: data cables with 0.8 mm wire Ø.

High protection rating IP66, impact resistance class IK06.

Details on the cable types and manufacturers can be found in the general construction test certificate of the material testing institute NRW, Erwitte.



Mounting plate for FireBox T series



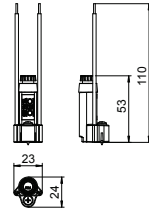
Type	Dimen- sion H mm	Dimen- sion B mm	Dimen- sion x mm	Dimen- sion y mm	Pack. pcs	Weight kg/100 pcs.	Item No.
MP T610	141	185	52	125	1	23.600	7205480
MP T616	159	220	63	165	1	34.500	7205484

St Steel

DD Strip galvanised zinc/aluminium, Double Dip

Mounting plate for the fastening of junction boxes of the FireBox T series (with external fastening) onto cable trays or cable ladders with a side height of 60 mm. The angled construction from sheet steel reinforced through crimps enables the secure mounting of cables that maintain electrical functionality, without having to bend the cable over the side rail.

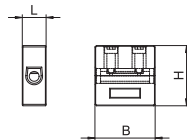
Fuse holder for FireBox T series



Type	Pack. pcs	Weight kg/100 pcs.	Item No.
TE-FH 520	1	1.800	7205570

Fuse holder with bayonet lock for fine-wire fuse for dimensions Ø 5 x 20 mm. Connection wires that maintain electrical functionality with nominal cross-section 2.5 mm², ready-stripped. For mounting on one of the exposed domes in the junction box of the FireBox T series using the supplied screw.

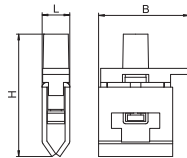
Ceramic terminal



Type	Nominal cross- section mm²	Dimen- sion B mm	Dimen- sion H mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TK 04	0.5 - 4	21.5	21.5	8.5	5	0.880	7205700
TK 06	6	21.5	21.5	8.5	5	0.880	7205702
TK 10	10	24	24	12.5	5	1.840	7205704
TK 16	16	28	28	15	5	3.160	7205706

High temperature-resistant ceramic terminal for refitting of the FireBox T series.

Protective conductor terminal



Type	Nominal cross- section mm²	Dimen- sion B mm	Dimen- sion H mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TPE 04	4	19	26	6	5	0.400	7205708
TPE 25	25	23	42	12	5	1.440	7205710

Protective conductor terminal for retro-fitting the FireBox T series with green-yellow identification.

Cable gland with locknut as a set

Type	Thread	Shipping box pcs	Pack. pcs	Weight kg/100 pcs	Item No.
V-TEC VM20+ OR	M20 x 1,5	100	10	1.106	7205660
V-TEC VM25+ OR	M25 x 1,5	100	10	1.710	7205663
V-TEC VM32+ OR	M32 x 1,5	100	10	2.840	7205666
V-TEC VM40+ OR	M40 x 1,5	120	10	5.150	7205669

PA Polyamide

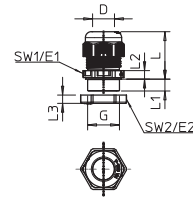
Robust cap nut cable gland with metric connecting thread to IEC 423, including pre-mounted locknut.

For high tightness requirements. Strain relief, wringing protection and tightness over the whole clamping area. Sealing ring made of polychloroprene/acrylonitrile butadiene rubber. Moulded shaped sealing lip on intermediate support, no connection thread sealing ring required.

VDE-tested according to DIN EN 50262, protection rating IP68 at 5 bar for 1 hr.

For maintenance of electrical function according to DIN 4102 Part 12 in connection with the junction boxes of the FireBox T series.

Colour: Pastel orange.



G	D	SW1	E1	SW2	E2	L min.	L max.	L1	L2	L3
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
M20 x 1.5	6–13	24	27	24	27	23.5	30.5	9	5	6
M25 x 1.5	9–17	29	32	32	36	26	35	10	6	6.5
M32 x 1.5	15–21	36	41	41	46	29	40	11	6	7
M40 x 1.5	16–28	44	50	50	56	36	46	11	7	7.5

Dimensions

Plug-in seal for FireBox T series

Type	Size	For Ø mm	Pack. pcs	Weight kg/100 pcs	Item No.
EDK 25 OR	M25	0 - 22	10	0.165	7205675
EDK 32 OR	M32	0 - 27	10	0.274	7205677
EDK 40 OR	M40	0 - 34	10	0.420	7205679

TPE Thermoplastic elastomer

The soft plug-in seal can be cut back step by step to suit the relevant cable diameter.

Colour: Pastel orange.

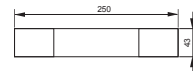


Identification plate for function maintenance

Type	Language	Pack. pcs	Weight kg/100 pcs	Item No.
KS-E DE	German	10	0.600	7205423
KS-E EN	English	10	0.600	7205432
KS-E NL	Dutch	10	0.600	7205405

PVC Polyvinylchloride

Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.



Function maintenance

Clamp clips with profile rails



The routing types with clamp clips fulfil all the requirements of DIN 4102 Part 12 as a standard support structure for the maintenance of electrical functionality classes E30 and E90. Mounting as a cable-specific routing type is possible, depending on the specifications of the cable manufacturer. The clamp clips can be used for horizontal cable routing on walls and ceilings and vertical routing on walls. The clamp clips are made of sheet steel with a riveted metal pressure trough. Long troughs made of galvanised sheet steel can be used to increase the support area for the cables. These are inserted loosely between the cables and the metal pressure troughs of the clamp clips. Bundling of up to three cables in a clamp clip is possible. The individual diameter of the bundled cables may not exceed 25 mm. If only individual cables are installed, then there is no limit to the cable diameter.



Horizontal mounting with clamp clips and long troughs on the wall and under the ceiling.



Horizontal cable mounting with clamp clips on the wall.



Horizontal cable mounting with clamp clips under the ceiling.



Vertical cable mounting with clamp clips on the wall.



Installation of the cables, either individually or as a bundle.

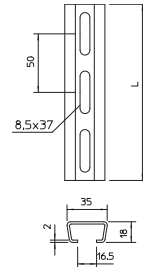
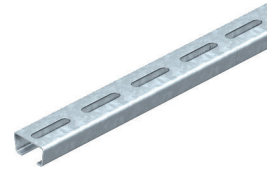
Profile rail 2068, slot width 16.5, perforated

Type	Length mm	Dimension W x H mm	Material thickness mm	Dimension L mm	Pack. m	Weight kg/100 m	Item No.
AML3518P2000FT	2000	35 x 18	1.5	2000	20	89.000	1119656

St Steel

FT Hot-dip galvanised

Central C profile rail for cable routing, in conjunction with clamp clips with a hammerhead foot. Can also be used as suspension construction for cable support systems.



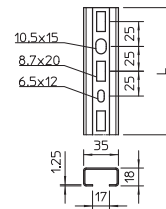
CM3518 profile rail, slot width 17 mm, perforated

Type	Length mm	Dimension W x H mm	Material thickness mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
CML3518P0150FS	150	35 x 18	1.25	150	25	10.600	1104241
CML3518P0200FS	200	35 x 18	1.25	200	25	14.200	1104268
CML3518P0300FS	300	35 x 18	1.25	300	25	21.300	1104284
CML3518P0400FS	400	35 x 18	1.25	400	10	28.400	1104292
CML3518P0500FS	500	35 x 18	1.25	500	10	35.500	1104306
CML3518P0600FS	600	35 x 18	1.25	600	10	42.600	1104310
CML3518P0700FS	700	35 x 18	1.25	700	10	49.700	1104315
CML3518P0800FS	800	35 x 18	1.25	800	10	56.800	1104320
CML3518P0900FS	900	35 x 18	1.25	900	10	63.900	1104325
CML3518P1000FS	1000	35 x 18	1.25	1000	1	71.000	1104497
CML3518P2000FS	2000	35 x 18	1.25	2000	2	71.000	1104500

St Steel

FS Strip-galvanised

Light-duty profile rail, perforated, slot width 17 mm.



Dimensions

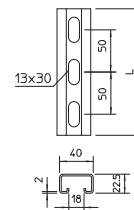
MS4022 mounting rail, heavy-duty, slot 18 mm, perforated

Type	Length mm	Dimension W x H mm	Material thickness mm	Dimension L mm	Pack. m	Weight kg/100 m	Item No.
MS4022P2000FT	2000	40 x 22,5	2	2000	10	152.500	1121979

St Steel

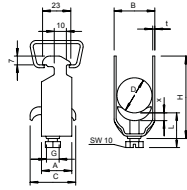
FT Hot-dip galvanised

Heavy-duty C profile rail for individual installation of support constructions, e.g. for cable trays or as a panel for switchgear cabinets. Can also be used for cable routing, in conjunction with clamp clips with a U foot.



Dimensions

Clamp clip, single, metal pressure trough



Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2056 M 12 FT	8 - 12	100	3.200	1156004
2056 M 16 FT	12 - 16	100	3.500	1156012
2056 M 22 FT	16 - 22	100	4.400	1156020
2056 M 28 FT	22 - 28	100	6.100	1156039
2056 M 34 FT	28 - 34	100	7.700	1156047
2056 M 40 FT	34 - 40	100	8.600	1156055
2056 M 46 FT	40 - 46	100	9.600	1156063
2056 M 52 FT	46 - 52	100	10.400	1156071
2056 M 58 FT	52 - 58	100	13.100	1156098
2056 M 64 FT	58 - 64	100	14.500	1156101
2056 M 70 FT	64 - 70	50	16.100	1156128
2056 M 76 FT	70 - 76	25	18.300	1156136
2056 M 82 FT	76 - 82	25	19.100	1156144
2056 M 90 FT	82 - 90	25	23.300	1156152
2056 M 100 FT	90 - 100	25	24.500	1156160

St Steel

FT Hot-dip galvanised

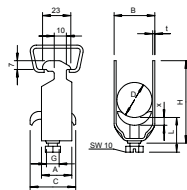
Suitable for all C profile rails with slot width 16–17 mm.

Clip, bolt and pressure trough made of hot-dip galvanised steel.

Dimensions

D mm	A mm	B mm	C mm	G	t mm	x mm	H mm	L mm
8 - 12	23	16	30	M6	1.5	3.5	40	32.5
12 - 16	23	20	30	M6	1.5	3.5	44	32.5
16 - 22	23	27	30	M6	1.5	4.5	50	46.5
22 - 28	23	33	30	M6	2	4.5	58	46.5
28 - 34	23	39	35	M8	2	5	66	44
34 - 40	23	45	35	M8	2	5	72	44
40 - 46	23	51	35	M8	2	5	79	44
46 - 52	23	57	35	M8	2	5	86	44
52 - 58	23	64	35	M8	2.5	5	93	44
58 - 64	23	70	35	M8	2.5	5	99	56
64 - 70	25	76	35	M8	2.5	5	106	56
70 - 76	25	82	40	M8	2.5	5	114	56
76 - 82	25	88	40	M8	2.5	5	121	56
82 - 90	25	97	40	M8	3	5	130	56
90 - 100	25	107	40	M8	3	5	140	56

Clamp clip, double, metal pressure trough



Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2056 M2 12 FT	8 - 12	50	3.980	1156179
2056 M2 16 FT	12 - 16	50	4.750	1156187
2056 M2 22 FT	16 - 22	50	6.900	1156195
2056 M2 28 FT	22 - 28	50	7.800	1156209

St Steel

FT Hot-dip galvanised

Suitable for all C profile rails with slot width 16–17 mm.

Clip, bolt and pressure trough made of hot-dip galvanised steel.

Dimensions

D mm	A mm	B mm	C mm	G	t mm	x mm	H mm	L mm
8–12	23	16	34	M6	1.5	5	52	34
12–16	23	20	34	M6	1.5	5	61	34
16–22	23	27	34	M6	1.5	5	73	47
22–28	23	33	34	M6	2	5	87	47

Clamp clip, triple, metal pressure trough

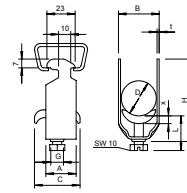
Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2056 M3 12 FT	8 - 12	50	4.050	1156241
2056 M3 16 FT	12 - 16	50	5.800	1156268
2056 M3 22 FT	16 - 22	50	6.500	1156276
2056 M3 28 FT	22 - 28	50	9.500	1156284

St Steel

FT Hot-dip galvanised

Suitable for all C profile rails with slot width 16–17 mm.

Clip, bolt and pressure trough made of hot-dip galvanised steel.



Dimensions

D mm	A mm	B mm	C mm	G mm	t mm	x mm	H mm	L mm
8-12	23	16	34	M6	1.2	5	70	47
12-16	23	20	34	M6	1.5	5	82	47
16-22	23	27	34	M6	1.5	5	101	47
22-28	23	33	34	M6	2	5	121	47

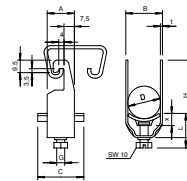
Clamp clip, single, metal pressure trough

Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2056U M 12 FT	8 - 12	100	3.300	1158007
2056U M 16 FT	12 - 16	100	3.520	1158015
2056U M 22 FT	16 - 22	100	3.960	1158023
2056U M 28 FT	22 - 28	100	5.890	1158031
2056U M 34 FT	28 - 34	100	7.650	1158058
2056U M 40 FT	34 - 40	100	8.360	1158066
2056U M 46 FT	40 - 46	100	10.890	1158074
2056U M 52 FT	46 - 52	100	11.660	1158082
2056U M 58 FT	52 - 58	100	14.740	1158090
2056U M 64 FT	58 - 64	100	15.730	1158104
2056U M 70 FT	64 - 70	50	18.200	1158112
2056U M 76 FT	70 - 76	25	20.600	1158120

St Steel

FT Hot-dip galvanised

Suitable for all C profile rails with slot width 18 mm and 22 mm.



Dimensions

D mm	A mm	B mm	C mm	G mm	t mm	x mm	H mm	L mm
8-12	20	16	34	M6	1.5	5	42	34
12-16	20	20	34	M6	1.5	5	46	34
16-22	20	27	34	M6	1.5	5	53	34
22-28	20	33	34	M6	2	5	59	34
28-34	20	39	34	M8	2	5.5	67	37.5
34-40	20	45	34	M8	2	5.5	73	37.5
40-46	20	51	40	M8	2	5.5	79	37.5
46-52	20	57	40	M8	2	6.5	85	38.5
52-58	23	64	40	M8	2.5	6.5	91	38.5
58-64	23	70	40	M8	2.5	6.5	97	38.5
64-70	23	76	40	M8	2.5	6.5	103	38.5
70-76	25	82	40	M8	2.5	6.5	110	45.5

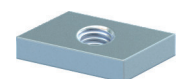
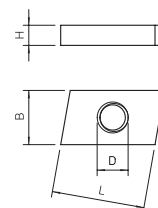
Slide nut

Type	Dimen- sion L mm	Dimen- sion B mm	Dimen- sion H mm	Pack. pcs	Weight kg/100 pcs.	Item No.
ACMSN M6 ZL	26	16.5	4	100	1.740	1147056

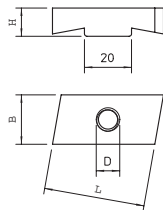
St Steel

ZL Zinc scale

Slide nut for use with CM3015, CM3518 and AM3518 profile rails



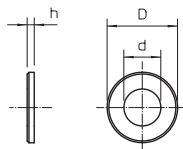
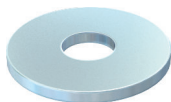
Slide nut



Type	Dimension L mm	Dimension B mm	Dimension H mm	Pack. pcs	Weight kg/100 pcs.	Item No.
MS40SN M6 ZL	35	17	10	50	3.750	1147106
St Steel						
ZL Zinc scale						

Slide nut for use with MS4022 profile rail

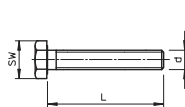
Large washer



Type	Dimension D mm	Dimension d mm	Dimension h mm	Pack. pcs	Weight kg/100 pcs.	Item No.
DIN440 7 F	22	6.6	2	100	0.550	6408702
St Steel						
F Hot-dip galvanised						

Washer of particularly large outer diameter.

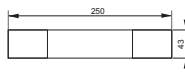
Hexagonal bolt DIN 933



Type	Thread	Dimension mm	Dimension L mm	Dimension d mm	SW mm	Pack. pcs	Weight kg/100 pcs.	Item No.
HHS M6x16 G	M6	M6 x 16	16	6	10	100	0.494	3156141
St Steel								
G Electrogalvanised								

Hexagonal bolt to ISO 4017 with metric thread

Identification plate for function maintenance



Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-E DE	German	10	0.600	7205423
KS-E EN	English	10	0.600	7205432
KS-E NL	Dutch	10	0.600	7205405
PVC Polyvinylchloride				

Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.

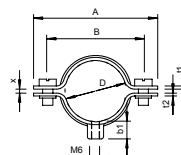
Cable and pipe spacer clip 732 with threaded connection

Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
732 6 GTP	5 - 6	100	1.160	1360051
732 8 GTP	7 - 8	100	1.310	1360086
732 10 GTP	9 - 10	100	1.360	1360108
732 12 GTP	10.5 - 12	100	1.460	1360124
732 14 GTP	12.5 - 14	100	1.480	1360140
732 15 GTP	13.5 - 15	100	1.530	1360159
732 16 GTP	14.5 - 16	100	1.590	1360167
732 18 GTP	16.5 - 18	100	1.620	1360183
732 20 GTP	18.5 - 20	50	1.730	1360205
732 22 GTP	20 - 22	50	1.780	1360221
732 24 GTP	22 - 24	50	1.840	1360248
732 26 GTP	24 - 26	50	1.920	1360264
732 28 GTP	26 - 28	50	2.840	1360280
732 30 GTP	28 - 30	50	3.040	1360302
732 33 GTP	31 - 33	25	3.120	1360337
732 35 GTP	33 - 35	25	3.280	1360353
732 38 GTP	36 - 38	25	3.490	1360388
732 40 GTP	38 - 40	25	3.600	1360396
732 42 GTP	40 - 42	25	3.840	1360426
732 45 GTP	43 - 45	25	3.990	1360450
732 48 GTP	46 - 48	25	4.040	1360485
732 50 GTP	48 - 50	25	4.160	1360507
732 60 GTP	58 - 60	25	4.960	1360604
732 63 GTP	61 - 63	25	5.000	1360639

St Steel

GTP Electrogalvanised, transparently passivated

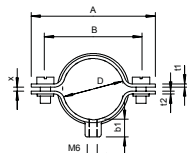
Mounting with screw-in spacer clips. Spacer clips and screw-in spacer clips are available in various materials: in V2A stainless steel, in electrogalvanised, hot-dip galvanised steel or in aluminium. Fastening can take place with bolt ties or angler anchors and Sprint screws. Depending on the design, the clips can be "shot" using a bolt-firing tool or nail device.



Dimensions

D mm	A mm	B mm	x mm	b1 mm	t1 mm	t2 mm	M
5-6	35	23	1	8	1	1.25	M5 x 10
7-8	34	22	1	8	1	1.25	M5 x 10
9-10	36	24	1	8	1	1.25	M5 x 12
10.5-12	38	26	1.5	8	1	1.25	M5 x 12
12.5-14	40	28	1.5	8	1	1.25	M5 x 12
13.5-15	41	29	1.5	8	1	1.25	M5 x 12
14.5-16	42	30	1.5	8	1	1.25	M5 x 12
16.5-18	44	32	1	8	1	1.25 / -	M5 x 12
18.5-20	46	34	1.5	8	1	1.25	M5 x 12
20-22	48	36	2	8	1	1.25	M5 x 12
22-24	50	38	2	8	1	1.25	M5 x 12
24-26	52	40	2	8	1	1.25	M5 x 12
26-28	59	45	2	8.5	1.5	1.5	M5 x 12
28-30	61	47	2	8.5	1.5	1.5	M5 x 12
31-33	64	50	2	8.5	1.5	1.5	M5 x 12
33-35	66	52	2	8.5	1.5	1.5	M5 x 12
36-38	69	55	2	8.5	1.5	1.5	M5 x 12
38-40	71	57	2	8.5	1.5	1.5	M5 x 12
40-42	73	59	2	8.5	1.5	1.5	M5 x 12
43-45	76	62	2	8.5	1.5	1.5	M5 x 12
46-48	79	65	2	8.5	1.5	1.5	M5 x 12
48-50	81	67	2	8.5	1.5	1.5	M5 x 14
58-60	91	77	2	8.5	1.5	1.5	M5 x 14
61-63	94	80	2	9.2	1.5	1.5	M5 x 14

Cable and pipe spacer clip 732 with threaded connection V4A



Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
732 6 A4	5 - 6	100	1.364	1360644
732 8 A4	7 - 8	100	1.376	1360646
732 10 A4	9 - 10	100	1.467	1360648
732 12 A4	10.5 - 12	100	1.622	1360650
732 14 A4	12.5 - 14	100	1.710	1360652
732 15 A4	13.5 - 15	100	1.791	1360654
732 16 A4	14.5 - 16	100	1.845	1360656
732 18 A4	16.5 - 18	100	1.889	1360658
732 20 A4	18.5 - 20	50	1.960	1360660
732 22 A4	20 - 22	50	1.999	1360662
732 24 A4	22 - 24	50	2.062	1360664
732 26 A4	24 - 26	50	2.083	1360666
732 28 A4	26 - 28	50	2.923	1360668
732 30 A4	28 - 30	50	3.047	1360670
732 33 A4	31 - 33	25	3.186	1360672
732 38 A4	36 - 38	25	3.453	1360676
732 40 A4	38 - 40	25	3.554	1360678
732 42 A4	40 - 42	25	3.650	1360680
732 45 A4	43 - 45	25	3.810	1360682
732 48 A4	46 - 48	25	3.972	1360684
732 50 A4	48 - 50	25	4.045	1360686
732 60 A4	58 - 60	25	4.582	1360688
732 63 A4	61 - 63	25	4.712	1360690

V4A Stainless steel, A4

Mounting with screw-in spacer clips. Spacer clips and screw-in spacer clips are available in various materials: in V2A stainless steel, in electrogalvanised, hot-dip galvanised steel or in aluminium. Fastening can be take place with bolt ties or Angler anchors and Sprint screws. Depending on the design, the clips can be "shot" using a bolt-firing tool or nail device.

Dimensions

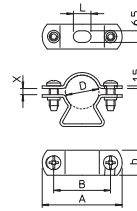
D mm	A mm	B mm	x mm	b1 mm	t1 mm	t2 mm	M
5-6	35	23	1	9.8	1	1.25	M5 x 10
7-8	34	22	1	9.8	1	1.25	M5 x 10
9-10	36	24	1	9.8	1	1.25	M5 x 12
10.5-12	38	26	1.5	9.8	1	1.25	M5 x 12
12.5-14	40	28	1.5	9.8	1	1.25	M5 x 12
13.5-15	41	29	1.5	9.8	1	1.25	M5 x 12
14.5-16	42	30	1.5	9.8	1	1.25	M5 x 12
16.5-18	44	22	1.5	9.8	1	1.25	M5 x 12
18.5-20	46	34	1.5	9.8	1	1.25	M5 x 12
20-22	48	36	2	9.8	1	1.25	M5 x 12
22-24	50	38	2	9.8	1	1.25	M5 x 12
24-26	52	40	2	10	1	1.25	M5 x 12
26-28	59	45	2	10	1.5	1.5	M5 x 12
28-30	61	47	2	10	1.5	1.5	M5 x 12
31-33	64	50	2	10	1.5	1.5	M5 x 12
36-38	69	55	2	10	1.5	1.5	M5 x 12
38-40	71	57	2	10	1.5	1.5	M5 x 12
40-42	73	59	2	10	1.5	1.5	M5 x 12
43-45	76	62	2	10	1.5	1.5	M5 x 12
46-48	79	65	2	10	1.5	1.5	M5 x 12
48-50	81	67	2	10	1.5	1.5	M5 x 14
58-60	91	77	2	10	1.5	1.5	M5 x 14
61-63	94	80	2	10	1.5	1.5	M5 x 14

Cable and pipe spacer clip 733

Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
733 21 G	19 - 21	50	2.730	1361201
733 23 G	21 - 23	50	2.870	1361236
733 29 G	24 - 29	50	3.480	1361295
733 38 G	30 - 38	25	4.040	1361384
733 48 G	39 - 48	25	4.810	1361481
733 54 G	48 - 54	25	5.800	1361511
733 61 G	53 - 61	20	6.370	1361619
733 63 G	63	20	6.940	1361635
733 19 FT	17 - 19	50	2.500	1361097
733 21 FT	19 - 21	50	2.730	1361100
733 23 FT	21 - 23	50	2.870	1361103
733 29 FT	24 - 29	50	3.480	1361106
733 38 FT	30 - 38	25	4.040	1361109
733 48 FT	39 - 48	25	4.810	1361112
733 54 FT	48 - 54	25	5.400	1361117
733 61 FT	53 - 61	20	6.100	1361115
733 63 FT	63	20	7.250	1361118

Sl Steel

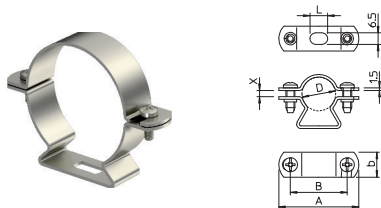
G Electrogalvanised FT Hot-dip galvanised



Dimensions

D mm	A mm	B mm	L mm	b mm	x mm
19-21	50	37	10	14	2
21-23	52	39	10	14	2.5
24-29	58	42	10	16	7
30-38	70	54	10	16	10
39-48	80	64	14	16	12.5
48-54	86	68	14	18	7.5
53-61	96	78	14	18	10
63	101	83	18	16	3
17 - 19	45	32	10	14	3.5
19 - 21	50	37	10	14	2
21 - 23	52	39	10	14	2.5
24 - 29	58	42	10	16	7
30 - 38	70	54	10	16	10
39 - 48	80	64	14	16	12.5
48-54	86	68	14	18	7.5
53-61	96	78	14	18	10
63	101	83	18	16	3

Cable and pipe spacer clip 733 V2A



Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
733 19 A2	17 - 19	50	2.800	1362038
733 21 A2	19 - 21	50	2.740	1362046
733 23 A2	21 - 23	50	2.800	1362054
733 29 A2	24 - 29	50	3.475	1362062
733 38 A2	30 - 38	25	4.500	1362070
733 48 A2	39 - 48	25	5.200	1362089
733 54 A2	48 - 54	25	5.800	1362097
733 61 A2	53 - 61	20	6.800	1362100
733 19 A4	17 - 19	50	2.500	1361651
733 21 A4	19 - 21	50	2.730	1361655
733 23 A4	21 - 23	50	2.710	1361659
733 29 A4	24 - 29	50	3.420	1361663
733 38 A4	30 - 38	25	4.040	1361667
733 48 A4	39 - 48	25	4.810	1361671
733 54 A4	48 - 54	25	5.800	1361675
733 61 A4	53 - 61	20	6.370	1361679
733 63 A4	63	20	6.940	1361683

V2A Stainless steel, A2 V4A Stainless steel, A4

Dimensions

D mm	A mm	B mm	L mm	b mm	x mm
17-19	45	32	10	14	3.5
19-21	50	37	10	14	2
21-23	52	39	10	14	2.5
24-29	58	42	10	16	7
30-38	70	54	10	16	10
39-48	80	64	14	16	12.5
48-54	86	68	14	18	7.5
53-61	96	78	14	18	10
17-19	45	32	10	14	3.5
19-21	50	37	10	14	2
21-23	52	39	10	14	2.5
24-29	58	42	10	16	7
30-38	70	54	10	16	10
39-48	80	64	14	16	12.5
48-54	86	68	14	18	7.5
53-61	96	78	14	18	10
63	101	83	18	16	3

Identification plate for function maintenance



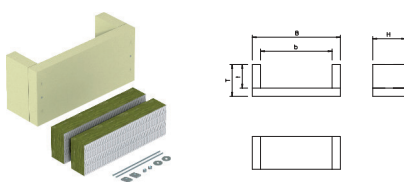
Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-E DE	German	10	0.600	7205423
KS-E EN	English	10	0.600	7205432
KS-E NL	Dutch	10	0.600	7205405

PVC Polyvinylchloride

Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.

Effective support for vertical routing

Strain relief, internal height 115 mm

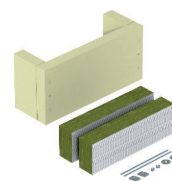
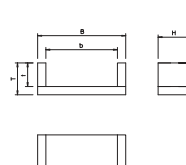


Type	Dimen- sion b mm	Dimen- sion t mm	Dimen- sion H mm	Dimen- sion B mm	Dimen- sion T mm	Pack. pcs	Weight kg/100 pcs.	Item No.
ZSE90-25-11	250	115	140	340	160	1	199.500	7215702
ZSE90-35-11	350	115	140	440	160	1	252.000	7215706
ZSE90-45-11	450	115	140	540	160	1	273.000	7215709

Strain relief as an effective support measure for vertical cable routing, according to DIN 4102 part 12, approved for all cable types and all vertical routing systems. Maintenance of electrical function classes E30 to E90. Housing including mineral fibre panels, fastening material, ASX fire protection coating in cartridge and identification plate.

Strain relief, internal height 175 mm

Type	Dimension b mm	Dimension t mm	Dimension H mm	Dimension B mm	Dimension T mm	Pack. pcs	Weight kg/100 pcs.	Item No.
ZSE90-25-17	250	175	160	340	220	1	500.000	7215713
ZSE90-35-17	350	175	160	440	220	1	600.000	7215716
ZSE90-45-17	450	175	160	540	220	1	700.000	7215719
ZSE90-55-17	550	175	160	640	220	1	722.000	7215726
ZSE90-65-17	650	175	160	740	220	1	441.000	7215730



Strain relief as an effective support measure for vertical cable routing, according to DIN 4102 part 12, approved for all cable types and all vertical routing systems. Maintenance of electrical function classes E30 to E90. Housing including mineral fibre panels, fastening material, ASX fire protection coating in cartridge and identification plate.

Ablation coating in a cartridge

Type	Contents ml	Pack. pcs	Weight kg/100 pcs.	Item No.
ASX-K	310	1	50.000	7202310

Intumescent material

Combined, endothermic and weatherproof coating for internal and external areas. Universal protection coating for cable and cable support structures. Use as direct filler, and as paint when stirred.

Material class DIN 4102 - B2, normally flammable.

In dry, frost-free rooms, the coating can be stored at temperatures from +5 °C to +25 °C for up to 18 months in closed, upright original containers.

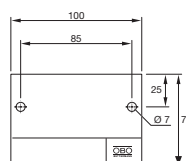


Identification plate for strain relief

Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-ZSE DE	German	1	2.400	7215750

PVC Polyvinylchloride

Universal identification plate to be written on with waterproof and light-resistant felt-tip pen for the ZSE90 strain relief. For approved identification, according to DIN 4102 Part 12. Incl. two push-fit anchors.



Function maintenance

Grip M grouped support



Horizontal wall and ceiling mounting.



Mounted grouped support 2031 M 15.



Easy insertion the cables in the opened grouped support.

S30

S60

S90

Cable routing with metal grouped supports is approved as a cable-specific routing type for the maintenance of electrical functionality classes E 30, E 60 and E 90 according to DIN 4102 Part 12. The collecting clamps used are made of sheet steel and can be opened and closed easily without the use of tools. To allow simple cable insertion, the supports can remain open during cable routing. Grouped supports for wall and ceiling mounting are suitable. Depending on the tested cables and the grouped supports used for the tests, fastening spacings of maximum 0.8 m and a cable assignment of up to 6 kg/m are permitted. The instructions of the various cable manufacturers should be complied with.

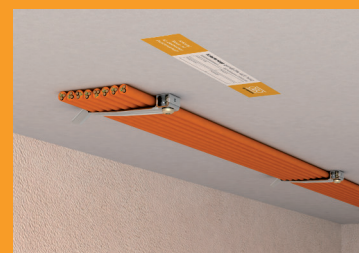
Function maintenance



Space-saving cable routing directly under the ceiling.



Simple cable installation through side insertion of the cables.



One-sided version for a small number of cables.

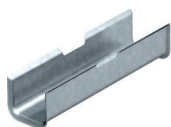


S30

Cable routing with rustproof steel pressure clips is approved as a cable-specific routing type for the maintenance of electrical functionality class E 30 according to DIN 4102 Part 12. This routing variant is ideal when there is only little mounting height available under the ceiling. With just small additions, fire alarm cables and also power cables for safety lighting systems can be routed in a space-saving way. For installation, the hips of the pressure clips are simply bent downwards and the cables pushed in from the side. The clamping area can be expanded with spacers.



Long trough for grouped support GRIP "M" 15



Type

2031 LW15

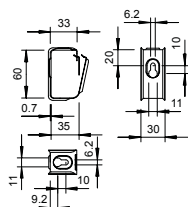
St Steel

FS Strip-galvanised

Long trough for grouped support type 2031/M15, for the maintenance of electrical function as cable-specific mounting variant.

Pack.	Weight		
pcs	kg/100 pcs.	Item No.	
25	8.200	2207184	

GRIP "M" 15



Type

2031 M 15 FS

St Steel

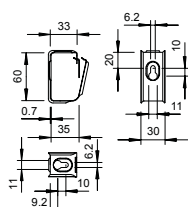
FS Strip-galvanised

Metal cable tidy for high mechanical stability, even in case of fire. Suitable for safe mounting above fire protection ceilings. Also approved as a cable-specific variant for the maintenance of electrical function to DIN 4102 part 12. For wall and ceiling mounting. Lock can be opened without tools. Detailed information on the approved routing variants can be found in the appropriate testing documentation.

No. of	Shipping		
conductors	box	Item No.	
NYM 3 x 1.5	pcs		
15	50	2207028	

Pack.	Weight		
pcs	kg/100 pcs.	Item No.	
50	3.700	2207028	

GRIP "M" 15



Type

2031 M 15 A2

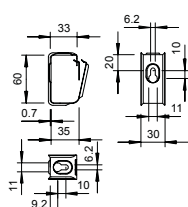
V2A Stainless steel, A2

Metal cable tidy for high mechanical stability, even in case of fire. Suitable for secure mounting above fire protection ceilings. Also approved as a cable-specific variant for the maintenance of electrical function to DIN 4102 part 12. For wall and ceiling mounting. Lock can be opened without tools. Detailed information on the approved routing variants can be found in the appropriate testing documentation.

No. of	Shipping		
conductors	box	Item No.	
NYM 3 x 1.5	pcs		
15	50	2207080	

Pack.	Weight		
pcs	kg/100 pcs.	Item No.	
50	3.000	2207080	

GRIP "M" 15



Type

2031 M 15 A4

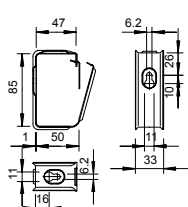
V4A Stainless steel, A4

Metal cable tidy for high mechanical stability, even in case of fire. Suitable for safe mounting above fire protection ceilings. Also approved as a cable-specific variant for the maintenance of electrical function to DIN 4102 part 12. For wall and ceiling mounting. Lock can be opened without tools. Detailed information on the approved routing variants can be found in the appropriate testing documentation.

No. of	Shipping		
conductors	box	Item No.	
NYM 3 x 1.5	pcs		
15	50	2207132	

Pack.	Weight		
pcs	kg/100 pcs.	Item No.	
50	3.000	2207132	

GRIP "M" 30



Type

2031 M 30 FS

St Steel

FS Strip-galvanised

Metal cable tidy for high mechanical stability, even in case of fire. Suitable for safe mounting above fire protection ceilings. Also approved as a cable-specific variant for the maintenance of electrical function to DIN 4102 part 12. For wall and ceiling mounting. Lock can be opened without tools. Detailed information on the approved routing variants can be found in the appropriate testing documentation.

No. of	Shipping		
conductors	box	Item No.	
NYM 3 x 1.5	pcs		
30	25	2207036	

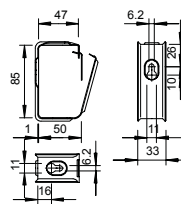
Pack.	Weight		
pcs	kg/100 pcs.	Item No.	
25	6.200	2207036	

Type	No. of conductors NYM 3 x 1.5	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
2031 M 30 A2	30	25	25	6.500	2207088

V2A Stainless steel, A2

Metal cable tidy for high mechanical stability, even in case of fire. Suitable for safe mounting above fire protection ceilings. Also approved as a cable-specific variant for the maintenance of electrical function to DIN 4102 part 12. For wall and ceiling mounting. Lock can be opened without tools. Detailed information on the approved routing variants can be found in the appropriate testing documentation.

GRIP "M" 30

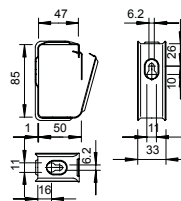


Type	No. of conductors NYM 3 x 1.5	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
2031 M 30 A4	30	25	25	6.500	2207140

V4A Stainless steel, A4

Metal cable tidy for high mechanical stability, even in case of fire. Suitable for safe mounting above fire protection ceilings. Also approved as a cable-specific variant for the maintenance of electrical function to DIN 4102 part 12. For wall and ceiling mounting. Lock can be opened without tools. Detailed information on the approved routing variants can be found in the appropriate testing documentation.

GRIP "M" 30



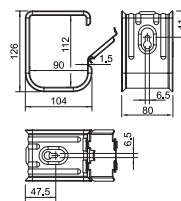
Type	No. of conductors NYM 3 x 1.5	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
2031 M 70 FS	70	10	10	34.500	2207060

St Steel

FS Strip-galvanised

Metal cable tidy for high mechanical stability, even in case of fire. Suitable for safe mounting above fire protection ceilings. Also approved as a cable-specific variant for the maintenance of electrical function to DIN 4102 part 12. For wall and ceiling mounting. Lock can be opened without tools. Detailed information on the approved routing variants can be found in the appropriate testing documentation.

GRIP "M" 70

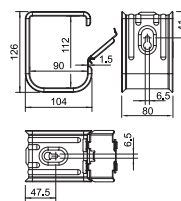


Type	No. of conductors NYM 3 x 1.5	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
2031 M 70 A4	70	10	10	37.000	2207164

V4A Stainless steel, A4

Metal cable tidy for high mechanical stability, even in case of fire. Suitable for safe mounting above fire protection ceilings. Also approved as a cable-specific variant for the maintenance of electrical function to DIN 4102 part 12. For wall and ceiling mounting. Lock can be opened without tools. Detailed information on the approved routing variants can be found in the appropriate testing documentation.

GRIP "M" 70

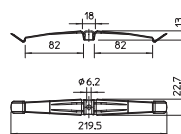


Pressure clip for 16 cables

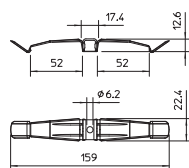
Type	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
2033 M A2	25	25	2.310	2204000

V2A Stainless steel, A2

The metal pressure clip is halogen- and fire load-free, and maintains a good mechanical stability even in fires. The pressure clip is also approved as a cable-specific variant for electrical function maintenance to DIN 4102 Part 12. In pressure clips with larger cross-sections, the spacer 2033 D 15 x 3 G (must be ordered separately) increases the clamping height from 10 to 13 mm. The pressure clips are suitable for fireproof mounting above suspended fire protection ceilings in accordance with DIN 4102.



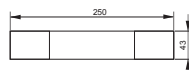
Pressure clip for 10 cables



Type	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
2034 M A2	50	50	1.860	2204010
V2A Stainless steel, A2				

The metal pressure clip is halogen- and fire load-free, and maintains a good mechanical stability even in fires. The pressure clip is also approved as a cable-specific variant for electrical function maintenance to DIN 4102 Part 12. In pressure clips with larger cross-sections, the spacer 2033 D 15 x 3 G (must be ordered separately) increases the clamping height from 10 to 13 mm. The pressure clips are suitable for fireproof mounting above suspended fire protection ceilings in accordance with DIN 4102.

Identification plate for function maintenance



Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-E DE	German	10	0.600	7205423
KS-E EN	English	10	0.600	7205432
KS-E NL	Dutch	10	0.600	7205405
PVC Polyvinylchloride				

Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.

Function maintenance

Cable routing in pipes



S30

S60

S90

Cable routing in the steel pipe, in combination with clamp clips or with screw-in spacer clips, fulfils the requirements of DIN 4102 Part 12 as a cable-specific routing type for the maintenance of electrical functionality classes E 30, E 60 and E 90. The steel pipes may be routed horizontally on the wall or under the ceiling and offer additional mechanical protection of the installed cables. Sheet steel clamp clips are used together with a riveted metal pressure sleeve and the appropriate profile rails, or closed screw-in spacer clips made of galvanised sheet steel. Refer to the available test certificates of the cable manufacturer for the maximum possible dimensions of the pipes, the maximum fastening spacing of the clips and the number of cables to be run in the pipe.



Ceiling mounting with screw-in spacer clip and clamp clip.



Horizontal wall mounting with screw-in spacer clip and clamp clip.



Space-saving installation of multiple pipes next to one another with clamp clips.



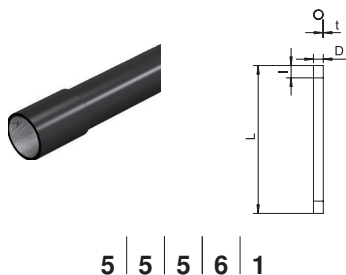
Insertion into the screw-in spacer clip by hooking the cover under the screw.



Multiple assignment according to the data of the test reports.



Armoured steel pipe with thread, black



Type	Thread	Dimen- sion D mm	Dimen- sion L mm	Dimen- sion I mm	Dimen- sion t mm	Colour	Pack. m	Weight kg/100 m	Item No.
SM16W SW	M16x1,5	16	3000	13	1.3	Jet black	30	50.000	2046500
SM20W SW	M20x1,5	20	3000	13	1.5	Jet black	30	73.000	2046501
SM25W SW	M25x1,5	25	3000	18	1.5	Jet black	30	92.000	2046502
SM32W SW	M32x1,5	32	3000	18	1.5	Jet black	21	120.000	2046503
SM40W SW	M40x1,5	40	3000	20.5	1.5	Jet black	15	152.000	2046505
SM50W SW	M50x1,5	50	3000	25	1.5	Jet black	15	190.700	2046506
SM63W SW	M63x1,5	63	3000	25	1.7	Jet black	9	287.700	2046507

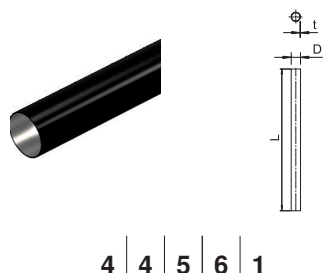
St Steel

PE50 PES50 - Polyester/epoxy

Electrical installation pipe according to EN 61386-1 with threaded ends to EN 60423 for mechanical protection of cables.

With burr-free inner wall. One coupling is already screwed onto each pipe.

Armoured steel pipe without thread, black



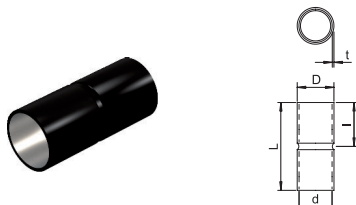
Type	Dimen- sion D mm	Dimen- sion L mm	Dimen- sion t mm	Colour	Pack. m	Weight kg/100 m	Item No.
S16W SW	16	3000	1	Jet black	30	37.000	2046565
S20W SW	20	3000	1	Jet black	30	44.700	2046566
S25W SW	25	3000	1.2	Jet black	30	70.400	2046567
S32W SW	32	3000	1.2	Jet black	21	91.200	2046568
S40W SW	40	3000	1.2	Jet black	15	139.700	2046569
S50W SW	50	3000	1.2	Jet black	15	176.000	2046570
S63W SW	63	3000	1.2	Jet black	9	223.000	2046571

St Steel

PE50 PES50 - Polyester/epoxy

Electrical installation pipe without threaded ends according to EN 61386-1 for mechanical protection of cables. With burr-free inner wall.

Armoured steel pipe connection sleeve without thread, black



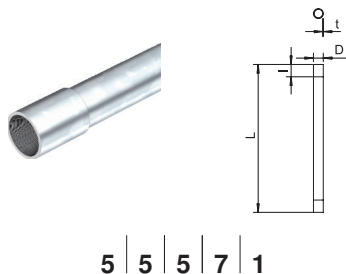
Type	Dimen- sion D mm	Dimen- sion d mm	Dimen- sion L mm	Dimen- sion I mm	Dimen- sion t mm	Colour	Pack. pcs	Weight kg/100 pcs	Item No.
SV16W SW	18.6	16.6	50	25	1	Jet black	25	2.400	2046582
SV20W SW	23.1	20.7	60	30	1.2	Jet black	50	3.200	2046583
SV25W SW	28.1	25.7	60	30	1.2	Jet black	50	5.200	2046584
SV32W SW	35.2	32.8	70	35	1.2	Jet black	50	7.200	2046585
SV40W SW	43.8	40.8	80	40	1.5	Jet black	25	13.200	2046586
SV50W SW	54	51	100	50	1.5	Jet black	10	20.000	2046587
SV63W SW	67	64	100	50	1.5	Jet black	5	28.000	2046588

St Steel

PE50 PES50 - Polyester/epoxy

Accessory part: plug-in sleeve for the connections between electrical installation pipes. With burr-free inner wall.

Electrogalvanised steel pipe, with thread



Type	Thread	Dimen- sion D mm	Dimen- sion L mm	Dimen- sion I mm	Dimen- sion t mm	Pack. m	Weight kg/100 m	Item No.
SM16W G	M16x1,5	16	3000	13	1.3	30	50.390	2046861
SM20W G	M20x1,5	20	3000	13	1.5	30	66.667	2046862
SM25W G	M25x1,5	25	3000	18	1.5	30	92.290	2046863
SM32W G	M32x1,5	32	3000	18	1.5	21	120.000	2046864
SM40W G	M40x1,5	40	3000	20.5	1.5	15	151.450	2046865
SM50W G	M50x1,5	50	3000	25	1.5	15	190.000	2046866
SM63W G	M63x1,5	63	3000	25	1.7	9	287.700	2046867

St Steel

G Electrogalvanised

Electrical installation pipe according to EN 61386-1 with threaded ends to EN 60423 for mechanical protection of cables.

With burr-free inner wall. One coupling is already screwed onto each pipe.

Armoured steel pipe without thread, electrogalvanised

Type	Dimension D mm	Dimension L mm	Dimension t mm	Pack. m	Weight kg/100 m	Item No.
S16W G	16	3000	1	30	37.000	2046840
S20W G	20	3000	1	30	44.700	2046841
S25W G	25	3000	1.2	30	70.400	2046842
S32W G	32	3000	1.2	21	91.200	2046843
S40W G	40	3000	1.2	15	139.700	2046844
S50W G	50	3000	1.2	15	176.000	2046845
S63W G	63	3000	1.2	9	223.000	2046846

St Steel

G Electrogalvanised

Electrical installation pipe without threaded ends according to EN 61386-1 for mechanical protection of cables. With burr-free inner wall.



4 | 4 | 5 | 7 | 1

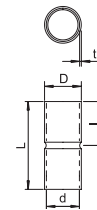
Armoured steel pipe connection sleeve without thread, electrogalvanised

Type	Dimension D mm	Dimension d mm	Dimension L mm	Dimension l mm	Dimension t mm	Pack. pcs	Weight kg/100 pcs.	Item No.
SV16W G	18.6	16.6	50	25	1	25	2.400	2046854
SV20W G	23.1	20.7	60	30	1.2	50	4.000	2046855
SV25W G	28.1	25.7	60	30	1.2	50	5.200	2046856
SV32W G	35.2	32.8	70	35	1.2	50	7.200	2046857
SV40W G	43.8	43.8	80	40	1.5	25	13.200	2046858
SV50W G	54	51	100	50	1.5	10	20.000	2046859
SV63W G	67	64	100	50	1.5	5	28.000	2046860

St Steel

G Electrogalvanised

Accessory part: plug-in sleeve for the connections between electrical installation pipes. With burr-free inner wall.



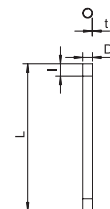
Hot-dip galvanised steel pipe, with thread

Type	Thread	Dimension D mm	Dimension L mm	Dimension l mm	Dimension t mm	Pack. m	Weight kg/100 m	Item No.
SM16W FT	M16x1,5	16	3000	13	1.3	30	54.000	2046533
SM20W FT	M20x1,5	20	3000	13	1.5	30	79.000	2046534
SM25W FT	M25x1,5	25	3000	18	1.5	30	99.000	2046535
SM32W FT	M32x1,5	32	3000	18	1.5	21	130.000	2046536
SM40W FT	M40x1,5	40	3000	20.5	1.5	15	164.000	2046537
SM50W FT	M50x1,5	50	3000	25	1.5	15	206.000	2046538
SM63W FT	M63x1,5	63	3000	26	1.8	9	324.700	2046540

St Steel

FT Hot-dip galvanised

Electrical installation pipe according to EN 61386-1 with threaded ends to EN 60423 for mechanical protection of cables.
With burr-free inner wall. Corrosion protection class 4 (high). One coupling is already screwed onto each pipe.



5 | 5 | 5 | 7 | 1

Hot-dip galvanised steel pipe, without thread

Type	Dimension D mm	Dimension L mm	Dimension t mm	Pack. m	Weight kg/100 m	Item No.
S16W FT	16	3000	1	30	37.000	2046593
S20W FT	20	3000	1	30	44.700	2046594
S25W FT	25	3000	1.2	30	70.400	2046595
S32W FT	32	3000	1.2	21	91.200	2046596
S40W FT	40	3000	1.2	15	139.700	2046597
S50W FT	50	3000	1.2	15	176.000	2046598
S63W FT	63	3000	1.2	9	223.000	2046599

St Steel

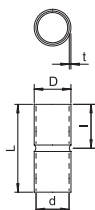
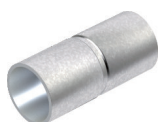
FT Hot-dip galvanised

Electrical installation pipe without threaded ends according to EN 61386-1 for mechanical protection of cables. With burr-free inner wall. Corrosion protection class 4 (high).



4 | 4 | 5 | 7 | 1

Hot-dip galvanised steel sleeve, without thread



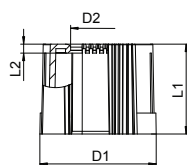
Type	Dimension D mm	Dimension d mm	Dimension L mm	Dimension l mm	Dimension t mm	Pack. pcs	Weight kg/100 pcs.	Item No.
SV16W FT	18.6	16.6	50	25	1	25	2.200	2046620
SV20W FT	23.1	20.7	60	30	1.2	50	3.200	2046621
SV25W FT	28.1	25.7	60	30	1.2	50	5.600	2046622
SV32W FT	35.2	32.8	70	35	1.2	50	7.800	2046623
SV40W FT	43.8	40.8	80	40	1.5	25	14.400	2046624
SV50W FT	54	51	100	50	1.5	10	22.000	2046625
SV63W FT	67	63	100	50	1.5	5	28.000	2046626

St Steel

FT Hot-dip galvanised

Accessory part: plug-in sleeve for the connections between electrical installation pipes. With burr-free inner wall.

Pipe end cap, splittable, light grey



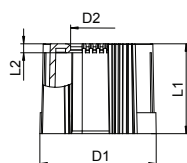
Type	Size	Dimension D1 mm	Dimension D2 mm	Dimension L1 mm	Dimension L2 mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
129 TB M16	M16	20	10	30	3	Light grey	50	0.400	2047812
129 TB M20	M20	24	13.4	30	3	Light grey	50	0.440	2047831
129 TB M25	M25	30	18.4	30	3	Light grey	50	0.500	2047839
129 TB M32	M32	36	25.4	30	3	Light grey	50	0.656	2047855
129 TB M40	M40	44	33.4	30	3	Light grey	30	0.790	2047863
129 TB M50	M50	53	43	30	3	Light grey	30	0.935	2047890
129 TB M63	M63	67	56	30	3	Light grey	20	1.140	2047898

PE Polyethylene

Separable pipe end cap to slot onto metric electrical installation pipes.

The separable pipe end cap can be used for repairs on existing installations according to regulations. It is not necessary to disconnect the cables, allowing quick mounting.

Pipe end cap, splittable, black



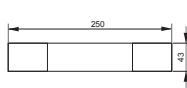
Type	Size	Dimension D1 mm	Dimension D2 mm	Dimension L1 mm	Dimension L2 mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
129 TB M16 SW	M16	20	10	30	3	Black	50	0.400	2047936
129 TB M20 SW	M20	24	13.4	30	3	Black	50	0.440	2047944
129 TB M25 SW	M25	30	18.4	30	3	Black	50	0.500	2047952
129 TB M32 SW	M32	36	25.4	30	3	Black	50	0.656	2047971
129 TB M40 SW	M40	44	33.4	30	3	Black	30	0.790	2047979
129 TB M50 SW	M50	53	43	30	3	Black	30	0.935	2047987
129 TB M63 SW	M63	67	56	30	3	Black	20	1.140	2047995

PE Polyethylene

Separable pipe end cap to slot onto metric electrical installation pipes.

The separable pipe end cap can be used for repairs on existing installations according to regulations. It is not necessary to disconnect the cables, allowing quick mounting.

Identification plate for function maintenance



Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-E DE	German	10	0.600	7205423
KS-E EN	English	10	0.600	7205432
KS-E NL	Dutch	10	0.600	7205405

PVC Polyvinylchloride

Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.

Function maintenance

LKM cable trunking



S30

S60

S90

Cable routing with metal cable trunking, type LKM, is approved as a cable-specific routing type for the maintenance of electrical function classes E 30, E 60 and E 90 according to DIN 4102 Part 12. The trunking may be routed horizontally on the wall or under the ceiling and offer additional mechanical protection of the installed cables. This installation variant is also used if, for reasons of appearance, open routing of the cables with the maintenance of electrical function is not wanted. A retaining clamp is available as an installation aid for the trunking type LKM60100. This prevents cables from falling out in the case of wall and ceiling mounting. When cable installation has been completed, the trunking cover is locked onto the trunking base.



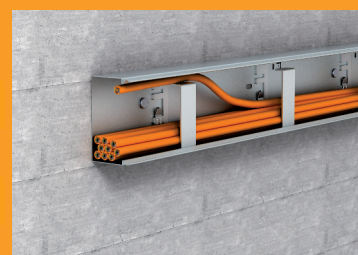
Horizontal wall and ceiling mounting.



Routing of power, data or fire alarm cables in the trunking, type LKM60100.



Tidy routing of data and fire alarm cables in the trunking, type 20030.



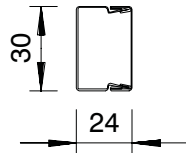
Retaining clamps locked into the base as installation aid for wall mounting.



Retaining clamps as mounting aid for the insertion of cables for ceiling mounting.



Trunking, type LKM 20030



Type

LKM20030FS

St Steel

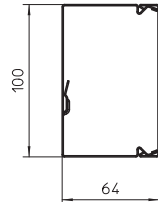
FS Strip-galvanised

Trunking cover and base with base perforation.

Equipotential bonding is guaranteed between the cover and the base without any additional aids.

Pack. m	Weight kg/100 m	Item No.
24	58.000	6246974

Trunking, type LKM 60100



Type

LKM60100FS

St Steel

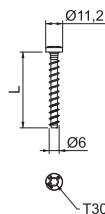
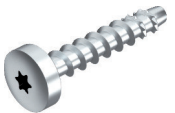
FS Strip-galvanised

Trunking cover and base with base perforation.

Equipotential bonding is guaranteed between the cover and the base without any additional aids.

Pack. m	Weight kg/100 m	Item No.
8	221.700	6247113

Fire protection screw tie



Type

MMS-plus 6X50

MMS-plus 6X35

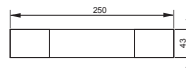
St Steel

G Electro-galvanised

Fire protection screw tie with pan head for direct installation without additional anchors. Drive T30, drill hole 5 mm. Tested anchor according to ETAG 001 – Part 3. Fire resistance class to R120 for concrete and masonry.

Type	Dimension mm	Bore hole Ø mm	Head Ø mm	Screw system	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
MMS-plus 6X50	6 x 50	5	11.2	Torx	50	100	1.000	3498108
MMS-plus 6X35	6 x 50	5	11.2	Torx	50	100	0.900	3498103

Identification plate for function maintenance



Type

KS-E DE German

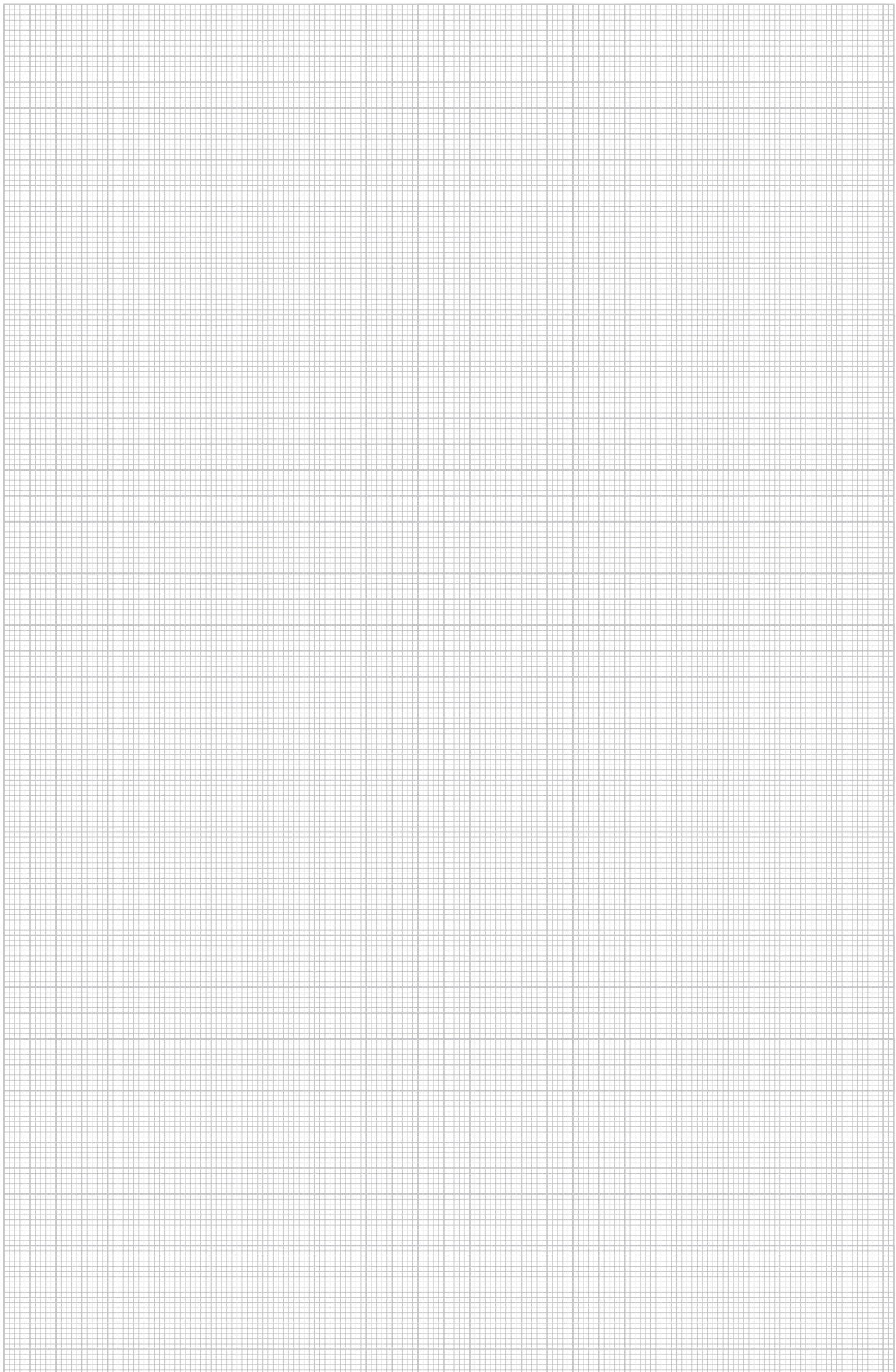
KS-E EN English

KS-E NL Dutch

PVC Polyvinylchloride

Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.

Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-E DE	German	10	0.600	7205423
KS-E EN	English	10	0.600	7205432
KS-E NL	Dutch	10	0.600	7205405





Anchoring

Metal spreading anchor



Nail tie, type N 6, with thread end.



Nail tie, type N-K 6, with flat head.



Bolt tie, type BZ.



Bolt tie, type BZ-IG.



Hollow core anchor, Easy type.

R60

R30

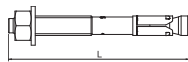
R90

R120

OBO Bettermann's metal spreading anchors for mounting in concrete components were tested for fire protection. Appropriate proofs are available for the tests carried out. Depending on the fire resistance length (up to 120 minutes), a maximum load capacity was determined when anchored in concrete. This load data is contained in the appropriate European Technical Assessments and appropriate test documentation. Although the load capacity of the anchors during a fire is below the load capacity when cold, this load capacity is completely sufficient for fireproof fastening of the different routing types. Special metal spreading anchors are offered for false ceilings.



Bolt tie BZ



Type	Thread	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
BZ10-100-120/180	M10	180	25	10.320	3498342
BZ 12-15-35/110	M12	110	25	10.320	3498350

St Steel

G Electrogalvanised

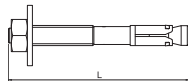
Wedge anchor BZ for the anchoring of medium-duty to heavy-duty loads, both in cracked and non-cracked concrete. It combines high approved loads with small edge distances and axial spacings.

European technical approval ETA-99/0010, including characteristic values under fire exposure to fire resistance R 120.

Proof of suitability in the case of seismic impacts, categories C1 and C2.

Shock approval by the Federal Office for Civil Protection in Bern, Switzerland.

Bolt tie BZ-U



Type	Thread	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
BZ-U 8-10-21/75	M8	75	50	3.460	3498320
BZ-U 8-30-41/95	M8	95	50	4.010	3498326
BZ-U 10-10-30/90	M10	90	50	6.720	3498334
BZ-U10-30-50/110	M10	110	25	7.900	3498340

St Steel

G Electrogalvanised

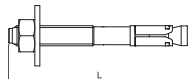
Bolt tie BZ for the anchoring of medium-duty to heavy-duty loads, both in cracked and non-cracked concrete. It combines high approved loads with small edge distances and axial spacings.

European technical approval ETA-99/0010, including characteristic values under fire exposure to fire resistance R 120.

Proof of suitability in the case of seismic impacts, categories C1 and C2.

Shock approval by the Federal Office for Civil Protection in Bern, Switzerland.

Bolt tie BZ-U



Type	Thread	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
BZ-U8-10-21/75A4	M8	75	50	3.460	3498322
BZU10-10-30/90A4	M10	90	50	6.740	3498336

V4A Stainless steel, A4

Wedge anchor BZ for the anchoring of medium-duty to heavy-duty loads, indoors and outdoors, both in cracked and non-cracked concrete. It combines high approved loads with small edge distances and axial spacings.

Anchoring

Injection tie VMU Plus



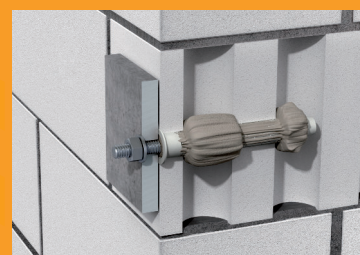
Anchor rod mounted in concrete without wire sleeve.



Anchor rod mounted in calcareous limestone full brick without wire sleeve.



In full brick, mount the anchor rod without a wire sleeve.



Anchor rod mounted in hollow calcareous limestone with wire sleeve.



Anchor rod mounted in hollow brick without wire sleeve.

R30

R60

R90

The VMS Plus injection mortar system is particularly suitable for fire protection fastening in hollow brick, concrete and porous concrete, calcareous limestone, sand-lime brick and masonry. The connection is free from spreading pressure and is created through the form fitting of the injection mortar with the substrate and an anchor rod. The components are tested and approved for a fire resistance period of 90 minutes. The maximum load capacity depending on the fire resistance period and the fastening substrate is documented accordingly in the available fire protection certificate. Although the load capacity of the injection mortar system is below the load capacity when cold, this load capacity is completely sufficient for fireproof fastening of the different routing types.



Pressing gun for 280 ml and side-by-side cartridges



Type	Pack. Weight		Item No.
	pcs	kg/100 pcs.	
VM-P 345 Profi	1	100.000	3497906

Plastic

Side-by-side cartridge pistol for the use of standard cartridges or side-by-side cartridges. The cartridge pistol is suitable for the injection mortar VMU plus 280 and can also be used with normal 300 ml cartridges.

Pressing gun for 10:1 coaxial cartridges



Type	Pack. Weight		Item No.
	pcs	kg/100 pcs.	
VM-P 380 Profi	1	110.000	3497909

Plastic

High-quality 2-component cartridge pistol. The parallel movement of the outlet to the holding grip ensures easy working. Suitable for the injection mortar type VMU plus 420.

Anchoring

Bolt tie



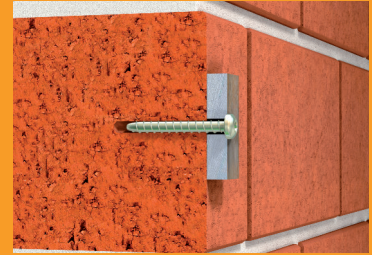
F30

F60

F90

F120

OBO Bettermann's fire protection bolt ties were fire-tested according to ETAG 001 Part 3. The maximum load capacity, depending on fire resistance periods of up to 120 minutes, was determined for different types of solid masonry. These values are documented in the appropriate test certificates. Taking the occurring loads for the maintenance of electrical function application and for false ceiling mounting into account, the determined load capacities for the different masonry types are absolutely sufficient. The fire protection bolt ties are screwed directly into the drill hole. There is no need for an additional anchor. No spreading forces develop and mounting near masonry edges is not required. The bolt tie is equally suitable for cracked concrete in ceilings.



Version with truss head and T drive.



Version with large truss head and T drive.



Version with hexagonal head.



Version as shaft tie with M6 threaded tip.

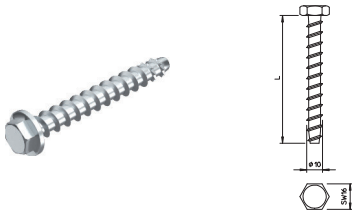


Version with countersunk cone head and T drive.



Bolt tie

MMS hex



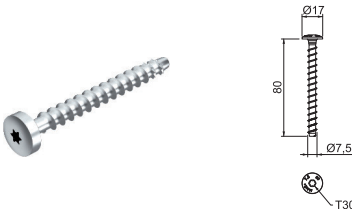
Type	Dimension mm	Dimension L mm	Bore hole Ø mm	SW mm	Pack. pcs	Weight kg/100 pcs.	Item No.
MMS-plus 10x80	10 x 80	80	8	13	25	4.000	3498124
MMS-plus 10x100	10 x 100	100	8	13	25	4.800	3498159

St Steel

G Electrogalvanised

Fire protection bolt tie with hexagonal head for direct mounting without additional anchor. WAF 13, drill hole 8 mm. Tested anchor according to ETAG 001 - Part 3. Fire resistance class to R120 for concrete and masonry.

Bolt tie



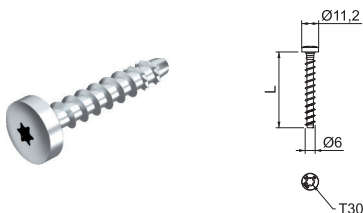
Type	Dimension mm	Bore hole Ø mm	Head Ø mm	Screw system	Pack. pcs	Weight kg/100 pcs.	Item No.
MMS-plus 7.5X80	7,5 x 80	6	13.2	Torx	50	1.600	3498272

St Steel

G Electrogalvanised

Fire protection bolt tie with pan head for direct mounting without anchors. Drive T40, drill hole 6 mm. Tested anchor according to ETAG 001 - Part 3. Fire resistance class to R120 for concrete and masonry.

Fire protection screw tie



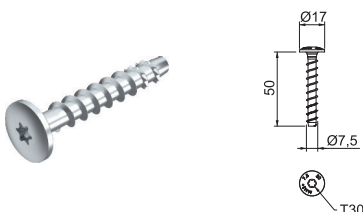
Type	Dimension mm	Bore hole Ø mm	Head Ø mm	Screw system	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
MMS-plus 6X50	6 x 50	5	11.2	Torx	50	100	1.000	3498108
MMS-plus 6X35	6 x 50	5	11.2	Torx	50	100	0.900	3498103

St Steel

G Electrogalvanised

Fire protection screw tie with pan head for direct installation without additional anchors. Drive T30, drill hole 5 mm. Tested anchor according to ETAG 001 – Part 3. Fire resistance class to R120 for concrete and masonry.

Fire protection screw tie



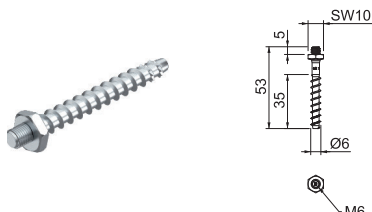
Type	Dimension mm	Bore hole Ø mm	Head Ø mm	Screw system	Pack. pcs	Weight kg/100 pcs.	Item No.
MMS-plus 7.5X50	7,5 x 50	6	17	Torx	100	1.500	3498261

St Steel

G Electrogalvanised

Fire protection bolt tie with large pan head for direct mounting without additional anchors. Drive T30, drill hole 6 mm. Tested anchor according to ETAG 001 - Part 3. Fire resistance class to R120 for concrete and masonry.

MMS-ST with thread



Type	Dimension mm	Anchor length mm	Bore hole Ø mm	Thread	SW mm	Pack. pcs	Weight kg/100 pcs.	Item No.
MMS-plus ST 6x55	6x55	60	5	M6	10	100	1.030	3498264

St Steel

G Electrogalvanised

Fire protection bolt tie with M6 thread and hexagonal head for direct mounting without additional anchors. WAF 10, drill hole 5 mm. Tested anchor according to ETAG 001 - Part 3. Fire resistance class to R120 for concrete and masonry.

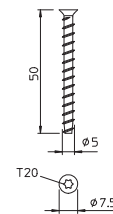
Screw anchor

Type	Dimension mm	Bore hole Ø mm	Head Ø mm	Screw system	Pack. pcs	Weight kg/100 pcs.	Item No.
MMS-plus KS 5x50	5 x 50	4	7.5	Torx	200	0.460	3498204

S Steel

G Electrogalvanised

Screw anchor with countersunk cone head for mounting without additional anchors. Drive T20, drill hole 4 mm. Fire protection-tested according to DIN 4102 for concrete and masonry. Fire resistance class to F90.



Anchoring

Wood screws



Wood is a combustible material and, as with steel constructions, wooden components are firstly only suitable under certain conditions for the fastening of fire-tested electrical installations. Coatings and panelling are also used in the constructions, in order to achieve a fire resistance class at all. However, if there is a fire, wood has a very good property: When burning, an insulated layer is created which delays further combustion. The wooden component must be dimensioned in such a way that failure of the carrying capacity cannot occur at an early stage. The combustion rates are a standard means for calculating the required wood cross-section, depending on the desired fire resistance class. The combustion rates depend on the type of wood and the moisture content of the wood. Taking the combustion rates into account, various cable support systems for electrical safety systems with the maintenance of electrical functionality classes E30 and E60 can be fastened to wooden components. Wood screws with a suitable steel cross-section and sufficient embedment depth are used for fastening. The long screws drill deep into the cross-section of the wooden beam, ensuring a secure hold of the mounted support systems, despite burning. Various mounting variants are documented in a fire protection survey.



Bracket mounting on the side of the wooden beam with rear fire protection plate.



Suspended support mounting under the wooden beam with rear fire protection plate.



Cable routing with single clips and in the pipe, at the side on the wooden beam.



Cable routing with grouped support on the side on the wooden beam.



Mounting of the OBO FireBox on a wooden beam.

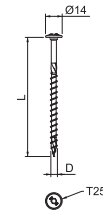
Flange head-screw HT 6

Type	Dimen- sion D mm	Dimen- sion L mm	Head Ø mm	Screw system	Pack. pcs	Weight kg/100 pcs.	Item No.
HT 6x60 TD	6	60	14	Torx	200	0.850	3498130
HT 6x80 TD	6	80	14	Torx	100	0.110	3498132
HT 6x100 TD	6	100	14	Torx	100	0.130	3498134
HT 6x120 TD	6	120	14	Torx	100	0.150	3498136

St Steel

G Electrogalvanised

Self-tapping wood screw for fireproof fastening of cable systems for the maintenance of electrical function according to DIN 4102 Part 12 on supporting wooden structures. The flange head shape allows installation without an additional washer.



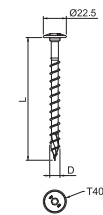
Flange head-screw HT 10

Type	Dimen- sion D mm	Dimen- sion L mm	Head Ø mm	Screw system	Pack. pcs	Weight kg/100 pcs.	Item No.
HT 10x80 TD	10	80	22.5	Torx	50	0.310	3498140
HT 10x100 TD	10	100	22.5	Torx	50	0.370	3498142
HT 10x120 TD	10	120	22.5	Torx	50	0.430	3498144
HT 10x140 TD	10	140	22.5	Torx	50	0.490	3498146

St Steel

G Electrogalvanised

Self-tapping wood screw for fireproof fastening of cable systems for the maintenance of electrical function according to DIN 4102 Part 12 on supporting wooden structures. The flange head shape allows installation without an additional washer.

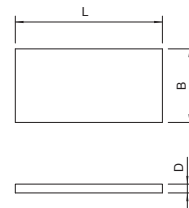


Fire protection plate

Type	Dimen- sion L mm	Dimen- sion B mm	Dimen- sion D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
GLB-P1	600	120	20	1	100.000	7205470
GLB-P2	600	120	30	1	150.000	7205472

Glass-fibre lightweight concrete

Fire protection plate (material class A1) as effective panelling measure for fastening on supporting wooden components for the maintenance of electrical function according to DIN 4102 Part 12. Made of fibreglass light concrete which is resistant to water and frost.



Mounting material for insulated ceilings

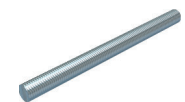
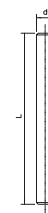
Threaded rod

Type	Thread	Dimen- sion d mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TR M8 1M G	M8	8	1000	10	30.000	3141128
TR M10 1M G	M10	10	1000	10	49.000	3141209
TR M12 1M G	M12	12	1000	10	62.000	3141306

St Steel

G Electrogalvanised

Threaded rod to DIN 976.



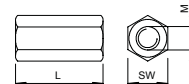
Connection sleeve

Type	Thread	Dimen- sion L mm	SW mm	Pack. pcs	Weight kg/100 pcs.	Item No.
CSTR M8 G	M8	24	13	50	1.880	6410081
CSTR M10 G	M10	30	17	50	4.150	6410103
CSTR M12 G	M12	40	19	25	7.000	6410111

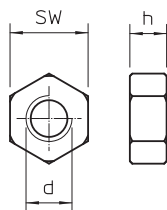
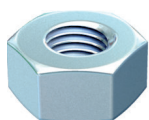
St Steel

G Electrogalvanised

Connection sleeve with continuous internal thread.



Hexagonal nut DIN 934



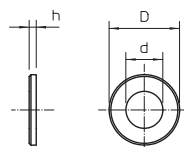
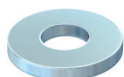
Type	Thread	SW mm	Dimen- sion h mm	Dimen- sion d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
HN M8 G	M8	13	6.8	8	100	0.474	3400085
HN M10 G	M10	17	8.4	10	100	1.084	3400107
HN M12 G	M12	19	10.8	12	100	1.730	3400123

St Steel

G Electrogalvanised

Hexagonal nut to DIN 934 with metric thread.

Washer



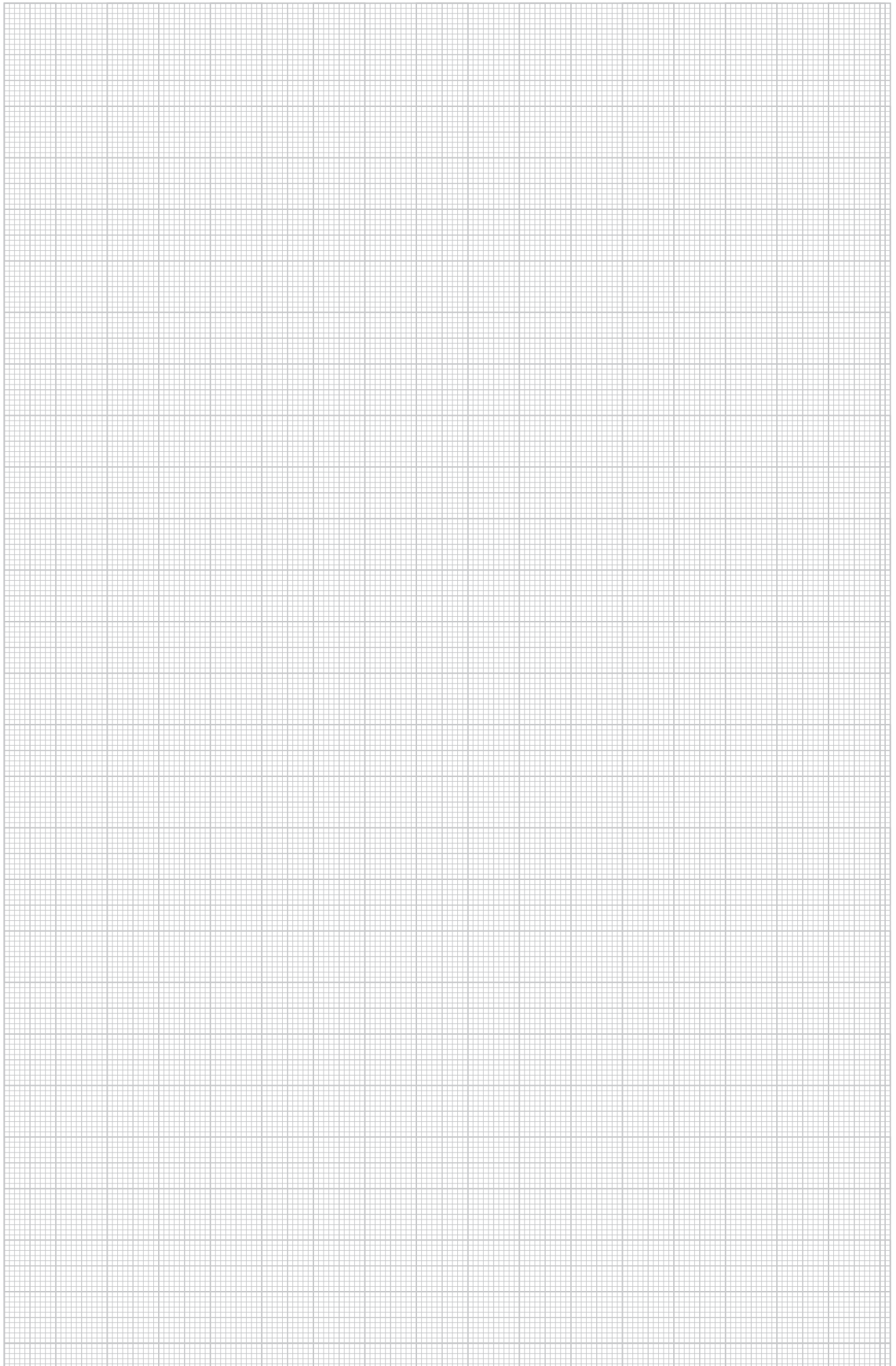
Type	Thread	Dimen- sion d mm	Dimen- sion D mm	Dimen- sion h mm	Pack. pcs	Weight kg/100 pcs.	Item No.
WS M8 D16 G	M8	8.4	16	1.6	100	0.214	3402088
WS M10 D20 G	M10	10.5	20	2	100	0.408	3402096
WS M12 D24 G	M12	13	24	2.5	100	0.627	3402126

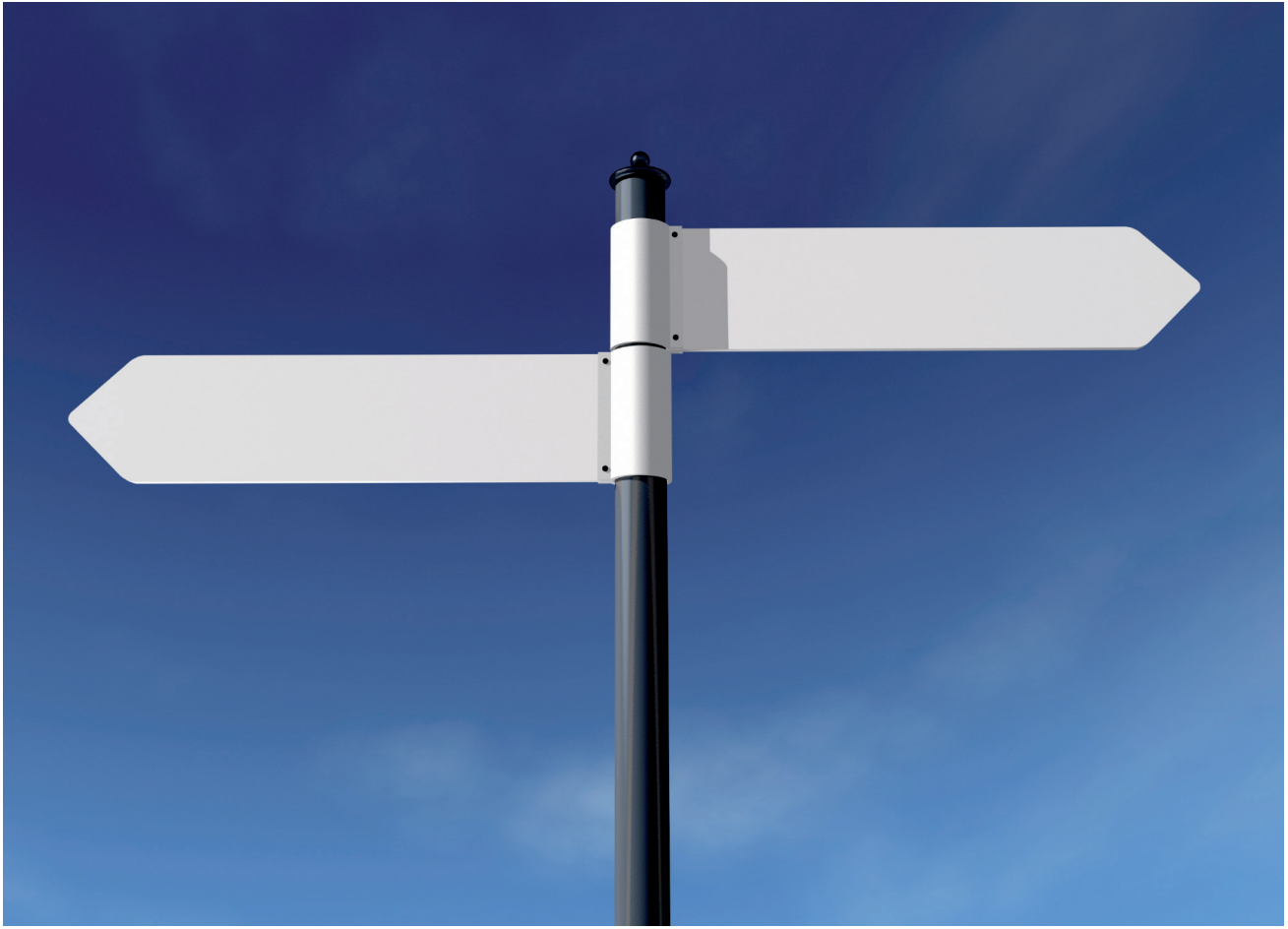
St Steel

G Electrogalvanised

Washer according to DIN 125, shape A, for universal use.







Directories



Numeric directory

438

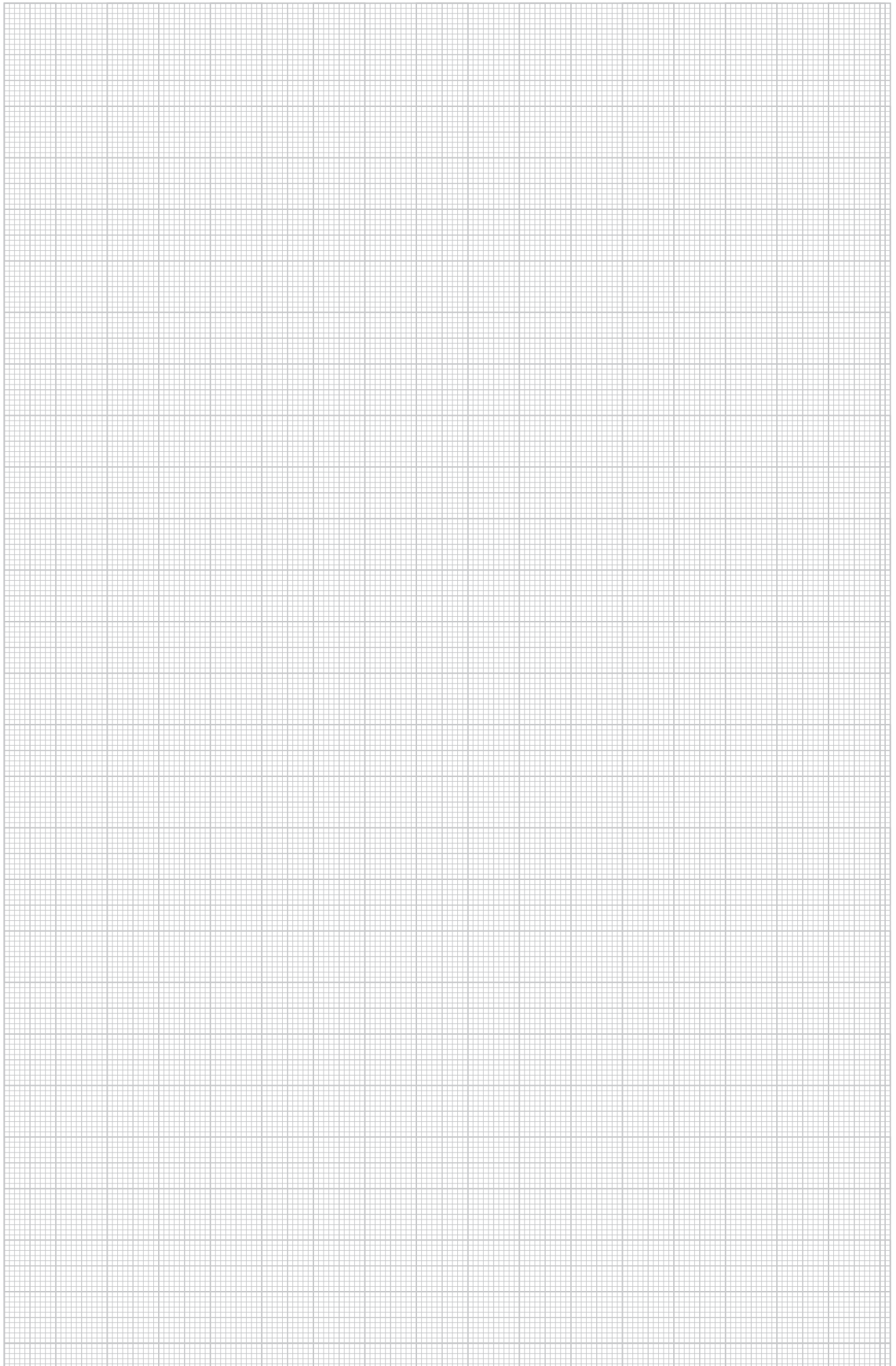
GTIN	Art. no.	Page	GTIN	Art. no.	Page	GTIN	Art. no.	Page	GTIN	Art. no.	Page	GTIN	Art. no.	Page
5000792	/100 pc. 1003038	332	5063018	/100 pc. 1156055	385	5912651	/100 pc. 1360690	408	5781806	/100 pc. 2046585	418	5595717	/100 pc. 2146207	254
5000853	1003046	332	5063070	1156063	385				5781844	2046586	418	5016069	2146509	254
5000914	1003054	332	5063131	1156071	385	5029809	1361097	409	5781851	2046587	418			
5000976	1003062	332	5063193	1156098	385	5029816	1361100	409	5781868	2046588	418	5741671	2153734	255
5001034	1003070	332	5063254	1156101	385	5029823	1361103	409		price/100				
5001096	1003089	332	5063315	1156128	385	5029861	1361106	409	5782148	2046593	419	5036616	2204000	318
5001157	1003097	332	5063377	1156136	385	5029878	1361109	409	5782155	2046594	419	5210672	2204010	318
5001218	1003100	332	5063438	1156144	385	5029885	1361112	409	5782162	2046595	419			
5001270	1003119	332	5063490	1156152	385	5254348	1361115	409	5782209	2046596	419	5863953	2207028	318
5001331	1003127	332	5063551	1156160	385	5615651	1361117	409	5782216	2046597	419	5798798	2207036	318
5001393	1003135	332	5494836	1156179	385	5254386	1361118	409	5782223	2046598	419	5022497	2207060	318
5001454	1003178	332	5494898	1156187	385	5116110	1361201	409	5782261	2046599	419	5809395	2207080	414
5001515	1003194	332	5494959	1156195	385	5116172	1361236	409		/100 pc.		5809401	2207088	415
5001577	1003208	332	5958703	1156209	385	5116233	1361295	409	5782384	2046620	420	5809456	2207132	414
5001638	1003216	332	5958765	1156241	386	5116295	1361384	409	5782391	2046621	420	5809463	2207140	415
5001690	1003232	332	5958826	1156268	386	5116356	1361481	409	5782407	2046622	420	5809470	2207164	415
5566892	1003259	332	5958888	1156276	386	5116417	1361511	409	5782445	2046623	420	5864011	2207184	414
5001751	1003283	332	5958949	1156284	386	5116479	1361619	409	5782452	2046624	420			
5566953	1003321	332				5116530	1361635	409	5782469	2046625	420	5228912	2349051	240
5001812	1003356	332	5498254	1158007	386	5912712	1361651	410	5782490	2046626	420			
5001874	1003372	332	5498315	1158015	386	5912729	1361655	410		price/100		6421046	2360041	164
5001935	1003402	332	5498377	1158023	386	5912750	1361659	410	5924647	2046840	419	6421053	2360043	164
5002055	1003461	332	5498438	1158031	386	5912767	1361663	410	5924654	2046841	419		/pc.	
			5498490	1158058	386	5912774	1361667	410	5924661	2046842	419	5230533	2360055	169
5038238	1104241	403	5498551	1158066	386	5912781	1361671	410	5924678	2046843	419			
5038290	1104268	403	5498612	1158074	386	5912828	1361675	410	5924685	2046844	419	5518419	2362970	240
5038351	1104284	403	5498674	1158082	386	5912835	1361679	410	5924692	2046845	419			
5836353	1104292	403	5498735	1158090	386	5912842	1361683	410	5924708	2046846	419	5242710	3041204	149
5038412	1104306	403	5498797	1158104	386					/100 pc.		5242772	3041212	149
5036678	1104310	403	5498858	1158112	386	5116714	1362011	206	5924784	2046854	419	5242833	3041255	149
5036739	1104315	403	5498919	1158120	386	5116776	1362038	410	5924791	2046855	419	5617235	3041409	149
5036791	1104320	403				5116837	1362046	207	5924807	2046856	419	5242956	3041956	149
5036852	1104325	403	5432371	1167006	140	5116899	1362054	410	5924814	2046857	419			
	price/100		5432432	1167014	140	5116950	1362062	410	5924821	2046858	419	5243137	3042200	149
5694458	1104497	403	5432494	1167022	140	5117018	1362070	410	5924838	2046859	419	5243199	3042251	149
5038771	1104500	403	5432555	1167030	140	5117070	1362089	410	5924845	2046860	419	6431243	3042270	150
			5432616	1167049	140	5117131	1362097	410		price/100			/pc.	
5046516	1117025	140				5117193	1362100	410	5924852	2046861	418	5617297	3042308	149
5046578	1117033	140	5114499	1360051	407				5924869	2046862	418			
			5114550	1360086	407	5532637	2022843	326	5924876	2046863	418	5243311	3043207	150
5047599	1119656	403	5114611	1360108	407	5532699	2022845	326	5924883	2046864	418	5243373	3043258	150
			5114673	1360124	407	5532750	2022847	326	5924890	2046865	418	5717492	3043312	150
5050230	1121979	403	5114734	1360140	407	5532811	2022849	326	5924906	2046866	418	5243557	3043401	151
			5114796	1360159	407	5532934	2022851	326	5924913	2046867	418	5243618	3043452	151
	/100 pc.		5114857	1360167	407	5532996	2022853	326				5111160	3043602	152
5486251	1122525	313	5114918	1360183	407	5533054	2022855	326		/100 pc.		5617419	3043606	152
5486794	1122533	313	5114970	1360205	407				6332243	2047812	420	5087076	3043610	152
5486916	1122541	313	5115038	1360221	407	5035831	2029672	327	6332250	2047831	420	5087137	3043614	152
5487036	1122568	313	5115090	1360248	407	5035893	2029675	327	6332267	2047839	420	5111641	3043618	152
	price/100		5115151	1360264	407	5035954	2029677	327	6332274	2047855	420	5421627	3043628	152
5487272	1122606	313	5115212	1360280	407	5036012	2029679	327	6332281	2047863	420	5243793	3043703	150
5487876	1122622	313	5115274	1360302	407	5036074	2029682	327	6332311	2047890	420	5243854	3043754	150
5686200	1122900	313	5115335	1360337	407	5036135	2029685	327	6332328	2047898	420	5642312	3043908	151
5686217	1122902	312	5115397	1360353	407	5036197	2029688	327	6332335	2047936	420	5453796	3043916	151
6255726	1122904	312	5115458	1360388	407	5036258	2029690	327	6332342	2047944	420			
5894117	1122906	313	5115519	1360396	407	5036319	2029693	327	6332373	2047952	420	5642978	3044831	151
	price/100		5115571	1360426	407	5036371	2029696	327	6332380	2047971	420	5643036	3044904	151
5697503	1122908	313	5115632	1360450	407				6332397	2047979	420	5453970	3044912	151
5686224	1122910	313	5115694	1360485	407		price/100		6332403	2047987	420			
5686262	1122918	312	5115755	1360507	407	5781028	2046500	418	6332434	2047995	420		/100 pc.	
5686279	1122920	312	5115878	1360604	407	5781066	2046501	418				5631699	3049205	170
5697541	1122923	312	5569114	1360639	407	5781073	2046502	418	5446477	2048752	327	5631637	3049221	170
5686293	1122924	312	5912378	1360644	408	5781080	2046503	418	5446538	2048760	327	5631576	3049256	170
	/100 pc.		5912385	1360646	408	5781127	2046505	418	5446590	2048779	327	5631453	3049329	170
5697626	1122933	312	5912392	1360648	408	5781134	2046506	418	5446651	2048787	327	5631392	3049345	170
5697664	1122934	312	5912408	1360650	408	5781141	2046507	418	5446712	2048795	327			
5697671	1122935	312	5912415	1360652	408	5781424	2046533	419	5088752	2048809	327		/pc.	
5697688	1122936	312	5912422	1360654	408	5781431	2046534	419	5088875	2048817	327	5244219	3051013	240
	price/100		5912439	1360656	408	5781448	2046535	419						
5698081	1122962	313	5912446	1360658	408	5781486	2046536	419	5808992	2086018	325	5244813	3059006	240
5698098	1122964	313	5912453	1360660	408	5781493	2046537	419	5809234	2086024	325	5244875	3059014</	

GTIN	Art. no.	Page	GTIN	Art. no.	Page	GTIN	Art. no.	Page	GTIN	Art. no.	Page	GTIN	Art. no.	Page
5300076	/100 pc. 3402088	381	5373698	/pc. 5003024	153	5381914	price/100 5021286	144	5805458	price/100 5057922	136	5077077	/pc. 5096877	30
5300137	3402096	336	5373759	5003032	153	5901273	5021294	144		/100 pc. 5057930	136	5077091	5096879	28
5300199	3402126	315	5373810	5003040	153	6286232	5021296	144	5805519			6487325	5096981	26
5300311	3402207	270	6527069	5003081	154	5381976	5021308	144				6487332	5096987	25
5300373	3402215	270	5374053	5003261	154	5067474	5021332	144	5388876	5059356	169			
5300434	3402223	328	5374114	5003288	154	6564804	5021380	146	5389057	5059496	169	5578123	5097607	67
	/pc. 3497906	428	5374176	5003296	154		price/100 5021480	145	5389231	5064015	140	5578161	5097650	68
6464661	3497909	428	5374718	5003776	154	5382096	5021502	145	5668565	5064017	140	5578215	5097858	69
6464678			5374770	5003784	154	6282425	5021640	145		/pc. 5081694	88	5396918	5099609	51
	/100 pc. 3498092	322	6427925	5009200	169	5902058	5021642	145	6087723	5081694	88	5396970	5099617	52
6029099	3498096	332	5376934	5009227	154	5680574	5021644	145	6427444	5081698	86	5942498	5099706	52
5918905	3498098	332	5376996	5009235	154	5680581	5021647	145	5614364	5081800	103	5708933	5099708	82
5918912	3498100	337	6431298	5009250	232	6033768	5021652	145	6532766	5081802	105			
5850069	3498103	422	6431304	5009256	232	5938668	5021656	145	6532773	5081804	106		/100 pc. 5102057	229
6651290						6431199	5021830	173	6415663	5081977	89	5399797	5102073	229
	/100 pc. 3498108	422	5377719	5012015	163		/100 pc. 5025206	167	6415694	5081990	104	5399919	5102081	229
6559657	3498124	430	6431113	5012270	232	5382690			5022978	5083400	101	5399971	5102111	229
6559626	3498130	433		/pc. 5014018	165	5383055	5028035	167	5525134	5084008	93	5400035	5102138	229
6563920	3498132	433	5377894	5014026	165	5383116	5028043	167	5525196	5084012	94	5400097	5102154	229
6563937	3498134	433	5377955	5014212	165				5525257	5084016	94	5400158	5102197	229
6563944	3498136	433	5378013	5014425	163	5383413	5030021	168	5525318	5084020	91	5400219	5102219	229
6563951	3498140	433	5901938	5014468	163	5383659	5030234	168	5525370	5084024	92	5400271	5102235	229
6563968	3498142	433	5105015	5014469	164	5383710	5030242	168	5525431	5084028	93	5400321	5102251	229
6563975	3498144	433	6391059	5014476	163				5525493	5084032	94	5400394	5102278	229
6563982	3498146	430	5105077	5014477	164	5383833	5032032	166	5525554	5084036	94		/pc. 5106002	238
6563999	3498159	433	6391042			5383895	5032040	166	5525615	5084040	94	6089505	5106003	239
6559633	3498204	431	5378198	5015065	124	5383956	5032237	167	5110750	5084048	95	6431137	5106041	238
5964100	3498261	271	5378259	5015073	123	5384014	5032245	167				6431311	5106045	238
6559664	3498264	430	5931669	5015075	124	5384137	5032539	167	6440573	5088564	81	6439614	5106050	233
6559671	3498272	333	5378310	5015081	123	5384199	5032547	167	6440580	5088565	80	6431281	5106071	233
6559640	3498320	294	6587292	5015105	126				5405542	5089761	32		/pc. 5106133	239
6411818	3498322	426	5959427	5015111	126	5384434	5033039	167	5405559	5089763	33	5900375	5106141	239
6411825	3498326	426	5800118	5015200	124	5433750	5033209	166				5900436		
6411832	3498334	426	6427628	5015265	132				6465644	5091722	118		/100 pc. 5201101	181
6411856	3498336	426	6427680	5015270	132	5384557	5038014	137				5401599		
6411863	3498340	426	5378372	5015502	124	5384618	5038030	137	6426713	5092420	63	5904335	5202213	199
6411870	3498342	426	5378556	5015650	122	5384670	5038057	137	6426720	5092422	62	5402138	5202248	198
6411894	3498350	426	5378617	5015707	123	5384731	5038073	137	6426751	5092424	61	6379965	5202510	192
	/pc. 5000017	148	5378679	5015715	123	5384793	5038081	137	6426768	5092426	60	5403036	5202515	192
5371298	5000025	148	5378730	5015723	122	5384854	5038111	137	6515400	5092431	58	5902294	5202566	192
5371359	5000203	148	5378853	5015758	122	5384915	5038138	137	6515431	5092433	59	5894124	5202568	192
5617358	5000300	147	5378914	5015766	122	5384977	5038154	137				5894223	5202569	195
5708834	5000335	147	5002253	5015830	128	5385219	5040035	137	5087250	5093270	98	5902232	5202590	192
6431229	5000481	148	5699330	5015832	128	5385271	5040051	137	5022619	5093272	100	5403814	5202833	191
	/pc. 5000500	148	5699347	5015836	128	5385332	5040078	137	5022732	5093275	99	5784920	5202836	191
6336340	5000742	146	5002260	5015842	128	5385394	5040094	137	5076551	5093380	55	5902171	5202868	191
5018049	5000750	146	5699354	5015844	128	5385455	5040116	137	6098583	5093382	57			
5814450	5000769	146	5699361	5015847	128	5385516	5040132	137	5299448	5093391	56	5038269	5203015	191
5111047	5000858	147	5699408	5015849	128	5385578	5040159	137	6159604	5093511	35	5784968	5203018	191
5740650	5000866	147	5002277	5015854	128	5385936	5040507	137	6159642	5093516	36	5289746	5203023	191
5371830	5000867	147	5002284	5015866	128				6159666	5093522	37			
5371892	5000947	147	5033615	5015880	128	5385998	5043018	139	6159697	5093526	39			
5371953	5000955	147	5033677	5015884	128	5386056	5043107	139	6159703	5093531	38	5404651	5207258	201
			5033738	5015890	129				6159710	5093533	40	5110392	5207266	201
6431236	5001190	150				5386117	5050030	138	6463831	5093998	97	5404774	5207339	199
	/pc. 5001218	155	5379157	5016037	129	5386179	5050057	138				5735762	5207342	199
5372370	5001226	155	5922216	5016096	129	5386230	5050073	138	6603695	5094210	76	5404835	5207347	200
5372431	5001366	155	5922278	5016126	129	5386292	5050081	138	6603701	5094212	77	5069546	5207371	200
5635475	5001404	155	5379270	5016142	165	5386353	5050111	138	6603718	5094230	74	5404897	5207444	200
5372554	5001412	155	6561063	5016160	169	5386414	5050138	138	6603725	5094232	75	5009726	5207451	201
5372615	5001416	169		/100 pc. 5018014	143	5386476	5050154	138	6603732	5094240	72	5404958	5207460	200
6560837	5001511	156	6409327	5018501	143	5386537	5050170	138	6603749	5094242	73	5405016	5207487	200
6431168	5001513	156	5800415	5018706	143	5386599	5050197	138	5648482	5094574	79	5405078	5207541	232
6431205	5001601	168	5022015	5018730	143				5478621	5094608	78	5904991	5207746	201
	/pc. 5001612	162	5680475	5019345	143	5386650	5051509	138				5905059	5207754	201
5721123	5001617	156	5680482	5019347	143	5386834	5052076	138	6159826	5095163	44	5905110	5207762	201
5635239	5001625	156	5680505	5019355	143	5386896	5052092	138	6161140	5095251	46	5904878	5207800	200
5862697	5001633	156	5680512	5019360	143	5386957	5052114	138	6161331	5095253	48	5904939	5207819	200
5372912	5001668	155				5387015	5052130	138	6162338	5095283	45	5336433	5207851	201
5372974	5001672	156	5381556	5021081	144	5387077	5052157	138						

GTIN	Art. no.	Page	GTIN	Art. no.	Page	GTIN	Art. no.	Page	GTIN	Art. no.	Page	GTIN	Art. no.	Page
5812111	/100 pc. 5215471	195	6517381	/pc. 5240030	114	5740476	/100 pc. 5313023	162	5423614	/100 pc. 5335205	233	5070054	/100 pc. 5403103	177
5902591	5215544	193	6522941	5240032	114	5543015	5313031	161	5423676	5335256	233	5070061	5403110	177
5407294	5215552	193	6522965	5240033	114	5237372	5313058	161				5070078	5403117	177
5784982	5215555	193	6524181	5240360	114	5806530	5313066	162	5424215	5336007	234	5070085	5403124	178
5812234	5215579	193	6524242	5240362	114				5424277	5336023	234	5548713	5403200	177
5785019	5215582	193	6524259	5240366	114	5418993	5314038	217	5424338	5336058	234	5110637	5403205	177
5812296	5215587	193	6524273	5240370	114	5419112	5314135	217	5424390	5336074	234	5548775	5403219	178
5812357	5215595	193	6524297	5240374	114	5419174	5314518	157	5424451	5336090	234	5548898	5403227	177
5812418	5215609	193	6524433	5240380	115	5419235	5314534	156	5424635	5336309	235	5548959	5403235	177
5407355	5215625	193	6524457	5240382	115	6428120	5314572	230	5424758	5336341	235	5926320	5403238	185
5812531	5215668	194	6524464	5240386	115	6428137	5314574	230	5424819	5336376	235			
5812593	5215749	194	6524471	5240390	115	5419297	5314615	157	5424871	5336457	235	5034872	/pc. 5403308	175
5902416	5215838	194	6524488	5240394	115	5893097	5314616	158	5424932	5336503	235	5034933	5403324	175
5902478	5215854	194				5419358	5314623	157				5613572	5403330	181
5531791	5215875	194		/100 pc.		5419471	5314658	157	5425595	5350085	228	5813903	5403333	181
5531852	5215879	194	5415695	5304008	210	5893080	5314659	157	5425656	5350093	228	5670735	5403335	180
			5415879	5304105	210	5419532	5314666	157	5425717	5350107	228			
5902652	5216184	193	5858034	5304107	210	5925873	5314720	157	5425779	5350115	228			
5902539	5216192	193	5415930	5304113	210				5425830	5350123	228	5428657	/100 pc. 5405068	176
5813019	5216206	193	5817512	5304164	211	5419716	5315506	213	5426257	5350689	228			
5813071	5216214	193	5817574	5304172	211	5740414	5315514	163	5426370	5350700	228	5428718	/pc. 5405769	181
5813132	5216257	193	5892809	5304176	130	5740353	5315522	163	5426431	5350719	228			
5813255	5216818	199	5416050	5304202	211	5237198	5315557	163	5426493	5350727	228			
			5892847	5304270	134	5419778	5315654	213	5426790	5350867	228	5888123	price/100 5407995	251
5407959	5217075	199	5416357	5304407	219	5419839	5315700	213	5426851	5350883	228	5888154	5407997	251
			5416418	5304504	219				5426912	5350905	228			
5904274	5218314	198	5503057	5304520	219	5419891	5316014	224				5674573	5408002	251
5577577	5218578	232	5416470	5304601	212	5419952	5316154	224	5426974	5351057	229	5674627	5408004	251
5548478	5218616	232	5817758	5304660	213	5818359	5316170	224	5427032	5351073	229	5854265	5408006	251
5408796	5218683	196	5416951	5304970	212	5420019	5316219	223	5427094	5351251	229	6591640	5408008	252
6648290	5218700	196	5417071	5304997	165	5420071	5316251	224	5427155	5351286	229			
6648306	5218704	196				5420132	5316308	223	5890652	5351359	229		/pc.	
6648313	5218708	196	5417316	5311039	214	5420194	5316324	223	5890713	5351375	229	5674641	5408011	253
6648320	5218716	196	5417378	5311101	214	5433682	5316450	222	5427216	5351456	229	6095346	5408013	252
6435234	5218780	232	5417439	5311152	214	5433729	5316459	223	5427278	5351472	229		price/100	
5408918	5218810	198	5417491	5311209	215	5433736	5316468	223				6591664	5408014	252
5408970	5218829	198	5417552	5311268	215	5420316	5316510	224	5427575	5400155	152	6591657	5408018	251
5409038	5218861	197	6466283	5311404	208	5420378	5316553	224	5629054	5400627	152		/pc.	
	/pc.		6428144	5311405	232					/pc.		6591695	5408019	253
5674580	5218882	197	6416912	5311407	209	5420439	5317010	220	6219339	5400810	188	6591701	5408020	253
	/100 pc.		5816584	5311410	209	5420491	5317053	220	6219346	5400812	188	6591671	5408021	252
5623052	5218885	197	5816591	5311417	209	5420552	5317207	220	6219353	5400814	189	5674689	5408022	252
5462972	5218888	196	5417675	5311500	208	5893158	5317208	220	6219360	5400817	189	6591688	5408023	252
5409090	5218926	226	5737063	5311503	138	5420613	5317223	221				5864172	5408024	254
5952213	5218977	197	5417736	5311519	208	5420675	5317258	220		/100 pc.		5674696	5408026	259
5625889	5218997	197	5417798	5311527	208	5420736	5317274	222	5901334	5401771	179	5674702	5408028	259
6388196	5218999	197	5835394	5311530	129	5420798	5317401	221	5427810	5401801	179	5871569	5408031	253
			5417859	5311535	209	5420859	5317428	222	5427872	5401836	179	6591633	5408032	253
5409458	5223075	203	5417910	5311551	134	5420910	5317452	221	5898399	5401852	179	5674719	5408036	253
5409519	5223105	203	5835349	5311554	129	5420972	5317479	222	5902119	5401879	179	5674870	5408043	256
5409632	5223156	203	5693789	5311573	139	5850861	5317481	221	5034810	5401970	175	5674887	5408049	256
5409755	5223202	203	5466192	5311585	139				5105619	5401980	176	5674726	5408052	255
5409939	5223601	204	5925446	5311590	134	5421030	5318084	219	5107774	5401983	176	5699668	5408056	254
			5451990	5311705	208	5421092	5318149	219	5108672	5401986	176	5813774	5408058	260
5410416	5226570	204	5452058	5311713	208				5108733	5401989	176	6586981	5408059	260
						5421276	5320011	226	5045359	5401993	176		/100 pc.	
5410539	5227070	204	5417972	5312035	216	5421337	5320054	226	5050803	5401995	176	5813781	5408060	259
5410591	5227089	204	5418030	5312132	216	5421511	5320690	227					/pc.	
5410652	5227100	204	6428038	5312292	231	5421573	5320704	227	5428053	5402107	180	5872696	5408064	254
5410713	5227151	204	6428045	5312294	231	6127504	5320707	227	5428176	5402158	180	5872702	5408066	255
			6428106	5312302	231	5421634	5320712	227	5428411	5402808	179	5872740	5408068	255
5410836	5228026	205	6428113	5312308	231				5428473	5402859	179	5872757	5408072	256
5410959	5228123	204	5418092	5312310	158	5421870	5325307	225		/pc.		5872764	5408074	255
5411017	5228131	205	5700869	5312318	159	5421931	5325315	225	5674733	5402864	182		/100 pc.	
5851011	5228134	205	5418153	5312345	159				5674740	5402866	182	5674924	5408101	246
5411079	5228220	207	5893103	5312346	160	5422419	5326303	226	5674757	5402868	182		/pc.	
5411192	5228328	204	5418214	5312418	159	5422471	5326311	226	5674764	5402870	182	5690733	5408105	244
			5418276	5312442	160	5422532	5326338	226	5674795	5402872	182	5613206	5408107	244
5411499	5229162	203	6466306	5312582	158				5674801	5402874	182	5613213	5408108	244
5411550	5229367	203	6428083	5312592	230	5453611	5328209	214	5674818	5402876	182	5613220	5408109	244
5411611	5229383	203	6428090	5312594	230	5453673	5328284	214	5674825	5402878	182	5636731	5408148	244
5411673	5229464 </													

GTIN	Art. no.	Page	GTIN	Art. no.	Page	GTIN	Art. no.	Page	GTIN	Art. no.	Page	GTIN	Art. no.	Page
5673811	/pc. 5408687	244	5430216	/100 pc. 5424151	152	5903949	/m 6047655	348	5668039	/pc. 6338458	335	6225071	/pc. 6342366	335
5613305	5408689	244	5430339	5424208	152	5706182	6047656	361	5668046	6338462	311	6225132	6342368	335
5673750	5408733	248				5706199	6047657	361	5668060	6338497	355	6225378	6342370	335
6036226	5408800	249				5391227	6047689	306				6225439	6342372	335
5542773	5408806	249	5901457	/pc. 5430011	153	5903956	6047690	348	6186556	6339018	354			
5542834	5408814	249	5901570	5430062	153				6186617	6339034	354	6340217	6348874	352
5770497	5408820	249				6059652	6055109	306	6186679	6339050	354	6168910	6348904	353
5004608	5408849	248	5430575	/100 pc. 5430151	153	6059713	6055206	306	6186730	6339077	354	6901456	6348920	353
5009733	5408852	249		/pc. 5430720	153	6059775	6055303	306	6186792	6339093	354			
6647842	5408854	186	6456161	5430720	153	6059836	6055400	306	6186853	6339115	354	6191413	6349102	355
6647859	5408856	186							6186914	6339131	354	6191475	6349153	355
6647866	5408858	186				6060191	6056105	306	6186976	6339166	354			
6647873	5408860	186	6101771	6001078	364	6060252	6056202	306	6187034	6339182	354	6199037	6364152	378
6219391	5408868	186	5166078	6001093	364	6060313	6056296	306	6187096	6339190	354	6199150	6364268	378
6219407	5408870	186	6858552	6001442	310				6187157	6339204	354	6199211	6364276	378
6647804	5408874	186	6858613	6001446	310	5829553	6059000	306	6187218	6339212	354	6501731	6364942	372
6647811	5408876	186	5045274	6001447	351	5829942	6059004	306	6187270	6339220	354	5618133	6364947	372
6647828	5408878	186	6858675	6001448	310	5829959	6059006	306	6187331	6339239	354			
6647835	5408880	186	6858736	6001450	310	5829966	6059008	306	6187393	6339247	354	6469819	6365027	372
6219414	5408888	184							6187454	6339255	354	6469635	6365035	372
6219421	5408890	184				5694441	6062025	365	6187515	6339263	354			
6219452	5408902	184	5872887	6003750	310	5694472	6062028	365	6187577	6339271	354			
6219469	5408905	185	5872894	6003754	310	5694489	6062033	314	6187638	6339298	354	6040438	/100 pc. 6404001	140
6219476	5408910	187				5694540	6062068	314				6049080	6404006	140
5859550	5408930	184				5694557	6062084	365	6187690	6340016	354	6049202	6404014	140
5859567	5408932	184	5938682	/pc. 6015345	351	5694564	6062086	365	6187751	6340032	354			
5871613	5408934	186				5694571	6062114	337	6187812	6340059	354	6199815	6406122	314
5871620	5408936	186	6520510	6016596	310				6187874	6340075	354	6078370	6406142	366
5871668	5408938	184	6013210	6016642	364	5694618	/100 pc. 6062280	314	6187935	6340091	354	6199877	6406157	314
5871675	5408940	184	6120079	6016648	364	5694625	6062282	314	6187997	6340113	354	6078431	6406193	366
5670056	5408942	183	6013456	6016839	364	5694656	6062284	358	6188055	6340148	354	6199990	6406203	314
5785330	5408943	183	7261436	6016855	310				6188116	6340164	354	6200054	6406254	381
5670063	5408946	183	6120437	6016859	364				6188178	6340180	354	6200238	6406521	366
5785347	5408947	183				6065530	/pc. 6067115	307	6188239	6340199	354	6200290	6406556	366
5670070	5408950	187	6013579	6017045	365	5694724	6067970	357	6188291	6340202	354	6201259	6406963	384
5670087	5408952	187	6120499	6017092	365				6188352	6340210	354	6201372	6406998	384
5670094	5408954	187	6931330	6017700	310	5889502	6068914	307	6188413	6340229	354			
5849360	5408955	187				5889526	6068918	307	6188475	6340237	354	6201792	6407528	358
5670100	5408956	187	6446896	6018505	384	5889533	6068920	307	6188536	6340245	354	6201853	6407536	381
5849391	5408957	187				5889540	6068922	307	6188659	6340261	354	6201914	6407560	384
5670117	5408958	188	6014538	6019528	384	5890492	6068936	349	6188710	6340288	354			
5849407	5408959	187				5890515	6068940	349	6188772	6340296	354	6202157	6408516	381
5670124	5408960	188	5881674	6041080	361	5890522	6068942	349	6959006	6340881	353	6479955	6408702	315
5670131	5408964	188	5881698	6041084	361	5890560	6068944	349	6959068	6340903	353	6480074	6408729	358
5802433	5408966	183	5881704	6041086	361	5889571	6068958	361	6959129	6340911	353	6480135	6408737	315
5802440	5408967	183	5881810	6041130	307	5889595	6068962	361	6959181	6340938	353			
5670148	5408968	183	5881834	6041134	307	5889601	6068964	361	6601752	6340946	353	6202218	6410081	380
5674931	5408969	183	5881841	6041136	307				6043927	6340950	353	6202270	6410103	357
5674948	5408971	185	5881858	6041138	307	6117611	6117465	65	6044047	6340954	353	6202331	6410111	315
5674979	5408972	185	5881889	6041150	348				6044160	6340958	353			
5674986	5408973	185	5881902	6041154	348				6284177	6340962	353			
5613329	5408976	243	5881919	6041156	348	5299639	/m 6207501	375	6437597	6340966	353	6229277	/pc. 6416446	336
5613336	5408978	243	5881926	6041158	348	5299646	6207505	375	6437658	6340970	353	6202812	6416500	311
5613343	5408980	243	5881957	6041180	361	5299684	6207509	375				6894253	6416504	355
5613350	5408982	243	5878322	6041184	361	5299691	6207523	375	6536771	6341527	311	6202874	6416519	355
5613367	5408984	247	5878339	6041186	361	5299707	6207527	375	6536719	6341535	311			
5613374	5408986	247	5878407	6041200	361	5299714	6207531	375	6536658	6341543	311	6650590	6417027	311
5613381	5408988	247	5878452	6041204	361				6536597	6341551	311	6650651	6417043	311
5613411	5408990	247	5878469	6041206	361	5064022	6208538	384	6536535	6341578	311	6650712	6417078	311
5613428	5408992	247	5878568	6041230	307	5064053	6208541	384	6536474	6341586	311			
5613435	5408994	247	5878582	6041234	307	5064060	6208544	384	6536412	6341594	311	6204311	6418198	311
5613442	5408996	248	5878629	6041236	307	5064251	6208627	384	6536351	6341608	311			
			5878636	6041238	307	5064268	6208630	384	6536290	6341616	311	6437474	/100 pc. 6418250	336
			5878698	6041250	348	5064299	6208633	384	6536238	6341624	311	6518470	6418252	314
5428893	/100 pc. 5410096	207	5878742	6041254	348				6536177	6341632	311	6204434	6418287	358
			5878759	6041257	348	6960262	/pc. 6208770	375				6204496	6418295	358
5429616	5412609	206	5878766	6041259	348	6339914	6208778	375	6221776	6342302	335	6204557	6418317	358
5446415	5412633	206	5878797	6041270	361	5065555	6208840	384	6222018	6342304	335			
5459071	5412706	168	5878810	6041275	361				6222070	6342306	335	6204731	/pc. 6418554	356
5752356	5412803	206	5878827	6041277	361	5677932	6220139	351	6222315	6342308	352	6204793	6418570	356
5752295	5412811	207	5878865	6041290	361	5807155	6220145	364	6222377	6342310	352	6204854	6418597	356
			5878889	6041294	361				6222438	6342312	352			
5429678	5416566													

GTIN	Art. no.	Page	GTIN	Art. no.	Page
	/pc.			/pc.	
6207312	6420745	335	6561810	7205430	271
6636853	6424716	378	6593675	7205431	271
6636976	6424732	378		/pc.	
6637034	6424740	378	5811688	7205432	333
6637096	6424759	378	6564002	7205470	433
			6564019	7205472	433
6079971	7070205	307	6134946	7205480	400
6094882	7070213	307	6134977	7205484	400
6094943	7070217	307	5930143	7205510	399
6095001	7070221	307	5930150	7205520	399
			5930167	7205524	399
6231072	7083106	308	5930174	7205528	399
6231195	7083203	308	5993070	7205530	392
6231256	7083300	308	5993087	7205533	392
6231317	7083408	308	5993094	7205536	393
			5993100	7205540	394
6232031	7084013	362	5993117	7205543	394
6232093	7084048	362	5993124	7205546	394
6232154	7084064	362	6002313	7205550	392
			6002375	7205553	392
5856559	7202200	269	6330904	7205556	393
5856566	7202201	269	6002443	7205560	395
5856597	7202203	269	6002504	7205563	395
5856603	7202204	270	6111169	7205566	395
5856610	7202205	270	5993162	7205570	400
5856627	7202206	270	5993131	7205580	397
5856665	7202207	270	5993148	7205583	398
5856672	7202208	270	6002528	7205590	398
5856689	7202209	270	6147892	7205620	396
5856719	7202210	270	6147908	7205623	396
6086917	7202212	292	6147939	7205626	396
6086924	7202213	292	6147946	7205630	397
6053674	7202214	292	6147953	7205633	397
6086931	7202215	292	6147960	7205640	398
6086948	7202216	293		/100 pc.	
6086979	7202217	293	6028238	7205660	401
6086986	7202218	293	6028245	7205663	401
6086993	7202219	293	6028269	7205666	401
6087006	7202220	293	6028290	7205669	401
5847854	7202283	271	6280551	7205675	401
5850120	7202295	274	6280568	7205677	401
5850137	7202300	269	6280582	7205679	401
5850144	7202302	269	6396016	7205700	400
5918929	7202306	271	6396023	7205702	400
5850182	7202310	274	6396030	7205704	400
5850199	7202312	274	6396047	7205706	400
5428190	7202322	289	6396054	7205708	400
6434459	7202505	284	6396061	7205710	400
5428275	7202510	285		/pc.	
6434466	7202515	288	5850083	7206058	269
5847915	7202521	285	5850076	7206104	269
6434510	7202557	288		/m	
6434527	7202561	288	6645794	7215210	331
6434565	7202565	288	6887590	7215234	331
6434572	7202569	288		/100 pc.	
6434589	7202573	288	6896530	7215374	331
6434626	7202577	288		/pc.	
6434633	7202581	288	6888214	7215500	333
6142811	7202624	288	5958857	7215702	388
6142934	7202628	288	5958864	7215706	388
6144013	7202660	288	5958871	7215709	388
6460991	7202709	280	5958901	7215713	388
6460878	7202725	280	5958918	7215716	388
6460755	7202741	280	5958925	7215719	388
5847861	7202904	271	5958932	7215726	388
5847878	7202912	271	5958963	7215730	388
			5447504	7215741	388
5817499	7203800	284	5447511	7215745	388
	/VPE		5809654	7215750	388
5817505	7203803	284		/m	
	/pc.		5917229	7216300	323
6436347	7203805	284		/pc.	
5817536	7203806	284	6090327	7216390	323
5817543	7203809	284		/m	
6135752	7204300	298	5917236	7216400	324
6135769	7204304	298	6462087	7216500	322
			6532469	7216501	322
6593705	7205405	333	6532513	7216600	323
	/pc.		6532209	7216630	324
5847830	7205423	333			
5448259	7205425	271			
5725695	7205429	271			



OBO BETTERMANN n.v./s.a.
Bist 14
2630 Aartselaar
BELGIË

Klantenservice België
Tel.: +32 3 870 - 74 00
Fax: +32 3 887 - 40 00
export@obo.be

www.obo.be

Building Connections

