

Solutions for switching cabinet construction



THINK CONNECTED.

Solutions for switching cabinet construction

Switching cabinets are the control centre in modern electrical systems and production facilities. This means they must be equipped and secured accordingly. Products and systems from OBO provide reliable functionality of the electrical components in a switching cabinet. They connect, distribute and protect – thereby making sure that your system is always available.



Think connected.

OBO means thinking in networks and acting systematically. We combine our products to produce solutions for your particular project in industry, commerce and infrastructure facilities - worldwide.



VK wiring trunking system, Dahl

VKH wiring trunking system, Dahl, halogen-free

Rail and clamp clip systems

Cable gland systems

Surge protection, type 1 / type 1+2 / type 2 / type 3

Surge protection for data and information technology

Directories

Modern switching cabinet construction with OBO systems

Reliable, safe and long-lasting – these features are vital for all elements in a switching cabinet so that control and automation systems remain available. OBO can compile the right solution portfolio for any installation job. From wiring trunking systems to rail systems right through to products for surge protection.

System 

Wiring trunking systems



Rail systems



Clip systems





Lightning current ar-
restor
Energy technology



Surge protection
Energy technology



Surge protection
Data and information
technology



Surge protection
Instrumentation, control
and
automation technology

Wiring trunking system, Dahl

An exceptionally large range of products in the usual high quality: Wiring trunking from our successful Dahl system ensures tidy wiring in a switching cabinet. All trunking is made from lead-free material. And for optimum safety, a selection of halogen-free trunking is available from our range.

For the professional wiring installation, there is wiring trunking in measurements from 15 x 15 mm to 100 x 100 mm available. A soft, burr-free slot and rounded tabs make the installation easier and also prevents injuries. Upon request we can also offer special designs.



c **RA**[®] **US**



Precise measurements and tested quality

The LK4 and LK4/N as well as the LKV and LKV/N trunking systems have exactly predetermined points for easy breaking-out of the side retainers. All types have, de-

pending on their size, single or dual track perforation to their base. Tapering in the side slots of the LK4/N and LKV/N types prevents the cables from falling out. The wiring trunking is VDE-tested and UL-listed (UL File E301798).



LK4 and LK4/N

OBO offer the LK4 wiring trunking in the measurements from 15 x 15 mm to 80 x 120 mm. Depending on the size, the trunking has single or dual track perforation to the base. Precise processing makes simple attaching and detaching of the covers possible but at the same time provides a firm fit.



LKV/H

The LKV/H wiring trunking is halogen-free and available in eight different sizes of 50 x 37.5 mm to 75 x 125 mm.



LKV and LKV/N

The special cover contours also guarantee a perfect fit on the LKV wiring trunking system. In the sizes from 25 x 25 mm to 100 x 100 mm (measurements according to DIN EN 50085- 2-3) it caters for any size requirement.

Benefits in detail



Mounting of the wiring trunking

The VK wiring trunking system is fastened to the mounting plate of the distributor cabinet using spreading rivets. The spreading rivets are installed using the plastic rivet tool.



Spacer mounting

Through the mounting on spacers, it is possible to install VK wiring trunking with a distance to the mounting plate.



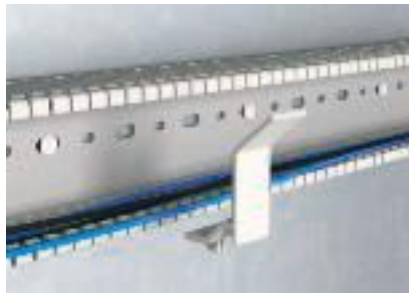
Base perforation

Single and dual-track base perforation to DIN 43659 enable precise work.



Release pliers

The side retainers can be removed down to the base of the trunking using the release pliers. When the side retainers have been broken out, there is no loss in volume in the transfer area to the next trunking piece.



Wire retainers

The wire retainers can be adjusted according to the trunking width. To do this, simply break off the wire retainer at the predetermined breaking points. This means that just one wire retainer is necessary for any trunking width.



Wire retainer mounting

The wire retainer is inserted into the side slot of the VK wiring trunking system. This simplifies cable installation and keeps the cables in place in the VK wire trunking system. It also guarantees easy attachment of the cover. If installations are required at a later date, then, when the cover is removed, the cables are held in the trunking and do not fall out.

Benefits of VK wiring trunking

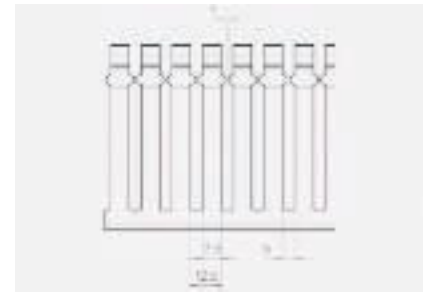
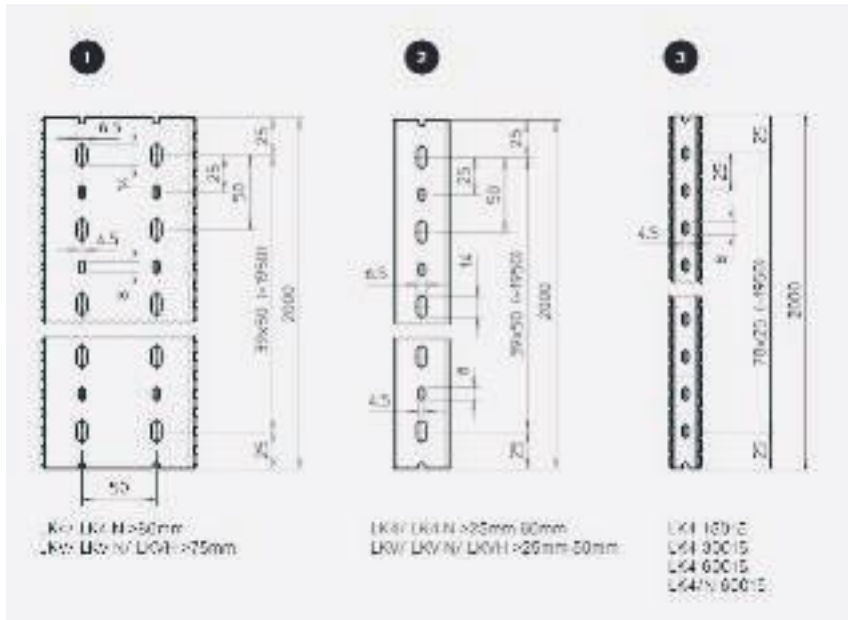
The Dahl VK wiring trunking is produced in the known quality – with soft, burr-free slots. Rounded tabs prevent injury during installation. Additional benefits are:

- Stable trunking with large wall thicknesses
- Exact predetermined breaking points in the strut and base area
- Absolute dimensional accuracy of the side perforation
- Absolute dimensional accuracy of the base perforation
- Starting dimension of the base perforation can be adjusted variably, if requested by the customer
- Cut edges rounded and deburred in the closing area
- VDE-tested
- UL-tested and listed file no. E301798
- Special designs on request
- Firm positioning of the covers through optimum closing contours
- Halogen-free trunking made of PC/ABS

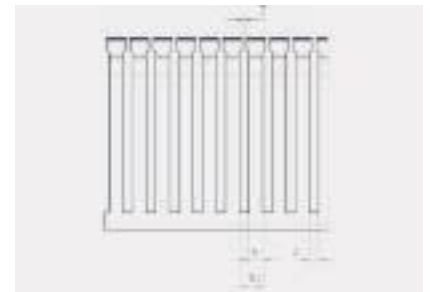
Wire holding lugs

In the N versions, there is a holding lug on the side retainer, allowing fixing of the cables in the VK wire trunking system.

Hole patterns and dimensions



LKV



LK4

All VK and VKH wiring trunking always start and finish - with regards to one delivery length (2,000 mm) - with half a small fastening hole (4.5 x 8 mm).

LK4/LK4/N	Item no.	Hole pattern
LK4 15015	6178001	2
LK4 30015	6178003	2
LK4 30025	6178005	3
LK4 40025	6178010	3
LK4 40040	6178012	3
LK4 40060	6178014	3
LK4 40080	6178016	1
LK4 40100	6178018	1
LK4 60015	6178026	2
LK4/N 60015	6178201	2
LK4 60025	6178028	3
LK4/N 60025	6178203	3
LK4 60040	6178031	3
LK4/N 60040	6178205	3
LK4 60060	6178033	3
LK4/N 60060	6178207	3
LK4 60080	6178035	1
LK4/N 60080	6178209	1
LK4 60100	6178037	1
LK4/N 60100	6178211	1
LK4 60120	6178039	1
LK4/N 60120	6178213	1

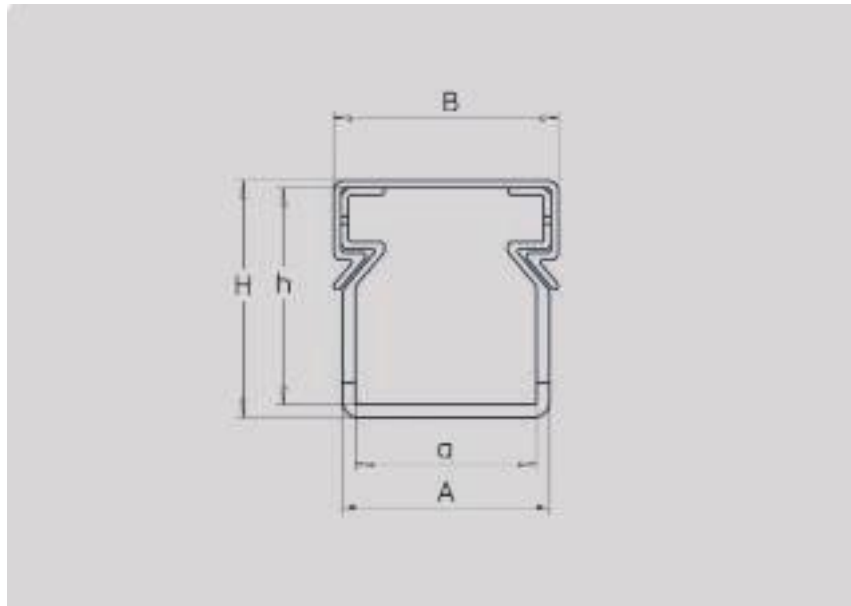
LK4/LK4/N	Item no.	Hole pattern
LK4 80025	6178050	3
LK4/N 80025	6178225	3
LK4 80040	6178052	3
LK4/N 80040	6178227	3
LK4 80060	6178054	3
LK4/N 80060	6178229	3
LK4 80080	6178056	1
LK4/N 80080	6178231	1
LK4 80100	6178059	1
LK4/N 80100	6178233	1
LK4/N 80120	6178236	1
LK4/N 80120	6178236	1
LK4/N 80120	6178236	1

LKV/H	Item no.	Hole pattern
LKV/H 50037	6178612	2
LKV/H 50050	6178614	2
LKV/H 50075	6178616	2
LKV/H 75037	6178622	2
LKV/H 75050	6178624	2
LKV/H 75075	6178626	1
LKV/H 75100	6178628	1
LKV/H 75125	6178630	1

LKV/LKV/N	Item no.	Hole pattern
LKV 25025	6178302	3
LKV 37025	6178305	3
LKV 37037	6178307	3
LKV 50025	6178310	3
LKV 50037	6178312	3
LKV 50050	6178314	3
LKV 50075	6178316	1

LKV/LKV/N	Item no.	Hole pattern
LKV 75025	6178320	3
LKV/N 75025	6178420	3
LKV 75037	6178322	3
LKV 75037	6178422	3
LKV 75050	6178324	3
LKV/N 75050	6178424	3
LKV 75075	6178326	1
LKV/N 75075	6178426	1
LKV 75100	6178328	1
LKV/N 75100	6178428	1
LKV 75125	6178330	1
LKV/N 75125	6178430	1
LKV 10037	6178334	3
LKV/N 10037	6178435	3
LKV 10050	6178336	3
LKV/N 10050	6178437	3
LKV 10075	6178338	1
LKV/N 10075	6178439	1
LKV 100100	6178341	1

Dimensions, LK4 wiring trunking



Dimensions LK4

Item no.	Type	Item no.	Type	Dimension a mm	Dimension A mm	Dimension B mm	Dimension h mm	Dimension H mm
6178001	LK4 15015			15	17	20	15	17
6178003	LK4 30015			15	17.8	20	30	32.4
6178005	LK4 30025			25	28.6	31	30	32.8
6178010	LK4 40025			25	28.6	31	40	42.8
6178012	LK4 40040			40	43.6	46.2	40	43
6178014	LK4 40060			60	64	66.4	40	43.2
6178016	LK4 40080			80	84	87	40	43.5
6178018	LK4 40100			100	104	107.4	40	43.7
6178026	LK4 60015	6178201	LK4 N 60015	15	18.6	20	60	62.8
6178028	LK4 60025	6178203	LK4 N 60025	25	29	31	60	63
6178031	LK4 60040	6178205	LK4 N 60040	40	44	46.2	60	63
6178033	LK4 60060	6178207	LK4 N 60060	60	64	66.4	60	63.2
6178035	LK4 60080	6178209	LK4 N 60080	80	84.4	87	60	63.7
6178037	LK4 60100	6178211	LK4 N 60100	100	104.6	107.4	60	64
6178039	LK4 60120	6178213	LK4 N 60120	120	124.6	127.8	60	64.2
6178050	LK4 80025	6178225	LK4 N 80025	25	29.4	31	80	83.2
6178052	LK4 80040	6178227	LK4 N 80040	40	44.4	46.2	80	83.3
6178054	LK4 80060	6178229	LK4 N 80060	60	64.4	66.4	80	83.4
6178056	LK4 80080	6178231	LK4 N 80080	80	84.6	87	80	83.9
6178059	LK4 80100	6178233	LK4 N 80100	100	104.8	107.4	80	84.1
6178061	LK4 80120	6178236	LK4 N 80120	120	124.8	127.8	80	84.3

Rails and clips

OBO rails and clips guarantee reliable mounting of devices, cables and wires in a switching cabinet. The range comprises various profile types such as hat rails, support rails and profile rails as well as sturdy mounting rails. All kinds of clamp clips retain cables and wires and ensure a permanent, secure installation.





Lightning and surge protection

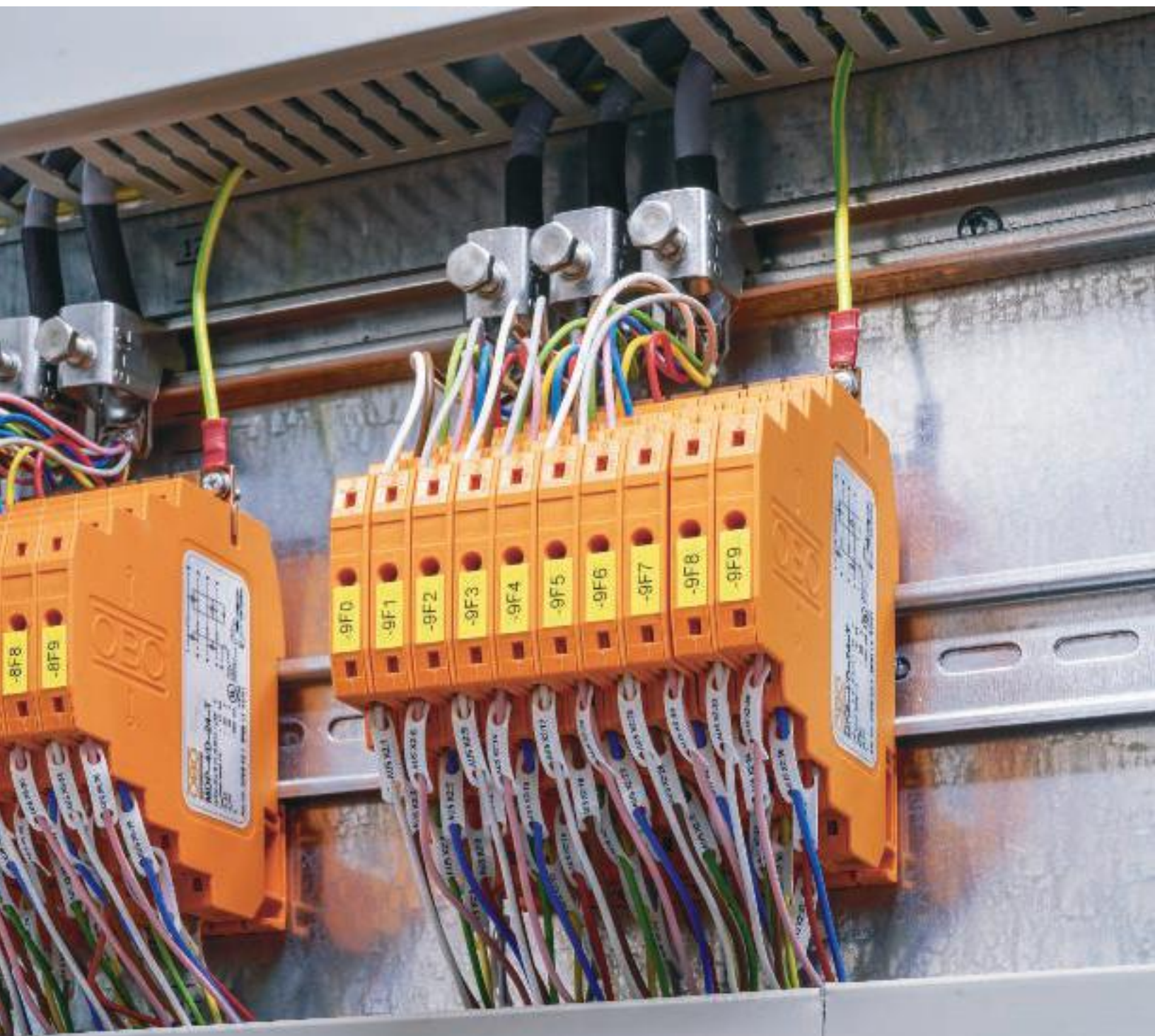
Surge protection systems shield the electrical control components in a switching cabinet safely against damage caused by lightning strikes or by coupling via the energy or data cable network. Surge protection systems form a multi-stage barrier which no surge voltage can break through.

OBO offers surge protection devices for all areas of application. Ranging from heavy surge arrestors for the industry and surge protection devices for residential and administration buildings for

protection devices for instrumentation, control and automation equipment and data cable protection.






- 5-year warranty
- VDE-tested
- Conforms to lightning protection standard VDE 0185-305 / IEC 62305
- Fulfills the surge protection norm VDE 0100-443 / IEC 60364-4-44
- According to the VdS guideline 2031
- Protection devices to VDE 0675-6-11 / IEC 61643-11







VK wiring trunking system, Dahl

	LK4 wiring trunking	15 x 15 mm to 80 x 120 mm	18
	LK4/N wiring trunking with wire retaining lug	60 x 15 mm to 80 x 120 mm	24
	LKV DIN wiring trunking	25 x 25 mm to 100 x 100 mm	28
	LKV/N DIN wiring trunking with wire retaining lug	75 x 25 mm to 100 x 100 mm	33
	Accessories	Wire retainer	36
		Plastic rivet tool	36
		Release pliers	36
		Spacer	36
		Washer	37
		Identification plate	37



LK4 wiring trunking

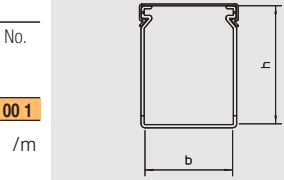


Wiring trunking, type LK4 15015

Type	Colour	Length	Dimension W x H	Pack.	Weight	Item No.
		mm	mm	m	kg/100 m	
LK4 15015	Stone grey	2000	15x15	72	12.000	6178 00 1

PVC Polyvinylchloride

Wiring trunking including cover and base perforation.

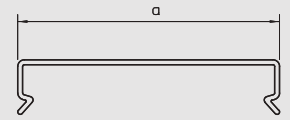


Cover

Type	Colour	Dimension a	Length	Pack.	Weight	Item No.
		mm	mm	m	kg/100 m	
LK4 DM 15	Stone grey	20	2000	92	8.500	6178 47 9

PVC Polyvinylchloride

Trunking cover for replacement requirements.

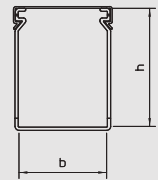


Wiring trunking, type LK4 30015

Type	Colour	Length	Dimension W x H	Pack.	Weight	Item No.
		mm	mm	m	kg/100 m	
LK4 30015	Stone grey	2000	15x30	40	18.000	6178 00 3

PVC Polyvinylchloride

Wiring trunking including cover and base perforation.

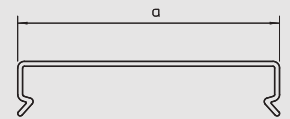


Cover

Type	Colour	Dimension a	Length	Pack.	Weight	Item No.
		mm	mm	m	kg/100 m	
LK4 D 15	Stone grey	20	2000	92	8.500	6178 48 0

PVC Polyvinylchloride

Trunking cover for replacement requirements.

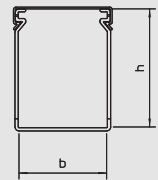


Wiring trunking, type LK4 30025

Type	Colour	Length	Dimension W x H	Pack.	Weight	Item No.
		mm	mm	m	kg/100 m	
LK4 30025	Stone grey	2000	25x30	48	28.000	6178 00 5

PVC Polyvinylchloride

Wiring trunking including cover and base perforation.

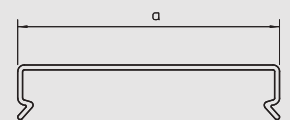


Cover

Type	Colour	Dimension a	Length	Pack.	Weight	Item No.
		mm	mm	m	kg/100 m	
LK4 D 25	Stone grey	31	2000	32	10.000	6178 48 2

PVC Polyvinylchloride

Trunking cover for replacement requirements.

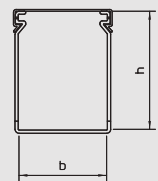


Wiring trunking, type LK4 40025

Type	Colour	Length	Dimension W x H	Pack.	Weight	Item No.
		mm	mm	m	kg/100 m	
LK4 40025	Stone grey	2000	25x40	48	36.500	6178 01 0

PVC Polyvinylchloride

Wiring trunking including cover and base perforation.

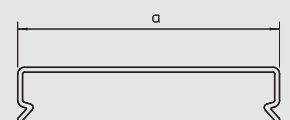


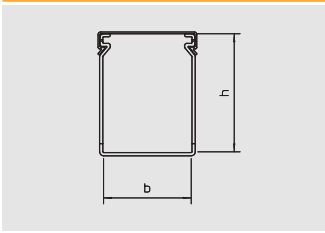
Cover

Type	Colour	Dimension a	Length	Pack.	Weight	Item No.
		mm	mm	m	kg/100 m	
LK4 D 25	Stone grey	31	2000	32	10.000	6178 48 2

PVC Polyvinylchloride

Trunking cover for replacement requirements.

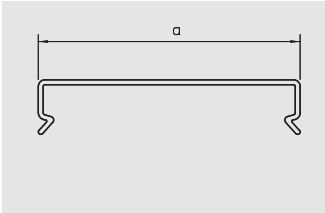




Wiring trunking, type LK4 40040

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LK4 40040	Stone grey	2000	40x40	36	44.000	6178 01 2

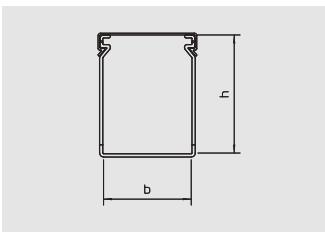
PVC Polyvinylchloride /m
Wiring trunking including cover and base perforation.



Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LK4 D 40	Stone grey	46.2	2000	24	13.500	6178 48 4

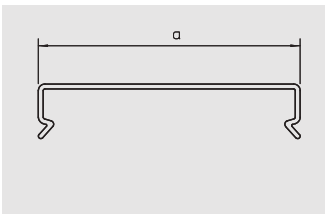
PVC Polyvinylchloride /m
Trunking cover for replacement requirements.



Wiring trunking, type LK4 40060

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LK4 40060	Stone grey	2000	60x40	24	57.000	6178 01 4

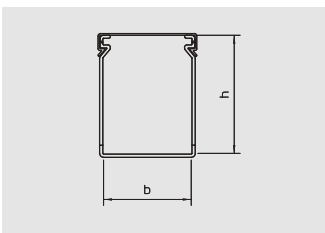
PVC Polyvinylchloride /m
Wiring trunking including cover and base perforation.



Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LK4 D 60	Stone grey	66.4	2000	40	18.000	6178 48 6

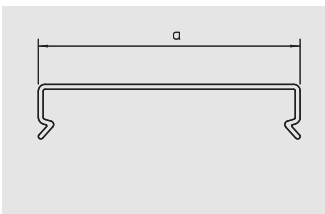
PVC Polyvinylchloride /m
Trunking cover for replacement requirements.



Wiring trunking, type LK4 40080

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LK4 40080	Stone grey	2000	80x40	24	71.000	6178 01 6

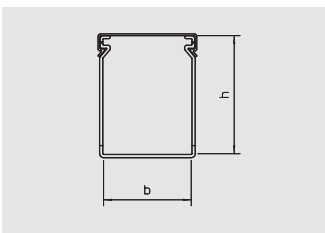
PVC Polyvinylchloride /m
Wiring trunking including cover and base perforation.



Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LK4 D 80	Stone grey	87	2000	12	27.000	6178 48 8

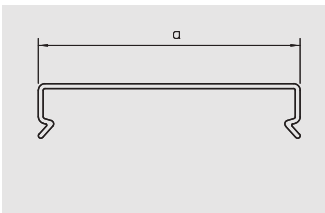
PVC Polyvinylchloride /m
Trunking cover for replacement requirements.



Wiring trunking, type LK4 40100

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LK4 40100	Stone grey	2000	100x40	24	85.500	6178 01 8

PVC Polyvinylchloride /m
Wiring trunking including cover and base perforation.



Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LK4 D 100	Stone grey	107.4	2000	12	35.500	6178 49 0

PVC Polyvinylchloride /m
Trunking cover for replacement requirements.



LK4 wiring trunking

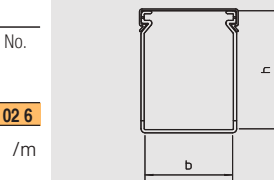


Wiring trunking, type LK4 60015

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LK4 60015	Stone grey	2000	15x60	48	32.500	6178 02 6

PVC Polyvinylchloride

Wiring trunking including cover and base perforation.

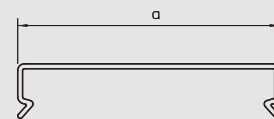


Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LK4 D 15	Stone grey	20	2000	92	8.500	6178 48 0

PVC Polyvinylchloride

Trunking cover for replacement requirements.

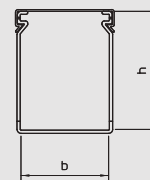


Wiring trunking, type LK4 60025

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LK4 60025	Stone grey	2000	25x60	32	46.000	6178 02 8

PVC Polyvinylchloride

Wiring trunking including cover and base perforation.

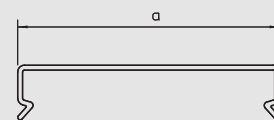


Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LK4 D 25	Stone grey	31	2000	32	10.000	6178 48 2

PVC Polyvinylchloride

Trunking cover for replacement requirements.

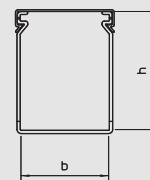


Wiring trunking, type LK4 60040

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LK4 60040	Stone grey	2000	40x60	24	53.500	6178 03 1

PVC Polyvinylchloride

Wiring trunking including cover and base perforation.

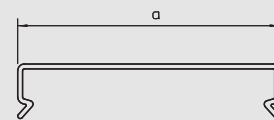


Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LK4 D 40	Stone grey	46.2	2000	24	13.500	6178 48 4

PVC Polyvinylchloride

Trunking cover for replacement requirements.

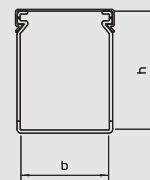


Wiring trunking, type LK4 60060

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LK4 60060	Stone grey	2000	60x60	32	64.500	6178 03 3

PVC Polyvinylchloride

Wiring trunking including cover and base perforation.

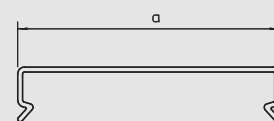


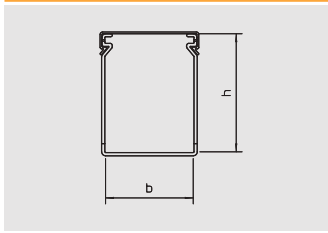
Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LK4 D 60	Stone grey	66.4	2000	40	18.000	6178 48 6

PVC Polyvinylchloride

Trunking cover for replacement requirements.

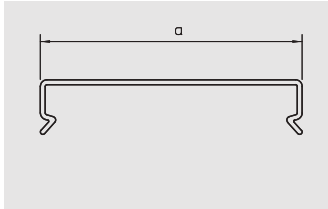




Wiring trunking, type LK4 60080

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LK4 60080	Stone grey	2000	80x60	24	82.500	6178 03 5

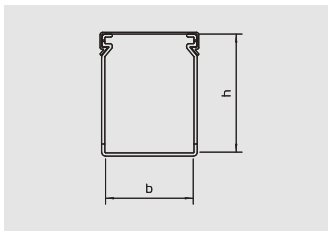
PVC Polyvinylchloride /m
Wiring trunking including cover and base perforation.



Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LK4 D 80	Stone grey	87	2000	12	27.000	6178 48 8

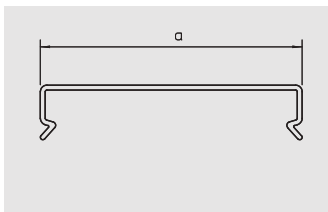
PVC Polyvinylchloride /m
Trunking cover for replacement requirements.



Wiring trunking, type LK4 60100

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LK4 60100	Stone grey	2000	100x60	16	100.000	6178 03 7

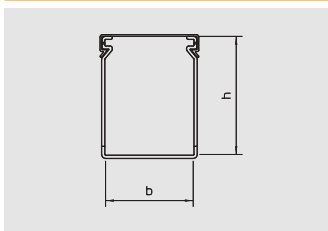
PVC Polyvinylchloride /m
Wiring trunking including cover and base perforation.



Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LK4 D 100	Stone grey	107.4	2000	12	35.500	6178 49 0

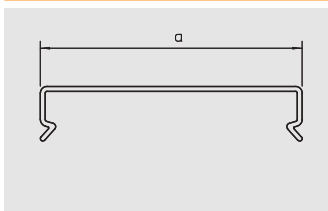
PVC Polyvinylchloride /m
Trunking cover for replacement requirements.



Wiring trunking, type LK4 60120

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LK4 60120	Stone grey	2000	120x60	8	117.000	6178 03 9

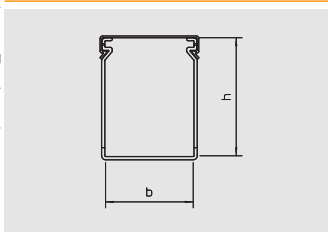
PVC Polyvinylchloride /m
Wiring trunking including cover and base perforation.



Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LK4 D 120	Stone grey	127.8	2000	16	45.500	6178 49 2

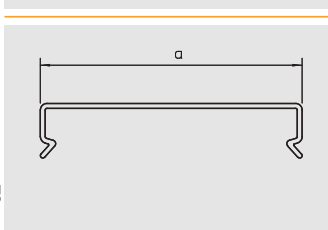
PVC Polyvinylchloride /m
Trunking cover for replacement requirements.



Wiring trunking, type LK4 80025

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LK4 80025	Stone grey	2000	25x80	32	61.000	6178 05 0

PVC Polyvinylchloride /m
Wiring trunking including cover and base perforation.



Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LK4 D 25	Stone grey	31	2000	32	10.000	6178 48 2

PVC Polyvinylchloride /m
Trunking cover for replacement requirements.



LK4 wiring trunking

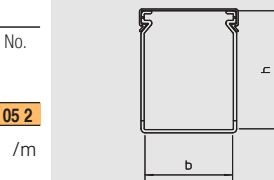


Wiring trunking, type LK4 80040

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LK4 80040	Stone grey	2000	40x80	24	64.500	6178 05 2

PVC Polyvinylchloride

Wiring trunking including cover and base perforation.

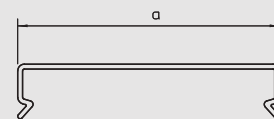


Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LK4 D 40	Stone grey	46.2	2000	24	13.500	6178 48 4

PVC Polyvinylchloride

Trunking cover for replacement requirements.

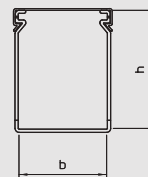


Wiring trunking, type LK4 80060

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LK4 80060	Stone grey	2000	60x80	24	76.000	6178 05 4

PVC Polyvinylchloride

Wiring trunking including cover and base perforation.

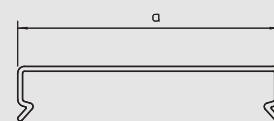


Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LK4 D 60	Stone grey	66.4	2000	40	18.000	6178 48 6

PVC Polyvinylchloride

Trunking cover for replacement requirements.

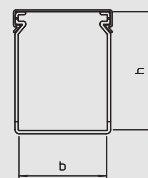


Wiring trunking, type LK4 80080

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LK4 80080	Stone grey	2000	80x80	16	95.500	6178 05 6

PVC Polyvinylchloride

Wiring trunking including cover and base perforation.

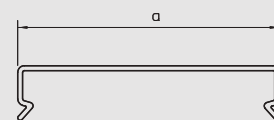


Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LK4 D 80	Stone grey	87	2000	12	27.000	6178 48 8

PVC Polyvinylchloride

Trunking cover for replacement requirements.

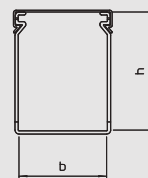


Wiring trunking, type LK4 80100

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LK4 80100	Stone grey	2000	100x80	16	111.500	6178 05 9

PVC Polyvinylchloride

Wiring trunking including cover and base perforation.

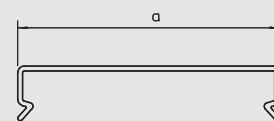


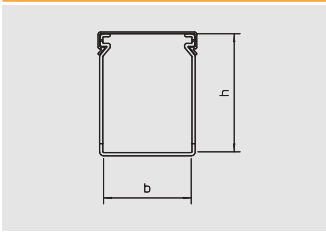
Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LK4 D 100	Stone grey	107.4	2000	12	35.500	6178 49 0

PVC Polyvinylchloride

Trunking cover for replacement requirements.

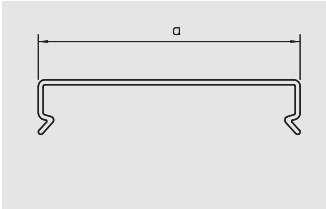




Wiring trunking, type LK4 80120

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LK4 80120	Stone grey	2000	120x80	8	128.500	6178 06 1

PVC Polyvinylchloride /m
Wiring trunking including cover and base perforation.



Cover

Type	Colour	Dimen- sion a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LK4 D 120	Stone grey	127.8	2000	16	45.500	6178 49 2

PVC Polyvinylchloride /m
Trunking cover for replacement requirements.



LK4/N wiring trunking



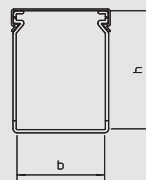
Wiring trunking, type LK4/N 60015

Type	Colour	Length	Dimension W x H	Pack.	Weight	Item No.
		mm	mm	m	kg/100 m	
LK4 N 60015	Stone grey	2000	15x60	48	41.000	6178 20 1

PVC Polyvinylchloride

/m

Wiring trunking including cover and base perforation, tapering in the side slots stop the cables from falling out.



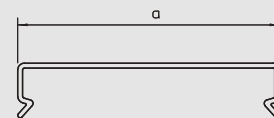
Cover

Type	Colour	Dimension a	Length	Pack.	Weight	Item No.
		mm	mm	m	kg/100 m	
LK4 D 15	Stone grey	20	2000	92	8.500	6178 48 0

PVC Polyvinylchloride

/m

Trunking cover for replacement requirements.



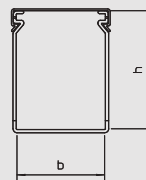
Wiring trunking, type LK4/N 60025

Type	Colour	Length	Dimension W x H	Pack.	Weight	Item No.
		mm	mm	m	kg/100 m	
LK4 N 60025	Stone grey	2000	25x60	32	48.500	6178 20 3

PVC Polyvinylchloride

/m

Wiring trunking including cover and base perforation, tapering in the side slots stops the cables from falling out.



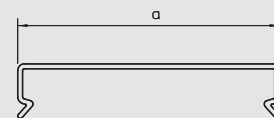
Cover

Type	Colour	Dimension a	Length	Pack.	Weight	Item No.
		mm	mm	m	kg/100 m	
LK4 D 25	Stone grey	31	2000	32	10.000	6178 48 2

PVC Polyvinylchloride

/m

Trunking cover for replacement requirements.



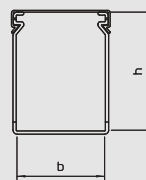
Wiring trunking, type LK4/N 60040

Type	Colour	Length	Dimension W x H	Pack.	Weight	Item No.
		mm	mm	m	kg/100 m	
LK4 N 60040	Stone grey	2000	40x60	24	56.000	6178 20 5

PVC Polyvinylchloride

/m

Wiring trunking including cover and base perforation, tapering in the side slots stops the cables from falling out.



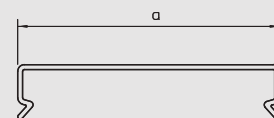
Cover

Type	Colour	Dimension a	Length	Pack.	Weight	Item No.
		mm	mm	m	kg/100 m	
LK4 D 40	Stone grey	46.2	2000	24	13.500	6178 48 4

PVC Polyvinylchloride

/m

Trunking cover for replacement requirements.



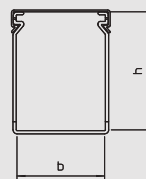
Wiring trunking, type LK4/N 60060

Type	Colour	Length	Dimension W x H	Pack.	Weight	Item No.
		mm	mm	m	kg/100 m	
LK4 N 60060	Stone grey	2000	60x60	32	68.000	6178 20 7

PVC Polyvinylchloride

/m

Wiring trunking including cover and base perforation, tapering in the side slots stops the cables from falling out.



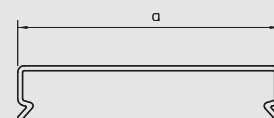
Cover

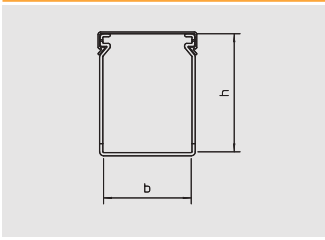
Type	Colour	Dimension a	Length	Pack.	Weight	Item No.
		mm	mm	m	kg/100 m	
LK4 D 60	Stone grey	66.4	2000	40	18.000	6178 48 6

PVC Polyvinylchloride

/m

Trunking cover for replacement requirements.

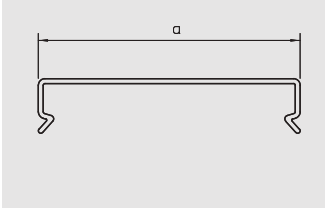




Wiring trunking, type LK4/N 60080

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LK4 N 60080	Stone grey	2000	80x60	24	87.000	6178 20 9

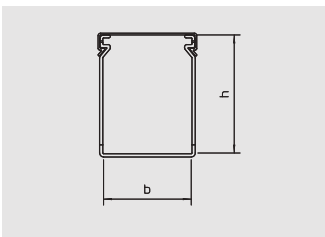
PVC Polyvinylchloride /m
Wiring trunking including cover and base perforation, tapering in the side slots stops the cables from falling out.



Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LK4 D 80	Stone grey	87	2000	12	27.000	6178 48 8

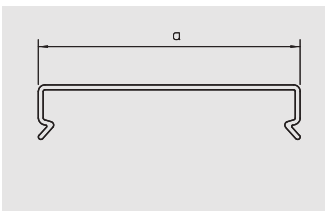
PVC Polyvinylchloride /m
Trunking cover for replacement requirements.



Wiring trunking, type LK4/N 60100

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LK4 N 60100	Stone grey	2000	100x60	16	105.500	6178 21 1

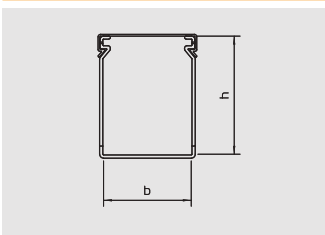
PVC Polyvinylchloride /m
Wiring trunking including cover and base perforation, tapering in the side slots stops the cables from falling out.



Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LK4 D 100	Stone grey	107.4	2000	12	35.500	6178 49 0

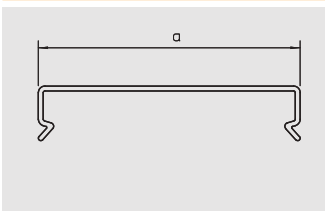
PVC Polyvinylchloride /m
Trunking cover for replacement requirements.



Wiring trunking, type LK4/N 60120

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LK4 N 60120	Stone grey	2000	120x60	8	120.500	6178 21 3

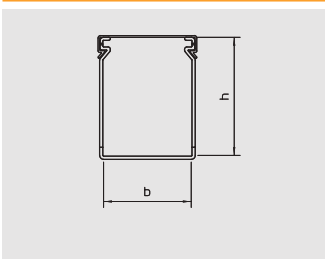
PVC Polyvinylchloride /m
Wiring trunking including cover and base perforation, tapering in the side slots stops the cables from falling out.



Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LK4 D 120	Stone grey	127.8	2000	16	45.500	6178 49 2

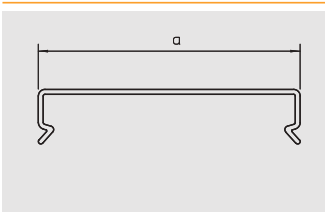
PVC Polyvinylchloride /m
Trunking cover for replacement requirements.



Wiring trunking, type LK4/N 80025

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LK4 N 80025	Stone grey	2000	25x80	32	65.000	6178 22 5

PVC Polyvinylchloride /m
Wiring trunking including cover and base perforation, tapering in the side slots stops the cables from falling out.



Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LK4 D 25	Stone grey	31	2000	32	10.000	6178 48 2

PVC Polyvinylchloride /m
Trunking cover for replacement requirements.



LK4/N wiring trunking

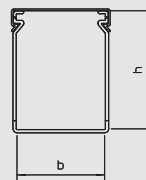


Wiring trunking, type LK4/N 80040

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LK4 N 80040	Stone grey	2000	40x80	24	73.500	6178 22 7

PVC Polyvinylchloride /m

Wiring trunking including cover and base perforation, tapering in the side slots stops the cables from falling out.

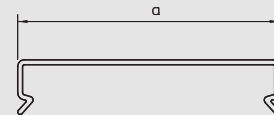


Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LK4 D 40	Stone grey	46.2	2000	24	13.500	6178 48 4

PVC Polyvinylchloride /m

Trunking cover for replacement requirements.

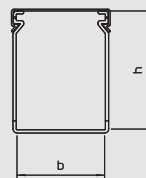


Wiring trunking, type LK4/N 80060

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LK4 N 80060	Stone grey	2000	60x80	24	82.000	6178 22 9

PVC Polyvinylchloride /m

Wiring trunking including cover and base perforation, tapering in the side slots stops the cables from falling out.

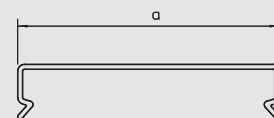


Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LK4 D 60	Stone grey	66.4	2000	40	18.000	6178 48 6

PVC Polyvinylchloride /m

Trunking cover for replacement requirements.

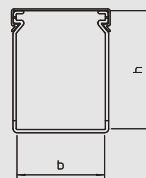


Wiring trunking, type LK4/N 80080

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LK4 N 80080	Stone grey	2000	80x80	16	101.000	6178 23 1

PVC Polyvinylchloride /m

Wiring trunking including cover and base perforation, tapering in the side slots stops the cables from falling out.

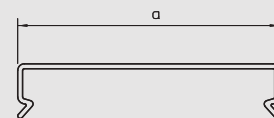


Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LK4 D 80	Stone grey	87	2000	12	27.000	6178 48 8

PVC Polyvinylchloride /m

Trunking cover for replacement requirements.

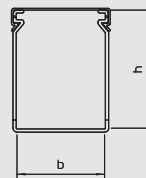


Wiring trunking, type LK4/N 80100

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LK4 N 80100	Stone grey	2000	100x80	16	116.500	6178 23 3

PVC Polyvinylchloride /m

Wiring trunking including cover and base perforation, tapering in the side slots stops the cables from falling out.

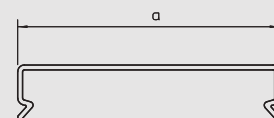


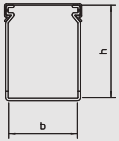
Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LK4 D 100	Stone grey	107.4	2000	12	35.500	6178 49 0

PVC Polyvinylchloride /m

Trunking cover for replacement requirements.



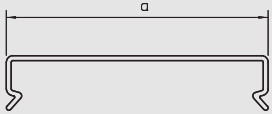


Wiring trunking, type LK4/N 80120

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LK4 N 80120	Stone grey	2000	120x80	8	133.500	6178 23 6

PVC Polyvinylchloride /m

Wiring trunking including cover and base perforation, tapering in the side slots stops the cables from falling out.



Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LK4 D 120	Stone grey	127.8	2000	16	45.500	6178 49 2

PVC Polyvinylchloride /m

Trunking cover for replacement requirements.



LKV DIN wiring trunking



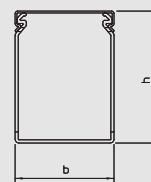
Wiring trunking, type 25025

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LKV 25025	Stone grey	2000	25x25	32	24.000	6178 30 2

PVC Polyvinylchloride

Wiring trunking including cover and base perforation to DIN EN 50085-2-3.

/m



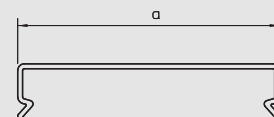
Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LKV D 25	Stone grey	25	2000	36	9.500	6178 50 4

PVC Polyvinylchloride

Trunking cover for replacement requirements.

/m



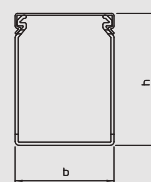
Wiring trunking, type 37025

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LKV 37025	Stone grey	2000	25x37.5	32	31.500	6178 30 5

PVC Polyvinylchloride

Wiring trunking including cover and base perforation to DIN EN 50085-2-3.

/m



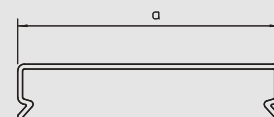
Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LKV D 25	Stone grey	25	2000	36	9.500	6178 50 4

PVC Polyvinylchloride

Trunking cover for replacement requirements.

/m



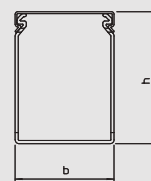
Wiring trunking, type 37037

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LKV 37037	Stone grey	2000	37.5 x 37.5	60	40.500	6178 30 7

PVC Polyvinylchloride

Wiring trunking including cover and base perforation to DIN EN 50085-2-3.

/m



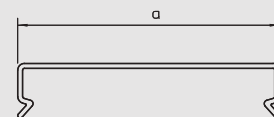
Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LKV D 37	Stone grey	37.5	2000	24	15.000	6178 50 6

PVC Polyvinylchloride

Trunking cover for replacement requirements.

/m



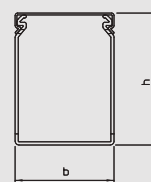
Wiring trunking, type 50025

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LKV 50025	Stone grey	2000	25x50	60	35.500	6178 31 0

PVC Polyvinylchloride

Wiring trunking including cover and base perforation to DIN EN 50085-2-3.

/m



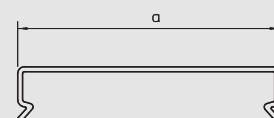
Cover

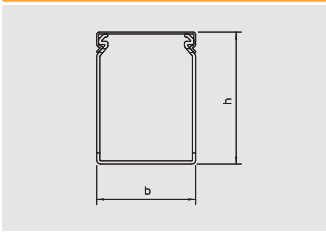
Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LKV D 25	Stone grey	25	2000	36	9.500	6178 50 4

PVC Polyvinylchloride

Trunking cover for replacement requirements.

/m

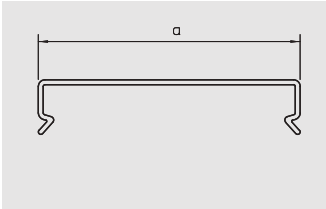




Wiring trunking, type 50037

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LKV 50037	Stone grey	2000	37.5 x 50	48	44.500	6178 31 2

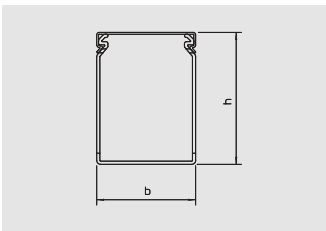
PVC Polyvinylchloride /m
Wiring trunking including cover and base perforation to DIN EN 50085-2-3.



Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LKV D 37	Stone grey	37.5	2000	24	15.000	6178 50 6

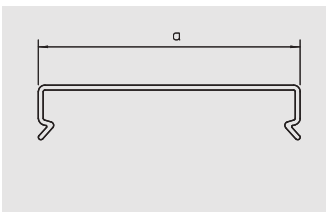
PVC Polyvinylchloride /m
Trunking cover for replacement requirements.



Wiring trunking, type 50050

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LKV 50050	Stone grey	2000	50x50	36	50.000	6178 31 4

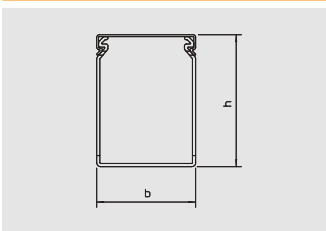
PVC Polyvinylchloride /m
Wiring trunking including cover and base perforation to DIN EN 50085-2-3.



Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LKV D 50	Stone grey	50	2000	24	17.500	6178 50 8

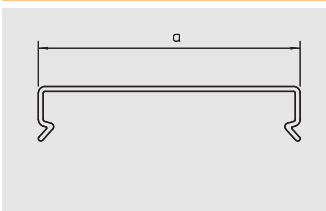
PVC Polyvinylchloride /m
Trunking cover for replacement requirements.



Wiring trunking, type 50075

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LKV 50075	Stone grey	2000	75x50	24	66.000	6178 31 6

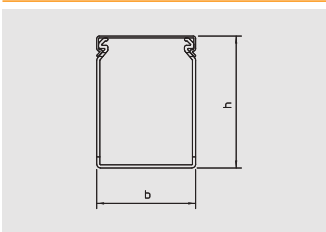
PVC Polyvinylchloride /m
Wiring trunking including cover and base perforation to DIN EN 50085-2-3.



Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LKV D 75	Stone grey	75	2000	12	23.000	6178 51 0

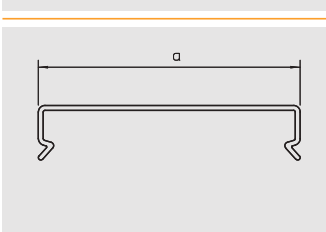
PVC Polyvinylchloride /m
Trunking cover for replacement requirements.



Wiring trunking, type 75025

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LKV 75025	Stone grey	2000	25x75	40	48.500	6178 32 0

PVC Polyvinylchloride /m
Wiring trunking including cover and base perforation to DIN EN 50085-2-3.



Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LKV D 25	Stone grey	25	2000	36	9.500	6178 50 4

PVC Polyvinylchloride /m
Trunking cover for replacement requirements.



LKV DIN wiring trunking



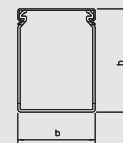
Wiring trunking, type 75037

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LKV 75037	Stone grey	2000	37.5 x 75	32	58.500	6178 32 2

PVC Polyvinylchloride

Wiring trunking including cover and base perforation to DIN EN 50085-2-3.

/m



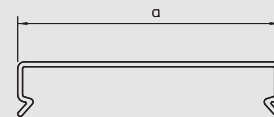
Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LKV D 37	Stone grey	37.5	2000	24	15.000	6178 50 6

PVC Polyvinylchloride

Trunking cover for replacement requirements.

/m



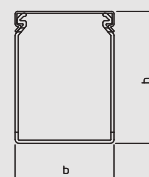
Wiring trunking, type 75050

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LKV 75050	Stone grey	2000	50x75	24	67.500	6178 32 4

PVC Polyvinylchloride

Wiring trunking including cover and base perforation to DIN EN 50085-2-3.

/m



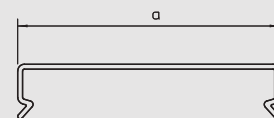
Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LKV D 50	Stone grey	50	2000	24	17.500	6178 50 8

PVC Polyvinylchloride

Trunking cover for replacement requirements.

/m



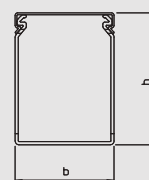
Wiring trunking, type 75075

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LKV 75075	Stone grey	2000	75x75	16	80.000	6178 32 6

PVC Polyvinylchloride

Wiring trunking including cover and base perforation to DIN EN 50085-2-3.

/m



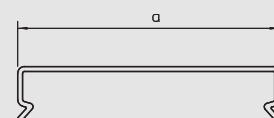
Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LKV D 75	Stone grey	75	2000	12	23.000	6178 51 0

PVC Polyvinylchloride

Trunking cover for replacement requirements.

/m



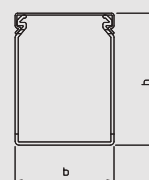
Wiring trunking, type 75100

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LKV 75100	Stone grey	2000	100x75	16	105.500	6178 32 8

PVC Polyvinylchloride

Wiring trunking including cover and base perforation to DIN EN 50085-2-3.

/m



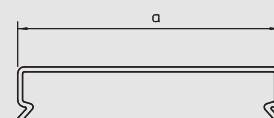
Cover

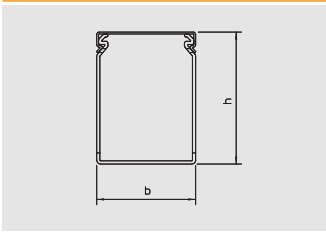
Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LKV D 100	Stone grey	100	2000	12	34.500	6178 51 2

PVC Polyvinylchloride

Trunking cover for replacement requirements.

/m

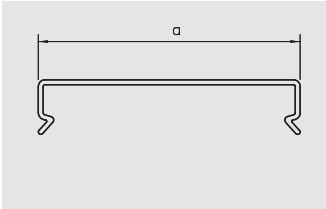




Wiring trunking, type 75125

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LKV 75125	Stone grey	2000	125x75	8	128.500	6178 33 0

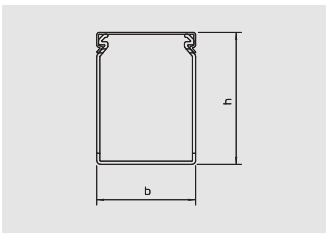
PVC Polyvinylchloride /m
Wiring trunking including cover and base perforation to DIN EN 50085-2-3.



Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LKV D 125	Stone grey	125	2000	16	47.000	6178 51 4

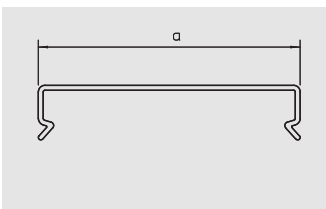
PVC Polyvinylchloride /m
Trunking cover for replacement requirements.



Wiring trunking, type 10037

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LKV 10037	Stone grey	2000	37.5 x 100	32	67.000	6178 33 4

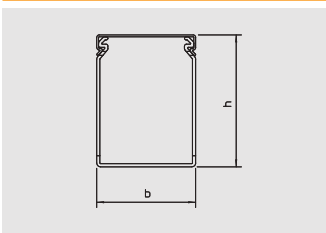
PVC Polyvinylchloride /m
Wiring trunking including cover and base perforation to DIN EN 50085-2-3.



Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LKV D 37	Stone grey	37.5	2000	24	15.000	6178 50 6

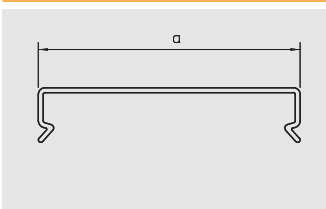
PVC Polyvinylchloride /m
Trunking cover for replacement requirements.



Wiring trunking, type 10050

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LKV 10050	Stone grey	2000	50x100	24	77.000	6178 33 6

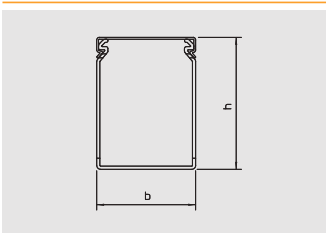
PVC Polyvinylchloride /m
Wiring trunking including cover and base perforation to DIN EN 50085-2-3.



Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LKV D 50	Stone grey	50	2000	24	17.500	6178 50 8

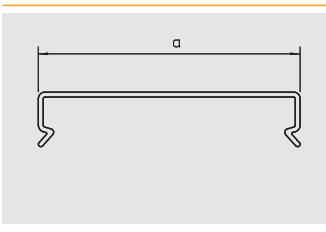
PVC Polyvinylchloride /m
Trunking cover for replacement requirements.



Wiring trunking, type 10075

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LKV 10075	Stone grey	2000	75x100	16	96.000	6178 33 8

PVC Polyvinylchloride /m
Wiring trunking including cover and base perforation to DIN EN 50085-2-3.



Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LKV D 75	Stone grey	75	2000	12	23.000	6178 51 0

PVC Polyvinylchloride /m
Trunking cover for replacement requirements.



LKV DIN wiring trunking

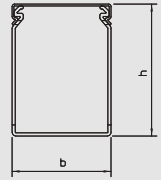


Wiring trunking, type 100100

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LKV 100100	Stone grey	2000	100x100	8	116.500	6178 34 1

PVC Polyvinylchloride /m

Wiring trunking including cover and base perforation to DIN EN 50085-2-3.

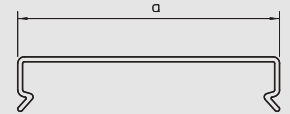


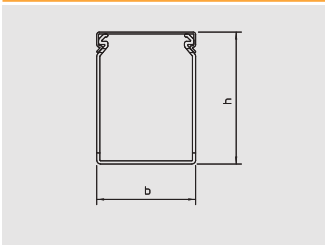
Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LKV D 100	Stone grey	100	2000	12	34.500	6178 51 2

PVC Polyvinylchloride /m

Trunking cover for replacement requirements.

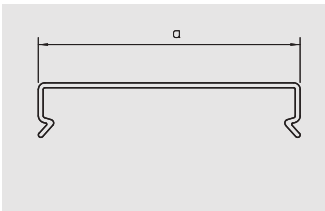




Wiring trunking, type 75025

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LKV N 75025	Stone grey	2000	25x75	40	49.500	6178 42 0

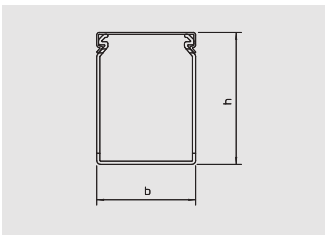
PVC Polyvinylchloride /m
Wiring trunking to DIN EN 50085-2-3 including cover and base perforation, tapering in the side slots stops the cables from falling out.



Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LKV D 25	Stone grey	25	2000	36	9.500	6178 50 4

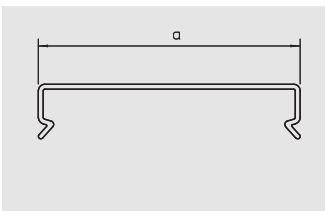
PVC Polyvinylchloride /m
Trunking cover for replacement requirements.



Wiring trunking, type 75037

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LKV N 75037	Stone grey	2000	37.5 x 75	32	60.500	6178 42 2

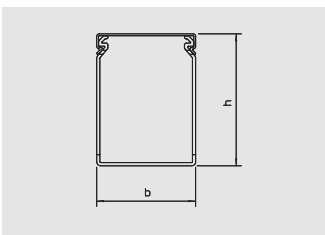
PVC Polyvinylchloride /m
Wiring trunking to DIN EN 50085-2-3 including cover and base perforation, tapering in the side slots stops the cables from falling out.



Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LKV D 37	Stone grey	37.5	2000	24	15.000	6178 50 6

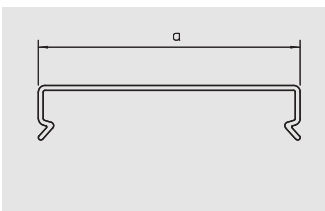
PVC Polyvinylchloride /m
Trunking cover for replacement requirements.



Wiring trunking, type 75050

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LKV N 75050	Stone grey	2000	50x75	24	72.500	6178 42 4

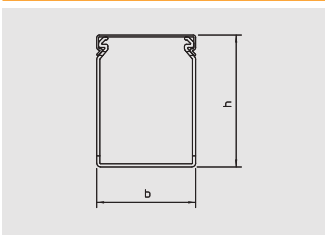
PVC Polyvinylchloride /m
Wiring trunking to DIN EN 50085-2-3 including cover and base perforation, tapering in the side slots stops the cables from falling out.



Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LKV D 50	Stone grey	50	2000	24	17.500	6178 50 8

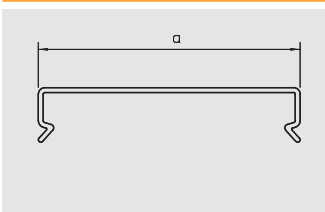
PVC Polyvinylchloride /m
Trunking cover for replacement requirements.



Wiring trunking, type 75075

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LKV N 75075	Stone grey	2000	75x75	16	84.500	6178 42 6

PVC Polyvinylchloride /m
Wiring trunking to DIN EN 50085-2-3 including cover and base perforation, tapering in the side slots stops the cables from falling out.



Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LKV D 75	Stone grey	75	2000	12	23.000	6178 51 0

PVC Polyvinylchloride /m
Trunking cover for replacement requirements.



LKV/N DIN wiring trunking



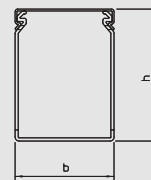
Wiring trunking, type 75100

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LKV N 75100	Stone grey	2000	100x75	16	112.000	6178 42 8

PVC Polyvinylchloride

/m

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation, tapering in the side slots stops the cables from falling out.



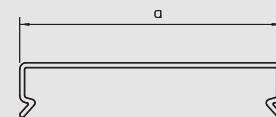
Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LKV D 100	Stone grey	100	2000	12	34.500	6178 51 2

PVC Polyvinylchloride

/m

Trunking cover for replacement requirements.



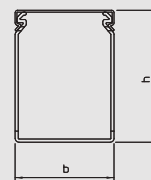
Wiring trunking, type 75125

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LKV N 75125	Stone grey	2000	125x75	8	138.500	6178 43 0

PVC Polyvinylchloride

/m

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation, tapering in the side slots stops the cables from falling out.



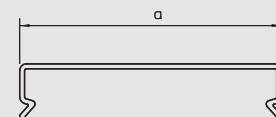
Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LKV D 125	Stone grey	125	2000	16	47.000	6178 51 4

PVC Polyvinylchloride

/m

Trunking cover for replacement requirements.



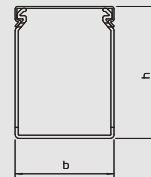
Wiring trunking, type 10037

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LKV N 10037	Stone grey	2000	37.5 x 100	32	73.000	6178 43 5

PVC Polyvinylchloride

/m

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation, tapering in the side slots stops the cables from falling out.



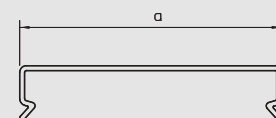
Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LKV D 37	Stone grey	37.5	2000	24	15.000	6178 50 6

PVC Polyvinylchloride

/m

Trunking cover for replacement requirements.



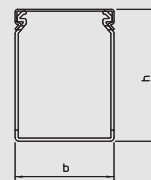
Wiring trunking, type 10050

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LKV N 10050	Stone grey	2000	50x100	24	83.000	6178 43 7

PVC Polyvinylchloride

/m

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation, tapering in the side slots stops the cables from falling out.



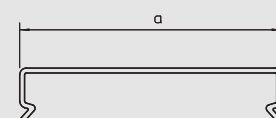
Cover

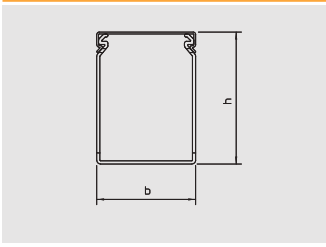
Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LKV D 50	Stone grey	50	2000	24	17.500	6178 50 8

PVC Polyvinylchloride

/m

Trunking cover for replacement requirements.

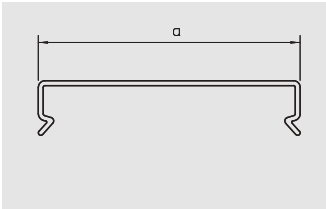




Wiring trunking, type 10075

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LKV N 10075	Stone grey	2000	75x100	16	102.000	6178 43 9

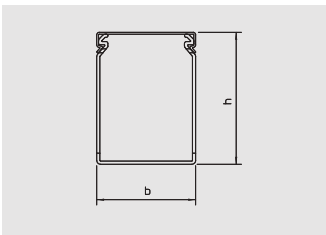
PVC Polyvinylchloride /m
Wiring trunking to DIN EN 50085-2-3 including cover and base perforation, tapering in the side slots stops the cables from falling out.



Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LKV D 75	Stone grey	75	2000	12	23.000	6178 51 0

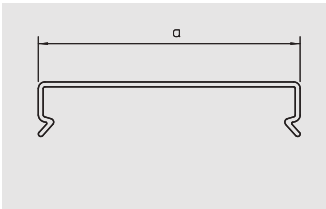
PVC Polyvinylchloride /m
Trunking cover for replacement requirements.



Wiring trunking, type 100100

Type	Colour	Length mm	Dimension W x H mm	Pack. m	Weight kg/100 m	Item No.
LKV N 100100	Stone grey	2000	100x100	8	122.500	6178 44 1

PVC Polyvinylchloride /m
Wiring trunking to DIN EN 50085-2-3 including cover and base perforation, tapering in the side slots stops the cables from falling out.



Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.
LKV D 100	Stone grey	100	2000	12	34.500	6178 51 2

PVC Polyvinylchloride /m
Trunking cover for replacement requirements.



Accessories, VK wiring trunking

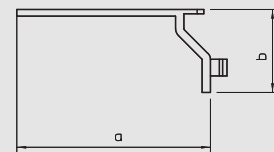


Wire retainer for type LK4 and LK4/N

Type	Colour	Dimension a mm	Dimension b mm	Pack. pcs	Weight kg/100 pcs.	Item No.
LK4 H	Stone grey	56	20	100	0.470	6178 09 2

PS Polystyrene /100 pc.

Wire retainer for wiring trunking, type LK4 and LK4/N. The wire retainer prevents already inserted cables from falling out. These predetermined breaking points allow the lengths of various trunking widths to be reduced to 38, 28 and 23 mm.

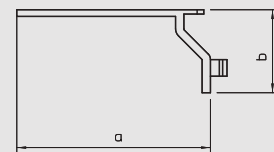


Wire retainer for type LKV and LKV/N

Type	Colour	Dimension a mm	Dimension b mm	Pack. pcs	Weight kg/100 pcs.	Item No.
LKV H	Stone grey	56	20	100	0.470	6178 34 9

PS Polystyrene /100 pc.

Wire retainer for wiring trunking, type LKV and LKV/N. The wire retainer prevents already inserted cables from falling out. These predetermined breaking points allow the lengths of various trunking widths to be reduced to 38, 28 and 23 mm.

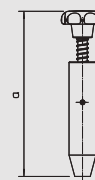


Plastic rivet tool

Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
KNW1	Black	1	9.300	6178 52 7
KNW2	Black	1	9.400	6178 52 9

POM Polyacetal (polyoxymethylene, polyformaldehyde) /pc.

Riveting tool for installing body-bound rivets 4.5 mm.



Spreading rivet, KSN 1

Type	Colour	Dimension a mm	Pack. pcs	Weight kg/100 pcs.	Item No.
KSN1	Light grey	4.5	100	0.024	6178 52 0

PP Polypropylene /100 pc.

The VK wiring trunking system is fixed to the mounting plate using the spreading rivet and the riveting tool.



Spreading rivet, KSN 22

Type	Colour	Dimension a mm	Pack. pcs	Weight kg/100 pcs.	Item No.
KSN22	Light grey	6	1		6178 52 5

PA Polyamide /100 pc.

The VK wiring trunking system is fixed to the mounting plate using the spreading rivet and the riveting tool.



Release pliers

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
AKZ	1	30.857	6178 53 5

St Steel /pc.

To notch the bars down to the trunking base.

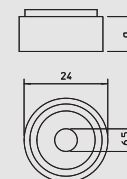


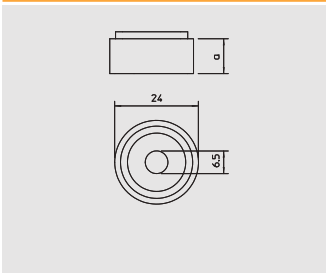
Spacer

Type	Colour	Dimension a mm	Diameter mm	Pack. pcs	Weight kg/100 pcs.	Item No.
AH1	Grey	12	24	100	0.354	6178 54 0

PVC Polyvinylchloride /100 pc.

Stackable spacer for height compensation between the different component heights.





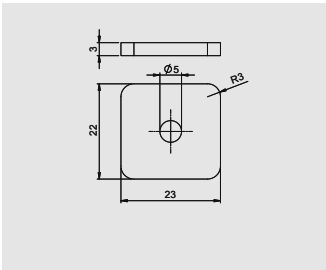
Spacer

Type	Colour	Dimension a mm	Diameter mm	Pack. pcs	Weight kg/100 pcs.	Item No.
AH2	Grey	20	24	100	0.576	6178 54 2

PVC Polyvinylchloride

/100 pc.

For height compensation between the different component heights.



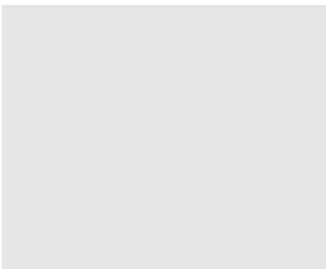
Washer

Type	Colour	Dimension h mm	Diameter mm	Pack. pcs	Weight kg/100 pcs.	Item No.
ULS	Grey	3	5	100	0.170	6178 54 8

PVC Polyvinylchloride

/100 pc.

Washer as compensation for different heights.



Identification plate

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
VK ISCS 5012	20	0.100	6178 64 3




/pc.

Sticker as an identification plate to attach onto wiring trunking in switching cabinets with self-protected power circuits.





VKH wiring trunking system, Dahl, halogen-free

	LKVH DIN wiring trunking, halogen-free	37.5 x 50 mm to 125 x 75 mm	40
	Accessories, VK wiring trunking, halogen-free	Wire retainer Plastic rivet tool Release pliers	41 41 41
	Universal trunking	-	42

LKVH DIN wiring trunking, halogen-free

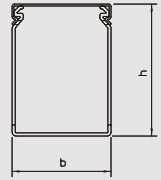
VKH wiring trunking system, Dahl, halogen-free



Wiring trunking, type 50037

Type	Colour	Length	Dimension W x H	Pack.	Weight	Item No.
		mm	mm	m	kg/100 m	
LKVH 50037	Light grey	2000	37.5 x 50	48	32.000	6178 58 2

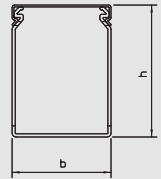
PC/ABS Polycarbonate/Acrylonitrile-butadiene-styrene /m
Halogen-free wiring trunking including cover and base perforation to DIN EN 50085-2-3.



Wiring trunking, type 50050

Type	Colour	Length	Dimension W x H	Pack.	Weight	Item No.
		mm	mm	m	kg/100 m	
LKVH 50050	Light grey	2000	50x50	36	37.000	6178 58 5

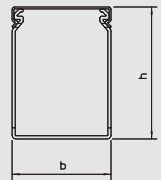
PC/ABS Polycarbonate/Acrylonitrile-butadiene-styrene /m
Halogen-free wiring trunking including cover and base perforation to DIN EN 50085-2-3.



Wiring trunking, type 50075

Type	Colour	Length	Dimension W x H	Pack.	Weight	Item No.
		mm	mm	m	kg/100 m	
LKVH 50075	Light grey	2000	75x50	24	52.000	6178 58 8

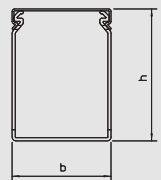
PC/ABS Polycarbonate/Acrylonitrile-butadiene-styrene /m
Halogen-free wiring trunking including cover and base perforation to DIN EN 50085-2-3.



Wiring trunking, type 75037

Type	Colour	Length	Dimension W x H	Pack.	Weight	Item No.
		mm	mm	m	kg/100 m	
LKVH N 75037	Light grey	2000	37.5 x 75	32	44.000	6178 55 2

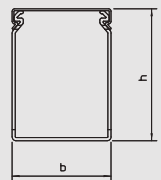
PC/ABS Polycarbonate/Acrylonitrile-butadiene-styrene /m
Halogen-free wiring trunking including cover and base perforation to DIN EN 50085-2-3.



Wiring trunking, type 75050

Type	Colour	Length	Dimension W x H	Pack.	Weight	Item No.
		mm	mm	m	kg/100 m	
LKVH N 75050	Light grey	2000	50x75	24	51.000	6178 55 6

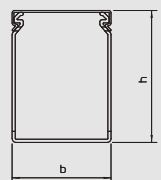
PC/ABS Polycarbonate/Acrylonitrile-butadiene-styrene /m
Halogen-free wiring trunking including cover and base perforation to DIN EN 50085-2-3.



Wiring trunking, type 75075

Type	Colour	Length	Dimension W x H	Pack.	Weight	Item No.
		mm	mm	m	kg/100 m	
LKVH N 75075	Light grey	2000	75x75	16	64.000	6178 55 9

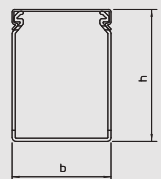
PC/ABS Polycarbonate/Acrylonitrile-butadiene-styrene /m
Halogen-free wiring trunking including cover and base perforation to DIN EN 50085-2-3.



Wiring trunking, type 75100

Type	Colour	Length	Dimension W x H	Pack.	Weight	Item No.
		mm	mm	m	kg/100 m	
LKVH N 75100	Light grey	2000	100x75	16	84.000	6178 56 3

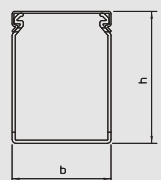
PC/ABS Polycarbonate/Acrylonitrile-butadiene-styrene /m
Halogen-free wiring trunking including cover and base perforation to DIN EN 50085-2-3.



Wiring trunking, type 75125

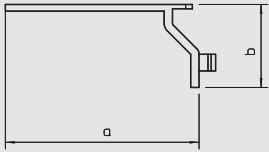
Type	Colour	Length	Dimension W x H	Pack.	Weight	Item No.
		mm	mm	m	kg/100 m	
LKVH N 75125	Light grey	2000	125x75	8	98.500	6178 56 6

PC/ABS Polycarbonate/Acrylonitrile-butadiene-styrene /m
Halogen-free wiring trunking including cover and base perforation to DIN EN 50085-2-3.



12 LSB Lösungskatalog_Schallschrankbau 2014 / en / 28/03/2014 (LLExpport_01699) / 28/03/2014

Wire retainer for type LKV/H



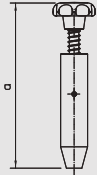
Type	Colour	Dimension a mm	Dimension b mm	Pack. pcs	Weight kg/100 pcs.	Item No.
LKV H H	Light grey	56	20	100	0.361	6178 65 0

PS Polystyrene /100 pc.

Wire retainer for halogen-free wiring trunking, type LKV/H. The wire retainer prevents already inserted cables from falling out. These predetermined breaking points allow the lengths of various trunking widths to be reduced to 38, 28 and 23 mm.



Plastic rivet tool



Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
KNW1	Black	1	9.300	6178 52 7
KNW2	Black	1	9.400	6178 52 9

POM Polyacetal (polyoxymethylene, polyformaldehyde) /pc.

Riveting tool for installing body-bound rivets 4.5 mm.



Spreading rivet, KSN 1



Type	Colour	Dimension a mm	Pack. pcs	Weight kg/100 pcs.	Item No.
KSN1	Light grey	4.5	100	0.024	6178 52 0

PP Polypropylene /100 pc.

The VK wiring trunking system is fixed to the mounting plate using the spreading rivet and the riveting tool.



Spreading rivet, KSN 22



Type	Colour	Dimension a mm	Pack. pcs	Weight kg/100 pcs.	Item No.
KSN22	Light grey	6	1		6178 52 5

PA Polyamide /100 pc.

The VK wiring trunking system is fixed to the mounting plate using the spreading rivet and the riveting tool.



Release pliers

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
AKZ	1	30.857	6178 53 5

St Steel /pc.

To notch the bars down to the trunking base.



Identification plate

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
VK ISCS 5012	20	0.100	6178 64 3

/pc.

Sticker as an identification plate to attach onto wiring trunking in switching cabinets with self-protected power circuits.



Universal trunking

VKH wiring trunking system, Dahl, halogen-free



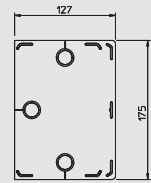
End piece

Type	Colour	Dimension a mm	Dimension b mm	Pack. pcs	Weight kg/100 pcs.	Item No.
RK-E1117RW	Pure white	175	127	2	13.500	6156 22 7
RK-E1117LGR	Light grey	175	127	2	13.500	6156 23 1
RK-E1117GR	Stone grey	175	127	2	13.500	6156 22 3

PVC Polyvinylchloride

/pc.

End piece for fastening and side closing of the universal trunking. The required fastening clips, type 2955 GL, are included.



Cover

Type	Colour	Length mm	Pack. m	Weight kg/100 m	Item No.
2410 110RW	Pure white	—	16	34.000	6191 63 0
2410 110LGR	Light grey	2000	16	34.000	6028 15 2
2410 110GR	Stone grey	2000	16	34.000	6022 71 5

PVC Polyvinylchloride

/m

Cover for creating the universal trunking.



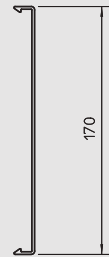
Front cover

Type	Colour	Length mm	Pack. m	Weight kg/100 m	Item No.
2410 170RW	Pure white	—	52	56.700	6191 70 3
2410 170LGR	Light grey	2000	52	56.700	6028 18 7
2410 170GR	Stone grey	2000	52	56.700	6022 75 8

PVC Polyvinylchloride

/m

Front cover for creating the universal trunking.



Cover clip

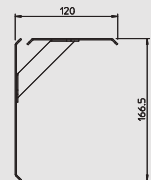
Type	Dimension a mm	Dimension b mm	Pack. pcs	Weight kg/100 pcs.	Item No.
RK-K1117	120	166	2	9.000	6156 20 7

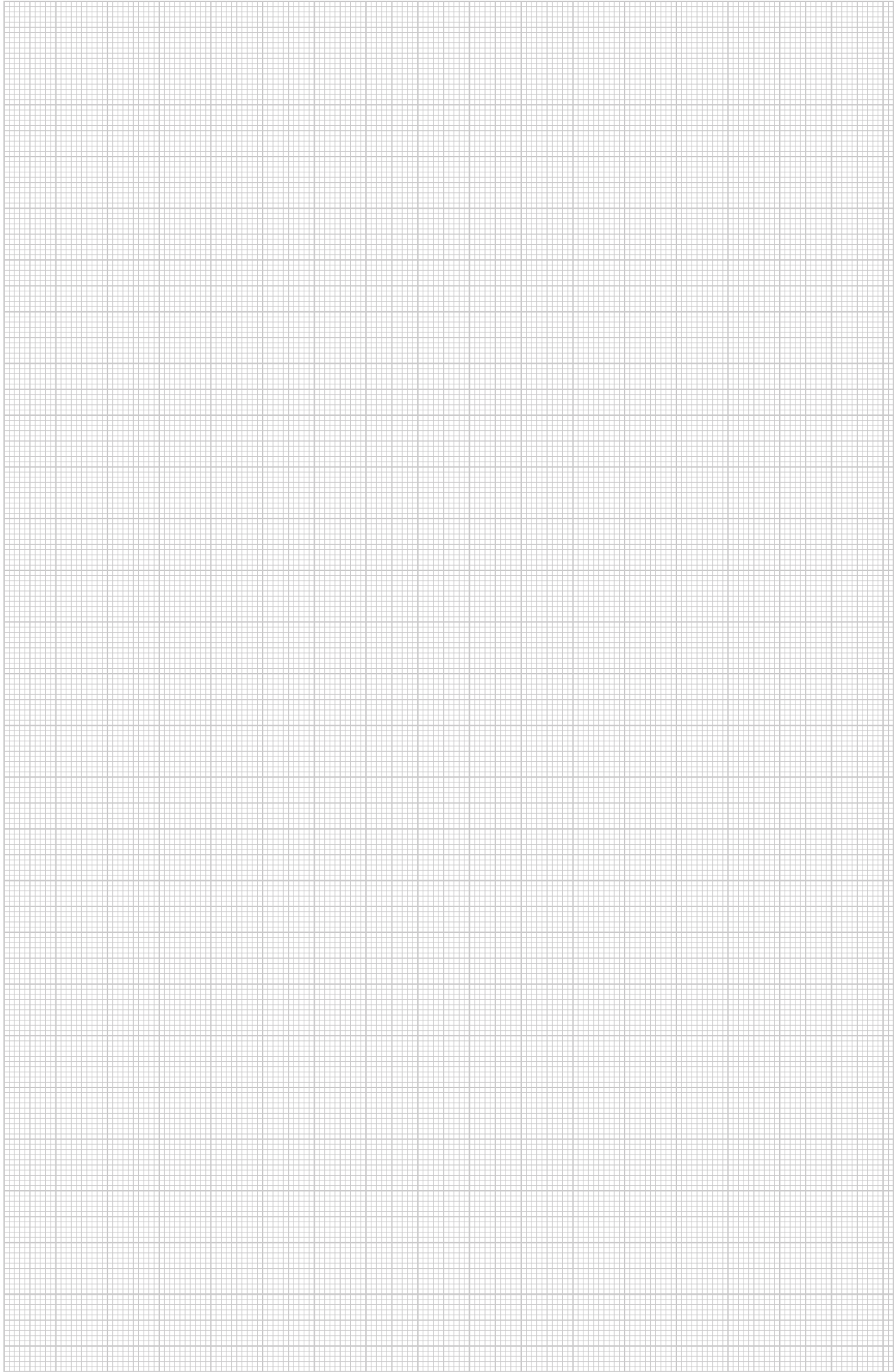
St Steel

FS Strip-galvanised

/pc.

Cover clip for fixing the covers of the universal trunking. These are required to prevent the covers from sagging.







Rail systems

	Hat profile rail	Unperforated Perforated	46 46
	Support rails		47
	Profile rail with slot 11 mm	Unperforated Separable	48 48
	Profile rail with slot 12 mm	Perforated Unperforated	48 48
	Profile rail with slot 16.5 mm	Unperforated	48
	Profile rail with slot 17 mm	Perforated, in fixed lengths	49
	Mounting rail, MS 41	Perforated on 3 sides	49
	Accessories	Wall, floor and ceiling bracket Mounting bracket Connection plate Drilling screw	49 49 50
	Clamp clips, N base	With screen connection	51
	Fastening to angular steel	With plastic pressure trough	52
	Clamp clips, hammer-head base	Plastic pressure trough, single Fastening earthing strips 3-single-wire connection	53

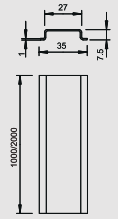
Hat profile and support rail

Hat profile rail, unperforated



Type	Version	Material thickness		Length	Bundle	Weight	Item No.
		mm	mm				
2069 2M BK	Unperforated	1	2000	50		34.000	1115 61 8
2069 3M BK	Unperforated	1	3000	—		34.400	1115 85 5
2069 1M FS	Unperforated	1	1000	25		34.000	1115 67 7
2069 2M FS	Unperforated	1	2000	50		34.000	1115 62 6
2069 1M GTP	Unperforated	1	1000	25		34.000	1115 68 5
2069 2M GTP	Unperforated	1	2000	50		34.000	1115 65 0

St Steel **FS** Strip-galvanised Bright **GTP** Electrogalvanised, transparently passivated /100 m
 Hat profile rail 35 x 7.5 mm to DIN EN 60715 (formerly DIN EN 50022).

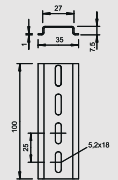


Hat profile rail, perforated



Type	Version	Material thickness		Length	Bundle	Weight	Item No.
		mm	mm				
2069 2M GTPL	Perforated	1	2000	50		33.000	1115 66 9
2069 L 2M FS	Perforated	1	2000	—		34.000	1115 80 4

St Steel **FS** Strip-galvanised **GTP** Electrogalvanised, transparently passivated /100 m
 Hat profile rail 35 x 7.5 mm to DIN EN 60715 (formerly DIN EN 50022).

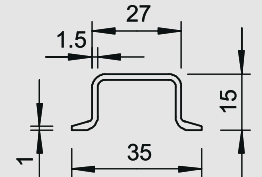


Hat profile rail, unperforated



Type	Version	Material thickness		Length	Bundle	Weight	Item No.
		mm	mm				
2069 15 1.5 GTP	Unperforated	1.5	2000	20		66.000	1115 42 1

St Steel **GTP** Electrogalvanised, transparently passivated /100 m
 Hat profile rail 35 x 15 mm similar to DIN EN 60715 (formerly DIN EN 50022), but with material thickness of 1.5 mm.

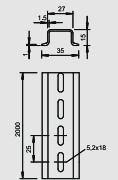


Hat profile rail, perforated



Type	Version	Inter-face	Material thickness		Length	Bundle	Weight	Item No.
			mm	mm				
2069 15 1.5 GTPL	Perforated	GTP	1.5	2000	20		66.000	1115 45 6

St Steel **GTP** Electrogalvanised, transparently passivated /100 m
 Hat profile rail 35 x 15 mm similar to DIN EN 60715 (formerly DIN EN 50022), but with material thickness of 1.5 mm.

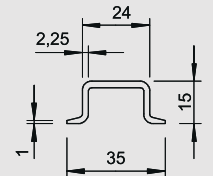


Hat profile rail, unperforated



Type	Version	Material thickness		Length	Bundle	Weight	Item No.
		mm	mm				
2069 15 2.2 GTP	Unperforated	2.25	2000	20		97.000	1115 55 3

St Steel **GTP** Electrogalvanised, transparently passivated /100 m
 Hat profile rail 35 x 15 mm to DIN EN 60715 (formerly DIN EN 50022).

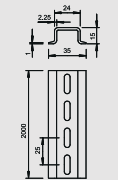


Hat profile rail, perforated



Type	Version	Material thickness		Length	Bundle	Weight	Item No.
		mm	mm				
2069 15 2.2 GTPL	Perforated	2.25	2000	20		97.000	1115 59 6

St Steel **GTP** Electrogalvanised, transparently passivated /100 m
 Hat profile rail 35 x 15 mm to DIN EN 60715 (formerly DIN EN 50022).

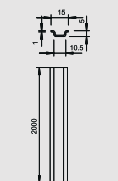


Hat profile rail

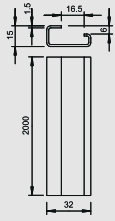


Type	Version	Material thickness		Length	Bundle	Weight	Item No.
		mm	mm				
46277 GTP	Unperforated	1	2000	50		12.400	1115 33 2
46277 GTPL	Perforated	1	2000	50		12.400	1115 35 9

St Steel **GTP** Electrogalvanised, transparently passivated /100 m
 Hat profile rail 15 x 5 mm to DIN EN 60715 (formerly DIN EN 50045).



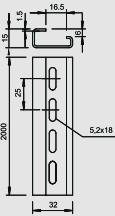
Hat profile and support rail



Support rail

Type	Version	Material thickness	Length	Bundle	Weight	Item No.
		mm	mm	m	kg/100 m	
2064 GTP 2M	Unperforated	1.5	2000	20	70.000	1115 05 7

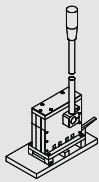
St Steel **GTP** Electrogalvanised, transparently passivated /100 m
 G rail G32 to DIN EN 60715 (previously DIN EN 50035).
 Support rail width 32 mm.



Support rail

Type	Version	Material thickness	Length	Bundle	Weight	Item No.
		mm	mm	m	kg/100 m	
2064 GTP L 2M	Perforated	1.5	2000	20	69.000	1115 06 5

St Steel **GTP** Electrogalvanised, transparently passivated /100 m
 G rail G32 to DIN EN 60715 (previously DIN EN 50035).
 Support rail width 32 mm.



Hat and support rail cutting unit

Type	Pack.	Weight	Item No.
	pcs	kg/100 pcs.	
HTS 35	1	2.000.000	1125 03 6

With the HTS 35 hat and support rail cutting device, you can cut the four most common hat and support rail profiles (types 2069..., 46277... and 2064...) to fit and without burring in accordance with DIN 50022 and DIN 50035.



Profile rail

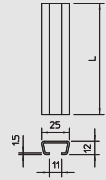
Profile rail, slot 11 mm



Type	Version	Dimension W x H mm	Material thickness mm	Length mm	Bundle m	Weight kg/100 m	Item No.
2066 2M FT	Unperforated	25 x 12	1.5	2000	20	65.000	1117 02 5
2066 2M FS	Unperforated	25 x 12	1.5	2000	20	58.300	1117 03 3
2066 2M VA	Unperforated	25 x 12	1.5	2000	20	58.300	1117 06 8

St Steel V2A Stainless steel, grade 304 FS Strip-galvanised FT Hot-dip galvanised /100 m

Profile rail, unperforated, slot width 11 mm.



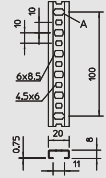
Profile rail, slot 11 mm, dividable



Type	Version	Dimension W x H mm	Material thickness mm	Length mm	Bundle m	Weight kg/100 m	Item No.
2060 2M AB FS	Perforated	20 x 8	0.75	2000	20	21.100	1106 12 0

St Steel FS Strip-galvanised /100 m

Profile rail with 11 mm slot width.
Perforated, on "A" can be broken every 10 cm.



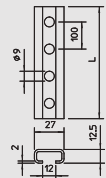
Profile rail, slot 12 mm, perforated



Type	Version	Slot width mm	Length mm	Bundle m	Weight kg/100 m	Item No.
2062 L 2M FT	Perforated	12	2000	20	89.500	1109 52 9

St Steel FT Hot-dip galvanised /100 m

Profile rail with 12 mm slot width.



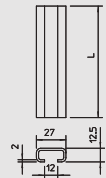
Profile rail, slot 12 mm, unperforated



Type	Version	Dimension W x H mm	Material thickness mm	Length mm	Bundle m	Weight kg/100 m	Item No.
2062 2M FT	Unperforated	27 x 12.5	2	2000	20	90.000	1109 02 2

St Steel FT Hot-dip galvanised /100 m

Profile rail with 12 mm slot width.



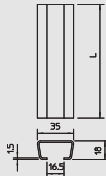
Profile rail, slot 16.5 mm



Type	Version	Dimension W x H mm	Material thickness mm	Length mm	Bundle m	Weight kg/100 m	Item No.
2068 2M BK	Unperforated	35 x 18	1.5	2000	20	90.000	1118 02 1
2068 2M FT	Unperforated	35 x 18	1.5	2000	20	89.400	1118 12 9
2068 2M FS	Unperforated	35 x 18	1.5	2000	20	90.000	1118 22 6

St Steel FS Strip-galvanised Bright FT Hot-dip galvanised /100 m

Profile rail, unperforated, slot width 16.5 mm.



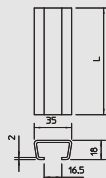
Profile rail, slot 16.5 mm

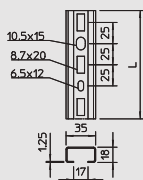


Type	Version	Dimension W x H mm	Material thickness mm	Length mm	Bundle m	Weight kg/100 m	Item No.
2063 2M BK	Unperforated	35 x 18	2	2000	20	116.000	1112 02 3
2063 2M FS	Unperforated	35 x 18	2	2000	20	116.000	1112 12 0
2063 2M FT	Unperforated	35 x 18	2	2000	20	121.350	1112 22 8

St Steel FS Strip-galvanised Bright FT Hot-dip galvanised /100 m

Profile rail, unperforated, slot width 16.5 mm.

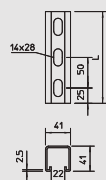




Profile rail, slot 17 mm

Type	Version	Dimension W x H mm	Material thickness mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
1268 L 150 FS	Perforated	35 x 18	1.25	150	25	10.600	1104 24 1
1268 L 200 FS	Perforated	35 x 18	1.25	200	25	14.200	1104 26 8
1268 L 300 FS	Perforated	35 x 18	1.25	300	25	21.300	1104 28 4
1268 L 400 FS	Perforated	35 x 18	1.25	400	10	28.400	1104 29 2
1268 L 500 FS	Perforated	35 x 18	1.25	500	10	35.500	1104 30 6
1268 L 600 FS	Perforated	35 x 18	1.25	600	10	42.600	1104 31 0
1268 L 700 FS	Perforated	35 x 18	1.25	700	10	49.700	1104 31 5
1268 L 800 FS	Perforated	35 x 18	1.25	800	10	56.800	1104 32 0
1268 L 900 FS	Perforated	35 x 18	1.25	900	10	63.900	1104 32 5
1268 L 1M FS	Perforated	35 x 18	1.25	1000	1	71.000	1104 49 7
1268 L 2M FS	Perforated	35 x 18	1.25	2000	2	71.000	1104 50 0

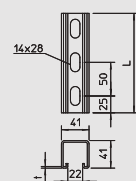
St Steel **FS** Strip-galvanised /100 m /100 pc.
Light-duty profile rail, perforated, slot width 17 mm.



Mounting rail, MS41

Type	Version	Dimension W x H mm	Material thickness mm	Length mm	Pack. m	Weight kg/100 m	Item No.
MS 41 LS 1M FS	Perforated	41x41	2.5	1000	1	225.500	1122 48 1
MS 41 LS 3M FS	Perforated	41 x 41	2.5	3000	3	225.500	1122 91 4
MS 41 LS 6M FS	Perforated	41x41	2.5	6000	6	225.500	1122 91 6

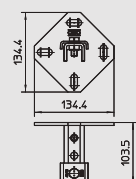
St Steel **FS** Strip-galvanised /100 m
Heavy-duty profile/mounting rail with continuous, three-sided perforation, slot width 22 mm.
Additional versions and appropriate accessories for the MS 41 system are listed in the new VBS catalogue.



Mounting rail, MS41

Type	Version	Inter- face	Dimension W x H mm	Material thickness mm	Length mm	Pack. m	Weight kg/100 m	Item No.
MS 41 LS 1M FT	Perforated	FT	41x41	2.5	1000	1	238.300	1122 47 9
MS 41 LS 3M FT	Perforated	FT	41 x 41	2.5	3000	3	238.300	1122 48 3
MS 41 LS 6M FT	Perforated	FT	41x41	2.5	6000	6	238.300	1122 48 7

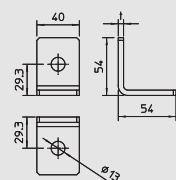
St Steel **FT** Hot-dip galvanised /100 m
Heavy-duty profile/mounting rail with continuous, three-sided perforation, slot width 22 mm.
Additional versions and appropriate accessories for the MS 41 system are listed in the new VBS catalogue.



Wall, floor and ceiling bracket with 3 holes

Type	Version	Inter- face	Dimension W x H mm	Material thickness mm	Length mm	Pack. pcs	Weight kg/100 pcs.	Item No.
WBDHE 41 G	Perforated	G	134 x 110	5	102	10	73.000	1123 19 3
WBDHE 41 FT	Perforated	FT	134 x 110	5	102	10	73.000	1123 19 1

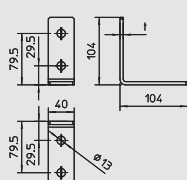
St Steel **G** Electrogalvanised **FT** Hot-dip galvanised /100 pc.
The wall, floor and ceiling bracket can ideally be used as a panel for wall, floor and ceiling mounting.
Also suitable for stand and frame construction in conjunction with the MS 41 mounting rails.



Mounting bracket, 90° with 2 holes

Type	Version	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
GMS 2 VW 90 G	90° bracket	60	10	16.170	1124 61 9
GMS 2 VW 90 FT	90° bracket	60	10	14.000	1124 65 9

St Steel **G** Electrogalvanised **FT** Hot-dip galvanised /100 pc.
Mounting bracket with two holes to connect profile rails 41 x 41 mm and 41 x 21 mm at an angle of 90°.



Mounting bracket, 90° with 4 holes

Type	Version	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
GMS 4 VW 90 G	90° bracket	30	10	32.660	1124 62 3
GMS 4 VW 90 FT	90° bracket	30	10	32.000	1124 66 3

St Steel **G** Electrogalvanised **FT** Hot-dip galvanised /100 pc.
Mounting bracket with two holes to connect profile rails 41 x 41 mm and 41 x 21 mm at an angle of 90°.



Profile rail

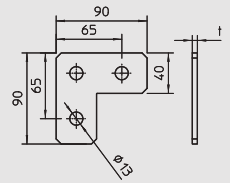


Connection plate, L-shaped

Type	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
GMS 3 VP L G	40	10	20.000	1124 61 3
GMS 3 VP L FT	40	10	25.000	1124 65 3

St Steel
 G Electrogalvanised
 FT Hot-dip galvanised
 /100 pc.

Connection plate with three holes for angled connection of profile rails 41 x 41 mm and 41 x 21 mm.

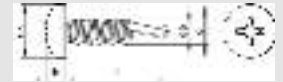


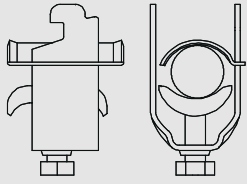
Drilling screw

Type	Dimension mm	Pack. pcs	Item No.
BS BKS KP	—	100	6049 25 0

St Steel
 G Electrogalvanised
 /100 pc.

Norm-conforming drilling screw for quick and easy fastening of walk-on cable trays onto support brackets type STA ,or for mounting the collision guard type SB.





Clamp clip, screen connection

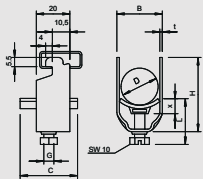
Type	Clamping range D mm	Dimension A mm	Dimension B mm	Dimension C mm	Dimension G mm	Dimension t mm	Dimension H mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2056N SAS 8 VA	4-8	20	12	28	M6	1.5	30	32.5	100	2.900	1167 00 6
2056N SAS 12 VA	8-12	20	16	34	M6	1.5	34	34	25	3.700	1167 01 4
2056N SAS 16 VA	12-16	20	20	34	M6	1.5	38	34	50	4.200	1167 02 2
2056N SAS 22 VA	16-22	20	27	34	M6	1.5	44	34	50	4.850	1167 03 0
2056N SAS 28 VA	22-28	20	33	34	M6	2	51	34	50	6.600	1167 04 9

V2A Stainless steel, grade 304

/100 pc.

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.

D	A	B	C	G	t	x	H	L
mm	mm	mm	mm	mm	mm	mm	mm	mm
4-8	20	12	28	M6	1.5	3.25	30	32.5
8-12	20	16	34	M6	1.5	5	34	34
12-16	20	20	34	M6	1.5	5	38	34
16-22	20	27	34	M6	1.5	5	44	34
22-28	20	33	34	M6	2	5	51	34



Clamp clip, single, plastic pressure trough

Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2056N 12 FT	8-12	100	2.500	1163 12 4
2056N 16 FT	12-16	100	2.750	1163 16 7
2056N 22 FT	16-22	100	3.100	1163 22 1
2056N 28 FT	22-28	100	4.600	1163 28 0
2056N 34 FT	28-34	100	5.900	1163 34 5
2056N 40 FT	34-40	100	6.300	1163 39 6
2056N 46 FT	40-46	100	7.650	1163 46 9
2056N 52 FT	46-52	100	8.750	1163 52 3
2056N 58 FT	52-58	50	11.000	1163 58 2
2056N 64 FT	58-64	50	12.100	1163 64 7
2056N 70 FT	64-70	50	13.550	1163 70 1

St Steel

FT Hot-dip galvanised

/100 pc.

Suitable for all C profile rails with slot width 11-12 mm; at least 6.5 mm clear internal height and at least 18.5 mm clear internal width.

Clamp and bolt made of hot-dip galvanised steel.

Polypropylene pressure sleeve, halogen-free, colour light grey RAL 7035.

Version with welding and/or locknuts for use under difficult circumstances and for vibration on request.

Important dimensions, clamp clip

D	A	B	C	G	t	x	H	L
mm	mm	mm	mm	mm	mm	mm	mm	mm
8 - 12	20	16	34	M6	1,5	5	34	34
12 - 16	20	20	34	M6	1,5	5	38	34
16 - 22	20	27	34	M6	1,5	5	44	34
22 - 28	20	33	34	M6	2	5	51	34
28 - 34	20	39	34	M8	2	5,5	59	37,5
34 - 40	20	45	34	M8	2	5,5	66	37,5
40 - 46	20	51	40	M8	2	5,5	72	37,5
46 - 52	20	57	40	M8	2	6,5	79	37,5
52 - 58	23	64	40	M8	2,5	6,5	86	45,5
58 - 64	23	70	40	M8	2,5	6,5	92	45,5
64 - 70	23	76	40	M8	2,5	6,5	99	45,5



Clamp clip, fastening to angular steel



Clamp clip, single, plastic pressure trough

Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2056W 12 FT	8-12	100	4.450	1180 12 6
2056W 16 FT	12-16	100	4.890	1180 16 9
2056W 22 FT	16-22	100	5.700	1180 22 3
2056W 28 FT	22-28	100	7.800	1180 28 2
2056W 34 FT	28-34	100	9.400	1180 34 7
2056W 40 FT	34-40	100	10.000	1180 40 1
2056W 46 FT	40-46	100	12.800	1180 46 0
2056W 52 FT	46-52	100	13.600	1180 52 5
2056W 58 FT	52-58	50	17.100	1180 58 4
2056W 64 FT	58-64	50	18.600	1180 64 9
2056W 70 FT	64-70	50	18.500	1180 68 1
2056W 76 FT	70-76	25	20.600	1180 76 2
2056W 82 FT	76-82	25	22.000	1180 82 7
2056W 90 FT	82-90	25	26.200	1180 90 8

St Steel

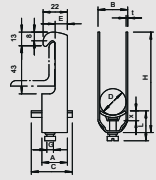
FT Hot-dip galvanised

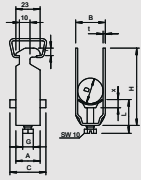
/100 pc.

Suitable for angular steel of 40 mm limb length.
Clamp and bolt made of hot-dip galvanised steel.
Polypropylene pressure sleeve, halogen-free, colour light grey RAL 7035.

Important dimensions, clamp clip

D	A	B	C	G	t	x	H	L
mm	mm	mm	mm		mm	mm	mm	mm
8 - 12	23	16	34	M6	1,5	5	74	27
12 - 16	23	20	34	M6	1,5	5	78	27
16 - 22	23	27	34	M6	1,5	5	85	27
22 - 28	23	33	34	M6	2	5	91	27
28 - 34	23	39	34	M8	2	5,5	99	31,5
34 - 40	23	45	34	M8	2	5,5	105	31,5
40 - 46	25	51	40	M8	2	5,5	111	31,5
46 - 52	25	57	40	M8	2	6,5	117	32,5
52 - 58	25	64	40	M8	2,5	6,5	123	32,5
58 - 64	25	70	40	M8	2,5	6,5	130	32,5
64 - 70	25	76	40	M8	2,5	6,5	136	32,5
70 - 76	25	82	40	M8	2,5	6,5	143	38,5
76 - 82	25	88	40	M8	2,5	6,5	149	38,5
82 - 90	25	97	40	M8	3	6,5	158	38,5





Clamp clip, single, plastic pressure trough

Type	Clamping range D	Dimension A	Dimension B	Dimension C	Dimension G	Dimension t	Dimension H	Dimension L	Pack.	Weight	Item No.
	mm	mm	mm	mm	mm	mm	mm	mm	pcs	kg/100 pcs.	
2056 12 FT	8-12	23	16	34	M6	1.5	40	34	100	3.540	1160 12 5
2056 16 FT	12-16	23	20	34	M6	1.5	44	34	100	3.820	1160 16 8
2056 22 FT	16-22	23	27	34	M6	1.5	50	34	100	4.508	1160 22 2
2056 28 FT	22-28	23	33	34	M6	2	58	34	100	6.240	1160 28 1
2056 34 FT	28-34	23	39	34	M8	2	58	34	100	7.680	1160 34 6
2056 40 FT	34-40	23	45	45	M8	2	72	37.5	100	8.260	1160 40 0
2056 46 FT	40-46	23	51	40	M8	2	79	44.5	100	10.900	1160 45 1
2056 52 FT	46-52	23	57	40	M8	2	79	44.5	100	11.900	1160 52 4
2056 58 FT	52-58	23	64	40	M8	2.5	93	45.5	100	14.300	1160 58 3
2056 64 FT	58-64	23	70	40	M8	2.5	99	45.5	100	15.600	1160 64 8
2056 70 FT	64-70	25	76	40	M8	2.5	106	45.5	50	18.200	1160 70 2
2056 76 FT	70-76	25	82	40	M8	2.5	114	45.5	25	20.600	1160 76 1
2056 82 FT	76-82	25	88	40	M8	2.5	121	45.5	25	22.000	1160 82 6
2056 90 FT	82-90	25	97	40	M8	3	130	57.5	25	26.200	1160 90 7
2056 100 FT	90-100	25	107	40	M8	3	140	57.5	25	27.800	1160 99 0



St Steel **FT** Hot-dip galvanised /100 pc.

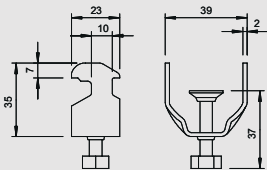
Suitable for all C profile rails with slot width 16–17 mm.
Hot-dip galvanised steel clamp and bolt, polypropylene pressure sleeve, halogen-free, colour light grey RAL 7035.

Version with welding and/or locknuts for use under difficult circumstances and for vibration on request.

Important dimensions, clamp clip

D	A	B	C	G	t	x	H	L
mm	mm	mm	mm	mm	mm	mm	mm	mm
8 - 12	23	16	34	M6	1,2	5	40	34
12 - 16	23	20	34	M6	1,5	5	44	34
16 - 22	23	27	34	M6	1,5	5	50	34
22 - 28	23	33	34	M6	2	5	58	34
28 - 34	23	33	34	M8	2	5	58	34
34 - 40	23	45	34	M8	2	5,5	72	37,5
40 - 46	23	51	40	M8	2	5,5	79	44,5
46 - 52	23	57	40	M8	2	5,5	79	44,5
52 - 58	23	64	40	M8	2,5	6,5	93	45,5
58 - 64	23	70	40	M8	2,5	6,5	99	45,5
64 - 70	25	76	40	M8	2,5	6,5	106	45,5
70 - 76	25	82	40	M8	2,5	6,5	114	45,5
76 - 82	25	88	40	M8	2,5	6,5	121	45,5
82 - 90	25	97	40	M8	3	6,5	130	57,5
90 - 100	25	107	40	M8	3	6,5	140	57,5

Clamp clip, fastening earthing strips



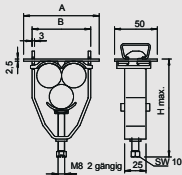
Type	For rail with slot width mm	Pack.	Weight	Item No.
		pcs	kg/100 pcs.	
2056 BE FT	16-17	25	4.700	1174 05 3

St Steel **FT** Hot-dip galvanised /100 pc.

To fasten earthing strips with widths of up to 30 mm to profile rails, suitable for all C profile rails with 16–17 mm slot width.



Clamp clip, hammer-head base, 3x single-wire connection



Type	Cable Ø	Pack.	Weight	Item No.
	mm	pcs	kg/100 pcs.	
2056 E 31 FT	28-31	25	19.500	1174 60 6
2056 E 37 FT	34-37	25	24.600	1174 61 4
2056 E 44 FT	40-44	25	28.300	1174 63 0

St Steel **FT** Hot-dip galvanised /100 pc.

Clip element, bolt and lock plate made of hot-dip galvanised steel, pressure and counter-trough made of polypropylene, halogen-free, light grey RAL 7035. Delivered complete with lock plate and counter-troughs.

The clamp clips 2056/E are used for systematic routing of single-wire cables in rotary current networks. As, with this routing type, the magnetic fields counteract each other, no heating is to be feared and steel clips can be used.

2056/E is suitable for all profile rails of 16–17 mm slot width.

Important dimensions, clamp clip

D	A	B	H
mm	mm	mm	mm
28-31	83	69	107
34-37	95	81	118
40-44	109	95	143



Clamp clips, hammer head base



Counter-trough, plastic, universal

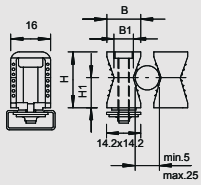
Type	Clamping range D	Dimension L	Dimension B	Dimension H	Colour	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
	mm	mm	mm	mm					
2058FW 12 LGR	8-12	34	16.5	5	Light grey	2400	100	0.099	1197 12 6
2058FW 16 LGR	12-16	34	20	5	Light grey	1200	100	0.130	1197 16 9
2058FW 22 LGR	16-22	34	25.5	5.8	Light grey	1000	100	0.170	1197 22 3
2058FW 28 LGR	22-28	34	31.5	7.2	Light grey	1000	100	0.216	1197 28 2
2058FW 34 LGR	28-34	34	37	8.4	Light grey	1200	100	0.280	1197 34 7
2058FW 40 LGR	34-40	34	42.5	9.7	Light grey	1200	100	0.318	1197 40 1
2058FW 46 LGR	40-46	40	48	11	Light grey	1200	100	0.415	1197 46 0
2058FW 52 LGR	46-52	40	51.5	9.8	Light grey	1600	100	0.425	1197 52 5
2058FW 58 LGR	52-58	40	57	10.6	Light grey	1600	100	0.460	1197 58 4
2058FW 64 LGR	58-64	40	61.2	10.4	Light grey	600	50	0.525	1197 64 9
2058FW 70 LGR	64-70	40	67.2	10.4	Light grey	400	50	0.565	1197 70 3
2058FW 76 LGR	70-76	40	71.4	11	Light grey	500	25	0.924	1197 76 2
2058FW 82 LGR	76-82	40	75.6	11	Light grey	500	25	0.998	1197 82 7
2058FW 90 LGR	82-90	40	82.6	12	Light grey	500	25	1.070	1197 90 8
2058FW 100 LGR	90-100	40	89.5	12	Light grey	500	25	1.150	1197 99 1

PP Polypropylene

/100 pc.

Irrespective of the rail, universally applicable by pushing onto a limb of the BBS clamp clip.





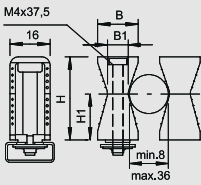
Series clip, slot 11–12 mm

Type	Clamping range D mm	Bolt	Colour	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
2050 5-25 LGR	5-25	M4 x 27	Light grey	1000	100	0.660	2254 02 6

PS Polystyrene /100 pc.
Also suitable for rails of 11 - 12 mm slot width; polystyrene clip element, impact resistant, halogen-free, light grey RAL 7035; metal parts: electrogalvanised steel.

Important dimensions, series clip

D	B	B1	H	H1
mm	mm	mm	mm	mm
5-25	14	8.5	23	12.5



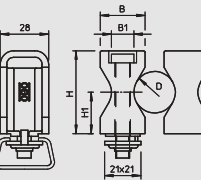
Series clip, slot 11–12 mm

Type	Clamping range D mm	Bolt	Colour	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
2051 8-36 LGR	8-36	M4 x 37.5	Light grey	800	100	0.970	2254 03 4

PS Polystyrene /100 pc.
Also suitable for rails of 11 - 12 mm slot width; polystyrene clip element, impact resistant, halogen-free, light grey RAL 7035; metal parts: electrogalvanised steel.

Important dimensions, series clip

D	B	B1	H
mm	mm	mm	mm
8-36	16.5	8.5	34



Series clip, slot 16–17 mm

Type	Clamping range D mm	Bolt	Colour	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
2054 14-48 LGR	14-48	M8 x 55	Light grey	300	25	5.120	2255 01 4
2055 24-72 LGR	24-72	M8 x 75	Light grey	240	20	7.970	2255 02 2

PA Polyamide /100 pc.
Heavy-duty version, also suitable for rails of 16 - 17 mm slot width; polyamide clip element, light grey RAL 7035; Metal parts: electrogalvanised steel.







Important dimensions, series clip

D	B	B1	H	H1
mm	mm	mm	mm	mm
14-48	26	13	48	24
24-72	38	15	70	35





Cable gland systems

	Cable gland, plastic	Metric thread	58
	Cable gland, plastic	PG thread	58
	Cable gland, brass	Metric thread	59
	Cable gland, brass	PG thread	59
	Cable gland, brass	EMC metric	60
	Cable gland, brass	EMC spring contact, metric	60



Cap nut cable gland



Cable gland, metric thread

Type	Thread	Colour	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC VM12 LGR	M12 x 1.5	Light grey	500	50	0.318	2022 86 2
V-TEC VM16 LGR	M16 x 1.5	Light grey	500	50	0.638	2022 86 4
V-TEC VM20 LGR	M20 x 1.5	Light grey	600	50	0.856	2022 86 6
V-TEC VM25 LGR	M25 x 1.5	Light grey	300	25	1.360	2022 86 8
V-TEC VM32 LGR	M32 x 1.5	Light grey	240	20	2.230	2022 87 0
V-TEC VM40 LGR	M40 x 1.5	Light grey	120	10	3.467	2022 87 2
V-TEC VM50 LGR	M50 x 1.5	Light grey	60	5	5.466	2022 87 4
V-TEC VM63 LGR	M63 x 1.5	Light grey	60	5	8.306	2022 87 6

PA Polyamide

/100 pc.

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 lamella technology protection class IP68 is achieved. Strain relief and tightness have been tested to DIN EN 50262. The connecting threads are metric and are therefore suitable for universal use. Once screwed in place the fitting is there for ever 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

Important dimensions, V-TEC cable gland

G	D	SW	E	L min.	L max.	L1	L2
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	23,5	8	5
M20 x 1,5	6 - 13	24	27	23,5	30,5	9	5
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
M63 x 1,5	36 - 48	67	75	48	60	12	9



Cable gland, PG thread

Type	Thread	Colour	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC PG7 LGR	Pg 7	Light grey	500	50	0.410	2024 70 5
V-TEC PG9 LGR	Pg 9	Light grey	500	50	0.630	2024 71 3
V-TEC PG11 LGR	Pg 11	Light grey	500	50	0.890	2024 72 1
V-TEC PG13 LGR	Pg 13,5	Light grey	400	50	1.020	2024 74 8
V-TEC PG16 LGR	Pg 16	Light grey	250	25	1.380	2024 75 6
V-TEC PG21 LGR	Pg 21	Light grey	300	25	2.290	2024 76 4
V-TEC PG29 LGR	Pg 29	Light grey	240	20	4.020	2024 77 2
V-TEC PG36 LGR	Pg 36	Light grey	120	10	6.030	2024 78 0
V-TEC PG42 LGR	Pg 42	Light grey	60	5	7.650	2024 79 9
V-TEC PG48 LGR	Pg 48	Light grey	60	5	9.460	2024 80 2

PA Polyamide

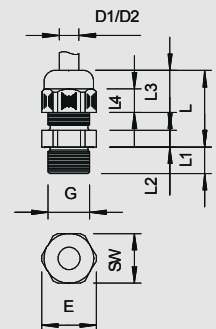
/100 pc.

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 lamella technology, protection class IP 68 is achieved. Strain relief and tightness have been tested to DIN EN 50262. The connecting threads of the cable glands are metric or Pg and are therefore suitable for universal use. Once screwed in place the fitting is there forever, as the optimum thread adjustment with the right pitch ensures permanent resistance to shaking.

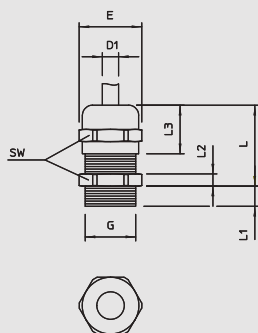
Applications: from private housing with junction boxes up to industrial applications in the distributor cabinet.

Important dimensions, V-TEC cable gland

G	D1	D2	SW	E	L min.	L max.	L1	L2	L3
Pg 7	2.5 - 6.5	3 - 6.5	15	18	23	8	5	12.6	
Pg 9	2.5 - 8	3.5 - 8	19	21	27	8	5	15.5	
Pg 11	3.5 - 10	4.5 - 10	22	22	29	8	5	17	
Pg 13,5	5 - 12	6 - 12	24	23	30	9	5	18	
Pg 16	7 - 14	7 - 14	27	25	33	10	6	19	
Pg 21	9 - 18	12 - 18	33	28	38	11	6	22	
Pg 29	14 - 25	17 - 25	42	32	43	11	7	24.5	
Pg 36	18 - 32	20 - 32	53	39	54	13	8	31	
Pg 42	24 - 38	26 - 38	60	42	57	13	9	32.5	
Pg 48	30 - 44	30 - 44	65	42	58	14	9	33	



Cable gland, metric thread



Type	Thread	Surface finish	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC VM12 MS	M12 x 1.5	Nickel-plated	500	50	1.200	2086 01 8
V-TEC VM16 MS	M16 x 1.5	Nickel-plated	600	50	1.640	2086 02 4
V-TEC VM20 MS	M20 x 1.5	Nickel-plated	250	25	3.140	2086 03 0
V-TEC VM25 MS	M25 x 1.5	Nickel-plated	250	25	4.260	2086 03 6
V-TEC VM32 MS	M32 x 1.5	Nickel-plated	160	20	7.160	2086 04 2
V-TEC VM40 MS	M40 x 1.5	Nickel-plated	60	5	12.240	2086 04 8
V-TEC VM50 MS	M50 x 1.5	Nickel-plated	45	5	22.700	2086 05 4
V-TEC VM63 MS	M63 x 1.5	Nickel-plated	40	5	30.300	2086 06 0

CuZn Brass **N** Nickel-plated /100 pc.

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 sealing ring to the connection thread, pre-mounted sealing ring at connection thread, VDE-tested to DIN EN 50262, protection class IP 68 at 5 bar/1h, Max. permitted ambient temperature -20 - 100°C

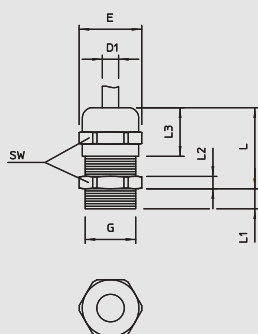
* Prices according to DEL notation.

Important dimensions, brass cable gland

G	D1	SW	E	L max.	L1
	mm	mm	mm	mm	mm
M12 x 1.5	3-6	14	15.5	20	5
M16 x 1.5	5-9	17	19	24	5
M20 x 1.5	9-13	22	24	27	6
M25 x 1.5	11-16	27	30	29.5	7
M32 x 1.5	14-21	34	36	30	8
M40 x 1.5	19-27	43	46	33	8
M50 x 1.5	24-35	55	60	38.5	9
M63 x 1.5	32-42	65	70	44.5	10



Cable gland, PG thread



Type	Thread	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC PG7 MS	Pg 7	500	50	1.000	2085 60 7
V-TEC PG9 MS	Pg 9	600	50	1.600	2085 61 5
V-TEC PG11 MS	Pg 11	600	50	2.300	2085 62 3
V-TEC PG13 MS	Pg 13.5	500	50	2.800	2085 63 1
V-TEC PG16 MS	Pg 16	300	25	3.400	2085 65 8
V-TEC PG21 MS	Pg 21	200	25	6.000	2085 66 6
V-TEC PG29 MS	Pg 29	120	20	13.000	2085 67 4
V-TEC PG36 MS	Pg 36	60	10	21.000	2085 68 2
V-TEC PG42 MS	Pg 42	15	5	23.500	2085 69 0
V-TEC PG48 MS	Pg 48	40	5	31.500	2085 70 4

CuZn Brass **N** Nickel-plated /100 pc.

Cable gland of cap-nut design with large sealing area, and strain relief and torsion protection for high sealing demands with Pg connection thread to DIN 40430, polyamide terminal insert, sealing ring of chloroprene/nitrile rubber, with pre-mounted O ring on the connection thread.

Protection rating IP 68 at 5 bar: 1 hr, tested to VDE 0619.

"Normal" connection thread length, according to DIN 46320.

* Prices according to DEL notation.

Important dimensions, brass cable gland

G	D1	D2	SW	E	L max.	L1	L2	L3
	mm	mm	mm	mm	mm	mm	mm	mm
Pg 7	2.5-6.5	3-6.5	14	15.5	20	5	3	12
Pg 9	2.5-8	3.5-8	17	18.9	22	6	3	14
Pg 11	3.5-10	4.5-10	20	22.2	24	6	3	15
Pg 13.5	5-12	6-12	22	24.4	25	6.5	3.5	15
Pg 16	7-14	7-14	24	26.7	27	6.5	4	17
Pg 21	9-18	12-18	30	33.5	33	7	4.5	20
Pg 29	14-25	17-25	40	43.5	39	8	5	23.5
Pg 36	18-32	20-32	50	54	49	9	5.5	29
Pg 42	24-38	26-38	57	61	52	10	6	31
Pg 48	30-44	30-44	64	69	52.5	10	6.5	31



Cap nut cable gland



Cable gland, EMC, metric

Type	Thread	Surface finish	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC VM12 EMV	M12 x 1.5	Nickel-plated	500	50	1.362	2086 20 3
V-TEC VM16 EMV	M16 x 1.5	Nickel-plated	600	50	1.849	2086 20 7
V-TEC VM20 EMV	M20 x 1.5	Nickel-plated	250	25	3.473	2086 21 1
V-TEC VM25 EMV	M25 x 1.5	Nickel-plated	250	25	5.280	2086 21 5
V-TEC VM32 EMV	M32 x 1.5	Nickel-plated	160	20	7.470	2086 21 9
V-TEC VM40 EMV	M40 x 1.5	Nickel-plated	60	5	12.880	2086 22 3
V-TEC VM50 EMV	M50 x 1.5	Nickel-plated	45	5	26.165	2086 22 7
V-TEC VM63 EMV	M63 x 1.5	Nickel-plated	45	5	33.990	2086 23 1

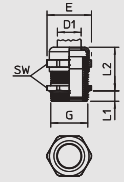
CuZn Brass **N** Nickel-plated /100 pc.

With metric connecting thread to IEC 423 robust EMC 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 IP 68 at 5 bar for 1 hr.

* Prices according to DEL notation.

Important dimensions, EMC brass cable gland

G	D1	SW	E	L max.	L1
	mm	mm	mm	mm	mm
M12 x 1.5	3-6	14	15.5	25	5
M16 x 1.5	5-9	17	19	30	5
M20 x 1.5	9-13	22	24	33.5	6
M25 x 1.5	11-16	17	30	36.5	7
M32 x 1.5	14-21	34	36	38	8
M40 x 1.5	19-27	43	46	49.5	8
M50 x 1.5	24-35	55	60	49.5	9
M63 x 1.5	32-42	65	70	52.5	10



Cable gland, EMC spring contact, metric

Type	Thread	Surface finish	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC VM16 EMV-K	M16 x 1.5	Nickel-plated	600	50	2.044	2086 16 5
V-TEC VM20 EMV-K	M20 x 1.5	Nickel-plated	250	25	3.564	2086 16 9
V-TEC VM25 EMV-K	M25 x 1.5	Nickel-plated	250	25	5.918	2086 17 3
V-TEC VM32 EMV-K	M32 x 1.5	Nickel-plated	160	20	9.880	2086 17 7
V-TEC VM40 EMV-K	M40 x 1.5	Nickel-plated	60	5	17.200	2086 18 1
V-TEC VM50 EMV-K	M50 x 1.5	Nickel-plated	45	5	13.735	2086 18 5
V-TEC VM63 EMV-K	M63 x 1.5	Nickel-plated	45	5	16.780	2086 18 9

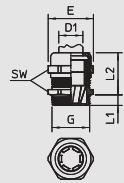
CuZn Brass **N** Nickel-plated /100 pc.

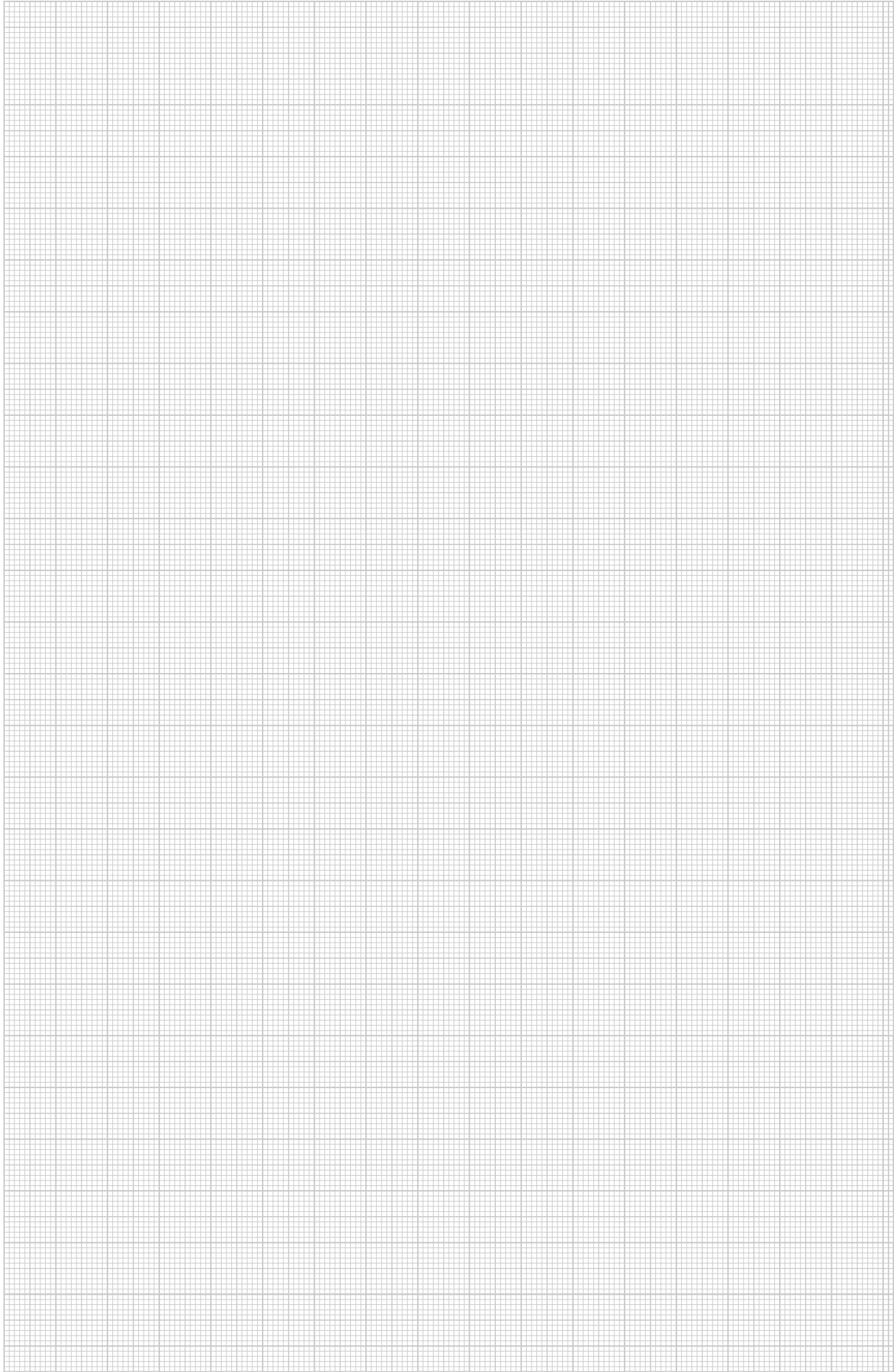
With metric connecting thread to IEC 423 robust EMC cap-nut cable gland with large sealing area. The contacting between the gland and braided shield is made using a contact spring. Strain relief, wringing protection and tightness over the whole clamping area. Neoprene sealing ring. Polyamide terminal insert. With pre-mounted O sealing ring on connection thread, VDE-tested to DIN EN 50262, protection rating IP 68 at 5 bar for 1 hr.

* Prices according to DEL notation.

Important dimensions, EMC brass cable gland










G	D1	SW	E	L max.	L1
	mm	mm	mm	mm	mm
M16 x 1.5	5-9	17	19	30	5
M20 x 1.5	9-13	22	24	33.5	6
M25 x 1.5	11-16	27	30	36.5	7
M32 x 1.5	14-21	34	36	38	8
M40 x 1.5	19-27	43	46	41	8
M50 x 1.5	24-35	55	60	49.5	9
M63 x 1.5	38-48	65	65	52.5	10







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

	Combination arrester MCD, 255 V	For TN-S and TT networks For TN networks	64 65
	Lightning arrester MCF	3-pole 1-pole	66
	Combination arrester, protection kit		67
	Combination arrester V50, 280 V	With NPE With remote signalling	68 69
	Surge arrester V20, 280 V	With NPE With remote signalling	70 71
	Surge arrester V10 Compact	With acoustic signalling With remote signalling Accessories	73
	MCR protection	For 2-pole power supply For 2-pole power supply with remote signalling	74 76
	Surge protection complete block PV type 2	1,000 V DC 600 V DC	78
	Surge arrester ÜSM	For LED lamps	79



Combination arrester/ MCD, 255 V for TN-S and TT networks



Combination arrester, surge arrester, type 1

- Protection level < 1.3 kV allows device protection
- 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 150 kA (10/350) in total
- Line following current quenching 25 kA I_{peak}, 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 arrester for use in distributor housings

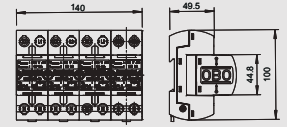
Application: Industrial systems and buildings with external lightning protection of the highest class I to IV.



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	5096 87 9

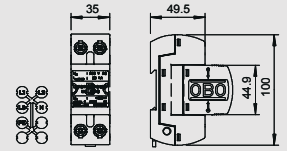
/pc.



Combination arrester, 1-pole

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
MCD 50-B	255	1-pole	1	34.400	5096 84 9

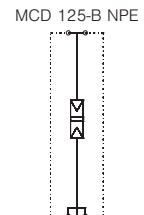
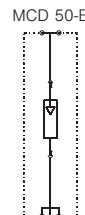
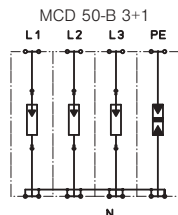
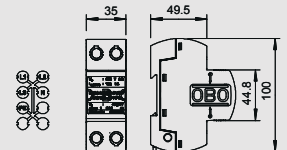
/pc.



Combination arrester, 1-pole NPE

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
MCD 125-B NPE	255	NPE	1	46.500	5096 86 5

/pc.



Nominal voltage	U _N	V	230	230	230
SPD to EN 61643-11			Type 1	Type 1	Type 1
SPD to IEC 61643-11			class I	class I	class I
Lightning protection zone LPZ			0→2	0→2	0→2
Impulse discharge current (10/350)	I _{imp}	kA	50	50	125
Total discharge current (10/350)	I _{Total}	kA	125	50	125
Nominal discharge current (8/20)	I _n	kA	50	50	125
Arrester surge current (8/20) [total]	I _{Total}	kA	125	50	125
Voltage protection level	U _p	kV	1,3	<1,3	<1,3
Response time	t _A	ns	<100	<100	<100
Follow current interrupt rating	I _{fi}	kA	25	25	0.1
Maximum back-up fuse		A	500	500	
Temperature range	θ	°C	-40 - +85	-40 - +85	-40 - +85
Division unit TE (17.5 mm)			8	2	2
Protection rating			IP20	IP20	IP20
Connection cross-section, rigid		mm ²	10 - 50	10 - 50	10 - 50
Connection cross-section, multi-wire		mm ²	10 - 35	10 - 35	10 - 35
Connection cross-section, flexible		mm ²	10 - 25	10 - 25	10 - 25
Item No.			5096 87 9	5096 84 9	5096 86 5



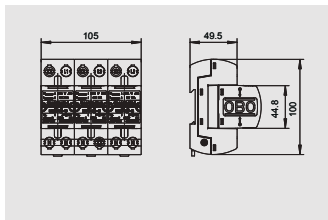
Combination arrester MCD, 255 V for TN networks

Combination arrester, surge arrester, type 1

- Protection level < 1.3 kV allows device protection
- 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 150 kA (10/350) in total
- Line following current quenching 25 kA I_{peak}, 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 arrester for use in distributor housings



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

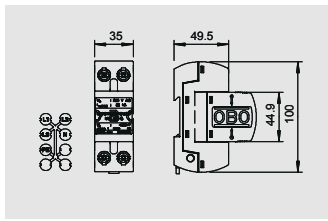


Combination arrester, 3-pole

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
MCD 50-B 3	255	3-pole	1	117.000	5096 87 7



/pc.

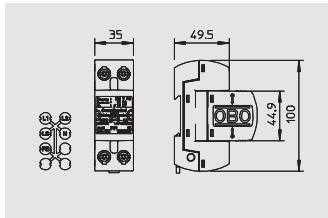


Combination arrester, 1-pole

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
MCD 50-B	255	1-pole	1	34.400	5096 84 9



/pc.

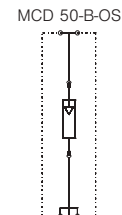
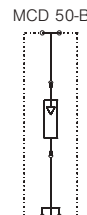
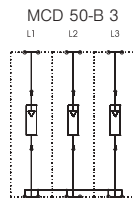


Combination arrester, 1-pole with function display

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
MCD 50-B-OS	255	1-pole	1	34.800	5096 85 2



/pc.



			MCD 50-B 3	MCD 50-B	MCD 50-B-OS
Nominal voltage	U _N	V	230	230	230
SPD to EN 61643-11			Type 1	Type 1	Type 1
SPD to IEC 61643-11			class I	class I	class I
Lightning protection zone LPZ			0-2	0-2	0-2
Impulse discharge current (10/350)	I _{imp}	kA	50	50	50
Total discharge current (10/350)	I _{Total}	kA	150	50	50
Nominal discharge current (8/20)	I _n	kA	50	50	50
Arrester surge current (8/20) [total]	I _{Total}	kA	150	50	50
Voltage protection level	U _p	kV	1,3	<1,3	1,3
Response time	t _A	ns	<100	<100	<100
Follow current interrupt rating	I _{fi}	kA	25	25	25
Maximum back-up fuse		A	500	500	500
Temperature range	θ	°C	-40 - +85	-40 - +85	-40 - +85
Division unit TE (17.5 mm)			6	2	2
Protection rating			IP20	IP20	IP20
Connection cross-section, rigid		mm ²	10 - 50	10 - 50	10 - 50
Connection cross-section, multi-wire		mm ²	10 - 35	10 - 35	10 - 35
Connection cross-section, flexible		mm ²	10 - 25	10 - 25	10 - 25
Item No.			5096 87 7	5096 84 9	5096 85 2

Always indicate the item number when ordering.



Lightning current arrester MCF, 440 V for power feed-in, industry



Surge arrester, type 1

- 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 150 kA (10/350) in total
- Line following current quenching 25 kA Ipeak, 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 arrester for use in distributor housings

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

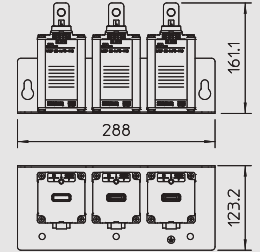


Lightning current arrester, 3-pole

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
MCF 35-P3+FS-440	440	3-pole	1	400.000	5096 97 6

AIG Cast aluminium

/pc.

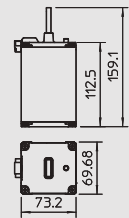


Lightning current arrester, 1-pole

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
MCF 35-1+FS-440	440	1-pole	1	98.000	5096 97 4

AIG Cast aluminium

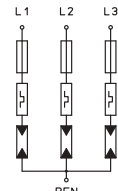
/pc.



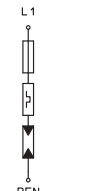
Surge protection, type 1 / type 1+2 / type 2 / type 3



MCF 35-P3+FS-440



MCF 35-1+FS-440

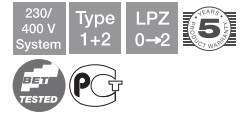


Nominal voltage	U_N	V	400	400
SPD to EN 61643-11			Type 1	Type 1
SPD to IEC 61643-11			class I	class I
Impulse discharge current (10/350)	I_{imp}	kA	35	35
Voltage protection level	U_p	kV	2,5	2,5
Protection rating			IP20	IP20
Follow current interrupt rating	I_{fi}	kA	50	50
Maximum back-up fuse		A	400	400
Temperature range	θ	°C	-40 - +85	-40 - +85
Item No.			5096 97 6	5096 97 4

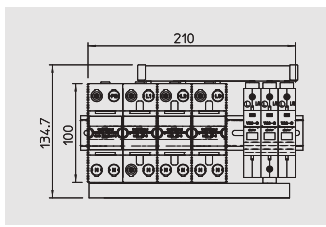
Combination arrester, protection set for TN and TT network systems

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.

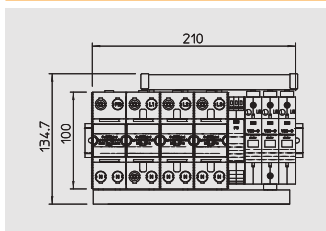


Protection set MCD + V20 3-pole + NPE

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
PS4-B+C TT+TNS	255	3 + NPE	1	206.000	5089 76 1



/pc.

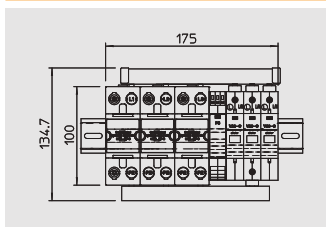


Protection set MCD + V20 3-pole + NPE with remote signalling

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	5089 76 3



/pc.

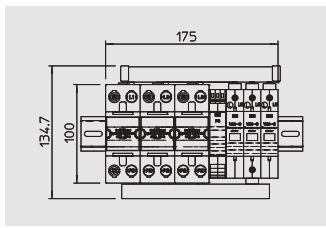


Protection set MCD + V20 3-pole

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
PS3-B+C TNC	255	3-pole	1	158.000	5089 75 4



/pc.

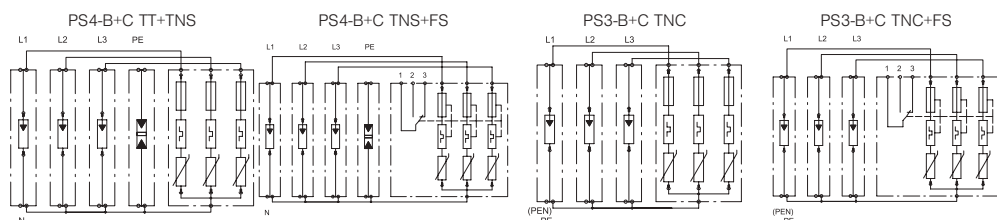


Protection set MCD + V20 3-pole with remote signalling

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
PS3-B+C TNC+FS	255	3-pole	1	163.000	5089 75 6



/pc.



	PS4-B+C TT+TNS	PS4-B+C TNS+FS	PS3-B+C TNC	PS3-B+C TNC+FS
Nominal voltage U_N	V	230	230	230
SPD to EN 61643-11	Type 1+2	Type 1+2	Type 1+2	Type 1+2
SPD to IEC 61643-11	class I+II	class I+II	class I+II	class I+II
Lightning protection zone LPZ	0-2	0-2	0-2	0-2
Impulse discharge current (10/350) I_{imp}	kA	100	100	100
Total discharge current (10/350) I_{Total}	kA	100	100	100
Nominal discharge current (8/20) I_n	kA	100	100	100
Arrester surge current (8/20) [total] I_{Total}	kA	100	100	100
Maximum discharge current I_{max}	kA	100	100	100
Voltage protection level U_p	kV	<1,3	<1,3	<1,3
Response time t_A	ns	<25	<25	<25
Follow current interrupt rating I_{fi}	kA	25	25	25
Maximum back-up fuse	A	125	125	125
Temperature range ϑ	°C	-40 - +85	-40 - +85	-40 - +85
Division unit TE (17.5 mm)		12	10	10
Protection rating		IP20	IP20	IP20
Connection cross-section, rigid	mm ²	10 - 50	10 - 50	10 - 50
Connection cross-section, multi-wire	mm ²	10 - 35	10 - 35	10 - 35
Connection cross-section, flexible	mm ²	10 - 25	10 - 25	10 - 25
Item No.		5089 76 1	5089 76 3	5089 75 4
				5089 75 6

Surge protection, type 1 / type 1+2 / type 2 / type 3



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



- Combination arrester, lightning current and surge arrester, type 1+2
- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
 - Lightning current arresting capacity 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
 - Arrester, plug-in, with dynamic cut-off unit and visual function display
 - Encapsulated, non-extinguishing zinc oxide varistor arrester for use in distributor housings

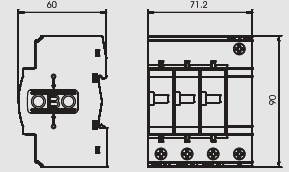
Application: Residential building with external lightning protection of Class III and IV.



Lightning current and surge arrester, 3-pole + NPE

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V50-B+C 3+NPE	280	3+NPE	1	55.000	5093 65 4

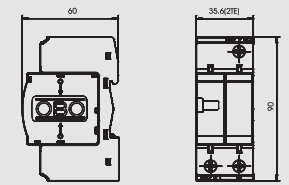
/pc.



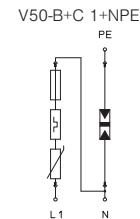
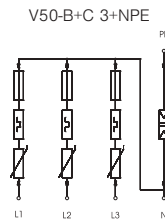
Lightning current and surge arrester, 1-pole + NPE

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V50-B+C 1+NPE	280	1 + NPE	1	31.300	5093 65 3

/pc.



Surge protection, type 1 / type 1+2 / type 2 / type 3



Nominal voltage	U_N	V	230	230
SPD to EN 61643-11			Type 1+2	Type 1+2
SPD to IEC 61643-11			class I+II	class I+II
Lightning protection zone LPZ			0-2	0-2
Impulse discharge current (10/350)	I_{imp}	kA	12,5	12,5
Total discharge current (10/350)	I_{Total}	kA	50	25
Nominal discharge current (8/20)	I_n	kA	30	30
Arrester surge current (8/20) [total]	I_{Total}	kA	50	50
Maximum discharge current	I_{max}	kA	50	50
Voltage protection level	U_p	kV	< 1,3	< 1,3
Response time	t_A	ns	<25	<25
Maximum back-up fuse		A	125	125
Temperature range	ϑ	°C	-40 - +80	-40 - +80
Division unit TE (17.5 mm)			4	2
Protection rating			IP20	IP20
Connection cross-section, rigid		mm ²	2,5 - 35	2,5 - 35
Connection cross-section, multi-wire		mm ²	2,5 - 35	2,5 - 35
Connection cross-section, flexible		mm ²	2,5 - 25	2,5 - 25
Item No.			5093 65 4	5093 65 3

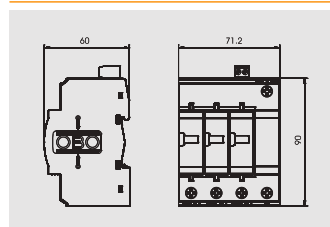
Combination arrester V25, 280 V for TN and TT network systems, with remote signalling

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

- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Arrester, plug-in, with dynamic cut-off unit and visual function display
- Encapsulated, non-extinguishing zinc oxide varistor arrester for use in distributor housings



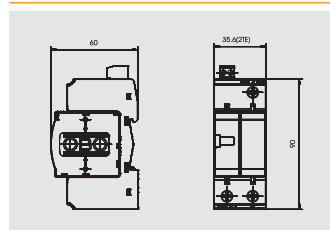
Application: Residential building with external lightning protection of Class III and IV.



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

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V50-B+C 3+NPE+FS	280	3+NPE + FS	1	55.000	5093 66 2

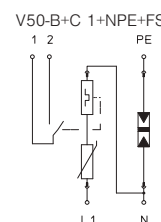
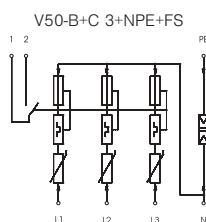
/pc.



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

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V50-B+C 1+NPE+FS	280	1+NPE + FS	1	26.100	5093 66 1

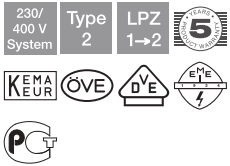
/pc.



Nominal voltage	U_N	V	230	230
SPD to EN 61643-11			Type 1+2	Type 1+2
SPD to IEC 61643-11			class I+II	class I+II
Lightning protection zone LPZ			0-2	0-2
Impulse discharge current (10/350)	I_{imp}	kA	12,5	12,5
Total discharge current (10/350)	I_{Total}	kA	50	25
Nominal discharge current (8/20)	I_n	kA	30	30
Arrester surge current (8/20) [total]	I_{Total}	kA	50	50
Maximum discharge current	I_{max}	kA	50	50
Voltage protection level	U_p	kV	< 1,3	< 1,3
Response time	t_A	ns	<25	<25
Maximum back-up fuse		A	125	125
Temperature range	ϑ	°C	-40 - +80	-40 - +80
Division unit TE (17,5 mm)			4	2
Protection rating			IP20	IP20
Connection cross-section, rigid		mm ²	2,5 - 35	2,5 - 35
Connection cross-section, multi-wire		mm ²	2,5 - 35	2,5 - 35
Connection cross-section, flexible		mm ²	2,5 - 25	2,5 - 25
Item No.			5093 66 2	5093 66 1



Surge arrester V20, 280 V for TN and TT networks



Surge arrester, type 2, 280 V

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

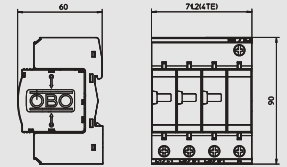
Application: Equipotential bonding (LPZ 1 to 2) and device protection in main and sub-distributors.



Surge arrester, 3-pole + NPE

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 3+NPE-280	280	3 + NPE	1	41.700	5094 65 6

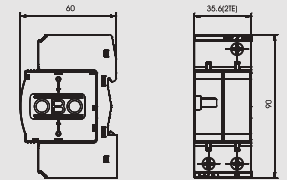
/pc.



Surge arrester, 1-pole + NPE

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 1+NPE-280	280	1 + NPE	1	22.300	5094 65 0

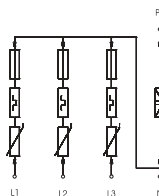
/pc.



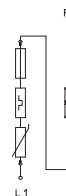
Surge protection, type 1 / type 1+2 / type 2 / type 3



V20-C 3+NPE-280



V20-C 1+NPE-280



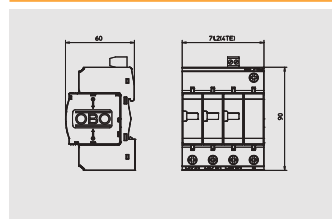
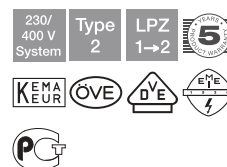
Nominal voltage	U_N	V	230	230
SPD to EN 61643-11			Type 2	Type 2
SPD to IEC 61643-11			class II	class II
Lightning protection zone LPZ			1-2	1-2
Nominal discharge current (8/20)	I_n	kA	20	20
Arrester surge current (8/20) [total]	I_{Total}	kA	120	40
Maximum discharge current	I_{max}	kA	40	40
Voltage protection level	U_p	kV	< 1,3	< 1,3
Response time	t_A	ns	< 25	< 25
Maximum back-up fuse		A	125	125
Temperature range	ϑ	°C	-40 - +80	-40 - +80
Division unit TE (17.5 mm)			4	2
Protection rating			IP20	IP20
Connection cross-section, rigid		mm ²	2,5 - 35	2,5 - 35
Connection cross-section, multi-wire		mm ²	2,5 - 35	2,5 - 35
Connection cross-section, flexible		mm ²	2,5 - 25	2,5 - 25
Item No.			5094 65 6	5094 65 0

Surge arrester V20, 280 V for TN and TT networks

Surge arrester, type 2, 280 V

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

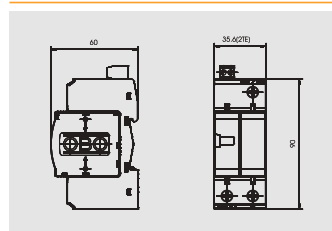
Application: Equipotential bonding (LPZ 1 to 2) and device protection in main and sub-distributors.



Surge arrester, 3-pole + NPE with remote signalling

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 3+NPE+FS	280	3 + NPE	1	43.300	5094 76 5

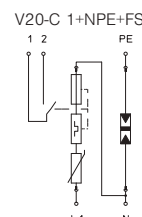
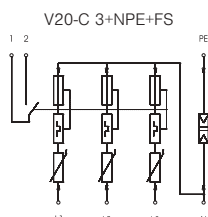
/pc.



Surge arrester, 1-pole + NPE with remote signalling

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 1+NPE+FS	280	1 + NPE	1	22.500	5094 76 0

/pc.



Nominal voltage	U_N	V	230	230
SPD to EN 61643-11			Type 2	Type 2
SPD to IEC 61643-11			class II	class II
Lightning protection zone LPZ			1→2	1→2
Nominal discharge current (8/20)	I_n	kA	20	20
Arrester surge current (8/20) [total]	I_{Total}	kA	80	40
Maximum discharge current	I_{max}	kA	40	40
Voltage protection level	U_p	kV	< 1,3	< 1,3
Response time	t_A	ns	< 25	< 25
Maximum back-up fuse		A	125	125
Temperature range	ϑ	°C	-40 - +80	-40 - +80
Division unit TE (17,5 mm)			4	2
Protection rating			IP20	IP20
Connection cross-section, rigid		mm ²	2,5 - 35	2,5 - 35
Connection cross-section, multi-wire		mm ²	2,5 - 35	2,5 - 35
Connection cross-section, flexible		mm ²	2,5 - 25	2,5 - 25
Item No.			5094 76 5	5094 76 0



Surge arrester V10 Compact



Surge arrester protection device, compact module, type 2+3

- For surge protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
- Discharge capacity of up to 60 kA (8/20) in total
- Integrated 3+1 solution for TN and TT network systems to 45 mm module width
- High-performance varistor technology
- With thermal and dynamic cut-off mechanism and visual function display
- Optionally with acoustic signalling (AS) or remote signalling (FS)

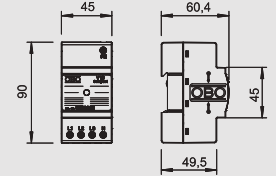
Application: Industrial environment, residential buildings as well as device protection of alternating current systems.



Surge arrester Compact

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V10 COMPACT 255	255	3 + NPE	1	15.800	5093 38 0

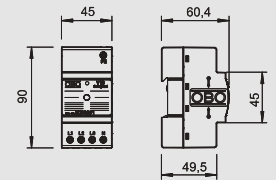
/pc.



Surge arrester Compact with acoustic signalling

Type	Highest continuous voltage V	Version	Designation	Pack. pcs	Weight kg/100 pcs.	Item No.
V10 COMPACT-AS	255	3 + NPE	with acoustic signalling	1	15.800	5093 39 1

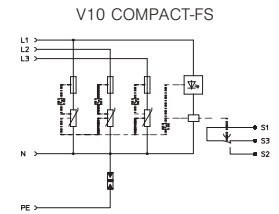
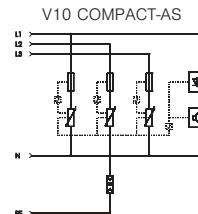
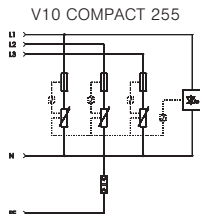
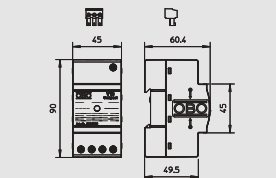
/pc.



Surge arrester Compact with remote signalling

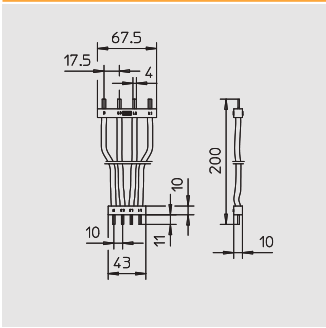
Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V10 COMPACT-FS	255	3 + NPE	1	17.300	5093 38 2

/pc.



Nominal voltage	U_N	V	230	230	230
SPD to EN 61643-11			Type 2+3	Type 2+3	Type 2+3
SPD to IEC 61643-11			class II+III	class II+III	class II+III
Lightning protection zone LPZ			1-3	1-3	1-3
Nominal discharge current (8/20)	I_n	kA	10	10	10
Arrestor surge current (8/20) [total]	I_{Total}	kA	60	60	60
Maximum discharge current	I_{max}	kA	20	20	20
Voltage protection level	U_p	kV	< 1,1	< 1,1	< 1,1
Response time	t_A	ns	< 25	< 25	< 25
Maximum back-up fuse		A	63	63	63
Temperature range	ϑ	°C	-40 - +80	-40 - +80	-40 - +80
Division unit TE (17.5 mm)			2.5	2.5	2.5
Protection rating			IP20	IP20	IP20
Connection cross-section, rigid		mm ²	2,5 - 10	2,5 - 10	2,5 - 10
Connection cross-section, multi-wire		mm ²	2,5 - 10	2,5 - 10	2,5 - 10
Connection cross-section, flexible		mm ²	2,5 - 10	2,5 - 10	2,5 - 10
Item No.			5093 38 0	5093 39 1	5093 38 2





Connecting bridge for V10 Compact, 200 mm

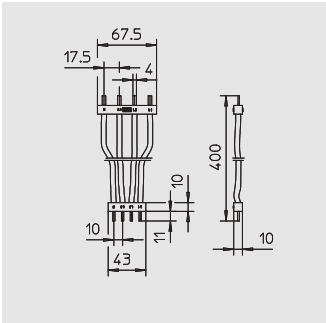
Type	Version	Pack.	Weight	Item No.
		pcs	kg/100 pcs.	
VB-V10 COMPACT-2	200 mm	1	5.300	5089 65 0

/pc.

Connecting bridge for V10 Compact:

The VB-V10 Compact connecting bridge allows quick and easy bridging to other series-mounted devices such as residual-current circuit-breaker.

- Available in two different lengths.



Connecting bridge for V10 Compact, 400 mm

Type	Version	Pack.	Weight	Item No.
		pcs	kg/100 pcs.	
VB-V10 COMPACT-4	400 mm	1	8.900	5089 65 2

/pc.

Connecting bridge for V10 Compact:

The VB-V10 Compact connecting bridge allows quick and easy bridging to other series-mounted devices such as residual-current circuit-breaker.

- Available in two different lengths.



MCR protection for 2-pole power supply



Surge protection device, fine protection type 3 for distributor installation

- 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 connection

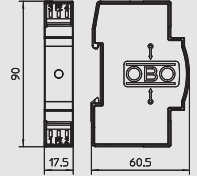
Application: Universal use on 35 mm U-rail in every normal commercially available distribution housing.



MCR protection for 2-pole power supply, 12 V

Type	U max DC V	U max AC V	Pack. pcs	Weight kg/100 pcs.	Item No.
VF12-AC DC	18	13.5	1	9.000	5097 45 3

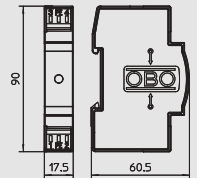
/pc.



MCR protection for 2-pole power supply, 24 V

Type	U max DC V	U max AC V	Pack. pcs	Weight kg/100 pcs.	Item No.
VF24-AC/DC	46	34	1	8.000	5097 60 7

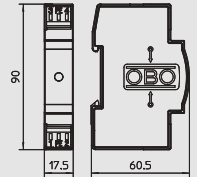
/pc.



MCR protection for 2-pole power supply, 48 V

Type	U max DC V	U max AC V	Pack. pcs	Weight kg/100 pcs.	Item No.
VF48-AC/DC	80	60	1	8.000	5097 61 5

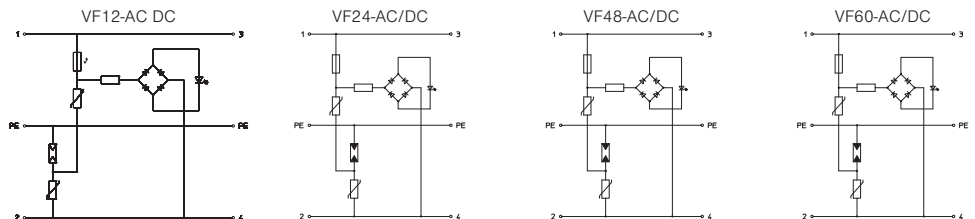
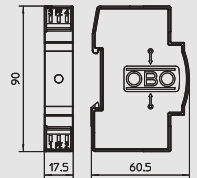
/pc.



MCR protection for 2-pole power supply, 60 V

Type	U max DC V	U max AC V	Pack. pcs	Weight kg/100 pcs.	Item No.
VF60-AC/DC	110	80	1	8.000	5097 62 3

/pc.



	VF12-AC DC	VF24-AC/DC	VF48-AC/DC	VF60-AC/DC
U max AC	U _c AC V	13.5	34	60
U max DC	U _c DC V	18	46	80
SPD to EN 61643-11		Type 3	Type 3	Type 3
SPD to IEC 61643-11		class III	class III	class III
Lightning protection zone LPZ		2-3	2-3	2-3
Nominal discharge current (8/20)	I _n kA	0.7	0.7	0.7
Rated current	I _L A	20	20	20
Voltage protection level line-line	V	<110	<130	<220
Voltage protection level line-earth	V	<1200	<1200	<1200
Response time	t _A ns	< 25	< 25	< 25
Temperature range	θ °C	-40 - +80	-40 - +80	-40 - +80
Protection rating		IP 20	IP 20	IP 20
Division unit TE (17.5 mm)		1	1	1
Connection cross-section, rigid	mm ²	0,14 - 2,5	0,14 - 2,5	0,14 - 2,5
Connection cross-section, multi-wire	mm ²	0,14 - 2,5	0,14 - 2,5	0,14 - 2,5
Connection cross-section, flexible	mm ²	0,14 - 2,5	0,14 - 2,5	0,14 - 2,5
Item No.		5097 45 3	5097 60 7	5097 61 5

Surge protection, type 1 / type 1+2 / type 2 / type 3

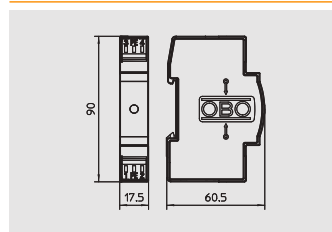


MCR protection for 2-pole power supply

Surge protection device, fine protection type 3 for distributor installation

- 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 connection

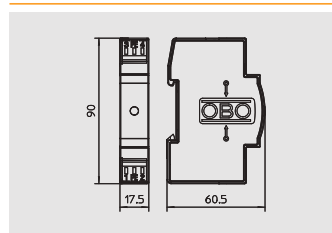
Application: Universal use on 35 mm U-rail in every normal commercially available distribution housing.



MCR protection for 2-pole power supply, 110 V

Type	U max DC V	U max AC V	Pack. pcs	Weight kg/100 pcs.	Item No.
VF110-AC DC	200	150	1	8.000	5097 63 1

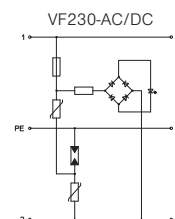
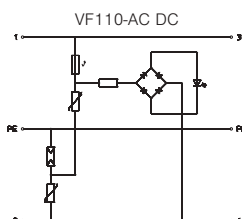
/pc.



MCR protection for 2-pole power supply, 230 V

Type	U max DC V	U max AC V	Pack. pcs	Weight kg/100 pcs.	Item No.
VF230-AC/DC	350	255	1	8.000	5097 65 0

/pc.



U max AC	U _c AC V	150
U max DC	U _c DC V	200
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 kA	2
Rated current	I _L A	20
Voltage protection level line-line	V	<500
Voltage protection level line-earth	V	<1400
Response time	t _A ns	<25
Temperature range	θ °C	-40 - +80
Protection rating		IP 20
Division unit TE (17.5 mm)		1
Connection cross-section, rigid	mm ²	0,14 - 2,5
Connection cross-section, multi-wire	mm ²	0,14 - 2,5
Connection cross-section, flexible	mm ²	0,14 - 2,5
Item No.		5097 63 1

		255
		350
		Type 3
		class III
		2→3
		2.5
		20
		<1000
		<1400
		<25
		-40 - +80
		IP 20
		1
		0,14 - 2,5
		0,14 - 2,5
		0,14 - 2,5
		5097 65 0



MCR protection for 2-pole power supply with remote signalling



Surge protection device, fine protection type 3 for distributor installation

- 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 connection

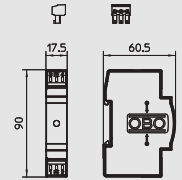
Application: Universal use on 35 mm U-rail in every normal commercially available distribution housing.



MCR protection for 2-pole power supply with remote signalling, 12 V AC/DC

Type	Version	U max DC V	U max AC V	Pack. pcs	Weight kg/100 pcs	Item No.
VF12-AC/DC-FS	—	18	13.5	1	6.400	5097 45 4

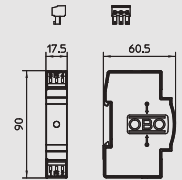
/pc.



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

Type	Version	U max DC V	U max AC V	Pack. pcs	Weight kg/100 pcs	Item No.
VF24-AC/DC-FS	2-pole	46	34	1	6.620	5097 82 0

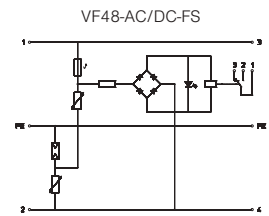
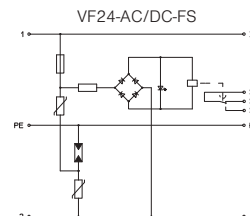
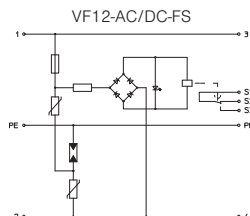
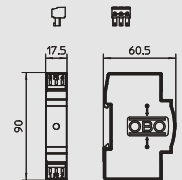
/pc.



MCR protection for 2-pole power supply with remote signalling, 48 V AC/DC

Type	Version	U max DC V	U max AC V	Pack. pcs	Weight kg/100 pcs	Item No.
VF48-AC/DC-FS	—	80	60	1	6.630	5097 82 2

/pc.



U max AC	U _c AC	V	13.5	34	60
U max DC	U _c DC	V	18	46	80
SPD to EN 61643-11			Type 3	Type 3	Type 3
SPD to IEC 61643-11			class III	class III	class III
Lightning protection zone LPZ			2→3	2→3	2→3
Nominal discharge current (8/20)	I _n	kA	0,7	0,7	0,7
Rated current	I _L	A	20	20	20
Voltage protection level line-line		V	<110	<160	<220
Voltage protection level line-earth		V	<1200	<1200	<1200
Response time	t _A	ns	< 25	< 25	< 25
Temperature range	θ	°C	-40 - +80	-40 - +80	-40 - +80
Protection rating			20	IP 20	IP 20
Division unit TE (17.5 mm)			1	1	1
Connection cross-section, rigid		mm ²	0,14 - 2,5	0,14 - 2,5	0,14 - 2,5
Connection cross-section, multi-wire		mm ²	0,14 - 2,5	0,14 - 2,5	0,14 - 2,5
Connection cross-section, flexible		mm ²	0,14 - 2,5	0,14 - 2,5	0,14 - 2,5
Item No.			5097 45 4	5097 82 0	5097 82 2



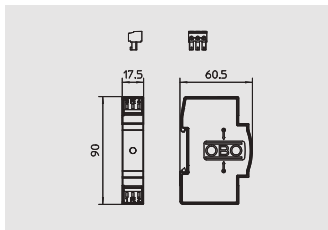
MCR protection for 2-pole power supply with remote signalling

Surge protection device, fine protection type 3 for distributor installation

- 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 connection



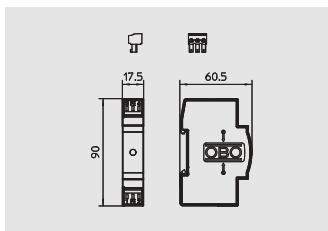
Application: Universal use on 35 mm U-rail in every normal commercially available distribution housing.



MCR protection for 2-pole power supply with remote signalling, 60 V AC

Type	Version	U max DC V	U max AC V	Pack. pcs	Weight kg/100 pcs	Item No.
VF60-AC/DC-FS	—	110	80	1	6.900	5097 82 4

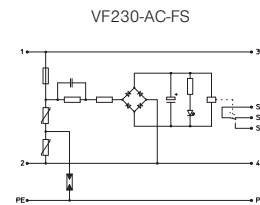
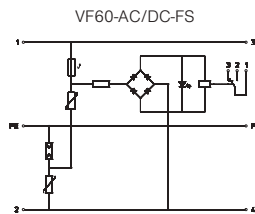
/pc.



MCR protection for 2-pole power supply with remote signalling, 230 V AC

Type	U max AC V	U max DC V	Pack. pcs	Weight kg/100 pcs	Item No.
VF230-AC-FS	255	—	1	6.910	5097 85 8

/pc.



U max AC	U _c AC V	80	255
U max DC	U _c DC V	110	
SPD to EN 61643-11		Type 3	Type 3
SPD to IEC 61643-11		class III	class III
Lightning protection zone LPZ		2→3	2→3
Nominal discharge current (8/20)	I _n kA	0.7	2.5
Rated current	I _L A	20	20
Voltage protection level line-line	V	<280	<1060
Voltage protection level line-earth	V	<1200	<1400
Response time	t _A ns	<25	<25
Temperature range	θ °C	-40 - +80	-40 - +80
Protection rating		IP 20	IP 20
Division unit TE (17.5 mm)		1	1
Connection cross-section, rigid	mm ²	0,14 - 2,5	0,14 - 2,5
Connection cross-section, multi-wire	mm ²	0,14 - 2,5	0,14 - 2,5
Connection cross-section, flexible	mm ²	0,14 - 2,5	0,14 - 2,5
Item No.		5097 82 4	5097 85 8



PV type 2 surge protection complete block, 600 V and 1000 V DC

Type	LPZ	Type	LPZ
2	1→2	1+2	0→2



Surge arrester type 2 for PV systems

- Varistor arrester, screwless with cut-off unit in error-resistant Y circuit to VDE 0100-712 (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)
- Discharge capacity up to 40 kA (8/20) per pole
- Low DC protection level: < 4.0 kV (Uoc max = 1,000V DC with V 20-C/0-500 PV)
- Low DC protection level: < 2.6 kV (Uoc max = 600V DC with V 20-C/0-300 PV)
- With visual function display for the application in distributor housings

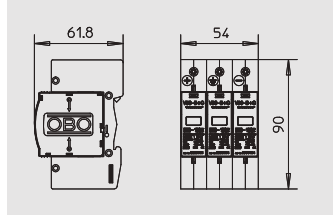
Application: Photovoltaic systems without or with separately insulated lightning protection system
Protection devices to be selected depending on the maximum open-circuit voltage Uoc.



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	5094 60 8

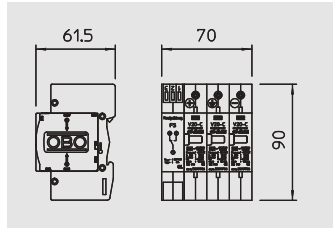
/pc.



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	5094 57 4

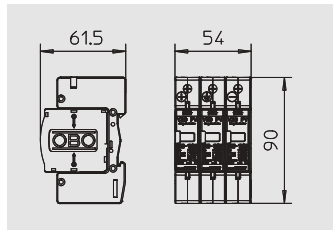
/pc.



PV surge protection V20, 600 V DC

Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 3PH-600	600	3-pole for PV systems	1	33.500	5094 60 5

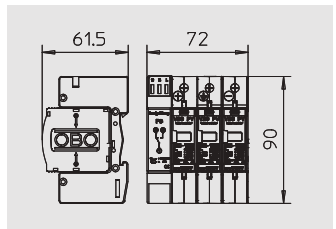
/pc.



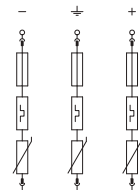
PV surge protection V20, 600 V DC with remote signalling

Type	U max DC V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 3PHFS-600	600	3-pole for PV systems with FS	1	41.500	5094 57 6

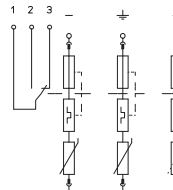
/pc.



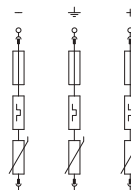
V20-C 3-PH-1000



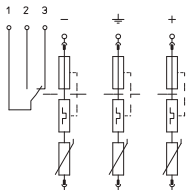
V20-C 3PHFS-1000



V20-C 3PH-600



V20-C 3PHFS-600



U max DC	U _c DC V	1000	1000	600	600
SPD to EN 61643-11		Type 2	Type 2	Type 2	Type 2
Lightning protection zone LPZ		1→2	1→2	1→2	1→2
Nominal discharge current (8/20)	I _n kA	20	20	20	20
Maximum discharge current	I _{max} kA	40	40	40	40
Voltage protection level	U _p kV	< 4,0	< 4,0	< 2,6	< 2,6
Response time	t _A ns	< 25	< 25	< 25	< 25
Temperature range	θ °C	-40 - +80	-40 - +80	-40 - +80	-40 - +80
Protection rating		IP 20	IP 20	IP 20	IP 20
Division unit TE (17.5 mm)		3	4	3	4
Connection cross-section, rigid	mm ²	2,5 - 35	2,5 - 35	2,5 - 35	2,5 - 35
Connection cross-section, multi-wire	mm ²	2,5 - 35	2,5 - 35	2,5 - 35	2,5 - 35
Connection cross-section, flexible	mm ²	2,5 - 25	2,5 - 25	2,5 - 25	2,5 - 25
Item No.		5094 60 8	5094 57 4	5094 60 5	5094 57 6



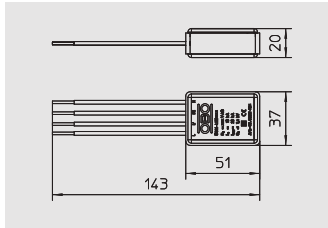
Surge arrester ÜSM for LED-drivers and LED lamps

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



- With visual operation display
- In a small size for the installation in the pole or in the LED lamp head
- 1+NPE protective circuit with a maximum discharge capacity of 20 kA
- Available with or without cut-off function of the lamp in case of malfunction

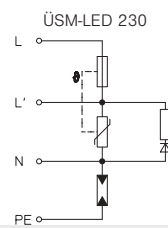
Application: Universally deployable in all lighting systems



Surge arrester ÜSM for LED drivers and LED lamps

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
ÜSM-LED 230	255	1 + NPE	1	3.500	5092 48 0

/pc.








Nominal voltage	U_N	V	230
SPD to EN 61643-11			Type 2
SPD to IEC 61643-11			class II
Lightning protection zone LPZ			1-3
Nominal discharge current (8/20)	I_n	kA	10
Arrestor surge current (8/20) [total]	I_{Total}	kA	20
Maximum discharge current	I_{max}	kA	20
Voltage protection level	U_p	kV	1,3
Response time	t_A	ns	< 25
Maximum back-up fuse		A	16
Temperature range	ϑ	°C	-15 - +60
Division unit TE (17,5 mm)			Others
Protection rating			IP20
Connecting cable length	m		0.09
Item No.			5092 48 0





Surge protection for data and information technology

	Surge protection	For telecommunication	82
	MCR protection	2-pole power supply	83
	MCR protection	Two-core systems	83
	MCR protection	Multi-wire system (testable)	90
	MCR protection	Explosive areas	97

Surge protection for telecommunication systems



Data cable protection devices for telecommunications equipment

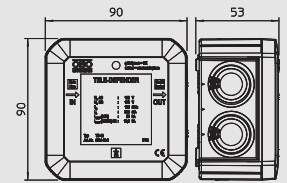
- Available as basic, medium and fine protection
- Low protection level at high current load
- Screwless terminals
- Bandwidth-optimised for secure transmission
- Quick mounting on hat rail or wall mounting

Application: DSL systems, ISDN or analogue telecommunications



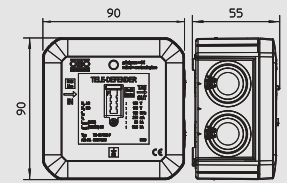
Surge arrester for telecommunication

Type	Connection system	Pack.	Weight	Item No.
		pcs	kg/100 pcs.	
TD-4/I	Terminal	1	11.000	5081 69 0
Plastic				/pc.



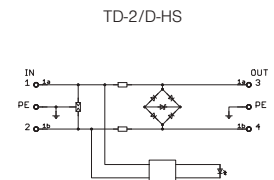
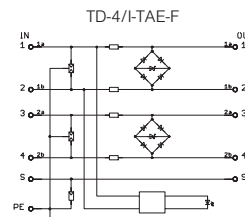
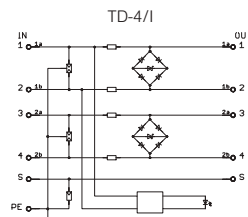
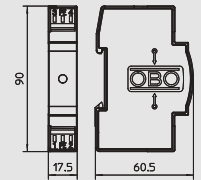
Surge arrester with TAE connection

Type	Connection system	Pack.	Weight	Item No.
		pcs	kg/100 pcs.	
TD-4/I-TAE-F	Terminal	1	12.300	5081 69 2
Plastic				/pc.



Surge arrester for hat rail

Type	Connection system	Pack.	Weight	Item No.
		pcs	kg/100 pcs.	
TD-2/D-HS	Terminal	1	4.800	5081 69 4
Plastic				/pc.



Maximum continuous voltage Vc/AC	V	120	120	120
Maximum continuous voltage Vc/DC	V	170	170	170
Lightning protection zone LPZ		0-2	0-2	0-2
Number of poles		4	4	2
Nominal load current IL AC	A	0.14	0.14	0.14
Nominal load current IL DC	A	0.2	0.2	0.2
Capacity (wire-wire)		< 50 pF	< 50 pF	< 50 pF
Capacity (wire-earth)		< 10 pF	< 10 pF	< 50 pF
Serial impedance per path	Ω	9Ω ± 10 %	9Ω ± 10 %	9Ω ± 10 %
Total arrester peak current (8/20)	kA	25	25	10
Total impulse durability (10/350)	kA	D1: 12,5	D1: 12,5	D1: 5 kA
Protection level line-line (1a-ab/2a-2b)	V	300	300	300
Protection level line-earth (1a-ab/2a-2b-PE)	V	650	650	650
Protection level screen-earth (S-PE)	V	850	850	850
Temperature range	θ °C	-40 - +80	-40 - +80	-40 - +80
Installation type		Surface-mounted	Surface-mounted	Hat rail 35 mm
Protection rating		IP54	IP20	IP20
Shielding connection available		Yes	Yes	No
Shield connection		Indirect	Indirect	Direct
Connection cross-section, flexible	mm ²	0,14 - 0,75	0,14 - 0,75	0,14 - 2,5
Connection cross-section, multi-wire	mm ²	0,14 - 0,75	0,14 - 0,75	0,14 - 2,5
Connection cross-section, rigid	mm ²	0,14 - 0,75	0,14 - 0,75	0,14 - 2,5
Testing standard		IEC 61643-21	IEC 61643-21	IEC 61643-21
Item No.		5081 69 0	5081 69 2	5081 69 4



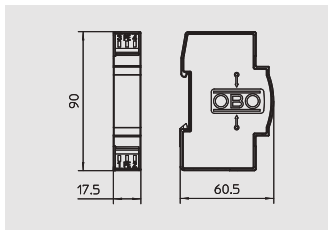
MCR protection for two-core systems

Data cable protection devices for two-wire dual core systems

- Available as basic, medium and fine protection
- Low protection level at high current load
- Screwless terminals
- Bandwidth-optimised for secure transmission
- Quick mounting on hat rail or wall mounting



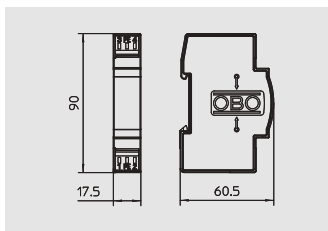
Application: Control systems, bus systems, communications systems



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

Type	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
TKS-B	120	170	2	Terminal	1	4.400	5097 97 6

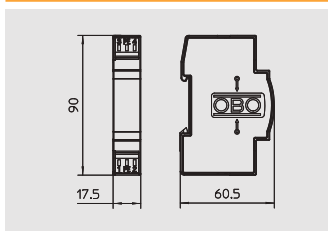
/pc.



Combination protection for two-core systems with HF applications 5 V

Type	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FRD 5 HF	4	6	2	Terminal	1	4.400	5098 57 1

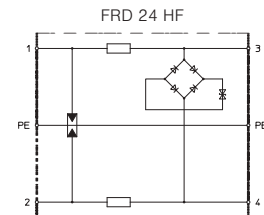
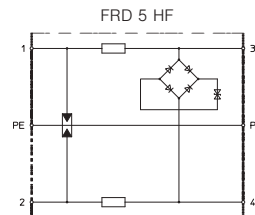
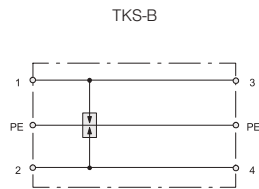
/pc.



Combination protection for two-core systems with HF applications 24 V

Type	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FRD 24 HF	19	28	2	Terminal	1	4.400	5098 57 5

/pc.



		TKS-B	FRD 5 HF	FRD 24 HF
Maximum continuous voltage Vc/AC	V	120	4	19
Maximum continuous voltage Vc/DC	V	170	6	28
Lightning protection zone LPZ		0-3	0-3	0-3
Number of poles		2	2	2
Rated current	I_L A	20	0.45	0.45
Serial impedance per path	Ω	-	2,2 ± 10 %	2,2 ± 10 %
Impulse durability line-line		C2: 18 kV / 9 kA	C2: 18 kV / 9 kA	C2: 18 kV / 9 kA
Impulse durability line-earth		C2: 18 kV / 9 kA	C2: 18 kV / 9 kA	C2: 18 kV / 9 kA
Total impulse durability (10/350)	kA	D1: 6	D1: 6	D1: 6
Total arrester peak current (8/20)	kA	18	18	18
Voltage protection level line-line	V	950	90	120
Voltage protection level line-earth	V	600	650	650
Shielding connection available		No	No	No
Shield connection		-	-	-
Temperature range	ϑ °C	-40 - +80	-40 - +80	-40 - +80
Division unit TE (17.5 mm)		1	1	1
Connection cross-section, flexible	mm ²	0,14 - 2,5	0,14 - 2,5	0,14 - 2,5
Connection cross-section, multi-wire	mm ²	0,14 - 2,5	0,14 - 2,5	0,14 - 2,5
Connection cross-section, rigid	mm ²	0,14 - 2,5	0,14 - 2,5	0,14 - 2,5
Testing standard		IEC 61643-21	IEC 61643-21	IEC 61643-21
Item No.		5097 97 6	5098 57 1	5098 57 5

12 LSB Lösungskatalog_Schalterschrankbau 2014 / en / 28/03/2014 (LLExpert_01699) / 28/03/2014

Surge protection for data and information technology



MCR protection for two-core systems



Surge protection for use in measurement and control technology

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

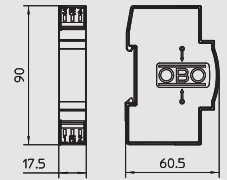
Application: Universal use on any 35 mm hat profile rail in every commercially available distributor housing.



Medium and fine protection for two-core systems 5 V

Type	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FRD 5	5	8	2	Terminal	1	5.100	5098 49 2

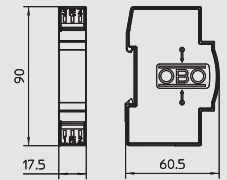
/pc.



Medium and fine protection for two-core systems 12 V

Type	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FRD 12	9	13	2	Terminal	1	5.100	5098 50 6

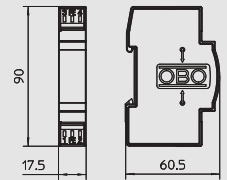
/pc.



Medium and fine protection for two-core systems 24 V

Type	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FRD 24	19	28	2	Terminal	1	5.100	5098 51 4

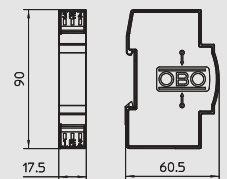
/pc.



Medium and fine protection for two-core systems 48 V

Type	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FRD 48	37	53	2	Terminal	1	5.100	5098 52 2

/pc.

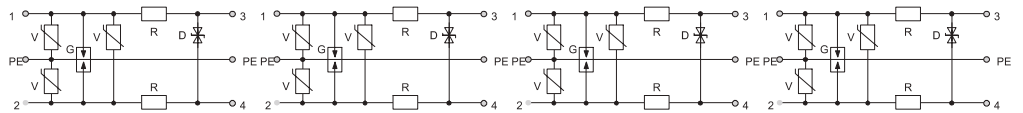


FRD 5

FRD 12

FRD 24

FRD 48



Maximum continuous voltage Vc/AC	V	5	9	19	37
Maximum continuous voltage Vc/DC	V	8	13	28	53
Lightning protection zone LPZ		0-3	0-3	0-3	0-3
Number of poles		2	2	2	2
Rated current	I_L	A	0.2	0.2	0.2
Serial impedance per path	Ω		15 ± 10 %	15 ± 10 %	15 ± 10 %
Impulse durability line-line			C1: 0,5 kV / 0,5 kA	C1: 1 kV / 0,5 kA	C2: 5 kV / 2,5 kA
Impulse durability line-earth			C2: 10 kV / 5 kA	C2: 10 kV / 5 kA	C2: 10 kV / 5 kA
Total impulse durability (10/350)	kA		D1: 3 kA	D1: 3	D1: 3
Total arrester peak current (8/20)	kA		10	10	10
Voltage protection level line-line	V		15	30	60
Voltage protection level line-earth	V		600	600	600
Shielding connection available			No	No	No
Shield connection			-	-	-
Temperature range	ϑ	°C	-40 - +80	-40 - +80	-40 - +80
Division unit TE (17.5 mm)			1	1	1
Connection cross-section, flexible	mm ²		0,14 - 2,5	0,14 - 2,5	0,14 - 2,5
Connection cross-section, multi-wire	mm ²		0,14 - 2,5	0,14 - 2,5	0,14 - 2,5
Connection cross-section, rigid	mm ²		0,14 - 2,5	0,14 - 2,5	0,14 - 2,5
Testing standard			IEC 61643-21	IEC 61643-21	IEC 61643-21
Item No.			5098 49 2	5098 50 6	5098 51 4
					5098 52 2



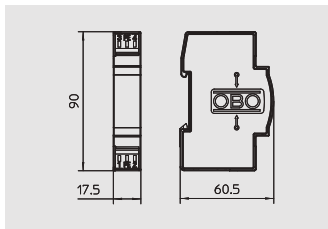
MCR protection for two-core systems

Surge protection for use in measurement and control technology



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

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



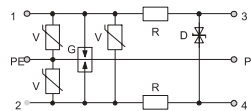
Medium and fine protection for two-core systems 110 V

Type	Max. continuous operating voltage V_c /AC V	Max. continuous operating voltage V_c /DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FRD 110	86	122	2	Terminal	1	5.100	5098 55 7

/pc.



FRD 110



Maximum continuous voltage V_c /AC	V	86
Maximum continuous voltage V_c /DC	V	122
Lightning protection zone LPZ		0-3
Number of poles		2
Rated current	I_L A	0.2
Serial impedance per path	Ω	15 ± 10 %
Impulse durability line-line		C2: 5 kV / 2,5 kA
Impulse durability line-earth		C2: 10 kV / 5 kA
Total impulse durability (10/350)	kA	D1: 3
Total arrester peak current (8/20)	kA	10
Voltage protection level line-line	V	300
Voltage protection level line-earth	V	600
Shielding connection available		No
Shield connection		-
Temperature range	ϑ °C	-40 - +80
Division unit TE (17.5 mm)		1
Connection cross-section, flexible	mm ²	0,14 - 2,5
Connection cross-section, multi-wire	mm ²	0,14 - 2,5
Connection cross-section, rigid	mm ²	0,14 - 2,5
Testing standard		IEC 61643-21
Item No.		5098 55 7

MCR protection for two-core systems



Surge protection for use in measurement and control technology

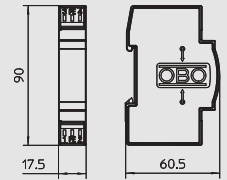
- Medium and fine protection
- Standard design for single core systems
- Two-stage protection circuit
- With installation-friendly, screwless connection terminals
- In space-saving 17.5 mm grid
- With inductive decoupling in the longitudinal branch

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

Medium and fine protection for two-core systems 5 V

Type	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FLD 5	5	8	2	Terminal	1	5.200	5098 60 0

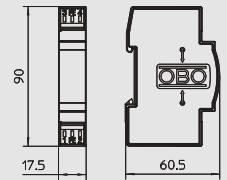
/pc.



Medium and fine protection for two-core systems 12 V

Type	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FLD 12	9	13	2	Terminal	1	5.200	5098 60 3

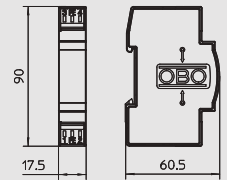
/pc.



Medium and fine protection for two-core systems 24 V

Type	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FLD 24	19	28	2	Terminal	1	5.200	5098 61 1

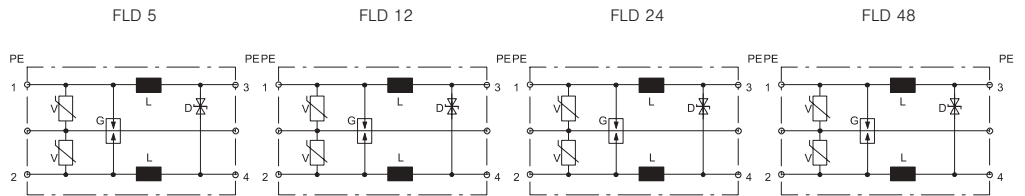
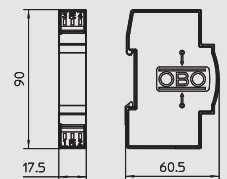
/pc.



Medium and fine protection for two-core systems 48 V

Type	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FLD 48	37	53	2	Terminal	1	5.200	5098 63 0

/pc.



Maximum continuous voltage Vc/AC	V	5	9	19	37
Maximum continuous voltage Vc/DC	V	8	13	28	53
Lightning protection zone LPZ		0-3	0-3	0-3	0-3
Number of poles		2	2	2	2
Rated current	I_L	A	1	1	1
Series induction per path	μH	120 ± 20 %	120 ± 20 %	120 ± 20 %	120 ± 20 %
Impulse durability line-line		C1: 1 kV / 0,5 kA	C1: 1 kV / 0,5 kA	C1: 5 kV / 2,5 kA	C1: 5 kV / 2,5 kA
Impulse durability line-earth		C2: 10 kV / 5 kA	C2: 10 kV / 5 kA	C2: 10 kV / 5 kA	C2: 10 kV / 5 kA
Total impulse durability (10/350)	kA	D1: 3	D1: 3	D1: 3	D1: 3
Total arrester peak current (8/20)	kA	10	10	10	10
Voltage protection level line-line	V	15	30	60	140
Voltage protection level line-earth	V	600	600	600	600
Shielding connection available		No	No	No	No
Shield connection		-	-	-	-
Temperature range	ϑ	°C	-40 - +80	-40 - +80	-40 - +80
Division unit TE (17.5 mm)			1	1	1
Connection cross-section, flexible	mm ²	0,14 - 2,5	0,14 - 2,5	0,14 - 2,5	0,14 - 2,5
Connection cross-section, multi-wire	mm ²	0,14 - 2,5	0,14 - 2,5	0,14 - 2,5	0,14 - 2,5
Connection cross-section, rigid	mm ²	0,14 - 2,5	0,14 - 2,5	0,14 - 2,5	0,14 - 2,5
Testing standard		IEC 61643-21	IEC 61643-21	IEC 61643-21	IEC 61643-21
Item No.		5098 60 0	5098 60 3	5098 61 1	5098 63 0



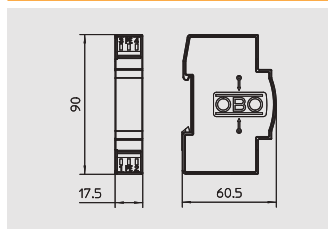
Surge protection for use in measurement and control technology

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



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

Medium and fine protection for two-core systems 60 V

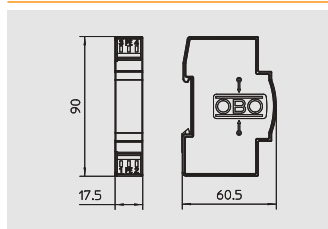


Type	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FLD 60	65	93	2	Terminal	1	5.200	5098 63 8

/pc.

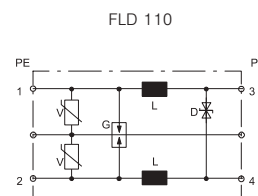
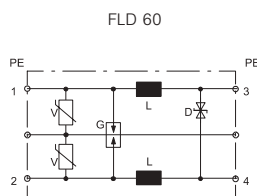


Medium and fine protection for two-core systems 110 V



Type	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FLD 110	86	122	2	Terminal	1	5.200	5098 64 6

/pc.



Maximum continuous voltage Vc/AC	V	65	86
Maximum continuous voltage Vc/DC	V	93	122
Lightning protection zone LPZ		0-3	0-3
Number of poles		2	2
Rated current	I _L A	1	1
Series induction per path	μH	120 ± 20 %	120 ± 20 %
Impulse durability line-line		C1: 1 kV / 0,5 kA	C1: 1 kV / 0,5 kA
Impulse durability line-earth		C2: 10 kV / 5 kA	C1: 1 kV / 0,5 kA
Total impulse durability (10/350)	kA	D1: 3	D1: 3
Total arrester peak current (8/20)	kA	10	10
Voltage protection level line-line	V	160	300
Voltage protection level line-earth	V	600	600
Shielding connection available		No	No
Shield connection		-	-
Temperature range	θ °C	-40 - +80	-40 - +80
Division unit TE (17,5 mm)		1	1
Connection cross-section, flexible	mm ²	0,14 - 2,5	0,14 - 2,5
Connection cross-section, multi-wire	mm ²	0,14 - 2,5	0,14 - 2,5
Connection cross-section, rigid	mm ²	0,14 - 2,5	0,14 - 2,5
Testing standard		IEC 61643-21	IEC 61643-21
Item No.		5098 63 8	5098 64 6

MCR protection for two-core systems



Surge protection for use in measurement and control technology

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

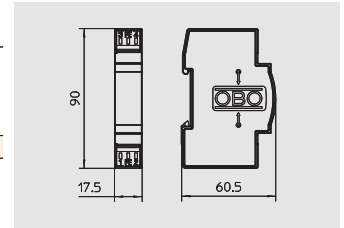
Application: Universal use on any 35 mm hat profile rail in every commercially available distributor housing.



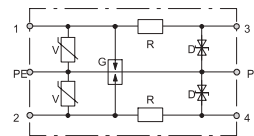
Medium and fine protection for two-core systems 24 V

Type	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FRD 2-24	19	28	2	Terminal	1	5.100	5098 72 7

/pc.



FRD 2-24



Maximum continuous voltage Vc/AC	V	19
Maximum continuous voltage Vc/DC	V	28
Lightning protection zone LPZ		0→3
Number of poles		2
Rated current	I_L	A
Serial impedance per path		Ω
Impulse durability line-line		15 ± 10 %
Impulse durability line-earth		C2: 5 kV / 2,5 kA
Total Impulse durability	I_{Total}	C2: 5 kV / 2,5 kA
Voltage protection level line-line	V	C2: 10kV / 5 kA
Voltage protection level line-earth	V	120
Shielding connection available		60
Shield connection		No
Temperature range	ϑ	°C
Division unit TE (17.5 mm)		-40 - +80
Connection cross-section, flexible	mm ²	1
Connection cross-section, multi-wire	mm ²	0,14 - 2,5
Connection cross-section, rigid	mm ²	0,14 - 2,5
Testing standard		0,14 - 2,5
Item No.		IEC 61643-21
		5098 72 7



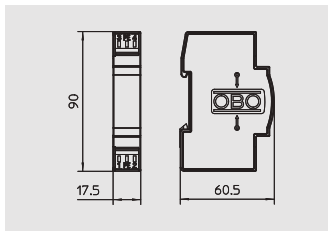
MCR protection for two-core systems

Surge protection for use in measurement and control technology



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

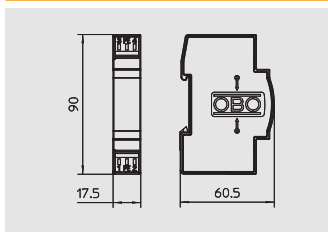
Application: Universal use on any 35 mm hat profile rail in every commercially available distributor housing.



Medium and fine protection for two-core systems 5 V

Type	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FLD 2-5	5	8	2	Terminal	1	5.100	5098 86 7

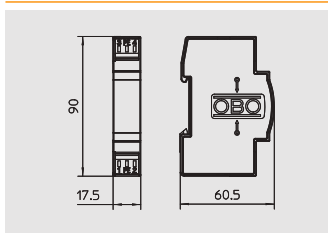
/pc.



Medium and fine protection for two-core systems 12 V

Type	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FLD 2-12	9	13	2	Terminal	1	5.100	5098 80 8

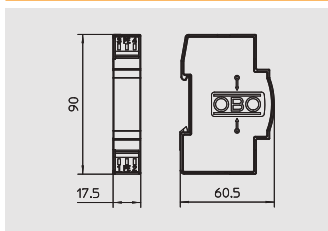
/pc.



Medium and fine protection for two-core systems 24 V

Type	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FLD 2-24	28	19	2	Terminal	1	5.100	5098 81 6

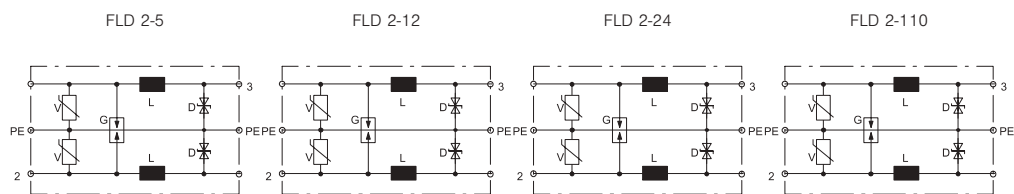
/pc.



Medium and fine protection for two-core systems 110 V

Type	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Number of poles	Connection system	Pack. pcs	Weight kg/100 pcs.	Item No.
FLD 2-110	86	122	2	Terminal	1	5.100	5098 85 9

/pc.



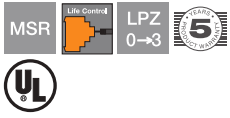
		FLD 2-5	FLD 2-12	FLD 2-24	FLD 2-110
Maximum continuous voltage Vc/AC	V	5	9	28	86
Maximum continuous voltage Vc/DC	V	8	13	19	122
Lightning protection zone LPZ		0-3	0-3	0-3	0-3
Number of poles		2	2	2	2
Rated current	I _L A	1	1	1	1
Series inductance per path	μH	120 ± 10 %	120 ± 10 %	120 ± 10 %	120 ± 10 %
Impulse durability line-line		C1: 1 kV / 0,5 kA	C1: 1 kV / 0,5 kA	C1: 1 kV / 0,5 kA	C1: 5 kV / 2,5 kA
Impulse durability line-earth		C1: 1 kV / 0,5 kA	C1: 1 kV / 0,5 kA	C1: 1 kV / 0,5 kA	C1: 5 kV / 2,5 kA
Total impulse durability	I _{Total} kA	C2: 2kV / 1 kA	C2: 2kV / 1 kA	C2: 2kV / 1 kA	C2: 10 kV / 5 kA
Voltage protection level line-line	V	30	60	120	500
Voltage protection level line-earth	V	15	30	60	300
Shielding connection available		No	No	No	No
Shield connection		-	-	-	-
Temperature range	θ °C	-40 - +80	-40 - +80	-40 - +80	-40 - +80
Division unit TE (17.5 mm)		1	1	1	1
Connection cross-section, flexible	mm ²	0,14 - 2,5	0,14 - 2,5	0,14 - 2,5	0,14 - 2,5
Connection cross-section, multi-wire	mm ²	0,14 - 2,5	0,14 - 2,5	0,14 - 2,5	0,14 - 2,5
Connection cross-section, rigid	mm ²	0,14 - 2,5	0,14 - 2,5	0,14 - 2,5	0,14 - 2,5
Testing standard		IEC 61643-21	IEC 61643-21	IEC 61643-21	IEC 61643-21
Item No.		5098 86 7	5098 80 8	5098 81 6	5098 85 9

12 LSB Lösungskatalog_Schalttechnikbau 2014 / en / 28/03/2014 (LLExpert_01699) / 28/03/2014

Surge protection for data and information technology



MCR protection for multi-wire systems (testable)



MDP.../D...T: lightning barrier with test function

- Nominal load current 0.58 A
- Protection device for multi-wire systems
- Direct shield earthing
- With easy-to-mount screwless connection terminals
- Space-saving width of just 8.1 mm
- Protection circuit testable with Life Control
- High bandwidth to 100 MHz

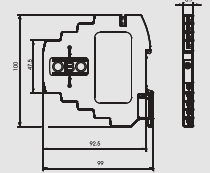
Application: Universal use on 35 mm hat profile rail in any standard distribution housing.



Series protection device, 2-pole, 5 V version

Type	Nominal voltage V	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-2 D-5-T	5	7	10	1	6.000	5098 40 4

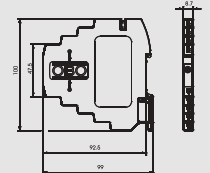
/pc.



Series protection device, 3-pole, 5 V version

Type	Nominal voltage V	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-3 D-5-T	5	7	10	1	6.000	5098 40 7

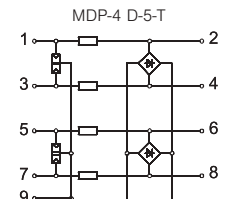
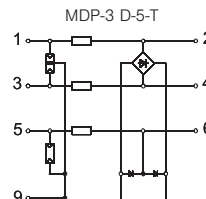
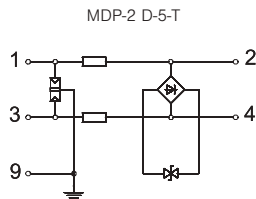
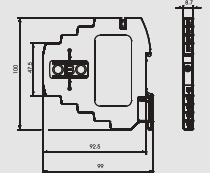
/pc.



Series protection device, 4-pole, 5 V version

Type	Nominal voltage V	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-4 D-5-T	5	7	10	1	6.000	5098 41 1

/pc.

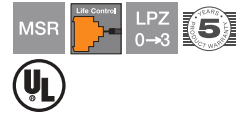


Maximum continuous voltage Vc/AC	V	7	7	7
Maximum continuous voltage Vc/DC	V	10	10	10
Lightning protection zone LPZ		0→3	0→3	0→3
Number of poles		2	3	4
Rated current	I_L	A	0.58	0.58
Serial impedance per path	Ω		2,35 ± 5 %	2,35 ± 5 %
Impulse durability line-line			C1: 0,5 kV / 0,25 kA	C1: 0,5 kV / 0,25 kA
Impulse durability line-earth			C2: 5 kV / 2,5 kA	C2: 5 kV / 2,5 kA
Total impulse durability (10/350)		kA	D1: 1	D1: 2kA
Total arrester peak current (8/20)		kA	5	7,5
Voltage protection level line-line		V	35	35
Voltage protection level line-earth		V	800	800
Shielding connection available			Yes	Yes
Shield connection			Direct	Direct
Temperature range	ϑ	°C	-40 - +80	-40 - +80
Connection cross-section, flexible		mm ²	2.5	2.5
Connection cross-section, multi-wire		mm ²	1.5	1.5
Connection cross-section, rigid		mm ²	2.5	2.5
Testing standard			IEC 61643-21	IEC 61643-21
Item No.			5098 40 4	5098 40 7
				5098 41 1



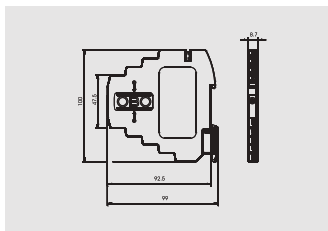
MCR protection for multi-wire systems (testable)

MDP.../D...T: lightning barrier with test function



- Nominal load current 0.58 A
- Protection device for multi-wire systems
- Direct shield earthing
- With easy-to-mount screwless connection terminals
- Space-saving width of just 8.1 mm
- Protection circuit testable with Life Control
- High bandwidth to 100 MHz

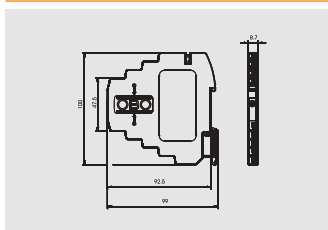
Application: Universal use on 35 mm hat profile rail in any standard distribution housing.



Series protection device, 2-pole, 24 V version

Type	Nominal voltage V	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-2 D-24-T	24	20	28	1	6.000	5098 42 2

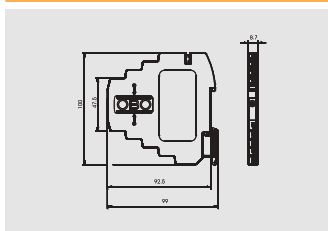
/pc.



Series protection device, 3-pole, 24 V version

Type	Nominal voltage V	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-3 D-24-T	24	20	28	1	6.000	5098 42 7

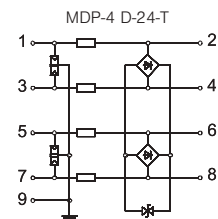
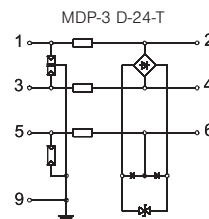
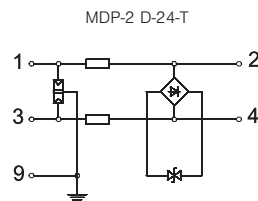
/pc.



Series protection device, 4-pole, 24 V version

Type	Nominal voltage V	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-4 D-24-T	24	20	28	1	5.800	5098 43 1

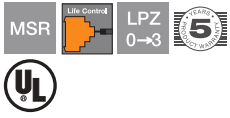
/pc.



Maximum continuous voltage Vc/AC	V	20	20	20
Maximum continuous voltage Vc/DC	V	28	28	28
Lightning protection zone LPZ		0-3	0-3	0-3
Number of poles		2	3	4
Rated current	I _L A	0.58	0.58	0.58
Serial impedance per path	Ω	2,35 ± 5 %	2,35 ± 5 %	2,35 ± 5 %
Impulse durability line-line		C1: 0,5 kV / 0,25 kA	C1: 0,5 kV / 0,25 kA	C1: 0,5 kV / 0,25 kA
Impulse durability line-earth		C2: 5 kV / 2,5 kA	C2: 5 kV / 2,5 kA	C2: 5 kV / 2,5 kA
Total impulse durability (10/350)	kA	D1: 1	D1: 1,5	D1: 2
Total arrester peak current (8/20)	kA	5	7,5	10 kA
Voltage protection level line-line	V	55	95	55
Voltage protection level line-earth	V	800	800	800
Shielding connection available		Yes	Yes	Yes
Shield connection		Direct	Direct	Direct
Temperature range	θ °C	-40 - +80	-40 - +80	-40 - +80
Connection cross-section, flexible	mm ²	2.5	2.5	2.5
Connection cross-section, multi-wire	mm ²	1.5	1.5	1.5
Connection cross-section, rigid	mm ²	2.5	2.5	2.5
Testing standard		IEC 61643-21	IEC 61643-21	IEC 61643-21
Item No.		5098 42 2	5098 42 7	5098 43 1



MCR protection for multi-wire systems (testable)



MDP.../D...T: lightning barrier with test function

- Nominal load current 0.58 A
- Protection device for multi-wire systems
- Direct shield earthing
- With easy-to-mount screwless connection terminals
- Space-saving width of just 8.1 mm
- Protection circuit testable with Life Control
- High bandwidth to 100 MHz

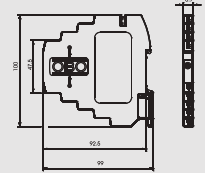
Application: Universal use on 35 mm hat profile rail in any standard distribution housing.



Series protection device, 2-pole, 48 V version

Type	Nominal voltage V	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-2 D-48-T	48	41	58	1	6.000	5098 44 2

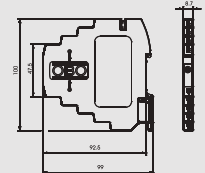
/pc.



Series protection device, 3-pole, 48 V version

Type	Nominal voltage V	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-3 D-48-T	48	41	58	1	6.000	5098 44 6

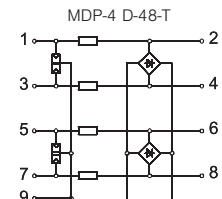
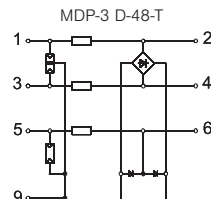
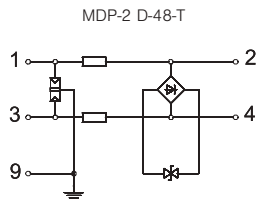
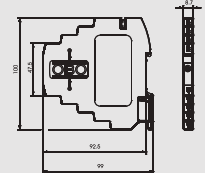
/pc.



Series protection device, 4-pole, 48 V version

Type	Nominal voltage V	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-4 D-48-T	48	41	58	1	5.800	5098 45 0

/pc.

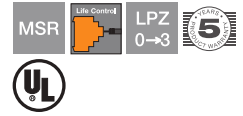


Maximum continuous voltage Vc/AC	V	41	41	41
Maximum continuous voltage Vc/DC	V	58	58	58
Lightning protection zone LPZ		0→3	0→3	0→3
Number of poles		2	3	4
Rated current	I _L A	0.58	0.58	0.58
Serial impedance per path	Ω	2,35 ± 5 %	2,35 ± 5 %	2,35 ± 5 %
Impulse durability line-line		C1: 0,5 kV / 0,25 kA	C1: 0,5 kV / 0,25 kA	C1: 0,5 kV / 0,25 kA
Impulse durability line-earth		C2: 5 kV / 2,5 kA	C2: 5 kV / 2,5 kA	C2: 5 kV / 2,5 kA
Total impulse durability (10/350)		D1: 1	D1: 1,5	D1: 2
Total arrester peak current (8/20)	kA	5	7,5	10
Voltage protection level line-line	V	95	95	95
Voltage protection level line-earth	V	800	800	800
Shielding connection available		Yes	Yes	Yes
Shield connection		Direct	Direct	Direct
Temperature range	θ °C	-40 - +80	-40 - +80	-40 - +80
Connection cross-section, flexible	mm ²	2,5	2,5	2,5
Connection cross-section, multi-wire	mm ²	1,5	1,5	1,5
Connection cross-section, rigid	mm ²	2,5	2,5	2,5
Testing standard		IEC 61643-21	IEC 61643-21	IEC 61643-21
Item No.		5098 44 2	5098 44 6	5098 45 0



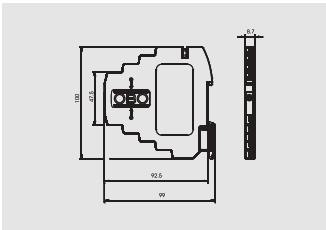
MCR protection for multi-wire systems (testable) to 10 A

MDP.../D...T: lightning barrier with test function



- Nominal load current 0.58 A
- Protection device for multi-wire systems
- Direct shield earthing
- With easy-to-mount screwless connection terminals
- Space-saving width of just 8.1 mm
- Protection circuit testable with Life Control
- High bandwidth to 100 MHz

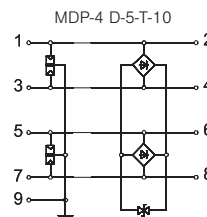
Application: Universal use on 35 mm hat profile rail in any standard distribution housing.



Series protection device, 4-pole, 5 V version

Type	Nominal voltage V	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-4 D-5-T-10	5	7	10	1	7.200	5098 41 3

/pc.



Maximum continuous voltage Vc/AC	V	7
Maximum continuous voltage Vc/DC	V	10
Lightning protection zone LPZ		0-3
Number of poles		4
Rated current	I_L A	10
Serial impedance per path	Ω	-
Impulse durability line-line		C1: 0,5 kV / 0,25 kA
Total Impulse durability (10/350)	kA	D1: 2
Total arrester peak current (8/20)	kA	10
Voltage protection level line-line	V	45
Voltage protection level line-earth	V	800
Shielding connection available		Yes
Shield connection		Direct
Temperature range	θ °C	-40 - +80
Connection cross-section, flexible	mm ²	2.5
Connection cross-section, multi-wire	mm ²	1.5
Connection cross-section, rigid	mm ²	2.5
Testing standard		IEC 61643-21
Item No.		5098 41 3



MCR protection for multi-wire systems (testable) to 10 A



MDP.../D...T: lightning barrier with test function

- Nominal load current 0.58 A
- Protection device for multi-wire systems
- Direct shield earthing
- With easy-to-mount screwless connection terminals
- Space-saving width of just 8.1 mm
- Protection circuit testable with Life Control
- High bandwidth to 100 MHz

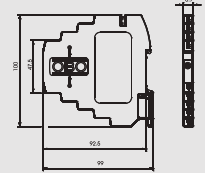
Application: Universal use on 35 mm hat profile rail in any standard distribution housing.



Series protection device, 2-pole, 12 V version

Type	Nominal voltage V	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-2 D-12-T-10	12	10.5	15	1	6.000	5098 41 5

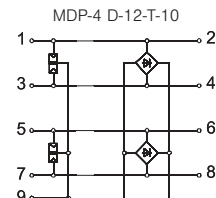
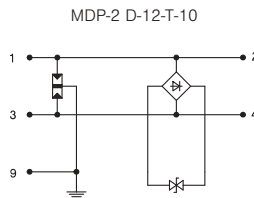
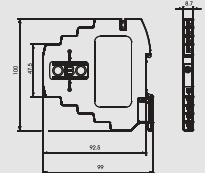
/pc.



Series protection device, 4-pole, 12 V version

Type	Nominal voltage V	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-4 D-12-T-10	12	10.5	15	1	6.000	5098 41 9

/pc.

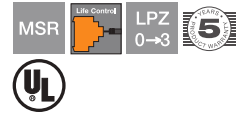


Maximum continuous voltage Vc/AC	V	10.5	10.5
Maximum continuous voltage Vc/DC	V	15	15
Lightning protection zone LPZ		0-3	0-3
Number of poles		2	4
Rated current	I_L	A	10
Serial impedance per path	Ω	-	-
Impulse durability line-line		C1: 0,5 kV / 0,25 kA	
Total impulse durability (10/350)		D1: 1	
Total arrester peak current (8/20)		5	
Voltage protection level line-line		55	
Voltage protection level line-earth		800	
Shielding connection available		Yes	
Shield connection		Direct	
Temperature range	ϑ	$^{\circ}\text{C}$	-40 - +80
Connection cross-section, flexible		mm^2	2.5
Connection cross-section, multi-wire		mm^2	1.5
Connection cross-section, rigid		mm^2	2.5
Testing standard			IEC 61643-21
Item No.			5098 41 5
			5098 41 9



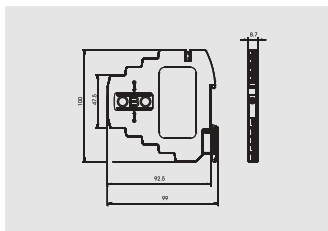
MCR protection for multi-wire systems (testable) to 10 A

MDP.../D...T: lightning barrier with test function



- Nominal load current 0.58 A
- Protection device for multi-wire systems
- Direct shield earthing
- With easy-to-mount screwless connection terminals
- Space-saving width of just 8.1 mm
- Protection circuit testable with Life Control
- High bandwidth to 100 MHz

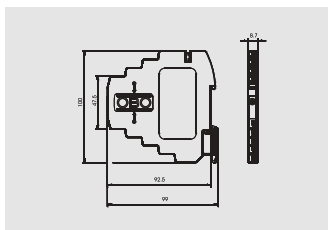
Application: Universal use on 35 mm hat profile rail in any standard distribution housing.



Series protection device, 2-pole, 24 V version

Type	Nominal voltage V	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-2 D-24-T-10	24	20	28	1	6.000	5098 42 5

/pc.



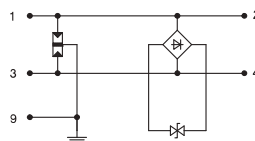
Series protection device, 4-pole, 24 V version

Type	Nominal voltage V	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-4 D-24-T-10	24	20	28	1	7.200	5098 43 3

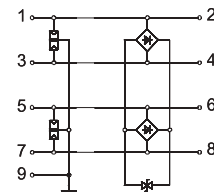
/pc.



MDP-2 D-24-T-10



MDP-4 D-24-T-10



Maximum continuous voltage Vc/AC	V	20	20
Maximum continuous voltage Vc/DC	V	28	28
Lightning protection zone LPZ		0-3	0-3
Number of poles		2	4
Rated current	I_L A	10	10
Serial impedance per path	Ω	-	-
Impulse durability line-line		C1: 0,5 kV / 0,25 kA	C1: 0,5 kV / 0,25 kA
Total impulse durability (10/350)	kA	D1: 1	D1: 2
Total arrester peak current (8/20)	kA	5	10
Voltage protection level line-line	V	70	70
Voltage protection level line-earth	V	800	800
Shielding connection available		Yes	Yes
Shield connection		Direct	Direct
Temperature range	ϑ °C	-40 - +80	-40 - +80
Connection cross-section, flexible	mm ²	2.5	2.5
Connection cross-section, multi-wire	mm ²	1.5	1.5
Connection cross-section, rigid	mm ²	2.5	2.5
Testing standard		IEC 61643-21	IEC 61643-21
Item No.		5098 42 5	5098 43 3

Accessories for MCR protection



Accessories for series terminal

Type	Pack.	Weight	Item No.
	pcs	kg/100 pcs.	
VB-MDP 10-MD	1	2.300	5098 47 0

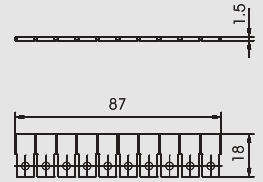
Cu Copper

/pc.

Connecting bridge for 8 mm lightning barriers

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

Application: Parallel switching of the MDP lightning barriers

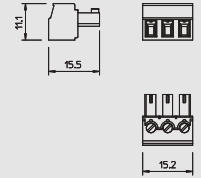


Replacement connector for VF remote signalling

Type	Version	Pack.	Weight	Item No.
		pcs	kg/100 pcs.	
VF-FS	3-pole	25	0.320	5098 47 5

/pc.

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

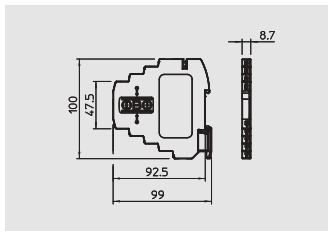


MDP.../D...-EX : lightning barrier for intrinsically-safe measuring circuits



- Protection device for multi-wire systems
- Direct shield earthing
- With easy-to-mount, screwless connection terminals
- Space-saving width of just 8.1 mm
- Ex-tested for intrinsically-safe measuring circuits
- High bandwidth up to 100 MHz

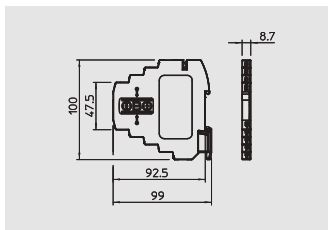
Application: universal use on 35 mm hat profile rail in any standard distribution housing.



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

Type	Nominal voltage V	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-4 D-5-EX	5	7	10	1	5.800	5098 41 2

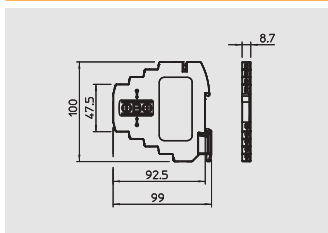
/pc.



Series protection device, 4-pole, 24 V version, Ex-tested

Type	Nominal voltage V	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-4 D-24-EX	24	20	28	1	5.800	5098 43 2

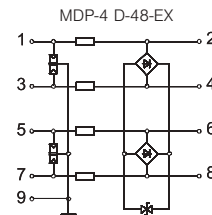
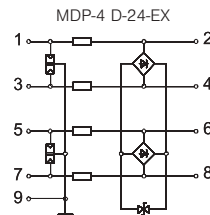
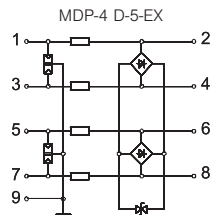
/pc.



Series protection device, 4-pole, 48 V version, Ex-tested

Type	Nominal voltage V	Max. continuous operating voltage Vc/AC V	Max. continuous operating voltage Vc/DC V	Pack. pcs	Weight kg/100 pcs.	Item No.
MDP-4 D-48-EX	48	41	58	1	5.800	5098 45 2

/pc.







Maximum continuous voltage Vc/AC	V	7	20	41
Maximum continuous voltage Vc/DC	V	10	28	58
Lightning protection zone LPZ		1-3	1-3	1-3
Number of poles		4	4	4
Rated current	I _L A	0.58	0.58	0.58
Serial impedance per path	Ω	2,35 ± 5 %	2,35 ± 5 %	2,35 ± 5 %
Impulse durability line-line		C1: 0.5 kV / 0.25 kA	C1: 0.5 kV / 0.25 kA	C1: 0.5 kV / 0.25 kA
Impulse durability line-earth		C2: 5 kV / 2,5 kA	C2: 5 kV / 2,5 kA	C2: 5 kV / 2,5 kA
Total impulse durability (10/350)	kA	D1: 2kA	D1: 2	D1: 2
Total arrester peak current (8/20)	kA	10 kA	10 kA	10
Voltage protection level line-line	V	35 V	55	95
Voltage protection level line-earth	V	800 V	800	800
Shielding connection available		Yes	Yes	Yes
Shield connection		Direct	Direct	Direct
Temperature range	θ °C	-40 - +80	-40 - +80	-40 - +80
Connection cross-section, flexible	mm ²	2.5	2.5	2.5
Connection cross-section, multi-wire	mm ²	1.5	1.5	1.5
Connection cross-section, rigid	mm ²	2.5	2.5	2.5
Ex approval		Ex II 2(1) G Ex ia IIC T4	Ex II 2(1) G Ex ia IIC T4	Ex II 2(1) G Ex ia IIC T4
Testing standard		IEC 61643-21	IEC 61643-21	IEC 61643-21
Item No.		5098 41 2	5098 43 2	5098 45 2





Directories

	Alphabetical table of contents
	Numeric directory
	Type listing
	Terms and conditions of sale and delivery



Alphabetical table of contents

A

Accessories for series terminal, 96

B

Basic protection for two-core systems with HF, 83
applications 120 V

C

Cable gland, EMC spring contact, metric, 60
Cable gland, EMC, metric, 60
Cable gland, metric thread, 59
Cable gland, PG thread, 59
Clamp clip, fastening earthing strips, 53
Clamp clip, hammer-head base, 3x single-wire, 53
connection
Clamp clip, single, plastic pressure trough, 53
Combination arrester, 1-pole, 65
Combination arrester, 1-pole NPE, 64
Combination arrester, 1-pole with function display, 65
Combination arrester, 3-pole, 65
Combination arrester, 3-pole NPE, 64
Combination protection for two-core systems with HF, 83
applications 24 V
Combination protection for two-core systems with HF, 83
applications 5 V
Connecting bridge for V10 Compact, 200 mm, 73
Connecting bridge for V10 Compact, 400 mm, 73
Connection plate, L-shaped, 50
Counter-trough, plastic, universal, 54
Cover, 35, 42
Cover clip, 42

D

Drilling screw, 50

E

End piece, 42

F

Front cover, 42

H

Hat and support rail cutting unit, 47
Hat profile rail, 46
Hat profile rail, perforated, 46
Hat profile rail, unperforated, 46

I

Identification plate, 37, 41

L

Lightning current and surge arrester, 1-pole + NPE, 68
Lightning current and surge arrester, 1-pole + NPE with, 69
remote signalling
Lightning current and surge arrester, 3-pole + NPE, 68
Lightning current and surge arrester, 3-pole + NPE with, 69
remote signalling
Lightning current arrester, 1-pole, 66
Lightning current arrester, 3-pole, 66

M

MCR protection for 2-pole power supply with remote, 77
signalling, 230 V AC
MCR protection for 2-pole power supply with remote, 76
signalling, 24 V AC/DC
MCR protection for 2-pole power supply with remote, 77
signalling, 60 V AC
MCR protection for 2-pole power supply with remote, 76
signalling, 12 V AC/DC
MCR protection for 2-pole power supply with remote, 76
signalling, 48 V AC/DC
MCR protection for 2-pole power supply, 110 V, 75
MCR protection for 2-pole power supply, 12 V, 74

M

MCR protection for 2-pole power supply, 24 V, 74
MCR protection for 2-pole power supply, 60 V, 74
MCR protection for 2-pole power supply, 230 V, 75
MCR protection for 2-pole power supply, 48 V, 74
Medium and fine protection for two-core systems 110 V, 85, 87, 89
Medium and fine protection for two-core systems 12 V, 84, 86, 89
Medium and fine protection for two-core systems 24 V, 84, 86, 88-89
Medium and fine protection for two-core systems 48 V, 84, 86
Medium and fine protection for two-core systems 5 V, 84, 86, 89
Medium and fine protection for two-core systems 60 V, 87
Mounting bracket, 90° with 2 holes, 49
Mounting bracket, 90° with 4 holes, 49
Mounting rail, MS41, 49

P

Plastic rivet tool, 36, 41
Profile rail, slot 11 mm, 48
Profile rail, slot 11 mm, dividable, 48
Profile rail, slot 12 mm, perforated, 48
Profile rail, slot 12 mm, unperforated, 48
Profile rail, slot 16.5 mm, 48
Profile rail, slot 17 mm, 49
Protection set MCD + V20 3-pole, 67
Protection set MCD + V20 3-pole + NPE, 67
Protection set MCD + V20 3-pole + NPE with remote, 67
signalling
Protection set MCD + V20 3-pole with remote signalling, 67
PV surge protection V20, 1,000 V DC, 78
PV surge protection V20, 1,000 V DC with remote, 78
signalling
PV surge protection V20, 600 V DC, 78
PV surge protection V20, 600 V DC with remote, 78
signalling

R

Release pliers, 36, 41
Replacement connector for VF remote signalling, 96

S

Series clip, slot 11–12 mm, 55
Series clip, slot 16–17 mm, 55
Series protection device, 2-pole, 12 V version, 94
Series protection device, 2-pole, 24 V version, 91
Series protection device, 2-pole, 48 V version, 92
Series protection device, 2-pole, 5 V version, 90
Series protection device, 2-pole, 24 V version, 95
Series protection device, 3-pole, 24 V version, 91
Series protection device, 3-pole, 48 V version, 92
Series protection device, 3-pole, 5 V version, 90
Series protection device, 4-pole, 12 V version, 94
Series protection device, 4-pole, 24 V version, 91, 95
Series protection device, 4-pole, 24 V version, Ex-, 97
tested
Series protection device, 4-pole, 48 V version, 92
Series protection device, 4-pole, 48 V version, Ex-, 97
tested
Series protection device, 4-pole, 5 V version, 90, 93
Series protection device, 4-pole, 5 V version, Ex-tested, 97
Spacer, 37
Spreading rivet, KSN 1, 36, 41
Spreading rivet, KSN 22, 36, 41
Support rail, 47
Surge arrester Compact, 72
Surge arrester Compact with acoustic signalling, 72
Surge arrester Compact with remote signalling, 72
Surge arrester for hat rail, 82
Surge arrester for telecommunication, 82
Surge arrester ÜSM for LED drivers and LED lamps, 79
Surge arrester with TAE connection, 82

S

- Surge arrester, 1-pole + NPE, 70
- Surge arrester, 1-pole + NPE with remote signalling, 71
- Surge arrester, 3-pole + NPE, 70
- Surge arrester, 3-pole + NPE with remote signalling, 71

W

- Wall, floor and ceiling bracket with 3 holes, 49
- Washer, 37
- Wire retainer for type LK4 and LK4/N, 36
- Wire retainer for type LKV and LKV/N, 36
- Wire retainer for type LKV/H, 41
- Wiring trunking, type 100100, 32, 35
- Wiring trunking, type 10037, 31, 34
- Wiring trunking, type 10050, 31, 34
- Wiring trunking, type 10075, 31, 35
- Wiring trunking, type 25025, 28
- Wiring trunking, type 37025, 28
- Wiring trunking, type 37037, 28
- Wiring trunking, type 50025, 28
- Wiring trunking, type 50037, 29, 40
- Wiring trunking, type 50050, 29, 40
- Wiring trunking, type 50075, 29, 40
- Wiring trunking, type 75025, 29, 33
- Wiring trunking, type 75037, 30, 33, 40
- Wiring trunking, type 75050, 30, 33, 40
- Wiring trunking, type 75075, 30, 33, 40
- Wiring trunking, type 75100, 30, 34, 40
- Wiring trunking, type 75125, 31, 34, 40
- Wiring trunking, type LK4 15015, 18
- Wiring trunking, type LK4 30015, 18
- Wiring trunking, type LK4 30025, 18
- Wiring trunking, type LK4 40025, 18
- Wiring trunking, type LK4 40040, 19
- Wiring trunking, type LK4 40060, 19
- Wiring trunking, type LK4 40080, 19
- Wiring trunking, type LK4 40100, 19
- Wiring trunking, type LK4 60015, 20
- Wiring trunking, type LK4 60025, 20
- Wiring trunking, type LK4 60040, 20
- Wiring trunking, type LK4 60060, 20
- Wiring trunking, type LK4 60080, 21
- Wiring trunking, type LK4 60100, 21
- Wiring trunking, type LK4 60120, 21
- Wiring trunking, type LK4 80025, 21
- Wiring trunking, type LK4 80040, 22
- Wiring trunking, type LK4 80060, 22
- Wiring trunking, type LK4 80080, 22
- Wiring trunking, type LK4 80100, 22
- Wiring trunking, type LK4 80120, 23
- Wiring trunking, type LK4/N 60015, 24
- Wiring trunking, type LK4/N 60025, 24
- Wiring trunking, type LK4/N 60040, 24
- Wiring trunking, type LK4/N 60060, 24
- Wiring trunking, type LK4/N 60080, 25
- Wiring trunking, type LK4/N 60100, 25
- Wiring trunking, type LK4/N 60120, 25
- Wiring trunking, type LK4/N 80025, 25
- Wiring trunking, type LK4/N 80040, 26
- Wiring trunking, type LK4/N 80060, 26
- Wiring trunking, type LK4/N 80080, 26
- Wiring trunking, type LK4/N 80100, 26
- Wiring trunking, type LK4/N 80120, 27

Numeric directory

Structure of the GTIN: Country code **40**

Manufacturer code **1219**

Individual GTIN **5647589**

GTIN	Art. no.	PE	Price	Page	GTIN	Art. no.	PE	Price	Page	GTIN	Art. no.	PE	Price	Page
5038238	1104 24 1	VBS	/100 pc.	49	5067399	1163 12 4	VBS	/100 pc.		5808992	2086 01 8	VBS	/100 pc.	59
5038290	1104 26 8	VBS		49	5067450	1163 16 7	VBS		49	5809234	2086 02 4	VBS		59
5038351	1104 28 4	VBS		49	5067511	1163 22 1	VBS		49	5809418	2086 03 0	VBS		59
5836353	1104 29 2	VBS		49	5067573	1163 28 0	VBS		49	5809593	2086 03 6	VBS		59
5038412	1104 30 6	VBS		49	5067634	1163 34 5	VBS		49	5809777	2086 04 2	VBS		59
5036678	1104 31 0	VBS		49	5067696	1163 39 6	VBS		49	5809890	2086 04 8	VBS		59
5036739	1104 31 5	VBS		49	5067757	1163 46 9	VBS		49	5810070	2086 05 4	VBS		59
5036791	1104 32 0	VBS		49	5067818	1163 52 3	VBS		49	5810131	2086 06 0	VBS		59
5036852	1104 32 5	VBS		49	5067870	1163 58 2	VBS		49	5655435	2086 16 5	VBS		60
			price/10		5067931	1163 64 7	VBS		49	5655480	2086 16 9	VBS		60
5694458	1104 49 7	VBS		49	5067993	1163 70 1	VBS		49	5655497	2086 17 3	VBS		60
5038771	1104 50 0	VBS		49						5655503	2086 17 7	VBS		60
					5432371	1167 00 6	VBS		48	5655534	2086 18 1	VBS		60
5039730	1106 12 0	VBS		48	5432432	1167 01 4	VBS		48	5655541	2086 18 5	VBS		60
					5432494	1167 02 2	VBS		48	5655558	2086 18 9	VBS		60
5041474	1109 02 2	VBS		48	5432555	1167 03 0	VBS		48	5655565	2086 20 3	VBS		60
5041894	1109 52 9	VBS		48	5432616	1167 04 9	VBS		48	5655572	2086 20 7	VBS		60
										5655589	2086 21 1	VBS		60
5043157	1112 02 3	VBS		48	5072492	1174 05 3	VBS		53	5655596	2086 21 5	VBS		60
5043270	1112 12 0	VBS		48	5500353	1174 60 6	VBS		53	5655602	2086 21 9	VBS		60
5043393	1112 22 8	VBS		48	5500414	1174 61 4	VBS		53	5655619	2086 22 3	VBS		60
					5500476	1174 63 0	VBS		53	5655626	2086 22 7	VBS		60
										5655657	2086 23 1	VBS		60
5044291	1115 05 7	VBS		47	5075431	1180 12 6	VBS		52					
5044352	1115 06 5	VBS		47	5075493	1180 16 9	VBS		52	5222132	2254 02 6	VBS		55
5044598	1115 33 2	VBS		46	5075554	1180 22 3	VBS		52	5222194	2254 03 4	VBS		55
5044659	1115 35 9	VBS		46	5075615	1180 28 2	VBS		52					
5044833	1115 42 1	VBS		46	5075677	1180 34 7	VBS		52	5222798	2255 01 4	VBS		55
5044895	1115 45 6	VBS		46	5075738	1180 40 1	VBS		52	5222859	2255 02 2	VBS		55
5045076	1115 55 3	VBS		46	5075790	1180 46 0	VBS		52					
5045199	1115 59 6	VBS		46	5075851	1180 52 5	VBS		52					
5045250	1115 61 8	VBS		46	5075912	1180 58 4	VBS		52					
5045311	1115 62 6	VBS		46	5075974	1180 64 9	VBS		52					
5045434	1115 65 0	VBS		46	5076032	1180 68 1	VBS		52					
5045496	1115 66 9	VBS		46	5076094	1180 76 2	VBS		52	6034352	5081 69 0	TBS		82
5045557	1115 67 7	VBS		46	5076155	1180 82 7	VBS		52	6046478	5081 69 2	TBS		82
5045618	1115 68 5	VBS		46	5076216	1180 90 8	VBS		52	6087723	5081 69 4	TBS		82
5045977	1115 80 4	VBS		46					52					
5871453	1115 85 5	VBS		46	5083115	1197 12 6	VBS		54	5237341	5089 65 0	TBS		73
					5083177	1197 16 9	VBS		54	5299400	5089 65 2	TBS		73
5046516	1117 02 5	VBS		48	5083238	1197 22 3	VBS		54	5405528	5089 75 4	TBS		67
5046578	1117 03 3	VBS		48	5083290	1197 28 2	VBS		54	5405535	5089 75 6	TBS		67
5046639	1117 06 8	VBS		48	5083351	1197 34 7	VBS		54	5405542	5089 76 1	TBS		67
					5083412	1197 40 1	VBS		54	5405559	5089 76 3	TBS		67
5046936	1118 02 1	VBS		48	5083474	1197 46 0	VBS		54					
5047056	1118 12 9	VBS		48	5083535	1197 52 5	VBS		54	6035441	5092 48 0	TBS		79
5047179	1118 22 6	VBS		48	5083597	1197 58 4	VBS		54					
					5083658	1197 64 9	VBS		54	5076551	5093 38 0	TBS		72
5697961	1122 47 9	VBS		49	5083719	1197 70 3	VBS		54	6098583	5093 38 2	TBS		72
5697978	1122 48 1	VBS		49	5083771	1197 76 2	VBS		54	5299448	5093 39 1	TBS		72
5050735	1122 48 3	VBS		49	5083832	1197 82 7	VBS		54	5688426	5093 65 3	TBS		68
5050742	1122 48 7	VBS		49	5083894	1197 90 8	VBS		54	5425120	5093 65 4	TBS		68
5686248	1122 91 4	VBS		49	5083955	1197 99 1	VBS		54	5688433	5093 66 1	TBS		69
5686255	1122 91 6	VBS		49					54	5425137	5093 66 2	TBS		69
			/100 pc.		5533177	2022 86 2	VBS		58	5648482	5094 57 4	TBS		78
5939276	1123 19 1	VBS		49	5533238	2022 86 4	VBS		58	5709084	5094 57 6	TBS		78
5939283	1123 19 3	VBS		49	5533658	2022 86 6	VBS		58	5708872	5094 60 5	TBS		78
					5533719	2022 86 8	VBS		58	5478621	5094 60 8	TBS		78
5485865	1124 61 3	VBS		50	5533771	2022 87 0	VBS		58	5382973	5094 65 0	TBS		70
5485919	1124 61 9	VBS		49	5533832	2022 87 2	VBS		58	5240099	5094 65 6	TBS		70
5485933	1124 62 3	VBS		49	5533894	2022 87 4	VBS		58	5382911	5094 76 0	TBS		71
5486060	1124 65 3	VBS		50	5533955	2022 87 6	VBS		58	5240242	5094 76 5	TBS		71
5486091	1124 65 9	VBS		49										
5486114	1124 66 3	VBS		49	5446774	2024 70 5	VBS		58	5541158	5096 84 9	TBS		64
					5446835	2024 71 3	VBS		58	5051466	5096 85 2	TBS		65
			/pc.		5446897	2024 72 1	VBS		58	5541394	5096 86 5	TBS		64
5477259	1125 03 6	VBS		47	5446958	2024 74 8	VBS		58	5077077	5096 87 7	TBS		65
					5447016	2024 75 6	VBS		58	5077091	5096 87 9	TBS		64
					5447078	2024 76 4	VBS		58	5990116	5096 97 4	TBS		66
			/100 pc.		5447139	2024 77 2	VBS		58	5995012	5096 97 6	TBS		66
5064459	1160 12 5	VBS		53	5447191	2024 78 0	VBS		58					
5064510	1160 16 8	VBS		53	5447252	2024 79 9	VBS		58	5578116	5097 45 3	TBS		74
5064572	1160 22 2	VBS		53	5447313	2024 80 2	VBS		58	5736561	5097 45 4	TBS		76
5064633	1160 28 1	VBS		53						5578123	5097 60 7	TBS		74
5064695	1160 34 6	VBS		53	5189916	2085 60 7	VBS		59	5578130	5097 61 5	TBS		74
5064756	1160 40 0	VBS		53	5189978	2085 61 5	VBS		59	5578147	5097 62 3	TBS		74
5064817	1160 45 1	VBS		53	5190035	2085 62 3	VBS		59	5578154	5097 63 1	TBS		75
5064879	1160 52 4	VBS		53	5190097	2085 63 1	VBS		59	5578161	5097 65 0	TBS		75
5064930	1160 58 3	VBS		53	5190158	2085 65 8	VBS		59	5578185	5097 82 0	TBS		

Type listing

Structure of the GTIN: Country code **40** Manufacturer code **1219** Individual GTIN **5647589**

Type	Dimensions/Colour/Div.	GTIN	Art. no.	PE	Price	Page	Type	Dimensions/Colour/Div.	GTIN	Art. no.	PE	Price	Page
1268 L 150 FS	35 x 18/ ST / FS	5038238	1104 24 1	VBS	/100 pc.	49	2058FW 70 LGR	64-70 40/ PP	5083719	1197 70 3	VBS	/100 pc.	54
1268 L 1M FS	35 x 18/ ST / FS	5694458	1104 49 7	VBS	price/100 m	49	2058FW 76 LGR	70-76 40/ PP	5083771	1197 76 2	VBS		54
1268 L 200 FS	35 x 18/ ST / FS	5038290	1104 26 8	VBS	/100 pc.	49	2058FW 82 LGR	76-82 40/ PP	5083832	1197 82 7	VBS		54
1268 L 2M FS	35 x 18/ ST / FS	5038771	1104 50 0	VBS	price/100 m	49	2058FW 90 LGR	82-90 40/ PP	5083894	1197 90 8	VBS		54
1268 L 300 FS	35 x 18/ ST / FS	5038351	1104 28 4	VBS	/100 pc.	49	2060 2M AB FS	20 x 8/ St / FS	5039730	1106 12 0	VBS	price/100 m	48
1268 L 400 FS	35 x 18/ ST / FS	5836353	1104 29 2	VBS		49	2062 2M FT	27 x 12.5/ St / FT	5041474	1109 02 2	VBS		48
1268 L 500 FS	35 x 18/ ST / FS	5038412	1104 30 6	VBS		49	2062 L 2M FT	/ St / FT	5041894	1109 52 9	VBS		48
1268 L 600 FS	35 x 18/ ST / FS	5036678	1104 31 0	VBS		49	2063 2M BK	35 x 18/ ST	5043157	1112 02 3	VBS		48
1268 L 700 FS	35 x 18/ ST / FS	5036739	1104 31 5	VBS		49	2063 2M FS	35 x 18/ ST / FS	5043270	1112 12 0	VBS		48
1268 L 800 FS	35 x 18/ ST / FS	5036791	1104 32 0	VBS		49	2063 2M FT	35 x 18/ ST / FT	5043393	1112 22 8	VBS		48
1268 L 900 FS	35 x 18/ ST / FS	5036852	1104 32 5	VBS		49	2064 GTP 2M	1,5/ ST / GTP	5044291	1115 05 7	VBS		47
2050 5-25 LGR	5-25 M4 x 27/ PS	5222132	2254 02 6	VBS		55	2064 GTPL 2M	1,5/ ST / GTP	5044352	1115 06 5	VBS		47
2051 8-36 LGR	8-36 M4 x 37.5/ PS	5222194	2254 03 4	VBS		55	2066 2M FS	25 x 12/ St / FS	5046578	1117 03 3	VBS		48
2054 14-48 LGR	14-48 M8 x 55/ PA	5222798	2255 01 4	VBS		55	2066 2M FT	25 x 12/ St / FT	5046516	1117 02 5	VBS		48
2055 24-72 LGR	24-72 M8 x 75/ PA	5222859	2255 02 2	VBS		55	2066 2M VA	25 x 12/ V2A	5046639	1117 06 8	VBS		48
2056 100 FT	90-100 25/ ST / FT	5065296	1160 99 0	VBS		53	2068 2M BK	35 x 18/ ST	5046936	1118 02 1	VBS		48
2056 12 FT	8-12 23/ ST / FT	5064459	1160 12 5	VBS		53	2068 2M FS	35 x 18/ ST / FS	5047179	1118 22 6	VBS		48
2056 16 FT	12-16 23/ ST / FT	5064510	1160 16 8	VBS		53	2068 2M FT	35 x 18/ ST / FT	5047056	1118 12 9	VBS		48
2056 22 FT	16-22 23/ ST / FT	5064572	1160 22 2	VBS		53	2069 15 1.5 GTP	1,5/ St / GTP	5044833	1115 42 1	VBS		46
2056 28 FT	22-28 23/ ST / FT	5064633	1160 28 1	VBS		53	2069 15 1.5 GTPL	/ St / GTP	5044895	1115 45 6	VBS		46
2056 34 FT	28-34 23/ ST / FT	5064695	1160 34 6	VBS		53	2069 15 2.2 GTP	2,25/ St / GTP	5045076	1115 55 3	VBS		46
2056 40 FT	34-40 23/ ST / FT	5064756	1160 40 0	VBS		53	2069 15 2.2 GTPL	2,25/ St / GTP	5045199	1115 59 6	VBS		46
2056 46 FT	40-46 23/ ST / FT	5064817	1160 45 1	VBS		53	2069 1M FS	1/ St / FS	5045557	1115 67 7	VBS		46
2056 52 FT	46-52 23/ ST / FT	5064879	1160 52 4	VBS		53	2069 1M GTP	1/ St / GTP	5045618	1115 68 5	VBS		46
2056 58 FT	52-58 23/ ST / FT	5064930	1160 58 3	VBS		53	2069 2M BK	1/ St	5045250	1115 61 8	VBS		46
2056 64 FT	58-64 23/ ST / FT	5064992	1160 64 8	VBS		53	2069 2M FS	1/ St / FS	5045311	1115 62 6	VBS		46
2056 70 FT	64-70 25/ ST / FT	5065050	1160 70 2	VBS		53	2069 2M GTP	1/ St / GTP	5045434	1115 65 0	VBS		46
2056 76 FT	70-76 25/ ST / FT	5065111	1160 76 1	VBS		53	2069 2M GTPL	1/ ST / GTP	5045496	1115 66 9	VBS		46
2056 82 FT	76-82 25/ ST / FT	5065173	1160 82 6	VBS		53	2069 3M BK	1/ St	5871453	1115 85 5	VBS		46
2056 90 FT	82-90 25/ ST / FT	5065234	1160 90 7	VBS		53	2069 L 2M FS	1/ St / FS	5045977	1115 80 4	VBS		46
2056 BE FT	/ St / FT	5072492	1174 05 3	VBS		53							
2056 E 31 FT	28-31 / St / FT	5500353	1174 60 6	VBS		53						/m	
2056 E 37 FT	34-37 / St / FT	5500414	1174 61 4	VBS		53	2410 110GR	Stone grey 2000/ PVC	6023295	6022 71 5	LFS		42
2056 E 44 FT	40-44 / St / FT	5500476	1174 63 0	VBS		53	2410 110LGR	Light grey 2000/ PVC	6669257	6028 15 2	LFS		42
2056N 12 FT	8-12 / ST / FT	5067399	1163 12 4	VBS			2410 110RW	Pure white/ PVC	6976942	6191 63 0	LFS		42
2056N 16 FT	12-16 / ST / FT	5067450	1163 16 7	VBS			2410 170GR	Stone grey 2000/ PVC	6023417	6022 75 8	LFS		42
2056N 22 FT	16-22 / ST / FT	5067511	1163 22 1	VBS			2410 170LGR	Light grey 2000/ PVC	6773893	6028 18 7	LFS		42
2056N 28 FT	22-28 / ST / FT	5067573	1163 28 0	VBS			2410 170RW	Pure white/ PVC	6502455	6191 70 3	LFS		42
2056N 34 FT	28-34 / ST / FT	5067634	1163 34 5	VBS									
2056N 40 FT	34-40 / ST / FT	5067696	1163 39 6	VBS									
2056N 46 FT	40-46 / ST / FT	5067757	1163 46 9	VBS									
2056N 52 FT	46-52 / ST / FT	5067818	1163 52 3	VBS			46277 GTP	1/ St / GTP	5044598	1115 33 2	VBS	price/100 m	46
2056N 58 FT	52-58 / ST / FT	5067870	1163 58 2	VBS			46277 GTPL	1/ St / GTP	5044659	1115 35 9	VBS		46
2056N 64 FT	58-64 / ST / FT	5067931	1163 64 7	VBS									
2056N 70 FT	64-70 / ST / FT	5067993	1163 70 1	VBS									
2056N SAS 12 VA	8-12 20/ V2A	5432432	1167 01 4	VBS								/100 pc.	
2056N SAS 16 VA	12-16 20/ V2A	5432494	1167 02 2	VBS			AH1	Grey 12/ PVC	6014873	6178 54 0	LFS		36
2056N SAS 22 VA	16-22 20/ V2A	5432555	1167 03 0	VBS									
2056N SAS 28 VA	22-28 20/ V2A	5432616	1167 04 9	VBS			AH2	Grey 20/ PVC	6014996	6178 54 2	LFS		37
2056N SAS 8 VA	4-8 20/ V2A	5432371	1167 00 6	VBS									
2056W 12 FT	8-12 / ST / FT	5075431	1180 12 6	VBS		52						/pc.	
2056W 16 FT	12-16 / ST / FT	5075493	1180 16 9	VBS		52	AKZ	/ ST	6014750	6178 53 5	LFS		36
2056W 22 FT	16-22 / ST / FT	5075554	1180 22 3	VBS		52	AKZ	/ ST	6014750	6178 53 5	LFS		41
2056W 28 FT	22-28 / ST / FT	5075615	1180 28 2	VBS		52							
2056W 34 FT	28-34 / ST / FT	5075677	1180 34 7	VBS		52							
2056W 40 FT	34-40 / ST / FT	5075738	1180 40 1	VBS		52							
2056W 46 FT	40-46 / ST / FT	5075790	1180 46 0	VBS		52	BS BKS KP	/ St / G	6147878	6049 25 0	KTS	/100 pc.	50
2056W 52 FT	46-52 / ST / FT	5075851	1180 52 5	VBS		52							
2056W 58 FT	52-58 / ST / FT	5075912	1180 58 4	VBS		52							
2056W 64 FT	58-64 / ST / FT	5075974	1180 64 9	VBS		52							
2056W 70 FT	64-70 / ST / FT	5076032	1180 68 1	VBS		52	FLD 110		5578413	5098 64 6	TBS	/pc.	87
2056W 76 FT	70-76 / ST / FT	5076094	1180 76 2	VBS		52	FLD 12		5578376	5098 60 3	TBS		86
2056W 82 FT	76-82 / ST / FT	5076155	1180 82 7	VBS		52	FLD 2-110		5578512	5098 85 9	TBS		89
2056W 90 FT	82-90 / ST / FT	5076216	1180 90 8	VBS		52	FLD 2-12		5578444	5098 80 8	TBS		89
							FLD 2-24		5578451	5098 81 6	TBS		89
2058FW 100 LGR	90-100 40/ PP	5083955	1197 99 1	VBS		54	FLD 24		5578383	5098 61 1	TBS		86
2058FW 12 LGR	8-12 34/ PP	5083115	1197 12 6	VBS		54	FLD 2-5		5578529	5098 86 7	TBS		89
2058FW 16 LGR	12-16 34/ PP	5083177	1197 16 9	VBS		54	FLD 48		5578390	5098 63 0	TBS		86
2058FW 22 LGR	16-22 34/ PP	5083238	1197 22 3	VBS		54	FLD 5		5578369	5098 60 0	TBS		86
2058FW 28 LGR	22-28 34/ PP	5083290	1197 28 2	VBS		54	FLD 60		5578406	5098 63 8	TBS		87
2058FW 34 LGR	28-34 34/ PP	5083351	1197 34 7	VBS		54							
2058FW 40 LGR	34-40 34/ PP	5083412	1197 40 1	VBS		54	FRD 110		5578338	5098 55 7	TBS		85
2058FW 46 LGR	40-46 40/ PP	5083474	1197 46 0	VBS		54	FRD 12		5578291	5098 50 6	TBS		84
2058FW 52 LGR	46-52 40/ PP	5083535	1197 52 5	VBS		54	FRD 2-24		5578420	5098 72 7	TBS		88
2058FW 58 LGR	52-58 40/ PP	5083597	1197 58 4	VBS		54	FRD 24		5578307	5098 51 4	TBS		84
2058FW 64 LGR	58-64 40/ PP	5083658	1197 64 9	VBS		54	FRD 24 HF		5578352	5098 57 5	TBS		83

12 LSB Lösungskatalog_Schallschrankbau 2014 / en / 28/03/2014 (LLExploit_01699)

Type	Dimensions/Colour/Div.	GTIN	Art. no.	PE	Price	Page	Type	Dimensions/Colour/Div.	GTIN	Art. no.	PE	Price	Page
FRD 48		5578314	5098 52 2	TBS	/pc.	84	LK4 H	Stone grey 56/ PS	6008339	6178 09 2	LFS	/100 pc.	36
FRD 5		5578284	5098 49 2	TBS		84						/m	
FRD 5 HF		5578345	5098 57 1	TBS		83	LK4 N 60015	Stone grey 2000/ PVC	6004850	6178 20 1	LFS		24
							LK4 N 60025	Stone grey 2000/ PVC	6004973	6178 20 3	LFS		24
							LK4 N 60040	Stone grey 2000/ PVC	6005093	6178 20 5	LFS		24
							LK4 N 60060	Stone grey 2000/ PVC	6005215	6178 20 7	LFS		24
GMS 2 VW 90 FT	60/ St / FT	5486091	1124 65 9	VBS	/100 pc.	49	LK4 N 60080	Stone grey 2000/ PVC	6005307	6178 20 9	LFS		25
GMS 2 VW 90 G	60/ St / G	5485919	1124 61 9	VBS		49	LK4 N 60100	Stone grey 2000/ PVC	6005406	6178 21 1	LFS		25
GMS 3 VP L FT	40/ St / FT	5486060	1124 65 3	VBS		50	LK4 N 60120	Stone grey 2000/ PVC	6005505	6178 21 3	LFS		25
GMS 3 VP L G	40/ St / G	5485865	1124 61 3	VBS		50	LK4 N 80025	Stone grey 2000/ PVC	6005802	6178 22 5	LFS		25
GMS 4 VW 90 FT	30/ St / FT	5486114	1124 66 3	VBS		49	LK4 N 80040	Stone grey 2000/ PVC	6005932	6178 22 7	LFS		26
GMS 4 VW 90 G	30/ St / G	5485933	1124 62 3	VBS		49	LK4 N 80060	Stone grey 2000/ PVC	6006052	6178 22 9	LFS		26
							LK4 N 80080	Stone grey 2000/ PVC	6006175	6178 23 1	LFS		26
							LK4 N 80100	Stone grey 2000/ PVC	6006298	6178 23 3	LFS		26
HTS 35		5477259	1125 03 6	VBS	/pc.	47	LK4 N 80120	Stone grey 2000/ PVC	6006410	6178 23 6	LFS		27
							LKV 100100	Stone grey 2000/ PVC	6011162	6178 34 1	LFS		32
KNW1	Black/ POM	6014514	6178 52 7	LFS		36	LKV 10037	Stone grey 2000/ PVC	6010806	6178 33 4	LFS		31
KNW1	Black/ POM	6014514	6178 52 7	LFS		41	LKV 10050	Stone grey 2000/ PVC	6010929	6178 33 6	LFS		31
							LKV 10075	Stone grey 2000/ PVC	6011049	6178 33 8	LFS		31
KNW2	Black/ POM	6014637	6178 52 9	LFS		36	LKV 25025	Stone grey 2000/ PVC	6009411	6178 30 2	LFS		28
KNW2	Black/ POM	6014637	6178 52 9	LFS		41	LKV 37025	Stone grey 2000/ PVC	6009534	6178 30 5	LFS		28
							LKV 37037	Stone grey 2000/ PVC	6009657	6178 30 7	LFS		28
							LKV 50025	Stone grey 2000/ PVC	6009732	6178 31 0	LFS		28
KSN1	Light grey 4,5/ PP	6014279	6178 52 0	LFS	/100 pc.	36	LKV 50037	Stone grey 2000/ PVC	6009831	6178 31 2	LFS		29
KSN1	Light grey 4,5/ PP	6014279	6178 52 0	LFS		41	LKV 50050	Stone grey 2000/ PVC	6009930	6178 31 4	LFS		29
							LKV 50075	Stone grey 2000/ PVC	6010073	6178 31 6	LFS		29
KSN22	Light grey 6/ PA	6337057	6178 52 5	LFS		36	LKV 75025	Stone grey 2000/ PVC	6010196	6178 32 0	LFS		29
KSN22	Light grey 6/ PA	6337057	6178 52 5	LFS		41	LKV 75037	Stone grey 2000/ PVC	6010318	6178 32 2	LFS		30
							LKV 75050	Stone grey 2000/ PVC	6010400	6178 32 4	LFS		30
							LKV 75075	Stone grey 2000/ PVC	6010509	6178 32 6	LFS		30
LK4 15015	Stone grey 2000/ PVC	6000050	6178 00 1	LFS	/m	18	LKV 75100	Stone grey 2000/ PVC	6010608	6178 32 8	LFS		30
LK4 30015	Stone grey 2000/ PVC	6000173	6178 00 3	LFS		18	LKV 75125	Stone grey 2000/ PVC	6010707	6178 33 0	LFS		31
LK4 30025	Stone grey 2000/ PVC	6000296	6178 00 5	LFS		18	LKV D 100	Stone grey 100/ PVC	6041763	6178 51 2	LFS		30
LK4 40025	Stone grey 2000/ PVC	6000418	6178 01 0	LFS		18	LKV D 100	Stone grey 100/ PVC	6041763	6178 51 2	LFS		32
LK4 40040	Stone grey 2000/ PVC	6000531	6178 01 2	LFS		19	LKV D 100	Stone grey 100/ PVC	6041763	6178 51 2	LFS		34
LK4 40060	Stone grey 2000/ PVC	6000654	6178 01 4	LFS		19	LKV D 100	Stone grey 100/ PVC	6041763	6178 51 2	LFS		35
LK4 40080	Stone grey 2000/ PVC	6000777	6178 01 6	LFS		19	LKV D 125	Stone grey 125/ PVC	6041886	6178 51 4	LFS		31
LK4 40100	Stone grey 2000/ PVC	6000890	6178 01 8	LFS		19	LKV D 125	Stone grey 125/ PVC	6041886	6178 51 4	LFS		34
LK4 60015	Stone grey 2000/ PVC	6001132	6178 02 6	LFS		20	LKV D 25	Stone grey 25/ PVC	6041282	6178 50 4	LFS		28
LK4 60025	Stone grey 2000/ PVC	6001255	6178 02 8	LFS		20	LKV D 25	Stone grey 25/ PVC	6041282	6178 50 4	LFS		28
LK4 60040	Stone grey 2000/ PVC	6001378	6178 03 1	LFS		20	LKV D 25	Stone grey 25/ PVC	6041282	6178 50 4	LFS		28
LK4 60060	Stone grey 2000/ PVC	6001491	6178 03 3	LFS		20	LKV D 25	Stone grey 25/ PVC	6041282	6178 50 4	LFS		29
LK4 60080	Stone grey 2000/ PVC	6001613	6178 03 5	LFS		21	LKV D 25	Stone grey 25/ PVC	6041282	6178 50 4	LFS		33
LK4 60100	Stone grey 2000/ PVC	6001736	6178 03 7	LFS		21	LKV D 37	Stone grey 37,5/ PVC	6041404	6178 50 6	LFS		28
LK4 60120	Stone grey 2000/ PVC	6001859	6178 03 9	LFS		21	LKV D 37	Stone grey 37,5/ PVC	6041404	6178 50 6	LFS		29
LK4 80025	Stone grey 2000/ PVC	6002214	6178 05 0	LFS		21	LKV D 37	Stone grey 37,5/ PVC	6041404	6178 50 6	LFS		30
LK4 80040	Stone grey 2000/ PVC	6002337	6178 05 2	LFS		22	LKV D 37	Stone grey 37,5/ PVC	6041404	6178 50 6	LFS		31
LK4 80060	Stone grey 2000/ PVC	6002450	6178 05 4	LFS		22	LKV D 37	Stone grey 37,5/ PVC	6041404	6178 50 6	LFS		33
LK4 80080	Stone grey 2000/ PVC	6002573	6178 05 6	LFS		22	LKV D 37	Stone grey 37,5/ PVC	6041404	6178 50 6	LFS		34
LK4 80100	Stone grey 2000/ PVC	6002696	6178 05 9	LFS		22	LKV D 50	Stone grey 50/ PVC	6041527	6178 50 8	LFS		29
LK4 80120	Stone grey 2000/ PVC	6002818	6178 06 1	LFS		23	LKV D 50	Stone grey 50/ PVC	6041527	6178 50 8	LFS		30
LK4 D 100	Stone grey 107,4/ PVC	6040803	6178 49 0	LFS		19	LKV D 50	Stone grey 50/ PVC	6041527	6178 50 8	LFS		31
LK4 D 100	Stone grey 107,4/ PVC	6040803	6178 49 0	LFS		21	LKV D 50	Stone grey 50/ PVC	6041527	6178 50 8	LFS		33
LK4 D 100	Stone grey 107,4/ PVC	6040803	6178 49 0	LFS		22	LKV D 50	Stone grey 50/ PVC	6041527	6178 50 8	LFS		34
LK4 D 100	Stone grey 107,4/ PVC	6040803	6178 49 0	LFS		25	LKV D 75	Stone grey 75/ PVC	6041640	6178 51 0	LFS		29
LK4 D 100	Stone grey 107,4/ PVC	6040803	6178 49 0	LFS		26	LKV D 75	Stone grey 75/ PVC	6041640	6178 51 0	LFS		30
LK4 D 120	Stone grey 127,8/ PVC	6040926	6178 49 2	LFS		21	LKV D 75	Stone grey 75/ PVC	6041640	6178 51 0	LFS		31
LK4 D 120	Stone grey 127,8/ PVC	6040926	6178 49 2	LFS		23	LKV D 75	Stone grey 75/ PVC	6041640	6178 51 0	LFS		33
LK4 D 120	Stone grey 127,8/ PVC	6040926	6178 49 2	LFS		25	LKV D 75	Stone grey 75/ PVC	6041640	6178 51 0	LFS		35
LK4 D 120	Stone grey 127,8/ PVC	6040926	6178 49 2	LFS		27					/100 pc.		
LK4 D 15	Stone grey 20/ PVC	6040209	6178 48 0	LFS		18	LKV H	Stone grey 56/ PS	6011285	6178 34 9	LFS		36
LK4 D 15	Stone grey 20/ PVC	6040209	6178 48 0	LFS		20	LKV H H	Light grey 56/ PS	6017829	6178 65 0	LFS		41
LK4 D 15	Stone grey 20/ PVC	6040209	6178 48 0	LFS		24					/m		
LK4 D 25	Stone grey 31/ PVC	6040322	6178 48 2	LFS		18	LKV N 100100	Stone grey 2000/ PVC	6015184	6178 44 1	LFS		35
LK4 D 25	Stone grey 31/ PVC	6040322	6178 48 2	LFS		18	LKV N 10037	Stone grey 2000/ PVC	6013913	6178 43 5	LFS		34
LK4 D 25	Stone grey 31/ PVC	6040322	6178 48 2	LFS		20	LKV N 10050	Stone grey 2000/ PVC	6014033	6178 43 7	LFS		34
LK4 D 25	Stone grey 31/ PVC	6040322	6178 48 2	LFS		21	LKV N 10075	Stone grey 2000/ PVC	6014156	6178 43 9	LFS		35
LK4 D 25	Stone grey 31/ PVC	6040322	6178 48 2	LFS		24	LKV N 75025	Stone grey 2000/ PVC	6013197	6178 42 0	LFS		33
LK4 D 25	Stone grey 31/ PVC	6040322	6178 48 2	LFS		25	LKV N 75037	Stone grey 2000/ PVC	6013319	6178 42 2	LFS		33
LK4 D 40	Stone grey 46,2/ PVC	6040445	6178 48 4	LFS		19	LKV N 75050	Stone grey 2000/ PVC	6013432	6178 42 4	LFS		33
LK4 D 40	Stone grey 46,2/ PVC	6040445	6178 48 4	LFS		20	LKV N 75075	Stone grey 2000/ PVC	6013555	6178 42 6	LFS		33
LK4 D 40	Stone grey 46,2/ PVC	6040445	6178 48 4	LFS		22	LKV N 75100	Stone grey 2000/ PVC	6013678	6178 42 8	LFS		34
LK4 D 40	Stone grey 46,2/ PVC	6040445	6178 48 4	LFS		24	LKV N 75125	Stone grey 2000/ PVC	6013791	6178 43 0	LFS		34
LK4 D 40	Stone grey 46,2/ PVC	6040445	6178 48 4	LFS		26							
LK4 D 60	Stone grey 66,4/ PVC	6040568	6178 48 6	LFS		19	LKVH 50037	Light grey 2000/ PC/ABS	5803744	6178 58 2	LFS		40
LK4 D 60	Stone grey 66,4/ PVC	6040568	6178 48 6	LFS		20	LKVH 50050	Light grey 2000/ PC/ABS	5803829	6178 58 5	LFS		40
LK4 D 60	Stone grey 66,4/ PVC	6040568	6178 48 6	LFS		22	LKVH 50075	Light grey 2000/ PC/ABS	5803836	6178 58 8	LFS		40
LK4 D 60	Stone grey 66,4/ PVC	6040568	6178 48 6	LFS		24	LKVH N 75037	Light grey 2000/ PC/ABS	5803751	6178 55 2	LFS		40
LK4 D 60	Stone grey 66,4/ PVC	6040568	6178 48 6	LFS		26	LKVH N 75050	Light grey 2000/ PC/ABS	5803768	6178 55 6	LFS		40
LK4 D 80	Stone grey 87/ PVC	6040681	6178 48 8	LFS		19	LKVH N 75075	Light grey 2000/ PC/ABS	5803799	6178 55 9	LFS		40
LK4 D 80	Stone grey 87/ PVC	6040681	6178 48 8	LFS		21	LKVH N 75100	Light grey 2000/ PC/ABS	5803805	6178 56 3	LFS		40
LK4 D 80	Stone grey 87/ PVC	6040681	6178 48 8	LFS		22	LKVH N 75125	Light grey 2000/ PC/ABS	5803812	6178 56 6			

Type listing

Structure of the GTIN: Country code **40** Manufacturer code **1219** Individual GTIN **5647589**

Type	Dimensions/Colour/Div.	GTIN	Art. no.	PE	Price	Page	Type	Dimensions/Colour/Div.	GTIN	Art. no.	PE	Price	Page
MCD 125-B NPE		5541394	5096 86 5	TBS	/pc.	64	VB-MDP 10-MD	/ Cu	5410461	5098 47 0	TBS	/pc.	96
MCD 50-B		5541158	5096 84 9	TBS		64							
MCD 50-B		5541158	5096 84 9	TBS		65	VB-V10 COMPACT-2		5237341	5089 65 0	TBS		73
MCD 50-B 3		5077077	5096 87 7	TBS		65	VB-V10 COMPACT-4		5299400	5089 65 2	TBS		73
MCD 50-B 3+1		5077091	5096 87 9	TBS		64							
MCD 50-B-OS		5051466	5096 85 2	TBS		65	VF110-AC DC	200 150	5578154	5097 63 1	TBS		75
MCF 35-1+FS-440	/ AIG	5990116	5096 97 4	TBS		66	VF12-AC DC	18 13,5	5578116	5097 45 3	TBS		74
MCF 35-P3+FS-440	/ AIG	5995012	5096 97 6	TBS		66	VF12-AC/DC-FS	18 5736561	5097 45 4	TBS			76
MDP-2 D-12-T-10		5787372	5098 41 5	TBS		94	VF230-AC/DC	350 255	5578161	5097 65 0	TBS		75
MDP-2 D-24-T		5406860	5098 42 2	TBS		91	VF230-AC-FS	255	5578215	5097 85 8	TBS		77
MDP-2 D-24-T-10		5787389	5098 42 5	TBS		95							
MDP-2 D-48-T		5406891	5098 44 2	TBS		92	VF24-AC/DC	46 34	5578123	5097 60 7	TBS		74
MDP-2 D-5-T		5406839	5098 40 4	TBS		90	VF24-AC/DC-FS	46	5578185	5097 82 0	TBS		76
MDP-3 D-24-T		5406877	5098 42 7	TBS		91							
MDP-3 D-48-T		5406907	5098 44 6	TBS		92	VF48-AC/DC	80 60	5578130	5097 61 5	TBS		74
MDP-3 D-5-T		5406846	5098 40 7	TBS		90	VF48-AC/DC-FS	80	5812258	5097 82 2	TBS		76
MDP-4 D-12-T-10		5773610	5098 41 9	TBS		94							
MDP-4 D-24-EX		5848523	5098 43 2	TBS		97	VF60-AC/DC	110 80	5578147	5097 62 3	TBS		74
MDP-4 D-24-T		5406884	5098 43 1	TBS		91	VF60-AC/DC-FS	110	5812265	5097 82 4	TBS		77
MDP-4 D-24-T-10		5625131	5098 43 3	TBS		95							
MDP-4 D-48-EX		5848530	5098 45 2	TBS		97	VF-FS		5813521	5098 47 5	TBS		96
MDP-4 D-48-T		5406914	5098 45 0	TBS		92							
MDP-4 D-5-EX		5848516	5098 41 2	TBS		97							
MDP-4 D-5-T		5406853	5098 41 1	TBS		90	VK ISCS 5012		6149100	6178 64 3	LFS		37
MDP-4 D-5-T-10		5625124	5098 41 3	TBS		93	VK ISCS 5012		6149100	6178 64 3	LFS		41
MS 41 LS 1M FS	41x41/ St / FS	5697978	1122 48 1	VBS	price/100 m	49	V-TEC PG11 LGR	Pg 11 Light grey / PA	5446897	2024 72 1	VBS	/100 pc.	58
MS 41 LS 1M FT	/ St / FT	5697961	1122 47 9	VBS		49	V-TEC PG11 MS	Pg 11 600 / CuZn / N	5190035	2085 62 3	VBS		59
MS 41 LS 3M FS	41 x 41 / St / FS	5686248	1122 91 4	VBS		49	V-TEC PG13 LGR	Pg 13,5 Light grey / PA	5446958	2024 74 8	VBS		58
MS 41 LS 3M FT	/ St / FT	5050735	1122 48 3	VBS		49	V-TEC PG13 MS	Pg 13,5 500 / CuZn / N	5190097	2085 63 1	VBS		59
MS 41 LS 6M FS	41x41/ St / FS	5686255	1122 91 6	VBS		49	V-TEC PG16 LGR	Pg 16 Light grey / PA	5447016	2024 75 6	VBS		58
MS 41 LS 6M FT	/ St / FT	5050742	1122 48 7	VBS		49	V-TEC PG16 MS	Pg 16 300 / CuZn / N	5190158	2085 65 8	VBS		59
							V-TEC PG21 LGR	Pg 21 Light grey / PA	5447078	2024 76 4	VBS		58
							V-TEC PG21 MS	Pg 21 200 / CuZn / N	5448631	2085 66 6	VBS		59
							V-TEC PG29 LGR	Pg 29 Light grey / PA	5447139	2024 77 2	VBS		58
							V-TEC PG29 MS	Pg 29 120 / CuZn / N	5448693	2085 67 4	VBS		59
PS3-B+C TNC		5405528	5089 75 4	TBS	/pc.	67	V-TEC PG36 LGR	Pg 36 Light grey / PA	5447191	2024 78 0	VBS		58
PS3-B+C TNC+FS		5405535	5089 75 6	TBS		67	V-TEC PG36 MS	Pg 36 60 / CuZn / N	5448754	2085 68 2	VBS		59
PS4-B+C TNS+FS		5405559	5089 76 3	TBS		67	V-TEC PG42 LGR	Pg 42 Light grey / PA	5447252	2024 79 9	VBS		58
PS4-B+C TT+TNS		5405542	5089 76 1	TBS		67	V-TEC PG42 MS	Pg 42 15 / CuZn / N	5448815	2085 69 0	VBS		59
							V-TEC PG48 LGR	Pg 48 Light grey / PA	5447313	2024 80 2	VBS		58
							V-TEC PG48 MS	Pg 48 40 / CuZn / N	5448877	2085 70 4	VBS		59
RK-E1117GR	Stone grey 175 / PVC	6543137	6156 22 3	LFS		42	V-TEC PG7 LGR	Pg 7 Light grey / PA	5446774	2024 70 5	VBS		58
RK-E1117LGR	Light grey 175 / PVC	6543076	6156 23 1	LFS		42	V-TEC PG7 MS	Pg 7 500 / CuZn / N	5189916	2085 60 7	VBS		59
RK-E1117RW	Pure white 175 / PVC	5649328	6156 22 7	LFS		42	V-TEC PG9 LGR	Pg 9 Light grey / PA	5446835	2024 71 3	VBS		58
							V-TEC PG9 MS	Pg 9 600 / CuZn / N	5189978	2085 61 5	VBS		59
RK-K1117	120 166 / St / FS	6543199	6156 20 7	LFS		42	V-TEC VM12 EMV	M12 x 1.5 / CuZn / N	5655565	2086 20 3	VBS		60
							V-TEC VM12 LGR	M12 x 1.5 Light grey / PA	5533177	2022 86 2	VBS		58
							V-TEC VM12 MS	M12 x 1.5 / CuZn / N	5808992	2086 01 8	VBS		59
TD-2/D-HS		6087723	5081 69 4	TBS		82	V-TEC VM16 EMV	M16 x 1.5 / CuZn / N	5655572	2086 20 7	VBS		60
							V-TEC VM16 EMV-K	M16 x 1.5 / CuZn / N	5655435	2086 16 5	VBS		60
TD-4/I		6034352	5081 69 0	TBS		82	V-TEC VM16 LGR	M16 x 1.5 Light grey / PA	5533238	2022 86 4	VBS		58
TD-4/I-TAE-F		6046478	5081 69 2	TBS		82	V-TEC VM16 MS	M16 x 1.5 / CuZn / N	5809234	2086 02 4	VBS		59
							V-TEC VM20 EMV	M20 x 1.5 / CuZn / N	5655589	2086 21 1	VBS		60
TKS-B		5578277	5097 97 6	TBS		83	V-TEC VM20 EMV-K	M20 x 1.5 / CuZn / N	5655480	2086 16 9	VBS		60
							V-TEC VM20 LGR	M20 x 1.5 Light grey / PA	5533658	2022 86 6	VBS		58
							V-TEC VM20 MS	M20 x 1.5 / CuZn / N	5809418	2086 03 0	VBS		59
							V-TEC VM25 EMV	M25 x 1.5 / CuZn / N	5655596	2086 21 5	VBS		60
ULS	Grey 3 / PVC	6015061	6178 54 8	LFS	/100 pc.	37	V-TEC VM25 EMV-K	M25 x 1.5 / CuZn / N	5655497	2086 17 3	VBS		60
							V-TEC VM25 LGR	M25 x 1.5 Light grey / PA	5533719	2022 86 8	VBS		58
							V-TEC VM25 MS	M25 x 1.5 / CuZn / N	5809593	2086 03 6	VBS		59
ÜSM-LED 230		6035441	5092 48 0	TBS	/pc.	79	V-TEC VM32 EMV	M32 x 1.5 / CuZn / N	5655602	2086 21 9	VBS		60
							V-TEC VM32 EMV-K	M32 x 1.5 / CuZn / N	5655503	2086 17 7	VBS		60
							V-TEC VM32 LGR	M32 x 1.5 Light grey / PA	5533771	2022 87 0	VBS		58
V10 COMPACT 255		5076551	5093 38 0	TBS		72	V-TEC VM32 MS	M32 x 1.5 / CuZn / N	5809777	2086 04 2	VBS		59
V10 COMPACT-AS		5299448	5093 39 1	TBS		72	V-TEC VM40 EMV	M40 x 1.5 / CuZn / N	5655619	2086 22 3	VBS		60
V10 COMPACT-FS		6098583	5093 38 2	TBS		72	V-TEC VM40 EMV-K	M40 x 1.5 / CuZn / N	5655534	2086 18 1	VBS		60
							V-TEC VM40 LGR	M40 x 1.5 Light grey / PA	5533832	2022 87 2	VBS		58
V20-C 1+NPE+FS		5382911	5094 76 0	TBS		71	V-TEC VM40 MS	M40 x 1.5 / CuZn / N	5809890	2086 04 8	VBS		59
V20-C 1+NPE-280		5382973	5094 65 0	TBS		70	V-TEC VM50 EMV	M50 x 1.5 / CuZn / N	5655626	2086 22 7	VBS		60
V20-C 3+NPE+FS		5240242	5094 76 5	TBS		71	V-TEC VM50 EMV-K	M50 x 1.5 / CuZn / N	5655541	2086 18 5	VBS		60
V20-C 3+NPE-280		5240099	5094 65 6	TBS		70	V-TEC VM50 LGR	M50 x 1.5 Light grey / PA	5533894	2022 87 4	VBS		58
V20-C 3-PH-1000	1000	5478621	5094 60 8	TBS		78	V-TEC VM50 MS	M50 x 1.5 / CuZn / N	5810070	2086 05 4	VBS		59
V20-C 3PH-600	600	5708872	5094 60 5	TBS		78	V-TEC VM63 EMV	M63 x 1.5 / CuZn / N	5655657	2086 23 1	VBS		60
V20-C 3PHFS-1000	1000	5648482	5094 57 4	TBS		78	V-TEC VM63 EMV-K	M63 x 1.5 / CuZn / N	5655558	2086 18 9	VBS		60
V20-C 3PHFS-600	600	5709084	5094 57 6	TBS		78	V-TEC VM63 LGR	M63 x 1.5 Light grey / PA	5533955	2022 87 6	VBS		58
							V-TEC VM63 MS	M63 x 1.5 / CuZn / N	5810131	2086 06 0	VBS		59
V50-B+C 1+NPE		5688426	5093 65 3	TBS		68							
V50-B+C 1+NPE+FS		5688433	5093 66 1	TBS		69							
V50-B+C 3+NPE		5425120	5093 65 4	TBS		68	WBDHE 41 FT	/ St / FT	5939276	1123 19 1	VBS		49
V50-B+C 3+NPE+FS		5425137	5093 66 2	TBS		69	WBDHE 41 G	/ St / G	5939283	1123 19 3	VBS		49

12 LSB Lösungskatalog_Schaltstrankbau 2014 / en / 28/03/2014 (LLExploit_01699)

Terms and conditions of sale and delivery of OBO BETTERMANN GmbH & Co. KG, OBO BETTERMANN Projekt und Systemtechnik GmbH and OBO Befestigungselemente GmbH, Menden.

1. All our supplies and services shall be governed exclusively by the following terms and conditions, including our additional terms and conditions for cable tray business transactions. Any terms and conditions of business and purchasing of the customer shall be valid only if we have acknowledged them in writing. Our quotations are without engagement; they are mere invitations to submit contract offers. Any and all transactions and agreements, including those entered into by our employees and agents shall only be binding upon our written confirmation or invoicing. The foregoing provision shall also apply to any modifications of the agreed formal requirements.

2. The documents and data pertaining to the quotation, such as illustrations, brochures, drawings, dimensions, loading capacity values and weight details are approximate only, unless they are expressly stipulated to be binding.

Samples are non-binding samples for inspection. Any purchase according to sample will be subject to customary deviations and deviations resulting from normal production processes. The properties of the sample shall be no guaranteed quality of the purchase object unless expressly stated otherwise in the confirmation of order. Samples must be returned to us at the latest within four weeks in perfect condition. If they are not returned within this period in proper condition, we shall be entitled to charge the purchase price for the sample in accordance with our current price list. All information on our products, in particular the illustrations, drawings, weight, dimension and performance data included in our quotations and printed matter shall be regarded as approximate average values and shall not represent any quality guarantee.

With regard to products made according to customer drawings, samples and other instructions of the customer, we will not provide any warranty nor assume any liability for the due and proper functioning of the product or for any other defects if and to the extent they are based upon the customer's specifications. The customer shall indemnify us from any third party claims, including claims for product liability as may be asserted against us for damages resulting from the products unless we have caused such damages by intent or gross negligence. The customer shall warrant that the manufacture and supply of products made in accordance with his instructions will not infringe any proprietary rights of third parties. Should any proprietary rights be asserted against us, we shall be entitled, without any legal review of the third party claims, to withdraw from the contract after hearing the customer, unless the third party withdraws the claims asserted against us under its proprietary rights within eight days by written declaration. The customer shall compensate us for any damage sustained as a result of the assertion of proprietary rights. In case of withdrawal, the work we have carried out so far shall be remunerated. Further rights under the statutory provisions shall not be affected thereby.

Any moulds, tools and design data produced by us for the execution of the order shall be our exclusive property. Unless expressly agreed otherwise, the customer shall not have any claims thereto, even if he has contributed to the costs of producing any such moulds, tools and design data.

3. The packing, shipping route and means of transportation shall be left to our discretion in the absence of any other agreements. They shall be charged at their cost price. We will take back undamaged cases, when being returned carriage paid, at 2/3 of the amount invoiced. The one-way or pool pallets used for transport shall be either exchanged upon taking delivery or returned. The smallest packing units stocked and listed may not be broken up for rationalisation reasons. In case of orders for different quantities, the nearest packing unit will be supplied.

We reserve the right to deviate from the agreed delivery quantity, in particular in the case of custom-made products, to a customary extent or in conformity with national or international standards. In case of a demand for adhering to a precise quantity, an express reference is necessary and subject to confirmation.

Master and call orders shall oblige the customer to accept the total quantity on which the master/call order is based. Where no particular call orders are specified in the contract, the total quantity of the master call order must be called within twelve months. If the customer fails to adhere to call deadlines, we shall be entitled to deliver and charge the total quantity in full after four weeks from written notice with reference to the consequences of any failure to call. Our rights arising from any default of the customer shall not be affected thereby.

4. Unless otherwise agreed, our prices are quoted ex works and do not include packing and insurance. The value added tax at the rate applicable on the date of dispatch will be added to our prices. The purchaser shall ensure the correctness of his VAT identification number, which he must notify to us immediately without being asked. He shall undertake to inform both us and the competent domestic tax authority without delay of any change in his name, address and VAT identification number.

Delivery shall be franco domicile within Germany, i.e. carriage and packing prepaid, if the net order value is in excess of € 1,200. For small orders below € 100 (net excluding value added tax), we shall invoice a lower quantity surcharge of € 10 (net) per order. Upon transfer of our supplies and services to a carrier or forwarding agent, at the latest upon their leaving our warehouse or supply plant, the risk shall pass to the recipient, even in case of deliveries free place of destination.

5. Delivery periods and delivery deadlines shall be approximate only unless we have expressly stated in writing that they are binding. Delivery periods shall commence upon receipt of our confirmation of order, but not before clarification of all execution details, ex place of delivery. The customer shall only be entitled to withdraw from the contract after having granted a reasonable extension of time. We reserve the right to make partial deliveries. Claims for damages and reimbursement of expenses - for any reason whatsoever - shall be subject to the provisions set out in article 10.

In the event of any circumstances that are beyond our control within the scope of normal operating risks and obstruct or make impracticable any delivery, we shall be entitled to suspend delivery by the duration of such obstruction plus a reasonable start-up period or to withdraw from the contract for the part not yet fulfilled. The purchaser can demand a statement from us as to whether we wish to deliver within a reasonable period or withdraw. If we fail to make such a statement, the purchaser may withdraw. Our notice to the purchaser shall be deemed to be sufficient evidence that we have been prevented from delivering.

Delivery time is extended in case of such events as labour disputes, strikes and lockouts, orders from the authorities, difficulties with the procurement of materials, spoiled work or post-processing, shutdowns and staff shortage as well as shortage of means of transport, and general occurrence of unforeseen events beyond our scope of influence, by the length of duration of these events.

6. Payments shall be made upon receipt of invoice less a 3% cash discount for payment within 10 days or net after 30 days from date of invoice. Erection work and all paid labour work must be paid within 10 days without deduction of any cash discount. In case of non-cash payments, the date of the credit note will be deemed to be the date of receipt of payment. Payments received shall always be credited first against costs, then against interest and then against the earliest liability. Cheques and bills of exchange shall only be accepted as means of payment.

Any payment by bill of exchange shall be subject to a prior separate and written agreement, whereby all bill costs shall be borne by the customer and no discount can be granted. The customer shall have no right to refuse performance and no right of retention - for any legal reason whatsoever - unless we have acknowledged his claim beforehand in writing or his claim has the force of law.

The customer shall only be entitled to set off claims which have the force of law, are undisputed or acknowledged by us in writing.

7. We shall retain title to the goods supplied by us until all our claims arising from our business transactions with the customer have been satisfied - current account clause - and all bills of exchange or cheques submitted for payment by the customer have been honoured.

Any treatment or processing of goods subject to our retention of title (reserved goods) shall be carried out for us as the manufacturer in accordance with § 950 BGB (German Civil Code) without any obligation on our part. If our reserved goods are to be regarded as the main item or the main item is owned by the customer, full title to the new item shall pass to us when it is created. In other cases, we shall acquire a co-ownership interest in the new item in the proportion of the sales value of our reserved goods to the other goods used for the new item at the time of processing, intermingling, joining or mixing. The customer shall take custody of our ownership or co-ownership interest free of charge; it shall be treated as reserved goods.

Before transfer of title, our goods shall be neither pledged nor assigned as collateral without our prior consent. In addition, any third party rights or pledges shall be notified to us immediately and we shall be given all details and provided all documents necessary for intervention; otherwise the customer must bear our loss. In the latter case, our total claims against the customer shall also be immediately payable.

The customer shall be entitled to sell or to use our reserved goods in the ordinary course of business subject to the condition that the relevant claims are transferred in accordance with article 8 below. This right shall lapse upon the customer's failure to promptly meet his payment obligations towards us or in the event of any cheque or bill protests or his suspension of payments. In such cases, we shall be entitled to take back the goods provisionally at

the customer's expense and to sell them at our duly exercised discretion after a corresponding reminder has been sent to the customer. We will then pass the due amount to the customer's credit.

8. If our goods are sold before payment of our claim, the customer shall be obliged to retain our title against his purchaser until the goods have been paid for in full by the purchaser. The claim arising against the purchaser from such resale as well as any other ancillary rights or security interests of the customer resulting from the sale and any claims for compensation in case of damage to or destruction of our reserved property, including the relevant insurance sum shall hereby be assigned to us. We hereby accept this assignment. Where our co-ownership interest is sold, the relevant claims shall be assigned in the amount corresponding to the value of our interest.

The customer shall, at our request, inform us of his purchasers, notify them of the assignment made and provide us with any and all documents required to assert our rights.

As long as the customer meets his contractual obligations without delay, he shall be authorised to collect the claims assigned. He shall keep the amounts collected on our behalf separately and remit them to us immediately as soon and as far as our claims become due. The authorisation shall lapse in case of any cheque or bill protest of the customer or his definite suspension of payments. The customer shall bear the costs incurred for any action taken against third parties and shall advance them upon request.

If the security provided to us by the retention of title and the anticipatory assignment should exceed the claims to be secured by more than 20%, we shall, at the customer's request, release paid supplies of our choice. Upon payment of all our claims by the customer, assigned claims shall pass to the customer.

9. Any complaints for obvious defects regarding the quantity or quality of our supplies and services that are identifiable upon careful inspection shall without delay, but at the latest within the period of limitation of eight days from arrival of the goods at the address of the customer or the person appointed by him, be notified in writing to us, not to our representatives. Slight deviations in dimensions and designs within the scope of defined technical tolerances shall not give rise to any right of complaint. Any rejected goods may only be returned to us with our prior written authorisation.

In case of justified complaints within the prescribed period, we shall, at our option, take remedial action by way of subsequent performance, by rectifying the defect, supplying non-defective goods or providing a credit note for the lower value calculated.

We shall be entitled to refuse subsequent performance in accordance with the statutory provisions. If we refuse subsequent performance, if any subsequent performance remains unsuccessful or if the customer cannot be reasonably expected to accept any subsequent performance, the latter shall be entitled to withdraw from the contract in compliance with the provisions of the following sentences. The customer shall only be entitled to withdraw from the contract - where a withdrawal is not excluded by law - upon the unsuccessful expiry of a reasonable period for subsequent performance set by him, unless this period was not required under the statutory provisions (§§ 281 para. 2, 323 para. 2, 440, 441 para. 1 BGB (German Civil Code)).

In case of his withdrawal, the customer shall be liable for any deterioration, destruction or loss of use resulting from any negligence or intent on his part. Any claims for damages or reimbursement of expenses of the customer shall be subject to the provisions set out in article 10.

In the case of any fraudulent concealment of a defect or in the case of any provision of a quality guarantee for the goods sold at the time of the passing of risk within the meaning of § 444 BGB (German Civil Code) (seller's declaration that the object sold has a specific property at the time of the passing of risk and that the seller, regardless of any fault on his part, intends to be answerable for any and all consequences resulting from its absence), the customer's rights shall be exclusively governed by the statutory provisions.

We shall - in addition to the statutory grounds for refusal - also be entitled to refuse subsequent performance if and as long as the customer fails to send us, at our request, the rejected goods or a sample thereof; the customer shall have no right of withdrawal for any such refusal. We may further refuse any subsequent performance if the goods concerned have been altered or modified without our consent unless the customer can prove that the defect was not caused by such alteration or modification.

The limitation period for any claims arising from defects shall be one year; in the case of goods which have been used in accordance with their intended purpose for a building and have caused its defectiveness, the limitation period shall be two years. The provisions of §§ 478, 479 BGB (German Civil Code) on recourse in the chain of suppliers shall not be affected thereby.

10. In the case of a pre-contractual, contractual or non-contractual breach of duty, including unsatisfactory delivery, tortious conduct and producer's liability, we shall only be liable for compensatory damages and reimbursement of expenses - subject to further contractual or statutory liability requirements - in the case of intent, gross negligence or slightly negligent breach of a material contractual duty (contractual duty the infringement of which jeopardises the fulfilment of the object of the contract). However - except in the case of intent - our liability shall be limited to the typical contractual damage that was foreseeable at the time the contract was entered into. The purchaser shall not be permitted to make a claim for expenses incurred in vain.

Except for any breach of material duties, our liability for slight negligence shall be excluded, but in any case be limited to the amount of the purchase price.

Any claim asserted by the customer or a third party for payment of a contractual penalty shall be excluded.

With regard to damages caused by delay, we shall only be liable for slight negligence up to the amount of 5% of the purchase price agreed with us.

The exclusions and limitations of liability set forth above shall not apply in the event that a guarantee is given with respect to the quality of the object sold within the meaning of § 444 BGB (German Civil Code) if a defect is fraudulently concealed or in the event of injury to life, physical injury or injury to health, or strict liability under the German Product Liability Act.

Any and all claims for damages against us, for any legal reason whatsoever, shall become statute-barred at the latest after one year from delivery of the goods to the customer, in the case of tortious liability from the time of knowledge, or grossly negligent ignorance, of the circumstances giving rise to the claim and the person liable to pay damages. This provision shall not apply in the case of liability for intent and in the event that a guarantee is given for the quality of the object sold, in the case of fraudulent concealment of a defect or in the event of injury to life, physical injury or injury to health, or strict liability under the German Product Liability Act. Any shorter limitation periods shall take precedence.

11. We shall be entitled to process and store any customer data obtained with regard to or in connection with the business relationship in accordance with the German Federal Data Protection Act, irrespective of whether such data is provided by the purchaser himself or by any third parties.

12. Place of performance for delivery and payment is Menden/Sauerland. The court of competent jurisdiction for any and all disputes, including disputes with regard to bills of exchange and cheques, is the Local Court (Amtsgericht) of Menden or, at our option, the District Court (Landgericht) of Arnsberg, irrespective of the value of the object in dispute. We shall, however, also be entitled to take legal proceedings against the customer at the place of his registered office.

German law shall be exclusively applicable. The application of international purchase laws is hereby excluded.

Should, for any reason whatsoever, individual provisions of our terms and conditions of sale and delivery be invalid, the validity and binding nature of the other provisions shall not be affected thereby. The customer agrees, that the invalid provision shall be replaced by a valid provision that comes as close as possible to the economic meaning of the invalid provision.

13. The prices of products made of brass and copper are subject to certain fluctuations that are based on the relevant DEL listings. The prices of our brass articles are based on a DEL listing of € 150 for Ms 58, those of our copper products on a DEL value for electrolyte copper of € 200.

In case of any increase or reduction in these prices by more than € 15, a five per cent surcharge or deduction shall be made for each 15 points. The calculation of any such surcharges or deductions shall be based on the DEL listing of the date of our receipt of the order.

Valid from January 2010



OBO BETTERMANN GmbH & Co. KG

P.O. Box 1120
58694 Menden, Germany

Customer Service Germany

Tel. +49 (0)2373 89-0
Fax +49 (0)2373 89-1238
E-mail: export@obo.de

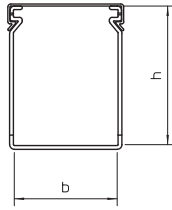
www.obo-bettermann.com

THINK CONNECTED.



LFS-N 50060 steinpar CE [®] RAL us

Wiring trunking, type LK4 15015

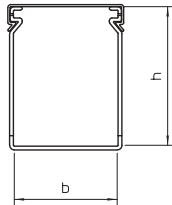


Type	Colour	Length mm	Dimension		Pack. Weight		Item No.
			W x H mm	m	kg/100 m		
LK4 15015	Stone grey	2000	15x15	72	12.000	6178001	

PVC Polyvinylchloride

Wiring trunking including cover and base perforation. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

Wiring trunking, type LK4 30015

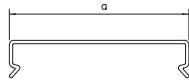


Type	Colour	Length mm	Dimension		Pack. Weight		Item No.
			W x H mm	m	kg/100 m		
LK4 30015	Stone grey	2000	15x30	40	18.000	6178003	

PVC Polyvinylchloride

Wiring trunking including cover and base perforation. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

Cover

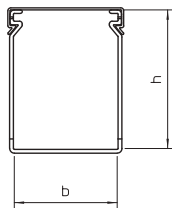


Type	Colour	Di- men- sion a mm	Length mm	Pack. Weight		Item No.
				m	kg/100 m	
LK4 D 15	Stone grey	20	2000	92	8.500	6178480

PVC Polyvinylchloride

Trunking cover for replacement requirements.

Wiring trunking, type LK4 30025

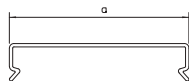


Type	Colour	Length mm	Dimension		Pack. Weight		Item No.
			W x H mm	m	kg/100 m		
LK4 30025	Stone grey	2000	25x30	48	28.000	6178005	

PVC Polyvinylchloride

Wiring trunking including cover and base perforation. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

Cover

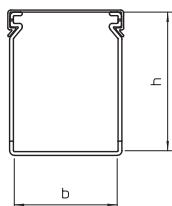


Type	Colour	Di- men- sion a mm	Length mm	Pack. Weight		Item No.
				m	kg/100 m	
LK4 D 25	Stone grey	31	2000	32	10.000	6178482

PVC Polyvinylchloride

Trunking cover for replacement requirements.

Wiring trunking, type LK4 40025



Type	Colour	Length mm	Dimension		Pack. Weight		Item No.
			W x H mm	m	kg/100 m		
LK4 40025	Stone grey	2000	25x40	48	36.500	6178010	

PVC Polyvinylchloride

Wiring trunking including cover and base perforation. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

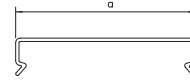


Cover

Type	Colour	Dimension		Pack. m	Weight kg/100 m	Item No.
		a mm	Length mm			
LK4 D 25	Stone grey	31	2000	32	10.000	6178482

PVC Polyvinylchloride

Trunking cover for replacement requirements.

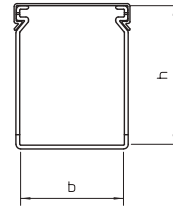


Wiring trunking, type LK4 40040

Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W mm	H mm			
LK4 40040	Stone grey	2000	40	40	36	44.000	6178012

PVC Polyvinylchloride

Wiring trunking including cover and base perforation. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

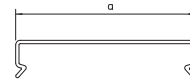


Cover

Type	Colour	Dimension		Pack. m	Weight kg/100 m	Item No.
		a mm	Length mm			
LK4 D 40	Stone grey	46.2	2000	24	13.500	6178484

PVC Polyvinylchloride

Trunking cover for replacement requirements.

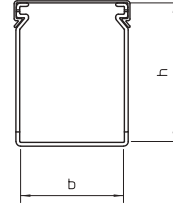


Wiring trunking, type LK4 40060

Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W mm	H mm			
LK4 40060	Stone grey	2000	60	40	24	57.000	6178014

PVC Polyvinylchloride

Wiring trunking including cover and base perforation. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

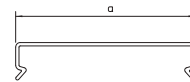


Cover

Type	Colour	Dimension		Pack. m	Weight kg/100 m	Item No.
		a mm	Length mm			
LK4 D 60	Stone grey	66.4	2000	40	18.000	6178486

PVC Polyvinylchloride

Trunking cover for replacement requirements.

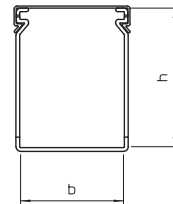


Wiring trunking, type LK4 40080

Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W mm	H mm			
LK4 40080	Stone grey	2000	80	40	24	71.000	6178016

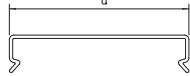
PVC Polyvinylchloride

Wiring trunking including cover and base perforation. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.



LK4 wiring trunking

Cover

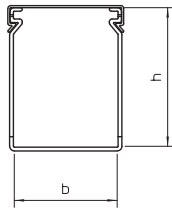


Type	Colour	Dimension		Pack. m	Weight kg/100 m	Item No.
		a mm	Length mm			
LK4 D 80	Stone grey	87	2000	12	27.000	6178488

PVC Polyvinylchloride

Trunking cover for replacement requirements.

Wiring trunking, type LK4 40100

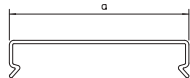


Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W mm	H mm			
LK4 40100	Stone grey	2000	100	40	24	85.500	6178018

PVC Polyvinylchloride

Wiring trunking including cover and base perforation. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

Cover

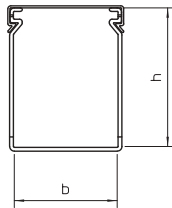


Type	Colour	Dimension		Pack. m	Weight kg/100 m	Item No.
		a mm	Length mm			
LK4 D 100	Stone grey	107.4	2000	12	35.500	6178490

PVC Polyvinylchloride

Trunking cover for replacement requirements.

Wiring trunking, type LK4 60015

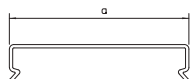


Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W mm	H mm			
LK4 60015	Stone grey	2000	15	60	48	32.500	6178026

PVC Polyvinylchloride

Wiring trunking including cover and base perforation. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

Cover

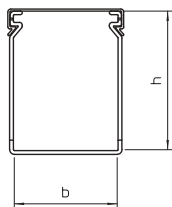


Type	Colour	Dimension		Pack. m	Weight kg/100 m	Item No.
		a mm	Length mm			
LK4 D 15	Stone grey	20	2000	92	8.500	6178480

PVC Polyvinylchloride

Trunking cover for replacement requirements.

Wiring trunking, type LK4 60025



Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W mm	H mm			
LK4 60025	Stone grey	2000	25	60	32	46.000	6178028

PVC Polyvinylchloride

Wiring trunking including cover and base perforation. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

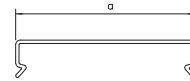


Cover

Type	Colour	Dimension a mm	Length mm	Pack. Weight		Item No.
				m	kg/100 m	
LK4 D 25	Stone grey	31	2000	32	10.000	6178482

PVC Polyvinylchloride

Trunking cover for replacement requirements.

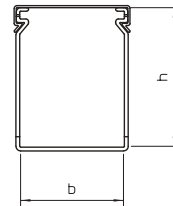


Wiring trunking, type LK4 60040

Type	Colour	Length mm	Dimension W x H mm	Pack. Weight		Item No.
				m	kg/100 m	
LK4 60040	Stone grey	2000	40x60	24	53.500	6178031

PVC Polyvinylchloride

Wiring trunking including cover and base perforation. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

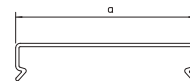


Cover

Type	Colour	Dimension a mm	Length mm	Pack. Weight		Item No.
				m	kg/100 m	
LK4 D 40	Stone grey	46.2	2000	24	13.500	6178484

PVC Polyvinylchloride

Trunking cover for replacement requirements.

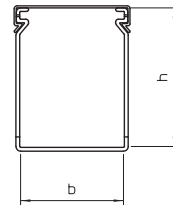


Wiring trunking, type LK4 60060

Type	Colour	Length mm	Dimension W x H mm	Pack. Weight		Item No.
				m	kg/100 m	
LK4 60060	Stone grey	2000	60x60	32	64.500	6178033

PVC Polyvinylchloride

Wiring trunking including cover and base perforation. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

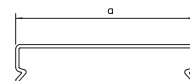


Cover

Type	Colour	Dimension a mm	Length mm	Pack. Weight		Item No.
				m	kg/100 m	
LK4 D 60	Stone grey	66.4	2000	40	18.000	6178486

PVC Polyvinylchloride

Trunking cover for replacement requirements.

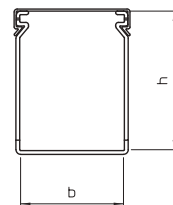


Wiring trunking, type LK4 60080

Type	Colour	Length mm	Dimension W x H mm	Pack. Weight		Item No.
				m	kg/100 m	
LK4 60080	Stone grey	2000	80x60	24	82.500	6178035

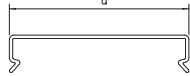
PVC Polyvinylchloride

Wiring trunking including cover and base perforation. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.



LK4 wiring trunking

Cover

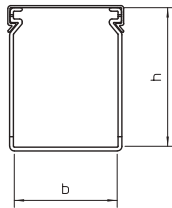


Type	Colour	Dimension		Pack. m	Weight kg/100 m	Item No.
		a mm	Length mm			
LK4 D 80	Stone grey	87	2000	12	27.000	6178488

PVC Polyvinylchloride

Trunking cover for replacement requirements.

Wiring trunking, type LK4 60100

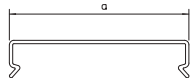


Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W mm	H mm			
LK4 60100	Stone grey	2000	100	60	16	100.000	6178037

PVC Polyvinylchloride

Wiring trunking including cover and base perforation. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

Cover

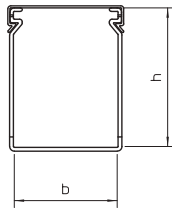


Type	Colour	Dimension		Pack. m	Weight kg/100 m	Item No.
		a mm	Length mm			
LK4 D 100	Stone grey	107.4	2000	12	35.500	6178490

PVC Polyvinylchloride

Trunking cover for replacement requirements.

Wiring trunking, type LK4 60120

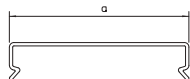


Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W mm	H mm			
LK4 60120	Stone grey	2000	120	60	8	117.000	6178039

PVC Polyvinylchloride

Wiring trunking including cover and base perforation. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

Cover

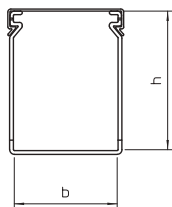


Type	Colour	Dimension		Pack. m	Weight kg/100 m	Item No.
		a mm	Length mm			
LK4 D 120	Stone grey	127.8	2000	16	45.500	6178492

PVC Polyvinylchloride

Trunking cover for replacement requirements.

Wiring trunking, type LK4 80025



Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W mm	H mm			
LK4 80025	Stone grey	2000	25	80	32	61.000	6178050

PVC Polyvinylchloride

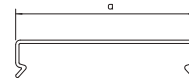
Wiring trunking including cover and base perforation. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.



Type	Colour	Di- men- sion	Length mm	Pack. m	Weight kg/100 m	Item No.
		a mm				
LK4 D 25	Stone grey	31	2000	32	10.000	6178482

PVC Polyvinylchloride

Trunking cover for replacement requirements.



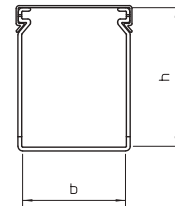
Cover

Wiring trunking, type LK4 80040

Type	Colour	Length mm	Dimension	Pack. m	Weight kg/100 m	Item No.
			W x H mm			
LK4 80040	Stone grey	2000	40x80	24	64.500	6178052
LK4 80040L800	Stone grey	2000	x80	168	51.600	6178069

PVC Polyvinylchloride

Wiring trunking including cover and base perforation. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

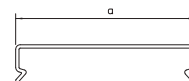


Cover

Type	Colour	Di- men- sion	Length mm	Pack. m	Weight kg/100 m	Item No.
		a mm				
LK4 D 40	Stone grey	46.2	2000	24	13.500	6178484

PVC Polyvinylchloride

Trunking cover for replacement requirements.

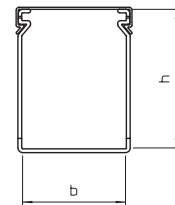


Wiring trunking, type LK4 80060

Type	Colour	Length mm	Dimension	Pack. m	Weight kg/100 m	Item No.
			W x H mm			
LK4 80060	Stone grey	2000	60x80	24	76.000	6178054

PVC Polyvinylchloride

Wiring trunking including cover and base perforation. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

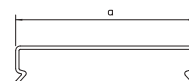


Cover

Type	Colour	Di- men- sion	Length mm	Pack. m	Weight kg/100 m	Item No.
		a mm				
LK4 D 60	Stone grey	66.4	2000	40	18.000	6178486

PVC Polyvinylchloride

Trunking cover for replacement requirements.

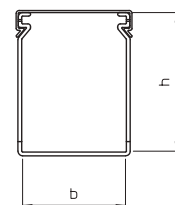


Wiring trunking, type LK4 80080

Type	Colour	Length mm	Dimension	Pack. m	Weight kg/100 m	Item No.
			W x H mm			
LK4 80080	Stone grey	2000	80x80	16	95.500	6178056

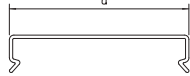
PVC Polyvinylchloride

Wiring trunking including cover and base perforation. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.



LK4 wiring trunking

Cover

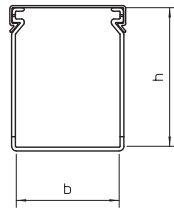


Type	Colour	Dimension a mm	Length mm	Pack. Weight		Item No.
				m	kg/100 m	
LK4 D 80	Stone grey	87	2000	12	27.000	6178488

PVC Polyvinylchloride

Trunking cover for replacement requirements.

Wiring trunking, type LK4 80100

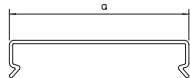


Type	Colour	Length mm	Dimension W x H mm		Pack. Weight		Item No.
			m	kg/100 m			
LK4 80100	Stone grey	2000	100x80	16	111.500	6178059	

PVC Polyvinylchloride

Wiring trunking including cover and base perforation. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

Cover

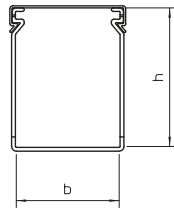
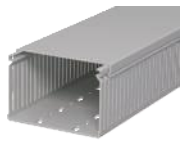


Type	Colour	Dimension a mm	Length mm	Pack. Weight		Item No.
				m	kg/100 m	
LK4 D 100	Stone grey	107.4	2000	12	35.500	6178490

PVC Polyvinylchloride

Trunking cover for replacement requirements.

Wiring trunking, type LK4 80120

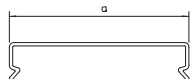


Type	Colour	Length mm	Dimension W x H mm		Pack. Weight		Item No.
			m	kg/100 m			
LK4 80120	Stone grey	2000	120x80	8	128.500	6178061	

PVC Polyvinylchloride

Wiring trunking including cover and base perforation. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

Cover



Type	Colour	Dimension a mm	Length mm	Pack. Weight		Item No.
				m	kg/100 m	
LK4 D 120	Stone grey	127.8	2000	16	45.500	6178492

PVC Polyvinylchloride

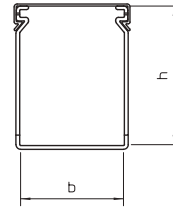
Trunking cover for replacement requirements.

Wiring trunking, type LK4/N 60015

Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LK4 N 60015	Stone grey	2000	15x60		48	41.000	6178201

PVC Polyvinylchloride

Wiring trunking including cover and base perforation, tapering in the side slots stops the cables from falling out.

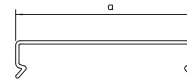


Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.

PVC Polyvinylchloride

Trunking cover for replacement requirements.

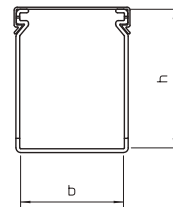


Wiring trunking, type LK4/N 60025

Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LK4 N 60025	Stone grey	2000	25x60		32	48.500	6178203

PVC Polyvinylchloride

Wiring trunking including cover and base perforation, tapering in the side slots stops the cables from falling out. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

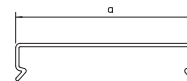


Cover

Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.

PVC Polyvinylchloride

Trunking cover for replacement requirements.

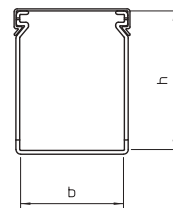


Wiring trunking, type LK4/N 60040

Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LK4 N 60040	Stone grey	2000	40x60		24	56.000	6178205

PVC Polyvinylchloride

Wiring trunking including cover and base perforation, tapering in the side slots stops the cables from falling out. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

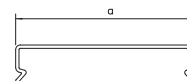


Cover

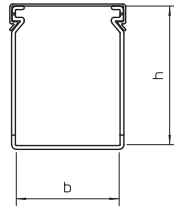
Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.

PVC Polyvinylchloride

Trunking cover for replacement requirements.



Wiring trunking, type LK4/N 60060

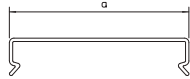


Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LK4 N 60060	Stone grey	2000	60x60		32	68.000	6178207

PVC Polyvinylchloride

Wiring trunking including cover and base perforation, tapering in the side slots stops the cables from falling out. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

Cover

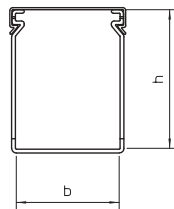


Type	Colour	Di- men- sion a mm	Length mm	Pack. m	Weight kg/100 m	Item No.

PVC Polyvinylchloride

Trunking cover for replacement requirements.

Wiring trunking, type LK4/N 60080

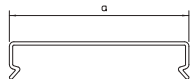


Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LK4 N 60080	Stone grey	2000	80x60		24	87.000	6178209

PVC Polyvinylchloride

Wiring trunking including cover and base perforation, tapering in the side slots stops the cables from falling out. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

Cover

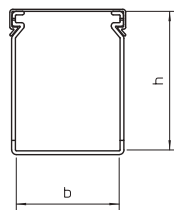


Type	Colour	Di- men- sion a mm	Length mm	Pack. m	Weight kg/100 m	Item No.

PVC Polyvinylchloride

Trunking cover for replacement requirements.

Wiring trunking, type LK4/N 60100

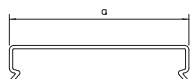


Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LK4 N 60100	Stone grey	2000	100x60		16	105.500	6178211

PVC Polyvinylchloride

Wiring trunking including cover and base perforation, tapering in the side slots stops the cables from falling out. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

Cover



Type	Colour	Di- men- sion a mm	Length mm	Pack. m	Weight kg/100 m	Item No.

PVC Polyvinylchloride

Trunking cover for replacement requirements.

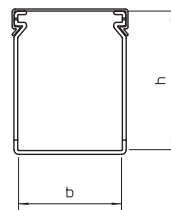


Wiring trunking, type LK4/N 60120

Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			a	W x H mm			
LK4 N 60120	Stone grey	2000	120	60	8	120.500	6178213

PVC Polyvinylchloride

Wiring trunking including cover and base perforation, tapering in the side slots stops the cables from falling out. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.



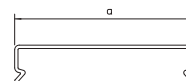
VK wiring duct

Cover

Type	Colour	Length mm	Di- men- sion		Pack. m	Weight kg/100 m	Item No.
			a	mm			
LK4 D 120	Stone grey	127.8	2000		16	45.500	6178492

PVC Polyvinylchloride

Trunking cover for replacement requirements.

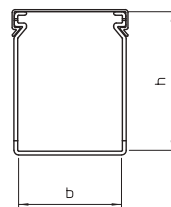


Wiring trunking, type LK4/N 80025

Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			a	W x H mm			
LK4 N 80025	Stone grey	2000	25	80	32	65.000	6178225

PVC Polyvinylchloride

Wiring trunking including cover and base perforation, tapering in the side slots stops the cables from falling out. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

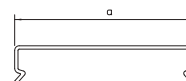


Cover

Type	Colour	Length mm	Di- men- sion		Pack. m	Weight kg/100 m	Item No.
			a	mm			
LK4 D 25	Stone grey	31	2000		32	10.000	6178482

PVC Polyvinylchloride

Trunking cover for replacement requirements.

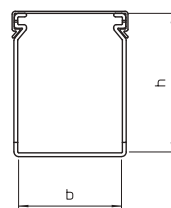


Wiring trunking, type LK4/N 80040

Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			a	W x H mm			
LK4 N 80040	Stone grey	2000	40	80	24	73.500	6178227

PVC Polyvinylchloride

Wiring trunking including cover and base perforation, tapering in the side slots stops the cables from falling out. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

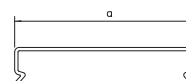


Cover

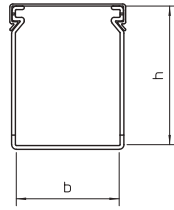
Type	Colour	Length mm	Di- men- sion		Pack. m	Weight kg/100 m	Item No.
			a	mm			
LK4 D 40	Stone grey	46.2	2000		24	13.500	6178484

PVC Polyvinylchloride

Trunking cover for replacement requirements.



Wiring trunking, type LK4/N 80060

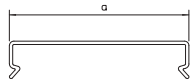


Type	Colour	Length mm	Dimension		Pack. Weight		Item No.
			W x H mm	m	kg/100 m		
LK4 N 80060	Stone grey	2000	60x80	24	82.000	6178229	

PVC Polyvinylchloride

Wiring trunking including cover and base perforation, tapering in the side slots stops the cables from falling out. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

Cover

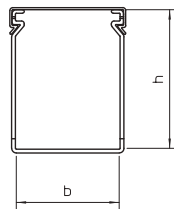


Type	Colour	Di- men- sion a mm	Length mm	Pack. Weight		Item No.
				m	kg/100 m	
LK4 D 60	Stone grey	66.4	2000	40	18.000	6178486

PVC Polyvinylchloride

Trunking cover for replacement requirements.

Wiring trunking, type LK4/N 80080

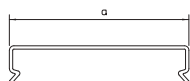


Type	Colour	Length mm	Dimension		Pack. Weight		Item No.
			W x H mm	m	kg/100 m		
LK4 N 80080	Stone grey	2000	80x80	16	101.000	6178231	

PVC Polyvinylchloride

Wiring trunking including cover and base perforation, tapering in the side slots stops the cables from falling out. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

Cover

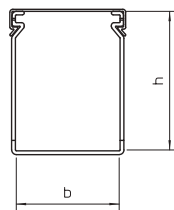


Type	Colour	Di- men- sion a mm	Length mm	Pack. Weight		Item No.
				m	kg/100 m	
LK4 D 80	Stone grey	87	2000	12	27.000	6178488

PVC Polyvinylchloride

Trunking cover for replacement requirements.

Wiring trunking, type LK4/N 80100

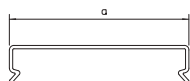


Type	Colour	Length mm	Dimension		Pack. Weight		Item No.
			W x H mm	m	kg/100 m		
LK4 N 80100	Stone grey	2000	100x80	16	116.500	6178233	

PVC Polyvinylchloride

Wiring trunking including cover and base perforation, tapering in the side slots stops the cables from falling out. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

Cover



Type	Colour	Di- men- sion a mm	Length mm	Pack. Weight		Item No.
				m	kg/100 m	
LK4 D 100	Stone grey	107.4	2000	12	35.500	6178490

PVC Polyvinylchloride

Trunking cover for replacement requirements.

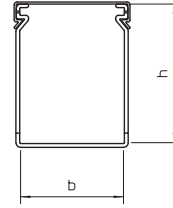


Wiring trunking, type LK4/N 80120

Type	Colour	Dimension		Pack. m	Weight kg/100 m	Item No.
		Length mm	W x H mm			
LK4 N 80120	Stone grey	2000	120x80	8	133.500	6178236

PVC Polyvinylchloride

Wiring trunking including cover and base perforation, tapering in the side slots stops the cables from falling out. The nominal dimension of the system size corresponds to the internal dimension of the trunking. Special lengths on request.

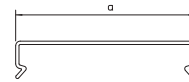


Cover

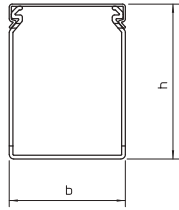
Type	Colour	Dimension a mm	Length mm	Pack. m	Weight kg/100 m	Item No.

PVC Polyvinylchloride

Trunking cover for replacement requirements.



Wiring trunking, type LKV 25025

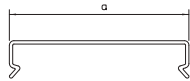


Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LKV 25025	Stone grey	2000	25x25		32	24.000	6178302

PVC Polyvinylchloride

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation. Special lengths on request.

Cover

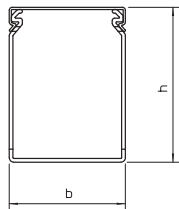


Type	Colour	Di- men- sion a mm	Length mm	Pack. m	Weight kg/100 m	Item No.

PVC Polyvinylchloride

Trunking cover for replacement requirements.

Wiring trunking, type LKV 37025

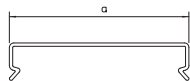


Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LKV 37025	Stone grey	2000	25x37,5		32	31.500	6178305

PVC Polyvinylchloride

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation. Special lengths on request.

Cover

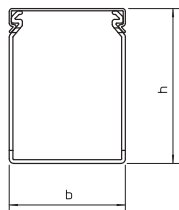


Type	Colour	Di- men- sion a mm	Length mm	Pack. m	Weight kg/100 m	Item No.

PVC Polyvinylchloride

Trunking cover for replacement requirements.

Wiring trunking, type LKV 37037

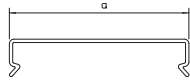


Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LKV 37037	Stone grey	2000	37,5 x 37,5		60	40.500	6178307

PVC Polyvinylchloride

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation. Special lengths on request.

Cover



Type	Colour	Di- men- sion a mm	Length mm	Pack. m	Weight kg/100 m	Item No.

PVC Polyvinylchloride

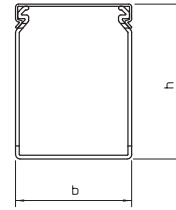
Trunking cover for replacement requirements.

Wiring trunking, type LKV 50025

Type	Colour	Length mm	Dimension		Pack. Weight		Item No.
			W x H mm	m	kg/100 m		
LKV 50025	Stone grey	2000	25x50	60	35.500	6178310	

PVC Polyvinylchloride

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation. Special lengths on request.

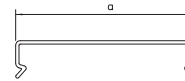


Cover

Type	Colour	Length mm	Dimension a mm	Pack. Weight		Item No.
				m	kg/100 m	
LKV D 25	Stone grey	25	2000	36	9.500	6178504

PVC Polyvinylchloride

Trunking cover for replacement requirements.

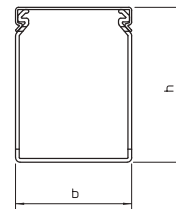


Wiring trunking, type LKV 50037

Type	Colour	Length mm	Dimension		Pack. Weight		Item No.
			W x H mm	m	kg/100 m		
LKV 50037	Stone grey	2000	37,5 x 50	48	44.500	6178312	

PVC Polyvinylchloride

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation. Special lengths on request.

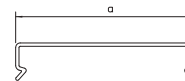


Cover

Type	Colour	Length mm	Dimension a mm	Pack. Weight		Item No.
				m	kg/100 m	
LKV D 37	Stone grey	37.5	2000	24	15.000	6178506

PVC Polyvinylchloride

Trunking cover for replacement requirements.

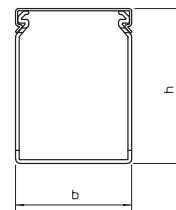


Wiring trunking, type LKV 50050

Type	Colour	Length mm	Dimension		Pack. Weight		Item No.
			W x H mm	m	kg/100 m		
LKV 50050	Stone grey	2000	50x50	36	50.000	6178314	

PVC Polyvinylchloride

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation. Special lengths on request.

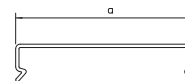


Cover

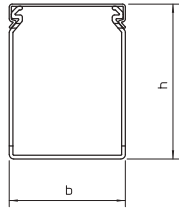
Type	Colour	Length mm	Dimension a mm	Pack. Weight		Item No.
				m	kg/100 m	
LKV D 50	Stone grey	50	2000	24	17.500	6178508

PVC Polyvinylchloride

Trunking cover for replacement requirements.



Wiring trunking, type LKV 50075

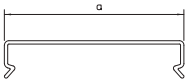


Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LKV 50075	Stone grey	2000	75x50		24	66.000	6178316

PVC Polyvinylchloride

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation. Special lengths on request.

Cover

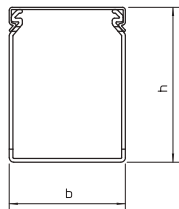


Type	Colour	Di- men- sion a mm	Length mm	Pack. m	Weight kg/100 m	Item No.

PVC Polyvinylchloride

Trunking cover for replacement requirements.

Wiring trunking, type LKV 75025

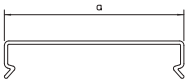


Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LKV 75025	Stone grey	2000	25x75		40	48.500	6178320

PVC Polyvinylchloride

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation. Special lengths on request.

Cover

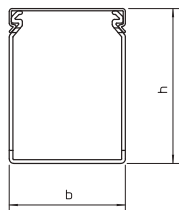


Type	Colour	Di- men- sion a mm	Length mm	Pack. m	Weight kg/100 m	Item No.

PVC Polyvinylchloride

Trunking cover for replacement requirements.

Wiring trunking, type LKV 75037

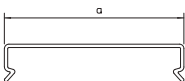


Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LKV 75037	Stone grey	2000	37,5 x 75		32	58.500	6178322

PVC Polyvinylchloride

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation. Special lengths on request.

Cover



Type	Colour	Di- men- sion a mm	Length mm	Pack. m	Weight kg/100 m	Item No.

PVC Polyvinylchloride

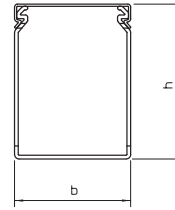
Trunking cover for replacement requirements.

Wiring trunking, type LKV 75050

Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LKV 75050	Stone grey	2000	50x75		24	67.500	6178324

PVC Polyvinylchloride

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation. Special lengths on request.

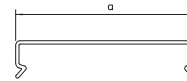


Cover

Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			a mm				
LKV D 50	Stone grey	50	2000		24	17.500	6178508

PVC Polyvinylchloride

Trunking cover for replacement requirements.

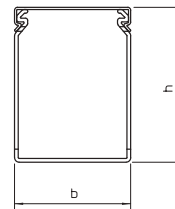


Wiring trunking, type LKV 75075

Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LKV 75075	Stone grey	2000	75x75		16	80.000	6178326

PVC Polyvinylchloride

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation. Special lengths on request.

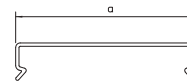


Cover

Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			a mm				
LKV D 75	Stone grey	75	2000		12	23.000	6178510

PVC Polyvinylchloride

Trunking cover for replacement requirements.

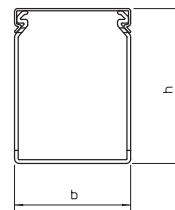


Wiring trunking, type LKV 75100

Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LKV 75100	Stone grey	2000	100x75		16	105.500	6178328

PVC Polyvinylchloride

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation. Special lengths on request.

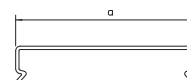


Cover

Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			a mm				
LKV D 100	Stone grey	100	2000		12	34.500	6178512

PVC Polyvinylchloride

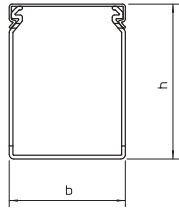
Trunking cover for replacement requirements.



LFS_Typ_OA / en / 2019/07/11 10:39:38 (LLEExport_02471) / 2019/07/11 10:40:01 10:40:01



Wiring trunking, type LKV 75125

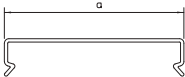


Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LKV 75125	Stone grey	2000	125 x 75		8	128.500	6178330

PVC Polyvinylchloride

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation. Special lengths on request.

Cover

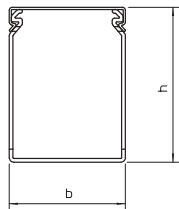


Type	Colour	Length mm	Di- men- sion		Pack. m	Weight kg/100 m	Item No.
			a mm	Length mm			
LKV D 125	Stone grey	125	2000		16	47.000	6178514

PVC Polyvinylchloride

Trunking cover for replacement requirements.

Wiring trunking, type LKV 10037

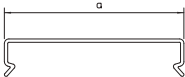


Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LKV 10037	Stone grey	2000	37,5x100		32	67.000	6178334

PVC Polyvinylchloride

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation. Special lengths on request.

Cover

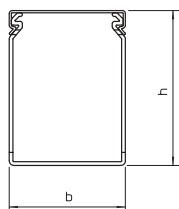


Type	Colour	Length mm	Di- men- sion		Pack. m	Weight kg/100 m	Item No.
			a mm	Length mm			
LKV D 37	Stone grey	37.5	2000		24	15.000	6178506

PVC Polyvinylchloride

Trunking cover for replacement requirements.

Wiring trunking, type LKV 10050

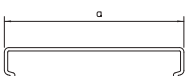


Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LKV 10050	Stone grey	2000	50x100		24	77.000	6178336
LKV 10050	Stone grey	2400	50x100		1	184.800	6179204

PVC Polyvinylchloride

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation. Special lengths on request.

Cover



Type	Colour	Length mm	Di- men- sion		Pack. m	Weight kg/100 m	Item No.
			a mm	Length mm			
LKV D 50	Stone grey	50	2000		24	17.500	6178508

PVC Polyvinylchloride

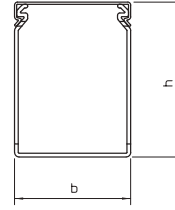
Trunking cover for replacement requirements.

Wiring trunking, type LKV 10075

Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LKV 10075	Stone grey	2000	75x100		16	96.000	6178338

PVC Polyvinylchloride

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation. Special lengths on request.

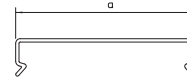


Cover

Type	Colour	Length mm	Dimension a mm	Pack. m	Weight kg/100 m	Item No.

PVC Polyvinylchloride

Trunking cover for replacement requirements.

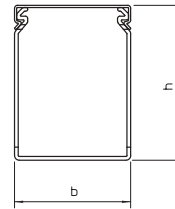


Wiring duct, type LKV 100100

Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LKV 100100	Stone grey	2000	100x100		8	116.500	6178341

PVC Polyvinylchloride

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation. Special lengths on request.

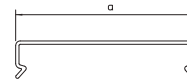


Cover

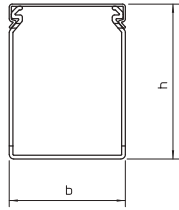
Type	Colour	Length mm	Dimension a mm	Pack. m	Weight kg/100 m	Item No.

PVC Polyvinylchloride

Trunking cover for replacement requirements.



Wiring trunking, type LKV N 75025

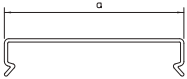


Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LKV N 75025	Stone grey	2000	25x75		40	49.500	6178420

PVC Polyvinylchloride

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation, tapering in the side slots stops the cables from falling out.

Cover

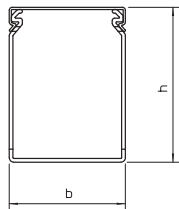


Type	Colour	Di- men- sion a mm	Length mm	Pack. m	Weight kg/100 m	Item No.

PVC Polyvinylchloride

Trunking cover for replacement requirements.

Wiring trunking, type LKV N 75037

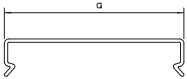


Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LKV N 75037	Stone grey	2000	37,5x75		32	60.500	6178422

PVC Polyvinylchloride

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation, tapering in the side slots stops the cables from falling out.

Cover

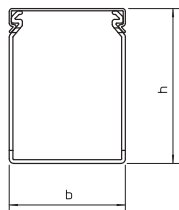


Type	Colour	Di- men- sion a mm	Length mm	Pack. m	Weight kg/100 m	Item No.

PVC Polyvinylchloride

Trunking cover for replacement requirements.

Wiring trunking, type LKV N 75050

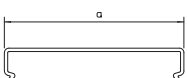


Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LKV N 75050	Stone grey	2000	50x75		24	72.500	6178424

PVC Polyvinylchloride

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation, tapering in the side slots stops the cables from falling out.

Cover



Type	Colour	Di- men- sion a mm	Length mm	Pack. m	Weight kg/100 m	Item No.

PVC Polyvinylchloride

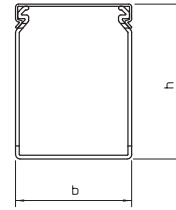
Trunking cover for replacement requirements.

Wiring trunking, type LKV N 75075

Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LKV N 75075	Stone grey	2000	75x75		16	84.500	6178426

PVC Polyvinylchloride

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation, tapering in the side slots stops the cables from falling out.

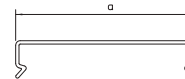


Cover

Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			a mm				
LKV D 75	Stone grey	75	2000		12	23.000	6178510

PVC Polyvinylchloride

Trunking cover for replacement requirements.

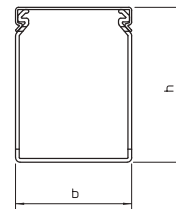


Wiring trunking, type LKV N 75100

Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LKV N 75100	Stone grey	2000	100x75		16	112.000	6178428

PVC Polyvinylchloride

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation, tapering in the side slots stops the cables from falling out.

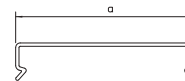


Cover

Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			a mm				
LKV D 100	Stone grey	100	2000		12	34.500	6178512

PVC Polyvinylchloride

Trunking cover for replacement requirements.

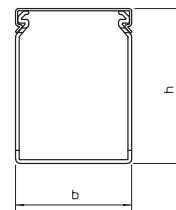


Wiring trunking, type LKV N 75125

Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LKV N 75125	Stone grey	2000	125x75		8	138.500	6178430

PVC Polyvinylchloride

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation, tapering in the side slots stops the cables from falling out.

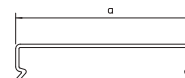


Cover

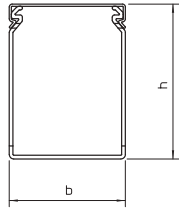
Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			a mm				
LKV D 125	Stone grey	125	2000		16	47.000	6178514

PVC Polyvinylchloride

Trunking cover for replacement requirements.



Wiring trunking, type LKV N 10037

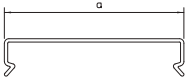


Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LKV N 10037	Stone grey	2000	37,5x100		32	73.000	6178435

PVC Polyvinylchloride

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation, tapering in the side slots stops the cables from falling out.

Cover

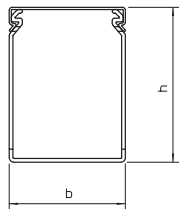


Type	Colour	Length mm	Di- men- sion		Pack. m	Weight kg/100 m	Item No.
			a mm				
LKV D 37	Stone grey	2000	37.5		24	15.000	6178506

PVC Polyvinylchloride

Trunking cover for replacement requirements.

Wiring trunking, type LKV N 10050

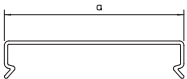


Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LKV N 10050	Stone grey	2000	50x100		24	83.000	6178437

PVC Polyvinylchloride

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation, tapering in the side slots stops the cables from falling out.

Cover

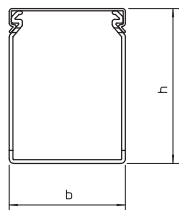


Type	Colour	Length mm	Di- men- sion		Pack. m	Weight kg/100 m	Item No.
			a mm				
LKV D 50	Stone grey	2000	50		24	17.500	6178508

PVC Polyvinylchloride

Trunking cover for replacement requirements.

Wiring trunking, type LKV N 10075

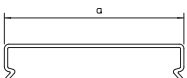


Type	Colour	Length mm	Dimension		Pack. m	Weight kg/100 m	Item No.
			W x H mm				
LKV N 10075	Stone grey	2000	75x100		16	102.000	6178439

PVC Polyvinylchloride

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation, tapering in the side slots stops the cables from falling out.

Cover



Type	Colour	Length mm	Di- men- sion		Pack. m	Weight kg/100 m	Item No.
			a mm				
LKV D 75	Stone grey	2000	75		12	23.000	6178510

PVC Polyvinylchloride

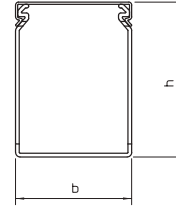
Trunking cover for replacement requirements.

Wiring duct, type LKV N 100100

Type	Colour	Length mm	Dimension W x H mm	Pack. Weight		Item No.
				m	kg/100 m	
LKV N 100100	Stone grey	2000	100x100	8	122.500	6178441

PVC Polyvinylchloride

Wiring trunking to DIN EN 50085-2-3 including cover and base perforation, tapering in the side slots stops the cables from falling out.

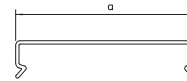


Cover

Type	Colour	Dimension a mm	Length mm	Pack. Weight		Item No.
				m	kg/100 m	
LKV D 100	Stone grey	100	2000	12	34.500	6178512

PVC Polyvinylchloride

Trunking cover for replacement requirements.



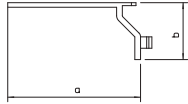
Identification plate, intrinsically safe circuits



Type	Colour	Dimension		Pack. pcs	Weight kg/100 pcs.	Item No.
		mm	mm			
VK ISCS 5012	Light blue	99	25	20	0.100	6178643

Sticker as an identification plate to attach onto wiring trunking in switching cabinets with self-protected power circuits.

Wire retainer for type LK4 and LK4/N

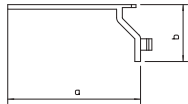


Type	Colour	Dimension		Pack. pcs	Weight kg/100 pcs.	Item No.
		a mm	b mm			
LK4 H	Stone grey	56	25	100	0.348	6178092

PS Polystyrene

Wire retainer for wiring trunking, type LK4 and LK4/N. The wire retainer prevents already inserted cables from falling out. These predetermined breaking points allow the length to be reduced for various trunking widths to 38, 28 and 23 mm.

Wire retainer for type LKV and LKV/N

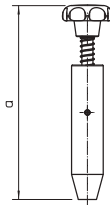


Type	Colour	Dimension		Pack. pcs	Weight kg/100 pcs.	Item No.
		a mm	b mm			
LKV H	Stone grey	56	25	100	0.343	6178349

PS Polystyrene

Wire retainer for wiring trunking, type LKV and LKV/N. The wire retainer prevents already inserted cables from falling out. These predetermined breaking points allow the length to be reduced for various trunking widths to 38, 28 and 23 mm.

Plastic rivet tool

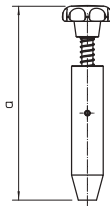


Type	Colour	Dimension	Pack. pcs	Weight kg/100 pcs.	Item No.

POM Polyacetal (polyoxymethylene, polyformaldehyde)

Riveting tool for installing body-bound rivets 4.5 mm.

Plastic rivet tool

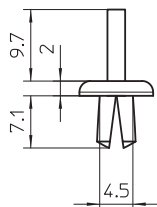


Type	Colour	Dimension	Pack. pcs	Weight kg/100 pcs.	Item No.

POM Polyacetal (polyoxymethylene, polyformaldehyde)

Riveting tool for mounting spreading rivets 6 mm.

Spreading rivet, KSN 1



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

PP Polypropylene

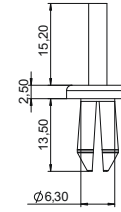
The riveting tool KNW1 should be used for rapid mounting and for the optimum function.

Body-bound rivet, KSN 22

Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
KSN22	Light grey	100	0.070	6178525

PA Polyamide

The riveting tool KNW2 should be used for rapid mounting and for the optimum function. Dimension of the drill hole: 6.5 mm.

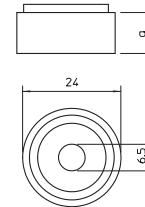


Spacer

Type	Colour	Dimension a mm	Pack. pcs	Weight kg/100 pcs.	Item No.
AH1	Grey	12	100	0.354	6178540
AH2	Grey	20	100	0.577	6178542

PVC Polyvinylchloride

Stackable spacer for height compensation between the different component heights.

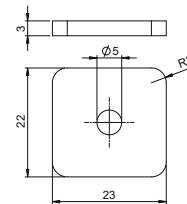


Washer

Type	Colour	Dimension h mm	Pack. pcs	Weight kg/100 pcs.	Item No.
ULS	Grey	3	100	0.170	6178548

PVC Polyvinylchloride

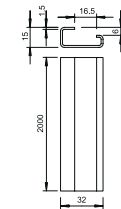
Washer as compensation for different heights.



Support rail

Type	Version	Material thickness mm	Length mm	Bundle m	Weight kg/100 m	Item No.
2064 GTP 2M	Unperforated	1.5	2000	20	70.000	1115057

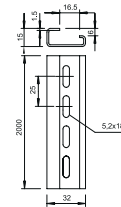
St Steel
GTP Electrogalvanised, transparently passivated
 G rail G32 to DIN EN 60715 (previously DIN EN 50035).



Support rail perforated

Type	Version	Material thickness mm	Length mm	Bundle m	Weight kg/100 m	Item No.
2064 GTP L 2M	Perforated	1.5	2000	20	69.000	1115065

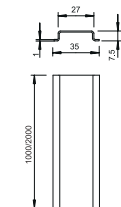
St Steel
GTP Electrogalvanised, transparently passivated
 G rail G32 to DIN EN 60715 (previously DIN EN 50035).



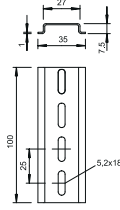
Hat profile rail, unperforated

Type	Version	Material thickness mm	Length mm	Bundle m	Weight kg/100 m	Item No.
2069 2M GTP	Unperforated	1	2000	50	36.040	1115650

St Steel
GTP Electrogalvanised, transparently passivated
 Hat profile rail 35 x 7.5 mm to DIN EN 60715 (formerly DIN EN 50022).



Hat profile rail, perforated



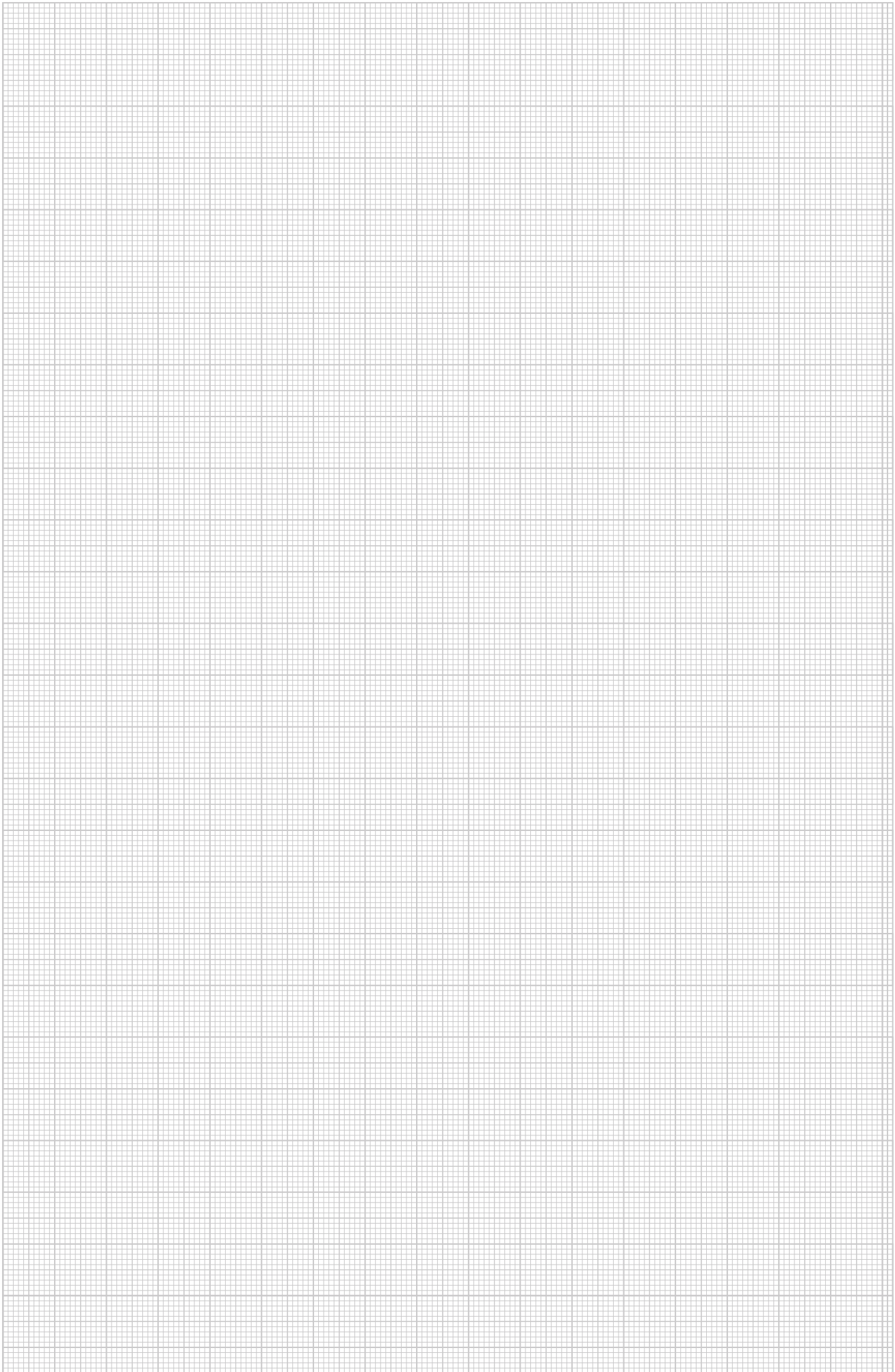
Type	Version	Material thickness mm	Length mm	Bundle m	Weight kg/100 m	Item No.
2069 2M GTPL	Perforated	1	2000	50	33.280	1115669

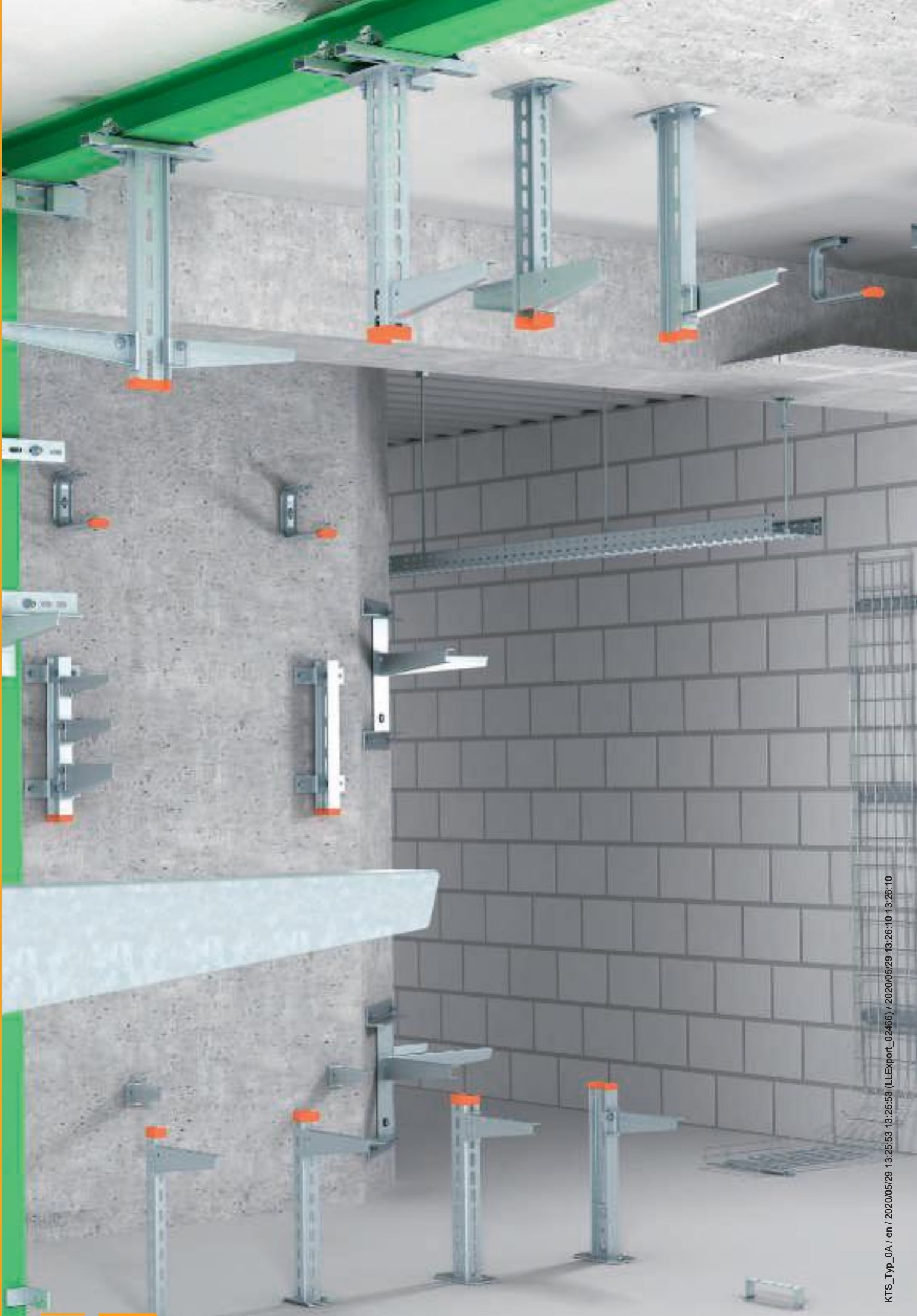
St Steel

GTP Electrogalvanised, transparently passivated

Hat profile rail 35 x 7.5 mm to DIN EN 60715 (formerly DIN EN 50022).







TP wall and ceiling bracket



Type	for		F in kN ceiling	F in kN Wall	Pack Piece	Weight kg/100 pc.	Item no.
	width mm	ceiling kN					
TPD 145 FS	100	1.3	1.4		6	48.000	6363806
TPD 245 FS	200	0.8	0.87		5	66.000	6363814
TPD 345 FS	300	0.5	0.55		5	78.000	6363822
TPD 445 FS	400	0.35	0.45		5	93.300	6363826
TPD 545 FS	500	0.25	0.35		5	107.000	6363829
TPD 145 FT	100	1.3	1.4		6	54.000	6363861
TPD 245 FT	200	0.8	0.87		5	69.000	6363865
TPD 345 FT	300	0.5	0.55		5	83.000	6363869

SI Steel

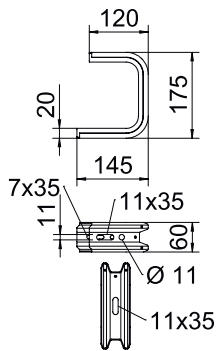
FS Strip galvanised FT Hot-dip galvanised

Important! If the ceiling bracket is fastened directly to the wall or ceiling, then, for reasons of stability, always use the spacer, type DS 4.

Max. side height of the cable support system 60 mm.

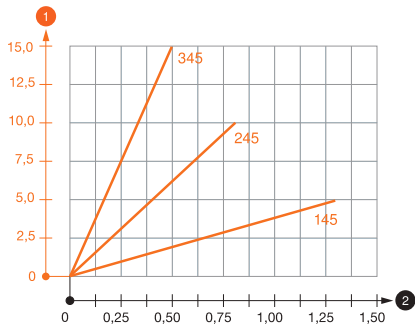
TP wall and ceiling bracket for universal use.

Dimensions



Type	Dimen- sion B mm	Dimen- sion H mm
TPD 145 FS	145	175
TPD 245 FS	245	175
TPD 345 FS	345	175
TPD 445 FS	445	175
TPD 545 FS	545	175

Load



Load diagram, ceiling bracket TPD

- 1 Bending of the bracket tip at permitted bracket load
- 2 Permitted bracket load in kN without man load
- Load curve with bracket lengths in mm

Characteristic anchor load values for TPD wall and ceiling bracket

		Wall fastening					
		Max. load F [kN]					
		Bracket length [mm]					
Anchor type		145	245	345	445	545	
BZ-U 8-30-41/95		1,00	0,70	2,40	0,40	0,30	
BZ-U 10-30-50/110		1,50	0,90	0,55	0,45	0,35	

		Ceiling fastening				
		Max. load F [kN]				
		Bracket width [mm]				
Anchor type		145	245	345	445	545
BZ-U 8-30-41/95		1,30	0,80	2,40	0,35	0,25
BZ-U 10-30-50/110		1,30	0,80	2,40	0,35	0,25

Max. total load F = cable weight + cable tray + ceiling bracket. The load capacity values increase considerably when used in uncracked concrete. The values given are based on concrete of strength class C20/25.

TP support

Type	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
TPS 445 FS	445	1	73.000	6364322
TPS 545 FS	545	1	80.000	6364349
TPS 645 FS	645	1	99.000	6364365
TPS 445 FT	445	1	75.000	6364403
TPS 545 FT	545	1	89.000	6364500
TPS 645 FT	645	1	103.000	6364608

St Steel

FS Strip galvanised FT Hot-dip galvanised

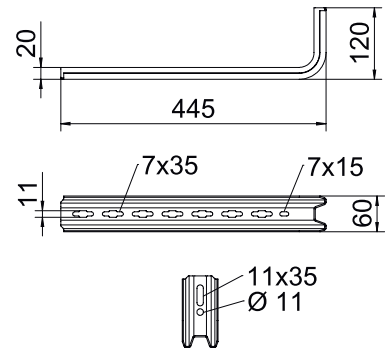
If the profile is fastened directly to the ceiling or the profile is screwed together as head reinforcement, then, for reasons of stability, always use the spacer, type DS 4.

Important: only use brackets of length 345 mm or less.

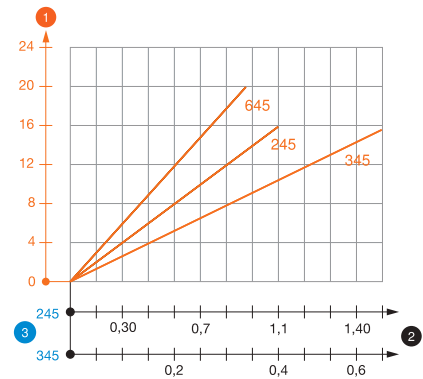
TP support for fastening to horizontal concrete ceilings.

Type	Dimension L mm
TPS 445 FS	445
TPS 545 FS	545
TPS 645 FS	645

Dimensions



Load



Load diagram, TP supports, type TPS

- 1 Bending of the end of the suspended support at permitted bracket load
 - 2 Permitted bracket load in kN without man load
 - 3 Bracket length in mm
- Load curves with support lengths in mm

Characteristic anchor load values for TP support

Single-sided load				
Anchor type	Max. load F [kN]			
	Bracket width [mm]			
	145	245	345	
BZ-U 8-30-41/95	1,50	1,00		0,65
BZ-U 10-30-50/110	1,50	1,50		0,65

Double-sided load				
Anchor type	Max. load F [kN]			
	Bracket width [mm]			
	145	245	345	
BZ-U 8-30-41/95	1,50	1,50		1,20
BZ-U 10-30-50/110	1,50	1,50		1,50

Max. total load F = cable weight + cable tray + bracket + suspended support. The tabular values for double-sided loads take the available axis spacing $a_i = 17$ cm into account. The load capacity values increase considerably when used in uncracked concrete. The specified values are based on concrete of resistance class C20/25. Comply with the installation conditions of the DIBt approval (anchors).

TP support



Type	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
TPS 445 A2	445	1	72.000	6364848
TPS 545 A2	545	1	85.000	6364850
TPS 645 A2	645	1	99.000	6364852

A2 Stainless steel, rustproof

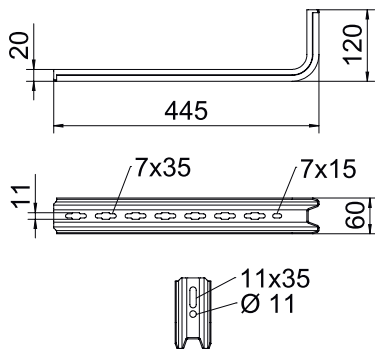
2B Bright, reworked

If the profile is fastened directly to the ceiling or the profile is screwed together as head reinforcement, then, for reasons of stability, always use the spacer, type DS 4.

Important: only use brackets of length 345 mm or less.

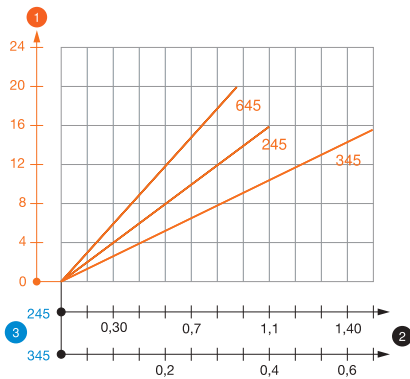
TP support for fastening to horizontal concrete ceilings.

Dimensions



Type	Dimension L mm
TPS 445 A2	445
TPS 545 A2	545
TPS 645 A2	645

Load



Load diagram, TP supports, type TPS

- 1 Bending of the end of the suspended support at permitted bracket load
- 2 Permitted bracket load in kN without man load
- 3 Bracket length in mm
- Load curves with support lengths in mm

Characteristic anchor load values for TP support

Single-sided load				
Anchor type	Max. load F [kN]			
	Bracket width [mm]			
	145	245	345	
BZ-U 8-30/95	1,50	1,00		0,65
BZ-U 10-30/110	1,50	1,50		0,65

Double-sided load				
Anchor type	Max. load F [kN]			
	Bracket width [mm]			
	145	245	345	
BZ-U 8-30/95	1,50	1,50		1,20
BZ-U 10-30/110	1,50	1,50		1,50

Max. total load F = cable weight + cable tray + bracket + suspended support. The tabular values for double-sided loads take the available axis spacing $a_i = 17$ cm into account. The load capacity values increase considerably when used in uncracked concrete. The specified values are based on concrete of resistance class C20/25. Comply with the installation conditions of the DIBt approval (anchors).

TPSA TP support/wall and support bracket



Type	for width mm	F in kN	Pack Piece	Weight kg/100 pc.	Item no.
TPSA 145 FS	100	1.5	1	32.300	6364101
TPSA 245 FS	200	0.9	1	46.000	6364209
TPSA 345 FS	300	0.55	1	60.000	6364306
TPSA 145 FT	100	1.5	1	33.000	6364659
TPSA 195 FT	150	1	1	40.000	6364683
TPSA 245 FT	200	0.9	1	47.000	6364667
TPSA 345 FT	300	0.55	1	62.000	6364675

St Steel

FS Strip galvanised FT Hot-dip galvanised

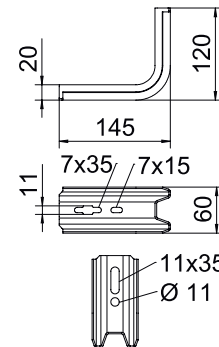
If the profile is fastened directly to the ceiling or the profile is screwed together as head reinforcement, then, for reasons of stability, always use the spacer, type DS 4.

TP support/bracket for fastening to horizontal concrete ceilings and walls.



Type	Dimension B mm
TPSA 145 FS	145
TPSA 245 FS	245
TPSA 345 FS	345

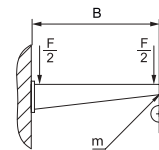
Dimensions



Load

Characteristic anchor load values for TP bracket - Wall fastening

Item on test	Force F (SWL)	Width B
TPSA 145 FS	1.5 kN	145 mm
TPSA 245 FS	0.9 kN	245 mm
TPSA 345 FS	0.55 kN	345 mm
TPSA 245 FS SP	0.9 kN	245 mm



Max. total load F = cable weight + cable tray + bracket. The load capacity values increase considerably when used in uncracked concrete. The values given are based on concrete of strength class C20/25. Observe the installation conditions of the DIBt approval (anchors).

TP support/wall and support bracket



Type	width mm	F in kN	Pack Piece	Weight kg/100 pc.	Item no.
TPSA 145 A2	100	1.5	1	32.000	6364871
TPSA 245 A2	200	0.9	1	45.000	6364876
TPSA 345 A2	300	0.55	1	59.000	6364881

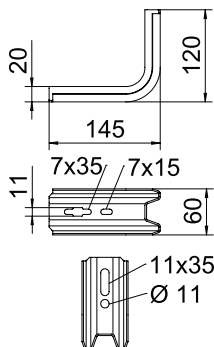
A2 Stainless steel, rustproof

2B Bright, reworked

If the profile is fastened directly to the ceiling or the profile is screwed together as head reinforcement, then, for reasons of stability, always use the spacer, type DS 4.

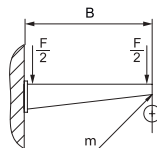
TP support/bracket for fastening to horizontal concrete ceilings and walls.

Dimensions



Type	Dimension B mm	Dimension L mm
TPSA 145 A2	145	—
TPSA 245 A2	245	—
TPSA 345 A2	345	—

Load

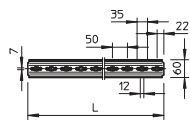


Characteristic anchor load values for TP bracket - Wall fastening

Item on test	Force F (SWL)	Width B
TPSA 145 A2	0.15 kN	145 mm
TPSA 245 A2	0.950 kN	245 mm
TPSA 345 A2	0.55 kN	345 mm

Max. total load F = cable weight + cable tray + bracket. The load capacity values increase considerably when used in uncracked concrete. The values given are based on concrete of strength class C20/25. Observe the installation conditions of the DIBt approval (anchors).

TP profile



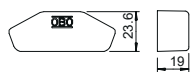
Type	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
TPS 3000 FS	3000	1	441.000	6364802

SI Steel

FS Strip galvanised

TP profile, perforated, in supply length 3,000 mm.

TPS-KS end cap



Type	Colour	Pack Piece	Weight kg/100 pc.	Item no.
TPS KS OR	Pastel orange	10	0.700	6364625

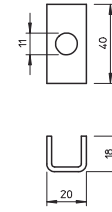
PE Polyethylene

End cap to cover ends of TP supports.

Type	Pack Piece	Weight kg/100 pc.	Item no.
DS 4 FS	20	3.390	6416551
DS 4 FT	20	3.800	6416586

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

For static reasons, the spacer is always used to prevent the profile from deforming when the fastening bolts are tightened.
 Spacer for use in profiles, type TP.



Spacer

Type	Pack Piece	Weight kg/100 pc.	Item no.
DS 4 A2	10	3.700	6416594

- A2** Stainless steel, rustproof
- 2B** Bright, reworked

For static reasons, the spacer is always used to prevent the profile from deforming when the fastening bolts are tightened.
 Spacer for use in profiles, type TP.

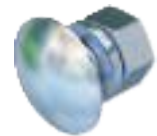
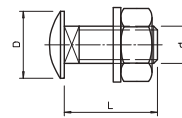


Truss-head bolt with nut and washer

Type	Dimension mm	Dimension L mm	Dimension d mm	Dimension D mm	Resistance grade	Pack Piece	Weight kg/100 pc.	Item no.
FRS 10x25 TPS F	M 10 x 25	25	10	18	5.6	50	4.300	6407536

- St** Steel
- F** Hot galvanised

The truss-head bolt can be used in combination with hot-dip and double-dip galvanised articles.
 Truss-head bolt with square neck. With washer and hexagonal nut.

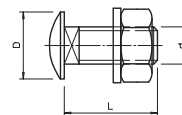


Truss-head bolt with nut and washer

Type	Dimension mm	Dimension L mm	Dimension d mm	Dimension D mm	Resistance grade	Pack Piece	Weight kg/100 pc.	Item no.
FRS 10x25 TPS A2	M 10 x 25	25	18	10	A2-70	50	4.000	6407537

- A2** Stainless steel, rustproof
- 2B** Bright, reworked

The truss-head bolt can be used in combination with hot-dip and double-dip galvanised articles.
 Truss-head bolt with square neck. With washer and hexagonal nut.

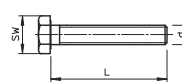


Hexagonal bolt with nut and washer

Type	Dimension mm	Dimension L mm	Dimension d mm	SW mm	Resistance grade	Pack Piece	Weight kg/100 pc.	Item no.
SKS 10x60 F	M 10 x 60	60	10	17	8.8	20	6.000	6408516

- St** Steel
- F** Hot galvanised

Hexagonal bolt for universal fixing of structure components.

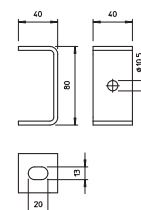


Ceiling bracket

Type	Pack Piece	Weight kg/100 pc.	Item no.
DB FT	20	16.000	6356109

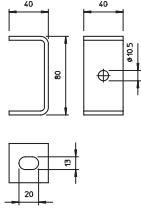
- St** Steel
- FT** Hot-dip galvanised

Ceiling bracket for threaded rod suspension.



KTS_Typ_0A/en/2020/05/29 13:25:53 (LLEExport_02466) / 2020/05/29 13:26:10 13:26:10

Ceiling bracket



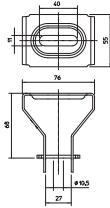
Type
DB A4

- A4** Stainless steel, rustproof
- 2B** Bright, reworked

Ceiling bracket for threaded rod suspension.

Pack Piece	Weight kg/100 pc.	Item no.
10	16.000	6356113

Ceiling bracket, variable



Type
DBV FS

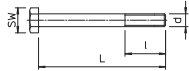
- St** Steel
- FS** Strip galvanised

The locked threaded rod seat offers the option of infinite angle adjustment.

Ceiling bracket for suspension with threaded rods. The variable adjustment permits universal use.

Pack Piece	Weight kg/100 pc.	Item no.
20	18.200	6356055

Hexagonal bolt with nut and washer

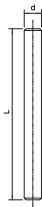


Type	Dimension mm	Dimension L mm	Dimension I mm	Dimension d mm	SW mm	Resistance grade	Pack Piece	Weight kg/100 pc.	Item no.
SKS 10x110 G	M10x110	110	30	10	17	5.6	20	9.500	6418244

- St** Steel
- G** Electrogalvanised

Hexagonal bolt with washers and hexagonal nut.

Threaded rod



Type	Thread	Dimension d mm	Dimension L mm	Pack Piece	Weight kg/100 pc.	Item no.
TR M6 1M G	M6	6	1000	10	18.300	3141047
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
TR M6 2M G	M6	6	2000	10	36.600	3141048
TR M8 2M G	M8	8	2000	10	60.000	3141136
TR M10 2M G	M10	10	2000	10	98.000	3141140
TR M12 2M G	M12	12	2000	10	140.000	3141144

- St** Steel
- G** Electrogalvanised

Threaded rod to DIN 976.

Threaded rod



Type	Thread	Dimension d mm	Dimension L mm	Pack Piece	Weight kg/100 pc.	Item no.
TR M6 1M A2	M6	6	1000	10	18.300	3141327
TR M8 1M A2	M8	8	1000	10	30.000	3141310
TR M10 1M A2	M10	10	1000	10	49.000	3141312
TR M12 1M A2	M12	12	1000	10	70.000	3141314
TR M6 2M A2	M6	6	2000	10	36.600	3141328
TR M8 2M A2	M8	8	2000	10	60.000	3141330
TR M10 2M A2	M10	10	2000	10	98.000	3141339
TR M12 2M A2	M12	12	2000	10	140.000	3141316

- A2** Stainless steel, rustproof
- 2B** Bright, reworked

Threaded rod to DIN 976.

Threaded rod

Type	Thread	Dimension d mm	Dimension L mm	Pack Piece	Weight kg/100 pc.	Item no.
TR M6 1M A4	M6	6	1000	50	18.300	3141482
TR M8 1M A4	M8	8	1000	50	30.000	3141492
TR M10 1M A4	M10	10	1000	25	49.000	3141502
TR M12 1M A4	M12	12	1000	20	70.000	3141512
TR M6 2M A4	M6	6	2000	25	36.600	3141484
TR M8 2M A4	M8	8	2000	25	60.000	3141494
TR M10 2M A4	M10	10	2000	20	98.000	3141504
TR M12 2M A4	M12	12	2000	10	140.000	3141514

A4 Stainless steel, rustproof

2B Bright, reworked

Threaded rod to DIN 976.



Mounting systems

Centre suspension for cable tray, 35

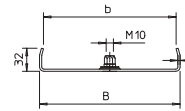
Type	for width mm	For threaded rod	Dimension B mm	Dimension b mm	F in kN	Pack Piece	Weight kg/100 pc.	Item no.
MAH 35 100 FS	100	M10	95	84	1.3	1	9.400	6358690
MAH 35 200 FS	200	M10	195	184	0.35	1	18.600	6358692
MAH 35 300 FS	300	M10	295	284	0.2	1	27.700	6358694

St Steel

FS Strip galvanised

The centre suspension possesses a rotatable M10 threaded sleeve. When filling, ensure an even distribution of the load (avoid one-sided filling).

Centre suspension for cable trays with rolled side rail of side height 35 mm.



Centre suspension for cable tray, 60

Type	for width mm	For threaded rod	Dimension B mm	Dimension b mm	F in kN	Pack Piece	Weight kg/100 pc.	Item no.
MAH 60 100 FS	100	M10	94	84	1.3	1	18.500	6358705
MAH 60 150 FS	150	M10	144	134	0.5	1	23.000	6358709
MAH 60 200 FS	200	M10	195	184	0.2	1	27.600	6358713
MAH 60 300 FS	300	M10	295	284	0.2	1	36.700	6358717
MAH 60 400 FS	400	M10	395	384	0.1	1	46.000	6358720
MAH 60 100 FT	100	M10	94	84	1.3	1	18.500	6358752
MAH 60 150 FT	150	M10	144	134	0.5	1	23.000	6358756
MAH 60 200 FT	200	M10	195	184	0.2	1	27.600	6358760
MAH 60 300 FT	300	M10	295	284	0.2	1	36.700	6358764

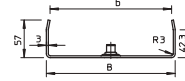
St Steel

FS Strip galvanised FT Hot-dip galvanised

The centre suspension possesses a rotatable M10 threaded sleeve. When filling, ensure an even distribution of the load (avoid one-sided filling).

The widths 100, 150 and 200 mm have additional base perforations, in order to screw the centre suspensions to the tray base when used for the maintenance of electrical functionality according to DIN 4102 Part 12.

Centre suspension for cable trays with rolled side rail of side height 60 mm.



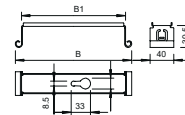
Centre suspension for cable trays with rolled side rail of side

Type	for width mm	Dimension B mm	Dimension B1 mm	Pack Piece	Weight kg/100 pc.	Item no.
MAH 050 FS	50	47	26	1	5.000	6358500
MAH 075 FS	75	72	51	1	6.500	6358510
MAH 100 FS	100	97	76	1	7.500	6358527
MAH 150 FS	150	147	126	1	8.000	6358535
MAH 200 FS	200	197	176	1	12.500	6358543

St Steel

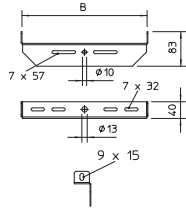
FS Strip galvanised

Centre suspension for cable trays for attachment from the side rail of the cable tray.



KTS_Typ_0A/en/2020/05/29 13:25:53 (LLExpert_02466) / 2020/05/29 13:26:10 13:26:10

Centre suspension, universal



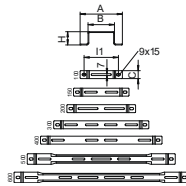
Type	Width mm	Pack Piece	Weight kg/100 pc.	Item no.
MAHU 200 FS	200	1	27.500	6358853
MAHU 300 FS	300	1	39.300	6358856
MAHU 400 FS	400	1	68.800	6358860
MAHU 500 FS	500	1	85.800	6358864
MAHU 600 FS	600	1	103.300	6358868
MAHU 200 FT	200	1	28.700	6358884
MAHU 300 FT	300	1	43.300	6358888
MAHU 400 FT	400	1	71.300	6358892
MAHU 500 FT	500	1	89.100	6358896
MAHU 600 FT	600	1	107.000	6358900

St Steel

FS Strip galvanised FT Hot-dip galvanised

Preferred use of this centre suspension in combination with cable ladders and mesh cable trays. Universal centre suspension for fastening to threaded rods and supports.

Stand-off bracket



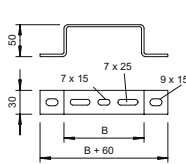
Type	Dimension A mm	Dimension B mm	Dimension H mm	Pack Piece	Weight kg/100 pc.	Item no.
DBL 50 100 FS	160	100	50	20	15.500	6015506
DBL 50 150 FS	210	150	50	20	18.800	6015514
DBL 50 200 FS	260	200	50	20	21.000	6015522
DBL 50 300 FS	360	300	50	20	36.900	6015530
DBL 50 400 FS	460	400	50	20	46.300	6015549
DBL 50 500 FS	560	500	50	25	57.200	6015552
DBL 50 600 FS	660	600	50	20	65.800	6015555
DBL 50 100 FT	160	100	50	20	16.000	6015565
DBL 50 150 FT	210	150	50	20	19.400	6015573
DBL 50 200 FT	260	200	50	20	22.000	6015581
DBL 50 300 FT	360	300	50	20	38.000	6015603
DBL 50 400 FT	460	400	50	20	47.700	6015611
DBL 50 500 FT	560	500	50	25	58.900	6015614
DBL 50 600 FT	660	600	50	20	67.800	6015617

St Steel

FS Strip galvanised FT Hot-dip galvanised

Stand-off bracket for cable trays and mesh cable trays.

Stand-off bracket



Type	Dimension A mm	Dimension B mm	Dimension H mm	Pack Piece	Weight kg/100 pc.	Item no.
DBL 50 100 A4	160	100	50	10	15.500	6015630
DBL 50 200 A4	260	200	50	10	22.800	6015632
DBL 50 300 A4	360	300	50	10	36.900	6015633
DBL 50 400 A4	460	400	50	10	46.300	6015634

A4 Stainless steel, rustproof

2B Bright, reworked

Stand-off bracket for cable trays and mesh cable trays.

US 3 support



Type	Length mm	Material thickness mm	Tensile load kN	Pack Piece	Weight kg/100 pc.	Item no.
US 3 K 20 FT	200	2	5	1	50.500	6342351
US 3 K 30 FT	300	2	5	1	64.400	6342353
US 3 K 40 FT	400	2	5	1	78.300	6342355
US 3 K 50 FT	500	2	5	1	92.300	6342357
US 3 K 60 FT	600	2	5	1	106.200	6342359
US 3 K 70 FT	700	2	5	1	120.200	6342362
US 3 K 80 FT	800	2	5	1	134.100	6342364
US 3 K 90 FT	900	2	5	1	147.800	6342366
US 3 K 100 FT	1000	2	5	1	162.000	6342368
US 3 K 110 FT	1100	2	5	1	175.900	6342370
US 3 K 120 FT	1200	2	5	1	189.900	6342372

St Steel

FT Hot-dip galvanised

For fastening to horizontal concrete ceilings and steel girders. For bracket widths of 400 mm or more, or if the bracket is mounted at the end of a suspended support, we recommend the use of the spacer, type DSK 25.

Suspended support (U profile) of dimensions 50 x 30 mm with welded head plate.

Load diagram, U support, type US 3 K

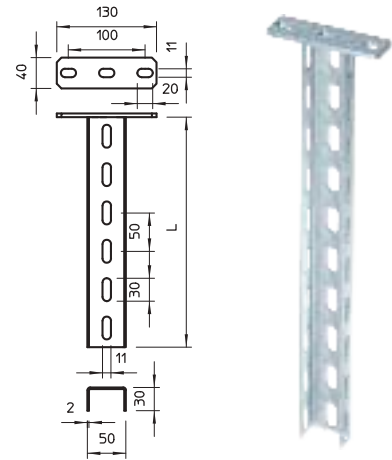
- 1 Bending of the end of the suspended support at permitted bracket load
 - 2 Permitted bracket load in kN without man load
 - 3 Bracket length in mm
- Load curves with support lengths in mm

Characteristic anchor load values for US 3 K suspended support

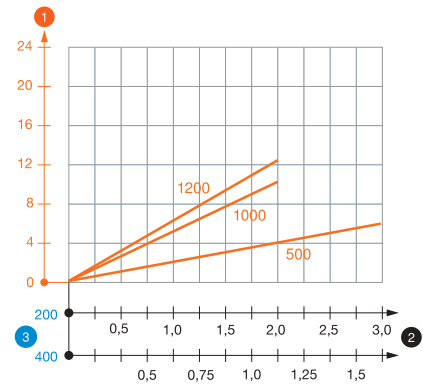
Single-sided load				
Anchor type	Max. load F [kN]			
	Bracket width [mm]			
	110	210	310	410
BZ-U 8-10-21/75	2,00	1,50	1,15	0,90
BZ-U 10-10-30/90	3,50	2,70	2,00	1,75

Double-sided load				
Anchor type	Max. load F [kN]			
	Bracket width [mm]			
	110	210	310	410
BZ-U 8-10-21/75	1,30	3,25	2,80	1,50
BZ-U 10-10-30/90	6,00	5,80	5,00	4,50

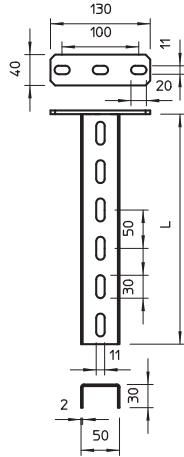
Max. total load F = cable weight + cable tray + bracket + support. The tabular values for double-sided loads take the available axis spacing $a_i = 10$ cm into account. The load capacity values increase considerably when used in uncracked concrete. The values given are based on concrete of strength class C20/25. Observe the installation conditions of the DIBt approval (anchors).



Load



US 3 support



Type	Length mm	Material thickness mm	Tensile load kN	Pack Piece	Weight kg/100 pc.	Item no.
US 3 K 20 A2	200	2	5	1	44.000	6342401
US 3 K 30 A2	300	2	5	1	58.000	6342403
US 3 K 40 A2	400	2	5	1	71.000	6342405
US 3 K 50 A2	500	2	5	1	84.000	6342407
US 3 K 60 A2	600	2	5	1	97.000	6342409
US 3 K 70 A2	700	2	5	1	110.000	6342411
US 3 K 80 A2	800	2	5	1	123.000	6342413
US 3 K 90 A2	900	2	5	1	137.000	6342415
US 3 K 100 A2	1000	2	5	1	150.000	6342417
US 3 K 20 A4	200	2	5	1	44.000	6342375
US 3 K 30 A4	300	2	5	1	58.000	6342530
US 3 K 40 A4	400	2	5	1	71.000	6342379
US 3 K 50 A4	500	2	5	1	84.000	6342381
US 3 K 60 A4	600	2	5	1	97.000	6342389
US 3 K 70 A4	700	2	5	1	110.000	6342391
US 3 K 80 A4	800	2	5	1	123.000	6342393
US 3 K 90 A4	900	2	5	1	137.000	6342395
US 3 K 100 A4	1000	2	5	1	150.000	6342397
US 3 K 110 A4	1100	2	5	1	166.000	6342396
US 3 K 120 A4	1200	2	5	1	110.000	6342398

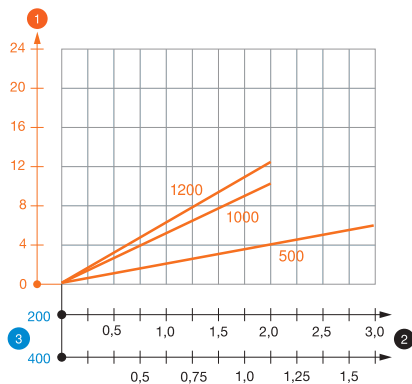
A2 Stainless steel, rustproof A4 Stainless steel, rustproof

2B Bright, reworked

For fastening to horizontal concrete ceilings and steel girders. For bracket widths of 400 mm or more, or if the bracket is mounted at the end of a suspended support, we recommend the use of the spacer, type DSK 25.

Suspended support (U profile) of dimensions 50 x 30 mm with welded head plate.

Load



Load diagram, U support, type US 3 K

- 1 Bending of the end of the suspended support at permitted bracket load
 - 2 Permitted bracket load in kN without man load
 - 3 Bracket length in mm
- Load curves with support lengths in mm

Characteristic anchor load values for US 3 K suspended support

		Single-sided load			
		Max. load F [kN]			
		Bracket width [mm]			
Anchor type		110	210	310	410
BZ-U 8-10/75		2,00	1,50	1,15	0,90
BZ-U 10-10/90		3,50	2,70	2,00	1,75

		Double-sided load			
		Max. load F [kN]			
		Bracket width [mm]			
Anchor type		110	210	310	410
BZ-U 8-10/75		1,30	3,25	2,80	1,50
BZ-U 10-10/90		6,00	5,80	5,00	4,50

Max. total load F = cable weight + cable tray + bracket + suspended support. The tabular values for double-sided loads take the available axis spacing $a_i = 10$ cm into account. The load capacity values increase considerably when used in uncracked concrete. The specified values are based on concrete of resistance class C20/25. Comply with the installation conditions of the DIBt approval (anchors).

Type	Length mm	Material thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
US 3 20 FS	200	2	1	27.000	6342302
US 3 30 FS	300	2	1	40.000	6342304
US 3 40 FS	400	2	1	53.000	6342306
US 3 50 FS	500	2	1	67.000	6342308
US 3 60 FS	600	2	1	80.000	6342310
US 3 70 FS	700	2	1	93.000	6342312
US 3 80 FS	800	2	1	107.000	6342314
US 3 90 FS	900	2	1	120.000	6342316
US 3 100 FS	1000	2	1	133.000	6342318
US 3 150 FS	1500	2	1	200.000	6342328
US 3 200 FS	2000	2	1	266.000	6342338
US 3 300 FS	3000	2	1	399.000	6342340
US 3 600 FS	6000	2	1	798.000	6342345
US 3 600 FT	6000	2	1	834.000	6342450

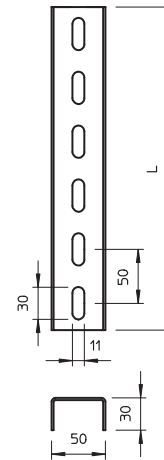
St Steel

FS Strip galvanised FT Hot-dip galvanised

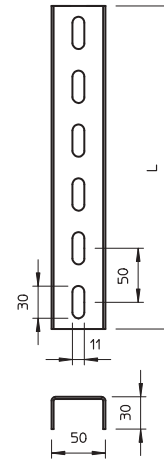
For bracket widths of 400 mm or more, or if the bracket is mounted at the end of a suspended support, we recommend the use of the spacer, type DSK 25.

U support in fixed lengths. Dimensions 30 x 50 mm.

US 3 support



US 3 support



Type	Length mm	Material thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
US 3 30 A2	300	2	1	40.000	6342455
US 3 50 A2	500	2	1	66.000	6342457
US 3 100 A2	1000	2	1	132.000	6342460
US 3 150 A2	1500	2	1	198.000	6342463
US 3 200 A2	2000	2	1	263.000	6342466
US 3 600 A2	6000	2	1	790.000	6342468
US 3 30 A4	300	2	1	40.000	6342485
US 3 50 A4	500	2	1	66.000	6342488
US 3 100 A4	1000	2	1	132.000	6342491
US 3 150 A4	1500	2	1	198.000	6342494
US 3 200 A4	2000	2	1	263.000	6342497
US 3 600 A4	6000	2	1	790.000	6342505

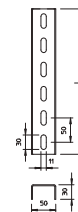
A2 Stainless steel, rustproof A4 Stainless steel, rustproof

2B Bright, reworked

For bracket widths of 400 mm or more, or if the bracket is mounted at the end of a suspended support, we recommend the use of the spacer, type DSK 25.

U support in fixed lengths. Dimensions 30 x 50 mm.

US 3 support



Type	Length mm	Material thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
US 3 30 VA4547	300	2	1	40.000	6342510

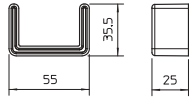
A5 Stainless steel, rustproof 1.4547

For bracket widths of 400 mm or more, or if the bracket is mounted at the end of a suspended support, we recommend the use of the spacer, type DSK 25.

U support in fixed lengths. Dimensions 30 x 50 mm.

U support system US 3

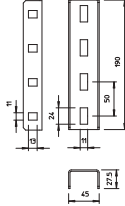
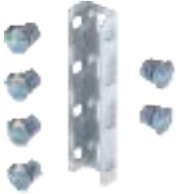
End cap



Type	Colour	Pack	Weight	Item no.
		Piece	kg/100 pc.	
US 3 KS OR	Pastel orange	20	1.068	6338458
PE Polyethylene				

End cap to cover the ends of US 3 supports.

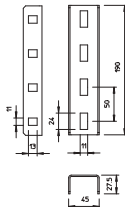
VUS 3 U support connector



Type	Pack	Weight	Item no.
	Piece	kg/100 pc.	
VUS 3 FT	10	48.300	6018513
St Steel			
FT Hot-dip galvanised			

Including appropriate fastening material.
U support connector to connect US 3 supports.

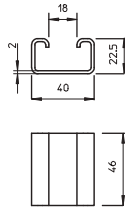
VUS 3 U support connector



Type	Pack	Weight	Item no.
	Piece	kg/100 pc.	
VUS 3 A2	1	48.200	6018517
VUS 3 A4	1	48.200	6018520
A2 Stainless steel, rustproof A4 Stainless steel, rustproof			
2B Bright, reworked			

Including appropriate fastening material.
U support connector to connect US 3 supports.

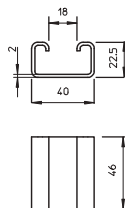
DSK 25 spacer



Type	Pack	Weight	Item no.
	Piece	kg/100 pc.	
DSK 25 FT	20	7.500	6416446
St Steel			
FT Hot-dip galvanised			

Spacer for use in U 3 supports.

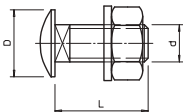
DSK 25 spacer



Type	Pack	Weight	Item no.
	Piece	kg/100 pc.	
DSK 25 A2	10	7.500	6416448
DSK 25 A4	10	7.500	6416450
A2 Stainless steel, rustproof A4 Stainless steel, rustproof			
2B Bright, reworked			

Spacer for use in U 3 supports.

Truss-head bolt with nut and washer



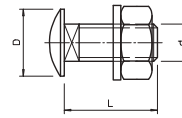
Type	Dimen- sion	Dimen- sion L	Dimen- sion d	Dimen- sion D	Resist- ance	Pack	Weight	Item no.
	mm	mm	mm	mm	grade	Piece	kg/100 pc.	
FRS 10x25 F 8.8	M 10 x 25	25	10	24	8.8	50	4.500	6407560
St Steel								
F Hot galvanised								

The truss-head bolt can be used in combination with hot-dip and double-dip galvanised articles.
Truss-head bolt with square neck. With washer and hexagonal nut.

Truss-head bolt with nut and washer

Type	Dimension mm	Dimension L mm	Dimension d mm	Dimension D mm	Resistance grade	Pack Piece	Weight kg/100 pc.	Item no.
FRS 10x25 A2	M 10 x 25	25	10	24	A2-70	50	3.905	6406718
FRS 10x25 A4	M 10 x 25	25	10	24	A4-70	50	4.500	6407524

A2 Stainless steel, rustproof A4 Stainless steel, rustproof
2B Bright, reworked

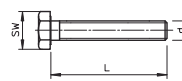


Truss-head bolt with square neck including washer and hexagonal nut.

Hexagonal bolt with nut and washer

Type	Dimension mm	Dimension L mm	Dimension d mm	SW mm	Resistance grade	Pack Piece	Weight kg/100 pc.	Item no.
SKS 10x80 F	M 10 x 80	80	10	17	8.8	20	6.865	6418250
SKS 10x90 F	M 10 x 90	90	10	17	8.8	20	7.807	6418252

St Steel
F Hot galvanised

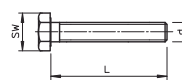


Hexagonal bolt for universal fixing of structure components.

Hexagonal bolt with nut and washer VA

Type	Dimension mm	Dimension L mm	Dimension d mm	SW mm	Resistance grade	Pack Piece	Weight kg/100 pc.	Item no.
SKS 10x90 A2	M 10 x 90	90	10	17	A2-70	20	10.038	6418255
SKS 10x80 A4	M 10 x 80	80	10	17	A4-70	20	7.800	6418248
SKS 10x90 A4	M 10 x 90	90	10	17	A4-70	20	7.800	6418256

A2 Stainless steel, rustproof A4 Stainless steel, rustproof
2B Bright, reworked



Hexagonal bolt for universal fixing of structure components.

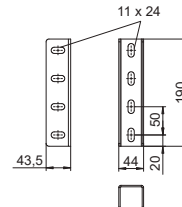
U support connector VUS 5

Type	Pack Piece	Weight kg/100 pc.	Item no.
VUS 5 FT	10	44.000	6018505

St Steel
FT Hot-dip galvanised

Including appropriate fastening material.

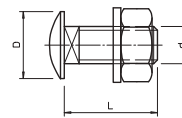
U support connector to connect US 5 supports.



Truss-head bolt with nut and washer

Type	Dimension mm	Dimension L mm	Dimension d mm	Dimension D mm	Resistance grade	Pack Piece	Weight kg/100 pc.	Item no.
FRS 10x25 F 8.8	M 10 x 25	25	10	24	8.8	50	4.500	6407560

St Steel
F Hot galvanised

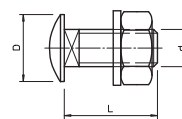


Truss-head bolt with square neck. With washer and hexagonal nut.

Truss-head bolt with nut and washer

Type	Dimension mm	Dimension L mm	Dimension d mm	Dimension D mm	Resistance grade	Pack Piece	Weight kg/100 pc.	Item no.
FRS 10x25 A2	M 10 x 25	25	10	24	A2-70	50	3.905	6406718
FRS 10x25 A4	M 10 x 25	25	10	24	A4-70	50	4.500	6407524

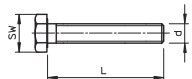
A2 Stainless steel, rustproof A4 Stainless steel, rustproof
2B Bright, reworked



Truss-head bolt with square neck including washer and hexagonal nut.

U support system US 5

Hexagonal bolt with nut and washer



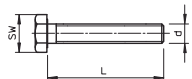
Type	Dimension mm	Dimension L mm	Dimension d mm	SW mm	Resistance grade	Pack Piece	Weight kg/100 pc.	Item no.
SKS 10x80 F	M 10 x 80	80	10	17	8.8	20	6.865	6418250
SKS 10x90 F	M 10 x 90	90	10	17	8.8	20	7.807	6418252
SKS 10x120 F	M 10 x 120	120	10	17	8.8	20	13.500	3160793

St Steel

F Hot galvanised

Hexagonal bolt for universal fixing of structure components.

Hexagonal bolt with nut and washer VA



Type	Dimension mm	Dimension L mm	Dimension d mm	SW mm	Resistance grade	Pack Piece	Weight kg/100 pc.	Item no.
SKS 10x90 A2	M 10 x 90	90	10	17	A2-70	20	10.038	6418255
SKS 10x80 A4	M 10 x 80	80	10	17	A4-70	20	7.800	6418248
SKS 10x90 A4	M 10 x 90	90	10	17	A4-70	20	7.800	6418256

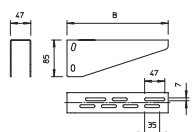
A2 Stainless steel, rustproof **A4** Stainless steel, rustproof

2B Bright, reworked

Hexagonal bolt for universal fixing of structure components.

U support system USL 5

Support bracket ASU 15



Type	Width mm	Pack Piece	Weight kg/100 pc.	Item no.
ASU 15 15 FS	185	30	32.300	6344488
ASU 15 20 FS	235	25	40.600	6344496
ASU 15 30 FS	335	20	78.500	6344518
ASU 15 40 FS	435	10	99.800	6344526
ASU 15 50 FS	535	10	120.700	6344534

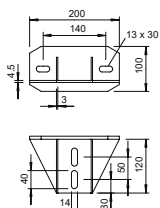
St Steel

FS Strip galvanised

Support bracket for fastening on the U support, type USL 5.

U support system US 7

Head plate, heavy-duty



Type	Pack Piece	Weight kg/100 pc.	Item no.
KU 7 NOX FT	1	184.000	6349056

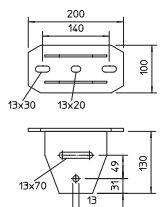
St Steel

FT Hot-dip galvanised

Please order fastening material (two truss-head bolts FRS 12 x 25) separately.

Heavy-duty head plate for installation in US 7 support.

Head plate, variable



Type	Pack Piece	Weight kg/100 pc.	Item no.
KU 7 VQP FT	10	181.600	6349153

St Steel

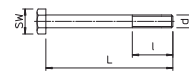
FT Hot-dip galvanised

Please order fastening material (two hexagonal bolts SKS 12 x 80 and spacer DSK 45) separately. The maximum angle adjustment is 30° on one side.

Variable head plate for installation on US 7 support.

Hexagonal bolt with hexagonal nut, washer and tooth lock washer

Type	Dimension mm	Dimension L mm	Dimension I mm	Dimension d mm	Dimension D mm	Resistance grade	Pack Piece	Weight kg/100 pc.	Item no.
SKS 12x80 F	M 12 x 80	80	30	12	19	8.8	20	11.800	6418287
SKS 12x100 F	M 12 x 100	100	30	12	19	8.8	20	12.600	6418295
SKS 12x110 F	M 12 x 110	110	30	12	19	8.8	20	14.500	6418317
SKS 12x130 F	M 12 x 130	130	36	12	19	8.8	20	15.500	6408478



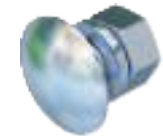
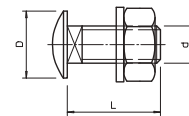
St Steel

F Hot galvanised

Hexagonal bolt with hexagonal nut, washer and tooth lock washer.

Truss-head bolt with nut and washer

Type	Dimension mm	Dimension L mm	Dimension d mm	Dimension D mm	Resistance grade	Pack Piece	Weight kg/100 pc.	Item no.
FRS 12x25 F	M 12 x 25	25	12	30	5.6	50	6.518	6406254



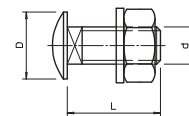
St Steel

F Hot galvanised

Truss-head bolt with square neck. With washer and hexagonal nut.

Truss-head bolt with nut and washer

Type	Dimension mm	Dimension L mm	Dimension d mm	Dimension D mm	Resistance grade	Pack Piece	Weight kg/100 pc.	Item no.
FRS 12x25 A2	M 12 x 25	25	12	30	A2-70	25	6.400	6406750



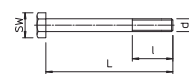
A2 Stainless steel, rustproof

2B Bright, reworked

Truss-head bolt with square neck including washer and hexagonal nut.

Hexagonal bolt with hexagonal nut, washer and tooth lock washer

Type	Dimension mm	Dimension L mm	Dimension I mm	Dimension d mm	Dimension D mm	Resistance grade	Pack Piece	Weight kg/100 pc.	Item no.
SKS 12x80 A2	M 12 x 80	80	30	12	19	A2-70	20	11.800	6418279
SKS 12x100 A2	M 12 x 100	100	30	12	19	A2-70	20	12.000	6418368
SKS 12x110 A2	M 12 x 110	110	30	12	19	A2-70	20	14.500	6418376



A2 Stainless steel, rustproof

2B Bright, reworked

Hexagonal bolt for universal fixing of structure components.



Wall, support and clamping bracket

Wall and support bracket MWA 12



Type	Width F in kN		Pack Piece	Weight kg/100 pc.	Item no.
	mm	kN			
MWA 12 11S FS	110	1.2	30	12.100	6424716
MWA 12 21S FS	210	1.2	30	27.100	6424732
MWA 12 31S FS	310	1.2	30	50.300	6424740
MWA 12 41S FS	410	1.2	30	68.000	6424759

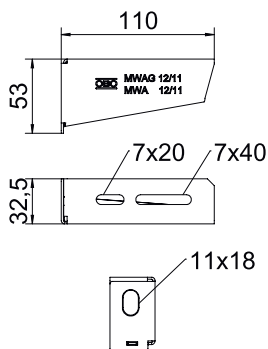
St Steel

FS Strip galvanised

Including truss-head bolt M10 x 25 for fastening to U supports.

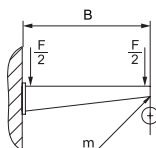
Light-duty wall and support bracket.

Dimensions



Type	Dimension B mm	Dimension A mm	Dimension H mm	Hole Ø mm
MWA 12 11S FS	110	32.5	53	11
MWA 12 21S FS	210	32.5	65	11
MWA 12 31S FS	310	38	75	11
MWA 12 41S FS	410	38	83	11

Load



Load characteristics wall and support bracket MWA 12

Item on test	Force F (SWL)	Width B
MWA 12 11S FS	1.2 kN	110 mm
MWA 12 21S FS	1.2 kN	210 mm
MWA 12 31S FS	1.2 kN	310 mm
MWA 12 41S FS	1.2 kN	410 mm

Deformation measurement point m
According to IEC 61537, chapter 10.8.1

Max. total load F = cable weight + cable tray + bracket

Wall and support bracket MWAM 12

Type	Width mm	F in kN kN	Pack Piece	Weight kg/100 pc.	Item no.
MWAM 12 11 FS	110	1.2	30	19.500	6424550
MWAM 12 21 FS	210	1.2	30	26.000	6424552
MWAM 12 31 FS	310	1.2	30	51.900	6424554
MWAM 12 41 FS	410	1.2	25	69.700	6424556

St Steel

FS Strip galvanised

Wall and support bracket MWAM.. including:

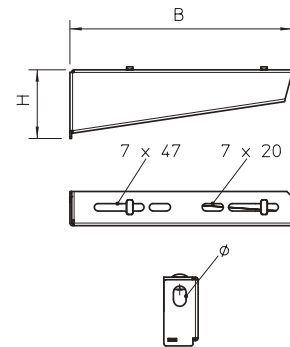
1. Two pre-mounted quick connectors for efficient cable tray fastening.
2. Truss-head bolt M10 x 25 for fastening on the U support.

Light-duty wall and support bracket including quick connector for use with cable trays of type RKSM.



Type	Dimen- sion B mm	Dimen- sion A mm	Dimen- sion H mm	Hole Ø mm
MWAM 12 11 FS	110	32.5	53	11
MWAM 12 21 FS	210	32.5	65	11
MWAM 12 31 FS	310	38	75	11
MWAM 12 41 FS	410	38	83	11

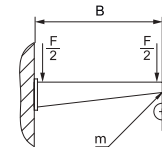
Dimensions



Load

Characteristic load values for MWAM 12 wall and support bracket

Item on test	Force F (SWL)	Width B
MWAM 12 11 FS	1.2 kN	110 mm
MWAM 12 21 FS	1.2 kN	210 mm
MWAM 12 31 FS	1.2 kN	310 mm
MWAM 12 41 FS	1.2 kN	410 mm



Deformation measuring point m

According to IEC 61537, Chapter 10.8.1

Max. total load F = Cable weight + cable tray + bracket

Quick connector

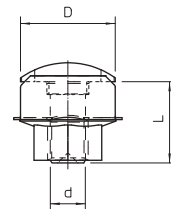
Type	Dimen- sion mm	Dimen- sion L mm	Dimen- sion d mm	Dimen- sion D mm	Pack Piece	Weight kg/100 pc.	Item no.
FCM F	M6 x 12	12	6	13.5	50	0.720	6424548

St Steel

F Hot galvanised

The quick fastening can then be mounted in all brackets with 7 x ... perforation at a later date.

Quick connector for efficient fastening of cable tray on brackets.



Wall and support bracket AW 15



Type	Width mm	F in kN kN	Pack Piece	Weight kg/100 pc.	Item no.
AW 15 11 FT	110	1.5	30	13.100	6420656
AW 15 16 FT	160	1.5	30	20.000	6420664
AW 15 21 FT	210	1.5	30	24.000	6420680
AW 15 31 FT	310	1.5	30	38.400	6420710
AW 15 41 FT	410	1.5	30	54.000	6420745
AW 15 51 FT	510	1.5	20	67.300	6420788
AW 15 56 FT	560	1.5	20	77.000	6420796
AW 15 61 FT	610	1.5	20	85.000	6420826

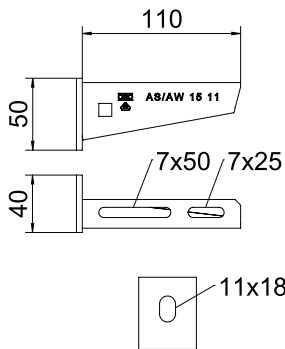
SI Steel

FT Hot-dip galvanised

Fastening of the bracket to the U support of width 400 mm or greater using a hexagonal bolt through both sides of the support. Please insert suitable spacers.

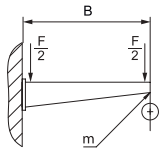
Light-duty wall and support bracket with welded head plate.

Dimensions



Type	Dimen- sion B mm	Dimen- sion A mm	Dimen- sion H mm	Hole Ø mm
AW 15 11 FT	110	40	50	11
AW 15 16 FT	160	40	55	11
AW 15 21 FT	210	40	60	11
AW 15 31 FT	310	40	65	11
AW 15 41 FT	410	40	70	11
AW 15 51 FT	510	40	75	11
AW 15 56 FT	560	40	80	11
AW 15 61 FT	610	40	80	11

Load



Characteristic anchor load values for wall bracket AW 15 - Wall fastening

Item on test	Force F (SWL)	Width B
AW 15 11 FT	1.5 kN	110 mm
AW 15 16 FT	1.5 kN	160 mm
AW 15 21 FT	1.5 kN	210 mm
AW 15 31 FT	1.5 kN	310 mm
AW 15 36 FT	1.5 kN	360 mm
AW 15 41 FT	1.5 kN	410 mm
AW 15 51 FT	1.5 kN	510 mm
AW 15 56 FT	1.5 kN	560 mm
AW 15 61 FT	1.5 kN	610 mm

Deformation measuring point m

According to IEC 61537, Chapter 10.8.1

Max. total load F = Cable weight + cable tray + bracket

Wall and support bracket AW 15



Type	Width mm	F in kN kN	Pack Piece	Weight kg/100 pc.	Item no.
AW 15 11 A2	110	1.5	30	12.500	6421008
AW 15 21 A2	210	1.5	30	24.000	6421024
AW 15 31 A2	310	1.5	30	38.200	6421032
AW 15 41 A2	410	1.5	30	55.000	6421036
AW 15 51 A2	510	1.5	20	64.400	6421040
AW 15 61 A2	610	1.5	20	85.000	6421044
AW 15 11 A4	110	1.5	30	12.500	6392008
AW 15 21 A4	210	1.5	30	24.000	6392016
AW 15 31 A4	310	1.5	30	37.400	6392024
AW 15 41 A4	410	1.5	30	55.000	6392032
AW 15 51 A4	510	1.5	20	64.400	6392040
AW 15 61 A4	610	1.5	20	85.000	6392059

A2 Stainless steel, rustproof A4 Stainless steel, rustproof

2B Bright, reworked

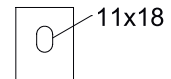
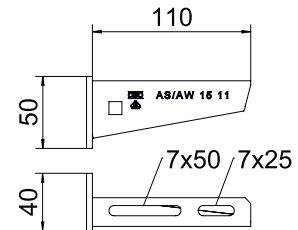
Fastening of the bracket to the U support of width 400 mm or greater using a hexagonal bolt through both sides of the support. Please insert suitable spacers.

Light-duty wall and support bracket with welded head plate.

Type	Dimen- sion B mm	Dimen- sion A mm	Dimen- sion H mm	Hole Ø mm
AW 15 11 A2	110	40	50	11
AW 15 21 A2	210	40	60	11
AW 15 31 A2	310	40	65	11
AW 15 41 A2	410	40	70	11
AW 15 51 A2	510	40	75	11
AW 15 61 A2	610	40	80	11



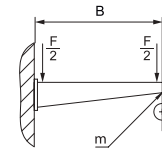
Dimensions



Load

Characteristic anchor load values for wall bracket AW 15 - Wall fastening

Item on test	Force F (SWL)	Length L
AW 15 11 A2	0.15 kN	110 mm
AW 15 21 A2	0.15 kN	210 mm
AW 15 31 A2	0.15 kN	310 mm
AW 15 41 A2	0.15 kN	410 mm
AW 15 51 A2	0.15 kN	510 mm
AW 15 61 A2	0.15 kN	610 mm



Deformation measuring point m

According to IEC 61537, Chapter 10.8.1

Max. total load F = Cable weight + cable tray + bracket

Wall, support and clamping bracket

Wall and support bracket AW 15

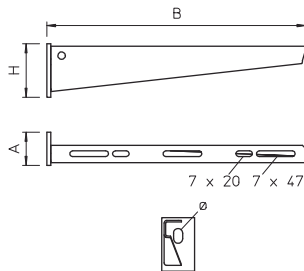


Type	Width F in kN		Pack Piece	Weight kg/100 pc.	Item no.
	mm	kN			
AW 15 21 VA4529	210	1.5	30	24.000	6421192

A5 Stainless steel, rustproof 1.4529

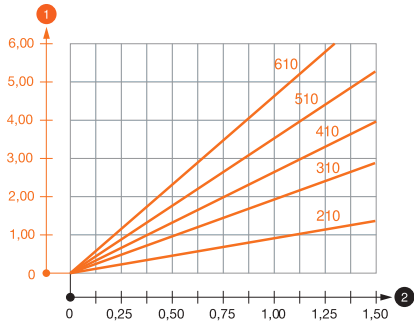
Fastening of the bracket to the U support of width 400 mm or greater using a hexagonal bolt through both sides of the support. Please insert suitable spacers.
Light-duty wall and support bracket with welded head plate.

Dimensions



Type	Dimension B mm	Dimension A mm	Dimension H mm	Hole Ø mm
AW 15 21 VA4529	210	40	60	11

Load



Load diagram, bracket AW 15 VA

- 1 Bending of the bracket tip at permitted bracket load
- 2 Permitted bracket load in kN without man load
- Load curve with bracket lengths in mm

Characteristic anchor load values for wall and support bracket AW 15

Anchor	Bracket load					
	Max. load F in kN					
	Bracket length in mm					
Permitted	100	200	300	400	500	600
F kN	3.57	1.09	0.90	0.73	0.65	0.61
						0.55

Max. total load F = cable weight + cable tray + bracket. The load capacity values increase considerably when used in uncracked concrete. The values given are based on concrete of strength class C20/25. Observe the installation conditions of the DIBt approval (anchors).

Wall and support bracket AW 15 2L

Type	Width mm	F in kN kN	Pack Piece	Weight kg/100 pc.	Item no.
AW 15 11 FT 2L	110	1.5	30	16.000	6420909
AW 15 16 FT 2L	160	1.5	30	20.000	6420912
AW 15 21 FT 2L	210	1.5	30	28.400	6420915
AW 15 31 FT 2L	310	1.5	30	42.000	6420918
AW 15 41 FT 2L	410	1.5	30	59.300	6420921
AW 15 51 FT 2L	510	1.5	20	72.000	6420924
AW 15 61 FT 2L	610	1.5	18	90.000	6420927

St Steel

FT Hot-dip galvanised

The double-perforated bracket offers the special option of double anchoring on lightweight partitions and light masonry.

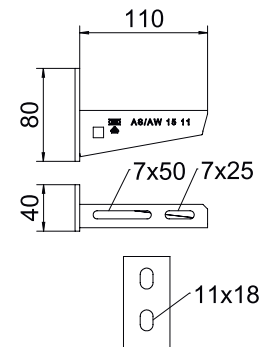
Wall and support bracket with welded head plate and two fastening holes.



Mounting systems

Type	Dimen- sion B mm	Dimen- sion A mm	Dimen- sion H mm	Hole Ø mm
AW 15 11 FT 2L	110	40	44	11
AW 15 16 FT 2L	160	40	54	11
AW 15 21 FT 2L	210	40	54	11
AW 15 31 FT 2L	310	40	64	11
AW 15 41 FT 2L	410	40	64	11
AW 15 51 FT 2L	510	40	72	11
AW 15 61 FT 2L	610	40	77	11

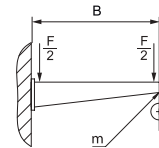
Dimensions



Load

Characteristic anchor load values for wall bracket AW 15 - Wall fastening

Item on test	Force F (SWL)	Width B
AW 15 11 FT 2L	1.5 kN	110 mm
AW 15 16 FT 2L	1.5 kN	160 mm
AW 15 21 FT 2L	1.5 kN	210 mm
AW 15 31 FT 2L	1.5 kN	310 mm
AW 15 41 FT 2L	1.5 kN	410 mm
AW 15 51 FT 2L	1.5 kN	510 mm
AW 15 61 FT 2L	1.5 kN	610 mm



Max. total load F = cable weight + cable tray + bracket. The load capacity values increase considerably when used in uncracked concrete. The values given are based on concrete of strength class C20/25. Observe the installation conditions of the DIBt approval (anchors).

Wall and support bracket AW 30



Type	Width mm	F in kN kN	Pack Piece	Weight kg/100 pc.	Item no.
AW 30 11 FT	110	3	1	22.000	6419704
AW 30 16 FT	160	3	1	33.000	6419712
AW 30 21 FT	210	3	1	39.300	6419720
AW 30 26 FT	260	3	1	53.000	6419739
AW 30 31 FT	310	3	1	63.000	6419747
AW 30 41 FT	410	3	1	88.500	6419763
AW 30 51 FT	510	3	1	129.000	6419798
AW 30 56 FT	560	3	1	148.800	6419844
AW 30 61 FT	610	3	1	157.000	6419828
AW 30 71 FT	710	3	1	207.000	6419836

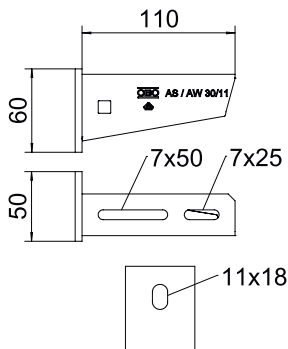
St Steel

FT Hot-dip galvanised

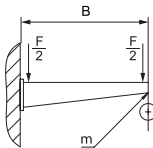
Fastening of the bracket to the U support of width 400 mm or greater using a hexagonal bolt through both sides of the support. Please insert suitable spacers.

Medium-duty wall and support bracket with welded head plate.

Dimensions



Load



Characteristic anchor load values for wall bracket AW 30 - Wall fastening

Item on test	Force F (SWL)	Width B
AW 30 11 FT	3 kN	110 mm
AW 30 16 FT	3 kN	160 mm
AW 30 21 FT	3 kN	210 mm
AW 30 31 FT	3 kN	310 mm
AW 30 41 FT	3 kN	410 mm
AW 30 51 FT	3 kN	510 mm
AW 30 61 FT	3 kN	610 mm
AW 30 71 FT	3 kN	710 mm

Deformation measuring point m

According to IEC 61537, Chapter 10.8.1

Max. total load F = Cable weight + cable tray + bracket

Wall and support bracket AW 30



Type	Width mm	F in kN kN	Pack Piece	Weight kg/100 pc.	Item no.
AW 30 11 A2	110	3	1	21.000	6442803
AW 30 21 A2	210	3	1	37.500	6442838
AW 30 31 A2	310	3	1	60.500	6442854
AW 30 41 A2	410	3	1	85.200	6442870
AW 30 51 A2	510	3	1	124.800	6442897
AW 30 61 A2	610	3	1	154.000	6442919
AW 30 11 A4	110	3	1	21.000	6443615
AW 30 21 A4	210	3	1	37.500	6443311
AW 30 31 A4	310	3	1	60.500	6443621
AW 30 41 A4	410	3	1	85.200	6443346
AW 30 51 A4	510	3	1	124.800	6443625
AW 30 61 A4	610	3	1	154.000	6443627

A2 Stainless steel, rustproof A4 Stainless steel, rustproof

2B Bright, reworked

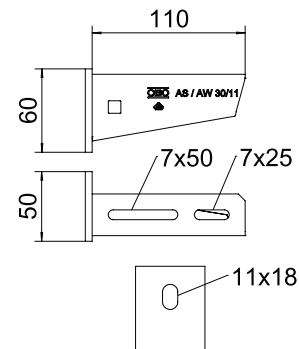
Fastening of the bracket to the U support of width 400 mm or greater using a hexagonal bolt through both sides of the support. Please insert suitable spacers.

Medium-duty wall and support bracket with welded head plate.



Type	Dimen- sion B mm	Dimen- sion A mm	Dimen- sion H mm	Hole Ø mm
AW 30 11 A2	110	50	60	11
AW 30 21 A2	210	50	70	13
AW 30 31 A2	310	50	80	13
AW 30 41 A2	410	50	80	13
AW 30 51 A2	510	50	90	13
AW 30 61 A2	610	50	100	13

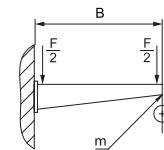
Dimensions



Load

Characteristic anchor load values for wall bracket AW 30 - Wall fastening

Item on test	Force F (SWL)	Width B
AW 30 11 A2	3 kN	110 mm
AW 30 21 A2	3 kN	210 mm
AW 30 31 A2	3 kN	310 mm
AW 30 41 A2	3 kN	410 mm
AW 30 51 A2	3 kN	510 mm
AW 30 61 A2	3 kN	610 mm



Deformation measuring point m

According to IEC 61537, Chapter 10.8.1

Max. total load F = Cable weight + cable tray + bracket

Wall, support and clamping bracket

Wall and support bracket AW 30

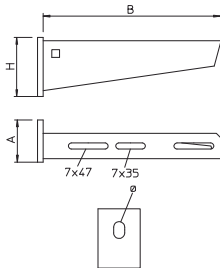


Type	Width F in kN		Pack Piece	Weight kg/100 pc.	Item no.
	mm	kN			
AW 30 21 VA4529	210	3	1	37.500	6443632

A5 Stainless steel, rustproof 1.4529

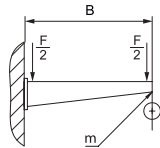
Fastening of the bracket to the U support of width 400 mm or greater using a hexagonal bolt through both sides of the support. Please insert suitable spacers.
Medium-duty wall and support bracket with welded head plate.

Dimensions



Type	Dimension B mm	Dimension A mm	Dimension H mm	Hole Ø mm
AW 30 21 VA4529	—	50	70	13

Load



Characteristic anchor load values for AW30 wall bracket – wall fastening

Test item	Force F (SWL)	Width B
AW 30 21 VA4529	3 kN	210 mm

Wall and support bracket AW 55



Type	Width mm	F in kN	Pack Piece	Weight kg/100 pc.	Item no.
AW 55 21 FT	210	5.5	1	75.700	6418554
AW 55 31 FT	310	5.5	1	122.000	6418570
AW 55 41 FT	410	5.5	1	164.400	6418597
AW 55 51 FT	510	5.5	1	238.200	6418619
AW 55 56 FT	560	5.5	1	282.000	6418627
AW 55 61 FT	610	5.5	1	305.000	6418635
AW 55 71 FT	710	5.5	1	418.000	6418651
AW 55 81 FT	810	5.5	1	477.000	6418686
AW 55 91 FT	910	5.5	1	558.000	6418708
AW 55 101 FT	1010	5.5	1	640.000	6418724

Sl Steel

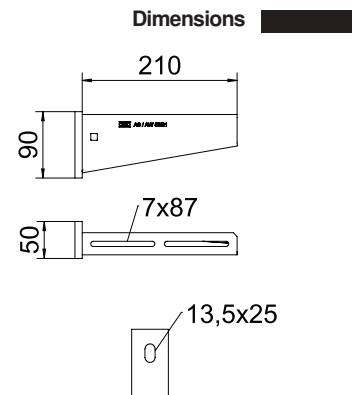
FT Hot-dip galvanised

Fastening of the bracket to the U support of width 400 mm or greater using a hexagonal bolt through both sides of the support. Please insert suitable spacers.

Heavy-duty wall and support bracket with welded head plate.

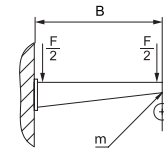


Type	Dimen- sion B mm	Dimen- sion A mm	Dimen- sion H mm	Hole Ø mm
AW 55 21 FT	210	50	90	13.5
AW 55 31 FT	310	50	110	13.5
AW 55 41 FT	410	50	130	13.5
AW 55 51 FT	510	60	145	13.5
AW 55 56 FT	560	60	165	13.5
AW 55 61 FT	610	60	165	13.5
AW 55 71 FT	710	60	195	13.5
AW 55 81 FT	810	60	195	13.5
AW 55 91 FT	910	60	215	13.5
AW 55 101 FT	1010	60	230	13.5



Characteristic anchor load values for wall bracket AW 55 - Wall fastening

Item on test	Force F (SWL)	Width B
AW 55 21 FT	0.950 kN	210 mm
AW 55 31 FT	0.950 kN	310 mm
AW 55 41 FT	0.950 kN	410 mm
AW 55 51 FT	0.950 kN	510 mm
AW 55 56 FT	0.950 kN	560 mm
AW 55 61 FT	0.950 kN	610 mm
AW 55 71 FT	0.950 kN	710 mm
AW 55 81 FT	0.950 kN	810 mm
AW 55 91 FT	0.950 kN	910 mm
AW 55 101 FT	0.950 kN	1,010 mm



Deformation measuring point m

According to IEC 61537, Chapter 10.8.1

Max. total load F = Cable weight + cable tray + bracket

Wall and support bracket AW 55



Type	Width mm	F in kN kN	Pack Piece	Weight kg/100 pc.	Item no.
AW 55 21 A2	210	5.5	1	77.000	6443063
AW 55 31 A2	310	5.5	1	118.900	6443067
AW 55 41 A2	410	5.5	1	162.800	6443071
AW 55 51 A2	510	5.5	1	232.500	6443075
AW 55 61 A2	610	5.5	1	305.000	6443079
AW 55 71 A2	710	5.5	1	445.000	6443083
AW 55 21 A4	210	5.5	1	77.000	6418557
AW 55 31 A4	310	5.5	1	118.900	6418573
AW 55 41 A4	410	5.5	1	162.800	6418601
AW 55 51 A4	510	5.5	1	232.500	6418622
AW 55 61 A4	610	5.5	1	305.000	6418638

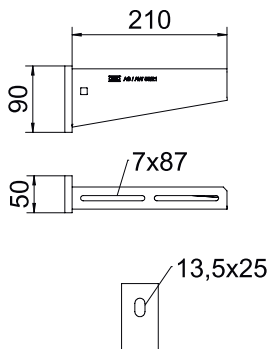
A2 Stainless steel, rustproof A4 Stainless steel, rustproof

2B Bright, reworked

Fastening of the bracket to the U support of width 400 mm or greater using a hexagonal bolt through both sides of the support. Please insert suitable spacers.

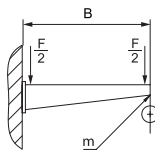
Heavy-duty wall and support bracket with welded head plate.

Dimensions



Type	Dimen- sion B mm	Dimen- sion A mm	Dimen- sion H mm	Hole Ø mm
AW 55 21 A2	210	50	90	13.5
AW 55 31 A2	310	50	110	13.5
AW 55 41 A2	410	50	130	13.5
AW 55 51 A2	510	60	145	13.5
AW 55 61 A2	610	60	165	13.5
AW 55 71 A2	710	60	195	13.5

Load



Characteristic anchor load values for wall bracket AW 55 - Wall fastening

Item on test	Force F (SWL)	Width B
AW 55 21 A2	0.950 kN	210 mm
AW 55 31 A2	0.950 kN	310 mm
AW 55 41 A2	0.950 kN	410 mm
AW 55 51 A2	0.950 kN	510 mm
AW 55 61 A2	0.950 kN	610 mm
AW 55 71 A2	0.950 kN	710 mm

Deformation measuring point m

According to IEC 61537, Chapter 10.8.1

Max. total load F = Cable weight + cable tray + bracket

Wall bracket AW 80

Type	Width mm	F in kN kN	Pack Piece	Weight kg/100 pc.	Item no.
AW 80 21 FT	210	8	1	104.000	6417752
AW 80 31 FT	310	8	1	160.000	6417779
AW 80 41 FT	410	8	1	213.000	6417795
AW 80 51 FT	510	8	1	355.000	6417817
AW 80 61 FT	610	8	1	433.000	6417833
AW 80 71 FT	710	8	1	525.000	6417868
AW 80 81 FT	810	8	1	623.000	6417884

St Steel

FT Hot-dip galvanised

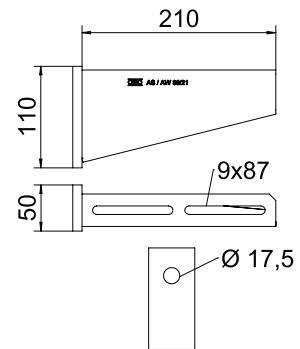
When fastening cable trays and ladders with truss-head bolts of size M6, please order large washers separately (perforation in bracket 9 x ...).

Heavy-duty wall bracket with welded head plate.



Type	Dimen- sion B mm	Dimen- sion A mm	Dimen- sion H mm	Hole Ø mm
AW 80 21 FT	210	50	110	17.5
AW 80 31 FT	310	50	145	17.5
AW 80 41 FT	410	50	165	17.5
AW 80 51 FT	510	60	195	17.5
AW 80 61 FT	610	60	210	17.5
AW 80 71 FT	710	60	235	17.5
AW 80 81 FT	810	60	260	17.5

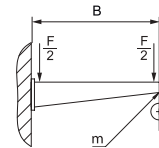
Dimensions



Load

Characteristic anchor load values for wall bracket AW 80 - Wall fastening

Item on test	Force F (SWL)	Width B
AW 80 21 FT	8 kN	210 mm
AW 80 31 FT	8 kN	310 mm
AW 80 41 FT	8 kN	410 mm
AW 80 51 FT	8 kN	510 mm
AW 80 61 FT	8 kN	610 mm
AW 80 71 FT	8 kN	710 mm
AW 80 81 FT	8 kN	810 mm



Deformation measuring point m

According to IEC 61537, Chapter 10.8.1

Max. total load F = Cable weight + cable tray + bracket

Wall and clamping bracket AWSS



Type	Width mm	F in kN	Pack Piece	Weight kg/100 pc.	Item no.
AWSS 21 FT	210	10	1	305.100	6417906
AWSS 31 FT	310	10	1	553.000	6417910
AWSS 41 FT	410	10	1	598.000	6417914
AWSS 51 FT	510	10	1	693.000	6417918
AWSS 61 FT	610	10	1	763.000	6417922
AWSS 71 FT	710	8	1	840.000	6417926
AWSS 81 FT	810	7	1	923.000	6417930
AWSS 91 FT	910	6.5	1	1,020.000	6417934
AWSS 101 FT	1010	6	1	1,134.000	6417938

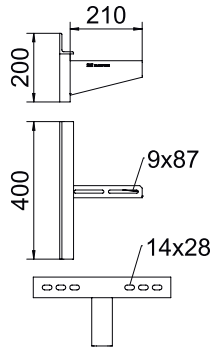
St Steel

FT Hot-dip galvanized

The heavyweight wall bracket can be used in conjunction with wide span systems or for large support distances of cable tray or cable ladder systems.

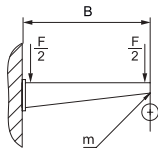
Wall bracket, heavy-duty.

Dimensions



Type	Dimension B mm	Dimension A mm	Dimension H mm	Hole Ø mm
AWSS 21 FT	210	400	200	14
AWSS 31 FT	310	400	335	14
AWSS 41 FT	410	400	335	14
AWSS 51 FT	510	400	335	14
AWSS 61 FT	610	400	335	14
AWSS 71 FT	710	400	335	14
AWSS 81 FT	810	400	341	14
AWSS 91 FT	910	400	366	14
AWSS 101 FT	1010	400	391	14

Load



Characteristic anchor load values for wall and clamping bracket AWSS - Wall fastening

Item on test	Force F (SWL)	Width B
AWSS 21 FT	10 kN	210 mm
AWSS 31 FT	10 kN	310 mm
AWSS 41 FT	10 kN	410 mm
AWSS 51 FT	10 kN	510 mm
AWSS 61 FT	10 kN	610 mm
AWSS 71 FT	8 kN	710 mm
AWSS 81 FT	7 kN	810 mm
AWSS 91 FT	6.5 kN	910 mm
AWSS 101 FT	6 kN	1010 mm

Deformation measuring point m

According to IEC 61537, Chapter 10.8.1

Max. total load F = Cable weight + cable tray + bracket

Wall bracket, variable AWW

Type	Width		F in kN	Pack Piece	Weight kg/100 pc.	Item no.
	mm					
AWV 21 FT	210		0.9	5	129.000	6419534
AWV 31 FT	310		0.9	5	149.000	6419550
AWV 41 FT	410		0.9	5	171.000	6419577
AWV 51 FT	510		0.9	5	209.000	6419593
AWV 61 FT	610		0.9	5	239.000	6419615

St Steel

FT Hot-dip galvanised

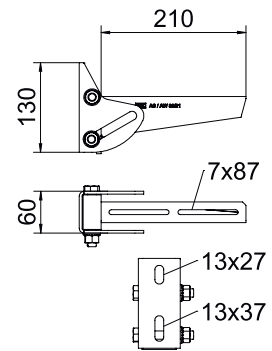
Usable bracket length dependent on adjustment angle. The largest possible adjustment angle is 30°.

Variable wall bracket for fixing to sloping or vaulted walls.



Type	Dimen-	Dimen-	Dimen-	Hole Ø
	sion B	sion A	sion H	
	mm	mm	mm	mm
AWV 21 FT	210	60	130	13
AWV 31 FT	310	60	130	13
AWV 41 FT	410	60	130	13
AWV 51 FT	510	60	130	13
AWV 61 FT	610	60	130	13

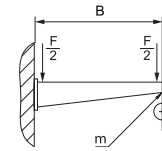
Dimensions



Load

Characteristic anchor load values for AWW wall bracket – wall fastening

Item on test	Force F (SWL)	Width B
AWV 21 FT	0.9 kN	210 mm
AWV 31 FT	0.9 kN	310 mm
AWV 41 FT	0.9 kN	410 mm
AWV 51 FT	0.9 kN	510 mm
AWV 61 FT	0.9 kN	610 mm



Deformation measuring point m

According to IEC 61537, Chapter 10.8.1

Max. total load F = Cable weight + cable tray + bracket

Adapter plate KA-AW 30



Type	Height mm	Pack	Weight	Item no.
		Piece	kg/100 pc.	
KA-AW 30 FT	140	1	262.000	6346715
KA-AW 80 FT	270	1	424.000	6346731

St Steel

FT Hot-dip galvanised

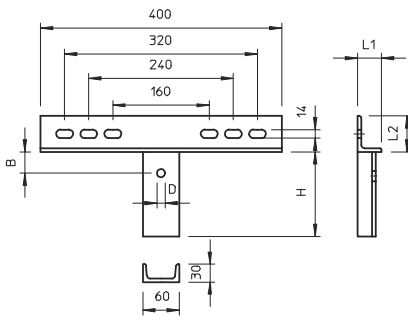
The bracket types AW 30, AW 55 ad AW 80 can be screwed to the adapter plate.

Please order the hexagonal bolt for bracket mounting (type SKS 12 x 40 GF) separately.

Adapter plate with slots for universal fastening to vertical steel girders and walls.

Dimensions

Type	Height mm	Width mm
KA-AW 30 FT	140	400
KA-AW 80 FT	270	400



Load

Adapter plate, bracket load			
Max. total load F in kN			
KA-AW 30 with bracket:			
Anchor type	AW 30/11 - AW 30/61	AW 55/21 - AW 55/41	
BZ 12-15-35/110	3,00	5,50	
Adapter plate, bracket load			
Max. total load F in kN			
KA-AW 80 with bracket:			
Anchor type	AW 55/51 - AW 55/101	AW 80/21 - AW 80/81	
BZ 12-15-35/110	5,50	8,00	

Max. total load F = cable weight + cable tray + bracket. The load capacity values increase considerably when used in uncracked concrete. Observe the load capacity of the brackets (diagram) and the installation conditions of the DIBt approval (anchors).

Adapter plate 45°

Type	Pack Piece	Weight kg/100 pc.	Item no.
KA-E 45 FT	1	618.000	6346758

- St** Steel
- FT** Hot-dip galvanised

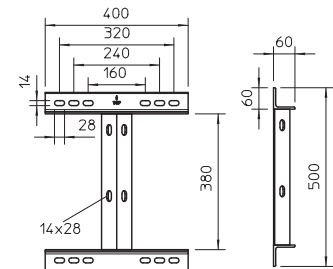
To support cable support systems in building corners and jumps. The hexagonal bolts, type SKS 12 x 40 GF, are used to fasten the brackets to the adapter plate. Please order the appropriate quantity.

Adapter plate with slots for universal fastening to vertical steel girders and walls. Wall and support brackets are screwed to the adapter plate at a 45° angle.



Type	Height mm	Width mm
KA-E 45 FT	500	400

Dimensions



Load

Adapter plate, bracket load				
Max. total load F in kN				
KA-E 45 with bracket:				
Anchor type	AW 30	AW 55	AW 80	
BZ 12-15-35/110	3,00	5,50	8,00	

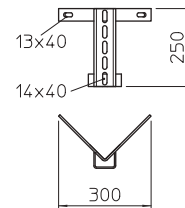
Max. total load F = cable weight + cable tray + bracket. The load capacity values increase considerably when used in uncracked concrete. Observe the load capacity of the brackets (diagram) and the installation conditions of the DIBt approval (anchors). Mounting information: When using this component, please order a bracket which is 500 mm longer than the width of the tray/ladder.

Type	Pack Piece	Weight kg/100 pc.	Item no.
KA-EA FT	2	201.000	6346763

- St** Steel
- FT** Hot-dip galvanised

Corner seat with welded U profile for fastening to 90° external corners. Wall and support brackets are screwed to the U profile.

Corner seat

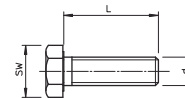


Hexagonal bolt with large surface screw, washer and nut

Type	Dimension mm	Dimension L mm	Dimension d mm	Resistance SW mm	Resistance grade	Pack Piece	Weight kg/100 pc.	Item no.
SKS 12x40 G F	M 12 x 40	40	12	19	8.8	10	9.800	3164020

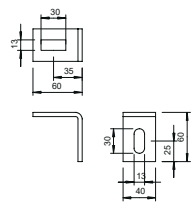
- St** Steel
- F** Hot galvanised

For fastening wall and support brackets on adapter plates.
Hexagonal bolt with hexagonal nut, large washer and washer.



Wall, support and clamping bracket

Mounting angle BW 60



Type

BW 60 40 FT

SI Steel

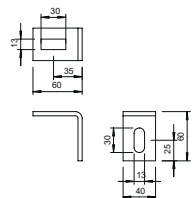
FT Hot-dip galvanised

Including truss-head bolt M12 x 25.

Mounting angle of limb dimension 60 x 60 mm.

Pack Piece	Weight kg/100 pc.	Item no.
10	23.000	6019560

Mounting angle BW 60



Type

BW 60 40 A2

BW 60 40 A4

A2 Stainless steel, rustproof **A4** Stainless steel, rustproof

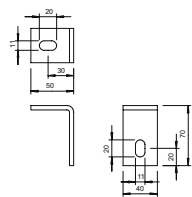
2B Bright, reworked

Including truss-head bolt M12 x 25.

Mounting angle of limb dimension 60 x 60 mm.

Pack Piece	Weight kg/100 pc.	Item no.
10	16.000	6019587
10	16.000	6019583

Mounting angle BW 70



Type

BW 70 40 FT

SI Steel

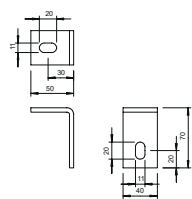
FT Hot-dip galvanised

Including truss-head bolt M10 x 25.

Mounting angle of limb dimension 70 x 50 mm.

Pack Piece	Weight kg/100 pc.	Item no.
10	22.000	6019706

Mounting angle BW 70



Type

BW 70 40 A2

A2 Stainless steel, rustproof

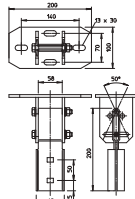
Including truss-head bolt M10 x 25.

Mounting angle of limb dimension 70 x 50 mm.

Pack Piece	Weight kg/100 pc.	Item no.
10	18.940	6019710

I support systems IS 8

Head plate, variable



Type

KI 8 VLP FT

SI Steel

FT Hot-dip galvanised

Including appropriate fastening material.

Limit the length of the support to max. 2,000 mm.

Variable head plate, adjustable in transverse direction, for installation on IS 8 support.

Pack Piece	Weight kg/100 pc.	Item no.
1	275.000	6347843

Support bracket AS 15

Type	Width F in kN		Pack Piece	Weight kg/100 pc.	Item no.
	mm	kN			
AS 15 11 FT	110	1.5	30	27.400	6421326
AS 15 16 FT	160	1.5	30	32.800	6421334
AS 15 21 FT	210	1.5	25	39.400	6421350
AS 15 31 FT	310	1.5	25	46.500	6421385
AS 15 41 FT	410	1.5	30	66.000	6421423
AS 15 51 FT	510	1.5	10	79.600	6421466
AS 15 61 FT	610	1.5	10	87.100	6421490

St Steel

FT Hot-dip galvanised

The support bracket can be fastened to both sides of the I support.

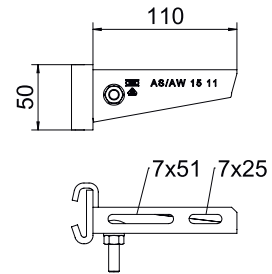
The necessary clamping lug (item no. 6419015), including bolt and nut can be ordered individually for bracket widths 110 - 160 mm.

Light-duty support bracket for infinitely adjustable fastening on IS 8 support.



Type	Dimen-	Dimen-
	sion B mm	sion H mm
AS 15 11 FT	110	50
AS 15 16 FT	160	55
AS 15 21 FT	210	60
AS 15 31 FT	310	65
AS 15 41 FT	410	70
AS 15 51 FT	510	75
AS 15 61 FT	610	80

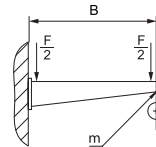
Dimensions



Load

Characteristic anchor load values for AS 15 wall and support bracket – wall fastening

Item on test	Force F (SWL)	Width B
AS 15 11 FT	0.15 kN	110 mm
AS 15 16 FT	0.15 kN	160 mm
AS 15 21 FT	0.15 kN	210 mm
AS 15 31 FT	0.15 kN	310 mm
AS 15 41 FT	0.15 kN	410 mm
AS 15 51 FT	0.15 kN	510 mm
AS 15 61 FT	0.15 kN	610 mm



Support bracket AS 30



Type	Width F in kN		Pack Piece	Weight kg/100 pc.	Item no.
	mm	kN			
AS 30 11 FT	110	3	1	30.000	6419370
AS 30 16 FT	160	3	1	37.000	6419376
AS 30 21 FT	210	3	1	44.000	6419382
AS 30 31 FT	310	3	1	73.000	6419388
AS 30 41 FT	410	3	1	100.000	6419394
AS 30 51 FT	510	3	1	140.000	6419400
AS 30 56 FT	560	3	1	155.000	6419406
AS 30 61 FT	610	3	1	168.000	6419412
AS 30 71 FT	710	3	1	214.000	6419418

St Steel

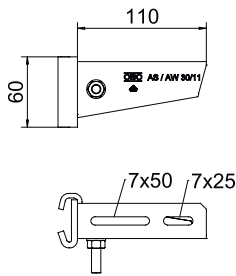
FT Hot-dip galvanized

The support bracket can be fastened to both sides of the I support.

The individual clamping lug, including bolt, nut and washer can also be ordered separately under the item no. 6419007.

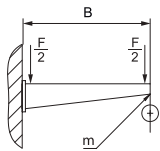
Medium-duty support bracket for infinitely adjustable fastening on IS 8 support.

Dimensions



Type	Dimension B	Dimension H
	mm	mm
AS 30 11 FT	110	60
AS 30 16 FT	160	65
AS 30 21 FT	210	70
AS 30 31 FT	310	80
AS 30 41 FT	410	80
AS 30 51 FT	510	90
AS 30 56 FT	560	100
AS 30 61 FT	610	100
AS 30 71 FT	710	100

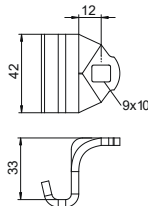
Load



Characteristic anchor load values for AS30 wall and support bracket – wall fastening

Item on test	Force F (SWL)	Width B
AS 30 11 FT	3 kN	110 mm
AS 30 16 FT	3 kN	160 mm
AS 30 21 FT	3 kN	210 mm
AS 30 31 FT	3 kN	310 mm
AS 30 41 FT	3 kN	410 mm
AS 30 51 FT	3 kN	510 mm
AS 30 56 FT	3 kN	560 mm
AS 30 61 FT	3 kN	610 mm
AS 30 71 FT	3 kN	710 mm

Clamping lug for AS30 / AS55



Type	Pack Piece	Weight kg/100 pc.	Item no.

St Steel

FT Hot-dip galvanized

Individual clamping strap for the fastening of the bracket AS 30 in the width 260 - 710 mm and AS 55 in the width 110 - 210 mm on the suspended support IS 8.

Support bracket AS 55

Type	Width mm	F in kN	Pack Piece	Weight kg/100 pc.	Item no.
AS 55 21 FT	210	5.5	1	81.000	6419286
AS 55 31 FT	310	5.5	1	133.000	6419292
AS 55 41 FT	410	5.5	1	157.300	6419298
AS 55 51 FT	510	5.5	1	233.000	6419304
AS 55 56 FT	560	5.5	1	260.000	6419310
AS 55 61 FT	610	5.5	1	283.000	6419316
AS 55 71 FT	710	5.5	1	385.000	6419322
AS 55 81 FT	810	5.5	1	444.000	6419328
AS 55 91 FT	910	5.5	1	517.000	6419334
AS 55 101 FT	1010	5.5	1	595.000	6419340

St Steel

FT Hot-dip galvanised

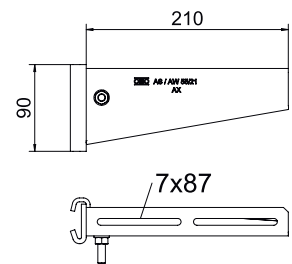
The support bracket can be fastened to both sides of the I support.

The individual clamping lug, including bolt, nut and washer can also be ordered separately under the item no. 6419007.

Heavy-duty support bracket for infinitely adjustable fastening on IS 8 support.

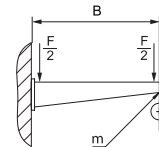


Type	Dimen- sion B mm	Dimen- sion H mm
AS 55 21 FT	210	90
AS 55 31 FT	310	110
AS 55 41 FT	410	130
AS 55 51 FT	510	145
AS 55 56 FT	560	165
AS 55 61 FT	610	165
AS 55 71 FT	710	195
AS 55 81 FT	810	195
AS 55 91 FT	910	195
AS 55 101 FT	1010	195



Characteristic anchor load values for AS55 wall and support bracket – wall fastening

Item on test	Force F (SWL)	Width B
AS 55 21 FT	0.950 kN	210 mm
AS 55 31 FT	0.950 kN	310 mm
AS 55 41 FT	0.950 kN	410 mm
AS 55 51 FT	0.950 kN	510 mm
AS 55 56 FT	0.950 kN	560 mm
AS 55 61 FT	0.950 kN	610 mm
AS 55 71 FT	0.950 kN	710 mm
AS 55 81 FT	0.950 kN	810 mm
AS 55 91 FT	0.950 kN	910 mm
AS 55 101 FT	0.950 kN	1010 mm



Clamp fastening systems

Clamping angle KL

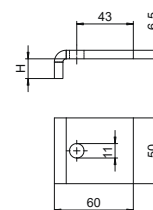
Type	Height mm	Bolt	Pack Piece	Weight kg/100 pc.	Item no.
KL1 10 S FT	10	M10 x 40	10	22.100	6354106
KL1 15 S FT	15	M10 x 50	10	23.400	6354114
KL1 20 S FT	20	M10 x 50	10	25.000	6354122

St Steel

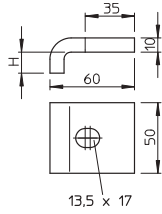
FT Hot-dip galvanised

Choose the clamping lug according to the thickness of the flange.

Clamping lug, type KL1, to fasten light support structures to steel girder flanges.



Clamping angle KWS



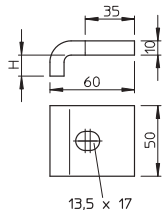
Type	Height		F in kN	Bolt	Pack Pair	Weight kg/100 pairs	Item no.
	mm						
KWS 5 FT	5		5.7	M12 x 40	10	64.000	6355218
KWS 15 FT	15		5.7	M12 x 50	10	65.200	6355234
KWS 20 FT	20		5.7	M12 x 60	10	79.000	6355242
KWS 25 FT	25		5.7	M12 x 60	10	80.000	6355250

- SI** Steel
- FT** Hot-dip galvanised

Choose the clamping angle according to the thickness of the flange.

Clamping angle, with hexagonal bolt, type KWS, for direct fixing of constructions to steel girder flanges.

Clamping angle KWS



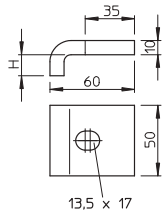
Type	Height		F in kN	Bolt	Pack Pair	Weight kg/100 pairs	Item no.
	mm						
KWS 5 A2	5		5.7	M12 x 40	5	62.000	6355404
KWS 10 A2	10		5.7	M12 x 50	5	68.000	6355412
KWS 15 A2	15		5.7	M12 x 50	5	146.000	6355420
KWS 20 A2	20		5.7	M12 x 60	5	77.000	6355439
KWS 25 A2	25		5.7	M12 x 60	5	81.000	6355447

- A2** Stainless steel, rustproof
- 2B** Bright, reworked

Choose the clamping angle according to the thickness of the flange.

Clamping angle, with hexagonal bolt, type KWS, for direct fixing of constructions to steel girder flanges.

Clamping angle KWH



Type	Height		F in kN	Bolt	Pack Pair	Weight kg/100 pairs	Item no.
	mm						
KWH 5 FT	5		5.7	M12 x 40	10	67.000	6355021
KWH 10 FT	10		5.7	M12 x 50	10	73.000	6355048
KWH 15 FT	15		5.7	M12 x 50	10	76.000	6355056
KWH 20 FT	20		5.7	M12 x 60	10	82.000	6355064
KWH 25 FT	25		5.7	M12 x 60	10	87.000	6355072

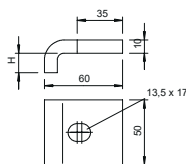
- SI** Steel
- FT** Hot-dip galvanised

Adapt the clamping angle to the material thickness of the flange.

The clamping angle is used in conjunction with profile rails of slot width 22 mm.

Clamping bracket, with hook-head bolt, type KWH, for fastening in the mounting rail, type MS5030.

Clamping angle KWH



Type	Height		F in kN	Bolt	Pack Pair	Weight kg/100 pairs	Item no.
	mm						
KWH 5 A2	5		5.7	M12 x 40	5	65.000	6355307
KWH 10 A2	10		5.7	M12 x 50	5	71.000	6355315
KWH 15 A2	15		5.7	M12 x 50	5	73.000	6355323
KWH 20 A2	20		5.7	M12 x 60	5	80.000	6355331
KWH 25 A2	25		5.7	M12 x 60	5	84.000	6355358

- A2** Stainless steel, rustproof
- 2B** Bright, reworked

Choose the clamping angle according to the thickness of the flange.

The clamping angle is used in conjunction with profile rails of slot width 22 mm (e.g. type CPS 5).

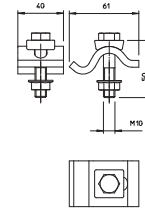
Clamping angle, with hammer-head bolt, type KWH, for fixing in the profile rail, type CPS 5.

Chuck jaw, light-duty TKS

Type	Height		F in kN	Pack	Weight	Item no.
	mm	kN				
TKS-L-25 FT	25	10		10	39.000	6355808

- St Steel
- FT Hot-dip galvanised

The clamping range of the chuck jaw is limited to the maximum fastening thickness, 25 mm.
Chuck jaw with hexagonal nut for direct fastening of structures to steel girders.

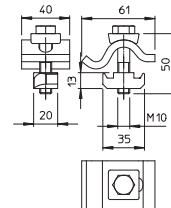


Chuck jaw, light-duty TKH

Type	Height		F in kN	Pack	Weight	Item no.
	mm	kN				
TKH-L-25 FT	25	10		10	46.000	6355812

- St Steel
- FT Hot-dip galvanised

The clamping range of the chuck jaw is limited to the maximum fastening thickness, 25 mm.
The chuck jaw is used in combination with profile rails of slot widths 18 mm and 22 mm.
Light-duty tensioning claw with slide nut for fixing mounting rails to steel girder flanges.

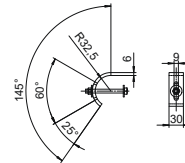


Chuck jaw, light-duty TKS

Type	Height	Bolt		Pack	Weight	Item no.
		mm				
TKS-L-36 M8 FT	36	M8	x 80	50	16.000	6355828

- St Steel
- FT Hot-dip galvanised

The clamping range of the chuck jaw is limited to the maximum fastening thickness of 36 mm.
Chuck jaw with hexagonal nut for direct fastening of structures to steel girders.

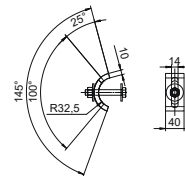


Chuck jaw, light-duty TKS

Type	Height	Bolt		Pack	Weight	Item no.
		mm				
TKS-L-36 M12 FT	36	M12	x 80	25	36.000	6355829

- St Steel
- FT Hot-dip galvanised

The clamping range of the chuck jaw is limited to the maximum fastening thickness, 25 mm.
Chuck jaw with hexagonal nut for direct fastening of structures to steel girders.

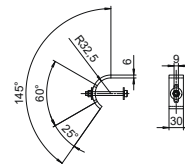


Chuck jaw, light-duty TKS

Type	Height	Bolt		Pack	Weight	Item no.
		mm				
TKS-L-36 M8 A2	36	M8	x 80	50	16.000	6355834

- A2 Stainless steel, rustproof

The clamping range of the chuck jaw is limited to the maximum fastening thickness of 36 mm.
Chuck jaw with hexagonal nut for direct fastening of structures to steel girders.

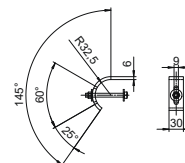


Chuck jaw, light-duty TKS

Type	Height	Bolt		Pack	Weight	Item no.
		mm				
TKS-L-36 M8 A4	36	M8	x 80	50	16.000	6355835

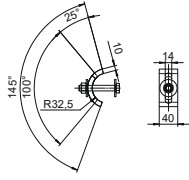
- A4 Stainless steel, rustproof

The clamping range of the chuck jaw is limited to the maximum fastening thickness of 36 mm.
Chuck jaw with hexagonal nut for direct fastening of structures to steel girders.



Clamp fastening systems

Chuck jaw, light-duty TKS

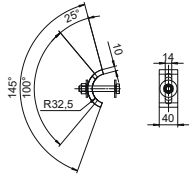


Type	Height		Bolt	Pack Piece	Weight kg/100 pc.	Item no.
	mm					
TKS-L36 M12 A2	36		M12 x 80	25	36.000	6355836

A2 Stainless steel, rustproof

The clamping range of the chuck jaw is limited to the maximum fastening thickness of 36 mm.
Chuck jaw with hexagonal nut for direct fastening of structures to steel girders.

Chuck jaw, light-duty TKS

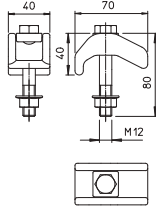


Type	Height		Bolt	Pack Piece	Weight kg/100 pc.	Item no.
	mm					
TKS-L36 M12 A4	36		M12 x 80	25	36.000	6355837

A4 Stainless steel, rustproof

The clamping range of the chuck jaw is limited to the maximum fastening thickness of 36 mm.
Chuck jaw with hexagonal nut for direct fastening of structures to steel girders.

Chuck jaw, heavy-duty TKS



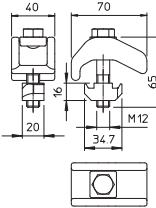
Type	Height mm	F in kN		Pack Pair	Weight kg/100 pairs	Item no.
		mm	kN			
TKS-S-30 ZL	30	21		10	82.800	6355798

St Steel

ZL Zinc slat

The clamping range of the chuck jaw is limited to the maximum fastening thickness, 30 mm.
Heavy-duty chuck jaw with hexagonal nut for direct fastening of structures to steel girders.

Chuck jaw, heavy-duty TKH



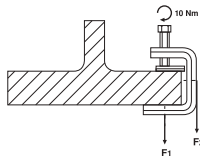
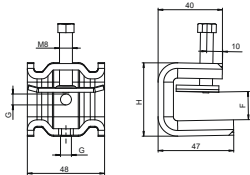
Type	Height mm	F in kN		Pack Pair	Weight kg/100 pairs	Item no.
		mm	kN			
TKH-S-30 ZL	30	21		10	88.600	6355805

St Steel

ZL Zinc slat

The clamping range of the chuck jaw is limited to the maximum fastening thickness, 30 mm.
The chuck jaw is used in combination with profile rails of slot width 22 mm.
Heavy-duty chuck jaw with slide nut for fastening profile rails to steel girders.

Beam clamp SSP 6-21



Type	Flange thickness mm	For threaded rod	Breaking load		Pack Piece	Weight kg/100 pc.	Item no.
			F1 kN	F2 kN			
SSP 6-21 M6 FT	6 - 21	M6	1.75	1.5	25	23.900	1486232
SSP 6-21 M8 FT	6 - 21	M8	1.75	1.5	25	23.900	1486282

St Steel

FT Hot-dip galvanised

This type of beam clamp is pushed onto the support and fixed to the girder or flat iron using a pressure trough and bolt (M8). The hexagonal bolt has a WAF of 10 mm. In the clip element, two additional M6 threads are also incorporated, to fix threaded rods, for example.

SSP 6-21 M6 FT

Breaking load F1 kN 1.75

Breaking load F2 kN 1.5

SSP 6-21 M8 FT

Breaking load F1 kN 1.75

Breaking load F2 kN 1.5

Beam clamp SSP 6-21

Type	Flange thickness mm	For threaded rod	Breaking load F1 kN	Breaking load F2 kN	Pack Piece	Weight kg/100 pc.	Item no.
SSP 6-21 M6 A2	6 - 21	M6	1.75	1.5	25	23.200	1486234
SSP 6-21 M6 A4	6 - 21	M6	1.75	1.5	25	23.200	1486236
SSP 6-21 M8 A2	6 - 21	M8	1.75	1.5	25	23.200	1486284
SSP 6-21 M8 A4	6 - 21	M8	1.75	1.5	25	23.200	1486286

A2 Stainless steel, rustproof **A4** Stainless steel, rustproof

2B Bright, reworked

This type of beam clamp is pushed onto the support and fixed to the girder or flat iron using a pressure trough and bolt (M8). The hexagonal bolt has a WAF of 10 mm. In the clip element, two additional M6 threads are also incorporated, to fix threaded rods, for example.

SSP 6-21 M6 A2

Breaking load F1 kN 1.75

Breaking load F2 kN 1.5

SSP 6-21 M6 A4

Breaking load F1 kN 1.75

Breaking load F2 kN 1.5

SSP 6-21 M8 A2

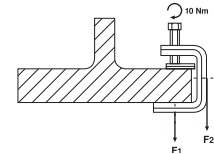
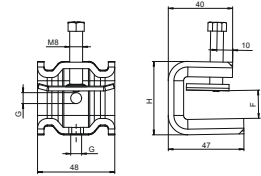
Breaking load F1 kN 1.75

Breaking load F2 kN 1.5

SSP 6-21 M8 A4

Breaking load F1 kN 1.75

Breaking load F2 kN 1.5



Beam clamp SSP 20-40

Type	Flange thickness mm	For threaded rod	Breaking load F1 kN	Breaking load F2 kN	Pack Piece	Weight kg/100 pc.	Item no.
SSP 20-40 M6 FT	20 - 40	M6	1.4	1.3	25	27.700	1486238
SSP 20-40 M8 FT	20 - 40	M8	1.4	1.3	25	27.800	1486288

St Steel

FT Hot-dip galvanised

This type of beam clamp is pushed onto the support and fixed to the girder or flat iron using a pressure trough and bolt (M8). The hexagonal bolt has a WAF of 10 mm. In the clip element, two additional M6 threads are also incorporated, to fix threaded rods, for example.

SSP 20-40 M6 FT

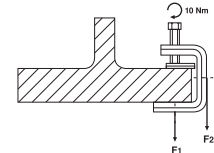
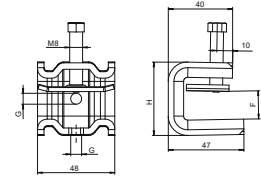
Breaking load F1 kN 1.4

Breaking load F2 kN 1.3

SSP 20-40 M8 FT

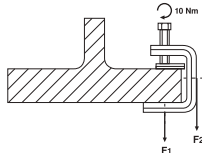
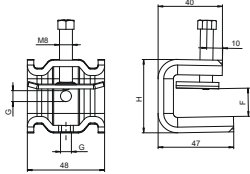
Breaking load F1 kN 1.4

Breaking load F2 kN 1.3



Clamp fastening systems

Beam clamp SSP 20-40



Type	Flange thickness mm	For threaded rod	Breaking load F1 kN	Breaking load F2 kN	Pack Piece	Weight kg/100 pc.	Item no.
SSP 20-40 M6 A2	20 - 40	M6	1.4	1.3	25	27.700	1486242
SSP 20-40 M6 A4	20 - 40	M6	1.4	1.3	25	27.700	1486244
SSP 20-40 M8 A2	20 - 40	M8	1.4	1.3	25	27.800	1486292
SSP 20-40 M8 A4	20 - 40	M8	1.4	1.3	25	27.800	1486294

A2 Stainless steel, rustproof **A4** Stainless steel, rustproof

2B Bright, reworked

This type of beam clamp is pushed onto the support and fixed to the girder or flat iron using a pressure trough and bolt (M8). The hexagonal bolt has a WAF of 10 mm. In the clip element, two additional M6 threads are also incorporated, to fix threaded rods, for example.

SSP 20-40 M6 A2

Breaking load F1 kN 1.4

Breaking load F2 kN 1.3

SSP 20-40 M6 A4

Breaking load F1 kN 1.4

Breaking load F2 kN 1.3

SSP 20-40 M8 A2

Breaking load F1 kN 1.4

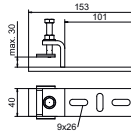
Breaking load F2 kN 1.3

SSP 20-40 M8 A4

Breaking load F1 kN 1.4

Breaking load F2 kN 1.3

Beam clamp with pressure plate, horizontal BFK 153



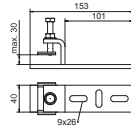
Type	Dimension B mm	Dimension b mm	Pack Piece	Weight kg/100 pc.	Item no.
BFKD 153 44 FT	153	101	10	41.400	6003885

St Steel

FT Hot-dip galvanised

The cable support system attached to the beam clamp runs horizontally. Beam clamp with pressure plate for clamping on the steel girder.

Beam clamp with pressure plate, horizontal BFK 153



Type	Dimension B mm	Dimension b mm	Pack Piece	Weight kg/100 pc.	Item no.
BFKD 153 44 A2	153	101	10	42.400	6003887

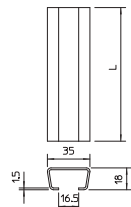
A2 Stainless steel, rustproof

2B Bright, reworked

The cable support system attached to the beam clamp runs horizontally. Beam clamp with pressure plate for clamping on the steel girder.

Construction and profile rail systems

AML3518 anchor rail, slot 16.5 mm, unperforated



Type	Length mm	Dimension W x H mm	Material thickness mm	Dimension L mm	Pack m	Weight kg/100 m	Item no.
AML3518UP2000BK	2000	35 x 18	1.5	2000	20	90.000	1118021
AML3518UP2000FS	2000	35 x 18	1.5	2000	20	90.000	1118226
AML3518UP2000FT	2000	35 x 18	1.5	2000	20	89.400	1118129

St Steel

FS Strip galvanised **BK** Bright **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.

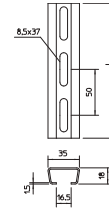
Anchor rail AML3518, slot 16.5 mm, perforated

Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack Piece	Weight kg/100 pc.	Item no.
AML3518P0200FT	200	35 x 18	1.5	200	25	17.800	1119696
AML3518P0300FT	300	35 x 18	1.5	300	25	26.700	1119693
AML3518P0400FT	400	35 x 18	1.5	400	10	35.600	1119690
AML3518P0500FT	500	35 x 18	1.5	500	10	44.500	1119687
AML3518P0600FT	600	35 x 18	1.5	600	10	53.400	1119684
AML3518P0700FT	700	35 x 18	1.5	700	10	62.300	1119681
AML3518P0800FT	800	35 x 18	1.5	800	10	71.200	1119678
AML3518P1000FT	1000	35 x 18	1.5	1000	10	89.000	1119672
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.



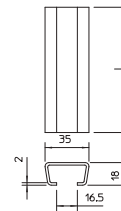
AMS3518 anchor rail, slot 16.5 mm, unperforated

Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack m	Weight kg/100 m	Item no.
AMS3518UP2000BK	2000	35 x 18	2	2000	20	116.000	1112023
AMS3518UP2000FS	2000	35 x 18	2	2000	20	116.000	1112120
AMS3518UP2000FT	2000	35 x 18	2	2000	20	121.350	1112228

St Steel

FS Strip galvanised BK Bright 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.



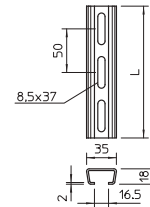
Anchor rail AMS3518, slot 16.5 mm, perforated

Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack m	Weight kg/100 m	Item no.
AMS3518P2000FS	2000	35 x 18	2	2000	2	115.000	1112708
AMS3518P2000FT	2000	35 x 18	2	2000	20	122.000	1112759

St Steel

FS Strip galvanised 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.



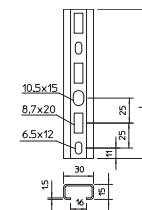
CM3015 profile rail, slot 16 mm, perforated

Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack Piece	Weight kg/100 pc.	Item no.
CM3015P0200FT	200	30 x 15	1.5	200	25	15.000	1109782
CM3015P0300FT	300	30 x 15	1.5	300	25	22.000	1109790
CM3015P0400FT	400	30 x 15	1.5	400	10	30.000	1109804
CM3015P0500FT	500	30 x 15	1.5	500	10	37.000	1109812
CM3015P0600FT	600	30 x 15	1.5	600	10	44.000	1109820
CM3015P0700FT	700	30 x 15	1.5	700	10	50.000	1109839
CM3015P0800FT	800	30 x 15	1.5	800	10	56.000	1109847

St Steel

FT Hot-dip galvanised

Profile rail, perforated, slot width 16 mm.



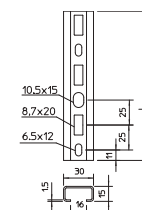
CM3015 profile rail, slot 16 mm, perforated

Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack m	Weight kg/100 m	Item no.
CM3015P1000FT	1000	30 x 15	1.5	1000	10	73.000	1109863
CM3015P2000FT	2000	30 x 15	1.5	2000	20	73.000	1109871

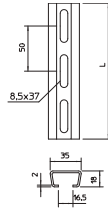
St Steel

FT Hot-dip galvanised

Profile rail, perforated, slot width 16 mm.



AML3518 anchor rail, slot 16.5 mm, perforated



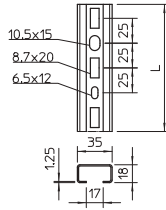
Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack m	Weight kg/100 m	Item no.
AML3518P1000A2	1000	35 x 18	1.5	1000	10	82.000	1119700
AML3518P2000A2	2000	35 x 18	1.5	2000	20	80.000	1119702
AML3518P6000A2	6000	35 x 18	1.5	6000	6	80.000	1119729

A2 Stainless steel, rustproof

2B Bright, reworked

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.

CML3518 profile rail, slot 17 mm, perforated



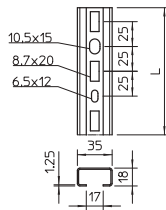
Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack Piece	Weight kg/100 pc.	Item no.
CML3518P0150FS	150	35 x 18	1.25	150	25	10.600	1104241
CML3518P0200FS	200	35 x 18	1.25	200	25	14.200	1104268
CML3518P0300FS	300	35 x 18	1.25	300	25	21.300	1104284
CML3518P0400FS	400	35 x 18	1.25	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

St Steel

FS Strip galvanised

Light-duty profile rail, perforated, slot width 17 mm.

CML3518 profile rail, slot 17 mm, perforated



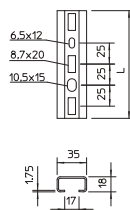
Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack m	Weight kg/100 m	Item no.
CML3518P1000FS	1000	35 x 18	1.25	1000	1	71.000	1104497
CML3518P2000FS	2000	35 x 18	1.25	2000	2	71.000	1104500

St Steel

FS Strip galvanised

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.

CMS3518 profile rail, slot 17 mm, perforated



Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack Piece	Weight kg/100 pc.	Item no.
CMS3518P0150FS	150	35 x 18	1.75	150	25	14.670	1104349
CMS3518P0200FS	200	35 x 18	1.75	200	25	19.560	1104357
CMS3518P0300FS	300	35 x 18	1.75	300	25	29.340	1104373
CMS3518P0400FS	400	35 x 18	1.75	400	10	39.120	1104391
CMS3518P0500FS	500	35 x 18	1.75	500	10	48.900	1104403
CMS3518P0600FS	600	35 x 18	1.75	600	10	58.680	1104411
CMS3518P0700FS	700	35 x 18	1.75	700	10	68.460	1104422
CMS3518P0800FS	800	35 x 18	1.75	800	10	78.240	1104427
CMS3518P0900FS	900	35 x 18	1.75	900	10	88.020	1104435

St Steel

FS Strip 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.

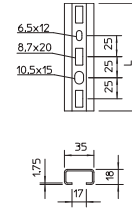
CMS3518 profile rail, slot 17 mm, perforated

Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack Weight		Item no.
					m	kg/100 m	
CMS3518P1000FS	1000	35 x 18	1.75	1000	10	97.800	1104445
CMS3518P2000FS	2000	35 x 18	1.75	2000	2	97.800	1104454

Sl Steel

FS Strip 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.

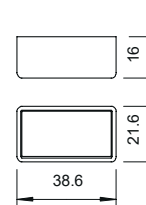


End cap

Type	Colour	Pack Weight		Item no.
		Piece	kg/100 pc.	
CM3518 SK	Pastel orange	50	0.384	1124502

PE Polyethylene

End cap for profile rail types CM3518 and AM3518.



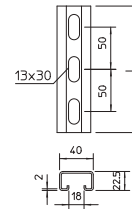
MS4022 mounting rail, heavy-duty, slot 18 mm, perforated

Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack Weight		Item no.
					m	kg/100 m	
MS4022P2000FT	2000	40 x 22,5	2	2000	10	152.500	1121979
MS4022P6000FT	6000	40 x 22,5	2	6000	6	152.500	1121898

Sl 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.



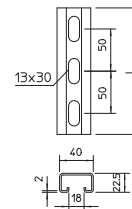
MS4022 mounting rail, heavy-duty, slot 18 mm, perforated

Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack Weight		Item no.
					m	kg/100 m	
MS4022P2000A2	2000	40 x 22,5	2	2000	10	152.500	1121960
MS4022P6000A2	6000	40 x 22,5	2	6000	6	152.500	1121901

A2 Stainless steel, rustproof

2B Bright, reworked

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.

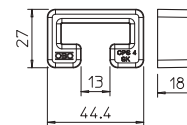


Protective cap MS4022

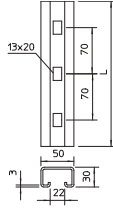
Type	Colour	Pack Weight		Item no.
		Piece	kg/100 pc.	
MS4022 SK	Pastel orange	25	0.647	1124555

PE Polyethylene

End caps for profile rail, type MS4022.



MS5030 mounting rail, slot 22 mm, perforated



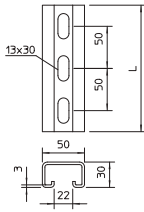
Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack Piece	Weight kg/100 pc.	Item no.
MS5030RP0220FT	220	50 x 30	3	220	1	69.000	6349404
MS5030RP0260FT	260	50 x 30	3	260	1	81.500	6349412
MS5030RP0300FT	300	50 x 30	3	300	1	94.000	6349439
MS5030RP0340FT	340	50 x 30	3	340	1	107.000	6349447
MS5030RP0380FT	380	50 x 30	3	380	1	119.000	6349463

Sl 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.

MS5030 mounting rail, slot 22 mm, perforated



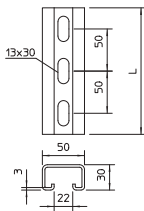
Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack Piece	Weight kg/100 pc.	Item no.
MS5030P0200FT	200	50 x 30	3	200	1	57.000	1121391
MS5030P0300FT	300	50 x 30	3	300	1	85.000	1121243
MS5030P0400FT	400	50 x 30	3	400	1	113.000	1121278
MS5030P0500FT	500	50 x 30	3	500	1	141.000	1121405
MS5030P0600FT	600	50 x 30	3	600	1	170.000	1121294
MS5030P0700FT	700	50 x 30	3	700	1	198.000	1121332
MS5030P0800FT	800	50 x 30	3	800	1	235.000	1121308
MS5030P0900FT	900	50 x 30	3	900	1	255.000	1121336
MS5030P1500FT	1500	50 x 30	3	1500	1	424.000	1121363

Sl 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.

MS5030 mounting rail, slot 22 mm, perforated



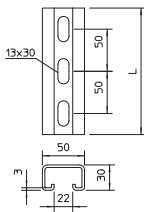
Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack m	Weight kg/100 m	Item no.
MS5030P1000FT	1000	50 x 30	3	1000	1	282.500	1121448
MS5030P2000FT	2000	50 x 30	3	2000	2	282.500	1121464
MS5030P3000FT	3000	50 x 30	3	3000	3	308.100	1121466
MS5030P6000FT	6000	50 x 30	3	6000	6	282.500	1121472

Sl 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.

MS5030 mounting rail, slot 22 mm, perforated



Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack m	Weight kg/100 m	Item no.
MS5030P2000A2	2000	50 x 30	3	2000	2	282.500	1121480
MS5030P6000A2	6000	50 x 30	3	6000	6	282.500	1121499

A2 Stainless steel, rustproof

2B Bright, reworked

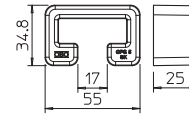
Heavy-duty C profile rail for individual installation of support constructions, e.g. for cable trays or as a panel for switchgear cabinets. Can also be used for cable routing, in conjunction with clamp clips with a U foot.

End cap

Type	Colour	Pack Piece	Weight kg/100 pc.	Item no.
MS5030 SK	Pastel orange	25	1.147	1124563

PE Polyethylene

End caps for profile rail, type MS5030.

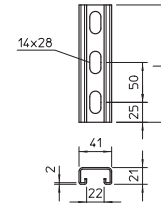


MS4121 mounting rail, slot 22 mm, perforated

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
MS4121P6000FS	6000	41x21	2	6000	6	141.900	1122922

- St Steel
- FS Strip 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.

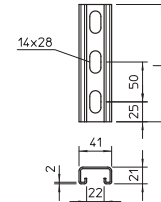


MS4121 mounting rail, slot 22 mm, perforated

Type	Length mm	Dimension W x H mm	Material thickness mm	Dimension L mm	Pack Piece	Weight kg/100 pc.	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
MS4121P0600FT	600	41x21	2	600	1	105.000	1122937
MS4121P0700FT	700	41x21	2	700	1	123.000	1122938
MS4121P0800FT	800	41x21	2	800	1	140.000	1122939
MS4121P0900FT	900	41x21	2	900	1	158.000	1122940

- 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.

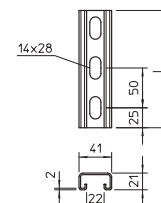


MS4121 mounting rail, slot 22 mm, perforated

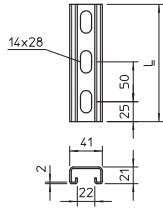
Type	Length mm	Dimension W x H mm	Material thickness mm	Dimension L mm	Pack m	Weight kg/100 m	Item no.
MS4121P2000FT	2000	41x21	2	2000	2	183.000	1122923
MS4121P3000FT	3000	41x21	2	3000	3	151.300	1122924
MS4121P6000FT	6000	41x21	2	6000	6	184.000	1122926

- 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.



MS4121 mounting rail, slot 22 mm, perforated



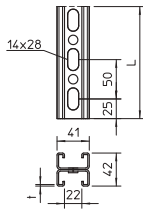
Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack m	Weight kg/100 m	Item no.
MS4121P2000A2	2000	41x21	2	2000	2	175.000	1122925
MS4121P3000A2	3000	41x21	2	3000	3	185.340	1122928
MS4121P6000A2	6000	41x21	2	6000	6	172.670	1122929
MS4121P2000A4	2000	41x21	2	2000	2	175.000	1122476
MS4121P3000A4	3000	41x21	2	3000	3	172.670	1122931
MS4121P6000A4	6000	41x21	2	6000	6	172.670	1122932

A2 Stainless steel, rustproof A4 Stainless steel, rustproof

2B Bright, reworked

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.

MS4142 mounting rail, slot 22 mm, double, perforated



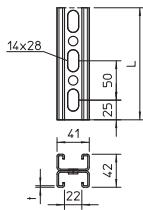
Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack m	Weight kg/100 m	Item no.
MS4142P3000FS	3000	41x42	2	3000	3	303.000	1122947
MS4142P6000FS	6000	41x42	2	6000	6	303.000	1122948
MS4142P3000FT	3000	41x42	2	3000	3	303.000	1122944
MS4142P6000FT	6000	41x42	2	6000	6	303.000	1122945

Sl Steel

FS Strip galvanised FT Hot-dip galvanised

Heavy-duty profile/mounting rail with continuous perforation in base, slot width 22 mm. Double version, i.e. two profile rails are interconnected on the base (clinched).

MS4121 mounting rail, slot 22 mm, double, perforated



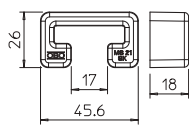
Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack m	Weight kg/100 m	Item no.
MS4142P6000A2	6000	41x42	2	6000	6	283.800	1122954

A2 Stainless steel, rustproof

2B Bright, reworked

Heavy-duty unistrut with continuous perforation in base, slot width 22 mm. Double version, i.e. two profile rails are interconnected on the base (welded).

End cap MS4121

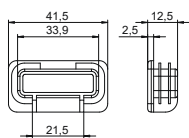


Type	Colour	Pack Piece	Weight kg/100 pc.	Item no.
MS4121 SK	Pastel orange	25	0.611	1122902

PE Polyethylene

End caps for profile rail, type MS4121.

End cap MS4121



Type	Colour	Pack Piece	Weight kg/100 pc.	Item no.
MS4121 EK	Pastel orange	50	0.645	1122904

PE Polyethylene

End cap for profile rail, type MS4121.

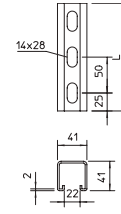
Mounting rail, MSL4141, slot 22 mm, perforated

Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion 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
MSL4141P6000FS	6000	41x41	2	6000	6	201.100	1122974
MSL4141P1000FT	1000	41x41	2	1000	1	214.700	1122962
MSL4141P3000FT	3000	41x41	2	3000	3	214.700	1122964
MSL4141P6000FT	6000	41x41	2	6000	6	214.700	1122966

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.



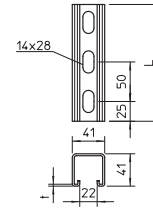
MS4141 mounting rail, slot 22 mm, perforated

Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack m	Weight kg/100 m	Item no.
MSL4141P1000A2	1000	41x41	2	1000	1	201.100	1122978
MSL4141P3000A2	3000	41x41	2	3000	3	201.100	1122980
MSL4141P6000A2	6000	41x41	2	6000	6	201.100	1122982
MSL4141P1000A4	1000	41x41	2	1000	1	201.100	1122988
MSL4141P3000A4	3000	41x41	2	3000	3	201.100	1122990
MSL4141P6000A4	6000	41x41	2	6000	6	201.100	1122992

A2 Stainless steel, rustproof A4 Stainless steel, rustproof

2B Bright, reworked

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.



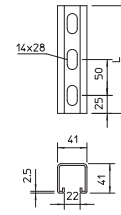
MS4141 mounting rail, slot 22 mm, perforated

Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion 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
MS4141P6000FS	6000	41x41	2.5	6000	6	247.500	1122912
MS4141P1000FT	1000	41x41	2.5	1000	1	261.400	1122606
MS4141P3000FT	3000	41x41	2.5	3000	3	261.400	1122622
MS4141P6000FT	6000	41x41	2.5	6000	6	260.670	1122657

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.



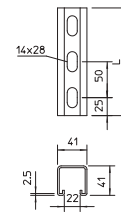
MS4141 mounting rail, slot 22 mm, perforated

Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack Piece	Weight kg/100 pc.	Item no.
MS4141P0200FT	200	41x41	2.5	200	1	52.400	1122509
MS4141P0300FT	300	41x41	2.5	300	1	78.500	1122517
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
MS4141P0800FT	800	41x41	2.5	800	1	209.200	1122576
MS4141P0900FT	900	41x41	2.5	900	1	235.300	1122584

St Steel

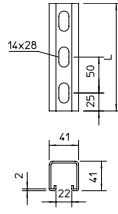
FT Hot-dip galvanised

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.



KTS_Typ_0A / en / 2020/05/29 13:25:53 (LLEXP02466) / 2020/05/29 13:26:10 13:26:10

MS4141 mounting rail, slot 22 mm, side perforation



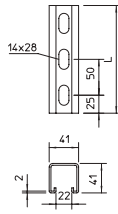
Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack m	Weight kg/100 m	Item no.
MSL4141PP1000FS	1000	41x41	2	1000	1	179.400	1123008
MSL4141PP3000FS	3000	41x41	2	3000	3	179.400	1123010
MSL4141PP6000FS	6000	41x41	2	6000	6	179.400	1123012
MSL4141PP1000FT	1000	41x41	2	1000	1	191.500	1123001
MSL4141PP3000FT	3000	41x41	2	3000	3	191.500	1123003
MSL4141PP6000FT	6000	41x41	2	6000	6	191.500	1123005

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 22 mm, side perforation



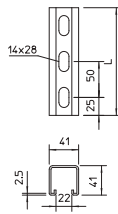
Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack m	Weight kg/100 m	Item no.
MSL4141PP1000A2	1000	41x41	2	1000	1	179.400	1123014
MSL4141PP3000A2	3000	41x41	2	3000	3	179.400	1123016
MSL4141PP6000A2	6000	41x41	2	6000	6	179.400	1123018
MSL4141PP1000A4	1000	41x41	2	1000	1	179.400	1123021
MSL4141PP3000A4	3000	41x41	2	3000	3	179.400	1123023
MSL4141PP6000A4	6000	41x41	2	6000	6	179.400	1123025

A2 Stainless steel, rustproof **A4** Stainless steel, rustproof

2B Bright, reworked

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 22 mm, side perforation



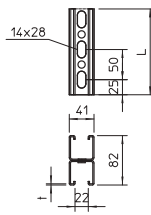
Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack m	Weight kg/100 m	Item no.
MS4141PP1000FS	1000	41x41	2.5	1000	1	281.000	1122481
MS4141PP3000FS	3000	41x41	2.5	3000	3	218.000	1122914
MS4141PP6000FS	6000	41x41	2.5	6000	6	218.340	1122916
MS4141PP1000FT	1000	41x41	2.5	1000	1	225.000	1122479
MS4141PP3000FT	3000	41x41	2.5	3000	3	233.340	1122483
MS4141PP6000FT	6000	41x41	2.5	6000	6	225.000	1122487

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.

MS4182 mounting rail, slot 22 mm, double, perforated



Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack m	Weight kg/100 m	Item no.
MS4182P3000FS	3000	41x82	2	3000	3	402.200	1122676
MS4182P6000FS	6000	41x82	2	6000	6	402.200	1122678
MS4182P3000FT	3000	41x82	2	3000	3	402.200	1122671
MS4182P6000FT	6000	41x82	2	6000	6	402.200	1122673

St Steel

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

Heavy-duty profile/mounting rail with continuous perforation in base, slot width 22 mm. Double version, i.e. two profile rails are interconnected on the base (clinched).

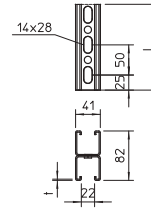
MS4182 mounting rail, slot 22 mm, double, perforated

Type	Length mm	Dimension		Material thickness mm	Dimen- sion L mm	Pack m	Weight kg/100 m	Item no.
		W x H mm						
MS4182P3000A2	3000	41x82	2	3000	3	402.200	1122682	
MS4182P6000A2	6000	41x82	2	6000	6	402.200	1122684	

A2 Stainless steel, rustproof

2B Bright, reworked

Heavy-duty unistrut with continuous perforation in base, slot width 22 mm. Double version, i.e. two profile rails are interconnected on the base (welded).

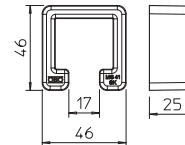


End cap MS4141

Type	Colour	Pack Piece	Weight kg/100 pc.	Item no.

PE Polyethylene

End caps for profile rail, type MS4141.

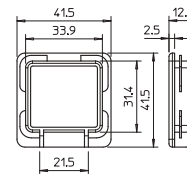


End cap MS4141

Type	Colour	Pack Piece	Weight kg/100 pc.	Item no.

PE Polyethylene

End cap for profile rail, type MS4141.



Wall, floor and ceiling bracket with 3 holes

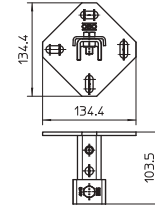
Type	Version	Dimension		Material thickness mm	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
		W x H mm						
WBDHE 41 FT	Perforated	134x110	5	102	10	73.000	1123191	

St Steel

FT Hot-dip galvanised

The wall, floor and ceiling bracket can ideally be used as a panel for wall, floor and ceiling mounting.

Also suitable for stand and frame construction in conjunction with the mounting rails MS4141.



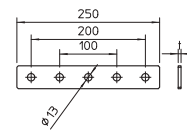
Connection plate with 5 holes

Type	Material thickness mm	Pack Piece	Weight kg/100 pc.	Item no.

St Steel

FT Hot-dip galvanised

Connection plate with five holes for straight connection of profile rails 41 x 41 mm and 41 x 21 mm.



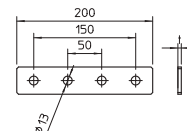
Connection plate with 4 holes

Type	Material thickness mm	Pack Piece	Weight kg/100 pc.	Item no.

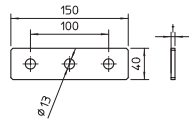
St Steel

FT Hot-dip galvanised

Connection plate with four holes for straight connection of profile rails 41 x 41 mm and 41 x 21 mm.



Connection plate with 3 holes

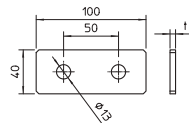


Type	Material thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
GMS 3 VP FT	5	20	24.010	1124647

- St Steel
- FT Hot-dip galvanised

Connection plate with three holes for straight connection of profile rails 41 x 41 mm and 41 x 21 mm.

Connection plate with 2 holes

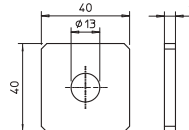


Type	Material thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
GMS 2 VP FT	5	10	14.000	1124645

- St Steel
- FT Hot-dip galvanised

Connection plate with two holes for straight connection of profile rails 41 x 41 mm and 41 x 21 mm.

Connection plate with 1 hole

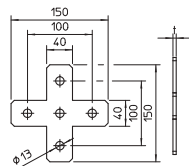


Type	Material thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
GMS 1 VP FT	5	10	7.120	1124643

- St Steel
- FT Hot-dip galvanised

Connection plate with lengthwise slot, for example for mounting threaded rods to profile rails 41 x 41 mm and 41 x 21 mm.

Connection plate, X-shaped

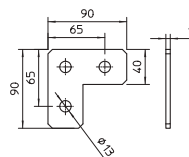


Type	Material thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
GMS 5 VP X FT	5	10	48.000	1124657

- St Steel
- FT Hot-dip galvanised

Connection plate with five holes for cross connection of profile rails 41 x 41 mm and 41 x 21 mm.

Connection plate, L-shaped

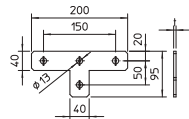


Type	Material thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
GMS 3 VP L FT	5	10	25.000	1124653

- St Steel
- FT Hot-dip galvanised

Connection plate with three holes for angled connection of profile rails 41 x 41 mm and 41 x 21 mm.

Connection plate, T-shaped



Type	Material thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
GMS 4 VP T FT	5	10	41.000	1124655

- St Steel
- FT Hot-dip galvanised

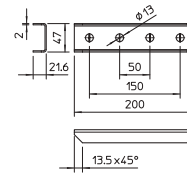
Connection plate with four holes for T-shaped connection of profile rails 41 x 41 mm and 41 x 21 mm.

Connector

Type	Version	Pack Piece	Weight kg/100 pc.	Item no.
GVMS 4 ASV FT	With continuous perforation 13 mm	10	24.900	1124641

- St Steel
- FT Hot-dip galvanised

Connector gripping from outside with four holes for straight connection of profile rails 41 x 41 mm and 41 x 21 mm.

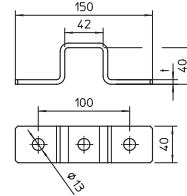


Omega clamp

Type	Material thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
GMS 3 O 4141 FT	5	10	35.000	1124673

- St Steel
- FT Hot-dip galvanised

Fastening clip with 3 holes for cross-wise connection of profile rails 41 x 41 mm.

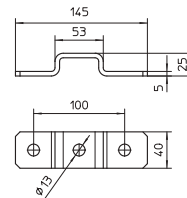


Omega clamp

Type	Material thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
GMS 3 O 4121 FT	5	10	26.540	1124671

- St Steel
- FT Hot-dip galvanised

Fastening clip with 3 holes for cross-wise connection of profile rails 41 x 21 mm.

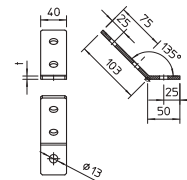


Mounting bracket, 45° with 3 holes

Type	Version	Shipping box Piece	Pack Piece	Weight kg/100 pc.	Item no.
GMS 3 VW 45 FT	45° angle	40	10	24.010	1124667

- St Steel
- FT Hot-dip galvanised

Mounting bracket with three holes to connect profile rails 41 x 41 mm and 41 x 21 mm at an angle of 45°.

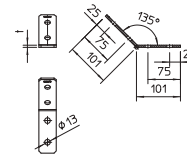


Mounting bracket, 45° with 4 holes

Type	Version	Shipping box Piece	Pack Piece	Weight kg/100 pc.	Item no.
GMS 4 VW 45 FT	45° angle	40	10	32.000	1124669

- St Steel
- FT Hot-dip galvanised

Mounting bracket with four holes to connect profile rails 41 x 41 mm and 41 x 21 mm at an angle of 45°.

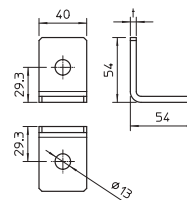


Mounting bracket, 90° with 2 holes

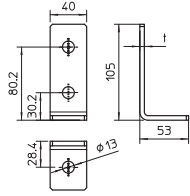
Type	Version	Shipping box Piece	Pack Piece	Weight kg/100 pc.	Item no.
GMS 2 VW 90 FT	90° angle	60	10	14.000	1124659

- St Steel
- FT Hot-dip galvanised

Mounting bracket with two holes to connect profile rails 41 x 41 mm and 41 x 21 mm at an angle of 90°.



Mounting bracket, 90° with 3 holes

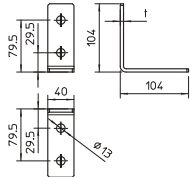


Type	Version	Shipping box Piece	Pack Piece	Weight kg/100 pc.	Item no.
GMS 3 VW 90 FT	90° angle	40	10	25.910	1124661

- St** Steel
- FT** Hot-dip galvanised

Mounting bracket with three holes to connect profile rails 41 x 41 mm and 41 x 21 mm at an angle of 90°.

Mounting bracket, 90° with 4 holes

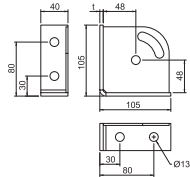


Type	Version	Shipping box Piece	Pack Piece	Weight kg/100 pc.	Item no.
GMS 4 VW 90 FT	90° angle	30	10	32.000	1124663

- St** Steel
- FT** Hot-dip galvanised

Mounting bracket with two holes to connect profile rails 41 x 41 mm and 41 x 21 mm at an angle of 90°.

Mounting bracket, 90° with 6 holes

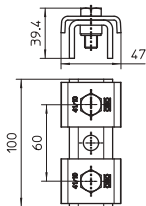


Type	Version	Pack Piece	Weight kg/100 pc.	Item no.
GMS 6 KD FT	90° bracket	10	50.900	1124792
GMS 6 KD A2	90° bracket	10	48.800	1124796
GMS 6 KD A4	90° bracket	10	48.800	1124798

- St** Steel
- A2** Stainless steel, rustproof
- A4** Stainless steel, rustproof
- FT** Hot-dip galvanised
- 2B** Bright, reworked

Reinforced mounting bracket with 6 holes to connect profile rails 41 x 41 mm and 41 x 21 mm at an angle of 90°. Additional fastening option for a strut at an angle of 45° with an adjusting range of +/- 30°. Can be used for angles between 15° and 75°.

Rail connector SV with 3 holes



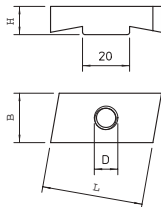
Type	Version	Dimension W x H mm	Material thickness mm	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
SVE 41 FT	Perforated	47x39,4	4	100	10	42.000	1123121

- St** Steel
- FT** Hot-dip galvanised

The rail connector is used to extend the mounting rail MS4141. The connection can be made simply and securely on the construction site or prefabricated in the workshop. There is a guarantee that there is no weak point in the area of the rail coupling. The static values of the mounting rail apply here.

Scope of delivery:
Retaining plates, type 4141, and suitable hexagonal bolts included loosely.

Slide nut



Type	Length mm	Width mm	Height mm	Thread	Pack Piece	Weight kg/100 pc.	Item no.
MS40SN M6 ZL	35	17	10	M6	50	3.750	1147106
MS40SN M8 ZL	35	17	10	M8	50	3.600	1147110
MS40SN M10 ZL	35	17	10	M10	50	3.400	1147114
MS40SN M12 ZL	35	17	10	M12	50	3.160	1147118

- St** Steel
- ZL** Zinc slat

Slide nut for use with MS4022 profile rail



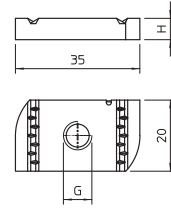
Slide nut

Type	Length mm	Width mm	Height mm	Thread	Pack Piece	Weight kg/100 pc.	Item no.
MS41SN M6 ZL	35	20	6	M6	50	2.880	1147206
MS41SN M8 ZL	35	20	6	M8	50	2.800	1147210
MS41SN M10 ZL	35	20	8	M10	50	3.650	1147214
MS41SN M12 ZL	35	20	9.5	M12	50	4.200	1147218

St Steel

ZL Zinc slat

Slide nut for use with MS4121 und MS4141 profile rails



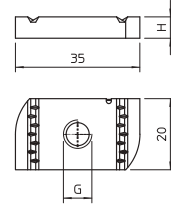
Slide nut

Type	Length mm	Width mm	Height mm	Thread	Pack Piece	Weight kg/100 pc.	Item no.
MS41SN M6 A4	35	20	6	M6	50	2.880	1147226
MS41SN M8 A4	35	20	6	M8	50	2.800	1147230
MS41SN M10 A4	35	20	8	M10	50	3.650	1147234
MS41SN M12 A4	35	20	9.5	M12	50	4.200	1147238

A4 Stainless steel, rustproof

2B Bright, reworked

Slide nut for use with MS4121 und MS4141 profile rails



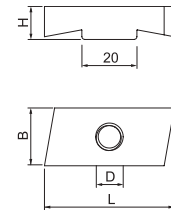
Slide nut

Type	Length mm	Width mm	Height mm	Thread	Pack Piece	Weight kg/100 pc.	Item no.
MS50SN M6 ZL	43	21	12	M6	50	6.700	1147156
MS50SN M8 ZL	43	21	12	M8	50	6.550	1147160
MS50SN M10 ZL	43	21	12	M10	50	6.350	1147164
MS50SN M12 ZL	43	21	12	M12	50	6.100	1147168

St Steel

ZL Zinc slat

Slide nut for use with MS5030 profile rail



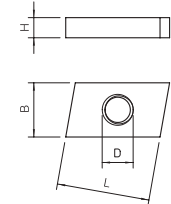
Slide nut

Type	Length mm	Width mm	Height mm	Thread	Pack Piece	Weight kg/100 pc.	Item no.
ACMSN M6 ZL	26	16.5	4	M6	100	1.740	1147056
ACMSN M8 ZL	26	16.5	4	M8	100	1.640	1147060
ACMSN M10 ZL	26	16.5	4	M10	100	1.300	1147064

St Steel

ZL Zinc slat

Slide nut for use with CM3015, CM3518 and AM3518 profile rails



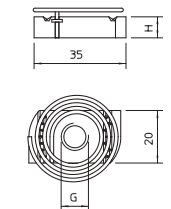
Slide nut with spring

Type	Length mm	Width mm	Height mm	Thread	Pack Piece	Weight kg/100 pc.	Item no.
MS41SNF M6 F	35	20	6	M6	50	3.200	1147306
MS41SNF M8 F	35	20	6	M8	50	3.150	1147310
MS41SNF M10 F	35	20	8	M10	50	4.000	1147314
MS41SNF M12 F	35	20	9.5	M12	50	4.550	1147318

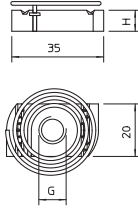
St Steel

F Hot galvanised

Slide nut with spring for use with MS4121 und MS4141 profile rails



Slide nut with spring



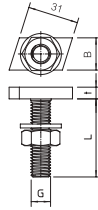
Type	Length mm	Width mm	Height mm	Thread	Pack Piece	Weight kg/100 pc.	Item no.
MS41SNF M6 A4	35	20	6	M6	50	3.200	1147336
MS41SNF M8 A4	35	20	6	M8	50	3.150	1147340
MS41SNF M10 A4	35	20	8	M10	50	4.000	1147344
MS41SNF M12 A4	35	20	9.5	M12	50	4.550	1147348

A4 Stainless steel, rustproof

2B Bright, reworked

Slide nut with spring for use with MS4121 and MS4141 profile rails

Hook-head screw



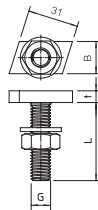
Type	Length mm	Width mm	Height mm	Thread	Torque Nm	Pack Piece	Weight kg/100 pc.	Item no.
MS40HB M6x30 ZL	35	17	10	M6x30mm	3.3	50	4.800	1148106
MS40HB M8x30 ZL	35	17	10	M8x30mm	8	50	5.650	1148110
MS40HB M8x60 ZL	35	17	10	M8x60mm	8	25	6.850	1148114
MS40HB M10x30 ZL	35	14	7.5	M10x30mm	16.1	50	6.000	1148118
MS40HB M10x60 ZL	35	14	7.5	M10x60mm	16.1	25	7.850	1148122
MS40HB M12x30 ZL	35	14	7.5	M12x30mm	27	50	7.550	1148126
MS40HB M12x60 ZL	35	14	7.5	M12x60mm	27	25	10.250	1148130

St Steel

ZL Zinc slat

Hook-head screw for use with MS4022 profile rail

Hook head screw



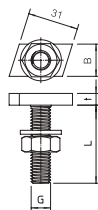
Type	Length mm	Width mm	Height mm	Thread	Torque Nm	Pack Piece	Weight kg/100 pc.	Item no.
MS40HB M6x30 A4	35	17	10	M6x30mm	2.9	50	4.800	1148146
MS40HB M8x30 A4	35	17	10	M8x30mm	7.1	50	5.650	1148150
MS40HB M8x60 A4	35	17	10	M8x60mm	7.1	25	6.850	1148154
MS40HB M10x30 A4	35	14	7.5	M10x30mm	14	50	6.000	1148160
MS40HB M10x60 A4	35	14	7.5	M10x60mm	14	25	7.850	1148164
MS40HB M12x30 A4	35	14	7.5	M12x30mm	24	50	7.550	1148168
MS40HB M12x60 A4	35	14	7.5	M12x60mm	24	25	10.250	1148170

A4 Stainless steel, rustproof

2B Bright, reworked

Hook-head screw for use with MS4022 profile rail

Hook-head screw



Type	Length mm	Width mm	Height mm	Pack Piece	Weight kg/100 pc.	Item no.
MS50HB M6x30 ZL	43	21	12	50	7.800	1148206
MS50HB M8x30 ZL	43	21	12	50	8.700	1148210
MS50HB M8x60 ZL	43	21	12	25	9.900	1148214
MS50HB M10x30 ZL	43.3	13	10	50	7.700	1148218
MS50HB M10x60 ZL	43.3	13	10	25	9.450	1148222
MS50HB M12x30 ZL	43.3	13	10	50	9.000	1148226
MS50HB M12x60 ZL	43.3	13	10	25	11.650	1148230

St Steel

ZL Zinc slat

Hook-head screw for use with MS5030 profile rail

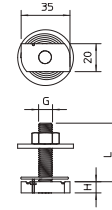
Hammer-head bolt

Type	Length mm	Width mm	Height mm	Thread	Torque Nm	Pack Piece	Weight kg/100 pc.	Item no.
MS41HB M6x30 ZL	35	20	6	M6x30	3.3	50	4.000	1148306
MS41HB M8x30 ZL	35	20	6	M8x30	8	50	4.850	1148310
MS41HB M8x60 ZL	35	20	6	M8x60	8	25	6.000	1148314
MS41HB M8x100 ZL	35	20	6	M8x100	8	20	7.600	1148318
MS41HB M10x30 ZL	35	20	8	M10x30	16	50	7.400	1148322
MS41HB M10x60 ZL	35	20	8	M10x60	16	25	9.250	1148326
MS41HB M10x100ZL	35	20	8	M10x100	16	20	11.700	1148330
MS41HB M12x30 ZL	35	20	9.5	M12x30	27	50	9.750	1148334
MS41HB M12x60 ZL	35	20	9.5	M12x60	27	25	12.400	1148338
MS41HB M12x100ZL	35	20	9.5	M12x100	27	20	15.950	1148342

Sl Steel

ZL Zinc slat

Hammer-head bolt for use with MS4121 and MS4141 profile rails



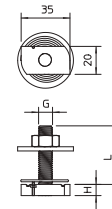
Hammer-head bolt

Type	Length mm	Width mm	Height mm	Thread	Torque Nm	Pack Piece	Weight kg/100 pc.	Item no.
MS41HB M6x30 A4	35	20	6	M6x30	3.4	50	4.000	1148406
MS41HB M8x30 A4	35	20	6	M8x30	6.2	50	4.800	1148410
MS41HB M8x60 A4	35	20	6	M8x60	6.2	25	6.000	1148414
MS41HB M8x100 A4	35	20	6	M8x100	6.2	20	7.550	1148418
MS41HB M10x30 A4	35	20	8	M10x30	9.9	50	7.350	1148422
MS41HB M10x60 A4	35	20	8	M10x60	9.9	25	9.200	1148426
MS41HB M10x100A4	35	20	8	M10x100	9.9	20	11.650	1148430
MS41HB M12x30 A4	35	20	9.5	M12x30	14.4	50	9.700	1148434
MS41HB M12x60 A4	35	20	9.5	M12x60	14.4	25	12.400	1148438
MS41HB M12x100A4	35	20	9.5	M12x100	14.4	20	15.900	1148442

A4 Stainless steel, rustproof

2B Bright, reworked

Hammer-head bolt for use with MS4121 and MS4141 profile rails



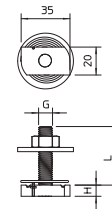
Hammer-head bolt with spring

Type	Length mm	Width mm	Height mm	Thread	Torque Nm	Pack Piece	Weight kg/100 pc.	Item no.
MS41HBF M8x30 F	35	20	6	M8x30	8	50	5.200	1148376
MS41HBF M8x60 F	35	20	6	M8x60	8	25	6.300	1148380
MS41HBF M10x30 F	35	20	8	M10x30	16.1	50	7.700	1148384
MS41HBF M10x60 F	35	20	8	M10x60	16.1	25	9.550	1148388
MS41HBF M12x30 F	35	20	9.5	M12x30	27	50	10.000	1148392
MS41HBF M12x60 F	35	20	9.5	M12x60	27	25	12.700	1148396

Sl Steel

F Hot galvanised

Hammer-head bolt with spring for use with MS4121 and MS4141 profile rails



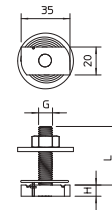
Hammer-head bolt with spring

Type	Length mm	Width mm	Height mm	Thread	Torque Nm	Pack Piece	Weight kg/100 pc.	Item no.
MS41HBF M8x30 A4	35	20	6	M8x30	6.2	50	4.800	1148476
MS41HBF M8x60 A4	35	20	6	M8x60	6.2	25	5.950	1148480
MS41HBF M10x30A4	35	20	8	M10x30	9.9	50	7.350	1148484
MS41HBF M10x60A4	35	20	8	M10x60	9.9	25	9.200	1148488
MS41HBF M12x30A4	35	20	9.5	M12x30	14.4	50	9.700	1148492
MS41HBF M12x60A4	35	20	9.5	M12x60	14.4	25	12.400	1148496

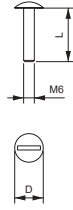
A4 Stainless steel, rustproof

2B Bright, reworked

Hammer-head bolt with spring for use with MS4121 and MS4141 profile rails



Pan head screw, steel

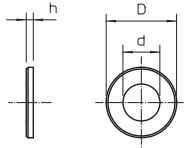


Type	Dimension mm	Pack Piece	Weight kg/100 pc.	Item no.
BS M6x30 G	M6x30	100	0.800	1148898

- St** Steel
- G** Electrogalvanised

The cup screw is used to connect two panels or to fasten cable sections on brackets. The flat, rounded head offers optimum cable protection.

Washer

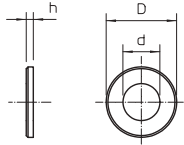


Type	Thread	Dimension d mm	Dimension D mm	Dimension h mm	Pack Piece	Weight kg/100 pc.	Item no.
WS M6 D12 G	M6	6.4	12	1.6	100	0.114	3402061

- St** Steel
- G** Electrogalvanised

Washer according to DIN 125, shape A, for universal use.

Washer V2A

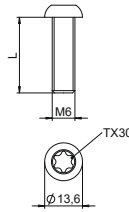


Type	Thread	Dimension d mm	Dimension D mm	Dimension h mm	Pack Piece	Weight kg/100 pc.	Item no.
WS M6 D12 A2	M6	6.4	12	1.6	100	0.114	3402304

- A2** Stainless steel, rustproof
- 2B** Bright, reworked

Washer according to DIN 125, shape A, for universal use.

Flat-head screw with internal Torx, steel

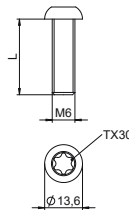


Type	Dimension mm	Screw system	Pack Piece	Weight kg/100 pc.	Item no.
7380T 6x20 G	M6x20	Torx	100	0.570	3164952
7380T 6x35 G	M6x35	Torx	100	0.910	3164956

- St** Steel
- G** Electrogalvanised

Flat head screw with TX 30, according to ISO 7380-1, suitable for fastening cable routes on brackets as well as for the mounting of barrier strips. The rounded head shape provides optimum cable protection. The Torx drive offers optimum force transmission in the screw movement.

Flat-head screw with internal Torx, stainless steel

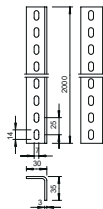


Type	Dimension mm	Screw system	Pack Piece	Weight kg/100 pc.	Item no.
7380T M6x35 A2	M6x35	Torx	100	0.910	3164976

- A2** Stainless steel, rustproof
- 2B** Bright, reworked

Flat head screw with TX 30, according to ISO 7380-1, suitable for fastening cable routes on brackets as well as for the mounting of barrier strips. The rounded head shape provides optimum cable protection. The Torx drive offers optimum force transmission in the screw movement.

Angle profile WP30/35



Type	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
WP 30 35 2000 FT	2000	10	257.000	6373100
WP 30 35 5000 FT	5000	1	643.000	6373103

- St** Steel
- FT** Hot-dip galvanised

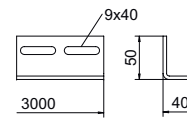
Angle profile, perforated on both sides, for creation of special support structures.

Angle profile WP40/50

Type	Length mm	Pack m	Weight kg/100 m	Item no.
WP 40 50 3000 FT	3000	3	224.000	6373200

- St Steel
- FT Hot-dip galvanised

The angle profile can be used to create pendant suspensions.
Perforated angle profile for the creation of special support structures.

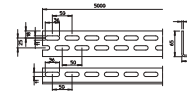


Angle profile WP40/65

Type	Length mm	Pack m	Weight kg/100 m	Item no.
WP 40 65 5000 FT	5000	5	250.000	6373070

- St Steel
- FT Hot-dip galvanised

Angle profile, perforated on both sides, for creation of special support structures.

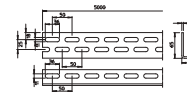


Angle profile WP40/65

Type	Length mm	Pack m	Weight kg/100 m	Item no.
WP 40 65 5000 A2	5000	5	240.000	6373062

- A2 Stainless steel, rustproof
- 2B Bright, reworked

Angle profile, perforated on both sides, for creation of special support structures.

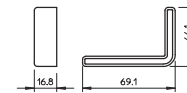


End cap

Type	Colour	Pack Piece	Weight kg/100 pc.	Item no.
WPK SR OR	Pastel orange	20	0.600	6372881
WPK SL OR	Pastel orange	20	0.600	6372898

- PE Polyethylene

End cap to cover the ends of angle profile, type WE 40/65.

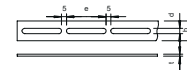


Slotted steel strap in strips

Type	Dimen- sion mm	Hole size mm	Length mm	Pack m	Weight kg/100 m	Item no.
OSS 20x3 3M FT	20 x 3	6,5 x 40	3000	60	35.000	1465767
OSS 30x4 3M FT	30 x 3	8,5 x 60	3000	30	72.000	1465805
OSS 40x4 3M FT	40 x 4	8,5 x 70	3000	30	101.000	1465821

- St Steel
- FT Hot-dip galvanised

Perforated slotted steel strap in strips.



Cable carrier trough system

Cable carrier trough, single, for individual routing

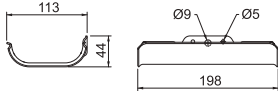


Type	Side	F in kN	Pack	Weight	Item no.
	height	per trough			
KTW 100 FT	44	0.35	1	48.000	6006890

- Steel
- Hot-dip galvanised

In accordance with DIN VDE 0298-300, a maximum support spacing of 0.8 m should not be exceeded.

Cable support brackets for quick and easy routing of cables in areas where common cable support systems cannot be installed due to lack of space. The cable support brackets possess a large load-bearing surface as well as rounded outer edges to protect the cables.



Cable support trough, single, with fastening rail



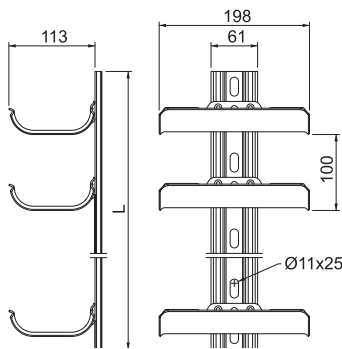
Type	Dimen-	Number of	F in kN	Pack	Weight	Item no.
	sion L		per trough			
KTW 100 1 FT	140	1	0.5	1	6.100	6006901

- Steel
- Hot-dip galvanised

In accordance with DIN VDE 0298-300, a maximum support spacing of 0.8 m should not be exceeded.

Cable support brackets for quick and easy routing of cables in areas where common cable support systems cannot be installed due to lack of space. The cable support brackets possess a large load-bearing surface as well as rounded outer edges to protect the cables.

Dimensions



Load

Load

Type	Levels	Total load	Quantity of anchors
KTW 100 1 FT	1	0.950 kN	1
KTW 100 2 FT	2	1.0 kN	1
KTW 100 3 FT	3	0.15 kN	1
KTW 100 4 FT	4	0.950 kN	2
KTW 100 5 FT	5	2.5 kN	2
KTW 100 6 FT	6	3.0 kN	2
KTW 100 7 FT	7	3.5 kN	3
KTW 100 8 FT	8	4.0 kN	3
KTW 100 9 FT	9	4.5 kN	3
KTW 100 10 FT	10	5.0 kN	4

The stated values are based on concrete of compressive strength C25/30. Fastening anchor type: BZ 10-100-120. Comply with the installation conditions of the DIBt approval (anchors).

Cable carrier troughs, 2-fold, with mounting rail

Type	Dimension L mm	Number of troughs	F in kN per trough kN	Pack Piece	Weight kg/100 pc.	Item no.
KTW 100 2 FT	200	2	0.5	1	111.000	6006902

St Steel

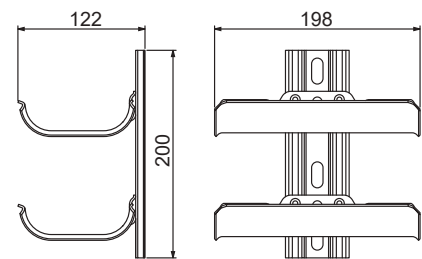
FT Hot-dip galvanised

In accordance with DIN VDE 0298-300, a maximum support spacing of 0.8 m should not be exceeded.

Cable support brackets for quick and easy routing of cables in areas where common cable support systems cannot be installed due to lack of space. The cable support brackets possess a large load-bearing surface as well as rounded outer edges to protect the cables.



Dimensions



Load

Load

Type	Levels	Total load	Quantity of anchors
KTW 100 1 FT	1	0.950 kN	1
KTW 100 2 FT	2	1.0 kN	1
KTW 100 3 FT	3	0.15 kN	1
KTW 100 4 FT	4	0.950 kN	2
KTW 100 5 FT	5	2.5 kN	2
KTW 100 6 FT	6	3.0 kN	2
KTW 100 7 FT	7	3.5 kN	3
KTW 100 8 FT	8	4.0 kN	3
KTW 100 9 FT	9	4.5 kN	3
KTW 100 10 FT	10	5.0 kN	4

The stated values are based on concrete of compressive strength C25/30. Fastening anchor type: BZ 10-100-120. Comply with the installation conditions of the DIBt approval (anchors).

Cable carrier trough system

Cable carrier troughs, 3-fold, with mounting rail



Type	Dimension L mm	Number of troughs	F in kN per trough	Pack Piece	Weight kg/100 pc.	Item no.
KTW 100 3 FT	300	3	0,5	1	168.000	6006903

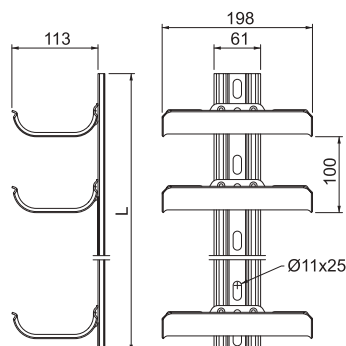
St Steel

FT Hot-dip galvanised

In accordance with DIN VDE 0298-300, a maximum support spacing of 0.8 m should not be exceeded.

Cable support brackets for quick and easy routing of cables in areas where common cable support systems cannot be installed due to lack of space. The cable support brackets possess a large load-bearing surface as well as rounded outer edges to protect the cables.

Dimensions



Load

Load

Type	Levels	Total load	Quantity of anchors
KTW 100 1 FT	1	0.950 kN	1
KTW 100 2 FT	2	1.0 kN	1
KTW 100 3 FT	3	0.15 kN	1
KTW 100 4 FT	4	0.950 kN	2
KTW 100 5 FT	5	2.5 kN	2
KTW 100 6 FT	6	3.0 kN	2
KTW 100 7 FT	7	3.5 kN	3
KTW 100 8 FT	8	4.0 kN	3
KTW 100 9 FT	9	4.5 kN	3
KTW 100 10 FT	10	5.0 kN	4

The stated values are based on concrete of compressive strength C25/30. Fastening anchor type: BZ 10-100-120. Comply with the installation conditions of the DIBt approval (anchors).

Cable carrier troughs, 4-fold, with mounting rail

Type	Dimension L mm	Number of troughs	F in kN per trough kN	Pack Piece	Weight kg/100 pc.	Item no.
KTW 100 4 FT	400	4	0.5	1	225.000	6006904

St Steel

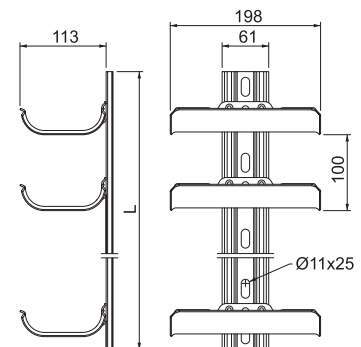
FT Hot-dip galvanised

In accordance with DIN VDE 0298-300, a maximum support spacing of 0.8 m should not be exceeded.

Cable support brackets for quick and easy routing of cables in areas where common cable support systems cannot be installed due to lack of space. The cable support brackets possess a large load-bearing surface as well as rounded outer edges to protect the cables.



Dimensions



Load

Load

Type	Levels	Total load	Quantity of anchors
KTW 100 1 FT	1	0.950 kN	1
KTW 100 2 FT	2	1.0 kN	1
KTW 100 3 FT	3	0.15 kN	1
KTW 100 4 FT	4	0.950 kN	2
KTW 100 5 FT	5	2.5 kN	2
KTW 100 6 FT	6	3.0 kN	2
KTW 100 7 FT	7	3.5 kN	3
KTW 100 8 FT	8	4.0 kN	3
KTW 100 9 FT	9	4.5 kN	3
KTW 100 10 FT	10	5.0 kN	4

The stated values are based on concrete of compressive strength C25/30. Fastening anchor type: BZ 10-100-120. Comply with the installation conditions of the DIBt approval (anchors).

Cable carrier trough system

Cable carrier troughs, 5-fold, with mounting rail



Type	Dimension L mm	Number of troughs	F in kN per trough	Pack Piece	Weight kg/100 pc.	Item no.
KTW 100 5 FT	500	5	0,5	1	361.000	6006905

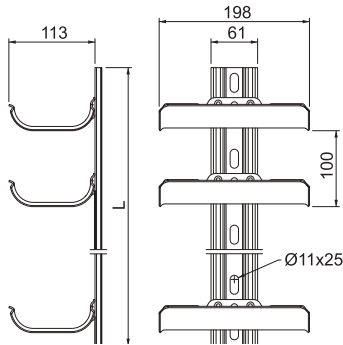
St Steel

FT Hot-dip galvanised

In accordance with DIN VDE 0298-300, a maximum support spacing of 0.8 m should not be exceeded.

Cable support brackets for quick and easy routing of cables in areas where common cable support systems cannot be installed due to lack of space. The cable support brackets possess a large load-bearing surface as well as rounded outer edges to protect the cables.

Dimensions



Load

Load

Type	Levels	Total load	Quantity of anchors
KTW 100 1 FT	1	0.950 kN	1
KTW 100 2 FT	2	1.0 kN	1
KTW 100 3 FT	3	0.15 kN	1
KTW 100 4 FT	4	0.950 kN	2
KTW 100 5 FT	5	2.5 kN	2
KTW 100 6 FT	6	3.0 kN	2
KTW 100 7 FT	7	3.5 kN	3
KTW 100 8 FT	8	4.0 kN	3
KTW 100 9 FT	9	4.5 kN	3
KTW 100 10 FT	10	5.0 kN	4

The stated values are based on concrete of compressive strength C25/30. Fastening anchor type: BZ 10-100-120. Comply with the installation conditions of the DIBt approval (anchors).

Cable carrier troughs, 6-fold, with mounting rail

Type	Dimension L mm	Number of troughs	F in kN per trough kN	Pack Piece	Weight kg/100 pc.	Item no.
KTW 100 6 FT	600	6	0.5	1	339.000	6006906

St Steel

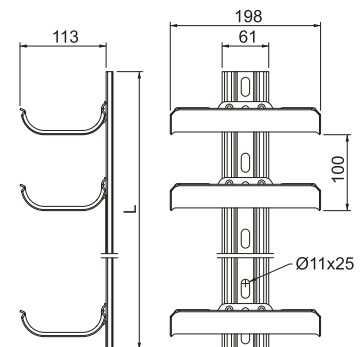
FT Hot-dip galvanised

In accordance with DIN VDE 0298-300, a maximum support spacing of 0.8 m should not be exceeded.

Cable support brackets for quick and easy routing of cables in areas where common cable support systems cannot be installed due to lack of space. The cable support brackets possess a large load-bearing surface as well as rounded outer edges to protect the cables.



Dimensions



Load

Load

Type	Levels	Total load	Quantity of anchors
KTW 100 1 FT	1	0.950 kN	1
KTW 100 2 FT	2	1.0 kN	1
KTW 100 3 FT	3	0.15 kN	1
KTW 100 4 FT	4	0.950 kN	2
KTW 100 5 FT	5	2.5 kN	2
KTW 100 6 FT	6	3.0 kN	2
KTW 100 7 FT	7	3.5 kN	3
KTW 100 8 FT	8	4.0 kN	3
KTW 100 9 FT	9	4.5 kN	3
KTW 100 10 FT	10	5.0 kN	4

The stated values are based on concrete of compressive strength C25/30. Fastening anchor type: BZ 10-100-120. Comply with the installation conditions of the DIBt approval (anchors).

Cable carrier trough system

Cable carrier troughs, 7-fold, with mounting rail



Type	Dimension L mm	Number of troughs	F in kN per trough	Pack Piece	Weight kg/100 pc.	Item no.
KTW 100 7 FT	700	7	0,5	1	395.000	6006907

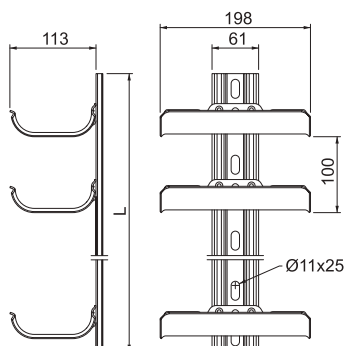
St Steel

FT Hot-dip galvanised

In accordance with DIN VDE 0298-300, a maximum support spacing of 0.8 m should not be exceeded.

Cable support brackets for quick and easy routing of cables in areas where common cable support systems cannot be installed due to lack of space. The cable support brackets possess a large load-bearing surface as well as rounded outer edges to protect the cables.

Dimensions



Load

Load

Type	Levels	Total load	Quantity of anchors
KTW 100 1 FT	1	0.950 kN	1
KTW 100 2 FT	2	1.0 kN	1
KTW 100 3 FT	3	0.15 kN	1
KTW 100 4 FT	4	0.950 kN	2
KTW 100 5 FT	5	2.5 kN	2
KTW 100 6 FT	6	3.0 kN	2
KTW 100 7 FT	7	3.5 kN	3
KTW 100 8 FT	8	4.0 kN	3
KTW 100 9 FT	9	4.5 kN	3
KTW 100 10 FT	10	5.0 kN	4

The stated values are based on concrete of compressive strength C25/30. Fastening anchor type: BZ 10-100-120. Comply with the installation conditions of the DIBt approval (anchors).

Cable carrier troughs, 8-fold, with mounting rail

Type	Dimension L mm	Number of troughs	F in kN per trough	Pack Piece	Weight kg/100 pc.	Item no.
KTW 100 8 FT	800	8	0.5	1	452.000	6006908

St Steel

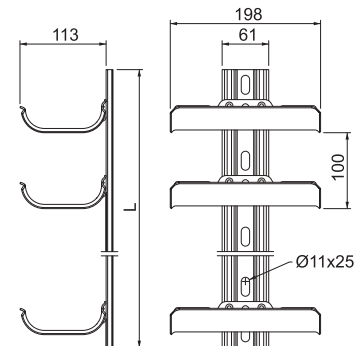
FT Hot-dip galvanised

In accordance with DIN VDE 0298-300, a maximum support spacing of 0.8 m should not be exceeded.

Cable support brackets for quick and easy routing of cables in areas where common cable support systems cannot be installed due to lack of space. The cable support brackets possess a large load-bearing surface as well as rounded outer edges to protect the cables.



Dimensions



Load

Load

Type	Levels	Total load	Quantity of anchors
KTW 100 1 FT	1	0.950 kN	1
KTW 100 2 FT	2	1.0 kN	1
KTW 100 3 FT	3	0.15 kN	1
KTW 100 4 FT	4	0.950 kN	2
KTW 100 5 FT	5	2.5 kN	2
KTW 100 6 FT	6	3.0 kN	2
KTW 100 7 FT	7	3.5 kN	3
KTW 100 8 FT	8	4.0 kN	3
KTW 100 9 FT	9	4.5 kN	3
KTW 100 10 FT	10	5.0 kN	4

The stated values are based on concrete of compressive strength C25/30. Fastening anchor type: BZ 10-100-120. Comply with the installation conditions of the DIBt approval (anchors).

Cable carrier trough system

Cable carrier troughs, 9-fold, with mounting rail



Type	Dimension L mm	Number of troughs	F in kN per trough	Pack Piece	Weight kg/100 pc.	Item no.
KTW 100 9 FT	900	9	0.5	1	465.000	6006909

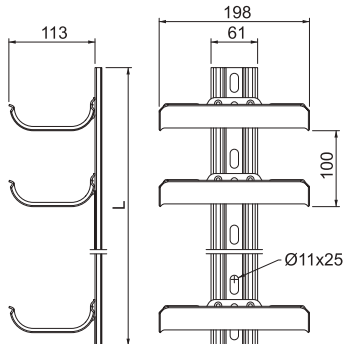
St Steel

FT Hot-dip galvanised

In accordance with DIN VDE 0298-300, a maximum support spacing of 0.8 m should not be exceeded.

Cable support brackets for quick and easy routing of cables in areas where common cable support systems cannot be installed due to lack of space. The cable support brackets possess a large load-bearing surface as well as rounded outer edges to protect the cables.

Dimensions



Load

Load

Type	Levels	Total load	Quantity of anchors
KTW 100 1 FT	1	0.950 kN	1
KTW 100 2 FT	2	1.0 kN	1
KTW 100 3 FT	3	0.15 kN	1
KTW 100 4 FT	4	0.950 kN	2
KTW 100 5 FT	5	2.5 kN	2
KTW 100 6 FT	6	3.0 kN	2
KTW 100 7 FT	7	3.5 kN	3
KTW 100 8 FT	8	4.0 kN	3
KTW 100 9 FT	9	4.5 kN	3
KTW 100 10 FT	10	5.0 kN	4

The stated values are based on concrete of compressive strength C25/30. Fastening anchor type: BZ 10-100-120. Comply with the installation conditions of the DIBt approval (anchors).

Cable carrier troughs, 10-fold, with mounting rail

Type	Dimension L mm	Number of troughs	F in kN per trough	Pack Piece	Weight kg/100 pc.	Item no.
KTW 100 10 FT	1000	10	0.5	1	565.000	6006910

St Steel

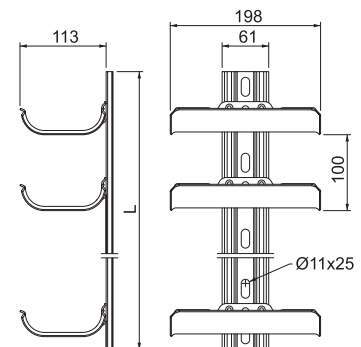
FT Hot-dip galvanised

In accordance with DIN VDE 0298-300, a maximum support spacing of 0.8 m should not be exceeded.

Cable support brackets for quick and easy routing of cables in areas where common cable support systems cannot be installed due to lack of space. The cable support brackets possess a large load-bearing surface as well as rounded outer edges to protect the cables.



Dimensions

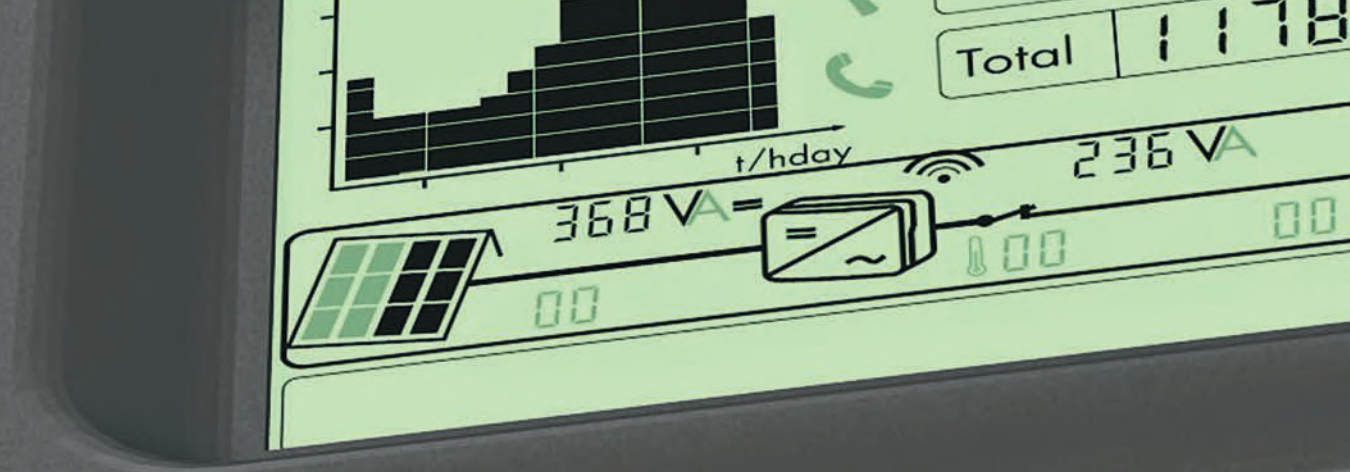


Load

Load







Type	Levels	Total load	Quantity of anchors
KTW 100 1 FT	1	0.950 kN	1
KTW 100 2 FT	2	1.0 kN	1
KTW 100 3 FT	3	0.15 kN	1
KTW 100 4 FT	4	0.950 kN	2
KTW 100 5 FT	5	2.5 kN	2
KTW 100 6 FT	6	3.0 kN	2
KTW 100 7 FT	7	3.5 kN	3
KTW 100 8 FT	8	4.0 kN	3
KTW 100 9 FT	9	4.5 kN	3
KTW 100 10 FT	10	5.0 kN	4

The stated values are based on concrete of compressive strength C25/30. Fastening anchor type: BZ 10-100-120. Comply with the installation conditions of the DIBt approval (anchors).



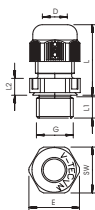


Cable gland systems, plastic

	Cap nut cable gland	124
	Accessories, plastic cap nut gland	142
	Cone cable gland	144
	Special cable glands	145
	Cable gland system accessories	150
	Cable entry	156



Cable gland, metric thread, light grey



Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC VM12 LGR	Light grey	50	0.318	2022862
V-TEC VM16 LGR	Light grey	50	0.638	2022864
V-TEC VM20 LGR	Light grey	50	0.856	2022866
V-TEC VM25 LGR	Light grey	25	1.360	2022868
V-TEC VM32 LGR	Light grey	20	2.235	2022870
V-TEC VM40 LGR	Light grey	10	3.467	2022872
V-TEC VM50 LGR	Light grey	5	5.466	2022874
V-TEC VM63 LGR	Light grey	5	8.306	2022876

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.

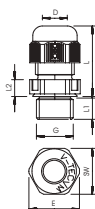
The connecting threads of the cable glands are metric or PG and are therefore suitable for universal use. Once screwed in place, the installation is there forever, as the optimum thread adjustment with the right pitch ensures permanent resistance to shaking.

Applications: From private housing with junction boxes up to industrial applications in the distributor cabinet. Temperature range: -20 °C to +65 °C.

Dimensions

Type	Thread	Sealing range D mm	SW mm	Dimension E mm	Dimension L min. mm	Dimension L max. mm	Dimension L1 mm	Dimension L2 mm	Installation torque Nm
V-TEC VM12 LGR	M12 x 1,5	3.5 - 7	15	16.5	18.5	23.5	8	5	2
V-TEC VM16 LGR	M16 x 1,5	4.5 - 10	20	22	21.5	23.5	8	5	2
V-TEC VM20 LGR	M20 x 1,5	6 - 13	24	27	23.5	30.5	9	5	3.8
V-TEC VM25 LGR	M25 x 1,5	9 - 17	29	32	26	35	10	6	5
V-TEC VM32 LGR	M32 x 1,5	15 - 21	36	41	29	40	11	6	7.5
V-TEC VM40 LGR	M40 x 1,5	16 - 28	44	50	36	46	11	7	10
V-TEC VM50 LGR	M50 x 1,5	23 - 35	54	60	43	52	12	8	12
V-TEC VM63 LGR	M63 x 1,5	36 - 48	67	75	48	60	12	9	15

Cable gland, metric thread, silver grey



Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC VM12 SGR	Silver grey	50	0.318	2022843
V-TEC VM16 SGR	Silver grey	50	0.638	2022845
V-TEC VM20 SGR	Silver grey	50	0.856	2022847
V-TEC VM25 SGR	Silver grey	25	1.360	2022849
V-TEC VM32 SGR	Silver grey	20	2.230	2022851
V-TEC VM40 SGR	Silver grey	10	3.467	2022853
V-TEC VM50 SGR	Silver grey	5	5.466	2022855
V-TEC VM63 SGR	Silver grey	5	8.306	2022857

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

Type	Thread	Sealing range D mm	SW mm	Dimension E mm	Dimension L min. mm	Dimension L max. mm	Dimension L1 mm	Dimension L2 mm	Installation torque Nm
V-TEC VM12 SGR	M12 x 1,5	3.5 - 7	15	16.5	18.5	23.5	8	5	2
V-TEC VM16 SGR	M16 x 1,5	4.5 - 10	20	22	21.5	29	8	5	2.5
V-TEC VM20 SGR	M20 x 1,5	6 - 13	24	27	23.5	30.5	10	6	3.8
V-TEC VM25 SGR	M25 x 1,5	9 - 17	29	32	26	35	10	6	5
V-TEC VM32 SGR	M32 x 1,5	15 - 21	36	41	29	40	11	6	7.5
V-TEC VM40 SGR	M40 x 1,5	16 - 28	44	50	36	46	11	7	10
V-TEC VM50 SGR	M50 x 1,5	23 - 35	54	60	43	52	12	8	12
V-TEC VM63 SGR	M63 x 1,5	36 - 48	67	75	48	60	12	9	15

Cable gland, metric thread, black



Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC VM12 SW	Black	50	0.318	2022883
V-TEC VM16 SW	Black	50	0.638	2022885
V-TEC VM20 SW	Black	50	0.856	2022887
V-TEC VM25 SW	Black	25	1.360	2022889
V-TEC VM32 SW	Black	20	2.230	2022891
V-TEC VM40 SW	Black	10	3.467	2022893
V-TEC VM50 SW	Black	5	5.466	2022895
V-TEC VM63 SW	Black	5	8.306	2022897

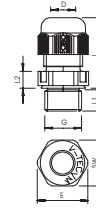
PA Polyamide

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.

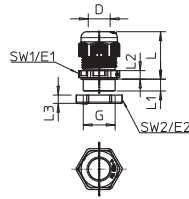


Type	Thread	Sealing range D mm	SW mm	Dimension E mm	Dimension L min. mm	Dimension L max. mm	Dimension L1 mm	Dimension L2 mm	Installation torque Nm
V-TEC VM12 SW	M12 x 1,5	3,5 - 7	15	16,5	18,5	23,5	8	5	2
V-TEC VM16 SW	M16 x 1,5	4,5 - 10	20	22	21,5	29	8	5	2
V-TEC VM20 SW	M20 x 1,5	6 - 13	24	27	23,5	30,5	9	5	3,8
V-TEC VM25 SW	M25 x 1,5	9 - 17	29	32	26	35	10	6	5
V-TEC VM32 SW	M32 x 1,5	15 - 21	36	41	29	40	11	6	7,5
V-TEC VM40 SW	M40 x 1,5	16 - 28	44	50	36	46	11	7	10
V-TEC VM50 SW	M50 x 1,5	23 - 35	54	60	43	52	12	8	12
V-TEC VM63 SW	M63 x 1,5	36 - 48	67	75	48	60	12	9	15

Dimensions



Cable gland, metric thread, set with locknut, light grey



Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC VM12+ LGR	Light grey	50	0.337	2022762
V-TEC VM16+ LGR	Light grey	50	0.795	2022764
V-TEC VM20+ LGR	Light grey	50	1.106	2022766
V-TEC VM25+ LGR	Light grey	25	1.710	2022768
V-TEC VM32+ LGR	Light grey	20	2.840	2022770
V-TEC VM40+ LGR	Light grey	10	5.150	2022772
V-TEC VM50+ LGR	Light grey	5	6.356	2022774
V-TEC VM63+ LGR	Light grey	5	10.136	2022776

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.

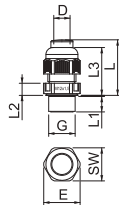
Applications: From private housing with junction boxes up to industrial applications in the distributor cabinet.

Temperature range: -20 °C to +65 °C.

Dimensions

Type	Thread	Sealing range D mm	SW 1 mm	Dim. E1 mm	Dim. E2 mm	Dim. L min. mm	Dim. L max. mm	Dim. L1 mm	Dim. L2 mm	Dimen- sion L3 mm	Instal- lation torque Nm
V-TEC VM12+ LGR	M12 x 1,5	3.5 - 7	15	16.5	19	18.5	23.5	8	5	5	2
V-TEC VM16+ LGR	M16 x 1,5	4.5 - 10	20	22	25	21.5	23.5	8	5	5	2
V-TEC VM20+ LGR	M20 x 1,5	6 - 13	24	27	27	23.5	30.5	9	5	6	3.8
V-TEC VM25+ LGR	M25 x 1,5	9 - 17	29	32	36	26	35	10	6	6.5	5
V-TEC VM32+ LGR	M32 x 1,5	15 - 21	36	41	46	29	40	11	6	7	7.5
V-TEC VM40+ LGR	M40 x 1,5	16 - 28	44	50	56	36	46	11	7	7.5	10
V-TEC VM50+ LGR	M50 x 1,5	23 - 35	54	60	68	43	52	12	8	8	12
V-TEC VM63+ LGR	M63 x 1,5	36 - 48	68	75	83	48	60	12	9	8.5	15

Plastic cap nut cable glands with screw plug, light grey



Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC VM12VS LGR	Light grey	50	0.360	2023040
V-TEC VM16VS LGR	Light grey	50	0.730	2023042
V-TEC VM20VS LGR	Light grey	50	0.990	2023044
V-TEC VM25VS LGR	Light grey	25	1.550	2023046
V-TEC VM32VS LGR	Light grey	20	2.480	2023048

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

Type	Thread	Sealing range D mm	SW mm	Dimen- sion E mm	Dim. L min. mm	Dim. L max. mm	Dim. L1 mm	Dim. L2 mm
V-TEC VM12VS LGR	M12 x 1,5	3.5 - 7	15	16.5	21.5	23.5	8	5
V-TEC VM16VS LGR	M16 x 1,5	4.5 - 10	20	22	25.5	23.5	8	5
V-TEC VM20VS LGR	M20 x 1,5	6 - 13	24	27	28	30.5	9	5
V-TEC VM25VS LGR	M25 x 1,5	9 - 17	29	32	30.5	35	10	6
V-TEC VM32VS LGR	M32 x 1,5	15 - 21	36	41	29	40	11	6

Cable gland, metric thread with multi-way seal insert, light grey



Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC VM20 2x4	Light grey	50	0.860	2022110
V-TEC VM20 4x5	Light grey	50	0.860	2022112
V-TEC VM20 2x6	Light grey	50	0.860	2022114
V-TEC VM25 5x4	Light grey	25	1.360	2022120
V-TEC VM25 3x6	Light grey	25	1.360	2022122
V-TEC VM25 2x6	Light grey	25	1.360	2022124
V-TEC VM25 3x7	Light grey	25	1.360	2022126
V-TEC VM25 2x8	Light grey	25	1.360	2022128
V-TEC VM32 2x8	Light grey	20	2.240	2022136
V-TEC VM32 4x8	Light grey	20	2.240	2022138

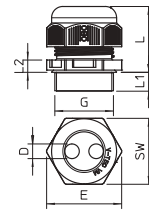
PA Polyamide

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.

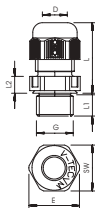


Dimensions

Type	Thread	SW mm	Dimension E mm	Dimension L min. mm	Dimension L max. mm	Dimension L1 mm	Dimension L2 mm
V-TEC VM20 2x4	M20 x 1,5	24	27	23.5	30.5	10	6
V-TEC VM20 4x5	M20 x 1,5	24	27	23.5	30.5	10	6
V-TEC VM20 2x6	M20 x 1,5	24	27	23.5	30.5	10	6
V-TEC VM25 5x4	M25 x 1,5	29	32	26	35	10	6
V-TEC VM25 3x6	M25 x 1,5	29	32	26	35	10	6
V-TEC VM25 2x6	M25 x 1,5	29	32	26	35	10	6
V-TEC VM25 3x7	M25 x 1,5	29	32	26	35	10	6
V-TEC VM25 2x8	M25 x 1,5	29	32	26	35	10	6
V-TEC VM32 2x8	M32 x 1,5	36	41	29	40	11	6
V-TEC VM32 4x8	M32 x 1,5	36	41	29	40	11	6



Cable gland, metric thread, UV-resistant, light grey



Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC VM12UV LGR	Light grey	50	0.319	2022900
V-TEC VM16UV LGR	Light grey	50	0.590	2022901
V-TEC VM20UV LGR	Light grey	50	0.590	2022902
V-TEC VM25UV LGR	Light grey	25	1.360	2022903
V-TEC VM32UV LGR	Light grey	20	2.235	2022904
V-TEC VM40UV LGR	Light grey	10	3.496	2022905
V-TEC VM50UV LGR	Light grey	5	5.480	2022906
V-TEC VM63UV LGR	Light grey	5	8.328	2022907

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.

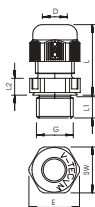
Applications: From private housing with junction boxes up to industrial applications in the distributor cabinet.

Temperature range: -20 °C to +65 °C.

Dimensions

Type	Sealing range D mm	SW mm	Dimension E mm	Dimension L min. mm	Dimension L max. mm	Dimension L1 mm	Dimension L2 mm
V-TEC VM12UV LGR	3.5 - 7	15	16.5	18.5	23.5	8	5
V-TEC VM16UV LGR	4.5 - 10	20	22	21.5	23.5	8	5
V-TEC VM20UV LGR	6 - 13	24	27	23.5	30.5	9	5
V-TEC VM25UV LGR	9 - 17	29	32	26	35	10	6
V-TEC VM32UV LGR	15 - 21	36	41	29	40	11	6
V-TEC VM40UV LGR	16 - 28	44	50	36	46	11	7
V-TEC VM50UV LGR	23 - 35	54	54	43	52	12	8
V-TEC VM63UV LGR	36 - 48	67	75	48	60	12	9

Cap nut cable glands V-TEC M, light grey



Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC M KA M20NL	Light grey	50	1.380	2024880

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

Type	Thread	Sealing range D mm	SW mm	Dimension L min. mm	Dimension L max. mm	Dimension L1 mm	Dimension L2 mm	Dimension L3 mm
V-TEC M KA M20NL	M20 x 1,5	7 - 14	27	25	33	7	6	19

Cap nut cable glands V-TEC M, pure white



Type	Thread	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC VM20 RW	M20 x 1,5	Pure white	50	0.856	2022804

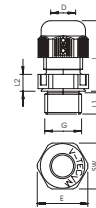
PA Polyamide

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.



Cap nut cable glands V-TEC M, light grey



Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC M12 LGR	Light grey	50	0.360	2022338
V-TEC M16 LGR	Light grey	50	0.630	2022346
V-TEC M20 LGR	Light grey	50	1.000	2022354
V-TEC M25 LGR	Light grey	25	2.350	2022362
V-TEC M32 LGR	Light grey	20	3.900	2022370
V-TEC M40 LGR	Light grey	10	7.500	2022397
V-TEC M50 LGR	Light grey	5	9.200	2022486
V-TEC M63 LGR	Light grey	5	9.660	2022494

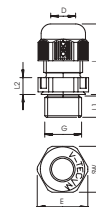
PA Polyamide

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.

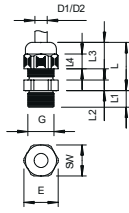
Temperature range: -20 °C to +65 °C.



Type	Thread	Sealing range D mm	SW mm	Dimension L min. mm	Dimension L max. mm	Dimension L1 mm	Dimension L2 mm	Dimension L3 mm
V-TEC M12 LGR	M12 x 1,5	2,5 - 6,5	15	18	23	8	5	12,6
V-TEC M16 LGR	M16 x 1,5	2,5 - 8	19	21	27	8	5	15,5
V-TEC M20 LGR	M20 x 1,5	5 - 12	24	23	30	9	5	18
V-TEC M25 LGR	M25 x 1,5	9 - 18	33	28	38	11	6	22
V-TEC M32 LGR	M32 x 1,5	14 - 25	42	32	43	11	7	24,5
V-TEC M40 LGR	M40 x 1,5	18 - 32	53	39	54	18	8	31
V-TEC M50 LGR	M50 x 1,5	24 - 38	60	42	57	18	9	32,5
V-TEC M63 LGR	M63 x 1,5	30 - 44	65	42	58	18	9	33



Cap nut cable glands V-TEC PG, signal white



Type	Thread	Colour	Pack. Weight		Item No.
			pcs	kg/100 pcs.	
V-TEC PG11 RW	PG 11	Pure white	50	0.890	2022575
V-TEC PG16 RW	PG 16	Pure white	25	1.380	2022579

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.

Cable gland, long metric thread



Type	Colour	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC VM L12 LGR	Light grey	500	50	0.392	2022943
V-TEC VM L16 LGR	Light grey	500	50	0.727	2022945
V-TEC VM L20 LGR	Light grey	600	50	0.883	2022947
V-TEC VM L25 LGR	Light grey	300	25	1.597	2022949
V-TEC VM L32 LGR	Light grey	240	20	2.047	2022951
V-TEC VM L40 LGR	Light grey	120	10	3.168	2022953
V-TEC VM L50 LGR	Light grey	60	5	5.010	2022955
V-TEC VM L63 LGR	Light grey	60	5	7.390	2022957

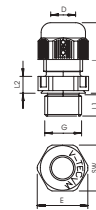
PA Polyamide

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.

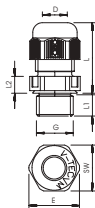


Type	Thread	Sealing range D mm	SW mm	Dimension E mm	Dimension L min. mm	Dimension L max. mm	Dimension L1 mm	Dimension L2 mm	Installation torque Nm
V-TEC VM L12 LGR	M12x1,5	3,5 - 7	15	16,5	17,5	24	15	12	2
V-TEC VM L16 LGR	M16x1,5	4,5 - 10	20	22	20,5	29,5	15	15,5	2,5
V-TEC VM L20 LGR	M20x1,5	6 - 13	24	27	22,5	32,5	15	17,5	3,75
V-TEC VM L25 LGR	M25x1,5	9 - 17	29	32	25,5	36	15	19,5	5
V-TEC VM L32 LGR	M32x1,5	15 - 21	36	41	28	40	15	22	7,5
V-TEC VM L40 LGR	M40x1,5	16 - 28	44	50	32	46	18	25	10
V-TEC VM L50 LGR	M50x1,5	23 - 35	54	60	37,5	54,3	18	29,5	12
V-TEC VM L63 LGR	M63x1,5	36 - 48	68	75	41,5	60,3	18	32,5	12

Dimensions



Cable gland, long metric thread, silver grey



Type	Colour	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC VM L12 SGR	Silver grey	500	50	0.392	2022921
V-TEC VM L16 SGR	Silver grey	500	50	0.727	2022924
V-TEC VM L20 SGR	Silver grey	600	50	0.883	2022926
V-TEC VM L25 SGR	Silver grey	300	25	1.597	2022928
V-TEC VM L32 SGR	Silver grey	240	20	2.047	2022930
V-TEC VM L40 SGR	Silver grey	120	10	3.168	2022933
V-TEC VM L50 SGR	Silver grey	60	5	5.010	2022935
V-TEC VM L63 SGR	Silver grey	60	5	7.390	2022937

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.

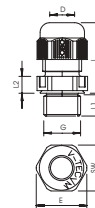
Applications: From private housing with junction boxes up to industrial applications in the distributor cabinet.

Temperature range: -20 °C to +65 °C.

Dimensions

Type	Thread	Sealing range		Dimension E	Dimension L min.	Dimension L max.	Dimension L1	Dimension L2	Installation torque
		D	SW						
V-TEC VM L12 SGR	M12 x 1,5	3.5 - 7	15	16.5	17.5	24	15	5	2
V-TEC VM L16 SGR	M16 x 1,5	4.5 - 10	20	22	20.5	29.5	15	5	2.5
V-TEC VM L20 SGR	M20 x 1,5	6 - 13	24	27	22.5	32.5	15	5	3.75
V-TEC VM L25 SGR	M25 x 1,5	9 - 17	29	32	25.5	36	15	6	5
V-TEC VM L32 SGR	M32 x 1,5	15 - 21	36	41	28	40	15	6	7.5
V-TEC VM L40 SGR	M40x1,5	16 - 28	44	50	32	46	18	7	10
V-TEC VM L50 SGR	M50x1,5	23 - 35	54	60	37.5	54.3	18	8	12
V-TEC VM L63 SGR	M63x1,5	36 - 48	68	75	41.5	60.3	18	9	12

Cable gland, long metric thread, black



Type	Colour	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC VM L12 SW	Black	500	50	0.392	2022964
V-TEC VM L16 SW	Black	500	50	0.727	2022966
V-TEC VM L20 SW	Black	600	50	0.883	2022968
V-TEC VM L25 SW	Black	300	25	1.597	2022970
V-TEC VM L32 SW	Black	240	20	2.047	2022972
V-TEC VM L40 SW	Black	120	10	3.168	2022974
V-TEC VM L50 SW	Black	60	5	5.010	2022976
V-TEC VM L63 SW	Black	60	5	7.390	2022978

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.

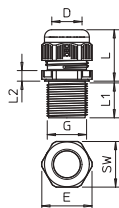
Dimensions

Type	Thread	Sealing range D mm	Sealing range SW mm	Dimension E mm	Dimension L min. mm	Dimension L max. mm	Dimension L1 mm	Dimension L2 mm	Installation torque Nm
V-TEC VM L12 SW	M12x1,5	3.5 - 7	15	16.5	17.5	24	15	12	2
V-TEC VM L16 SW	M16x1,5	4.5 - 10	20	22	20.5	29.5	15	15.5	2.5
V-TEC VM L20 SW	M20x1,5	6 - 13	24	27	22.5	32.5	15	17.5	3.75
V-TEC VM L25 SW	M25x1,5	9 - 17	29	32	25.5	36	15	19.5	5
V-TEC VM L32 SW	M32x1,5	15 - 21	36	41	28	40	15	22	7.5
V-TEC VM L40 SW	M40x1,5	16 - 28	44	50	32	46	18	25	10
V-TEC VM L50 SW	M50x1,5	23 - 35	54	60	37.5	54.3	18	29.5	12
V-TEC VM L63 SW	M63x1,5	36 - 48	68	75	41.5	60.3	18	32.5	12



VBS_Typ 0A / en / 2019/05/21 15:42:50 15:42:50 (LLEExport_02463) / 2019/05/21 15:43:10 15:43:10

Cable gland, metric thread, extra long, black



Type	Colour	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC VM LL16 SW	Black	500	50	0.800	2022985
V-TEC VM LL20 SW	Black	600	50	1.000	2022987
V-TEC VM LL25 SW	Black	300	25	1.700	2022989
V-TEC VM LL32 SW	Black	240	20	2.200	2022991
V-TEC VM LL40 SW	Black	120	10	2.200	2022993
V-TEC VM LL50 SW	Black	60	5	5.500	2022995
V-TEC VM LL63 SW	Black	60	5	7.500	2022997

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

Type	Thread	Sealing range D mm	SW mm	Dimension E mm	Dimension L min. mm	Dimension L max. mm	Dimension L1 mm	Dimension L2 mm	Installation torque Nm
V-TEC VM LL16 SW	M16x1,5	4.5 - 10	20	22	20.5	29.5	24	5	2.5
V-TEC VM LL20 SW	M20x1,5	6 - 13	24	27	22.5	32.5	24	5	3.75
V-TEC VM LL25 SW	M25x1,5	9 - 17	29	32	25.5	36	24	6	5
V-TEC VM LL32 SW	M32x1,5	15 - 21	36	41	28	40	24	6	7.5
V-TEC VM LL40 SW	M40x1,5	16 - 28	44	50	36	46	24	7	10
V-TEC VM LL50 SW	M50x1,5	23 - 35	54	60	37.5	54.3	24	8	12
V-TEC VM LL63 SW	M63x1,5	36 - 48	68	75	41.5	60.3	24	9	12

Divisible cable gland, seal insert enclosed, light grey

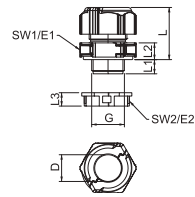


Type	Thread	Colour	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC TB20	M20x1,5	Light grey	50	5	2.236	2024940
V-TEC TB25	M25x1,5	Light grey	50	5	3.440	2024910
V-TEC TB32	M32x1,5	Light grey	60	5	7.756	2024970

PC Polycarbonate

The splittable cable gland V-TEC TB.. ensures - like all V-TEC glands - a secure sealing of the cable. The installation of pre-terminated cables or function cables, for example, is easy and quick, thanks to the splitting of the cable gland.

The V-TEC TB is also unbeatable when refitting an existing installation and as a "repair gland". There is no need to disassemble pre-mounted cables, it can be installed without interrupting the production process.



Dimensions

Type	Dimension E mm	Dimension L min. mm	Dimension L max. mm	Dimension L1 mm	Dimension L2 mm
V-TEC TB20	33.5	24.5	30.5	10	8.5

Divisible cable gland, seal insert, 1 cable, light grey

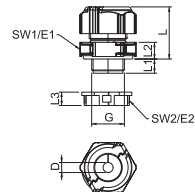


Type	Thread	Colour	Sealing range D mm	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC TB20 06-08	M20x1,5	Light grey	6 - 8	50	5	2.133	2024942
V-TEC TB20 08-10	M20x1,5	Light grey	8 - 10.5	50	5	2.063	2024944
V-TEC TB20 09-13	M20x1,5	Light grey	9 - 13	50	5	1.973	2024946
V-TEC TB20 11-14	M20x1,5	Light grey	11.5 - 14.5	50	5	1.853	2024948
V-TEC TB25 06-09	M25x1,5	Light grey	6 - 7.5	50	5	2.900	2024912
V-TEC TB25 09-11	M25x1,5	Light grey	9 - 11	50	5	2.900	2024913
V-TEC TB25 11-13	M25x1,5	Light grey	11 - 13	50	5	3.110	2024916
V-TEC TB25 12-15	M25x1,5	Light grey	12 - 15	50	5	2.980	2024919
V-TEC TB25 14-18	M25x1,5	Light grey	14 - 18	50	5	2.510	2024922
V-TEC TB25 18-20	M25x1,5	Light grey	18 - 20	50	5	2.290	2024925
V-TEC TB32 09-13	M32x1,5	Light grey	9 - 13	60	5	7.416	2024972
V-TEC TB32 11-15	M32x1,5	Light grey	11.5 - 15.5	60	5	7.246	2024974
V-TEC TB32 14-18	M32x1,5	Light grey	14 - 18	60	5	7.069	2024976
V-TEC TB32 17-20	M32x1,5	Light grey	17 - 20.5	60	5	7.156	2024978
V-TEC TB32 20-25	M32x1,5	Light grey	20 - 25	60	5	6.396	2024980
V-TEC TB32 24-26	M32x1,5	Light grey	24 - 26.5	60	5	6.026	2024982

PC Polycarbonate

The splittable cable gland V-TEC TB.. ensures - like all V-TEC glands - a secure sealing of the cable. The installation of pre-terminated cables or function cables, for example, is easy and quick, thanks to the splitting of the cable gland.

The V-TEC TB is also unbeatable when refitting an existing installation and as a "repair gland". There is no need to disassemble pre-mounted cables, it can be installed without interrupting the production process.

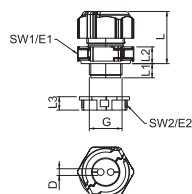


Dimensions

Type	Sealing range D mm	SW 1 mm	SW 2 mm	Dimension L1 mm	Dimension L2 mm	Dimension L mm
V-TEC TB20 06-08	6 - 8	30	27	10	8.5	30
V-TEC TB20 08-10	8 - 10.5	30	27	10	8.5	30
V-TEC TB20 09-13	9 - 13	30	27	10	8.5	30
V-TEC TB20 11-14	11.5 - 14.5	30	27	10	8.5	30



Separable cable gland, sealing insert, multiple, light grey



Type	Thread	Colour	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC TB20 2x4	M20x1,5	Light grey	50	5	2.187	2024950
V-TEC TB20 2x5	M20x1,5	Light grey	50	5	2.153	2024952
V-TEC TB20 2x6	M20x1,5	Light grey	50	5	2.113	2024954
V-TEC TB20 4x4	M20x1,5	Light grey	50	5	2.123	2024956
V-TEC TB20 6x4	M20x1,5	Light grey	50	5	2.083	2024958
V-TEC TB25 3x7	M25x1,5	Light grey	50	5	2.449	2024927
V-TEC TB25 3x9	M25x1,5	Light grey	50	5	2.640	2024928
V-TEC TB25 4x5	M25x1,5	Light grey	50	5	2.539	2024929
V-TEC TB25 4x6	M25x1,5	Light grey	50	5	2.439	2024930
V-TEC TB25 4x8	M25x1,5	Light grey	50	5	2.950	2024931
V-TEC TB32 2x11	M32x1,5	Light grey	60	5	7.196	2024984
V-TEC TB32 3x9	M32x1,5	Light grey	60	5	7.196	2024986
V-TEC TB32 3x11	M32x1,5	Light grey	60	5	7.196	2024988
V-TEC TB32 4x8	M32x1,5	Light grey	60	5	7.211	2024990
V-TEC TB32 6x6	M32x1,5	Light grey	60	5	7.284	2024992

PC Polycarbonate

The splittable cable gland V-TEC TB.. ensures - like all V-TEC glands - a secure sealing of the cable. The installation of pre-terminated cables or function cables, for example, is easy and quick, thanks to the splitting of the cable gland.

The V-TEC TB is also unbeatable when refitting an existing installation and as a "repair gland". There is no need to disassemble pre-mounted cables, it can be installed without interrupting the production process.

Dimensions

Type	Dimension D mm	SW mm	Dimension E mm	Dimension L min. mm	Dimension L max. mm	Dimension L1 mm	Dimension L2 mm
V-TEC TB20 2x4	4	30	33.5	24.5	30.5	10	8.5
V-TEC TB20 2x5	5	30	33.5	24.5	30.5	10	8.5
V-TEC TB20 2x6	6	30	33.5	24.5	30.5	10	8.5
V-TEC TB20 4x4	4	30	33.5	24.5	30.5	10	8.5
V-TEC TB20 6x4	4	30	33.5	24.5	30.5	10	8.5

Cable gland, PG thread, silver grey



Type	Thread	Colour	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC PG7 SGR	Pg 7	Silver grey	500	50	0.410	2022605
V-TEC PG9 SGR	Pg 9	Silver grey	500	50	0.630	2022613
V-TEC PG11 SGR	Pg 11	Silver grey	500	50	0.890	2022621
V-TEC PG13.5 SGR	Pg 13,5	Silver grey	400	50	1.020	2022648
V-TEC PG16 SGR	Pg 16	Silver grey	250	25	1.380	2022656
V-TEC PG21 SGR	Pg 21	Silver grey	300	25	2.290	2022664
V-TEC PG29 SGR	Pg 29	Silver grey	240	20	4.020	2022672
V-TEC PG36 SGR	Pg 36	Silver grey	120	10	6.040	2022680
V-TEC PG42 SGR	Pg 42	Silver grey	60	5	7.650	2022699
V-TEC PG48 SGR	Pg 48	Silver grey	60	5	9.460	2022702

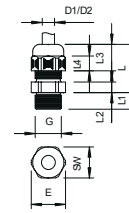
PA Polyamide

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.



Cable gland, PG thread, light grey



Type	Thread	Colour	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC PG7 LGR	Pg 7	Light grey	500	50	0.410	2024705
V-TEC PG9 LGR	Pg 9	Light grey	500	50	0.630	2024713
V-TEC PG11 LGR	Pg 11	Light grey	500	50	0.890	2024721
V-TEC PG13 LGR	Pg 13,5	Light grey	400	50	1.020	2024748
V-TEC PG16 LGR	Pg 16	Light grey	250	25	1.380	2024756
V-TEC PG21 LGR	Pg 21	Light grey	300	25	2.290	2024764
V-TEC PG29 LGR	Pg 29	Light grey	240	20	4.020	2024772
V-TEC PG36 LGR	Pg 36	Light grey	120	10	6.030	2024780
V-TEC PG42 LGR	Pg 42	Light grey	60	5	7.650	2024799
V-TEC PG48 LGR	Pg 48	Light grey	60	5	9.460	2024802

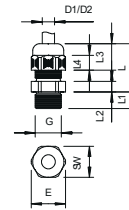
PA Polyamide

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.

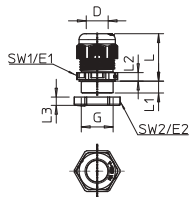
The connecting threads of the cable glands are metric or PG and are therefore suitable for universal use. Once screwed in place, the installation is there forever, as the optimum thread adjustment with the right pitch ensures permanent resistance to shaking.

Applications: From private housing with junction boxes up to industrial applications in the distributor cabinet.

Temperature range: -20 °C to +65 °C.



Cable gland, PG thread, set with locknut, light grey



Type	Thread	Colour	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC PG7+ LGR	Pg 7	Light grey	600	50	0.503	2024655
V-TEC PG9+ LGR	Pg 9	Light grey	500	50	0.799	2024657
V-TEC PG11+ LGR	Pg 11	Light grey	500	50	1.074	2024659
V-TEC PG13,5+LGR	Pg 13,5	Light grey	400	50	1.276	2024661
V-TEC PG16+ LGR	Pg 16	Light grey	250	25	1.705	2024663
V-TEC PG21+ LGR	Pg 21	Light grey	300	25	2.756	2024665
V-TEC PG29+ LGR	Pg 29	Light grey	240	20	5.120	2024667
V-TEC PG36+ LGR	Pg 36	Light grey	120	10	7.713	2024669
V-TEC PG42+ LGR	Pg 42	Light grey	60	5	9.406	2024671
V-TEC PG48+ LGR	Pg 48	Light grey	60	5	11.290	2024673

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.

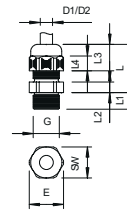
Temperature range: -20 °C to +65 °C.

Cable gland, long PG thread, silver grey



Type	Thread	Colour	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC L PG9 SGR	Pg 9	Silver grey	500	50	0.670	2024187
V-TEC L PG11 SGR	Pg 11	Silver grey	500	50	0.930	2024195
V-TEC L PG13 SGR	Pg 13,5	Silver grey	600	50	1.090	2024209
V-TEC L PG16 SGR	Pg 16	Silver grey	250	25	1.490	2024217
V-TEC L PG21 SGR	Pg 21	Silver grey	300	25	2.330	2024225
V-TEC L PG29 SGR	Pg 29	Silver grey	240	20	3.860	2024233
V-TEC L PG36 SGR	Pg 36	Silver grey	120	10	7.750	2024241

PA Polyamide

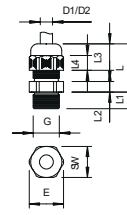


Cable gland, long PG thread, light grey

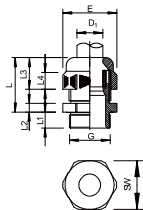


Type	Thread	Colour	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC L PG7 LGR	Pg 7	Light grey	500	50	0.410	2024284
V-TEC L PG9 LGR	Pg 9	Light grey	500	50	0.670	2024292
V-TEC L PG11 LGR	Pg 11	Light grey	500	50	0.930	2024306
V-TEC L PG13 LGR	Pg 13,5	Light grey	600	50	1.090	2024314
V-TEC L PG16 LGR	Pg 16	Light grey	250	25	1.490	2024322
V-TEC L PG21 LGR	Pg 21	Light grey	300	25	2.330	2024330
V-TEC L PG29 LGR	Pg 29	Light grey	240	20	3.860	2024349
V-TEC L PG36 LGR	Pg 36	Light grey	120	10	7.750	2024357
V-TEC L PG42 LGR	Pg 42	Light grey	60	5	10.070	2024365

PA Polyamide



Cable gland, EX area, metric thread



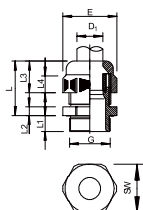
Type	Thread	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
VTEC EX M12 SW	M12 x 1,5	Black	50	0.360	2050307
VTEC EX M16 SW	M16 x 1,5	Black	50	0.630	2050315
VTEC EX M20 SW	M20 x 1,5	Black	50	1.000	2050323
VTEC EX M25 SW	M25 x 1,5	Black	25	2.350	2050331
VTEC EX M32 SW	M32 x 1,5	Black	20	3.900	2050358
VTEC EX M40 SW	M40 x 1,5	Black	10	7.500	2050366
VTEC EX M50 SW	M50 x 1,5	Black	5	9.200	2050374
VTEC EX M63 SW	M63 x 1,5	Black	5	9.460	2050382

PA Polyamide

Dimensions

G	D1 mm	WAF mm	E mm	L min. mm	L max. mm	L1 mm	L2 mm	L3 mm
M12 x 1.5	3.5 - 6.5	15	16.5	18	23	8	5	12.6
M16 x 1.5	5 - 8	19	21	21	27	8	5	15.5
M20 x 1.5	7 - 12	24	27	23	30	9	5	18
M25 x 1.5	12 - 18	33	37.5	28	38	11	6	22
M32 x 1.5	17 - 25	42	47.5	32	43	11	7	24.5
M40 x 1.5	21 - 32	53	60	39	54	13	8	31
M50 x 1.5	24 - 37	60	68.5	42	57	13	9	32.5
M63 x 1.5	30 - 44	65	74	42	58	14	9	33

Cable gland, EX area, PG thread



Type	Thread	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
VTEC EX PG7 SW	Pg 7	Black	50	0.410	2050005
VTEC EX PG9 SW	Pg 9	Black	50	0.630	2050013
VTEC EX PG11 SW	Pg 11	Black	50	0.890	2050021
VTEC EX PG13.5SW	Pg 13,5	Black	50	1.020	2050048
VTEC EX PG16 SW	Pg 16	Black	25	1.380	2050056
VTEC EX PG21 SW	Pg 21	Black	25	2.290	2050064
VTEC EX PG29 SW	Pg 29	Black	20	4.020	2050072
VTEC EX PG36 SW	Pg 36	Black	10	6.030	2050080
VTEC EX PG42 SW	Pg 42	Black	5	7.650	2050099
VTEC EX PG48 SW	Pg 48	Black	5	9.460	2050102

PA Polyamide

Dimensions

G	D1 mm	WAF mm	E mm	L min. mm	L max. mm	L1 mm	L2 mm	L3 mm
Pg 7	3.5 - 6.5	15	16.5	18	23	8	5	12.6
Pg 9	5 - 8	19	21	21	27	8	5	17
Pg 11	4.5 - 10	22	25	22	29	8	5	17
Pg 13.5	6.5 - 12	24	27	23	30	9	5	18
Pg 16	7 - 14	27	30	25	33	10	6	19
Pg 21	12 - 18	33	37.5	28	38	11	6	22
Pg 29	17 - 25	42	47.5	32	43	11	7	24.5
Pg 36	21 - 32	53	60	39	54	13	8	31
Pg 42	24 - 38	60	68.5	42	57	13	9	32.5
Pg 48	30 - 44	65	74	42	58	14	9	33

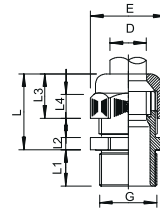
Cable gland, EX area, long PG thread



Type	Thread	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
VTEC EXL PG9 SW	Pg 9	Black	50	0.670	2050145
VTEC EXL PG11 SW	Pg 11	Black	50	0.930	2050153
VTEC EXL PG13 SW	Pg 13,5	Black	50	1.090	2050161
VTEC EXL PG16 SW	Pg 16	Black	25	1.490	2050188
VTEC EXL PG21 SW	Pg 21	Black	25	2.330	2050196

PA Polyamide

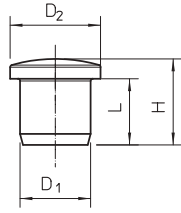
G	D1	WAF	E	L min.	L max.	L1	L2	L3
	mm	mm	mm	mm	mm	mm	mm	mm
Pg 9	5-8	19	21	21	27	15	5	15.5
Pg 11	4.5-10	22	25	22	29	15	5	17
Pg 13.5	6.5-12	24	27	23	30	15	5	18
Pg 16	7-14	27	30	25	33	15	6	19
Pg 21	12-18	33	37.5	28	38	15	6	22



Dimensions



Screw plug, metric and PG



Type	Size	Dimension D1 mm	Dimension L mm	Dimension D2 mm	Dimension H mm	Pack. pcs	Weight kg/100 pcs.	Item No.
107VS VM 5 PA	für M12 / Pg9	5,5	9	10	12,5	50	0,041	2029511
107VS VM 9 PA	für M16 / Pg13,5	9,5	12	13,5	16	50	0,090	2029514
107VS VM 12 PA	für M20 / Pg16	12	12	16,5	16,5	50	0,130	2029517
107VS VM 16 PA	für M25 / Pg21	16	15	20,5	19,5	50	0,190	2029520
107VS VM 20 PA	für M32 / Pg29	20	17	24,5	21,5	25	0,250	2029523
107VS VM 27 PA	für M40 / Pg36	27	20	32	24	10	0,353	2029529
107VS VM 35 PA	für M50 / Pg42	35	25	39	29	5	0,500	2029533

PA Polyamide

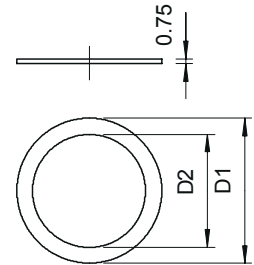
Screw plug in for dust-proof and waterproof closure of installed but (as yet) unfilled V-TEC... cable glands.

Pressure ring 107

Type	Size mm	Dimen- sion D1 mm	Dimen- sion D2 mm	Pack.	Weight	Item No.
				pcs	kg/100 pcs.	
107 D PG29 GTP	Pg 29	35	30	25	0.140	2027291

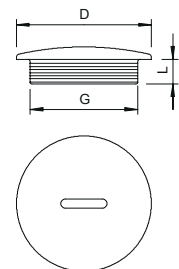
St Steel

GTP Electrogalvanised, transparently passivated



Type	Thread	Colour	Pack.	Item No.
			pcs	
108 M20 MD LGR	M20x1,5	Light grey	100	2033505
108 M20 MD SW	M20x1,5	Jet black	100	2033507

PS Polystyrene



Cable gland 106 G PG16 PS



IP 54 IP 65 Pg

Type	Thread	Colour	Pack. Weight		Item No.
			pcs	kg/100 pcs	
106 G PG16 PS	Pg 16	Light grey	50	1.046	2035995

PS Polystyrene

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. Sealing ring made of polychloroprene/acrylonitrile butadiene rubber. Moulded shaped sealing lip on intermediate support, thus no connection thread sealing ring required, VDE-tested to DIN EN 62444, . Temperature range -20 °C to +65 °C.

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. Sealing ring made of polychloroprene/acrylonitrile butadiene rubber. Moulded shaped sealing lip on intermediate support, thus no connection thread sealing ring required, VDE-tested to DIN EN 50262, . Temperature range -20 °C to +65 °C.

Cable gland, metric thread



Type	Thread	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
106 M12 PS	M12 x 1,5	Light grey	50	0.400	2035316
106 M16 PS	M16 x 1,5	Light grey	50	0.560	2035324
106 M 20 PS	M20 x 1,5	Light grey	50	0.753	2035332
106 M 25 PS	M25 x 1,5	Light grey	50	1.018	2035340
106 M 32 PS	M32 x 1,5	Light grey	10	2.891	2035359
106 M 40 PS	M40 x 1,5	Light grey	10	4.973	2035367
106 M 50 PS	M50 x 1,5	Light grey	5	6.594	2035375
106 M 63 PS	M63 x 1,5	Light grey	5	9.630	2035383

PS Polystyrene

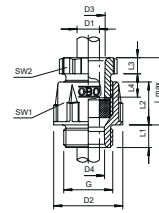
Standard cable gland, shape A, to DIN 46320 with simple NR/SBR sealing ring with metric connection thread to IEC 423.

Protection rating: with connection thread sealing ring IP 65, without connection thread sealing ring IP 54.

Note: only tighten polystyrene cable glands lightly on account of the risk of stress crack formation.

G	D1	D2	D3	D4	SW1	SW2	L1	L2	L3	L4	L max.
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
M12 x 1.5	3.5-6.5	16.5	7	7	15	13	8	13	5	8.5	23
M16 x 1.5	4.5-7	21.5	10.2	10	19	16	8	14	5	9	25
M20 x 1.5	9-13	27	13.4	13.5	24	21	9	16	5	10.8	28
M25 x 1.5	10-14	30	15.8	16	27	23	10	16.5	6	12	30
M32 x 1.5	18-25	47.5	30.3	26	42	40	11	20.5	8	18	42
M40 x 1.5	25-33	58	38.4	33	53	50	12	24	8	17	43
M50 x 1.5	30-38	65	44.5	40.5	60	55	13	27	9	18.5	48
M63 x 1.5	37-44	70	50	45.5	65	60	14	27	9	18.5	48

Dimensions



Cable gland, PG thread



Type	Thread	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
106 PG7	Pg 7	Light grey	50	0.325	2036061
106 PG9	Pg 9	Light grey	50	0.560	2036096
106 PG11	Pg 11	Light grey	50	0.800	2036118
106 PG13.5	Pg 13,5	Light grey	50	0.794	2036134
106 PG16	Pg 16	Light grey	50	1.003	2036169
106 PG21	Pg 21	Light grey	50	1.760	2036215
106 PG29	Pg 29	Light grey	10	3.004	2036290
106 PG36	Pg 36	Light grey	10	6.240	2036363
106 PG42	Pg 42	Light grey	5	6.698	2036428
106 PG48	Pg 48	Light grey	5	7.336	2036487

PS Polystyrene

Standard cable gland, shape A, to DIN 46320 with simple NR/SBR sealing ring.

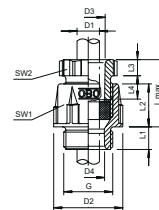
PG connection thread in accordance with DIN 40430.

Protection rating: with connection thread sealing ring IP65, without connection thread sealing ring IP54.

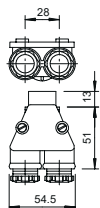
Note: only tighten polystyrene cable glands lightly on account of the risk of stress crack formation.

G	D1	D2	D3	D4	SW1	SW2	L1	L2	L3	L4	L max.
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
Pg 7	3.5-6.5	16.5	7	7	15	13	8	13	5	8.5	23
Pg 9	4.5-7	21.5	10.2	10.2	19	16	8	14	5	9	25
Pg 11	5.5-10	25	11.3	11.5	22	19	8	15	5	10	27
Pg 13.5	9-13	27	13.4	13.5	24	21	9	16	5	10.8	28
Pg 16	10-14	30	15.8	16.5	27	23	10	16.5	6	12	30
Pg 21	14-18	37.5	21.2	21	33	30	11	19	7	17	38
Pg 29	18-25	47.5	30	27.5	42	40	11	20.5	8	18	42
Pg 36	25-33	58	38	34.5	53	50	12	24	8	17	43
Pg 42	30-38	65	44.5	40.5	60	55	13	27	9	18.5	48
Pg 48	37-44	70	50	45.5	65	60	14	27	9	18.5	48

Dimensions



Twin gland, PG thread

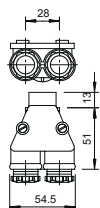


Type	Thread	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
113 PG13.5 LGR	Pg 13,5	Light grey	5	3.752	2024136
113 PG16 LGR	Pg 16	Light grey	5	4.360	2024160

UF Duroplast, Aminoplast, type 131.5

Protection rating, with removable polystyrene cover, as well as two polyethylene connection thread sealing rings.

Twin gland, metric thread



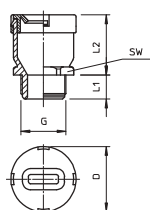
Type	Thread	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
113 M20 LGR	M 20 x 1,5	Light grey	5	3.701	2024063

UF Duroplast, Aminoplast, type 131.5

Protection rating, with removable polystyrene cover, as well as two polyethylene connection thread sealing rings.

With connection thread M20 x 1.5, two half glands PG 13.5 for cable diameters 6.5–10.5 mm.

Flat cable threaded connection, metric thread M20



Type	Thread	Flat cables/ thickness mm	Flat cables/ width mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
106 FL M20 8 19	M20	6 - 8	17 - 19	Stone grey	50	1.350	2013002

PE Polyethylene

Flat-cable entry, choke-nipple design with metric connecting thread to IEC 432, protection rating IP 31, with pre-mounted support sealing ring 107/F.

Dimensions

G	D mm	L1 mm	L2 mm	SW mm
M20	32.5	12	30	27

Flat cable threaded connection, metric thread M25



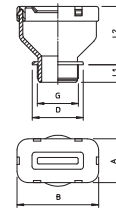
Type	Thread	Flat cables/ thickness mm	Flat cables/ width mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
106 FL M25 6 30	M25	4 - 6	27 - 30	Stone grey	25	2.630	2013006
106 FL M25 8 33	M25	6 - 8	30 - 33	Stone grey	25	2.630	2013007
106 FL M25 9 22	M25	7 - 9	19 - 22	Stone grey	25	2.630	2013008
106 FL M25 9 39	M25	7 - 9	36 - 39	Stone grey	25	2.630	2013009
106 FL M25 10 29	M25	8 - 10	26 - 29	Stone grey	25	2.630	2013010
106 FL M25 10 31	M25	8.5 - 10.5	28.5 - 31.5	Stone grey	25	2.630	2013011
106 FL M25 12 35	M25	9 - 12	31 - 35	Stone grey	25	2.630	2013012
106 FL M25 14 40	M25	11 - 14	37 - 40	Stone grey	25	2.680	2013013
106 FL M32 6 30	M32	4 - 6	27 - 30	Stone grey	15	3.450	2013015
106 FL M32 8 33	M32	6 - 8	30 - 33	Stone grey	15	3.450	2013016
106 FL M32 9 22	M32	7 - 9	19 - 22	Stone grey	15	3.450	2013017
106 FL M32 9 39	M32	7 - 9	36 - 39	Stone grey	15	3.450	2013018
106 FL M32 10 29	M32	8 - 10	26 - 29	Stone grey	15	3.450	2013019
106 FL M32 10 31	M32	8.5 - 10.5	28.5 - 31.5	Stone grey	15	3.450	2013020
106 FL M32 12 35	M32	9 - 12	31 - 35	Stone grey	15	3.450	2013021
106 FL M32 14 40	M32	11 - 14	37 - 40	Stone grey	15	3.500	2013022

PE Polyethylene

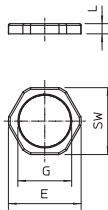
Flat-cable entry, choke-nipple design with metric connecting thread to IEC 432, protection rating IP31, with pre-mounted support sealing ring 107/F.

G	D	L1	L2	A	B
	mm	mm	mm	mm	mm
M25	35	12	40	30	56

Dimensions



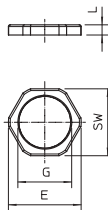
Locknut, metric thread



Type	Thread	Colour	SW mm	Dimen- sion E mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
116 M12 LGR PA	M12x1,5	Light grey	17	19	5	100	0.100	2048906
116 M16 LGR PA	M16x1,5	Light grey	22	25	5	100	0.160	2048914
116 M20 LGR PA	M20x1,5	Light grey	26	29	6	100	0.173	2048922
116 M25 LGR PA	M25x1,5	Light grey	32	36	6.5	100	0.297	2048930
116 M32 LGR PA	M32x1,5	Light grey	41	46	7	50	0.610	2048949
116 M40 LGR PA	M40x1,5	Light grey	50	56	7	25	1.683	2048957
116 M50 LGR PA	M50x1,5	Light grey	60	68	8	25	0.890	2048965
116 M63 LGR PA	M63x1,5	Light grey	75	83	8	25	1.467	2048973

PA Polyamide

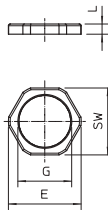
Cable outlet, plastic locknut



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
116 M63 SGR PA	M63x1,5	Silver grey	75	83	8	25	1.300	2048825

PA Polyamide

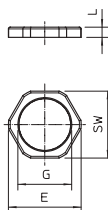
Locknut, metric thread



Type	Thread	Colour	SW mm	Dimen- sion E mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
116 M12 SW PA	M12x1,5	Black	17	19	5	100	0.100	2049066
116 M16 SW PA	M16x1,5	Black	22	25	5	100	0.160	2049074
116 M20 SW PA	M20x1,5	Black	26	29	6	100	0.173	2049082
116 M25 SW PA	M25x1,5	Black	32	36	6.5	100	0.266	2049090
116 M32 SW PA	M32x1,5	Black	41	46	7	50	0.610	2049104
116 M40 SW PA	M40x1,5	Black	50	56	7	25	1.683	2049112
116 M50 SW PA	M50x1,5	Black	60	68	8	25	1.756	2049120
116 M63 SW PA	M63x1,5	Black	75	83	8	25	1.286	2049139

PA Polyamide

Locknut, PG thread



Type	Thread	Colour	SW mm	Dimen- sion E mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
116 VDE PG7 PA	Pg 7	Light grey	19	21	5	100	0.093	2048078
116 VDE PG 9 PA	Pg 9	Light grey	22	24	5	100	0.169	2048094
116 VDE PG11 PA	Pg 11	Light grey	24	26	5	100	0.184	2048116
116 VDE PG13.5PA	Pg 13,5	Light grey	27	29	6	100	0.256	2048132
116 VDE PG16 PA	Pg 16	Light grey	30	33	6	100	0.325	2048167
116 VDE PG21 PA	Pg 21	Light grey	36	39	7	100	0.466	2048221
116 VDE PG29 PA	Pg 29	Light grey	46	50	7	50	1.100	2048299
116 VDE PG36 PA	Pg 36	Light grey	60	66	8	25	1.683	2048361
116 VDE PG42 PA	Pg 42	Light grey	65	73	8	25	1.756	2048426
116 VDE PG48 PA	Pg 48	Light grey	70	78	8	25	1.830	2048485

PA Polyamide

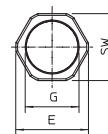
Locknut, metric thread



Type	Thread	Colour	SW mm	Dimen- sion E mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
116 M12 LGR PS	M12 x 1,5	Light grey	17	19	5	100	0.075	2049503
116 M16 LGR PS	M16 x 1,5	Light grey	22	25	5	100	0.120	2049511
116 M20 LGR PS	M20 x 1,5	Light grey	26	29	6	100	0.167	2049538
116 M25 LGR PS	M25 x 1,5	Light grey	32	36	6.5	100	0.260	2049546
116 M32 LGR PS	M32 x 1,5	Light grey	41	46	7	50	0.484	2049554
116 M40 LGR PS	M40 x 1,5	Light grey	50	56	7	25	0.491	2049562
116 M50 LGR PS	M50 x 1,5	Light grey	60	68	8	25	0.732	2049570
116 M63 LGR PS	M63 x 1,5	Light grey	75	83	8	25	1.029	2049589

PS Polystyrene

Locknut DIN 46319, with metric thread IEC 423.



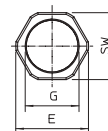
Locknut, PG thread



Type	Thread	Colour	SW mm	Dimen- sion E mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
116 PG 7	Pg 7	Light grey	19	21	5	100	0.099	2043076
116 PG 9	Pg 9	Light grey	22	24	5	100	0.118	2043092
116 PG11	Pg 11	Light grey	24	26	5	100	0.113	2043114
116 PG13.5	Pg 13,5	Light grey	27	29	6	100	0.178	2043130
116 PG16	Pg 16	Light grey	30	33	6	100	0.226	2043165
116 PG21	Pg 21	Light grey	36	39	7	100	0.346	2043211
116 PG29	Pg 29	Light grey	46	50	7	50	0.573	2043297
116 PG36	Pg 36	Light grey	60	66	8	25	1.184	2043351
116 PG42	Pg 42	Light grey	65	73	8	25	1.089	2043424
116 PG48	Pg 48	Light grey	70	78	8	25	1.175	2043483

PS Polystyrene

Locknut DIN 46320, with PG thread DIN 40430.



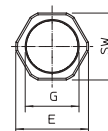
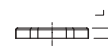
Locknut, PG thread



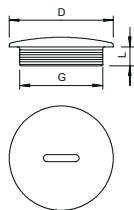
Type	Thread	Colour	SW mm	Dimen- sion E mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
116 VDE PG7 PA	Pg 7	Light grey	19	21	5	100	0.093	2048078
116 VDE PG 9 PA	Pg 9	Light grey	22	24	5	100	0.169	2048094
116 VDE PG11 PA	Pg 11	Light grey	24	26	5	100	0.184	2048116
116 VDE PG13.5PA	Pg 13,5	Light grey	27	29	6	100	0.256	2048132
116 VDE PG16 PA	Pg 16	Light grey	30	33	6	100	0.325	2048167
116 VDE PG21 PA	Pg 21	Light grey	36	39	7	100	0.466	2048221
116 VDE PG29 PA	Pg 29	Light grey	46	50	7	50	1.100	2048299
116 VDE PG36 PA	Pg 36	Light grey	60	66	8	25	1.683	2048361
116 VDE PG42 PA	Pg 42	Light grey	65	73	8	25	1.756	2048426
116 VDE PG48 PA	Pg 48	Light grey	70	78	8	25	1.830	2048485

PA Polyamide

Locknut DIN 46320, with PG thread DIN 40430.



Screw plug, metric thread

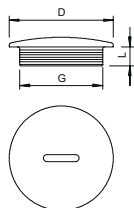


Type	Thread	Dimension D mm	Dimension L mm	Colour	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
108 M12 PS	M12 x 1,5	15	6	Light grey	3000	100	0.047	2033003
108 M16 PS	M16 x 1,5	20	6	Light grey	1800	100	0.085	2033007
108 M20 PS	M20 x 1,5	24	6	Light grey	1200	100	0.128	2033011
108 M25 PS	M25 x 1,5	30	8	Light grey	1000	100	0.210	2033016
108 M32 PS	M32 x 1,5	37	8	Light grey	500	50	0.339	2033021
108 M40 PS	M40 x 1,5	46	8	Light grey	300	25	0.564	2033026
108 M50 PS	M50 x 1,5	56	10	Light grey	300	25	0.939	2033032
108 M63 PS	M63 x 1,5	70	12	Light grey	300	25	1.492	2033038

PS Polystyrene

Screw plug in accordance with DIN 46320, with metric thread to IEC 423.

Screw plug, PG thread



Type	Thread	Dimension D mm	Dimension L mm	Colour	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
108 PG 7	Pg 7	14	6	Light grey	2400	100	0.056	2033070
108 PG 9	Pg 9	19	6	Light grey	1800	100	0.096	2033097
108 PG11	Pg 11	22	6	Light grey	2000	100	0.128	2033119
108 PG13.5	Pg 13,5	25	6.5	Light grey	1200	100	0.164	2033135
108 PG16	Pg 16	27	6.5	Light grey	1000	100	0.184	2033151
108 PG21	Pg 21	34	8	Light grey	1200	100	0.345	2033216
108 PG29	Pg 29	44	8	Light grey	600	50	0.646	2033291
108 PG36	Pg 36	58	10	Light grey	200	25	1.057	2033364
108 PG42	Pg 42	67	10	Light grey	300	25	1.479	2033429
108 PG48	Pg 48	73	12	Light grey	300	25	1.832	2033488

Pg Polystyrene

Screw plug in accordance with DIN 46320, with PG thread to DIN 40430.

Reduction, metric thread



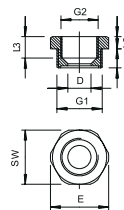
Type	External thread	Internal thread	Colour	SW mm	Pack. pcs	Weight kg/100 pcs.	Item No.
107 R M20-12 PA	M20	M12	Light grey	24	100	0.500	2030616
107 R M20-16 PA	M20	M16	Light grey	24	100	0.700	2030619
107 R M25-12 PA	M25	M12	Light grey	32	100	0.850	2030624
107 R M25-16 PA	M25	M16	Light grey	32	100	0.850	2030626
107 R M25-20 PA	M25	M20	Light grey	32	100	0.650	2030628
107 R M32-12 PA	M32	M12	Light grey	36	50	1.200	2030632
107 R M32-16 PA	M32	M16	Light grey	36	50	1.100	2030634
107 R M32-20 PA	M32	M20	Light grey	36	50	1.050	2030637
107 R M32-25 PA	M32	M25	Light grey	36	50	1.000	2030640
107 R M40-16 PA	M40	M16	Light grey	46	50	2.000	2030643
107 R M40-20 PA	M40	M20	Light grey	46	50	1.850	2030646
107 R M40-25 PA	M40	M25	Light grey	46	50	1.950	2030649
107 R M40-32 PA	M40	M32	Light grey	46	50	1.400	2030652
107 R M50-20 PA	M50	M20	Light grey	55	25	2.300	2030655
107 R M50-25 PA	M50	M25	Light grey	55	25	2.250	2030659
107 R M50-32 PA	M50	M32	Light grey	55	25	2.200	2030661
107 R M50-40 PA	M50	M40	Light grey	55	25	2.050	2030664
107 R M63-25 PA	M63	M25	Light grey	68	25	3.050	2030667
107 R M63-32 PA	M63	M32	Light grey	68	25	3.070	2030670
107 R M63-40 PA	M63	M40	Light grey	68	25	3.100	2030673
107 R M63-50 PA	M63	M50	Light grey	68	25	3.000	2030675

PA Polyamide

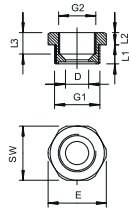
Reduction, with metric internal and external thread.

G1	G2	SW mm	E mm	L1 mm	L3 mm
M20	M12	24	26.6	8	12
M20	M16	24	26.6	8	12
M25	M12	32	32	8	14
M25	M16	32	32	8	14
M25	M20	32	32	8	14
M32	M12	36	40	10	16
M32	M16	36	40	10	16
M32	M20	36	40	10	16
M32	M25	36	40	10	16
M40	M16	46	50.5	10	16
M40	M20	46	50.5	10	16
M40	M25	46	50.5	10	16
M40	M32	46	50.5	10	16
M50	M20	55	60	12	18
M50	M25	55	60	12	18
M50	M32	55	60	12	18
M50	M40	55	60	12	18
M63	M25	68	75	12	18
M63	M32	68	75	12	18
M63	M40	68	75	12	18
M63	M50	68	75	12	18

Dimensions



Reduction, PG thread



Type	External thread	Internal thread	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
107 R PG11-7 PA	Pg 11	Pg 7	Light grey	50	0.400	2030705
107 R PG13-9 PA	Pg 13,5	Pg 9	Light grey	50	0.450	2030713
107 R PG16-9 PA	Pg 16	Pg 9	Light grey	50	0.600	2030748
107 R PG16-11 PA	Pg 16	Pg 11	Light grey	50	0.480	2030756
107 R PG21-11 PA	Pg 21	Pg 11	Light grey	50	0.910	2030764
107 R PG21-13 PA	Pg 21	Pg 13,5	Light grey	50	0.800	2030772
107 R PG21-16 PA	Pg 21	Pg 16	Light grey	50	0.650	2030780
107 R PG29-16 PA	Pg 29	Pg 16	Light grey	50	1.460	2030799
107 R PG29-21 PA	Pg 29	Pg 21	Light grey	25	1.500	2030802
107 R PG36-21 PA	Pg 36	Pg 21	Light grey	25	2.350	2030829
107 R PG36-29 PA	Pg 36	Pg 29	Light grey	25	2.200	2030810
107 R PG42-29 PA	Pg 42	Pg 29	Light grey	25	2.350	2030837

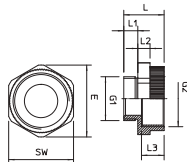
PA Polyamide

Reduction, Pg internal and external thread to DIN 40430.

Dimensions

G1	G2	D mm	SW mm	E mm	L1 mm	L2 mm	L3 mm
Pg 11	Pg 7	7.5	22	24	8	6	9.5
Pg 13.5	Pg 9	9.5	24	26	8.5	6	9.5
Pg 16	Pg 9	9.5	27	29	9.5	6	11.5
Pg 16	Pg 11	11.5	27	29	9.5	6	11
Pg 21	Pg 11	11.5	32	35.5	10.5	5	11
Pg 21	Pg 13.5	13.5	32	35.5	10.5	5	11
Pg 21	Pg 16	16.5	32	35.5	10.5	5	11
Pg 29	Pg 16	16.5	40	43	12	6	12.5
Pg 29	Pg 21	21.5	39	43	12.5	6	13.5
Pg 36	Pg 21	21	50	54	13	6	13.5
Pg 36	Pg 29	28.5	50	54	18	6	18
Pg 42	Pg 29	27.5	55	59	16	6	17

Intermediate expansion connector, metric thread



Type	External thread	Internal thread	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
107 E M 12-16 PA	M12	M16	Light grey	50	0.300	2031450
107 E M 16-20 PA	M16	M20	Light grey	50	0.380	2031451
107 E M 20-25 PA	M20	M25	Light grey	50	0.630	2031452
107 E M 25-32 PA	M25	M32	Light grey	50	0.970	2031453
107 E M 32-40 PA	M32	M40	Light grey	25	1.300	2031454

PA Polyamide

Intermediate expansion connector, metric internal and external thread.

Dimensions

G1	G2	SW mm	E mm	L mm	L1 mm	L2 mm	L3 mm	D mm
M12	M16	20	22	20.6	8	5	11.2	7.2
M16	M20	24	26.6	20.6	8	5	11	11.3
M20	M25	30	33	21	8	6	10.8	15
M25	M32	37	41	22.7	8	7	12.5	19
M32	M40	45	49.5	25	10	7	12.5	26.4

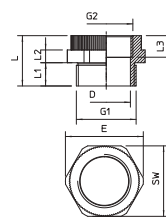
Adapter PG-M



Type	External thread	Internal thread	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
107 ADA PG7-M12	PG7	M12	Light grey	20	0.194	2031465
107 ADA PG9-M12	PG9	M12	Light grey	20	0.370	2031466
107 ADA PG11-M16	PG11	M16	Light grey	20	0.410	2031467
107 ADA PG13-M20	PG13,5	M20	Light grey	20	0.416	2031468
107 ADA PG16-M20	PG16	M20	Light grey	20	0.630	2031469
107 ADA PG21-M25	PG21	M25	Light grey	10	0.940	2031470
107 ADA PG29-M32	PG29	M32	Light grey	10	1.610	2031471

PA Polyamide

Adapter for converting a Pg threaded drill hole to a metric threaded drill hole.



Dimensions

G1	G2	SW mm	E mm	L mm	L1 mm	L2 mm	L3 mm	D mm
PG 7	M12	15	16.5	20.3	7.9	5	10.4	7.7
PG 9	M12	19	21	20		5	10	10.5
PG11	M16	22	24.5	20.3	8	5	10	13.6
PG13.5	M20	24	26.7	21.3	9.1	5	10	15.2
PG16	M20	27	30	22	10	6	10	17.6
PG21	M25	33	36.5	23.6	10.9	6	10	22.7
PG29	M32	42	46.7	25.5	11.2	7	10.4	30.8

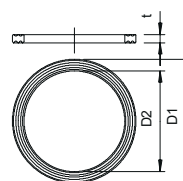
Connection thread sealing ring, metric



Type	Size mm	Dimension D1 mm	Dimension D2 mm	Dimension t mm	Pack. pcs	Weight kg/100 pcs.	Item No.
107 F M12 PE	M12	16.3	12	1	100	0.017	2030004
107 F M16 PE	M16	20.9	16	1.1	100	0.018	2030008
107 F M20 PE	M20	25.1	20	1.1	100	0.030	2030012
107 F M25 PE	M25	31.3	25	1.4	100	0.038	2030016
107 F M32 PE	M32	37.6	32	1.7	100	0.105	2030020
107 F M40 PE	M40	49.1	40	1.7	100	0.200	2030024
107 F M50 PE	M50	60.1	50	2	100	0.250	2030028
107 F M63 PE	M63	73.8	63	2	100	0.290	2030032

PE Polyethylene

Connection thread sealing ring, suitable for all plastic cable glands with metric connection thread to DIN EN 60423 or ISO 68. The internal diameters of the sealing rings are designed in such a way that they can be pre-mounted in a captive manner.



Connection thread sealing ring, metric



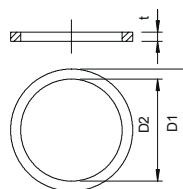
Type	Size mm	Dimension D1 mm	Dimension D2 mm	Dimension t mm	Pack. pcs	Weight kg/100 pcs.	Item No.
170 M16	M16	19.9	16	2	100	0.040	2088428
170 M20	M20	24	20	2	100	0.066	2088436
170 M25	M25	30	25	3	100	0.170	2088444
170 M32	M32	38	32	3	100	0.270	2088452

FA Fibre-proof material DIN 28091

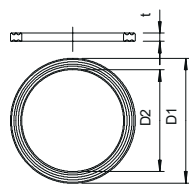
Asbestos-free material.

Connection thread sealing ring, Part 9, to DIN 46320, suitable for all brass cable glands with metric connection thread to DIN EN 60423 or ISO 68.

Colour: green, graphited on one side.



Connection thread sealing ring, PG

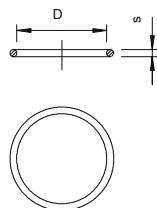


Type	Size mm	Dimension D1 mm	Dimension D2 mm	Dimension t mm	Pack. pcs	Weight kg/100 pcs.	Item No.
107 F PG7 PE	Pg 7	16.5	12.1	1.6	100	0.010	2030071
107 F PG9 PE	Pg 9	19	14.7	1.6	100	0.013	2030098
107 F PG11 PE	Pg 11	23	18	1.8	100	0.022	2030101
107 F PG13.5 PE	Pg 13,5	25	19.8	1.8	100	0.030	2030136
107 F PG16 PE	Pg 16	27	21.8	1.8	100	0.038	2030160
107 F PG21 PE	Pg 21	34	27.5	2.2	100	0.049	2030217
107 F PG29 PE	Pg 29	44	36.2	2.2	100	0.105	2030292
107 F PG36 PE	Pg 36	55.5	46.2	2.7	100	0.200	2030365
107 F PG48 PE	Pg 48	69.5	58.5	3.2	100	0.290	2030489

PE Polyethylene

Connection thread sealing ring, in accordance with Part 9 to DIN 46320, however, dimensions may, according to material or function, deviate, suitable for all plastic cable glands with PG connection thread to DIN EN 40430, the internal diameter of the sealing rings are designed so that they can be captively pre-mounted.

O sealing ring for metric connection thread

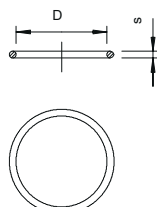


Type	Size mm	Dimension D mm	Dimension S mm	Pack. pcs	Weight kg/100 pcs.	Item No.
171 M20	M20	18	1.5	100	0.011	2088738
171 M25	M25	22	1.5	100	0.012	2088746
171 M32	M32	29	2	100	0.035	2088754

NBR Nitrile rubber

O sealing rings, suitable as connection thread sealing rings for all plastic and brass cable glands with metric connection thread to DIN EN 60423 or ISO 68. The rings can be captively pre-mounted.

O sealing ring for PG connection thread



Type	Size mm	Dimension D mm	Dimension S mm	Pack. pcs	Weight kg/100 pcs.	Item No.
171 PG 9	Pg 9	13	1.5	100	0.008	2088819
171 PG11	Pg 11	16	1.5	100	0.010	2088827
171 PG13.5	Pg 13,5	18	1.5	100	0.011	2088835
171 PG16	Pg 16	20	1.5	100	0.012	2088843
171 PG21	Pg 21	25	2	100	0.027	2088851
171 PG29	Pg 29	33	2	100	0.035	2088878
171 PG36	Pg 36	43	2	50	0.045	2088886
171 PG42	Pg 42	50	2	50	0.052	2088894

NBR Nitrile rubber

O sealing rings, suitable as connection thread sealing rings for all plastic and brass cable glands with PG connection thread to DIN EN 60423 or ISO 68. The rings can be captively pre-mounted.

Sealing plate, PG

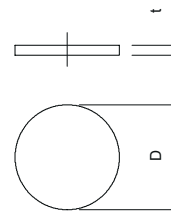
Pg

Type	Size mm	Dimen- sion D mm	Dimen- sion t mm	Pack. pcs	Weight kg/100 pcs.	Item No.
107 V PG 7 PVC	Pg 7	11	0.5	100	0.013	2029707
107 V PG 9 PVC	Pg 9	13.5	0.5	100	0.020	2029715
107 V PG11 PVC	Pg 11	16.5	0.5	100	0.030	2029723
107 V PG13.5 PVC	Pg 13,5	18.5	0.5	100	0.038	2029731
107 V PG16 PVC	Pg 16	20.5	0.5	100	0.048	2029758
107 V PG21 PVC	Pg 21	26	0.5	100	0.075	2029766
107 V PG29 PVC	Pg 29	35	1	100	0.135	2029774

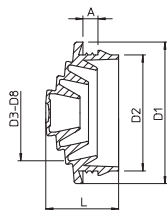
PVC Polyvinylchloride

The sealing plate offers both mechanical protection and the maintenance of the protection rating of plastic and metal cable glands to DIN 46320 before cable installation.

Application: the discs are placed between the pressure screw and the pressure ring. If the safe maintenance of IP65 is required, we recommend placing the discs between the pressure ring and the sealing ring. To mount the cable, remove the discs – they can be reused.



Plug-in seal EDVS



Type	Size	For Ø mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
EDVS M20 LGR	M20	0 - 17	Light grey	100	0.117	2012375
EDS M20 LGR	M20	0 - 17	Light grey	100	0.125	2012350
EDVS M25 LGR	M25	0 - 22	Light grey	100	0.179	2012383
EDS M25 LGR	M25	0 - 22	Light grey	100	0.185	2012354
EDVS M32 LGR	M32	0 - 28	Light grey	50	0.295	2012391
EDS M32 LGR	M32	0 - 28	Light grey	50	0.295	2012358

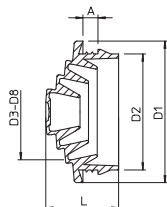
PE Polyethylene

The push-in nipple can be cut back to suit the relevant cable diameter.

Dimensions

G	L	A	D1	D2	D3	D4	D5	D6	D7	D8
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
M20	12.8	3.4	24.8	20.3	0 - 6	5 - 10	9 - 15	14 - 17	-	-
M20	12.8	3.1	24.8	20.3	0-6	5-10	9-15	14-17	-	-
M25	14.5	4.3	29.5	25.3	0 - 6	5 - 10	9 - 15	14 - 20	19 - 22	-
M25	14.5	3.1	29.5	25.3	0-6	5-10	9-15	14-20	19-22	-
M32	17.8	4.4	36.3	32.3	0 - 6	5 - 10	9 - 15	14 - 20	19 - 25	24 - 28
M32	17.8	3.1	36.3	32.3	0-6	5-10	9-15	14-20	19-25	24-28

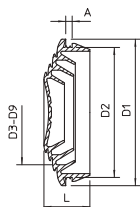
EDS plug-in seal, light grey



Type	Size	For Ø mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
EDS M20 LGR	M20	0 - 17	Light grey	100	0.125	2012350
EDS M25 LGR	M25	0 - 22	Light grey	100	0.185	2012354
EDS M32 LGR	M32	0 - 28	Light grey	50	0.295	2012358

PE Polyethylene

Plug-in seal EDK light grey



Type	Size	For Ø mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
EDK 25 LGR	M25	0 - 22	Light grey	100	0.165	2011638
EDK 32 LGR	M32	0 - 27	Light grey	50	0.260	2011646
EDK 40 LGR	M40	0 - 34	Light grey	25	0.425	2011654
EDK 25 RW	M25	0 - 22	Pure white	100	0.175	2011689
EDK 32 RW	M32	0 - 27	Pure white	50	0.260	2011697
EDK 40 RW	M40	0 - 34	Pure white	25	0.425	2011700

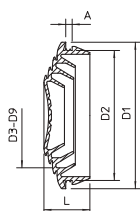
TPE Thermoplastic elastomer

The plug-in seal can be cut back to suit the relevant cable diameter.

Dimensions

G	L	A	D1	D2	D3	D4	D5	D6	D7	D8	D9
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
M25	10.1	2.2	29.5	25.4	0-5	4-10	9-15	14.5-18	18.5-22	-	-
M32	11.4	2.2	36.4	32.3	0-5	4-10	9-15	14.5-18	18.5-22	24-27	-
M40	13.4	2.2	44.1	40.2	0-5	4-10	9-15	14.5-18	18.5-22	24-27	31-34
M25	10,1	2,2	29,5	25,4	0-5	4-10	9-15	14,5-18	18,5-22	-	-
M32	11,4	2,2	36,4	32,3	0-5	4-10	9-15	14,5-18	18,5-22	24-27	-
M40	13,4	2,2	44,1	40,2	0-5	4-10	9-15	14,5-18	18,5-22	24-27	31-34

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.

Plug-in seal for pipes, T-series junction box, light grey

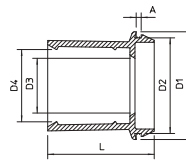
IP 55 M25 M32 M40

Type	Size	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
EDR 25 16-20 LGR	M25	Light grey	50	0.520	2011506
EDR 25 20-25 LGR	M25	Light grey	50	0.680	2011514
EDR 32 25-32 LGR	M32	Light grey	50	1.170	2011530
EDR 40 32-40 LGR	M40	Light grey	25	2.200	2011546

TPE Thermoplastic elastomer

Plug-in seal for junction boxes for direct insertion of metric pipes

G	L mm	A mm	D1 mm	D2 mm	D3 mm	D4 mm
M25	30	2.2	29.5	25.3	15.0	18.4
M25	30	2.2	29.5	25.3	18.5	24.2
M32	36	2.2	37	32.3	24	31.2
M40	49	2.2	46	42.3	31	39.2



Dimensions

IP 54



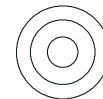
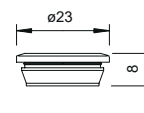
Type	Size	For Ø mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
89	PG 11	7 - 13	Light grey	100	0.111	2012030
89 RW	PG 11	7 - 13	Pure white	100	0.113	2012103
89 SW	PG 11	7 - 13	Black	100	0.112	2012146
89 LoG	PG 11	7 - 13	Light grey	5000	0.111	2012065
89 3MM NUT	PG 11	7 - 13	Light grey	2000	0.106	2012081

PE Polyethylene

Closed entry nipple with perforation membrane for cable diameters 7–13 mm. Ideal for simple cable routing in housings or through thin sheet metal.

Required hole diameter 18.5–19 mm, wall thickness max. 1.8 mm.

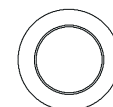
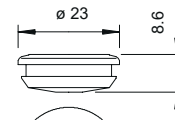
Nipple 89



Type	Size	For Ø mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
89 ROE 12-16	PG 13,5	12 - 16	Light grey	100	0.102	2012049

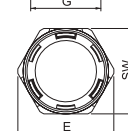
PE Polyethylene

Nipple 89/RK



Pressure balance plug 109

Type	Thread	Protection rating	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
109 M20 LGR	M20x1,5	IP68	Light grey	5	0.538	2034680





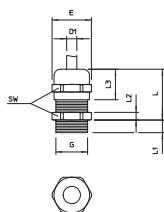


Cable gland systems, brass

	Cap nut cable gland	160
	Cone cable gland	162
	Locknuts	168
	Cable gland system accessories	169



Cable gland, metric thread



Type	Thread	Dimension L1 mm	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC VM12 MS	M12 x 1,5	5	50	1.200	2086018
V-TEC VM16 MS	M16 x 1,5	5	50	1.640	2086024
V-TEC VM20 MS	M20 x 1,5	6	25	3.140	2086030
V-TEC VM25 MS	M25 x 1,5	7	25	4.260	2086036
V-TEC VM32 MS	M32 x 1,5	8	20	7.160	2086042
V-TEC VM40 MS	M40 x 1,5	8	5	12.240	2086048
V-TEC VM50 MS	M50 x 1,5	9	5	22.700	2086054
V-TEC VM63 MS	M63 x 1,5	10	5	30.300	2086060

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.

Dimensions

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
M63 x 1.5	32-42	65	70	44.5	1	31	5

Cable gland, long metric thread



Type	Thread	Dimension L1 mm	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC VM LM12 MS	M12 x 1,5	10	50	1.300	2086111
V-TEC VM LM16 MS	M16 x 1,5	10	50	1.940	2086117
V-TEC VM LM20 MS	M20 x 1,5	10	25	3.360	2086123
V-TEC VM LM25 MS	M25 x 1,5	11	25	4.800	2086129
V-TEC VM LM32 MS	M32 x 1,5	13	10	7.840	2086135
V-TEC VM LM40 MS	M40 x 1,5	13	5	13.400	2086141
V-TEC VM LM50 MS	M50 x 1,5	14	5	24.000	2086147
V-TEC VM LM63 MS	M63 x 1,5	14	5	32.100	2086153
V-TEC VM LM75MS1	M75 x 1,5	18	3	112.300	2086156
V-TEC VM LM75MS2	M75 x 1,5	18	3	98.200	2086159

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. For thicker housing wall thicknesses in conjunction with locknuts. Neoprene sealing ring. Polyamide terminal insert. With pre-mounted sealing ring on connection thread, VDE-tested to DIN EN 50262, protection rating IP 68 at 5 bar for 1 hr.

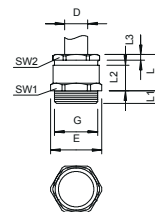
With long connection thread.

* Prices according to DEL notation.

G	D1	SW	E	L max.	L1
	mm	mm	mm	mm	mm
M12 x 1.5	3-6	14	15.5	20	10
M16 x 1.5	5-9	17	19	24	10
M20 x 1.5	9-13	22	24	27	10
M25 x 1.5	11-16	27	30	29.5	11
M32 x 1.5	14-21	34	36	30	13
M40 x 1.5	19-27	43	46	33	13
M50 x 1.5	24-35	55	60	38.5	14
M63 x 1.5	32-42	65	65	44.5	14
M75 x 1.5	48 - 55	90	97	42	18
M75 x 1.5	53 - 60	90	97	42	18

Dimensions

Cable gland, M cutting ring



Type	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
162 MS M12	M12x1,5	50	1.200	2083706

CuZn Brass

N Nickel-plated

Cable gland with hexagonal intermediate connector, shape C4, to DIN 46320 with metric connection thread to DIN EN 60423 and ISO 68. Pressure rings made of electrogalvanised and transparently passivated steel. NR/SBR sealing ring.

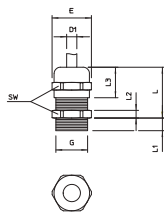
Protection rating: with connection thread sealing ring IP 65, without connection thread sealing ring IP 54.

With cutting ring.

* Prices according to DEL notation.



Cable gland, PG thread



Type	Thread	Dimension L1 mm	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC PG7 MS	Pg 7	5	50	1.000	2085607
V-TEC PG9 MS	Pg 9	6	50	1.600	2085615
V-TEC PG11 MS	Pg 11	6	50	2.300	2085623
V-TEC PG13 MS	Pg 13,5	6,5	50	2.800	2085631
V-TEC PG16 MS	Pg 16	6,5	25	3.400	2085658
V-TEC PG21 MS	Pg 21	7	25	6.000	2085666
V-TEC PG29 MS	Pg 29	8	20	13.000	2085674
V-TEC PG36 MS	Pg 36	9	10	21.000	2085682
V-TEC PG42 MS	Pg 42	10	5	23.500	2085690
V-TEC PG48 MS	Pg 48	10	5	31.500	2085704

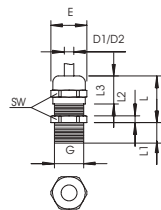
CuZn Brass

N Nickel-plated

Dimensions

G	D1 mm	D2 mm	SW mm	E mm	L max. mm	L1 mm	L2 mm	L3 mm
Pg 7	2.5-6.5	3-6.5	14	15.5	20	5	3	12
Pg 9	2.5-8	3.5-8	17	18.9	22	6	3	14
Pg 11	3.5-10	4.5-10	20	22.2	24	6	3	15
Pg 13.5	5-12	6-12	22	24.4	25	6.5	3.5	15
Pg 16	7-14	7-14	24	26.7	27	6.5	4	17
Pg 21	9-18	12-18	30	33.5	33	7	4.5	20
Pg 29	14-25	17-25	40	43.5	39	8	5	23.5
Pg 36	18-32	20-32	50	54	49	9	5.5	29
Pg 42	24-38	26-38	57	61	52	10	6	31
Pg 48	30-44	30-44	64	69	52.5	10	6.5	31

Cable gland, long PG thread



Type	Thread	Dimension L1 mm	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC L PG9 MS	Pg 9	10	50	1.740	2085739
V-TEC L PG11 MS	Pg 11	10	50	2.550	2085747
V-TEC L PG13 MS	Pg 13,5	10	50	3.030	2085755
V-TEC L PG16 MS	Pg 16	10	25	3.660	2085763
V-TEC L PG21 MS	Pg 21	12	25	6.580	2085771
V-TEC L PG29 MS	Pg 29	12	10	13.660	2085798
V-TEC L PG48 MS	Pg 48	15	5	37.900	2085836

CuZn Brass

N Nickel-plated

Dimensions

G	D1 mm	D2 mm	SW mm	E mm	L max. mm	L1 mm	L2 mm	L3 mm
Pg 9	2.5-8	3.5-8	17	18.9	22	10	3	14
Pg 11	3.5-10	4.5-10	20	22.2	24	10	3	15
Pg 13.5	5-12	6-12	22	24.4	25	10	3.5	16
Pg 16	7-14	7-14	24	26.7	27	10	4	17
Pg 21	9-18	12-18	30	33.5	33	12	4.5	20
Pg 29	14-25	17-25	40	43.5	39	12	5	23
Pg 48	30-44	30-44	64	69	52.5	15	6.5	31

Cable gland, PG cutting ring

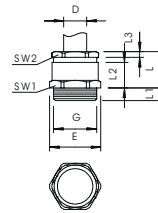
IP 54 IP 65 Pg

Type	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
162 MS PG 7	Pg 7	50	1.000	2082620
162 MS PG42	Pg 42	5	25.000	2082624
162 MS PG48	Pg 48	5	33.100	2082632

CuZn Brass

N Nickel-plated

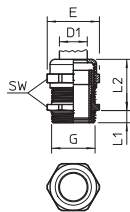
G	D mm	SW1 mm	SW2 mm	E mm	L1 mm	L2 mm
Pg 42	30 - 42	57	54	61	33	10
Pg 48	36 - 47	64	60	69	44	10



Dimensions



Cable gland, EMC, metric



Type	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC VM12 EMV	M12 x 1,5	50	1.362	2086203
V-TEC VM16 EMV	M16 x 1,5	50	1.849	2086207
V-TEC VM20 EMV	M20 x 1,5	25	3.473	2086211
V-TEC VM25 EMV	M25 x 1,5	25	5.280	2086215
V-TEC VM32 EMV	M32 x 1,5	20	7.470	2086219
V-TEC VM40 EMV	M40 x 1,5	5	12.880	2086223
V-TEC VM50 EMV	M50 x 1,5	5	26.165	2086227
V-TEC VM63 EMV	M63 x 1,5	5	33.990	2086231

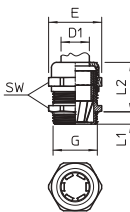
CuZn Brass

N Nickel-plated

Dimensions

G	D1 mm	SW mm	E mm	L max. mm	L1 mm
M12 x 1.5	3-6	14	15.5	25	5
M16 x 1.5	5-9	17	19	30	5
M20 x 1.5	9-13	22	24	33.5	6
M25 x 1.5	11-16	27	30	36.5	7
M32 x 1.5	14-21	34	36	38	8
M40 x 1.5	19-27	43	46	49.5	8
M50 x 1.5	24-35	55	60	49.5	9
M63 x 1.5	32-42	65	70	52.5	10

Cable gland, EMC spring contact, metric



Type	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC VM16 EMV-K	M16x1,5	50	2.044	2086165
V-TEC VM20 EMV-K	M20x1,5	25	3.564	2086169
V-TEC VM25 EMV-K	M25x1,5	25	5.918	2086173
V-TEC VM32 EMV-K	M32x1,5	20	9.880	2086177
V-TEC VM40 EMV-K	M40x1,5	5	17.200	2086181
V-TEC VM50 EMV-K	M50x1,5	5	13.735	2086185
V-TEC VM63 EMV-K	M63x1,5	5	16.780	2086189

CuZn Brass

N Nickel-plated

Cable gland, M cutting ring

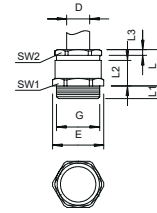
IP 54 IP 65 M

Type	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
162 MS M12	M12x1,5	50	1.200	2083706
162 MS M16	M16 x 1,5	50	1.814	2083712
162 MS M20	M20 x 1,5	25	2.520	2083716
162 MS M25	M25 x 1,5	25	3.388	2083720
162 MS M32	M32 x 1,5	10	5.004	2083724
162 MS M40	M40 x 1,5	10	8.720	2083728
162 MS M50	M50 x 1,5	5	15.800	2083732
162 MS M63	M63 x 1,5	5	21.600	2083736

CuZn Brass

N Nickel-plated

G	D mm	SW1 mm	SW2 mm	E mm	L1 mm	L2 mm
M16 x 1.5	5-9.5	17	15	18.9	7	16
M20 x 1.5	7.5-13.5	22	20	24.4	7	18
M25 x 1.5	10-20.5	32	28	35.5	8	22
M32 x 1.5	18-29	40	37	43.5	8.5	24
M40 x 1.5	24-31	50	47	54	8.5	29
M50 x 1.5	30-42	58	54	62.1	9.5	33
M63 x 1.5	36-47	65	60	69	10	10



Dimensions

Cable gland, PG cutting ring

IP 54 IP 65 Pg

Type	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
162 MS PG 7	Pg 7	50	1.000	2082620
162 MS PG 9	Pg 9	50	1.250	2082519
162 MS PG11	Pg 11	50	1.960	2082500
162 MS PG13.5	Pg 13,5	50	2.630	2082527
162 MS PG16	Pg 16	25	3.190	2082543
162 MS PG21	Pg 21	25	5.240	2082578
162 MS PG29	Pg 29	10	9.260	2082594
162 MS PG36	Pg 36	10	16.490	2082616
162 MS PG42	Pg 42	5	25.000	2082624
162 MS PG48	Pg 48	5	33.100	2082632

CuZn Brass

N Nickel-plated

Cable gland with hexagonal intermediate connector, shape C4, to DIN 46320 with Pg connection thread to DIN 40430.

Pressure rings made of electrogalvanised and transparently passivated steel.

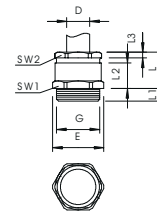
NR/SBR sealing ring.

Protection rating: with connection thread sealing ring IP 65, without connection thread sealing ring IP 54.

With cutting ring.

* Prices according to DEL notation.

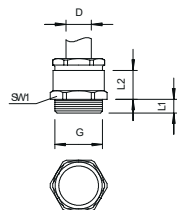
G	D mm	SW1 mm	SW2 mm	E mm	L1 mm	L2 mm	L2 mm	L3 mm
Pg 9	5-9.5	17	15	18.9	16	6	10.5	2.5
Pg 11	7.5-11.5	20	18	22.2	17	6	11	3
Pg 13.5	7.5-13.5	22	20	24.4	18	6.5	12.5	3
Pg 16	7.5-15.5	24	22	26.7	19	6.5	13.5	3
Pg 21	10-20.5	30	28	33.5	22	7	15	3.5
Pg 29	18-29	40	37	43.5	24	8	16.5	4
Pg 36	24-37	50	47	54	29	9	19.5	4.5
Pg 42	30-42	57	54	61	33	10	22	6
Pg 48	36-47	64	60	69	44	10	23	6



Dimensions



Cable gland, small sealing ring, M



IP 54 IP 65 M

Type	Thread	Surface finish	Pack. pcs	Weight kg/100 pcs.	Item No.
163 MS M12	M12 x 1,5	Nickel-plated	50	0.850	2083612
163 MS M16	M16 x 1,5	Nickel-plated	50	1.160	2083620
163 MS M20	M20 x 1,5	Nickel-plated	25	2.210	2083639
163 MS M25	M25 x 1,5	Nickel-plated	25	4.550	2083647
163 MS M32	M32 x 1,5	Nickel-plated	10	8.210	2083655
163 MS M40	M40 x 1,5	Nickel-plated	10	14.230	2083663
163 MS M50	M50 x 1,5	Nickel-plated	5	20.540	2083671
163 MS M63	M63 x 1,5	Nickel-plated	5	30.000	2083698

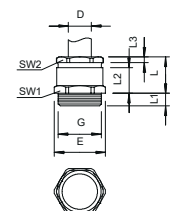
CuZn Brass

N Nickel-plated

Dimensions

G	D mm	SW1 mm	SW2 mm	E mm	L1 mm	L2 mm
M12 x 1.5	5-7	14	13	15.5	7	10
M16 x 1.5	6-8	17	15	18.9	7	10.5
M20 x 1.5	8-10	22	20	24.4	7	12.5
M25 x 1.5	17-19	34	28	35.5	8	15
M32 x 1.5	24-26	42	37	43.5	8.5	16.5
M40 x 1.5	31-33	52	47	54	8.5	19.5
M50 x 1.5	37-39	57	54	62.1	10.5	23
M63 x 1.5	43-45	65	60	69	10.5	23

Cable gland, small sealing ring, PG



IP 54 IP 65 Pg

Type	Thread	Surface finish	Pack. pcs	Weight kg/100 pcs.	Item No.
163 MS PG 7	Pg 7	Nickel-plated	50	0.850	2082071
163 MS PG 9	Pg 9	Nickel-plated	50	1.160	2082098
163 MS PG11	Pg 11	Nickel-plated	25	1.690	2082101
163 MS PG13.5	Pg 13,5	Nickel-plated	25	2.210	2082136
163 MS PG16	Pg 16	Nickel-plated	25	2.960	2082160
163 MS PG21	Pg 21	Nickel-plated	25	4.550	2082217
163 MS PG29	Pg 29	Nickel-plated	10	8.210	2082292
163 MS PG36	Pg 36	Nickel-plated	10	14.230	2082365
163 MS PG42	Pg 42	Nickel-plated	5	20.540	2082411
163 MS PG48	Pg 48	Nickel-plated	5	30.050	2082489

CuZn Brass

N Nickel-plated

Dimensions

G	D mm	SW1 mm	SW2 mm	E mm	L max. mm	L1 mm	L2 mm	L3 mm
Pg 7	5-7	14	13	15.5	15	5	10	2.5
Pg 9	6-8	17	15	18.9	16	6	10.5	2.5
Pg 11	8-10	20	18	22.2	17	6	11	3
Pg 13.5	8-10	22	20	24.4	18	6.5	12	3
Pg 16	8-10	24	22	26.7	19	6.5	13.5	3
Pg 21	17-19	30	28	33.5	22	7	15	3.5
Pg 29	24-26	40	37	43.5	24	8	16.5	4
Pg 36	31-33	50	47	54	29	9	19.5	4.5
Pg 42	37-39	57	54	61	33	10	22	6
Pg 48	43-45	64	60	69	34	10	23	6

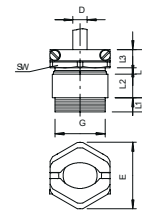
Cable gland, PG strain relief

IP 54 IP 65 Pg

Type	Thread	Surface finish	Pack. pcs	Weight kg/100 pcs.	Item No.
159 MS PG 7	Pg 7	Nickel-plated	50	1.960	2046075
159 MS PG 9	Pg 9	Nickel-plated	50	2.460	2046091
159 MS PG11	Pg 11	Nickel-plated	50	3.250	2046113
159 MS PG13.5	Pg 13,5	Nickel-plated	50	3.830	2046121
159 MS PG16	Pg 16	Nickel-plated	25	5.700	2046164
159 MS PG21	Pg 21	Nickel-plated	25	7.590	2046210
159 MS PG29	Pg 29	Nickel-plated	10	14.970	2046296
159 MS PG36	Pg 36	Nickel-plated	5	22.030	2046369
159 MS PG42	Pg 42	Nickel-plated	5	41.070	2046423
159 MS PG48	Pg 48	Nickel-plated	4	46.250	2046482

CuZn Brass

N Nickel-plated

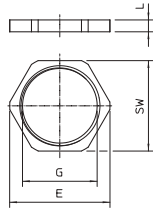


G	D	SW1	SW2	E	L max.	L1	L2	L3
	mm	mm	mm	mm	mm	mm	mm	mm
Pg 7	5-7	14	16	17.5	22	5	10	9.3
Pg 9	6-8	17	19	20.5	24	6	10.5	10.6
Pg 11	8-10	20	22	24.5	25	6	11	11.3
Pg 13.5	8-10	22	24	27	26	6.5	12.5	11.3
Pg 16	8-10	24	26	29	28	6.5	13.5	11.8
Pg 21	17-19	30	33	37	32	7	15	13.3
Pg 29	24-26	40	42	46.5	34	8	16.5	13.8
Pg 36	31-33	50	52	57	40	9	19.5	15.8
Pg 42	37-39	57	59	65	43	10	22	16.3
Pg 48	43-45	64	64	70	44	10	23	16.3

Dimensions



Locknut, metric thread



M

Type	Thread	SW mm	Dimension E mm	Dimension 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
169 MS M63	M63 x 1,5	70	77.6	6	25	5.720	2091682
169 MS M75	M75 x 1,5	90	100	8	3	16.800	2091685

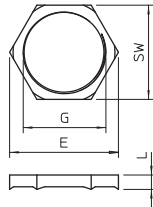
CuZn Brass

N Nickel-plated

Locknuts DIN 46319 with metric thread IEC 423.

* Prices according to DEL notation.

Locknut, metric thread with cutting teeth



M

Type	Thread	SW mm	Dimension E mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
169 MSS M12	M12x1,5	15	17.3	4.5	50	0.360	2091705
169 MSS M16	M16x1,5	19	21.9	4.5	50	0.490	2091709
169 MSS M20	M20x1,5	24	27.7	4.5	50	0.760	2091713
169 MSS M25	M25x1,5	30	34.6	4.5	50	1.190	2091717
169 MSS M32	M32x1,5	36	41.5	4.5	50	1.230	2091721
169 MSS M40	M40x1,5	46	53.1	5	25	2.590	2091725
169 MSS M50	M50x1,5	60	69.2	5	25	5.070	2091729
169 MSS M63	M63x1,5	70	80.8	6	25	5.950	2091733

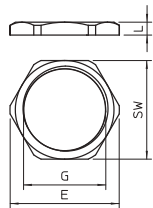
CuZn Brass

N Nickel-plated

Locknuts DIN 46319 with metric thread IEC 423.

* Prices according to DEL notation.

Locknut, PG thread



Pg

Type	Thread	SW mm	Dimension E mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
169 MS PG 7	Pg 7	15	16.6	2,8	100	0.180	2091070
169 MS PG 9	Pg 9	18	20	2,8	100	0.260	2091097
169 MS PG11	Pg 11	21	23.5	3	100	0.290	2091119
169 MS PG13.5	Pg 13,5	23	25.5	3	100	0.364	2091135
169 MS PG16	Pg 16	26	29	3	100	0.460	2091151
169 MS PG21	Pg 21	32	35.5	3,5	100	0.720	2091216
169 MS PG29	Pg 29	41	45	4	100	1.320	2091291
169 MS PG36	Pg 36	51	56	5	50	2.100	2091364
169 MS PG42	Pg 42	60	65	5	50	3.260	2091429
169 MS PG48	Pg 48	64	69	5,5	25	3.270	2091488

CuZn Brass

N Nickel-plated

Locknuts, part M to DIN 46320 with Pg thread to DIN 40430. * Price according to DEL notation.

Screw plug, metric thread

M

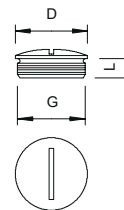
Type	Thread	Dimension D mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
168 MS M12	M12 x 1,5	16	5	100	0.390	2090511
168 MS M16	M16 x 1,5	20	6	100	0.640	2090538
168 MS M20	M20 x 1,5	22	6.5	100	0.930	2090546
168 MS M25	M25 x 1,5	28	7	50	1.850	2090554
168 MS M32	M32 x 1,5	35	8	50	2.810	2090562
168 MS M40	M40 x 1,5	45	8	50	5.290	2090570
168 MS M50	M50 x 1,5	55	9	25	6.310	2090589
168 MS M63	M63 x 1,5	68	10	25	12.570	2090597

CuZn Brass

N Nickel-plated

Screw plug in accordance with DIN 46320, with metric thread to DIN EN 60423 or ISO 68.

* Prices according to DEL notation.



Screw plug, PG thread

Pg

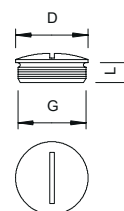
Type	Thread	Dimension D mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
168 MS PG 7	Pg 7	14	5	100	0.410	2090074
168 MS PG 9	Pg 9	17	6	100	0.530	2090090
168 MS PG11	Pg 11	20	6	100	0.840	2090112
168 MS PG13	Pg 13,5	22	6.5	100	0.930	2090139
168 MS PG16	Pg 16	24	6.5	100	1.300	2090163
168 MS PG21	Pg 21	30	7	50	2.420	2090201
168 MS PG29	Pg 29	39	8	50	4.310	2090295
168 MS PG36	Pg 36	50	9	50	7.800	2090368
168 MS PG42	Pg 42	57	10	25	11.710	2090422
168 MS PG48	Pg 48	64	10	25	15.260	2090481

CuZn Brass

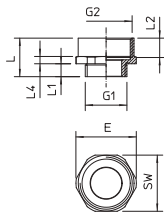
N Nickel-plated

Screw plug in accordance with DIN 46320, with Pg thread to DIN EN 40430.

* Prices according to DEL notation.



Expansion piece, metric thread



M

Type	External thread	Internal thread	Pack. pcs	Weight kg/100 pcs.	Item No.
165 ADA M12-16	M12	M16	50	1.030	2088280
165 ADA M16-20	M16	M20	50	1.430	2088281
165 ADA M20-25	M20	M25	50	2.090	2088282
165 ADA M25-32	M25	M32	50	2.710	2088283
165 ADA M32-40	M32	M40	25	5.180	2088284
165 ADA M40-50	M40	M50	10	10.150	2088285
165 ADA M 50-63	M50	M63	5	13.060	2088286

CuZn Brass

N Nickel-plated

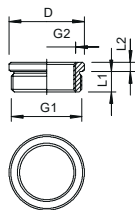
The areas of application for brass cable glands range from junction boxes as a distribution/-connection box up to large industrial applications for safe floor routing to switchgear cabinets with a control and distribution function. For high mechanical requirements, OBO can offer the entire family of extensions (Part K) to DIN 46320.

* Prices according to DEL notation.

Dimensions

Type	External thread	Internal thread	SW mm	Dimension E mm	Dimension L mm	Dimension L1 mm	Dimension L2 mm	Dimension D mm
165 ADA M12-16	M12	M16	18	20	16	5	7	8
165 ADA M16-20	M16	M20	22	24.5	16.7	5	8	12
165 ADA M20-25	M20	M25	27	29	18.5	6.4	9	15
165 ADA M25-32	M25	M32	34	35.8	20.7	7.4	8	20.8
165 ADA M32-40	M32	M40	42	45.5	23.8	8	10	26
165 ADA M40-50	M40	M50	52	58	30.5	8.2	12.5	33.8
165 ADA M 50-63	M50	M63	65	69.9	33	9.2	16	43.4

Reduction, metric thread



M

Type	External thread	Internal thread	Dimension D mm	Thread length mm	Dimension L2 mm	Pack. pcs	Weight kg/100 pcs.	Item No.
167 R MS M16-12	M16	M12	20	6	2.5	50	0.880	2089505
167 R MS M20-12	M20	M12	24	6.5	3.5	50	1.340	2089513
167 R MS M20-16	M20	M16	24	6.5	3.5	50	1.480	2089521
167 R MS M25-16	M25	M16	30	7	3	50	3.220	2089548
167 R MS M25-20	M25	M20	30	7	3	50	2.700	2089556
167 R MS M32-20	M32	M20	39	8	3.5	50	6.120	2089564
167 R MS M32-25	M32	M25	39	8	3.5	50	4.500	2089572
167 R MS M40-25	M40	M25	50	6	3.5	25	9.960	2089580
167 R MS M40-32	M40	M32	50	9	3.5	25	6.840	2089599
167 R MS M50-32	M50	M32	57	10	4	25	16.300	2089602
167 R MS M50-40	M50	M40	57	10	4	25	10.250	2089610
167 R MS M63-40	M63	M40	64	10	4	10	30.080	2089629
167 R MS M63-50	M63	M50	64	10	4	10	10.090	2089637

CuZn Brass

N Nickel-plated

Reduction (Part H) in accordance with DIN 46320, with metric thread to DIN EN 60423 or ISO 68.

* Prices according to DEL notation.

Reduction, PG thread

Pg

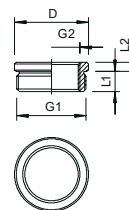
Type	External thread	Internal thread	Dimension D mm	Thread length mm	Dimension L2 mm	Pack. pcs	Weight kg/100 pcs.	Item No.
167 R MS PG9-7	Pg 9	Pg 7	17	6	2.5	50	0.430	2089025
167 R MS PG11-7	Pg 11	Pg 7	20	6	2.5	50	1.030	2089041
167 R MS PG11-9	Pg 11	Pg 9	20	6	2.5	50	0.650	2089076
167 R MS PG13-7	Pg 13,5	Pg 7	22	6.5	2.5	50	1.520	2089092
167 R MS PG13-9	Pg 13,5	Pg 9	22	6.5	2.5	50	1.120	2089114
167 R MS PG13-11	Pg 13,5	Pg 11	22	6.5	2.5	50	0.470	2089130
167 R MS PG16-9	Pg 16	Pg 9	24	6.5	3	50	1.730	2089157
167 R MS PG16-11	Pg 16	Pg 11	24	6.5	3	50	1.050	2089173
167 R MS PG16-13	Pg 16	Pg 13,5	24	6.5	3	50	0.656	2089203
167 R MS PG21-11	Pg 21	Pg 11	30	7	3	50	2.960	2089238
167 R MS PG21-13	Pg 21	Pg 13,5	30	7	3	50	2.520	2089254
167 R MS PG21-16	Pg 21	Pg 16	30	7	3	50	1.964	2089270
167 R MS PG29-16	Pg 29	Pg 16	39	8	3.5	50	6.560	2089297
167 R MS PG29-21	Pg 29	Pg 21	39	8	3.5	50	4.273	2089319
167 R MS PG36-21	Pg 36	Pg 21	50	9	3.5	25	11.660	2089335
167 R MS PG36-29	Pg 36	Pg 29	50	9	3.5	25	6.980	2089351
167 R MS PG42-36	Pg 42	Pg 36	57	10	4	25	6.750	2089408
167 R MS PG48-36	Pg 48	Pg 36	64	10	4	25	12.840	2089424
167 R MS PG48-42	Pg 48	Pg 42	64	10	4	25	6.230	2089440

CuZn Brass

N Nickel-plated

Reduction (Part H) to DIN 46320, with Pg thread to DIN 40430, as a transition from a PG thread hole to a smaller cable gland.

* Prices according to DEL notation.



Adapter expansion M - PG

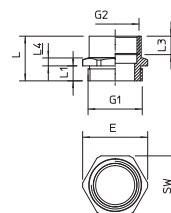
M Pg

Type	External thread	Internal thread	Pack. pcs	Weight kg/100 pcs.	Item No.
165 ADA M12-PG7	M12	PG7	20	0.590	2088301
165 ADA M16-PG9	M16	PG9	20	9.110	2088312
165 ADA M16-PG11	M16	PG11	20	2.220	2088302
165 ADA M20-PG11	M20	PG11	20	1.760	2088316
165 ADA M20-PG13	M20	PG13,5	20	1.320	2088303
165 ADA M20-PG16	M20	PG16	20	1.650	2088318
165 ADA M25-PG16	M25	PG16	20	2.540	2088304
165 ADA M25-PG21	M25	PG21	20	2.330	2088324
165 ADA M32-PG29	M32	PG29	10	4.850	2088330
165 ADA M40-PG29	M40	PG29	10	7.150	2088306
165 ADA M50-PG42	M50	PG42	10	10.110	2088307
165 ADA M63-PG48	M63	PG48	4	20.080	2088348

CuZn Brass

N Nickel-plated

Adapter for converting a metric threaded drill hole to a Pg threaded drill hole.

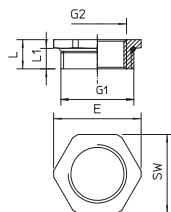


Dimensions

Type	External thread	Internal thread	SW mm	Dimension E mm	Dimension L mm	Dimension L1 mm	Dimension L3 mm	Dimension D mm
165 ADA M12-PG7	M12	PG7	14	15.5	16	6	9	8
165 ADA M16-PG9	M16	PG9	17	19	16.5	5	7	12
165 ADA M16-PG11	M16	PG11	22	24.5	16	6	7.9	12.5
165 ADA M20-PG11	M20	PG11	22	24.5	17.6	6.5	10.2	15
165 ADA M20-PG13	M20	PG13,5	22	24.5	19	6.5	11.5	16
165 ADA M20-PG16	M20	PG16	14.9	23.9	19.6	6	9	11.5
165 ADA M25-PG16	M25	PG16	27	30	20.5	7	12.5	18.3
165 ADA M25-PG21	M25	PG21	30	33.5	22.2	7	13.5	20.5
165 ADA M32-PG29	M32	PG29	40	44	24.4	8	15	27.5
165 ADA M40-PG29	M40	PG29	43	46.2	24.4	8	15	31.8
165 ADA M50-PG42	M50	PG42	57	60.8	31	9	20	44
165 ADA M63-PG48	M63	PG48	65	69.8	33	10	21	52.2

VBS_Typ 0A / en / 2019/05/21 15:42:50 (LLE:export_02463) / 2019/05/21 15:43:10 15:43:10

Adapter reduction M - PG



M **Pg**

Type	External thread	Internal thread	Pack. pcs	Weight kg/100 pcs.	Item No.
165 ADA M16-PG7	M16	PG7	20	5.130	2088310
165 ADA M20-PG9	M20	PG9	20	1.100	2088314
165 ADA M25-PG11	M25	PG11	20	1.940	2088320
165 ADA M25-PG13	M25	PG13,5	20	1.610	2088322
165 ADA M32-PG16	M32	PG16	10	3.790	2088328
165 ADA M32-PG21	M32	PG21	10	1.730	2088305
165 ADA M40-PG21	M40	PG21	10	6.980	2088334
165 ADA M50-PG29	M50	PG29	5	11.220	2088340
165 ADA M63-PG36	M63	PG36	5	16.950	2088344
165 ADA M63-PG42	M63	PG42	5	10.460	2088346

CuZn Brass

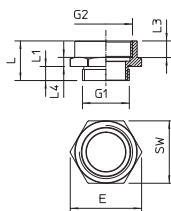
N Nickel-plated

Adapter for reducing a metric threaded drill hole to a smaller Pg threaded drill hole.

Dimensions

Type	External thread	Internal thread	SW mm	Dimension E mm	Dimension L mm	Dimension L1 mm
165 ADA M16-PG7	M16	PG7	17	19	8	5
165 ADA M20-PG9	M20	PG9	22	24.5	9	6
165 ADA M25-PG11	M25	PG11	27	30	10	7
165 ADA M25-PG13	M25	PG13,5	27	30	10	7
165 ADA M32-PG16	M32	PG16	34	36	11	8
165 ADA M32-PG21	M32	PG21	34	36	11	8
165 ADA M40-PG21	M40	PG21	43	46	12	8
165 ADA M50-PG29	M50	PG29	55	60	13	9
165 ADA M63-PG36	M63	PG36	65	69	14.2	10
165 ADA M63-PG42	M63	PG42	65	70	14.2	10

Adapter expansion PG - M



M **Pg**

Type	External thread	Internal thread	Pack. pcs	Weight kg/100 pcs.	Item No.
165 ADA PG9-M16	PG9	M16	20	1.160	2088291
165 ADA PG11-M16	PG11	M16	20	1.000	2088292
165 ADA PG13-M20	PG13,5	M20	20	2.040	2088293
165 ADA PG16-M20	PG16	M20	20	3.080	2088294
165 ADA PG16-M25	PG16	M25	20	3.320	2088295
165 ADA PG21-M25	PG21	M25	10	4.490	2088296
165 ADA PG21-M32	PG21	M32	10	4.310	2088297
165 ADA PG29-M40	PG29	M40	10	4.830	2088298
165 ADA PG36-M50	PG36	M50	5	9.250	2088299

CuZn Brass

N Nickel-plated

Adapter for converting a Pg threaded drill hole to a larger metric threaded drill hole.

Dimensions

Type	External thread	Internal thread	SW mm	Dimension E mm	Dimension L mm	Dimension L1 mm	Dimension L3 mm	Dimension D mm
165 ADA PG9-M16	PG9	M16	19	21	16	6	7.5	12
165 ADA PG11-M16	PG11	M16	20	22	17	6	10	12
165 ADA PG13-M20	PG13,5	M20	24	26	17.5	6.5	8.5	16
165 ADA PG16-M20	PG16	M20	27	29	17.5	6.5	8.3	18.4
165 ADA PG16-M25	PG16	M25	30	33.5	18.5	6.6	9.5	18.4
165 ADA PG21-M25	PG21	M25	32	33.5	19	7	10	23
165 ADA PG21-M32	PG21	M32	36	39	20	7	10.5	22.7
165 ADA PG29-M40	PG29	M40	43	46	21	8	10.8	32
165 ADA PG36-M50	PG36	M50	55	60	23	9	10.5	42

Adapter reduction PG - M

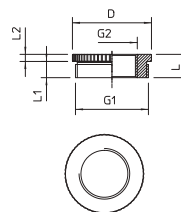
M Pg

Type	External thread	Internal thread	Pack. pcs	Weight kg/100 pcs.	Item No.
165 ADA PG29-M25	PG29	M25	20	5.730	2088289

CuZn Brass

N Nickel-plated

Adapter for converting a Pg threaded drill hole to a metric threaded drill hole.



Dimensions

Type	External thread	Internal thread	Dimension D mm	Dimension L mm	Dimension L1 mm
165 ADA PG29-M25	PG29	M25	39	11.5	8

Pressure ring, PG thread

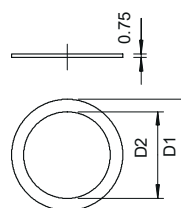
Pg

Type	Size mm	Dimension D1 mm	Dimension D2 mm	Pack. pcs	Weight kg/100 pcs.	Item No.
107 D PG7 GTP	Pg 7	11	8	100	0.020	2027070
107 D PG9 GTP	Pg 9	13.5	10	100	0.038	2027097
107 D PG11 GTP	Pg 11	16.5	12	100	0.061	2027119
107 D PG13.5 GTP	Pg 13,5	18,5	14	100	0.066	2027135
107 D PG16 GTP	Pg 16	20,5	16	100	0.074	2027151
107 D PG21 GTP	Pg 21	26	21	50	0.100	2027216

St Steel

GTP Electrogalvanised, transparently passivated

Pressure ring, Part 7, to DIN 46320, suitable for plastic and brass glands to DIN 46320.



Connection thread sealing ring, metric

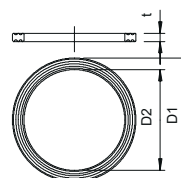
M



Type	Size mm	Dimension D1 mm	Dimension D2 mm	Dimension t mm	Pack. pcs	Weight kg/100 pcs.	Item No.
107 F M12 PE	M12	16.3	12	1	100	0.017	2030004
107 F M16 PE	M16	20.9	16	1.1	100	0.018	2030008
107 F M20 PE	M20	25.1	20	1.1	100	0.030	2030012
107 F M25 PE	M25	31.3	25	1.4	100	0.038	2030016
107 F M32 PE	M32	37.6	32	1.7	100	0.105	2030020
107 F M40 PE	M40	49.1	40	1.7	100	0.200	2030024
107 F M50 PE	M50	60.1	50	2	100	0.250	2030028
107 F M63 PE	M63	73.8	63	2	100	0.290	2030032

PE Polyethylene

Connection thread sealing ring, suitable for all plastic cable glands with metric connection thread to DIN EN 60423 or ISO 68. The internal diameters of the sealing rings are designed in such a way that they can be pre-mounted in a captive manner.



Connection thread sealing ring, metric

M

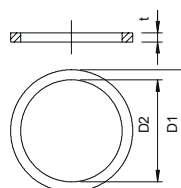
Type	Size mm	Dimension D1 mm	Dimension D2 mm	Dimension t mm	Pack. pcs	Weight kg/100 pcs.	Item No.
170 M16	M16	19.9	16	2	100	0.040	2088428
170 M20	M20	24	20	2	100	0.066	2088436
170 M25	M25	30	25	3	100	0.170	2088444
170 M32	M32	38	32	3	100	0.270	2088452

FA Fibre-proof material DIN 28091

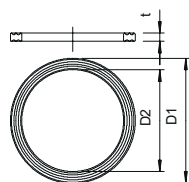
Asbestos-free material.

Connection thread sealing ring, Part 9, to DIN 46320, suitable for all brass cable glands with metric connection thread to DIN EN 60423 or ISO 68.

Colour: green, graphited on one side.



Connection thread sealing ring, PG

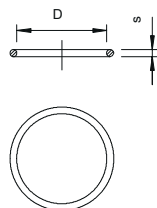


Type	Size mm	Dimension D1 mm	Dimension D2 mm	Dimension t mm	Pack. pcs	Weight kg/100 pcs.	Item No.
107 F PG7 PE	Pg 7	16.5	12.1	1.6	100	0.010	2030071
107 F PG9 PE	Pg 9	19	14.7	1.6	100	0.013	2030098
107 F PG11 PE	Pg 11	23	18	1.8	100	0.022	2030101
107 F PG13.5 PE	Pg 13,5	25	19.8	1.8	100	0.030	2030136
107 F PG16 PE	Pg 16	27	21.8	1.8	100	0.038	2030160
107 F PG21 PE	Pg 21	34	27.5	2.2	100	0.049	2030217
107 F PG29 PE	Pg 29	44	36.2	2.2	100	0.105	2030292
107 F PG36 PE	Pg 36	55.5	46.2	2.7	100	0.200	2030365
107 F PG48 PE	Pg 48	69.5	58.5	3.2	100	0.290	2030489

PE Polyethylene

Connection thread sealing ring, in accordance with Part 9 to DIN 46320, however, dimensions may, according to material or function, deviate, suitable for all plastic cable glands with PG connection thread to DIN EN 40430, the internal diameter of the sealing rings are designed so that they can be captively pre-mounted.

O sealing ring for metric connection thread

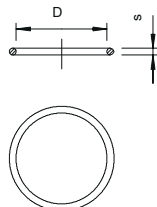


Type	Size mm	Dimension D mm	Dimension S mm	Pack. pcs	Weight kg/100 pcs.	Item No.
171 M20	M20	18	1.5	100	0.011	2088738
171 M25	M25	22	1.5	100	0.012	2088746
171 M32	M32	29	2	100	0.035	2088754

NBR Nitrile rubber

O sealing rings, suitable as connection thread sealing rings for all plastic and brass cable glands with metric connection thread to DIN EN 60423 or ISO 68. The rings can be captively pre-mounted.

O sealing ring for PG connection thread



Type	Size mm	Dimension D mm	Dimension S mm	Pack. pcs	Weight kg/100 pcs.	Item No.
171 PG 9	Pg 9	13	1.5	100	0.008	2088819
171 PG11	Pg 11	16	1.5	100	0.010	2088827
171 PG13.5	Pg 13,5	18	1.5	100	0.011	2088835
171 PG16	Pg 16	20	1.5	100	0.012	2088843
171 PG21	Pg 21	25	2	100	0.027	2088851
171 PG29	Pg 29	33	2	100	0.035	2088878
171 PG36	Pg 36	43	2	50	0.045	2088886
171 PG42	Pg 42	50	2	50	0.052	2088894

NBR Nitrile rubber

O sealing rings, suitable as connection thread sealing rings for all plastic and brass cable glands with PG connection thread to DIN EN 60423 or ISO 68. The rings can be captively pre-mounted.

Sealing plate, PG

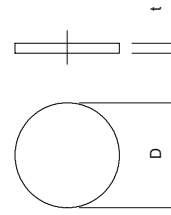
Pg

Type	Size mm	Dimen- sion D mm	Dimen- sion t mm	Pack. pcs	Weight kg/100 pcs.	Item No.
107 V PG 7 PVC	Pg 7	11	0.5	100	0.013	2029707
107 V PG 9 PVC	Pg 9	13.5	0.5	100	0.020	2029715
107 V PG11 PVC	Pg 11	16.5	0.5	100	0.030	2029723
107 V PG13.5 PVC	Pg 13,5	18.5	0.5	100	0.038	2029731
107 V PG16 PVC	Pg 16	20.5	0.5	100	0.048	2029758
107 V PG21 PVC	Pg 21	26	0.5	100	0.075	2029766
107 V PG29 PVC	Pg 29	35	1	100	0.135	2029774

PVC Polyvinylchloride

The sealing plate offers both mechanical protection and the maintenance of the protection rating of plastic and metal cable glands to DIN 46320 before cable installation.

Application: the discs are placed between the pressure screw and the pressure ring. If the safe maintenance of IP65 is required, we recommend placing the discs between the pressure ring and the sealing ring. To mount the cable, remove the discs – they can be reused.



Lightning Protection and Earthing System

BS Components



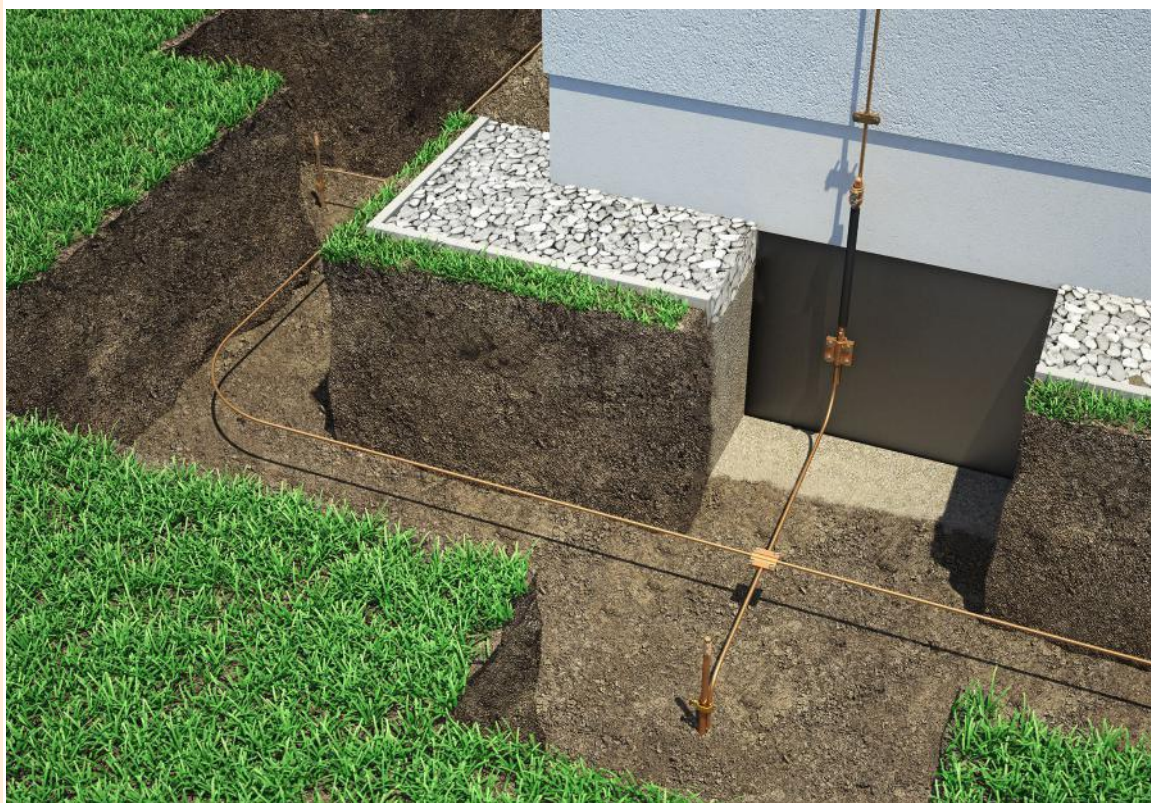
Earthing and Lightning protection system from OBO

OBO Bettermann is one of the most experienced manufacturers of Earthing, Lightning and Surge Protection systems. For almost 100 years, OBO has been developing and producing standard-compliant Earthing and Lightning protection systems. Former national standards have resulted in differing installation practices around the world.

The first version of the current international standard IEC 62305 for lightning protection was published in 2006. After a relatively short transition period, the previously valid BS 6651 was replaced by the national version of IEC 62305. The second version of the now valid IEC 62305 appeared in 2010. OBO Bettermann can offer safe products and solutions for lightning protection applications and installations according to the valid lightning protection standard IEC 62305.

The new OBO Bettermann products for earthing systems are based on the old British lightning protection standard. With the now supplemented TBS portfolio for earthing systems, it is possible to cover a range of applications with type A or type B earthing systems according to IEC 62305-3.

The current OBO Bettermann TBS Catalogue and the OBO website contain additional interesting TBS products for earthing, lightning protection, equipotential bonding and surge protection.





“The safest way to protect yourself against lightning in a house is the erection of a lightning arrester, which carries the electrical matter from the thundercloud safely down into the earth without allowing it to touch even a single beam of the house.”

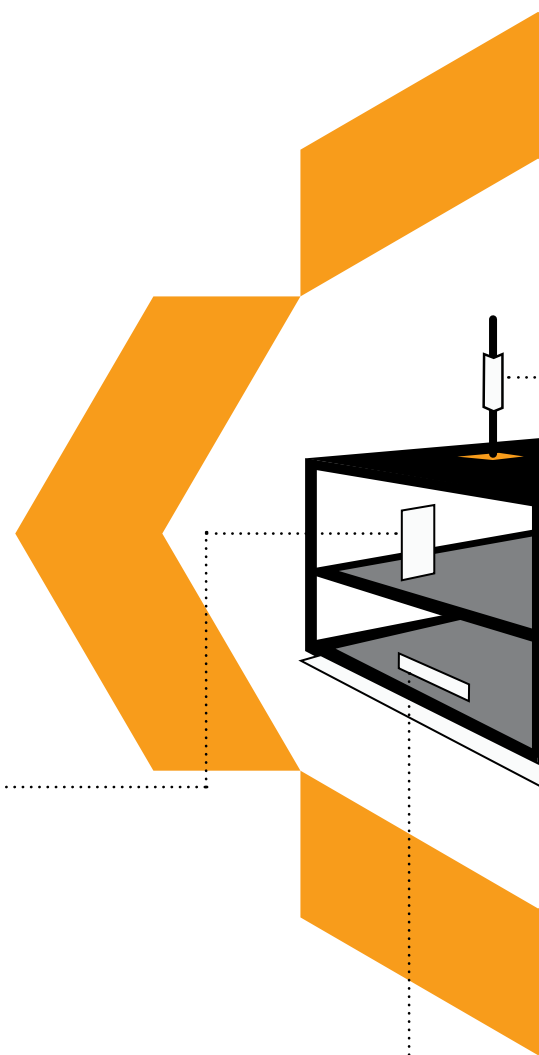
Joseph Kraus' "Catechism of Lightning", 1814



Protected

The “Protected to the power of four” principle:

The matched, safe and tested lightning protection systems from OBO Bettermann protect people, buildings and property. OBO can offer the right selection of products, depending on the application and scope of protection. Surge voltages are a constant risk for buildings and people. Effective protection is only guaranteed when surge voltages are reduced in stages as part of a lightning protection zone concept. Our lightning and surge voltage protection systems are perfectly matched to one another and to the requirements in the different zones – from the air-termination device, which must arrest the full energy of a lightning strike, through to fine power protection, which eliminates the last voltage peaks directly in front of a terminal.



4

Surge protection systems

Surge protection systems form a multi-stage barrier which no surge voltage can break through.

According to IEC 60364-4-44 IEC 60364-5-53, surge protection is frequently mandatory

Lightning protection provides safety!

Lightning protection is fire protection through

the avoidance of sparks and fire if there is a lightning strike.

Surge protection is fire protection through the avoidance of short circuits if there is a lightning strike.

Air-termination and conductor systems

Direct lightning strikes with energy of up to 200,000 A are reliably intercepted by air-termination devices and conducted into an earthing system through the conductor systems.

IEC/EN 62305
+
State and model building
regulations require lightning
protection

2

Earthing systems

If the conducted lightning current reaches the earthing system, then approximately 50 per cent of the energy is passed into the ground, while the other half is distributed via the equipotential bonding system.

IEC/EN 62305
+
DIN 18014
require foundation earth
electrodes

3

Equipotential bonding systems

These form the interface between external and internal lightning protection. They ensure that dangerous potential differences do not come about in the building.

IEC/EN 60364-1
requires protection
against electric shocks

General introduction

Lightning is a naturally occurring spark discharge or short-lived electric arc. Lightning discharges can take place from one cloud to another, or between a cloud and the ground. Lightning – one of the “electrometeors” – generally occurs during thunderstorms, where it is accompanied by thunder. Lightning involves an exchange of electric charges (electrons or gas ions), in other words, electric currents flow. Depending on the polarity of the electrostatic charge, lightning can alternatively start from the ground.

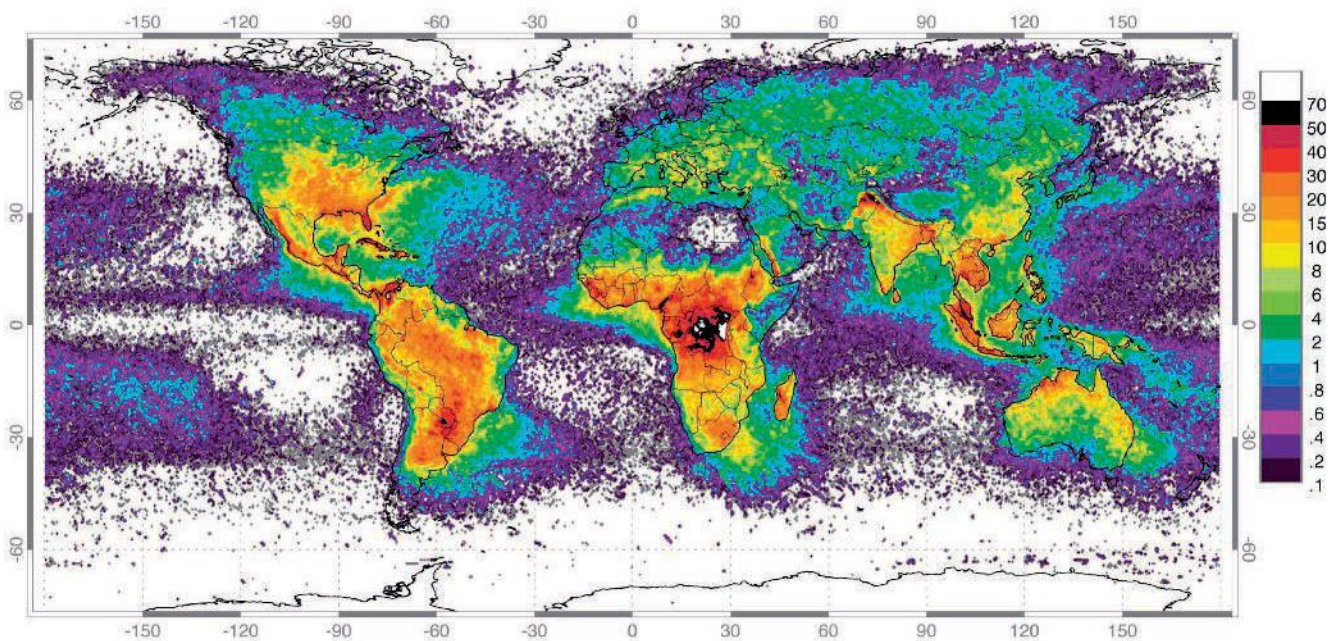
Some 90% of all lightning discharges between a cloud and the ground are negative ground-to-cloud strikes. Here, the lightning begins in an area of negative charge in the cloud and spreads to the positively charged ground.

However, the vast majority of discharges take place within clouds, or from one cloud to another.

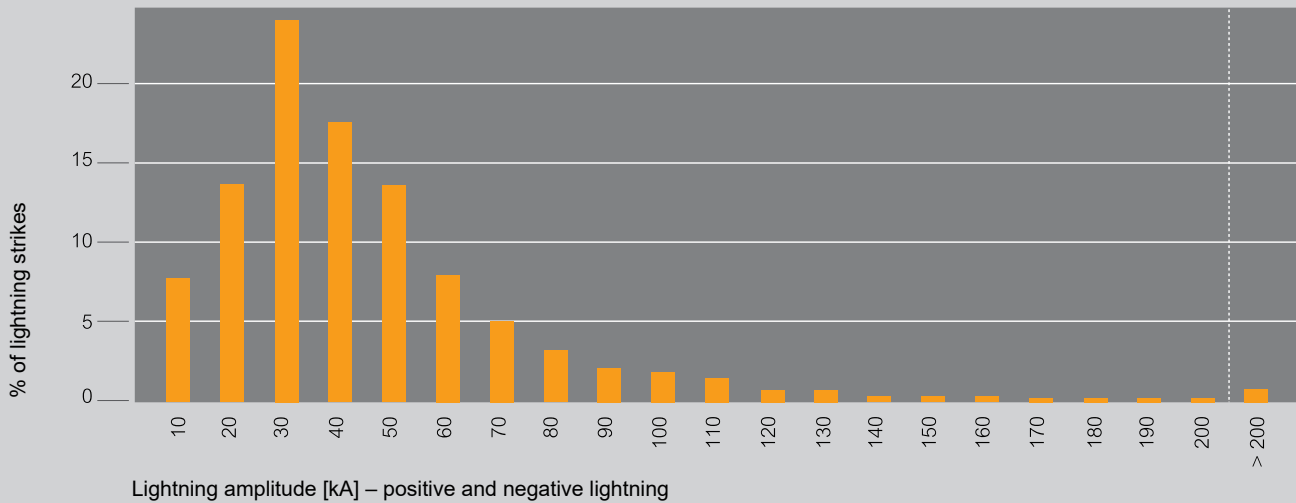
NASA has measured the annual global frequency of lightning over the period 1995 to 2003. The local values obtained by NASA can be used to determine the annual number of lightning strikes per km² even for countries that do not have their own information on numbers of lightning impulses. For risk assessments according to IEC/EN 62305-2, it is recommended that these values are doubled.

The less common types of discharge are:

- Negative ground-to-cloud lightning
- Positive cloud-to-ground lightning
- Positive ground-to-cloud lightning



*Annual number of lightning strikes per km² between 1995 and 2003
(www.nasa.gov)*



Frequency of lightning by amplitude

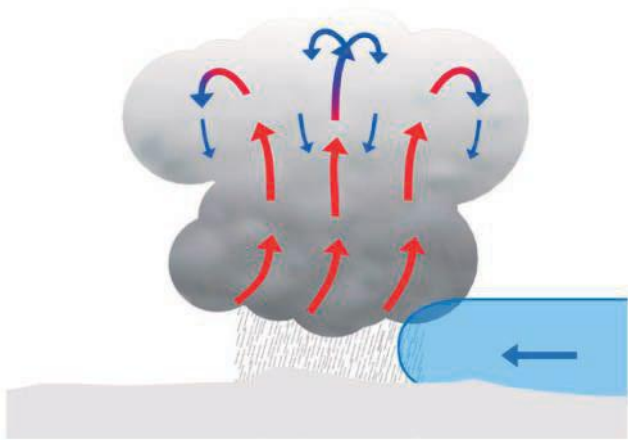
Lightning

Lightning and surge voltages endanger people and assets. Lightning strikes Germany around two million times a year, and that figure is rising. Discharges occur in both rural and densely populated areas, endangering people, buildings and technical equipment. Several hundred million euros of damage is done each year, especially as a result of electrical surges.

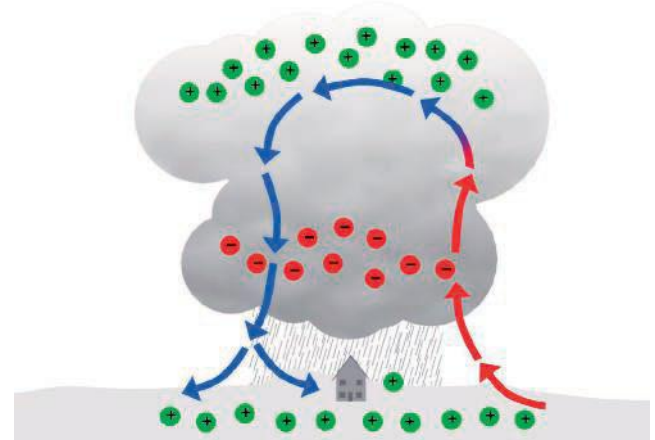
A lightning protection system consists of both external and internal lightning protection measures. It protects people from injury, structures from damage and electrical equipment from failure due to surge voltages.

Key data about lightning:

- 1,500,000,000 lightning strikes annually per year
- 2,000,000 lightning strikes in Germany per year
- 450,000 instances of surge voltage damage in Germany per year
- Surge voltage damage can occur over a radius of up to 2 km from the location of the lightning strike
- The majority of lightning strikes are of a magnitude between 30 and 40 kA



A cold front



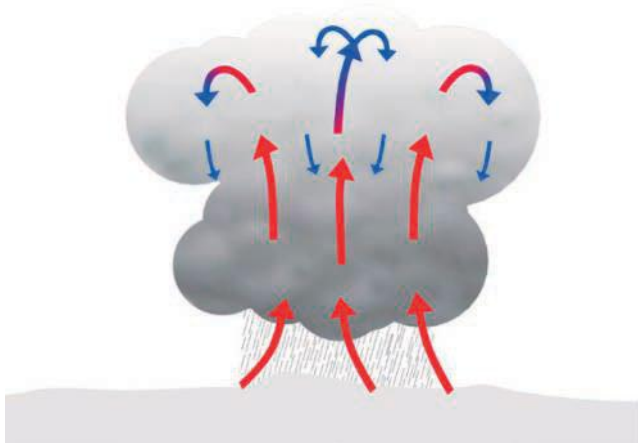
How lightning forms – negative and positive charges

Types of thunderstorm

Cold front thunderstorms develop when humid warm air meets a front of cold air. Heat thunderstorms are produced by a combination of intense solar radiation and moist, warm air rising rapidly to great heights.

Charge separation

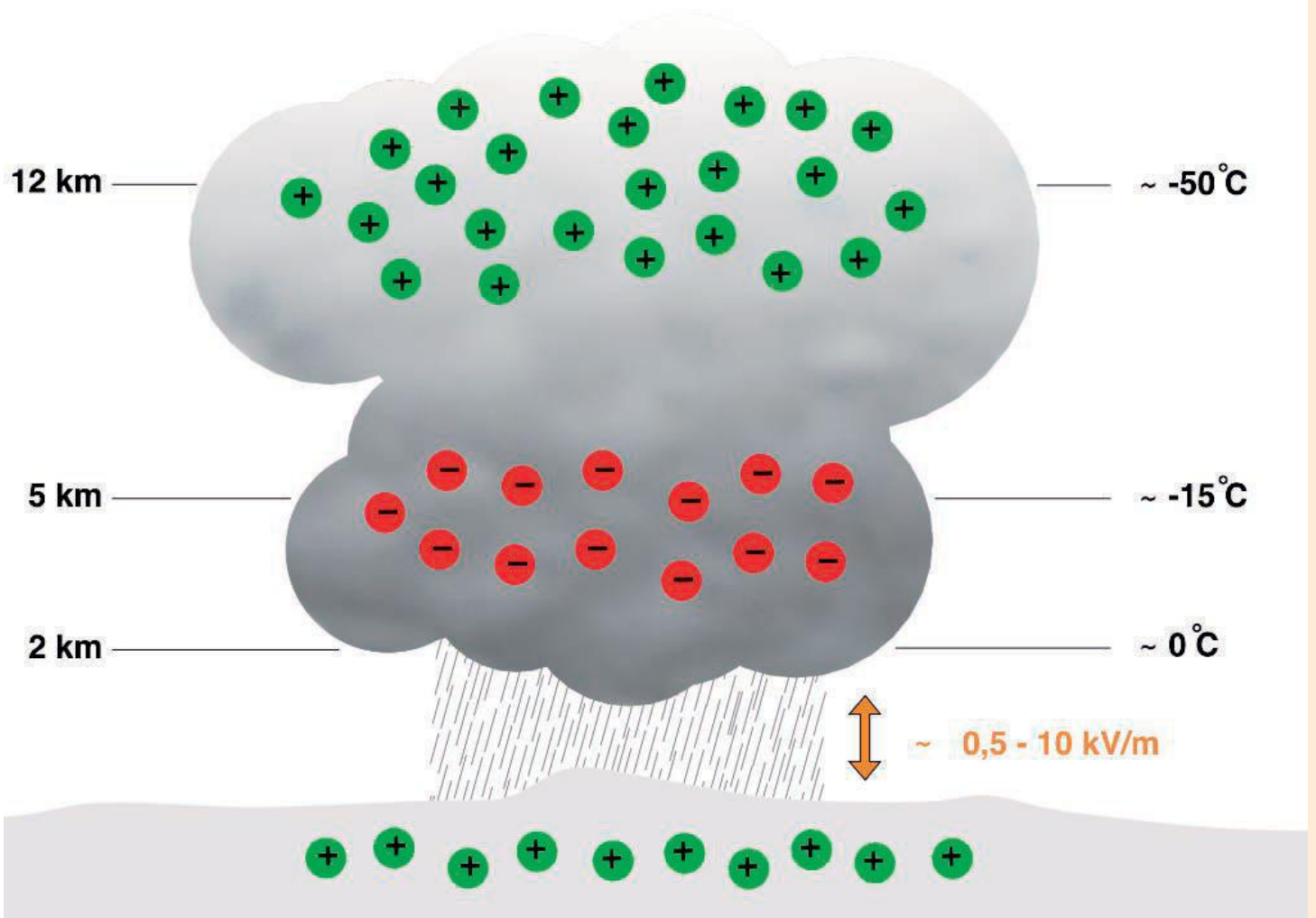
When warm, damp air rises, the moisture in the air condenses and, at higher altitudes, ice crystals form. Strong up-winds of up to 100 km/h cause the light ice crystals to move to the upper area and the hail particles to the lower area. Impact and friction cause charge separation.



A heat thunderstorm

How lightning is formed

Storm fronts can occur when clouds expand to heights of up to 15,000 metres.



Charge distribution in a cloud

■ Charge dispersion

Studies have proved that the sleet falling down (area warmer than -15°C) has a negative charge and the ice crystals being thrown upwards (area colder than -15°C) have a positive charge. The light ice crystals are carried into the upper areas of the cloud by the up-wind and the sleet falls to the central areas of the cloud.

Typical charge distribution:

- Positive in the upper part, negative in the middle part, and weakly positive in the lower part.
- The area near the ground also has a positive charge.
- The field strength required to trigger lightning is dependent on the insulation ability of the air and is between 0.5 and 10 kV/m.

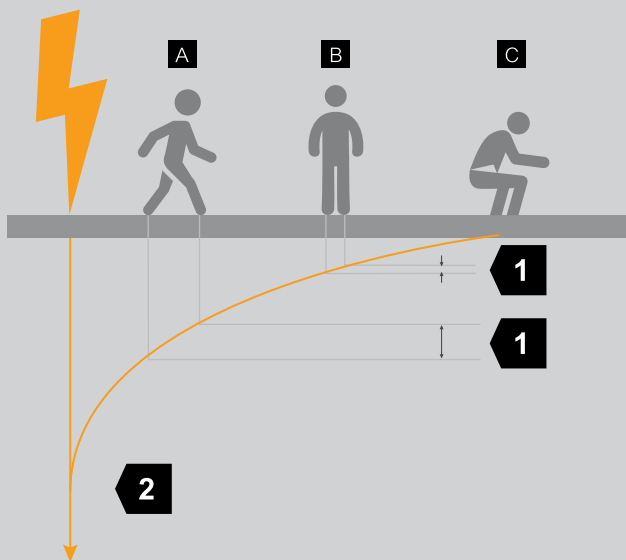
Risks posed by lightning discharges

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

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

Risk to humans

When lightning hits buildings, trees or even the ground itself, the lightning current enters the ground and a so-called potential funnel forms. The greater the distance from the point where the current enters the ground, the lower the electrical potential in the ground. The difference in potential produces a step voltage that puts people and animals at risk of electric shock. In buildings fitted with lightning protection systems, the lightning current causes a voltage drop at the earthing resistance. All metal components in and on the building must be connected with the equipotential bonding system to rule out the risk of high contact voltages. On the ground near the building, step voltages pose a further risk. If a person touches the lightning protection system, they are at risk of harm due to the large contact voltage.



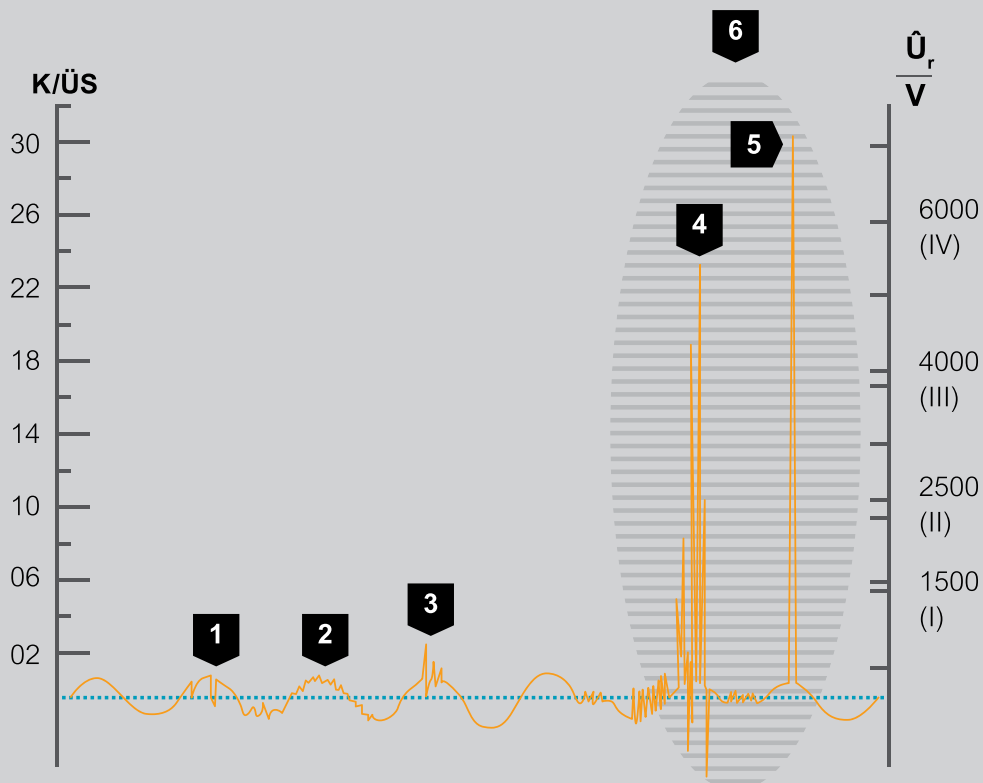
Step voltage and potential funnel formed when lightning strikes

1	Step voltage U
2	Potential gradient area
A	Close to the point of strike/beside the down-conductor, the step voltage (1) is high.
B	The step voltage decreases with distance away from the point of lightning impact.
C	Out in the open, a crouching position provides protection against direct lightning impact.

Risk to buildings and equipment

Buildings and equipment are at risk not just from direct lightning strikes, but also from the surges that can occur up to two kilometres away from a lightning strike. Surges are several times (factor: $K/\ddot{U}S$) above the permissible mains voltage. If the electric strength (\ddot{U}_r/V) of an electrical system is exceeded, this will lead to malfunctions or even permanent destruction.

Weak and frequent permanent surges are triggered by high-frequency interference and line disruptions. In these cases, the sources of interference must be removed or suitable line filters fitted. Suitable lightning and surge protection systems are needed to protect against energy-rich switching or lightning surges in buildings and equipment.



1	Voltage dips of various duration
2	Harmonics caused by slow and rapid voltage fluctuations
3	Transient surge voltages
4	Switching surges
5	Lightning surges
6	Range within surge protective devices are used

Types of surge voltage

Transient surges

Transient surges are voltage increases lasting for a matter of microseconds but whose magnitude is several times that of the mains voltage. Permanent surges caused by impermissible conditions in the mains network are not considered as transient surges.

Switching surges

Switching surges can arise from various sources, e.g. switching operations involving large inductive loads such as motors. As a rule, switching surges amount to twice to three times the operating voltage.

Induced surge voltages

Induced voltage peaks in building installations and energy or data supply cables can also reach many times the nominal operating voltage and cause the immediate failure of the systems.

Lightning surges

The largest voltage peaks in the low-voltage consumer network are caused by lightning discharges. Lightning surges can sometimes reach 100 times the nominal voltage value and transport a high energy content. When a direct strike hits the external lightning protection system or a low-voltage exposed cable, this usually causes – without internal lightning and surge protection – damage to the insulation and total outage of the connected consumers.

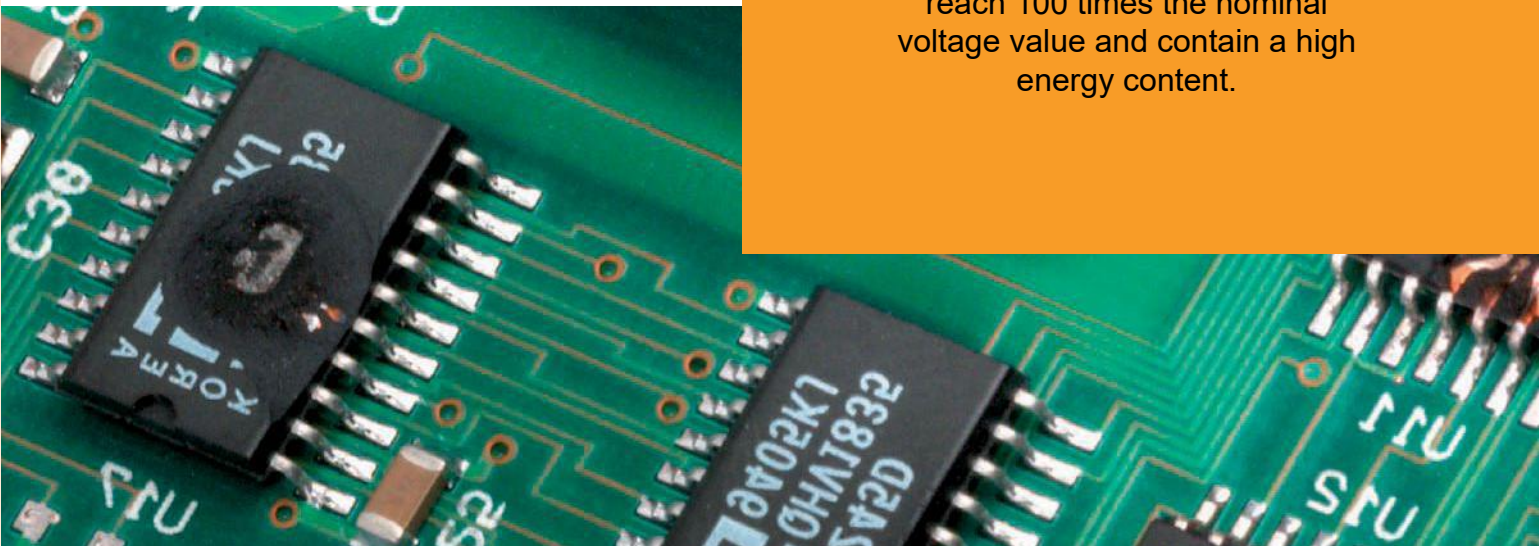
Effects of surges

Energy-rich lightning currents often cause the instantaneous destruction of unprotected systems. In the case of small surges, on the other hand, failures often occur only after a time delay as they accelerate the aging process of the components in the affected devices, causing them insidious damage. A number of different protection measures are required. These depend on the exact cause and/or impact point of the lightning discharge.





Sources and causes of damage according to standards

For the purposes of the risk analysis according to IEC/EN 62305-2, lightning strikes are assigned to one of four possible “sources of damage” (S1-S4). A lightning strike can lead to three possible sources of damage (D1-D3). The damage/loss is then categorised according to four different types of damage (L1-L4).

Lightning surges can sometimes reach 100 times the nominal voltage value and contain a high energy content.



Circuit board destroyed by a surge

Impact Point	Example	Source of damage	Type of damage	Type of loss
Structure		S1	C1 C2 C3	D1, D4 D1, D2, D3, D4 D1, D2, D4
Ground near a structure		S2	Impact Point	D1, D2, D4
Service connected to the structure		S3	Impact Point	D1 D1, D2, D3, D4 D1, D2, D4
Ground near a service		S4	Impact Point	D1, D2, D4

Risk analysis according to IEC 62305-2

C1	Electric shock to life forms due to contact and step voltages
C2	Fire, explosion and mechanical and chemical impact due to physical effects of lightning discharge
C3	Destruction of electrical or electronic systems by surge voltages
D1	Injury to or death of people
D2	Loss of services to the public
D3	Loss of irreplaceable cultural treasures
D4	Financial losses

Lightning and surge protection standards

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

A lightning and surge protection system consists of several systems, each tailored to each of the others. At its most basic, a lightning and surge protection system consists of one internal and one external lightning protection system. These, in turn, can be categorised into the following systems and measures:

- Air-termination systems
- Conductors
- Earthing systems
- Area shielding
- Separation distance
- Lightning protection equipotential bonding

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

Product standards

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

Comprehensive lightning protection can only be achieved through a coordinated approach.

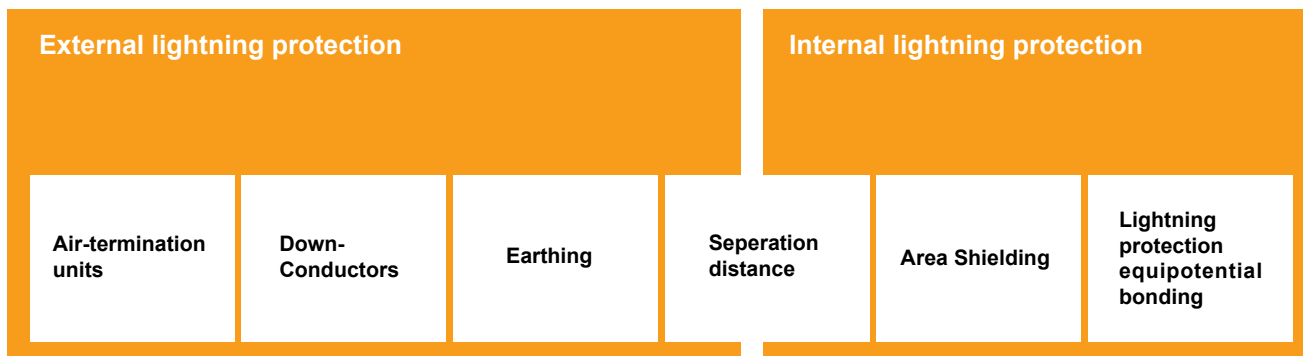


Figure 1 External and internal lightning protection systems

Standard	German supplement	Contents
IEC 62305-1		Protection against lightning - Part 1: General principles
IEC 62305-2		Protection against lightning - Part 2: Risk management
	1	Lightning risk in Germany
	2	Calculation aids for estimating the risk of damage for buildings
	3	Additional information on use of EN 62305-2
IEC 62305-3		Protection against lightning - Part 3: Protection of structures and people
	1	Additional information on use of EN 62305-3
	2	Additional information for building structures
	3	Additional information for the testing and servicing of lightning protection systems
	4	Use of metal roofs in lightning protection systems
	5	Lightning and surge protection for PV power supply systems
IEC 62305-4		Protection against lightning - Part 4: Electrical and electronic systems within structures
	1	Distribution of the lightning current
IEC 0675-6-11		Low-voltage surge protection devices - Part 11: Surge protection devices connected to low-voltage power systems
IEC 60364-5-53		Low-voltage electrical installations - Part 5-53: Selection and erection of electrical equipment - Isolation, switching and control - Clause 534: Devices for protection against surge voltages (ÜSE)
IEC 60364-4-44		Low-voltage electrical installations - Part 4-44: Protection for safety - Protection against voltage disturbances and electromagnetic disturbances - Clause 443: Protection against surge voltages of atmospheric origin or due to switching
IEC 60364-7-712		Requirements for operational premises, special rooms and systems - photovoltaic (PV) power supply systems
IEC 60728-11		Cable networks for television signals, sound signals and interactive services
IEC 61400-24		Wind power plants - Part 24: Lightning protection

Table 1.1: Key lightning protection standards and specifications

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

Table 1.2: Product standards for lightning and surge voltage protection components

Components of a lightning and surge protection system

All lightning and surge protection systems are made up of the following elements:

1. Air-termination and down-conductor systems

Air-termination and down-conductor systems reliably arrest direct lightning strikes with energy of up to 200,000 A and conduct them safely into the earthing system.

2. Earthing systems

Earthing systems discharge approx. 50% of the arrested lightning current into the ground; the other half is distributed via the equipotential bonding.

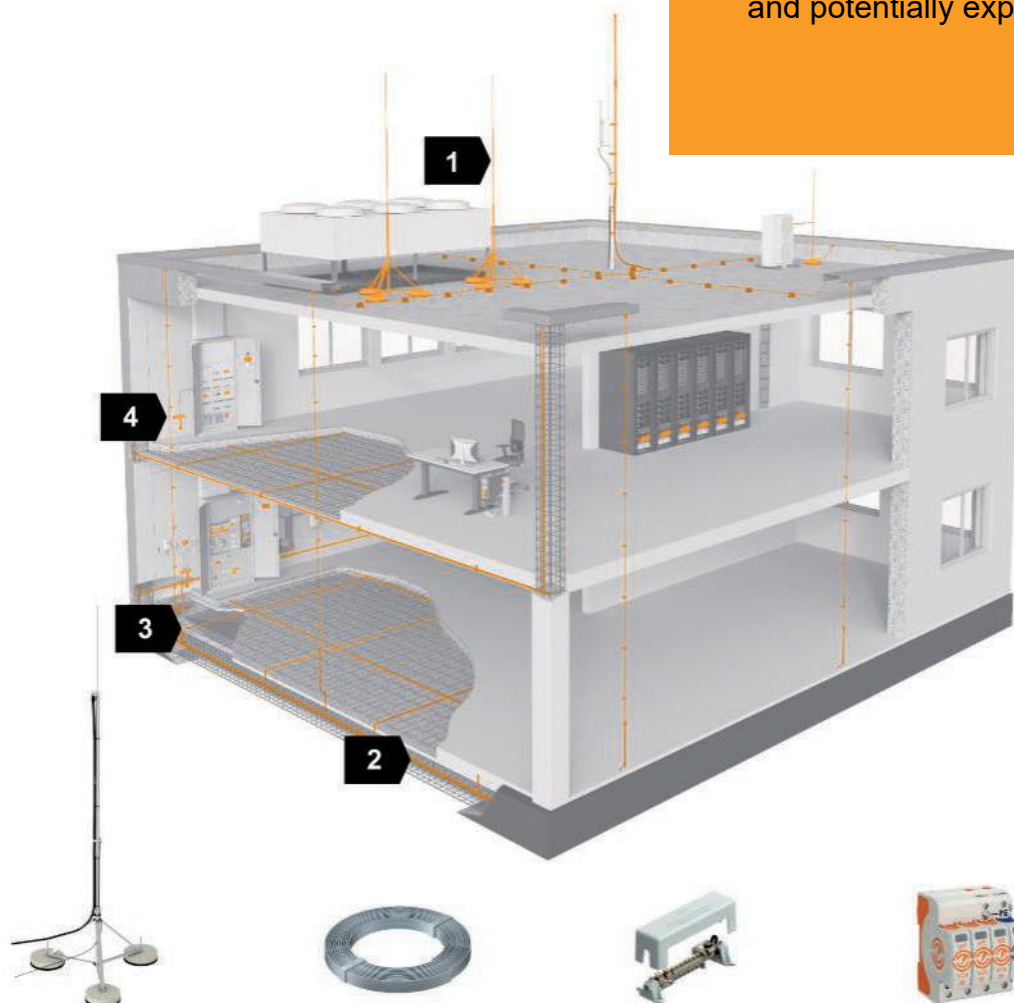
3. Equipotential bonding systems

Equipotential bonding systems form the interface between external and internal lightning protection. They ensure that dangerous potential differences do not come about in the building.

4. Surge protection systems

Surge protection systems form a multi-stage barrier which no surge voltage can break through.

OBO can offer components for comprehensive lightning and surge voltage protection systems. Standard-compliant, tested components from OBO offer protection and safety of the highest order not just for homes but also for industrial plants and potentially explosive areas.



1. Air-termination and conductor systems

2. Earthing systems

3. Equipotential bonding systems

4. Surge protection systems

The external lightning protection system

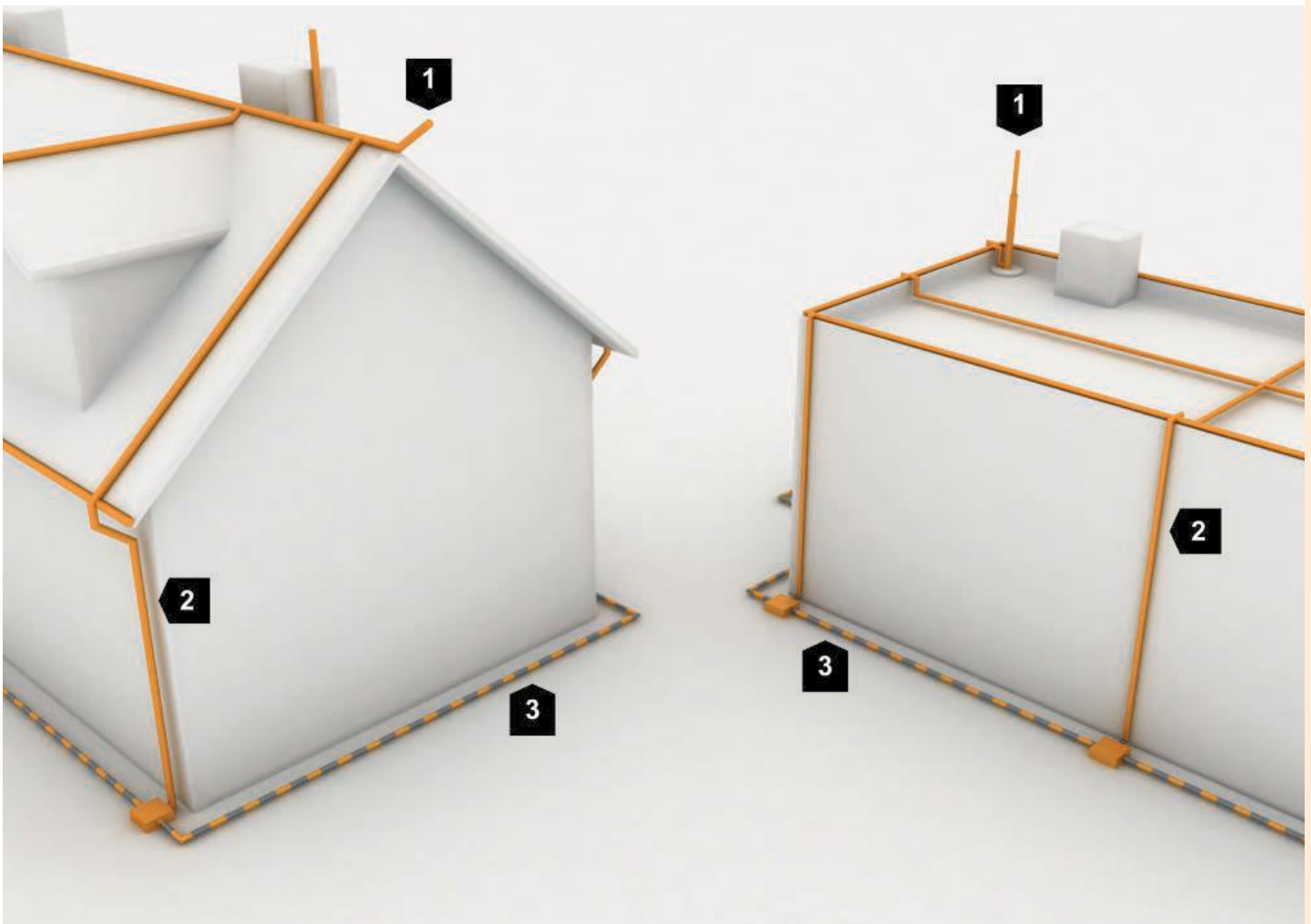
The external lightning protection system consists of air-termination systems, down-conductors and the earthing system. With these components it is able to perform the functions required of it, namely intercepting direct lightning strikes, discharging the lightning current to earth and distributing it in the ground.

Air-termination systems

Air termination systems are the part of the lightning protection system that protect the building structure from direct lightning strikes.

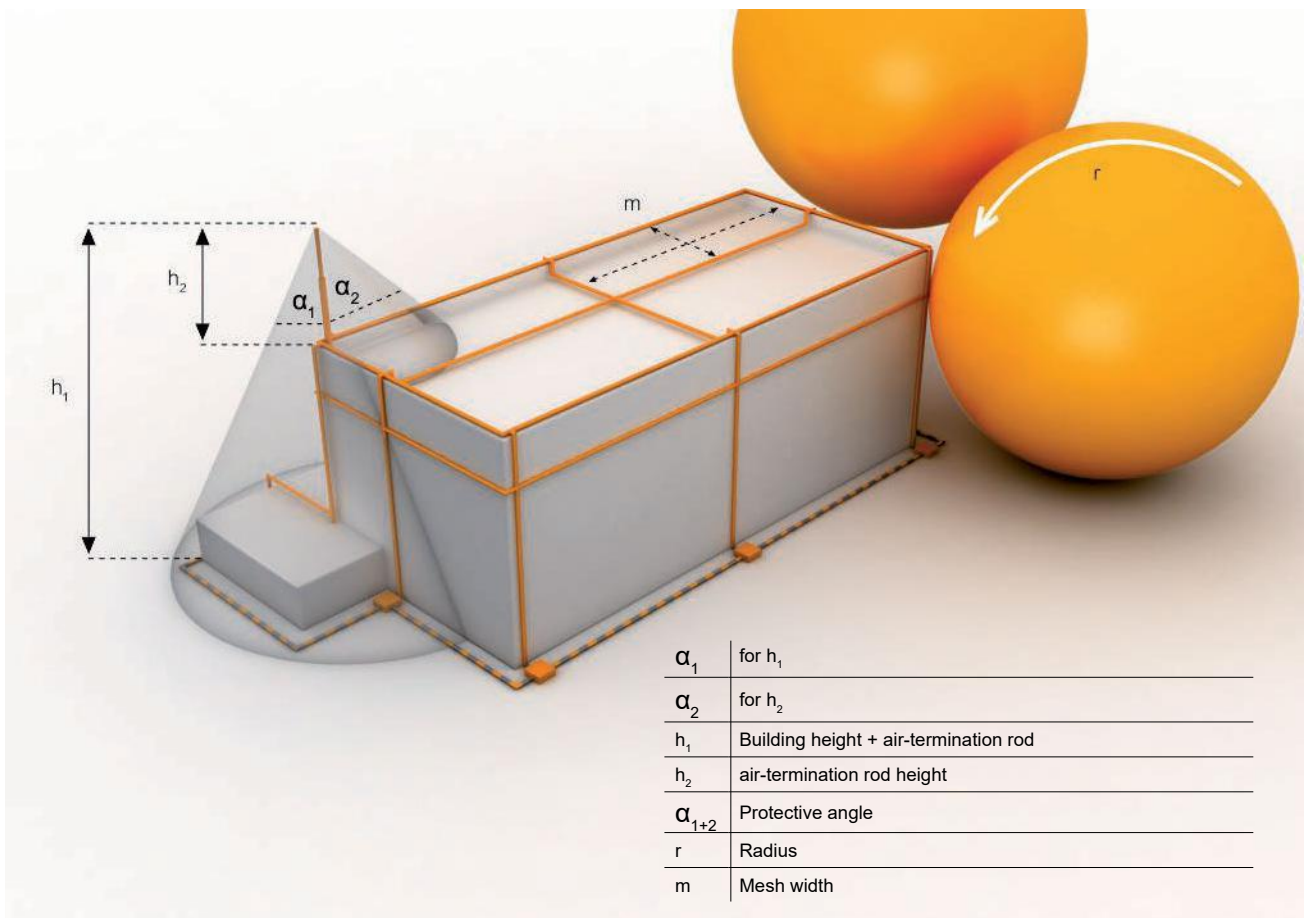
Air-termination systems can be comprised of any combination of the following components:

- Air-termination rods (including free-standing rods)
- Catenary wires
- Meshed conductors



1	Air Termination system
2	Down-conductor
3	Earthing system

Components of an external lightning protection system



Designing a lightning protection system using the protective angle, mesh and rolling sphere methods

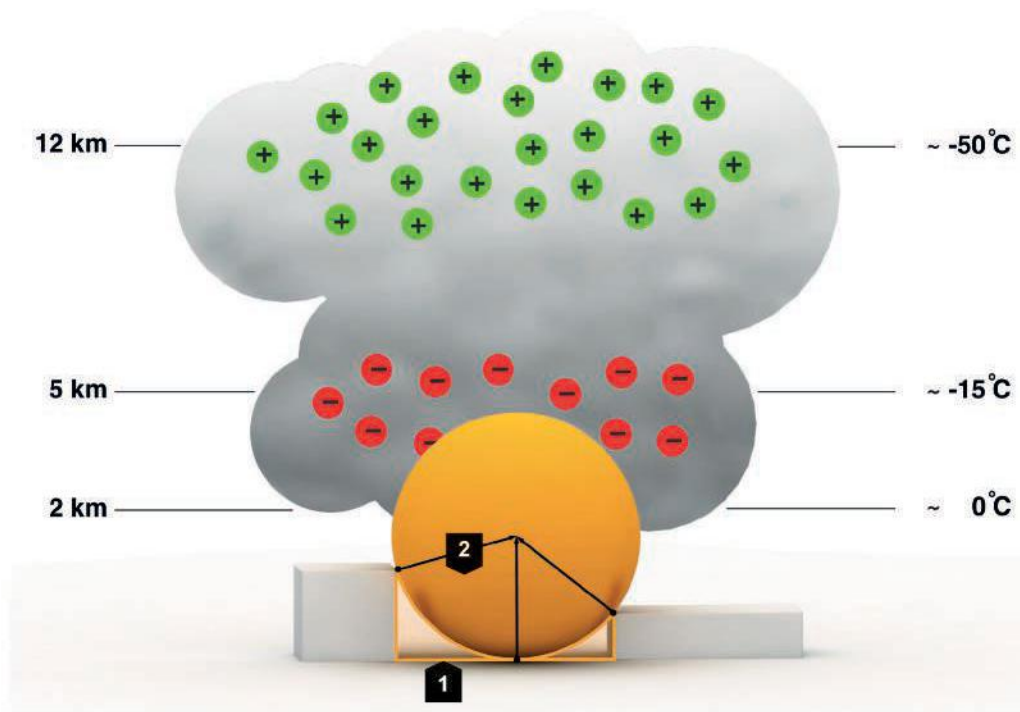
The rolling sphere method is the only one of the methods for planning air-termination systems that is derived from the electrogeometric lightning model and founded on physical principles.

This is, therefore, the method that should be used where the protective angle or mesh method throw up uncertainties.

■ Planning methods for air-termination systems

Following a practical assessment of the building, one or a combination of the following planning methods is selected:

- Rolling sphere method (particularly suitable for complex systems)
- Protective angle method (for simple planning tasks, e.g. for air-termination rods)
- Mesh method (for simple planning tasks, e.g. for flat roofs)



1	Protected area
2	Area exposed to strike

Electrogeometric lightning model/rolling sphere method

Rolling sphere method

Charge separation causes a potential difference between the clouds and the ground, producing a stepped leader. Connecting discharges are launched towards the tip of the stepped leader from various points such as trees, houses and antennas. At the point where the interception discharge is first reached by the tip of the stepped leader, a strike occurs. It is therefore necessary to protect all points on the surface of a ball with the radius of the striking distance, and with the tip of the stepped leader as its centre, against direct lightning strike. This ball will be referred to here as the “rolling sphere”. The radius of the rolling sphere depends on the lightning protection class of the buildings that are to be protected.

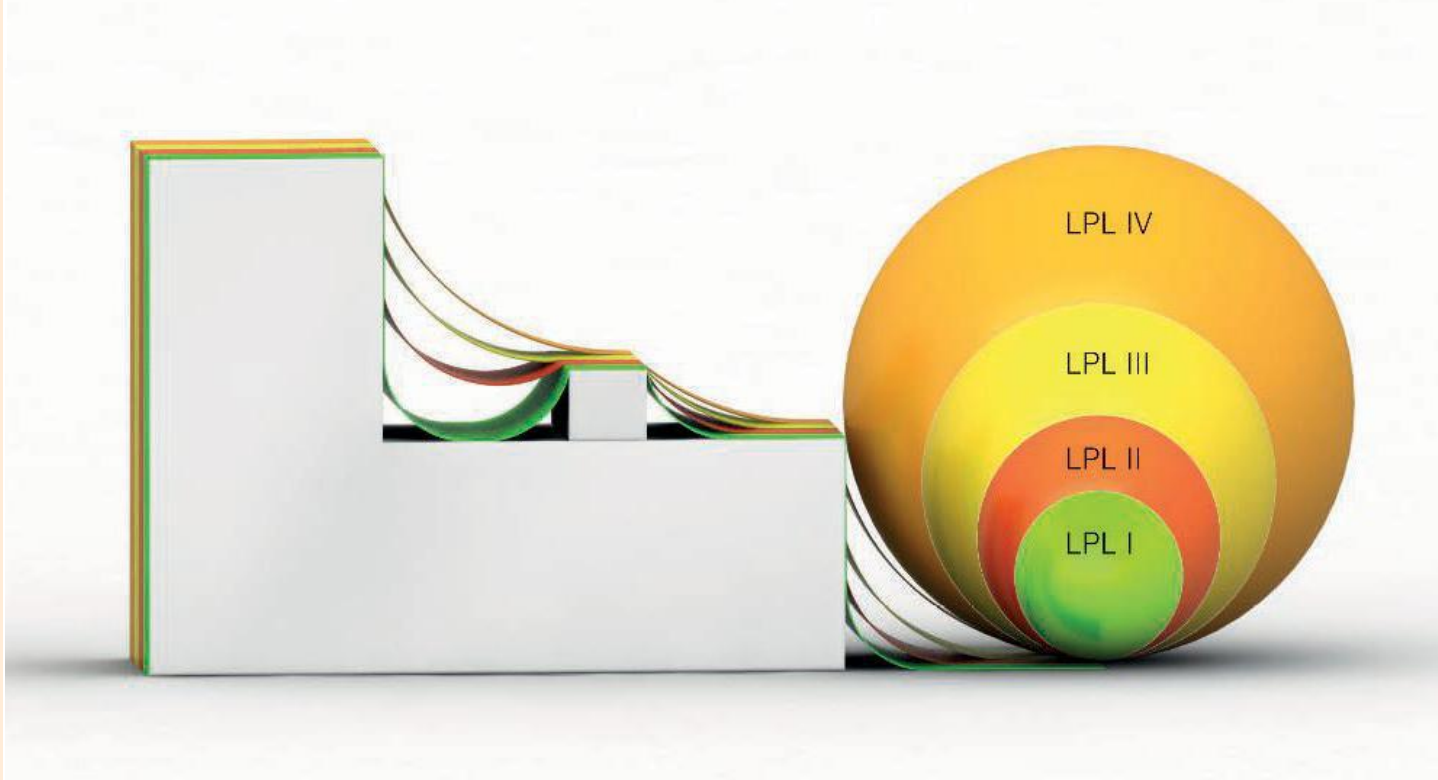
The lightning current must be intercepted and arrested by the lightning protection system. In case of a direct strike, the lightning protection system protects the building against fire. The air-termination systems provide an optimal impact point and are connected to the earthing system via the conductors. For lightning currents, this creates a conductive path into the ground. The air-termination systems form protective spaces, the necessary size of which can be determined using, for example, the “rolling sphere method”.

The rolling sphere radius, together with the minimum current peak values relative to the appropriate lightning protection class, form the electrogeometric model (EGM), which is the only physically recognised basic model for the creation of a lightning protection concept according to IEC/EN 62305-1.

Other, theoretical models, which only allow small areas with greater peak current values than named in IEC/EN 62305-1, may not be used for planning of a lightning protection system recognised in the standard. Their reproducible effectiveness could not be proven by recognised scientific methods. The protection methods, which are specified in more detail in IEC/EN 62305-3 and IEC/EN 62305-4, only offer effective protection against lightning strikes whose current technical values are in the area between the maximum and minimum peak current values defined by the lightning protection class (see following table).

The rolling sphere rolls over the building; everywhere it makes contact is a possible impact point for the lightning.

Risk level (LPL = lightning protection level)	Radius of rolling sphere	Smallest peak current value in kA	Max. peak current value in kA
I	20 m	3	200
II	30 m	5	150
III	45 m	10	150
IV	60 m	16	100



Radius of rolling sphere for different lightning protection classes

Modern CAD programs can reproduce in 3D the rolling sphere rolling over the entire installation that is to be protected. For example, in buildings of lightning protection class I, the ball touches surfaces and points that in buildings of lightning protection class II (or III or IV) would still be in the protected area. The rolling sphere method allows the installation to be divided into different external lightning protection zones (LPZs) or “lightning protection levels” (LPLs):

LPZ 0A

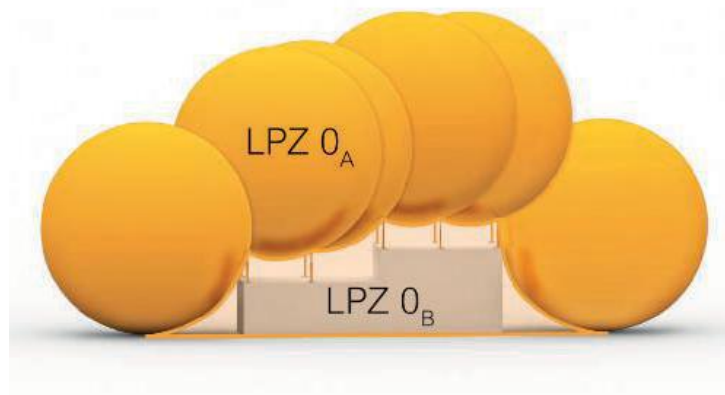
Hazards from direct lightning strikes and the entire electromagnetic field of the lightning.

LPZ 0B

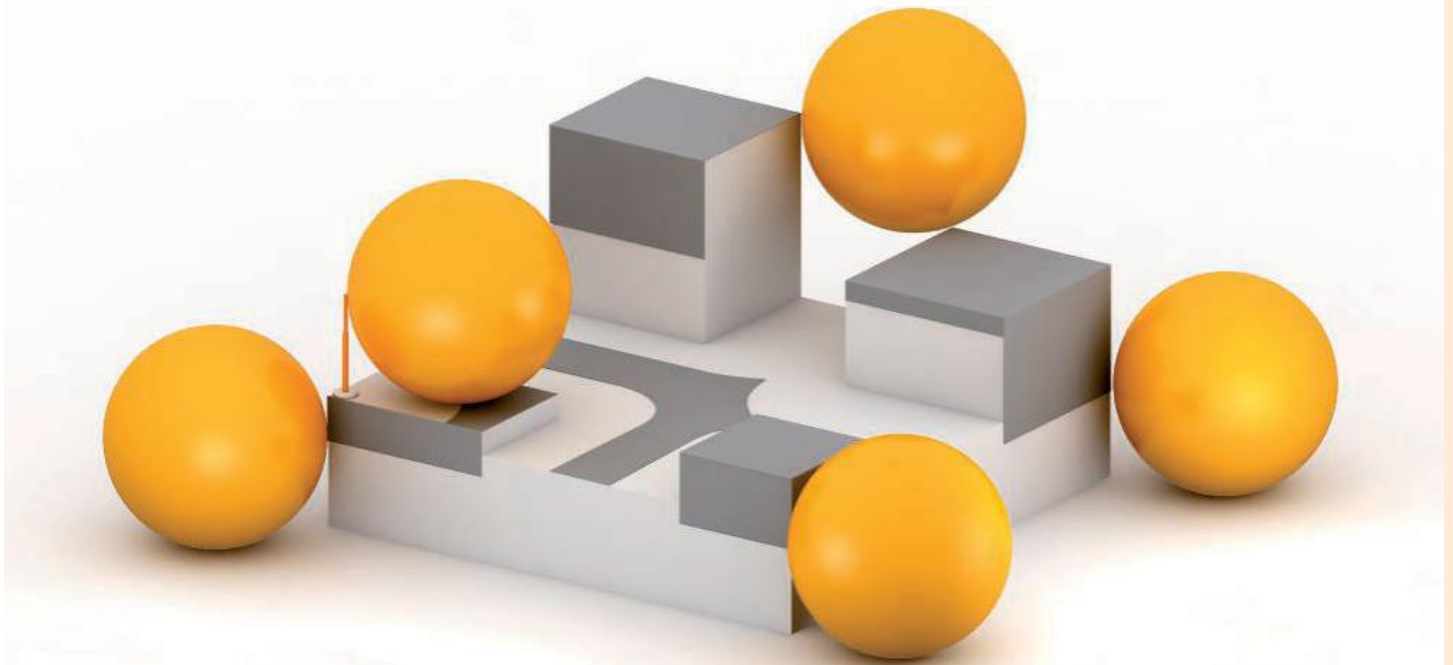
Protected against direct lightning strikes, but at risk from the entire electric field of the lightning.

Note

Lateral impacts can occur on any building structures higher than the radius of the rolling sphere. However, the probability of a lateral impact is negligible on building structures with a height of less than 60 m.



Rolling sphere method and the resulting lightning protection zones (LPZs)

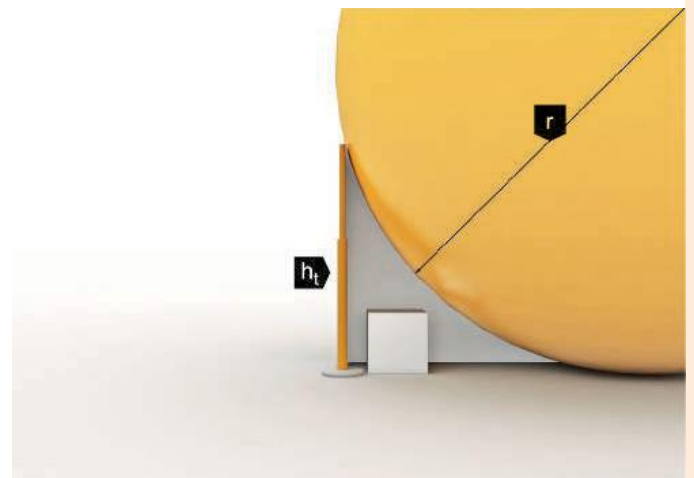


Rolling sphere method (dark grey areas are areas at risk of strike)

The building that is to be protected must be fitted with air-termination systems in such a way that a sphere with a radius determined on the basis of the lightning protection class cannot touch the building. Air-termination systems are required in the dark grey areas.

The rolling sphere method can be used to determine the required lengths of air-termination rods and the distances between them. The air-termination rods must be arranged in such a way that all parts of the structure to be protected are located in the protection area of the air-termination system.

For all types of air-termination system, only the actual dimensions of the metallic air-termination system shall be taken into account during planning according to IEC/EN 62305-3. This should also be taken into account with all so-called “active” air-termination systems, such as ESE “Early Streamer Emission”. Only the planning methods named in IEC/EN 62305-3 shall be used for planning. Others, such as the “Collection Volume Method” (CVM), are excluded by the standard.

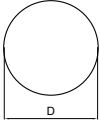


h_t	Air-termination rod
r	Rolling sphere radius

Protection area of an air-termination rod determined using the rolling sphere method

Air Termination

Round Conductor, Copper bonded

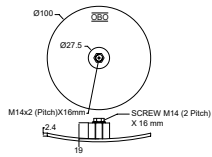


Type	Nominal size Ø mm	Cross-section mm ²	Normal ring ca. m	Weight Kg/100 m	Item No.
RD 8-ST CU IN	8	50	100	41.2	5021382
RD 10-ST CU IN	10	78	100	58.4	5021384

Cu Copper-coated

- Copper bonding thickness of greater than 250 Microns
- Meets the requirements of VDE 0185-305 (IEC 62305)
- Application: Air-terminal and structural down conductors in case of structurally utilized concrete columns especially for highly corrosive areas

Strike Pad

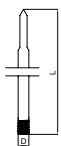


Type	Fit	Weight Kg/100 pcs	Item No.
128 SP	Open roof	51	5450095

Cu Gun Metal

- Interceptor can be fixed/embedded on the terrace
- Assembled to lightning conductor by screw and nut
- Suitable for fixing with flat 25 x 3 mm and roof surface
- Tightening torque: 20 Nm
- Complies to the requirement of IEC 62561-1 Class H
- Application: open roof car parking area and helipads

Air Copper Rods

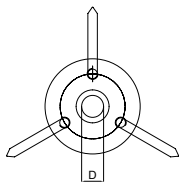


Type	Dimension D mm	Dimension L mm	Weight Kg/100 pcs	Item No.
101 CU M16 500	15	500	71.5	5450270
101 CU M16 1000	15	1000	150.5	5450272
101 CU M16 1500	15	1500	228.0	5450274
101 CU M16 2000	15	2000	305.5	5450276

Cu Copper

- Suitable for high wind loads
- Material : Copper
- Diameter of rod: 15 mm, Available in different ranges of length: 500mm,1000mm,1500mm,2000mm
- Complies to the requirement of IEC 62561-2

Multi point for air terminal




Type	Fit Dia. mm	Weight Kg/100 pcs	Item No.
101 MP 6 130	15	34.5	5450288

Cu Copper

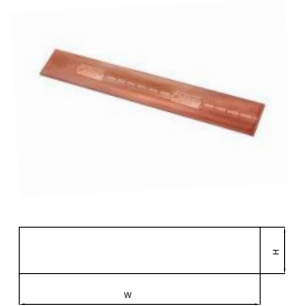
- Suitable to use with 15 mm dia. vertical air terminal rod
- Material : Copper
- Complies to the requirement of IEC 62561-1

Flat conductors, Copper

Type	Dimension W x H mm	Cross- section mm ²	Normal ring ca. m	Weight Kg/100 pcs	Item No.
FL 25-CU IN	25 x 3	75	50	64.9	5450450
FL 50-CU IN	50 x 6	300	20	257.3	5450452
FL 25-TCU IN	25 x 3	75	50	67.0	5450454


 Tinned Copper  Copper

- Complies to the requirement of IEC 62561-2
- Meets the requirements of VDE 0185-305 (IEC 62305)
- Application: Lightning protection system, earthing systems and equipotential bonding system

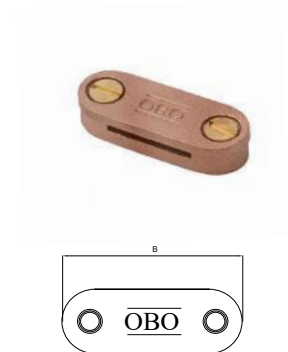


Metallic down conductor clips for flat tape

Type	Fit mm	Dimension B mm	Weight Kg/100 pcs	Item No.
DC CLIP 25X3	FL25	50	6.0	5450240
DC CLIP 50X6	FL50	75	12.0	5450242

 Gun Metal

- For fixing of flat conductor to the building surface
- Fit: FL 25 & FL 50
- With mounting hole 6.2 x 22 mm
- With 2 cylinder bolts M6 x 16 and over-piece from hot-dip galvanised steel
- Material : Gun Metal
- Complies to the requirement of IEC 62561-4



Non-metallic down conductor clip for flat tape

Type	Fit mm	Dimension B mm	Weight Kg/100 pcs	Item No.
DC CLIP 25X3 SA	FL25	50	1.1	5450244


 Polypropylene

- For fixing of flat conductor to the building surface
- Fit: FL 25
- Material : Polypropylene
- Complies to the requirement of IEC 62561-4
- Fixing type: Screwing



Self adhesive non-metallic down conductor clip for flat tape

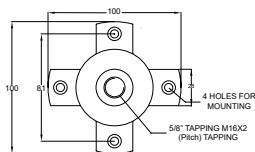
Type	Fit mm	Dimension B mm	Weight Kg/100 pcs	Item No.
DC CLIP 25X3 BR	FL25	60	2.0	5450246

 Polypropylene

- For fixing of flat conductor to the building surface with self adhesive base
- Fit: FL 25
- Material : Polypropylene
- Complies to the requirement of IEC 62561-4
- Fixing type: self adhesive



Base for air copper rod

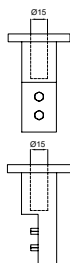


Type	Fit	Weight Kg/100 m	Item No.
101 M16 TC	Flat roof	32.5	5450280
101 M16	Ridge roof	100.0	5450286

Gun Metal

- Base for Ø 15 mm dia. interception rods
- Quick and easy installation of interception rod in base
- Suitable for fixing with flat 25 x 3 mm and roof surface
- Tightening torque: 20 Nm
- Complies to the requirement of IEC 62561-1

Coupling for air terminal rod to tape

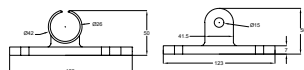


Type	Flat size mm	Fit Dia. mm	Weight Kg/100 pcs	Item No.
101 M16 18X40	25 x 3	15	-	5450282

Gun Metal

- Suitable to connect flat conductor with 15mm dia. vertical air terminal rod
- Material : Gun Metal
- Complies to the requirement of IEC 62561-1

Mounting bracket for air terminal rod

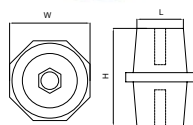


Type	Fit Dia. mm	Weight Kg/100 pcs	Item No.
101 M16 97X120	15	96.5	5450284

Gun Metal

- Mounting brackets for air terminal rod consists of two parts
- Facilitates clamping of vertical air terminal rod to side wall
- Material : Gun Metal
- Complies to the requirement of IEC 62561-1

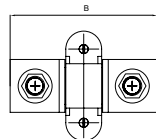
Insulator



Type	Thread mm	Dimension W mm	Dimension H mm	Weight Kg/100 pcs.	Item No.
INS 50 50 M6	M6	18	20	1.0	5450094

- Material : Reinforced polyester
- Thread size : M6
- Application: Insulation bush

Bimetallic connector

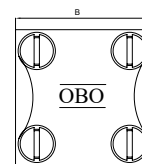


Type	Fit mm	Dimension B mm	Weight Kg/100 m	Item No.
226 ZV 25X3 CU	FL25	78	19.5	5450238

- For connecting two dissimilar material of aluminium and copper flat conductor
- Fit: FL 25 X 3 mm
- Connector to avoid bimetallic corrosion
- Complies to the requirement of IEC 62561-1

Square tape clamps

Type	Fit mm	Dimension B mm	Weight Kg/100 pcs	Item No.
255 25	FL25	52	17.5	5450480
255 50	FL50	77	68.0	5450482

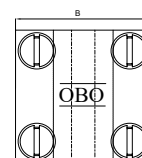


Gun Metal

- Enables fixing of flat conductor with cross, straight and tee joints to the building surface
- Fit: FL 25 & FL 50
- The base gets connected to the building surface through countersunk hole in the middle and upper part is fixed by four screws
- Material : Gun Metal
- Complies to the requirement of IEC 62561-1

Cable to tape square clamps

Type	Fit mm	Fit Sq. mm	Dimension B mm	Weight Kg/100 pcs	Item No.
255 25 70	FL 25 X 3	70	50	30.5	5450484
255 25 95	FL 25 X 3	95	50	-	5450486

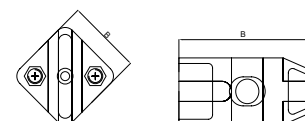


Gun Metal

- Enable fixing of flat conductor & copper cable crossing over to the building surface
- Connections: straight through and tee
- Fit: Flat 25 X 3 to copper cable 70 / 95 Sq.mm
- The base has a countersunk hole in the middle and upper part is fixed by four screws
- Material : Gun Metal
- Complies to the requirement of IEC 62561-1

Test Cable to tape square clamps

Type	Fit mm	Dimension B mm	Weight Kg/100 pcs	Item No.	
226 RD8	FL 25 X 3	RD 8 mm	64	25.0	5450496
226 50	FL 25 X 3	50 Sq.mm	64	-	5450490
226 70	FL 25 X 3	70 Sq.mm	64	-	5450492
226 95	FL 25 X 3	95 Sq.mm	64	35.5	5450494

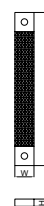


Gun Metal

- Provides disconnection between conductor/cable and tape for testing purpose
- Connections: Straight
- Suitable for flat 25 X 3 to RD 8 conductor / copper cable 50/70/95 Sq.mm
- Single bolt clamps with base & upper part
- Material : Gun Metal
- Complies to the requirement of IEC 62561-1

Flexible flat copper braid bonds

Type	Width mm	Length mm	Height mm	Weight Kg/100 pcs.	Item No.
856 CU 200	25	200	3.5	9.0	5450296
856 CU 400	25	400	3.5	15.0	5450297
856 CU SN 200	25	200	3.5	9.0	5450298
856 CU SN 400	25	400	3.5	15.0	5450299



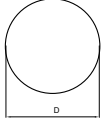
Tinned Copper

Cu Copper


- Main potential equalisation conforms to VDE 0100 Part 410 and Part 540, and also lightning protection potential equalisation to VDE 0185-305 (IEC 62305)
- Quick, simple assembly of connection conductors
- Suitable to bond metal gates, doors, fences and metal objects
- Complies to the requirement of IEC 62561-1
- Tightening torque: 20 Nm

Down-Conductor systems

Round conductor, Copper bonded

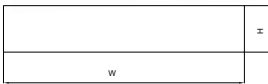


Type	Nominal size Ø mm	Cross-section mm ²	Normal ring ca. m	Weight Kg/100 m	Item No.
RD 8-ST CU IN	8	50	100	41.2	5021382
RD 10-ST CU IN	10	78	100	58.4	5021384



 Copper-coated

- Copper bonding thickness of greater than 250 Microns
- Meets the requirements of VDE 0185-305 (IEC 62305)
- Application: Air-terminal and structural down conductors in case of structurally utilized concrete columns especially for highly corrosive areas
- Complies to the requirement of IEC 62561-2

Flat conductors, Copper

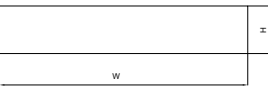


Type	Dimension W x H mm	Cross-section mm ²	Normal ring ca. m	Weight Kg/100 m	Item No.
FL 25-CU IN	25 x 3	75	50	64.9	5450450
FL 50-CU IN	50 x 6	300	20	257.3	5450452
FL 25-TCU IN	25 x 3	75	50	67.0	5450454

 Tinned Copper  Copper

- Complies to the requirement of IEC 62561-2
- Meets the requirements of VDE 0185-305 (IEC 62305)
- Application: Lightning protection system, earthing systems and equipotential bonding systems

Insulated flat conductors, Copper

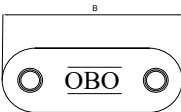


Type	Dimension W x H mm	Cross-section mm ²	Normal ring ca. m	Colour	Weight Kg/100m	Item No.
FL 25-CU PVC SW	25 x 3	75	50	Black	77.0	5450460
FL 25-CU PVC BR	25 x 3	75	50	Brown	77.0	5450462
FL 25-CU PVC GN	25 x 3	75	50	Green	77.0	5450464
FL 25-CU PVC GR	25 x 3	75	50	Grey	77.0	5450466
FL 25-CU PVC STG	25 x 3	75	50	Stone	77.0	5450468
FL 25-CU PVC WS	25 x 3	75	50	White	77.0	5450470

 Copper

- Complies to the requirement of IEC 62561-2
- Meets the requirements of VDE 0185-305 (IEC 62305)
- Application: Lightning protection systems, earthing systems and equipotential bonding systems

Metallic down conductor clips for flat tape



Type	Fit mm	Dimension B mm	Weight Kg/100 pcs	Item No.
DC CLIP 25X3	FL25	50	6.0	5450240
DC CLIP 50X6	FL50	75	12.0	5450242

 Gun Metal

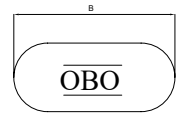
- Ensures the fixing the flat conductor to the building surface
- Fit: FL 25 & FL 50
- With mounting hole 6.2 x 22 mm
- With 2 cylinder bolts M6 x 16 and over-piece from hot-dip galvanised steel
- Material : Gun metal
- Complies to the requirement of IEC 62561-4

Non-metallic down conductor clip for flat tape

Type	Fit mm	Dimension B mm	Weight Kg/100 pcs	Item No.
DC CLIP 25X3 SA	FL25	50	1.1	5450244

Polypropylene

- For fixing of flat conductor to the building surface
- Fit: FL 25
- Material : Polypropylene
- Complies to the requirement of IEC 62561-4
- Fixing type: Screwing

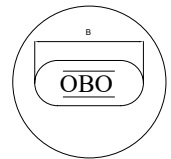


Self adhesive non-metallic down conductor clip for flat tape

Type	Fit mm	Dimension B mm	Weight Kg/100 pcs	Item No.
DC CLIP 25X3 BR	FL25	60	2.0	5450246

Polypropylene

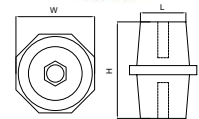
- For fixing of flat conductor to the building surface with self adhesive base
- Fit: FL 25
- Material : Polypropylene
- Complies to the requirement of IEC 62561-4
- Fixing type: self adhesive



Insulator

Type	Width mm	Length mm	Height mm	Weight Kg/100 pcs.	Item No.
INS 50 50 M6	M6	18	20	1.0	5450094

- Material: Reinforced polyester
- Thread size : M6
- Application: Insulation bush

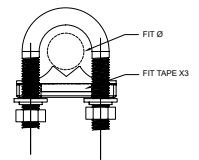


Single plate type U - Bolt rod to flat clamps

Type	For earth rods Fit mm Ø mm	Fit mm	Weight Kg/100 m	Item No.
2740 16 E DP	16	Rd 16 / Flat	-	5450077
2740 20 E DP	20	Rd 20 / Flat	24.0	5450078

Gun Metal

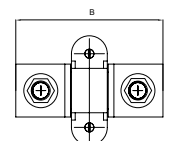
- Clamps flat conductor to earthing rod
- Material of clip top & bottom : Gun Metal
- Tightening torque: 20 Nm
- Complies to the requirement of IEC 62561-1
- Application: Establish connection between flat , earth rods, rebars, metal pipes & hand rails



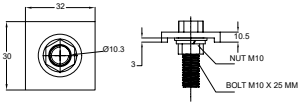
Bimetallic connector

Type	Fit mm	Dimension B mm	Weight Kg/100 pcs	Item No.
226 ZV 25X3 CU	FL25	78	19.5	5450238

- For connecting two dissimilar material of aluminium and copper flat conductor
- Fit: FL 25 X 3 mm
- Connector to avoid bimetallic corrosion
- Complies to the requirement of IEC 62561-1



Beam to tape bond

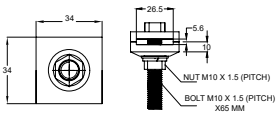


Type	Fit mm	Weight Kg/100 pcs	Item No.
1818 FL26 M10	Flat/Tape	10.0	5450250

Gun Metal

- For beam to tape bonding
- Tightening torque: 20 Nm
- Complies to the requirement of IEC 62561-1

Rain water pipe bond for flat

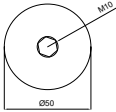


Type	Fit mm	Bolt Size	Weight Kg/100 pcs	Item No.
1818 FL26 M10	FL25	M10	17.5	5450251

Gun Metal

- For bonding rain water pipe to flat
- Material: Gun Metal
- Complies to the requirement of IEC 62561-1

Earth boss

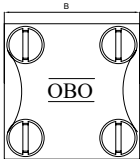


Type	Dia. mm	Bolt Size	Weight Kg/100 pcs	Item No.
EARTH BOSS	50	M10	80.5	5450390

Mild Steel

- Bonds the steel structure to earth by welding
- Connections should wrap with corrosion proof tape
- Complies to the requirement of IEC 62561-1

Square tape clamps

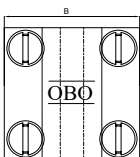


Type	Fit mm	Dimension B mm	Weight Kg/100 pcs	Item No.
255 25	FL25	52	17.5	5450480
255 50	FL50	77	68.0	5450482

Gun Metal

- Enables fixing of flat conductor cross, straight through and tee joints to the building surface
- Fit: FL 25 & FL 50
- The base get connected to the building surface through countersunk hole in the middle and upper part is fixed by four screws
- Material : Gun Metal
- Complies to the requirement of IEC 62561-1

Cable to tape square clamp



Type	Fit mm	Fit Sq. mm	Dimension B mm	Weight Kg/100 pcs	Item No.
255 25 70	FL 25 X 3	70	50	30.5	5450484
255 25 95	FL 25 X 3	95	50	-	5450486

Gun Metal

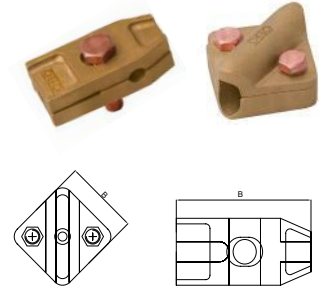
- Enable fixing of flat conductor & copper cable crossing over to the building surface
- Connections: straight through and tee
- Fit: Flat 25 X 3 to copper cable 70 / 95 Sq.mm
- The base has a countersunk hole in the middle and upper part is fixed by four screws
- Material : Gun Metal
- Complies to the requirement of IEC 62561-1

Test Cable to tape square clamps

Type	Fit mm	Fit	Dimension B mm	Weight Kg/100 pcs	Item No.
226 RD8	FL 25 X 3	RD 8 mm	64 mm	25.0	5450496
226 50	FL 25 X 3	50 Sq.mm	64 mm	-	5450490
226 70	FL 25 X 3	70 Sq.mm	64 mm	-	5450492
226 95	FL 25 X 3	95 Sq.mm	64 mm	35.5	5450494

Gun Metal

- Provides disconnection between conductor/cable and tape for testing purpose
- Connections: Straight
- Suitable for flat 25 X 3 to RD 8 conductor / copper cable 50/70/95 Sq.mm
- Single bolt clamps with base & upper part
- Material : Gun Metal
- Complies to the requirement of IEC 62561-1

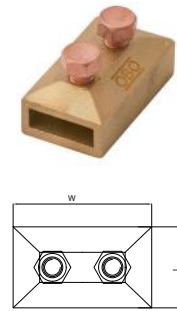


Oblong Test Clamp

Type	Maximum Flat size mm	Weight Kg/100 pcs	Item No.
226 25 25	26 X 8	25.0	5450498

Gun Metal

- Fixing of flat conductor straight through or to be overlapped joints to the building surface
- Clamp makes connection & disconnection possible for allowing periodic maintenance
- The base has a countersunk hole in the middle and upper part is fixed by two screws
- Tightening torque 12 Nm
- Complies to the requirement of IEC 62561-1

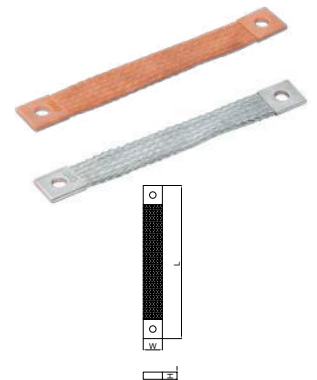


Flexible flat copper braid bonds

Type	Width mm	Length mm	Height mm	Weight Kg/100 pcs.	Item No.
856 CU 200	25	200	3.5	9.0	5450296
856 CU 400	25	400	3.5	15.0	5450297
856 CU SN 200	25	200	3.5	9.0	5450298
856 CU SN 400	25	400	3.5	15.0	5450299

Tinned Copper Cu Copper

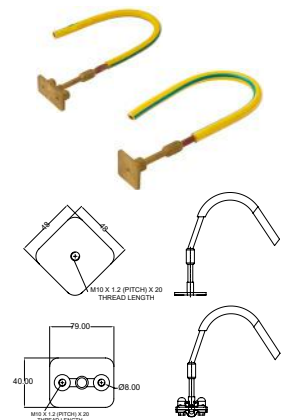
- Main potential equalisation confirms to VDE 0100 Part 410 and Part 540, and also lightning protection potential equalisation to VDE 0185-305 (IEC 62305)
- Quick & simple assembly of connection conductors
- Suitable to bond metal gates, doors, fences and metal objects
- Complies to the requirement of IEC 62561-1
- Tightening torque: 20 Nm



Earth points with pre-welded tail

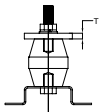
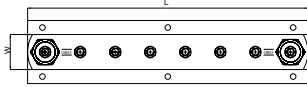
Type	Description	Weight Kg/100 pcs.	Item No.
205 EP 70 500 1H	Single hole earth point with pre-welded tail	60.0	5450260
205 EP 70 500 2H	Two hole earth points with pre-welded tail	70.0	5450261

- Application: Interface between earthing systems, conductors and reinforcements
- Complies to the requirement of IEC 62561-1
- Tightening torque: 20 Nm



Equipotential bonding systems

Equipotential bonding earth bars without disconnecting link

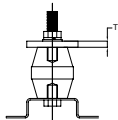
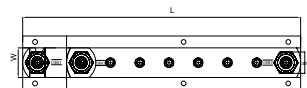


Type	Number of connections	Width mm	Length mm	Thickness mm	Weight Kg/100pcs.	Item No.
1802 6	6	50	400	6	223.0	5450330
1802 8	8	50	500	6	269.5	5450332
1802 10	10	50	600	6	321.5	5450334
1802 12	12	50	700	6	369.0	5450336
1802 16	16	50	800	6	463.5	5450338

Tinned Copper

- Main potential equalisation to VDE 0100 Part 410 and Part 540, and also lightning protection potential equalisation to VDE 0185-305 (IEC 62305)
- Quick, simple assembly of connection conductors to the contact rail using lock bolts M10
- The tinned copper busbar with 11mm dia. hole spacing 50 mm for earthing termination
- Application: It provides earthing termination for various services
- Complies to the requirement of IEC 62561-1
- Tightening torque: 20 Nm

Equipotential bonding earth bars with single disconnecting link

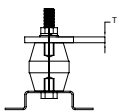
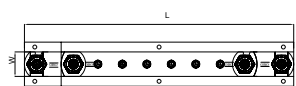


Type	Number of connections	Width mm	Length mm	Thickness mm	Weight Kg/100pcs.	Item No.
1802 1DC 6	6	50	375	6	287.5	5450340
1802 1DC 8	8	50	475	6	333.0	5450342
1802 1DC 10	10	50	575	6	380.0	5450344
1802 1DC 12	12	50	675	6	429.5	5450346
1802 1DC 16	16	50	775	6	526.5	5450348

Tinned Copper

- Main potential equalisation to VDE 0100 Part 410 and Part 540, and also lightning protection potential equalisation to VDE 0185-305 (IEC 62305)
- Quick, simple assembly of connection conductors to the contact rail using lock bolts M10
- The tinned copper busbar with 11mm dia. hole spacing 50 mm for earthing termination
- Application: It provides earthing termination for various services
- Complies to the requirement of IEC 62561-1
- Tightening torque: 20 Nm

Equipotential bonding earth bars with double disconnecting link



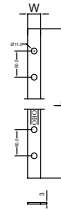
Type	Number of connections	Width mm	Length mm	Thickness mm	Weight Kg/100pcs.	Item No.
1802 2DC 6	6	50	450	6	348.0	5450350
1802 2DC 8	8	50	550	6	395.0	5450352
1802 2DC 10	10	50	650	6	441.5	5450354
1802 2DC 12	12	50	750	6	495.0	5450356
1802 2DC 16	16	50	850	6	590.5	5450358

Tinned Copper

- Main potential equalisation to VDE 0100 Part 410 and Part 540, and also lightning protection potential equalisation to VDE 0185-305 (IEC 62305)
- Quick, simple assembly of connection conductors to the contact rail using lock bolts M10
- The tinned copper busbar with 11mm dia. hole spacing 50 mm for earthing termination
- Application: It provides earthing termination for various services
- Complies to the requirement of IEC 62561-1
- Tightening torque: 20 Nm

Inspection housing earth bars (for PVC earth chamber)

Type	Number of connections	Width mm	Length mm	Height mm	Weight Kg/100pcs.	Item No.
5700 PIP SM EB 5	5	25	315	3	19.5	5106072
5700 PIP SM EB 7	7	25	315	3	19.5	5106053

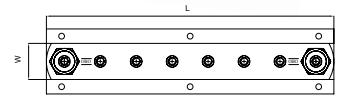


Cu Copper

- Main potential equalisation to VDE 0100 Part 410 and Part 540 & also, lightning protection potential equalisation to VDE 0185-305 (IEC 62305)
- Quick & simple assembly of connection conductors to the contact rail using lock bolts M10
- The Copper Busbar with 11mm dia. hole spacing 50 mm for earthing termination
- Application: It provides earthing termination for various services
- Complies to the requirement of IEC 62561-1
- Tightening torque: 20 Nm

Equipotential bonding earth bars without disconnecting link

Type	Number of connections	Width mm	Length mm	Thickness mm	Weight Kg/100pcs.	Item No.
1802 6	6	50	400	6	223.5	5450300
1802 8	8	50	500	6	269.5	5450302
1802 10	10	50	600	6	321.5	5450304
1802 12	12	50	700	6	369.0	5450306
1802 16	16	50	800	6	463.5	5450308

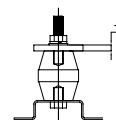
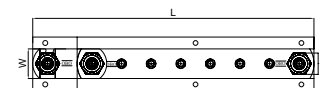


Cu Copper

- Main potential equalisation to VDE 0100 Part 410 and Part 540 & also, lightning protection potential equalisation to VDE 0185-305 (IEC 62305)
- Quick & simple assembly of connection conductors to the contact rail using lock bolts M10
- The Copper Busbar with 11mm dia. hole spacing 50 mm for earthing termination
- Application: It provides earthing termination for various services
- Complies to the requirement of IEC 62561-1
- Tightening torque: 20 Nm

Equipotential bonding earth bars with single disconnecting link

Type	Number of connections	Width mm	Length mm	Thickness mm	Weight Kg/100pcs.	Item No.
1802 1DC 6	6	50	375	6	287.5	5450310
1802 1DC 8	8	50	475	6	333.0	5450312
1802 1DC 10	10	50	575	6	380.0	5450314
1802 1DC 12	12	50	675	6	429.5	5450316
1802 1DC 16	16	50	775	6	526.5	5450318



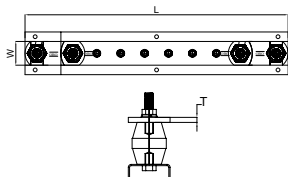
Cu Copper

- Main potential equalisation to VDE 0100 Part 410 and Part 540 & also, lightning protection potential equalisation to VDE 0185-305 (IEC 62305)
- Quick & simple assembly of connection conductors to the contact rail using lock bolts M10
- The Copper Busbar with 11mm dia. hole spacing 50 mm for earthing termination
- Application: It provides earthing termination for various services
- Complies to the requirement of IEC 62561-1
- Tightening torque: 20 Nm



Equipotential bonding earth bars with double disconnecting link

Type	Number of connections	Width mm	Length mm	Thickness mm	Weight Kg/100pcs.	Item No.
1802 2DC 6	6	50	450	6	348.0	5450320
1802 2DC 8	8	50	550	6	395.0	5450322
1802 2DC 10	10	50	650	6	441.5	5450324
1802 2DC 12	12	50	750	6	495.0	5450326
1802 2DC 16	16	50	850	6	590.5	5450328

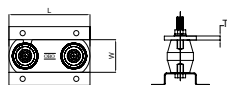


Cu Copper

- Main potential equalisation to VDE 0100 Part 410 and Part 540 & also, lightning protection potential equalisation to VDE 0185-305 (IEC 62305)
- Quick & simple assembly of connection conductors to the contact rail using lock bolts M10
- The Copper Busbar with 11mm dia. hole spacing 50 mm for earthing termination
- Application: It provides earthing termination for various services
- Complies to the requirement of IEC 62561-1
- Tightening torque: 20 Nm

Disconnecting links

Type	Width mm	Length mm	Height mm	Weight Kg/100pcs.	Item No.
DCL CU	50	125	6	87.0	5450400
DCL TINNED CU	50	125	6	87.0	5450406

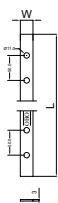


Cu Copper **Tinned Copper**

- Main potential equalisation to VDE 0100 Part 410 and Part 540 & also, lightning protection potential equalisation to VDE 0185-305 (IEC 62305)
- Quick & simple assembly of connection conductors to the contact rail using lock bolts M10
- Application: It provides connection and disconnection to earthing termination for various services
- Complies to the requirement of IEC 62561-1
- Tightening torque: 20 Nm

Inspection housing earth bars (for Concrete earth chamber)

Type	Number of connections	Width mm	Length mm	Thickness mm	Weight Kg/100pcs.	Item No.
5700 CIP SM EB 5	5	25	285	3	18.0	5106052
5700 CIP SM EB 7	7	25	285	3	17.5	5106073

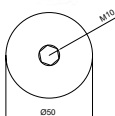


Cu Copper

- Main potential equalisation to VDE 0100 Part 410 and Part 540, and also lightning protection potential equalisation to VDE 0185-305 (IEC 62305)
- Quick, simple assembly of connection conductors to the contact rail using lock bolts M10
- The Copper Busbar with 11mm dia. hole spacing 50 mm for earthing termination
- Application: It provides earthing termination for various services
- Complies according to IEC 62561-1
- Tightening torque: 20 Nm

Earth boss

Type	Dia. mm	Bolt Size	Weight Kg/100 pcs	Item No.
EARTH BOSS	50	M10	80.5	5450390



Mild Steel

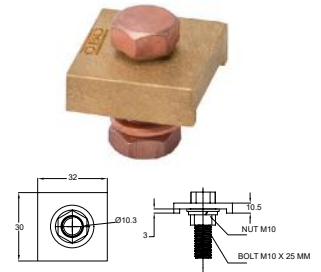
- Bonds the steel structure to earth by welding
- Connections should wrap with corrosion proof tape
- Complies to the requirement of IEC 62561-1

Beam to tape bond

Type	Fit mm	Weight Kg/100 pcs	Item No.
1818 FL26 M10	Flat/Tape	10.0	5450250

Gun Metal

- For beam to tape bonding
- Tightening torque: 20 Nm
- Complies to the requirement of IEC 62561-1

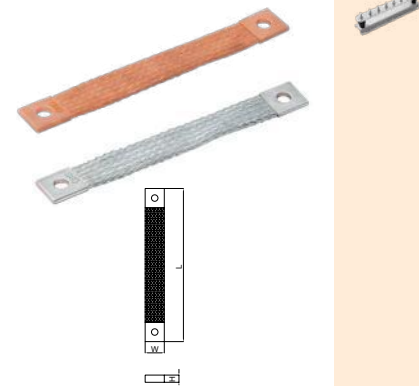


Flexible flat copper braid bonds

Type	Width mm	Length mm	Height mm	Weight Kg/100pcs.	Item No.
856 CU 200	25	200	3.5	9.0	5450296
856 CU 400	25	400	3.5	15.0	5450297
856 CU SN 200	25	200	3.5	9.0	5450298
856 CU SN 400	25	400	3.5	15.0	5450299

Cu Copper Tinned Copper

- Main potential equalisation confirms to VDE 0100 Part 410 and Part 540 & also, lightning protection potential equalisation to VDE 0185-305 (IEC 62305)
- Quick & simple assembly of connection conductors
- Suitable to bond metal gates, doors, fences and metal objects
- Complies to the requirement of IEC 62561-1
- Tightening torque: 20 Nm

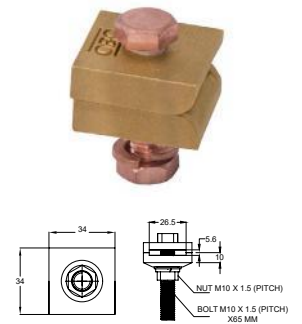


Rain water pipe bond for flat

Type	Flat mm	Bolt Size	Weight Kg/100 pcs	Item No.
1818 FL26 M10	FL26	M10	17.5	5450251

Gun Metal

- For bonding rain water pipe to flat
- Material: Gun Metal
- Complies to the requirement of IEC 62561-1



Type A

- Horizontal earth electrodes
- Vertical earth electrodes (earth rods)

Type B

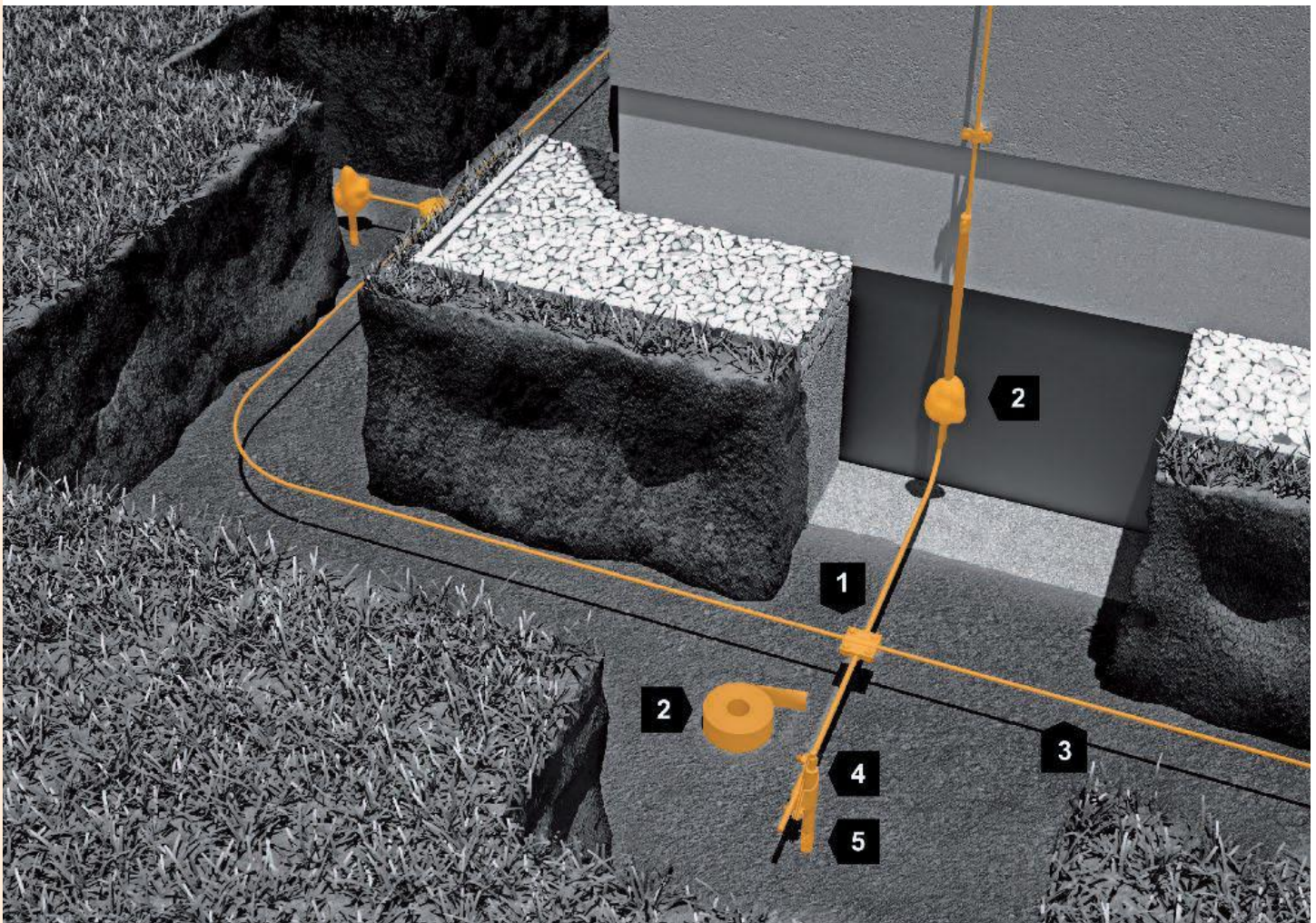
- Ring earth electrodes (surface earthers)
- Foundation earth electrodes

External and internal lightning protection systems

Planning methods

IEC 62305-3 demands continuous lightning protection equipotential bonding. This means individual earthing systems must be connected together to create a global earthing system.

The standard differentiates between type A and type B earthing systems. Type A earth electrodes are vertical or horizontal earthers (earth rods). Type B earth electrodes are any surface earther (ring earthers, foundation earthers). OBO Construct for earthing systems offers digital support in the planning of earthing systems.



1	Cross-connector
2	Corrosion protection strip
3	Round conductor
4	Connection clips
5	Earth rods (observe corrosion protection for connectors)

Type A earth rods with ring equipotential bonding

Type A earth rod structure

Functional method

As single earth electrodes, an earth rod of 9.0 m in length is recommended for each conductor. This should be routed at a distance of 1.0 m from the foundation of the building and min. 0.5 m below the surface of the earth or under the frost limit.

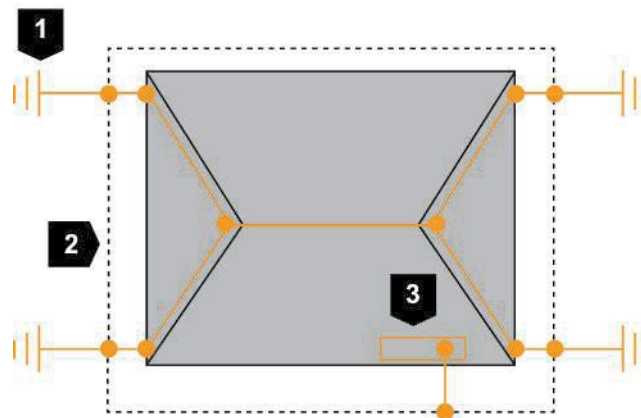
As a minimum dimension (according to IEC 62305-3), a length of 2.5 m for vertical routing and 5 m for horizontal routing apply for type A earthers for lightning protection classes III and IV. Depending on the soil conditions, earth rods can be driven into the earth by hand or using suitable electric, petrol or pneumatic hammers.

All earth rods must be connected with a ring earther inside or outside of the building and with an entry to the equipotential busbar.

The required earther lengths may be split into several lengths connected in parallel.

Information on arrangement of type A earthers

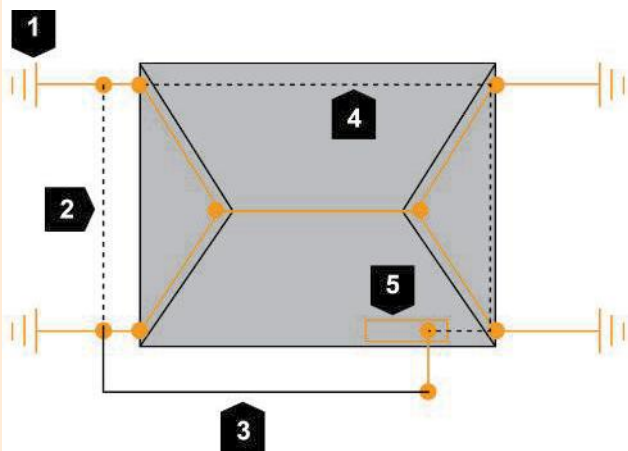
- In general, earth rods are inserted vertically into the earth to fairly large depths. They are driven into natural soil, which is usually only found beneath foundations.
- Often, the specific ground resistance cannot be determined in the densely built-up areas. In these cases, when determining the minimum length of the earther, it is sufficient to assume a specific ground resistance of 1,000 Ohm/m.
- In type A earthing systems, there is a minimum requirement of two earth rods.
- Earther arrangement, type A: connection inside and outside the building structure.
- Down-conductors are interconnected near the surface of the ground.



1	Earth rod, type A
2	Underground connection
3	Main earthing rail (MER)

Earthing system, type A: Connection outside the building structure

The type A fan or earth rods do not fulfil the requirements for equipotential bonding and potential control. A type A earthing system is suitable for low building structures (e.g. single-occupancy dwellings), existing building structures, for LPS with air-termination rods or tension cables, or for an isolated LPS. Type A earthing systems comprise horizontal and vertical earth electrodes, connected to each conductor.



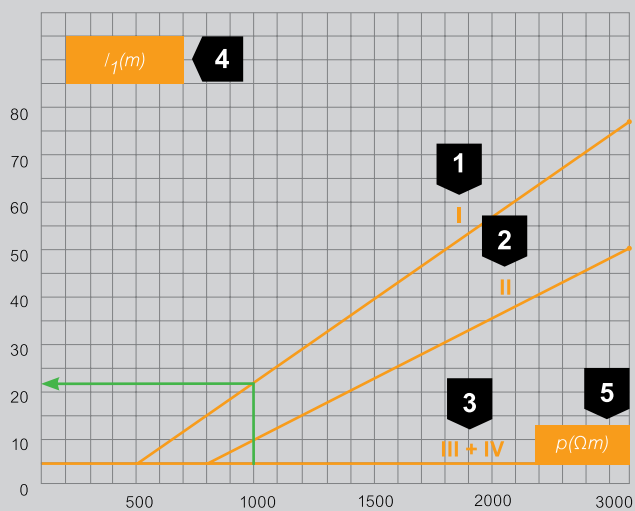
1	Earth rod, type A
2	Underground connection
3	Surface-mounted connection
4	Connection inside the building
5	Main earthing rail (MER)

Earthing system, type A: Connection inside and outside the structure

If it is not possible to connect the earth rods in the ground, this can take place in or on the building.

Connection cables should be as short as possible and not installed higher than 1 m above the ground. If the lightning protection equipotential bonding was only connected to a single earth electrode, then high potential difference to other earthers would result. This could cause unapproved arcing or lethal voltage differences.

The minimum length of each earth electrode – based on the protection class of the LPS – is not relevant if the earthing resistance of the individual earth electrode is $\leq 10 \Omega$ (recommendation). The minimum length of each earth rod is l_1 for horizontal earth electrodes and $0.5 \times l_1$ for vertical earth electrodes.



1	Earth rod, type A
2	Underground connection
3	Surface-mounted connection
4	Connection inside the building
5	Main earthing rail (MER)

Minimum lengths of earthers

Example

- Lightning protection class I
- Sand, gravel, top layers (dry) 1,000 Ωm

Result

- Lightning protection class 1: 22 m
- Earth rod: 11 m

Materials for type A

The following materials can be used, amongst others:

- Rods from stainless steel, Ø 20 mm
- Galvanised steel rods, Ø 20 mm
- Copper coated steel rods, Ø 20 mm
- Stainless steel rods, Ø 25 mm
- Galvanised steel flat conductors, 30 x 3.5 mm
- Stainless steel flat conductors, 30 x 3.5 mm
- Galvanised steel pipes, Ø 25 mm

See Chapter 2.7.2 Materials for earthing systems.

Corrosion protection

In potentially corrosive areas, rust-proof stainless steel with a molybdenum content of $\geq 2\%$, e.g. 1.4404 or 1.4571, should be used. Detachable connections in the ground must be protected against corrosion (plastic corrosion protection strip).

Normative requirements

All types of earth rods and potential coupling pieces must be tested according to IEC 62561-2 ED2.

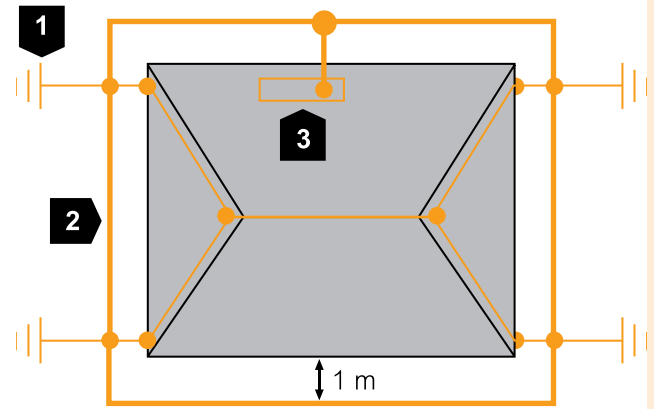
Type B ring earth electrodes

The type B ring earth electrodes is laid around the building.

Functional method

Outside the building, at least 80% of the ring earth electrodes (surface earther's) overall length must be in contact with the ground. It must be installed as a closed ring at a distance of 1.0 m and a depth of 0.5 m (or 0.8 m according to DIN 18014) around the external foundation of the building. A ring earth electrode is an earther according to arrangement type B.

In the earth, rustproof stainless steel with a molybdenum content of $\geq 2\%$ should be used.



1	Earth rods (optional)
2	Underground connection
3	Main earthing busbar (MEB)

Installation principle, ring earther

Materials for ring earth electrodes

The following materials can be used, amongst others:

- Stainless steel flat conductors, 30 x 3.5 mm
- Galvanised steel flat conductors, 30 x 3.5 mm
- Round conductors made of copper, Ø 8 mm
- Round conductors made of stainless steel, Ø 10 mm
- Round conductors made of galvanised steel, Ø 10 mm

See Chapter 2.7.2 Materials for earthing systems.

Corrosion protection

In the earth, rustproof stainless steel with a molybdenum content of $\geq 2\%$, e.g. 1.4404 or 1.4571, should be used. Detachable connections in the ground must be protected against corrosion (plastic corrosion protection strip).

Condition for additional earthing measures

With type B earthing systems, the central radius r must be greater than or equal to the minimum earthing length l_1 .

$$r = \sqrt{A/\pi}$$

$$r \geq l_1$$

r : Medium radius of the area covered by the earther

A : Area of the earthing system in m^2

l_1 : Minimum earth length in m

Example

Area of 100 m^2 , covered by a type B earther Lightning protection class I, Sand, gravel, top layers (dry) 1,000 Ωm , l_1 from "Minimum lengths of earthers" = 22 m

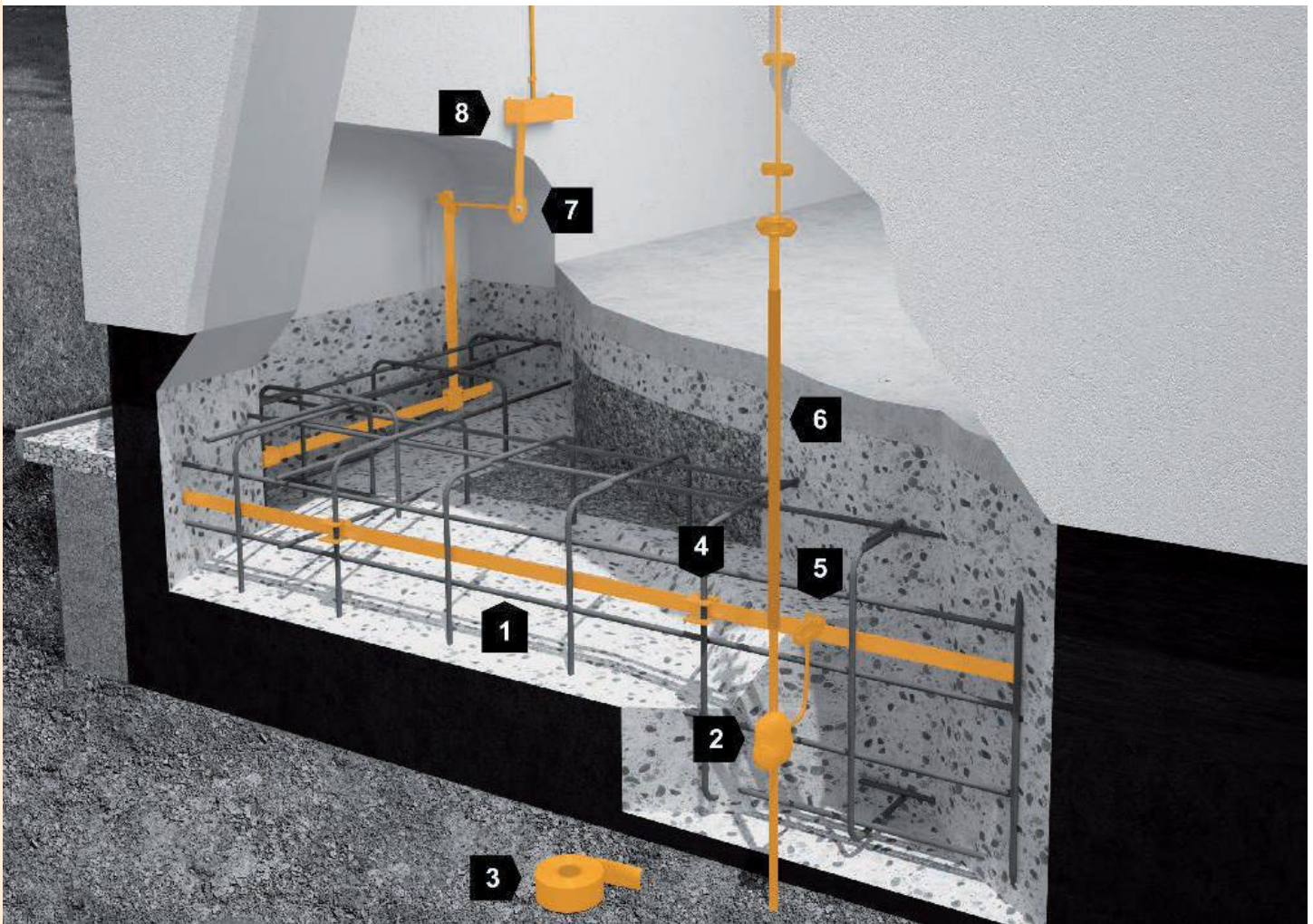
Result:

$$A = 100 \text{ m}^2$$

$$r = \sqrt{(100 \text{ m}^2 / \pi)} = 31.83 \text{ m}$$

$$31.83 \text{ m} \geq 22 \text{ m}$$

Condition $r \geq l_1$ fulfilled.



1	Flat conductor
2	Cross-connector with corrosion protection
3	Corrosion protection strip
4	Connection terminal for reinforced steels
5	Cross-connector
6	Earth lead-in rod
7	Earthing fixed point
8	Main earthing busbar (MEB)

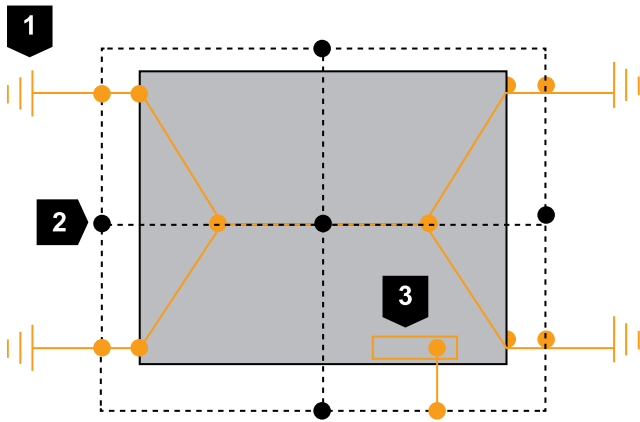
Type B foundation earth electrode

Type B foundation earth electrodes

The foundation earth electrodes is a component of the electrical installation of the building.

Functional method

A foundation earth electrodes is an earther that is embedded into the concrete foundation of a building. It also acts as a lightning protection earth electrodes if the lugs required for connecting the conductors protrude from the foundation. The steel strip is to be connected to reinforcements at intervals of approx. 2 m. DIN 18014 forms the basis for constructing the foundation earth electrodes. Wedge connectors must not be used in mechanically compacted concrete.



1	Earth rods (optional)
2	Ring earth electrodes
3	Main earthing busbar (MEB)

Installation principle, foundation earther with functional equipotential bonding cable

In order to achieve a clean insertion, the use of strip holders is recommended for the installation of foundation earth electrodes. The holders must be inserted at a distance of approx. 2 m.

In accordance with DIN 18014, connect the foundation earthers of each individual foundation on the lowest storey into a closed ring. If necessary, insert transverse conductors, in order to create a grid of 20 x 20 m. If the earth electrodes do not have the necessary contact with the earth electrodes in the foundation, then a grid ring earther should additionally be installed. The foundation earth electrodes becomes a functional equipotential bonding conductor.

This is the case when using:

- Water-impervious concrete according to DIN EN 206 and DIN 1045-2 (white trough)
- Bitumen seals (black trough), e.g. bitumen lines
- Polymer-modified bitumen thick coating
- Impact-resistant plastic webs
- Heat insulation (perimeter insulation) on the underside and side walls of the foundations
- Additionally attached, capillary breaking, poorly electrically conductive earth strata, e.g. made of recycling or crushed glass

This grid ring earther must be connected with the functional equipotential bonding conductor and must be executed as follows either outside of or within the floor plate:

- Grid width of 10 x 10 m with lightning protection measures
- Grid width of 20 x 20 m without lightning protection measures

Materials for foundation earthers and functional equipotential bonding conductors

The following materials can be used, amongst others:

- Galvanised steel flat conductors, 30 x 3.5 mm
- Stainless steel flat conductors, 30 x 3.5 mm
- Copper cable, 50 mm²
- Round conductors made of galvanised steel, Ø 10 mm
- Round conductors made of stainless steel, Ø 10 mm

Connection lugs

Connection lugs must be made of materials with permanent corrosion protection. Either hot galvanised steels with plastic jacketing or rustproof stainless steels with a molybdenum content $\geq 2\%$ must be used, e.g. 1.4404 or 1.4571. The connection lugs should be clearly marked with protective caps during the construction phase, e.g. with the OBO ProtectionBall.

Materials for ring earthers

The following materials can be used for the grid ring earther:

- Stainless steel flat conductors, 30 x 3.5 mm
- Round conductors made of stainless steel, Ø 10 mm
- Copper cable, 50 mm²

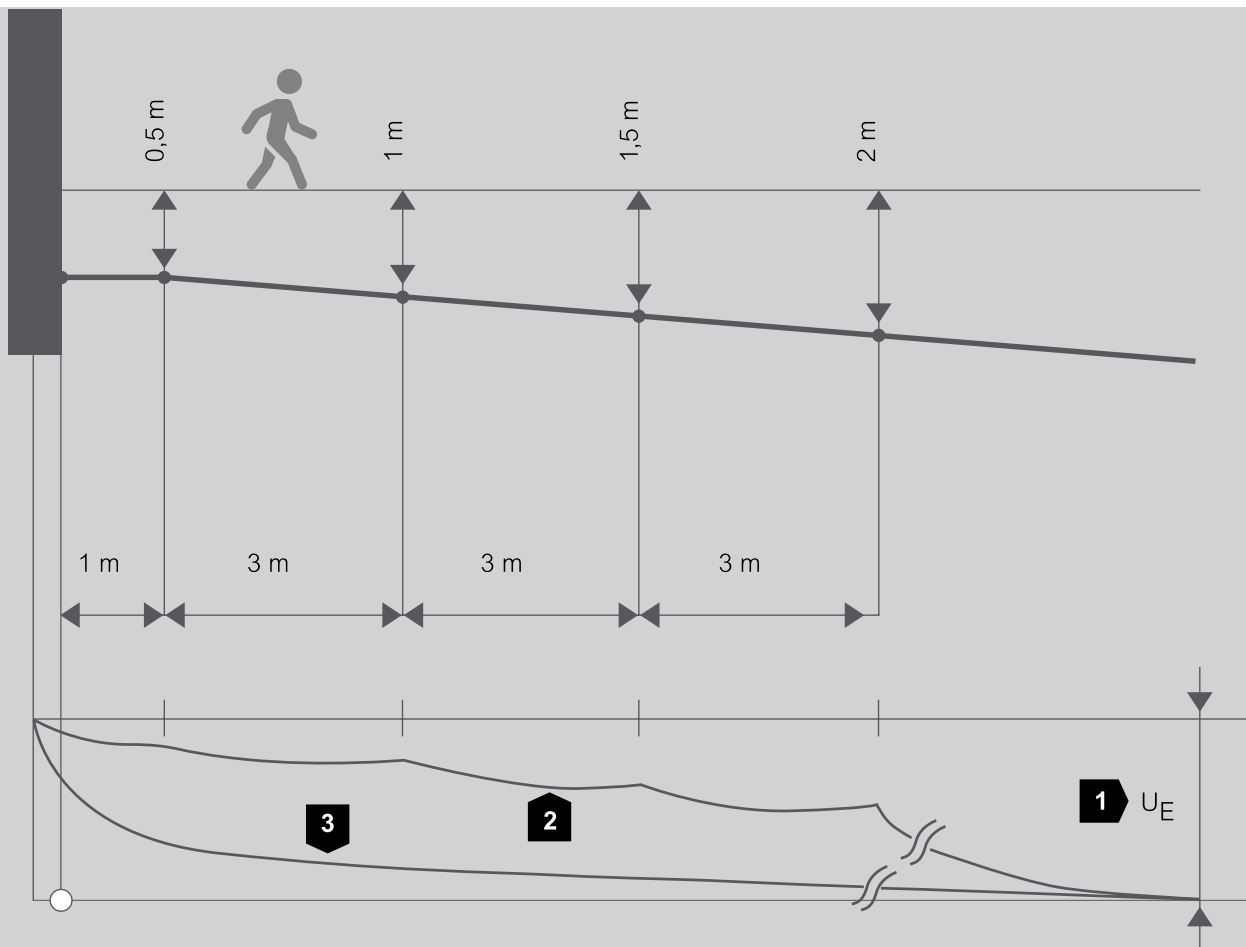


OBO ProtectionBall (item no. 5018 01 4) for marking earthing lugs

Potential control

The potential control reduces the step voltage close to rods or down conductors on a building. Additional earth conducts are laid and connected with one another in a grid format.

The lightning current is distributed through the metal grid system and the voltage drop and the resulting step voltage are reduced. As the distance from the rod or down-conductor increases, the depth of the earther cable also increases (in increments of 0.5 m). The earthers are typically laid 3 m apart.



1	Earthing voltage U_E
2	With potential control
3	Without potential control

Potential control on a street-light pole

Step voltage

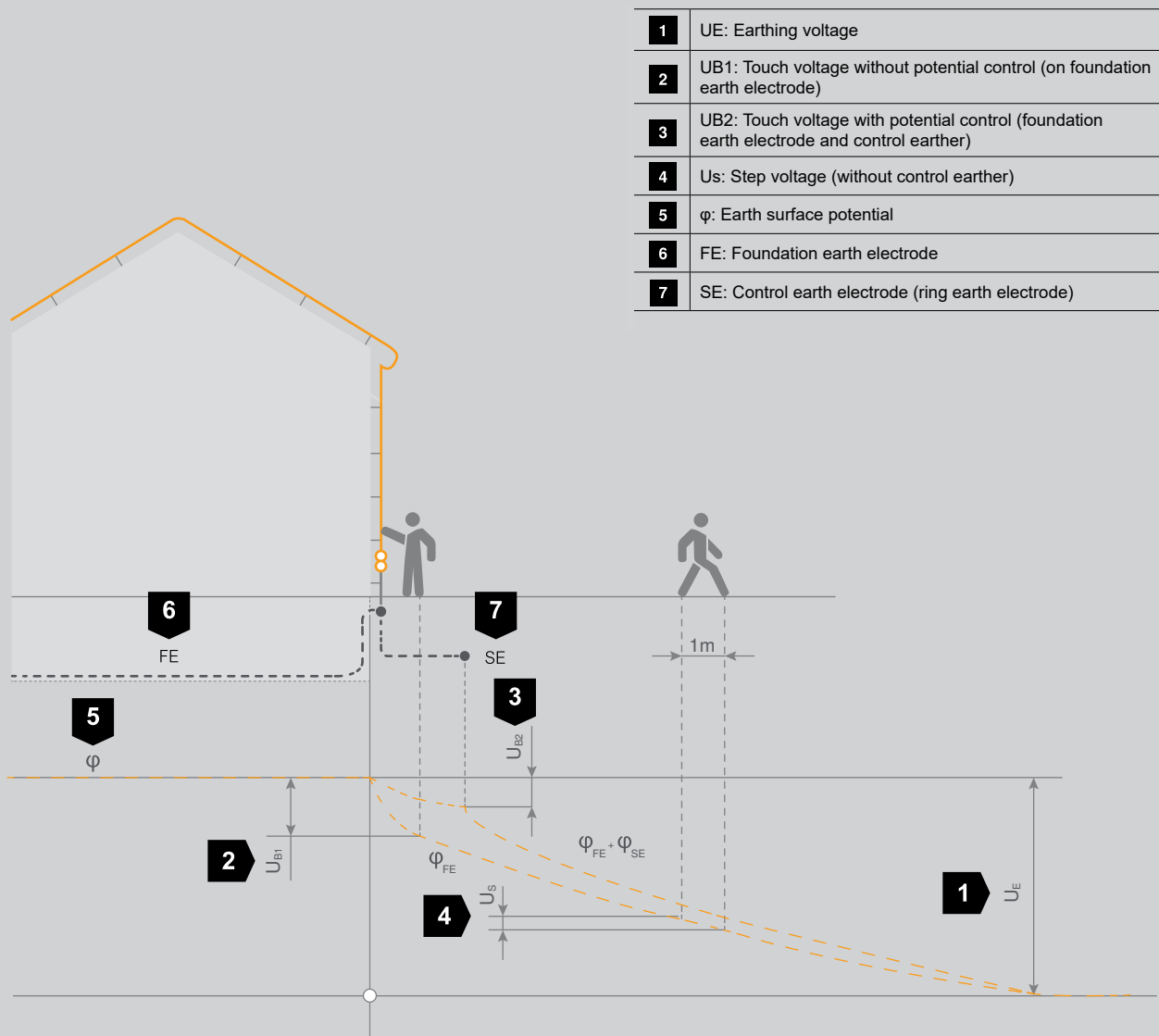
The step voltage is the voltage between a person's feet placed 1 m apart. Here the current flows between the person's feet through their body. The contact voltage is the voltage between a component (e.g. the conductor) and earth potential.

Here the current flows from the hand to the foot through the body. Both types of voltage can be harmful to the body. These voltages need to be reduced via potential control or insulation.

Protection against dangerous touch voltage

The step voltage is the voltage between a person's feet placed 1 m apart. Here the current flows between the person's feet through their body. The contact voltage is the voltage between a component (e.g. the conductor) and earth potential.

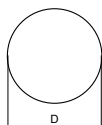
Here the current flows from the hand to the foot through the body. Both types of voltage can be harmful to the body. These voltages need to be reduced via potential control or insulation.



Electrical potential on the earth surface and voltages as current passes through the foundation earth electrode (FE) and control earther (SE)

Earthing systems

Round conductor, Copper bonded

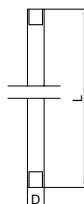


Type	Nominal size Ø mm	Cross-section mm ²	Normal ring ca. m	Weight Kg/100 m	Item No.
RD 8-ST CU IN	8	50	100	41.2	5021382
RD 10-ST CU IN	10	78	100	58.4	5021384

 Copper-coated

- Copper bonding thickness of greater than 250 Microns
- Meets the requirements of VDE 0185-305 (IEC 62305)
- Application: Air-terminal and structural down conductors in case of structurally utilized concrete columns especially for highly corrosive areas
- Complies to the requirement of IEC 62561-2

Copper earth rods

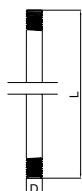


Type	Dimension D mm	Dimension L mm	Weight Kg/100 pcs	Item No.
16 1200 SER	16	1200	211.5	5450180
16 1500 SER	16	1500	264.3	5450182
16 1800 SER	16	1800	322.5	5450184
16 3000 SER	16	3000	536.5	5450186
20 1200 SER	20	1200	300.0	5450190
20 1500 SER	20	1500	412.0	5450192
20 1800 SER	20	1800	497.0	5450194
20 3000 SER	20	3000	834.5	5450196

 Copper

- Solid copper earth rod with internal threads at both end
- Material : Copper
- Length of the earth rod can be increase with suitable coupling dowel
- Application: Suitable for both residential & industrial purpose
- Complies to the requirement of IEC 62561-2 & UL 467

Threaded Copper bonded earth rods



Type	Dimension D mm	Dimension L mm	Copper coating thickness Microns	Weight Kg/100 pcs	Item No.
2019 20 CBER	16	1200	250	191.0	5450150
16 1500 CBER	16	1500	250	239.0	5450152
16 1800 CBER	16	1800	250	292.0	5450154
16 3000 CBER	16	3000	250	492.5	5450156
20 1200 CBER	20	1200	250	288.5	5450160
20 1500 CBER	20	1500	250	375.0	5450162
20 1800 CBER	20	1800	250	445.0	5450164
20 3000 CBER	20	3000	250	744.5	5450166

 Copper coated

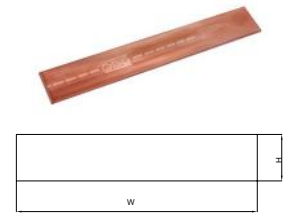
- Copper bonded earth rod with external threads at both end
- Material : Copper coated steel
- Length of the earth rod can be increased with suitable coupler.
- Application: Suitable for both residential & industrial purpose
- Complies to the requirement of IEC 62561-2 & UL 467

Flat conductors, Copper

Type	Dimension W x H mm	Cross-section mm ²	Normal ring ca. m	Weight Kg/100 m	Item No.
FL 25-CU IN	25 x 3	75	50	64.9	5450450
FL 50-CU IN	50 x 6	300	20	257.3	5450452
FL 25-TCU IN	25 x 3	75	50	67.0	5450454

■ Tinned Copper ■ Copper

- Complies to the requirement of IEC 62561-2
- Meets the requirements of VDE 0185-305 (IEC 62305)
- Application: Lightning protection system, earthing systems and equipotential bonding system

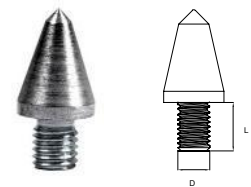


Spikes for earth rod

Type	Dimension D mm	Dimension L mm	Weight Kg/100pcs.	Item No.
1819	M10	13	2.5	5450140
1819	M12	13	4.0	5450142

■ Steel - Electro zinc coated

- Suitable for Ø16 mm dia. and Ø20 mm dia. solid copper earth rod
- Material : Steel - Electro zinc coated
- Application: It drives earth rod into soil

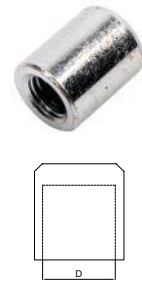


Driving Heads

Type	Dimension D mm	Weight Kg/100pcs.	Item No.
1820 16 CBER	16	12.5	5450120
1820 20 CBER	20	14.0	5450122

■ Steel - Electro zinc coated

- Suitable for Ø16 mm dia. and Ø20 mm dia. earth rod
- Material : Steel - Electro zinc coated
- Application: It protects the thread and the top of the earth rod from damage when being driven into the ground.

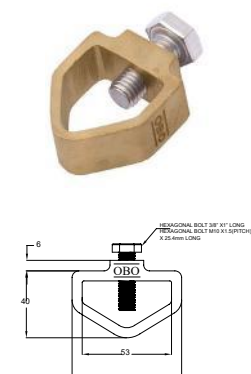


Rod to tape clamps

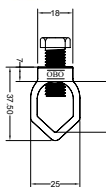
Type	For earth rods Ømm	Fit mm	Weight Kg/100 pcs	Item No.
2745 20 RTT	20	Rd 8-10/ FL 25	12.5	5450291
17 25 RT	17.2	Rd 8-10/ FL 25	10.0	5450064

■ Gun Metal

- For earthing rod connector to tape connection
- Type A terminal
- Material : Gun Metal
- Tightening torque: 20 Nm
- Complies to the requirement of IEC 62561-1
- Application: To connect cables to earth rods



Rod to cable clamp

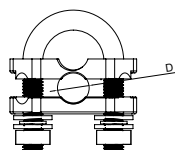


Type	For earth rods Ømm	Fit mm	Weight Kg/100 pcs	Item No.
2745 20 RTC	20	Rd 20/ Conductor 35-95 mm ²	7.5	5450292

Gun Metal

- Suitable for earthing rod connector Ø 20 or conductors 35-95 mm²
- Suitable for round conductor attachments Rd 7-12.5 with hexagonal bolts M10 x 25, copper (Cu)
- Material : Gun Metal
- Tightening torque: 20 Nm
- Complies to the requirement of IEC 62561-1
- Application: It connects cables to earth rods

Double plate type U - Bolt rod to cable clamps



Type	For earth rods Ømm	Fit Sq. mm	Weight Kg/100 pcs	Item No.
2740 16 25-95	16	25-95	-	5450073
2740 20 35-70	20	35-70	-	5450074
2740 16 70-185	16	70-185	28.5	5450075
2740 16 150-300	16	150-300	40.0	5450076

Gun Metal

- For earthing rod connector Ø 16/20 to conductors 25-95 mm² / 35-70 mm² / 70-185 mm² / 150-300 mm²
- Material of clip top & bottom : Gun Metal
- Tightening torque: 20 Nm
- Complies to the requirement of IEC 62561-1
- Application: It connects cables to earth rods, rebars, metal pipes & hand rails

Earth rod coupling dowels for solid copper earth rod

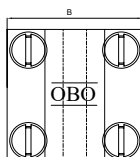


Type	Dimension D mm	Dimension L mm	Weight Kg/100 pcs	Item No.
2019 16 SER	10	70	4.0	5450110
2019 20 SER	12	70	5.5	5450112

Gun Metal

- Suitable for 16 mm dia. and 20 mm dia. solid copper earth rod
- Material : Gun Metal
- Application: It provides robust coupling to join the two internal threaded copper earth rods
- Ensures continuous contact between rods.
- Complies according to IEC 62561-2 & IEC 62561-1

Cable to tape square clamps



Type	Fit mm	Fit Sq. mm	Dimension B mm	Weight Kg/100 pcs	Item No.
255 25 70	FL 25 X 3	70	50	30.5	5450484
255 25 95	FL 25 X 3	95	50	-	5450486

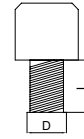
Gun Metal

- Enable fixing of flat conductor & copper cable crossing over to the building surface
- Connections: straight through and tee
- Fit: Flat 25 X 3 to copper cable 70 / 95 Sq.mm
- The base has a countersunk hole in the middle and upper part is fixed by four screws
- Material : Gun Metal
- Complies to the requirement of IEC 62561-1

Type	Dimension D mm	Dimension L mm	Weight kg/100 pcs.	Item No.
1820 20 SER	M12	37	6.0	5450132
1820 16 SER	M10	32	3.5	5450130

Steel - Electro zinc coated

- Suitable for Ø20 mm dia. and Ø16 mm dia. solid copper earth rod
- Material : Steel - Electro zinc coated
- Application: It protects the thread and the top of the earth rod from damage when being driven into the ground.

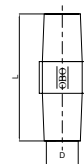


Earth rod couplers for copper bonded earth rod

Type	Dimension D mm	Dimension L mm	Weight Kg/100 pcs	Item No.
2019 16 CBER	16	72	13.5	5450100
2019 20 CBER	20	72	19.0	5450102

Gun Metal

- Suitable for 16 mm dia. and 20 mm dia. copper bonded earth rod
- Material : Gun Metal
- Application: It provides robust coupling to join the two threaded copper bonded earth rods
- Ensures continuous contact between rods.
- Tightening torque: 40 Nm
- Complies to the requirement of IEC 62561-1

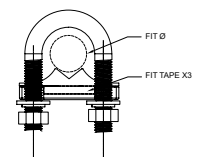


Single plate type U - Bolt rod to flat clamps

Type	For earth rods Ømm	Fit mm	Weight Kg/100 pcs	Item No.
2740 16 E DP	16	Rd 16 / Flat	-	5450077
2740 20 E DP	20	Rd 16 / Flat	24.0	5450078

Gun Metal

- Clamps Flat conductor to Earthing rod
- Material of clip top & bottom : Gun Metal
- Tightening torque: 20 Nm
- Complies to the requirement of IEC 62561-1
- Application: Establish connection between flat , earth rods, rebars, metal pipes & hand rails

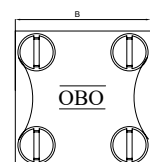


Square tape clamps

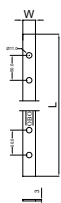
Type	Fit mm	Dimension B mm	Weight Kg/100 pcs	Item No.
255 25	FL25	52	17.5	5450480
255 50	FL50	77	68.0	5450482

Gun Metal

- Enables fixing of flat conductor - Cross, straight through and tee joints to the building surface
- Fit: FL 25 & FL 50
- The base get connected to the building surface through countersunk hole in the middle and upper part is fixed by four screws
- Material : Gun Metal
- Complies to the requirement of IEC 62561-1



Inspection housing earth bars (for PVC earth chamber)

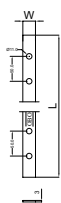


Type	Number of connections	Width mm	Length mm	Thickness mm	Weight Kg/100pcs.	Item No.
5700 PIP SM EB 5	5	25	315	3	19.5	5106072
5700 PIP SM EB 7	7	25	315	3	19.5	5106053

Cu Copper

- Main potential equalisation to VDE 0100 Part 410 and Part 540 & also, lightning protection potential equalisation to VDE 0185-305 (IEC 62305)
- Quick & simple assembly of connection conductors to the contact rail using lock bolts M10
- The Copper Busbar with 11mm dia. hole spacing 50 mm for earthing termination
- Application: It provides earthing termination for various services
- Complies to the requirement of IEC 62561-1
- Tightening torque: 20 Nm

Inspection housing earth bars (for Concrete earth chamber)



Type	Number of connections	Width mm	Length mm	Thickness mm	Weight Kg/100pcs.	Item No.
5700 CIP SM EB 5	5	25	285	3	18.0	5106052
5700 CIP SM EB 7	7	25	285	3	17.5	5106073

Cu Copper

- Main potential equalisation to VDE 0100 Part 410 and Part 540 & also, lightning protection potential equalisation to VDE 0185-305 (IEC 62305)
- Quick, simple assembly of connection conductors to the contact rail using lock bolts M10
- The Copper Busbar with 11mm dia. hole spacing 50 mm for earthing termination
- Application: It provides earthing termination for various services
- Complies according to IEC 62561-1
- Tightening torque: 20 Nm

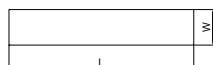
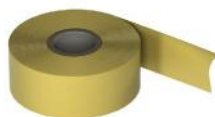
Earth enhancing compound



Type	Weight kg	Weight Kg/100pcs.	Item No.
OEC-2 10	10	1000.00	5450056
OEC-2 25	25	2500.00	5450058

- For retaining and maintaining moisture content in the soil
- Tested as per IEC 62561-7
- TCLP tested

Plastic corrosion protection strip



Type	Width mm	Length m	Weight Kg/100pcs.	Item No.
356 50 SM	50	10	71.5	2360057

- Approx. 1.1 mm thick
- Width: 50 mm, made of petrolatum-coated chemical fibre fabric

Earth rod seals

Type	For earth rods Ømm	Weight Kg/100 pcs	Item No.
ERS 16-1200 CB	Ø16 Copper bonded steel earth rod	409.5	5450230
ERS 20-1200 CB	Ø20 Copper bonded steel earth rod	409.5	5450232
ERS 16-1200 SER	Ø16 Solid copper earth rod	409.5	5450234
ERS 20-1200 SER	Ø20 Solid copper earth rod	409.5	5450236



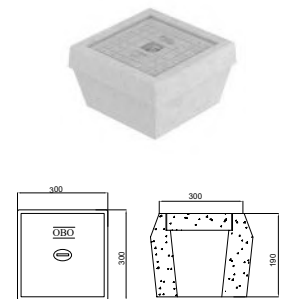
- Earth rod seal with double flange
- Hard drawn Plastic
- Ensure safety of earthing system
- Prevents water admittance
- Complies to the requirement of IEC 62561-5
- To be used under reinforcement

Heavy duty earth inspection chamber - Concrete

Type	Width mm	Length mm	Height mm	Weight Kg/100pcs.	Item No.
5700 CIP SM	330	330	190	2800.0	5104043

Concrete

- Under floor earth inspection pit with central lifting eye lid
- Material: Concrete
- Ensure the safety of earthing system
- Suitable for heavy loads : 5000 Kg load bearing capacity
- Complies to the requirement of IEC 62561-5
- It provides enough space for earth rod and bonding bar fixing



Heavy duty earth inspection chamber- PVC

Type	Width mm	Length mm	Height mm	Weight Kg/100pcs.	Item No.
5700 PIP SM	260	260	211	253.5	5106047

Polyethylene

- Under floor earth inspection pit
- Hard drawn Plastic
- Ensure the safety of earthing system
- Suitable for heavy loads : 5000 Kg load bearing capacity
- Complies to the requirement of IEC 62561- 5



OBO BETTERMANN Middle East and North Africa FZCO

P.O. Box 371148
Office : 402, Building 1E, DAFZA
Dubai, UAE.

Tel. +971 4 2668726

www.obo-bettermann.com

TBS-MENA-001

Building Connections





According to the new IEC/EN standards
IEC 60364-4-44
IEC 60364-5-53
surge protection has been
mandatory since 2016.



MCF, V50 and V20 The new team to combat surge voltages





Tested quality

Top of the agenda at the BET Test Centre is the expert testing of OBO's surge voltage and lightning protection systems. This also includes the testing of new developments, as well as the modifications to existing OBO lightning protection components, surge protection devices and lightning arrestors.

OBO development

OBO production

External certification



Safety with surge protective devices

Surge protective devices (SPDs) increase safety and prevent dangerous surge voltage from entering the building via the power and telecommunication lines.

The SPDs reduce the surge voltage to a level which is not dangerous to terminals. This means they prevent short circuits and the resulting risk of fire.

Surge voltage damage

Damage from surge voltages occurs not only from direct lightning strikes, which can cause significant destruction. Serious damage to electronic devices and systems is more commonly caused by surge voltages from lightning strikes within a radius of two kilometres.

Household contents insurance usually offers protection against direct lightning strikes. However, standard policies frequently do not cover the cost of surge damage to electronic devices. Additionally, the result of lightning strikes and the subsequent surge voltages can lead to costs from data loss and from loss of production.

Standards

IEC 60364-4-44 - Surge protection Required since October 2016

When is surge protection required?

- In every new electrical installation
- In every new or extended building
- Insurance companies demand surge protection

IEC 62305 - Lightning protection

When is a lightning protection system required?

- State building regulations (e.g. for schools, etc.)
- Risk analysis according to IEC 62305-2
- Insurance companies demand surge protection

Conclusion

Surge voltages endanger electronic devices and data

Surge protection is required for new buildings or modifications

This provides safety and protection for electrical installations and buildings

Type classes of surge protective devices



Building with lightning protection



Building with exposed cable supply



Type 1 + 2 combination arrestor

Used at the feed point of the building.



Buildings without lightning protection



Main and sub-distributor board



Type 2 surge protection

They are used in the main distributor and in sub-distributors / switching cabinets.



Industry



Office, commercial and residential buildings

MCF Compact Lightning protection class 1-4

Fulfils the requirement to 100 kA
(10/350) per SPD



Office, commercial and residential buildings

V50 Lightning protection class 3-4

Fulfils the requirement to 50 kA
(10/350) per SPD



Office, commercial and residential buildings



Main and sub-distributor board

V20

They are used in the main distributor and in sub-distributors / switching cabinets.



MCF



- Type 1 + 2 SPD: $I_{mp} = 25$ kA per pole and up to 100 kA in total
- Usable in buildings with lightning protection class 1-4
- Compact design, only 105 mm wide: Space savings of up to 25% for TNS and TT applications
- Protection level: < 1.5 kV, coordinated to Type 3 SPD
- Safe up to mains following current of 50 kA
- Universally usable for industry, offices, commercial and residential buildings
- Quality according to EN 61643-11 certified by an external testing institute
- Corresponds to the pre-meter requirements TAB and VDE-NAR 4100
- System protection up to 315 A usable without separate fusing
- Remote signalling, potential-free changeover (RS)
- Operating instructions always available online via QR code



V50



- Type 1 + 2 SPD: $I_{mp} = 12.5$ 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



V20



- 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



OBO checklist



Complete lightning and surge protection

As a manufacturer, OBO offers both components for external lightning protection and earthing as well as for equipotential bonding and surge protection.



Support

For us, active customer proximity means offering help and advice whenever we are needed:

Customer Service Germany
Service hotline: +49 (0)2373 89-1700
Fax: +49 (0)2373 89-1238
E-mail: export@obo.de
www.obo-bettermann.com



Brochures and selection aids

The OBO lightning protection guide and brochures offer support in the planning of lightning and surge protection systems.



Seminars and workshops

At the OBO Campus and also on-site, we are available to pass on our practical knowledge to you through seminars and planner days.



Expertise

At the BET Test Centre, highly qualified specialists test the OBO lightning protection components and surge protection devices in accordance with the relevant standards.



Certified

External tests, e.g. to VDE, ÖVE, KEMA and UL standards, are available for many products.



Warranty

OBO is renowned for its high quality, and offers surge protection devices with a 5-year warranty.

Lightning protection guide. Safely routed.

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

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

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

The new lightning protection guide can be requested and is also available for download at www.obo-bettermann.com.

Topics

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





Contact Customer Service

Customer Service Germany

Tel.: +49 (0)2373 89-1700

Fax: +49 (0)2373 89-1238

export@obo.de

Service times:

Mon. to Thurs. 7.30 a.m. to 5.00 p.m.

Fri. 7.00 a.m. to 3.00 p.m.

www.obo-bettermann.com



MCF, type 1 + 2 combination arrester

Combination arrester MCF, 3-pole 255 V, for TN-C system



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	
MCF75-3+FS	255	3	IP20	1	5096981

/pc.

Connection options

MCF75-3+FS					
Lightning surge current (10/350 μs)		I_{imp}			25 kA
Nominal discharge current (8/20 μs)		$I_{n/L-N}$			25 kA
Protection level		U_D			1.5 kV
Total discharge current (10/350)		I_{total}			75 kA

Combination arrester MCF, 3-pole+NPE 255 V, for TNS- and TT system



Type	Highest continuous voltage AC V	Pole version	Protection rating	Pack. pcs	
MCF100-3+NPE+FS	255	3+N/PE	IP20	1	5096987

/pc.

Connection options

MCF100-3+NPE+FS					
Lightning surge current (10/350 μs)		I_{imp}			25 kA
Nominal discharge current (8/20 μs)		$I_{n/L-N}$			25 kA
Protection level		U_D			1.5 kV
Total discharge current (10/350)		I_{total}			100 kA

Combination arrester V50, 1-pole 280 V

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

PA Polyamide



Connection options

V50-1-280

Lightning surge current (10/350 μ s)	I_{imp}	12.5 kA
Nominal discharge current (8/20 μ s)	$I_n / L-N$	30 kA
Total discharge current (10/350)	I_{total}	— kA
Protection level	U_n	1.3 kV

Combination arrester V50, 1-pole with FS 280 V

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

PA Polyamide



Connection options

V50-1+FS-280

Lightning surge current (10/350 μ s)	I_{imp}	12.5 kA
Nominal discharge current (8/20 μ s)	$I_n / L-N$	30 kA
Total discharge current (10/350)	I_{total}	— kA
Protection level	U_n	1.3 kV

Combination arrester V50, 1-pole + NPE 280 V, for TN-S and TT-system

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



Connection options

V50-1+NPE-280

Lightning surge current (10/350 μ s)	I_{imp}	12.5 kA
Nominal discharge current (8/20 μ s)	$I_n / L-N$	30 kA
Total discharge current (10/350)	I_{total}	25 kA
Protection level	U_n	1.3 kV

Combination arrester V50, 1-pole + NPE with FS 280 V, for TN-S and TT-system

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



Connection options

V50-1+NPE+FS-280

Lightning surge current (10/350 μ s)	I_{imp}	12.5 kA
Nominal discharge current (8/20 μ s)	$I_n / L-N$	30 kA
Total discharge current (10/350)	I_{total}	25 kA
Protection level	U_n	1.3 kV

Combination arrestor V50, 3-pole 280 V, for TN-C-system



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

Connection options

V50-3-280		
Lightning surge current (10/350 μ s)	I_{imp}	12.5 kA
Nominal discharge current (8/20 μ s)	$I_n / L-N$	30 kA
Total discharge current (10/350)	I_{total}	37.5 kA
Protection level	U_o	1.3 kV

Combination arrestor 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.
5093516	280	3	IP20	1	46.900	5093516

Connection options

5093516		
Lightning surge current (10/350 μ s)	I_{imp}	12.5 kA
Nominal discharge current (8/20 μ s)	$I_n / L-N$	30 kA
Total discharge current (10/350)	I_{total}	37.5 kA
Protection level	U_o	1.3 kV

Combination arrestor V50, 3-pole + NPE 280 V, for TN-S and TT-system



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

Connection options

V50-3+NPE-280		
Lightning surge current (10/350 μ s)	I_{imp}	12.5 kA
Nominal discharge current (8/20 μ s)	$I_n / L-N$	30 kA
Total discharge current (10/350)	I_{total}	50 kA
Protection level	U_o	1.3 kV

Combination arrestor V50, 3-pole + NPE with FS 280 V, for TN-S and TT-system



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

Connection options

V50-3+NPE+FS-280		
Lightning surge current (10/350 μ s)	I_{imp}	12.5 kA
Nominal discharge current (8/20 μ s)	$I_n / L-N$	30 kA
Total discharge current (10/350)	I_{total}	50 kA
Protection level	U_o	1.3 kV

Combination arrester V50, 4-pole 280 V, for TN-S-system

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

**V50-4-280**

Lightning surge current (10/350 μ s)	I_{imp}	12.5 kA
Nominal discharge current (8/20 μ s)	$I_n / L-N$	30 kA
Total discharge current (10/350)	I_{total}	50 kA
Protection level	U_o	1.3 kV

Connection options

Combination arrester V50, 4-pole with FS 280 V, for TN-S and TT-system

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

**V50-4+FS-280**

Lightning surge current (10/350 μ s)	I_{imp}	12.5 kA
Nominal discharge current (8/20 μ s)	$I_n / L-N$	30 kA
Total discharge current (10/350)	I_{total}	50 kA
Protection level	U_o	1.3 kV

Connection options

Upper part V50 280 V

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



Upper part NPE-C50

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



Surge arrester V20, 1-pole, 280 V



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

Connection options

V20-1-280						
Nominal discharge current (8/20 μs)	$I_n / L-N$	20 kA				
Arrestor surge current (8/20 μs) [total]	I_{total}	40 kA				
Protection level	U_o	1.3 kV				

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



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

Connection options

V20-1+FS-280						
Nominal discharge current (8/20 μs)	$I_n / L-N$	20 kA				
Arrestor surge current (8/20 μs) [total]	I_{total}	40 kA				
Protection level	U_o	1.3 kV				

Surge arrester V20, 1-pole + NPE, 280 V, for TN-S and TT- System



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

Connection options

V20-1+NPE-280						
Nominal discharge current (8/20 μs)	$I_n / L-N$	20 kA				
Arrestor surge current (8/20 μs) [total]	I_{total}	60 kA				
Protection level	U_o	1.3 kV				

Surge arrester V20, 1-pole + NPE and remote signalling, 280 V, for TN-S and TT-system



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

Connection options

V20-1+NPE+FS-280						
Nominal discharge current (8/20 μs)	$I_n / L-N$	20 kA				
Arrestor surge current (8/20 μs) [total]	I_{total}	60 kA				
Protection level	U_o	1.3 kV				

Surge arrester V20, 3-pole, 280 V, for TN-C- system

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



V20-3-280

Nominal discharge current (8/20 μs)	$I_{n / L-N}$	20 kA
Arrestor surge current (8/20 μs) [total]	I_{total}	120 kA
Protection level	U_o	1.3 kV

Connection options

Surge arrester V20, 3-pole with remote signalling, 280 V, for TN-C- system

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



V20-3+FS-280

Nominal discharge current (8/20 μs)	$I_{n / L-N}$	20 kA
Arrestor surge current (8/20 μs) [total]	I_{total}	120 kA
Protection level	U_o	1.3 kV

Connection options

Surge arrester V20, 3-pole + NPE, 280 V, for TN-S and TT system

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



V20-3+NPE-280

Nominal discharge current (8/20 μs)	$I_{n / L-N}$	20 kA
Arrestor surge current (8/20 μs) [total]	I_{total}	60 kA
Protection level	U_o	1.3 kV

Connection options

Surge arrester V20, 3-pole + NPE and remote signalling, 280 V, for TN-S and TT-system

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



V20-3+NPE+FS-280

Nominal discharge current (8/20 μs)	$I_{n / L-N}$	20 kA
Arrestor surge current (8/20 μs) [total]	I_{total}	60 kA
Protection level	U_o	1.3 kV

Connection options

V20, type 2 surge protection device

Surge arrester V20, 4-pole, 280 V, for TN-C-system



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

Connection options

V20-4-280

Nominal discharge current (8/20 μs)	$I_n / L-N$	20 kA
Arrestor surge current (8/20 μs) [total]	I_{total}	160 kA
Protection level	U_o	1.3 kV

Surge arrester V20, 4-pole with remote signalling, 280 V, for TN-C-system



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

Connection options

V20-4+FS-280

Nominal discharge current (8/20 μs)	$I_n / L-N$	20 kA
Arrestor surge current (8/20 μs) [total]	I_{total}	160 kA
Protection level	U_o	1.3 kV

Upper part V20 280 V

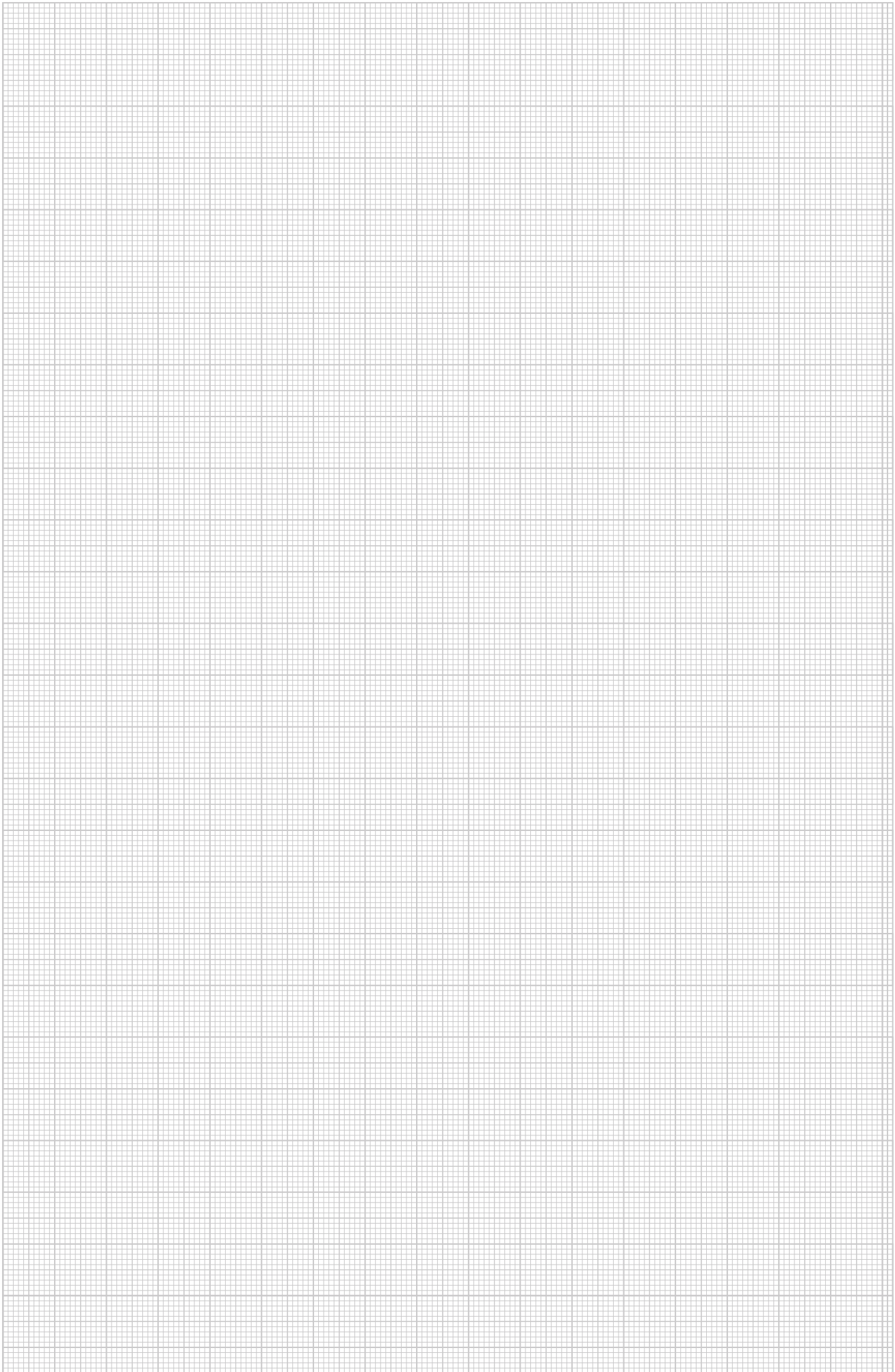


Type	Highest continuous voltage	Pole version	Protection rating	Pack. pcs	Weight kg/100 pcs.	Item No.
	AC V					
V20-0-280	280	1	IP20	1	5.000	5095364

Upper part C20 280 V



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



OBO Bettermann GmbH & Co. KG
PO Box 1120
58694 Menden
GERMANY

Customer Service Germany
Tel.: +49 (0)2373 89-1700
Fax: +49 (0)2373 89-1238
E-mail: export@obo.de

www.obo-bettermann.com

