- Coordinated spark-gap-based lightning current arrester consisting of a base part and plug-in protection module
- Maximum system availability due to RADAX Flow follow current limitation
- No tripping of 32 A gL/gG fuses up to short-circuit currents of 50 kA_{rms}
- Discharge capacity up to 50 kA (10/350 µs)
- Directly coordinated with DEHNguard surge protective devices without additional cable length
- Low voltage protection level
- Operating state/fault indication by indicator flag in the inspection window
- Easy replacement of protection modules without tools due to module locking system with module release button

For protecting low-voltage consumer's installations against surges and even direct lightning strikes. For installation in conformity with the lightning protection zones concept at the boundaries from 0_A – 1.

DEHNbloc M 1 ...: Coordinated modular single-pole lightning current arrester with high follow current limitation
DEHNbloc M 1 ... FM: With remote signalling contact for monitoring device (floating changeover contact)

The modular devices of the DEHNbloc M product family are coordinated lightning current arresters with a functional design.

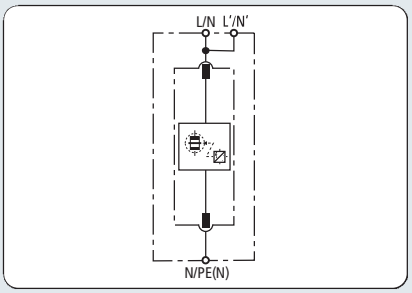
Energy coordination with Type 2 surge arresters of the DEHNguard family is ensured without additional cable lengths or decoupling coils. This is one of the most important features of the Red/Line product family.

The DEHNbloc M arresters combine high performance and user-friendliness in a single device. Their electrical parameters were rated for the most stringent requirements within lightning and surge protection systems. DEHNbloc M is ideally suited for use in the main distribution board of the low-voltage consumer's installation of a building. Equipped with the latest RADAX Flow spark gap technology, the protection and availability of electrical installations is a top priority of DEHNbloc M.

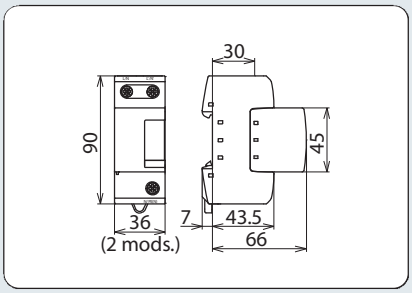
Due to the unique follow current limitation and extinction, fuses are not tripped by follow currents even in case of low-value fuses in the installation. The leakage-current-free protective circuit and the mechanical operating state indicator allow the device to be installed even upstream of meter panels in low-voltage consumer's installations.

The modular DEHNbloc M arresters are safe and user-friendly. Their vibration-proof module locking system, for example, is unique. Shock or vibration during transport or operation or enormous mechanical impulse loads resulting from discharges do not affect the module locking system which ensures safe fixation both for the base part and protection module. Nevertheless, the protection modules can be easily replaced without tools by simply pressing the user-friendly module release button. Both the base part and protection module are mechanically coded to ensure against installing an incorrect module. DEHNbloc M devices incorporate double terminals, allowing series connection of the arresters in a space-saving and cost-effective way according to IEC 60364-5-53 requirements for nominal currents up to 125 A.

The operating state/fault indication of DEHNbloc M immediately provides information on the operating state of the device even if no operating current is present. Apart from the standard visual indication with red and green indicator flags, DEHNbloc M ... FM devices feature an additional remote signalling output. With its floating changeover contact, the remote signal can be used as a break or make contact according to the particular circuit concept.



Basic circuit diagram DB M 1 ...



Dimension drawing DB M 1 ...

- **Coordinated spark-gap-based lightning current arrester consisting of a base part and plug-in protection module**
- **Maximum system availability due to RADAX Flow follow current limitation**
- **Directly coordinated with DEHNguard surge protective devices without additional cable length**

Coordinated modular single-pole lightning current arrester with high follow current limitation

Type	DB M 1 150	DB M 1 255	DB M 1 320
Part No.	961 110	961 120	961 130
SPD according to EN 61643-11	Type 1	Type 1	Type 1
SPD according to IEC 61643-1/-11	Class I	Class I	Class I
Max. continuous operating a.c. voltage (U_C)	150 V	255 V	320 V
Lightning impulse current (10/350 µs) (I_{imp})	35 kA	50 kA	25 kA
Specific energy (W/R)	306.25 kJ/ohms	625.00 kJ/ohms	156.25 kJ/ohms
Nominal discharge current (8/20 µs) (I_n)	35 kA	50 kA	25 kA
Voltage protection level (U_P)	≤ 1.5 kV	≤ 2.5 kV	≤ 2.5 kV
Follow current extinguishing capability a.c. (I_{fi})	50 kA_{rms}	50 kA_{rms}	50 kA_{rms}
Follow current limitation/Selectivity	no tripping of a 32 A gL/gG fuse up to 50 kA_{rms} (prosp.)		
Response time (t_A)	≤ 100 ns	≤ 100 ns	≤ 100 ns
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 0.2 s)	500 A gL/gG	500 A gL/gG	315 A gL/gG
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 5 s)	315 A gL/gG	315 A gL/gG	315 A gL/gG
Max. backup fuse (L) for I_K > 50 kA_{rms}	200 A gL/gG	200 A gL/gG	200 A gL/gG
Max. backup fuse (L-L')	125 A gL/gG	125 A gL/gG	125 A gL/gG
Temporary overvoltage (TOV) (U_T)	200 V / 5 sec.	440 V / 5 sec.	440 V / 5 sec.
TOV characteristics	withstand	withstand	withstand
Operating temperature range (parallel connection) (T_{UP})	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Operating temperature range (series connection) (T_{US})	-40°C...+60°C	-40°C...+60°C	-40°C...+60°C
Operating state/fault indication	green / red	green / red	green / red
Number of ports	1	1	1
Cross-sectional area (L/N, L'/N', N/PE (N)) (min.)	10 mm^2 solid/flexible	10 mm^2 solid/flexible	10 mm^2 solid/flexible
Cross-sectional area (L/N, N/PE(N)) (max.)	50 mm^2 stranded/35 mm^2 flexible	50 mm^2 stranded/35 mm^2 flexible	50 mm^2 stranded/35 mm^2 flexible
Cross-sectional area (L'/N') (max.)	35 mm^2 stranded/25 mm^2 flexible	35 mm^2 stranded/25 mm^2 flexible	35 mm^2 stranded/25 mm^2 flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20	IP 20
Capacity	2 modules, DIN 43880	2 modules, DIN 43880	2 modules, DIN 43880
Approvals	UL, CSA	VDE, KEMA, UL	UL, CSA

Accessory for DEHNbloc® M

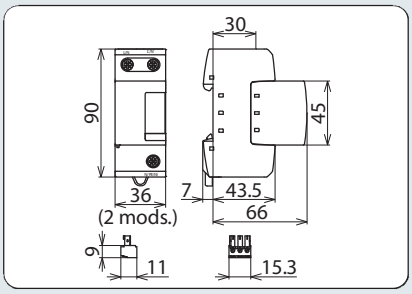
DB M Spark-Gap-Based Protection Module

Spark-gap-based protection module

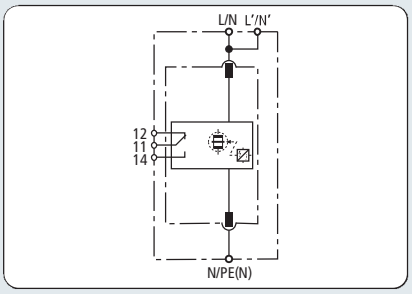
Type DB M MOD ...	150	255	320
Part No.	961 001	961 002	961 003
Max. continuous operating a.c. voltage (U_C)	150 V	255 V	320 V

Coordinated Type 1 Lightning Current Arresters

DEHNbloc M 1 ... FM



Dimension drawing DB M 1 ... FM



Basic circuit diagram DB M 1 ... FM

Coordinated modular single-pole lightning current arrester with high follow current limitation; with remote signalling contact for monitoring system (floating changeover contact)

- **Coordinated spark-gap-based lightning current arrester consisting of a base part and plug-in protection module**
- **Maximum system availability due to RADAX Flow follow current limitation**
- **Directly coordinated with DEHNguard surge protective devices without additional cable length**

Type	DB M 1 150 FM	DB M 1 255 FM	DB M 1 320 FM
Part No.	961 115	961 125	961 135
SPD according to EN 61643-11	Type 1	Type 1	Type 1
SPD according to IEC 61643-1/-11	Class I	Class I	Class I
Max. continuous operating a.c. voltage (U_C)	150 V	255 V	320 V
Lightning impulse current (10/350 µs) (I_{imp})	35 kA	50 kA	25 kA
Specific energy (W/R)	306.25 kJ/ohms	625.00 kJ/ohms	156.25 kJ/ohms
Nominal discharge current (8/20 µs) (I_n)	35 kA	50 kA	25 kA
Voltage protection level (U_P)	≤ 1.5 kV	≤ 2.5 kV	≤ 2.5 kV
Follow current extinguishing capability a.c. (I_{fi})	50 kA_{rms}	50 kA_{rms}	50 kA_{rms}
Follow current limitation/Selectivity	no tripping of a 32 A gL/gG fuse up to 50 kA_{rms} (prosp.)		
Response time (t_A)	≤ 100 ns	≤ 100 ns	≤ 100 ns
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 0.2 s)	500 A gL/gG	500 A gL/gG	315 A gL/gG
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 5 s)	315 A gL/gG	315 A gL/gG	315 A gL/gG
Max. backup fuse (L) for I_K > 50 kA_{rms}	200 A gL/gG	200 A gL/gG	200 A gL/gG
Max. backup fuse (L-L')	125 A gL/gG	125 A gL/gG	125 A gL/gG
Temporary overvoltage (TOV) (U_T)	200 V / 5 sec.	440 V / 5 sec.	440 V / 5 sec.
TOV characteristics	withstand	withstand	withstand
Operating temperature range (parallel connection) (T_{UP})	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Operating temperature range (series connection) (T_{US})	-40°C...+60°C	-40°C...+60°C	-40°C...+60°C
Operating state/fault indication	green / red	green / red	green / red
Number of ports	1	1	1
Cross-sectional area (L/N, L'/N', N/PE (N)) (min.)	10 mm^2 solid/flexible	10 mm^2 solid/flexible	10 mm^2 solid/flexible
Cross-sectional area (L/N, N/PE(N)) (max.)	50 mm^2 stranded/35 mm^2 flexible	50 mm^2 stranded/35 mm^2 flexible	50 mm^2 stranded/35 mm^2 flexible
Cross-sectional area (L'/N') (max.)	35 mm^2 stranded/25 mm^2 flexible	35 mm^2 stranded/25 mm^2 flexible	35 mm^2 stranded/25 mm^2 flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20	IP 20
Capacity	2 modules, DIN 43880	2 modules, DIN 43880	2 modules, DIN 43880
Approvals	UL, CSA	VDE, KEMA, UL	UL, CSA
Type of remote signalling contact	changeover contact	changeover contact	changeover contact
a.c. switching capacity	250 V/0.5 A	250 V/0.5 A	250 V/0.5 A
d.c. switching capacity	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	max. 1.5 mm^2 solid/flexible	max. 1.5 mm^2 solid/flexible	max. 1.5 mm^2 solid/flexible

Accessory for DEHNbloc® M

DB M Spark-Gap-Based Protection Module

Spark-gap-based protection module

Type DB M MOD ...	150	255	320
Part No.	961 001	961 002	961 003
Max. continuous operating a.c. voltage (U_C)	150 V	255 V	320 V

- High discharge capacity due to powerful creepage discharge spark gap
- Maximum system availability due to RADAX Flow follow current limitation
- With module release button for replacing protection modules without tools
- Operating state / fault indication by green / red indicator flag in the inspection window
- The plug-in protection module can be replaced without the need to de-energise and removing the vertical cover

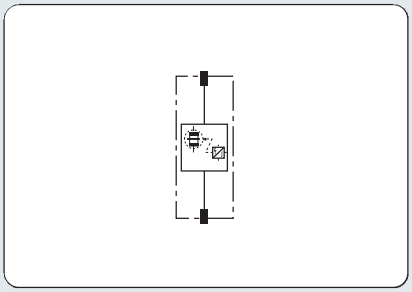
For protecting low-voltage consumer's installations against surges and even direct lightning strikes. For installation in conformity with the lightning protection zones concept at the boundaries from 0_A – 1.

DB M MOD ...: Spark-gap-based protection module

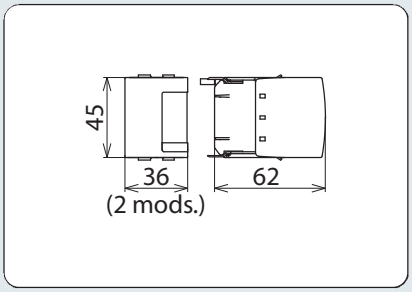
The spark-gap-based protection modules for devices of the DEHNbloc M family incorporate the complete protective circuit including the RADAX Flow spark gap and the monitoring circuit for controlling the energy flow. The spark gap monitoring system and the operating state and fault indicator are also housed in the protection module.

Every protection module is mechanically coded to ensure against installing an incorrect replacement module.

As with all modular protective devices, protection modules can be easily replaced without tools by simply pressing the module release button.



Basic circuit diagram DB M MOD ...



Dimension drawing DB M MOD ...

Spark-gap-based protection module

Type	DB M MOD 150	DB M MOD 255	DB M MOD 320
Part No.	961 001	961 002	961 003
Max. continuous operating a.c. voltage (U_C)	150 V	255 V	320 V
Lightning impulse current (10/350 µs) (I_{imp})	35 kA	50 kA	25 kA
Specific energy (W/R)	306.25 kJ/ohms	625.00 kJ/ohms	156.25 kJ/ohms
Follow current extinguishing capability a.c. (I_{fi})	50 kA_{rms}	50 kA_{rms}	50 kA_{rms}
Follow current limitation/Selectivity	no tripping of a 32 A gL/gG fuse up to 50 kA_{rms} (prosp.)		

- Encapsulated RADAX Flow spark gap with high follow current limitation
- No tripping of 32 A gL/gG fuses up to short-circuit currents of 50 kA_{rms}
- High lightning current discharge capacity
- Directly coordinated with DEHNguard ... and V(A) NH ... surge protective devices without additional cable length
- NH00 versions
- Low voltage protection level

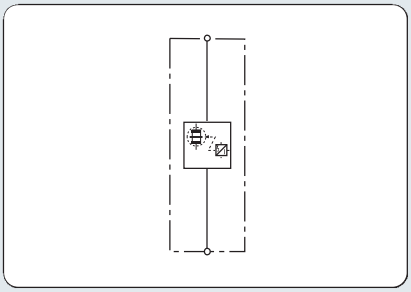
For protecting low voltage consumer's installations against surges and even direct lightning strikes. For installation in conformity with the lightning protection zones concept at the boundaries from 0_A – 1.

DBM NH00 255: Coordinated single-pole lightning current arrester in NH00 design with high follow current limitation for U_C = 255 V

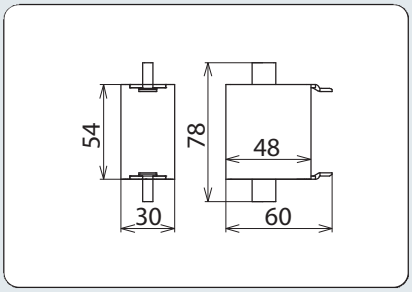
The coordinated DEHNbloc Maxi ... lightning current arresters adapt themselves to every kind of application. Be it in exposed locations or harsh industrial environments: DEHNbloc Maxi ... are always the right solution. The single-pole devices are coordinated with the approved DEHNguard and V(A) NH surge arresters of the Red/Line family. Independent of cable lengths and without the need for additional decoupling coils, the surge protection concept can be adapted to the specific requirements of the installation.

DEHNbloc Maxi arresters are based on the patented encapsulated creepage discharge spark gap and RADAX Flow follow current limitation technology. There is no need for installers to worry about safety distances from busbars or equipment. This arrangement also eliminates the risk of tripped backup fuses resulting from a lack of selectivity between the protective device and any overcurrent protection systems that may be in place, resulting in the highest possible system availability.

DEHNbloc Maxi NH00 255 was specifically designed for industrial distribution boards and supply systems and allows compact and space-saving installation in NH00 fuse holders or NH disconnectors depending on the particular system.



Basic circuit diagram DBM NH00 255



Dimension drawing DBM NH00 255

- **Encapsulated RADAX Flow spark gap with high follow current limitation**
- **High lightning current discharge capability**
- **Directly coordinated with DEHNguard ... and V(A) NH ... surge protective devices without additional cable length**

Coordinated single-pole lightning current arrester in NH00 design with high follow current limitation for U_C = 255 V

Type	DBM NH00 255
Part No.	900 255
SPD according to EN 61643-11	Type 1
SPD according to IEC 61643-1/-11	Class I
Max. continuous operating a.c. voltage (U_C)	255 V
Lightning impulse current (10/350 µs) (I_{imp})	25 kA
Specific energy (W/R)	156.25 kJ/ohms
Nominal discharge current (8/20 µs) (I_n)	25 kA
Voltage protection level (U_P)	≤ 2.5 kV
Follow current extinguishing capability a.c. (I_{fi})	50 kA_{rms}
Follow current limitation / Selectivity	no tripping of a 32 A gL/gG fuse up to 50 kA_{rms} (prosp.)
Response time (t_A)	≤ 100 ns
Max. backup fuse (L) up to I_K = 50 kA_{rms}	315 A gL/gG
Max. backup fuse (L) for I_K > 50 kA_{rms}	200 A gL/gG
Temporary overvoltage (TOV) (U_T)	440 V / 5 sec.
TOV characteristics	withstand
Operating temperature range (parallel connection) (T_{UP})	-40°C...+80°C
Number of ports	1
For mounting on	NH fuse holders of size NH00
Enclosure material	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation
Degree of protection	IPX4W

Coordinated Type 1 Lightning Current Arresters

Coordinated lightning curr. arr. for nominal voltages of 400 V / 690 V

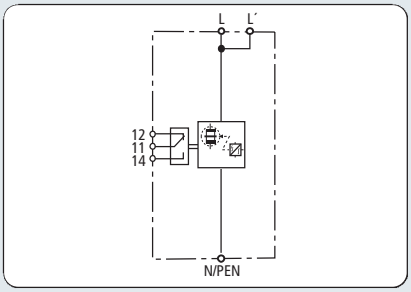
- Encapsulated non-exhausting spark gap
- High follow current extinguishing capability and follow current limitation due RADAX Flow technology
- Directly coordinated with DEHNguard surge protective devices without additional cable length
- Operating state/fault indication by indicator flag in the inspection window

For protecting low-voltage consumer's installations against surges and even direct lightning strikes. For installation in conformity with the lightning protection zones concept at the boundaries from 0_A – 1.

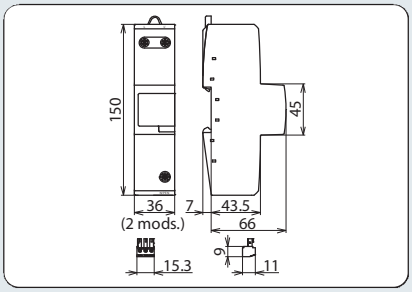
DEHNbloc Maxi 1 440: Coordinated single-pole lightning current arrester with high follow current limitation for U_C = 440 V
DEHNbloc Maxi 1 440 FM: With remote signalling contact for monitoring device (floating changeover contact)
DEHNbloc Maxi 1 760 FM: Coordinated single-pole lightning current arrester with high follow current limitation for U_C = 760 V; with remote signalling contact for monitoring device (floating changeover contact)

The coordinated DEHNbloc Maxi 440 and 760 lightning current arresters were specifically designed for high system voltages.
This allows to efficiently protect a variety of industrial applications from direct and indirect lightning currents.
Be it in a wind turbine or an isolated low-voltage installation of an industrial enterprise, DEHNbloc Maxi devices exactly fulfil the specific requirements.

Both the design of the protective circuit and the enclosure specifically designed for this type of arrester are particularly adapted to high system voltages.
The approved RADAX Flow technology is the essential core element of the coordinated DEHNbloc Maxi 440 and 760 lightning current arresters. Their capability of considerably limiting power-frequency follow currents and extinguishing them within a matter of milliseconds makes these devices special.
The patented RADAX Flow follow current limitation ensures that low-value fuses are not tripped by follow currents.
Their capability to discharge lightning currents without destruction and to suppress mains follow currents without tripping upstream overcurrent protective devices ensures a high degree of availability in electrical installations.
The operating state/fault indication of the coordinated lightning current arresters immediately provides information on the operating state of the devices even if no operating current is present. Apart from the standard visual indication with green and red indicator flags, DEHNbloc Maxi 1 ... FM features a three-pole remote signalling terminal. With its floating changeover contact, the remote signal can be used as a break or make contact according to the particular circuit concept.



Basic circuit diagram DBM 1 440 FM



Dimension drawing DBM 1 440 FM

- **Encapsulated non-exhausting spark gap**
- **High follow current extinguishing capability and limitation due to RADAX Flow technology**
- **Directly coordinated with DEHNguard surge protective devices without additional cable length**

Coordinated single-pole lightning current arrester with high follow current limitation for U_C = 440 V

Type	DBM 1 440	DBM 1 440 FM
Part No.	961 140	961 145
SPD according to EN 61643-11	Type 1	Type 1
SPD according to IEC 61643-1/-11	Class I	Class I
Max. continuous operating a.c. voltage (U_C)	440 V	440 V
Lightning impulse current (10/350 µs) (I_{imp})	35 kA	35 kA
Specific energy (W/R)	306.25 kJ/ohms	306.25 kJ/ohms
Nominal discharge current (8/20 µs) (I_n)	35 kA	35 kA
Voltage protection level (U_P)	≤ 2.5 kV	≤ 2.5 kV
Follow current extinguishing capability a.c. (I_{fi})	50 kA_{rms}	50 kA_{rms}
Follow current limitation / Selectivity	no tripping of a 32 A gL/gG fuse up to 50 kA_{rms} (prosp.)	no tripping of a 32 A gL/gG fuse up to 50 kA_{rms} (prosp.)
Response time (t_A)	≤ 100 ns	≤ 100 ns
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 0.2 s)	500 A gL/gG	500 A gL/gG
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 5 s)	250 A gL/gG	250 A gL/gG
Max. backup fuse (L) for I_K > 50 kA_{rms}	160 A gL/gG	160 A gL/gG
Max. backup fuse (L-L')	125 A gL/gG	125 A gL/gG
Temporary overvoltage (TOV) (U_T)	690 V / 5 sec.	690 V / 5 sec.
TOV characteristics	withstand	withstand
Operating temperature range (parallel connection) (T_{UP})	-40°C...+80°C	-40°C...+80°C
Operating temperature range (series connection) (T_{US})	-40°C...+60°C	-40°C...+60°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (L, L', N/PEN) (min.)	10 mm^2 solid/flexible	10 mm^2 solid/flexible
Cross-sectional area (L, N/PEN) (max.)	50 mm^2 stranded/35 mm^2 flexible	50 mm^2 stranded/35 mm^2 flexible
Cross-sectional area (L') (max.)	35 mm^2 stranded/25 mm^2 flexible	35 mm^2 stranded/25 mm^2 flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	2 modules, DIN 43880	2 modules, DIN 43880
Approvals	UL, CSA	UL, CSA
Type of remote signalling contact	—	changeover contact
a.c. switching capacity	—	250 V/0.5 A
d.c. switching capacity	—	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	—	max. 1.5 mm^2 solid/flexible

Accessory for DEHNbloc® Maxi 440 / 760

Earthing Clip DG, three-pole, single-phase

Earthing clip for connecting the earth terminals of e.g. 3 Type 1 SPDs in a two-module enclosure with multi-functional terminal to earth

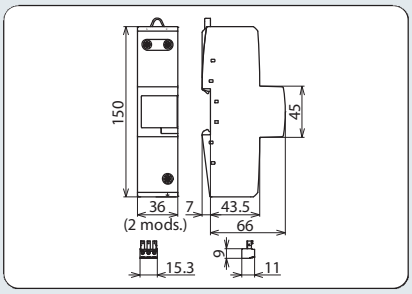
Type	EB DG 1000 1 3
Part No.	900 411
Dimensions	34 x 112 x 3 mm
Terminal	up to 25 mm^2

Accessory for DEHNbloc® Maxi 440 / 760

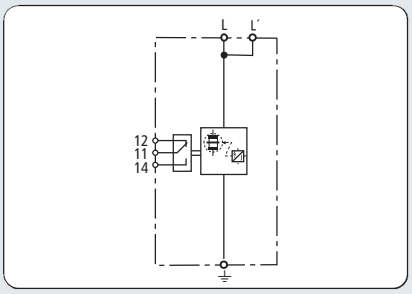
Earthing Clip, four-pole, single-phase

Earthing clip for connecting the earth terminals of e.g. 4 Type 1 SPDs in a two-module enclosure with multi-functional terminal to earth

Type	EB 1 4 9
Part No.	900 417
Dimensions	34 x 148 x 3 mm
Terminal	up to 25 mm^2



Dimension drawing DBM 1 760 FM



Basic circuit diagram DBM 1 760 FM

Coordinated single-pole lightning current arrester with high follow current limitation for U_C = 760 V

- **Encapsulated non-exhausting spark gap**
- **High follow current extinguishing capability and limitation due to RADAX Flow technology**
- **Directly coordinated with DEHNguard surge protective devices without additional cable length**

Type	DBM 1 760 FM
Part No.	961 175
SPD according to EN 61643-11	Type 1
SPD according to IEC 61643-1/-11	Class I
Max. continuous operating a.c. voltage (U_C)	760 V
Lightning impulse current (10/350 µs) (I_{imp})	25 kA
Specific energy (W/R)	156.25 kJ/ohms
Nominal discharge current (8/20 µs) (I_n)	25 kA
Voltage protection level (U_P)	≤ 4 kV
Follow current extinguishing capability a.c. (I_{fi})	25 kA_{rms}
Follow current limitation / Selectivity	no tripping of a 32 A gL/gG fuse up to 25 kA_{rms} (prosp.)
Response time (t_A)	≤ 100 ns
Max. backup fuse (L) up to I_K = 25 kA_{rms} (t_a ≤ 5 s)	250 A gL/gG
Max. backup fuse (L) up to I_K > 25 kA_{rms}	100 A gL/gG
Max. backup fuse (L-L')	125 A gL/gG
Temporary overvoltage (TOV) (U_T)	1000 V / 5 sec.
TOV characteristics	withstand
Operating temperature range (parallel connection) (T_{UP})	-40°C...+80°C
Operating temperature range (series connection) (T_{US})	-40°C...+60°C
Operating state/fault indication	green / red
Number of ports	1
Cross-sectional area (L, L', ⏚) (min.)	10 mm^2 solid/flexible
Cross-sectional area (L, ⏚) (max.)	50 mm^2 stranded/35 mm^2 flexible
Cross-sectional area (L') (max.)	35 mm^2 stranded/25 mm^2 flexible
For mounting on	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation
Degree of protection	IP 20
Capacity	2 modules, DIN 43880
Approvals	UL, CSA
Type of remote signalling contact	changeover contact
a.c. switching capacity	250 V/0.5 A
d.c. switching capacity	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	max. 1.5 mm^2 solid/flexible

Accessory for DEHNbloc® Maxi 440 / 760

Earthing Clip, four-pole, single-phase

Earthing clip for connecting the earth terminals of e.g. 4 Type 1 SPDs in a two-module enclosure with multi-functional terminal to earth

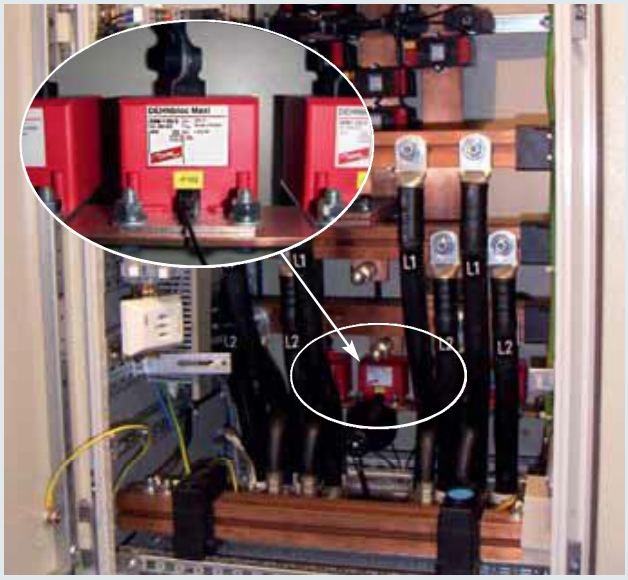
Type	EB 1 4 9
Part No.	900 417
Dimensions	34 x 148 x 3 mm
Terminal	up to 25 mm^2

Accessory for DEHNbloc® Maxi 440 / 760

Earthing Clip DG, three-pole, single-phase

Earthing clip for connecting the earth terminals of e.g. 3 Type 1 SPDs in a two-module enclosure with multi-functional terminal to earth

Type	EB DG 1000 1 3
Part No.	900 411
Dimensions	34 x 112 x 3 mm
Terminal	up to 25 mm^2



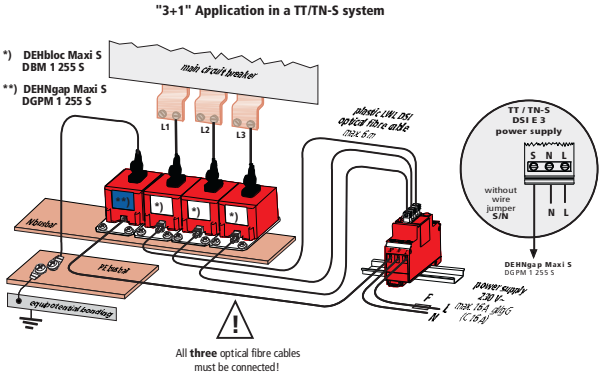
For protecting low voltage consumer's installations against surges and even direct lightning strikes. For installation in conformity with the lightning protection zones concept at the boundaries from 0_A – 1.

- Combination of spark gap and integrated back-up fuse
- Directly mounted onto PEN/N busbars
- Low voltage protection level $U_P \leq 2.5$ kV (including 80 cm connecting cable)
- Directly coordinated with DEHNguard surge protective device without additional cable length
- Short-circuit withstand capability of 100 kA_{rms} (220 kA_{peak})
- High follow current extinguishing capability and limitation due to RADAX Flow technology
- High lightning current discharge capacity
- With optical-fibre interface for SPD monitoring

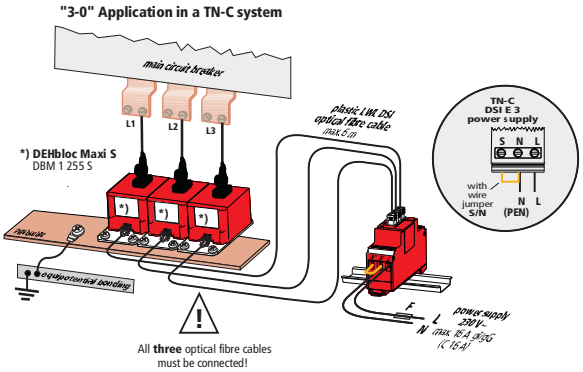
DEHNbloc Maxi 1 255 S: Coordinated lightning current arrester with integrated arrester backup fuse for busbars

DEHNbloc Maxi S arresters can be easily integrated into the application environment of a low-voltage switchgear installation or distribution board.
Thanks to their unique mechanical design, the coordinated DEHNbloc Maxi S lightning current arresters can be mounted directly onto the PEN/N busbar of a switchgear installation without the need for additional adapters.
With the backup fuse integrated in the device, no other separate backup fuses need to be installed.
Installing the DEHNbloc Maxi S devices directly into the connection panel of a switchgear installation upstream of the circuit breaker ensures short cable lengths of the arresters and a low voltage protection level for the installation.
With a discharge capacity of 25 kA (10/350 µs), DEHNbloc Maxi S fulfils the most stringent requirements of national and international lightning protection standards for all three-phase current applications in TN and TT systems.
For "3+1" circuit configurations, DEHNgap Maxi S provides a powerful creepage discharge spark gap with a discharge capacity of 100 kA (10/350 µs).

DEHNbloc Maxi S also features patented RADAX Flow follow current limitation, thus ensuring selectivity even in case of low-value fuses.
The capability to conduct lightning impulse currents without destruction and suppress mains follow currents without tripping upstream overcurrent protective devices ensures the availability of the switchgear installation in the event of a lightning strike. This considerably reduces the risk of arc formation in the installation.
In conjunction with the DEHNsignal remote signalling system, the operating state of DEHNbloc Maxi S devices can be monitored at any time.
Easy-to-implement optical transmission to the DEHNsignal E 3 remote signalling receiver module ensures safe electrical isolation between the power circuit and the remote signalling circuit.

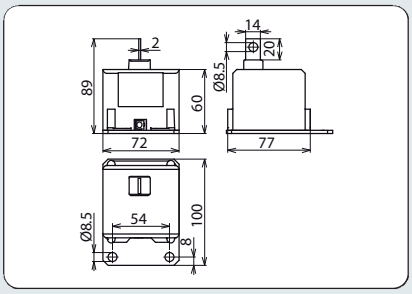


Application in a TT / TN-S system

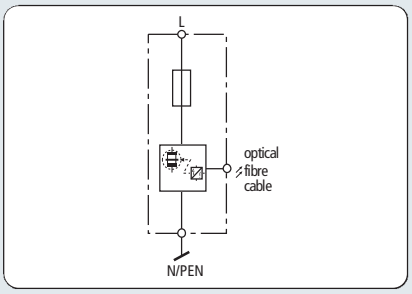


Application in a TN-C system

Coordinated Type 1 Lightning Current Arresters



Dimension drawing DBM 1 255 S



Basic circuit diagram DBM 1 255 S

Coordinated single-pole lightning current arrester with integrated arrester backup fuse for busbars

- **Combination of spark gap and integrated backup fuse**
- **Directly mounted onto PEN/N busbars**
- **High follow current extinguishing capability and limitation due to RADAX Flow technology**

Type	DBM 1 255 S
Part No.	900 220
SPD according to EN 61643-11	Type 1
SPD according to IEC 61643-1/-11	Class I
Max. continuous operating a.c. voltage (U_C)	255 V
Lightning impulse current (10/350 µs) (I_{imp})	25 kA
Specific energy (W/R)	156.25 kJ/ohms
Nominal discharge current (8/20 µs) (I_n)	25 kA
Voltage protection level (U_P)	≤ 2.5 kV (including 80 cm connecting cable)
Follow current extinguishing capability a.c. (I_{fi})	50 kA_{rms}
Follow current limitation / Selectivity	no tripping of a 32 A gL/gG fuse up to 50 kA_{rms} (prosp.)
Response time (t_A)	≤ 100 ns
Max. mains-side overcurrent protection	not required
Short-circuit withstand capability	100 kA_{rms} (220 kA_{peak})
Temporary overvoltage (TOV) (U_T)	335 V / 5 sec.
TOV characteristics	withstand
Operating temperature range (T_U)	-40°C...+80°C
Number of ports	1
For mounting on	PEN / N busbars min. 35 mm²
Connection type	cable lug min. 35 mm²/max. 50 mm²
Enclosure material	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation
Dimensions (W x H x D)	72 x 89 x 100 mm
Operating state indication	by optical cables via DSI E 3

Accessory for DEHNbloc® Maxi S

LWL ST DSI

Plug for plastic optical fibre cables

Type	LWL ST DSI
Part No.	910 641
Diameter	2.2 mm

LWL DSI 18M

18 metres of plastic optical fibre cable, preferably for use with DEHNbloc Maxi S

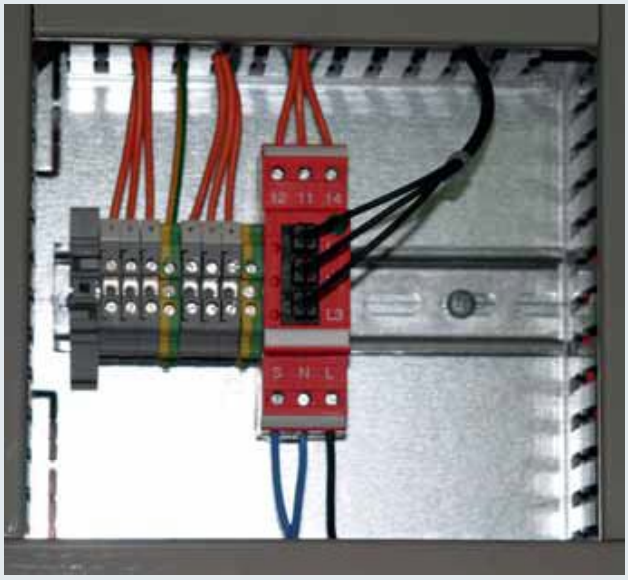
Type	LWL DSI 18M
Part No.	910 642
Diameter	2.2 mm
Length	18 m

Accessory for DEHNbloc® Maxi S

DEHNsignal E 3

Receiver module for optical transmission for selective operating state indication / centralised fault indication of three coordinated DEHNbloc Maxi S and, where appropriate, DEHNgap Maxi S lightning current arresters in five-wire systems

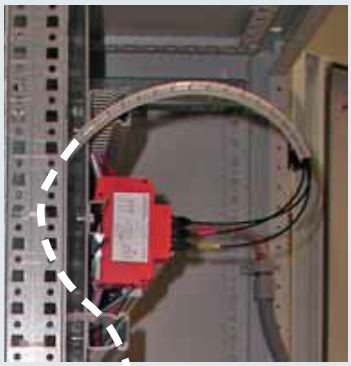
Type	DSI E 3
Part No.	910 631
Supply a.c. voltage (U_N)	230 V



Receiver module for optical transmission for DEHNbloc Maxi S and DEHNgap Maxi S surge protective devices with floating changeover contact

- Operating state indication of the surge protective device connected to it
- Indication of phase failures
- Floating changeover contact
- Selective operating state indication
- Centralised fault indication

DEHNsignal E 3: Receiver module for optical transmission for selective operating state indication / centralised fault indication of three coordinated DEHNbloc Maxi S and, where appropriate, DEHNgap Maxi S lightning current arresters in five-wire systems

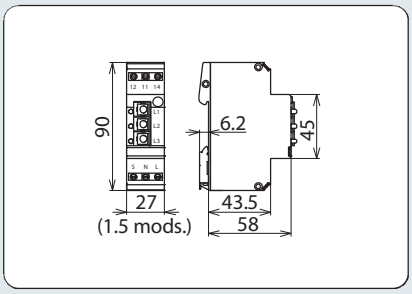


The DEHNsignal E 3 receiver module for optical transmission transmits remote signals of DEHNbloc Maxi S and DEHNgap Maxi S surge protective devices.

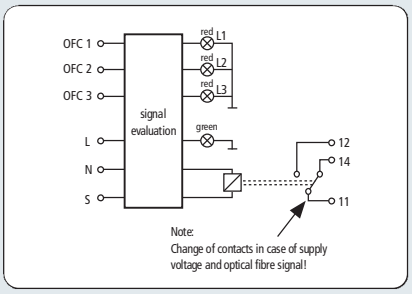
The DEHNsignal E 3 receiver module is particularly adapted to the place of installation of the coordinated DEHNbloc Maxi S and DEHNgap Maxi S surge protective devices.
Three DEHNbloc Maxi S arresters and, if necessary, the N-PE protective circuit can be remotely monitored by the receiver module via optical fibre cables.

Considering the special installation environment of surge protective devices in a switchgear installation, communication via optical fibre cable between the protective devices and the DEHNsignal E 3 receiver module is a considerable safety benefit.
The operating states of the individual arresters is transmitted to the DEHNsignal E 3 receiver module in the form of an optical signal via EMC-resistant plastic optical fibre cables (OFC). The optical signals are evaluated in the DEHNsignal E 3 receiver module and are converted into an electrical signal. The operating states can be directly read out at the DEHNsignal E 3 receiver module or can be transmitted via a floating changeover contact. The DEHNsignal E 3 receiver module features a green indicator light to check its operating state. In addition to the operating state indication, the three red indicator lights of the selective operating state indication indicate the operating states of the assigned protective devices. The receiver module signals if a protective device of a phase fails. The surge protective devices and the DEHNsignal E 3 receiver module can be easily connected via optical fibre cable by the accessory parts described.

Accessory for Type 1 Arresters



Dimension drawing DSI E 3



Basic circuit diagram DSI E 3

- **Operating state indication of the surge protective device connected to it**
- **Floating changeover contact**
- **Selective operating state indication**

Receiver module for optical transmission for selective operating state indication / centralised fault indication of three coordinated DEHNbloc Maxi S and, where appropriate, DEHNgap Maxi S lightning current arresters in five-wire systems

Type	DSI E 3
Part No.	910 631
Supply a.c. voltage (U_N)	230 V
Power input (P)	< 550 mW
Backup fuse for supply voltage	16 A gL/gG or C 16 A
Operating temperature range	-40°C...+80°C
Signal input	3x via optical fibre plug-in system (LWL ST DSI)
Operating state indication	green LED
Selective operating state indication	3 red LEDs (L1, L2, L3)
For mounting on	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0
Degree of protection	IP 20
Capacity	1.5 modules, DIN 43880
Type of remote signalling contact	floating changeover contact
a.c. switching capacity	250 V/0.5 A
d.c. switching capacity	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area	min. 0.5 mm² solid/flexible; max. 4 mm² solid/flexible
Max. distance with LWL DSI 18M	6 m
Test standards	EN 61010-1:1993 and EN 61010-1/A2:1995

Accessory for DEHNsignal

LWL ST DSI

Plug for plastic optical fibre cables

Type	LWL ST DSI
Part No.	910 641
Diameter	2.2 mm

Accessory for DEHNsignal

LWL DSI 18M

18 metres of plastic optical fibre cable, preferably for use with DEHNbloc Maxi S

Type	LWL DSI 18M
Part No.	910 642
Diameter	2.2 mm
Length	18 m

Coordinated modular single-pole lightning current arrester for d.c.

For protecting d.c. consumer's installations against surges and even direct lightning strikes. For installation in conformity with the lightning protection zones concept at the boundaries from 0_A – 1.

- Coordinated spark-gap-based lightning current arrester consisting of a base part and plug-in protection module
- Spark gap technology particularly suited for use in d.c. circuits
- Discharge capacity up to 25 kA (10/350 µs)
- Directly coordinated with DEHNguard surge protective devices without additional cable length
- Low voltage protection level
- Operating state/fault indication by indicator flag in the inspection window
- Easy replacement of protection modules due to module locking system with module release button

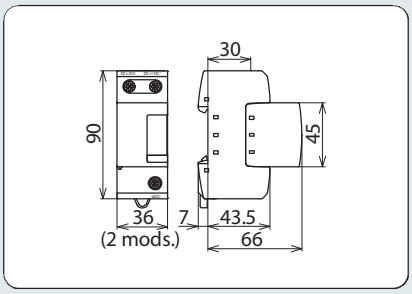
DEHNsecure M 1 ...: Coordinated modular single-pole lightning current arrester for d.c. applications
DEHNsecure M 1 ... FM: With remote signalling contact for monitoring device (floating changeover contact)
DEHNsecure M 2P ...: Coordinated modular two-pole lightning current arrester for d.c. applications
DEHNsecure M 2P ... FM: With remote signalling contact for monitoring device (floating changeover contact)

The modular devices of the DEHNsecure product family are coordinated lightning current arresters with a functional design.
They can be energy coordinated with Type 2 surge arresters of the DEHNguard family without additional cable lengths or decoupling coils.
The DEHNsecure arresters combine high performance and user-friendliness in a single device. Their electrical parameters were rated for the most stringent requirements in lightning and surge protection systems.
The internal structure of the DEHNsecure spark gap is ideally suited for use in d.c. circuits. The device concept allows to prevent mains follow currents up to 2000 A d.c. at the early stages of development.
With this new arrester series, a consistent lightning protection zones concept including the cross-boundary d.c. lines can now be implemented.
Furthermore, the leakage-current-free version of the spark-gap-based arrester offers numerous advantages when used in insulation monitored systems or for applications with high demands on the self-energy consumption.
DEHNsecure arresters are, for example, used in safety lighting systems, emergency power supply systems, d.c. systems for direct supply of d.c. drives, control circuits and any kind of battery-operated power supply system.
DEHNsecure M 1 60 (FM) and **DEHNsecure M 2P 60 (FM)** were specifically developed for Remote Radio Head (RRH) applications. Designed for potentially high load currents, they leave enough leeway for future developments in the field of mobile communication.
DEHNsecure M 1 242 (FM) is used for safety lighting systems. The relevant consumers are supplied with a.c. voltage during normal operation and with battery-operated d.c. voltage during emergency operation. As overvotlages may occur during both operating states, DEHNsecure M 1 242 is suited for direct and alternating currents (backup fuse max. 10 A gL/gG).

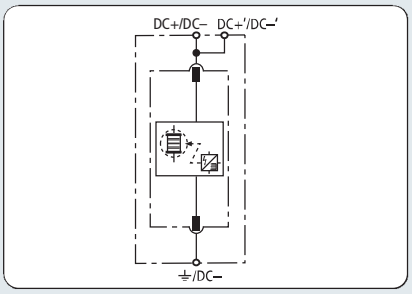
The modular DEHNsecure arresters combine safety and user-friendliness in a single device. The vibration-proof module locking system, for example, is unique. Shock or vibration during transport or operation or enormous mechanical impulse loads resulting from discharges do not affect the module locking system which ensures safe fixation both for the base part and protection module. Nevertheless, the protection modules can be easily replaced without tools by simply pressing the user-friendly module release button. The mechanically coded base part and protection module ensure against installing an incorrect module. DEHNsecure arresters incorporate double terminals, allowing series connection of the arresters in a space-saving and cost-effective way according to IEC 60364-5-53 requirements for nominal currents up to 125 A.
The operating state/fault indication of DEHNsecure immediately provides information on the operating state of the device even if no operating current is present. Apart from the standard visual indication with red and green indicator flags, DEHNsecure ... FM devices have an additional remote signalling output. With its floating changeover contact, the remote signal can be used as a break or make contact according to the particular circuit concept.

Coordinated Type 1 Lightning Current Arresters

DEHNsecure M 1 ...



Dimension drawing DSE M 1 ...



Basic circuit diagram DSE M 1 ...

NEW

Coordinated modular single-pole lightning current arrester for d.c. applications

- **Coordinated spark-gap-based lightning current arrester consisting of a base part and plug-in protection module**
- **Spark gap technology particularly suited for use in d.c. circuits**
- **Directly coordinated with DEHNguard surge protective device without additional cable length**

Type	DSE M 1 60	DSE M 1 220	DSE M 1 242
Part No.	971 121	971 120	971 122
SPD classification according to EN 61643-11	Type 1	Type 1	Type 1
SPD classification according to IEC 61643-1/-11	Class I	Class I	Class I
Max. continuous operating d.c. voltage (U_C)	60 V	220 V	242 V
Lightning impulse current (10/350 µs) (I_{imp})	25 kA	25 kA	25 kA
Specific energy (W/R)	156.25 kJ/ohms	156.25 kJ/ohms	156.25 kJ/ohms
Nominal discharge current (8/20 µs) (I_n)	25 kA	25 kA	25 kA
Voltage protection level (U_P)	≤ 1.5 kV	≤ 2,5 kV	≤ 2,5 kV
Response time (t_A)	≤ 100 ns	≤ 100 ns	≤ 100 ns
Short-circuit withstand capability for max. mains-side overcurrent protection d.c.	2000 A	2000 A	2000 A
Max. mains-side overcurrent protection	250 A gL/gG	250 A gL/gG	250 A gL/gG
Max. backup fuse (DC+/DC- -> DC+'/DC-')	125 A gL/gG	125 A gL/gG	125 A gL/gG
Operating temperature range (parallel connection) (T_{UP})	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Operating temperature range (series connection) (T_{US})	-40°C...+60°C	-40°C...+60°C	-40°C...+60°C
Operating state/fault indication	green / red	green / red	green / red
Number of ports	1	1	1
Cross-sectional area (DC+/DC-, DC+'/DC-', ⏚/DC-) (min.)	10 mm² solid/flexible	10 mm² solid/flexible	10 mm² solid/flexible
Cross-sectional area (DC+/DC-, ⏚/DC-) (max.)	50 mm² stranded/35 mm² flexible	50 mm² stranded/35 mm² flexible	50 mm² stranded/35 mm² flexible
Cross-sectional area (DC+'/DC-') (max.)	35 mm² stranded/25 mm² flexible	35 mm² stranded/25 mm² flexible	35 mm² stranded/25 mm² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20	IP 20
Capacity	2 modules, DIN 43880	2 modules, DIN 43880	2 modules, DIN 43880
Extended technical data when used for safety lighting systems			
(d.c. and a.c. operation possible)	no	no	yes
– Max. continuous operating a.c. voltage (U_C)	—	—	253 V
– Max. backup fuse	—	—	10 A gL/gG

Accessory for DEHNsecure M

DSE M Spark-Gap-Based Protection Module

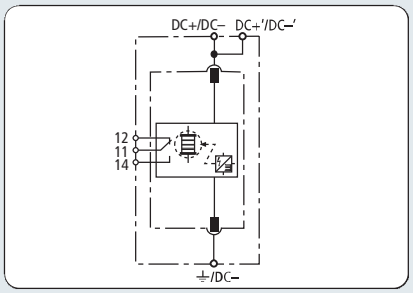
Spark-gap-based protection module

Type DSE MOD ...	60	220	242
Part No.	971 001	971 002	971 003
Max. continuous operating d.c. voltage (U_C)	60 V	220 V	242 V

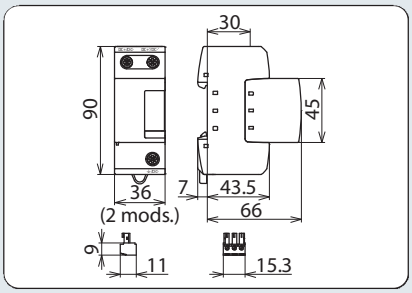
DEHNsecure M 1 ... FM

NEW

- **Coordinated spark-gap-based lightning current arrester consisting of a base part and plug-in protection module**
- **Spark gap technology particularly suited for use in d.c. circuits**
- **Directly coordinated with DEHNguard surge protective device without additional cable length**



Basic circuit diagram DSE M 1 ... FM



Dimension drawing DSE M 1 ... FM

Coordinated modular single-pole lightning current arrester for d.c. applications; with remote signalling contact for monitoring device (floating changeover contact)

Type	DSE M 1 60 FM	DSE M 1 220 FM	DSE M 1 242 FM
Part No.	971 126	971 125	971 127
SPD classification according to EN 61643-11	Type 1	Type 1	Type 1
SPD classification according to IEC 61643-1/-11	Class I	Class I	Class I
Max. continuous operating d.c. voltage (U_C)	60 V	220 V	242 V
Lightning impulse current (10/350 µs) (I_{imp})	25 kA	25 kA	25 kA
Specific energy (W/R)	156.25 kJ/ohms	156.25 kJ/ohms	156.25 kJ/ohms
Nominal discharge current (8/20 µs) (I_n)	25 kA	25 kA	25 kA
Voltage protection level (U_P)	≤ 1.5 kV	≤ 2.5 kV	≤ 2.5 kV
Response time (t_A)	≤ 100 ns	≤ 100 ns	≤ 100 ns
Short-circuit withstand capability for max. mains-side overcurrent protection d.c.	2000 A	2000 A	2000 A
Max. mains-side overcurrent protection	250 A gL/gG	250 A gL/gG	250 A gL/gG
Max. backup fuse (DC+/DC- -> DC+'/DC-')	125 A gL/gG	125 A gL/gG	125 A gL/gG
Operating temperature range (parallel connection) (T_{UP})	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Operating temperature range (series connection) (T_{US})	-40°C...+60°C	-40°C...+60°C	-40°C...+60°C
Operating state/fault indication	green / red	green / red	green / red
Number of ports	1	1	1
Cross-sectional area (DC+/DC-, DC+'/DC-', ⏚/DC-) (min.)	10 mm² solid/flexible	10 mm² solid/flexible	10 mm² solid/flexible
Cross-sectional area (DC+/DC-, ⏚/DC-) (max.)	50 mm² stranded/35 mm² flexible	50 mm² stranded/35 mm² flexible	50 mm² stranded/35 mm² flexible
Cross-sectional area (DC+'/DC-') (max.)	35 mm² stranded/25 mm² flexible	35 mm² stranded/25 mm² flexible	35 mm² stranded/25 mm² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20	IP 20
Capacity	2 modules, DIN 43880	2 modules, DIN 43880	2 modules, DIN 43880
Type of remote signalling contact	changeover contact	changeover contact	changeover contact
a.c. switching capacity	250 V/0.5 A	250 V/0.5 A	250 V/0.5 A
d.c. switching capacity	250 V/0,1 A; 125 V/0,2 A; 75 V/0.5 A	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	max. 1.5 mm² solid/flexible	max. 1.5 mm² solid/flexible	max. 1.5 mm² solid/flexible
Extended technical data when used for safety lighting systems			
(d.c. and a.c. operation possible)	no	no	yes
– Max. continuous operating a.c. voltage (U_C)	—	—	253 V
– Max. backup fuse	—	—	10 A gL/gG

Accessory for DEHNsecure M

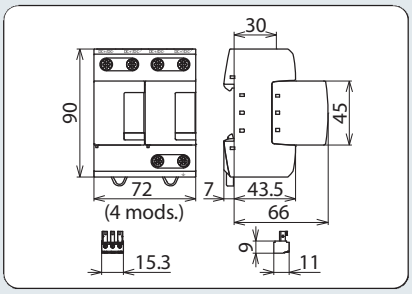
DSE PE Spark-Gap-Based Protection Module

Spark-gap-based protection module

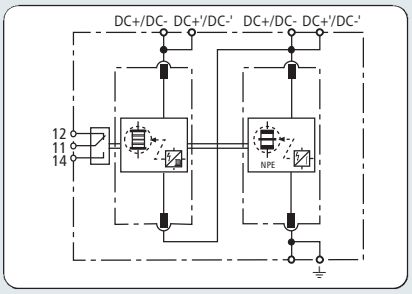
Type DSE MOD ...	60	220	242
Part No.	971 001	971 002	971 003
Max. continuous operating d.c. voltage (U_C)	60 V	220 V	242 V

Coordinated Type 1 Lightning Current Arresters

DEHNsecure M 2P ... (FM)



Dimension drawing DSE M 2P ... FM



Basic circuit diagram DSE M 2P ... FM

Coordinated modular two-pole lightning current arrester for d.c. applications ("1+1" circuits); FM version with floating remote signalling contact

- **Coordinated spark-gap-based lightning current arrester consisting of a base part and plug-in protection module**
- **Spark gap technology particularly suited for use in d.c. circuits**
- **Directly coordinated with DEHNguard surge protective device without additional cable length**

Type	DSE M 2P 60	DSE M 2P 60 FM
Part No.	971 221	971 226
SPD classification according to EN 61643-11	Type 1	Type 1
SPD classification according to IEC 61643-1/-11	Class I	Class I
Max. continuous operating d.c. voltage (U_C)	60 V	60 V
Lightning impulse current (10/350) (DC+/DC- -> DC-/DC+) (DC-/DC+ ->⏚)	25 / 50 kA	25 / 50 kA
Specific energy (DC+/DC- -> DC-/DC+) (DC-/DC+ ->⏚) (W/R)	156.25 kJ/ohms / 625.00 kJ/ohms	156.25 kJ/ohms / 625.00 kJ/ohms
Nominal discharge current (8/20 µs) (I_n)	25 kA	25 kA
Voltage protection level (DC+/DC- -> DC-/DC+) (DC-/DC+ ->⏚) (U_P)	≤ 1.5 kV / ≤ 1.5 kV	≤ 1.5 kV / ≤ 1.5 kV
Response time (t_A)	≤ 100 ns	≤ 100 ns
Short-circuit withstand capability for max. mains-side overcurrent protection d.c.	2000 A	2000 A
Max. mains-side overcurrent protection	250 A gL/gG	250 A gL/gG
Max. backup fuse (DC+/DC- -> DC+'/DC-')	125 A gL/gG	125 A gL/gG
Operating temperature range (parallel connection) (T_{UP})	-40°C...+80°C	-40°C...+80°C
Operating temperature range (series connection) (T_{US})	-40°C...+60°C	-40°C...+60°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (min.)	10 mm² solid/flexible	10 mm² solid/flexible
Cross-sectional area (DC+/DC-, DC-/DC+, ⏚) (max.)	50 mm² stranded/35 mm² flexible	50 mm² stranded/35 mm² flexible
Cross-sectional area (DC+ /DC- , DC- /DC+) (max.)	35 mm² stranded/25 mm² flexible	35 mm² stranded/25 mm² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	4 modules, DIN 43880	4 modules, DIN 43880
Type of remote signalling contact	—	changeover contact
a.c. switching capacity	—	250 V/0.5 A
d.c. switching capacity	—	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	—	max. 1.5 mm² solid/flexible

Accessory for DEHNsecure M

DSE M/PE Spark-Gap-Based Protection Module

Spark-gap-based protection module

Type	DSE MOD 60	DSE MOD PE 60
Part No.	971 001	971 010
Max. continuous operating d.c. voltage (U_C)	60 V	60 V

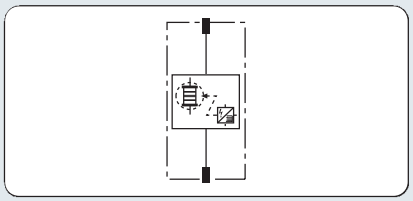
For protecting d.c. consumer's installations against surges and even direct lightning strikes. For installation in conformity with the lightning protection zones concept at the boundaries from 0_A – 1.

- Spark gap technology particularly for use in d.c. circuits
- Operating state / fault indication by green / red indicator flag in the inspection window
- Easy replacement of protection modules without tools due to module locking system with module release button

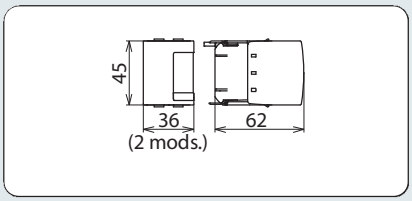
DSE MOD ...: Spark-gap-based protection module

DSE M Spark-Gap-Based Protection Module

NEW



Basic circuit diagram DSE MOD ...



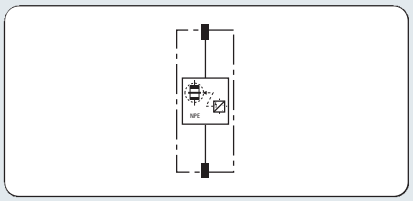
Dimension drawing DSE MOD ...

Spark-gap-based protection module

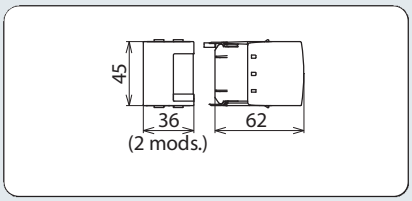
Type	DSE MOD 60	DSE MOD 220	DSE MOD 242
Part No.	971 001	971 002	971 003
Max. continuous operating d.c. voltage (U_C)	60 V	220 V	242 V
Lightning impulse current (10/350 µs) (I_{imp})	25 kA	25 kA	25 kA
Specific energy (W/R)	156.25 kJ/ohms	156.25 kJ/ohms	156.25 kJ/ohms

DSE PE Spark-Gap-Based Protection Module

NEW



Basic circuit diagram DSE MOD ...

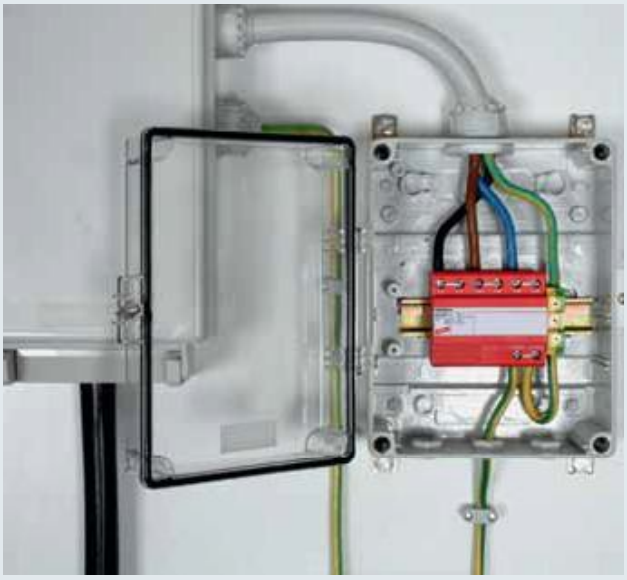


Dimension drawing DSE MOD ...

Spark-gap-based protection module

Type	DSE MOD PE 60
Part No.	971 010
Max. continuous operating d.c. voltage (U_C)	60 V
Lightning impulse current (10/350 µs) (I_{imp})	50 kA
Specific energy (W/R)	625.00 kJ/ohms

- Encapsulated non-exhausting creepage discharge spark gap
- RADAX Flow spark gap technology with high follow current limitation
- Energy coordination with other arresters of the Red/Line product family
- Can also be used upstream of meter panels due to its high insulation resistance
- Multifunctional terminal for connecting conductors and busbars
- Single-pole and three-pole version (lightning impulse currents up to 100 kA depending on the system configuration)
- Modular single-pole version also available



For protecting low-voltage consumer's installations against surges and even direct lightning strikes. For installation in conformity with the lightning protection zones concept at the boundaries from 0_A – 1.

DEHNbloc H M 1 255: **Modular single-pole lightning current arrester with high follow current limitation**
DEHNbloc 1 255 H: **Single-pole lightning current arrester with high follow current limitation**
DEHNbloc 3 255 H: **Three-pole lightning current arrester with high follow current limitation**

The spark gaps of the DEHNbloc lightning current arresters allow a compact configuration of low-voltage distribution boards. By using pressurised, encapsulated creepage discharge spark gaps, no safety distance from busbars and special flameproof enclosures are necessary.

With a lightning current discharge capacity up to 50 kA (10/350 µs) per pole, DEHNbloc devices fulfil the most stringent requirements of national and international lightning protection and application standards.

The consistent improvement of the integration concept made the DEHNbloc devices even more efficient: With DEHNbloc H, the groundbreaking RADAX Flow spark gap technology for follow current extinction and limitation was integrated into the DEHNbloc family.

The RADAX Flow technology prevents that system operation is disrupted due to a tripped line protection as soon as the arrester operates. In times where systems increasingly depend on a properly functioning electrical infrastructure, this is an indispensable product feature. Thanks to the patented RADAX Flow principle, even the amplitude of short circuit currents in installations up to 50 kA_{rms} can be limited to approx. 500 A and extinguished after approximately 5 ms. This feature ensures selectivity even in case of low-value fuses.

But the DEHNbloc H family concept also stands out due to other product features: With its double terminals on the phase and earth side, the single-pole DEHNbloc 1 255 H device offers various application options.

The DBH M 1 255 device with a new arrester design features the approved module release system that safely fixes the protection module to the base part even at maximum loads on the protection module. The modules can be easily replaced without tools by simply pressing the user-friendly module release button of the protection module.

The devices incorporate double terminals suitable for all conductors, allowing series connection of even three-pole DEHNbloc 3 255 H arresters in a space-saving and cost-effective way according to IEC 60364-5-53 requirements for nominal currents up to 125 A.

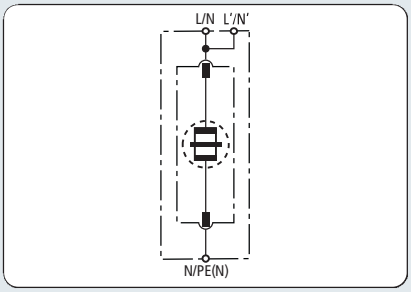
If DEHNbloc is to be used with other DIN rail mounted devices, multifunctional terminals are ideally suited for providing connection for conductors and busbars.

DEHNbloc H

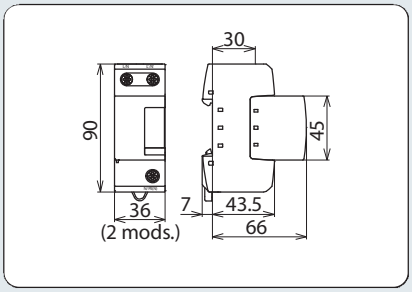
Type 1 Lightning Current Arresters

NEW

- **Encapsulated non-exhausting creepage discharge spark gap**
- **RADAX Flow spark gap technology with high follow current limitation**
- **Can also be used upstream of meter panels due to its high insulation resistance**



Basic circuit diagram DBH M 1 255



Dimension drawing DBH M 1 255

Modular single-pole lightning current arrester with high follow current limitation for U_C = 255 V

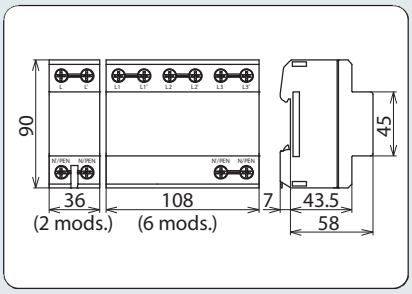
Type	DBH M 1 255
Part No.	961 122
SPD according to EN 61643-11	Type 1
SPD according to IEC 61643-1/-11	Class I
Nominal a.c. voltage (U_N)	230 V
Max. continuous operating a.c. voltage (U_C)	255 V
Lightning impulse current (10/350 µs) (I_{imp})	50 kA
Nominal discharge current (8/20 µs) (I_N)	50 kA
Voltage protection level (U_P)	≤ 4 kV
Follow current extinguishing capability a.c. (I_{fi})	50 kA_{rms}
Follow current limitation / Selectivity	no tripping of a 32 A gL/gG fuse up to 50 kA_{rms} (prosp.)
Response time (t_A)	≤ 100 ns
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 0.2 s)	500 A gL/gG
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 5 s)	315 A gL/gG
Max. backup fuse (L) for I_K > 50 kA_{rms}	200 A gL/gG
Max. backup fuse (L-L')	125 A gL/gG
Temporary overvoltage (TOV) (U_T)	440 V / 5 sec.
TOV characteristics	withstand
Operating temperature range (parallel connection) (T_{UP})	-40°C...+80°C
Operating temperature range (series connection) (T_{US})	-40°C...+60°C
Number of ports	1
Cross-sectional area (L/N, L'/N', N/PE(N)) (min.)	10 mm^2 solid/flexible
Cross-sectional area (L/N, N/PE(N)) (max.)	50 mm^2 stranded/35 mm^2 flexible
Cross-sectional area (L'/N') (max.)	35 mm^2 stranded/25 mm^2 flexible
For mounting on	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation
Degree of protection	IP 20
Capacity	2 modules, DIN 43880

Accessory for DEHNbloc®

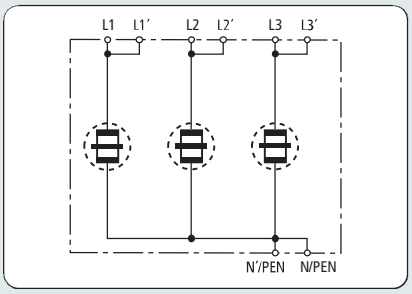
DB H Spark-Gap-Based Protection Module

Spark-gap-based protection module

Type	DBH MOD 255
Part No.	961 022
Max. continuous operating a.c. voltage (U_C)	255 V



Dimension drawing DB 1 255 H / DB 3 255 H



Basic circuit diagram DB 1 255 H / DB 3 255 H

Single-pole and three-pole lightning current arrester with high follow current limitation

- **Encapsulated non-exhausting creepage discharge spark gap**
- **RADAX Flow spark gap technology with high follow current limitation**
- **Can also be used upstream of meter panels due to its high insulation resistance**

Type	DB 1 255 H	DB 3 255 H
Part No.	900 222	900 120
SPD according to EN 61643-11	Type 1	Type 1
SPD according to IEC 61643-1/-11	Class I	Class I
Nominal a.c. voltage (U_N)	230 V	230/400 V
Max. continuous operating a.c. voltage (U_C)	255 V	255 V
Lightning impulse current (10/350 µs) (I_{imp})	50 kA	—
Specific energy (W/R)	625.00 kJ/ohms	—
Lightning impulse current (10/350 µs) [L-N/PEN] (I_{imp})	—	50 kA
Specific energy [L-N/PEN] (W/R)	—	625.00 kJ/ohms
Lightning impulse current (10/350 µs) [L1+L2+L3-N/PEN] (I_{total})	—	100 kA
Specific energy [L1+L2+L3-N/PEN] (W/R)	—	2.50 MJ/ohms
Nominal discharge current (8/20 µs) (I_N)	50 kA	50 / 100 kA
Voltage protection level (U_P)	≤ 4 kV	≤ 4 kV
Follow current extinguishing capability a.c. (I_{fi})	50 kA_{rms}	50 kA_{rms}
Follow current limitation / Selectivity	no tripping of a 32 A gL/gG fuse up to 50 kA_{rms} (prosp.)	no tripping of a 32 A gL/gG fuse up to 50 kA_{rms} (prosp.)
Response time (t_A)	≤ 100 ns	≤ 100 ns
Max. backup fuse up to I_K = 50 kA_{rms} (t_a ≤ 0.2 s)	500 A gL/gG	500 A gL/gG
Max. backup fuse up to I_K = 50 kA_{rms} (t_a ≤ 5 s)	315 A gL/gG	315 A gL/gG
Max. backup fuse for I_K > 50 kA_{rms}	200 A gL/gG	200 A gL/gG
Max. backup fuse (L-L')	125 A gL/gG	125 A gL/gG
Temporary overvoltage (TOV) (U_T)	335 V / 5 sec.	335 V / 5 sec.
TOV characteristics	withstand	withstand
Operating temperature range (parallel connection) (T_{UP})	-40°C...+80°C	-40°C...+80°C
Operating temperature range (series connection) (T_{US})	-40°C...+60°C	-40°C...+60°C
Number of ports	1	1
Cross-sectional area (L, L', N/PEN, N'/PEN) (min.)	10 mm^2 solid/flexible	—
Cross-sectional area (L, N/PEN) (max.)	50 mm^2 stranded/35 mm^2 flexible	—
Cross-sectional area (L', N'/PEN) (max.)	35 mm^2 stranded/25 mm^2 flexible	—
Cross-sectional area (L1, L1', L2, L2', L3, L3', N/PEN, N'/PEN)	—	10 mm^2 solid/flexible
Cross-sectional area (L1, L2, L3, N/PEN)	—	50 mm^2 stranded/35 mm^2 flexible
Cross-sectional area (L1', L2', L3', N'/PEN)	—	35 mm^2 stranded/25 mm^2 flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	2 modules, DIN 43880	6 modules, DIN 43880
Approvals	KEMA, VDE	KEMA, VDE