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Public address systems are used for voice, music and alarm transmission. To this end, the useful signal is modulated onto a carrier voltage (e.g. 100 V) and reaches the loudspeaker via a transmitter. This transmitter transforms the low impedance of the loudspeaker to a higher value, thus reducing the current.

Therefore, telecommunication lines with a diameter of 0.8 mm can be used.

There are different kinds of loudspeakers. Flush and wall loudspeakers typically have a rated power between 6 and 30 W, column loudspeakers between 20 W and 100 W and horn loud-



Figure 1 Modular public address system with surge protective devices

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Figure 2 Horn loudspeaker installed on a structure without external lightning protection system

speakers between 10 W and 60 W. Modular amplifiers have a rated power between 100 W and 600 W (in some cases even higher).

Loudspeakers with different power ratings can be jointly used in a line or group. The minimum power of the amplifier is the sum of the individual loudspeaker power ratings in the public address system. When determining the minimum power of the amplifier, it is not the sum of the loudspeaker power ratings which is decisive, but the sum of the selected power ratings at the transmitters.

Subsection 7.2.1 of the EN 50174-2 standard deals with the protection from lightning strikes and induced surges. It also weighs up the risk of damage against the risk accepted by the operator. If this risk assessment reveals that lightning and surge protection measures are required, lightning and impulse current carrying protective devices must be installed for the relevant installations and systems in need of protection.

The following description makes no reference to any further regulations which may apply (e.g. German Sample Directive on Fireproofing Requirements for Line Systems (MLAR), building regulations, regulations concerning electroacoustic emergency warning systems, regulations concerning burglar and fire alarm systems).



Figure 3 Horn loudspeaker located in the protected volume of an air-termination system on a structure with external lightning protection system

Large-scale public address systems feature a modular 19" design (**Figure 1**) and are frequently in close proximity to a permanently manned workstation. In such cases, the length of the connecting cable to the PC or intercom dictates whether the surge arresters shown (3 + 4) must be installed. Surge protective devices are required with cable lengths >10 m.

To be able to dimension the surge arrester for the loudspeaker line, the maximum current I in the relevant branch must be determined by means of the ratio I = P/U where P is the power of the amplifier or loudspeaker (group) and U is the carrier voltage.

All earth connections of the surge arresters in the vicinity of the public address system must be connected to a nearby common potential point.

If exterior loudspeakers are located on the roof of a building, they can be damaged by indirect lightning effects (inductive / capacitive coupling) regardless of whether the system has external lightning protection (**Figure 3**) or not (**Figure 2**). If the system is equipped with an external lightning protection system (**Figure 3**), the exterior loudspeaker is reliably protected from direct lightning strikes when located within the protected volume of an air-termination system.

DEHNrail

DR M 2P 255 (953 200)

- Two-pole surge arrester consisting of a base part and a plug-in protection module
 High discharge capacity due to heavy-duty zinc oxide varistor / spark gap combination
 Energy coordination with other arresters of the Red/Line product family







Dimension drawing DR M 2P 255

Figure without obligation

Basic circuit diagram DR M 2P 255

Two-pole surge arrester consisting of a base part and a plug-in protection module.

Part No. 983 200 SPD according to EN 61643-11 / IEC 61643-11 Vp 83 / class III Nominal voltage (a.c.) (U _a) 230 V (50 / 60 Hz) Max. continuous operating voltage (a.c.) (U _a) 255 V (50 / 60 Hz) Max. continuous operating voltage (a.c.) (U _a) 255 V Nominal discharge current (8/20 µs) (I _a) 3 KA Total discharge current (8/20 µs) (I _a) 5 KA Combination wave (U _a) 5 KA Combination wave (U _b) 5 KA Combination wave (U _b) 5 KA Combination wave (U _b) 5 KA Voltage protection level [L-N/1 (LN-PE] (U ₀) 5 KA Response time [L-N/1 (k _b) 5 KD Stort circut withstand capability for mains side overcurrent protection 25 A G G B 2 A Short circut withstand capability for mains side overcurrent protection wave (U _b) 6 KA _{mm} Temporary overvoltage (TOV) [L-N/1 (L) - Characteristic 35 V / 120 min safe failure Temporary overvoltage (TOV) [L-N/1 (L) - Characteristic 100 V + U _{Mar} / 200 ms - safe failure Temporary overvoltage (TOV) [L-N/1 - Characteristic 120 V + U _{Mar} / 200 ms - safe failure Core sacctional area (min.) 0.5 mm ² solid / 16xble <th>Туре</th> <th>DR M 2P 255</th>	Туре	DR M 2P 255
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Response time [L/N-PE] (t,) ≤ 100 ns Max. mains-side overcurrent protection 25 A gG or B 25 A Short-circuit withstand capability for mains-side overcurrent protection with 25 A gG (socR) 6 kA_ms Temporary overvoltage (TOV) [L-N] (U ₁) – Characteristic 335 V/ 5 sec. – withstand Temporary overvoltage (TOV) [L-N] (U ₁) – Characteristic 335 V/ 120 min. – safe failure Temporary overvoltage (TOV) [L-N] (U ₁) – Characteristic 335 V/ 120 min. – withstand Temporary overvoltage (TOV) [L-N-PE] (U ₁) – Characteristic 335 V/ 120 min. – withstand Temporary overvoltage (TOV) [L-N-PE] (U ₁) – Characteristic 440 V / 5 sec. – withstand Temporary overvoltage (TOV) [L-N-PE] (U ₁) – Characteristic 440 V / 5 sec. – withstand Temporary overvoltage (TOV) [L-N-PE] (U ₁) – Characteristic 440 V / 5 sec. – withstand Temporary overvoltage (TOV) [L-N-PE] (U ₁) – Characteristic 440 V / 5 sec. – withstand Temporary overvoltage (TOV) [L-N-PE] (U ₁) – Characteristic 1200 V + U _{net} / 200 ms – safe failure Operating tate / fault indication green / red Number of ports 1 Cross-sectional area (max.) 4 mm ² solid / 12.5 mm ² flexible For mounting on 35 mm DIN rails acc. to EN 60715 Enclosure material thermoplastic, red, UL 9	Voltage protection level [L-N] / [L/N-PE] (U _P)	≤ 1250 / ≤ 1500 V
Max. mains-side overcurrent protection 25 A g G or B 25 A Short-circuit withstand capability for mains-side overcurrent protection with 25 A gG (l _{SCCR}) 6 kA _{ma} Temporary overvoltage (TOV) [L-N] (U ₁) - Characteristic 335 V / 5 sec withstand Temporary overvoltage (TOV) [L-N] (U ₁) - Characteristic 440 V / 120 min safe failure Temporary overvoltage (TOV) [LN] (U ₁) - Characteristic 335 V / 120 min withstand Temporary overvoltage (TOV) [LN-PE] (U ₁) - Characteristic 440 V / 5 sec withstand Temporary overvoltage (TOV) [LN-PE] (U ₁) - Characteristic 1200 V + U _{mE} / 200 ms - safe failure Operating temperature range (T _u) - 40 °C +80 °C Operating state / fault indication green / red Number of ports 1 Cross-sectional area (min.) 0.5 mm ² solid / lexible Cross-sectional area (max.) 4 mm [*] solid / 2.5 mm ² flexible For mounting on 35 mm DIN rails acc. to EN 60715 Endosure material thermoplastic, red, UL 94 V-0 Place of installation indoor installation Degree of protection IP 20 Capacity 1 module(s), DIN 43880 Approvals KEMA, VDE, UL, CSA Weight 81 g Customs tariff number (Comb. Nomenclature EU) 85363030 GTIN 4013364108301	Response time [L-N] (t _A)	≤ 25 ns
Short-circuit withstand capability for mains-side overcurrent protection with 25 A gG (IsceR) 6 kAms Temporary overvoltage (TOV) [L-N] (U ₁) – Characteristic 335 V / 5 sec. – withstand Temporary overvoltage (TOV) [L-N] (U ₁) – Characteristic 335 V / 120 min. – withstand Temporary overvoltage (TOV) [L/N-PE] (U ₁) – Characteristic 335 V / 120 min. – withstand Temporary overvoltage (TOV) [L/N-PE] (U ₁) – Characteristic 440 V / 5 sec. – withstand Temporary overvoltage (TOV) [L/N-PE] (U ₁) – Characteristic 1200 V + U _{REF} / 200 ms – safe failure Operating state / fault indication green / red Number of ports 1 Cross-sectional area (min.) 0.5 mn ² solid / 18xible Cross-sectional area (min.) 35 m DIN rails acc. to EN 60715 Enclosure material thermoplastic, red, UL 94 V-0 Place of installation indoor installation Degree of protection IP 20 Capacity 1 module(s), DIN 43880 Approvals KEMA, VDE, UL, CSA Weight 81 g Customs tariff number (Comb. Nomenclature EU) 85363030	Response time [L/N-PE] (t _A)	≤ 100 ns
protection with 25 A gG (i_{score})6 kA,msTemporary overvoltage (TOV) [L-N] (U;) - Characteristic335 V / 5 sec withstandTemporary overvoltage (TOV) [L-N] (U;) - Characteristic440 V / 120 min safe failureTemporary overvoltage (TOV) [L/N-PE] (U;) - Characteristic335 V / 120 min withstandTemporary overvoltage (TOV) [L/N-PE] (U;) - Characteristic440 V / 5 sec withstandTemporary overvoltage (TOV) [L/N-PE] (U;) - Characteristic440 V / 5 sec withstandTemporary overvoltage (TOV) [L/N-PE] (U;) - Characteristic1200 V + U_{REF} / 200 ms - safe failureOperating temperature range (Tu)-40 °C +80 °COperating tate / fault indicationgreen / redNumber of ports1Cross-sectional area (min.)0.5 mm² solid / flexibleCross-sectional area (min.)0.5 mm² solid / 1Cross-sectional area (min.)35 m DIN rails acc. to EN 60715Enclosure materialthermoplastic, red, UL 94 V-0Place of installationindoor installationDegree of protectionI p20Capacity1 module(s), DIN 43880ApprovalsKEMA, VDE, UL, CSAWeight81 gCustoms tariff number (Comb. Nomenclature EU)85363030GTIN4013364108301	Max. mains-side overcurrent protection	25 A gG or B 25 A
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Temporary overvoltage (TOV) [L/N-PE] (U _T) - Characteristic 335 V / 120 min withstand Temporary overvoltage (TOV) [L/N-PE] (U _T) - Characteristic 440 V / 5 sec withstand Temporary overvoltage (TOV) [L+N-PE] (U _T) - Characteristic 1200 V + U _{REF} / 200 ms - safe failure Operating temperature range (T _U) -40 °C +80 °C Operating state / fault indication green / red Number of ports 1 Cross-sectional area (min.) 0.5 mm ² solid / flexible Cross-sectional area (max.) 4 mm ² solid / 2.5 mm ² flexible For mounting on 35 mm DIN rails acc. to EN 60715 Enclosure material thermoplastic, red, UL 94 V-0 Place of installation IP 20 Capacity 1 module(s), DIN 43880 Approvals KEMA, VDE, UL, CSA Weight 81 g Customs tariff number (Comb. Nomenclature EU) 85363030 GTIN 4013364108301	Temporary overvoltage (TOV) [L-N] (U _T) – Characteristic	335 V / 5 sec. – withstand
Temporary overvoltage (TOV) [L/N-PE] (U ₁) - Characteristic 440 V / 5 sec withstand Temporary overvoltage (TOV) [L+N-PE] (U ₁) - Characteristic 1200 V + U _{REF} / 200 ms - safe failure Operating temperature range (T _u) -40 °C +80 °C Operating state / fault indication green / red Number of ports 1 Cross-sectional area (min.) 0.5 mm ² solid / flexible Cross-sectional area (max.) 4 mm ² solid / 2.5 mm ² flexible For mounting on 35 mm DIN rais acc. to EN 60715 Enclosure material thermoplastic, red, UL 94 V-0 Place of installation indoor installation Degree of protection IP 20 Capacity 1 module(s), DIN 43880 Approvals KEMA, VDE, UL, CSA Weight 81 g Customs tariff number (Comb. Nomenclature EU) 85363030 GTIN 4013364108301	Temporary overvoltage (TOV) [L-N] (U _T) – Characteristic	440 V / 120 min. – safe failure
Temporary overvoltage (TOV) [L+N-PE] (U ₁) – Characteristic1200 V + U _{REF} / 200 ms – safe failureOperating temperature range (T _u)-40 °C +80 °COperating state / fault indicationgreen / redNumber of ports1Cross-sectional area (min.)0.5 mm² solid / flexibleCross-sectional area (max.)4 mm² solid / 2.5 mm² flexibleFor mounting on35 mm DIN rails acc. to EN 60715Enclosure materialthermoplastic, red, UL 94 V-0Place of installationIndoor installationDegree of protectionIP 20Capacity1 module(s), DIN 43880ApprovalsKEMA, VDE, UL, CSAWeight81 gCustoms tariff number (Comb. Nomenclature EU)85363030GTIN4013364108301	Temporary overvoltage (TOV) [L/N-PE] (U _T) – Characteristic	335 V / 120 min. – withstand
Operating temperature range (Tu)-40 °C +80 °COperating state / fault indicationgreen / redNumber of ports1Cross-sectional area (min.)0.5 mm² solid / flexibleCross-sectional area (max.)4 mm² solid / 2.5 mm² flexibleFor mounting on35 mm DIN rails acc. to EN 60715Enclosure materialthermoplastic, red, UL 94 V-0Place of installationindoor installationDegree of protectionIP 20Capacity1 module(s), DIN 43880ApprovalsKEMA, VDE, UL, CSAWeight81 gCustoms tariff number (Comb. Nomenclature EU)85363030GTIN4013364108301	Temporary overvoltage (TOV) [L/N-PE] (U _T) – Characteristic	440 V / 5 sec. – withstand
Operating state / fault indicationgreen / redNumber of ports1Cross-sectional area (min.)0.5 mm² solid / flexibleCross-sectional area (max.)4 mm² solid / 2.5 mm² flexibleFor mounting on35 mm DIN rails acc. to EN 60715Enclosure materialthermoplastic, red, UL 94 V-0Place of installationindoor installationDegree of protectionIP 20Capacity1 module(s), DIN 43880ApprovalsKEMA, VDE, UL, CSAWeight81 gCustoms tariff number (Comb. Nomenclature EU)85363030GTIN4013364108301	Temporary overvoltage (TOV) [L+N-PE] (U _T) – Characteristic	1200 V + U _{REF} / 200 ms – safe failure
Number of ports1Cross-sectional area (min.) $0.5 mm^2 solid / flexible$ Cross-sectional area (max.) $4 mm^2 solid / 2.5 mm^2 flexible$ For mounting on $35 mm DIN rails acc. to EN 60715$ Enclosure materialthermoplastic, red, UL 94 V-0Place of installationindoor installationDegree of protectionIP 20Capacity1 module(s), DIN 43880ApprovalsKEMA, VDE, UL, CSAWeight81 gCustoms tariff number (Comb. Nomenclature EU)85363030GTIN4013364108301	Operating temperature range (T _U)	-40 °C +80 °C
Cross-sectional area (min.) $0.5 \mathrm{mm}^2 \mathrm{solid} / \mathrm{flexible}$ Cross-sectional area (max.) $4 \mathrm{mm}^2 \mathrm{solid} / 2.5 \mathrm{mm}^2 \mathrm{flexible}$ For mounting on $35 \mathrm{mm} \mathrm{DIN} \mathrm{rails} \mathrm{acc. to} \mathrm{EN} 60715$ Enclosure materialthermoplastic, red, UL 94 V-0Place of installationindoor installationDegree of protectionIP 20Capacity1 module(s), DIN 43880ApprovalsKEMA, VDE, UL, CSAWeight81 gCustoms tariff number (Comb. Nomenclature EU)85363030GTIN4013364108301	Operating state / fault indication	green / red
Cross-sectional area (max.)4 mm² solid / 2.5 mm² flexibleFor mounting on35 mm DIN rails acc. to EN 60715Enclosure materialthermoplastic, red, UL 94 V-0Place of installationindoor installationDegree of protectionIP 20Capacity1 module(s), DIN 43880ApprovalsKEMA, VDE, UL, CSAWeight81 gCustoms tariff number (Comb. Nomenclature EU)85363030GTIN401364108301	Number of ports	1
For mounting on35 mm DIN rails acc. to EN 60715Enclosure materialthermoplastic, red, UL 94 V-0Place of installationindoor installationDegree of protectionIP 20Capacity1 module(s), DIN 43880ApprovalsKEMA, VDE, UL, CSAWeight81 gCustoms tariff number (Comb. Nomenclature EU)85363030GTIN401364108301	Cross-sectional area (min.)	0.5 mm ² solid / flexible
Enclosure materialthermoplastic, red, UL 94 V-0Place of installationindoor installationDegree of protectionIP 20Capacity1 module(s), DIN 43880ApprovalsKEMA, VDE, UL, CSAWeight81 gCustoms tariff number (Comb. Nomenclature EU)85363030GTIN4013364108301	Cross-sectional area (max.)	4 mm ² solid / 2.5 mm ² flexible
Place of installationindoor installationDegree of protectionIP 20Capacity1 module(s), DIN 43880ApprovalsKEMA, VDE, UL, CSAWeight81 gCustoms tariff number (Comb. Nomenclature EU)85363030GTIN4013364108301	For mounting on	35 mm DIN rails acc. to EN 60715
Degree of protectionIP 20Capacity1 module(s), DIN 43880ApprovalsKEMA, VDE, UL, CSAWeight81 gCustoms tariff number (Comb. Nomenclature EU)85363030GTIN4013364108301	Enclosure material	thermoplastic, red, UL 94 V-0
Capacity1 module(s), DIN 43880ApprovalsKEMA, VDE, UL, CSAWeight81 gCustoms tariff number (Comb. Nomenclature EU)85363030GTIN4013364108301	Place of installation	indoor installation
Approvals KEMA, VDE, UL, CSA Weight 81 g Customs tariff number (Comb. Nomenclature EU) 85363030 GTIN 4013364108301	Degree of protection	IP 20
Weight 81 g Customs tariff number (Comb. Nomenclature EU) 85363030 GTIN 4013364108301	Capacity	1 module(s), DIN 43880
Customs tariff number (Comb. Nomenclature EU) 85363030 GTIN 4013364108301	Approvals	KEMA, VDE, UL, CSA
GTIN 4013364108301	Weight	81 g
	Customs tariff number (Comb. Nomenclature EU)	85363030
PU 1 pc(s)	GTIN	4013364108301
	PU	1 pc(s)

DEHNprotector

Figure without obligation

DPRO 230 (909 230)

- Surge protection with monitoring device and disconnector
 Visual operating state (green) and fault indication (red)
 Enhanced safety due to fault-proof Y protective circuit





Basic circuit diagram DPRO 230



Dimension drawing DPRO 230

Adapter with integrated surge protection and child lock.

Туре	DPRO 230
Part No.	909 230
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Nominal voltage (a.c.) (U _N)	230 V (50 / 60 Hz)
Max. continuous operating voltage (a.c.) (U _c)	255 V (50 / 60 Hz)
Nominal load current (a.c.) (I _L)	16 A
Nominal discharge current (8/20 µs) (In)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I _{total})	5 kA
Combination wave (U _{oc})	6 kV
Combination wave [L+N-PE] (U _{OC total})	10 kV
Voltage protection level [L-N] / [L/N-PE] (U _P)	≤ 1250 / ≤ 1500 V
Response time [L-N] (t _A)	≤ 25 ns
Response time [L/N-PE] (t _A)	≤ 100 ns
Max. mains-side overcurrent protection	B 16 A
Short-circuit withstand capability for max. mains-side overcurrent protection ($I_{\mbox{\tiny SCCR}}$)	1 kA _{ms}
Temporary overvoltage (TOV) [L-N] (U _T) – Characteristic	335 V / 5 sec. – withstand
Temporary overvoltage (TOV) [L-N] (U_T) – Characteristic	440 V / 120 min. – safe failure
Temporary overvoltage (TOV) [L/N-PE] (U_T) – Characteristic	335 V / 120 min. – withstand
Temporary overvoltage (TOV) [L/N-PE] (U_T) – Characteristic	440 V / 5 sec. – withstand
Temporary overvoltage (TOV) [L+N-PE] (U_T) – Characteristic	1200 V + U _{REF} / 200 ms – safe failure
Fault indication	red light
Operating state indication	green light
Number of ports	1
Operating temperature range (T _U)	-25 °C +40 °C
For mounting on	earthed socket outlets DIN 49440 / DIN 49441
Enclosure material	thermoplastic, pure white, UL 94 V-2
Place of installation	indoor installation
Degree of protection	IP 20
Dimensions	126 x 69 x 41 mm
Weight	190 g
Customs tariff number (Comb. Nomenclature EU)	85363010
GTIN	4013364117686
PU	1 pc(s)

DEHNvario

DVR 2 BY S 150 FM (928 430)

- For electroacoustic systems up to 10 A
- Direct plug-in technology allows connection without tools
- For installation in conformity with the lightning protection zone concept at the boundaries 0_A 2 and higher







Figure without obligation

Basic circuit diagram DVR 2 BY S 150 FM

Dimension drawing DVR 2 BY S 150 FM

Compact combined arrester for protecting electroacoustic systems (e.g. voice alarm systems, loudspeaker systems). Protection of one galvanically isolated pair; direct or indirect shield earthing. Direct plug-in technology allows fast conductor connection without tools. Easy replacement of the arrester is ensured by the integrated terminal units which can be released and then removed from the enclosure. Integrated remote signalling contact (break contact).

Technical data

Part No. 928 430 SPD class Immerial Nominal voltage (a.c.) (U ₀) 100 V Max. continuous operating voltage (a.c.) (U ₀) 100 V Nominal current at 70 °C (I) 110 V Nominal current at 80 °C (I) 7 A DI lighting inpulse current (10/350 µs) per line (I _m) 2.5 kA DI lighting inpulse current (10/350 µs) per line (I _m) 7.5 kA C2 Total nominal discharge current (8/20 µs) per line (I, I) 7.5 kA C2 Total nominal discharge current (8/20 µs) per line (I, I) 5.5 kA Voltage protection level line-line at I _m D1 (U ₃) 2.5 kA Voltage protection level line-line at I _m D1 (U ₃) 500 V Voltage protection level line-line at I _m D1 (U ₃) 500 V Voltage protection level line-line at I _m D1 (U ₃) 500 V Voltage protection level line-line at I _m D1 (U ₃) 500 V Voltage protection level line-line at I _m D1 (U ₃) 500 V Voltage protection level line-line (I) 40 °C Capacity 2 module(s), D1N 43880 For mounting on 35 mm DIN ralls acc. to EN 60715 Conse-sectional area, flexible 0.2.15 mn ²	Туре	DVR 2 BY S 150 FM
Nominal voltage (a.c.) (U _a) 100 V Max. continuous operating voltage (d.c.) (U _a) 150 V Max. continuous operating voltage (d.c.) (U _a) 150 V Nominal current at 70 °C (I _a) 10 A Nominal current at 70 °C (I _a) 7 A D1 lighting impulse current (10/350 µs) per line (I _m) 2.5 skA D1 lighting impulse current (10/350 µs) per line (I _m) 9 kA C2 Notinnal discharge current (8/20 µs) per line (I _m) 9 kA C2 Total nominal discharge current (8/20 µs) (I _m) 9 kA Voltage protection level line-Fine at I _m D1 (U _b) 5 500 V Voltage protection level line-Fine at I_mD1 (U _b) 5 600 V Voltage protection level line-Fine at I_NU SC (U _b) 5 600 V Voltage protection level line-Fine at I_NU SC (U _b) 5 600 V Voltage protection level line-Fine (I _b) 14 MHz Operating temperature range (T _m) 40 °C 480 °C Degree of protection IP 20 Capachy 2 module(s). DIN 43880 Consection al rang. fold 0.2.1.5 mn ² Consection al rang. fold 0.2.1.5 mn ² Consection al rang. fold 0.2.1.5 mn ² <		
Max. continuous operating voltage (d.c.) (U ₂) 150 V Max. continuous operating voltage (d.c.) (U ₂) 110 V Nominal current 170 °C (I ₂) 10 A Nominal current at 80 °C (I ₁) 7 A D1 Lightning impulse current (10/350 µs) por line (I _m) 2.5 kA D1 Total lightning impulse current (10/350 µs) fumo (I _m) 9 kA C2 Rominal discharge current (120 µs) por line (L ₁) 7.5 kA C2 Total nominal discharge current (120 µs) (J _m) \$ 500 V Voltage protection level line-Hine at I _m D1 (U ₃) \$ 500 V Voltage protection level line-Hine at I _m D1 (U ₃) \$ 700 V Voltage protection level line-Hine at I _m D1 (U ₃) \$ 400 V Voltage protection level line-Hine at I _m D1 (U ₃) \$ 400 V Voltage protection level line-Hine at I _m D1 (U ₃) \$ 400 V Voltage protection level line-Hine at I _m D1 (U ₃) \$ 400 V Voltage protection level line-Hine at I _m D1 (U ₃) \$ 400 V Voltage protection level line-Hine at I _m D1 (U ₃) \$ 400 V Voltage protection level line-Hine at I _m D1 (U ₃) \$ 400 V Coller of Une-Hine at I _m D1 (U ₃) \$ 200 VI (D ₁ (U ₃) Coutoff sequency line-Hine (I _m)		
Max. continuous operating voltage (a.c.) (U ₀) 110 V Nominal current at 70°C (L) 10 A Nominal current at 80°C (L) 7 A D1 Lighting inpulse current (10/350 µs) per line (L _m) 2.5 kA D1 Total lighting inpulse current (10/350 µs) per line (L _m) 9 kA C2 Nominal discharge current (8/20 µs) per line (L) 7.5 kA C2 Total nominal discharge current (8/20 µs) per line (L) 2.5 kA Voltage protection level line-line at L _m D1 (U _s) \$ 500 V Voltage protection level line-FO at L _W D1 (U _s) \$ 500 V Voltage protection level line-FO at L _W D1 (U _s) \$ 650 V Current (R20 µs) per line (L) \$ 400 V Voltage protection level line-FO at L _W D1 (U _s) \$ 650 V Current frequency line-line (L) 1.4 MHz Operating temperature range (T _i) 40° C +80° C Degree of protection IP 20 Capacity 2 module(s), DIN 43880 For mouting on 35 mDIN rails ace. to EN 80715 Connection (input / output) Spring/ Spring Cross-sectional area, flexible 0.2-1.5 mn ² Cross-sectional area, flexible 0.2-1.5 mn ²	Nominal voltage (a.c.) (U _N)	100 V
Nominal current at 70 °C (L) 10 A Nominal current at 80 °C (L) 7 A D1 Lighting impulse current (10/350 µs) per line (L _m) 2.5 kA D1 Total lighting impulse current (10/350 µs) per line (L) 7.5 kA C2 Nominal discharge current (8/20 µs) (L) 2.5 kA Voltage protection level line-line at L _m D1 (U _a) 5 00 V Voltage protection level line-line at L _m D1 (U _a) 5 00 V Voltage protection level line-line at L _m D1 (U _a) 5 00 V Voltage protection level line-line at L _m D1 (U _a) 5 00 V Voltage protection level line-line at L _m D1 (U _a) 5 00 V Voltage protection level line-line at L _m D1 (U _a) 5 00 V Voltage protection level line-line at L _m D1 (U _a) 5 00 V Cutoff frequency line-line (f _a) 1.4 MHz Operating temperature range (T _a) 4.40 °C +80 °C Degree of protection IP 2.0 Capacity 2 module(s), DIN 43880 For moutring on 55 mm DIN raits acc. to EN 60715 Connection (input / output) S mon DIN raits acc. to EN 60715 Consectional area, soid 0.2-1.5 mn ² Cross-sectional area, flexible 0.2.1		150 V
Nominal current at 80 °C (t) 7 A D1 Liphthing impulse current (10/350 µs) per line (t _w) 2.5 kA D1 Total lighthing impulse current (10/350 µs) (t _w) 9 kA C2 Nominal discharge current (8/20 µs) per line (t _w) 7.5 kA C2 Total nominal discharge current (8/20 µs) (t _w) 2.5 kA Voltage protection level line-line at t _w D1 (U _y) 500 V Voltage protection level line-line at t _w D1 (U _y) 500 V Voltage protection level line-line at t _w D1 (U _y) 500 V Voltage protection level line-line at t _w D1 (U _y) 500 V Voltage protection level line-line at t _w D1 (U _y) 500 V Voltage protection level line-line at t _w D1 (U _y) 500 V Voltage protection level line-line at t _w D1 (U _y) 500 V Out-off frequency line-line (T _x) 40 °C Degree of protection 1P 20 Capacity 2 module(s), DIN 43880 For mounting on 35 m DIN rails acc: to EN 60715 Connection (input / output) spring / spring Cross-sectional area, solid 0.2-1.5 mm ² Colur yellow Test standrads IEC 61643.21 / EN 6164.32.1	Max. continuous operating voltage (a.c.) (U _c)	110 V
D1 Lightning impulse current (10/350 µs) per line (l,) 2.5 kA D1 Total lightning impulse current (10/250 µs) (l,) 9 kA C2 Nominal discharge current (8/20 µs) per line (l,.) 7.5 kA C2 Total nominal discharge current (8/20 µs) (l,) 2.25 kA Voltage protection level line-line at I, D1 (U,) 500 V Voltage protection level line-line at I, D1 (U,) 500 V Voltage protection level line-line at I, D1 (U,) 500 V Voltage protection level line-line at I, D1 (U,) 500 V Voltage protection level line-line at I, D1 (U,) 500 V Voltage protection level line-line at I, D1 (U,) 500 V Voltage protection level line-line at I, D1 (U,) 500 V Cut-off frequency line-line (f,0) 1.4 MHz Operating temperature range (Tu) 40 °C+80 °C Degree of protection IP 20 Capacity 2 module(s), DIN 43880 For mounting on 35 mm DIN rals acc. to EN 60715 Consectional area, flexible 0.2-1.5 mm² Cross-sectional area, solid 0.2-1.5 mm² Colour yellow Test standards IEC 61643-21 / EN 61643-21 <td>Nominal current at 70 $^{\circ}$C (I_L)</td> <td>10 A</td>	Nominal current at 70 $^{\circ}$ C (I _L)	10 A
D1 Total lightning impulse current (10/350 µs) (lum) 9 kA C2 Nominal discharge current (8/20 µs) (lum) 7.5 kA C2 Total nominal discharge current (8/20 µs) (lum) 22.5 kA Voltage protection level line-line at lump D1 (Us) 5 500 V Voltage protection level line-line at 1 k//µs C3 (Us) 5 400 V Voltage protection level line-line at 1 k//µs C3 (Us) 5 650 V Cut-off frequency line-line (t) 1.4 MHz Operating temperature range (Tu) -40 °C + 80 °C Degree of protection IP 20 Capacity 2 module(s) DIN 43880 For mounting on 35 mm DIN raits acc. to 16 80715 Conse-sectional area, flexible 0.2-1.5 mm² Cross-sectional area, flexible 0.2-1.5 mm² Colour yellow Colour yellow Colour yellow Colour yellow Colour Seco V/0.5 A Switching capacity (a.c.) 250 V/0.5 A </td <td>Nominal current at 80 °C (I_L)</td> <td>7 A</td>	Nominal current at 80 °C (I _L)	7 A
C2 Nominal discharge current (8/20 µs) (h.) 7.5 kA C2 Total nominal discharge current (8/20 µs) (h.) 2.5 kA Voltage protection level line-line at Imp, D1 (Up) 500 V Voltage protection level line-line at Imp, D1 (Up) 500 V Voltage protection level line-line at IkV/µs C3 (Up) 5400 V Voltage protection level line-line at IkV/µs C3 (Up) 560 V Cut-off frequency line-line (f.) 1.4 MHz Operating temperature range (Tu) -40 °C +80 °C Degree of protection IP 20 Capacity 2 module(s), DIN 43880 For mounting on 35 mm DIN rails acc. to EN 60715 Consectional area, solid 0.2-1.5 mm ² Cross-sectional area, flexible 0.2-1.5 mm ² Colour yellow Test standards IEC 61643-21 / EN 61643-21 Approvals EAC Type of remote signalling contact break contact Switching capacity (a.c.) 250 V / 0.1 A; 125 V / 0.2 A; 75 V / 0.5 A Switching capacity (a.c.) 250 V / 0.1 A; 125 V / 0.2 A; 75 V / 0.5 A Switching capacity (a.c.) 250 V / 0.1 A; 125 V / 0.2 A; 75 V / 0.5 A Switching capacity (a.c.) 250 V / 0.1 A; 125 V / 0.2 A; 75 V / 0.5 A <td>D1 Lightning impulse current (10/350 $\mu s)$ per line ($I_{\text{imp}})$</td> <td>2.5 kA</td>	D1 Lightning impulse current (10/350 $\mu s)$ per line ($I_{\text{imp}})$	2.5 kA
C2 Total nominal discharge current (8/20 µs) (h,) 2.2.5 kA Voltage protection level line-line at 1 _{mp} D1 (U _p) \$ 500 V Voltage protection level line-PC at 1 _{mp} D1 (U _p) \$ 700 V Voltage protection level line-PC at 1 kV/µs C3 (U _p) \$ 400 V Voltage protection level line-PC at 1 kV/µs C3 (U _p) \$ 650 V Cut-off frequency line-line (f ₀) 1.4 MHz Operating temperature range (T ₀) -40 °C +80 °C Degree of protection IP 20 Capacity 2 module(s), DIN 438800 For mouting on 35 mm DIN rails acc. to EN 60715 Connection (input / output) spring / spring Cross-sectional area, solid 0.2-1.5 mm ² Colour yellow Earthing via DIN rail Enclosure material Uel 4V-0 Colour yellow Type of remote signalling contact EAC Switching capacity (d.c.) 250 V / 0.1 A; 125 V / 0.2 A; 75 V / 0.5 A Switching capacity (d.c.) 250 V / 0.1 A; 125 V / 0.5 A Colour 250 V / 0.1 A; 125 V / 0.5 A Switching capacity (d.c.) 250 V / 0.1 A; 125 V / 0.5 A <	D1 Total lightning impulse current (10/350 µs) (I _{imp})	9 kA
Voltage protection level line-line at leve D1 (Up) ≤ 500 V Voltage protection level line-PG at Lw, D1 (Up) ≤ 700 V Voltage protection level line-Ine at 1 kV/µs C3 (Up) ≤ 400 V Voltage protection level line-Ine at 1 kV/µs C3 (Up) ≤ 650 V Cut-off frequency line-line (fp) 1.4 MHz Operating temperature range (Tu) -40 °C +80 °C Degree of protection IP 20 Capacity 2 module(s), DIN 43800 For mounting on 35 mm DIN rails acc. to EN 60715 Connection (input / output) spring / spring Cross-sectional area, solid 0.2-1.5 mm² Cross-sectional area, flexible 0.2-1.5 mm² Earthing via DIN rail Enclosure material thermoplastic, UL 94 V-0 Colour yellow Type of renote signalling contact break contact Switching capacity (d.c.) 250 V / 0.5 A Cross-sectional area for renote signalling terminals max. 1.5 mm² Switching capacity (a.c.) 250 V / 0.5 A Colour 250 V / 0.5 A Switching capacity (a.c.) 250 V / 0.5 A Colour 250 V / 0.5 A Switching capacit	C2 Nominal discharge current (8/20 $\mu s)$ per line (I_n)	7.5 kA
Voltage protection level line-PG at lum, D1 (Up) ≤ 700 V Voltage protection level line-line at 1 kV/µs C3 (Up) ≤ 400 V Voltage protection level line-PG at 1 kV/µs C3 (Up) ≤ 650 V Cut-off frequency line-line (fp) 1.4 MHz Operating temperature range (Tr) -40 °C +80 °C Degree of protection IP 20 Capacity 2 module(s), DIN 43880 For mounting on 35 mm DIN rails acc. to EN 60715 Consersectional area, solid 0.2-1.5 mm² Cross-sectional area, fexible 0.2-1.5 mm² Earthing via DIN rail Enclosure material thermoplastic, UL 94 V-0 Colour yellow Test standards EAC Type of renote signalling contact break contact Switching capacity (a.c.) 250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A Switching capacity (a.c.) 250 V/0.1 A; 125 V/0.5 A Cross-sectional area for renote signalling terminals max. 1.5 mm² Weight 110 g Cutoms tariff number (Comb. Nomenclature EU) 85363010	C2 Total nominal discharge current (8/20 µs) (In)	22.5 kA
Voltage protection level line-line at 1 kV/µs C3 (Up) ≤ 400 V Voltage protection level line-PG at 1 kV/µs C3 (Up) ≤ 650 V Cut-off frequency line-line (fp) 1.4 MHz Operating temperature range (Tu) -40 ° C+80 °C Degree of protection IP 20 Capacity 2 module(s), DIN 43880 For mounting on 35 mm DIN rails acc. to EN 60715 Conse-sectional area, solid 0.2-1.5 mm² Cross-sectional area, flexible 0.2-1.5 mm² Earthing via DIN rail Enclosure material thermoplastic, UL 94 V-0 Colour yellow Test standards IEC 61643-21 / EN 61643-21 Approvals EAC Type of remote signalling contact break contact Switching capacity (a.c.) 250 V / 0.1 A; 125 V / 0.2 A; 75 V / 0.5 A Switching capacity (a.c.) 250 V / 0.5 A Cross-sectional area for menote signalling terminals max. 1.5 mm² Veligh 110 g Colour 8536310 Golur 4013364261389	Voltage protection level line-line at I _{imp} D1 (U _p)	≤ 500 V
Voltage protection level line-PG at 1 kV/µs C3 (µ) ≤ 650 V Cut-off frequency line-line (f _c) 1.4 MHz Operating temperature range (T _u) -40 °C+80 °C Degree of protection IP 20 Capacity 2 module(s), DIN 43880 For mounting on 35 mm DIN rails acc. to EN 60715 Connection (input / output) spring / spring Cross-sectional area, solid 0.2-1.5 mm² Cross-sectional area, flexible 0.2-1.5 mm² Earthing via DIN rail Enclosure material thermoplastic, UL 94 V-0 Colour yellow Test standards IEC 61643-21 / EN 61643-21 Approvals EAC Type of remote signalling contact break contact Switching capacity (a.c.) 250 V / 0.1 A; 125 V / 0.2 A; 75 V / 0.5 A Switching capacity (a.c.) 250 V / 0.1 A; 125 V / 0.5 A Cross-sectional area for remote signalling terminals max. 1.5 mm² Vesight 110 g Customs tariff number (Comb. Nomenclature EU) 85363010	Voltage protection level line-PG at I _{imp} D1 (U _p)	≤ 700 V
Cut-off frequency line-line (f_0)1.4 MHzOperating temperature range (T_u)-40 °C +80 °CDegree of protectionIP 20Capacity2 module(s), DIN 43880For mounting on35 mm DIN rails acc. to EN 60715Connection (input / output)spring / springCross-sectional area, solid0.2-1.5 mm²Cross-sectional area, flexible0.2-1.5 mm²Earthing viaDIN railEnclosure materialthermoplastic, UL 94 V-0ColouryellowTest standardsIEC 61643-21 / EN 61643-21ApprovalsEACType of remote signalling contactbreak contactSwitching capacity (d.c.)250 V / 0.1 A; 125 V / 0.5 ASwitching capacity (a.c.)250 V / 0.5 ACross-sectional area for remote signalling terminalsmax. 1.5 mm²Customs tariff number (Comb. Nomenclature EU)85363010GTIN4013364261389	Voltage protection level line-line at 1 kV/ μ s C3 (U _p)	≤ 400 V
Operating temperature range (Tu)-40 °C +80 °CDegree of protectionIP 20Capacity2 module(s), DIN 43880For mounting on35 mm DIN rails acc. to EN 60715Connection (input / output)spring / springCross-sectional area, solid0.2-1.5 mm²Cross-sectional area, flexible0.2-1.5 mm²Earthing viaDIN railEnclosure materialthermoplastic, UL 94 V-0ColouryellowTest standardsIEC 61643-21 / EN 61643-21ApprovalsEACType of remote signalling contactbreak contactSwitching capacity (a.c.)250 V / 0.1 A; 125 V / 0.2 A; 75 V / 0.5 ASwitching capacity (a.c.)110 gCross-sectional area for remote signalling terminalsmax. 1.5 mm²Weight110 gCross-sectional area for remote EU)85363010GTIN4013364261389	Voltage protection level line-PG at 1 kV/µs C3 (U _P)	≤ 650 V
Degree of protectionIP 20Capacity2 module(s), DIN 43880For mounting on35 mm DIN rails acc. to EN 60715Connection (input / output)spring / springCross-sectional area, solid0.2-1.5 mm²Cross-sectional area, flexible0.2-1.5 mm²Earthing viaDIN railEnclosure materialthermoplastic, UL 94 V-0ColouryellowTest standardsIEC 61643-21 / EN 61643-21ApprovalsEACType of remote signalling contactbreak contactSwitching capacity (d.c.)250 V / 0.1 A; 125 V / 0.2 A; 75 V / 0.5 ASwitching capacity (a.c.)250 V / 0.1 A; 15 mm²Weight110 gCross-sectional area for remote signalling terminalsmax. 1.5 mm²Weight110 gCustoms tariff number (Comb. Nomenclature EU)85363010GTIN4013364261389	Cut-off frequency line-line (f _G)	1.4 MHz
Capacity2 module(s), DIN 43880For mounting on35 mm DIN rails acc. to EN 60715Connection (input / output)spring / springCross-sectional area, solid0.2-1.5 mm²Cross-sectional area, flexible0.2-1.5 mm²Earthing viaDIN railEnclosure materialthermoplastic, UL 94 V-0ColouryellowTest standardsIEC 61643-21 / EN 61643-21ApprovalsEACType of remote signalling contactbreak contactSwitching capacity (a.c.)250 V / 0.1 A; 125 V / 0.2 A; 75 V / 0.5 ACross-sectional area for remote signalling terminalsmax. 1.5 mm²Weight110 gCustoms tariff number (Comb. Nomenclature EU)85363010GTIN4013364261389	Operating temperature range (T _u)	-40 °C +80 °C
For mounting on35 mm DIN rails acc. to EN 60715Connection (input / output)spring / springCross-sectional area, solid0.2-1.5 mm²Cross-sectional area, flexible0.2-1.5 mm²Earthing viaDIN railEnclosure materialthermoplastic, UL 94 V-0ColouryellowTest standardsIEC 61643-21 / EN 61643-21ApprovalsEACType of remote signalling contactbreak contactSwitching capacity (d.c.)250 V / 0.1 A; 125 V / 0.2 A; 75 V / 0.5 ASwitching capacity (a.c.)250 V / 0.1 A; 10 gCross-sectional area for remote signalling terminalsmax. 1.5 mm²Weight110 gCustoms tariff number (Comb. Nomenclature EU)85363010GTIN4013364261389	Degree of protection	IP 20
Connection (input / output)spring / springCross-sectional area, solid0.2-1.5 mm²Cross-sectional area, flexible0.2-1.5 mm²Earthing viaDIN railEnclosure materialthermoplastic, UL 94 V-0ColouryellowTest standardsIEC 61643-21 / EN 61643-21ApprovalsEACType of remote signalling contactbreak contactSwitching capacity (d.c.)250 V / 0.1 A; 125 V / 0.2 A; 75 V / 0.5 ASwitching capacity (a.c.)250 V / 0.1 A; 125 V / 0.5 ACross-sectional area for remote signalling terminalsmax. 1.5 mm²Weight110 gCustoms tariff number (Comb. Nomenclature EU)85363010GTIN4013364261389	Capacity	2 module(s), DIN 43880
Cross-sectional area, solid0.2-1.5 mm²Cross-sectional area, flexible0.2-1.5 mm²Earthing via0.2-1.5 mm²Earthing viaDIN railEnclosure materialthermoplastic, UL 94 V-0ColouryellowTest standardsIEC 61643-21 / EN 61643-21ApprovalsEACType of remote signalling contactbreak contactSwitching capacity (d.c.)250 V / 0.1 A; 125 V / 0.2 A; 75 V / 0.5 ASwitching capacity (a.c.)250 V / 0.1 A; 125 V / 0.5 ACross-sectional area for remote signalling terminalsmax. 1.5 mm²Weight110 gCustoms tariff number (Comb. Nomenclature EU)85363010GTIN4013364261389	For mounting on	35 mm DIN rails acc. to EN 60715
Cross-sectional area, flexible0.2-1.5 mm²Earthing viaDIN railEnclosure materialDIN railEnclosure materialthermoplastic, UL 94 V-0ColouryellowTest standardsIEC 61643-21 / EN 61643-21ApprovalsEACType of remote signalling contactbreak contactSwitching capacity (d.c.)250 V / 0.1 A; 125 V / 0.2 A; 75 V / 0.5 ASwitching capacity (a.c.)250 V / 0.5 ACross-sectional area for remote signalling terminalsmax. 1.5 mm²Weight110 gCustoms tariff number (Comb. Nomenclature EU)85363010GTIN4013364261389	Connection (input / output)	spring / spring
Earthing viaDIN railEnclosure materialthermoplastic, UL 94 V-0ColouryellowTest standardsIEC 61643-21 / EN 61643-21ApprovalsEACType of remote signalling contactbreak contactSwitching capacity (d.c.)250 V / 0.1 A; 125 V / 0.2 A; 75 V / 0.5 ASwitching capacity (a.c.)250 V / 0.5 ACross-sectional area for remote signalling terminalsmax. 1.5 mm²Weight110 gCustoms tariff number (Comb. Nomenclature EU)85363010GTIN4013364261389	Cross-sectional area, solid	0.2-1.5 mm ²
Enclosure materialthermoplastic, UL 94 V-0ColouryellowTest standardsIEC 61643-21 / EN 61643-21ApprovalsEACType of remote signalling contactbreak contactSwitching capacity (d.c.)250 V / 0.1 A; 125 V / 0.2 A; 75 V / 0.5 ASwitching capacity (a.c.)250 V / 0.5 ACross-sectional area for remote signalling terminalsmax. 1.5 mm²Weight110 gCustoms tariff number (Comb. Nomenclature EU)85363010GTIN4013364261389	Cross-sectional area, flexible	0.2-1.5 mm ²
ColouryellowTest standardsIEC 61643-21 / EN 61643-21ApprovalsEACType of remote signalling contactbreak contactSwitching capacity (d.c.)250 V / 0.1 A; 125 V / 0.2 A; 75 V / 0.5 ASwitching capacity (a.c.)250 V / 0.5 ACross-sectional area for remote signalling terminalsmax. 1.5 mm²Weight110 gCustoms tariff number (Comb. Nomenclature EU)85363010GTIN4013364261389	Earthing via	DIN rail
Test standardsIEC 61643-21 / EN 61643-21ApprovalsEACType of remote signalling contactbreak contactSwitching capacity (d.c.)250 V / 0.1 A; 125 V / 0.2 A; 75 V / 0.5 ASwitching capacity (a.c.)250 V / 0.5 ACross-sectional area for remote signalling terminalsmax. 1.5 mm²Weight110 gCustoms tariff number (Comb. Nomenclature EU)85363010GTIN4013364261389	Enclosure material	thermoplastic, UL 94 V-0
ApprovalsEACType of remote signalling contactbreak contactSwitching capacity (d.c.)250 V / 0.1 A; 125 V / 0.2 A; 75 V / 0.5 ASwitching capacity (a.c.)250 V / 0.5 ACross-sectional area for remote signalling terminalsmax. 1.5 mm²Weight110 gCustoms tariff number (Comb. Nomenclature EU)85363010GTIN4013364261389	Colour	yellow
Type of remote signalling contact break contact Switching capacity (d.c.) 250 V / 0.1 A; 125 V / 0.2 A; 75 V / 0.5 A Switching capacity (a.c.) 250 V / 0.5 A Cross-sectional area for remote signalling terminals max. 1.5 mm ² Weight 110 g Customs tariff number (Comb. Nomenclature EU) 85363010 GTIN 4013364261389	Test standards	IEC 61643-21 / EN 61643-21
Switching capacity (d.c.) 250 V / 0.1 A; 125 V / 0.2 A; 75 V / 0.5 A Switching capacity (a.c.) 250 V / 0.5 A Cross-sectional area for remote signalling terminals max. 1.5 mm² Weight 110 g Customs tariff number (Comb. Nomenclature EU) 85363010 GTIN 4013364261389	Approvals	EAC
Switching capacity (a.c.)250 V / 0.5 ACross-sectional area for remote signalling terminalsmax. 1.5 mm²Weight110 gCustoms tariff number (Comb. Nomenclature EU)85363010GTIN4013364261389	Type of remote signalling contact	break contact
Cross-sectional area for remote signalling terminals max. 1.5 mm ² Weight 110 g Customs tariff number (Comb. Nomenclature EU) 85363010 GTIN 4013364261389	Switching capacity (d.c.)	250 V / 0.1 A; 125 V / 0.2 A; 75 V / 0.5 A
Weight 110 g Customs tariff number (Comb. Nomenclature EU) 85363010 GTIN 4013364261389	Switching capacity (a.c.)	250 V / 0.5 A
Customs tariff number (Comb. Nomenclature EU) 85363010 GTIN 4013364261389	Cross-sectional area for remote signalling terminals	max. 1.5 mm ²
GTIN 4013364261389	Weight	110 g
	Customs tariff number (Comb. Nomenclature EU)	85363010
PU 1 pc(s)	GTIN	4013364261389
	PU	1 pc(s)

BLITZDUCTOR SP

BSP M2 BD 180 (926 247)

- High degree of protection for one pair
- For installation in conformity with the lightning protection zone concept at the boundaries from 0_B 2 and higher







Figure without obligation

Basic circuit diagram BSP M2 BD 180

Dimension drawing BSP M2 BD 180

Space-saving surge arrester module for protecting one pair of balanced interfaces with galvanic isolation.

Туре	BSP M2 BD 180
Part No.	926 247
SPD class	TYPE2P2
Nominal voltage (U_N)	180 V
Max. continuous operating voltage (d.c.) (U _c)	180 V
Max. continuous operating voltage (a.c.) (U _c)	127 V
Nominal current at 45 °C (I _L)	0.75 A
D1 Lightning impulse current (10/350 µs) per line (I _{imp})	1 kA
C2 Total nominal discharge current (8/20 µs) (In)	20 kA
C2 Nominal discharge current (8/20 µs) per line (In)	10 kA
Voltage protection level line-line for In C2 (Up)	≤ 270 V
Voltage protection level line-PG for In C2 (Up)	≤ 600 V
Voltage protection level line-line at 1 kV/µs C3 (U _p)	≤ 250 V
Voltage protection level line-PG at 1 kV/µs C3 (U _p)	≤ 550 V
Series impedance per line	1.8 ohm(s)
Cut-off frequency line-line (f _G)	25.0 MHz
Capacitance line-line (C)	≤ 240 pF
Capacitance line-PG (C)	≤ 16 pF
Operating temperature range (T_{\cup})	-40 °C +80 °C
Degree of protection (with plugged-in protection module)	IP 20
Pluggable into	BXT BAS / BSP BAS 4 base part
Earthing via	BXT BAS / BSP BAS 4 base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21, UL 497B
Approvals	UL, CSA, SIL, EAC
SIL classification	up to SIL3 *)
Weight	21 g
Customs tariff number (Comb. Nomenclature EU)	85363010
GTIN	4013364127128
PU	1 pc(s)

BLITZDUCTOR SP

BSP M2 BD HF 5 (926 271)

- Minimal signal interference
- For installation in conformity with the lightning protection zone concept at the boundaries from 0_B-2 and higher







Figure without obligation

Basic circuit diagram BSP M2 BD HF 5

Dimension drawing BSP M2 BD HF 5

Space-saving surge arrester module for protecting one pair of high-frequency bus systems or video transmission systems with galvanic isolation.

Туре	BSP M2 BD HF 5
Part No.	926 271
SPD class	TYPE2[2]
Nominal voltage (U_N)	5 V
Max. continuous operating voltage (d.c.) (U _c)	6.0 V
Max. continuous operating voltage (a.c.) (U _c)	4.2 V
Nominal current at 45 °C (I _L)	1.0 A
D1 Lightning impulse current (10/350 µs) per line (I _{imp})	1 kA
C2 Total nominal discharge current (8/20 µs) (In)	20 kA
C2 Nominal discharge current (8/20 µs) per line (In)	10 kA
Voltage protection level line-line for $I_n C2 (U_p)$	≤ 35 V
Voltage protection level line-PG for $I_n C2 (U_p)$	≤ 600 V
Voltage protection level line-line at 1 kV/µs C3 (Up)	≤ 11 V
Voltage protection level line-PG at 1 kV/µs C3 (U _p)	≤ 550 V
Series impedance per line	1.0 ohm(s)
Cut-off frequency line-line (f _G)	100 MHz
Capacitance line-line (C)	≤ 25 pF
Capacitance line-PG (C)	≤ 25 pF
Operating temperature range (T_{U})	-40 °C +80 °C
Degree of protection (with plugged-in protection module)	IP 20
Pluggable into	BXT BAS / BSP BAS 4 base part
Earthing via	BXT BAS / BSP BAS 4 base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21, UL 497B
Approvals	UL, CSA, SIL, EAC
SIL classification	up to SIL3 *)
Weight	21 g
Customs tariff number (Comb. Nomenclature EU)	85363010
GTIN	4013364127142
PU	1 pc(s)

BLITZDUCTOR SP

BSP M4 BE 12 (926 322)

- High degree of protection for four single lines
- For installation in conformity with the lightning protection zone concept at the boundaries from 0_B 2 and higher







Figure without obligation

Basic circuit diagram BSP M4 BE 12

Dimension drawing BSP M4 BE 12 Space-saving surge arrester module for protecting four single lines sharing a common reference potential and unbalanced interfaces.

	5
Туре	BSP M4 BE 12
Part No.	926 322
SPD class	TYPE 2P1
Nominal voltage (U _N)	12 V
Max. continuous operating voltage (d.c.) (U_c)	15 V
Max. continuous operating voltage (a.c.) (U _c)	10.6 V
Nominal current at 45 $^{\circ}$ C (I _L)	0.75 A
D1 Lightning impulse current (10/350 μ s) per line (I _{imp})	1 kA
C2 Total nominal discharge current (8/20 µs) (In)	20 kA
C2 Nominal discharge current (8/20 µs) per line (In)	10 kA
Voltage protection level line-line for $I_n C2$ (U _p)	≤ 55 V
Voltage protection level line-PG for In C2 (Up)	≤ 60 V
Voltage protection level line-line at 1 kV/µs C3 (U _p)	≤ 38 V
Voltage protection level line-PG at 1 kV/µs C3 (Up)	≤ 19 V
Series impedance per line	1.8 ohm(s)
Cut-off frequency line-PG (f _G)	2.7 MHz
Capacitance line-line (C)	≤ 1.0 nF
Capacitance line-PG (C)	≤ 2.0 nF
Operating temperature range (T_{U})	-40 °C +80 °C
Degree of protection (with plugged-in protection module)	IP 20
Pluggable into	BXT BAS / BSP BAS 4 base part
Earthing via	BXT BAS / BSP BAS 4 base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21, UL 497B
Approvals	UL, CSA, SIL, EAC
SIL classification	up to SIL3 *)
Weight	22 g
Customs tariff number (Comb. Nomenclature EU)	85363010
GTIN	4013364127166
PU	1 pc(s)

BLITZDUCTOR XT

BXT ML2 BD HFS 5 (920 271)

- LifeCheck SPD monitoring function
- Minimal signal interference
- For installation in conformity with the lightning protection zone concept at the boundaries from 0_A –2 and higher







Figure without obligation

Basic circuit diagram BXT ML2 BD HFS

Dimension drawing BXT ML2 BD HFS

Space-saving combined lightning current and surge arrester module with LifeCheck feature for protecting one pair of unearthed high-frequency bus systems or video transmission systems, with direct or indirect shield earthing. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.

Туре	BXT ML2 BD HFS 5
Part No.	920 271
SPD monitoring system SPD class	
Nominal voltage (U_N)	5 V
Max. continuous operating voltage (d.c.) (U _c)	6.0 V
Max. continuous operating voltage (a.c.) (U _c)	4.2 V
Nominal current at 45 °C (I _L)	1.0 A
D1 Total lightning impulse current (10/350 µs) (I _{imp})	9 kA
D1 Lightning impulse current (10/350 µs) per line (I _{imp})	2.5 kA
C2 Total nominal discharge current (8/20 µs) (In)	20 kA
C2 Nominal discharge current (8/20 μ s) per line (I _n)	10 kA
Voltage protection level line-line for $I_{imp}D1$ (U _p)	≤ 25 V
Voltage protection level line-PG for I_{imp} D1 (U _p)	≤ 550 V
Voltage protection level line-line at 1 kV/µs C3 (U _p)	≤ 11 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U _p)	≤ 550 V
Series resistance per line	1.0 ohm(s)
Cut-off frequency line-line (f _G)	100.0 MHz
Capacitance line-line (C)	≤ 25 pF
Capacitance line-PG (C)	≤ 25 pF
Operating temperature range (T _u)	-40 °C +80 °C
Degree of protection (with plugged-in protection module)	IP 20
Pluggable into	BXT BAS / BSP BAS 4 base part
Earthing via	BXT BAS / BSP BAS 4 base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21, UL 497B
Approvals	CSA, UL, EAC, ATEX, IECEx, CSA & USA Hazloc, SIL
SIL classification	up to SIL3 *)
ATEX approvals	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc
IECEx approvals	DEK 11.0032X: Ex nA IIC T4 Gc
CSA & USA Hazloc approvals (1)	2516389: Class I Div. 2 GP A, B, C, D T4
CSA & USA Hazloc approvals (2)	2516389: Class I Zone 2, AEx nA IIC T4
Weight	22 g
Customs tariff number (Comb. Nomenclature EU)	85363010
GTIN	4013364117556
PU	1 pc(s)

BLITZDUCTOR XT

BXT ML4 BE 12 (920 322)

- LifeCheck SPD monitoring function
- Optimal protection of four single lines
- For installation in conformity with the lightning protection zone concept at the boundaries from $0_A 2$ and higher







Figure without obligation

Basic circuit diagram BXT ML4 BE 12

Dimension drawing BXT ML4 BE 12

Space-saving combined lightning current and surge arrester module with LifeCheck feature for protecting four single lines sharing a common reference potential as well as unbalanced interfaces. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.

Туре	BXT ML4 BE 12
Part No.	920 322
SPD monitoring system	LifeCheck
SPD class	TYPE 1 P1
Nominal voltage (U_N)	12 V
Max. continuous operating voltage (d.c.) (U _c)	15 V
Max. continuous operating voltage (a.c.) (U _c)	10.6 V
Nominal current at 45 °C (I _L)	0.75 A
D1 Total lightning impulse current (10/350 µs) (I _{imp})	10 kA
D1 Lightning impulse current (10/350 µs) per line (I _{imp})	2.5 kA
C2 Total nominal discharge current (8/20 µs) (In)	20 kA
C2 Nominal discharge current (8/20 µs) per line (In)	10 kA
Voltage protection level line-line for I _{imp} D1 (U _p)	≤ 50 V
Voltage protection level line-PG for I _{imp} D1 (U _p)	≤ 37 V
Voltage protection level line-line at 1 kV/µs C3 (U _p)	≤ 38 V
Voltage protection level line-PG at 1 kV/µs C3 (U _p)	≤ 19 V
Series resistance per line	1.8 ohm(s)
Cut-off frequency line-PG (f _G)	2.7 MHz
Capacitance line-line (C)	≤ 1.0 nF
Capacitance line-PG (C)	≤ 2.0 nF
Operating temperature range (T _u)	-40 °C +80 °C
Degree of protection (with plugged-in protection module)	IP 20
Pluggable into	BXT BAS / BSP BAS 4 base part
Earthing via	BXT BAS / BSP BAS 4 base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21, UL 497B
Approvals	CSA, UL, EAC, ATEX, IECEx, CSA & USA Hazloc, SIL
SIL classification	up to SIL3 * ⁾
ATEX approvals	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc
IECEx approvals	DEK 11.0032X: Ex nA IIC T4 Gc
CSA & USA Hazloc approvals (1)	2516389: Class I Div. 2 GP A, B, C, D T4
CSA & USA Hazloc approvals (2)	2516389: Class I Zone 2, AEx nA IIC T4
Weight	24 g
Customs tariff number (Comb. Nomenclature EU)	85363010
GTIN	4013364109049
PU	1 pc(s)

BLITZDUCTOR XT

BXT ML4 BD 180 (920 347)

- LifeCheck SPD monitoring function
- Optimal protection of two pairs
- For installation in conformity with the lightning protection zone concept at the boundaries from 0_A –2 and higher







Figure without obligation

Basic circuit diagram BXT ML4 BD 180

Dimension drawing BXT ML4 BD 180 Space-saving combined lightning current and surge arrester module with LifeCheck feature for protecting two pairs of unearthed balanced interfaces. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.

	BXT ML4 BD 180
Type Part No.	920 347
SPD monitoring system	LifeCheck
SPD class	TYPE 1P2
Nominal voltage (U_N)	180 V
Max. continuous operating voltage (d.c.) (U _c)	180 V
Max. continuous operating voltage (a.c.) (U _c)	127 V
Nominal current at 45 °C (I _L)	0.75 A
D1 Total lightning impulse current (10/350 µs) (I _{imp})	10 kA
D1 Lightning impulse current (10/350 µs) per line (I _{imp})	2.5 kA
C2 Total nominal discharge current (8/20 µs) (In)	20 kA
C2 Nominal discharge current (8/20 µs) per line (In)	10 kA
Voltage protection level line-line for I _{imp} D1 (U _p)	≤ 270 V
Voltage protection level line-PG for I _{imp} D1 (U _p)	≤ 550 V
Voltage protection level line-line at 1 kV/µs C3 (U _p)	≤ 250 V
Voltage protection level line-PG at 1 kV/µs C3 (U _p)	≤ 550 V
Series resistance per line	1.8 ohm(s)
Cut-off frequency line-line (f _G)	25.0 MHz
Capacitance line-line (C)	≤ 240 pF
Capacitance line-PG (C)	≤ 16 pF
Operating temperature range (T _U)	-40 °C +80 °C
Degree of protection (with plugged-in protection module)	IP 20
Pluggable into	BXT BAS / BSP BAS 4 base part
Earthing via	BXT BAS / BSP BAS 4 base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21, UL 497B
Approvals	CSA, UL, EAC, ATEX, IECEx, CSA & USA Hazloc, SIL
SIL classification	up to SIL3 * ⁾
ATEX approvals	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc
IECEx approvals	DEK 11.0032X: Ex nA IIC T4 Gc
CSA & USA Hazloc approvals (1)	2516389: Class I Div. 2 GP A, B, C, D T4
CSA & USA Hazloc approvals (2)	2516389: Class I Zone 2, AEx nA IIC T4
Weight	24 g
Customs tariff number (Comb. Nomenclature EU)	85363010
GTIN	4013364109018
PU	1 pc(s)

BLITZDUCTOR

BXT BAS (920 300)

- Four-pole version for universal use with all types of BSP and BXT / BXTU protection modules
- No signal interruption if the protection module is removed
- Universal design without protection elements







Figure without obligation

Basic circuit diagram with and without plugged-in module

Dimension drawing BXT BAS

The BLITZDUCTOR XT base part is an extremely space-saving and universal four-pole feed-through terminal for the insertion of a protection module without signal disconnection if the protection module is removed. The snap-in mechanism at the supporting foot of the base part allows the protection module to be safely earthed via the DIN rail. Since no components of the protective circuit are situated in the base part, maintenance is only required for the protection modules.

Туре	BXT BAS
Part No.	920 300
Operating temperature range (T _u)	-40 °C +80 °C
Degree of protection	IP 20
For mounting on	35 mm DIN rails acc. to EN 60715
Connection (input / output)	screw / screw
Signal disconnection	no
Cross-sectional area, solid	0.08-4 mm ²
Cross-sectional area, flexible	0.08-2.5 mm ²
Tightening torque (terminals)	0.4 Nm
Earthing via	35 mm DIN rails acc. to EN 60715
Enclosure material	polyamide PA 6.6
Colour	yellow
ATEX approvals	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc *)
IECEx approvals	DEK 11.0032X: Ex nA IIC T4 Gc *)
Approvals	CSA, UL, EAC, ATEX, IECEx *)
Weight	34 g
Customs tariff number (Comb. Nomenclature EU)	85369010
GTIN	4013364109179
PU	1 pc(s)

*) only in connection with an approved protection module

DEHNgate

DGA FF TV (909 703)

- Frequency range for analogue and digital TV, also suitable for reverse LAN channels
- Arresters of type FF and GFF with integrated measuring output
- Three types for adapted use in conformity with the lightning protection zone concept at the boundaries from $0_A 2$ (combined lightning current and surge arresters of type GF), 0_{A-1} (lightning current arresters of type GF) and 1 2 (surge arresters of type FF)







Dimension drawing DGA FF TV

Figure without obligation

Basic circuit diagram DGA FF TV

DGA ... TV arresters with F connection for remote supply protect 75-ohm satellite and broadband cable systems and fulfil the high shielding requirements of class A according to EN 50083-2. They allow space-saving installation in all common TV and satellite applications and are available as lightning current arresters, surge arresters as well as combined lightning current and surge arresters with integrated measuring output, allowing the system to be easily tested.

Туре	DGA FF TV
Part No.	909 703
SPD class	
Max. continuous operating voltage (d.c.) (U_c)	24 V
Nominal current (I _L)	2 A
D1 Lightning impulse current (10/350 μs) (I _{imp})	0.2 kA
C2 Nominal discharge current (8/20 µs) (In)	1.5 kA
Voltage protection level for I _{imp} D1 (U _P)	≤ 230 V
Voltage protection level for In C2 (UP)	≤ 300 V
Voltage protection level at 1 kV/µs C3 (U _P)	≤ 60 V
Frequency range	d.c. / 5-3000 MHz
Insertion loss 5-862 MHz typ.	1.2 dB
Insertion loss 862-2400 MHz typ.	1.4 dB
Insertion loss 2400-3000 MHz typ.	2 dB
Return loss	≥ 14 dB
Return loss (47-2400 MHz)	≥ 18 dB (-1.5 dB/octave)
Return loss test socket (5-47 MHz)	≥ 18 dB
Test socket connection loss	20 dB
Shield attenuation 5-300 MHz	≥ 85 dB
Shield attenuation 300-470 MHz	≥ 80 dB
Shield attenuation 470-1000 MHz	≥ 75 dB
Shield attenuation 1000-2400 MHz	≥ 55 dB
Characteristic impedance (Z)	75 ohms
Operating temperature range (T _u)	-40 °C +80 °C
Degree of protection (if lines are connected)	IP 30
For mounting on	35 mm DIN rails acc. to EN 60715 or wall mounting
Connection (input / output)	F socket / F socket
Earthing via	DIN rail or screw connection
Enclosure material	metal
Colour	bare surface
Test standards	IEC 61643-21 / EN 61643-21
Approvals	EAC
Accessories	2x F plugs
Weight	233 g
Customs tariff number (Comb. Nomenclature EU)	85363010
GTIN	4013364085664
PU	1 pc(s)

DEHNgate

DGA G SMA (929 039)

- Compact dimensions
- Extremely wide transmission range
- For installation in conformity with the lightning protection zone concept at the boundaries from $0_B 1$ and higher







Figure without obligation

Basic circuit diagram DGA G SMA

Dimension drawing DGA G SMA Surge arrester for remote supply with integrated gas discharge tube. Ideally suited for wireless applications for the coaxial interfaces of devices and antennas.

Available with SMA, BNC or N connection for bushing installation.

Туре	DGA G SMA
Part No.	929 039
SPD class	TYPE 2
Max. continuous operating voltage (d.c.) (U _c)	135 V
Nominal current (I _L)	2 A
Max. transmission capacity	60 W
D1 Lightning impulse current (10/350 µs) (I _{imp})	1 kA
C2 Nominal discharge current (8/20 µs) (In)	5 kA
Voltage protection level for $I_n C2$ (U _P)	≤ 700 V
Frequency range	0-5.8 GHz
Insertion loss	≤ 0.2 dB
Return loss (d.c 3 GHz)	≥ 20 dB
Return loss (3 GHz-5.8 GHz)	≥ 18 dB
Characteristic impedance (Z)	50 ohms
Operating temperature range (T _U)	-40 °C +85 °C
Degree of protection (if lines are connected)	IP 65
Connection	SMA socket / SMA plug
Earthing via	bushing (Ø11.2 mm)
Enclosure material	gold-plated brass
Colour	gold
Test standards	IEC 61643-21 / EN 61643-21
Weight	24 g
Customs tariff number (Comb. Nomenclature EU)	85366910
GTIN	4013364135185
PU	1 pc(s)

DEHNgate

DGA G BNC (929 042)

- Compact dimensions
- Extremely wide transmission range
- For installation in conformity with the lightning protection zone concept at the boundaries from 0_B 1 and higher







Figure without obligation

Basic circuit diagram DGA G BNC

Dimension drawing DGA G BNC Surge arrester for remote supply with integrated gas discharge tube. Ideally suited for wireless applications for the coaxial interfaces of devices and antennas.

Available with SMA, BNC or N connection for bushing installation.

Туре	DGA G BNC
Part No.	929 042
SPD class	TYPE2
Max. continuous operating voltage (d.c.) (U _c)	135 V
Nominal current (I _L)	3.5 A
Max. transmission capacity	25 W
D1 Lightning impulse current (10/350 µs) (I _{imp})	1 kA
C2 Nominal discharge current (8/20 µs) (In)	5 kA
Voltage protection level for $I_n C2 (U_P)$	≤ 650 V
Frequency range	0-4 GHz
Insertion loss	≤ 0.2 dB
Return loss (d.c 3 GHz)	≥ 20 dB
Return loss (3 GHz-4 GHz)	≥ 20 dB
Characteristic impedance (Z)	50 ohms
Operating temperature range (T _U)	-40 °C +85 °C
Degree of protection (if lines are connected)	IP 20
Connection	BNC socket / BNC plug
Earthing via	bushing (Ø12.9 mm)
Enclosure material	brass, gold-plated
Colour	gold
Test standards	IEC 61643-21 / EN 61643-21
Weight	39 g
Customs tariff number (Comb. Nomenclature EU)	85366910
GTIN	4013364091030
PU	1 pc(s)

Surge Protection Lightning Protection Safety Equipment DEHN protects. DEHN SE Hans-Dehn-Str. 1 Postfach 1640 92306 Neumarkt, Germany Tel. +49 9181 906-0 Fax +49 9181 906-1100 info@dehn.de www.dehn-international.com



www.dehn-international.com/partners

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