SINCE 1995

SALTEK®

Overvoltage controlled. ANYWHERE.

Catalogue
Surge Protective Devices

2015–2016

Index

SPD connected to LV power supply systems up to 1 000 V

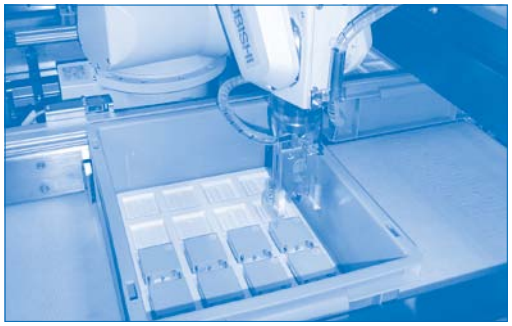
SPD connected to installations of photovoltaic systems

SPD connected to data/signal/telecommunication networks

Who we are
What we do

SALTEK®. A leading Czech company specialising in the development and production of surge protection devices. We offer either a complete range of Type 1 to 3 Surge protection devices for low-voltage power systems according to EN 61643-11, or surge protection devices for informatics, measurement & control and telecommunications.

SALTEK® products provide protection against atmospheric and technological overvoltage and ensure safe and trouble-free operation of technology, machinery and electrical appliances in industry, transport, telecommunications, data centres, office buildings as well as households.



20 years of success in both the Czech Republic and abroad

- We have been on the market since 1995.
- Our products protect various technologies in a lot of countries in Europe, Asia and Africa.

Our own development = foundation of pernament and dynamic company development

- Our R&D department providing continuous innovation is the foundation of our further development.
- Our experienced R&D team utilises a testing laboratory with the latest equipment featuring unique devices and technologies that support fast and high-quality development process.
- State-of-the-art materials, construction procedures and measurement methods are a essential for us.

Flexibility and speed = our basic credo

- Flexible approach to the implementation of special customised solutions and products ODM/OEM all over the world.
- Fast delivery according to customers' requests.

Customers = power engine

- Customers are our everlasting inspiration. Hands-on experience linked to technical innovation gives us the opportunity to provide solutions for complex surge protection.
- High-class and fast technical support, regular training of specialists as well as extensive marketing and sales services are our standards.

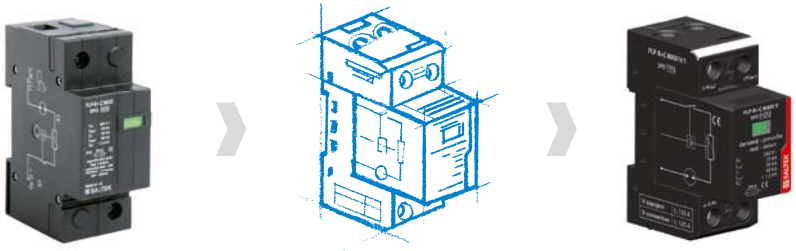
Quality + world standards = our essentials

The safety, reliability and top quality of our products come first for us! Quality is our image. We are certified in compliance with international standards:

■ EN ISO 9001 ■ EN ISO 14001 ■ OHSAS 18001

We are an active member of Czech and international standardization institutions - ÚNMZ, IEC and CENELEC, which define standards for the development of surge protection in the future.

reddot award 2014
winner



RedDot® Award

Product design has become an integral part of product quality and we place great stress on it. A range of surge protection devices with unique colour marking were awarded the Red Dot® 2014 award for product design. The colour coding is an important design component as it greatly helps users to recognise individual products or groups of products.

What we do
Solutions for complex surge protection

We combine technical innovation with expertise. Thanks to our customers' feedback and our own development, SALTEK® products provide solutions for complex surge protection for various applications in different areas.

Industry

Commercial buildings use very sophisticated systems prone to abnormalities caused by overvoltage in the power system and signal lines. SALTEK® products minimize shut-down times of production technologies and subsequent financial losses.

- Protection of 230/400 V power system
- Protection of power system up to 1 000 V
- Protection of access security and fire alarm systems
- Protection of signal and communication lines

Buildings

Both residential and commercial buildings feature a great number of sensitive technologies and appliances. SALTEK® products considerably increase their reliability and, consequently, greatly improve the user comfort of such buildings.

- Protection of 230/400 V power system
- Protection of aerial systems
- Protection of access, security and fire alarm systems, CCTV, telecommunications lines, data networks, etc.
- Protection of technological facilities in buildings (heating, air conditioning, etc.)

Photovoltaic (PV) systems

PV systems must withstand weather conditions as they are located in highly exposed places. SALTEK® products ensure the best possible protection against temporary overvoltage to provide trouble-free operation throughout their working life. Protection of PV power plants/PV technologies for residential houses and for factories/Off grid PV technology.

- Protection of DC and AC side
- Protection of signal lines

Antennas and transmitters

Located in rather exposed places, receiving and transmitting systems must withstand harsh atmospheric conditions during their working life. SALTEK® products ensure the best possible protection of technologies against lightning strikes and induced overvoltage and thus they significantly increase operational reliability of technologies on transmission routes.

- Protection of 230/400 V power system
- Protection of aerial down conductors
- Protection of communication lines

Data centres

In the era of information technologies, data centres and server rooms have become an inevitable part of life and collected data are of vital importance. Inaccessibility or complete losses of data can have catastrophic consequences in both industrial areas and everyday life. SALTEK® products can protect them and prevent technical problems and financial losses.

- Protection of 230/400 V power system
- Protection of signal and communication lines

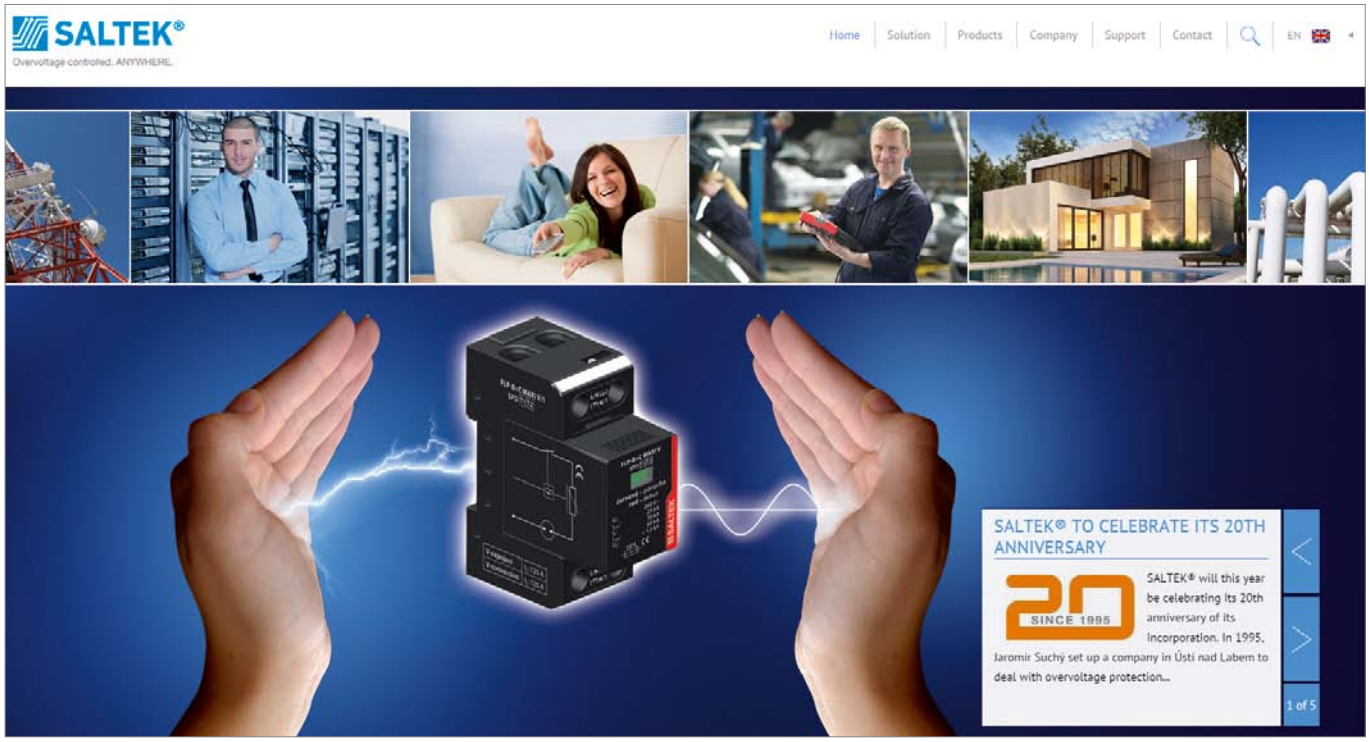
Oil and gas pipelines

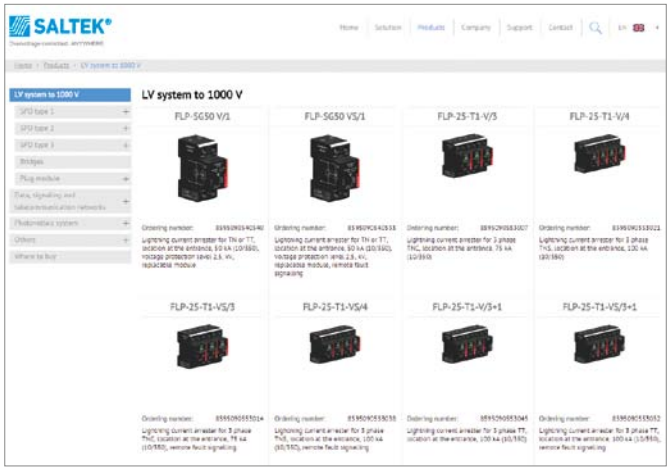
Very large systems which are exposed to undesirable effects of lightning strikes, induction from parallel lines of MV, HV or stray current near railways. These events negatively affect the technologies which are necessary for their trouble-free operation. SALTEK® products ensure the best possible protection of such technologies and significantly increase their reliability.

- Protection of 230/400 V power system and system, up to 1 000 V
- Protection of access security and fire alarm systems, signal and communication lines
- Protection of pipelines against induced voltage

SALTEK® on-line
Product information always at hand

If you do not have our Catalogue available or further printed information you would be interested in, visit www.saltek.eu/en to see a comprehensive overview of our products and on-line support.





Technical support (www.saltek.eu/en/tech-support)

For your solutions, optimization of your projects and designs of additional solutions in existing buildings/installations. We offer extensive technical support of surge protection according to EN 62305.

We are on FB! You can like it!

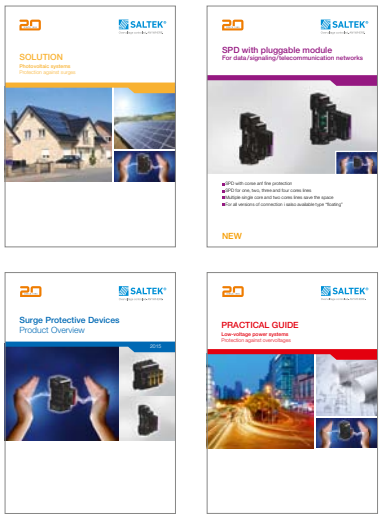
What can you find at www.saltek.eu/en?

On-line catalogue (www.saltek.eu/en/catalogue-products)

- The latest information about the SALTEK® SPDs
- Generating of the product data sheet for a specific product in PDF format for you to print out or save
- Complete technical data
- Dimension drawings and wiring
- Instruction manuals
- Declaration of conformity

Catalogues and brochures (www.saltek.eu/en/brochures)

Instruction manuals, catalogues, videos and other documents to download.



Novelties 2015

Separating spark gap

ISG- …
ISGC …
ISGO-500

- For indirect connection of the external lightning protection system to other proximate metal parts where no direct connection is permitted due to operating conditions.
- U_{WDC} = 50; 100; 380; 500 V DC
- I_{imp} = 50; 100 kA
  Classification N, H class

See page: 74–79

Data protection with removable module

BD BDG DMG DP
BDM DM DMHF

- Removable module without communication interruption
- Coarse and fine protection
- For single- up to four-conductor lines
- 50% space savings for multi single- and two-conductor lines
- All options are also available in F grade, where the line is protected from the protective earth by separating it using a gas discharge tube.

- **BD-…-T-V/1-16** lightning arrester ST1
- **BDM-…-V/1-…** lightning arrester ST1+2+3
- **BDG-…-V/1-…** lightning arrester ST1+2+3, separated signal earth
- **DM-…-V/2-J…** SPD for single-core line ST 2+3
- **DM-…-V/1-…** SPD for two-core line ST 2+3
- **DMG-…-V/1-…** SPD for two-core line ST 2+3, separated signal earth
- **DMG-…-V/1-4R1** SPD for three/four- core line ST 2+3
- **DMHF-…-V/1-4R1** SPD for four-core high speed line ST 2+3
- **DP-…-V/1-16** SPD of supply with extra-low voltage AC, DC

See page: 106–146

Type 3 SPD – SPD with RFI filter

DA-275-DF … - (S)

- SPD with an integrated RFI filter specified for the protection of MCR, Security and Fire Protection control systems, etc.
- Against transient overvoltage and RF interference
- Optical indication of end of life
- S version failure remote signalling
- S version with - 2 modules only
- DFi version – supply interruption by interruption of both (phase and neutral) lines

See page: 55 and 56

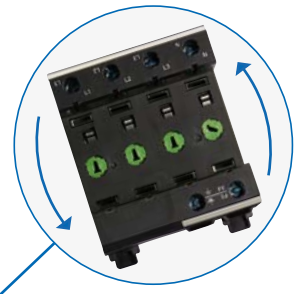
Features of SALTEK® surge arresters

Example: SLP-275 V/3S+1

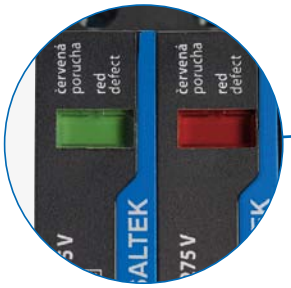
Remote signalling

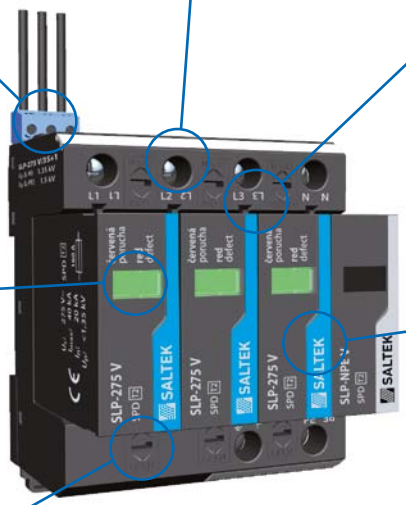
Biconnect terminals

Reversible installation



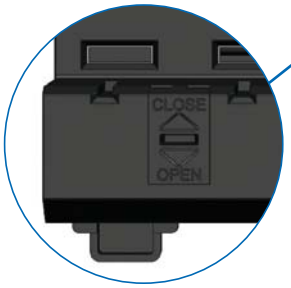
Optical lifetime status indication





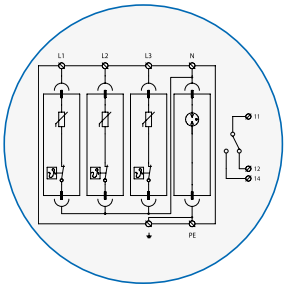
Pluggable modules

Lock system for fixing of modules



Mechanical coding

Safety thermodynamic disconnector



SALTEK

Type 1 SPD and Type 1 and 2 SPD. FLP series

SALTEK

PV type 2 SPD. SLP series for photovoltaic applications

Module marking = easy to identify
To identify arresters in the distribution board easily, SALTEK® pluggable modules and SPDs are marked in colour so it is easy for customers to identify the type of SPD installed in their distribution board.

SALTEK

Type 2 SPD. SLP series

SALTEK

PV type 1 and 2 SPD. FLP series for photovoltaic applications

SALTEK

Type 3 SPD, e.g., DA series

SALTEK

SPD for data/signal/ telecommunication networks

SALTEK

“N-PE” modules

SPD connected to LV power supply systems up to 1 000 V

- Office and commercial buildings
- Industrial buildings and installations
- Energy industry
- Residential buildings
- Smart buildings

- Type 1 SPD - Lightning Current Arresters
- Type 1+2 SPD - Lightning Current Arresters
- Type 2 SPD - Surge Arresters
- Type 3 SPD for DIN 35 rail mounting and additional mounting
- Type 3 SPD with RFI filter
- Socket outlets and adaptors with integrated Type 3 SPD
- Isolation spark gaps
- Surge separating induktors

Lightning and surge protection

1. Introduction – Legislative

The use of modern sophisticated equipment, consumer electronics and control systems places high demands on their electromagnetic compatibility. Modern electronic control systems provided with circuits with a very high integration level are becoming more and more sensitive to electromagnetic disturbance and overvoltage. The installation of surge protections according to effective legal standards will reduce the danger of their being damaged to a minimum. Technical designs are defined by standards harmonised with EU standards:

- Protective bonding to the same potential including the conductor cross section for the main and additional bonding is defined by standards EN **50310 ed. 2., IEC 60364-5-54, IEC 60364-4-41**

- Lightning protection is specified in the **EN 62305** collection of new standards, harmonised with European standards. **EN 62305 – 1** deals with general principles.

Lightning protection level	Maximum lightning parameter according to LPL
LPL	First short discharge
LPL I	200 kA
LPL II	150 kA
LPL III	100 kA
LPL IV	100 kA

IEC/EN 62305 – 2 – deals with the risk assessment for buildings or engineering networks struck by lightning.

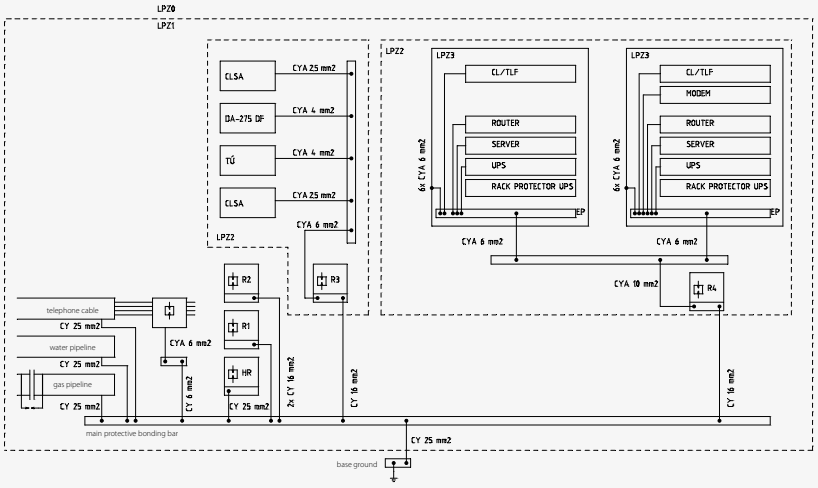
IEC/EN 62305 – 3 – deals with the proposal for external lightning protection (lightning conductor).

IEC/EN 62305 – 4 – deals with protective measures resulting in the reduction of failures of electrical and electronic systems inside the building (zone protection)

- Classification of protections is set forth in standard **EN 61643-11**.
  Devices are classified into three basic categories:
  SPD type 1 – lightning current arresters
  SPD type 2 – surge arresters
  SPD type 3 – surge arresters

- Classification of low-voltage distribution into impulse resistance categories, including specification of the maximum allowed overvoltage is determined in standard **EN 60664-1**

Example of main and additional bonding



Lightning protection zones

The standard EN 62305-4 defines lightning protection zones LPZ in view of the direct and indirect (electromagnetic pulse – LEMP) lightning effect:

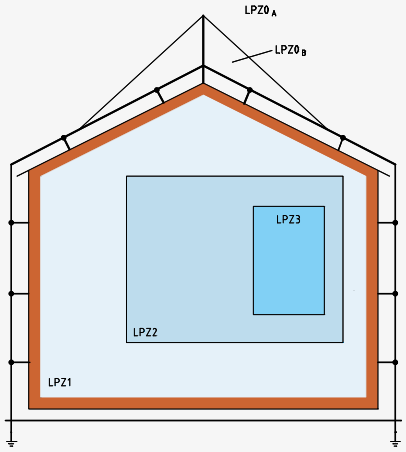
LPZ 0$_A$ – free area (possibility of a direct lightning strike, non-attenuated LEMP)

LPZ 0$_B$ – lightning conductor receiver protection area (direct lightning strike protection, non-attenuated LEMP)

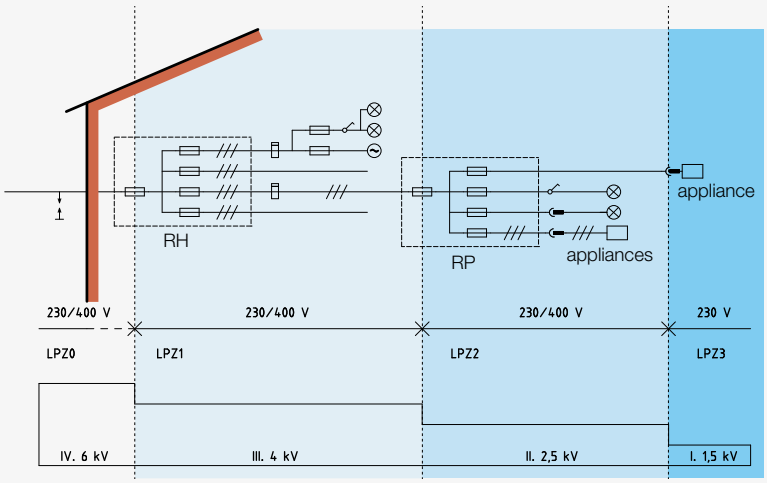
LPZ 1 – inside a building (direct lightning strike is eliminated, attenuated LEMP – depending upon shielding)

LPZ 2 – inside a room – e.g. a server room with a conductive floor, FeAl floors and wall lining (further attenuation of LEMP in connection with a higher shielding level)

LPZ 3 – inside a metal box (e.g. 19" RACK)

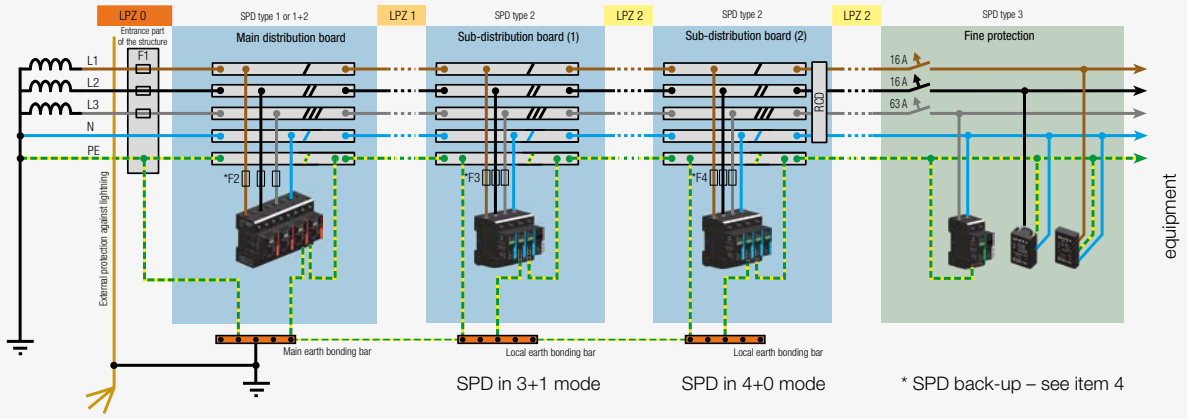


Rated impulse for equipment (acc. to EN 60664-1) or Impulse-withstand voltage.



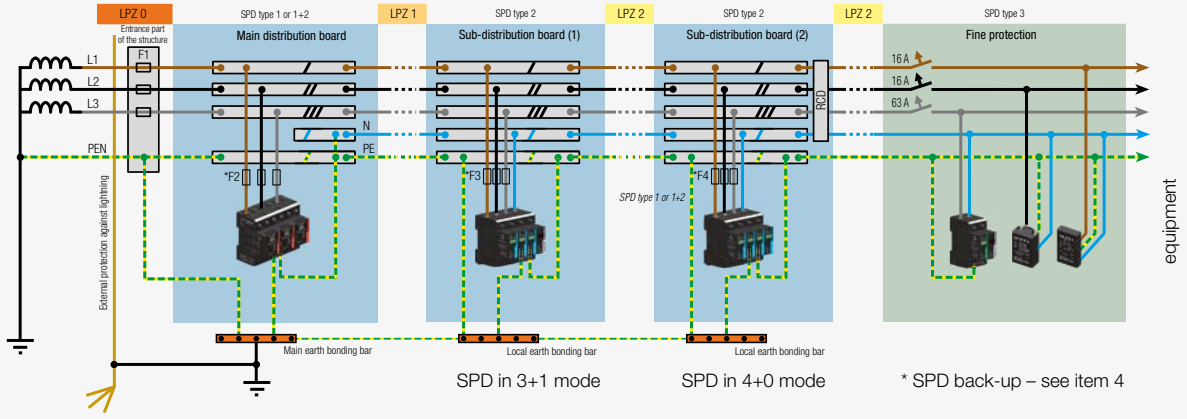
2. Connection of surge protection devices in networks

TN-S



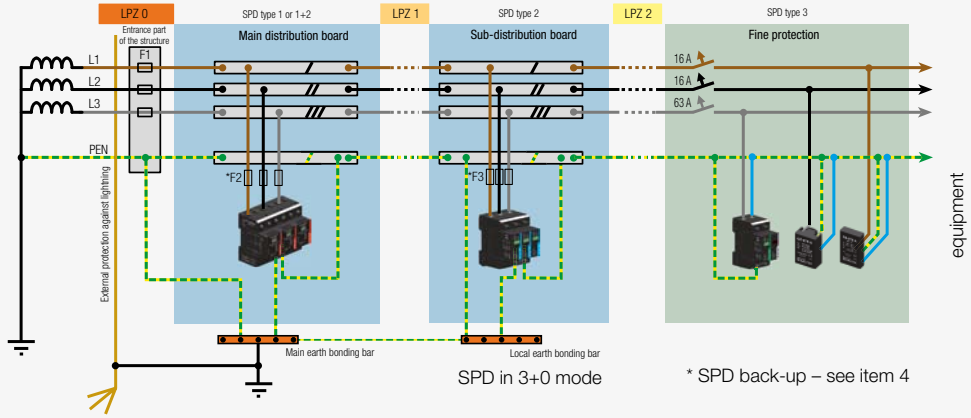
SPD in 3+1 mode | SPD in 4+0 mode | * SPD back-up – see item 4

TN-C-S



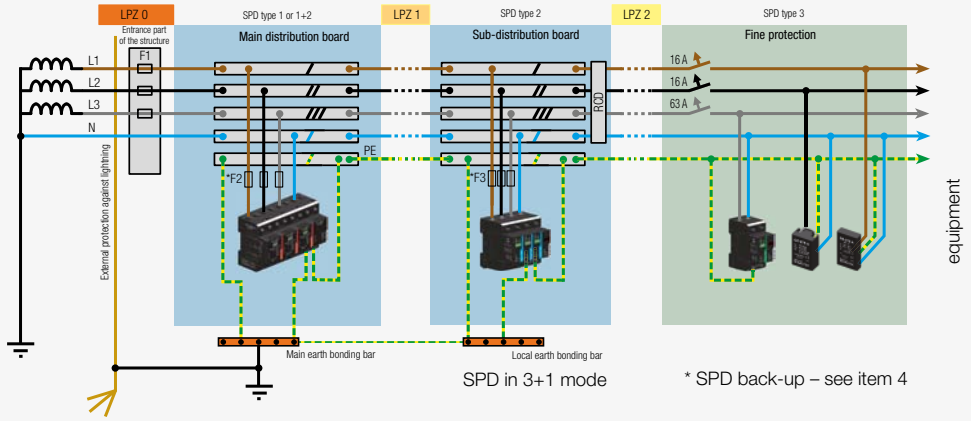
SPD in 3+1 mode | SPD in 4+0 mode | * SPD back-up – see item 4

TN-C



SPD in 3+0 mode | * SPD back-up – see item 4

TT



SPD in 3+1 mode | * SPD back-up – see item 4

3. SPD dimensioning and their application

Type 1 SPD dimensioning EN 62305 Location of SPD type 1: at the boundary of LPZ0 and LPZ1 zones in main distribution board		
LPL	**Lightning**	**Total SPD**
I.	to 200 kA	100 kA
II.	to 150 kA	75 kA
III.	to 100 kA	50 kA
IV.	to 100 kA	50 kA

Application of SALTEK SPD type 1 EN 62305 Location of SPD type 1: at the boundary of LPZ0 and LPZ1 zones in main distribution board	
LPL	**Lightning** / **Total SPD**
I.	to 200 kA / 100 kA
Conditions met by:	
FLP-SG50 V(S)/1	- large industrial facilities - structures of special importance
FLP-A35	- technological facilities - administrative structures
FLP-B+C MAXI V(S) FLP-25-T1-V(S)	- administrative structures - civic amenities - family houses - near transformer stations
LPL	**Lightning** / **Total SPD**
III.	to 100 kA / 50 kA
Conditions met by:	
FLP-12,5 V(S)	- family houses w/o down conductor system with a cable connector in the housing and in the LPS III class - structures in LPS IV class, i.e. structures and halls without persons and interior equipment, structures only with heavy current wiring
FLP-12,5 V(S)	- on LW earthing supply cables to the structure where the connection is not directly to the public distribution network (i.e. interconnection between 2 structures) - to sub-distribution boards within the structure, with a cable length from the last SPD of over 50 m

Application of SALTEK SPD type 2 EN 62305 Location of SPD type 2: at the boundary of LPZ1 and LPZ2 zones or sub-distribution board	
Conditions met by:	
SLP-xxx	- all types of wiring - type of network (TN, IT, T T) - connection method - nominal voltage

Application of SALTEK SPD type 3 EN 62305 Location of SPD type 3: at the boundary of LPZ2 and LPZ3 zones (technology)	
Conditions met by:	
DA-275 (with DIN bar)	- all types of wiring (if the equipment is in the clamp or distribution board)
DA-275 …, CZ…	- all types of wiring (sockets with overvoltage protection at the shortest possible distance from the appliance)
xxx-OVERDRIVE	- all types of wiring adapters for plugs with overvoltage protection

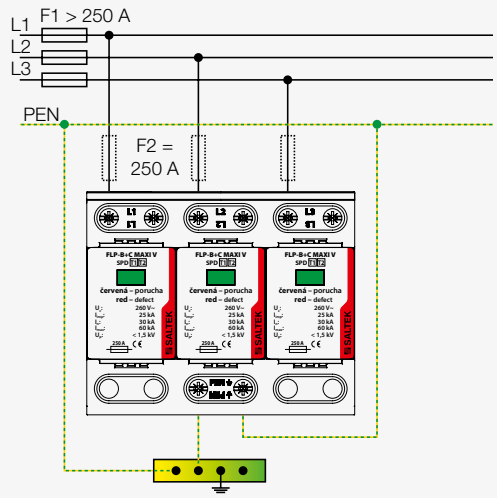
4. Principle of overcurrent protection of SPD

For overcurrent protection of SPD it is important to consider whether we should follow the protection priority principle, which is used in most installations, or the power supply priority principle.

a) protection priority principle – an SPD should be provided with additional protection in this case only if the value of the line protection (F1 fuse) is higher than the value of the respective SPD shown in the catalogue (F2 fuse) and the SPD protection always has the value shown in the manufacturer´s catalogue (parameter – maximum additional protection).

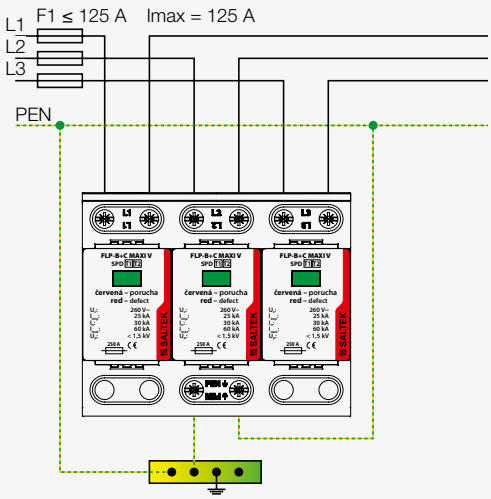
An example of back-up fuse for SPD – FLP-B+C MAXI V – in different supply networks.
The catalogue value of maximum back-up fuse for FLP-B+C MAXI V is 250 A, and 125 A for the “V” connection.

Parallel connection TN-C



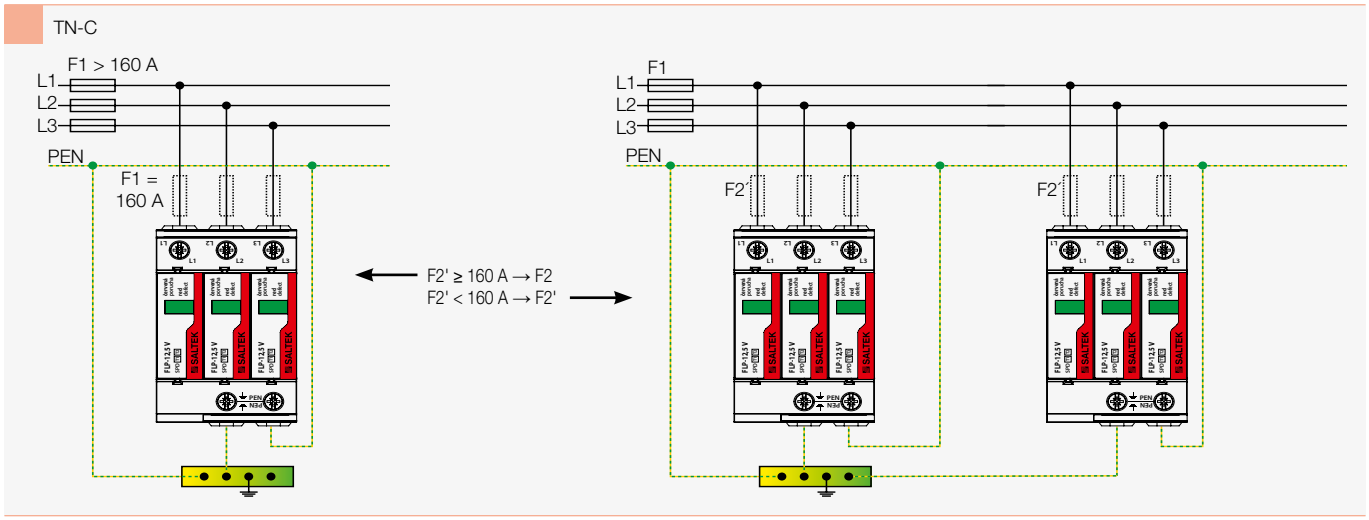
F1 > 250 A → F2
F1 ≤ 250 A → ~~F2~~
F1 > 125 A
F1 ≤ 125 A

“V” (series) connection



b) supply priority principle – an SPD should always be provided with a back-up fuse in this case, i.e., there are always both F1 and F2 fuses. The value of the SPD back-up (F2 fuse) must be calculated in this case according to the principle of protection selectivity, whereas the value should never be higher than the value specified in the manufacturer´s catalogue. Should the calculation show a higher value than that shown in the catalogue, then the value of the SPD back-up fuse is the same as that in the manufacturer´s catalogue. Should the value of the SPD back-up be lower than that shown in the catalogue, the whole installation (i.e., the SPD back-up and the SPD itself) should be provided with at least another protection installation next to the original one, as indicated in the example below.

An example of additional SPD protection - FLP-12,5 V- in different supply networks.
Katalogová hodnota maximálního předjištění pro FLP-12,5 V je
The catalogue value of the maximum back-up for FLP-12,5 V is
F2 = 160 A.
F2‘ – the value of the SPD back-up established by the calculation

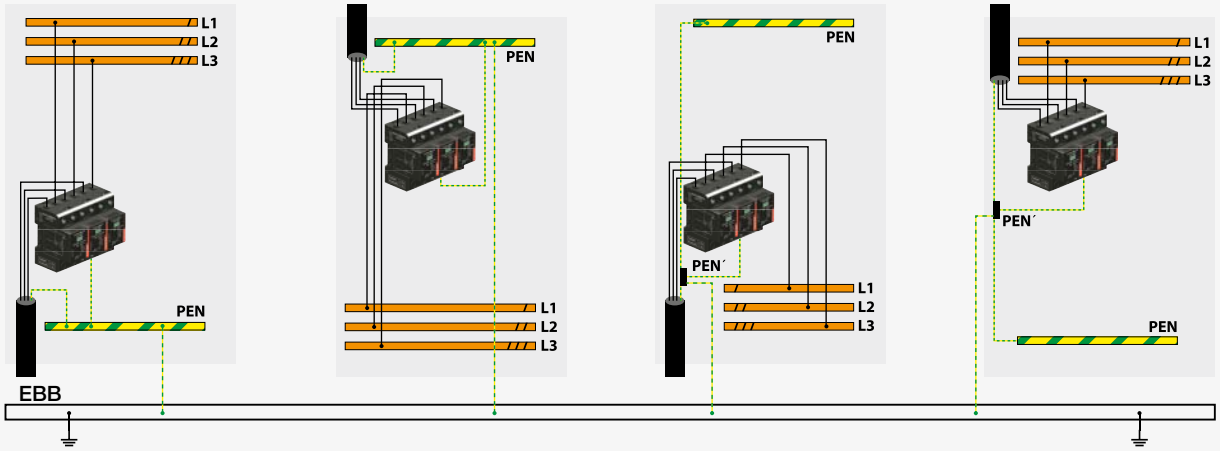


5. Principles for positioning and connecting of lightning and surge arresters

Surge protection devices and lightning current arresters cannot be positioned in the distribution board at random. It should be noted that protection should be located in the closest proximity to the entry feed cable of the distribution board to minimize the area of the induction loop, see the image below.
Another important condition for connecting the SPD is to minimize the impedance of connecting conductors. Stranded conductors or strip lines are preferentially used for connecting SPD type 1. It is also important that the length of the connecting conductors is as small as possible – see IEC 60364-5-53 chapter 534 (the total length of connecting conductors must not exceed 1 m). The cross-section of the connecting conductors should be as large as possible – maximum up to the cross-section according to the type of connector. In SPD type 1 (lightning arresters) the connecting conductors are an integral part of the main bonding – as determined by the IEC 60364-4-41 standard, while minimum cross-sections of the connecting conductors are specified in IEC 60364-5-54.

If SPDs are located in circuits where residual current devices are installed, the SPD should be positioned before the residual current device (not in the residual current device circuit), to prevent spontaneous overload tripping of the RCD affected by surge arresters or lightning current arresters.
Should an overvoltage protection be located in the residual current devices circuit, RCD type S or G should be used. Even in this case it should be noted that the resistance of these residual current devices is not high (5 to 8 kA in wave 8/20 µs) which makes it impossible to use any SPD in the circuit of the residual current device. If you want to prevent a residual current device type S or G responding to surge protection by overload tripping, only a protection SPD type 3 can be used in the circuit of the residual current device.

Examples of SPDs located in a distribution board.



6. SPD dimensioning

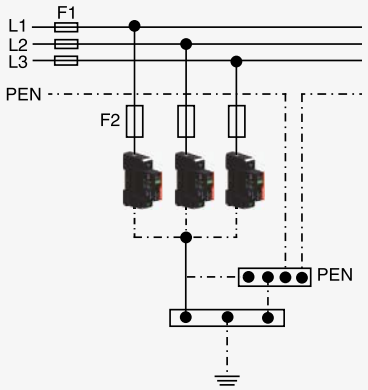
Only the SPD type 1 should be dimensioned. Dimensioning of the SPD type 1 should be based on the calculation of the lightning protection level (LPL) for the lightning protection system (LPS).

The table from CLC/TS 50539-12 below shows minimum values of the discharge lightning strike current to the pole considering the lightning protection (LPL) class of the building for the SPD type 1.

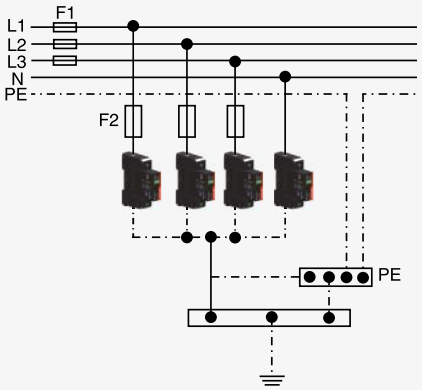
If the LPL value is not known, the worse scenario is anticipated			Low voltage networks									
LPL	Maximum current corresponding to LPL	Number of conductors (n)	TT			TN-C	TN-S			IT without neutral conductor	IT with neutral conductor	
			Connection mode				Connection mode			Connection mode		
			CT1	CT2			CT1	CT2		CT1	CT2	
			L-PE N-PE	L-N	N-PE	L-PEN	L-PE N-PE	L-N	N-PE	L-PE	L-N	N-PE
1 or unknown	200 kA		I_{imp} (kA)									
		5	N/A	N/A	N/A	N/A	20,0	20,0	80,0	N/A	N/A	N/A
		4	25,0	25,0	100,0	25,0	N/A	N/A	N/A	N/A	25,0	100,0
		3	N/A	N/A	N/A	N/A	33,3	33,3	66,7	33,3	N/A	N/A
		2	50,0	50,0	100,0	50,0	N/A	N/A	N/A	N/A	50,0	100,0
2	150 kA		I_{imp} (kA)									
		5	N/A	N/A	N/A	N/A	15,0	15,0	60,0	N/A	N/A	N/A
		4	18,8	18,8	75,0	18,8	N/A	N/A	N/A	N/A	18,8	75,0
		3	N/A	N/A	N/A	N/A	25,0	25,0	50,0	25,0	N/A	N/A
		2	37,5	37,5	75,0	37,5	N/A	N/A	N/A	N/A	37,5	75,0
3 or 4	100 kA		I_{imp} (kA)									
		5	N/A	N/A	N/A	N/A	10,0	10,0	40,0	N/A	N/A	N/A
		4	12,5	12,5	50,0	12,5	N/A	N/A	N/A	N/A	12,5	50,0
		3	N/A	N/A	N/A	N/A	16,7	16,7	33,3	16,7	N/A	N/A
		2	25,0	25,0	50,0	25,0	N/A	N/A	N/A	N/A	25,0	50,0

Note: CT1 – SPD connected in the x+0 mode; **CT2** – SPD connected in the x+1 mode

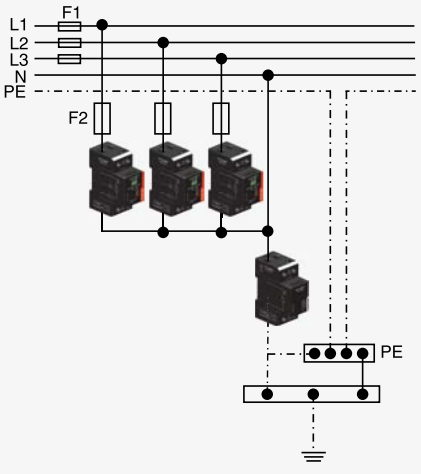
CT1 – TN-C



CT1 – TN-S

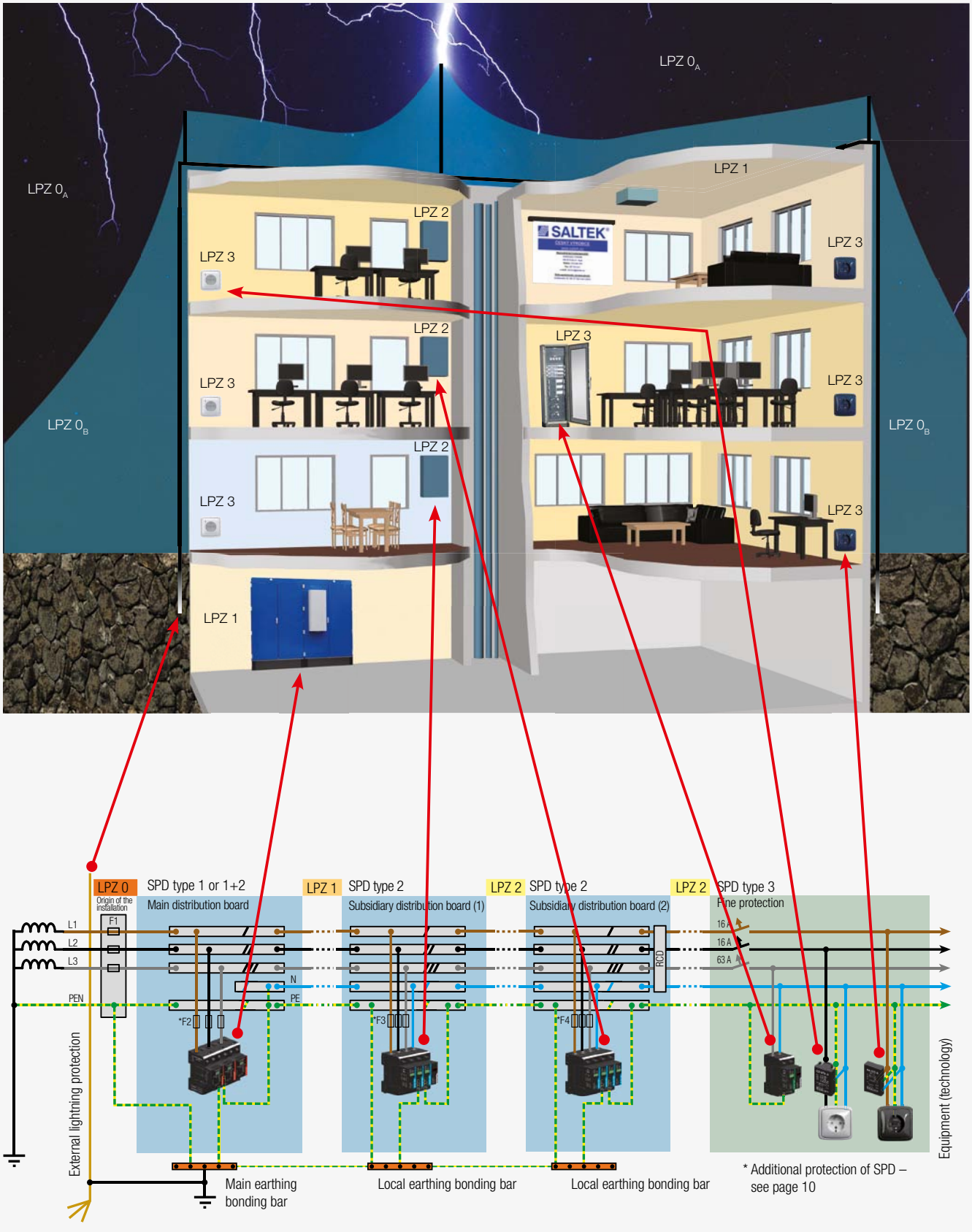


CT2



7. Reducing overvoltage in LPZ zones

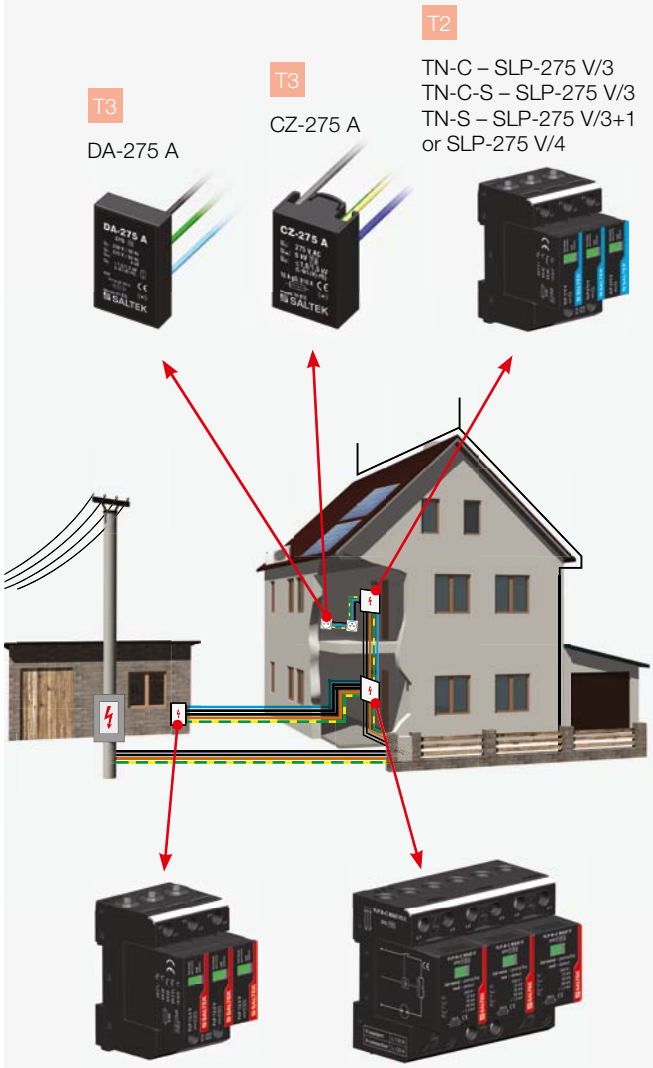
The principle of reducing voltage using zones lies in progressive reduction of the overvoltage level to a safe value that will not damage the specific equipment or technology. To obtain a safe overvoltage value, the whole structure is divided into individual zones and the SPD is installed at the boundary between the zones.



Examples of SPD applications

Modern family houses feature more and more electronic equipment. If the owner of the structure wants to watch TV, be in contact with the world via the Internet, control the heating in the structure automatically, use various electronic equipment without any trouble, it is necessary to protect such equipment against atmospheric events. Lightning strikes hitting the structure or near the structure and overvoltage in the mains can destroy or damage such electronic devices or otherwise make use of such sensitive appliances uncomfortable.
Internal protection against lightning and overvoltage must be considered as an integrated system. For most family houses it is OK to install SPD type 1 and 2 at the line entry in the structure (the main distribution board where the circuit breakers for the whole house are located), i.e. FLP-B+C MAXI V(S)/3 for the wiring connected in TN-C or TN-C-S, or FLP-B+C MAXI V(S)/4 for the wiring in the TN-S network. For sensitive appliances inside the structure, it is sufficient to use overvoltage protection - SPD type 3, in combination with respective data protection.
It should further be noted that antenna down conductors at the structure entry must also be considered. For such cases, we use the FX-090 F75 T current arrester.
If the structure has ESS, EPS, or electronics to control the heating system, overvoltage protection SPD type 3 with vf filter type DA-275 DF 6 will be used to protect the supply 230 V AC, which will be installed in close proximity to the protected equipment.
If the structure has photovoltaic panels installed on the roof, you need to protect the panels as well as the DC/AC inverter. Protection for photovoltaic equipment, e.g. the SLP-PV500 V/U type, is used to protect the DC part.
The following examples show various options for connecting the structure to the distribution network.

1 A family house in a built-up area or a detached structure with or without a down conductor and external line on posts



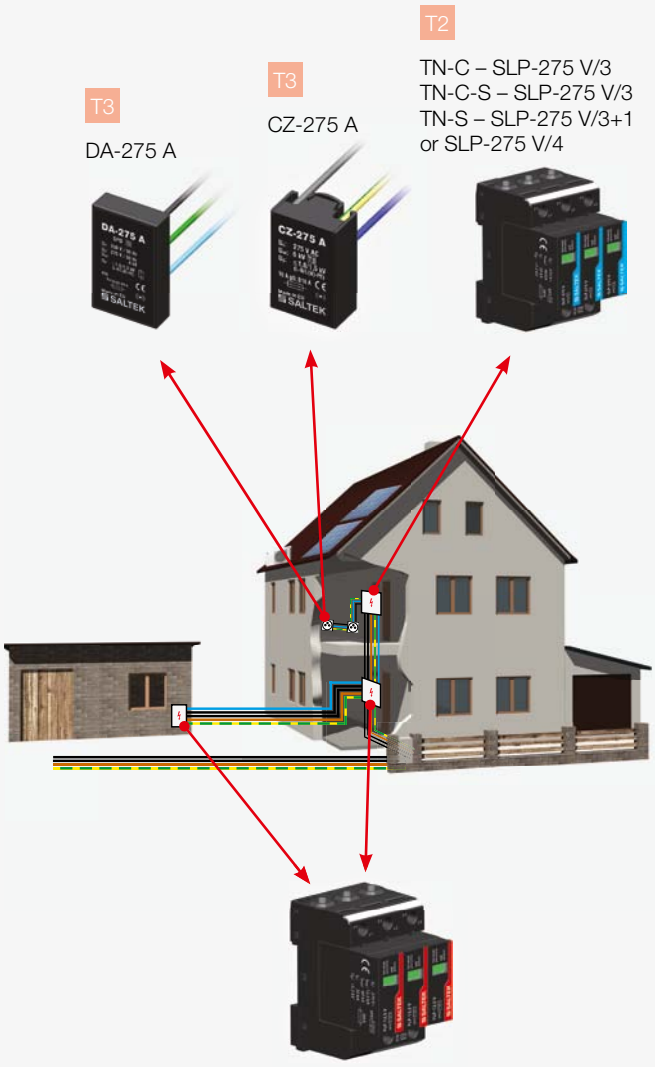
TN-C – FLP-12,5 V/3
TN-C-S – FLP-12,5 V/3
TN-S – FLP-12,5 V/4

T1 T2

TN-C – FLP-B+C MAXI V(S)/3
TN-C-S – FLP-B+C MAXI V(S)/3
TN-S – FLP-B+C MAXI V(S)/4

T1 T2

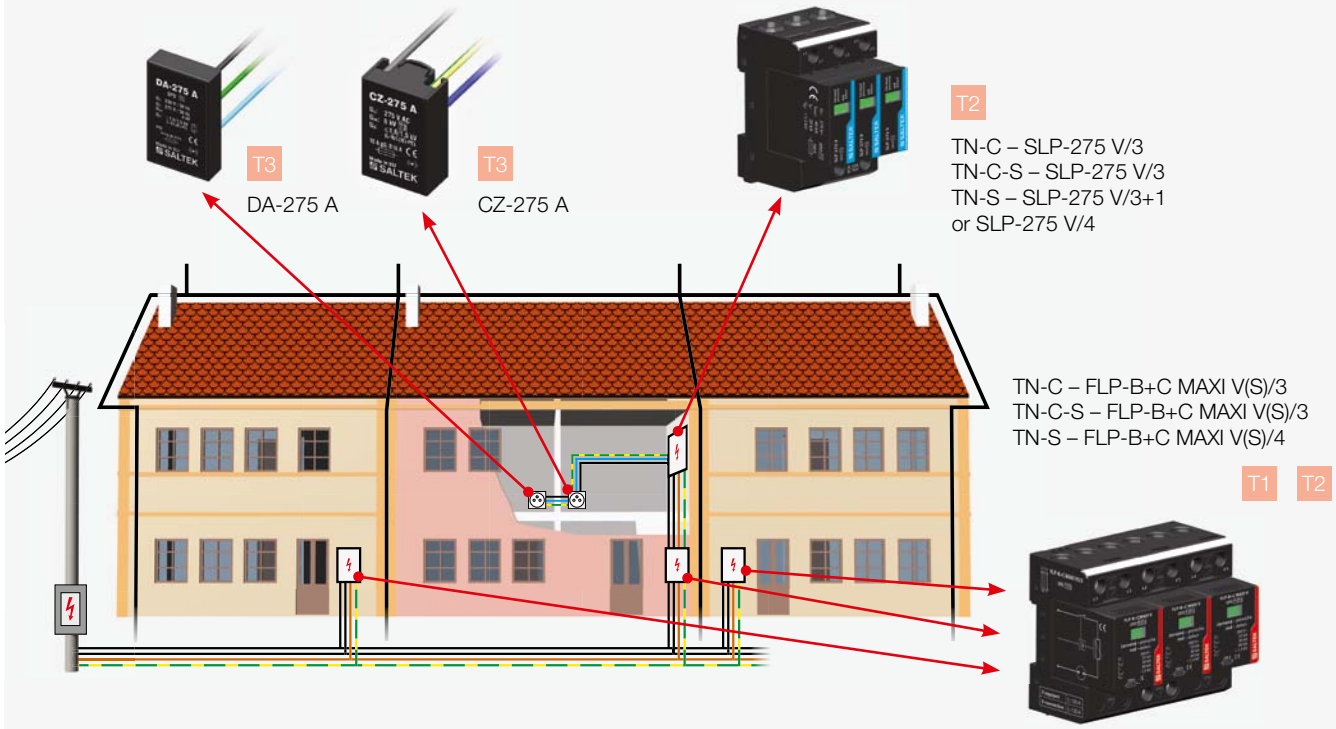
2 A family house in a built-up area without a down conductor and cable connection



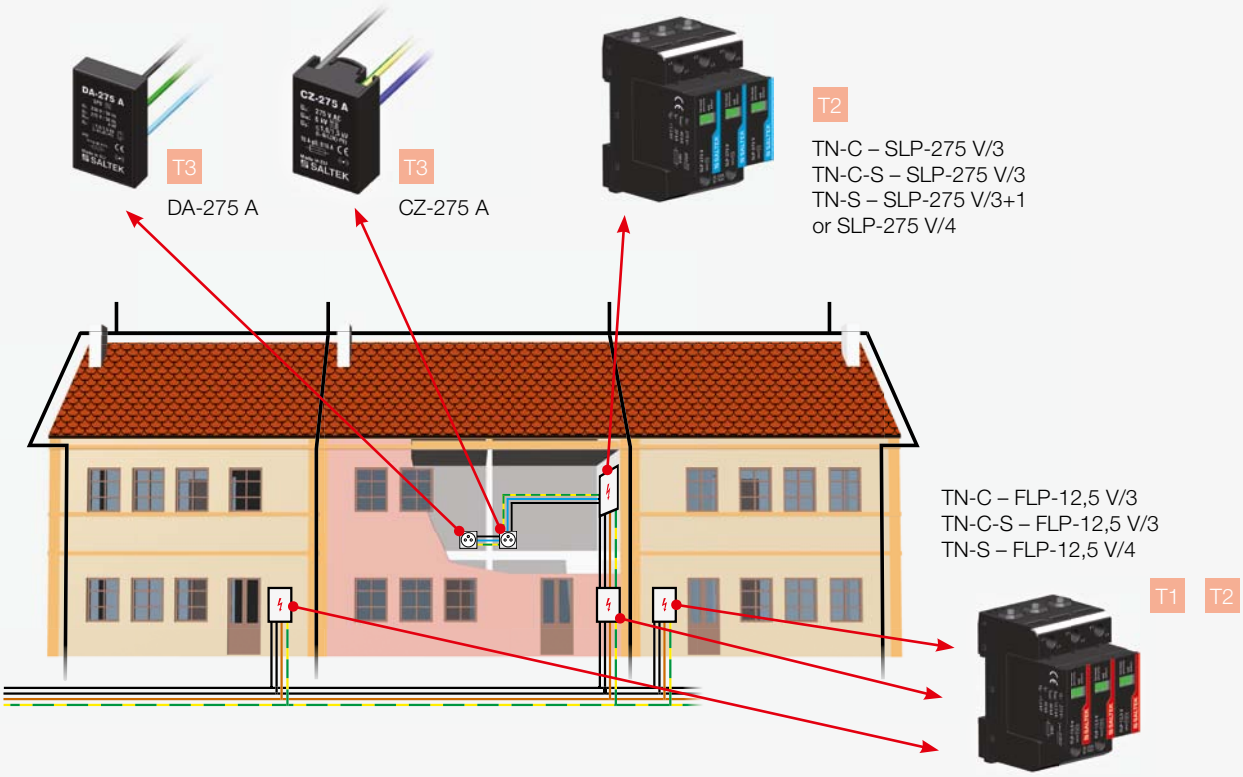
TN-C – FLP-12,5 V/3
TN-C-S – FLP-12,5 V/3
TN-S – FLP-12,5 V/4

T1 T2

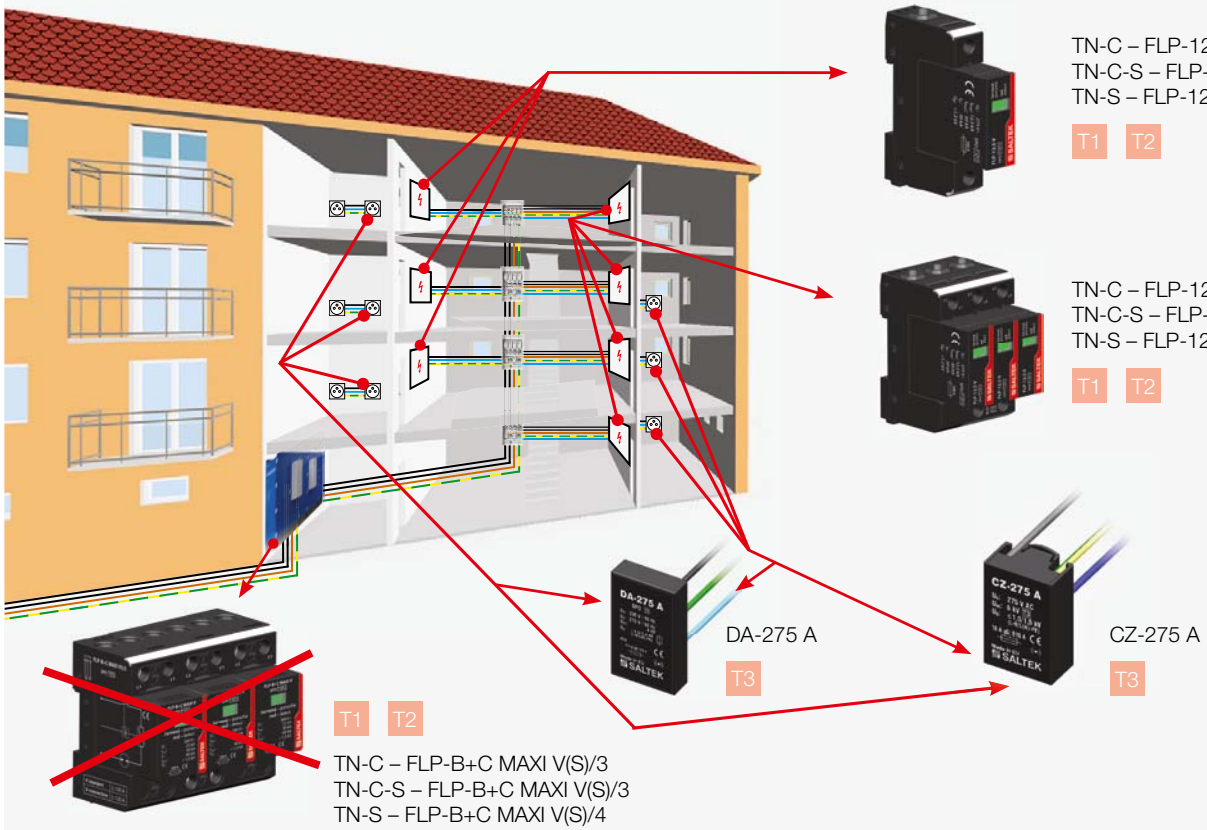
3 Terrace houses with a common down conductor and external line



4 Terrace houses with a common down conductor and cable connection



5 Blocks of flats with a cable connection without the possibility to install SPD type 1 in the unmeasured part



TN-C – FLP-12,5 V/1
TN-C-S – FLP-12,5 V/1
TN-S – FLP-12,5 V/2

T1 T2

TN-C – FLP-12,5 V/3
TN-C-S – FLP-12,5 V/3
TN-S – FLP-12,5 V/4

T1 T2

DA-275 A

T3

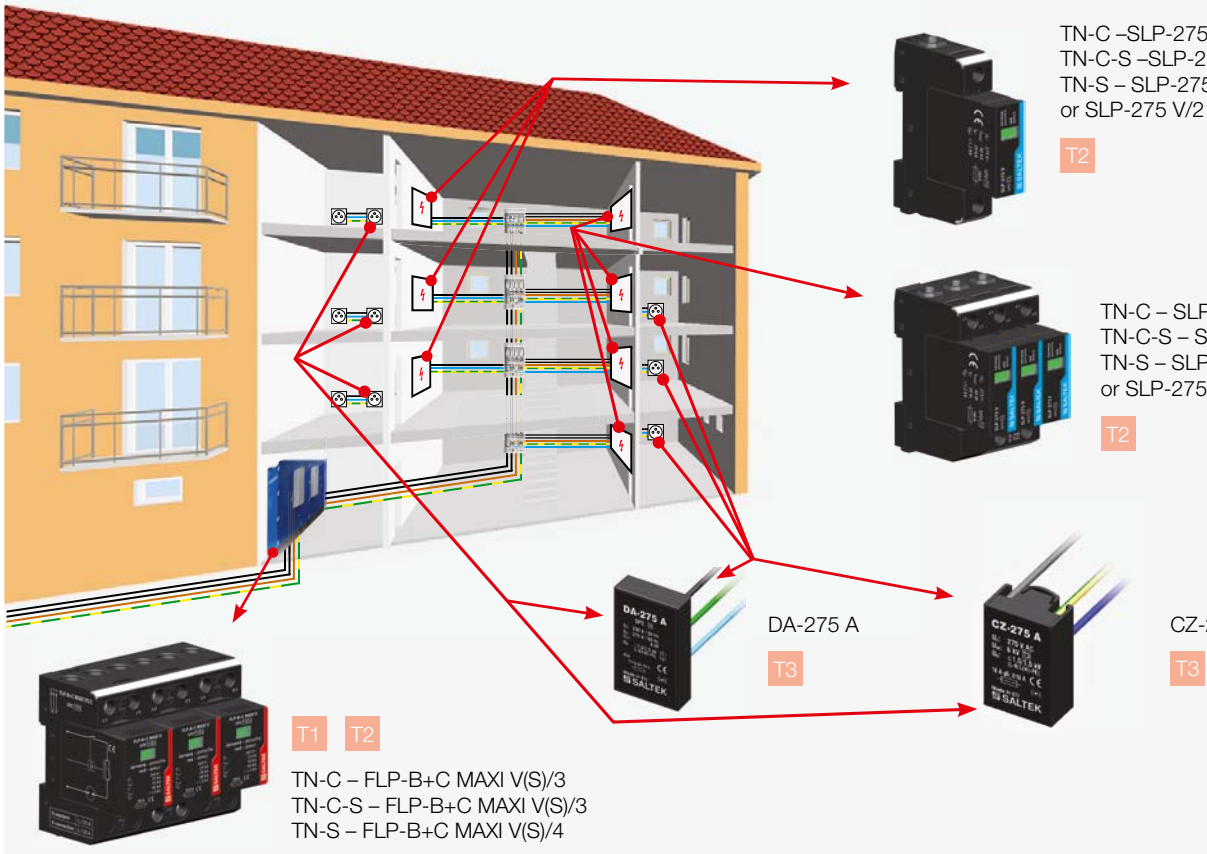
CZ-275 A

T3

T1 T2

TN-C – FLP-B+C MAXI V(S)/3
TN-C-S – FLP-B+C MAXI V(S)/3
TN-S – FLP-B+C MAXI V(S)/4

6 Blocks of flats with a cable connection with the possibility to install SPD type 1 in the unmeasured part



TN-C –SLP-275 V/1
TN-C-S –SLP-275 V/1
TN-S – SLP-275 V/1+1
or SLP-275 V/2

T2

TN-C – SLP-275 V/3
TN-C-S – SLP-275 V/3
TN-S – SLP-275 V/3+1
or SLP-275 V/4

T2

DA-275 A

T3

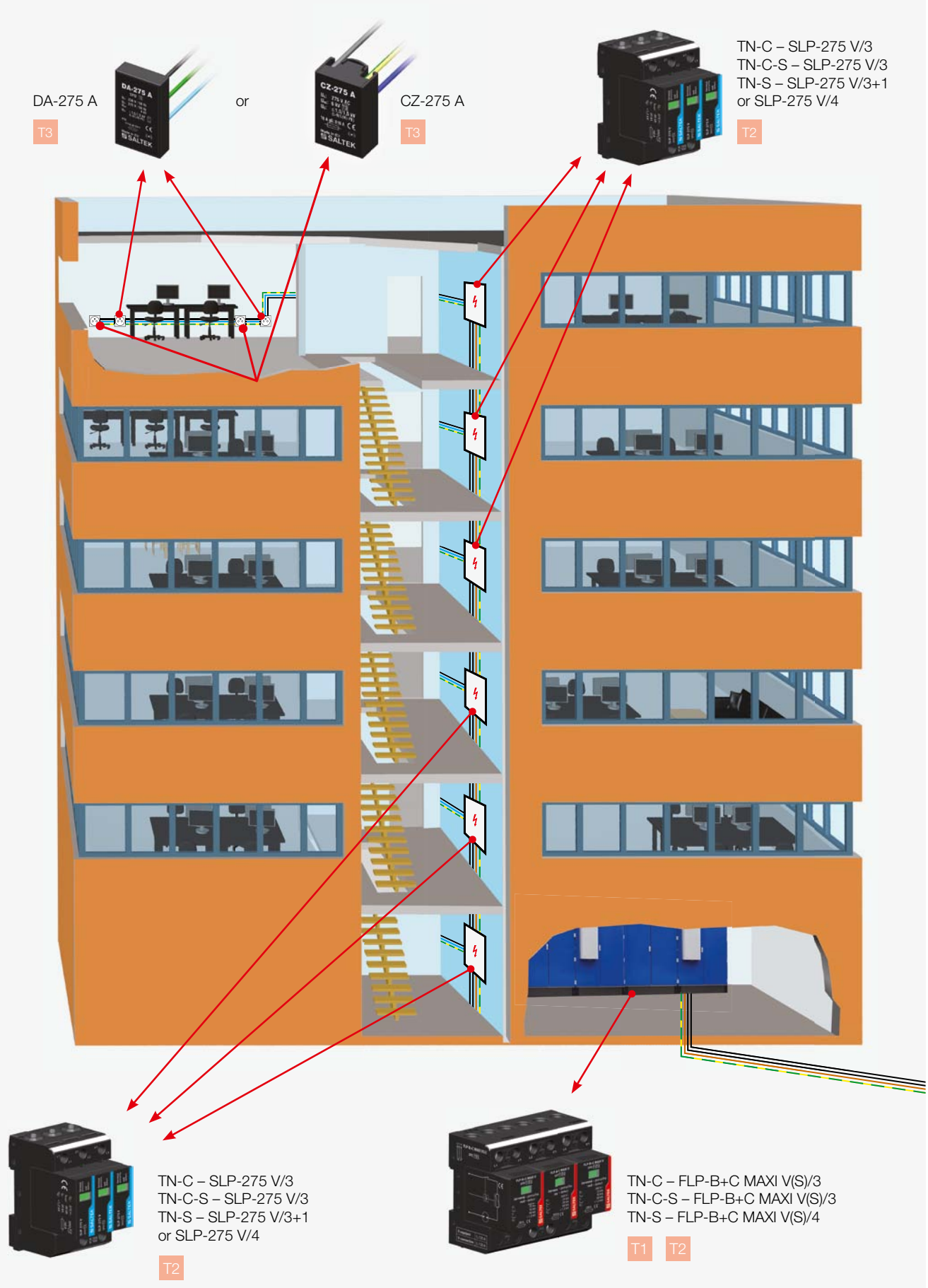
CZ-275 A

T3

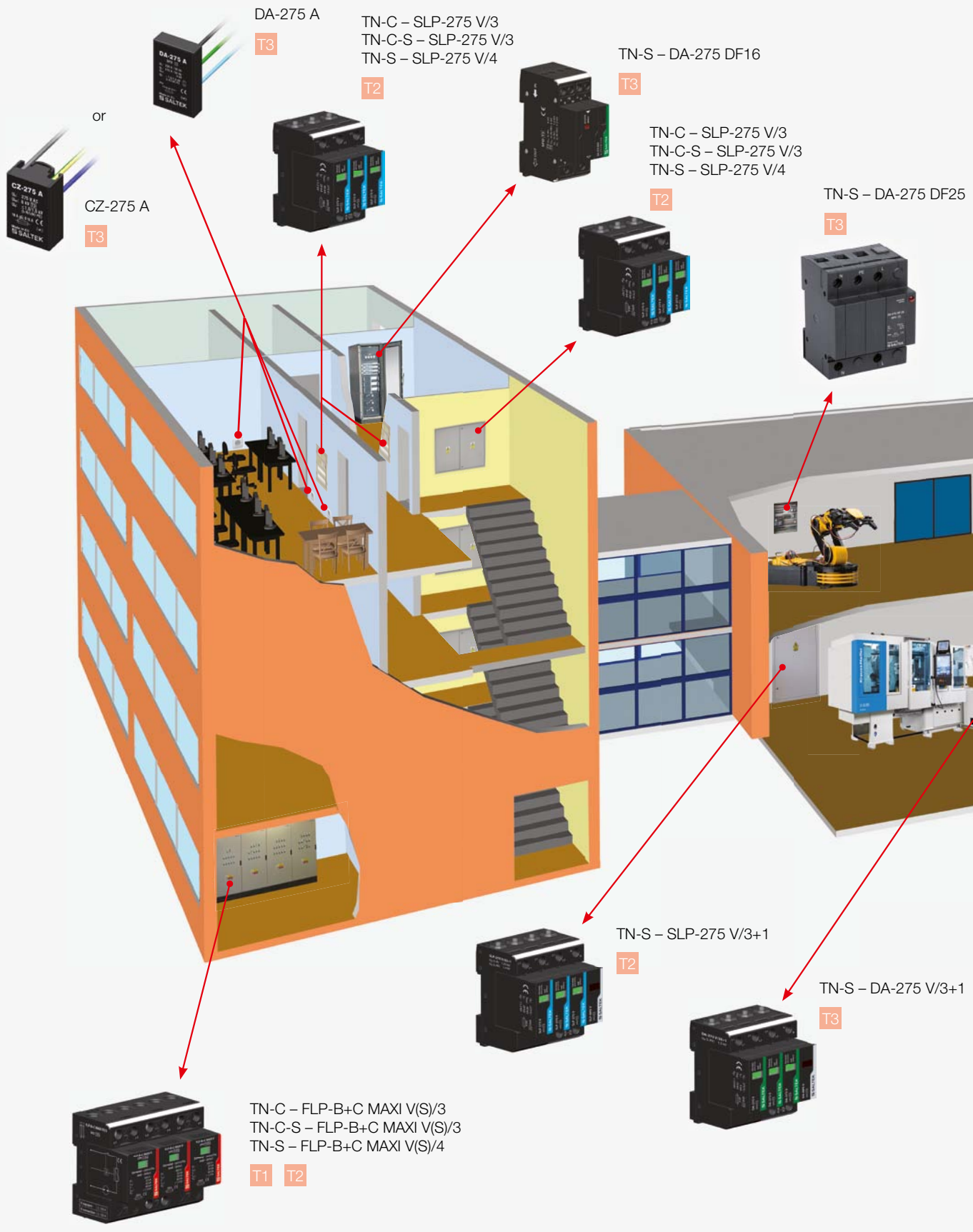
T1 T2

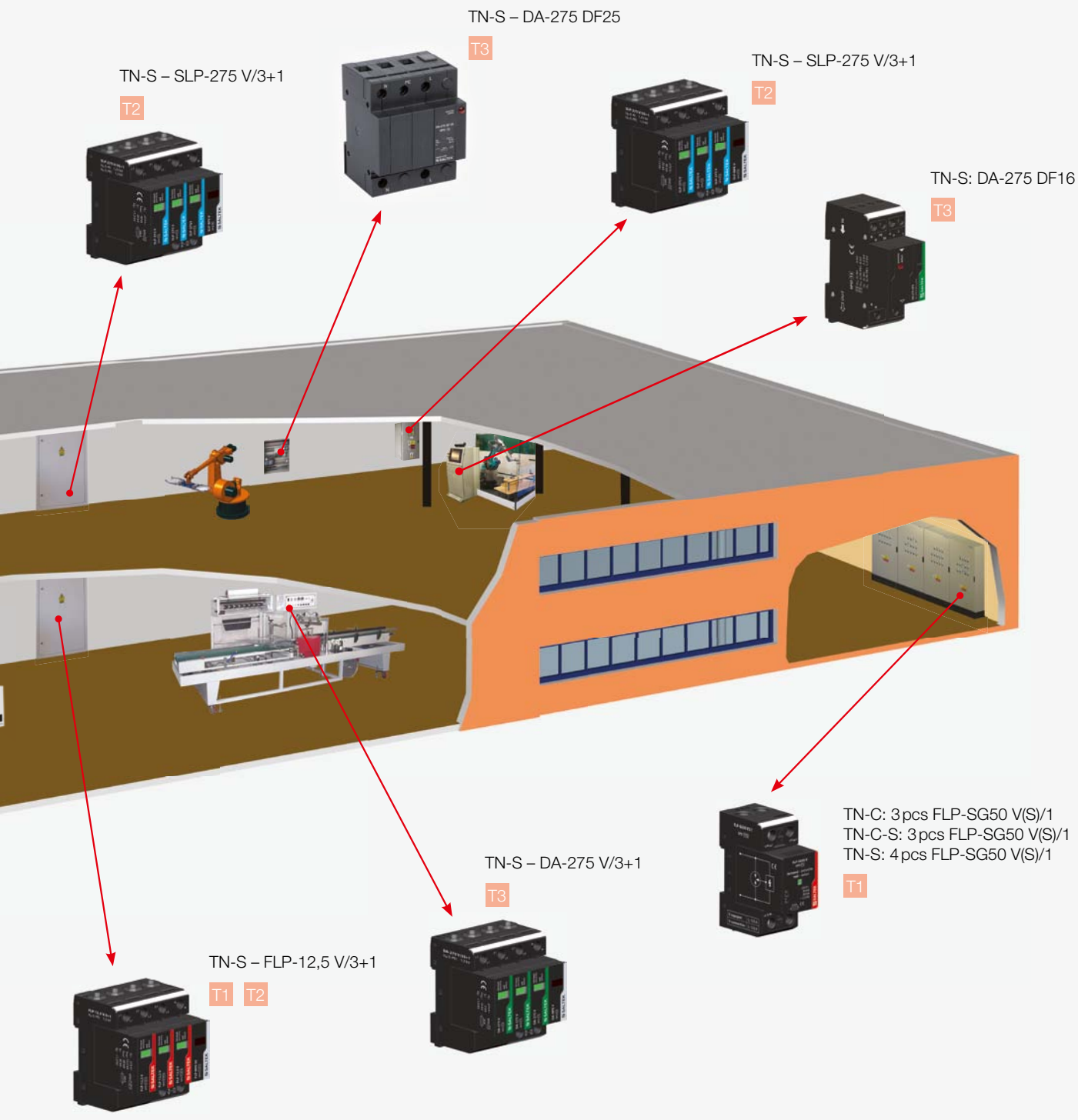
TN-C – FLP-B+C MAXI V(S)/3
TN-C-S – FLP-B+C MAXI V(S)/3
TN-S – FLP-B+C MAXI V(S)/4

7 Office buildings



8 Office and industrial building




TN-S – DA-275 DF25
T3
TN-S – SLP-275 V/3+1
T2
TN-S – SLP-275 V/3+1
T2
TN-S: DA-275 DF16
T3
TN-C: 3 pcs FLP-SG50 V(S)/1
TN-C-S: 3 pcs FLP-SG50 V(S)/1
TN-S: 4 pcs FLP-SG50 V(S)/1
T1
TN-S – DA-275 V/3+1
T3
TN-S – FLP-12,5 V/3+1
T1 T2

SALTEK SPD applications in LV distribution systems

Type of structure	system	main distribution board (in the structure)	sub-distribution board (in the same structure)	end consumer
Family houses, administrative buildings, technologic units, industrial structures	3-ph. TN-C	**FLP-B+C MAXI VS/3, FLP-B+C MAXI V/3 FLP-25-T1-VS/3, FLP-25-T1-V/3**	distance > 10 m **SLP-275 V/3**(S)	distance > 5 m overvoltage protection to DIN rail: **DA-275 V/1(S)+1** (up to 63 A) **DA-275 V/3(S)+1** (up to 63 A) **DA-275 DJ** (up to 16 A) overvoltage protection to a DIN rail with a RFI filter: **DA-275 DFx (S)** (x = 2, 6, 10, 16 A) **DA-275 DF 25** for 25 A **DA-275 DFi** (x = 1, 6, 10, 16 A) **RACK-PROTECTOR** multiple sockets to 19" stands **CZ-275 A, DA-275 CZS DA-275 A, DA-275 S** for additional assembly to the sockets and appliances sockets with overvoltage protection **XX-OVERDRIVE** socket adapters
			distance > 50 m **FLP-12.5 V/3**(S)	
			distance > 100 m **FLP-B+C MAXI V/3, FLP-B+C MAXI VS/3**	
		FLP-25-T1-VS/3, FLP-25-T1-V/3	distance < 10 m **SLP-275 V/3**(S)	
		FLP-B+C MAXI VS/3, FLP-B+C MAXI V/3 FLP-25-T1-VS/3 + SLP-275 V/3 S FLP-25-T1-V/3 + SLP-275 V/3 (also with terminals to the equipment)	distance > 10 m **SLP-275 V/3**(S)	
			distance > 50 m **FLP-12.5 V/3**(S)	
			distance > 100 m **FLP-B+C MAXI V/3, FLP-B+C MAXI VS/3**	
	3-ph. TN-S	**FLP-B+C MAXI VS/4, FLP-B+C MAXI V/4 FLP-25-T1-VS/4, FLP-25-T1-V/4**	distance > 10 m **SLP-275 V/4**(S)	
			distance > 50 m **FLP-12.5 V/4**(S)	
			distance > 100 m **FLP-B+C MAXI V/4, FLP-B+C MAXI VS/4**	
		FLP-25-T1-VS/4, FLP-25-T1-V/4	distance < 10 m **SLP-275 V/4**(S)	
		FLP-B+C MAXI VS/4, FLP-B+C MAXI V/4 FLP-25-T1-VS/4 + SLP-275 V/4 S FLP-25-T1-V/4 + SLP-275 V/4 (also with terminals to the equipment)	distance > 10 m **SLP-275 V/4**(S)	
			distance > 50 m **FLP-12.5 V/4**(S)	
			distance > 100 m **FLP-B+C MAXI V/4, FLP-B+C MAXI VS/4**	
	3-ph. TN-C-S	**FLP-B+C MAXI VS/3, FLP-B+C MAXI V/3 FLP-25-T1-VS/3, FLP-25-T1-V/3**	distance > 10 m **SLP-275 V/4**(S)	
			distance > 50 m **FLP-12.5 V/4**(S)	
			distance > 100 m **FLP-B+C MAXI V/4, FLP-B+C MAXI VS/4**	
		FLP-25-T1-VS/3, FLP-25-T1-V/3	distance < 10 m **SLP-275 V/4**(S)	
		FLP-B+C MAXI VS/3, FLP-B+C MAXI V/3 FLP-25-T1-VS/3 + SLP-275 V/3 S FLP-25-T1-V/3 + SLP-275 V/3 (also with terminals to the equipment)	distance > 10 m **SLP-275 V/4**(S)	
			distance > 50 m **FLP-12.5 V/4**(S)	
			distance > 100 m **FLP-B+C MAXI V/4, FLP-B+C MAXI VS/4**	
Blocks of flats with 12 or more apartments (SPD located in the apart. distr. boards)	3-ph. TN-C		**FLP-12.5 V/3**(S)	distance < 5 m place before the overvoltage protection RTO-xx (xx – rated current 16, 35 or 63 A) number acording to connection 1-phase TN-C **1× RTO-xx** 1-phase TN-S **2× RTO-xx** 3-phase TN-C **3× RTO-xx** 3-phase TN-S **4× RTO-xx**
	3-ph. TN-S		**FLP-12.5 V/4**(S)	
	3-ph. TN-C-S	division in the apartment distr. board	**FLP-12.5 V/3**(S)	
	1-ph. TN-C		**FLP-B+C MAXI V/1, FLP-B+C MAXI VS/1**	
	1-ph. TN-S		**FLP-12.5 V/2**(S)	
Demanding applications (structures – operations classified at the risk of explosion, chemical plants…, structures of a very high importance)	3-ph. TN-C	**3× FLP-SG50 V(S)/1** with terminals to the equipment **3× FLP-SG50 V(S)/1 + 1× SLP-275 V/3(S)**	distance < 10 m **1× SLP-275 V/3**(S)	
			distance > 10 m **SLP-275 V/3**(S)	
			distance > 50 m **FLP-12.5 V/3**(S)	
			distance > 100 m **FLP-B+C MAXI V/3, FLP-B+C MAXI VS/3**	
	3-ph. TN-S	**4× FLP-SG50 V(S)/1** with terminals to the equipment **4× FLP-SG50 V(S)/1 + 1× SLP-275 V/4(S)**	distance < 10 m **1× SLP-275 V/4**(S)	
			distance > 10 m **SLP-275 V/4**(S)	
			distance > 50 m **FLP-12.5 V/4**(S)	
			distance > 100 m **FLP-B+C MAXI V/4, FLP-B+C MAXI VS/4**	
	3-ph. TN-C-S	division in the main distribution board **3× FLP-SG50 V(S)/1** with terminals to the equipment **3× FLP-SG50 V(S)/1 + 1× SLP-275 V/4(S)**	distance < 10 m **1× SLP-275 V/4**(S)	
			distance > 10 m **SLP-275 V/4**(S)	
			distance > 50 m **FLP-12.5 V/4**(S)	
			distance > 100 m **FLP-B+C MAXI V/4, FLP-B+C MAXI VS/4**	

SALTEK SPD applications in LV distribution systems

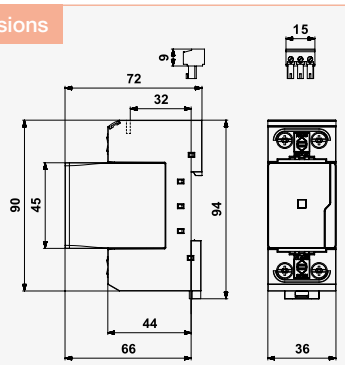
Type of structure	system	main distribution board (in the structure)	sub-distribution board (in the same structure)	end consumer
Structures equipped with ESE (active down conductor)	3-ph. TN-C	**3x FLP-SG50 V(S)/1**	distance > 10 m **SLP-275 V/3**(S)	distance > 5 m overvoltage protection to DIN rail: **DA-275 V/1(S)+1** (up to 63 A) **DA-275 V/3(S)+1** (up to 63 A) **DA-275 DJ** (up to 16 A) Overvoltage protection to DIN rail with RFI filter: **DA-275 DFx (S)** (x = 2, 6, 10, 16 A) **DA-275 DF 25** pro 25 A **DA-275 DFi** (x = 1, 6, 10, 16 A) **RACK-PROTECTOR** multiple sockets for 19" stands **CZ-275 A, DA-275 CZS** **DA-275 A, DA-275 S** For additional mounting to sockets and appliances Sockets with overvoltage protection **XX-OVERDRIVE** Socket adapters
			distance > 50 m **FLP-12.5 V/3**(S)	
			distance > 100 m **FLP-B+C MAXI V/3, FLP-B+C MAXI VS/3**	
		3x FLP-SG50 V(S)/1	distance < 10 m **SLP-275 V/3**(S)	
		also with terminals to the equipment **3x FLP-SG50 V(S)/1** + **SLP-275 V/3(S)**	distance > 10 m **SLP-275 V/3**(S)	
			distance > 50 m **FLP-12.5 V/3**(S)	
			distance > 100 m **FLP-B+C MAXI V/3, FLP-B+C MAXI VS/3**	
	3-ph. TN-S	**4x FLP-SG50 V(S)/1**	distance > 10 m **SLP-275 V/4**(S)	
			distance > 50 m **FLP-12.5 V/4**(S)	
			distance > 100 m **FLP-B+C MAXI V/4, FLP-B+C MAXI VS/4**	
		4x FLP-SG50 V(S)/1	distance < 10 m **SLP-275 V/4**(S)	
		also with terminals to the equipment **4x FLP-SG50 V(S)/1 + SLP-275 V/4(S)**	distance > 10 m **SLP-275 V/4**(S)	
			distance > 50 m **FLP-12.5 V/4**(S)	
			distance > 100 m **FLP-B+C MAXI V/4, FLP-B+C MAXI VS/4**	
	3-ph. TN-C-S	**3x FLP-SG50 V(S)/1**	distance > 10 m **SLP-275 V/4**(S)	
			distance > 50 m **FLP-12.5 V/4**(S)	
			distance > 100 m **FLP-B+C MAXI V/4, FLP-B+C MAXI VS/4**	
		3x FLP-SG50 V(S)/1	distance < 10 m **SLP-275 V/4**(S)	
		also with terminals to the equipment **3x FLP-SG50 V(S)/1 + SLP-275 V/3(S)**	distance > 10 m **SLP-275 V/4**(S)	
			distance > 50 m **FLP-12.5 V/4**(S)	
			distance > 100 m **FLP-B+C MAXI V/4, FLP-B+C MAXI VS/4**	
Technology with 1-phase connection	1-ph. TN-C	**FLP-SG50 V(S)/1** with terminals to the equipment **FLP-SG50 V(S)/1 + SLP-275 V/1(S)**	distance < 10 m **SLP-275 V/1**(S)	distance < 5 m SPD back-up RTO-xx (xx – rated current 16, 35 or 63 A) number acording to connection 1-phase TN-C **1× RTO-xx** 1-phase TN-S **2× RTO-xx** 3-phase TN-C **3× RTO-xx** 3-phase TN-S **4× RTO-xx**
			distance > 10 m **SLP-275 V/1**(S)	
			distance > 50 m **FLP-12.5 V/1**(S)	
			distance > 100 m **FLP-B+C MAXI V/1, FLP-B+C MAXI VS/1**	
	1-ph. TN-S	**2× FLP-SG50 V(S)/1** with terminals to the equipment **2× FLP-SG50 V(S)/1 + 1× SLP-275 V/2(S)**	distance < 10 m **1× SLP-275 V/2**(S)	
			distance > 10 m **1× SLP-275 V/2**(S)	
			distance > 50 m **1× FLP-12.5 V/2**(S)	
			distance > 100 m **FLP-B+C MAXI V/2, FLP-B+C MAXI VS/2**	
	1-ph. TN-C-S	Division in the main distribution board **FLP-SG50 V(S)/1** with terminals to the equipment **FLP-SG50 V(S)/1 + SLP-275 V/1(S)**	distance < 10 m **1× SLP-275 V/2**(S)	
			distance > 10 m **1× SLP-275 V/2**(S)	
			distance > 50 m **1× FLP-12.5 V/2**(S)	
			distance > 100 m **FLP-B+C MAXI V/2, FLP-B+C MAXI VS/2**	

FLP-SG50 V(S)/1

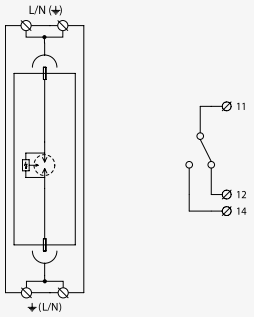
SPD type 1 - Lightning Current Arrester
pluggable module, visual fault signaling, blocking module

- instalation at the boundary of zones LPZ 0 and LPZ 1
- protection against impact of direct or indirect lightning strike in the hardest application in heavy, chemical and energy industry
- coordination with SPD type 2 (SLP-275 V) even without surge separating inductors
- remote status signaling (S)

Dimensions



Basic circuit diagram



Parameter / Type		FLP-SG50 V/1	FLP-SG50 VS/1
Nominal voltage	U_n	230 V AC	230 V AC
Maximum operating voltage	U_c	255 V AC	255 V AC
Nominal load current for "V" connection	I_L	125 A	125 A
Lightning impulse current (10/350 µs)	I_{imp}	50 kA	50 kA
Nominal discharge current (8/20 µs)	I_n	50 kA	50 kA
Voltage protection level	U_p	2,5 kV	2,5 kV
Ability to independently switch off the following current	I_{fi}	50 kA	50 kA
Short-circuit current rating	I_{SCCR}	50 kA	50 kA
Maximum overcurrent protection		315 A gL/gG	315 A gL/gG
Maximum overcurrent protection for "V" connection		125 A gL/gG	125 A gL/gG
Response time	t_a	100 ns	100 ns
Cross-section of connected conductors solid		2,5 / 50 mm²	2,5 / 50 mm²
Cross-section of connected conductors stranded		2,5 / 35 mm²	2,5 / 35 mm²
Fault indication		red indication field	red indication field
Remote indication		no	potential-free change-over contact
Remote indication contacts		-	250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors		-	1,5 mm²
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T1	EN 61643-11:2012, IEC 61643-11:2011, T1
Ordering number		8595090540540	8595090540533

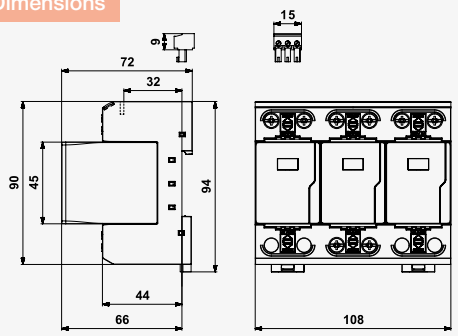
Spare module	FLP-SG50 V/0	FLP-SG50 VS/0
Ordering number	8595090542278	8595090541486

FLP-25-T1-V(S)/3

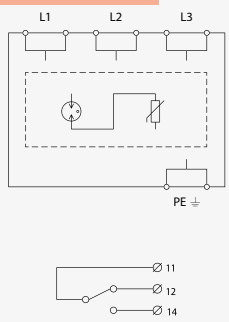
SPD type 1 - Lightning Current Arrester
pluggable module, visual fault signaling, blocking module

- three-pole high performance lightning current arrester
- installation at the boundary of zones LPZ 0 and LPZ 1 or higher
- protection against impact of direct or indirect lightning strike
- wide range of applications - houses, office and industrial buildings, resp. to sub-distribution boards in large buildings
- remote status signaling (S)

Dimensions



Basic circuit diagram



Parameter / Type		FLP-25-T1-V/3	FLP-25-T1-VS/3
Nominal voltage	U_n	230 V AC	230 V AC
Maximum operating voltage	U_c	260 V AC	260 V AC
Nominal load current for "V" connection	I_L	125 A	125 A
Lightning impulse current (10/350 µs)	I_{imp}	25 kA	25 kA
Voltage protection level	U_p	1,5 kV	1,5 kV
Short-circuit current rating	I_{SCCR}	50 kA	50 kA
Maximum overcurrent protection		250 A gL/gG	250 A gL/gG
Maximum overcurrent protection for "V" connection		125 A gL/gG	125 A gL/gG
Cross-section of connected conductors solid		2,5 / 50 mm^2	2,5 / 50 mm^2
Cross-section of connected conductors stranded		2,5 / 35 mm^2	2,5 / 35 mm^2
Fault indication		red indication field	red indication field
Remote indication		no	potential-free change-over contact
Remote indication contacts			250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors			1,5 mm^2
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T1	EN 61643-11:2012, IEC 61643-11:2011, T1
Ordering number		8595090553007	8595090553014

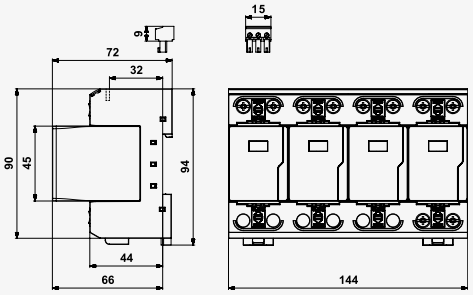
Spare module	FLP-25-T1-V/0	FLP-25-T1-V/0
Ordering number	8595090554530	8595090554530

FLP-25-T1-V(S)/4

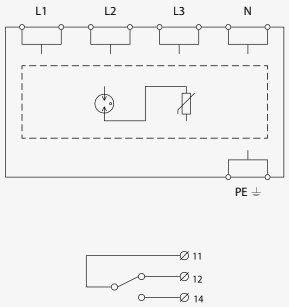
SPD type 1 - Lightning Current Arrester
pluggable module, visual fault signaling, blocking module

- four-pole high performance lightning current arrester
- installation at the boundary of zones LPZ 0 and LPZ 1 or higher
- protection against impact of direct or indirect lightning strike
- wide range of applications - houses, office and industrial buildings, resp. to sub-distribution boards in large buildings
- remote status signaling (S)

Dimensions



Basic circuit diagram



Parameter / Type		FLP-25-T1-V/4	FLP-25-T1-VS/4
Nominal voltage	U_n	230 V AC	230 V AC
Maximum operating voltage	U_c	260 V AC	260 V AC
Nominal load current for "V" connection	I_L	125 A	125 A
Lightning impulse current (10/350 µs)	I_{imp}	25 kA	25 kA
Voltage protection level	U_p	1,5 kV	1,5 kV
Short-circuit current rating	I_{SCCR}	50 kA	50 kA
Maximum overcurrent protection		250 A gL/gG	250 A gL/gG
Maximum overcurrent protection for "V" connection		125 A gL/gG	125 A gL/gG
Response time	t_a	100 ns	100 ns
Cross-section of connected conductors solid		2,5 / 50 mm²	2,5 / 50 mm²
Cross-section of connected conductors stranded		2,5 / 35 mm²	2,5 / 35 mm²
Fault indication		red indication field	red indication field
Remote indication			potential-free change-over contact
Remote indication contacts			250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors			1,5 mm²
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T1	EN 61643-11:2012, IEC 61643-11:2011, T1
Ordering number		8595090553021	8595090553038

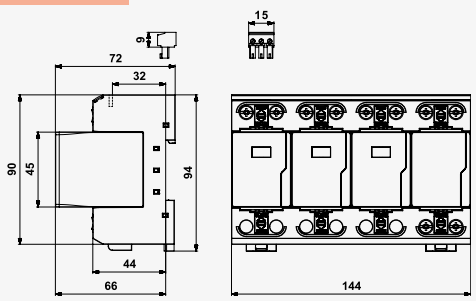
Spare module	FLP-25-T1-V/0	FLP-25-T1-V/0
Ordering number	8595090554530	8595090554530

FLP-25-T1-V(S)/3+1

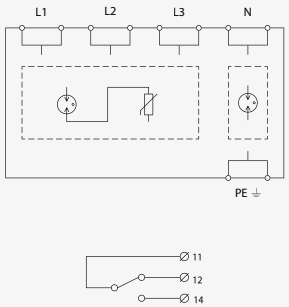
SPD type 1 - Lightning Current Arrester
pluggable module, visual fault signaling, blocking module

- combination of three -pole high performance lightning current arrester and encapsulated efficiency spark gap, connected in the 3+1 mode
- installation at the boundary of zones LPZ 0 and LPZ 1 or higher
- protection against impact of direct or indirect lightning strike
- wide range of applications - houses, office and industrial buildings, resp. to sub-distribution boards in large buildings
- remote status signaling (S)

Dimensions



Basic circuit diagram



Parameter / Type		FLP-25-T1-V/3+1	FLP-25-T1-VS/3+1
Nominal voltage	U_n	230 V AC	230 V AC
Maximum operating voltage L-N	U_c	260 V AC	260 V AC
Maximum operating voltage N-PE	U_c	255 V AC	255 V AC
Nominal load current for "V" connection	I_L	125 A	125 A
Lightning impulse current (10/350 µs) L-N	I_{imp}	25 kA	25 kA
Lightning impulse current (10/350 µs) N-PE	I_{imp}	100 kA	100 kA
Voltage protection level mode L-N	U_p	1,5 kV	1,5 kV
Voltage protection level mode N-PE	U_p	1,5 kV	1,5 kV
Voltage protection level mode L-PE	U_p	2,2 kV	2,2 kV
Ability to independently switch off the following current N-PE	I_{fi}	0,1 kA	0,1 kA
Short-circuit current rating	I_{SCCR}	50 kA	50 kA
Maximum overcurrent protection		250 A gL/gG	250 A gL/gG
Maximum overcurrent protection for "V" connection		125 A gL/gG	125 A gL/gG
Response time L-N	t_a	100 ns	100 ns
Response time N-PE	t_a	100 ns	100 ns
Cross-section of connected conductors solid		2,5 / 50 mm²	2,5 / 50 mm²
Cross-section of connected conductors stranded		2,5 / 35 mm²	2,5 / 35 mm²
Fault indication L-N		red indication field	red indication field
Fault indication N-PE		no	no
Remote indication			potential-free change-over contact
Remote indication contacts			250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors			1,5 mm²
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T1	EN 61643-11:2012, IEC 61643-11:2011, T1
Ordering number		8595090553045	8595090553052

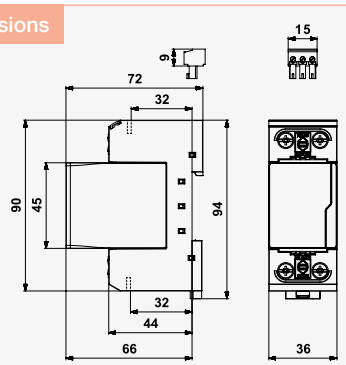
Spare module	FLP-25-T1-V/0	FLP-100-T1-V/0	FLP-25-T1-V/0	FLP-100-T1-V/0
Ordering number	8595090554530	8595090554547	8595090554530	8595090554547

FLP-A...N VS/NPE

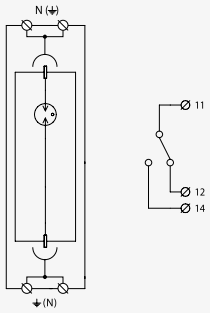
SPD type 1 - Lightning Current Arrester, Spark Gap for N-PE
N-PE module, pluggable module

- installation at the boundary of zones LPZ 0 and LPZ 1
- protection against impact of direct or indirect lightning strikes, for connection Type 1 SPD in 1+1 mode
- remote status signaling

Dimensions



Basic circuit diagram



Parameter / Type		FLP-A50N VS/NPE	FLP-A100N VS/NPE
Maximum operating voltage	U_c	255 V AC	255 V AC
Nominal load current for "V" connection	I_L	125 A	125 A
Lightning impulse current (10/350 µs)	I_{imp}	50 kA	100 kA
Nominal discharge current (8/20 µs)	I_n	50 kA	100 kA
Maximum discharge current (8/20 µs)	I_{max}	100 kA	100 kA
Voltage protection level	U_p	1,5 kV	1,5 kV
Ability to independently switch off the following current	I_{fi}	0,1 kA	0,1 kA
Response time	t_a	100 ns	100 ns
Cross-section of connected conductors solid		2,5 / 50 mm²	2,5 / 50 mm²
Cross-section of connected conductors stranded		2,5 / 35 mm²	2,5 / 35 mm²
Fault indication		remote signalling of N-PE module shows the presence of the replaceable module	remote signalling of N-PE module shows the presence of the replaceable module
Remote indication		potential-free change-over contact	potential-free change-over contact
Remote indication contacts		250 V / 0,5 A AC, 250 V / 0,1 A DC	250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors		1,5 mm²	1,5 mm²
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T1	EN 61643-11:2012, IEC 61643-11:2011, T1
Ordering number		8595090535737	8595090535744

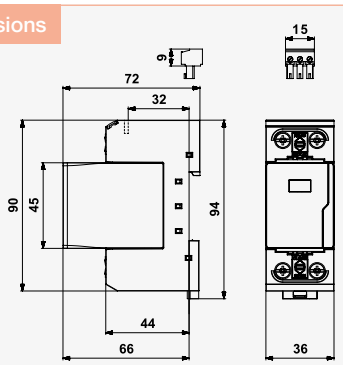
Spare module	FLP-A50N V/0	FLP-A100N V/0
Ordering number	8595090535379	8595090535362

FLP-B+C MAXI V(S)/1

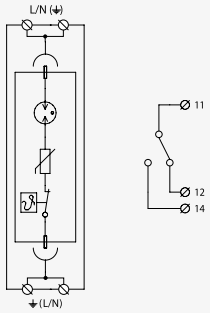
SPD type 1 and type 2- Lightning Current Arrester and Surge Arrester
pluggable module, visual fault signaling, blocking module

- high performance lightning current arrester
- installation at the boundary of zones LPZ 0 and LPZ 1 or higher
- protection against impact of direct or indirect lightning strike
- wide range of applications - houses, office or industrial buildings, resp. to sub-distribution boards in large buildings
- remote status signaling (S)

Dimensions



Basic circuit diagram



Parameter / Type		FLP-B+C MAXI V/1	FLP-B+C MAXI VS/1
Nominal voltage	U_n	230 V AC	230 V AC
Maximum operating voltage	U_c	260 V AC	260 V AC
Nominal load current for "V" connection	I_L	125 A	125 A
Lightning impulse current (10/350 µs)	I_{imp}	25 kA	25 kA
Nominal discharge current (8/20 µs)	I_n	30 kA	30 kA
Maximum discharge current (8/20 µs)	I_{max}	60 kA	60 kA
Voltage protection level	U_p	1,5 kV	1,5 kV
Short-circuit current rating	I_{SCCR}	50 kA	50 kA
Maximum overcurrent protection		250 A gL/gG	250 A gL/gG
Maximum overcurrent protection for "V" connection		125 A gL/gG	125 A gL/gG
Response time	t_a	100 ns	100 ns
Cross-section of connected conductors solid		2,5 / 50 mm²	2,5 / 50 mm²
Cross-section of connected conductors stranded		2,5 / 35 mm²	2,5 / 35 mm²
Fault indication		red indication field	red indication field
Remote indication			potential-free change-over contact
Remote indication contacts			250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors			1,5 mm²
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2012, T1,T2	EN 61643-11:2012, IEC 61643-11:2012, T1,T2
Ordering number		8595090550914	8595090535331

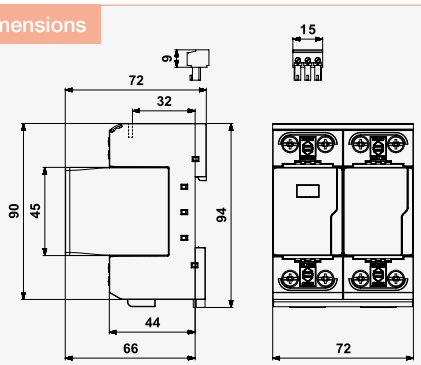
Spare module	FLP-B+C MAXI V/0	FLP-B+C MAXI V/0
Ordering number	8595090535355	8595090535355

FLP-B+C MAXI V(S)/1+1

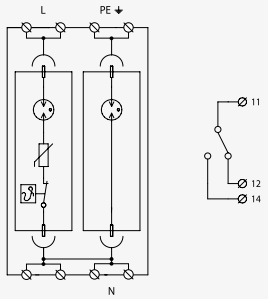
SPD type 1 and type 2- Lightning Current Arrester and Surge Arrester
pluggable module, visual fault signaling, blocking module

- high performance lightning current arrester
- installation at the boundary of zones LPZ 0 and LPZ 1 or higher
- protection against impact of direct or indirect lightning strike
- wide range of applications - houses, office or industrial buildings, resp. to sub-distribution boards in large buildings
- remote status signaling (S)

Dimensions



Basic circuit diagram



Parameter / Type		FLP-B+C MAXI V/1+1	FLP-B+C MAXI VS/1+1
Nominal voltage	U_n	230 V AC	230 V AC
Maximum operating voltage L-N	U_c	260 V AC	260 V AC
Maximum operating voltage N-PE	U_c	255 V AC	255 V AC
Nominal load current for "V" connection	I_L	125 A	125 A
Lightning impulse current (10/350 µs) L-N	I_{imp}	25 kA	25 kA
Lightning impulse current (10/350 µs) N-PE	I_{imp}	50 kA	50 kA
Nominal discharge current (8/20 µs) L-N	I_n	30 kA	30 kA
Nominal discharge current (8/20 µs) N-PE	I_n	50 kA	50 kA
Maximum discharge current (8/20 µs) L-N	I_{max}	60 kA	60 kA
Maximum discharge current (8/20 µs) N-PE	I_{max}	100 kA	100 kA
Voltage protection level mode L-N	U_p	1,5 kV	1,5 kV
Voltage protection level mode N-PE	U_p	1,5 kV	1,5 kV
Voltage protection level mode L-PE	U_p	2,2 kV	2,2 kV
Short-circuit current rating	I_{SCCR}	50 kA	50 kA
Maximum overcurrent protection		250 A gL/gG	250 A gL/gG
Maximum overcurrent protection for "V" connection		125 A gL/gG	125 A gL/gG
Response time L-N	t_a	100 ns	100 ns
Response time N-PE	t_a	100 ns	100 ns
Cross-section of connected conductors solid		2,5 / 50 mm²	2,5 / 50 mm²
Cross-section of connected conductors stranded		2,5 / 35 mm²	2,5 / 35 mm²
Fault indication L-N		red indication field	red indication field
Fault indication N-PE		no	no
Remote indication			potential-free change-over contact
Remote indication contacts			250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors			1,5 mm²
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T1,T2	EN 61643-11:2012, IEC 61643-11:2011, T1,T2
Ordering number		8595090550952	8595090537830

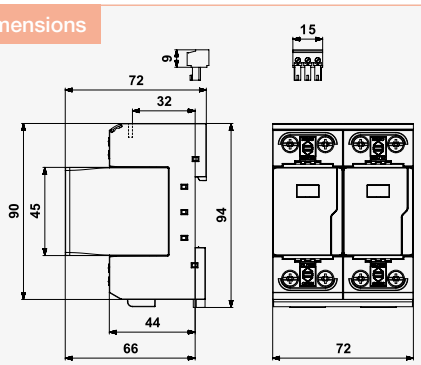
Spare module	FLP-B+C MAXI V/0	FLP-A50N V/0	FLP-B+C MAXI V/0	FLP-A50N V/0
Ordering number	8595090535355	8595090535379	8595090535355	8595090535379

FLP-B+C MAXI V(S)/2

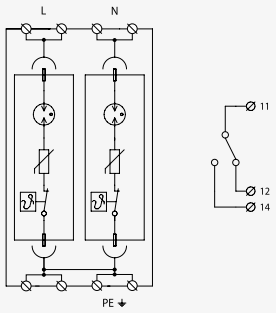
SPD type 1 and type 2- Lightning Current Arrester and Surge Arrester
pluggable module, visual fault signaling, blocking module

- high performance lightning current arrester
- installation at the boundary of zones LPZ 0 and LPZ 1 or higher
- protection against impact of direct or indirect lightning strike
- wide range of applications - houses, office or industrial buildings, resp. to sub-distribution boards in large buildings
- remote status signaling (S)

Dimensions



Basic circuit diagram



Parameter / Type		FLP-B+C MAXI V/2	FLP-B+C MAXI VS/2
Nominal voltage	U_n	230 V AC	230 V AC
Maximum operating voltage	U_c	260 V AC	260 V AC
Nominal load current for "V" connection	I_L	125 A	125 A
Lightning impulse current (10/350 µs)	I_{imp}	25 kA	25 kA
Nominal discharge current (8/20 µs)	I_n	30 kA	30 kA
Maximum discharge current (8/20 µs)	I_{max}	60 kA	60 kA
Voltage protection level	U_p	1,5 kV	1,5 kV
Short-circuit current rating	I_{SCCR}	50 kA	50 kA
Maximum overcurrent protection		250 A gL/gG	250 A gL/gG
Maximum overcurrent protection for "V" connection		125 A gL/gG	125 A gL/gG
Response time	t_a	100 ns	100 ns
Cross-section of connected conductors solid		2,5 / 50 mm²	2,5 / 50 mm²
Cross-section of connected conductors stranded		2,5 / 35 mm²	2,5 / 35 mm²
Fault indication		red indication field	red indication field
Remote indication			potential-free change-over contact
Remote indication contacts			250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors			1,5 mm²
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T1,T2	EN 61643-11:2012, IEC 61643-11:2011, T1,T2
Ordering number		8595090550921	8595090537847

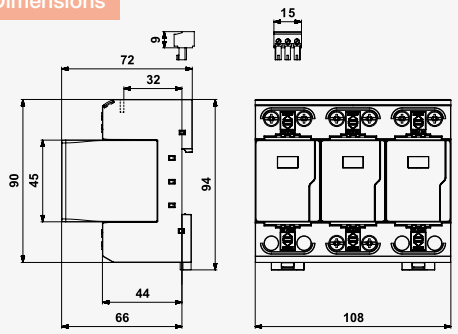
Spare module	FLP-B+C MAXI V/0	FLP-B+C MAXI V/0
Ordering number	8595090535355	8595090535355

FLP-B+C MAXI V(S)/3

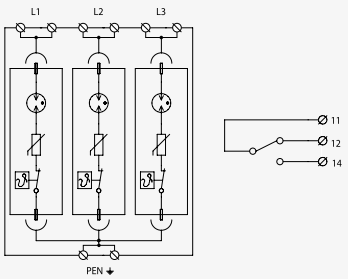
SPD type 1 and type 2- Lightning Current Arrester and Surge Arrester
pluggable module, visual fault signaling, blocking module

- three-pole high performance lightning current arrester
- installation at the boundary of zones LPZ 0 and LPZ 1 or higher
- protection against impact of direct or indirect lightning strike
- wide range of applications - houses, office or industrial buildings, resp. to sub-distribution boards in large buildings
- remote status signaling (S)

Dimensions



Basic circuit diagram



Parameter / Type		FLP-B+C MAXI V/3	FLP-B+C MAXI VS/3
Nominal voltage	U_n	230 V AC	230 V AC
Maximum operating voltage	U_c	260 V AC	260 V AC
Nominal load current for "V" connection	I_L	125 A	125 A
Lightning impulse current (10/350 µs)	I_{imp}	25 kA	25 kA
Nominal discharge current (8/20 µs)	I_n	30 kA	30 kA
Maximum discharge current (8/20 µs)	I_{max}	60 kA	60 kA
Voltage protection level	U_p	1,5 kV	1,5 kV
Short-circuit current rating	I_{SCCR}	50 kA	50 kA
Maximum overcurrent protection		250 A gL/gG	250 A gL/gG
Maximum overcurrent protection for "V" connection		125 A gL/gG	125 A gL/gG
Response time	t_a	100 ns	100 ns
Cross-section of connected conductors solid		2,5 / 50 mm²	2,5 / 50 mm²
Cross-section of connected conductors stranded		2,5 / 35 mm²	2,5 / 35 mm²
Fault indication		red indication field	red indication field
Remote indication			potential-free change-over contact
Remote indication contacts			250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors			1,5 mm²
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2012, T1,T2	EN 61643-11:2012, IEC 61643-11:2011, T1,T2
Ordering number		8595090550938	8595090535706

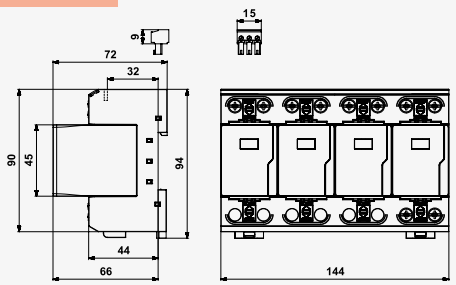
Spare module	FLP-B+C MAXI V/0	FLP-B+C MAXI V/0
Ordering number	8595090535355	8595090535355

FLP-B+C MAXI V(S)/4

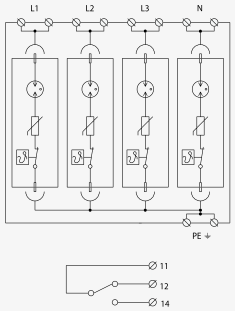
SPD type 1 and type 2- Lightning Current Arrester and Surge Arrester
pluggable module, visual fault signaling, blocking module

- four-pole high performance lightning current arrester
- installation at the boundary of zones LPZ 0 and LPZ 1 or higher
- protection against impact of direct or indirect lightning strike
- wide range of applications - houses, office or industrial buildings, resp. to sub-distribution boards in large buildings
- remote status singaling (S)

Dimensions



Basic circuit diagram



LV power systems up to 1 000 V

Parameter / Type		FLP-B+C MAXI V/4	FLP-B+C MAXI VS/4
Nominal voltage	U_n	230 V AC	230 V AC
Maximum operating voltage	U_c	260 V AC	260 V AC
Nominal load current for "V" connection	I_L	125 A	125 A
Lightning impulse current (10/350 µs)	I_{imp}	25 kA	25 kA
Nominal discharge current (8/20 µs)	I_n	30 kA	30 kA
Maximum discharge current (8/20 µs)	I_{max}	60 kA	60 kA
Voltage protection level	U_p	1,5 kV	1,5 kV
Short-circuit current rating	I_{SCCR}	50 kA	50 kA
Maximum overcurrent protection		250 A gL/gG	250 A gL/gG
Maximum overcurrent protection for "V" connection		125 A gL/gG	125 A gL/gG
Response time	t_a	100 ns	100 ns
Cross-section of connected conductors solid		2,5 / 50 mm²	2,5 / 50 mm²
Cross-section of connected conductors stranded		2,5 / 35 mm²	2,5 / 35 mm²
Fault indication		red indication field	red indication field
Remote indication			potential-free change-over contact
Remote indication contacts			250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors			1,5 mm²
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2012, T1,T2	EN 61643-11:2012, IEC 61643-11:2011, T1,T2
Ordering number		8595090550945	8595090535713

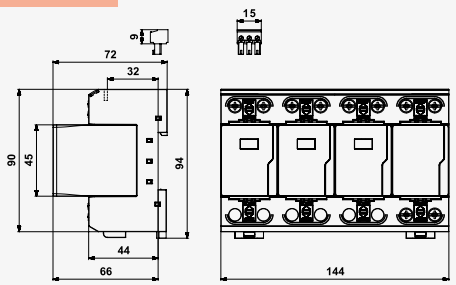
Spare module	FLP-B+C MAXI V/0	FLP-B+C MAXI V/0
Ordering number	8595090535355	8595090535355

FLP-B+C MAXI V(S)/3+1

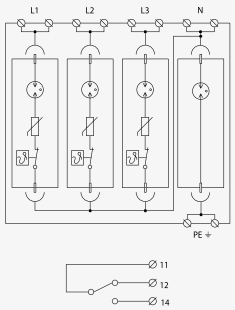
SPD type 1 and type 2- Lightning Current Arrester and Surge Arrester
pluggable module, visual fault signaling, blocking module

- combination of three -pole high performance lightning current arrester and encapsulated efficiency spark gap, connected in the 3+1 mode
- installation at the boundary of zones LPZ 0 and LPZ 1 or higher
- protection against impact of direct or indirect lightning strike
- wide range of applications - houses, office and industrial buildings, resp. to sub-distribution boards in large buildings
- remote status signaling (S)

Dimensions



Basic circuit diagram



Parameter / Type		FLP-B+C MAXI V/3+1	FLP-B+C MAXI VS/3+1
Nominal voltage	U_n	230 V AC	230 V AC
Maximum operating voltage L-N	U_c	260 V AC	260 V AC
Maximum operating voltage N-PE	U_c	255 V AC	255 V AC
Nominal load current for "V" connection	I_L	125 A	125 A
Lightning impulse current (10/350 µs) L-N	I_{imp}	25 kA	25 kA
Lightning impulse current (10/350 µs) N-PE	I_{imp}	100 kA	100 kA
Nominal discharge current (8/20 µs) L-N	I_n	30 kA	30 kA
Nominal discharge current (8/20 µs) N-PE	I_n	100 kA	100 kA
Maximum discharge current (8/20 µs) L-N	I_{max}	60 kA	60 kA
Maximum discharge current (8/20 µs) N-PE	I_{max}	100 kA	100 kA
Voltage protection level mode L-N	U_p	1,5 kV	1,5 kV
Voltage protection level mode N-PE	U_p	1,5 kV	1,5 kV
Voltage protection level mode L-PE	U_p	2,2 kV	2,2 kV
Short-circuit current rating	I_{SCCR}	50 kA	50 kA
Maximum overcurrent protection		250 A gL/gG	250 A gL/gG
Maximum overcurrent protection for "V" connection		125 A gL/gG	125 A gL/gG
Response time L-N	t_a	100 ns	100 ns
Response time N-PE	t_a	100 ns	100 ns
Cross-section of connected conductors solid		2,5 / 50 mm²	2,5 / 50 mm²
Cross-section of connected conductors stranded		2,5 / 35 mm²	2,5 / 35 mm²
Fault indication L-N		red indication field	red indication field
Fault indication N-PE		no	no
Remote indication			potential-free change-over contact
Remote indication contacts			250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors			1,5 mm²
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T1,T2	EN 61643-11:2012, IEC 61643-11:2011, T1,T2
Ordering number		8595090550969	8595090535720

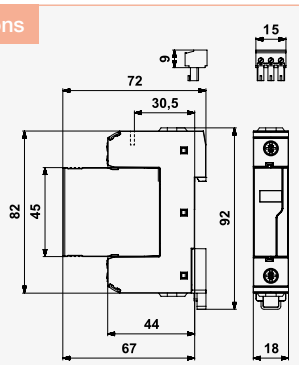
Spare module	FLP-B+C MAXI V/0	FLP-A100N V/0	FLP-B+C MAXI V/0	FLP-A100N V/0
Ordering number	8595090535355	8595090535362	8595090535355	8595090535362

FLP-12,5 V/1 (S)

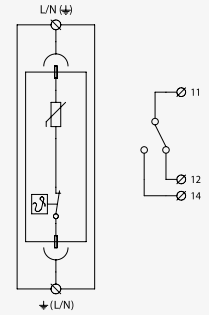
SPD type 1 and type 2- Lightning Current Arrester and Surge Arrester
pluggable module, visual fault signaling

- varistor lightning current arrester, installation at the boundary of zones LPZ 0 and LPZ 1 or higher
- protection against impact of partial lightning currents, induced surge during a lightning strike or switching surges
- for objects in LPL III and IV
- remote status signaling (S)

Dimensions



Basic circuit diagram



Parameter / Type		FLP-12,5 V/1	FLP-12,5 V/1 S
Nominal voltage	U_n	230 V AC	230 V AC
Maximum operating voltage	U_c	275 V AC / 350 V DC	275 V AC / 350 V DC
Lightning impulse current (10/350 µs)	I_{imp}	12,5 kA	12,5 kA
Nominal discharge current (8/20 µs)	I_n	30 kA	30 kA
Maximum discharge current (8/20 µs)	I_{max}	60 kA	60 kA
Voltage protection level at 5 kA	U_p	0,9 kV	0,9 kV
Voltage protection level	U_p	1,2 kV	1,2 kV
Short-circuit current rating	I_{SCCR}	50 kA	50 kA
Maximum overcurrent protection		160 A gL/gG	160 A gL/gG
Response time	t_a	25 ns	25 ns
Cross-section of connected conductors solid		1 / 35 mm²	1 / 35 mm²
Cross-section of connected conductors stranded		1 / 25 mm²	1 / 25 mm²
Fault indication		red indication field	red indication field
Remote indication			potential-free change-over contact
Remote indication contacts			250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors			1,5 mm²
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T1,T2	EN 61643-11:2012, IEC 61643-11:2011, T1,T2
Ordering number		8595090534211	8595090534228

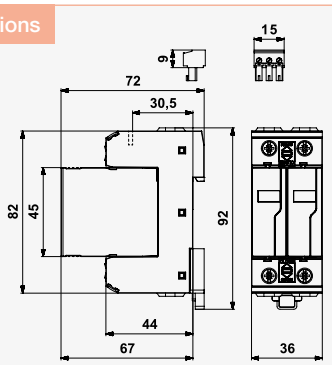
Spare module	FLP-12,5 V/0	FLP-12,5 V/0
Ordering number	8595090534310	8595090534310

FLP-12,5 V/1(S)+1

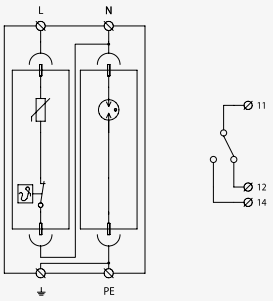
SPD type 1 and type 2- Lightning Current Arrester and Surge Arrester
pluggable module, visual fault signaling, blocking module

- combination of varistor lightning current arrester and encapsulated efficiency spark gap, connected in the 1+1 mode
- installation at the boundary of zones LPZ 0 and LPZ 1 or higher
- protection against impact of partial lightning currents, induced surge during a lightning strike or switching surges
- for objects in LPL III and IV
- remote status signaling (S)

Dimensions



Basic circuit diagram



Parameter / Type		FLP-12,5 V/1+1	FLP-12,5 V/1S+1
Nominal voltage	U_n	230 V AC	230 V AC
Maximum operating voltage L-N	U_c	275 V AC	275 V AC
Maximum operating voltage N-PE	U_c	255 V AC	255 V AC
Lightning impulse current (10/350 µs) L-N	I_{imp}	12,5 kA	12,5 kA
Lightning impulse current (10/350 µs) N-PE	I_{imp}	25 kA	25 kA
Nominal discharge current (8/20 µs) L-N	I_n	30 kA	30 kA
Nominal discharge current (8/20 µs) N-PE	I_n	30 kA	30 kA
Maximum discharge current (8/20 µs) L-N	I_{max}	60 kA	60 kA
Maximum discharge current (8/20 µs) N-PE	I_{max}	60 kA	60 kA
Voltage protection level at 5 kA L-N	U_p	0,9 kV	0,9 kV
Voltage protection level mode L-N	U_p	1,2 kV	1,2 kV
Voltage protection level mode N-PE	U_p	1,5 kV	1,5 kV
Voltage protection level mode L-PE	U_p	1,5 kV	1,5 kV
Short-circuit current rating	I_{SCCR}	50 kA	50 kA
Maximum overcurrent protection		160 A gL/gG	160 A gL/gG
Response time L-N	t_a	25 ns	25 ns
Response time N-PE	t_a	100 ns	100 ns
Cross-section of connected conductors solid		1 / 35 mm²	1 / 35 mm²
Cross-section of connected conductors stranded		1 / 25 mm²	1 / 25 mm²
Fault indication L-N		red indication field	red indication field
Remote indication			potential-free change-over contact
Remote indication contacts			250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors			1,5 mm²
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T1,T2	EN 61643-11:2012, IEC 61643-11:2011, T1,T2
Ordering number		8595090534235	8595090534242

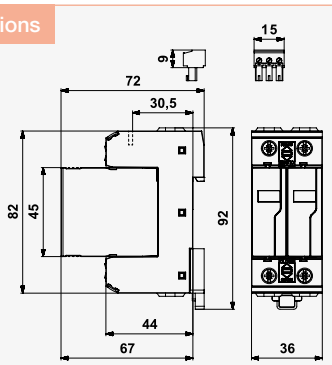
Spare module	FLP-12,5 V/0	FLP-NPE 25 V/0	FLP-12,5 V/0	FLP-NPE 25 V/0
Ordering number	8595090534310	8595090534327	8595090534310	8595090534327

FLP-12,5 V/2 (S)

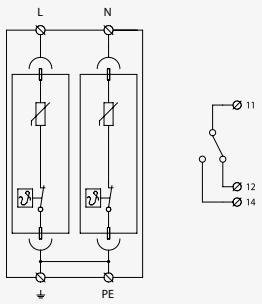
SPD type 1 and type 2- Lightning Current Arrester and Surge Arrester
pluggable module, visual fault signaling, blocking module

- two-pole varistor lightning current arrester, installation at the boundary of zones LPZ 0 and LPZ 1 or higher
- protection against impact of partial lightning currents, induced surge during a lightning strike or switching surges
- for objects in LPL III and IV
- remote status signaling (S)

Dimensions



Basic circuit diagram



Parameter / Type		FLP-12,5 V/2	FLP-12,5 V/2 S
Nominal voltage	U_n	230 V AC	230 V AC
Maximum operating voltage	U_c	275 V AC / 350 V DC	275 V AC / 350 V DC
Lightning impulse current (10/350 µs)	I_{imp}	12,5 kA	12,5 kA
Nominal discharge current (8/20 µs)	I_n	30 kA	30 kA
Maximum discharge current (8/20 µs)	I_{max}	60 kA	60 kA
Voltage protection level at 5 kA	U_p	0,9 kV	0,9 kV
Voltage protection level	U_p	1,2 kV	1,2 kV
Short-circuit current rating	I_{SCCR}	50 kA	50 kA
Maximum overcurrent protection		160 A gL/gG	160 A gL/gG
Response time	t_a	25 ns	25 ns
Cross-section of connected conductors solid		1 / 35 mm²	1 / 35 mm²
Cross-section of connected conductors stranded		1 / 25 mm²	1 / 25 mm²
Fault indication		red indication field	red indication field
Remote indication			potential-free change-over contact
Remote indication contacts			250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors			1,5 mm²
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T1,T2	EN 61643-11:2012, IEC 61643-11:2011, T1,T2
Ordering number		8595090538097	8595090551829

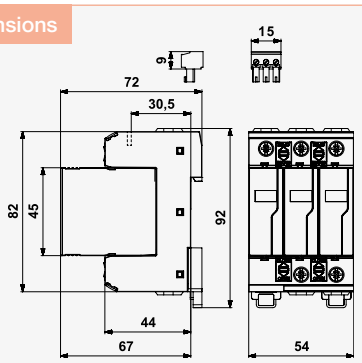
Spare module	FLP-12,5 V/0	FLP-12,5 V/0
Ordering number	8595090534310	8595090534310

FLP-12,5 V/3 (S)

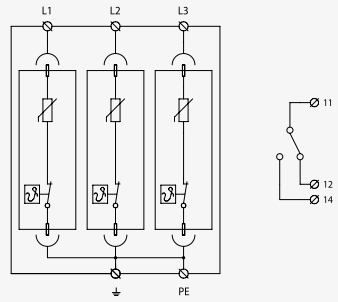
SPD type 1 and type 2- Lightning Current Arrester and Surge Arrester
pluggable module, visual fault signaling, blocking module

- three-pole varistor lightning current arrester, installation at the boundary of zones LPZ 0 and LPZ 1 or higher
- protection against impact of partial lightning currents, induced surge during a lightning strike or switching surges
- for objects in LPL III and IV
- remote status signaling (S)

Dimensions



Basic circuit diagram



Parameter / Type		FLP-12,5 V/3	FLP-12,5 V/3 S
Nominal voltage	U_n	230 V AC	230 V AC
Maximum operating voltage	U_c	275 V AC / 350 V DC	275 V AC / 350 V DC
Lightning impulse current (10/350 µs)	I_{imp}	12,5 kA	12,5 kA
Nominal discharge current (8/20 µs)	I_n	30 kA	30 kA
Maximum discharge current (8/20 µs)	I_{max}	60 kA	60 kA
Voltage protection level at 5 kA	U_p	0,9 kV	0,9 kV
Voltage protection level	U_p	1,2 kV	1,2 kV
Short-circuit current rating	I_{SCCR}	50 kA	50 kA
Maximum overcurrent protection		160 A gL/gG	160 A gL/gG
Response time	t_a	25 ns	25 ns
Cross-section of connected conductors solid		1 / 35 mm²	1 / 35 mm²
Cross-section of connected conductors stranded		1 / 25 mm²	1 / 25 mm²
Fault indication		red indication field	red indication field
Remote indication			potential-free change-over contact
Remote indication contacts			250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors			1,5 mm²
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T1,T2	EN 61643-11:2012, IEC 61643-11:2011, T1,T2
Ordering number		8595090534259	8595090534266

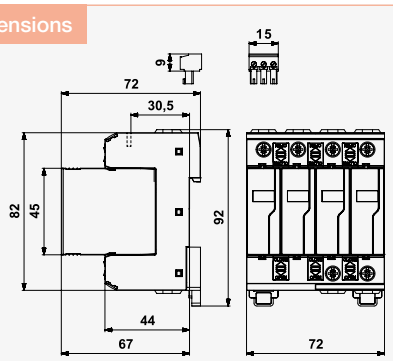
Spare module	FLP-12,5 V/0	FLP-12,5 V/0
Ordering number	8595090534310	8595090534310

FLP-12,5 V/4 (S)

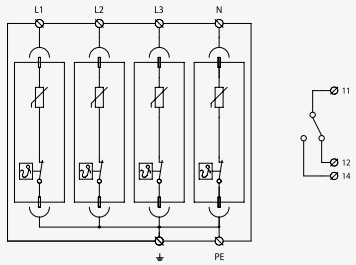
SPD type 1 and type 2- Lightning Current Arrester and Surge Arrester
pluggable module, visual fault signaling, blocking module

- four-pole varistor lightning current arrester, installation at the boundary of zones LPZ 0 and LPZ 1 or higher
- protection against impact of partial lightning currents, induced surge during a lightning strike or switching surges
- for objects in LPL III and IV
- remote status signaling (S)

Dimensions



Basic circuit diagram



Parameter / Type		FLP-12,5 V/4	FLP-12,5 V/4 S
Nominal voltage	U_n	230 V AC	230 V AC
Maximum operating voltage	U_c	275 V AC / 350 V DC	275 V AC / 350 V DC
Lightning impulse current (10/350 µs)	I_{imp}	12,5 kA	12,5 kA
Nominal discharge current (8/20 µs)	I_n	30 kA	30 kA
Maximum discharge current (8/20 µs)	I_{max}	60 kA	60 kA
Voltage protection level at 5 kA	U_p	0,9 kV	0,9 kV
Voltage protection level	U_p	1,2 kV	1,2 kV
Short-circuit current rating	I_{SCCR}	50 kA	50 kA
Maximum overcurrent protection		160 A gL/gG	160 A gL/gG
Response time	t_a	25 ns	25 ns
Cross-section of connected conductors solid		1 / 35 mm²	1 / 35 mm²
Cross-section of connected conductors stranded		1 / 25 mm²	1 / 25 mm²
Fault indication		red indication field	red indication field
Remote indication			potential-free change-over contact
Remote indication contacts			250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors			1,5 mm²
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T1,T2	EN 61643-11:2012, IEC 61643-11:2011, T1,T2
Ordering number		8595090534297	8595090534303

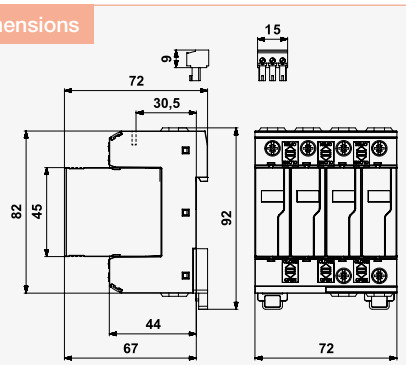
Spare module	FLP-12,5 V/0	FLP-12,5 V/0
Ordering number	8595090534310	8595090534310

FLP-12,5 V/3(S)+1

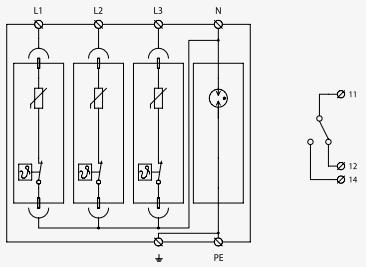
SPD type 1 and type 2- Lightning Current Arrester and Surge Arrester
pluggable module, visual fault signaling, blocking module

- combination of varistor lightning current arrester and encapsulated efficiency spark gap, connected in the 3+1 mode
- installation at the boundary of zones LPZ 0 and LPZ 1 or higher
- protection against impact of partial lightning currents, induced surge during a lightning strike or switching surges
- for objects in LPL III and IV
- remote status signaling (S)

Dimensions



Basic circuit diagram



Parameter / Type		FLP-12,5 V/3+1	FLP-12,5 V/3S+1
Nominal voltage	U_n	230 V AC	230 V AC
Maximum operating voltage L-N	U_c	275 V AC	275 V AC
Maximum operating voltage N-PE	U_c	255 V AC	255 V AC
Lightning impulse current (10/350 µs) L-N	I_{imp}	12,5 kA	12,5 kA
Lightning impulse current (10/350 µs) N-PE	I_{imp}	50 kA	50 kA
Nominal discharge current (8/20 µs) L-N	I_n	30 kA	30 kA
Nominal discharge current (8/20 µs) N-PE	I_n	50 kA	50 kA
Maximum discharge current (8/20 µs) L-N	I_{max}	60 kA	60 kA
Maximum discharge current (8/20 µs) N-PE	I_{max}	100 kA	100 kA
Voltage protection level at 5 kA L-N	U_p	0,9 kV	0,9 kV
Voltage protection level mode L-N	U_p	1,2 kV	1,2 kV
Voltage protection level mode N-PE	U_p	1,5 kV	1,5 kV
Voltage protection level mode L-PE	U_p	1,5 kV	1,5 kV
Short-circuit current rating	I_{SCCR}	50 kA	50 kA
Maximum overcurrent protection		160 A gL/gG	160 A gL/gG
Response time L-N	t_a	25 ns	25 ns
Response time N-PE	t_a	100 ns	100 ns
Cross-section of connected conductors solid		1 / 35 mm²	1 / 35 mm²
Cross-section of connected conductors stranded		1 / 25 mm²	1 / 25 mm²
Fault indication L-N		red indication field	red indication field
Remote indication			potential-free change-over contact
Remote indication contacts			250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors			1,5 mm²
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T1,T2	EN 61643-11:2012, IEC 61643-11:2011, T1,T2
Ordering number		8595090534273	8595090534280

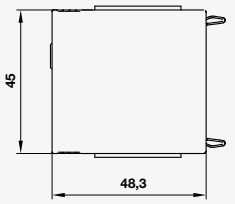
Spare module	FLP-12,5 V/0	FLP-12,5 V/0
Ordering number	8595090534310	8595090534310

FLP-...

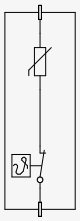
Spare pluggable modules for lighting current arresters Type 1, Type 2 and Type 1+2

- SALTEK SPD with a “V” in the type number are made with pluggable modules.
- this enables simple withdrawal of the module from its base to test the systems insulation, without the need to disconnect the device from the circuit
- the new modules enable simple up-down orientation of the SPD, according to the incoming cables and also it serve for fast and easy replacement in case of failuret
- the spare modules (marked “xxx V/0”) are identical to the ones used in original product
- the voltages used cannot be mixed because of the identical voltage key on the module and the corresponding base part

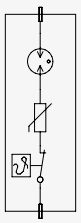
Dimensions



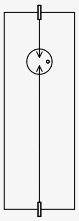
FLP-12,5 V/0
FLP-NPE V/0



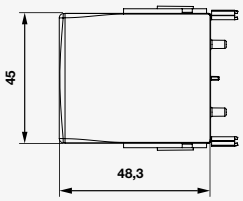
FLP-12,5 V/0



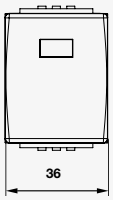
FLP-B+C MAXI V/0
FLP-25-T1-V/0



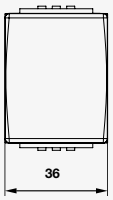
FLP-NPE V/0
FLP-A50N V/0
FLP-A100N V/0
FLP-100-T1-V/0

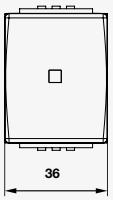


FLP-B+C MAXI V/0
FLP-25-T1-V/0



FLP-A50N V/0
FLP-A100N V/0
FLP-100-T1-V/0





FLP-SG50 V/0
FLP-SG50 VS/0

Basic circuit diagram

Type	Ordering number
FLP-12,5 V/0	8595090534310
FLP-B+C MAXI V/0	8595090535355
FLP-NPE 25 V/0	8595090534327

Type	Ordering number
FLP-A50N V/0	8595090535379
FLP-100-T1-V/0	8595090554547
FLP-A100N V/0	8595090535362

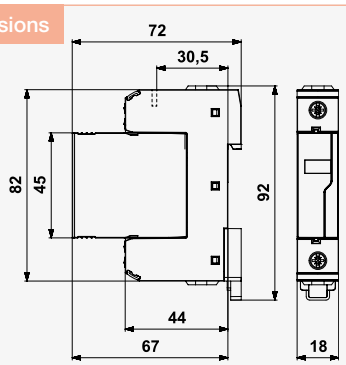
Type	Ordering number
FLP-SG50 V/0	8595090542278
FLP-SG50 VS/0	8595090541486
FLP-25-T1-V/0	8595090554530

SLP-...V/1

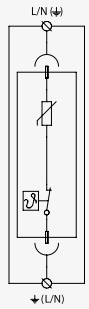
SPD type 2 - Surge Arrester
pluggable module, visual fault signaling

- varistor surge arrester
- installation at the boundary of zones LPZ 1 and LPZ 2
- especially to sub-distribution boards
- protection of the LV installations and equipments against induced surges and switching surge
- SLP-600 V/1 suitable for protection of inverters or wind power plant systems

Dimensions



Basic circuit diagram



Parameter / Type		SLP-075 V/1	SLP-150 V/1	SLP-275 V/1	SLP-385 V/1	SLP-440 V/1	SLP-600 V/1
Nominal voltage	U_n	60 V AC	120 V AC	230 V AC		400 V AC	
Maximum operating voltage of varistor							880 V AC
Maximum operating voltage	U_c	75 V AC / 100 V DC	150 V AC / 200 V DC	275 V AC / 350 V DC	385 V AC / 500 V DC	440 V AC / 585 V DC	600 V AC
Nominal discharge current (8/20 µs)	I_n	15 kA	15 kA	20 kA	20 kA	20 kA	15 kA
Maximum discharge current (8/20 µs)	I_{max}	40 kA	40 kA	40 kA	40 kA	40 kA	40 kA
Voltage protection level at 5 kA	U_p	0,3 kV	0,45 kV	0,9 kV	1,3 kV	1,5 kV	2,7 kV
Voltage protection level	U_p	0,4 kV	0,7 kV	1,35 kV	1,8 kV	1,9 kV	3,2 kV
Short-circuit current rating	I_{SCCR}	50 kA	50 kA	50 kA	50 kA	25 kA	25 kA
Maximum overcurrent protection		160 A gL/gG	160 A gL/gG	160 A gL/gG	160 A gL/gG	125 A gL/gG	100 A gL/gG
Response time	t_a	25 ns	25 ns	25 ns	25 ns	25 ns	25 ns
Cross-section of connected conductors solid		1 / 35 mm²	1 / 35 mm²	1 / 35 mm²	1 / 35 mm²	1 / 35 mm²	1 / 35 mm²
Cross-section of connected conductors stranded		1 / 25 mm²	1 / 25 mm²	1 / 25 mm²	1 / 25 mm²	1 / 25 mm²	1 / 25 mm²
Fault indication		red indication field	red indication field	red indication field	red indication field	red indication field	red indication field
Degree of protection		IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C	-40 °C … +80 °C	-40 °C … +80 °C	-40 °C … +80 °C	-40 °C … +80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T2	EN 61643-11:2012, IEC 61643-11:2011, T2	EN 61643-11:2012, IEC 61643-11:2011, T2	EN 61643-11:2012, IEC 61643-11:2011, T2	EN 61643-11:2012, IEC 61643-11:2011, T2	EN 61643-11:2012, IEC 61643-11:2011, T2
Ordering number		8595090518150	8595090551850	8595090516170	8595090519553	8595090518174	8595090533016

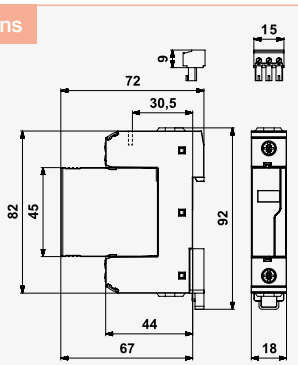
Spare module	SLP-075 V/0	SLP-150 V/0	SLP-275 V/0	SLP-385 V/0	SLP-440 V/0	SLP-600 V/0
Ordering number	8595090518112	8595090551935	8595090523680	8595090519508	8595090518136	8595090533030

SLP-...V/1 S

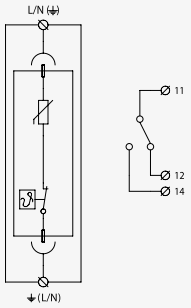
SPD type 2 - Surge Arrester
pluggable module, visual fault signaling

- varistor surge arrester
- installation at the boundary of zones LPZ 1 and LPZ 2
- especially to sub-distribution boards
- protection of the LV installations and equipments against induced surges and switching surge
- SLP-600 V/1 suitable for protection of inverters or wind power plant systems
- remote status signaling

Dimensions



Basic circuit diagram



LV power systems up to 1 000 V

Parameter / Type		SLP-075 V/1 S	SLP-150 V/1 S	SLP-275 V/1 S	SLP-385 V/1 S	SLP-440 V/1 S	SLP-600 V/1 S
Nominal voltage	U_n	60 V AC	120 V AC	230 V AC		400 V AC	
Maximum operating voltage of varistor							880 V AC
Maximum operating voltage	U_c	75 V AC / 100 V DC	150 V AC / 200 V DC	275 V AC / 350 V DC	385 V AC / 500 V DC	440 V AC / 585 V DC	600 V AC
Nominal discharge current (8/20 µs)	I_n	15 kA	15 kA	20 kA	20 kA	20 kA	15 kA
Maximum discharge current (8/20 µs)	I_{max}	40 kA	40 kA	40 kA	40 kA	40 kA	40 kA
Voltage protection level at 5 kA	U_p	0,3 kV	0,45 kV	0,9 kV	1,3 kV	1,5 kV	2,7 kV
Voltage protection level	U_p	0,4 kV	0,7 kV	1,35 kV	1,8 kV	1,9 kV	3,2 kV
Short-circuit current rating	I_{SCCR}	50 kA	50 kA	50 kA	50 kA	25 kA	25 kA
Maximum overcurrent protection		160 A gL/gG	160 A gL/gG	160 A gL/gG	160 A gL/gG	125 A gL/gG	100 A gL/gG
Response time	t_a	25 ns	25 ns	25 ns	25 ns	25 ns	25 ns
Cross-section of connected conductors solid		1 / 35 mm²	1 / 35 mm²	1 / 35 mm²	1 / 35 mm²	1 / 35 mm²	1 / 35 mm²
Cross-section of connected conductors stranded		1 / 25 mm²	1 / 25 mm²	1 / 25 mm²	1 / 25 mm²	1 / 25 mm²	1 / 25 mm²
Fault indication		red indication field	red indication field	red indication field	red indication field	red indication field	red indication field
Remote indication		potential-free change-over contact	potential-free change-over contact	potential-free change-over contact	potential-free change-over contact	potential-free change-over contact	potential-free change-over contact
Remote indication contacts		250 V / 0,5 A AC, 250 V / 0,1 A DC	250 V / 0,5 A AC, 250 V / 0,1 A DC	250 V / 0,5 A AC, 250 V / 0,1 A DC	250 V / 0,5 A AC, 250 V / 0,1 A DC	250 V / 0,5 A AC, 250 V / 0,1 A DC	250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors		1,5 mm²	1,5 mm²	1,5 mm²	1,5 mm²	1,5 mm²	1,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C	-40 °C … +80 °C	-40 °C … +80 °C	-40 °C … +80 °C	-40 °C … +80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T2	EN 61643-11:2012, IEC 61643-11:2011, T2	EN 61643-11:2012, IEC 61643-11:2011, T2	EN 61643-11:2012, IEC 61643-11:2011, T2	EN 61643-11:2012, IEC 61643-11:2011, T2	EN 61643-11:2012, IEC 61643-11:2011, T2
Ordering number		8595090518235	8595090551867	8595090516187	8595090527718	8595090518259	8595090533023

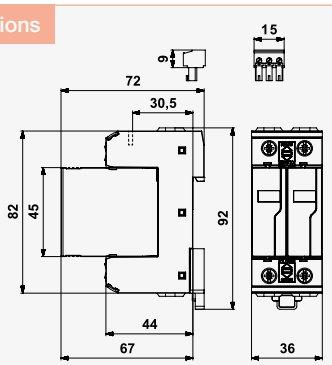
Spare module	SLP-075 V/0	SLP-150 V/0	SLP-275 V/0	SLP-385 V/0	SLP-440 V/0	SLP-600 V/0
Ordering number	8595090518112	8595090551935	8595090523680	8595090519508	8595090518136	8595090533030

SLP-275 V/1(S)+1

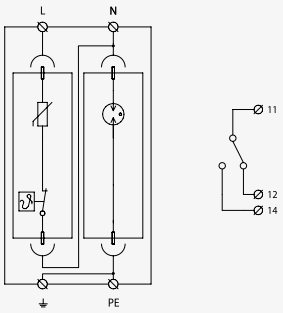
SPD type 2 - Surge Arrester
pluggable module, visual fault signaling, blocking module

- combination of varistor surge arrester and encapsulated spark gap, connected in the 1+1 mode
- installation at the boundary of zones LPZ 1 and LPZ 2
- especially to sub-distribution boards in TT and also TN-C LV systems
- protection of the LV installations and equipments against induced surges and switching surge
- remote status signaling (S)

Dimensions



Basic circuit diagram



Parameter / Type		SLP-275 V/1+1	SLP-275 V/1S+1
Nominal voltage	U_n	230 V AC	230 V AC
Maximum operating voltage L-N	U_c	275 V AC	275 V AC
Maximum operating voltage N-PE	U_c	255 V AC	255 V AC
Nominal discharge current (8/20 µs) L-N	I_n	20 kA	20 kA
Nominal discharge current (8/20 µs) N-PE	I_n	20 kA	20 kA
Maximum discharge current (8/20 µs) L-N	I_{max}	40 kA	40 kA
Maximum discharge current (8/20 µs) N-PE	I_{max}	40 kA	40 kA
Voltage protection level at 5 kA L-N	U_p	0,9 kV	0,9 kV
Voltage protection level mode L-N	U_p	1,35 kV	1,35 kV
Voltage protection level mode N-PE	U_p	1,5 kV	1,5 kV
Ability to independently switch off the following current N-PE	I_{fi}	0,1 kA	0,1 kA
Short-circuit current rating	I_{SCCR}	50 kA	50 kA
Maximum overcurrent protection		160 A gL/gG	160 A gL/gG
Response time L-N	t_a	25 ns	25 ns
Response time N-PE	t_a	100 ns	100 ns
Cross-section of connected conductors solid		1455 V	1455 V
Cross-section of connected conductors stranded		1 / 35 mm²	1 / 35 mm²
Fault indication L-N		1 / 25 mm²	1 / 25 mm²
Fault indication N-PE		red indication field	red indication field
Remote indication		no	no
Remote indication contacts			potential-free change-over contact
Cross-section of remote indication conductors			250 V / 0,5 A AC, 250 V / 0,1 A DC
Degree of protection			1,5 mm²
Range of operating temperatures		IP 20	IP 20
Mounting		-40 °C … +80 °C	-40 °C … +80 °C
According to standard		DIN rail 35 mm	DIN rail 35 mm
Ordering number		EN 61643-11:2012, IEC 61643-11:2011, T2	EN 61643-11:2012, IEC 61643-11:2011, T2
Ordering number		8595090519485	8595090524915

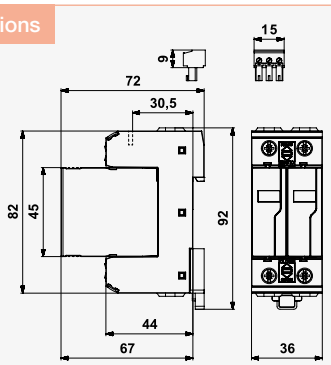
Spare module	SLP-275 V/0	SLP-NPE V/0	SLP-275 V/0	SLP-NPE V/0
Ordering number	8595090523680	8595090530039	8595090523680	8595090530039

SLP-275 V/2 (S)

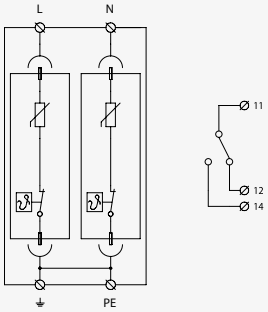
SPD type 2 - Surge Arrester
pluggable module, visual fault signaling, blocking module

- two-pole varistor surge arrester
- installation at the boundary of zones LPZ 1 and LPZ 2
- especially to sub-distribution boards in TN-S LV systems
- protection of the LV installations and equipments against induced surges and switching surge
- remote status signaling (S)

Dimensions



Basic circuit diagram



Parameter / Type		SLP-275 V/2	SLP-275 V/2 S
Nominal voltage	U_n	230 V AC	230 V AC
Maximum operating voltage	U_c	275 V AC / 350 V DC	275 V AC / 350 V DC
Nominal discharge current (8/20 µs)	I_n	20 kA	20 kA
Maximum discharge current (8/20 µs)	I_{max}	40 kA	40 kA
Voltage protection level at 5 kA	U_p	0,9 kV	0,9 kV
Voltage protection level	U_p	1,35 kV	1,35 kV
Short-circuit current rating	I_{SCCR}	50 kA	50 kA
Maximum overcurrent protection		160 A gL/gG	160 A gL/gG
Response time	t_a	25 ns	25 ns
Cross-section of connected conductors solid		1 / 35 mm²	1 / 35 mm²
Cross-section of connected conductors stranded		1 / 25 mm²	1 / 25 mm²
Fault indication		red indication field	red indication field
Remote indication			potential-free change-over contact
Remote indication contacts			250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors			1,5 mm²
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T2	EN 61643-11:2012, IEC 61643-11:2011, T2
Ordering number		8595090516194	8595090551836

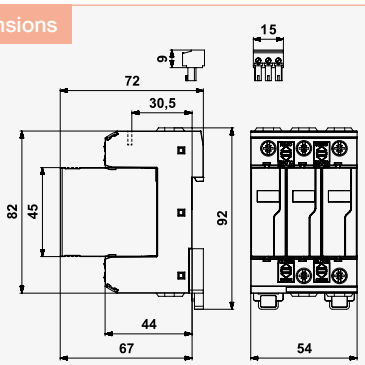
Spare module	SLP-275 V/0	SLP-275 V/0
Ordering number	8595090523680	8595090523680

SLP-275 V/3 (S)

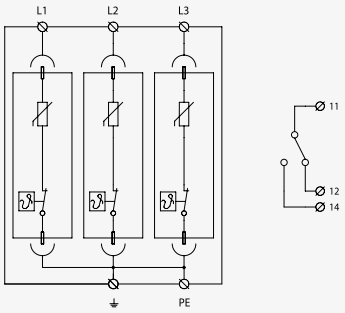
SPD type 2 - Surge Arrester
pluggable module, visual fault signaling, blocking module

- three-pole varistor surge arrester
- installation at the boundary of zones LPZ 1 and LPZ 2
- especially to sub-distribution boards in TN-C LV systems
- protection of the LV installations and equipments against induced surges and switching surge
- remote status signaling (S)

Dimensions



Basic circuit diagram



Parameter / Type		SLP-275 V/3	SLP-275 V/3 S
Nominal voltage	U_n	230 V AC	230 V AC
Maximum operating voltage	U_c	275 V AC / 350 V DC	275 V AC / 350 V DC
Nominal discharge current (8/20 µs)	I_n	20 kA	20 kA
Maximum discharge current (8/20 µs)	I_{max}	40 kA	40 kA
Voltage protection level at 5 kA	U_p	0,9 kV	0,9 kV
Voltage protection level	U_p	1,35 kV	1,35 kV
Short-circuit current rating	I_{SCCR}	50 kA	50 kA
Maximum overcurrent protection		160 A gL/gG	160 A gL/gG
Response time	t_a	25 ns	25 ns
Cross-section of connected conductors solid		1 / 35 mm²	1 / 35 mm²
Cross-section of connected conductors stranded		1 / 25 mm²	1 / 25 mm²
Fault indication		red indication field	red indication field
Remote indication			potential-free change-over contact
Remote indication contacts			250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors			1,5 mm²
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T2	EN 61643-11:2012, IEC 61643-11:2011, T2
Ordering number		8595090517603	8595090517610

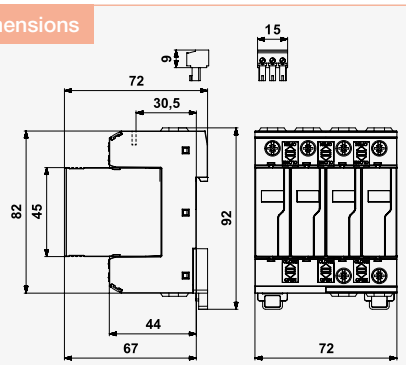
Spare module	SLP-275 V/0	SLP-275 V/0
Ordering number	8595090523680	8595090523680

SLP-275 V/4 (S)

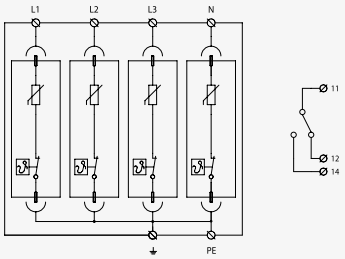
SPD type 2 - Surge Arrester
pluggable module, visual fault signaling, blocking module

- four-pole varistor surge arrester
- installation at the boundary of zones LPZ 1 and LPZ 2
- especially to sub-distribution boards in TN-S LV systems
- protection of the LV installations and equipments against induced surges and switching surge
- remote status signaling (S)

Dimensions



Basic circuit diagram



LV power systems up to 1 000 V

Parameter / Type		SLP-275 V/4	SLP-275 V/4 S
Nominal voltage	U_n	230 V AC	230 V AC
Maximum operating voltage	U_c	275 V AC / 350 V DC	275 V AC / 350 V DC
Nominal discharge current (8/20 µs)	I_n	20 kA	20 kA
Maximum discharge current (8/20 µs)	I_{max}	40 kA	40 kA
Voltage protection level at 5 kA	U_p	0,9 kV	0,9 kV
Voltage protection level	U_p	1,35 kV	1,35 kV
Short-circuit current rating	I_{SCCR}	50 kA	50 kA
Maximum overcurrent protection		160 A gL/gG	160 A gL/gG
Response time	t_a	25 ns	25 ns
Cross-section of connected conductors solid		1 / 35 mm²	1 / 35 mm²
Cross-section of connected conductors stranded		1 / 25 mm²	1 / 25 mm²
Fault indication		red indication field	red indication field
Remote indication			potential-free change-over contact
Remote indication contacts			250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors			1,5 mm²
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T2	EN 61643-11:2012, IEC 61643-11:2011, T2
Ordering number		8595090517221	8595090517634

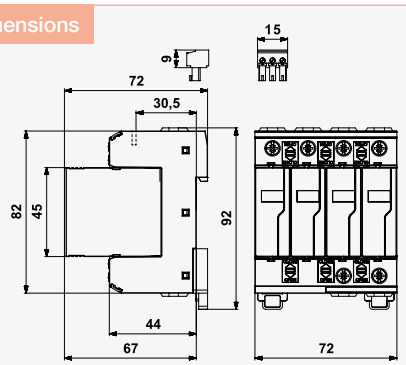
Spare module	SLP-275 V/0	SLP-275 V/0
Ordering number	8595090523680	8595090523680

SLP-275 V/3(S)+1

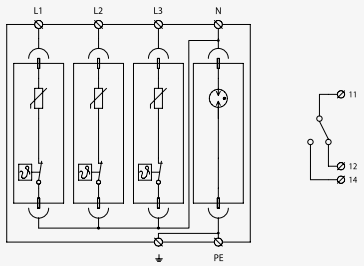
SPD type 2 - Surge Arrester
pluggable module, visual fault signaling, blocking module

- combination of varistor surge arrester and encapsulated spark gap, connected in the 3+1 mode
- installation at the boundary of zones LPZ 1 and LPZ 2
- especially to sub-distribution boards in TT and also TN-C LV systems
- protection of the LV installations and equipments against induced surges and switching surge
- remote status signaling (S)

Dimensions



Basic circuit diagram



Parameter / Type		SLP-275 V/3+1	SLP-275 V/3S+1
Jmenovité napětí	U_n	230 V AC	230 V AC
Nejvyšší trvalé provozní napětí L-N	U_c	275 V AC	275 V AC
Nejvyšší trvalé provozní napětí N-PE	U_c	255 V AC	255 V AC
Jmenovitý výbojový proud (8/20 µs) L-N	I_n	20 kA	20 kA
Jmenovitý výbojový proud (8/20 µs) N-PE	I_n	20 kA	20 kA
Maximální výbojový proud (8/20 µs) L-N	I_{max}	40 kA	40 kA
Maximální výbojový proud (8/20 µs) N-PE	I_{max}	40 kA	40 kA
Napěťová ochranná hladina při 5 kA L-N	U_p	0,9 kV	0,9 kV
Napěťová ochranná hladina mód L-N	U_p	1,35 kV	1,35 kV
Napěťová ochranná hladina mód N-PE	U_p	1,5 kV	1,5 kV
Schopnost samostatně vypnout následný proud N-PE	I_{fi}	0,1 kA	0,1 kA
Jmenovitý zkratový proud	I_{SCCR}	50 kA	50 kA
Maximální předjištění		160 A gL/gG	160 A gL/gG
Doba odezvy L-N	t_a	25 ns	25 ns
Doba odezvy N-PE	t_a	100 ns	100 ns
TOV 200 ms L-PE		1455 V	1455 V
Průřez připojovaných vodičů pevný (min/max)		1 / 35 mm^2	1 / 35 mm^2
Průřez připojovaných vodičů slaněný (min/max)		1 / 25 mm^2	1 / 25 mm^2
Signalizace poruchy L-N		red indication field	red indication field
Signalizace poruchy N-PE		no	no
Dálková signalizace			potential-free change-over contact
Kontakty dálkové signalizace			250 V / 0,5 A AC, 250 V / 0,1 A DC
Maximální průřez vodičů dálkové signalizace			1,5 mm^2
Stupeň krytí		IP 20	IP 20
Rozsah pracovních teplot		-40 °C … +80 °C	-40 °C … +80 °C
Montáž		DIN rail 35 mm	DIN rail 35 mm
Splňuje požadavky normy		EN 61643-11:2012, IEC 61643-11:2011, T2	EN 61643-11:2012, IEC 61643-11:2011, T2
Ordering number		8595090519461	8595090520023

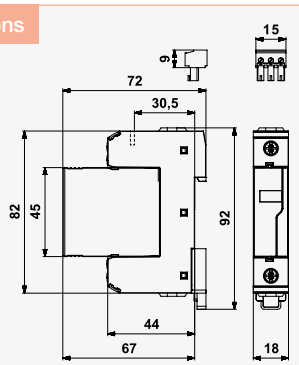
Spare module	SLP-275 V/0	SLP-NPE V/0	SLP-275 V/0	SLP-NPE V/0
Ordering number	8595090523680	8595090530039	8595090523680	8595090530039

SLP-…VB/1 (S)

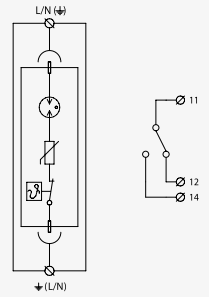
SPD type 2 - Surge Arrester
pluggable module, visual fault signaling

- combined type surge arrester (varistor+GDT)
- instalation at the boundary of zones LPZ 1 and LPZ 2
- protection of the LV installation and equipments against induced surges and switching surge
- no leakage current
- for areas with higher storm activity
- remote status signaling (S)

Dimensions



Basic circuit diagram



Parameter / Type		SLP-075 VB/1	SLP-075 VB/1 S	SLP-130 VB/1	SLP-130 VB/1 S	SLP-275 VB/1	SLP-275 VB/1 S
Nominal voltage	U_n			110 V AC	110 V AC	230 V AC	230 V AC
Maximum operating voltage	U_c	75 V AC / 100 V DC	75 V AC / 100 V DC	135 V AC / 175 V DC	135 V AC / 175 V DC	275 V AC / 350 V DC	275 V AC / 350 V DC
Nominal discharge current (8/20 µs)	I_n	15 kA	15 kA	20 kA	20 kA	20 kA	20 kA
Maximum discharge current (8/20 µs)	I_{max}	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA
Voltage protection level	U_p	0,6 kV	0,6 kV	0,7 kV	0,7 kV	1,2 kV	1,2 kV
Voltage protection level at 5 kA	U_p	0,3 kV	0,3 kV	0,5 kV	0,5 kV	0,9 kV	0,9 kV
Short-circuit current rating	I_{SCCR}	35 kA	35 kA	35 kA	35 kA	35 kA	35 kA
Maximum overcurrent protection		125 A gL/gG	125 A gL/gG	125 A gL/gG	125 A gL/gG	125 A gL/gG	125 A gL/gG
Response time	t_a	100 ns	100 ns	100 ns	100 ns	100 ns	100 ns
Cross-section of connected conductors solid		1 / 35 mm²	1 / 35 mm²	1 / 35 mm²	1 / 35 mm²	1 / 35 mm²	1 / 35 mm²
Cross-section of connected conductors stranded		1 / 25 mm²	1 / 25 mm²	1 / 25 mm²	1 / 25 mm²	1 / 25 mm²	1 / 25 mm²
Fault indication		red indication field	red indication field	red indication field	red indication field	red indication field	red indication field
Remote indication			potential-free change-over contact		potential-free change-over contact		potential-free change-over contact
Remote indication contacts			250 V / 0,5 A AC, 250 V / 0,1 A DC		250 V / 0,5 A AC, 250 V / 0,1 A DC		250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors			1,5 mm²		1,5 mm²		1,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C	-40 °C … +80 °C	-40 °C … +80 °C	-40 °C … +80 °C	-40 °C … +80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T2	EN 61643-11:2012, IEC 61643-11:2011, T2	EN 61643-11:2012, IEC 61643-11:2011, T2	EN 61643-11:2012, IEC 61643-11:2011, T2	EN 61643-11:2012, IEC 61643-11:2011, T2	EN 61643-11:2012, IEC 61643-11:2011, T2
Ordering number		8595090521556	8595090521563	8595090521822	8595090529965	8595090519447	8595090519454

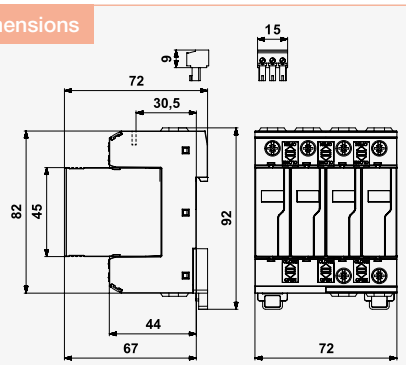
Spare module	SLP-075 VB/0	SLP-130 VB/0	SLP-275 VB/0	SLP-075 VB/0	SLP-130 VB/0	SLP-275 VB/0
Ordering number	8595090521549	8595090533139	8595090519430	8595090521549	8595090533139	8595090519430

SLP-275 VB/3(S)+1

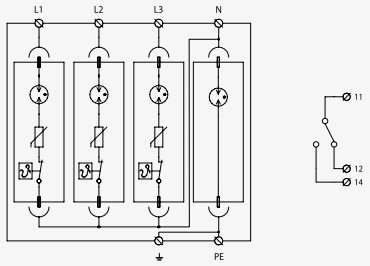
SPD type 2 - Surge Arrester
pluggable module, visual fault signaling, blocking module

- combined type surge arrester (varistor+GDT), connected in the 3+1 mode
- instalation at the boundary of zones LPZ 1 and LPZ 2
- protection of the LV installations and equipments against induced surges and switching surge
- no leakage current
- for areas with higher storm activity
- remote status signaling (S)

Dimensions



Basic circuit diagram



Parameter / Type		SLP-275 VB/3+1	SLP-275 VB/3S+1
Maximum operating voltage L-N	U_c	275 V AC	275 V AC
Maximum operating voltage N-PE	U_c	255 V AC	255 V AC
Nominal discharge current (8/20 µs) L-N	I_n	20 kA	20 kA
Nominal discharge current (8/20 µs) N-PE	I_n	20 kA	20 kA
Maximum discharge current (8/20 µs) L-N	I_{max}	25 kA	25 kA
Maximum discharge current (8/20 µs) N-PE	I_{max}	40 kA	40 kA
Voltage protection level mode L-N	U_p	1,2 kV	1,2 kV
Voltage protection level mode N-PE	U_p	1,5 kV	1,5 kV
Voltage protection level mode L-PE	U_p	2 kV	2 kV
Ability to independently switch off the following current N-PE	I_{fi}	0,1 kA	0,1 kA
Short-circuit current rating	I_{SCCR}	35 kA	35 kA
Maximum overcurrent protection		125 A gL/gG	125 A gL/gG
Response time	t_a	100 ns	100 ns
Cross-section of connected conductors solid		1 / 35 mm²	1 / 35 mm²
Cross-section of connected conductors stranded		1 / 25 mm²	1 / 25 mm²
Fault indication		red indication field	red indication field
Remote indication			potential-free change-over contact
Remote indication contacts			250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors			1,5 mm²
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T2	EN 61643-11:2012, IEC 61643-11:2011, T2
Ordering number		8595090533108	8595090533115

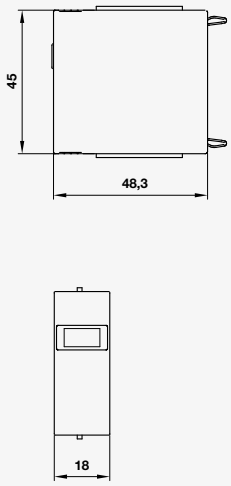
Spare module	SLP-275 VB/0	SLP-NPE V/0	SLP-275 VB/0	SLP-NPE V/0
Ordering number	8595090519430	8595090530039	8595090519430	8595090530039

SLP-...

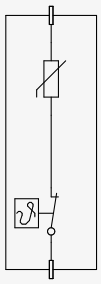
Spare pluggable modules for surge arresters Type 2

- SALTEK SPD with a “V” in the type number are made with pluggable modules.
- this enables simple withdrawal of the module from its base to test the systems insulation, without the need to disconnect the device from the circuit
- the new modules enable simple up-down orientation of the SPD, according to the incoming cables and also it serve for fast and easy replacement in case of failuret
- the spare modules (marked “xxx V/0”) are identical to the ones used in original product
- the voltages used cannot be mixed because of the identical voltage key on the module and the corresponding base part

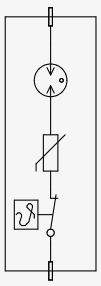
Dimensions



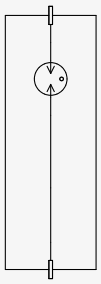
Basic circuit diagram



SLP-XXX V/0



SLP-XXX VB/0



SLP-NPE V/0

Type	Ordering number
SLP-075 V/0	8595090518112
SLP-150 V/0	8595090551935
SLP-275 V/0	8595090523680

Type	Ordering number
SLP-385 V/0	8595090519508
SLP-440 V/0	8595090518136
SLP-600 V/0	8595090533030

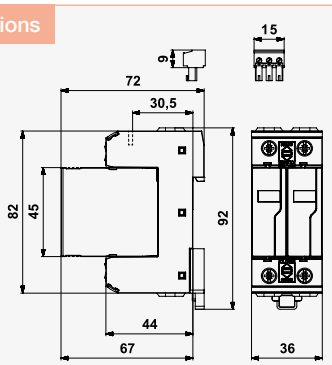
Type	Ordering number
SLP-075 VB/0	8595090521549
SLP-130 VB/0	8595090533139
SLP-275 VB/0	8595090519430
SLP-NPE V/0	8595090530039

DA-275 V/1(S)+1

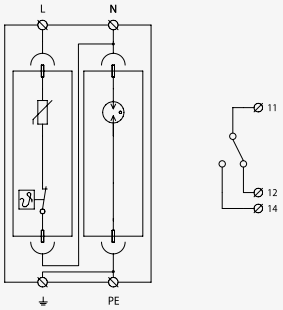
SPD type 3 - Surge Arrester
pluggable module, visual fault signaling, blocking module

- combination of varistor SPD and encapsulated spark gap, connected in the 1+1 mode
- installation at the boundary of zones LPZ 2 and LPZ 3
- protection against impact of induced surge during a lightning strike or switching surges
- protection of LV installations and all types of electric and electronic equipment
- remote status signaling (S)

Dimensions



Basic circuit diagram



Parameter / Type		DA-275 V/1+1	DA-275 V/1S+1
Type of network		TT	TT
Nominal voltage	U_n	230 V AC	230 V AC
Maximum operating voltage L-N	U_c	275 V AC	275 V AC
Maximum operating voltage N-PE	U_c	255 V AC	255 V AC
Nominal discharge current (8/20 µs) L-N	I_n	5 kA	5 kA
Nominal discharge current (8/20 µs) N-PE	I_n	10 kA	10 kA
Test voltage L-N	U_{oc}	10 kV	10 kV
Test voltage N-PE	U_{oc}	20 kV	20 kV
Voltage protection level	U_p	1 kV	1 kV
Voltage protection level mode L-N	U_p	1,5 kV	1,5 kV
Voltage protection level mode N-PE	U_p	1,5 kV	1,5 kV
Maximum overcurrent protection		63 A gL/gG or C 63 A	63 A gL/gG or C 63 A
Response time	t_a	25 ns	
Response time L-N	t_a	25 ns	25 ns
Response time N-PE	t_a	100 ns	100 ns
Cross-section of connected conductors solid		1 / 35 mm²	1 / 35 mm²
Cross-section of connected conductors stranded		1 / 25 mm²	1 / 25 mm²
Fault indication L-N		red indication field	red indication field
Fault indication N-PE		no	no
Remote indication			potential-free change-over contact
Remote indication contacts			250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors			1,5 mm²
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … 80 °C	-40 °C … 80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T3	EN 61643-11:2012, IEC 61643-11:2011, T3
Ordering number		8595090518723	8595090519751

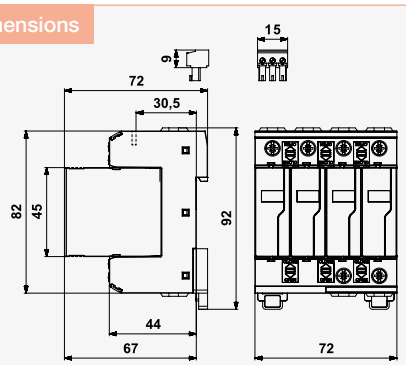
Spare module	DA-275 V/0	DA-NPE V/0	DA-275 V/0	DA-NPE V/0
Ordering number	8595090535942	8595090530046	8595090535942	8595090530046

DA-275 V/3(S)+1

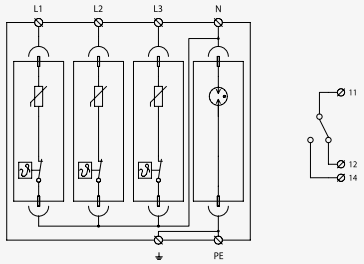
SPD type 3 - Surge Arrester
pluggable module, visual fault signaling, blocking module

- combination of varistor SPD and encapsulated spark gap, connected in the 3+1 mode
- installation at the boundary of zones LPZ 2 and LPZ 3
- protection against impact of induced surge during a lightning strike or switching surges
- protection of LV installations and all types of electric and electronic equipment
- remote status signaling (S)

Dimensions



Basic circuit diagram



Parameter / Type		DA-275 V/3+1	DA-275 V/3S+1
Type of network		TT	TT
Nominal voltage	U_n	230 V AC	230 V AC
Maximum operating voltage L-N	U_c	275 V AC	275 V AC
Maximum operating voltage N-PE	U_c	255 V AC	255 V AC
Nominal discharge current (8/20 µs) L-N	I_n	5 kA	5 kA
Nominal discharge current (8/20 µs) N-PE	I_n	10 kA	10 kA
Test voltage L-N	U_{oc}	10 kV	10 kV
Test voltage N-PE	U_{oc}	20 kV	20 kV
Voltage protection level mode L-N	U_p	1 kV	1 kV
Voltage protection level mode N-PE	U_p	1,5 kV	1,5 kV
Voltage protection level mode L-PE	U_p	1,5 kV	1,5 kV
Maximum overcurrent protection		63 A gL/gG or C 63 A	63 A gL/gG or C 63 A
Response time	t_a	25 ns	
Response time L-N	t_a	25 ns	25 ns
Response time N-PE	t_a	100 ns	100 ns
Cross-section of connected conductors solid		1 / 35 mm²	1 / 35 mm²
Cross-section of connected conductors stranded		1 / 25 mm²	1 / 25 mm²
Fault indication L-N		red indication field	red indication field
Fault indication N-PE		no	no
Remote indication			potential-free change-over contact
Remote indication contacts			250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors			1,5 mm²
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … 80 °C	-40 °C … 80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T3	EN 61643-11:2012, IEC 61643-11:2011, T3
Ordering number		8595090518488	8595090518495

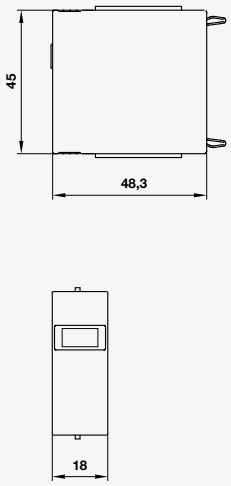
Spare module	DA-275 V/0	DA-NPE V/0	DA-275 V/0	DA-NPE V/0
Ordering number	8595090535942	8595090530046	8595090535942	8595090530046

DA-...

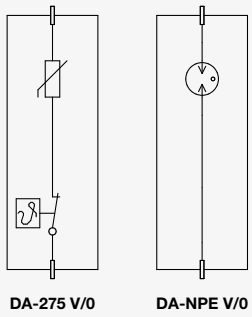
Spare pluggable modules for surge arresters Type 3

- SALTEK SPD with a “V” in the type number are made with pluggable modules.
- this enables simple withdrawal of the module from its base to test the systems insulation, without the need to disconnect the device from the circuit
- the new modules enable simple up-down orientation of the SPD, according to the incoming cables and also it serve for fast and easy replacement in case of failuret
- the spare modules (marked “xxx V/0”) are identical to the ones used in original product
- the voltages used cannot be mixed because of the identical voltage key on the module and the corresponding base part

Dimensions



Basic circuit diagram



Type	Ordering number
DA-275 V/0	8595090535942
DA-NPE V/0	8595090535942

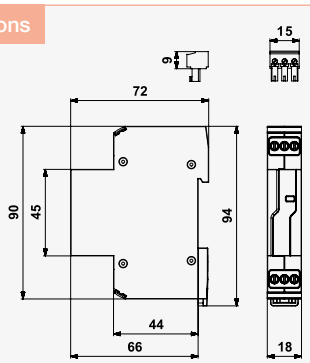
DA-275-DJ.. (S)

NEW

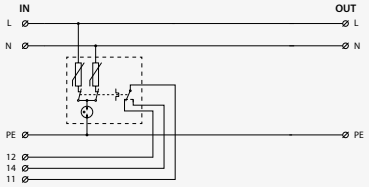
SPD type 3 - Surge Arrester
visual fault signaling

- universally applicable protection for all types of LV electric and electronic equipment against transient overvoltage
- terminals for series connection for high current of load (up to 25 A)
- remote status signaling (S)

Dimensions



Basic circuit diagram



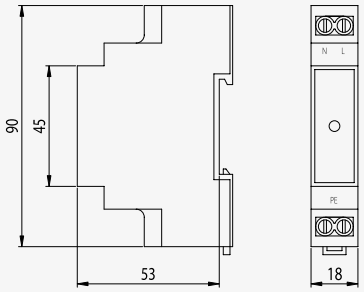
Parameter / Type		DA-275-DJ16	DA-275-DJ16-S	DA-275-DJ25	DA-275-DJ25-S
Type of network		TN	TN	TN	TN
Nominal voltage	U_n	230 V AC	230 V AC	230 V AC	230 V AC
Maximum operating voltage	U_c	275 V AC	275 V AC	275 V AC	275 V AC
Nominal discharge current (8/20 µs) L-N	I_n	3 kA	3 kA	3 kA	3 kA
Nominal discharge current (8/20 µs) N-PE	I_n	3 kA	3 kA	3 kA	3 kA
Nominal discharge current (8/20 µs) L+N-PE	I_n	5 kA	5 kA	5 kA	5 kA
Test voltage L-N	U_{oc}	6 kV	6 kV	6 kV	6 kV
Test voltage N-PE	U_{oc}	6 kV	6 kV	6 kV	6 kV
Test voltage L+N-PE	U_{oc}	10 kV	10 kV	10 kV	10 kV
Voltage protection level mode L-N	U_p	1,2 kV	1,2 kV	1,2 kV	1,2 kV
Voltage protection level mode N-PE	U_p	1,5 kV	1,5 kV	1,5 kV	1,5 kV
Voltage protection level mode L-PE	U_p	1,5 kV	1,5 kV	1,5 kV	1,5 kV
Short-circuit current rating	I_{SCCR}	6 kA	6 kA	6 kA	6 kA
Maximum overcurrent protection		16 A gL/gG or B 16 A	16 A gL/gG or B 16 A	25 A gL/gG or B 25 A	25 A gL/gG or B 25 A
Response time	t_a				
Response time L-N	t_a	25 ns	25 ns	25 ns	25 ns
Response time N-PE	t_a	100 ns	100 ns	100 ns	100 ns
Cross-section of connected conductors solid - max		6 mm²	6 mm²	6 mm²	6 mm²
Cross-section of connected conductors stranded - max		4 mm²	4 mm²	4 mm²	4 mm²
e of network		red indicator	red indication field	red indicator	red indication field
Remote indication			potential-free change-over contact		potential-free change-over contact
Remote indication contacts			250V/0,5A AC,250V/0,1A DC		250V/0,5A AC,250V/0,1A DC
Cross-section of remote indication conductors			1,5 mm²		1,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C... 70°C	-40 °C... 70°C	-40 °C... 70°C	-40 °C... 70°C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to		EN 61643-11:2012, IEC 61643-11:2011, T3	EN 61643-11:2012, IEC 61643-11:2011, T3	EN 61643-11:2012, IEC 61643-11:2011, T3	EN 61643-11:2012, IEC 61643-11:2011, T3
Ordering number		8595090557685	8595090557692	8595090557708	8595090557715

DA-... DJ

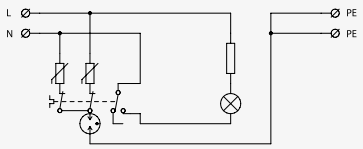
SPD type 3 - Surge Arrester
visual fault signaling

- universally applicable protection for all types of LV electric and electronic equipment against transient overvoltage

Dimensions



Basic circuit diagram



Parameter / Type		DA-075 DJ	DA-130 DJ
Type of network		TN	TN
Nominal voltage	U_n		
Maximum operating voltage	U_c	75 V AC	135 V AC
Nominal discharge current (8/20 µs) L-N	I_n	2 kA	2,5 kA
Nominal discharge current (8/20 µs) N-PE	I_n	2 kA	2,5 kA
Nominal discharge current (8/20 µs) L+N-PE	I_n	4 kA	5 kA
Test voltage L-N	U_{oc}	4 kV	5 kV
Test voltage N-PE	U_{oc}	4 kV	5 kV
Test voltage L+N-PE	U_{oc}	8 kV	10 kV
Voltage protection level mode L-N	U_p	0,4 kV	0,6 kV
Voltage protection level mode N-PE	U_p	1,2 kV	1,5 kV
Voltage protection level mode L-PE	U_p	1,2 kV	1,5 kV
Short-circuit current rating	I_{SCCR}	6 kA	6 kA
Maximum overcurrent protection		16 A gL/gG or C 16 A	16 A gL/gG or C 16 A
Response time	t_a	25 ns	
Response time L-N	t_a	100 ns	25 ns
Response time N-PE	t_a		100 ns
Cross-section of connected conductors solid - max		6 mm²	6 mm²
Cross-section of connected conductors stranded - max		4 mm²	4 mm²
Fault indication		red indicator	red indicator
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … 80 °C	-40 °C … 80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T3	EN 61643-11:2012, IEC 61643-11:2011, T3
Ordering number		8595090533191	8595090521891

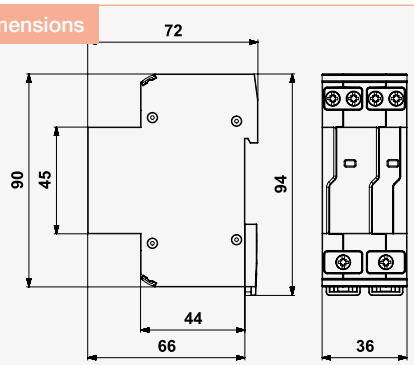
DA-275-DF...

NEW

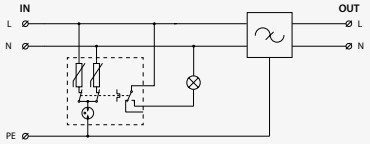
SPD type 3 - Surge Arrester with RF filter
visual fault signaling

- surge protection with integrated RFI filter
- protection of power systems of M&C systems, electronic security and fire systems, etc. against transient overveoltage and RF disturbance

Dimensions



Basic circuit diagram



Parameter / Type		DA-275-DF2	DA-275-DF6	DA-275-DF10	DA-275-DF16
Nominal voltage	U_n	230 V AC	230 V AC	230 V AC	230 V AC
Maximum operating voltage	U_c	275 V AC	275 V AC	275 V AC	275 V AC
Nominal load current	I_L	2 A	6 A	10 A	16 A
Nominal discharge current (8/20 µs) L-N	I_n	3 kA	3 kA	3 kA	3 kA
Nominal discharge current (8/20 µs) N-PE	I_n	3 kA	3 kA	3 kA	3 kA
Nominal discharge current (8/20 µs) L+N-PE	I_n	5 kA	5 kA	5 kA	5 kA
Test voltage L-N	U_{oc}	6 kV	6 kV	6 kV	6 kV
Test voltage N-PE	U_{oc}	6 kV	6 kV	6 kV	6 kV
Test voltage L+N-PE	U_{oc}	10 kV	10 kV	10 kV	10 kV
Voltage protection level mode L-N	U_p	1,2 kV	1,2 kV	1,2 kV	1,2 kV
Voltage protection level mode N-PE	U_p	1,5 kV	1,5 kV	1,5 kV	1,5 kV
Voltage protection level mode L-PE	U_p	1,5 kV	1,5 kV	1,5 kV	1,5 kV
Short-circuit current rating	I_{SCCR}	6 kA	6 kA	6 kA	6 kA
Maximum overcurrent protection		2 A gL/gG or B 2 A	6 A gL/gG or B 6 A	10 A gL/gG or B 10 A	16 A gL/gG or B 16 A
Response time L-N	t_a	25 ns	25 ns	25 ns	25 ns
Response time N-PE	t_a	100 ns	100 ns	100 ns	100 ns
Filter attenuation at 1 MHz (50 Ω/50 Ω) unsymmetrical		30 dB	30 dB	30 dB	30 dB
Cross-section of connected conductors solid - max		6 mm²	6 mm²	6 mm²	6 mm²
Cross-section of connected conductors stranded - max		6 mm²	6 mm²	6 mm²	6 mm²
Fault indication		red indicator	red indicator	red indicator	red indicator
Cross-section of remote indication conductors solid - max		1,5 mm²	1,5 mm²	1,5 mm²	1,5 mm²
Cross-section of remote indication conductors stranded - max		1,5 mm²	1,5 mm²	1,5 mm²	1,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C ... 70 °C	-40 °C ... 70 °C	-40 °C ... 70 °C	-40 °C ... 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T3	EN 61643-11:2012, IEC 61643-11:2011, T3	EN 61643-11:2012, IEC 61643-11:2011, T3	EN 61643-11:2012, IEC 61643-11:2011, T3
Ordering number		8595090557159	8595090557173	8595090557197	8595090557210

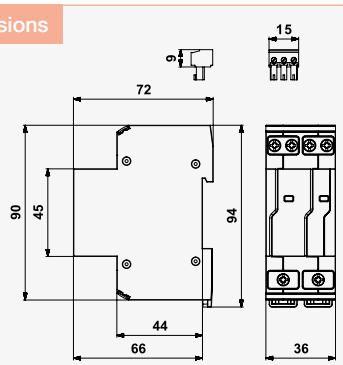
DA-275-DF…-S

NEW

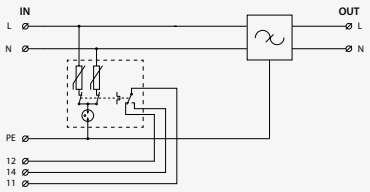
SPD type 3 - Surge Arrester with RF filter
remote and visual fault signaling

- surge protection with integrated RFI filter
- protection of power systems of M&C systems, electronic security and fire systems, etc. against transient overveoltage and RF disturbance

Dimensions



Basic circuit diagram



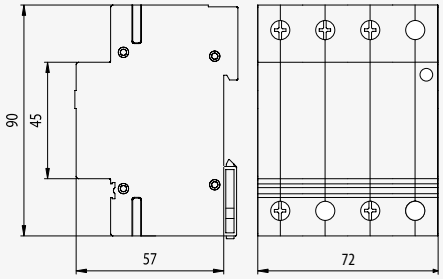
Parameter / Type		DA-275-DF2-S	DA-275-DF6-S	DA-275-DF10-S	DA-275-DF16-S
Nominal voltage	U_n	230 V AC	230 V AC	230 V AC	230 V AC
Maximum operating voltage	U_c	275 V AC	275 V AC	275 V AC	275 V AC
Nominal load current	I_L	2 A	6 A	10 A	16 A
Nominal discharge current (8/20 µs) L-N	I_n	3 kA	3 kA	3 kA	3 kA
Nominal discharge current (8/20 µs) N-PE	I_n	3 kA	3 kA	3 kA	3 kA
Nominal discharge current (8/20 µs) L+N-PE	I_n	5 kA	5 kA	5 kA	5 kA
Test voltage L-N	U_{oc}	6 kV	6 kV	6 kV	6 kV
Test voltage N-PE	U_{oc}	6 kV	6 kV	6 kV	6 kV
Test voltage L+N-PE	U_{oc}	10 kV	10 kV	10 kV	10 kV
Voltage protection level mode L-N	U_p	1,2 kV	1,2 kV	1,2 kV	1,2 kV
Voltage protection level mode N-PE	U_p	1,5 kV	1,5 kV	1,5 kV	1,5 kV
Voltage protection level mode L-PE	U_p	1,5 kV	1,5 kV	1,5 kV	1,5 kV
Short-circuit current rating	I_{SCCR}	6 kA	6 kA	6 kA	6 kA
Maximum overcurrent protection		2 A gL/gG or B 2 A	6 A gL/gG or B 6 A	10 A gL/gG or B 10 A	16 A gL/gG or B 16 A
Response time L-N	t_a	25 ns	25 ns	25 ns	25 ns
Response time N-PE	t_a	100 ns	100 ns	100 ns	100 ns
Filter attenuation at 1MHz (50 Ω/50 Ω) unsymmetrical		30 dB	30 dB	30 dB	30 dB
Cross-section of connected conductors solid - max		6 mm²	6 mm²	6 mm²	6 mm²
Cross-section of connected conductors stranded - max		6 mm²	6 mm²	6 mm²	6 mm²
Fault indication		red indication field	red indication field	red indication field	red indication field
Remote indication		potential-free change-over contact	potential-free change-over contact	potential-free change-over contact	potential-free change-over contact
Remote indication contacts		250 V / 0,5 A AC, 250 V / 0,1 A DC	250 V / 0,5 A AC, 250 V / 0,1 A DC	250 V / 0,5 A AC, 250 V / 0,1 A DC	250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors solid - max		1,5 mm²	1,5 mm²	1,5 mm²	1,5 mm²
Cross-section of remote indication conductors stranded - max		1,5 mm²	1,5 mm²	1,5 mm²	1,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T3	EN 61643-11:2012, IEC 61643-11:2011, T3	EN 61643-11:2012, IEC 61643-11:2011, T3	EN 61643-11:2012, IEC 61643-11:2011, T3
Ordering number		8595090557166	8595090557180	8595090557203	8595090557227

DA-275 DF 25

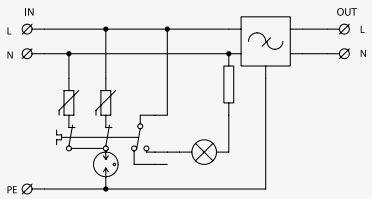
SPD type 3 - Surge Arrester with RF filter
visual fault signaling

- surge protection with integrated RFI filter
- protection of power systems of M&C systems, electronic security and fire systems, etc. against transient overveoltage and RF disturbance

Dimensions



Basic circuit diagram



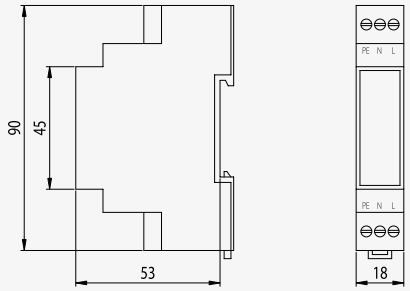
Parameter / Type		DA-275 DF 25
Nominal voltage	U_n	230 V AC
Maximum operating voltage	U_c	275 V AC
Nominal load current	I_L	25 A
Nominal discharge current (8/20 µs) L-N	I_n	3 kA
Nominal discharge current (8/20 µs) N-PE	I_n	3 kA
Nominal discharge current (8/20 µs) L+N-PE	I_n	5 kA
Test voltage L-N	U_{oc}	6 kV
Test voltage N-PE	U_{oc}	6 kV
Test voltage L+N-PE	U_{oc}	10 kV
Voltage protection level mode L-N	U_p	1,2 kV
Voltage protection level mode N-PE	U_p	1,5 kV
Voltage protection level mode L-PE	U_p	1,5 kV
Maximum overcurrent protection		25 A gL/gG or C 25 A
Response time L-N	t_a	25 ns
Response time N-PE	t_a	100 ns
Filter attenuation at 1MHz (50 Ω/50 Ω) unsymmetrical		30 dB
Cross-section of connected conductors solid		1 / 50 mm²
Cross-section of connected conductors stranded		1 / 35 mm²
Fault indication		red indicator
Degree of protection		IP 20
Range of operating temperatures		-40 °C … 80 °C
Mounting		DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T3
Ordering number		8595090537328

DA-275 DFI 1

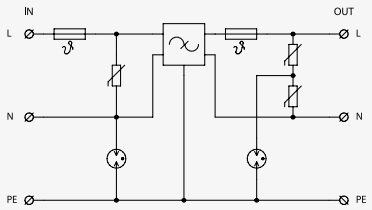
SPD type 3 - Surge Arrester with RF filter
fault signaling due to power supply interruption

- surge protection with integrated RFI filter
- protection of power systems of M&C systems, electronic security and fire systems, etc. against transient overveoltage and RF disturbance

Dimensions



Basic circuit diagram



Parameter / Type		DA-275 DFI 1
Nominal voltage	U_n	230 V AC
Maximum operating voltage	U_c	275 V AC
Nominal load current	I_L	1 A
Nominal discharge current (8/20 µs) L-N	I_n	1,5 kA
Nominal discharge current (8/20 µs) N-PE	I_n	1,5 kA
Test voltage L-N	U_{oc}	3 kV
Test voltage N-PE	U_{oc}	3 kV
Voltage protection level mode L-N	U_p	1,2 kV
Voltage protection level mode N-PE	U_p	1,2 kV
Maximum overcurrent protection		1 A gL/gG nebo C 1 A
Response time L-N	t_a	25 ns
Response time N-PE	t_a	100 ns
Filter attenuation at 1MHz (50 Ω/50 Ω) unsymmetrical		50 dB
Cross-section of connected conductors solid - max		4 mm^2
Cross-section of connected conductors stranded - max		2,5 mm^2
Fault indication		supply interruption
Remote indication		no
Degree of protection		IP 20
Range of operating temperatures		-40 °C … 80 °C
Mounting		DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T3
Ordering number		8595090512059

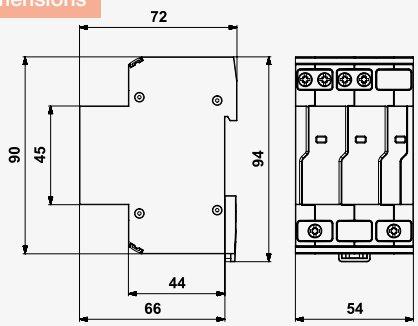
DA-275-DFi...

NEW

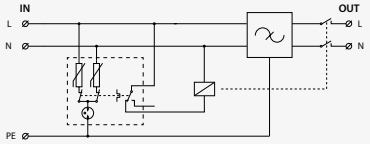
SPD type 3 - Surge Arrester with RF filter
fault signaling due to supply interruption, visual fault signaling

- surge protection with integrated RFI filter
- protection of power systems of M&C systems, electronic security and fire systems, etc. against transient overveoltage and RF disturbance
- not for DC power systems

Dimensions



Basic circuit diagram



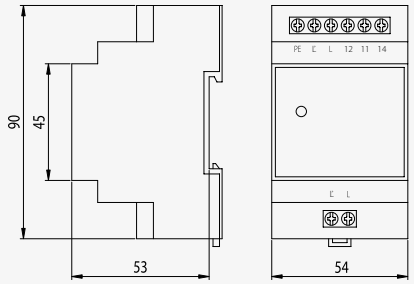
Parameter / Type		DA-275-DFi6	DA-275-DFi10	DA-275-DFi16
Nominal voltage	U_n	230 V AC	230 V AC	230 V AC
Maximum operating voltage	U_c	275 V AC	275 V AC	275 V AC
Nominal load current	I_L	6 A	10 A	16 A
Nominal discharge current (8/20 µs) L-N	I_n	3 kA	3 kA	3 kA
Nominal discharge current (8/20 µs) N-PE	I_n	3 kA	3 kA	3 kA
Nominal discharge current (8/20 µs) L+N-PE	I_n	5 kA	5 kA	5 kA
Test voltage L-N	U_{oc}	6 kV	6 kV	6 kV
Test voltage N-PE	U_{oc}	6 kV	6 kV	6 kV
Test voltage L+N-PE	U_{oc}	10 kV	10 kV	10 kV
Voltage protection level mode L-N	U_p	1,2 kV	1,2 kV	1,2 kV
Voltage protection level mode N-PE	U_p	1,5 kV	1,5 kV	1,5 kV
Voltage protection level mode L-PE	U_p	1,5 kV	1,5 kV	1,5 kV
Short-circuit current rating	I_{SCCR}	6 kA	6 kA	6 kA
Maximum overcurrent protection		6 A gL/gG or B 6 A	10 A gL/gG or B 10 A	16 A gL/gG or B 16 A
Response time L-N	t_a	25 ns	25 ns	25 ns
Response time N-PE	t_a	100 ns	100 ns	100 ns
Filter attenuation at 1MHz (50 Ω/50 Ω) unsymmetrical		30 dB	30 dB	30 dB
Cross-section of connected conductors solid - max		6 mm²	6 mm²	6 mm²
Cross-section of connected conductors stranded - max		6 mm²	6 mm²	6 mm²
Fault indication		red indication field, supply interruption	red indication field, supply interruption	red indication field, supply interruption
Cross-section of remote indication conductors solid - max		1,5 mm²	1,5 mm²	1,5 mm²
Cross-section of remote indication conductors stranded - max		1,5 mm²	1,5 mm²	1,5 mm²
Degree of protection		IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting			DIN rail 35 mm	DIN rail 35 mm
According to standard			EN 61643-11:2012, IEC 61643-11:2011, T3	EN 61643-11:2012, IEC 61643-11:2011, T3
Ordering number		8595090557234	8595090557241	8595090557258

DA-400 DF 16 (S)

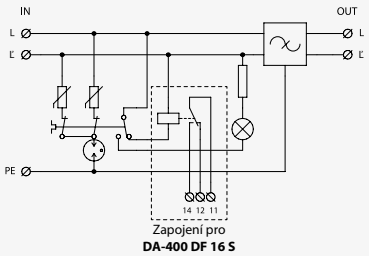
SPD type 3 - Surge Arrester with RF filter
visual fault signaling

- surge protection with integrated RFI filter
- protection of power systems of M&C systems, electronic security and fire systems, etc. against transient overveoltage and RF disturbance
- for two-phase power supply
- not for DC power systems
- remote status signaling (S)

Dimensions



Basic circuit diagram



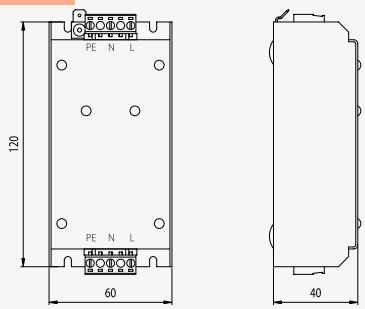
Parameter / Type		DA-400 DF 16	DA-400 DF 16 S
Nominal voltage	U_n	400 V AC	400 V AC
Maximum operating voltage	U_c	440 V AC	440 V AC
Nominal load current	I_L	16 A	16 A
Nominal discharge current (8/20 µs) L-N	I_n	3 kA	3 kA
Nominal discharge current (8/20 µs) N-PE	I_n	3 kA	3 kA
Nominal discharge current (8/20 µs) L+N-PE	I_n	5 kA	5 kA
Test voltage L-N	U_{oc}	6 kV	6 kV
Test voltage N-PE	U_{oc}	6 kV	6 kV
Test voltage L+N-PE	U_{oc}	10 kV	10 kV
Voltage protection level mode L-N	U_p	1,6 kV	1,6 kV
Voltage protection level mode N-PE	U_p	1,4 kV	1,4 kV
Voltage protection level mode L-PE	U_p	1,4 kV	1,4 kV
Maximum overcurrent protection		16 A gL/gG or C 16 A	16 A gL/gG or C 16 A
Response time L-N	t_a	25 ns	25 ns
Response time N-PE	t_a	100 ns	100 ns
Filter attenuation at 1 MHz (50 Ω/50 Ω) unsymmetrical		30 dB	30 dB
Cross-section of connected conductors solid - max		4 mm^2	4 mm^2
Cross-section of connected conductors stranded - max		2,5 mm^2	2,5 mm^2
Fault indication		red indicator	red indicator
Remote indication			potential-free change-over contact
Remote indication contacts			250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors solid - max			4 mm^2
Cross-section of remote indication conductors stranded - max			2,5 mm^2
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … 80 °C	-40 °C … 80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T3	EN 61643-11:2012, IEC 61643-11:2011, T3
Ordering number		8595090515074	8595090525660

DA-275 BFG

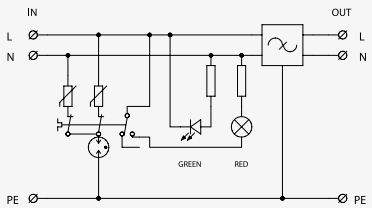
SPD type 3 - Surge Arrester with RF filter
visual fault signaling, grounding terminal, class I

- surge protection with integrated RFI filter
- protection of power systems of M&C systems, electronic security and fire systems, etc. against transient overveoltage and RF disturbance

Dimensions



Basic circuit diagram



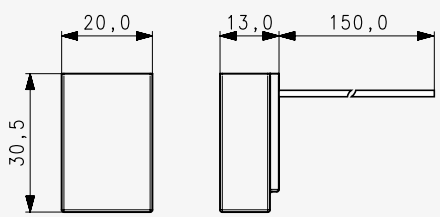
Parameter / Type		DA-275 BFG
Nominal voltage	U_n	230 V AC
Maximum operating voltage	U_c	275 V AC
Nominal load current	I_L	16 A
Nominal discharge current (8/20 µs) L-N	I_n	3 kA
Nominal discharge current (8/20 µs) N-PE	I_n	3 kA
Nominal discharge current (8/20 µs) L+N-PE	I_n	5 kA
Test voltage L-N	U_{oc}	6 kV
Test voltage N-PE	U_{oc}	6 kV
Test voltage L+N-PE	U_{oc}	10 kV
Voltage protection level mode L-N	U_p	1,2 kV
Voltage protection level mode N-PE	U_p	1,5 kV
Voltage protection level mode L-PE	U_p	1,5 kV
Maximum overcurrent protection		16 A gL/gG or C 16 A
Response time L-N	t_a	25 ns
Response time N-PE	t_a	100 ns
Filter attenuation at 1MHz (50 Ω/50 Ω) unsymmetrical		30 dB
Cross-section of connected conductors solid - max		2,5 mm^2
Cross-section of connected conductors stranded - max		2,5 mm^2
Fault indication		red indicator
Remote indication		no
Degree of protection		IP 20
Range of operating temperatures		-40 °C … 80 °C
Mounting		DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T3
Ordering number		8595090506294

CZ-275 A

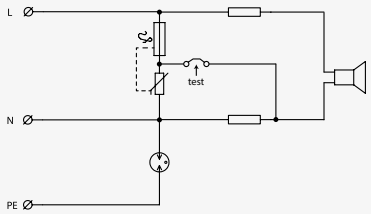
SPD type 3 - Module of Surge Protection
acoustic fault signaling

- SPD for additional installation into devices or equipments
- for protection of all LV equipments against transient overvoltage

Dimensions



Basic circuit diagram



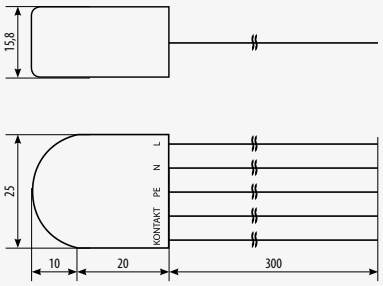
Parameter / Type		CZ-275 A
Nominal voltage	U_n	230 V AC
Maximum operating voltage	U_c	275 V AC
Nominal discharge current (8/20 µs) L-N	I_n	3 kA
Nominal discharge current (8/20 µs) N-PE	I_n	3 kA
Test voltage L-N	U_{oc}	6 kV
Test voltage N-PE	U_{oc}	6 kV
Voltage protection level mode L-N	U_p	1 kV
Voltage protection level mode N-PE	U_p	1,5 kV
Short-circuit current rating	I_{SCCR}	6 kA
Maximum overcurrent protection		16 A gL/gG or B 16 A
Response time L-N	t_a	25 ns
Response time N-PE	t_a	100 ns
Fault indication		acoustic signalling
Degree of protection		IP 20
Range of operating temperatures		-20 °C … 70 °C
Mounting		installation box
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T3
Ordering number		8595090540632

DA-275 CZS

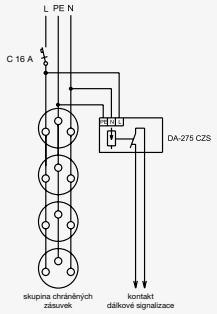
SPD type 3 - Module of Surge Protection
remote fault signaling

- SPD for additional installation into devices or equipments
- for protection of all LV equipments against transient overvoltage
- non symetrical connection

Dimensions



Basic circuit diagram



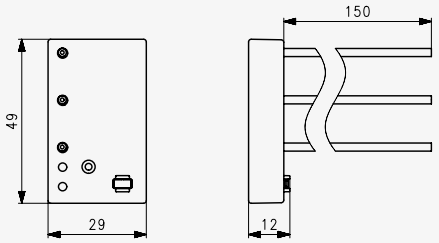
Parameter / Type		DA-275 CZS
Nominal voltage	U_n	230 V AC
Maximum operating voltage	U_c	275 V AC
Nominal discharge current (8/20 µs) L-N	I_n	3 kA
Nominal discharge current (8/20 µs) N-PE	I_n	3 kA
Test voltage L-N	U_{oc}	6 kV
Test voltage N-PE	U_{oc}	6 kV
Voltage protection level mode L-N	U_p	1 kV
Voltage protection level mode N-PE	U_p	1,5 kV
Voltage protection level mode L-PE	U_p	1,5 kV
Maximum overcurrent protection		16 A gL/gG or C 16 A
Response time L-N	t_a	25 ns
Response time N-PE	t_a	100 ns
Fault indication		open contact
Remote indication		potential-free open contact
Remote indication contacts		230 V / 0,5 A AC, 24 V / 0,5 A DC
Degree of protection		IP 20
Range of operating temperatures		-40 °C … 80 °C
Mounting		installation box
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T3
Ordering number		8595090519164

DA-275 A

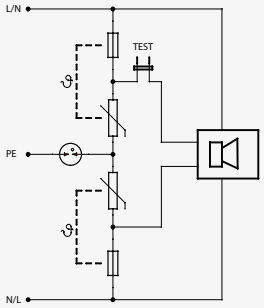
SPD type 3 - Module of Surge Protection
acoustic fault signaling

- SPD for additional installation into devices or equipments
- for protection of all LV equipments against transient overvoltage
- symetrical connection

Dimensions



Basic circuit diagram



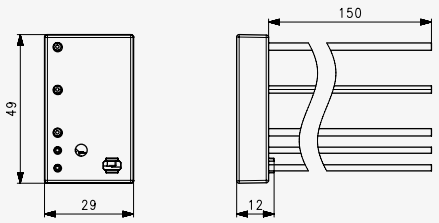
Parameter / Type		DA-275 A
Nominal voltage	U_n	230 V AC
Maximum operating voltage	U_c	275 V AC
Nominal discharge current (8/20 µs) L-N	I_n	2 kA
Nominal discharge current (8/20 µs) N-PE	I_n	2 kA
Test voltage L-N	U_{oc}	4 kV
Test voltage N-PE	U_{oc}	4 kV
Voltage protection level mode L-N	U_p	1,5 kV
Voltage protection level mode N-PE	U_p	1,5 kV
Short-circuit current rating	I_{SCCR}	3 kA
Maximum overcurrent protection		16 A gL/gG or B 16 A
Response time L-N	t_a	25 ns
Response time N-PE	t_a	100 ns
Fault indication		acoustic signalling
Degree of protection		IP 20
Range of operating temperatures		-20 °C … 70 °C
Mounting		installation box
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T3
Ordering number		8595090540472

DA-275 S

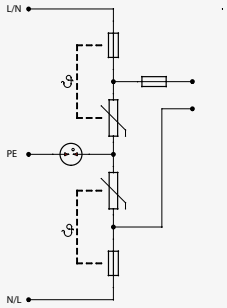
SPD type 3 - Module of Surge Protection
remote fault signaling

- SPD for additional installation into devices or equipments
- for protection of all LV equipments against transient overvoltage
- symetrical connection

Dimensions



Basic circuit diagram



Parameter / Type		DA-275 S
Nominal voltage	U_n	230 V AC
Maximum operating voltage	U_c	275 V AC
Nominal discharge current (8/20 µs) L-N	I_n	2 kA
Nominal discharge current (8/20 µs) N-PE	I_n	2 kA
Test voltage L-N	U_{oc}	4 kV
Test voltage N-PE	U_{oc}	4 kV
Voltage protection level mode L-N	U_p	1,5 kV
Voltage protection level mode N-PE	U_p	1,5 kV
Short-circuit current rating	I_{SCCR}	3 kA
Maximum overcurrent protection		16 A gL/gG or B 16 A
Response time L-N	t_a	25 ns
Response time N-PE	t_a	100 ns
Fault indication		loss of voltage
Remote indication		potential open contact
Maximum current of signalling		1 A
Degree of protection		IP 20
Range of operating temperatures		-40 °C … 80 °C
Mounting		installation box
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T3
Ordering number		8595090540625

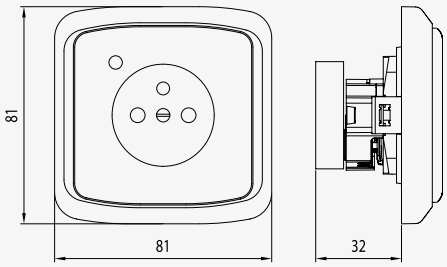
Socket outlet with Surge Protection

Type 3 SPD
visual or acoustic fault signaling

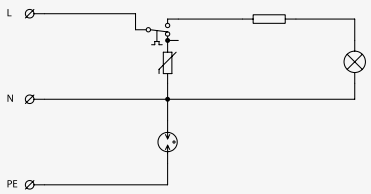
- single or double socket outlets with integrated SPD
- for protection of all types of LV electric and electronic equipment against transient overvoltage
- instalation to mounting boxes or thrunking systems with 40 mm dept
- a lot of design ranges of several international socket outlet producers or customized solutions on request
- earth pin or SCHUKO version

Example

Dimensions



Basic circuit diagram



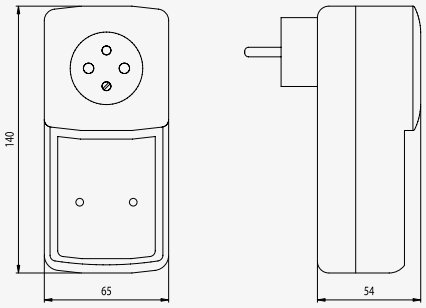
Parameter / Type		Socket
Nominal voltage	U_n	230 V AC
Maximum operating voltage	U_c	275 V AC
Nominal discharge current (8/20 µs) L-N	I_n	3 kA
Nominal discharge current (8/20 µs) N-PE	I_n	3 kA
Test voltage L-N	U_{oc}	6 kV
Test voltage N-PE	U_{oc}	6 kV
Voltage protection level mode L-N	U_p	1 kV
Voltage protection level mode N-PE	U_p	1,5 kV
Voltage protection level mode L-PE	U_p	1,5 kV
Short-circuit current rating	I_{SCCR}	6 kA
Maximum overcurrent protection		16 A gL/gG or C 16 A
Response time L-N	t_a	25 ns
Response time N-PE	t_a	100 ns
Fault indication		optical /acoustic signalling
Degree of protection		IP 20
Range of operating temperatures		-25 °C … 40 °C
Mounting		installation box
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T3

PA-OVERDRIVE ...

SPD type 3 - Plug adapter with Surge Protection
visual fault signaling

- plug adapter with integrated SPD and RFI filter
- protection of all LV equipments against transient overvoltage and RF disturbance
- SCHUKO version is available on request

Dimensions



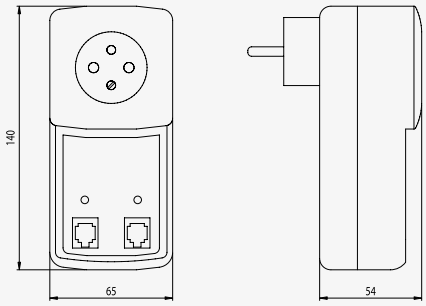
Parameter / Type		PA-OVERDRIVE F16	PA-OVERDRIVE X16	PA-OVERDRIVE F6
Nominal voltage	U_n	230 V AC	230 V AC	230 V AC
Maximum operating voltage	U_c	275 V AC	275 V AC	275 V AC
Nominal load current	I_L	16 A	16 A	6 A
Nominal discharge current (8/20 µs) L-N	I_n	3 kA	3 kA	2 kA
Nominal discharge current (8/20 µs) N-PE	I_n	3 kA	3 kA	2 kA
Test voltage L-N	U_{oc}	6 kV	6 kV	4 kV
Voltage protection level mode L-N	U_p	1,3 kV	1,2 kV	1,2 kV
Maximum overcurrent protection		16 A gL/gG or C 16 A	16 A gL/gG or C 16 A	16 A gL/gG or C 16 A
Response time L-N	t_a	25 ns	25 ns	25 ns
Response time N-PE	t_a	100 ns	100 ns	100 ns
Filter attenuation at 1MHz (50 Ω/50 Ω) unsymmetrical		30 dB		30 dB
Fault indication		red indicator	red indicator	red indicator
Degree of protection		IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C ... 80 °C	-40 °C ... 80 °C	-40 °C ... 80 °C
Mounting		intermediate adaptor	intermediate adaptor	intermediate adaptor
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T3	EN 61643-11:2012, IEC 61643-11:2011, T3	EN 61643-11:2012, IEC 61643-11:2011, T3
Ordering number		8595090510154	8595090510574	8595090510581

FAX-OVERDRIVE ...

SPD type 3 - Plug adapter with Surge Protection
visual fault signaling

- plug adapter with integrated LV SPD, RFI filter and protection of analog telephone line
- protection of telecomunication equipments against transient overvelotage and RF disturbance
- suitable also for ADSL
- SCHUKO version is available on request

Dimensions



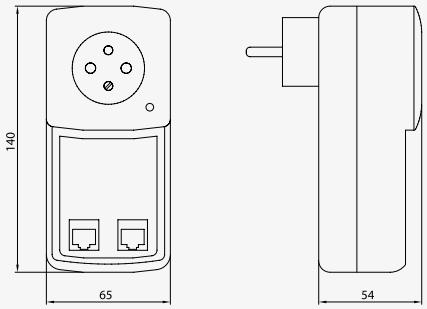
Parameter / Type			FAX-OVERDRIVE X16	FAX-OVERDRIVE F16	FAX-OVERDRIVE F6
power part	Nominal voltage	U_n	230 V AC	230 V AC	230 V AC
	Maximum operating voltage	U_c	275 V AC	275 V AC	275 V AC
	Nominal load current	I_L	16 A	16 A	6 A
	Nominal discharge current (8/20 µs) L-N	I_n	3 kA	3 kA	2 kA
	Nominal discharge current (8/20 µs) N-PE	I_n	3 kA	3 kA	2 kA
	Test voltage L-N	U_{oc}	6 kV	6 kV	4 kV
	Voltage protection level mode L-N	U_p	1,2 kV	1,3 kV	1,2 kV
	Maximum overcurrent protection		16 A gL/gG or C 16 A		16 A gL/gG or C 16 A
	Response time L-N	t_a	25 ns	25 ns	25 ns
	Response time N-PE	t_a	100 ns	100 ns	100 ns
	Filter attenuation at 1MHz (50 Ω/50 Ω) unsymmetrical			30 dB	30 dB
	Fault indication		red indicator	red indicator	red indicator
line part	Maximum operating voltage	U_c	240 V DC	240 V DC	240 V DC
	Nominal load current	I_L	0,2 A	0,2 A	0,2 A
	C2 nominal discharge current (8/20 µs) core-core	I_n	2,5 kA	2,5 kA	2,5 kA
	C2 voltage protection level mode core-core at In	U_p	450 V	450 V	450 V
	C2 voltage protection level mode core-PE at In	U_p	450 V	450 V	450 V
	C3 voltage protection level mode core-core at 1 kV/µs	U_p	300 V	300 V	300 V
	C3 voltage protection level mode core-PE at 1 kV/µs	U_p	300 V	300 V	300 V
	Response time core-core	t_a	1 ns	1 ns	1 ns
	Response time core-PE	t_a	100 ns	100 ns	100 ns
	Serial resistance per core	R	6,8 Ω	6,8 Ω	6,8 Ω
	Treshold frequency core-core	f	40 MHz	40 MHz	40 MHz
	Insertion attenuation		0,6 dB	0,6 dB	0,6 dB
	Connection (input - output)		RJ 12	RJ 12	RJ 12
	Degree of protection		IP 20	IP 20	IP 20
	Range of operating temperatures		-40 °C … 80 °C	-40 °C … 80 °C	-40 °C … 80 °C
	Mounting		intermediate adaptor	intermediate adaptor	intermediate adaptor
	According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, T3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, T3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, T3
Ordering number			8595090510635	8595090510642	8595090510659

ISDN-OVERDRIVE X16

SPD type 3 - Plug adapter with Surge Protection
visual fault signaling

- plug adapter with integrated LV SPD and protection of ISDN line
- protection of telecomunication equipments against transient overvoltage
- instalation behind NT
- SCHUKO version is available on request

Dimensions



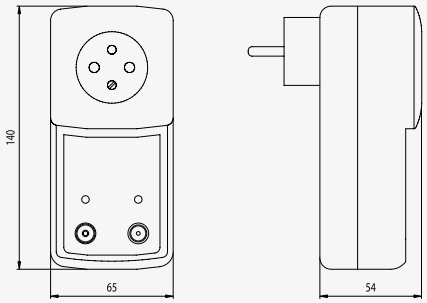
Parameter / Type			ISDN-OVERDRIVE X16
power part	Nominal voltage	U_n	230 V AC
	Maximum operating voltage	U_c	275 V AC
	Nominal load current	I_L	16 A
	Nominal discharge current (8/20 µs) L-N	I_n	3 kA
	Nominal discharge current (8/20 µs) N-PE	I_n	3 kA
	Test voltage L-N	U_{oc}	6 kV
	Voltage protection level mode L-N	U_p	1,2 kV
	Maximum overcurrent protection		16 A gL/gG or C 16 A
	Response time L-N	t_a	25 ns
	Response time N-PE	t_a	100 ns
	Fault indication		red indicator
line part	Maximum operating voltage	U_c	38 V DC
	C2 nominal discharge current (8/20 µs) core-core	I_n	0,5 kA
	C2 voltage protection level mode core-core at In	U_p	120 V
	C2 voltage protection level mode core-PE at In	U_p	230 V
	Response time core-core	t_a	25 ns
	Response time core-PE	t_a	25 ns
	Treshold frequency core-core	f	1,4 MHz
	Connection (input - output)		RJ 45
	Degree of protection		IP 20
	Range of operating temperatures		-40 °C … 80 °C
	Mounting		intermediate adaptor
	According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, T3
Ordering number			8595090519157

TV-OVERDRIVE ...

SPD type 3 - Plug adapter with Surge Protection
visual fault signaling

- plug adapter with integrated SPD, RFI filter and fine protection of TV
- protection of TV recievers against transient overvoltage and RF disturbance
- SCHUKO version is available on request

Dimensions



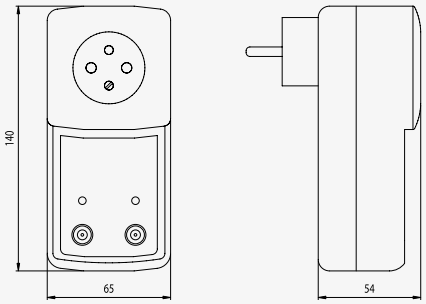
Parameter / Type			TV-OVERDRIVE X16	TV-OVERDRIVE F6
power part	Nominal voltage	U_n	230 V AC	230 V AC
	Maximum operating voltage	U_c	275 V AC	275 V AC
	Nominal load current	I_L	16 A	6 A
	Nominal discharge current (8/20 µs) L-N	I_n	3 kA	2 kA
	Nominal discharge current (8/20 µs) N-PE	I_n	3 kA	2 kA
	Test voltage L-N	U_{oc}	6 kV	4 kV
	Voltage protection level mode L-N	U_p	1,2 kV	1,2 kV
	Maximum overcurrent protection		16 A gL/gG or C 16 A	16 A gL/gG or C 16 A
	Response time L-N	t_a	25 ns	25 ns
	Response time N-PE	t_a	100 ns	100 ns
	Filter attenuation at 1MHz (50 Ω/50 Ω) unsymmetrical			30 dB
	Fault indication		red indicator	red indicator
line part	Maximum operating voltage	U_c	50 V DC	50 V DC
	C2 nominal discharge current (8/20 µs) core-core	I_n	5 kA	5 kA
	C2 nominal discharge current (8/20 µs) core-PE	I_n	5 kA	5 kA
	C2 voltage protection level mode core-core at In	U_p	650 V	650 V
	C2 voltage protection level mode core-PE at In	U_p	650 V	650 V
	C3 voltage protection level mode core-core at 1 kV/µs	U_p	600 V	600 V
	C3 voltage protection level mode core-PE at 1 kV/µs	Up	600 V	600 V
	Wave impedance	Z	75 Ω	75 Ω
	Response time core-core	t_a	100 ns	100 ns
	Response time core-PE	t_a	100 ns	100 ns
	Treshold frequency core-core	f	862 MHz	862 MHz
	Insertion attenuation		0,7 dB	0,7 dB
	Connection (input - output)		IEC 75/IEC 75	IEC 75/IEC 75
	Degree of protection		IP 20	IP 20
	Range of operating temperatures		-40 °C ... 80 °C	-40 °C ... 80 °C
	Mounting		intermediate adaptor	intermediate adaptor
	According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, T3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, T3
Ordering number			8595090510598	8595090510604

SAT-OVERDRIVE ...

SPD type 3 - Plug adapter with Surge Protection
visual fault signaling

- plug adapter with integrated SPD and fine protection of satellite or aerial line
- protection of satellite recievers against transient overvoltage
- SCHUKO version is available on request

Dimensions



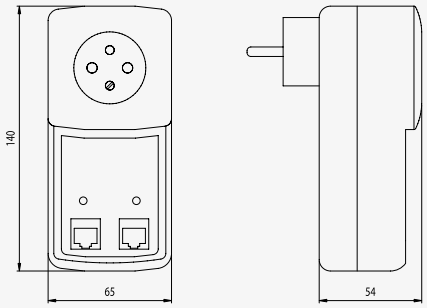
Parameter / Type			SAT-OVERDRIVE X16	SAT-OVERDRIVE F6
power part	Nominal voltage	U_n	230 V AC	230 V AC
	Maximum operating voltage	U_c	275 V AC	275 V AC
	Nominal load current	I_L	16 A	6 A
	Nominal discharge current (8/20 µs) L-N	I_n	3 kA	2 kA
	Nominal discharge current (8/20 µs) N-PE	I_n	3 kA	2 kA
	Test voltage L-N	U_{oc}	6 kV	4 kV
	Voltage protection level mode L-N	U_p	1,2 kV	1,2 kV
	Short-circuit current rating	I_{SCCR}	6 kA	6 kA
	Maximum overcurrent protection		16 A gL/gG or C 16 A	16 A gL/gG or C 16 A
	Response time L-N	t_a	25 ns	25 ns
	Response time N-PE	t_a	100 ns	100 ns
	Filter attenuation at 1MHz (50 Ω/50 Ω) unsymmetrical			30 dB
	Fault indication		red indicator	red indicator
line part	Maximum operating voltage	U_c	50 V DC	50 V DC
	C2 nominal discharge current (8/20 µs) core-core	I_n	5 kA	5 kA
	C2 nominal discharge current (8/20 µs) core-PE	I_n	5 kA	5 kA
	C2 voltage protection level mode core-core at In	U_p	650 V	650 V
	C2 voltage protection level mode core-PE at In	U_p	650 V	650 V
	C3 voltage protection level mode core-core at 1 kV/µs	U_p	600 V	600 V
	C3 voltage protection level mode core-PE at 1 kV/µs	U_p	600 V	600 V
	Wave impedance	Z	75 Ω	75 Ω
	Response time core-core	t_a	100 ns	100 ns
	Response time core-PE	t_a	100 ns	100 ns
	Treshold frequency core-core	f	2150 MHz	2150 MHz
	Insertion attenuation		1,8 dB	1,8 dB
	Connection (input - output)		female F 75/female F 75	female F 75/female F 75
	Degree of protection		IP 20	IP 20
	Range of operating temperatures		-40 °C ... 80 °C	-40 °C ... 80 °C
	Mounting		intermediate adaptor	intermediate adaptor
	According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, T3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, T3
Ordering number			8595090517146	8595090518952

NET-OVERDRIVE ...

SPD type 3 - Plug adapter with Surge Protection
visual fault signaling

- plug adapter with integrated SPD, RFI filter and fine protection of Ethernet Cat. 5 line
- protection of PC against transient overvoltage and RF disturbance
- SCHUKO version is available on request

Dimensions



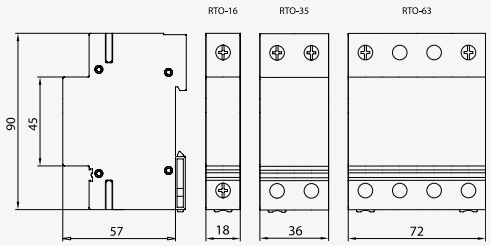
Parameter / Type			NET-OVERDRIVE X16	NET-OVERDRIVE F6
power part	Nominal voltage	U_n	230 V AC	230 V AC
	Maximum operating voltage	U_c	275 V AC	275 V AC
	Nominal load current	I_L	16 A	6 A
	Nominal discharge current (8/20 µs) L-N	I_n	3 kA	2 kA
	Nominal discharge current (8/20 µs) N-PE	I_n	3 kA	2 kA
	Test voltage L-N	U_{oc}	6 kV	4 kV
	Voltage protection level mode L-N	U_p	1,2 kV	1,2 kV
	Maximum overcurrent protection		16 A gL/gG or C 16 A	16 A gL/gG or C 16 A
	Response time L-N	t_a	25 ns	25 ns
	Response time N-PE	t_a	100 ns	100 ns
	Filter attenuation at 1MHz (50 Ω/50 Ω) unsymmetrical			30 dB
	Fault indication		red indicator	red indicator
line part	Maximum operating voltage	U_c	8,1 V DC	8,1 V DC
	Nominal load current	I_L	0,1 A	0,1 A
	C1 nominal discharge current (8/20 µs) core-core	I_n	200 A	200 A
	C1 total discharge current (8/20 µs) cores-PE	I_{Total}	1,6 kA	1,6 kA
	C1 voltage protection level mode core-core at In	U_p	45 V	45 V
	C1 voltage protection level mode core-PE at In	U_p		350 V
	C3 voltage protection level mode core-core at 1 kV/µs	U_p		40 V
	C3 voltage protection level mode core-PE at 1 kV/µs	U_p		350 V
	Response time core-core	t_a	1 ns	1 ns
	Response time core-PE	t_a	100 ns	100 ns
	Insertion attenuation at 100 MHz		1,2 dB	1,2 dB
	Connection (input - output)		RJ 45/RJ 45	RJ 45/RJ 45
	Degree of protection		IP 20	IP 20
	Range of operating temperatures		-40 °C ... 80 °C	-40 °C ... 80 °C
	Mounting		intermediate adaptor	intermediate adaptor
	According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, T3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, T3
Ordering number			8595090510611	8595090510628

RTO-…

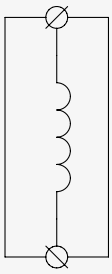
Surge separating inductor

- coupling impedance for coordination of SPD type 1 and 2 or type 2 and 3

Dimensions



Basic circuit diagram



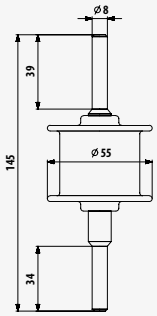
Parameter / Type		RTO-16	RTO-35	RTO-63
Nominal voltage	U_n	500 V AC	500 V AC	500 V AC
Frequency	f	50 Hz	50 Hz	50 Hz
Nominal load current	I_L	16 A	35 A	63 A
Maximum overcurrent protection		16 A gL/gG or C 16 A	35 A gL/gG or C 35 A	63 A gL/gG or C 63 A
Resistance	R	5 mOhm	2,5 mOhm	2 mOhm
Inductance	L	10 uH	10 uH	10 uH
Power loss at IL		1,28 W	3 W	8 W
Cross-section of connected conductors solid		1 / 50 mm^2	1 / 50 mm^2	1 / 50 mm^2
Cross-section of connected conductors stranded		1 / 35 mm^2	1 / 35 mm^2	1 / 35 mm^2
Degree of protection		IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 80 °C	-40 °C … 80 °C	-40 °C … 80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
Ordering number		8595090514329	8595090514336	8595090514343

ISG-A100

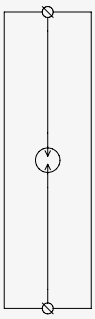
Isolation Spark Gap
encapsulated high-performance spark gap

- for indirect connection of external lightning protection system with other nearby metal parts, where is not allowed direct connection

Dimensions



Basic circuit diagram



Parameter / Type		ISG-A100
Lightning impulse current	I_{imp}	100 kA
Rated impulse sparkover voltage	U_{nimp}	5 kV
Rated power frequency withstand voltage	U_{WAC}	2,5 kV
Explosion-tested version		100 MOhm
Classification		class H - heavy duty
Degree of protection		IP 67
Range of operating temperatures		-40 °C … 80 °C
According to standard		EN 62561-3:2012,IEC 62561-3:2012
Ordering number		8595090535904

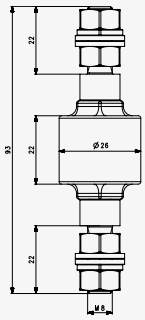
ISG-…

NEW

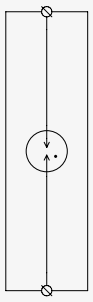
Isolation Spark Gap
encapsulated high-performance spark gap

- for indirect connection of external lightning protection system with other nearby metal parts, where is not allowed direct connection
- Ex version on request

Dimensions



Basic circuit diagram



Parameter / Type		ISG-50	ISG-100
Lightning impulse current	I_{imp}	50 kA	50 kA
Rated impulse sparkover voltage	U_{nimp}	0,9 kV	0,95 kV
Rated power frequency withstand voltage	U_{WAC}	0,04 kV	0,07 kV
Rated DC withstand voltage	U_{WDC}	0,05 kV	0,1 kV
Explosion-tested version		100 MOhm	100 MOhm
Classification		class N - normal duty	class N - normal duty
Degree of protection		IP 67	IP 67
Range of operating temperatures		-40 °C … 80 °C	-40 °C … 80 °C
According to standard		EN 62561-3:2012,IEC 62561-3:2012	EN 62561-3:2012,IEC 62561-3:2012
Ordering number		8595090540861	8595090540786

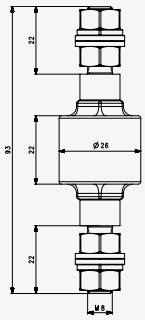
ISG-…

NEW

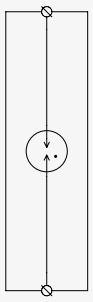
Isolation Spark Gap
encapsulated high-performance spark gap

- for indirect connection of external lightning protection system with other nearby metal parts, where is not allowed direct connection
- Ex version on request

Dimensions



Basic circuit diagram



Parameter / Type		ISG-250	ISG-500
Lightning impulse current	I_{imp}	100 kA	100 kA
Rated impulse sparkover voltage	U_{rimp}	1,4 kV	1,5 kV
Rated power frequency withstand voltage	U_{WAC}	0,25 kV	0,35 kV
Rated DC withstand voltage	U_{WDC}	0,38 kV	0,5 kV
Explosion-tested version		100 MOhm	100 MOhm
Classification		class H - heavy duty	class H - heavy duty
Degree of protection		IP 67	IP 67
Range of operating temperatures		-40 °C … 80 °C	-40 °C … 80 °C
According to standard		EN 62561-3:2012,IEC 62561-3:2012	EN 62561-3:2012,IEC 62561-3:2012
Ordering number		8595090541301	8595090541271

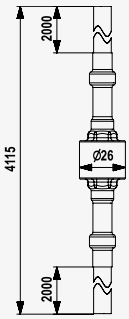
ISGC-…

NEW

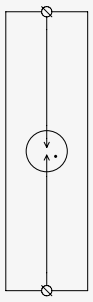
Isolation Spark Gap
encapsulated high-performance spark gap

- for indirect connection of external lightning protection system with other nearby metal parts, where is not allowed direct connection
- Ex version on request

Dimensions



Basic circuit diagram



Parameter / Type		ISGC-50	ISGC-100
Lightning impulse current	I_{imp}	50 kA	50 kA
Rated impulse sparkover voltage	U_{rimp}	0,9 kV	0,95 kV
Rated power frequency withstand voltage	U_{WAC}	0,04 kV	0,07 kV
Rated DC withstand voltage	U_{WDC}	0,05 kV	0,1 kV
Explosion-tested version		100 MOhm	100 MOhm
Classification		class N - normal duty	class N - normal duty
Degree of protection		IP 67	IP 67
Range of operating temperatures		-40 °C … 80 °C	-40 °C … 80 °C
According to standard		EN 62561-3:2012,IEC 62561-3:2012	EN 62561-3:2012,IEC 62561-3:2012
Ordering number		8595090553656	8595090553663

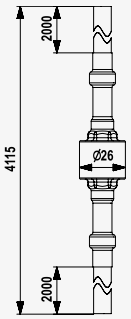
ISGC-…

NEW

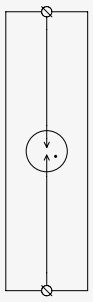
Isolation Spark Gap
encapsulated high-performance spark gap

- for indirect connection of external lightning protection system with other nearby metal parts, where is not allowed direct connection
- Ex version on request

Dimensions



Basic circuit diagram



Parameter / Type		ISGC-250	ISGC-500
Lightning impulse current	I_{imp}	100 kA	100 kA
Rated impulse sparkover voltage	U_{rimp}	1,4 kV	1,5 kV
Rated power frequency withstand voltage	U_{WAC}	0,25 kV	0,35 kV
Rated DC withstand voltage	U_{WDC}	0,38 kV	0,5 kV
Explosion-tested version		100 MOhm	100 MOhm
Classification		class H - heavy duty	class H - heavy duty
Degree of protection		IP 67	IP 67
Range of operating temperatures		-40 °C … 80 °C	-40 °C … 80 °C
According to standard		EN 62561-3:2012,IEC 62561-3:2012	EN 62561-3:2012,IEC 62561-3:2012
Ordering number		8595090553670	8595090553687

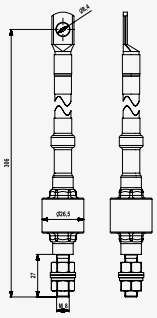
ISGO-500

NEW

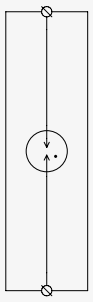
Isolation Spark Gap
encapsulated high-performance spark gap

- for indirect connection of external lightning protection system with other nearby metal parts, where is not allowed direct connection
- Ex version on request

Dimensions



Basic circuit diagram



Parameter / Type		ISGO-500
Lightning impulse current	I_{imp}	100 kA
Rated impulse sparkover voltage	U_{rimp}	1,5 kV
Rated power frequency withstand voltage	U_{WAC}	0,35 kV
Rated DC withstand voltage	U_{WDC}	0,5 kV
Explosion-tested version		100 MOhm
Classification		class H - heavy duty
Degree of protection		IP 67
Range of operating temperatures		-40 °C … 80 °C
According to standard		EN 62561-3:2012,IEC 62561-3:2012
Ordering number		8595090555186

Notes

SPD connected to installations of photovoltaic systems

- Protection of PV inverters for photovoltaic systems
- PV solution for family houses
- PV plants
- Protection of off-grid solar inverters
- Protection of battery charges
- Lightning arrester PV Type 1 and 2 SPD
- Surge arrester PV Type 2 SPD

SPD connected to installations of photovoltaic systems

Photovoltaic arrays are costly to install and demanding in terms of technology. Their service life must be measured in decades to see a return on the invested funds. Manufacturers usually provide about a twenty-year guarantee for photovoltaic systems.
To provide trouble-free technology throughout its service life, it is necessary to include comprehensive protection against atmospheric and induced overvoltage at the design stage to implement the technology into the project. Protection must be provided not only at the output side of the inverter, but also at the photovoltaic panels.
Solar photovoltaic arrays are usually installed on rooftops, or on a "greenfield".
As for the anticipated risks (pursuant to EN 62305-2), direct or near lightning strikes are considered. Overvoltage or lightning strike can bring about financial loss, and for photovoltaic systems installed on rooftops where individuals could be working, injury should also be considered.
Photovoltaic system designs, including lightning and overvoltage suppression, shall comply with the HD 60364-7-712 standard (Electrical installations of buildings – Solar photovoltaic (PV) systems), technical specification CLC/TS 50539-12 (SPD for specific application including DC – Selection and application principles – SPDs connected to PV installations) and the group of EN 62305 standards (Lightning protection).
The core (key device) of the whole photovoltaic system is the inverter, so the lightning and overvoltage protection should be focused on the inverter and, it should be incorporated into the whole lightning and overvoltage protection system. Furthermore, photovoltaic units and their bearing metal structures should be integrated into the grounding design.

SPD selection for DC side:

- U_{CPV} maximum continuous operating voltage
  $U_{OC\ STC}$ standardized test circuit voltage of PV String

$$U_{CPV} \geq 1{,}2\times U_{OC\ STC}$$

- If separating spark-over distance "s" is kept
  – Type 2 SPD PV is installed
  – If distance "l" between PV modules and inverter is longer than 10m - SPD is installed on both sides of the DC line

- If separating spark-over distance "s" is not kept
  – Type 1 and 2 SPD PV is installed
  – It is always necessary to install SPD PV on both sides of the DC line

All surge protections SALTEK® for photovoltaic systems are tested according to EN 50539-11.

General circuit diagram of solar photovoltaic systems

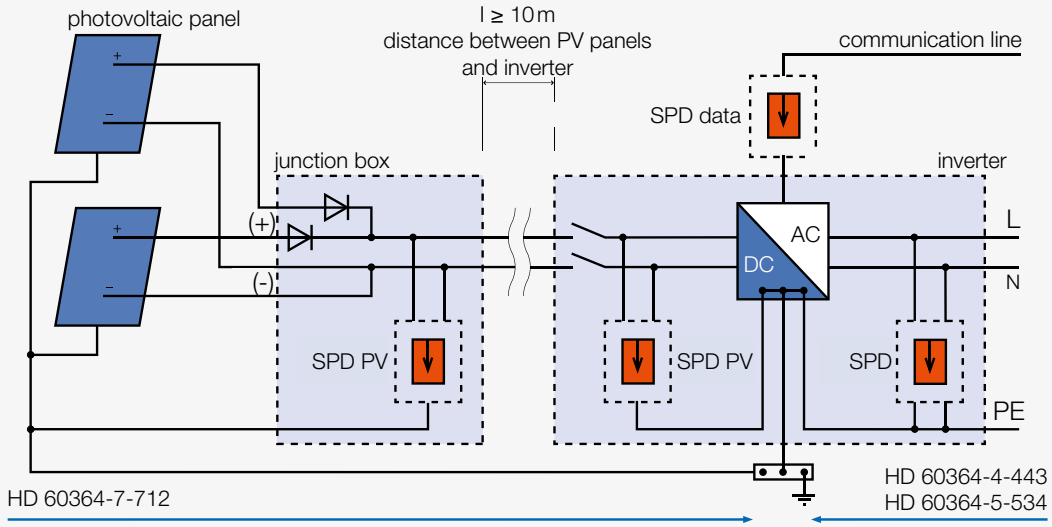


Fig. 1

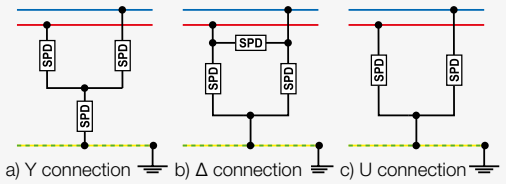
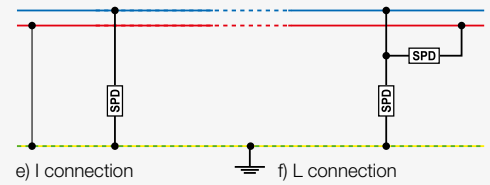


Fig. 2



The DC side of the PV system can either be unearthed (insulated) or with one pole earthed. Figures 1 and 2 (see CLC/TS 50 539-12) show how SPDs on the DC side must be connected.

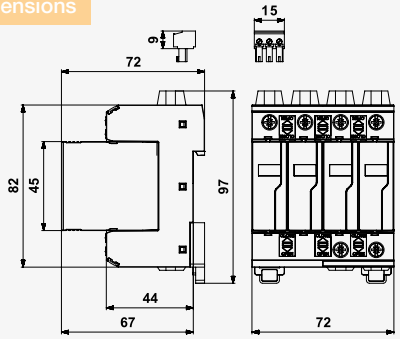
When mounting an SPD, the necessary length of the connecting conductors should be complied with HD 60364-5-534 (IEC 60364-5-53, chapter 534), clause 534.2.9.

FLP-PV... V/U (S)

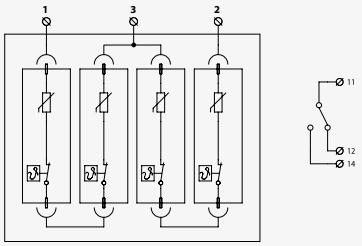
SPD PV type 1 and type 2 - Lightning Current Arrester for PV systems
pluggable module, visual fault signaling

- for installation in the DC circuits of solar photovoltaic systems
- remote status signaling (S)
- maximum continuous operating voltage for PV application: Ucpv ≥ 1,2x UOC STC

Dimensions



Basic circuit diagram



Parameter / Type		FLP-PV500 V/U	FLP-PV500 V/U S	FLP-PV700 V/U	FLP-PV700 V/U S
Maximum operating voltage mode 1/3, 2/3	U_{CPV}	500 V DC	500 V DC	700 V DC	700 V DC
Lightning impulse current (10/350 µs)	I_{imp}	25 kA	25 kA	25 kA	25 kA
Nominal discharge current (8/20 µs)	I_n	30 kA	30 kA	30 kA	30 kA
Maximum discharge current (8/20 µs)	I_{max}	60 kA	60 kA	60 kA	60 kA
Voltage protection level mode 1/2	U_p	3,4 kV	3,4 kV	4,8 kV	4,8 kV
Voltage protection level mode 1/3, 2/3	U_p	1,7 kV	1,7 kV	2,4 kV	2,4 kV
Short-circuit current rating	I_{SCPV}	63 A DC	63 A DC	125 A DC	125 A DC
Response time	t_a	25 ns	25 ns	25 ns	25 ns
Cross-section of connected conductors solid		1 / 35 mm²	1 / 35 mm²	1 / 35 mm²	1 / 35 mm²
Cross-section of connected conductors stranded		1 / 25 mm²	1 / 25 mm²	1 / 25 mm²	1 / 25 mm²
Fault indication		red indication field	red indication field	red indication field	red indication field
Remote indication			potential-free change-over contact		potential-free change-over contact
Remote indication contacts			250 V / 0,5 A AC, 250 V / 0,1 A DC		250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors			1,5 mm²		1,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C	-40 °C … +80 °C	-40 °C … +80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 50539-11:2013, PV T1, PV T2	EN 50539-11:2013, PV T1, PV T2	EN 50539-11:2013, PV T1, PV T2	EN 50539-11:2013, PV T1, PV T2
Ordering number		8595090536727	8595090536734	8595090536741	8595090536758

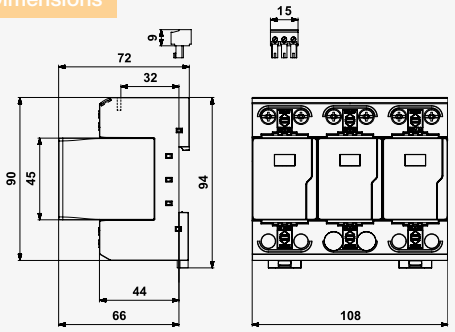
Spare module	FLP-PV250U V/0	FLP-PV250U V/0	FLP-PV350U V/0	FLP-PV350U V/0
Ordering number	8595090536901	8595090536901	8595090536918	8595090536918

FLP-PV1000 V(S)/Y

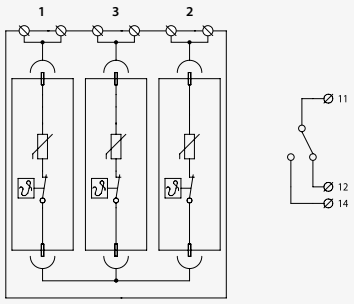
SPD PV type 1 and type 2 - Lightning Current Arrester for PV systems
pluggable module, visual fault signaling

- for installation in the DC circuits of solar photovoltaic systems
- remote status signaling (S)
- maximum continuous operating voltage for PV application: Ucpv ≥ 1,2x UOC STC

Dimensions



Basic circuit diagram



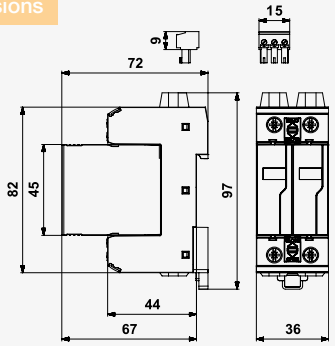
Parameter / Type		FLP-PV1000 V/Y	FLP-PV1000 VS/Y
Maximum operating voltage mode 1/3, 2/3	U_{CPV}	1 000 V DC	1 000 V DC
Lightning impulse current (10/350 µs)	I_{imp}	12,5 kA	12,5 kA
Nominal discharge current (8/20 µs)	I_n	30 kA	30 kA
Maximum discharge current (8/20 µs)	I_{max}	60 kA	60 kA
Voltage protection level mode 1/2	U_p	3,6 kV	3,6 kV
Voltage protection level mode 1/3, 2/3	U_p	3,6 kV	3,6 kV
Short-circuit current rating	I_{SCPV}	125 A DC	125 A DC
Response time	t_a	25 ns	25 ns
Cross-section of connected conductors solid		2,5 / 50 mm²	2,5 / 50 mm²
Cross-section of connected conductors stranded		2,5 / 35 mm²	2,5 / 35 mm²
Fault indication		red indication field	red indication field
Remote indication			potential-free change-over contact
Remote indication contacts			250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors			1,5 mm²
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C
Mounting		DIN rail 35 mm	
According to standard		EN 50539-11:2013, PV T1, PV T2	EN 50539-11:2013, PV T1, PV T2
Ordering number		8595090540595	8595090540588

Spare module	FLP-PV500Y V/0	FLP-PV500Y V/0
Ordering number	8595090542117	8595090542117

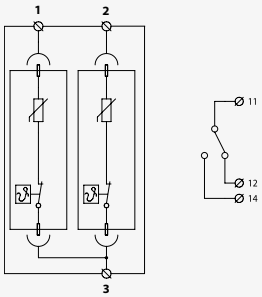
SPD PV type 2 - Surge Arrester for PV systems
pluggable module, visual fault signaling, blocking module

- for installation in the DC circuits of solar photovoltaic systems
- remote status signaling (S)
- maximum continuous operating voltage for PV application: Ucpv ≥ 1,2x UOC STC

Dimensions



Basic circuit diagram



Parameter / Type		SLP-PV170 V/U	SLP-PV170 V/U S	SLP-PV500 V/U	SLP-PV500 V/U S	SLP-PV600 V/U	SLP-PV600 V/U S
Maximum operating voltage mode 1/2	U_{CPV}	250 V DC	250 V DC	750 V DC	750 V DC	900 V DC	900 V DC
Maximum operating voltage mode 1/3, 2/3	U_{CPV}	170 V DC	170 V DC	510 V DC	510 V DC	600 V DC	600 V DC
Nominal discharge current (8/20 µs)	I_n	15 kA	15 kA	15 kA	15 kA	15 kA	15 kA
Maximum discharge current (8/20 µs)	I_{max}	40 kA	40 kA	30 kA	30 kA	30 kA	30 kA
Voltage protection level mode 1/2	U_p	1,2 kV	1,2 kV	4 kV	4 kV	4,2 kV	4,2 kV
Voltage protection level mode 1/3, 2/3	U_p	0,6 kV	0,6 kV	2 kV	2 kV	2,1 kV	2,1 kV
Short-circuit current rating	I_{SCPV}	63 A DC	63 A DC	63 A DC	63 A DC	125 A DC	125 A DC
Response time	t_a	25 ns	25 ns	25 ns	25 ns	25 ns	25 ns
Cross-section of connected conductors solid		1 / 35 mm²	1 / 35 mm²	1 / 35 mm²	1 / 35 mm²	1 / 35 mm²	1 / 35 mm²
Cross-section of connected conductors stranded		1 / 25 mm²	1 / 25 mm²	1 / 25 mm²	1 / 25 mm²	1 / 25 mm²	1 / 25 mm²
Fault indication		red indication field	red indication field	red indication field	red indication field	red indication field	red indication field
Remote indication			potential-free change-over contact		potential-free change-over contact		potential-free change-over contact
Remote indication contacts			250 V / 0,5 A AC, 250 V / 0,1 A DC		250 V / 0,5 A AC, 250 V / 0,1 A DC		250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors			1,5 mm²		1,5 mm²		1,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C	-40 °C … +80 °C	-40 °C … +80 °C	-40 °C … +80 °C	-40 °C … +80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 50539-11:2013, PV T2	EN 50539-11:2013, PV T2	EN 50539-11:2013, PV T2	EN 50539-11:2013, PV T2	EN 50539-11:2013, PV T2	EN 50539-11:2013, PV T2
Ordering number		8595090536628	8595090536635	8595090536642	8595090536659	8595090536666	8595090536673

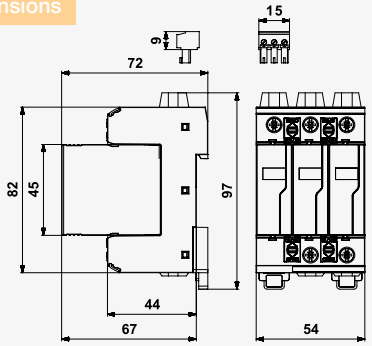
Spare module	SLP-PV170U V/0	SLP-PV170U V/0	SLP-PV500U V/0	SLP-PV500U V/0	SLP-PV600U V/0	SLP-PV600U V/0
Ordering number	8595090536925	8595090536925	8595090536949	8595090536949	8595090536956	8595090536956

SLP-PV… V/Y (S)

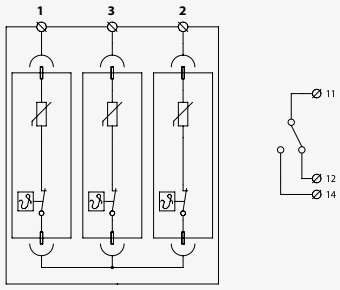
SPD PV type 2 - Surge Arrester for PV systems
pluggable module, visual fault signaling, blocking module

- for installation in the DC circuits of solar photovoltaic systems
- remote status signaling (S)
- maximum continuous operating voltage for PV application: Ucpv ≥ 1,2x UOC STC

Dimensions



Basic circuit diagram



Parameter / Type		SLP-PV700 V/Y	SLP-PV700 V/Y S	SLP-PV1000 V/Y	SLP-PV1000 V/Y S	SLP-PV1200 V/Y	SLP-PV1200 V/Y S
Maximum operating voltage mode 1/3, 2/3	U_{CPV}	750 V DC	750 V DC	1 020 V DC	1 020 V DC	1200 V DC	1200 V DC
Nominal discharge current (8/20 µs)	I_n	20 kA	20 kA	15 kA	15 kA	15 kA	15 kA
Maximum discharge current (8/20 µs)	I_{max}	40 kA	40 kA	30 kA	30 kA	30 kA	30 kA
Voltage protection level mode 1/2	U_p	3,6 kV	3,6 kV	4 kV	4 kV	4,2 kV	4,2 kV
Voltage protection level mode 1/3, 2/3	U_p	3,6 kV	3,6 kV	4 kV	4 kV	4,2 kV	4,2 kV
Short-circuit current rating	I_{SCPV}	63 A DC	63 A DC	125 A DC	125 A DC	125 A DC	125 A DC
Response time	t_a	25 ns	25 ns	25 ns	25 ns	25 ns	25 ns
Cross-section of connected conductors solid		1 / 35 mm²	1 / 35 mm²	1 / 35 mm²	1 / 35 mm²	1 / 35 mm²	1 / 35 mm²
Cross-section of connected conductors stranded		1 / 25 mm²	1 / 25 mm²	1 / 25 mm²	1 / 25 mm²	1 / 25 mm²	1 / 25 mm²
Fault indication		red indication field	red indication field	red indication field	red indication field	red indication field	red indication field
Remote indication			potential-free change-over contact		potential-free change-over contact		potential-free change-over contact
Remote indication contacts			250 V / 0,5 A AC, 250 V / 0,1 A DC		250 V / 0,5 A AC, 250 V / 0,1 A DC		250V/0,5A AC,250V/0,1A DC
Cross-section of remote indication conductors			1,5 mm²		1,5 mm²		1,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … +80 °C	-40 °C … +80 °C	-40 °C … +80 °C	-40 °C … +80 °C	-40 °C ... 80 °C	-40 °C ... 80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 50539-11:2013, PV T2	EN 50539-11:2013, PV T2	EN 50539-11:2013, PV T2	EN 50539-11:2013, PV T2	EN 50539-11:2013, PV T2	EN 50539-11:2013, PV T2
Ordering number		8595090536680	8595090536697	8595090536703	8595090536710	8595090538974	8595090538981

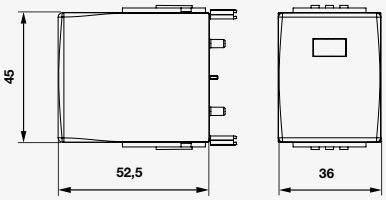
Spare module	SLP-PV350Y V/0	SLP-PV350Y V/0	SLP-PV500Y V/0	SLP-PV500Y V/0	SLP-PV600Y V/0	SLP-PV600Y V/0
Ordering number	8595090537441	8595090537441	8595090537366	8595090537366	8595090538998	8595090538998

SLP-PV..., FLP-PV...

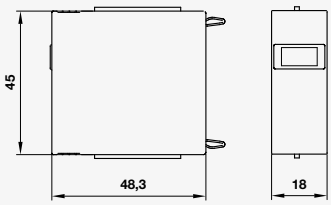
Spare pluggable modules for surge arresters Type 2

- SALTEK SPD with a “V” in the type number are made with pluggable modules.
- this enables simple withdrawal of the module from its base to test the systems insulation, without the need to disconnect the device from the circuit
- the new modules enable simple up-down orientation of the SPD, according to the incoming cables and also it serve for fast and easy replacement in case of failuret
- the spare modules (marked “xxx V/0”) are identical to the ones used in original product
- the voltages used cannot be mixed because of the identical voltage key on the module and the corresponding base part

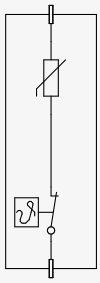
Dimensions



FLP-PV500Y V/0



Basic circuit diagram



Type	Ordering number
SLP-PV170U V/0	8595090536925
SLP-PV500U V/0	8595090536949
SLP-PV600U V/0	8595090536956

Type	Ordering number
SLP-PV350Y V/0	8595090537441
SLP-PV500Y V/0	8595090537366
FLP-PV250U V/0	8595090536901

Type	Ordering number
FLP-PV350U V/0	8595090536918
FLP-PV500Y V/0	8595090542117
SLP-PV600Y V/0	8595090538998

Notes

SPD connected to data/signal/telecommunication networks

- Security, Fire Alarm and CCTV systems
- IP technology and data networks (Ethernet)
- ADSL and telecommunications
- Antennas
- Attendance systems
- Control systems for industry

- Lightning current arresters ST1; ST1+2+3
- Surge protection ST2+3; ST3
- Line BD – lightning current arrester
- Line DM, DMG – for single/two/three/four cores communication lines, G – with isolated signal ground
- Line DMHF – for high speed lines
- Line DM-PROFIBUS
- Line DL – for Ethernet and IP technology
- Line DP – for extra low-voltage power supply
- Line VL – for CCTV
- Line CLSA – for LSA-PLUS disconnection modules
- Line .X – for coaxial cables

Telecommunication, signal and data protections

The basic principle for surge protection is the **complexity** and **coordination** of devices. The complexity requirement can be met only by installing surge arresters in all inputs and outputs (!) of the given equipment, i.e. it is necessary to protect the power supply line and also the measuring and communication interface. We can ensure coordination by installing devices with various protective effects in sequence into the line or the communication core and the interface.

Criteria to meet the requirement for complexity and coordination particularly include position of installation respective to LPZ boundary, maximum impulse or discharge current, required protection level and response time.

Fig. 1 shows the principle of protection coordination and protection complexity.

In order to select the correct type of dataline protection there must be detailed information about the protected signal:

- Signal voltage
- Signal current
- Frequency bandwidth – frequency and signal form
- Conduit in lightning protection zones (LPZ 0 to LPZ 2)
- L+ongitudinal impedance – maximum line attenuation
- Possibility of steady overvoltage (so-called high-ohm fault)

During the installation of all surge devices, strictly observe the elimination of the link between the input of the unprotected line and the output of the protected line and the earthing line. Examples of the most frequent installation errors concerning the link between the input and output of the protected line and earth are shown in Fig. 2. This figure also shows an example of correct wiring.

Potential balancing of pulse overvoltage must always proceed outside the protected equipment. Fig. 3 shows the correct wiring of surge arresters in a control system with external power source, communicating with the surroundings via a measuring and communication interface. Potential balancing via the protected equipment is inadmissible.

The table with principle of marking for easier orientation:

Transition from zones	Marking
LPZ 0 – LPZ 1	ST 1
LPZ 1 – LPZ 2	ST 2
LPZ 2 – LPZ 3	ST 3

Example of marking:

Product	Description	Marking
BD 250T	lightning current arrester	ST 1
BDG 24	combined lightning and surge currents arrester	ST1+2+3
DM-024/1R DJ	combined overvoltage protection	ST2+3

Fig. 1 Principle of protection coordination and protection complexity

FLP – lightning current arrester class B
SLP – voltage discharge gap class C
DA – voltage discharge gap class D
BD-T – lightning current arrester
DM – combined surge protection
M&C – measurement and control room

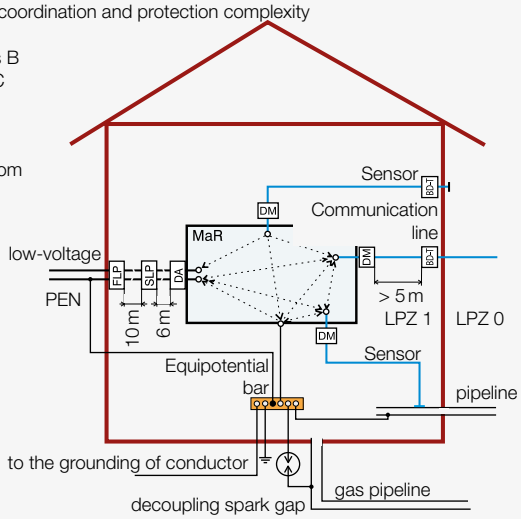


Fig. 2 Links between input and output line and earth connection

An unprotected input line should be removed from the protected output line as far as possible

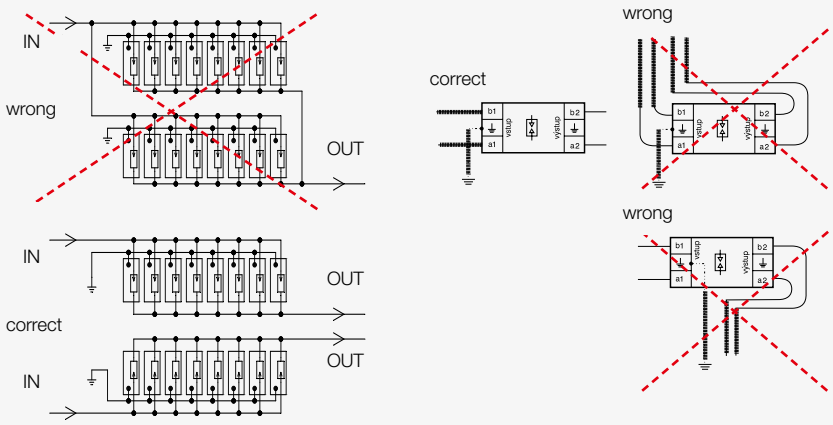
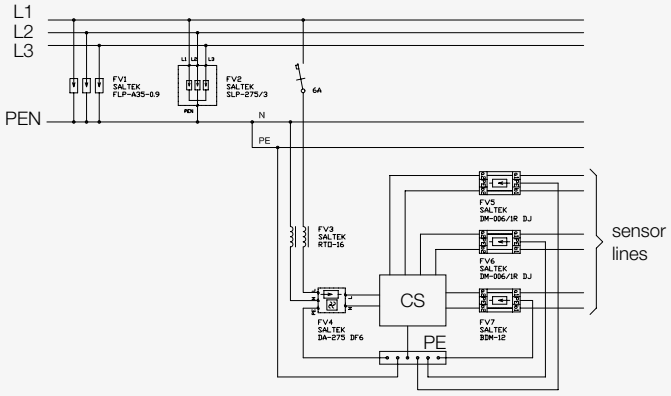


Fig. 3 Principle of the protection of control systems



The principle of placing the dataline protections

For easier placing of dataline protections SALTEK introduced a new type of categorization of dataline protections under SALTEK marking ST 1, ST 2 and ST 3. This new designation quite specifically define the placing of dataline protections within the principles of Zonal protection and complies with standards EN 61643-21 + A1 , A2 and EN 62305 - Zonal protection.

Another important thing to note is the fact that the majority of dataline protection is multi-type. The most commonly used protection is two-type, composed of second and third type (ST 2+3). This includes units of the DM line intended to protect communication lines which are inside the building.

For communication lines that go to the outside of the building (i.e. between LPZ 0 to LPZ 1), a combination of devices can be used, i.e. protection DM series (ST 2+3) and lightning current arrester BD type (ST 1) or three-type protection BDM series or BDG (ST 1+2+3) . On the Fig. 4 it is clearly shown which variant for which case is suitable.

Given that most of the dataline protection is a multi-type, it must be remembered that these are directional and must be fitted in the correct manor (installed in the correct direction). The communication line (wire) is connected to the input of dataline device and the output of dataline device is connected to the protected equipment as shown in Fig. 5. For comprehensive protection of communication and instrumentation systems, it is necessary that as well as protecting the measuring and datalines, the power supply line must be also protected. Protection of the AC power supply 230 V AC is shown in Fig. 3 (the principle of the protection of control system). When protecting small voltages, the DP units are used. These are adapted for protection of both AC and DC voltage. The signal lines often use shielded cables. The principle of grounding of shielding is shown in Fig. 6 (grounding of shielding)

Maintenance of protection devices

Overvoltage protection devices from SALTEK do not require maintenance during its lifetime. But it is appropriate to provide periodic inspection during the operation and remedy when any problem occurres. The damage of the dataline protection cause the interruption and/or permanent short circuit of the line.

Fig. 4 Coordination distance

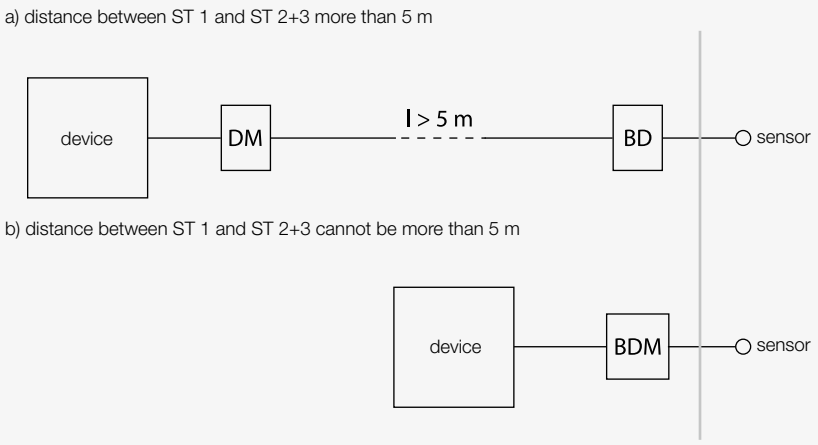


Fig. 5 Protection of electronic security system

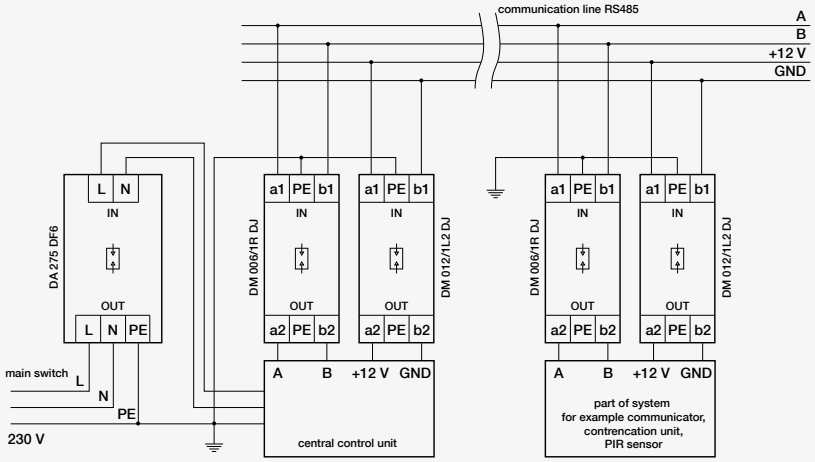
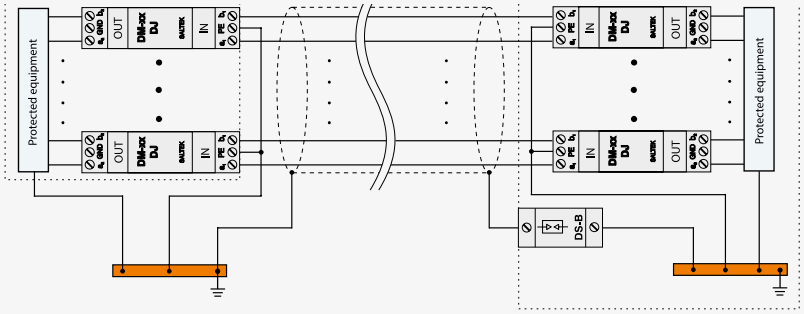


Fig. 6 Grounding of the shielding



SALTEK SPD applications in data / signal / telecommunication systems

MEASURING AND CONTROL TECHNOLOGY AND BUS SYSTEMS								
Interface / Signal		Protected lines	U (DC) (V)	Discharge current per core 10/350 µs	Discharge current per core 8/20 µs	SPD xx – corresponding voltage	For mounting on	Notes
Current loop 0 ÷ 20 mA, 4 ÷ 20 mA		2	12/24	x	10 kA	DM-xx/1R DJ	DIN 35	
				x	10 kA	DM-xx/1-RS	DIN 35	
		2	12/24	x	10 kA	DM-xx-V/1-R1	DIN 35	
		2	12/24	x	10 kA	CLSA-xx	LSA plus	disconnection
		2	12/24	5 kA	x	BDM-xx-V/1-R1	DIN 35	
		4	12/24	x	10 kA	DM-xx-V/2-R1	DIN 35	
				x	10 kA	DM-xx-V/2-FR1	DIN 35	floating ground
				x	10 kA	2ks DM-xx/1 R DJ	DIN 35	
		2	12/24	x	10 kA	DMG-xx-V/1-R1	DIN 35	isolated signal ground
		2	12/24	x	10 kA	DMG-xx-/1-RS	DIN 35	isolated signal ground
		2	12/24	x	10 kA	DMG-xx/1R DJ	DIN 35	isolated signal ground
		2	12/24	5 kA	x	BDG-xx-V/1-R1	DIN 35	isolated signal ground
Binary signals		2	6 ÷ 240	x	10 kA	DM-xx-V/1-R1	DIN 35	
				x	10 kA	DM-xx-V/1-FR1	DIN 35	floating ground
				x	10 kA	CLSA-xx	LSA plus	disconnection
				x	10 kA	DM-xx/1R DJ	DIN 35	
		2	6 ÷ 60	5 kA	x	BDM-xx-V/1-R1	DIN 35	
BLN Building Level Network		2	15/48	x	10 kA	DM-xx-V/1-R1	DIN 35	
				x	10 kA	DM-xx-V/1-FR1	DIN 35	floating ground
				x	10 kA	DM-xx/1R DJ	DIN 35	
TTL		2	12	x	10 kA	DM-012-V/1-R1	DIN 35	
				x	10 kA	DM-012-V/1-FR1	DIN 35	floating ground
				x	10 kA	DM-012/1R DJ	DIN 35	
		2	12	5 kA	x	BDM-012-V/1-R1	DIN 35	
RS-485 up to 1.5 Mbit/s		2	5	x	10 kA	DM-006-V/1-R1	DIN 35	
				x	10 kA	DM-006-V/1-FR1	DIN 35	floating ground
				x	10 kA	DM-006/1R DJ	DIN 35	
		3	5	x	10 kA	DM-006/3R DJ	DIN 35	
		3/4	5	x	10 kA	DMG-006-V/1-4R1	DIN 35	isolated signal ground
		3/4	5	x	10 kA	DMG-006-V/1-4FR1	DIN 35	floating ground
		4	5	x	10 kA	DM-006/4R DJ	DIN 35	
		2	5	5 kA	x	BDM-006-V/1-R1	DIN 35	
RS-422		2	5	x	10 kA	DM-006-V/1-R1	DIN 35	
				x	10 kA	DM-006-V/1-FR1	DIN 35	floating ground
				x	10 kA	DM-006/1R DJ	DIN 35	
		4	5	x	10 kA	DMG-006-V/1-4R1	DIN 35	isolated signal ground
				x	10 kA	DMG-006-V/1-4FR1	DIN 35	floating ground
				x	10 kA	DM-006/4R DJ	DIN 35	
		2	5	5 kA	x	BDM-xx-V/1-R1	DIN 35	
Analog signals	I = 0.06 A	2	6 ÷ 48	x	10 kA	DM-xx-/1-R DJ	DIN 35	
	I = 0.37 A	2	6 ÷ 48	x	10 kA	DM-xx-/1-L DJ	DIN 35	
	I = 0.5 A	2	6 ÷ 48	x	10 kA	CLSA-xx	LSA plus	disconnection
			6 ÷ 110	x	10 kA	DM-xx-/1-RS	DIN 35	
			6 ÷ 110	x	10 kA	DMG-xx-/1-RS	DIN 35	
			24	x	10 kA	DMLF-024-/1-RS	DIN 35	
	I = 1 A	2	6 ÷ 230	x	10 kA	DM-xx-V/1-R1	DIN 35	
				x	10 kA	DM-xx-V/1-FR1	DIN 35	floating ground
				x	10 kA	DMG-xx-V/1-R1	DIN 35	isolated signal ground
				x	10 kA	DMG-xx-V/1-FR1	DIN 35	floating ground
			6 ÷ 48	5 kA	x	BDM-xx-V/1-R1	DIN 35	
				5 kA	x	BDG-xx-V/1-R1	DIN 35	isolated signal ground
				5 kA	x	BDM-xx-V/1-FR1	DIN 35	floating ground
				5 kA	x	BDG-xx-V/1-FR1	DIN 35	floating ground
	I = 2 A	2	6 ÷ 48	x	10 kA	DM-xx-/1-L2 DJ	DIN 35	
			6 ÷ 60	x	10 kA	DM-xx-V/1-R2	DIN 35	
				x	10 kA	DM-xx-V/1-FR2	DIN 35	floating ground
				x	10 kA	DMG-xx-V/1-R2	DIN 35	isolated signal ground
				x	10 kA	DMG-xx-V/1-FR2	DIN 35	floating ground
Multipurpose coarse protection		2	70	5 kA	x	BD-090-T-V/1-16	DIN 35	
				5 kA	x	BD-090-T-V/1-F16	DIN 35	floating ground
RS-232		2	15	x	10 kA	DM-012-V/1-R1	DIN 35	
				x	10 kA	DM-012-V/1-FR1	DIN 35	floating ground
				x	10 kA	DM-012/1R DJ	DIN 35	
		2	15	5 kA	x	BDM-012-V/1-R1	DIN 35	
Measurement of temperature Pt-100, Pt-1000 Ni-1000, NTC, PTC		2	up to 6	x	10 kA	CLSA-006	LSA plus	disconnection
				x	10 kA	DM-006-V/1-R1	DIN 35	
				x	10 kA	DM-006-V/1-FR1	DIN 35	floating ground
				x	10 kA	DM-006/1R DJ	DIN 35	
		3	up to 6	x	10 kA	DM-006/3R DJ	DIN 35	
		3/4	up to 6	x	10 kA	DMG-006-V/1-4R1	DIN 35	
		3/4	up to 6	x	10 kA	DMG-006-V/1-4FR1	DIN 35	floating ground
		4	up to 6	x	10 kA	DM-006/4R DJ	DIN 35	
		2	up to 6	5 kA	x	BDM-xx-V/1-R1	DIN 35	
Optron protocol		2	6 ÷ 24	x	10 kA	DM-006-V/1-R1	DIN 35	
				x	10 kA	DM-006-V/1-FR1	DIN 35	floating ground
				x	10 kA	DM-xx/1R DJ	DIN 35	
		2	6 ÷ 60	5 kA	x	BDM-xx-V/1-R1	DIN 35	

MEASURING AND CONTROL TECHNOLOGY AND BUS SYSTEMS

Interface / Signal		Protected lines	U (DC) (V)	Discharge current per core 10/350 µs	Discharge current per core 8/20 µs	SPD xx – corresponding voltage	For mounting on	Notes
DC power supply	I = 2A	2	6 ÷ 60	x	10 kA	DM-xx-V/1-R2	DIN 35	
				x	10 kA	DM-xx-V/1-FR2	DIN 35	floating ground
				x	10 kA	DM-xx/1 L2 DJ	DIN 35	
	I =16A	2	12 ÷ 60	x	2 kA	DP-xx	DIN 35	
				x	2 kA	DP-xx-V/1-16	DIN 35	
				x	2 kA	DP-xx-V/1-F16	DIN 35	floating ground
	I = 2A	2	6 ÷ 60	x	10 kA	DMG-xx-V/1-R2	DIN 35	isolated signal ground
				x	10 kA	DMG-xx-V/1-FR2	DIN 35	floating ground
	I = 1A	2	6 ÷ 60	5 kA	x	BDM-xx-V/1-R1	DIN 35	
						BDM-xx-V/1-FR1	DIN 35	floating ground
	I = 1A	2	6 ÷ 60	5 kA	x	BDG-xx-V/1-R1	DIN 35	isolated signal ground
						BDG-xx-V/1-FR1	DIN 35	floating ground
	I = 6A	2	24	x	1 kA	DPF-24	DIN 35	RFI filter
M-Bus		2	48	x	10 kA	DM-048-V/1-R1	DIN 35	
				x	10 kA	DM-048/1R DJ	DIN 35	
		2	48	5 kA	x	BDM-048-V/1-R1	DIN 35	
CAN-Bus communication max. 1.5 Mbit/s		2	6	x	10 kA	DM-006-V/1-R1	DIN 35	
				x	10 kA	DM-006/1R DJ	DIN 35	
		2	6	5 kA	x	BDM-006-V/1-R1	DIN 35	
Device Net communication 500 kbit/s	I = 2A	2	24	x	10 kA	DM-024-V/1-R2	DIN 35	
				x	10 kA	DM-024/1 L2 DJ	DIN 35	
	I = 2A	2	5	x	10 kA	DM-006-V/1-R2	DIN 35	
				x	10 kA	DM-006/1L2 DJ	DIN 35	
	I = 1A	2	24	5 kA	x	BDM-024-V/1-R1	DIN 35	
			5	5 kA	x	BDM-006-V/1-R1	DIN 35	
C-Bus		2	5	x	10 kA	DM-006-V/1-R1	DIN 35	
Honeywell communication max. 0.9 Mbit/s		2	5	x	10 kA	DM-006/1R DJ	DIN 35	
				5 kA	x	BDM-006-V/1-R1	DIN 35	
Dupline		2	15	5 kA	x	BDG-012-V/1-R1	DIN 35	floating ground
E-Bus (Honeywel)		2	48	5 kA	x	BDG-048-V/1-R1	DIN 35	floating ground
Fieldbus Foundation		2	30	5 kA	x	BDG-048-V/1-R1	DIN 35	floating ground
Genius I/O Bus		2	12	5 kA	x	BDG-012-V/1-R1	DIN 35	floating ground
FIPIO/FIPWAY		2	30	5 kA	x	BDG-048-V/1-R1	DIN 35	floating ground
INTERBUS INLINE		2	48	5 kA	x	BDG-048-V/1-R1	DIN 35	floating ground
K-Bus		2	24	5 kA	x	BDG-024-V/1-R1	DIN 35	floating ground
LUXMATE-Bus		2	24	5 kA	x	BDG-024-V/1-R1	DIN 35	floating ground
Procontic CS31 (RS-232)		2	15	5 kA	x	BDM-024-V/1-R1	DIN 35	
Profibus-DP/FMS	up to 1.5 Mbit/s	2	6	x	10 kA	DM-006-V/1-R1	DIN 35	
				x	10 kA	DM-006/1R DJ	DIN 35	
		2	6	5 kA	x	BDM-006-V/1-R1	DIN 35	
	up to 20 Mbit/s	9	18	x	150 A	DL-RS DD9	Canon	
	up to 50 Mbit/s	2	6	x	10 kA	DM-PROFIBUS 5V	DIN 35	
		2+2	6/24	x	10 kA	DMHF-xx-V/1-4R1	DIN 35	
		2+2	6/24	x	10 kA	DMHF-xx-V/1-4FR1	DIN 35	floating ground
R-Bus		2	6	5 kA	x	BDG-006-V/1-R1	DIN 35	isolated signal ground
SDLS		2	6	x	5 kA	CLSA-6	Krone LSA+	
Securilan-LON-Bus		2	6	5 kA	x	BDG-006-V/1-R1	DIN 35	floating ground
SIGMA SYS (Siemens EPS)		2	48	5 kA	x	BDG-048-V/1-R1	DIN 35	floating ground
		2	48	5 kA	x	BDM-048-V/1-R1	DIN 35	
SS97 SINIS (RS-232)		2	15	5 kA	x	BDM-024-V/1-R1	DIN 35	
SUCONET		2	6	5 kA	x	BDG-006-V/1-R1	DIN 35	floating ground
TELEPERM M analog input		2	12	5 kA	x	BDM-012-V/1-R1	DIN 35	
		2	24	5 kA	x	BDM-024-V/1-R1	DIN 35	
		2	12	x	5 kA	CLSA-12	Krone LSA+	
		2	24	x	5 kA	CLSA-24	Krone LSA+	
TELEPERM M binary I/O		2	48	x	10 kA	DM-048-V/1-R1	DIN 35	
				x	10 kA	DM-048/1L DJ	DIN 35	
		2	48	5 kA	x	BDM-048-V/1-R1	DIN 35	
TELEPERM M ES100K		2	12	x	10 kA	DM-012-V/1-R1	DIN 35	
				x	10 kA	DM-012/1L DJ	DIN 35	
		2	12	5 kA	x	BDM-012-V/1-R1	DIN 35	
TELEPERM MFM100		2	12	5 kA	x	BDG-012-V/1-R1	DIN 35	
				5 kA	x	BDG-012-V/1-FR1	DIN 35	floating ground
TTY		2	6 ÷ 24	x	10 kA	DM-xxx-V/1-R1	DIN 35	
				x	10 kA	DM-xxx/1R DJ	DIN 35	
		2	6 ÷ 24	5 kA	x	BDM-xxx-V/1-R1	DIN 35	
Potential-free (isolated) contacts		1	6 ÷ 110	x	10 kA	DMJ-xx/2-RS	DIN 35	
				x	10 kA	DM-xx-V/2-JR1	DIN 35	
				x	10 kA	DM-xx-V/2-JR2	DIN 35	
				x	10 kA	DM-xx-V/2-JFR1	DIN 35	floating ground
				x	10 kA	DM-xx-V/2-JFR2	DIN 35	floating ground
				x	10 kA	DM-xx-V/4-JFR1	DIN 35	
				x	10 kA	DM-xx-V/4-JFR1	DIN 35	floating ground
Protection against power crossing of lines up to 400 V		2	24/48	x	5 kA	DMS-xx	DIN 35	

SALTEK SPD applications in data / signal / telecommunication systems

TELECOMMUNICATIONS, TELEPHONE SYSTEMS							
Interface / Signal	Protected lines	U (DC) (V)	Discharge current per core		SPD xx – corresponding voltage	For mounting on	Notes
			10/350 µs	8/20 µs			
ADSL analog line	2	170	x	5 kA	CLSA -TLF	LSA plus	disconnection
			x	5 kA	CLSA -DSL	LSA plus	disconnection
			x	10 kA	DL-TLF	DIN 35	RJ12
			5 kA	x	BDG-230-V/1-R1	DIN 35	isolated signal ground
			5 kA	x	BDG-230-V/1-FR1	DIN 35	floating ground
		90	5 kA	x	BD-250-T-V/1-16	DIN 35	
Analog telephone line	2	170	x	5 kA	CLSA -TLF	LSA plus	disconnection
			x	10 kA	DL-TLF	DIN 35	RJ12
			5 kA	x	BDG-230-V/1-R1	DIN 35	isolated signal ground
			5 kA	x	BDG-230-V/1-FR1	DIN 35	floating ground
		90	5 kA	x	BD-250-T-V/1-16	DIN 35	
DATEX-P	2	24	x	10 kA	CLSA-24	LSA plus	disconnection
			x	10 kA	DMG-024/1-RS	DIN 35	
			x	10 kA	DMG-024-V/1-R1	DIN 35	isolated signal ground
			x	10 kA	DMG-024-V/1-FR1	DIN 35	floating ground
			5 kA	x	BDG-024-V/1-R1	DIN 35	isolated signal ground
			5 kA	x	BDG-024-V/1-FR1	DIN 35	floating ground
ISDN U_{K0}	2	170	x	2.5 kA	DL-ISDN RJ45	DIN 35	
			x	10 kA	DL-ISDN SV	DIN 35	
	2	170	x	5 kA	CLSA-ISDN	LSA plus	disconnection
Modem M1	2	15	x	10 kA	CLSL-24	LSA plus	disconnection
			x	10 kA	DMG-024/1R-RS	DIN 35	isolated signal ground
			x	10 kA	DMG-024-V/1-R1	DIN 35	isolated signal ground
			x	10 kA	DMG-024-V/1-FR1	DIN 35	floating ground
			5 kA	x	BDG-024-V/1-R1	DIN 35	isolated signal ground
			5 kA	x	BDG-024-V/1-FR1	DIN 35	floating ground
			5 kA	x	BDM-24-V/1-R1	DIN 35	
					BDM-24-V/1-FR1	DIN 35	floating ground
Telephony systems (eg. Siemens, HICOM, ALCATEL)	2	170	x	5 kA	CLSA TLF	LSA plus	disconnection
			x	10 kA	DL-TLF	DIN 35	RJ12
		90	5 kA	x	BD-250-T-V/1-16	DIN 35	
T-DSL	2	170	x	5 kA	CLSA-DSL	LSA plus	disconnection
				5 kA	CLSA-TLF	LSA plus	disconnection
			x	10 kA	DL-TLF	box	RJ12
		90	5 kA	x	BD-250-T-V/1-16	DIN 35	
Multipurpose coarse protection	2	90	5 kA	x	BD-250-T-V/1-16	DIN 35	
				x	BD-250-T-V/1-F16	DIN 35	floating ground

DATA LINES NETWORK							
Interface / Signal	Protected lines	U (DC) (V)	Discharge current per core		SPD xx – corresponding voltage	For mounting on	Notes
			10/350 µs	8/20 µs			
ETHERNET 10/100 10 Base T	8	6	x	150 A	DL-1G	DIN 35	RJ45 male
			x	200 A	DL-Cat.5e	DIN 35	RJ45
			x	200 A	DL-Cat.6	DIN 35	RJ45
			2 kA	150 A	DL-1G RJ45	DIN 35	RJ45
FDDI, CDDI	8	6	x	150 A	DL-1G	DIN 35	RJ45
			x	200 A	DL-Cat.5e	DIN 35	RJ45
			x	200 A	DL-Cat.6	DIN 35	RJ45
	2	6	x	5 kA	CLSA-06	LSA plus	disconnection
Industrial Ethernet	8	6	x	150 A	DL-1G	DIN 35	RJ45
			x	200 A	DL-Cat.5e	DIN 35	RJ45
			x	200 A	DL-Cat.6	DIN 35	RJ45
	8 x 8	6	x	200 A	DL-Cat.5e 8 PATCH PANEL	19" RACK	LSA/RJ45
	16 x 8		x	200 A	DL-Cat.5e 16 PATCH PANEL	19" RACK	LSA/RJ45
	24 x 8		x	200 A	DL-Cat.5e 24 PATCH PANEL	19" RACK	LSA/RJ45
	8 x 8	6	x	200 A	DL-Cat.5e 8 RACK PANEL	19" RACK	RJ45
	16 x 8		x	200 A	DL-Cat.5e 16 RACK PANEL	19" RACK	RJ45
	24 x 8		x	200 A	DL-Cat.5e 24 RACK PANEL	19" RACK	RJ45
Token Ring	8	6	x	150 A	DL-1G	DIN 35	RJ45
			x	200 A	DL-Cat.5e	DIN 35	RJ45
			x	200 A	DL-Cat.6	DIN 35	RJ45
	8 x 8	6	x	200 A	DL-Cat.5e 8 PATCH PANEL	19" RACK	LSA/RJ45
	16 x 8		x	200 A	DL-Cat.5e 16 PATCH PANEL	19" RACK	LSA/RJ45
	24 x 8		x	200 A	DL-Cat.5e 24 PATCH PANEL	19" RACK	LSA/RJ45
	8 x 8	6	x	200 A	DL-Cat.5e 8 RACK PANEL	19" RACK	RJ45
	16 x 8		x	200 A	DL-Cat.5e 16 RACK PANEL	19" RACK	RJ45
	24 x 8		x	200 A	DL-Cat.5e 24 RACK PANEL	19" RACK	RJ45
VG-Any LAN	8	6	x	150 A	DL-1G	DIN 35	RJ45
			x	200 A	DL-Cat.5e	DIN 35	RJ45
			x	200 A	DL-Cat.6	DIN 35	RJ45
	8 x 8	6	x	200 A	DL-Cat.5e 8 PATCH PANEL	19" RACK	LSA/RJ45
	16 x 8		x	200 A	DL-Cat.5e 16 PATCH PANEL	19" RACK	LSA/RJ45
	24 x 8		x	200 A	DL-Cat.5e 24 PATCH PANEL	19" RACK	LSA/RJ45
	8 x 8	6	x	200 A	DL-Cat.5e 8 RACK PANEL	19" RACK	RJ45
	16 x 8		x	200 A	DL-Cat.5e 16 RACK PANEL	19" RACK	RJ45
	24 x 8		x	200 A	DL-Cat.5e 24 RACK PANEL	19" RACK	RJ45
VoIP (Voice over IP)	8	48	x	150 A	DL-1G	DIN 35	RJ45 male
POE (power over ethernet)	4	6/24	x	5 kA/1 kA	DL-100 POE 24	box	SV/RJ45
	4	6/48	x	5 kA/1 kA	DL-100 POE 48	box	SV/RJ45
	4	6/48	x	1.5/1 kA	DL-Cat.5e POE	DIN 35	SV/RJ45
	4	6/48	x	1.5/1 kA	DL-Cat.5e POE plus	DIN 35	SV/RJ45
	8	60	x	150 A	DL-1G 60V	DIN 35	RJ45 male
	8	60	2	150 A	DL-1G RJ45	DIN 35	RJ45
	8	60	x	200 A	DL-Cat-60V	DIN 35	RJ45

SALTEK SPD applications in data / signal / telecommunication systems

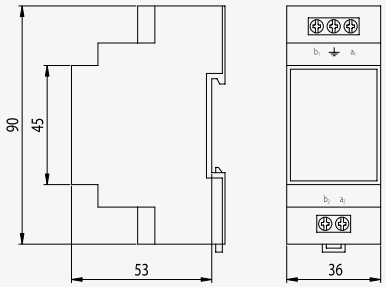
ANTENNAS, TRANSMITTERS, RECIEVERS, BROADBAND SYSTEM, CCTV								
Interface / Signal		Protected lines	U (DC) (V)	Discharge current per core		SPD xx – corresponding voltage	For mounting on	Notes
				10/350 µs	8/20 µs			
AMPS, NADAC 824 ÷ 894 MHz			70	x	10 kA	HX-90 N50 F/F	N50	I_N =6A 3.5 GHz
			70	x	10 kA	HX-90 N50 F/M	N50	I_N =6A 3.5 GHz
			170	x	10 kA	HX-230 N50 F/F	N50	I_N =6A 3.5 GHz
			170	x	10 kA	HX-230 N50 F/M	N50	I_N =6A 3.5 GHz
DCS 1800 B162 1710 ÷ 1880 MHz		1	70	2.5 kA	10 kA	HX-90 N50 F/F	N50	I_N =6A 3.5 GHz
			170	2.5 kA	10 kA	HX-230 N50 F/F	N50	I_N =6A 3.5 GHz
				15 kA	20 kA	ZX-xx N50	N50	xx - frequency
Transmitters				15 kA	20 kA	ZX-xx N50	N50	xx - frequency
			70	x	20 kA	HX-90 N50 F/F	N50	I_N =6A 3.5 GHz
			70	x	20 kA	HX-90 N50 F/M	N50	I_N =6A 3.5 GHz
			170	x	20 kA	HX-230 N50 F/F	N50	I_N =6A 3.5 GHz
			170	x	20 kA	HX-230 N50 F/M	N50	I_N =6A 3.5 GHz
GSM 900, GSMR		1	70	x	10 kA	HX-90 N50 F/F	N50	I_N =6A 3.5 GHz
			70	x	10 kA	HX-90 N50 F/M	N50	I_N =6A 3.5 GHz
			170	x	10 kA	HX-230 N50 F/F	N50	I_N =6A 3.5 GHz
			170	x	10 kA	HX-230 N50 F/M	N50	I_N =6A 3.5 GHz
				15 kA	20 kA	ZX-0.9 N50	N50	adapters avalaible SMA, PIGTAIL
GPS 1565 ÷ 1585 MHz		1	70	2.5 kA	10 kA	HX-90 N50 F/F	N50	I_N =6A 3.5 GHz
			70	2.5 kA	10 kA	HX-90 N50 F/M	N50	I_N =6A 3.5 GHz
			170	2.5 kA	10 kA	HX-230 N50 F/F	N50	I_N =6A 3.5 GHz
			170	2.5 kA	10 kA	HX-230 N50 F/M	N50	I_N =6A 3.5 GHz
				15 kA	20 kA	ZX-xx N50	N50	xx - frequency
GSM 1800		1	70	2.5 kA	10 kA	HX-90 N50 F/F (F/M)	N50	I_N =6A 3.5 GHz
			170	2.5 kA	10 kA	HX-230 N50 F/F (F/M)	N50	I_N =6A 3.5 GHz
				15 kA	20 kA	ZX-1.8 N50	N50	
PCS 1900 1850 ÷ 1990 MHz			70	2.5 kA	10 kA	HX-90 N50 F/F (F/M)	N50	I_N =6A 3.5 GHz
			170	2.5 kA	10 kA	HX-230 N50 F/F (F/M)	N50	I_N =6A 3.5 GHz
				15 kA	20 kA	ZX-xx N50	N50	xx - frequency
TETRA, NMT 450 380 ÷ 512 MHz			70	2.5 kA	10 kA	HX-90 N50 F/F (F/M)	N50	I_N =6A 3.5 GHz
			170	2.5 kA	10 kA	HX-230 N50 F/F (F/M)	N50	I_N =6A 3.5 GHz
Terrestrial TV				x	1.5 kA	SX-90 F75 F/F	F connector	I_N =4A 2 GHz
				x	1.5 kA	SX-90 B75 F/F	BNC	I_N =4A 2 GHz
				2.5 kA	10 kA	FX-90 F75 F/F	F connector	I_N =4A 2 GHz
				2.5 kA	10 kA	SX-90 B75 F/F	BNC	I_N =4A 2 GHz
UMTS		1	70	2.5 kA	10 kA	HX-90 N50 F/F (F/M)	N50	I_N =6A 3.5 GHz
			170	2.5 kA	10 kA	HX-230 N50 F/F (F/M)	N50	I_N =6A 3.5 GHz
				15 kA	20 kA	ZX-xx N50	N50	xx - frequency
WLAN band 2.4 GHz		1	70	2.5 kA	10 kA	HX-90 N50 F/F (F/M)	N50	I_N =6A 3.5 GHz
			170	2.5 kA	10 kA	HX-230 N50 F/F (F/M)	N50	I_N =6A 3.5 GHz
				15 kA	20 kA	ZX-2.4 N50	N50	adapters avalaible SMA, PIGTAIL
VIDEO	coax	1		x	10 kA	VL-B75 F/F	DIN 35	BNC
	coax			x	10 kA	VL-F75 F/F	DIN 35	F connector
	2-wire	2		x	10 kA	VL-SV	DIN 35	screw terminals
WLAN Twist Pair		2		x	10 kA	VL-SV	DIN 35	screw terminals

BD-… T

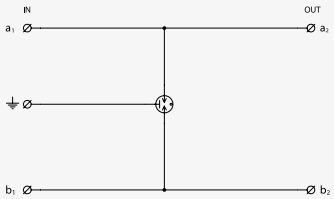
Lightning Current Arrester
coarse protection for telecommunication and signaling networks

- protection of 2-core telecommunication, data and other lines
- installation at the boundary of LPZ 0 and LPZ 1 zones at the entrance of the line into building

Dimensions



Basic circuit diagram



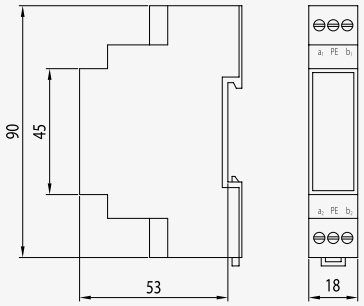
Parameter / Type		BD-90 T	BD-250 T
Connection (input - output)		terminals-terminals	terminals-terminals
Location of SPD		ST 1	ST 1
Maximum operating voltage	U_c	43 V AC / 60 V DC	135 V AC / 190 V DC
Nominal load current	I_L	16 A	16 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA
D1 total discharge current (10/350 µs) cores-PE	I_{Total}	5 kA	5 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	950 V	1 000 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	650 V	750 V
Response time core-core	t_a	100 ns	100 ns
Response time core-PE	t_a	100 ns	100 ns
Cross-section of connected conductors solid - max		4 mm²	4 mm²
Cross-section of connected conductors stranded - max		2,5 mm²	2,5 mm²
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … 80 °C	-40 °C … 80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2,C3
Ordering number		8595090507864	8595090507888

DM-…/1 R DJ

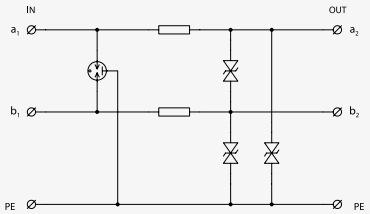
Combination of coarse and fine surge protection for telecommunication and signaling networks

- protection of 2-core telecommunication and data lines, electronic security and fire detection systems, and communication interfaces of control systems against transient overvoltage

Dimensions



Basic circuit diagram



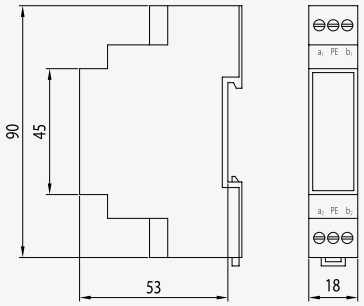
Parameter / Type		DM-006/1 R DJ	DM-012/1 R DJ	DM-024/1 R DJ	DM-048/1 R DJ
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC
Maximum operating voltage	U_c	5,7 V AC / 8,1 V DC	10,2 V AC / 14,5 V DC	20,6 V AC / 29,1 V DC	35,6 V AC / 50,2 V DC
Nominal load current	I_L	0,06 A	0,06 A	0,06 A	0,06 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA
C2 voltage protection level mode core-core at In	U_p	25 V	35 V	50 V	80 V
C2 voltage protection level mode core-PE at In	U_p	20 V	35 V	50 V	80 V
C3 voltage protection level mode core-core at 1 kV/µs	U_p	12 V	20 V	40 V	70 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	15 V	30 V	48 V	75 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns
Response time core-PE	t_a	1 ns	1 ns	1 ns	1 ns
Serial resistance per core	R	6,8 Ω	6,8 Ω	6,8 Ω	6,8 Ω
Treshold frequency core-core	f	1 MHz	1,7 MHz	3,4 MHz	7 MHz
Cross-section of connected conductors solid - max		4 mm²	4 mm²	4 mm²	4 mm²
Cross-section of connected conductors stranded - max		2,5 mm²	2,5 mm²		2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 80 °C	-40 °C … 80 °C	-40 °C … 80 °C	-40 °C … 80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3
Ordering number		8595090509301	8595090509318	8595090509325	8595090509332

DM-…/1 L DJ

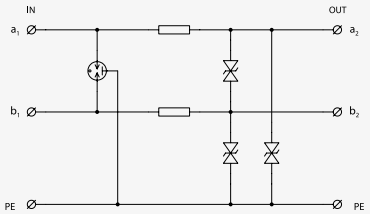
Combination of coarse and fine surge protection for telecommunication and signaling networks

- protection of 2-core telecommunication and data lines, electronic security and fire detection systems, and communication interfaces of control systems against transient overvoltage

Dimensions



Basic circuit diagram



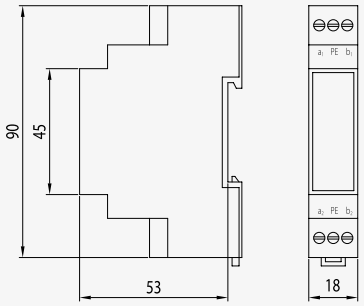
Parameter / Type		DM-006/1 L DJ	DM-012/1 L DJ	DM-024/1 L DJ	DM-048/1 L DJ
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC
Maximum operating voltage	U_c	5,7 V AC / 8,1 V DC	10,2 V AC / 14,5 V DC	20,6 V AC / 29,1 V DC	35,6 V AC / 50,2 V DC
Nominal load current	I_L	0,37 A	0,37 A	0,37 A	0,37 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA
C2 voltage protection level mode core-core at In	U_p	25 V	35 V	50 V	80 V
C2 voltage protection level mode core-PE at In	U_p	20 V	35 V	50 V	80 V
C3 voltage protection level mode core-core at 1 kV/µs	U_p	12 V	20 V	40 V	70 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	15 V	30 V	48 V	75 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns
Response time core-PE	t_a	1 ns	1 ns	1 ns	1 ns
Serial inductance per core	L	100 uH	100 uH	100 uH	100 uH
Treshold frequency core-core	f	0,16 MHz	0,16 MHz	0,16 MHz	0,16 MHz
Cross-section of connected conductors solid - max		4 mm²	4 mm²	4 mm²	4 mm²
Cross-section of connected conductors stranded - max		2,5 mm²	2,5 mm²	2,5 mm²	2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 80 °C	-40 °C … 80 °C	-40 °C … 80 °C	-40 °C … 80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3
Ordering number		8595090515579	8595090513520	8595090512370	8595090513537

DM-…/1 L2 DJ

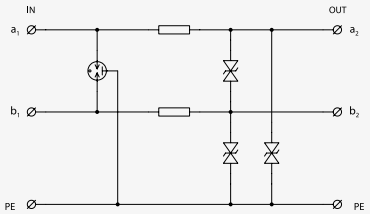
Combination of coarse and fine surge protection for telecommunication and signaling networks

- protection of 2-core telecommunication and data lines, electronic security and fire detection systems, and communication interfaces of control systems against transient overvoltage

Dimensions



Basic circuit diagram



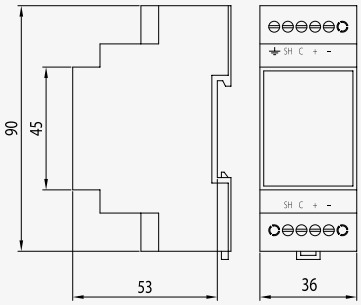
Parameter / Type		DM-006/1 L2 DJ	DM-012/1 L2 DJ	DM-024/1 L2 DJ	DM-048/1 L2 DJ
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC
Maximum operating voltage	U_c	5,7 V AC / 8,1 V DC	10,2 V AC / 14,5 V DC	20,6 V AC / 29,1 V DC	35,6 V AC / 50,2 V DC
Nominal load current	I_L	2 A	2 A	2 A	2 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA
C2 voltage protection level mode core-core at In	U_p	25 V	35 V	50 V	80 V
C2 voltage protection level mode core-PE at In	U_p	20 V	35 V	50 V	80 V
C3 voltage protection level mode core-core at 1 kV/µs	U_p	12 V	20 V	40 V	70 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	15 V	30 V	48 V	75 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns
Response time core-PE	t_a	1 ns	1 ns	1 ns	1 ns
Serial inductance per core	L	25 uH	25 uH	25 uH	25 uH
Treshold frequency core-core	f	0,55 MHz	0,6 MHz	0,6 MHz	0,6 MHz
Cross-section of connected conductors solid - max		4 mm²	4 mm²	4 mm²	4 mm²
Cross-section of connected conductors stranded - max		2,5 mm²	2,5 mm²	2,5 mm²	2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 80 °C	-40 °C … 80 °C	-40 °C … 80 °C	-40 °C … 80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3
Ordering number		8595090513322	8595090513315	8595090513339	8595090513346

DM-…/1 3R DJ

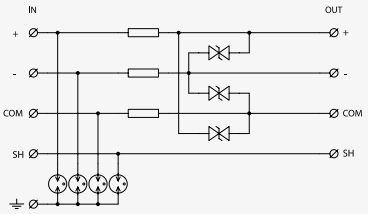
Combination of coarse and fine surge protection for telecommunication and signaling networks

- surge protection, protection of 3-core telecommunication, data lines, electronic security and fire detection systems, particularly RS 485, RS 422 and RS 232 interfaces against surge
- protection of 3-core telecommunication and data lines, electronic security and fire detection systems, particularly RS 485, RS 422 and RS 232 interfaces against impact of transient overvoltage

Dimensions



Basic circuit diagram



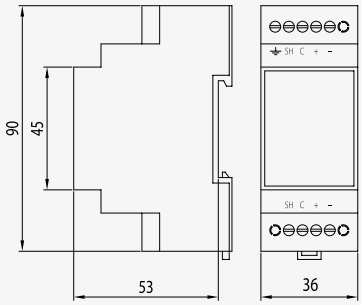
Parameter / Type		DM-006/1 3R DJ	DM-012/1 3R DJ	DM-024/1 3R DJ	DM-048/1 3R DJ
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC
Maximum operating voltage	U_c	5,7 V AC / 8,1 V DC	10,2 V AC / 14,5 V DC	20,6 V AC / 29,1 V DC	35,6 V AC / 50,2 V DC
Nominal load current	I_L	0,06 A	0,06 A	0,06 A	0,06 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA
C2 voltage protection level mode core-core at In	U_p	25 V	35 V	50 V	80 V
C2 voltage protection level mode core-PE at In	U_p	350 V	350 V	350 V	350 V
C3 voltage protection level mode core-core at 1 kV/µs	U_p	12 V	20 V	40 V	65 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	650 V	650 V	650 V	650 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns
Response time core-PE	t_a	100 ns	100 ns	100 ns	100 ns
Serial resistance per core	R	6,8 Ω	6,8 Ω	6,8 Ω	6,8 Ω
Treshold frequency core-core	f	1 MHz	1,7 MHz	3,4 MHz	7 MHz
Cross-section of connected conductors solid - max		4 mm²	4 mm²	4 mm²	4 mm²
Cross-section of connected conductors stranded - max		2,5 mm²	2,5 mm²	2,5 mm²	2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 80 °C	-40 °C … 80 °C	-40 °C … 80 °C	-40 °C … 80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3
Ordering number		8595090513506	8595090513490	8595090512349	8595090513483

DM-…/1 3L DJ

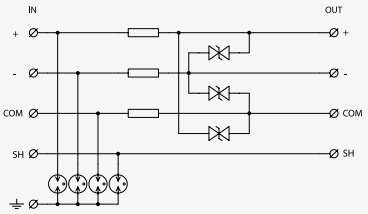
Combination of coarse and fine surge protection for telecommunication and signaling networks

- protection of 3-core telecommunication and data lines, electronic security and fire detection systems, particularly RS 485, RS 422 and RS 232 interfaces against impact of transient overvoltage

Dimensions



Basic circuit diagram



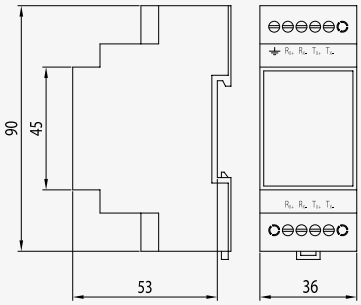
Parameter / Type		DM-006/1 3L DJ	DM-012/1 3L DJ	DM-024/1 3L DJ	DM-048/1 3L DJ
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC
Maximum operating voltage	U_c	5,7 V AC / 8,1 V DC	10,2 V AC / 14,5 V DC	20,6 V AC / 29,1 V DC	35,6 V AC / 50,2 V DC
Nominal load current	I_L	0,37 A	0,37 A	0,37 A	0,37 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA
C2 voltage protection level mode core-core at In	U_p	25 V	35 V	50 V	80 V
C2 voltage protection level mode core-PE at In	U_p	350 V	350 V	350 V	350 V
C3 voltage protection level mode core-core at 1 kV/µs	U_p	12 V	20 V	40 V	65 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	650 V	650 V	650 V	650 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns
Response time core-PE	t_a	100 ns	100 ns	100 ns	100 ns
Serial inductance per core	L	100 uH	100 uH	100 uH	100 uH
Treshold frequency core-core	f	0,16 MHz	0,16 MHz	0,16 MHz	0,16 MHz
Cross-section of connected conductors solid - max		4 mm²	4 mm²	4 mm²	4 mm²
Cross-section of connected conductors stranded - max		2,5 mm²	2,5 mm²	2,5 mm²	2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 80 °C	-40 °C … 80 °C	-40 °C … 80 °C	-40 °C … 80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3
Ordering number		8595090514022	8595090520948	8595090515197	8595090516484

DM-…/1 4R DJ

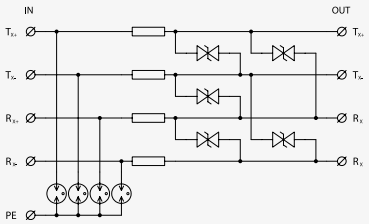
Combination of coarse and fine surge protection for telecommunication and signaling networks

- protection of 4-core telecommunication and data lines, electronic security and fire detection systems, particularly RS 485, RS 422 and RS 232 interfaces against impact of transient overvoltage

Dimensions



Basic circuit diagram



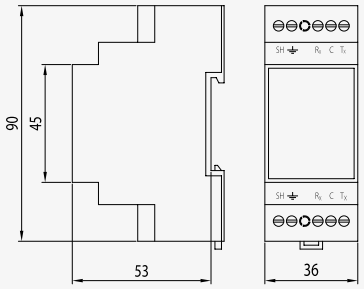
Parameter / Type		DM-006/1 4R DJ	DM-012/1 4R DJ	DM-024/1 4R DJ	DM-048/1 4R DJ
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC
Maximum operating voltage	U_c	5,7 V AC / 8,1 V DC	10,2 V AC / 14,5 V DC	20,6 V AC / 29,1 V DC	35,6 V AC / 50,2 V DC
Nominal load current	I_L	0,06 A	0,06 A	0,06 A	0,06 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA
C2 voltage protection level mode core-core at In	U_p	25 V	35 V	50 V	80 V
C2 voltage protection level mode core-PE at In	U_p	350 V	350 V	350 V	350 V
C3 voltage protection level mode core-core at 1 kV/µs	U_p	12 V	20 V	40 V	65 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	650 V	650 V	650 V	650 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns
Response time core-PE	t_a	100 ns	100 ns	100 ns	100 ns
Serial resistance per core	R	6,8 Ω	6,8 Ω	6,8 Ω	6,8 Ω
Treshold frequency core-core	f	1 MHz	1,7 MHz	3,4 MHz	7 MHz
Cross-section of connected conductors solid - max		4 mm²	4 mm²	4 mm²	4 mm²
Cross-section of connected conductors stranded - max		2,5 mm²	2,5 mm²	2,5 mm²	2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 80 °C	-40 °C … 80 °C	-40 °C … 80 °C	-40 °C … 80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3
Ordering number		8595090516750	8595090516897	8595090513575	8595090519775

DM-PROFIBUS … V

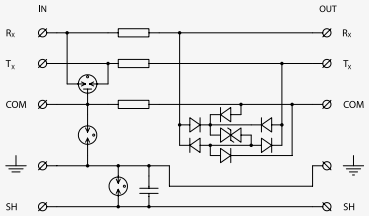
Combination of coarse and fine surge protection for industrial bus-bar system (e.g. PROFIBUS)

- protection of line and communication interfaces of the PROFIBUS industrial bus-bar system
- coarse and fine surge protection
- also, cable shielding is protected

Dimensions



Basic circuit diagram



Parameter / Type		DM-PROFIBUS 5 V	DM-PROFIBUS 24 V
Connection (input - output)		terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3
Nominal voltage	U_n	5 V DC	24 V DC
Maximum operating voltage	U_c	5,7 V AC / 8,1 V DC	20,6 V AC / 29,1 V DC
Nominal load current	I_L	0,06 A	0,06 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA
C2 voltage protection level mode core-core at In	U_p	150 V	300 V
C2 voltage protection level mode core-COM at In	U_p	150 V	300 V
C2 voltage protection level mode COM-PE at In	U_p	350 V	350 V
C2 voltage protection level mode SH-PE at In	U_p	350 V	350 V
C3 voltage protection level mode core-core at 1 kV/µs	U_p	40 V	40 V
C3 voltage protection level mode core-COM at 1 kV/µs	U_p	40 V	40 V
C3 voltage protection level mode COM-PE at 1 kV/µs	U_p	650 V	650 V
C3 voltage protection level mode SH-PE at 1 kV/µs	U_p	650 V	650 V
Response time core-core	t_a	1 ns	1 ns
Response time core COM		1 ns	1 ns
Response time COM-PE	t_a	100 ns	100 ns
Response time SH-PE	t_a	100 ns	100 ns
Serial resistance per core	R	1 Ω	1 Ω
Treshold frequency core-core	f	100 MHz	100 MHz
Cross-section of connected conductors solid - max		4 mm²	4 mm²
Cross-section of connected conductors stranded - max		2,5 mm²	2,5 mm²
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … 80 °C	-40 °C … 80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3
Ordering number		8595090515319	8595090516736

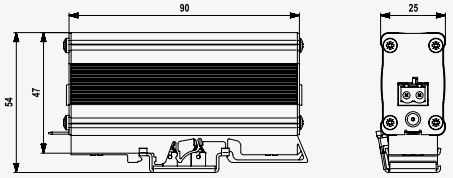
DMS-…

NEW

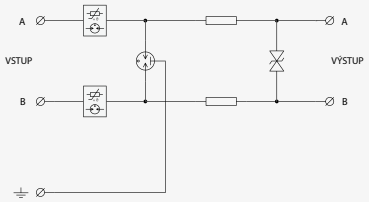
Special Surge Arrester with limiting current

- fine protection for measuring lines, resistance against AC voltage in line

Dimensions



Basic circuit diagram



Parameter / Type		DMS-24	DMS-48
Connection (input - output)		terminals	terminals
Location of SPD		ST 3	ST 3
Nominal voltage	U_n	24 V DC	48 V DC
Maximum operating voltage	U_c	23 V AC / 33 V DC	39 V AC / 56 V DC
Nominal load current	I_L	0,06 A	0,06 A
C2 nominal discharge current (8/20 µs) core-core	I_n	5 kA	5 kA
C2 total discharge current (8/20 µs) cores-PE	C	10 kA	10 kA
C2 voltage protection level mode core-core at In	U_p	55 V	90 V
C2 voltage protection level mode core-PE at In	U_p	450 V	450 V
Response time core-core	t_a	1 ns	1 ns
Response time core-PE	t_a	100 ns	100 ns
Serial resistance per core	R	8 Ω	8 Ω
Treshold frequency core-core	f	1,8 MHz	2,2 MHz
Cross-section of connected conductors solid - max		2,5 mm^2	2,5 mm^2
Cross-section of connected conductors stranded - max		2,5 mm^2	2,5 mm^2
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090541189	8595090555452

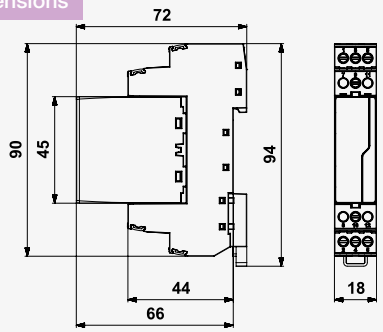
BD-…-T-V/1-(F)16

NEW

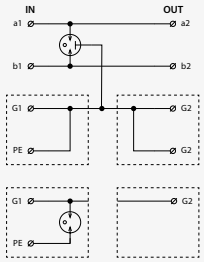
Lightning Current Arrester
pluggable module

- protection of 2-core telecommunication, data and other lines
- installation at the boundary of LPZ 0 and LPZ 1 zones at the input of the line into building
- F - line separated from protective ground by GDT

Dimensions



Basic circuit diagram



zapojení pro
BD-...-T-V/1-F16

Parameter / Type		BD-090-T-V/1-16	BD-250-T-V/1-16	BD-090-T-V/1-F16	BD-250-T-V/1-F16
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 1	ST 1	ST 1	ST 1
Maximum operating voltage	U_c	50 V AC / 70 V DC	128 V AC / 180 V DC	50 V AC / 70 V DC	128 V AC / 180 V DC
Nominal load current	I_L	16 A	16 A	16 A	16 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA
C2 nominal discharge current (8/20 µs) GND-PE	I_n			10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA	20 kA
D1 impulse discharge current (10/350 µs) core-core	I_{imp}	2,5 kA	2,5 kA	2,5 kA	2,5 kA
D1 total discharge current (10/350 µs) cores-PE	I_{Total}	5 kA	5 kA	5 kA	5 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	550 V	550 V	550 V	550 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	550 V	550 V		
C3 voltage protection level mode GND-PE at 1 kV/µs	U_p			550 V	550 V
C3 voltage protection level mode core-GND at 1 kV/µs	U_p			550 V	550 V
Response time core-core	t_a	100 ns	100 ns	100 ns	100 ns
Response time core-PE	t_a	100 ns	100 ns		
Response time GND-PE	t_a			100 ns	100 ns
Response time GND	t_a			100 ns	100 ns
Cross-section of connected conductors solid		0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²
Cross-section of connected conductors stranded		0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2
Ordering number		8595090554172	8595090554189	8595090555520	8595090555537

Spare module	BD-090-T-V/1-0	BD-250-T-V/1-0	BD-090-T-V/1-0	BD-250-T-V/1-0
Ordering number	8595090553885	8595090553892	8595090553885	8595090553892

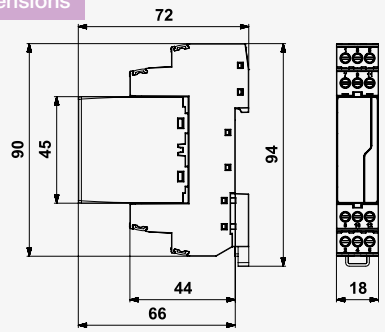
BD-…-T-V/2-(F)16

NEW

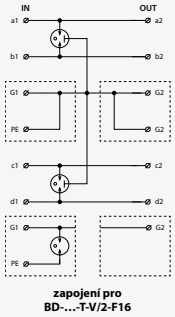
Lightning Current Arrester
pluggable module

- protection of 2-core telecommunication, data and other lines
- installation at the boundary of LPZ 0 and LPZ 1 zones at the input of the line into building
- F - line separated from protective ground by GDT

Dimensions



Basic circuit diagram



Parameter / Type		BD-090-T-V/2-16	BD-250-T-V/2-16	BD-090-T-V/2-F16	BD-250-T-V/2-F16
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 1	ST 1	ST 1	ST 1
Maximum operating voltage	U_c	50 V AC / 70 V DC	128 V AC / 180 V DC	50 V AC / 70 V DC	128 V AC / 180 V DC
Nominal load current	I_L	16 A	16 A	16 A	16 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA
C2 nominal discharge current (8/20 µs) GND-PE	I_n			10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA	20 kA
D1 impulse discharge current (10/350 µs) core-core	I_{imp}	2,5 kA	2,5 kA	2,5 kA	2,5 kA
D1 total discharge current (10/350 µs) cores-PE	I_{Total}	5 kA	5 kA	5 kA	5 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	550 V	550 V	550 V	550 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	550 V	550 V		
C3 voltage protection level mode GND-PE at 1 kV/µs	U_p			550 V	550 V
C3 voltage protection level mode core-GND at 1 kV/µs	U_p			550 V	550 V
Response time core-core	t_a	100 ns	100 ns	100 ns	100 ns
Response time core-PE	t_a	100 ns	100 ns		
Response time GND-PE	t_a			100 ns	100 ns
Response time GND	t_a			100 ns	100 ns
Cross-section of connected conductors solid		0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²
Cross-section of connected conductors stranded		0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2
Ordering number		8595090555506	8595090555513	8595090555544	8595090555551

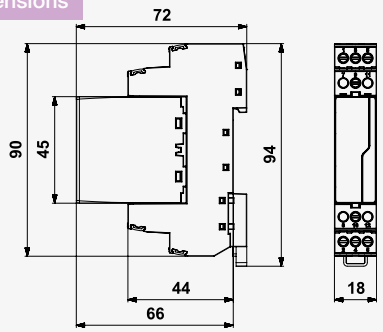
Spare module	BD-090-T-V/2-0	BD-250-T-V/2-0	BD-090-T-V/2-0	BD-250-T-V/2-0
Ordering number	8595090553908	8595090553915	8595090553908	8595090553915

BDG-...-V/1-R. NEW

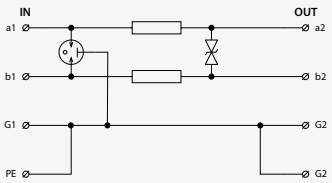
Lightning Current Arrester
pluggable module

- coarse and fine protection of 2-core telecommunication, data and other lines
- installation at the boundary of LPZ 0 and LPZ 1 zones or higher at the input of the line into building

Dimensions



Basic circuit diagram



Parameter / Type		BDG-006-V/1-R1	BDG-012-V/1-R1	BDG-024-V/1-R1	BDG-048-V/1-R1	BDG-230-V/1-R
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 1+2+3	ST 1+2+3	ST 1+2+3	ST 1+2+3	ST 1+2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC	230 V DC
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC	177 V AC / 250 V DC
Nominal load current	I_L	1 A	1 A	1 A	1 A	0,5 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA	20 kA	20 kA
D1 impulse discharge current (10/350 µs) core-core	I_{imp}	2,5 kA	2,5 kA	2,5 kA	2,5 kA	2,5 kA
D1 total discharge current (10/350 µs) cores-PE	I_{Total}	5 kA	5 kA	5 kA	5 kA	5 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	12 V	22 V	46 V	65 V	350 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	500 V	550 V	550 V	550 V	550 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns	1 ns
Response time core-PE	t_a	100 ns	100 ns	100 ns	100 ns	100 ns
Serial resistance per core	R	0,8 Ω	0,8 Ω	0,8 Ω	0,8 Ω	3,3 Ω
Treshold frequency core-core	f	1,2 MHz	3 MHz	6 MHz	7 MHz	16 MHz
Cross-section of connected conductors solid		0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²
Cross-section of connected conductors stranded		0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C ... 70 °C	-40 °C ... 70 °C	-40 °C ... 70 °C	-40 °C ... 70 °C	-40 °C ... 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2
Ordering number		8595090554196	8595090554202	8595090554219	8595090554226	8595090554233

Spare module	BDG-006-V/1-0	BDG-012-V/1-0	BDG-024-V/1-0	BDG-048-V/1-0	BDG-230-V/1-0
Ordering number	8595090553991	8595090554004	8595090554011	8595090554028	8595090554035

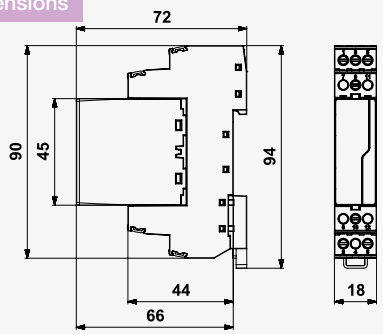
BDG-…-V/1-FR.

NEW

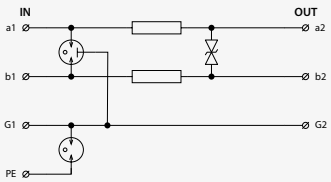
Lightning Current Arrester
pluggable module, line separated from protective ground by GDT

- coarse and fine protection of 2-core telecommunication, data and other lines
- installation at the boundary of LPZ 0 and LPZ 1 zones or higher at the input of the line into building

Dimensions



Basic circuit diagram



Parameter / Type		BDG-006-V/1-FR1	BDG-012-V/1-FR1	BDG-024-V/1-FR1	BDG-048-V/1-FR1	BDG-230-V/1-FR
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 1+2+3	ST 1+2+3	ST 1+2+3	ST 1+2+3	ST 1+2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC	230 V DC
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC	177 V AC / 250 V DC
Nominal load current	I_L	1 A	1 A	1 A	1 A	0,5 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA	10 kA
C2 nominal discharge current (8/20 µs) GND-PE	I_n	10 kA	10 kA	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA	20 kA	20 kA
D1 impulse discharge current (10/350 µs) core-core	I_{imp}	2,5 kA	2,5 kA	2,5 kA	2,5 kA	2,5 kA
D1 total discharge current (10/350 µs) cores-PE	I_{Total}	5 kA	5 kA	5 kA	5 kA	5 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	12 V	22 V	46 V	65 V	350 V
C3 voltage protection level mode GND-PE at 1 kV/µs	U_p	550 V	550 V	550 V	550 V	550 V
C3 voltage protection level mode core-GND at 1 kV/µs	U_p	550 V	550 V	550 V	550 V	550 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns	1 ns
Response time GND-PE	t_a	100 ns	100 ns	100 ns	100 ns	100 ns
Response time GND	t_a	100 ns	100 ns	100 ns	100 ns	100 ns
Serial resistance per core	R	0,8 Ω	0,8 Ω	0,8 Ω	0,8 Ω	3,3 Ω
Treshold frequency core-core	f	1,2 MHz	3 MHz	6 MHz	7 MHz	16 MHz
Cross-section of connected conductors solid		0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²
Cross-section of connected conductors stranded		0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2
Ordering number		8595090557043	8595090557050	8595090557067	8595090557074	8595090557081

Spare module	BDG-006-V/1-0	BDG-012-V/1-0	BDG-024-V/1-0	BDG-048-V/1-0	BDG-230-V/1-0
Ordering number	8595090553991	8595090554004	8595090554011	8595090554028	8595090554035

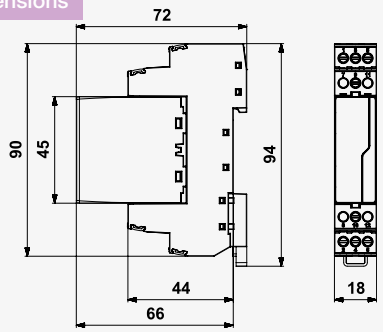
BDM-…-V/1-R.

NEW

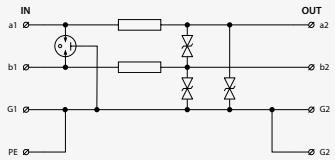
Lightning Current Arrester
pluggable module

- coarse and fine protection of 2-core telecommunication, data and other lines
- installation at the boundary of LPZ 0 and LPZ 1 zones or higher at the input of the line into building

Dimensions



Basic circuit diagram



Parameter / Type		BDM-006-V/1-R1	BDM-012-V/1-R1	BDM-024-V/1-R1	BDM-048-V/1-R1	BDM-230-V/1-R
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 1+2+3	ST 1+2+3	ST 1+2+3	ST 1+2+3	ST 1+2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC	230 V DC
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC	177 V AC / 250 V DC
Nominal load current	I_L	1 A	1 A	1 A	1 A	0,5 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA	20 kA	20 kA
D1 impulse discharge current (10/350 µs) core-core	I_{imp}	2,5 kA	2,5 kA	2,5 kA	2,5 kA	2,5 kA
D1 total discharge current (10/350 µs) cores-PE	I_{Total}	5 kA	5 kA	5 kA	5 kA	5 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	12 V	22 V	46 V	65 V	350 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	12 V	22 V	46 V	65 V	350 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns	1 ns
Response time core-PE	t_a	1 ns	1 ns	1 ns	1 ns	1 ns
Serial resistance per core	R	0,8 Ω	0,8 Ω	0,8 Ω	0,8 Ω	3,3 Ω
Treshold frequency core-core	f	0,8 MHz	2 MHz	4 MHz	5 MHz	11 MHz
Cross-section of connected conductors solid		0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²
Cross-section of connected conductors stranded		0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2
Ordering number		8595090554240	8595090554257	8595090554264	8595090554271	8595090554288

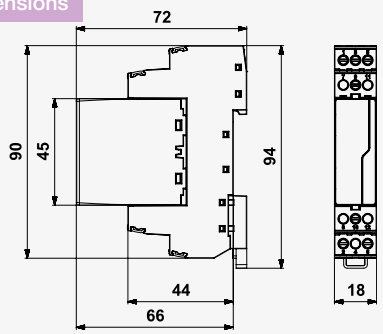
Spare module	BDM-006-V/1-0	BDM-012-V/1-0	BDM-024-V/1-0	BDM-048-V/1-0	BDM-230-V/1-0
Ordering number	8595090555018	8595090555025	8595090555032	8595090555049	8595090555056

BDM-…-V/1-FR. NEW

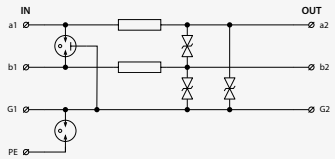
Lightning Current Arrester
pluggable module, line separated from protective ground by GDT

- coarse and fine protection of 2-core telecommunication, data and other lines
- installation at the boundary of LPZ 0 and LPZ 1 zones or higher at the input of the line into building

Dimensions



Basic circuit diagram



Parameter / Type		BDM-006-V/1-FR1	BDM-012-V/1-FR1	BDM-024-V/1-FR1	BDM-048-V/1-FR1	BDM-230-V/1-FR
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 1+2+3	ST 1+2+3	ST 1+2+3	ST 1+2+3	ST 1+2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC	230 V DC
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC	177 V AC / 250 V DC
Nominal load current	I_L	1 A	1 A	1 A	1 A	0,5 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA	10 kA
C2 nominal discharge current (8/20 µs) GND-PE	I_n	10 kA	10 kA	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA	20 kA	20 kA
D1 impulse discharge current (10/350 µs) core-core	I_{imp}	2,5 kA	2,5 kA	2,5 kA	2,5 kA	2,5 kA
D1 total discharge current (10/350 µs) cores-PE	I_{Total}	5 kA	5 kA	5 kA	5 kA	5 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	12 V	22 V	46 V	65 V	350 V
C3 voltage protection level mode GND-PE at 1 kV/µs	U_p	550 V	550 V	550 V	550 V	550 V
C3 voltage protection level mode core-GND at 1 kV/µs	U_p	12 V	22 V	46 V	65 V	350 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns	1 ns
Response time GND-PE	t_a	100 ns	100 ns	100 ns	100 ns	100 ns
Response time GND	t_a	1 ns	1 ns	1 ns	1 ns	1 ns
Serial resistance per core	R	0,8 Ω	0,8 Ω	0,8 Ω	0,8 Ω	3,3 Ω
Treshold frequency core-core	f	0,8 MHz	2 MHz	4 MHz	5 MHz	11 MHz
Cross-section of connected conductors solid		0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²
Cross-section of connected conductors stranded		0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2
Ordering number		8595090557098	8595090557104	8595090557111	8595090557128	8595090557135

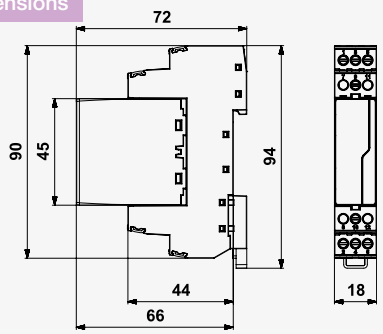
Spare module	BDM-006-V/1-0	BDM-012-V/1-0	BDM-024-V/1-0	BDM-048-V/1-0	BDM-230-V/1-0
Ordering number	8595090555018	8595090555025	8595090555032	8595090555049	8595090555056

DMG-...-V/1-R. NEW

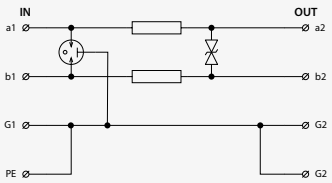
Combination of coarse and fine surge protection for telecommunication and signaling networks
pluggable module

- protection of shielded/unshielded 2-core telecommunication, data lines, electronic security and fire detection systems and communication interfaces of control systems against impact of transient overvoltage

Dimensions



Basic circuit diagram



Parameter / Type		DMG-006-V/1-R2	DMG-012-V/1-R2	DMG-024-V/1-R2	DMG-048-V/1-R2
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC
Nominal load current	I_L	2 A	2 A	2 A	2 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA	20 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	12 V	22 V	46 V	65 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	550 V	550 V	550 V	550 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns
Response time core-PE	t_a	100 ns	100 ns	100 ns	100 ns
Serial resistance per core	R	0,4 Ω	0,4 Ω	0,4 Ω	0,4 Ω
Treshold frequency core-core	f	1,2 MHz	3 MHz	6 MHz	7 MHz
Cross-section of connected conductors solid		0,14 / 4 mm^2	0,14 / 4 mm^2	0,14 / 4 mm^2	0,14 / 4 mm^2
Cross-section of connected conductors stranded		0,14 / 2,5 mm^2	0,14 / 2,5 mm^2	0,14 / 2,5 mm^2	0,14 / 2,5 mm^2
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
According to standard		ČSN EN 61643-21+A1,A2,C2	ČSN EN 61643-21+A1,A2,C2	ČSN EN 61643-21+A1,A2,C2	ČSN EN 61643-21+A1,A2,C2
Ordering number		8595090555568	8595090555575	8595090555582	8595090555599

Spare module	DMG-006-V/1-0	DMG-012-V/1-0	DMG-024-V/1-0	DMG-048-V/1-0
Ordering number	8595090553922	8595090553939	8595090553946	8595090553953

NEW

Parameter / Type		DMG-060-V/1-R2	DMG-110-V/1-R1	DMG-230-V/1-R1
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	60 V DC	110 V DC	230 V DC
Maximum operating voltage	U_c	45 V AC / 64 V DC	85 V AC / 120 V DC	177 V AC / 250 V DC
Nominal load current	I_L	2 A	1 A	1 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	85 V	170 V	350 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	550 V	550 V	550 V
Response time core-core	t_a	1 ns	1 ns	1 ns
Response time core-PE	t_a	100 ns	100 ns	100 ns
Serial resistance per core	R	0,4 Ω	1,6 Ω	1,6 Ω
Treshold frequency core-core	f	10 MHz	14 MHz	16 MHz
Cross-section of connected conductors solid		0,14 / 4 mm^2	0,14 / 4 mm^2	0,14 / 4 mm^2
Cross-section of connected conductors stranded		0,14 / 2,5 mm^2	0,14 / 2,5 mm^2	0,14 / 2,5 mm^2
Degree of protection		IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090555605	8595090555612	8595090555629

Spare module	DMG-060-V/1-0	DMG-110-V/1-0	DMG-230-V/1-0
Ordering number	8595090553960	8595090553977	8595090553984

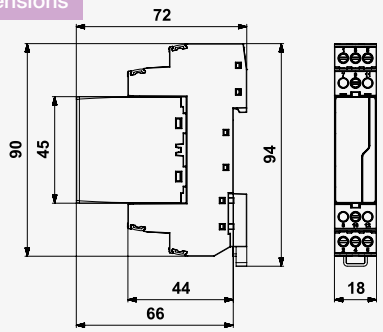
DMG-...-V/1-FR.

NEW

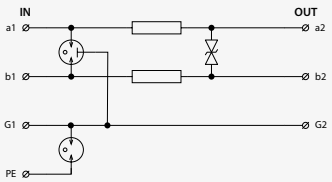
Combination of coarse and fine surge protection for telecommunication and signaling networks
pluggable module, line separated from protective ground by GDT

- protection of shielded 2-core telecommunication, data lines, electronic security and fire detection systems and communication interfaces of control systems against impact of transient overvoltage

Dimensions



Basic circuit diagram



Parameter / Type		DMG-006-V/1-FR2	DMG-012-V/1-FR2	DMG-024-V/1-FR2	DMG-048-V/1-FR2
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC
Nominal load current	I_L	2 A	2 A	2 A	2 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA
C2 nominal discharge current (8/20 µs) GND-PE	I_n	10 kA	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA	20 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	12 V	22 V	46 V	65 V
C3 voltage protection level mode GND-PE at 1 kV/µs	U_p	550 V	550 V	550 V	550 V
C3 voltage protection level mode core-GND at 1 kV/µs	U_p	550 V	550 V	550 V	550 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns
Response time GND-PE	t_a	100 ns	100 ns	100 ns	100 ns
Response time GND	t_a	100 ns	100 ns	100 ns	100 ns
Serial resistance per core	R	0,4 Ω	0,4 Ω	0,4 Ω	0,4 Ω
Treshold frequency core-core	f	1,2 MHz	3 MHz	6 MHz	7 MHz
Cross-section of connected conductors solid		0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²
Cross-section of connected conductors stranded		0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090555636	8595090555643	8595090555650	8595090555667

Spare module	DMG-006-V/1-0	DMG-012-V/1-0	DMG-024-V/1-0	DMG-048-V/1-0
Ordering number	8595090553922	8595090553939	8595090553946	8595090553953

NEW

Parameter / Type		DMG-060-V/1-FR2	DMG-110-V/1-FR1	DMG-230-V/1-FR1
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	60 V DC	110 V DC	230 V DC
Maximum operating voltage	U_c	45 V AC / 64 V DC	85 V AC / 120 V DC	177 V AC / 250 V DC
Nominal load current	I_L	2 A	1 A	1 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA
C2 nominal discharge current (8/20 µs) GND-PE	I_n	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	85 V	170 V	350 V
C3 voltage protection level mode GND-PE at 1 kV/µs	U_p	550 V	550 V	550 V
C3 voltage protection level mode core-GND at 1 kV/µs	U_p	550 V	550 V	550 V
Response time core-core	t_a	1 ns	1 ns	1 ns
Response time GND-PE	t_a	100 ns	100 ns	100 ns
Response time GND	t_a	100 ns	100 ns	100 ns
Serial resistance per core	R	0,4 Ω	1,6 Ω	1,6 Ω
Treshold frequency core-core	f	10 MHz	14 MHz	16 MHz
Cross-section of connected conductors solid		0,14 / 4 mm^2	0,14 / 4 mm^2	0,14 / 4 mm^2
Cross-section of connected conductors stranded		0,14 / 2,5 mm^2	0,14 / 2,5 mm^2	0,14 / 2,5 mm^2
Degree of protection		IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090555674	8595090555681	8595090555698

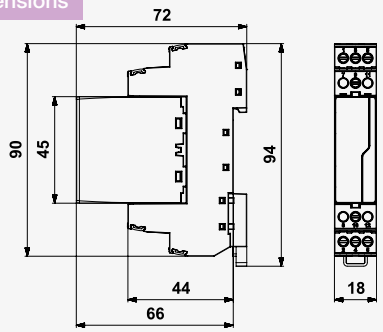
Spare module	DMG-060-V/1-0	DMG-110-V/1-0	DMG-230-V/1-0
Ordering number	8595090553960	8595090553977	8595090553984

DMG-...-V/1-R. NEW

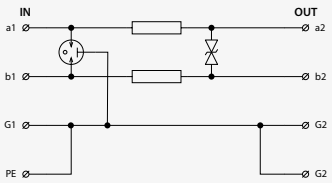
Combination of coarse and fine surge protection for telecommunication and signaling networks
pluggable module

- protection of shielded/unshielded 2-core telecommunication, data lines, electronic security and fire detection systems and communication interfaces of control systems against impact of transient overvoltage

Dimensions



Basic circuit diagram



Parameter / Type		DMG-006-V/1-R1	DMG-012-V/1-R1	DMG-024-V/1-R1	DMG-048-V/1-R1
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC
Nominal load current	I_L	1 A	1 A	1 A	1 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA	20 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	12 V	22 V	46 V	65 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	550 V	550 V	550 V	550 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns
Response time core-PE	t_a	100 ns	100 ns	100 ns	100 ns
Serial resistance per core	R	0,8 Ω	0,8 Ω	0,8 Ω	0,8 Ω
Treshold frequency core-core	f	1,2 MHz	3 MHz	6 MHz	7 MHz
Cross-section of connected conductors solid		0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²
Cross-section of connected conductors stranded		0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090555704	8595090555711	8595090555728	8595090555735

Spare module	DMG-006-V/1-0	DMG-012-V/1-0	DMG-024-V/1-0	DMG-048-V/1-0
Ordering number	8595090553922	8595090553939	8595090553946	8595090553953

NEW

Parameter / Type		DMG-060-V/1-R1	DMG-110-V/1-R	DMG-230-V/1-R
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	60 V DC	110 V DC	230 V DC
Maximum operating voltage	U_c	45 V AC / 64 V DC	85 V AC / 120 V DC	177 V AC / 250 V DC
Nominal load current	I_L	1 A	0,5 A	0,5 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	85 V	170 V	350 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	550 V	550 V	550 V
Response time core-core	t_a	1 ns	1 ns	1 ns
Response time core-PE	t_a	100 ns	100 ns	100 ns
Serial resistance per core	R	0,8 Ω	3,3 Ω	3,3 Ω
Treshold frequency core-core	f	10 MHz	14 MHz	16 MHz
Cross-section of connected conductors solid		0,14 / 4 mm^2	0,14 / 4 mm^2	0,14 / 4 mm^2
Cross-section of connected conductors stranded		0,14 / 2,5 mm^2	0,14 / 2,5 mm^2	0,14 / 2,5 mm^2
Degree of protection		IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090555742	8595090555759	8595090555766

Spare module	DMG-060-V/1-0	DMG-110-V/1-0	DMG-230-V/1-0
Ordering number	8595090553960	8595090553977	8595090553984

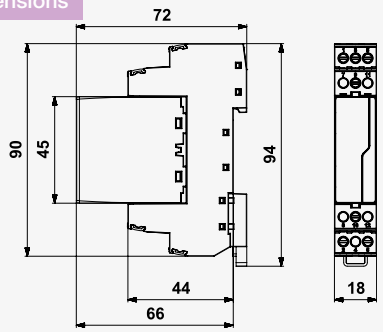
DMG-...-V/1-FR.

NEW

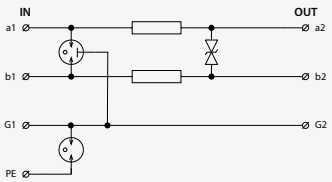
Combination of coarse and fine surge protection for telecommunication and signaling networks
pluggable module, line separated from protective ground by GDT

- protection of shielded 2-core telecommunication, data lines, electronic security and fire detection systems and communication interfaces of control systems against impact of transient overvoltage

Dimensions



Basic circuit diagram



Parameter / Type		DMG-006-V/1-FR1	DMG-012-V/1-FR1	DMG-024-V/1-FR1	DMG-048-V/1-FR1
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC
Nominal load current	I_L	1 A	1 A	1 A	1 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA
C2 nominal discharge current (8/20 µs) GND-PE	I_n	10 kA	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA	20 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	12 V	22 V	46 V	65 V
C3 voltage protection level mode GND-PE at 1 kV/µs	U_p	550 V	550 V	550 V	550 V
C3 voltage protection level mode core-GND at 1 kV/µs	U_p	550 V	550 V	550 V	550 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns
Response time GND-PE	t_a	100 ns	100 ns	100 ns	100 ns
Response time GND	t_a	100 ns	100 ns	100 ns	100 ns
Serial resistance per core	R	0,8 Ω	0,8 Ω	0,8 Ω	0,8 Ω
Treshold frequency core-core	f	1,2 MHz	3 MHz	6 MHz	7 MHz
Cross-section of connected conductors solid		0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²
Cross-section of connected conductors stranded		0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090555773	8595090555780	8595090555797	8595090555803

Spare module	DMG-006-V/1-0	DMG-012-V/1-0	DMG-024-V/1-0	DMG-048-V/1-0
Ordering number	8595090553922	8595090553939	8595090553946	8595090553953

NEW

Parameter / Type		DMG-060-V/1-FR1	DMG-110-V/1-FR	DMG-230-V/1-FR
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	60 V DC	110 V DC	230 V DC
Maximum operating voltage	U_c	45 V AC / 64 V DC	85 V AC / 120 V DC	177 V AC / 250 V DC
Nominal load current	I_L	1 A	0,5 A	0,5 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA
C2 nominal discharge current (8/20 µs) GND-PE	I_n	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	85 V	170 V	350 V
C3 voltage protection level mode GND-PE at 1 kV/µs	U_p	550 V	550 V	550 V
C3 voltage protection level mode core-GND at 1 kV/µs	U_p	550 V	550 V	550 V
Response time core-core	t_a	1 ns	1 ns	1 ns
Response time GND-PE	t_a	100 ns	100 ns	100 ns
Response time GND	t_a	100 ns	100 ns	100 ns
Serial resistance per core	R	0,8 Ω	3,3 Ω	3,3 Ω
Treshold frequency core-core	f	10 MHz	14 MHz	16 MHz
Cross-section of connected conductors solid		0,14 / 4 mm^2	0,14 / 4 mm^2	0,14 / 4 mm^2
Cross-section of connected conductors stranded		0,14 / 2,5 mm^2	0,14 / 2,5 mm^2	0,14 / 2,5 mm^2
Degree of protection		IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090555810	8595090555827	8595090555834

Spare module	DMG-060-V/1-0	DMG-110-V/1-0	DMG-230-V/1-0
Ordering number	8595090553960	8595090553977	8595090553984

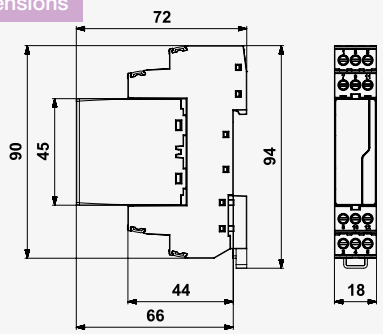
DMG-…-V/2-R.

NEW

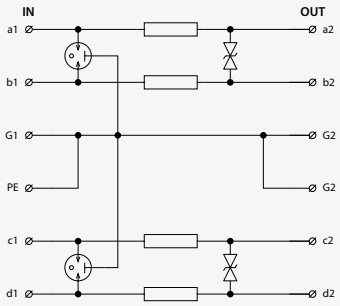
Combination of coarse and fine surge protection for telecommunication and signaling networks
pluggable module

- protection of shielded/unshielded 2-core telecommunication, data lines, electronic security and fire detection systems and communication interfaces of control systems against impact of transient overvoltage

Dimensions



Basic circuit diagram



Parameter / Type		DMG-006-V/2-R1	DMG-012-V/2-R1	DMG-024-V/2-R1	DMG-048-V/2-R1
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC
Nominal load current	I_L	1 A	1 A	1 A	1 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA	20 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	12 V	22 V	46 V	65 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	550 V	550 V	550 V	550 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns
Response time core-PE	t_a	100 ns	100 ns	100 ns	100 ns
Serial resistance per core	R	0,8 Ω	0,8 Ω	0,8 Ω	0,8 Ω
Treshold frequency core-core	f	1,2 MHz	3 MHz	6 MHz	7 MHz
Cross-section of connected conductors solid		0,14 / 4 mm^2	0,14 / 4 mm^2	0,14 / 4 mm^2	0,14 / 4 mm^2
Cross-section of connected conductors stranded		0,14 / 2,5 mm^2	0,14 / 2,5 mm^2	0,14 / 2,5 mm^2	0,14 / 2,5 mm^2
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090555841	8595090555858	8595090555865	8595090555872

Spare module	DMG-006-V/1-0	DMG-012-V/1-0	DMG-024-V/1-0	DMG-048-V/1-0
Ordering number	8595090553922	8595090553939	8595090553946	8595090553953

NEW

Parameter / Type		DMG-060-V/2-R1	DMG-110-V/2-R	DMG-230-V/2-R
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	60 V DC	110 V DC	230 V DC
Maximum operating voltage	U_c	45 V AC / 64 V DC	85 V AC / 120 V DC	177 V AC / 250 V DC
Nominal load current	I_L	1 A	0,5 A	0,5 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	85 V	170 V	350 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	550 V	550 V	550 V
Response time core-core	t_a	1 ns	1 ns	1 ns
Response time core-PE	t_a	100 ns	100 ns	100 ns
Serial resistance per core	R	0,8 Ω	3,3 Ω	3,3 Ω
Treshold frequency core-core	f	10 MHz	14 MHz	16 MHz
Cross-section of connected conductors solid		0,14 / 4 mm^2	0,14 / 4 mm^2	0,14 / 4 mm^2
Cross-section of connected conductors stranded		0,14 / 2,5 mm^2	0,14 / 2,5 mm^2	0,14 / 2,5 mm^2
Degree of protection		IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090555889	8595090555896	8595090555902

Spare module	DMG-060-V/1-0	DMG-110-V/1-0	DMG-230-V/1-0
Ordering number	8595090553960	8595090553977	8595090553984

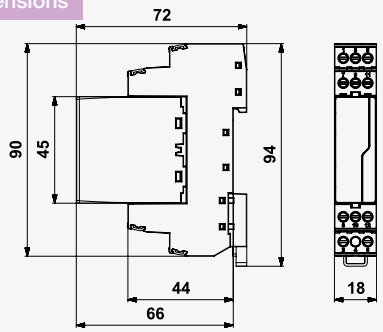
DMG-…-V/2-FR.

NEW

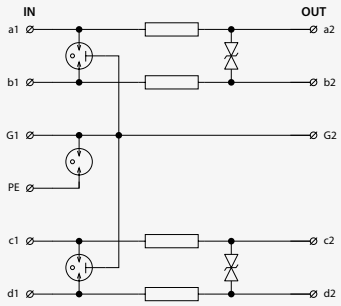
Combination of coarse and fine surge protection for telecommunication and signaling networks
pluggable module, line separated from protective ground by GDT

- protection of shielded 2-core telecommunication, data lines, electronic security and fire detection systems and communication interfaces of control systems against impact of transient overvoltage

Dimensions



Basic circuit diagram



Parameter / Type		DMG-006-V/2-FR1	DMG-012-V/2-FR1	DMG-024-V/2-FR1	DMG-048-V/2-FR1
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC
Nominal load current	I_L	1 A	1 A	1 A	1 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA
C2 nominal discharge current (8/20 µs) GND-PE	I_n	10 kA	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA	20 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	12 V	22 V	46 V	65 V
C3 voltage protection level mode GND-PE at 1 kV/µs	U_p	550 V	550 V	550 V	550 V
C3 voltage protection level mode core-GND at 1 kV/µs	U_p	550 V	550 V	550 V	550 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns
Response time GND-PE	t_a	100 ns	100 ns	100 ns	100 ns
Response time GND	t_a	100 ns	100 ns	100 ns	100 ns
Serial resistance per core	R	0,8 Ω	0,8 Ω	0,8 Ω	0,8 Ω
Treshold frequency core-core	f	1,2 MHz	3 MHz	6 MHz	7 MHz
Cross-section of connected conductors solid		0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²
Cross-section of connected conductors stranded		0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090555919	8595090555926	8595090555933	8595090555940

Spare module	DMG-006-V/1-0	DMG-012-V/1-0	DMG-024-V/1-0	DMG-048-V/1-0
Ordering number	8595090553922	8595090553939	8595090553946	8595090553953

NEW

Parameter / Type		DMG-060-V/2-FR1	DMG-110-V/2-FR	DMG-230-V/2-FR
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	60 V DC	110 V DC	230 V DC
Maximum operating voltage	U_c	45 V AC / 64 V DC	85 V AC / 120 V DC	177 V AC / 250 V DC
Nominal load current	I_L	1 A	0,5 A	0,5 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA
C2 nominal discharge current (8/20 µs) GND-PE	I_n	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	85 V	170 V	350 V
C3 voltage protection level mode GND-PE at 1 kV/µs	U_p	550 V	550 V	550 V
C3 voltage protection level mode core-GND at 1 kV/µs	U_p	550 V	550 V	550 V
Response time core-core	t_a	1 ns	1 ns	1 ns
Response time GND-PE	t_a	100 ns	100 ns	100 ns
Response time GND	t_a	100 ns	100 ns	100 ns
Serial resistance per core	R	0,8 Ω	3,3 Ω	3,3 Ω
Treshold frequency core-core	f	10 MHz	14 MHz	16 MHz
Cross-section of connected conductors solid		0,14 / 4 mm^2	0,14 / 4 mm^2	0,14 / 4 mm^2
Cross-section of connected conductors stranded		0,14 / 2,5 mm^2	0,14 / 2,5 mm^2	0,14 / 2,5 mm^2
Degree of protection		IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090555957	8595090555964	8595090555971

Spare module	DMG-060-V/1-0	DMG-110-V/1-0	DMG-230-V/1-0
Ordering number	8595090553960	8595090553977	8595090553984

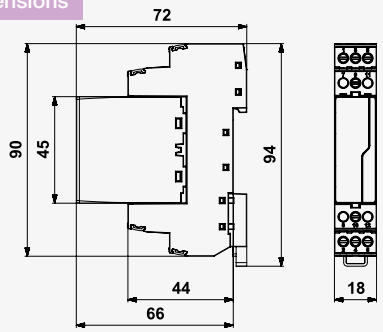
DM-…-V/1-R.

NEW

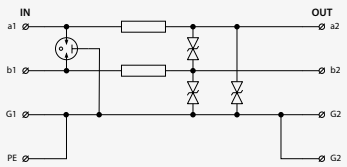
Combination of coarse and fine surge protection for telecommunication and signaling networks
pluggable module

- protection of 2-core telecommunication, data lines, electronic security and fire detection systems and communication interfaces of control systems against impact of transient overvoltage

Dimensions



Basic circuit diagram



Parameter / Type		DM-006-V/1-R1	DM-012-V/1-R1	DM-024-V/1-R1	DM-048-V/1-R1
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC
Nominal load current	I_L	1 A	1 A	1 A	1 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA	20 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	12 V	22 V	46 V	65 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	12 V	22 V	46 V	65 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns
Response time core-PE	t_a	1 ns	1 ns	1 ns	1 ns
Serial resistance per core	R	0,8 Ω	0,8 Ω	0,8 Ω	0,8 Ω
Treshold frequency core-core	f	0,8 MHz	2 MHz	4 MHz	5 MHz
Cross-section of connected conductors solid		0,14 / 4 mm^2	0,14 / 4 mm^2	0,14 / 4 mm^2	0,14 / 4 mm^2
Cross-section of connected conductors stranded		0,14 / 2,5 mm^2	0,14 / 2,5 mm^2	0,14 / 2,5 mm^2	0,14 / 2,5 mm^2
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090554295	8595090554301	8595090554318	8595090554325

Spare module	DM-006-V/1-0	DM-012-V/1-0	DM-024-V/1-0	DM-048-V/1-0
Ordering number	8595090555063	8595090555070	8595090553946	8595090553953

NEW

Parameter / Type		DM-060-V/1-R1	DM-110-V/1-R	DM-230-V/1-R
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	60 V DC	110 V DC	230 V DC
Maximum operating voltage	U_c	45 V AC / 64 V DC	85 V AC / 120 V DC	177 V AC / 250 V DC
Nominal load current	I_L	1 A	0,5 A	0,5 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	85 V	170 V	350 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	85 V	170 V	350 V
Response time core-core	t_a	1 ns	1 ns	1 ns
Response time core-PE	t_a	1 ns	1 ns	1 ns
Serial resistance per core	R	0,8 Ω	3,3 Ω	3,3 Ω
Treshold frequency core-core	f	6,5 MHz	10 MHz	11 MHz
Cross-section of connected conductors solid		0,14 / 4 mm^2	0,14 / 4 mm^2	0,14 / 4 mm^2
Cross-section of connected conductors stranded		0,14 / 2,5 mm^2	0,14 / 2,5 mm^2	0,14 / 2,5 mm^2
Degree of protection		IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090555988	8595090555995	8595090556008

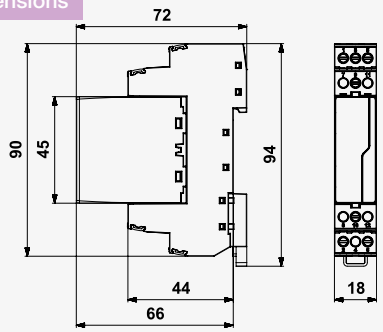
Spare module	DM-060-V/1-0	DM-110-V/1-0	DM-230-V/1-0
Ordering number	8595090555100	8595090555117	8595090556688

DM-…-V/1-FR. NEW

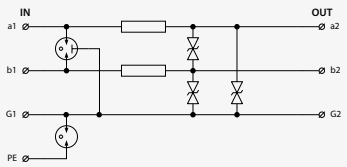
Combination of coarse and fine surge protection for telecommunication and signaling networks
pluggable module, line separated from protective ground by GDT

- protection of 2-core telecommunication, data lines, electronic security and fire detection systems and communication interfaces of control systems against impact of transient overvoltage

Dimensions



Basic circuit diagram



Parameter / Type		DM-006-V/1-FR1	DM-012-V/1-FR1	DM-024-V/1-FR1	DM-048-V/1-FR1
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC
Nominal load current	I_L	1 A	1 A	1 A	1 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA
C2 nominal discharge current (8/20 µs) GND-PE	I_n	10 kA	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA	20 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	12 V	22 V	46 V	65 V
C3 voltage protection level mode GND-PE at 1 kV/µs	U_p	550 V	550 V	550 V	550 V
C3 voltage protection level mode core-GND at 1 kV/µs	U_p	12 V	22 V	46 V	65 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns
Response time GND-PE	t_a	100 ns	100 ns	100 ns	100 ns
Response time GND	t_a	1 ns	1 ns	1 ns	1 ns
Serial resistance per core	R	0,8 Ω	0,8 Ω	0,8 Ω	0,8 Ω
Treshold frequency core-core	f	0,8 MHz	2 MHz	4 MHz	5 MHz
Cross-section of connected conductors solid		0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²
Cross-section of connected conductors stranded		0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090556015	8595090556022	8595090556039	8595090556046

Spare module	DM-006-V/1-0	DM-012-V/1-0	DM-024-V/1-0	DM-048-V/1-0
Ordering number	8595090555063	8595090555070	8595090555087	8595090555094

NEW

Parameter / Type		DM-060-V/1-FR1	DM-110-V/1-FR	DM-230-V/1-FR
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	60 V DC	110 V DC	230 V DC
Maximum operating voltage	U_c	45 V AC / 64 V DC	85 V AC / 120 V DC	177 V AC / 250 V DC
Nominal load current	I_L	1 A	0,5 A	0,5 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA
C2 nominal discharge current (8/20 µs) GND-PE	I_n	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	85 V	170 V	350 V
C3 voltage protection level mode GND-PE at 1 kV/µs	U_p	550 V	550 V	550 V
C3 voltage protection level mode core-GND at 1 kV/µs	U_p	85 V	170 V	350 V
Response time core-core	t_a	1 ns	1 ns	1 ns
Response time GND-PE	t_a	100 ns	100 ns	100 ns
Response time GND	t_a	1 ns	1 ns	1 ns
Serial resistance per core	R	0,8 Ω	3,3 Ω	3,3 Ω
Treshold frequency core-core	f	6,5 MHz	10 MHz	11 MHz
Cross-section of connected conductors solid		0,14 / 4 mm^2	0,14 / 4 mm^2	0,14 / 4 mm^2
Cross-section of connected conductors stranded		0,14 / 2,5 mm^2	0,14 / 2,5 mm^2	0,14 / 2,5 mm^2
Degree of protection		IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090556053	8595090556060	8595090556077

Spare module	DM-060-V/1-0	DM-110-V/1-0	DM-230-V/1-0
Ordering number	8595090555100	8595090555117	8595090556688

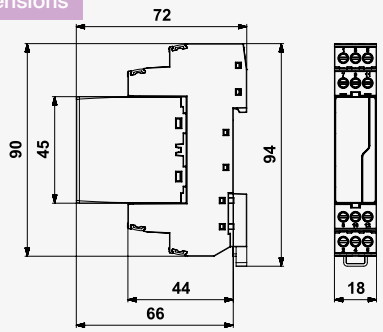
DM-…-V/2-R.

NEW

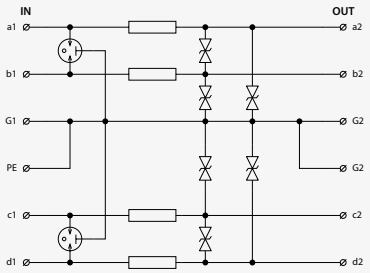
Combination of coarse and fine surge protection for telecommunication and signaling networks
pluggable module

- protection of two 2-core telecommunication, data lines, electronic security and fire detection systems and communication interfaces of control systems against impact of transient overvoltage

Dimensions



Basic circuit diagram



Parameter / Type		DM-006-V/2-R1	DM-012-V/2-R1	DM-024-V/2-R1	DM-048-V/2-R1
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC
Nominal load current	I_L	1 A	1 A	1 A	1 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA	20 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	12 V	22 V	46 V	65 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	12 V	22 V	46 V	65 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns
Response time core-PE	t_a	1 ns	1 ns	1 ns	1 ns
Serial resistance per core	R	0,8 Ω	0,8 Ω	0,8 Ω	0,8 Ω
Treshold frequency core-core	f	0,8 MHz	2 MHz	4 MHz	5 MHz
Cross-section of connected conductors solid		0,14 / 4 mm^2	0,14 / 4 mm^2	0,14 / 4 mm^2	0,14 / 4 mm^2
Cross-section of connected conductors stranded		0,14 / 2,5 mm^2	0,14 / 2,5 mm^2	0,14 / 2,5 mm^2	0,14 / 2,5 mm^2
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090554332	8595090554349	8595090554356	8595090554363

Spare module	DM-006-V/2-0	DM-012-V/2-0	DM-024-V/2-0	DM-048-V/2-0
Ordering number	8595090556695	8595090556701	8595090556718	8595090556725

NEW

Parameter / Type		DM-060-V/2-R1	DM-110-V/2-R	DM-230-V/2-R
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	60 V DC	110 V DC	230 V DC
Maximum operating voltage	U_c	45 V AC / 64 V DC	85 V AC / 120 V DC	177 V AC / 250 V DC
Nominal load current	I_L	1 A	0,5 A	0,5 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	85 V	170 V	350 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	85 V	170 V	350 V
Response time core-core	t_a	1 ns	1 ns	1 ns
Response time core-PE	t_a	1 ns	1 ns	1 ns
Serial resistance per core	R	0,8 Ω	3,3 Ω	3,3 Ω
Treshold frequency core-core	f	6,5 MHz	10 MHz	11 MHz
Cross-section of connected conductors solid		0,14 / 4 mm^2	0,14 / 4 mm^2	0,14 / 4 mm^2
Cross-section of connected conductors stranded		0,14 / 2,5 mm^2	0,14 / 2,5 mm^2	0,14 / 2,5 mm^2
Degree of protection		IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090556084	8595090556091	8595090556107

Spare module	DM-060-V/2-0	DM-110-V/2-0	DM-230-V/2-0
Ordering number	8595090556732	8595090556749	8595090556756

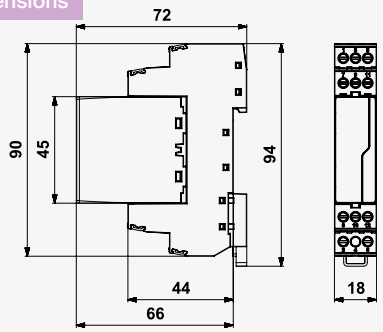
DM-…-V/2-FR.

NEW

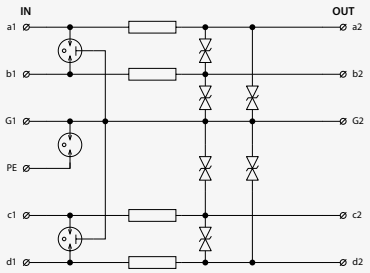
Combination of coarse and fine surge protection for telecommunication and signaling networks
pluggable module, line separated from protective ground by GDT

- protection of two 2-core telecommunication, data lines, electronic security and fire detection systems and communication interfaces of control systems against impact of transient overvoltage

Dimensions



Basic circuit diagram



Parameter / Type		DM-006-V/2-FR1	DM-012-V/2-FR1	DM-024-V/2-FR1	DM-048-V/2-FR1
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC
Nominal load current	I_L	1 A	1 A	1 A	1 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA
C2 nominal discharge current (8/20 µs) GND-PE	I_n	10 kA	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA	20 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	12 V	22 V	46 V	65 V
C3 voltage protection level mode GND-PE at 1 kV/µs	U_p	550 V	550 V	550 V	550 V
C3 voltage protection level mode core-GND at 1 kV/µs	U_p	12 V	22 V	46 V	65 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns
Response time GND-PE	t_a	100 ns	100 ns	100 ns	100 ns
Response time GND	t_a	1 ns	1 ns	1 ns	1 ns
Serial resistance per core	R	0,8 Ω	0,8 Ω	0,8 Ω	0,8 Ω
Treshold frequency core-core	f	0,8 MHz	2 MHz	4 MHz	5 MHz
Cross-section of connected conductors solid		0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²
Cross-section of connected conductors stranded		0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090556114	8595090556121	8595090556138	8595090556145

Spare module	DM-006-V/2-0	DM-012-V/2-0	DM-024-V/2-0	DM-048-V/2-0
Ordering number	8595090556695	8595090556701	8595090556718	8595090556725

NEW

Parameter / Type		DM-060-V/2-FR1	DM-110-V/2-FR	DM-230-V/2-FR
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	60 V DC	110 V DC	230 V DC
Maximum operating voltage	U_c	45 V AC / 64 V DC	85 V AC / 120 V DC	177 V AC / 250 V DC
Nominal load current	I_L	1 A	0,5 A	0,5 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA
C2 nominal discharge current (8/20 µs) GND-PE	I_n	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	85 V	170 V	350 V
C3 voltage protection level mode GND-PE at 1 kV/µs	U_p	550 V	550 V	550 V
C3 voltage protection level mode core-GND at 1 kV/µs	U_p	85 V	170 V	350 V
Response time core-core	t_a	1 ns	1 ns	1 ns
Response time GND-PE	t_a	100 ns	100 ns	100 ns
Response time GND	t_a	1 ns	1 ns	1 ns
Serial resistance per core	R	0,8 Ω	3,3 Ω	3,3 Ω
Treshold frequency core-core	f	6,5 MHz	10 MHz	11 MHz
Cross-section of connected conductors solid		0,14 / 4 mm^2	0,14 / 4 mm^2	0,14 / 4 mm^2
Cross-section of connected conductors stranded		0,14 / 2,5 mm^2	0,14 / 2,5 mm^2	0,14 / 2,5 mm^2
Degree of protection		IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090556152	8595090556169	8595090556176

Spare module	DM-060-V/2-0	DM-110-V/2-0	DM-230-V/2-0
Ordering number	8595090556732	8595090556749	8595090556756

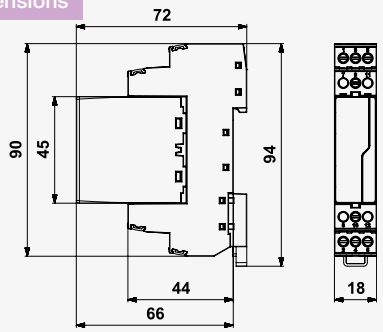
DM-…-V/1-R.

NEW

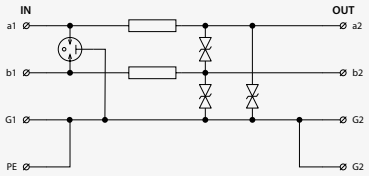
Combination of coarse and fine surge protection for telecommunication and signaling networks
pluggable module

- protection of 2-core telecommunication, data lines, electronic security and fire detection systems and communication interfaces of control systems against impact of transient overvoltage

Dimensions



Basic circuit diagram



Parameter / Type		DM-006-V/1-R2	DM-012-V/1-R2	DM-024-V/1-R2	DM-048-V/1-R2
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC
Maximum operating voltage	U^c	6 V AC / 8,5 V DC	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC
Nominal load current	I^L	2 A	2 A	2 A	2 A
C2 nominal discharge current (8/20 µs) core-core	I^n	10 kA	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA	20 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	12 V	22 V	46 V	65 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	12 V	22 V	46 V	65 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns
Response time core-PE	t_a	1 ns	1 ns	1 ns	1 ns
Serial resistance per core	R	0,4 Ω	0,4 Ω	0,4 Ω	0,4 Ω
Treshold frequency core-core	f	0,8 MHz	2 MHz	4 MHz	5 MHz
Cross-section of connected conductors solid		0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²
Cross-section of connected conductors stranded		0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090554370	8595090554387	8595090554394	8595090554400

Spare module	DM-006-V/1-0	DM-012-V/1-0	DM-024-V/1-0	DM-048-V/1-0
Ordering number	8595090555063	8595090555070	8595090555087	8595090555094

NEW

Parameter / Type		DM-060-V/1-R2	DM-110-V/1-R1	DM-230-V/1-R1
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	60 V DC	110 V DC	230 V DC
Maximum operating voltage	U_c	45 V AC / 64 V DC	85 V AC / 120 V DC	177 V AC / 250 V DC
Nominal load current	I_L	2 A	1 A	1 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	85 V	170 V	350 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	85 V	170 V	350 V
Response time core-core	t_a	1 ns	1 ns	1 ns
Response time core-PE	t_a	1 ns	1 ns	1 ns
Serial resistance per core	R	0,4 Ω	1,6 Ω	1,6 Ω
Treshold frequency core-core	f	6,5 MHz	10 MHz	11 MHz
Cross-section of connected conductors solid		0,14 / 4 mm^2	0,14 / 4 mm^2	0,14 / 4 mm^2
Cross-section of connected conductors stranded		0,14 / 2,5 mm^2	0,14 / 2,5 mm^2	0,14 / 2,5 mm^2
Degree of protection		IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090556183	8595090556190	8595090556206

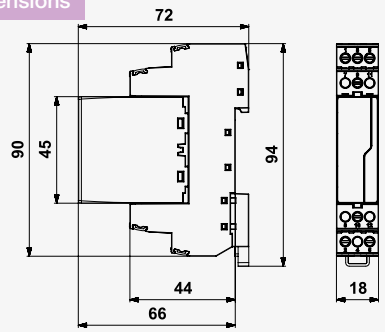
Spare module	DM-060-V/1-0	DM-110-V/1-0	DM-230-V/1-0
Ordering number	8595090555100	8595090555117	8595090556688

DM-…-V/1-FR. NEW

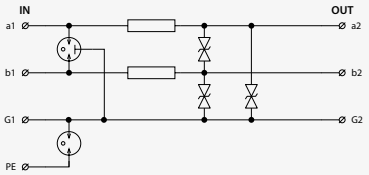
Combination of coarse and fine surge protection for telecommunication and signaling networks
pluggable module, line separated from protective ground by GDT

- protection of 2-core telecommunication, data lines, electronic security and fire detection systems and communication interfaces of control systems against impact of transient overvoltage

Dimensions



Basic circuit diagram



Parameter / Type		DM-006-V/1-FR2	DM-012-V/1-FR2	DM-024-V/1-FR2	DM-048-V/1-FR2
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC
Nominal load current	I_L	2 A	2 A	2 A	2 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA
C2 nominal discharge current (8/20 µs) GND-PE	I_n	10 kA	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA	20 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	12 V	22 V	46 V	65 V
C3 voltage protection level mode GND-PE at 1 kV/µs	U_p	550 V	550 V	550 V	550 V
C3 voltage protection level mode core-GND at 1 kV/µs	U_p	12 V	22 V	46 V	65 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns
Response time GND-PE	t_a	100 ns	100 ns	100 ns	100 ns
Response time GND	t_a	1 ns	1 ns	1 ns	1 ns
Serial resistance per core	R	0,4 Ω	0,4 Ω	0,4 Ω	0,4 Ω
Treshold frequency core-core	f	0,8 MHz	2 MHz	4 MHz	5 MHz
Cross-section of connected conductors solid		0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²
Cross-section of connected conductors stranded		0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090556213	8595090556220	8595090556237	8595090556244

Spare module	DM-006-V/1-0	DM-012-V/1-0	DM-024-V/1-0	DM-048-V/1-0
Ordering number	8595090555063	8595090555070	8595090555087	8595090555094

NEW

Parameter / Type		DM-060-V/1-FR2	DM-110-V/1-FR1	DM-230-V/1-FR1
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	60 V DC	110 V DC	230 V DC
Maximum operating voltage	U_c	45 V AC / 64 V DC	85 V AC / 120 V DC	177 V AC / 250 V DC
Nominal load current	I_L	2 A	1 A	1 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA
C2 nominal discharge current (8/20 µs) GND-PE	I_n	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	85 V	170 V	350 V
C3 voltage protection level mode GND-PE at 1 kV/µs	U_p	550 V	550 V	550 V
C3 voltage protection level mode core-GND at 1 kV/µs	U_p	85 V	170 V	350 V
Response time core-core	t_a	1 ns	1 ns	1 ns
Response time GND-PE	t_a	100 ns	100 ns	100 ns
Response time GND	t_a	1 ns	1 ns	1 ns
Serial resistance per core	R	0,4 Ω	1,6 Ω	1,6 Ω
Treshold frequency core-core	f	6,5 MHz	10 MHz	11 MHz
Cross-section of connected conductors solid		0,14 / 4 mm^2	0,14 / 4 mm^2	0,14 / 4 mm^2
Cross-section of connected conductors stranded		0,14 / 2,5 mm^2	0,14 / 2,5 mm^2	0,14 / 2,5 mm^2
Degree of protection		IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090556251	8595090556268	8595090556275

Spare module	DM-060-V/1-0	DM-110-V/1-0	DM-230-V/1-0
Ordering number	8595090555100	8595090555117	8595090556688

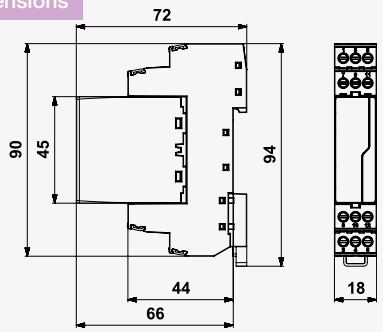
DMG-...-V/1-4R1

NEW

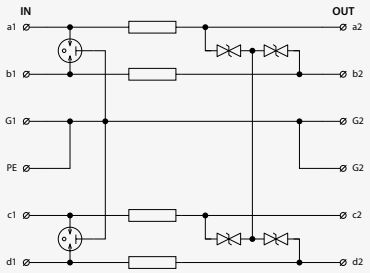
Combination of coarse and fine surge protection for telecommunication and signaling networks
pluggable module

- protection of three/four-core telecommunication, data and other lines and communication interfaces of control systems M&C, electronic security and fire detection systems, especially RS 485, RS 422 and RS 232 against impact of transient overvoltage

Dimensions



Basic circuit diagram



Parameter / Type		DMG-006-V/1-4R1	DMG-012-V/1-4R1	DMG-024-V/1-4R1	DMG-048-V/1-4R1
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC
Nominal load current	I_L	1 A	1 A	1 A	1 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA	20 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	18 V	24 V	46 V	90 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	550 V	550 V	550 V	550 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns
Response time core-PE	t_a	100 ns	100 ns	100 ns	100 ns
Serial resistance per core	R	0,8 Ω	0,8 Ω	0,8 Ω	0,8 Ω
Treshold frequency core-core	f	1,2 MHz	3 MHz	6 MHz	7 MHz
Cross-section of connected conductors solid		0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²
Cross-section of connected conductors stranded		0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090554417	8595090554424	8595090554431	8595090554448

Spare module	DMG-006-V/1-4-0	DMG-012-V/1-4-0	DMG-024-V/1-4-0	DMG-048-V/1-4-0
Ordering number	8595090556763	8595090556770	8595090556787	8595090556794

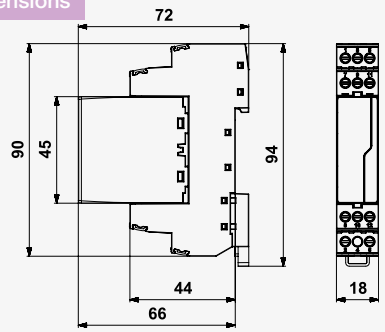
DMG-...-V/1-4FR1

NEW

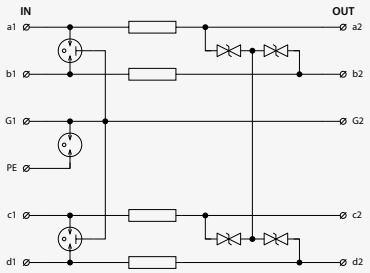
Combination of coarse and fine surge protection for telecommunication and signaling networks
pluggable module, line separated from protective ground by GDT

- protection of three/four-core telecommunication, data and other lines and communication interfaces of control systems M&C, electronic security and fire detection systems, especially RS 485, RS 422 and RS 232 against impact of transient overvoltage

Dimensions



Basic circuit diagram



Parameter / Type		DMG-006-V/1-4FR1	DMG-012-V/1-4FR1	DMG-024-V/1-4FR1	DMG-048-V/1-4FR1
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC
Nominal load current	I_L	1 A	1 A	1 A	1 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA
C2 nominal discharge current (8/20 µs) GND-PE	I_n	10 kA	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA	20 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	18 V	24 V	46 V	90 V
C3 voltage protection level mode GND-PE at 1 kV/µs	U_p	550 V	550 V	550 V	550 V
C3 voltage protection level mode core-GND at 1 kV/µs	U_p	550 V	550 V	550 V	550 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns
Response time GND-PE	t_a	100 ns	100 ns	100 ns	100 ns
Response time GND	t_a	100 ns	100 ns	100 ns	100 ns
Serial resistance per core	R	0,8 Ω	0,8 Ω	0,8 Ω	0,8 Ω
Treshold frequency core-core	f	1,2 MHz	3 MHz	6 MHz	7 MHz
Cross-section of connected conductors solid		0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²
Cross-section of connected conductors stranded		0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090556282	8595090556299	8595090556305	8595090556312

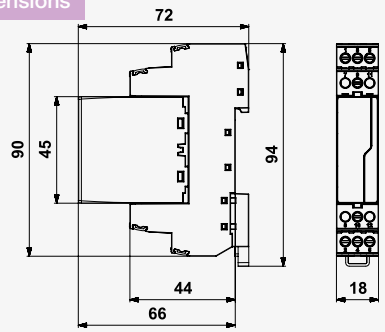
Spare module	DMG-006-V/1-4-0	DMG-012-V/1-4-0	DMG-024-V/1-4-0	DMG-048-V/1-4-0
Ordering number	8595090556763	8595090556770	8595090556787	8595090556794

DM-…-V/2-JR. NEW

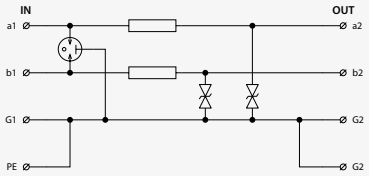
Combination of coarse and fine surge protection for telecommunication and signaling networks
pluggable module

- protection of two 1-core signaling, data and other lines with common ground against impact of transient overvoltage
- especially for electronic security and fire detection systems

Dimensions



Basic circuit diagram



Parameter / Type		DM-006-V/2-JR1	DM-012-V/2-JR1	DM-024-V/2-JR1	DM-048-V/2-JR1	DM-110-V/2-JR
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC	110 V DC
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC	85 V AC / 120 V DC
Nominal load current	I_L	1 A	1 A	1 A	1 A	0,5 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA	20 kA	20 kA
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	12 V	22 V	46 V	65 V	170 V
Response time core-PE	t_a	1 ns	1 ns	1 ns	1 ns	1 ns
Serial resistance per core	R	0,8 Ω	0,8 Ω	0,8 Ω	0,8 Ω	3,3 Ω
Cross-section of connected conductors solid		0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²
Cross-section of connected conductors stranded		0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090556329	8595090556336	8595090556343	8595090556350	8595090556367

Spare module	DM-006-V/2-J-0	DM-012-V/2-J-0	DM-024-V/2-J-0	DM-048-V/2-J-0	DM-110-V/2-J-0
Ordering number	8595090556800	8595090556817	8595090556824	8595090556831	8595090556848

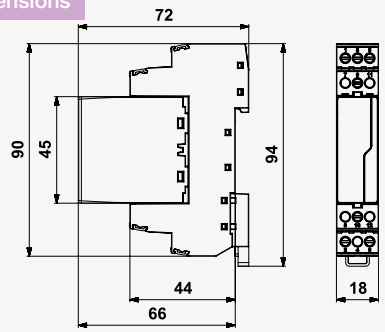
DM-…-V/2-JFR.

NEW

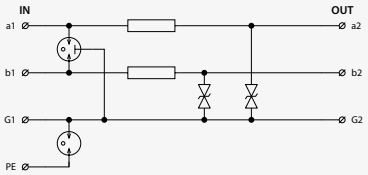
Combination of coarse and fine surge protection for telecommunication and signaling networks
pluggable module, line separated from protective ground by GDT

- protection of two 1-core signaling, data and other lines with common ground against impact of transient overvoltage
- especially for electronic security and fire detection systems

Dimensions



Basic circuit diagram



Parameter / Type		DM-006-V/2-JFR1	DM-012-V/2-JFR1	DM-024-V/2-JFR1	DM-048-V/2-JFR1	DM-110-V/2-JFR
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC	110 V DC
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC	85 V AC / 120 V DC
Nominal load current	I_L	1 A	1 A	1 A	1 A	0,5 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA	10 kA
C2 nominal discharge current (8/20 µs) GND-PE	I_n	10 kA	10 kA	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA	20 kA	20 kA
C3 voltage protection level mode GND-PE at 1 kV/µs	U_p	550 V	550 V	550 V	550 V	550 V
C3 voltage protection level mode core-GND at 1 kV/µs	U_p	12 V	22 V	46 V	65 V	170 V
Response time GND-PE	t_a	100 ns	100 ns	100 ns	100 ns	100 ns
Response time GND	t_a	1 ns	1 ns	1 ns	1 ns	1 ns
Serial resistance per core	R	0,8 Ω	0,8 Ω	0,8 Ω	0,8 Ω	3,3 Ω
Cross-section of connected conductors solid		0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²
Cross-section of connected conductors stranded		0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090556374	8595090556381	8595090556398	8595090556404	8595090556411

Spare module	DM-006-V/2-J-0	DM-012-V/2-J-0	DM-024-V/2-J-0	DM-048-V/2-J-0	DM-110-V/2-J-0
Ordering number	8595090556800	8595090556817	8595090556824	8595090556831	8595090556848

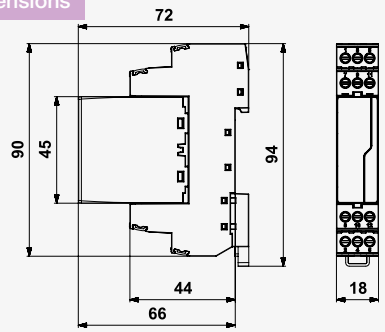
DM-…-V/4-JR.

NEW

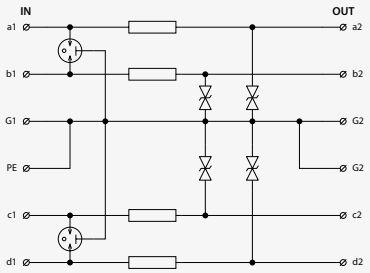
Combination of coarse and fine surge protection for telecommunication and signaling networks
pluggable module

- protection of four 1-core signaling, data and other lines with common ground against impact of transient overvoltage
- especially for electronic security and fire detection systems

Dimensions



Basic circuit diagram



Parameter / Type		DM-006-V/4-JR1	DM-012-V/4-JR1	DM-024-V/4-JR1	DM-048-V/4-JR1	DM-110-V/4-JR
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC	110 V DC
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC	85 V AC / 120 V DC
Nominal load current	I_L	1 A	1 A	1 A	1 A	0,5 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA	20 kA	20 kA
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	12 V	22 V	46 V	65 V	170 V
Response time core-PE	t_a	1 ns	1 ns	1 ns	1 ns	1 ns
Serial resistance per core	R	0,8 Ω	0,8 Ω	0,8 Ω	0,8 Ω	3,3 Ω
Cross-section of connected conductors solid		0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²
Cross-section of connected conductors stranded		0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090556428	8595090556435	8595090556442	8595090556459	8595090556466

Spare module	DM-006-V/2-J-0	DM-012-V/2-J-0	DM-024-V/2-J-0	DM-048-V/2-J-0	DM-110-V/2-J-0
Ordering number	8595090556800	8595090556817	8595090556824	8595090556831	8595090556848

DM-…-V/4-JFR.

NEW

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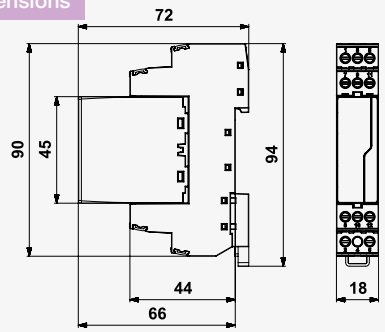
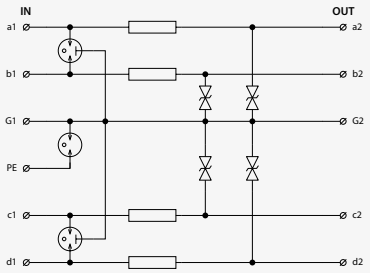
Dimensions



Basic circuit diagram



Parameter / Type		DM-006-V/4-JFR1	DM-012-V/4-JFR1	DM-024-V/4-JFR1	DM-048-V/4-JFR1	DM-110-V/4-JFR
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC	110 V DC
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC	85 V AC / 120 V DC
Nominal load current	I_L	1 A	1 A	1 A	1 A	0,5 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA	10 kA
C2 nominal discharge current (8/20 µs) GND-PE	I_n	10 kA	10 kA	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA	20 kA	20 kA
C3 voltage protection level mode GND-PE at 1 kV/µs	U_p	550 V	550 V	550 V	550 V	550 V
C3 voltage protection level mode core-GND at 1 kV/µs	U_p	12 V	22 V	46 V	65 V	170 V
Response time GND-PE	t_a	100 ns	100 ns	100 ns	100 ns	100 ns
Response time GND	t_a	1 ns	1 ns	1 ns	1 ns	1 ns
Serial resistance per core	R	0,8 Ω	0,8 Ω	0,8 Ω	0,8 Ω	3,3 Ω
Cross-section of connected conductors solid		0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²
Cross-section of connected conductors stranded		0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090556473	8595090556480	8595090556497	8595090556503	8595090556510

Spare module	DM-006-V/2-J-0	DM-012-V/2-J-0	DM-024-V/2-J-0	DM-048-V/2-J-0	DM-110-V/2-J-0
Ordering number	8595090556800	8595090556817	8595090556824	8595090556831	8595090556848

DM-…-V/2-JR.

NEW

Combination of coarse and fine surge protection for telecommunication and signaling networks
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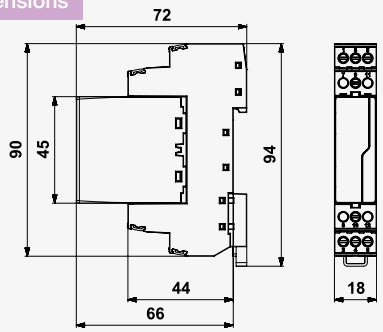
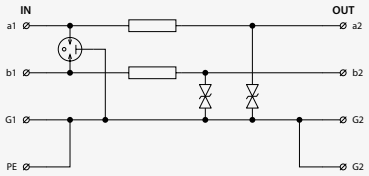
- especially for electronic security and fire detection systems

Dimensions



Basic circuit diagram



Parameter / Type		DM-006-V/2-JR2	DM-012-V/2-JR2	DM-024-V/2-JR2	DM-048-V/2-JR2	DM-110-V/2-JR1
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC	110 V DC
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC	85 V AC / 120 V DC
Nominal load current	I_L	2 A	2 A	2 A	2 A	1 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA	20 kA	20 kA
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	12 V	22 V	46 V	65 V	170 V
Response time core-PE	t_a	1 ns	1 ns	1 ns	1 ns	1 ns
Serial resistance per core	R	0,4 Ω	0,4 Ω	0,4 Ω	0,4 Ω	1,6 Ω
Cross-section of connected conductors solid		0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²
Cross-section of connected conductors stranded		0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090556527	8595090556534	8595090556541	8595090556558	8595090556565

Spare module	DM-006-V/2-J-0	DM-012-V/2-J-0	DM-024-V/2-J-0	DM-048-V/2-J-0	DM-110-V/2-J-0
Ordering number	8595090556800	8595090556817	8595090556824	8595090556831	8595090556848

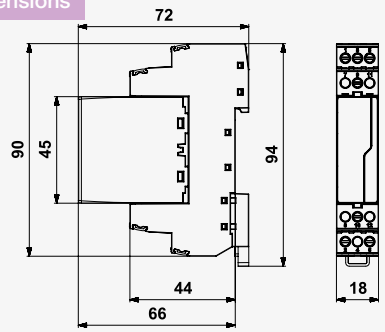
DM-…-V/2-JFR.

NEW

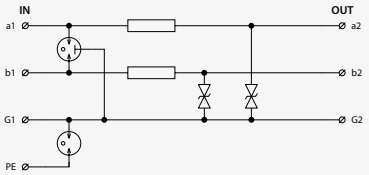
Combination of coarse and fine surge protection for telecommunication and signaling networks
pluggable module, line separated from protective ground by GDT

- protection of two 1-core signaling, data and other lines with common ground against impact of transient overvoltage
- especially for electronic security and fire detection systems

Dimensions



Basic circuit diagram



Parameter / Type		DM-006-V/2-JFR2	DM-012-V/2-JFR2	DM-024-V/2-JFR2	DM-048-V/2-JFR2	DM-110-V/2-JFR1
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC	110 V DC
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC	85 V AC / 120 V DC
Nominal load current	I_L	2 A	2 A	2 A	2 A	1 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA	10 kA
C2 nominal discharge current (8/20 µs) GND-PE	I_n	10 kA	10 kA	10 kA	10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA	20 kA	20 kA
C3 voltage protection level mode GND-PE at 1 kV/µs	U_p	550 V	550 V	550 V	550 V	550 V
C3 voltage protection level mode core-GND at 1 kV/µs	U_p	12 V	22 V	46 V	65 V	170 V
Response time GND-PE	t_a	100 ns	100 ns	100 ns	100 ns	100 ns
Response time GND	t_a	1 ns	1 ns	1 ns	1 ns	1 ns
Serial resistance per core	R	0,4 Ω	0,4 Ω	0,4 Ω	0,4 Ω	1,6 Ω
Cross-section of connected conductors solid		0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²
Cross-section of connected conductors stranded		0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090556572	8595090556589	8595090556596	8595090556602	8595090556619

Spare module	DM-006-V/2-J-0	DM-012-V/2-J-0	DM-024-V/2-J-0	DM-048-V/2-J-0	DM-110-V/2-J-0
Ordering number	8595090556800	8595090556817	8595090556824	8595090556831	8595090556848

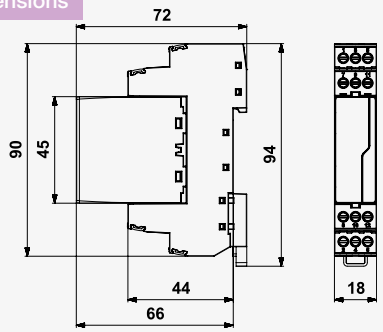
DMHF-...-V/1-4(F)R1

NEW

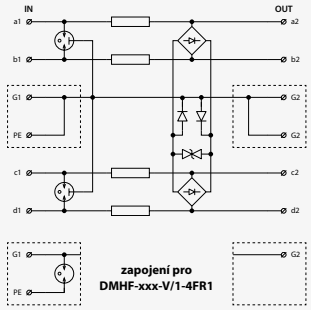
Combination of coarse and fine surge protection for industrial bus-bar system (e.g. PROFIBUS)
pluggable module

- protection of 4-core high-speed signaling, data and other communication lines and interfaces of electronic security and fire detection systems against impact of transient overvoltage
- F - line separated from protective ground by GDT

Dimensions



Basic circuit diagram



Parameter / Type		DMHF-006-V/1-4R1	DMHF-024-V/1-4R1	DMHF-006-V/1-4FR1	DMHF-024-V/1-4FR1
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	24 V DC	6 V DC	24 V DC
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	25 V AC / 36 V DC	6 V AC / 8,5 V DC	25 V AC / 36 V DC
Nominal load current	I_L	1 A	1 A	1 A	1 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	10 kA	10 kA
C2 nominal discharge current (8/20 µs) GND-PE	I_n			10 kA	10 kA
C2 total discharge current (8/20 µs) cores-PE	C	20 kA	20 kA	20 kA	20 kA
C3 voltage protection level mode core-core at 1 kV/µs	U_p	16 V	48 V	16 V	48 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	16 V	48 V		
C3 voltage protection level mode GND-PE at 1 kV/µs	U_p			550 V	550 V
C3 voltage protection level mode core-GND at 1 kV/µs	U_p			16 V	48 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns
Response time core-PE	t_a	1 ns	1 ns		
Response time GND-PE	t_a			100 ns	100 ns
Response time GND	t_a			1 ns	1 ns
Serial resistance per core	R	0,8 Ω	0,8 Ω	0,8 Ω	0,8 Ω
Treshold frequency core-core	f	70 MHz	70 MHz	70 MHz	70 MHz
Cross-section of connected conductors solid		0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²
Cross-section of connected conductors stranded		0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2
Ordering number		8595090554455	8595090554462	8595090556626	8595090556633

Spare module	DMHF-006-V/1-4-0	DMHF-024-V/1-4-0	DMHF-006-V/1-4-0	DMHF-024-V/1-4-0
Ordering number	8595090556909	8595090556916	8595090556909	8595090556916

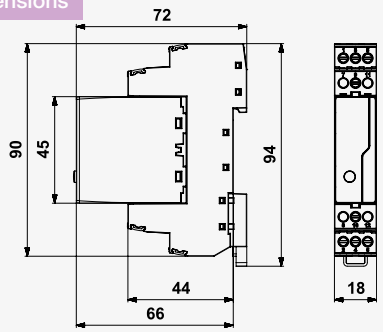
DP-…-V/1-16

NEW

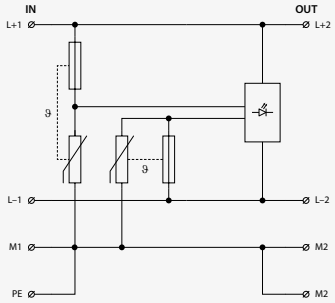
Surge Arrester for installations with extra low voltage
visual fault signaling

- protection of power supply with output from the midle and non-grounded pole
- installation as close as possible to the protected equipment

Dimensions



Basic circuit diagram



Parameter / Type		DP-012-V/1-16	DP-024-V/1-16	DP-048-V/1-16	DP-060-V/1-16
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2	ST 2	ST 2	ST 2
Nominal voltage	U_n	12 V AC	24 V AC	48 V AC	60 V AC
Maximum operating voltage	U_c	20 V AC / 20 V DC	34 V AC / 34 V DC	60 V AC / 60 V DC	75 V AC / 75 V DC
Nominal load current	I_L	16 A	16 A	16 A	16 A
C2 nominal discharge current (8/20 µs) core-core	I_n	2 kA	2 kA	2 kA	2 kA
C2 voltage protection level mode core-core at In	U_p	180 V	230 V	370 V	390 V
C2 voltage protection level mode core-PE at In	U_p	110 V	150 V	200 V	210 V
Test voltage L+ - L-		4 kV	4 kV	4 kV	4 kV
Test voltage L+(L-)-PE		4 kV	4 kV	4 kV	4 kV
voltage protection level L+ - L-		0,18 kV	0,23 kV	0,37 kV	0,39 kV
voltage protection level L+(L-)-PE		0,11 kV	0,15 kV	0,2 kV	0,21 kV
Maximum overcurrent protection		16 A gL/gG or B 16 A	16 A gL/gG or B 16 A	16 A gL/gG or B 16 A	16 A gL/gG or B 16 A
Response time L+ - L-		25 ns	25 ns	25 ns	25 ns
Response time L+(L-)-PE		100 ns	100 ns	100 ns	100 ns
Cross-section of connected conductors solid		0,1 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²
Cross-section of connected conductors stranded		0,1 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²
Fault indication		red indicator	red indicator	red indicator	red indicator
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012| EN 61643-11:2012, IEC 61643-11:2011, T3| C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012| EN 61643-11:2012, IEC 61643-11:2011, T3| C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012| EN 61643-11:2012, IEC 61643-11:2011, T3| C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012| EN 61643-11:2012, IEC 61643-11:2011, T3| C2
Ordering number		8595090554479	8595090554486	8595090554493	8595090554509

Spare module	DP-012-V/1-0	DP-024-V/1-0	DP-048-V/1-0	DP-060-V/1-0
Ordering number	8595090556923	8595090556930	8595090556947	8595090556954

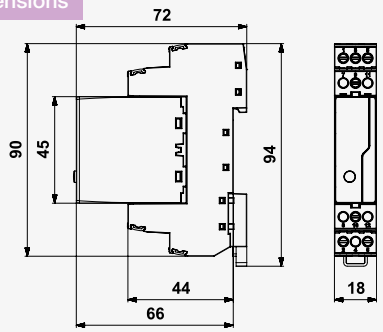
DP-…-V/1-F16

NEW

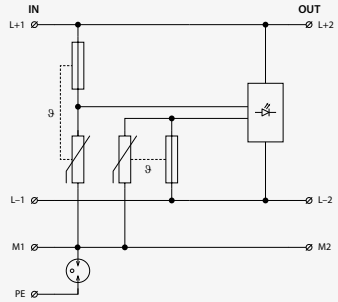
Surge Arrester for installations with extra low voltage
visual fault signaling

- protection of power supply with output from the midle and non-grounded pole, also for powwer suply with one pole grounded
- installation as close as possible to the protected equipment

Dimensions



Basic circuit diagram



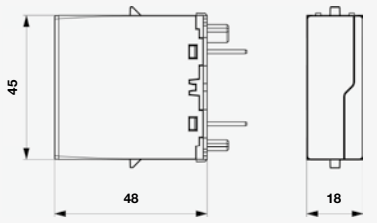
Parameter / Type		DP-012-V/1-F16	DP-024-V/1-F16	DP-048-V/1-F16	DP-060-V/1-F16
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2	ST 2	ST 2	ST 2
Nominal voltage	U_n	12 V AC	24 V AC	48 V AC	60 V AC
Maximum operating voltage	U_c	20 V AC / 20 V DC	34 V AC / 34 V DC	60 V AC / 60 V DC	75 V AC / 75 V DC
Nominal load current	I_L	16 A	16 A	16 A	16 A
C2 nominal discharge current (8/20 µs) core-core	I_n	2 kA	2 kA	2 kA	2 kA
C2 voltage protection level mode core-core at In	U_p	180 V	230 V	370 V	390 V
C2 voltage protection level mode core-PE at In	U_p	750 V	750 V	750 V	750 V
C2 voltage protection level mode core-PE at In		750 V	750 V	750 V	750 V
Test voltage L+ - L-		4 kV	4 kV	4 kV	4 kV
Test voltage L+(L-)-PE		4 kV	4 kV	4 kV	4 kV
Test voltage M-PE		4 kV	4 kV	4 kV	4 kV
voltage protection level L+ - L-		0,18 kV	0,23 kV	0,37 kV	0,39 kV
voltage protection level L+(L-)-PE		0,75 kV	0,75 kV	0,75 kV	0,75 kV
voltage protection level M-PE		0,75 kV	0,75 kV	0,75 kV	0,75 kV
Maximum overcurrent protection		16 A gL/gG or B 16 A	16 A gL/gG or B 16 A	16 A gL/gG or B 16 A	16 A gL/gG or B 16 A
Response time L+ - L-		25 ns	25 ns	25 ns	25 ns
Response time L+(L-)-PE		100 ns	100 ns	100 ns	100 ns
Response time M-PE		100 ns	100 ns	100 ns	100 ns
Cross-section of connected conductors solid		0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²	0,14 / 4 mm²
Cross-section of connected conductors stranded		0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²	0,14 / 2,5 mm²
Fault indication		red indicator	red indicator	red indicator	red indicator
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012| EN 61643-11:2012, IEC 61643-11:2011, T3| C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012| EN 61643-11:2012, IEC 61643-11:2011, T3| C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012| EN 61643-11:2012, IEC 61643-11:2011, T3| C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012| EN 61643-11:2012, IEC 61643-11:2011, T3| C2
Ordering number		8595090556640	8595090556657	8595090556664	8595090556671

Spare module	DP-012-V/1-0	DP-024-V/1-0	DP-048-V/1-0	DP-060-V/1-0
Ordering number	8595090556923	8595090556930	8595090556947	8595090556954

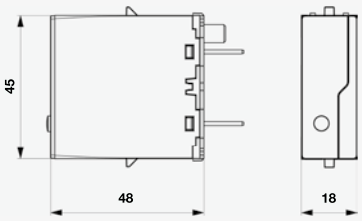
BD-..., DMG-..., BDG-..., BDM-..., DM-..., DMHF-..., DP-...

Spare pluggable modules for SPD for data / signal / telecommunication lines

Dimensions



DM-..., DMG-..., BD-..., BDG-...



DP-...

Type	Ordering number
BD-090-T-V/1-0	8595090553885
BD-250-T-V/1-0	8595090553892
BD-090-T-V/2-0	8595090553908
BD-250-T-V/2-0	8595090553915
DMG-006-V/1-0	8595090553922
DMG-012-V/1-0	8595090553939
DMG-024-V/1-0	8595090553946
DMG-048-V/1-0	8595090553953
DMG-060-V/1-0	8595090553960
DMG-110-V/1-0	8595090553977
DMG-230-V/1-0	8595090553984
BDG-006-V/1-0	8595090553991
BDG-012-V/1-0	8595090554004
BDG-024-V/1-0	8595090554011
BDG-048-V/1-0	8595090554028
BDG-230-V/1-0	8595090554035
DMG-006-V/2-0	8595090554042
DMG-012-V/2-0	8595090554059
DMG-024-V/2-0	8595090554066
DMG-048-V/2-0	8595090554073
DMG-060-V/2-0	8595090554981

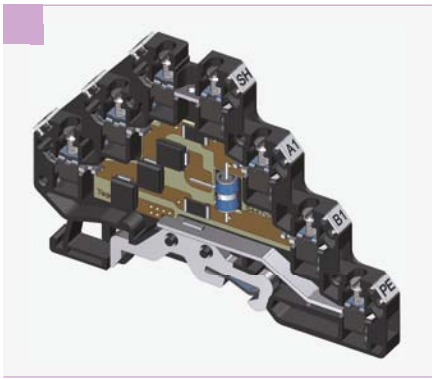
Type	Ordering number
DMG-110-V/2-0	8595090554998
DMG-230-V/2-0	8595090555001
BDM-006-V/1-0	8595090555018
BDM-012-V/1-0	8595090555025
BDM-024-V/1-0	8595090555032
BDM-048-V/1-0	8595090555049
BDM-230-V/1-0	8595090555056
DM-006-V/1-0	8595090555063
DM-012-V/1-0	8595090555070
DM-024-V/1-0	8595090555087
DM-048-V/1-0	8595090555094
DM-060-V/1-0	8595090555100
DM-110-V/1-0	8595090555117
DM-230-V/1-0	8595090556688
DM-006-V/2-0	8595090556695
DM-012-V/2-0	8595090556701
DM-024-V/2-0	8595090556718
DM-048-V/2-0	8595090556725
DM-060-V/2-0	8595090556732
DM-110-V/2-0	8595090556749
DM-230-V/2-0	8595090556756

Type	Ordering number
DMG-006-V/1-4-0	8595090556763
DMG-012-V/1-4-0	8595090556770
DMG-024-V/1-4-0	8595090556787
DMG-048-V/1-4-0	8595090556794
DM-006-V/2-J-0	8595090556800
DM-012-V/2-J-0	8595090556817
DM-024-V/2-J-0	8595090556824
DM-048-V/2-J-0	8595090556831
DM-110-V/2-J-0	8595090556848
DM-006-V/4-J-0	8595090556855
DM-012-V/4-J-0	8595090556862
DM-024-V/4-J-0	8595090556879
DM-048-V/4-J-0	8595090556886
DM-110-V/4-J-0	8595090556893
DMHF-006-V/1-4-0	8595090556909
DMHF-024-V/1-4-0	8595090556916
DP-012-V/1-0	8595090556923
DP-024-V/1-0	8595090556930
DP-048-V/1-0	8595090556947
DP-060-V/1-0	8595090556954

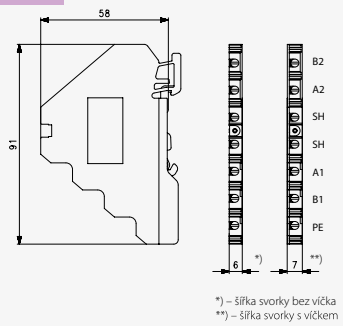
DM-…/1-RS

Combination of coarse and fine surge protection for telecommunication and signaling networks
coupling impedance (R)

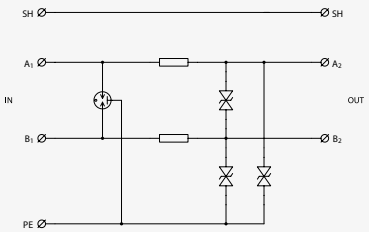
- protection of 2-wire telecommunication, data and other lines and the communication interface of M&C, electronic security and fire detection systems, etc. against impact of transient overvoltage
- longitudinal overvoltage (core – earth) and lateral overvoltage (core – core) are prevented by a two-level combination of coarse and fine surge protection



Dimensions



Basic circuit diagram

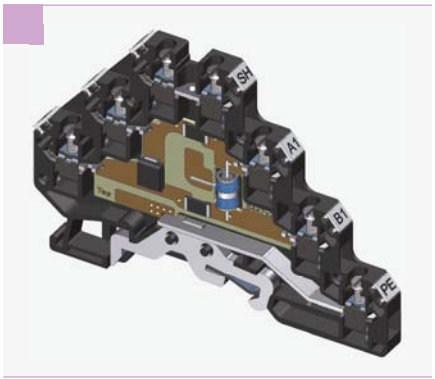


Parameter / Type		DM-006/1-RS	DM-012/1-RS	DM-024/1-RS	DM-048/1-RS	DM-060/1-RS	DM-110/1-RS
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC	60 V DC	110 V DC
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC	45 V AC / 64 V DC	85 V AC / 120 V DC
Nominal load current	I_L	0,5 A	0,5 A	0,5 A	0,5 A	0,5 A	0,5 A
C2 nominal discharge current (8/20 µs) core-core	I_n	5 kA	5 kA	5 kA	5 kA	5 kA	5 kA
C2 total discharge current (8/20 µs) cores-PE	C	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA
C2 voltage protection level mode core-core at In	U_p	18 V	28 V	50 V	80 V	100 V	210 V
C2 voltage protection level mode core-PE at In	U_p	30 V	40 V	65 V	95 V	120 V	230 V
C3 voltage protection level mode core-core at 1 kV/µs	U_p	12 V	20 V	45 V	65 V	85 V	170 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	15 V	20 V	45 V	65 V	85 V	170 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns	1 ns	1 ns
Response time core-PE	t_a	1 ns	1 ns	1 ns	1 ns	1 ns	1 ns
Serial resistance per core	R	1,6 Ω	1,6 Ω	1,6 Ω	1,6 Ω	1,6 Ω	1,6 Ω
Treshold frequency core-core	f	1 MHz	2 MHz	4 MHz	5 MHz	6,5 MHz	10 MHz
Cross-section of connected conductors solid - max		4 mm²	4 mm²	4 mm²	4 mm²	4 mm²	4 mm²
Cross-section of connected conductors stranded - max		2,5 mm²	2,5 mm²	2,5 mm²	2,5 mm²	2,5 mm²	2,5 mm²
Degree of protection		IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3
Ordering number		8595090551409	8595090551416	8595090551423	8595090551430	8595090551294	8595090551300

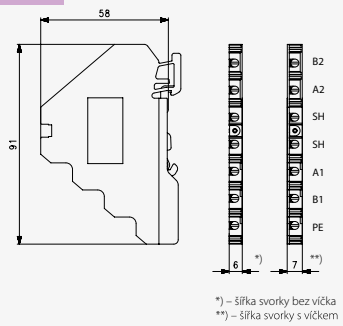
DMG-.../1-RS

Combination of coarse and fine surge protection for telecommunication and signaling networks
coupling impedance (R)

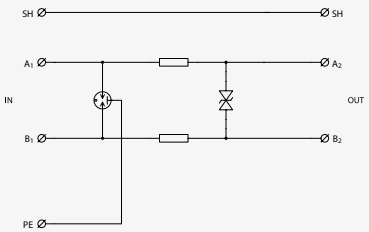
- protection of 2-wire telecommunication, data and other lines and the communication interface of M&C, electronic security and fire detection systems, etc. against impact of transient overvoltage
- longitudinal overvoltage (core – earth) and lateral overvoltage (core – core) are prevented by a two-level combination of coarse and fine surge protection



Dimensions



Basic circuit diagram

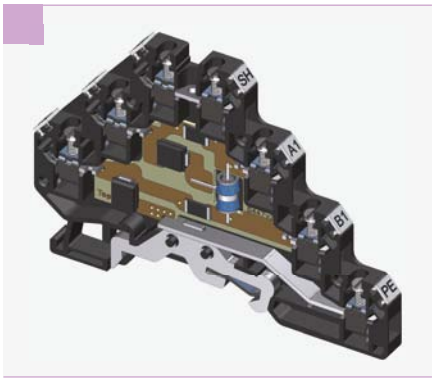


Parameter / Type		DMG-006/1-RS	DMG-012/1-RS	DMG-024/1-RS	DMG-048/1-RS	DMG-060/1-RS	DMG-110/1-RS
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	12 V DC	24 V DC	48 V DC	60 V DC	110 V DC
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC	45 V AC / 64 V DC	85 V AC / 120 V DC
Nominal load current	I_L	0,5 A	0,5 A	0,5 A	0,5 A	0,5 A	0,5 A
C2 nominal discharge current (8/20 µs) core-core	I_n	5 kA	5 kA	5 kA	5 kA	5 kA	5 kA
C2 total discharge current (8/20 µs) cores-PE	C	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA
C2 voltage protection level mode core-core at In	U_p	18 V	28 V	50 V	80 V	100 V	210 V
C2 voltage protection level mode core-PE at In	U_p	350 V	350 V	350 V	350 V	350 V	350 V
C3 voltage protection level mode core-core at 1 kV/µs	U_p	12 V	20 V	45 V	65 V	85 V	170 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	500 V	500 V	500 V	500 V	500 V	500 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns	1 ns	1 ns
Response time core-PE	t_a	100 ns	100 ns	100 ns	100 ns	100 ns	100 ns
Serial resistance per core	R	1,6 Ω	1,6 Ω	1,6 Ω	1,6 Ω	1,6 Ω	1,6 Ω
Treshold frequency core-core	f	1 MHz	2 MHz	4 MHz	5 MHz	6,5 MHz	10 MHz
Cross-section of connected conductors solid - max		4 mm^2	4 mm^2	4 mm^2	4 mm^2	4 mm^2	4 mm^2
Cross-section of connected conductors stranded - max		2,5 mm^2	2,5 mm^2	2,5 mm^2	2,5 mm^2	2,5 mm^2	2,5 mm^2
Degree of protection		IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3
Ordering number		8595090551324	8595090551331	8595090551348	8595090551355	8595090551362	8595090551379

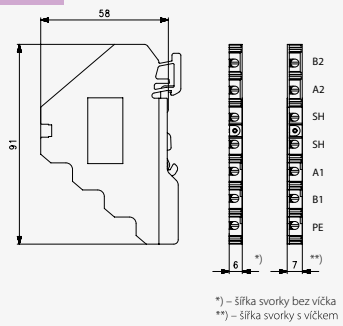
DMJ-…/2-RS

Combination of coarse and fine surge protection for telecommunication and signaling networks

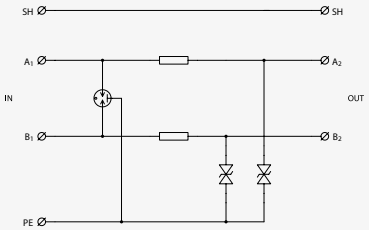
- protection of two single-wire telecommunication, data and other lines and the communication interface of M&C, electronic security and fire detection systems, etc. against impact of transient overvoltage
- longitudinal overvoltage (core - earth) is prevented by a two-level combination of coarse and fine surge protection



Dimensions



Basic circuit diagram

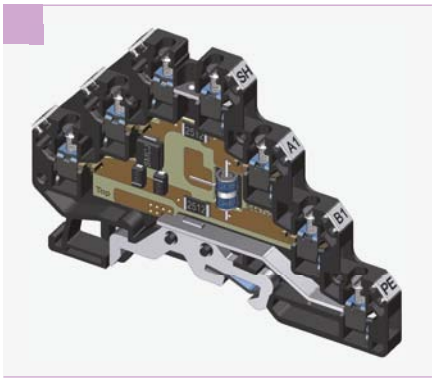


Parameter / Type		DMJ-012/2-RS	DMJ-024/2-RS	DMJ-048/2-RS	DMJ-060/2-RS	DMJ-110/2-RS
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3	ST 2+3
Nominal voltage	U_n	12 V DC	24 V DC	48 V DC	60 V DC	110 V DC
Maximum operating voltage	U_c	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC	45 V AC / 64 V DC	85 V AC / 120 V DC
Nominal load current	I_L	0,5 A	0,5 A	0,5 A	0,5 A	0,5 A
C2 nominal discharge current (8/20 µs) core-core	I_n	5 kA	5 kA	5 kA	5 kA	5 kA
C2 total discharge current (8/20 µs) cores-PE	C	10 kA	10 kA	10 kA	10 kA	10 kA
C2 voltage protection level mode core-PE at In	U_p	40 V	65 V	95 V	120 V	230 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	20 V	45 V	65 V	85 V	170 V
Response time core-PE	t_a	1 ns	1 ns	1 ns	1 ns	1 ns
Serial resistance per core	R	1,6 Ω	1,6 Ω	1,6 Ω	1,6 Ω	1,6 Ω
Treshold frequency core-core	f	2 MHz	4 MHz	5 MHz	6,5 MHz	10 MHz
Cross-section of connected conductors solid - max		4 mm^2	4 mm^2	4 mm^2	4 mm^2	4 mm^2
Cross-section of connected conductors stranded - max		2,5 mm^2	2,5 mm^2	2,5 mm^2	2,5 mm^2	2,5 mm^2
Degree of protection		IP 20	IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3
Ordering number		8595090551447	8595090551454	8595090551317	8595090551461	8595090551478

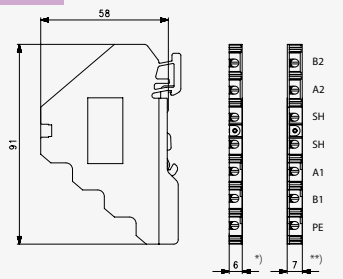
DMHF-.../1-RS

Combination of coarse and fine surge protection for telecommunication and signaling networks
coupling impedance (R)

- protection of 2-wire telecommunication, data and other lines and the communication interface of M&C, electronic security and fire detection systems, etc. against impact of transient overvoltage

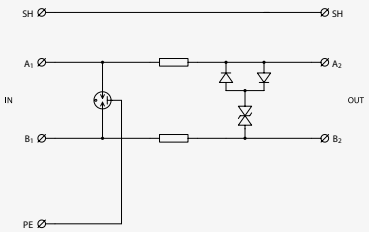


Dimensions



*) – šířka svorky bez víčka
**) – šířka svorky s víčkem

Basic circuit diagram

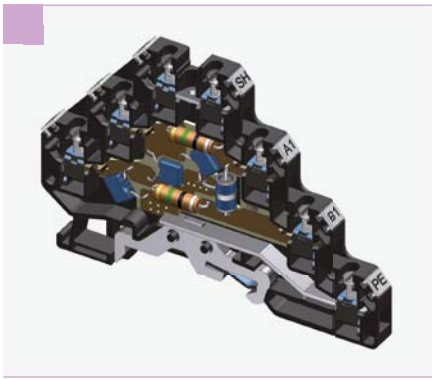


Parameter / Type		DMHF-006/1-RS	DMHF-015/1-RS
Connection (input - output)		terminals-terminals	terminals-terminals
Location of SPD		ST 2+3	ST 2+3
Nominal voltage	U_n	6 V DC	15 V DC
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	15 V AC / 22 V DC
Nominal load current	I_L	0,5 A	0,5 A
C2 nominal discharge current (8/20 µs) core-core	I_n	5 kA	5 kA
C2 total discharge current (8/20 µs) cores-PE	C	10 kA	10 kA
C2 voltage protection level mode core-core at In	U_p	26 V	36 V
C2 voltage protection level mode core-PE at In	U_p	350 V	350 V
C3 voltage protection level mode core-core at 1 kV/µs	U_p	14 V	28 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	500 V	500 V
Response time core-core	t_a	1 ns	1 ns
Response time core-PE	t_a	1 ns	1 ns
Serial resistance per core	R	1,6 Ω	1,6 Ω
Treshold frequency core-core	f	70 MHz	70 MHz
Cross-section of connected conductors solid - max		4 mm^2	4 mm^2
Cross-section of connected conductors stranded - max		2,5 mm^2	2,5 mm^2
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3
Ordering number		8595090551386	8595090551393

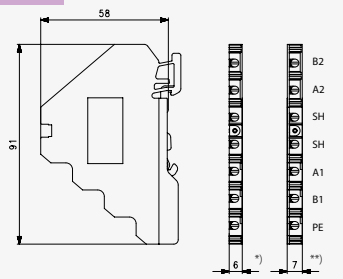
DMLF-24/1-RS

Combination of coarse and fine surge protection for telecommunication and signaling networks

- protection of analog measuring lines in areas with RF disturbance

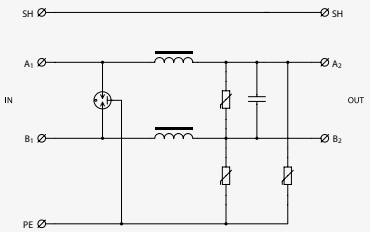


Dimensions



*) – šířka svorky bez víčka
**) – šířka svorky s víčkem

Basic circuit diagram

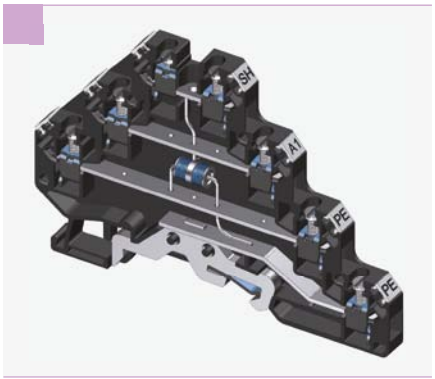


Parameter / Type		DMLF-024/1-RS
Connection (input - output)		terminals-terminals
Location of SPD		ST 2
Nominal voltage	U_n	24 V DC
Maximum operating voltage	U_c	31 V DC
Nominal load current	I_L	0,1 A
C2 nominal discharge current (8/20 µs) core-core	I_n	5 kA
C2 total discharge current (8/20 µs) cores-PE	C	10 kA
C2 voltage protection level mode core-core at In	U_p	65 V
C2 voltage protection level mode core-PE at In	U_p	80 V
C3 voltage protection level mode core-core at 1 kV/µs	U_p	55 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	55 V
Response time core-core	t_a	25 ns
Response time core-PE	t_a	25 ns
Treshold frequency core-core	f	0,07 MHz
Cross-section of connected conductors solid - max		4 mm^2
Cross-section of connected conductors stranded - max		2,5 mm^2
Degree of protection		IP 20
Range of operating temperatures		-40 °C … 70 °C
Mounting		DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3
Ordering number		8595090553335

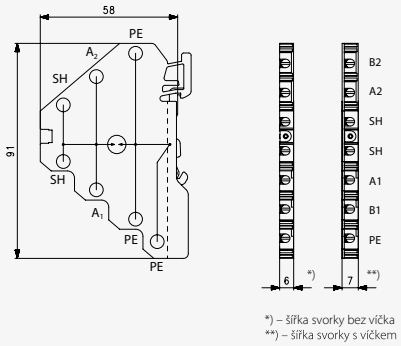
DS-...-RS

Single stage Surge Arrester
B – gas tubes, V – varistors, D – fast suppressor diods

- protection of signaling, data and others lines with common operating ground against impact of transient overvoltage



Dimensions



*) – šířka svorky bez víčka
**) – šířka svorky s víčkem

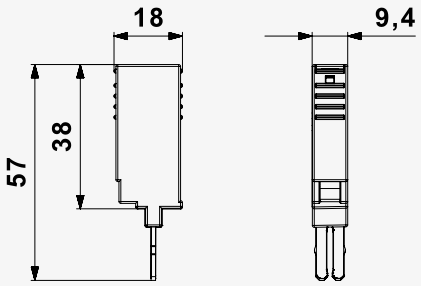
Parameter / Type		DS-B090-RS	DS-B240-RS	DS-V075-RS	DS-V130-RS	DS-D012-RS	DS-D024-RS
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2	ST 2	ST 2	ST 2	ST 3	ST 3
Maximum operating voltage	U_c	50 V AC / 70 V DC	127 V AC / 180 V DC	75 V AC / 100 V DC	140 V AC / 180 V DC	10,2 V AC / 14,5 V DC	20,6 V AC / 29,1 V DC
Nominal load current	I_L	16 A	16 A	16 A	16 A	16 A	16 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA	10 kA	6 kA	6 kA	0,3 kA	0,3 kA
C3 nominal discharge current (10/1000 µs) core-PE	I_{SM}					25 A	
C2 voltage protection level mode core-PE at In	U_p			310 V	530 V		48 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	550 V	600 V			1 V	
Response time core-PE	t_a	100 ns	100 ns	25 ns	25 ns		1 ns
Cross-section of connected conductors solid - max		4 mm²	4 mm²	4 mm²	4 mm²	4 mm²	4 mm²
Cross-section of connected conductors stranded - max		2,5 mm²	2,5 mm²	2,5 mm²	2,5 mm²	2,5 mm²	2,5 mm²
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3
Ordering number		8595090551485	8595090551492	8595090551508	8595090551515	8595090551522	8595090551539

CLSA-...

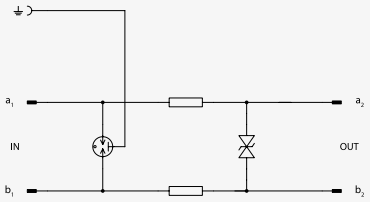
Surge Arrester for telecommunication and signaling networks for LSA-PLU

- combination of coarse and fine protection of data and M&C lines
- for LSA separating strips

Dimensions



Basic circuit diagram



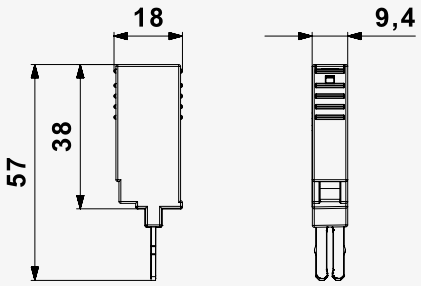
Parameter / Type		CLSA-6	CLSA-12	CLSA-24	CLSA-48	CLSA-HF6
Connection (input - output)		LSA disconnection rail	LSA disconnection rail	LSA disconnection rail	LSA disconnection rail	LSA disconnection rail
Accessories		grounding rail	grounding rail	grounding rail	grounding rail	grounding rail
Location of SPD		ST 2+3	ST 2+3	ST 2+3	ST 2+3	ST2+3
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	11 V AC / 16 V DC	25 V AC / 36 V DC	36 V AC / 51 V DC	6 V AC / 8,5 V DC
Nominal load current	I_L	0,5 A	0,5 A	0,5 A	0,5 A	0,5 A
C2 nominal discharge current (8/20 µs) core-core	I_n	5 kA	5 kA	5 kA	5 kA	5 kA
C2 total discharge current (8/20 µs) cores-PE	C	10 kA	10 kA	10 kA	10 kA	10 kA
C2 voltage protection level mode core-PE at In	U_p	400 V	400 V	400 V	400 V	350 V
C3 voltage protection level mode core-core at 1 kV/µs	U_p	13 V	21 V	48 V	65 V	15 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	350 V	350 V	350 V	350 V	350 V
Response time core-core	t_a	1 ns	1 ns	1 ns	1 ns	1 ns
Response time core-PE	t_a	100 ns	100 ns	100 ns	100 ns	100 ns
Serial resistance per core	R	1,6 Ω	1,6 Ω	1,6 Ω	1,6 Ω	1,6 Ω
Treshold frequency core-core	f	1,5 MHz	2,5 MHz	4 MHz	6,5 MHz	55 MHz
Degree of protection		IP 20	IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		LSA disconnection rail	LSA disconnection rail	LSA disconnection rail	LSA disconnection rail	LSA disconnection rail
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3
Ordering number		8595090551690	8595090551706	8595090551713	8595090551720	8595090551751

CLSA-…

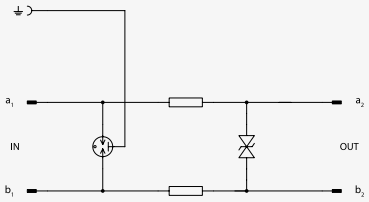
Surge Arrester for telecommunication and signaling networks for LSA-PLU

- combination of coarse and fine protection of telecommunication equipment including ADSL
- for protection of M&C and data lines and ISDN lines
- for LSA separating strips

Dimensions



Basic circuit diagram



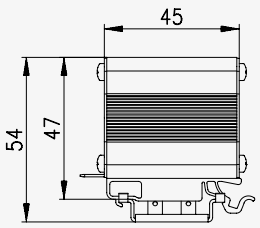
Parameter / Type		CLSA-TLF	CLSA-ISDN	CLSA-DSL
Connection (input - output)		LSA disconnection rail	LSA disconnection rail	LSA disconnection rail
Accessories		grounding rail	grounding rail	grounding rail
Location of SPD		ST 2+3	ST 2+3	ST 2+3
Maximum operating voltage	U_c	120 V AC / 170 V DC	85 V AC / 120 V DC	120 V AC / 170 V DC
Nominal load current	I_L	0,5 A	0,5 A	0,5 A
C2 nominal discharge current (8/20 µs) core-core	I_n	5 kA	5 kA	5 kA
C2 total discharge current (8/20 µs) cores-PE	C	10 kA	10 kA	10 kA
C2 voltage protection level mode core-core at In	U_p	310 V	220 V	280 V
C2 voltage protection level mode core-PE at In	U_p	400 V	400 V	350 V
C3 voltage protection level mode core-core at 1 kV/µs	U_p	230 V	170 V	230 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	350 V	350 V	400 V
Response time core-core	t_a	1 ns	1 ns	1 ns
Response time core-PE	t_a	100 ns	100 ns	100 ns
Serial resistance per core	R	1,6 Ω	1,6 Ω	1,6 Ω
Treshold frequency core-core	f	14 MHz	16 MHz	65 MHz
Degree of protection		IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 70 °C	-40 °C … 70 °C	-40 °C … 70 °C
Mounting		LSA disconnection rail	LSA disconnection rail	LSA disconnection rail
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3
Ordering number		8595090551737	8595090551744	8595090551768

DL-TLF

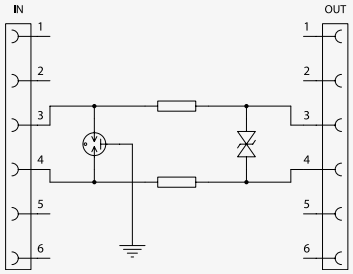
Surge Arrester for phone line
RJ12 connectors

- combination of coarse and fine protection of one pair of analogue lines of telecommunication equipment, incl. ADSL

Dimensions



Basic circuit diagram



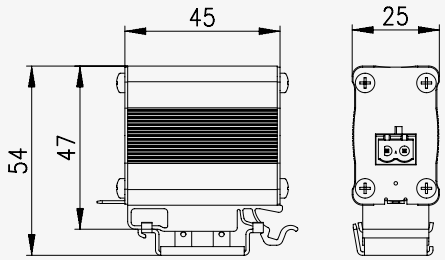
Parameter / Type		DL-TLF
Location of SPD		ST 2+3
Maximum operating voltage	U_c	114 V AC / 162 V DC
Nominal load current	I_L	0,06 A
C2 nominal discharge current (8/20 µs) core-core	I_n	2,5 kA
C2 voltage protection level mode core-core at In	U_p	260 V
C2 voltage protection level mode core-PE at In	U_p	300 V
C3 voltage protection level mode core-core at 1 kV/µs	U_p	240 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	400 V
Response time core-core	t_a	1 ns
Response time core-PE	t_a	100 ns
Serial resistance per core	R	6,8 Ω
Treshold frequency core-core	f	14 MHz
Connection (input - output)		RJ 45/RJ 45
Degree of protection		IP 20
Range of operating temperatures		-40 °C … 80 °C
Mounting		DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3
Ordering number		8595090533801

DL-ISDN SV

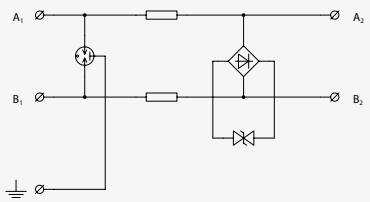
Surge Arrester for phone line
efficient protection for ISDN

- combination of coarse and fine protection of one pair of ISDN line of telecommunication equipment
- installation at the boundary of LPZ 1 and LPZ 2 zones and higher

Dimensions



Basic circuit diagram



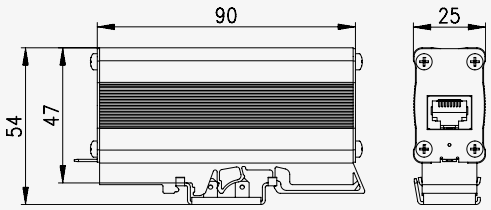
Parameter / Type		DL-ISDN SV
Location of SPD		ST 2+3
Maximum operating voltage	U_c	85 V AC / 120 V DC
Nominal load current	I_L	0,06 A
C2 nominal discharge current (8/20 µs) core-core	I_n	10 kA
C2 voltage protection level mode core-core at In	U_p	260 V
C2 voltage protection level mode core-PE at In	U_p	150 V
C3 voltage protection level mode core-core at 1 kV/µs	U_p	180 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	500 V
Response time core-core	t_a	1 ns
Response time core-PE	t_a	1 ns
Serial resistance per core	R	6,8 Ω
Treshold frequency core-core	f	50 MHz
Cross-section of connected conductors stranded - max		2,5 mm2
Connection (input - output)		screw terminals
Degree of protection		IP 20
Range of operating temperatures		-40 °C … 80 °C
Mounting		DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3
Ordering number		8595090533818

DL-ISDN RJ45

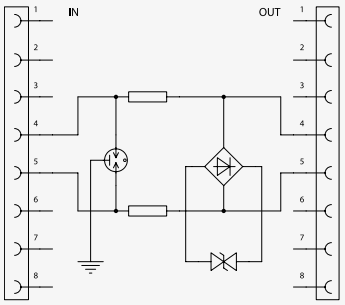
Surge Arrester for phone line
connectors RJ45

- combination of coarse and fine protection of one pair of ISDN line of telecommunication equipment
- installation at the boundary of LPZ 1 and LPZ 2 zones and higher

Dimensions



Basic circuit diagram

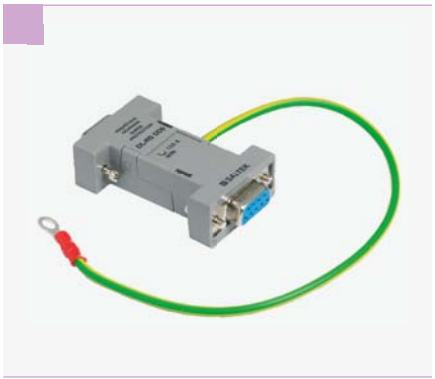


Parameter / Type		DL-ISDN RJ45
Location of SPD		ST 2+3
Maximum operating voltage	U_c	86 V AC / 121 V DC
Nominal load current	I_L	0,06 A
C2 nominal discharge current (8/20 µs) core-core	I_n	2,5 kA
C2 voltage protection level mode core-core at In	U_p	270 V
C2 voltage protection level mode core-PE at In	U_p	300 V
C3 voltage protection level mode core-core at 1 kV/µs	U_p	180 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	400 V
Response time core-core	t_a	1 ns
Response time core-PE	t_a	100 ns
Serial resistance per core	R	6,8 Ω
Treshold frequency core-core	f	80 MHz
Connection (input - output)		RJ 45/RJ 45
Degree of protection		IP 20
Range of operating temperatures		-40 °C … 80 °C
Mounting		DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3
Ordering number		8595090533825

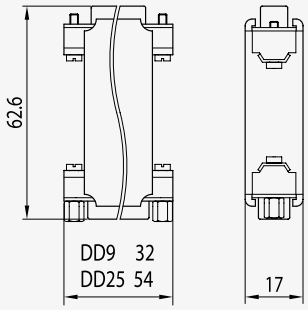
DL-RS DD...

Surge Arrester for RS interface (wih connector DSUB)
DSUB 9 or arrester 25 connectors

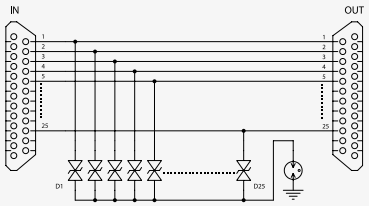
- fine protection for serial ports of computers and control systems againts impact of transient overvoltage



Dimensions



Basic circuit diagram



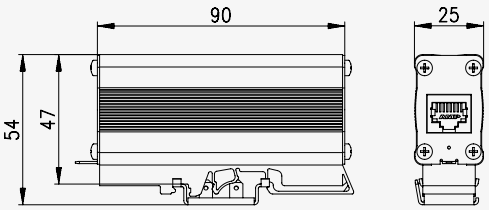
Parameter / Type		DL-RS DD9	DL-RS DD25
Location of SPD		ST 3	ST 3
Maximum operating voltage	U_c	12,7 V AC / 18 V DC	12,7 V AC / 18 V DC
C1 nominal discharge current (8/20 µs) core-core	I_n	150 A	150 A
C1 voltage protection level mode core-core at In	U_p	65 V	65 V
C3 voltage protection level mode core-core at 1 kV/µs	U_p	50 V	50 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	980 V	980 V
Response time core-core	t_a	1 ns	1 ns
Response time core-PE	t_a	100 ns	100 ns
Treshold frequency core-core	f	55 MHz	55 MHz
Connection (input - output)		female DSUB 9 - male DSUB 9	female DSUB 25 - male DSUB 25
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … 80 °C	-40 °C … 80 °C
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C1,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C1,C3
Ordering number		8595090509684	8595090521600

DL-Cat. 5e

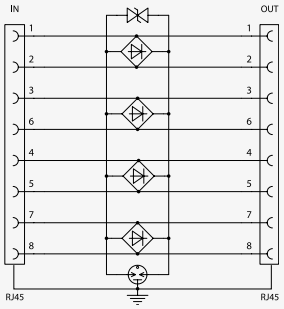
Surge Arrester for Ethernet
connectors RJ45

- fine protection for one port of Ethernet Cat. 5e. installation at the boundary of LPZ 2 and LPZ 3 zones directly in front of the device

Dimensions



Basic circuit diagram



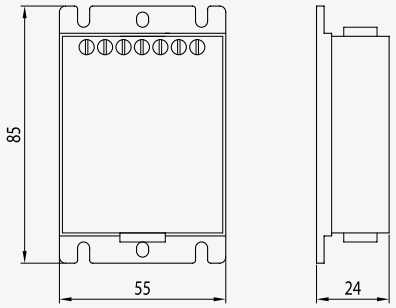
Parameter / Type		DL-Cat. 5e
Location of SPD		ST 3
Maximum operating voltage	U_c	6 V AC / 8,5 V DC
Nominal load current	I_L	0,5 A
C2 nominal discharge current (8/20 µs) core-core	I_n	0,2 kA
C2 total discharge current (8/20 µs) cores-PE	C	1,6 kA
C2 voltage protection level mode core-core at In	U_p	40 V
C2 voltage protection level mode core-PE at In	U_p	350 V
C3 voltage protection level mode core-core at 1 kV/µs	U_p	65 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	350 V
Response time core-core	t_a	1 ns
Response time core-PE	t_a	100 ns
Insertion attenuation at 100 MHz		1,2 dB
Connection (input - output)		RJ 45 - RJ 45
Degree of protection		IP 20
Range of operating temperatures		-40 °C … 80 °C
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3
Ordering number		8595090533757

DL-100 POE-...

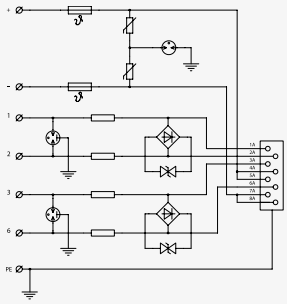
Surge Arrester for Power over Ethernet Cat.5x
temninals / RJ45

- combined SPD for Power over Ethernet
- protection of power supply line and Ethernet line

Dimensions



Basic circuit diagram



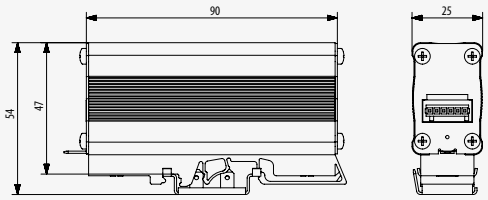
Parameter / Type			DL-100 POE-024	DL-100 POE-048
power part	Location of SPD		ST 2+3	ST 2+3
	Maximum operating voltage	U_c	5,7 VAC /8,1 V DC	5,7 VAC /8,1 V DC
	Nominal load current	I_L	0,1 A	0,1 A
	C2 nominal discharge current (8/20 µs) core-core	I_n	5 kA	5 kA
	C2 voltage protection level mode core-core at In	U_p	300 V	300 V
	C2 voltage protection level mode core-PE at In	U_p	340 V	340 V
	C3 voltage protection level mode core-core at 1 kV/µs	U_p	55 V	55 V
	C3 voltage protection level mode core-PE at 1 kV/µs	U_p	530 V	530 V
	Response time core-core	t_a	1 ns	1 ns
	Response time core-PE	t_a	100 ns	100 ns
	Insertion attenuation at 100 MHz		1,5 dB	1,5 dB
	Serial resistance per core	R	1 Ω	1 Ω
line part	Nominal voltage	U_n	24 V DC	48 V DC
	Maximum operating voltage	U_c	40 V AC / 52 V DC	60 V AC / 76 V DC
	Nominal load current	I_L	1 A	1 A
	C2 nominal discharge current (8/20 µs) core-core	I_n	1 kA	1 kA
	C2 voltage protection level mode core-core at In	U_p	210 V	280 V
	C2 voltage protection level mode core-PE at In	U_p	690 V	690 V
	Response time core-core	t_a	25 ns	25 ns
	Response time core-PE	t_a	100 ns	100 ns
	Cross-section of connected conductors solid - max		4 mm²	4 mm²
	Cross-section of connected conductors stranded - max		2,5 mm²	2,5 mm²
	Connection (input - output)		terminals/RJ 45	terminals/RJ 45
	Degree of protection		IP 20	IP 20
	Range of operating temperatures		-40 °C ... 80 °C	-40 °C ... 80 °C
	Mounting		surface on the desk	surface on the desk
	According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3
Ordering number			8595090531364	8595090531357

DL-Cat. 5e POE …

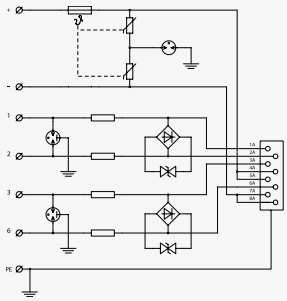
Surge Arrester for Power over Ethernet Cat.5x
temninals / RJ45

- combined SPD for Power over Ethernet
- protection of power supply line and Ethernet line

Dimensions



Basic circuit diagram



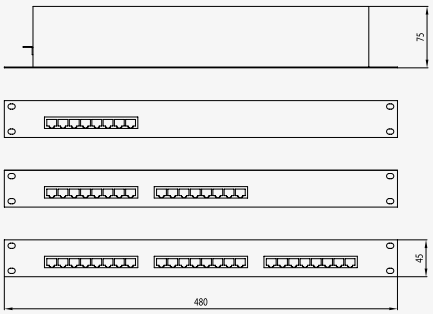
Parameter / Type			DL-Cat.5e POE	DL-Cat.5e POE plus
power part	Location of SPD		ST 2+3	ST 2+3
	Maximum operating voltage	U_c	6 V AC / 8,5 V DC	6 V AC / 8,5 V DC
	Nominal load current	I_L	0,1 A	0,1 A
	C2 nominal discharge current (8/20 µs) core-core	I_n	1,5 kA	1,5 kA
	C2 voltage protection level mode core-core at In	U_p	180 V	180 V
	C2 voltage protection level mode core-PE at In	U_p	490 V	490 V
	C3 voltage protection level mode core-core at 1 kV/µs	U_p	60 V	60 V
	C3 voltage protection level mode core-PE at 1 kV/µs	U_p	560 V	560 V
	Response time core-core	t_a	1 ns	1 ns
	Response time core-PE	t_a	100 ns	100 ns
	Insertion attenuation at 100 MHz		1,5 dB	1,5 dB
	Serial resistance per core	R	0,27 Ω	0,27 Ω
line part	Nominal voltage	U_n	48 V DC	48 V DC
	Maximum operating voltage	U_c	40 V AC / 76 V DC	40 V AC / 76 V DC
	Nominal load current	I_L	0,35 A	1 A
	Maximum load current		15,4 W	48,9 W
	C2 nominal discharge current (8/20 µs) core-core	I_n	1 kA	1 kA
	C2 voltage protection level mode core-core at In	U_p	280 V	280 V
	C2 voltage protection level mode core-PE at In	U_p	780 V	780 V
	Response time core-core	t_a	25 ns	25 ns
	Response time core-PE	t_a	100 ns	100 ns
	Connection (input - output)		terminals/RJ 45	terminals/RJ 45
	Degree of protection		IP 20	IP 20
	Range of operating temperatures		-40 °C … 80 °C	-40 °C … 80 °C
	Mounting		DIN rail 35 mm	DIN rail 35 mm
	According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3
Ordering number			8595090536024	8595090538066

DL-Cat. 5e … RACK PANEL

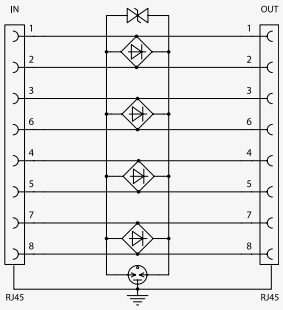
Surge Arrester for Ethernet

- fine protection for max. 24 ports of Ethernet Cat. 5
- only a shielded version is supplied
- installation at the boundary of LPZ 2 and LPZ 3 zones, directly in front of the device

Dimensions



Basic circuit diagram



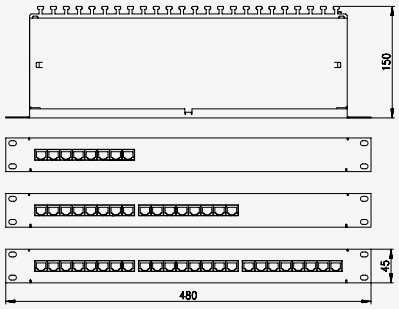
Parameter / Type		DL-Cat. 5e 8 RACK PANEL	DL-Cat. 5e 16 RACK PANEL	DL-Cat. 5e 24 RACK PANEL
Location of SPD		ST 3	ST 3	ST 3
Maximum operating voltage	U_c	5,7 V AC / 8,1 V DC	5,7 V AC / 8,1 V DC	5,7 V AC / 8,1 V DC
Nominal load current	I_L	0,1 A	0,1 A	0,1 A
C2 nominal discharge current (8/20 µs) core-core	I_n	0,2 kA	0,2 kA	0,2 kA
C2 total discharge current (8/20 µs) cores-PE	C	1,6 kA	1,6 kA	1,6 kA
C2 voltage protection level mode core-core at In	U_p	40 V	40 V	40 V
C2 voltage protection level mode core-PE at In	U_p	350 V	350 V	350 V
C3 voltage protection level mode core-core at 1 kV/µs	U_p	65 V	65 V	65 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	350 V	350 V	350 V
Response time core-core	t_a	1 ns	1 ns	1 ns
Response time core-PE	t_a	100 ns	100 ns	100 ns
Insertion attenuation at 100 MHz		1,5 dB	1,5 dB	1,5 dB
Connection (input - output)		RJ 45/RJ 45	RJ 45/RJ 45	RJ 45/RJ 45
Degree of protection		IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 60 °C	-40 °C … 60 °C	-40 °C … 60 °C
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3
Ordering number		8595090529309	8595090529316	8595090529323

DL-Cat. 5e … PATCH PANEL

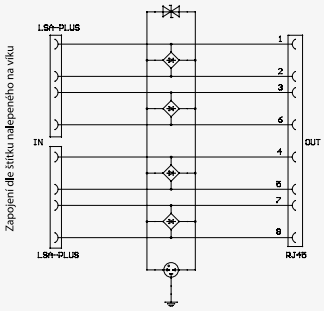
Surge Arrester for Ethernet

- combination of coarse and fine protection on board with patch panel unit for all 4 pairs in structured cabling system of Ethernet Cat. 5e. the 24 fully shielded ports in a metal rack panel
- installation at the boundary of LPZ 2 and LPZ3 zones or higher, directly in front of the device

Dimensions



Basic circuit diagram



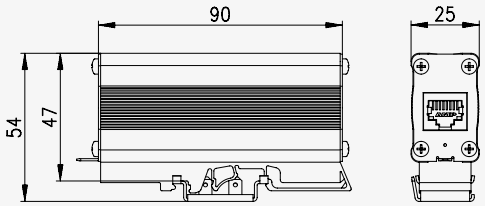
Parameter / Type		DL-Cat. 5e 24 PATCH PANEL	DL-Cat. 5e 8 PATCH PANEL	DL-Cat. 5e 16 PATCH PANEL
Location of SPD		ST 3	ST 3	ST 3
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	6 V AC / 8,5 V DC	6 V AC / 8,5 V DC
Nominal load current	I_L	0,1 A	0,1 A	0,1 A
C2 nominal discharge current (8/20 µs) core-core	I_n	0,2 kA	0,2 kA	0,2 kA
C2 total discharge current (8/20 µs) cores-PE	C	1,6 kA	1,6 kA	1,6 kA
C2 voltage protection level mode core-core at In	U_p	40 V	40 V	40 V
C2 voltage protection level mode core-PE at In	U_p	350 V	350 V	350 V
C3 voltage protection level mode core-core at 1 kV/µs	U_p	65 V	65 V	65 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	350 V	350 V	350 V
Response time core-core	t_a	1 ns	1 ns	1 ns
Response time core-PE	t_a	100 ns	100 ns	100 ns
Insertion attenuation at 100 MHz		1,8 dB	1,8 dB	1,8 dB
Connection (input - output)		LSA connector/RJ 45	LSA connector/RJ 45	LSA connector/RJ 45
Degree of protection		IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 60 °C	-40 °C … 60 °C	-40 °C … 60 °C
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3
Ordering number		8595090532576	8595090533061	8595090533078

DL-Cat. 6 …

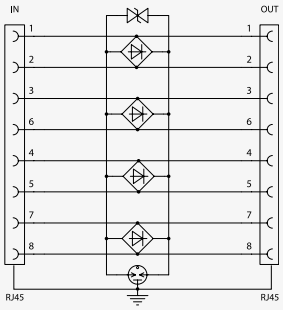
Surge Arrester for Ethernet
connectors RJ45

- fine protection for one port of Ethernet Cat. 6
- installation at the boundary of LPZ 2 and LPZ 3 zones directly in front of the device
- DL/Cat. 6-60V also for power supply

Dimensions



Basic circuit diagram



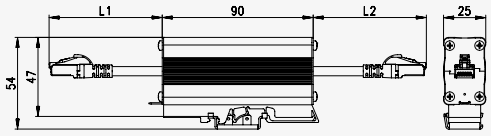
Parameter / Type		DL-Cat.6	DL-Cat.6 -60V
Location of SPD		ST 3	ST 3
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	60 V DC
Nominal load current	I_L	0,5 A	0,5 A
C2 nominal discharge current (8/20 µs) core-core	I_n	0,2 kA	0,2 kA
C2 total discharge current (8/20 µs) cores-PE	C	1,6 kA	1,6 kA
C2 voltage protection level mode core-core at In	U_p	40 V	130 V
C2 voltage protection level mode core-PE at In	U_p	350 V	350 V
C3 voltage protection level mode core-core at 1 kV/µs	U_p	65 V	130 V
Response time core-core	t_a	1 ns	1 ns
Insertion attenuation at 250 MHz		2 dB	2 dB
Connection (input - output)		RJ 45/RJ 45	RJ 45/RJ 45
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … 60 °C	-40 °C … 80 °C
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3
Ordering number		8595090536031	8595090538080

DL-1G ...

Surge Arrester for Ethernet

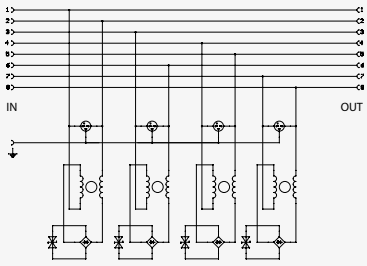
- combination of coarse and fine protection for all 4 pairs of a shielded patch cord
- its intended for protection of connecting switches and/or communication cards of Ethernet Cat. 6 or 5e (up to 1 Gbps)
- product is fully shielded
- installation at the boundary of LPZ 2 and LPZ 3 zones or higher, directly in front of the device

Dimensions



Délky:
L1 = 1,5 m, L2 = 0,5 m

Basic circuit diagram



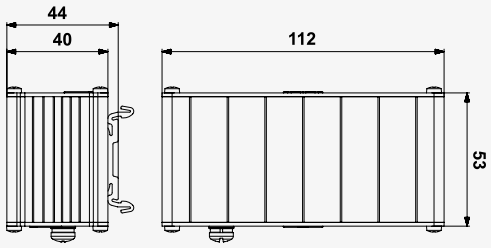
Parameter / Type		DL-1G 60 V	DL-1G
Location of SPD		ST 3	ST 2+3
Maximum operating voltage	U_c	60 V DC	34 V AC / 48 V DC
Nominal load current	I_L	0,5 A	0,5 A
C2 nominal discharge current (8/20 µs) core-core	I_n	0,15 kA	0,15 kA
C2 nominal discharge current (8/20 µs) core-PE	I_n	2,5 kA	2,5 kA
C2 voltage protection level mode core-core at In	U_p	100 V	95 V
C2 voltage protection level mode core-PE at In	U_p	500 V	500 V
C3 voltage protection level mode core-core at 1 kV/µs	U_p	130 V	130 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	400 V	400 V
Response time core-core	t_a	1 ns	1 ns
Response time core-PE	t_a	100 ns	100 ns
Insertion attenuation at 250 MHz		1,5 dB	1,5 dB
Connection (input - output)		patch cord RJ 45 - patch cord RJ 45	patch cord RJ 45 - patch cord RJ 45
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C … 60 °C	-40 °C … 60 °C
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3
Ordering number		8595090528876	8595090532569

DL-1G RJ45

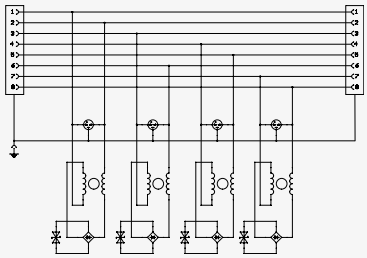
Surge Arrester for Ethernet

- protection of line Ethernet Cat. 6 with power supply
- installation at the boundary of LPZ 0 and LPZ 1 or higher

Dimensions



Basic circuit diagram

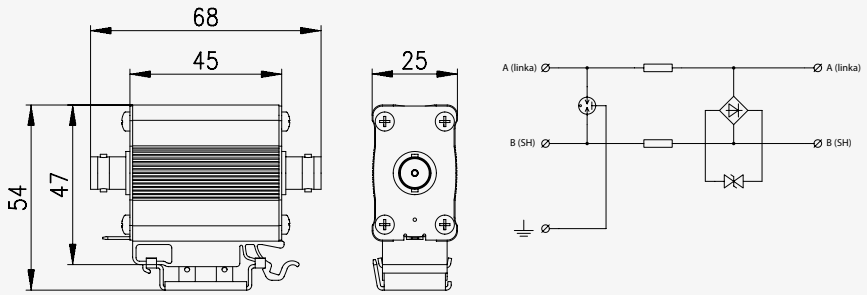


Parameter / Type		DL-1G RJ45
Location of SPD		ST 1+2+3
Maximum operating voltage	U_c	60 V DC
Nominal load current	I_L	0,5 A
C2 nominal discharge current (8/20 µs) core-core	I_n	0,15 kA
C2 total discharge current (8/20 µs) cores-PE	C	10 kA
D1 total discharge current (10/350 µs) cores-PE	I_{Total}	2 kA
C2 voltage protection level mode core-core at In	U_p	110 V
C2 voltage protection level mode core-PE at In	U_p	400 V
C3 voltage protection level mode core-core at 1 kV/µs	U_p	170 V
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	350 V
Response time core-core	t_a	1 ns
Response time core-PE	t_a	100 ns
Insertion attenuation at 250 MHz		1,5 dB
Connection (input - output)		RJ 45 - RJ 45
Degree of protection		IP 20
Range of operating temperatures		-40 °C … 60 °C
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2,C3
Ordering number		8595090540458

VL-... F/F

Surge Arrester for video circuits
BNC or F connectors or screw-less terminals

- combination of coarse and fine protection for video circuits
- installation at the boundary of LPZ 1 and LPZ 2 zones or higher, directly in front of the equipment

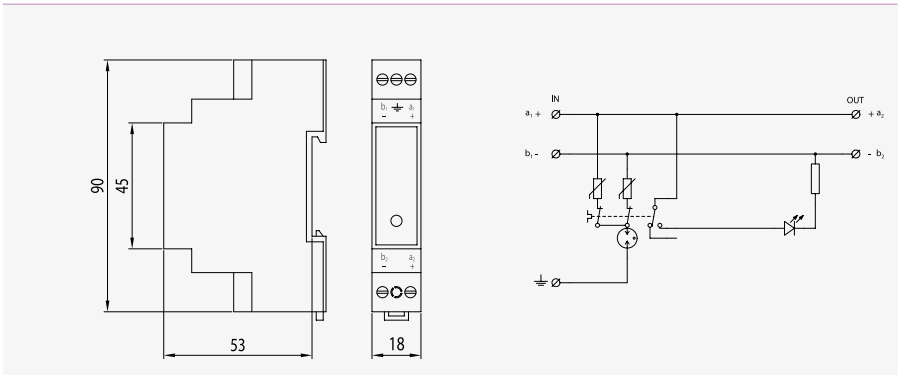


Parameter / Type		VL-B75 F/F	VL-F75 F/F	VL-SV
Location of SPD		ST 2+3	ST 2+3	ST 2+3
Maximum operating voltage	U_c	6 V AC / 8,5 V DC	6 V AC / 8,5 V DC	6 V AC / 8,5 V DC
Nominal load current	I_L	0,06 A	0,06 A	0,06 A
C2 nominal discharge current (8/20 µs) core-SH	I_n	5 kA	5 kA	5 kA
C2 nominal discharge current (8/20 µs) SH-PE	I_n	5 kA	5 kA	5 kA
C2 voltage protection level mode core-SH at In	U_p	150 V	150 V	150 V
C2 voltage protection level mode SH-PE at In	U_p	350 V	350 V	350 V
C3 voltage protection level mode core-SH at 1 kV/µs	U_p	35 V	35 V	35 V
C3 voltage protection level mode SH-PE at 1 kV/µs	U_p	350 V	350 V	350 V
Response time core-SH	t_a	1 ns	1 ns	1 ns
Response time SH-PE	t_a	100 ns	100 ns	100 ns
Serial resistance per core	R	0,27 Ω	0,27 Ω	0,27 Ω
Treshold frequency core-SH	f	150 MHz	150 MHz	150 MHz
Connection (input - output)		BNC 75	F 75	screw terminals
Degree of protection		IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C ... 80 °C	-40 °C ... 80 °C	-40 °C ... 80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3
Ordering number		8595090533764	8595090533788	8595090533795

DP-...

Surge Arrester for installations with extra low voltage
visual fault signaling

- protection of equipment connected to installation of DC and AC supply voltage
- installation at the boundary of LPZ 1 and LPZ 2 zones or higher



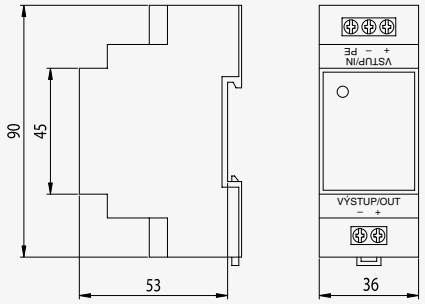
Parameter / Type		DP-012	DP-024	DP-048	DP-060
Connection (input - output)		terminals-terminals	terminals-terminals	terminals-terminals	terminals-terminals
Location of SPD		ST 2	ST 2	ST 2	ST 2
Nominal voltage	U_n	12 V AC	24 V AC	48 V AC	60 V AC
Maximum operating voltage	U_c	22 V AC / 28 V DC	34 V AC / 44 V DC	70 V AC / 90 V DC	80 V AC / 112 V DC
Nominal load current	I_L	16 A	16 A	16 A	16 A
C2 nominal discharge current (8/20 µs) core-core	I_n	2 kA	2 kA	2 kA	2 kA
C2 voltage protection level mode core-core at In	U_p	160 V	200 V	360 V	390 V
C2 voltage protection level mode core-PE at In	U_p	530 V	530 V	550 V	550 V
Nominal discharge current (8/20 µs) a-b	I_n	2 000 A	2 000 A	2 000 A	2 000 A
Nominal discharge current (8/20 µs) a(b)-PE	I_n	2 000 A	2 000 A	2 000 A	2 000 A
Test voltage a-b	U_{oc}	4 kV	4 kV	4 kV	4 kV
Test voltage a(b)-PE	U_{oc}	4 kV	4 kV	4 kV	4 kV
voltage protection level a-b	U_p	0,16 kV	0,2 kV	0,36 kV	0,39 kV
voltage protection level a(b)-PE	U_p	0,53 kV	0,53 kV	0,55 kV	0,53 kV
Maximum overcurrent protection		16 A gL/gG or C 16 A	16 A gL/gG or C 16 A	16 A gL/gG or C 16 A	16 A gL/gG or C 16 A
Response time a-b	t_a	25 ns	25 ns	25 ns	25 ns
Response time a(b)-PE	t_a	100 ns	100 ns	100 ns	100 ns
Cross-section of connected conductors solid - max		4 mm²	4 mm²	4 mm²	4 mm²
Cross-section of connected conductors stranded - max		2,5 mm²	2,5 mm²	2,5 mm²	2,5 mm²
Fault indication		red indicator	red indicator	red indicator	red indicator
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C ... 80 °C	-40 °C ... 80 °C	-40 °C ... 80 °C	-40 °C ... 80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T3| C2	EN 61643-11:2012, IEC 61643-11:2011, T3| C2	EN 61643-11:2012, IEC 61643-11:2011, T3| C2	EN 61643-11:2012, IEC 61643-11:2011, T3| C2
Ordering number		8595090521877	8595090516040	8595090521884	8595090521907

DPF-024

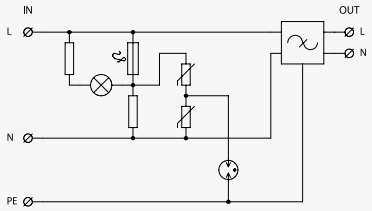
Surge Arrester for installations with extra low voltage

- SPD with integrated RFI filter
- protection of control systems, electronic security and fire systems against impact of transient overvoltage and RF disturbance

Dimensions



Basic circuit diagram



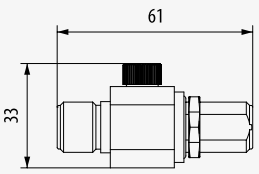
Parameter / Type		DPF-024
Connection (input - output)		terminals-terminals
Nominal voltage	U_n	24 V AC
Maximum operating voltage	U_c	40 V AC / 50 V DC
Nominal load current	I_L	6 A
Test voltage a-b	U_{oc}	1 kV
Test voltage a(b)-PE	U_{oc}	1 kV
Voltage protection level a-b	U_p	0,2 kV
Voltage protection level a(b)-PE	U_p	0,55 kV
Maximum overcurrent protection		6 A gL/gG nebo C 6 A
Response time a-b	t_a	25 ns
Response time a(b)-PE	t_a	100 ns
VF filter		ano
Filter attenuation at 1MHz (50 Ω/50 Ω) unsymmetrical		30 dB
Cross-section of connected conductors solid - max		4 mm^2
Cross-section of connected conductors stranded - max		2,5 mm^2
Fault indication		red indicator
Degree of protection		IP 20
Range of operating temperatures		-40 °C … 80 °C
Mounting		DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011, T3
Ordering number		8595090530503

HX-... N50 F/.

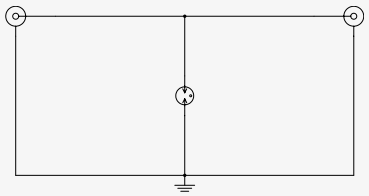
Lightning Current Arrester for coaxial line
N50 connectors

- protection of coaxial lines and telecommunication equipment
- installation at the boundary of LPZ 0 and LPZ 1 zones at the line input into the building
- suitable for the combined signal installation and power supply

Dimensions



Basic circuit diagram



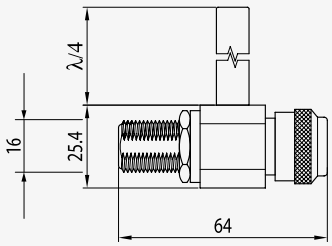
Parameter / Type		HX-090 N50 F/F	HX-090 N50 F/M	HX-230 N50 F/M	HX-230 N50 F/F
Location of SPD		ST 1+2	ST 1+2	ST 1+2	ST 1+2
Maximum operating voltage	U_c	70 V DC	70 V DC	180 V DC	180 V DC
Nominal load current	I_L	6 A	6 A	6 A	6 A
C2 nominal discharge current (8/20 µs) core-PE	I_n	10 kA	10 kA	10 kA	10 kA
D1 impulse discharge current (10/350 µs) core-PE	I_{imp}	2,5 kA	2,5 kA	2,5 kA	2,5 kA
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	600 V	600 V	650 V	650 V
Response time core-PE	t_a	100 ns	100 ns	100 ns	100 ns
Power	P	95 W	95 W	640 W	640 W
Wave impedance	Z	50 Ω	50 Ω	50 Ω	50 Ω
Bandwidth - min	f	0 MHz	0 MHz	0 MHz	0 MHz
Bandwidth - max	f	3 500 MHz	3 500 MHz	3 500 MHz	3 500 MHz
Insertion attenuation		0,1 dB	0,1 dB	0,1 dB	0,1 dB
SWR	SWR	1,2	1,2	1,2	1,2
Connection (input - output)		N 50	N 50	N 50	N 50
Degree of protection		IP 66	IP 66	IP 66	IP 66
Range of operating temperatures		-40 °C ... 80 °C	-40 °C ... 80 °C	-40 °C ... 80 °C	-40 °C ... 80 °C
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2,C4	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2,C5	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2,C6
Ordering number		8595090534051	8595090533467	8595090535102	8595090535119

ZX-… N50 F/M

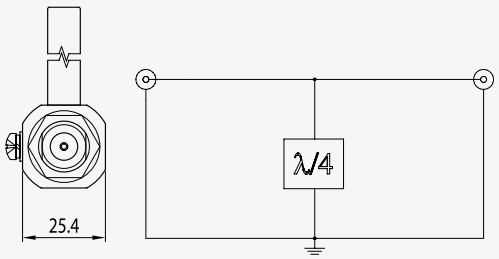
Lightning Current Arrester for coaxial line, quarter-wave short circuit
N50 connectors, quarter-wave short circuit

- protection of coaxial lines and telecommunication equipment
- installation at the boundary of LPZ 0 and LPZ 1 zones or higher at the line input into the building
- not suitable for the combined signal installation and power supply

Dimensions



Basic circuit diagram



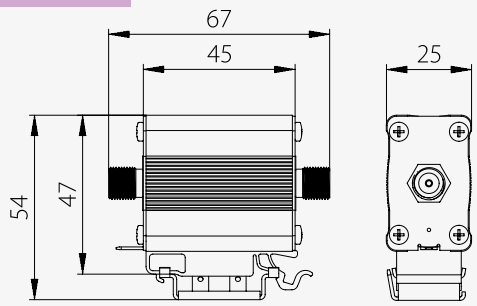
Parameter / Type		ZX-2,4 N50 F/M	ZX-1,9 N50 F/M	ZX-3,5 N50 F/M	ZX-5,8 N50 F/M
Location of SPD		ST 1+2+3	ST 1+2+3	ST 1+2+3	ST 1+2+3
C2 nominal discharge current (8/20 µs) core-PE	I_n	20 kA	20 kA	20 kA	20 kA
D1 impulse discharge current (10/350 µs) core-PE	I_{imp}	15 kA	15 kA	15 kA	15 kA
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	25 V	25 V	25 V	25 V
Wave impedance	Z	50 Ω	50 Ω	50 Ω	50 Ω
Insertion attenuation		0,2 dB	0,2 dB	0,2 dB	0,2 dB
SWR	SWR	1,2	1,2	1,2	1,2
Connection (input - output)		N 50	N 50	N 50	N 50
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 80 °C	-40 °C … 80 °C	-40 °C … 80 °C	-40 °C … 80 °C
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2
Ordering number		8595090517931	8595090519898	8595090519904	8595090519911

FX-... .75 F/F

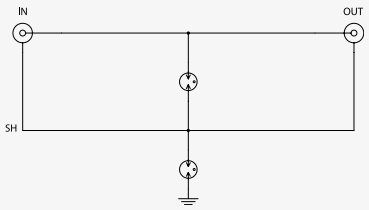
Lightning Current Arrester for coaxial line
BNC or F connectors

- protection for coaxial lines
- installation at the boundary of LPZ 0 and LPZ 1 zones at the line input into the building
- suitable as the 1st level of surge protection in coordination with the SX type

Dimensions



Basic circuit diagram



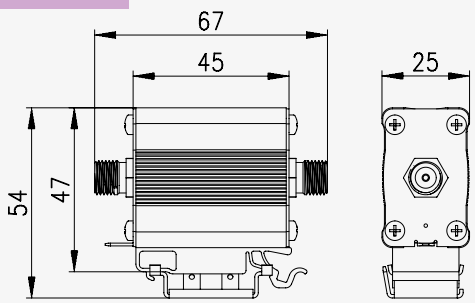
Parameter / Type		FX-090 F75 T F/F	FX-090 B75 T F/F	FX-230 B75 T F/F	FX-230 F75 T F/F
Location of SPD		ST 1	ST 1	ST 1	ST 1
Maximum operating voltage	U_c	70 V DC	70 V DC	180 V DC	180 V DC
Nominal load current	I_L	4 A	4 A	4 A	4 A
C2 nominal discharge current (8/20 µs) core-SH	I_n	10 kA	10 kA	10 kA	10 kA
C2 nominal discharge current (8/20 µs) SH-PE	I_n	10 kA	10 kA	10 kA	10 kA
D1 impulse discharge current (10/350 µs) core-SH	I_{imp}	2,5 kA	2,5 kA	2,5 kA	2,5 kA
D1 impulse discharge current (10/350 µs) SH-PE	I_{imp}	2,5 kA	2,5 kA	2,5 kA	2,5 kA
C3 voltage protection level mode core-SH at 1 kV/µs	U_p	600 V	600 V	660 V	660 V
C3 voltage protection level mode SH-PE at 1 kV/µs	U_p	600 V	600 V	660 V	660 V
Wave impedance	Z	75 Ω	75 Ω	75 Ω	75 Ω
Insertion attenuation		0,2 dB	0,6 dB	0,6 dB	0,2 dB
SWR	SWR	1,3	1,2	1,2	1,3
Bandwidth - min	f	0 MHz	0 MHz	0 MHz	0 MHz
Bandwidth - max	f	2 150 MHz	2 150 MHz	2 150 MHz	2 150 MHz
Response time core-SH	t_a	100 ns	100 ns	100 ns	100 ns
Response time SH-PE	t_a	100 ns	100 ns	100 ns	100 ns
Connection (input - output)		F 75	BNC 75	BNC 75	F 75
Degree of protection		IP 20	IP 20	IP 20	IP 20
Range of operating temperatures		-40 °C … 80 °C	-40 °C … 80 °C	-40 °C … 80 °C	-40 °C … 80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, D1,C2
Ordering number		8595090533870	8595090533856	8595090533900	8595090533924

SX-... .75 F/F

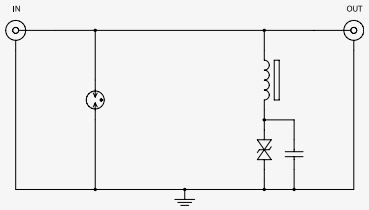
Surge Arrester for coaxial line
BNC or F connectors

- fine protection for coaxial inputs of TV systems
- suitable as the 2nd level of surge protection in coordination with the FX type
- installation at the boundary of LPZ 2 and LPZ 3 zones, directly in front of the equipment

Dimensions



Basic circuit diagram



Parameter / Type		SX-090 B75 F/F	SX-090 F75 F/F
Location of SPD		ST 2+3	ST 2+3
Maximum operating voltage	U_c	29,1 V DC	29,1 V DC
Nominal load current	I_L	4 A	4 A
C2 nominal discharge current (8/20 µs) core-PE	I_n	1,5 kA	1,5 kA
C3 voltage protection level mode core-PE at 1 kV/µs	U_p	80 V	80 V
Wave impedance	Z	75 Ω	75 Ω
Insertion attenuation		1 dB	1 dB
SWR	SWR	1,7	1,7
Bandwidth - min	f	1 MHz	1 MHz
Bandwidth - max	f	2 150 MHz	2 150 MHz
Response time core-PE	t_a	1 ns	1 ns
Connection (input - output)		BNC 75	BNC 75
Degree of protection		IP 20	IP 20
Range of operating temperatures		-40 °C ... 80 °C	-40 °C ... 80 °C
Mounting		DIN rail 35 mm	DIN rail 35 mm
According to standard		EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3	EN 61643-21+A1,A2:2013, EN IEC 61643-21+A1,A2:2012, C2,C3
Ordering number		8595090533955	8595090533979

Accessories for DM-xxx/n-RS

Product	Ordering number
Connection bridge JRS 10P	C41175

Image

C41175

Example of use

Accessories for HX and ZX

Product	Ordering number
Holder	C09720

C09720

Accessories for LSA technologies

Product	Ordering number
Comb earthing rail	C95712
Universal disconnection rail LSA 2/10	C95710
Mounting frame – 1 position	C95711

C95712

C95710

Notes

Index of SALTEK® products

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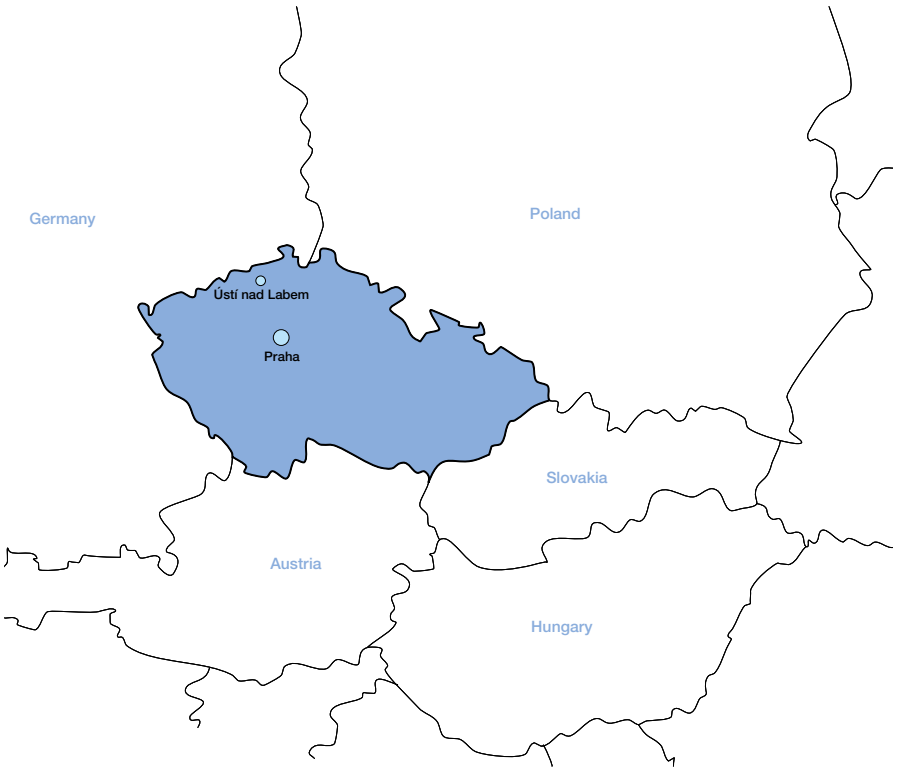

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