



SURGE PROTECTION

PRODUCT CATALOGUE



ENERGY
TO
INNOVATE

Introduction

Why choose Mersen.....	4
Need of protection.....	6
Introduction to surge protection.....	7
SPD features based on the IEC 61643 standard.....	9
Typical current (I _{TPP}).....	10
Cascade protection.....	11
Grounding systems.....	12
Installation and wiring.....	13
SPD placement in your design.....	14
Effectiveness of an SPD depending on the earth connection.....	16

Lightning and Surge Protection solutions

Power line SPDs.....	19
Photovoltaic SPDs.....	49
LED lightning SPDs.....	63
Signal line SPDs.....	73
Other Surge-Trap® ranges.....	81

WHY CHOOSE MERSEN



Global experts in electrical protection

We are a global leader in electrical protection and a recognized expert in surge and overcurrent protection. Through our specialized brands and decades of expertise, we develop reliable, certified and technologically advanced solutions that ensure maximum safety, service continuity and full compliance with international standards.



**We are SPD
manufacturers**

50

INDUSTRIAL
PLANTS

24

R+D+i
CENTERS

4

TESTING
LABORATORIES

SPAIN

TERRASSA

MERSEN CENTRE OF EXCELLENCE
IN SURGE PROTECTION

Our surge protection activity reflects our commitment to delivering comprehensive, high-performance protection systems. Backed by strong technological capabilities, global industrial resources and a long-term strategic vision, we contribute to building a safer and more sustainable energy future.

Reliability

Experience that powers trust

More than 30 years of manufacturing surge protection devices support our track record focused on technical excellence and performance.

Our production relies on highly automated processes that ensure strict control and full traceability at every stage. In addition, we actively participate in international standardization committees, enabling us to anticipate regulatory developments and deliver solutions aligned with the most demanding standards.

Peace of mind

In every installation

We act as a single, trusted partner ensuring technical consistency and full compatibility within the electrical panel.

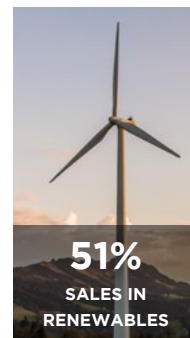
All products are tested in the group's certified laboratories and backed by third-party certifications, guaranteeing compliance with major international standards and facilitating technical specification and approval in both national and international projects.

Sustainability

A responsible partner everywhere we operate

We design and manufacture in Europe, with strategic production centers that ensure proximity, industrial control and high-quality standards.

We proactively address regulatory and environmental challenges and have received international recognition for corporate social responsibility, reflecting responsible management and a commitment to positive impact.



ENERGY TO INNOVATE

Find out more about us
[Mersen website >>](#)



NEED OF PROTECTION

Why protect against surges?

Electrical and electronic equipment is indispensable in the daily activities of today's businesses and individuals. These devices are connected to the electrical grid and often exchange data through communication lines, making them particularly sensitive to electrical disturbances. These interconnecting networks provide a propagation path for overvoltages.

Protection against lightning and overvoltages not only **ensures the safety of people, assets and equipment, but also ensures continuity of installation services.**

Overvoltage protection extends the life of the equipment by more than 20%, which significantly reduces the volume of electronic waste. It also reduces the power consumption of the installations, all of which translates into cost savings and environmental sustainability.

Not all protection devices are effective. Choosing well is your responsibility.

The various players in the supply chain need to ensure that protection devices comply with the product standards, as this will result in greater installation safety and reliability.

It is important to check and demand the following information:

- Product CE marking and declaration
- Testing in accordance with national and international product codes and standards
- Product certifications
- Integrated quality and environmental management system
- Audited production



5.000.000
lightning strikes per day

Causes of electrical damage in homes:

61% Transient power surges

25% Persistent power surges

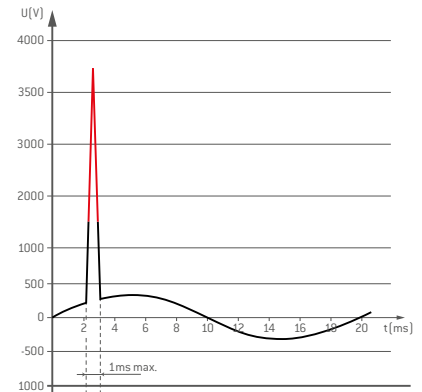
INTRODUCTION TO SURGE PROTECTION

What are surges?

Surges are transient overvoltages that can reach tens of kilovolts with durations in the order of microseconds. Despite their short duration, the high energy content can cause serious problems to equipment connected to the line like premature ageing of electronic components, equipment failure or disruptions to service and financial loss.

Origin of surges

- **Lightning:** The most destructive source of surge. Based on the IEC 61643-12 standard, energy from lightning can reach up to 200 kA. However for reference, estimates indicate 65% are less than 20 kA and 85% are less than 35 kA.
- **Induction:** Sources include cloud-to-cloud lightning or nearby lightning impacts where the current flow induces an overvoltage on supply lines or other metallic conductors.



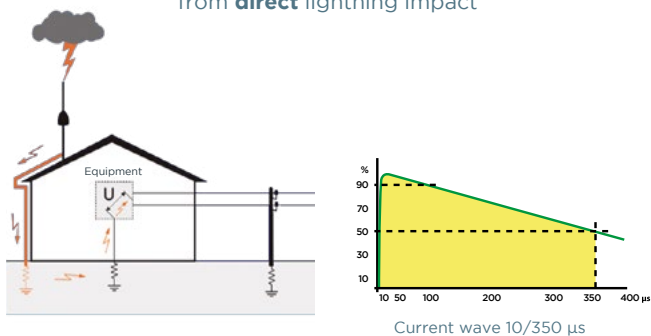
When the peak voltage exceeds the withstand capability of the equipment, permanent damage may occur.

Types of surges

It is impossible to predict the exact timing, location, magnitude or waveform of a surge event. Therefore, within the Standards, some assumptions have been made and 2 main waveforms have been chosen to simulate different surge events.

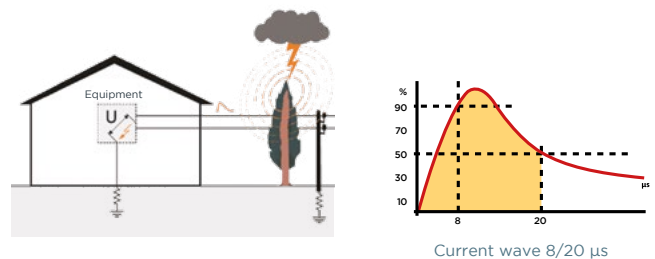
Conduction:

Conduction or 10/350 μ s simulates energy from **direct** lightning impact



Induction:

Induction or 8/20 μ s simulates energy from **indirect** lightning impact

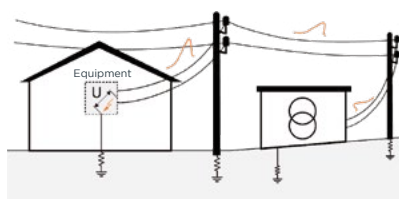


Do not confuse this kA rating with the fault levels of the installation.

Fault ratings given by the transformer are kA for 1 second. Surge kA rates are for microseconds. Protection in front of surge will be based on this statement.

Internal surges:

These are the main sources of surge in real life. They come from utility grid switching, disconnection of motors or other inductive loads. Energy from these sources is also analysed with the 8/20 μ s waveform.



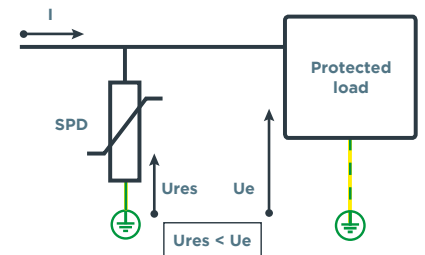
Transient overvoltages do not occur solely in power distribution lines, they are also common in any line formed by metal conductors, such as telephony, communications, measurement and data.

Protector in front of surges:

SPD (Surge Protection Device)

A surge protection device acts as a voltage controlled switch and is **installed between the active conductors and ground in parallel with the equipment to be protected**. When the supply voltage is lower than its activation voltage, the protector acts as a high-impedance element so that no current flows through it. When the supply voltage is higher than the activation voltage, the protector acts as an element with an impedance close to zero, diverting the overvoltage to earth and preventing it from affecting equipment downstream.

Nevertheless, in the terminals of the SPD **there will always be a residual voltage (U_{res})**. This is not a fixed value. Because of the surge current, there will be a residual voltage across the SPD, this means, **the higher the surge current, the higher the residual voltage**. To protect your electrical equipment the residual voltage across the SPD, including the wires and connections, needs to be less than the overvoltage withstand of the equipment.



I : peak current

U_{res} : voltage protection level (Residual voltage at I_n)

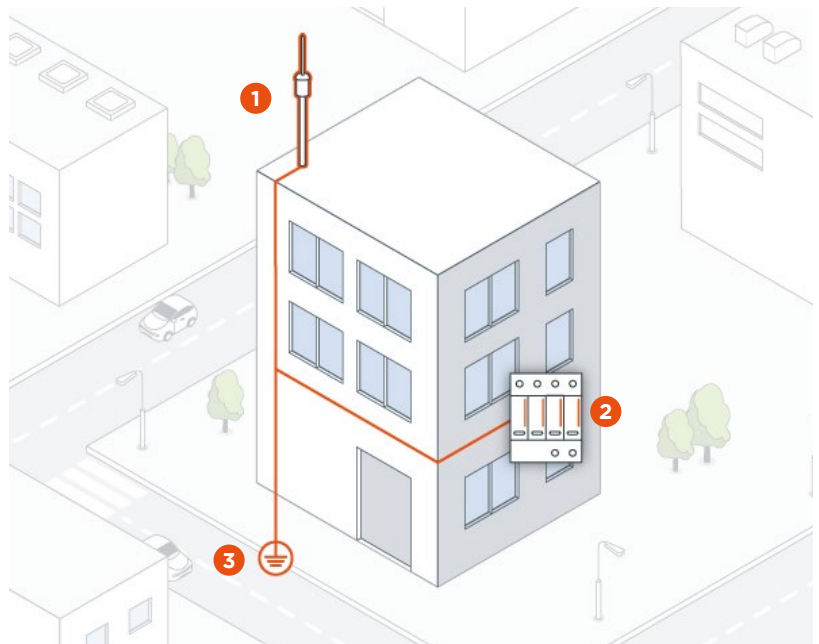
U_e : impulse voltage the equipment can withstand

What is the best way of protecting an installation against surges?

Effective protection does not depend on a single device, but on a comprehensive system with three key elements:

- 1. External protection:** captures and safely channels lightning to earth.
- 2. Internal protection:** protects equipment against transient and permanent power surges.
- 3. Earthing system:** dissipates energy to earth.

If one of these elements is missing or incorrectly sized, the protection will not be effective.



SPD FEATURES BASED ON THE IEC 61643 STANDARD

Classification of protectors

Protection devices are classified into types according to discharge capacity.

• Type 1

T1

Tested with a 10/350 μ s waveform (Class I test), which simulates the current produced by a direct lightning strike.

Ability to discharge very high currents to earth, providing a high Up - voltage protection level.

Must be accompanied by downstream Type 2 protectors. Designed for use in incoming power supply panels where the risk of lightning strike is high, for example in buildings with an external protection system.

• Type 2

T2

Tested with an 8/20 μ s waveform (Class II test), which simulates the current produced in the event of a switching or lightning strike on the distribution line or its vicinity.

Ability to discharge high currents to earth, providing a medium Up - voltage protection level. Designed for use in distribution panels located downstream of Type 1 protectors or in incoming power supply panels in areas with low exposure to lightning strikes.

• Type 3

T3

Tested with a combined 1.2/50 μ s - 8/20 μ s waveform (Class III test), which simulates the current and voltage that can reach the equipment to be protected.

Ability to discharge medium currents to earth, providing a low Up voltage protection level.

Always installed downstream of a Type 2 protection, it is designed to protect sensitive equipment or equipment located more than 20 m downstream of the Type 2 device.

The technology can provide protection solutions that combine different types of protection: Type 1+2 and Type 2+3.

Protection parameters according to IEC 61643

Iimp

Impulse current

Peak current with 10/350 μ s waveform that the protection device can withstand without reaching end of life.

Itotal

Total discharge current

Current with 10/350 μ s waveform that flows through the earth conductor of a multipole SPD during the total discharge current test.

I_{max}

Maximum discharge current

Peak current with 8/20 μ s waveform that the protection device can withstand.

I_n

Nominal current

Peak current in 8/20 μ s waveform that the protection device can withstand 20 times without reaching end of life.

Up

Voltage protection level

Maximum residual voltage between the terminals of the protection device during the application of a peak current equal to the nominal current (I_n).

U_c

Maximum continuous operating voltage

Maximum effective voltage that can be applied permanently to the terminals of the protection device.

U_{oc}

Open circuit voltage (combined voltage pulse)

This parameter is used only for the Class III test and is applicable to a Type 3 SPD. It consists of the application of a combination wave (1.2/50 μ s in open circuit - 8/20 μ s in short circuit).

I_{fi}

Follow current extinction capability

This parameter is only devoted to surge protectors using "air gap" technology. Once they have "switched", these surge protectors conduct part of the network current (follow current) and need to interrupt it.

Typical current (I_{typ})

SPD performance that guarantees the surge protection in real-world conditions

I_{lim} , I_{max} and I_n show the one-off maximum robustness of the SPDs in heavy conditions. However, most surge currents are in practice lower and repetitive because of network switching or because of lightning inductions onto the power grid.

The Typical Surge Current (I_{typ}) is the value that statistically the SPD faces in real life. The value depends on the level of exposure.

I_{lim}

Maximum current the SPD is able to withstand
1 time in 10/350 μ s

I_{max}

Maximum current the SPD is able to withstand
1 time in 8/20 μ s

I_n

Maximum current the SPD is able to withstand
20 times in 8/20 μ s

I_{typ}

Maximum current the SPD is able to withstand
200 times in 8/20 μ s

(depending on the level of exposure)

Lifetime of the SPDs

The lifetime is defined by the **number of hits that the SPD is able to withstand at Typical Surge Current (I_{typ})**. Estimating the lifetime of the SPD is essential to guarantee protection.

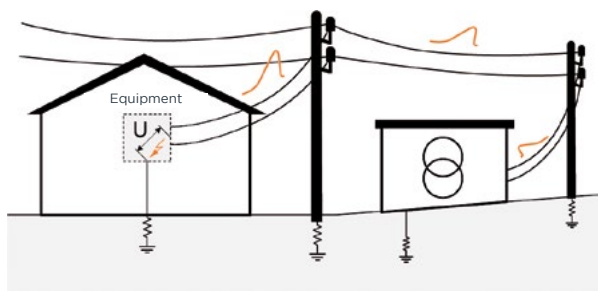
The minimum lifetime values that we can expect are:

High exposed locations:

200 peaks

Type 1+2 SPD requirement; usually installed in the highest exposed locations.

$I_{typ} = 10 \text{ kA } 8/20 \mu\text{s}$

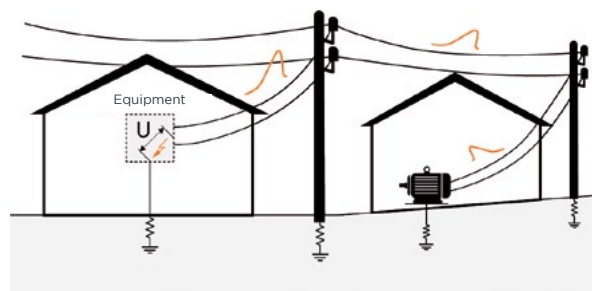


Low exposed locations or internal surges:

200 peaks

Type 2 SPD requirement; usually installed in medium or lower exposed locations.

$I_{typ} = 5 \text{ kA } 8/20 \mu\text{s}$



The SPD must be designed in order to pass the test of the standards, but furthermore to guarantee a great performance in real life.

CASCADE PROTECTION

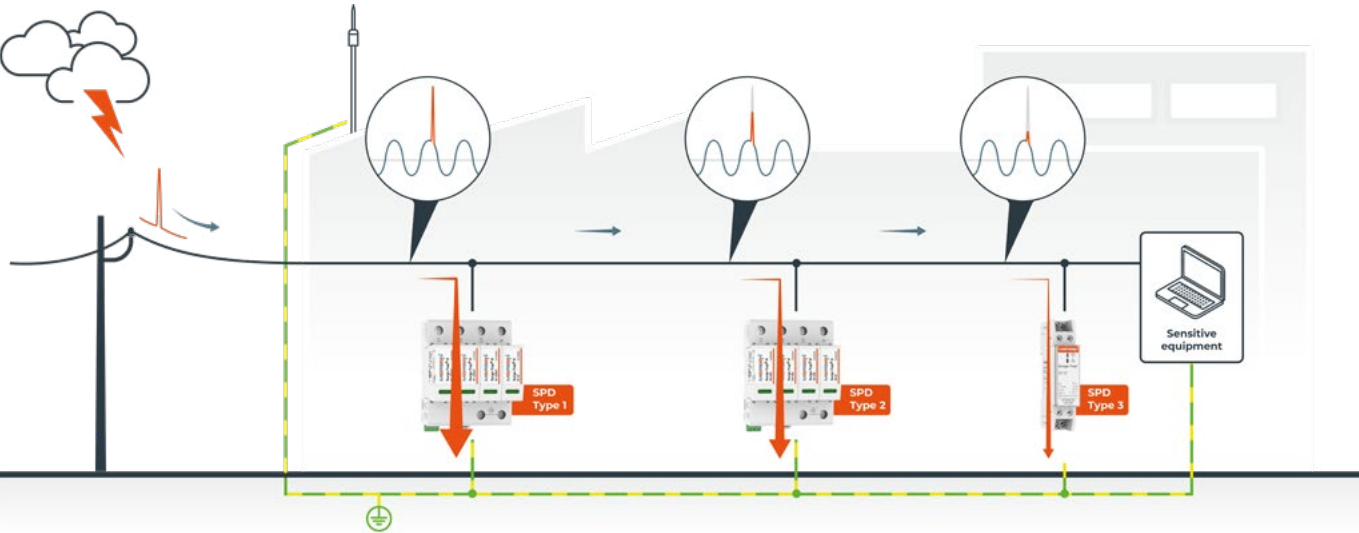
Protection system of coordinated stages

Type 1, Type 2 and Type 3 SPDs

The SPDs of a surge protection system must be able to withstand the discharged current and provide a U_{res} level (residual voltage) lower than the U_e peak voltage that the equipment can withstand.

As explained, most of the times it is not possible to achieve this with just one SPD, especially because the intensity of the surge is not known, and because of the induction of overvoltages when conductors exceed 10 m.

The optimal protection system is the **3-STEP approach**, in which successive stages are combined in the performance of high discharge capacity devices and devices with an optimal voltage protection level (low). This is addressed by the definition of “Types” or “Classes” of SPDs according to the type of transient pulses to which each protected zone in the installation is subject to.



	STAGE 1	STAGE 2	STAGE 3	
	Direct impact of a lightning strike (current).	Indirect impact of a lightning strike on the distribution line (overhead lines) or its vicinity (rise of ground potential or induction by coupling of electromagnetic radiation of the strike) or in the event of a switching.	Indirect impact simulated by the current and voltage that can reach the long-distance circuits and individual equipment to be protected.	
Location	Main switch board	Distribution board	Final sub-circuits Individual equipment	
IEC/EN 61643-11	Type 1 / Class I	Type 2 / Class II	Type 3 / Class III	
Overvoltage category IEC 60364-4-443	IV	III	II	I
Overvoltage withstand (U_e) values for equipment at 230/400 V	6 kV	4 kV	2.5 kV	1.5 kV
LPZ IEC 62305-4 protection zone	LPZ 1	LPZ 2	LPZ 3	
Discharge capacity (I_{imp} , I_{max})	High	Medium	Low	
Voltage protection level (U_p)	✓ (Coarse)	✓✓ (Fine)	✓✓✓ (Very fine)	

GROUNDING SYSTEMS

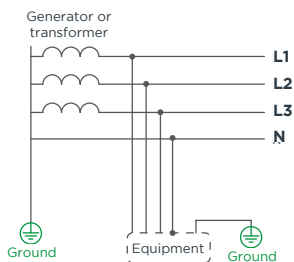
Earthing of electrical installations

All national codes on the generation, transmission and distribution of electricity require **grounding of all the elements of the installation**.

This ground connection ensures a sufficiently low impedance path for **protection devices to protect people and equipment**, and to prevent hazardous step and touch voltages.

As we will see, there are **several systems** for making this ground connection, depending on the interconnection between the installation components.

TT arrangement

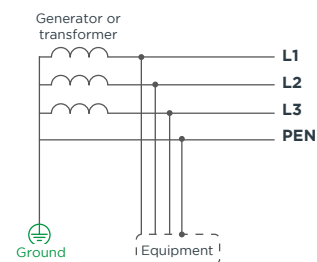


- Individual ground connection at the consumer level, separated from the transformer. Without distributed ground conductor (PE).
- The protective ground is the physical ground connection itself.

Advantages: Less interference. More reliable.

Disadvantages: High impedance L-PE fault loop, hence it requires a differential protection device.

TN-C arrangement

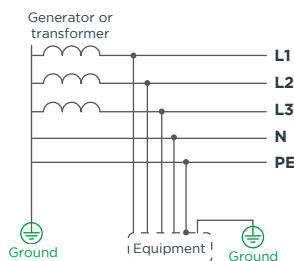


- The PEN conductor performs the functions of neutral and ground wire from transformer to the consumer.
- The protective ground connection is through the PEN conductor, generally to the transformer ground.

Advantages: Minimum costs for both wiring and installation.

Disadvantages: Cable failure may create critical safety risks. High electromagnetic interference. Need for oversizing cable.

TN-S (or TNC-S) arrangement

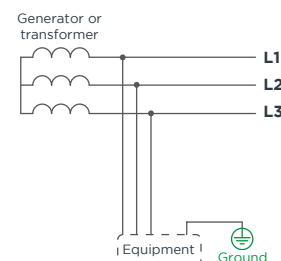


- Neutral and ground wires distributed from the installation origin (one cable performs both functions in TNC-S distribution).
- The protective ground connection is through the protection conductor itself, generally to the transformer ground.

Advantages: Maximum safety against cable breaks and L-PE faults.

Disadvantages: The most expensive system, both for cable and for installation and maintenance.

IT arrangement



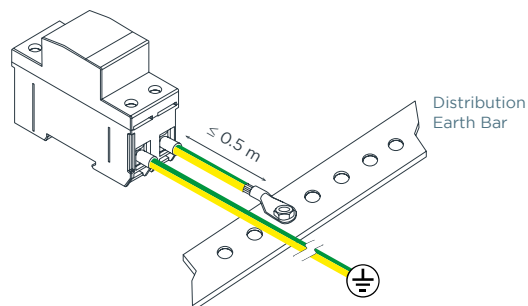
- The transformer neutral is isolated from ground. Optional distributed neutral conductor. Local ground connection at the consumer level.
- The protective ground is made via the local ground connection. There is no risk at the first L-PE fault due to the high loop impedance.

Advantages: No neutral breakage risk. Continuity of service in case of L-PE incidents.

Disadvantages: Requires connected devices to be able to work at line voltages. Needs insulation monitoring to act at the first fault.

INSTALLATION AND WIRING

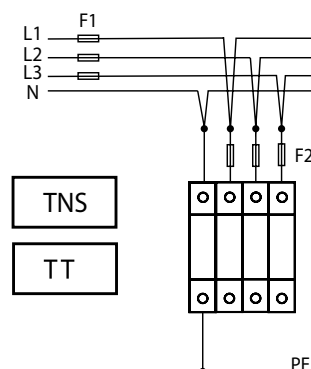
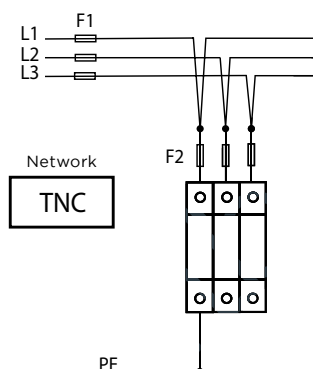
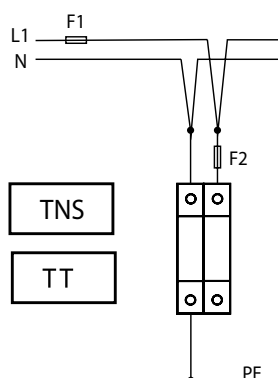
Recommended lengths and connection types according to IEC 61643-12



In order to achieve optimum overvoltage protection, connecting conductors of SPDs shall be as short as possible. Long lead lengths will degrade the protection offered by the SPD.

When connecting an SPD in parallel, the optimal connection is a “V-type” (see image below). Whenever this is not feasible, **the maximum derivation cable length should be less than 0.5 m.**

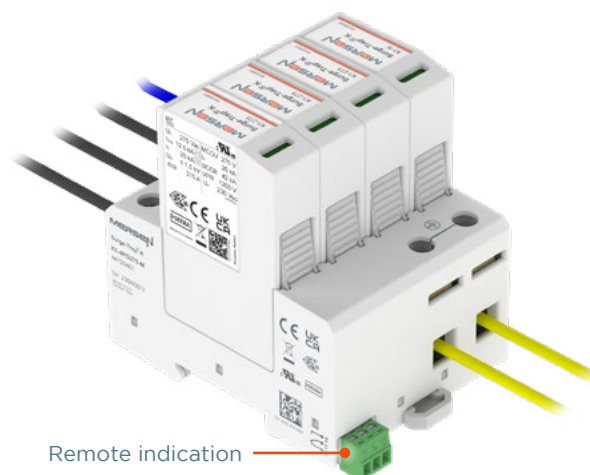
Wiring, general considerations (lengths and sections)



TYPE OF WIRE	Ø min L, N	Ø min PE	Ø max L, N, PE
STRANDED	6 mm ²	16 mm ² (Type 1)	25 mm ²
RIGID		6 mm ² (Type 2)	35 mm ²

Remote indication

U _{max} / I _{max}	
	AC: 50 V / 1 A DC: 125 V / 0.2 A
max 1.5 mm ² min 0.05 mm ²	



SPD PLACEMENT IN YOUR DESIGN

When selecting an SPD, several points must be considered

1. Where to start the protection design?

At the origin of the installation, the main switchboard is the place to start the design of SPDs on the network.

2. Network typology

TNS, TNC, TT, IT, PV and No. of conductors.

3. Nominal voltage rating (Un) of the supply.

Both features will condition the **maximum continuous operating voltage (Uc)**. IEC/HD standard 60364-5-534 sets the minimum allowed value of Uc depending on the system configuration, taking into account a safety margin of the device above the nominal voltage.

4. Type 1, Type 2, Type 3 which one has to be selected?

As previously stated, the SPD protection design does not depend on the fault ratings given by the transformer, it only depends on the level of exposure in front of a surge.

Example: Which SPD do we have to install in the main switchboard?

See the diagram below from IEC 62305-1 standard which displays the dispersion of the highest lightning considered: 200 kA at 10/350 μ s.

In the worst case scenario, 50% of this energy is conducted away to earth leaving 100 kA potential across the networks 3 phase and neutral. Here a **25 kA at 10/350 μ s (Iimp) Type 1 SPD is recommended** for insulated installations in extremely exposed locations to lightning.

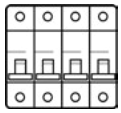
In the "Normal Scenario" it is assumed any direct lightning strike to the network will be at such a distance from the installation that another 50% of the energy is dispersed to earth via other conductors before entering your point of connection. In this scenario a device with **12.5 kA at 10/350 μ s (Iimp) Type 1 is recommended**. Furthermore, based on the **IEC 61643-12 standard and even stated in section 534.4, 12.5 kA is the minimum kA rate when a Type 1 is required**. If the level of exposure of the installation is lower than the scenarios described above. Type 2 SPD (Imax) may be considered along with risk and cost of equipment and downtime.



Do we have to consider more SPDs?

The IEC 60364-4-443 standard classifies electrical devices in categories, depending on how sensitive they are to surge overvoltage (Ue).

Category 1 devices (electronic receivers) are the most sensitive, Ue has to be at least 1.5 kV. Whereas category 4 devices can withstand 6kV or more. Generally, components in main switchboards are category 4 devices ie ACB, MCCB etc.

Category	IV	III	II	I
230/400 lines	Counters / MCCB / ACB	MCBs and RCCDs	Electrical devices	Electronic receivers
Example				
Impulse voltage withstand	6 kV	4 kV	2.5 kV	1.5 kV

Example: How will a SPD Type 1+2 act against different surges?

Then, let's consider an example below, where a Type 1+2 SPD is installed in the main distribution board of an installation. The following chart analysis the status of the SPD, the status of the category 1 loads (the most sensitive Ue: 1.5 kV) in front of different surge scenarios:

SURGE EVENT			
 $I_{limp} = 12.5 \text{ kA}$ $I_{max} = 50 \text{ kA}$ $I_n = 20 \text{ kA}$ $U_p \leq 1.5 \text{ kV}$ In accordance with the IEC 61643-11	$\leq 20 \text{ kA}$ 	50 kA 	$> 50 \text{ kA}$ 
 $U_e = 1.5 \text{ kV}$ Robustness classification for electric and electronic devices according to IEC 60364-4-443			

According to the IEC 61643-1 declared Up rate is related to In. Although the SPD is able to withstand Imax probably Up level will be higher than Ue.

Statements:

1. For discharges over the maximum capacity (**Imax**) of the SPD, the loads and the SPD itself will be damaged.
2. limp and Imax define the maximum surge level the SPD itself can withstand but does not describe the protection.
3. Only In defines the level of protection as at In the residual voltage seen by the equipment being protected is Ue.
4. As surges may be induced in cable between the main switchboard and distribution board, or by the final loads themselves, the switchboard may not be close enough to direct a surge in time to protect other final loads.

Conclusions:

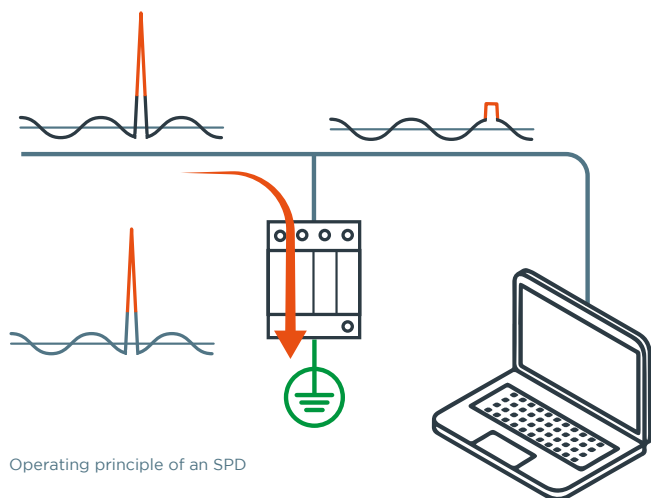
- With just one stage of protection only equipment close to the SPD is protected and only up to a surge of In.
- To improve the protection possibilities, at least, a second stage of protection in a distribution board is a must. This SPD design is called cascading protection.
- **Further SPDs (Type 2 and Type 3) are required to protect sensitive and critical equipment downstream of the origin of the installation when a Type 1 is fitted at the origin of installation (534.4.1.1)**

EFFECTIVENESS OF AN SPD DEPENDING ON THE EARTH CONNECTION

The importance of the earth connection

Surge protection devices discharge excess energy to earth, thus limiting the peak voltage to a value acceptable for the electrical equipment connected.

An **earth in proper conditions** is therefore an aspect not to overlook when it comes to **effective surge protection**. **Continuously monitoring the state of the earth connection** ensures proper operation of surge protection devices.



Operating principle of an SPD

Impedance loop method

The loop impedance method is a system for checking the entire earthing system by acting physically not on earth rods, but solely on the low voltage line.

Sending pulses and measuring the voltage response makes it possible to measure the impedance of the path, which usually includes the earthing system and wiring and the return path through the transformer coil.

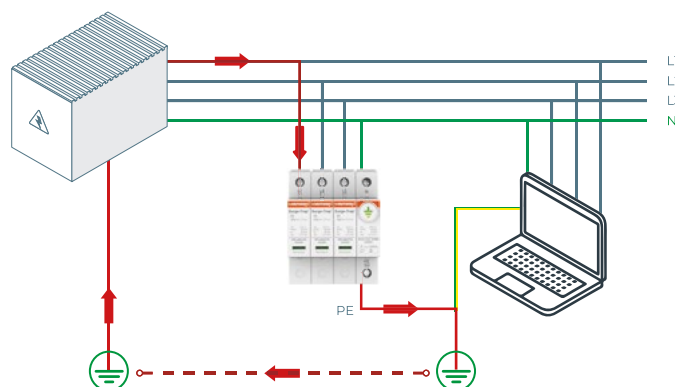


Diagram of loop impedance measuring used by TERRA®



SURGE-TRAP®
TERRA 

No earth, no protection

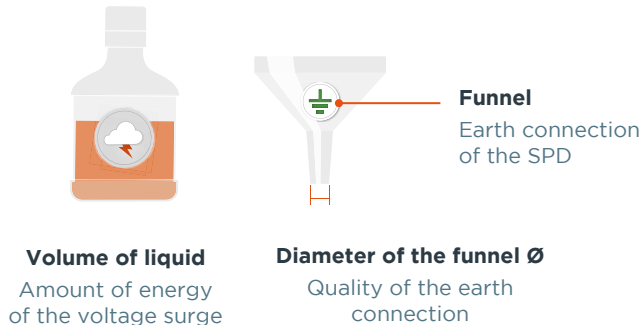
If the surge protection device does not have an adequate path to earth for discharging voltage peaks, the protector will be forced to operate under sub-optimal conditions.

The effectiveness of surge protectors is indeed closely linked to the earthing system, since a high impedance path may increase the exposure of sensitive equipment to the effects of the overvoltage.

Hydraulic simile

To understand the relationship between the quality of the earth connection and the effectiveness of overvoltage protection, people often use a very intuitive hydraulic simile.

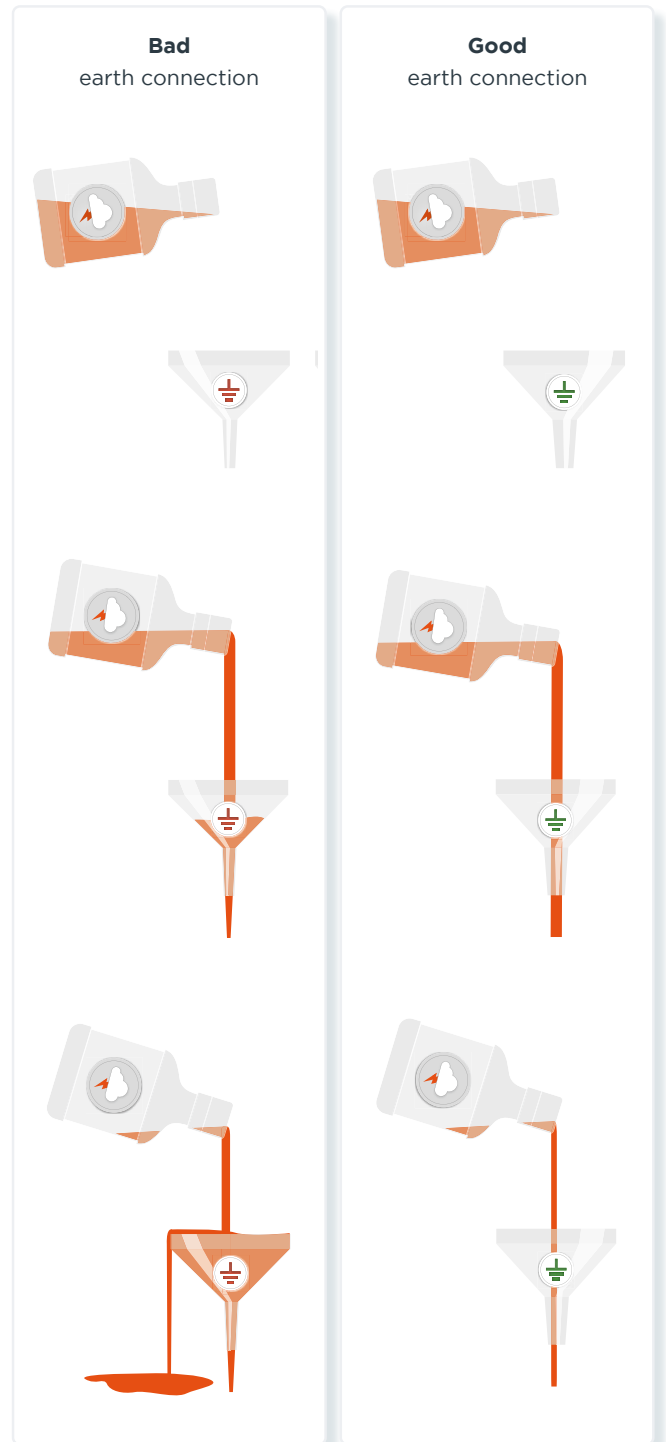
If we equate the energy of the overvoltage to a specific volume of liquid, **the earth connection may be thought of like a funnel**. There is a direct relationship between **the diameter of the funnel opening** and the quality of the earth connection. Once the funnel has drained the entire volume of liquid, the overvoltage will have been shunted to earth and the equipment will see a completely normal voltage.



The adjacent diagram compares what happens to a bad earth connection (funnel on the left - small opening) to what happens to a good one (funnel on the right - big opening) in the event of an overvoltage. We can see how an earth connection with higher resistance (funnel on the left) is saturated with the energy of the discharge (the funnel overflows because it is incapable of draining fast enough). Intuitively, **this prolongs the time during which the equipment to be protected is subjected to the effects of overvoltage**, and which therefore suffer more wear (the funnel takes longer to empty due to its smaller opening).

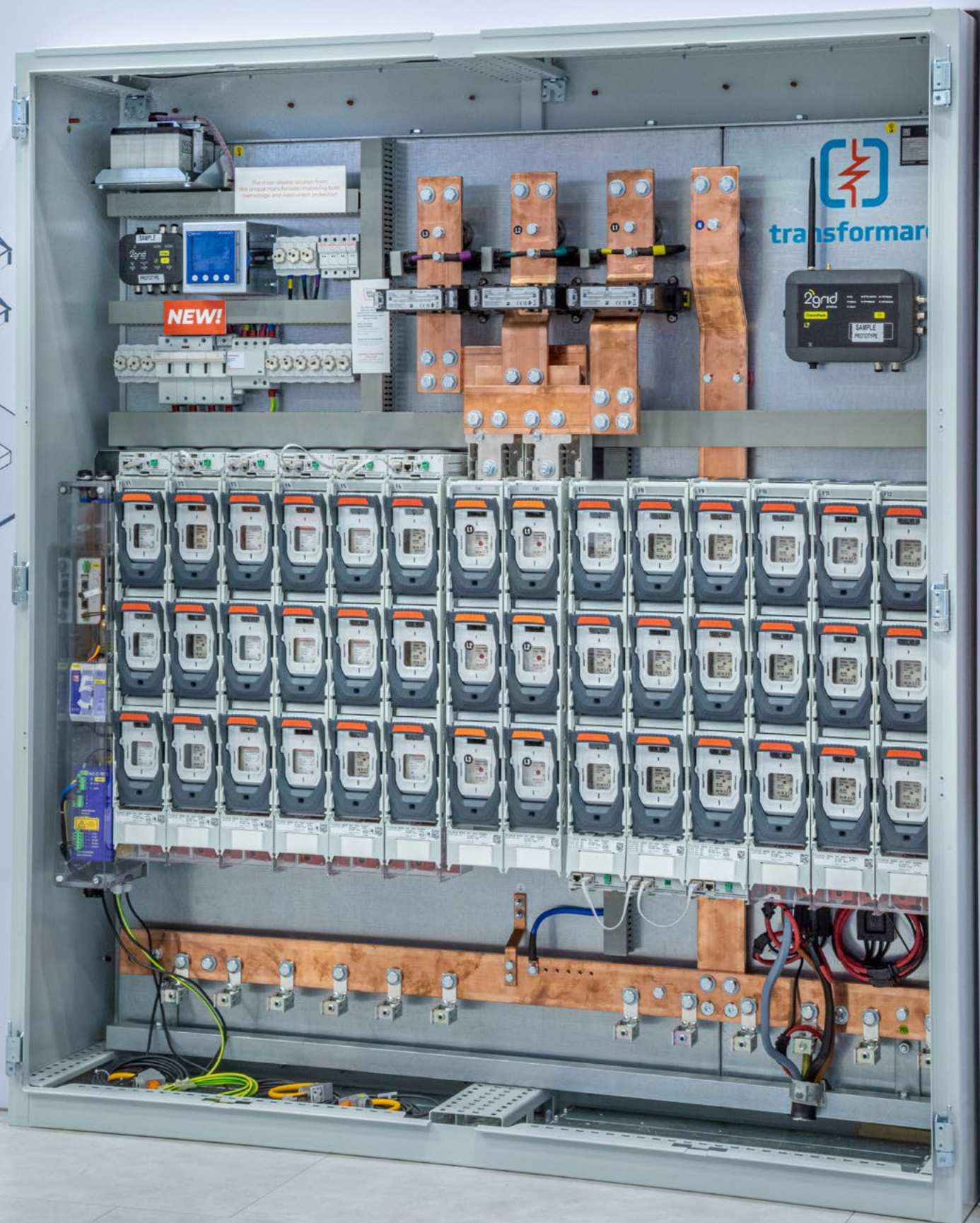
Since all the equipment is referenced to earth, this can even lead to **the current, unable to find a better escape route**, doing direct **damage to the equipment** and rendering the protection ineffective.

In the extreme case of loss or **lack of an earth connection**, the **surge protection device becomes totally ineffective**.



A poor earth connection means reduced capacity to discharge the overvoltage compared to a good connection. Slower dissipation of the overvoltage means the equipment is exposed to its effects for longer. In the absence of an optimum discharge path, the voltage surge will overwhelm sensitive equipment.

MERSEN INSIDE



SURGE PROTECTION DEVICES

POWER LINE SPDs

Surge-Trap® K

The new generation of Surge Protection Devices

Surge-Trap® K is the new generation of Surge Protection Devices from the Mersen brand, developed to address today's electrical protection and safety requirements in residential, commercial, and industrial buildings. Patented worldwide.

Complete range



Type 1+2 LF
25 kA



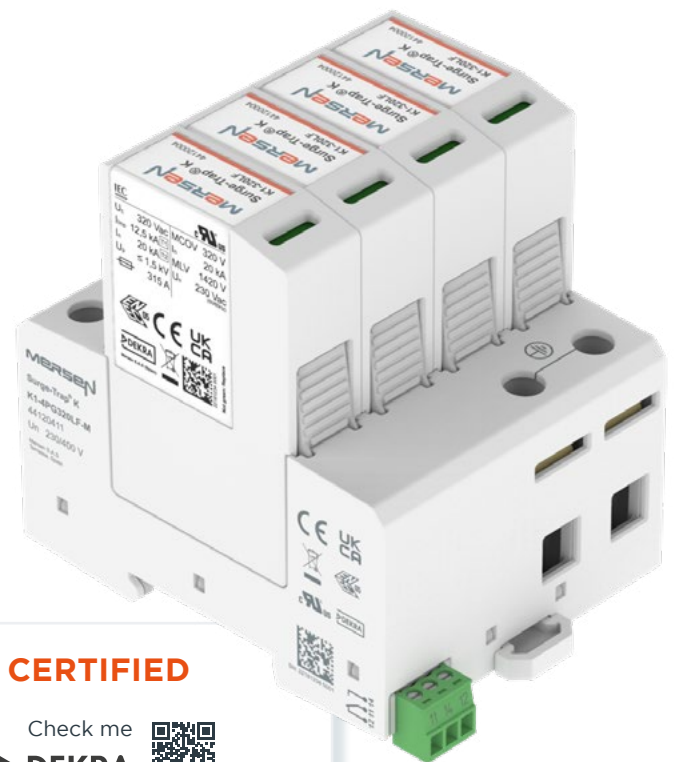
Type 1+2 LF
12.5 kA



Type 1+2
12.5 kA

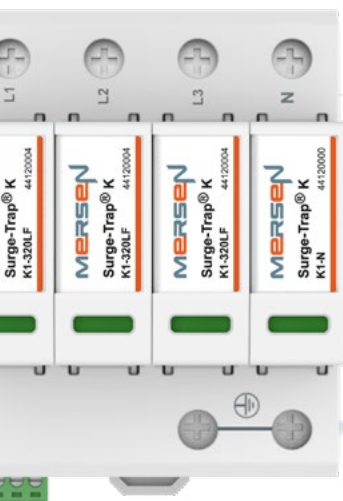


Type 2



CERTIFIED

Check me 
DEKRA

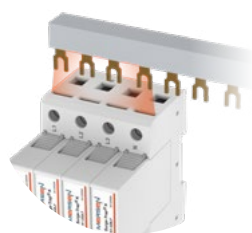


-  Certified range IEC & UL
-  Extended back-up protection (up to 315 A)
-  LCF Leakage current free options
-  Manufactured in Europe with sustainable criteria

Fast and easy installation



Double PE connection



Assembly compatibility with busbar



Ergonomic pluggable cartridge

How to back-up SPDs?

Surge-Trap® K has been specifically engineered to operate as a fully coordinated system with its **NEW dedicated back-up solution, the SSD (SPD Specific Disconnecter)**.

- ✓ High system robustness
- ✓ Easy and safe dimensioning of back-up protection
- ✓ Continuity of protection during surge event
- ✓ Continuity of service if back-up blows
- ✓ Compliant with current and upcoming standards

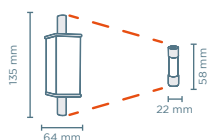
IEC 61643-11 & prIEC TS 61643-06

NEW

Iscrr 100 kA



Designed to save space on the panel



**SMALL
BEST**

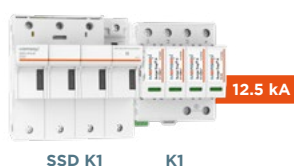
**Save up to
50% space**

New Solution
SPD Specific
Disconnecter

Standard Solution
Fuse technology

Easy and safe back-up dimensioning

	SPD	SSD
12.5 kA	K1 series	SSD K1 series
25 kA	K1H series	SSD K1H series

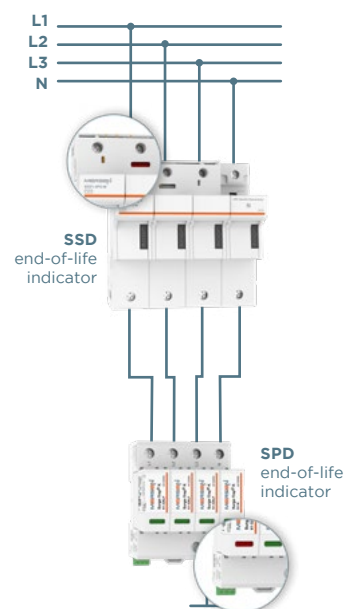


SSD K1 K1



SSD K1H K1H

Complete diagnosis at the end-of-life



The most reliable solution from the unique manufacturer mastering both overvoltage and overcurrent protection

SURGE-TRAP® K - K1H LF SERIES

Type 1+2 surge protection device (SPD) for transient overvoltages with limp 25 kA. The certified Surge-Trap® K - K1H LF Series range, leakage current free, is suitable as a first level of protection in buildings with a higher level of risk.

Standards

- EN IEC 61643-11

More info



DEKRA

**Part numbers****2 Poles**

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	limp [kA]	In [kA]	Up at In [kV]	Remote (M)
44120239	K1H-2PG255LF-M	1+1	TT, TNS	255	230	25	25	≤1,5	✓

3 Poles

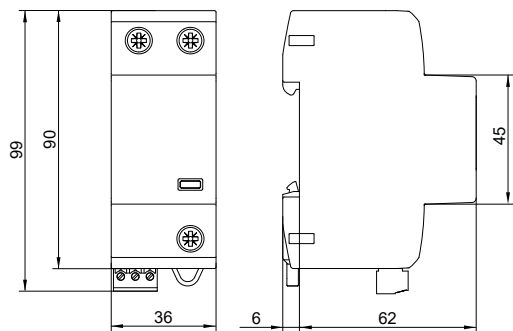
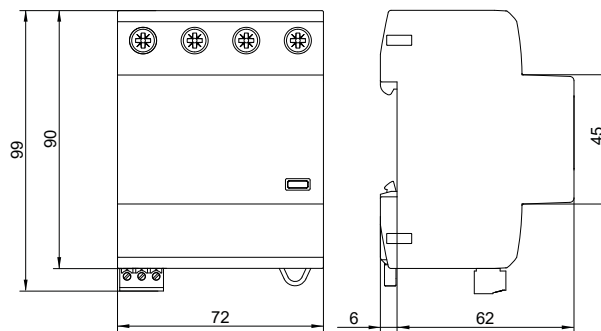
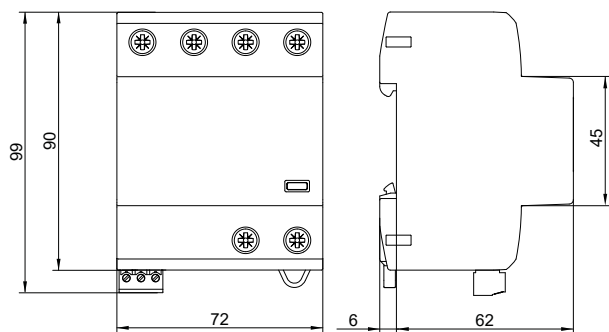
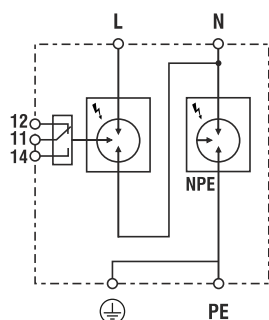
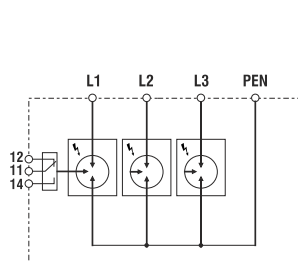
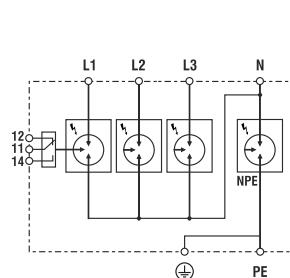
Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	limp [kA]	In [kA]	Up at In [kV]	Remote (M)
44120343	K1H-3P255LF-M	3+0	TNC	255	230/400	25	25	≤1,5	✓

4 Poles

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	limp [kA]	In [kA]	Up at In [kV]	Remote (M)
44120451	K1H-4PG255LF-M	3+1	TT, TNS	255	230/400	25	25	≤1,5	✓

**NEW Dedicated back-up solution****SPD Specific Disconnecter (SSD)**

SPD		SSD	
SPD range	Number of poles	Item number	Description
K1H LF Series	2 Poles	45001202	SSD1H-2PG-M
	3 Poles	45001302	SSD1H-3P-M
	4 Poles	45001402	SSD1H-4PG-M

Dimensions**2 Poles****3 Poles****4 Poles****Internal configuration****TT, TNS (1+1)****TNC (3+0)****TT, TNS (3+1)**

POWER LINE SPDs

SSD K1H SERIES



SPD Specific disconnect (SSD) for Surge-Trap® K – K1H LF Series. SSD K1H Series has been designed and validated together with Surge-Trap® K – K1H LF Series, ensuring continuity of protection and service. Suitable for applications with high short-circuit currents.

Standards

- prIEC TS 61643-06



More info



Part numbers

2 Poles

Item number	Item description	Internal conf.	Network configuration	Ue [V]	Itrip [A]	Iimp [kA]	In [kA]	Remote (M)
45001202	SSD1H-2PG-M	1+1	TT, TN, IT	500	1100	25	25	✓

3 Poles

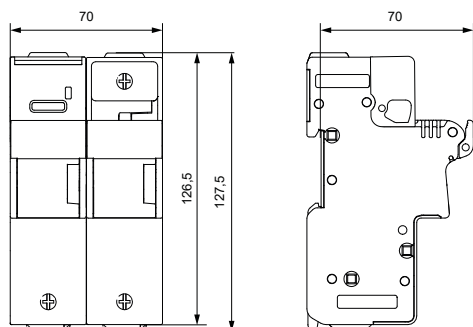
Item number	Item description	Internal conf.	Network configuration	Ue [V]	Itrip [A]	Iimp [kA]	In [kA]	Remote (M)
45001302	SSD1H-3P-M	3+0	TT, TN, IT	500	1100	25	25	✓

4 Poles

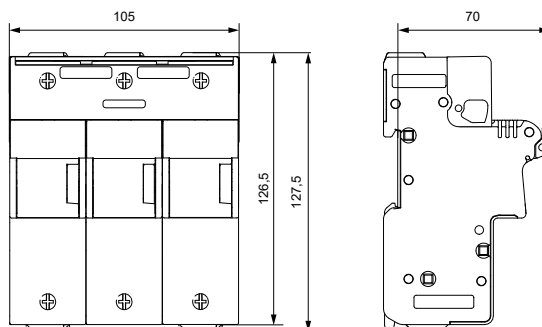
Item number	Item description	Internal conf.	Network configuration	Ue [V]	Itrip [A]	Iimp [kA]	In [kA]	Remote (M)
45001402	SSD1H-4PG-M	3+1	TT, TN, IT	500	1100	25	25	✓

Dimensions

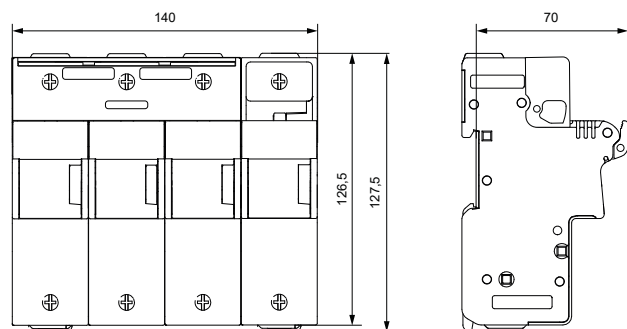
2 Poles



3 Poles

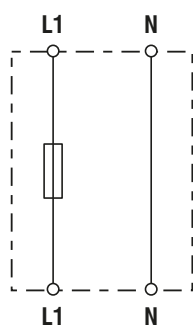


4 Poles

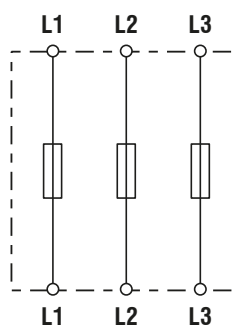


Internal configuration

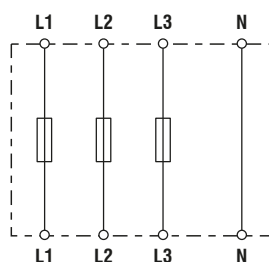
2 Poles



3 Poles



4 Poles



SURGE-TRAP® K - K1 SERIES



Type 1+2 surge protection device (SPD) for transient overvoltages, pluggable, with limp 12.5 kA. The multi-certified Surge-Trap® K - K1 Series range is suitable as a first level of protection in the main distribution board in low-voltage installations.

Standards

- EN IEC 61643-11
- UL 1449 5th Edition

More info



Part numbers

1 Pole

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	limp [kA]	I _{max} [kA]	In [kA]	Up at In [kV]	Remote (M)
44120114	K1-1P175	1+0	TNS, TNC, TT (only L-N)	175	120	12.5	50	20	≤1	
44120115	K1-1P175-M	1+0	TNS, TNC, TT (only L-N)	175	120	12.5	50	20	≤1	✓
44120100	K1-1PG	0+1	TT, TNS	255	Neutral	50	100	50	≤1,5	
44120101	K1-1PG-M	0+1	TT, TNS	255	Neutral	50	100	50	≤1,5	✓
44120102	K1-1P275	1+0	TNS, TNC, TT (only L-N)	275	230	12.5	50	20	≤1,5	
44120103	K1-1P275-M	1+0	TNS, TNC, TT (only L-N)	275	230	12.5	50	20	≤1,5	✓
44120106	K1-1P320	1+0	TNS, TNC, TT (only L-N)	320	277	12.5	50	20	≤1,5	
44120107	K1-1P320-M	1+0	TNS, TNC, TT (only L-N)	320	277	12.5	50	20	≤1,5	✓
44120110	K1-1P440	1+0	TNS, TNC, TT (only L-N)	440	400	12.5	50	20	≤2	
44120111	K1-1P440-M	1+0	TNS, TNC, TT (only L-N)	440	400	12.5	50	20	≤2	✓

2 Poles

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	limp [kA]	I _{max} [kA]	In [kA]	Up at In [kV]	Remote (M)
44120224	K1-2PG175	1+1	TT, TNS	175	120	12.5	50	20	≤1	
44120225	K1-2PG175-M	1+1	TT, TNS	175	120	12.5	50	20	≤1	✓
44120200	K1-2PG275	1+1	TT, TNS	275	230	12.5	50	20	≤1,5	
44120201	K1-2PG275-M	1+1	TT, TNS	275	230	12.5	50	20	≤1,5	✓
44120208	K1-2PG320	1+1	TT, TNS	320	277	12.5	50	20	≤1,5	
44120209	K1-2PG320-M	1+1	TT, TNS	320	277	12.5	50	20	≤1,5	✓
44120228	K1-2P175	2+0	TNS	175	120	12.5	50	20	≤1	
44120229	K1-2P175-M	2+0	TNS	175	120	12.5	50	20	≤1	✓
44120204	K1-2P275	2+0	TNS	275	230	12.5	50	20	≤1,5	
44120205	K1-2P275-M	2+0	TNS	275	230	12.5	50	20	≤1,5	✓
44120212	K1-2P320	2+0	TNS	320	277	12.5	50	20	≤1,5	
44120213	K1-2P320-M	2+0	TNS	320	277	12.5	50	20	≤1,5	✓
44120220	K1-2P440*	2+0	TNS	440	400	12.5	50	20	≤2	
44120221	K1-2P440-M*	2+0	TNS	440	400	12.5	50	20	≤2	✓

*Also suitable for 230 V IT network configuration.

3 Poles

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	Iimp [kA]	Imax [kA]	In [kA]	Up at In [kV]	Remote (M)
44120320	K1-3P175	3+0	TNC	175	120/208	12.5	50	20	≤1	
44120321	K1-3P175-M	3+0	TNC	175	120/208	12.5	50	20	≤1	✓
44120300	K1-3P275	3+0	TNC	275	230/400	12.5	50	20	≤1,5	
44120301	K1-3P275-M	3+0	TNC	275	230/400	12.5	50	20	≤1,5	✓
44120304	K1-3P320	3+0	TNC	320	277/480	12.5	50	20	≤1,5	
44120305	K1-3P320-M	3+0	TNC	320	277/480	12.5	50	20	≤1,5	✓
44120308	K1-3P440*	3+0	TNC	440	400/690	12.5	50	20	≤2	
44120309	K1-3P440-M*	3+0	TNC	440	400/690	12.5	50	20	≤2	✓

*Also suitable for ~/400 V IT network configuration.

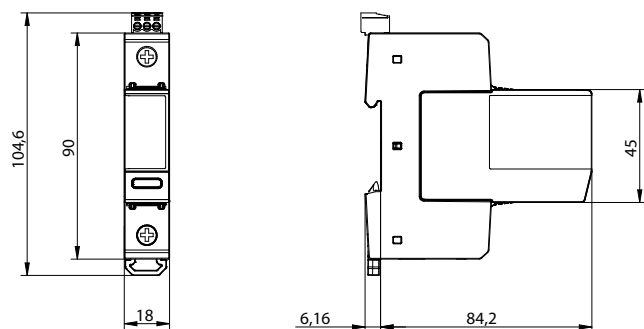
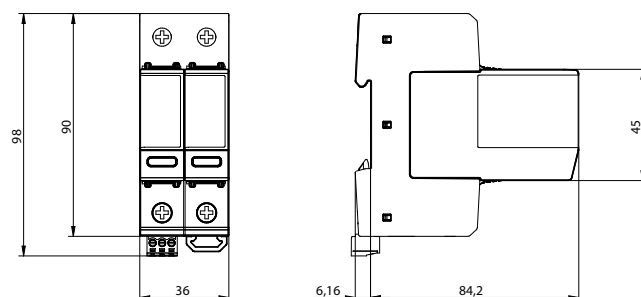
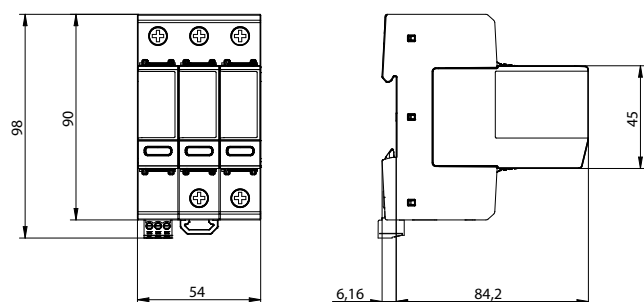
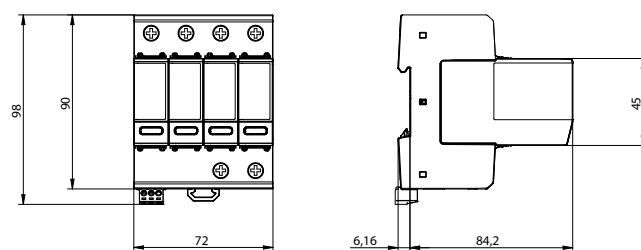
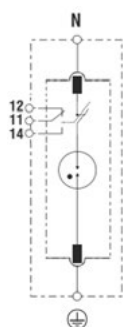
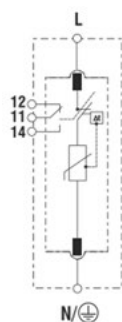
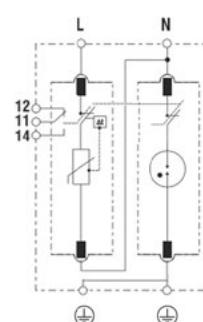
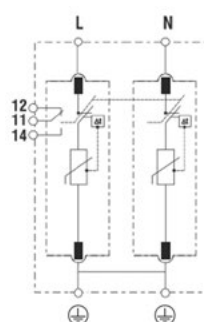
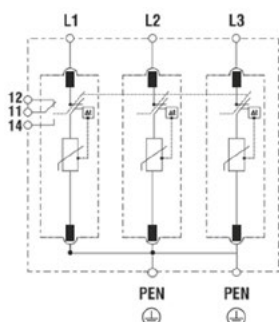
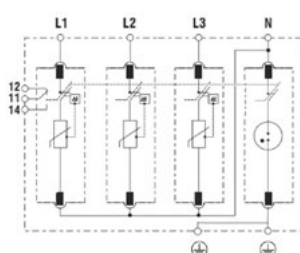
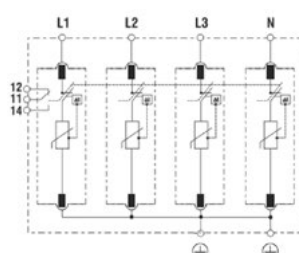
4 Poles

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	Iimp [kA]	Imax [kA]	In [kA]	Up at In [kV]	Remote (M)
44120424	K1-4PG175	3+1	TT, TNS	175	120/208	12.5	50	20	≤1	
44120425	K1-4PG175-M	3+1	TT, TNS	175	120/208	12.5	50	20	≤1	✓
44120400	K1-4PG275	3+1	TT, TNS	275	230/400	12.5	50	20	≤1,5	
44120401	K1-4PG275-M	3+1	TT, TNS	275	230/400	12.5	50	20	≤1,5	✓
44120408	K1-4PG320	3+1	TT, TNS	320	277/480	12.5	50	20	≤1,5	
44120409	K1-4PG320-M	3+1	TT, TNS	320	277/480	12.5	50	20	≤1,5	✓
44120428	K1-4P175	4+0	TNS	175	120/208	12.5	50	20	≤1	
44120429	K1-4P175-M	4+0	TNS	175	120/208	12.5	50	20	≤1	✓
44120404	K1-4P275	4+0	TNS	275	230/400	12.5	50	20	≤1,5	
44120405	K1-4P275-M	4+0	TNS	275	230/400	12.5	50	20	≤1,5	✓
44120412	K1-4P320	4+0	TNS	320	277/480	12.5	50	20	≤1,5	
44120413	K1-4P320-M	4+0	TNS	320	277/480	12.5	50	20	≤1,5	✓
44120420	K1-4P440*	4+0	TNS	440	400/690	12.5	50	20	≤2	
44120421	K1-4P440-M*	4+0	TNS	440	400/690	12.5	50	20	≤2	✓

*Also suitable for 230/400 V IT network configuration.

**NEW Dedicated back-up solution****SPD Specific Disconnecter (SSD)**

SPD		SSD	
SPD range	Number of poles	Item number	Description
K1 Series	2 Poles	45001201	SSD1-2PG-M
	3 Poles	45001301	SSD1-3P-M
	4 Poles	45001401	SSD1-4PG-M

Dimensions**1 Pole****2 Poles****3 Poles****4 Poles****Internal configuration****TT, TNS (0+1)****TNS, TNC, TT (only L-N) (1+0)****TT, TNS (1+1)****TNS (2+0)****TNC (3+0)****TT, TNS (3+1)****TNS (4+0)**

SURGE-TRAP® K - K1 LF SERIES



Type 1+2 surge protection device (SPD) for transient overvoltages, pluggable, leakage current free, with limp 12.5 kA. The multi-certified Surge-Trap® K - K1 LF Series range is suitable for protection in the meter box.

Standards

- EN IEC 61643-11
- UL 1449 5th Edition

More info



Part numbers

1 Pole

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	limp [kA]	I _{max} [kA]	In [kA]	Up at In [kV]	Remote (M)
44120108	K1-1P320LF	1+0	TNS, TNC, TT (only L-N)	320	277	12.5	50	20	≤1,5	
44120109	K1-1P320LF-M	1+0	TNS, TNC, TT (only L-N)	320	277	12.5	50	20	≤1,5	✓

2 Poles

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	limp [kA]	I _{max} [kA]	In [kA]	Up at In [kV]	Remote (M)
44120210	K1-2PG320LF	1+1	TT, TNS	320	277	12.5	50	20	≤1,5	
44120211	K1-2PG320LF-M	1+1	TT, TNS	320	277	12.5	50	20	≤1,5	✓
44120214	K1-2P320LF	2+0	TNS	320	277	12.5	50	20	≤1,5	
44120215	K1-2P320LF-M	2+0	TNS	320	277	12.5	50	20	≤1,5	✓

3 Poles

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	limp [kA]	I _{max} [kA]	In [kA]	Up at In [kV]	Remote (M)
44120306	K1-3P320LF	3+0	TNC	320	230/400	12.5	50	20	≤1,5	
44120307	K1-3P320LF-M	3+0	TNC	320	230/400	12.5	50	20	≤1,5	✓

4 Poles

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	limp [kA]	I _{max} [kA]	In [kA]	Up at In [kV]	Remote (M)
44120410	K1-4PG320LF	3+1	TT, TNS	320	230/400	12.5	50	20	≤1,5	
44120411	K1-4PG320LF-M	3+1	TT, TNS	320	230/400	12.5	50	20	≤1,5	✓
44120414	K1-4P320LF	4+0	TNS	320	230/400	12.5	50	20	≤1,5	
44120415	K1-4P320LF-M	4+0	TNS	320	230/400	12.5	50	20	≤1,5	✓

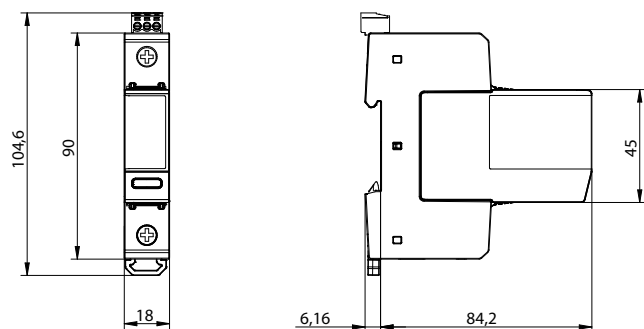
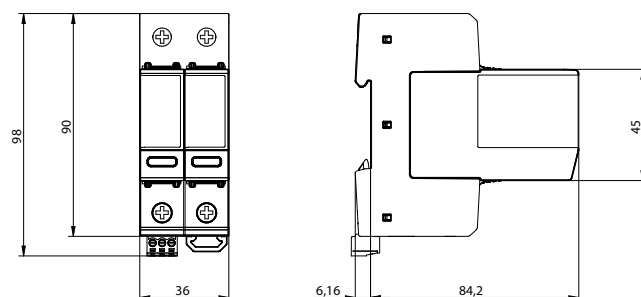
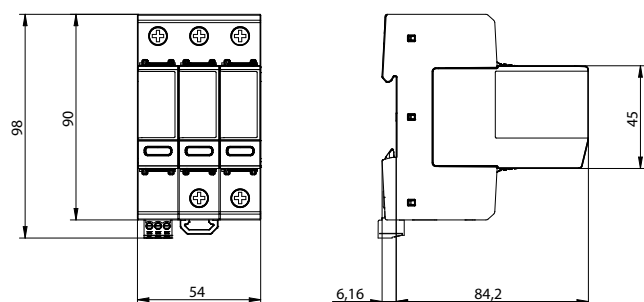
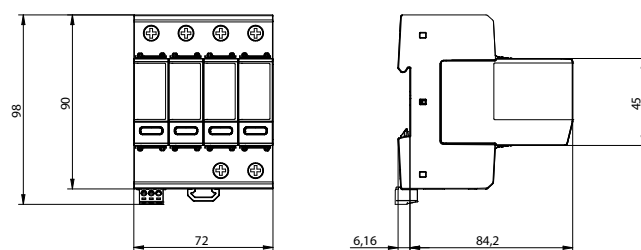
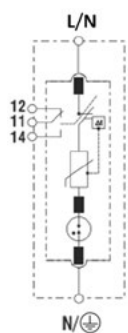
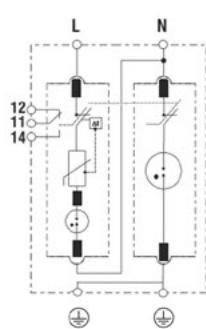
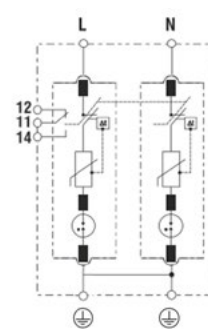
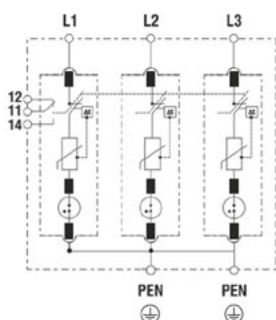
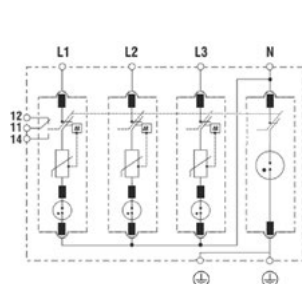
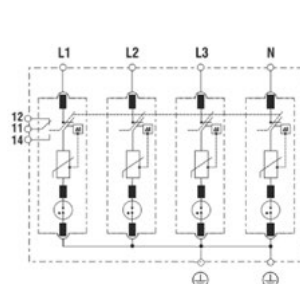


NEW Dedicated back-up solution

SPD Specific
Disconnecter (SSD)



SPD		SSD	
SPD range	Number of poles	Item number	Description
K1 LF Series	2 Poles	45001201	SSD1-2PG-M
	3 Poles	45001301	SSD1-3P-M
	4 Poles	45001401	SSD1-4PG-M

SURGE-TRAP® K - K1 LF SERIES**Dimensions****1 Pole****2 Poles****3 Poles****4 Poles****Internal configuration****TNS, TNC, TT (only L-N) (1+0)****TT, TNS (1+1)****TNS (2+0)****TNC (3+0)****TT, TNS (3+1)****TNS (4+0)**

SURGE-TRAP® K - K1 L SERIES



Type 1+2 surge protection device (SPD) for transient overvoltages, pluggable, with limp 12.5 kA. The compact Surge-Trap® K - K1 L Series range is suitable as a first level of protection in the main distribution board in low-voltage installations with space limitations.

Standards

- EN IEC 61643-11



More info



Part numbers

1 Pole

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	limp [kA]	I _{max} [kA]	In [kA]	Up at In [kV]	Remote (M)
44120122	K1-1PG-L	0+1	TT, TNS	255	Neutral	50	100	50	≤1,5	
44120123	K1-1PG-LM	0+1	TT, TNS	255	Neutral	50	100	50	≤1,5	✓
44120124	K1-1P275-L	1+0	TNS, TNC, TT (only L-N)	275	230	12.5	50	20	≤1,5	
44120125	K1-1P275-LM	1+0	TNS, TNC, TT (only L-N)	275	230	12.5	50	20	≤1,5	✓

2 Poles

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	limp [kA]	I _{max} [kA]	In [kA]	Up at In [kV]	Remote (M)
44120234	K1-2PG275-L	1+1	TT, TNS	275	230	12.5	50	20	≤1,5	
44120235	K1-2PG275-LM	1+1	TT, TNS	275	230	12.5	50	20	≤1,5	✓
44120236	K1-2P275-L	2+0	TNS	275	230	12.5	50	20	≤1,5	
44120237	K1-2P275-LM	2+0	TNS	275	230	12.5	50	20	≤1,5	✓

3 Poles

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	limp [kA]	I _{max} [kA]	In [kA]	Up at In [kV]	Remote (M)
44120340	K1-3P275-L	3+0	TNC	275	230/400	12.5	50	20	≤1,5	
44120341	K1-3P275-LM	3+0	TNC	275	230/400	12.5	50	20	≤1,5	✓

4 Poles

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	limp [kA]	I _{max} [kA]	In [kA]	Up at In [kV]	Remote (M)
44120446	K1-4PG275-L	3+1	TT, TNS	275	230/400	12.5	50	20	≤1,5	
44120447	K1-4PG275-LM	3+1	TT, TNS	275	230/400	12.5	50	20	≤1,5	✓
44120448	K1-4P275-L	4+0	TNS	275	230/400	12.5	50	20	≤1,5	
44120449	K1-4P275-LM	4+0	TNS	275	230/400	12.5	50	20	≤1,5	✓

SURGE-TRAP® K - K1 L SERIES

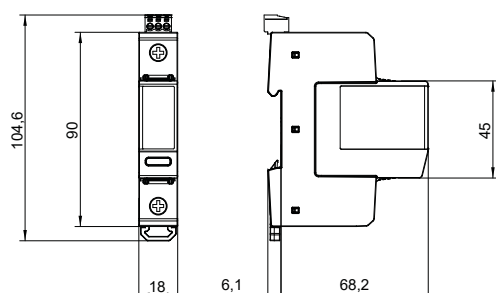
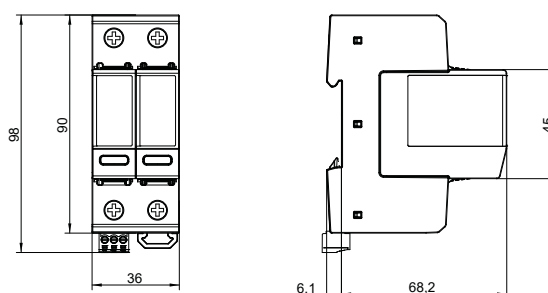
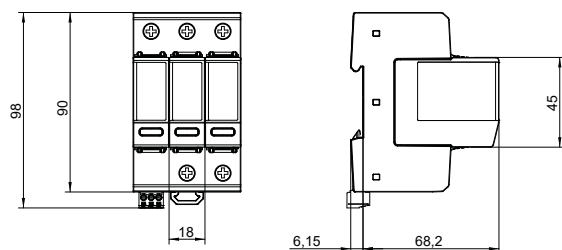
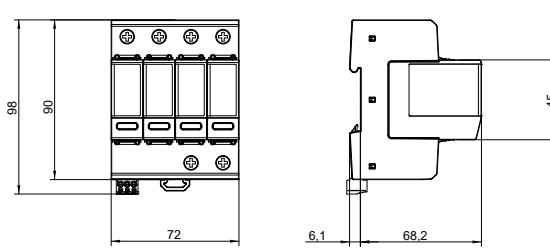
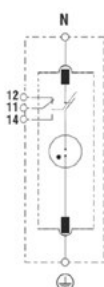
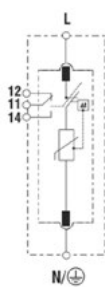
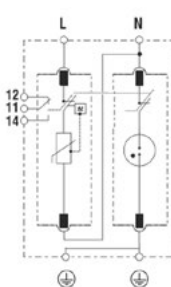
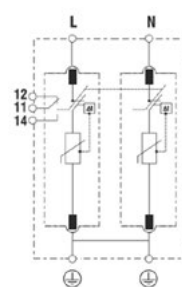
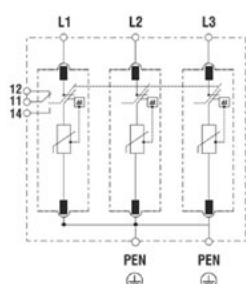
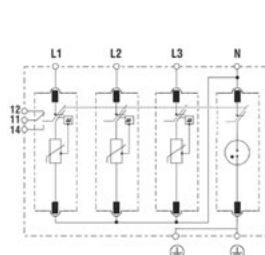
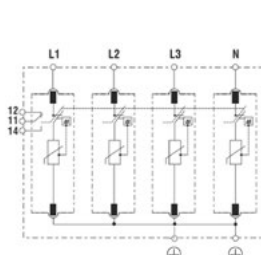
NEW Dedicated
back-up solution

SPD Specific
Disconnecter (SSD)



SPD	
SPD range	Number of poles
K1 L Series	2 Poles
	3 Poles
	4 Poles

SSD	
Item number	Description
45001201	SSD1-2PG-M
45001301	SSD1-3P-M
45001401	SSD1-4PG-M

Dimensions**1 Pole****2 Poles****3 Poles****4 Poles****Internal configuration****TT, TNS (0+1)****TNS, TNC, TT (only L-N) (1+0)****TT, TNS (1+1)****TNS (2+0)****TNC (3+0)****TT, TNS (3+1)****TNS (4+0)**

POWER LINE SPDs

SSD K1 SERIES



SPD Specific disconnect (SSD) for Surge-Trap® K – K1 Series. SSD K1 Series has been designed and validated together with Surge-Trap® K – K1 Series, ensuring continuity of protection and service. Suitable for applications with high short-circuit currents.

Standards

- prIEC TS 61643-06



More info



Part numbers

2 Poles

Item number	Item description	Internal conf.	Network configuration	Ue [V]	Itrip [A]	Iimp [kA]	In [kA]	Remote (M)
45001201	SSD1-2PG-M	1+1	TT, TN, IT	500	500	12.5	20	✓

3 Poles

Item number	Item description	Internal conf.	Network configuration	Ue [V]	Itrip [A]	Iimp [kA]	In [kA]	Remote (M)
45001301	SSD1-3P-M	3+0	TT, TN, IT	500	500	12.5	20	✓

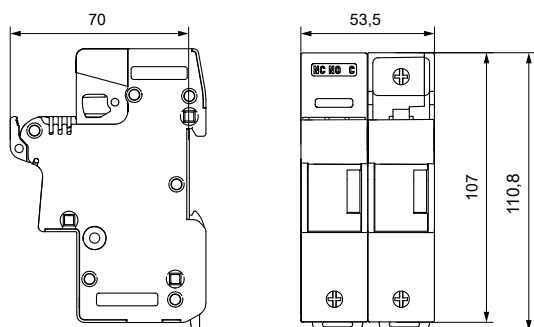
4 Poles

Item number	Item description	Internal conf.	Network configuration	Ue [V]	Itrip [A]	Iimp [kA]	In [kA]	Remote (M)
45001401	SSD1-4PG-M	3+1	TT, TN, IT	500	500	12.5	20	✓

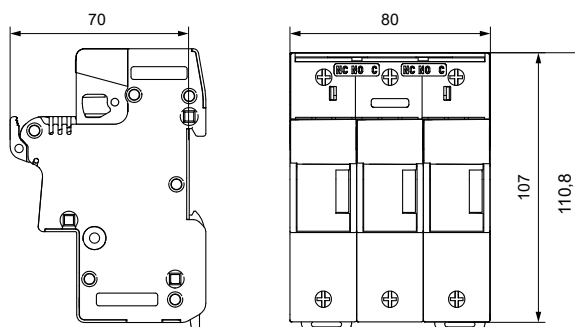
SSD K1 SERIES

Dimensions

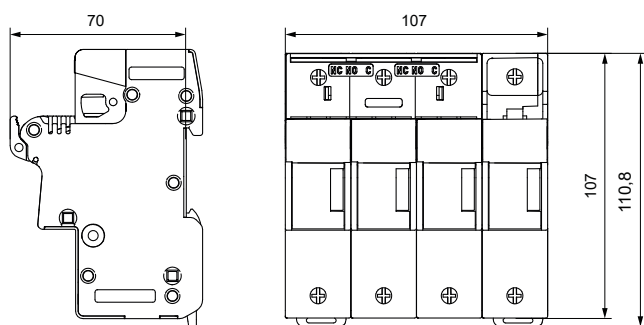
2 Poles



3 Poles

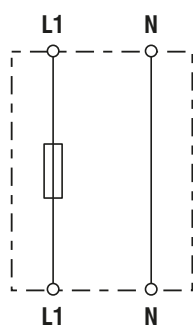


4 Poles

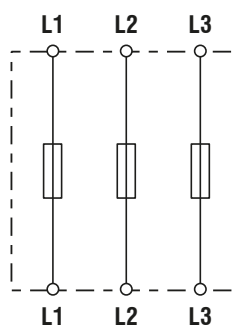


Internal configuration

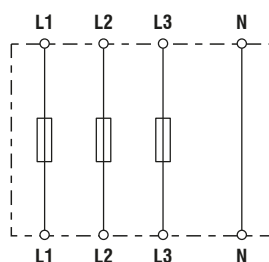
2 Poles



3 Poles



4 Poles



SURGE-TRAP® MONOBLOC STMZT12 SERIES



Type 1+2 surge protection device (SPD) for transient overvoltages monobloc design in busbar format. The Surge-Trap® Monobloc STMZT12 Series range is suitable for protecting low-voltage installations against overvoltages.

Standards

- DIN VDE 0100-443/-534
- EN IEC 61643-11

More info

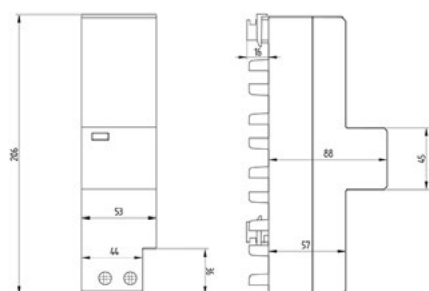


Part numbers

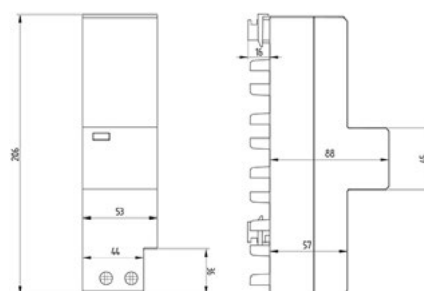
Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	Iimp [kA]	In [kA]	Up at In [kV]
83120225	STMZT12-12K255V-3P	3+0	TNC	255	230/400	12.5	20	≤1,5
83120227	STMZT12-12K255V-4PG	3+1	TT, TNS	255	230/400	12.5	20	≤1,5
83120224	STMZT12-7K255V-3P	3+0	TNC	255	230/400	7.5	20	≤1,5
83120226	STMZT12-7K255V-4PG	3+1	TT, TNS	255	230/400	7.5	20	≤1,5

Dimensions

TNC (3+0)

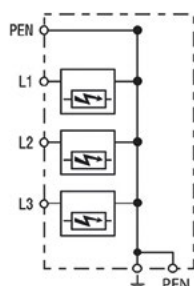


TT, TNS (3+1)

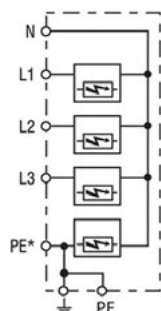


Internal configuration

TNC (3+0)



TT, TNS (3+1)



SURGE-TRAP® K - K2 SERIES



Type 2 surge protection device (SPD) for transient overvoltages, pluggable, with I_{max} 50 kA. The multi-certified Surge-Trap® K - K2 Series range is suitable as a second level of protection in low-voltage installations.

Standards

- EN IEC 61643-11
- UL 1449 5th Edition

More info



Part numbers

1 Pole

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	I _{max} [kA]	In [kA]	Up at In [kV]	Remote (M)
44020116	K2-1P175	1+0	TNS, TNC, TT (only L-N)	175	120	50	20	≤1	
44020117	K2-1P175-M	1+0	TNS, TNC, TT (only L-N)	175	120	50	20	≤1	✓
44020100	K2-1PG	0+1	TT, TNS	255	Neutral	50	50	≤1,5	
44020101	K2-1PG-M	0+1	TT, TNS	255	Neutral	50	50	≤1,5	✓
44020102	K2-1P275	1+0	TNS, TNC, TT (only L-N)	275	230	50	20	≤1,5	
44020103	K2-1P275-M	1+0	TNS, TNC, TT (only L-N)	275	230	50	20	≤1,5	✓
44020106	K2-1P320	1+0	TNS, TNC, TT (only L-N)	320	277	50	20	≤1,5	
44020107	K2-1P320-M	1+0	TNS, TNC, TT (only L-N)	320	277	50	20	≤1,5	✓
44020110	K2-1P440	1+0	TNS, TNC, TT (only L-N)	440	400	50	20	≤2	
44020111	K2-1P440-M	1+0	TNS, TNC, TT (only L-N)	440	400	50	20	≤2	✓
44020114	K2-1PG440	0+1	TT, TNS	440	Neutral	50	50	≤2	
44020115	K2-1PG440-M	0+1	TT, TNS	440	Neutral	50	50	≤2	✓

2 Poles

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	I _{max} [kA]	In [kA]	Up at In [kV]	Remote (M)
44020228	K2-2PG175	1+1	TT, TNS	175	120	50	20	≤1	
44020229	K2-2PG175-M	1+1	TT, TNS	175	120	50	20	≤1	✓
44020200	K2-2PG275	1+1	TT, TNS	275	230	50	20	≤1,5	
44020201	K2-2PG275-M	1+1	TT, TNS	275	230	50	20	≤1,5	✓
44020208	K2-2PG320	1+1	TT, TNS	320	277	50	20	≤1,5	
44020209	K2-2PG320-M	1+1	TT, TNS	320	277	50	20	≤1,5	✓
44020216	K2-2PG440	1+1	TT, TNS	440	400	50	20	≤2	
44020217	K2-2PG440-M	1+1	TT, TNS	440	400	50	20	≤2	✓
44020230	K2-2P175	2+0	TNS	175	120	50	20	≤1	
44020231	K2-2P175-M	2+0	TNS	175	120	50	20	≤1	✓
44020202	K2-2P275	2+0	TNS	275	230	50	20	≤1,5	
44020203	K2-2P275-M	2+0	TNS	275	230	50	20	≤1,5	✓
44020210	K2-2P320	2+0	TNS	320	277	50	20	≤1,5	
44020211	K2-2P320-M	2+0	TNS	320	277	50	20	≤1,5	✓

POWER LINE SPDs

SURGE-TRAP® K - K2 SERIES

Continue **2 Poles**

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	I _{max} [kA]	In [kA]	Up at In [kV]	Remote (M)
44020218	K2-2P440*	2+0	TNS	440	400	50	20	≤2	
44020219	K2-2P440-M*	2+0	TNS	440	400	50	20	≤2	✓

*Also suitable for 230 V IT network configuration.

3 Poles

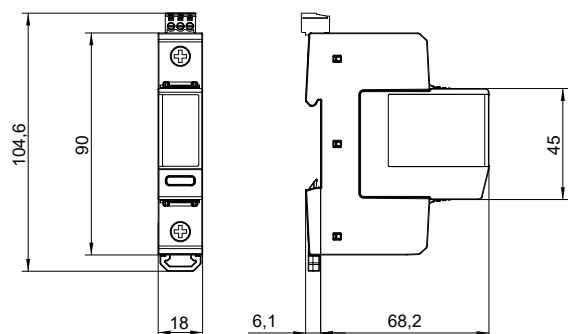
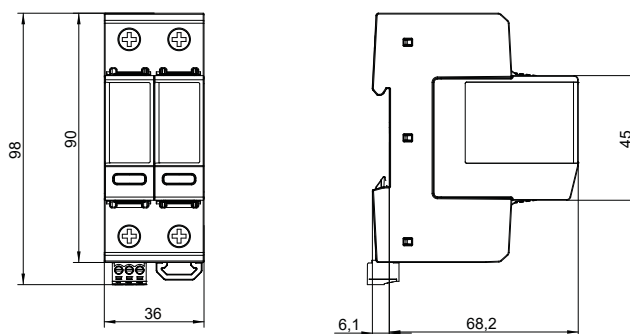
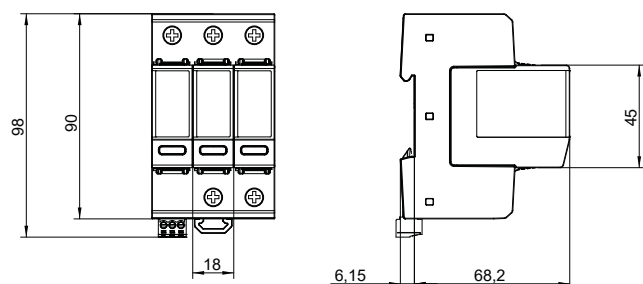
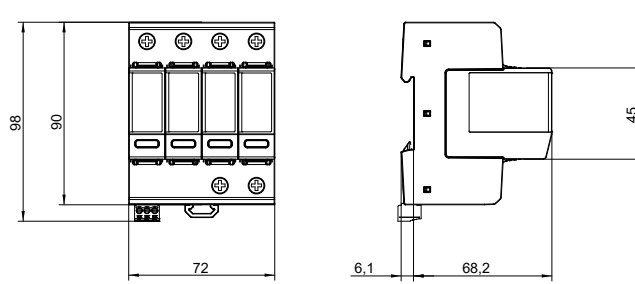
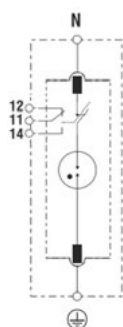
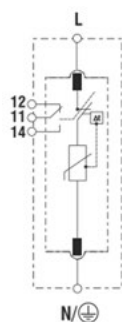
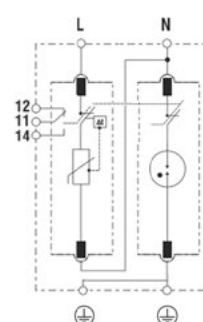
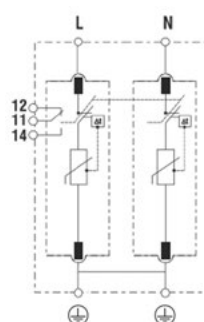
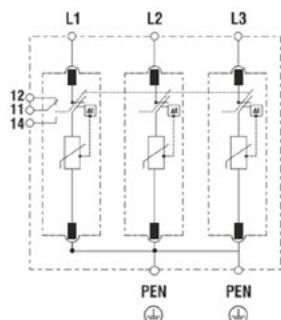
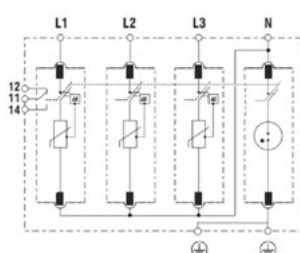
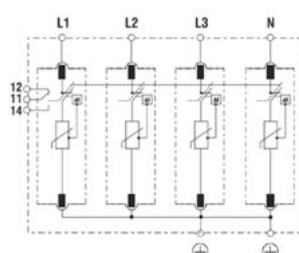
Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	I _{max} [kA]	In [kA]	Up at In [kV]	Remote (M)
44020324	K2-3P175	3+0	TNC	175	120/208	50	20	≤1	
44020325	K2-3P175-M	3+0	TNC	175	120/208	50	20	≤1	✓
44020300	K2-3P275	3+0	TNC	275	230/400	50	20	≤1,5	
44020301	K2-3P275-M	3+0	TNC	275	230/400	50	20	≤1,5	✓
44020304	K2-3P320	3+0	TNC	320	277/480	50	20	≤1,5	
44020305	K2-3P320-M	3+0	TNC	320	277/480	50	20	≤1,5	✓
44020308	K2-3P440*	3+0	TNC	440	400/690	50	20	≤2	
44020309	K2-3P440-M*	3+0	TNC	440	400/690	50	20	≤2	✓

*Also suitable for -/400 V IT network configuration.

4 Poles

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	I _{max} [kA]	In [kA]	Up at In [kV]	Remote (M)
44020426	K2-4PG175	3+1	TT, TNS	175	120/208	50	20	≤1	
44020427	K2-4PG175-M	3+1	TT, TNS	175	120/208	50	20	≤1	✓
44020400	K2-4PG275	3+1	TT, TNS	275	230/400	50	20	≤1,5	
44020401	K2-4PG275-M	3+1	TT, TNS	275	230/400	50	20	≤1,5	✓
44020408	K2-4PG320	3+1	TT, TNS	320	277/480	50	20	≤1,5	
44020409	K2-4PG320-M	3+1	TT, TNS	320	277/480	50	20	≤1,5	✓
44020416	K2-4PG440	3+1	TT, TNS	440	400/690	50	20	≤2	
44020417	K2-4PG440-M	3+1	TT, TNS	440	400/690	50	20	≤2	✓
44020428	K2-4P175	4+0	TNS	175	120/208	50	20	≤1	
44020429	K2-4P175-M	4+0	TNS	175	120/208	50	20	≤1	✓
44020404	K2-4P275	4+0	TNS	275	230/400	50	20	≤1,5	
44020405	K2-4P275-M	4+0	TNS	275	230/400	50	20	≤1,5	✓
44020412	K2-4P320	4+0	TNS	320	277/480	50	20	≤1,5	
44020413	K2-4P320-M	4+0	TNS	320	277/480	50	20	≤1,5	✓
44020420	K2-4P440*	4+0	TNS	440	400/690	50	20	≤2	
44020421	K2-4P440-M*	4+0	TNS	440	400/690	50	20	≤2	✓

*Also suitable for 230/400 V IT network configuration.

SURGE-TRAP® K - K2 SERIES**Dimensions****1 Pole****2 Poles****3 Poles****4 Poles****Internal configuration****TT, TNS (0+1)****TNS, TNC, TT (only L-N) (1+0)****TT, TNS (1+1)****TNS (2+0)****TNC (3+0)****TT, TNS (3+1)****TNS (4+0)**

GROUND MONITORING INSIDE THE SPD SURGE-TRAP® TERRA

Monitoring the grounding system in the surge protection device itself

For the protection to work properly, the correct status of the grounding system in an electrical installation is essential.

+

Did you know that nobody knows what percentage of installed surge protection devices are providing good protection?

TERRA® is the first protection device on the market that, in addition to indicating that it is properly wired, guarantees that there is an adequate path to ground, which is essential if the protection device is to shunt the energy peaks to ground effectively.

The premium solution for the most demanding installations

TERRA®'s simple information makes it the ideal solution for both unskilled personnel and maintenance professionals specialised in ground connections.

It helps to avoid situations that might cause power cuts and repair costs, with the resulting damage to your brand image.

It provides additional information about the grounding system, with potential synergies for protection and safety in general, not just for surge protection.

TERRA⁺

Technology

TERRA® is based on the impedance loop technology already patented, sold and implemented by Mersen in thousands of protection solutions.



The best SPD on the market

TERRA® is the premium protection device in the Mersen STP range, designed according to the most exacting standards. Intelligent protection.



NO CONNECTION



POOR



CORRECT



Ground status indicator

Continuous LED display of ground status.

Wiring safety

The only protection device on the market that tells you when it is properly installed, avoiding risks due to electrical wiring errors.



Confirmation of proper installation

More than 30 years of experience in the sector confirm that it is relatively common for wiring **errors to occur** during the installation of surge protection devices. These errors result in the **loss of protection or risks to the installation itself**.

Effective surge protection

Even when equipped with surge protection devices, the electrical installation may still be subject to the effects of overvoltage if the ground connection is inadequate or in poor condition.

Safety information in the event of indirect contact

Just as happens with surge protection devices, the safety of the electrical installation in the event of indirect contact is based on there being a grounding connection.



When the TERRA® LED is green, it means that the protection device is properly wired and powered up. Green for Go.



When the TERRA® LED is green, it indicates that the ground path is good enough to shunt the energy peaks to ground effectively. Green for Go.



When TERRA® cannot detect any ground connection, it is advisable to check the installation status.

SURGE-TRAP® PLUGGABLE - STPT2 TERRA SERIES

Type 2 surge protection device (SPD) for transient overvoltages, pluggable with I_{max} 40 kA. The Surge-Trap® Pluggable - STPT2 TERRA Series range, with continuous grounding system monitoring, is suitable as a second level of protection in low-voltage installations.

Standards

- EN IEC 61643-11
- EN IEC 61557-3
- EN IEC 61010:1

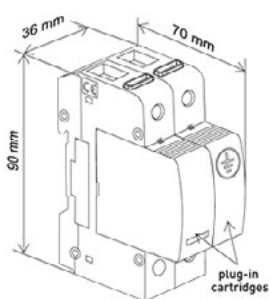
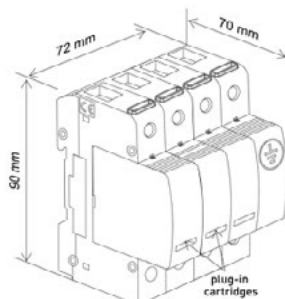
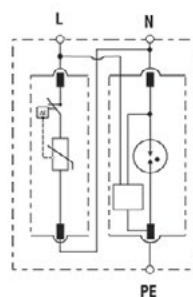
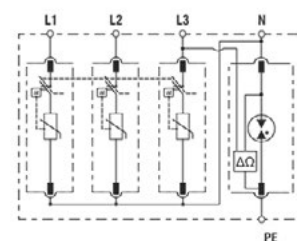
More info

**Part numbers****2 Poles**

Item number	Item description	Internal conf.	Network configuration	U_c [V]	U_n [V]	I_{max} [kA]	I_n [kA]	U_p at I_n [kV]
83020183	STPT2-40K275V-2P-TE	1+1	TT, TNS	275	230	40	20	$\leq 1,3$

4 Poles

Item number	Item description	Internal conf.	Network configuration	U_c [V]	U_n [V]	I_{max} [kA]	I_n [kA]	U_p at I_n [kV]
83020185	STPT2-40K275V-4P-TE	3+1	TT, TNS	275	230/400	40	20	$\leq 1,3$

Dimensions**2 Poles****4 Poles****Internal configuration****TNS (2+0)****TT, TNS (3+1)**

SURGE-TRAP® PLUGGABLE STPT23 SERIES - 20kA



Type 2+3 surge protection device (SPD) for transient overvoltages pluggable with I_{max} 20 kA. The Surge-Trap® Pluggable STPT23 Series - 20kA range is suitable for protecting low-voltage installations against overvoltages.

Standards

- EN IEC 61643-11

More info



Part numbers

1 Pole

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	I _{max} [kA]	In [kA]	Up at In [kV]	Uoc [kV]	Remote (M)
83230100	STPT23-20K150V-1P	1+0	TNS, TNC, TT (only L-N)	150	120	20	10	≤0,8	10	
83230101	STPT23-20K150V-1PM	1+0	TNS, TNC, TT (only L-N)	150	120	20	10	≤0,8	10	✓
83230106	STPT23-20K-N	0+1	TT, TNS	255	Neutral	20	10	≤1,5	10	
83230102	STPT23-20K320V-1P	1+0	TNS, TNC, TT (only L-N)	320	277	20	10	≤1,4	10	
83230103	STPT23-20K320V-1PM	1+0	TNS, TNC, TT (only L-N)	320	277	20	10	≤1,4	10	✓

2 Poles

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	I _{max} [kA]	In [kA]	Up at In [kV]	Uoc [kV]	Remote (M)
83230112	STPT23-20K320V-2PG	1+1	TT, TNS	320	277	20	10	≤1,4	10	
83230113	STPT23-20K320V-2PGM	1+1	TT, TNS	320	277	20	10	≤1,4	10	✓
83230114	STPT23-20K150V-2P	2+0	TNS	150	120	20	10	≤0,8	10	
83230115	STPT23-20K150V-2PM	2+0	TNS	150	120	20	10	≤0,8	10	✓
83230116	STPT23-20K320V-2P	2+0	TNS	320	277	20	10	≤1,4	10	
83230117	STPT23-20K320V-2PM	2+0	TNS	320	277	20	10	≤1,4	10	✓

3 Poles

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	I _{max} [kA]	In [kA]	Up at In [kV]	Uoc [kV]	Remote (M)
83230122	STPT23-20K320V-3P	3+0	TNC	320	277/480	20	10	≤1,4	10	
83230123	STPT23-20K320V-3PM	3+0	TNC	320	277/480	20	10	≤1,4	10	✓

4 Poles

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	I _{max} [kA]	In [kA]	Up at In [kV]	Uoc [kV]	Remote (M)
83230128	STPT23-20K320V-4PG	3+1	TT, TNS	320	230/400	20	10	≤1,4	10	
83230129	STPT23-20K320V-4PGM	3+1	TT, TNS	320	230/400	20	10	≤1,4	10	✓
83230132	STPT23-20K320V-4P	4+0	TNS	320	277/480	20	10	≤1,4	10	

POWER LINE SPDs

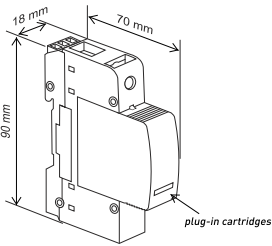
SURGE-TRAP® PLUGGABLE STPT23 SERIES - 20kA

Continue 4 Poles

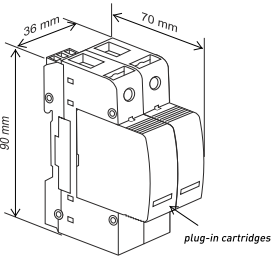
Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	I _{max} [kA]	I _n [kA]	Up at I _n [kV]	Uoc [kV]	Remote (M)
83230133	STPT23-20K320V-4PM	4+0	TNS	320	277/480	20	10	≤1,4	10	✓

Dimensions

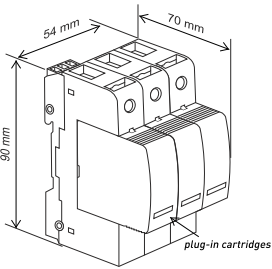
1 Pole



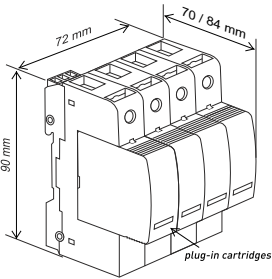
2 Poles

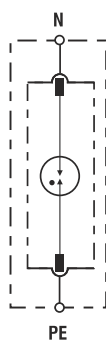
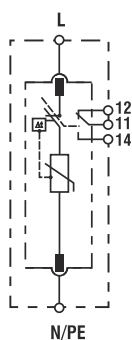
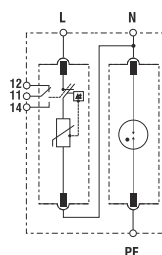
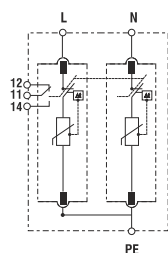
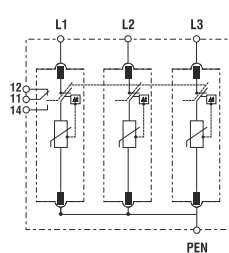
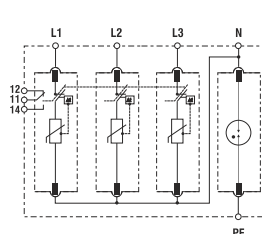
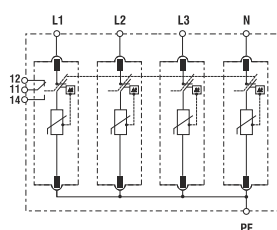


3 Poles



4 Poles



Internal configuration**TT, TNS (0+1)****TNS, TNC, TT (only L-N) (1+0)****TT, TNS (1+1)****TNS (2+0)****TNC (3+0)****TT, TNS (3+1)****TNS (4+0)**

SURGE-TRAP® PLUGGABLE STPT23 LF SERIES - 20kA



Type 2+3 surge protection device (SPD) for transient overvoltages pluggable with I_{max} 20 kA compatible with PLC networks. The Surge-Trap® Pluggable STPT23 LF Series - 20kA range is suitable for protecting low-voltage installations against overvoltages.

Standards

- EN IEC 61643-11



More info



Part numbers

2 Poles

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	Imax [kA]	In [kA]	Up at In [kV]	Uoc [kV]	Remote (M)
83230110	STPT23-20K275V-2PG-LF	1+1	TT, TNS	275	230	20	10	≤1,5	10	
83230111	STPT23-20K275V-2PG-LFM	1+1	TT, TNS	275	230	20	10	≤1,5	10	✓
83230134	STPT23-20K275V-2P-LF	2+0	TNS	275	230	20	10	≤1,5	10	
83230135	STPT23-20K275V-2P-LFM	2+0	TNS	275	230	20	10	≤1,5	10	✓

3 Poles

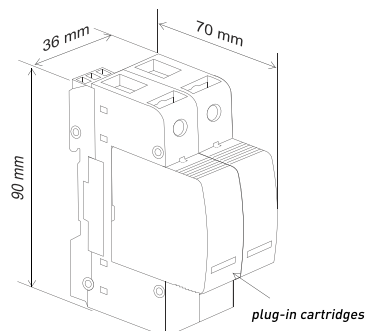
Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	Imax [kA]	In [kA]	Up at In [kV]	Uoc [kV]	Remote (M)
83230120	STPT23-20K275V-3P-LF	3+0	TNC	275	230/400	20	10	≤1,5	10	
83230121	STPT23-20K275V-3P-LFM	3+0	TNC	275	230/400	20	10	≤1,5	10	✓

4 Poles

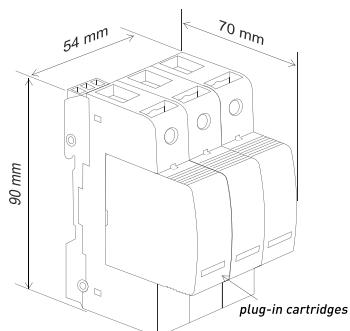
Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	Imax [kA]	In [kA]	Up at In [kV]	Uoc [kV]	Remote (M)
83230126	STPT23-20K275V-4PG-LF	3+1	TT, TNS	275	230/400	20	10	≤1,5	10	
83230127	STPT23-20K275V-4PG-LFM	3+1	TT, TNS	275	230/400	20	10	≤1,5	10	✓
83230136	STPT23-20K275V-4P-LF	4+0	TNS	275	230/400	20	10	≤1,5	10	
83230137	STPT23-20K275V-4P-LFM	4+0	TNS	275	230/400	20	10	≤1,5	10	✓

Dimensions

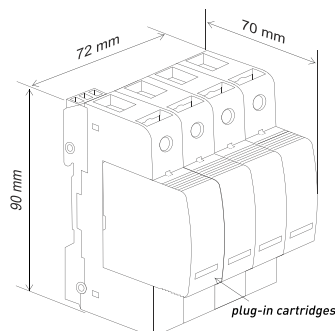
2 Poles



3 Poles

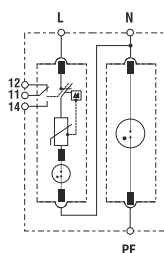


4 Poles

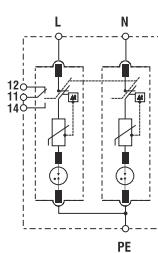


Internal configuration

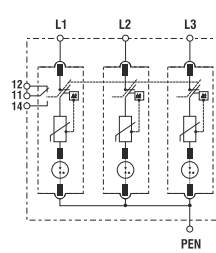
TT, TNS (1+1)



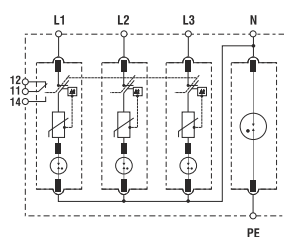
TNS (2+0)



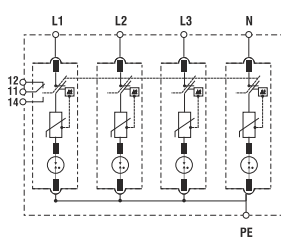
TNC (3+0)



TT, TNS (3+1)



TNS (4+0)



SURGE-TRAP® MONOBLOC STMT23 SERIES



Type 2+3 surge protection device (SPD) for transient overvoltages, with I_{max} from 20 to 6 kA, slim monobloc design. The Surge-Trap® Monobloc STMT23 Series range is suitable for fine protection of sensitive equipment.

Standards

- EN IEC 61643-11

More info

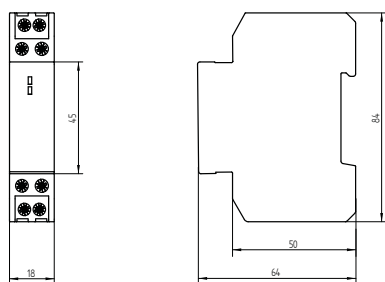


Part numbers

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	Imax [kA]	In [kA]	Up at In [kV]	Uoc [kV]	Remote (M)
83230510	STMT23-20K275V-SP-S	2+0	TT, TNS	275	230	20	10	≤1,4	10	
83230511	STMT23-20K275V-SP-SM	2+0	TT, TNS	275	230	20	10	≤1,4	10	✓
83230502	STMT23-6K150V-SP-S	2+0	TT, TNS	150	120	6	3	≤0,7	6	
83230503	STMT23-6K150V-SP-SM	2+0	TT, TNS	150	120	6	3	≤0,7	6	✓
83230500	STMT23-6K20V-SP-S	2+0	TT, TNS	20	12	6	3	≤0,22	6	
83230501	STMT23-6K20V-SP-SM	2+0	TT, TNS	20	12	6	3	≤0,22	6	✓
83230504	STMT23-6K30V-SP-S	2+0	TT, TNS	30	24	6	3	≤0,25	6	
83230505	STMT23-6K30V-SP-SM	2+0	TT, TNS	30	24	6	3	≤0,25	6	✓
83230506	STMT23-6K60V-SP-S	2+0	TT, TNS	60	48	6	3	≤0,33	6	
83230507	STMT23-6K60V-SP-SM	2+0	TT, TNS	60	48	6	3	≤0,33	6	✓
83230508	STMT23-6K75V-SP-S	2+0	TT, TNS	75	60	6	3	≤0,5	6	
83230509	STMT23-6K75V-SP-SM	2+0	TT, TNS	75	60	6	3	≤0,5	6	✓

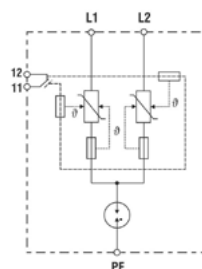
Dimensions

2 Poles



Internal configuration

TT, TNS (2+0)





SURGE PROTECTION DEVICES

PHOTOVOLTAIC SPDs

LEADING SURGE PROTECTION FOR PHOTOVOLTAIC DC SYSTEMS

Surge-Trap® K PV

High-performance protection for the DC side of PV installations

Surge-Trap® K PV is the new range that delivers market-leading surge protection solutions for PV, ensuring robust protection across critical points in photovoltaic systems, including inverter DC inputs and combiner boxes. Engineered for demanding environments, it offers high discharge capacity without the need for backup fuses, simplifying installation while enhancing overall system robustness.

SPD Type T12 & T2

Complete range
up to 1500 Vdc

I_{max} 50 kA

High discharge
capability

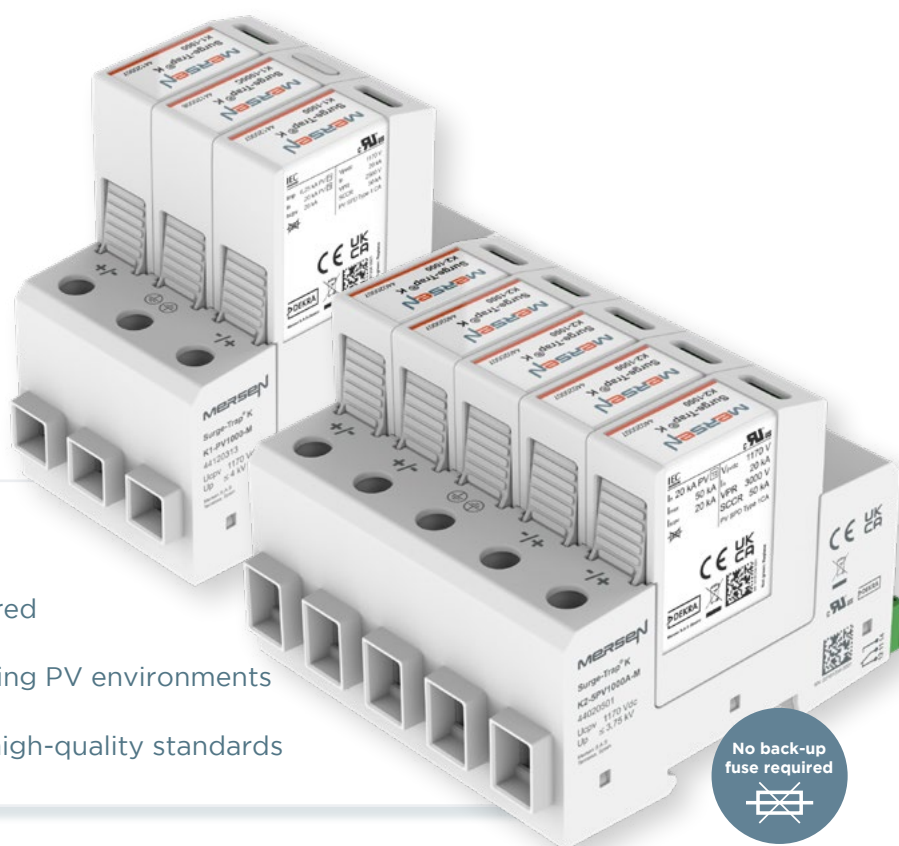
I_{scpv} 20 kA

DC short-circuit
current

Multi-certified UL & DEKRA

Maximum safety
and quality

- Multi-certified range IEC & UL
- No external back-up fuse required
- Designed for the most demanding PV environments
- European manufacturing with high-quality standards



No back-up
fuse required



All-in-one multi-MPPT protection

One device protects 2 or more MPPT inputs, replacing multiple SPDs

Faster and safer installation

Fewer wiring points speed up
assembly and reduce wiring errors

Space and wiring saving

Less DIN-rail space, fewer connections and
PE connections. Ideal for compact PV boxes

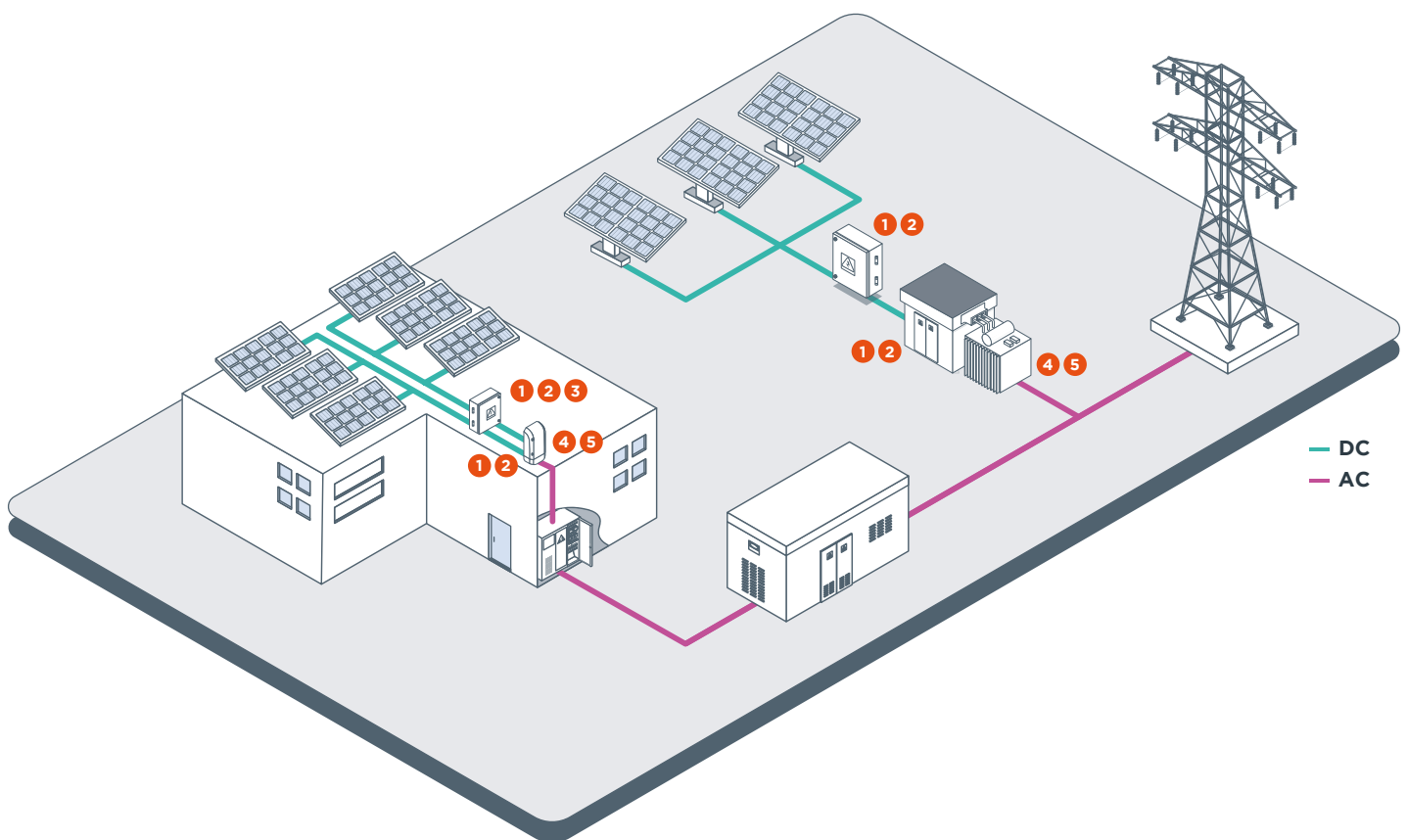
Across every photovoltaic installation

Photovoltaic systems are exposed to surges caused by direct and indirect lightning strikes, as well as switching surges generated within DC and AC circuits. A **complete surge protection strategy** must cover every critical point of the installation to ensure system reliability and safeguard sensitive equipment.

The Surge-Trap® K PV range is specifically designed for this purpose, addressing the protection requirements of both rooftop and utility-scale installations.

Effective protection of photovoltaic systems requires coordinated surge protection on **both the DC and AC sides** of the installation.

SPDs installed should comply with the corresponding standards: **IEC 61643-11** for AC and **IEC 61643-31** for DC.



PV protection

1

Surge-Trap® K1 PV
Type 1+2 PV SPD
Page 52-53



2

Surge-Trap® K2 PV
Type 2 PV SPD
Page 54-55



3

PV String boxes
Type 1+2 & Type 2 PV SPD
Page 60



AC protection

4

Surge-Trap® K
Type 1+2 & Type 2 SPD
Page 26 & 37



5

Surge-Trap® STPT AC Reinforced
Type 1+2 & Type 2 AC SPD for high voltage outputs
Page 56-57

PHOTOVOLTAIC SPDs

SURGE-TRAP® K - K1 PV SERIES



Type 1+2 surge protection device (SPD) for transient overvoltages pluggable with limp 5- 6.25 kA depending on the model. The Surge-Trap® K - K1 PV Series is suitable for PV installations and certified according to IEC and UL standards.

Standards

- EN IEC 61643-31
- UL 1449 5th Edition

More info

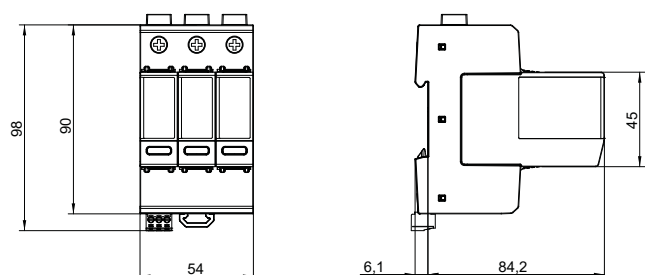


Part numbers

Item number	Item description	Ucpv [V]	Internal conf.	limp [kA]	Itotal [kA]	Imax [kA]	In [kA]	Up at In [kV]	Iscpv [kA]	Remote (M)
44120312	K1-PV1000	1170	+, -, PE	6.25	12.5	50	20	≤4	20	
44120313	K1-PV1000-M	1170	+, -, PE	6.25	12.5	50	20	≤4	20	✓
44120316	K1-PV1500	1500	+, -, PE	5	10	50	20	≤5	20	
44120317	K1-PV1500-M	1500	+, -, PE	5	10	50	20	≤5	20	✓

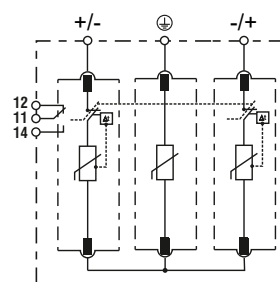
Dimensions

PV



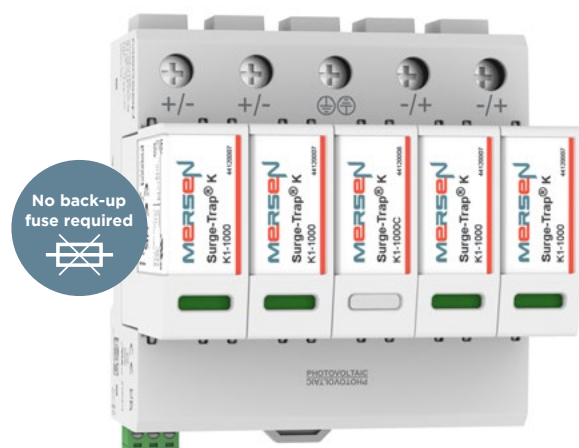
Internal configuration

+, -, PE (PV)



PHOTOVOLTAIC SPDs

SURGE-TRAP® K - K1 5PV SERIES



Type 1+2 surge protection device (SPD) for transient overvoltages with limp 5-6.25 kA depending on the model. The Surge-Trap® K - K1 5PV Series is suitable for PV installations and to protect multiple MPPT inputs, helping save space and wiring in compact PV combiner boxes. Certified according to IEC and UL standards.

Standards

- EN IEC 61643-31
- UL 1449 5th Edition

More info

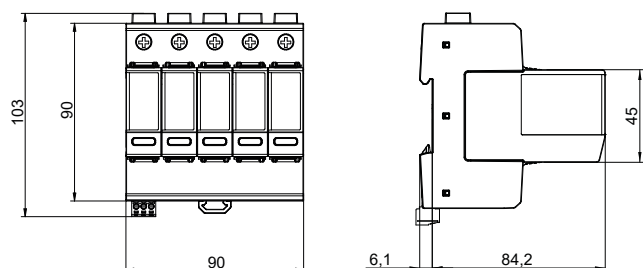


Part numbers

Item number	Item description	Ucpv [V]	Internal conf.	limp [kA]	Itotal [kA]	Imax [kA]	In [kA]	Up at In [kV]	Iscpv [kA]	Remote (M)
44120500	K1-5PV1000A	1170	2+, 2-, PE	6.25	12.5	50	20	≤4	20	
44120501	K1-5PV1000A-M	1170	2+, 2-, PE	6.25	12.5	50	20	≤4	20	✓
44120502	K1-5PV1000B	1170	3+, 1-, PE	6.25	12.5	50	20	≤4	20	
44120503	K1-5PV1000B-M	1170	3+, 1-, PE	6.25	12.5	50	20	≤4	20	✓
44120504	K1-5PV1500A	1500	2+, 2-, PE	5	10	50	20	≤5	20	
44120505	K1-5PV1500A-M	1500	2+, 2-, PE	5	10	50	20	≤5	20	✓
44120506	K1-5PV1500B	1500	3+, 1-, PE	5	10	50	20	≤5	20	
44120507	K1-5PV1500B-M	1500	3+, 1-, PE	5	10	50	20	≤5	20	✓

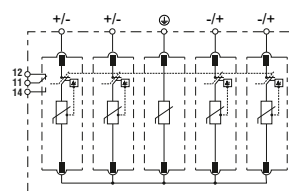
Dimensions

5PV

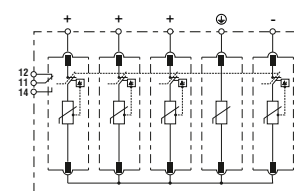


Internal configuration

2+, 2-, PE (5PVA)



3+, 1-, PE (5PVB)



SURGE-TRAP® K - K2 PV SERIES

Type 2 surge protection device (SPD) for transient overvoltages pluggable with I_{max} 50 kA. The Surge-Trap® K - K2 PV Series is suitable for PV installations and certified according to IEC and UL standards.

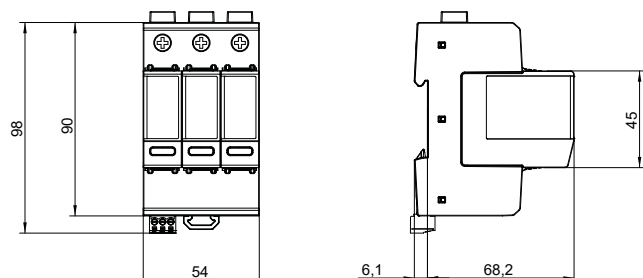
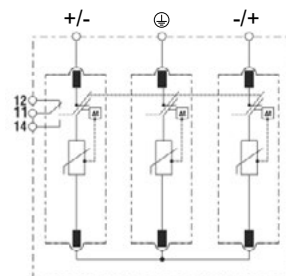
Standards

- EN IEC 61643-31
- UL 1449 5th Edition

More info

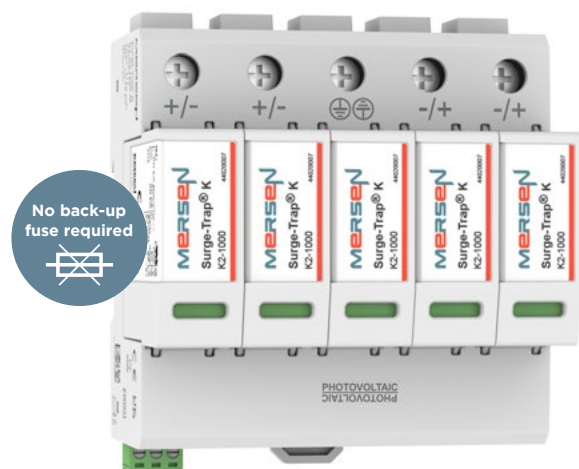
**Part numbers**

Item number	Item description	Ucpv [V]	Internal conf.	I_{max} [kA]	I_n [kA]	Up at I_n [kV]	I_{scpv} [kA]	Remote (M)
44020340	K2-PV600	660	+, -, PE	50	20	≤ 3	20	
44020341	K2-PV600-M	660	+, -, PE	50	20	≤ 3	20	✓
44020312	K2-PV1000	1170	+, -, PE	50	20	$\leq 3,75$	20	
44020313	K2-PV1000-M	1170	+, -, PE	50	20	$\leq 3,75$	20	✓
44020316	K2-PV1500	1500	+, -, PE	50	20	$\leq 4,75$	20	
44020317	K2-PV1500-M	1500	+, -, PE	50	20	$\leq 4,75$	20	✓

Dimensions**PV****Internal configuration****+, -, PE (PV)**

PHOTOVOLTAIC SPDs

SURGE-TRAP® K - K2 5PV SERIES



Type 2 surge protection device (SPD) for transient overvoltages pluggable with I_{max} 50 kA. The Surge-Trap® K - K2 5PV Series is suitable for PV installations and to protect multiple MPPT inputs, helping save space and wiring in compact PV combiner boxes. Certified according to IEC and UL standards.

Standards

- EN IEC 61643-31
- UL 1449 5th Edition

More info

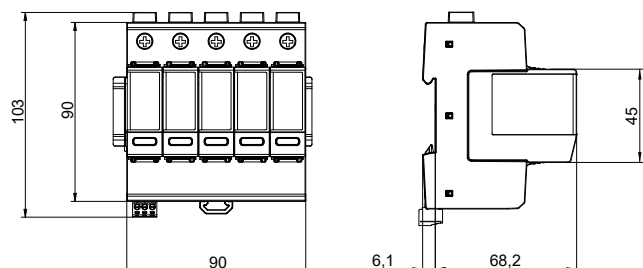


Part numbers

Item number	Item description	Ucpv [V]	Internal conf.	I_{max} [kA]	I_n [kA]	Up at I_n [kV]	I_{scpv} [kA]	Remote (M)
44020500	K2-5PV1000A	1170	2+, 2-, PE	50	20	$\leq 3,75$	20	
44020501	K2-5PV1000A-M	1170	2+, 2-, PE	50	20	$\leq 3,75$	20	✓
44020502	K2-5PV1000B	1170	3+, 1-, PE	50	20	$\leq 3,75$	20	
44020503	K2-5PV1000B-M	1170	3+, 1-, PE	50	20	$\leq 3,75$	20	✓
44020504	K2-5PV1500A	1500	2+, 2-, PE	50	20	$\leq 4,75$	20	
44020505	K2-5PV1500A-M	1500	2+, 2-, PE	50	20	$\leq 4,75$	20	✓
44020506	K2-5PV1500B	1500	3+, 1-, PE	50	20	$\leq 4,75$	20	
44020507	K2-5PV1500B-M	1500	3+, 1-, PE	50	20	$\leq 4,75$	20	✓

Dimensions

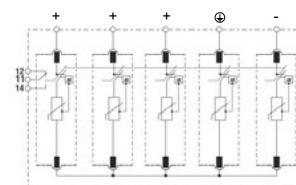
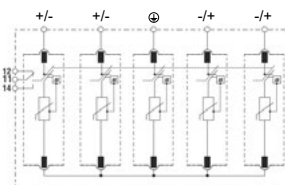
5PV



Internal configuration

2+, 2-, PE (5PVA)

3+, 1-, PE (5PVB)



SURGE-TRAP® PLUGGABLE STPT12 SERIES - AC REINFORCED



Type 1+2 surge protection device (SPD) for transient overvoltages pluggable with limp 5 kA and reinforced design. The Surge-Trap® Pluggable STPT12 Series - AC Reinforced range is suitable for PV installations on the AC side, protecting inverters up to 800 Vac and special applications requiring high withstand voltage peaks.

Standards

- EN IEC 61643-11



More info

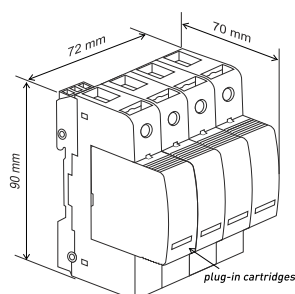


Part numbers

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	Iimp [kA]	Imax [kA]	In [kA]	Up at In [kV]	U peak [V]	Remote (M)
83120243	STPT12-5K680V-3P-R	3+0 R	TNC, IT	1360	-/800 (IT); 577/1000 (TNC)	5	40	20	≤5	1700	
83120244	STPT12-5K680V-3P-RM	3+0 R	TNC, IT	1360	-/800 (IT); 577/1000 (TNC)	5	40	20	≤5	1700	✓
83120261	STPT12-5K320V-3P-R	3+0 R	TNC, IT	640	-/580 (IT); 577/1000 (TNC)	5	40	20	≤3	840	
83120262	STPT12-5K320V-3P-RM	3+0 R	TNC, IT	640	-/580 (IT); 577/1000 (TNC)	5	40	20	≤3	840	✓

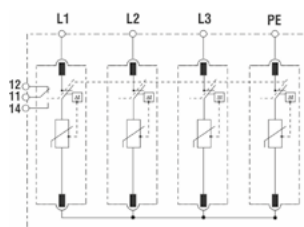
Dimensions

4 Poles



Internal configuration

TNC, IT (3+0 R)



SURGE-TRAP® PLUGGABLE STPT2 SERIES - AC REINFORCED



Type 2 surge protection device (SPD) for transient overvoltages pluggable with I_{max} 30 kA and reinforced design. The Surge-Trap® Pluggable STPT2 Series - AC Reinforced range is suitable for PV installations on the AC side, protecting inverters up to 800 Vac and special applications requiring high withstand voltage peaks.

Standards

- EN IEC 61643-11
- UL 1449 5th Edition



More info

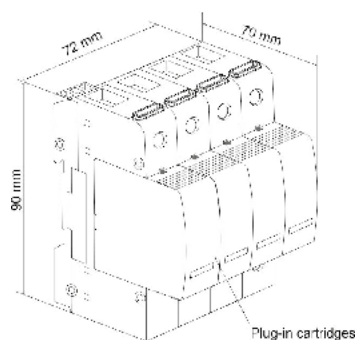


Part numbers

Item number	Item description	Internal conf.	Network configuration	U_c [V]	U_n [V]	I_{max} [kA]	I_n [kA]	Up at I_n [kV]	U_{peak} [V]	Remote (M)
83020213	STPT2-30K750V-3P-R	3+0 R	TNC, IT	1500	-/800 (IT); 577/1000 (TNC)	30	15	≤ 6	1900	
83020214	STPT2-30K750V-3P-RM	3+0 R	TNC, IT	1500	-/800 (IT); 577/1000 (TNC)	30	15	≤ 6	1900	✓
83020201	STPT2-30K850V-3P-R	3+0 R	TNC, IT	1700	-/800 (IT); 577/1000 (TNC)	30	15	≤ 6	2200	
83020202	STPT2-30K850V-3P-RM	3+0 R	TNC, IT	1700	-/800 (IT); 577/1000 (TNC)	30	15	≤ 6	2200	✓

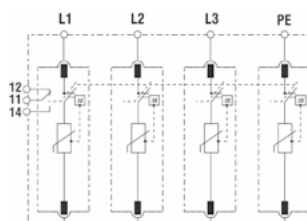
Dimensions

4 Poles



Internal configuration

TNC, IT (3+0 R)

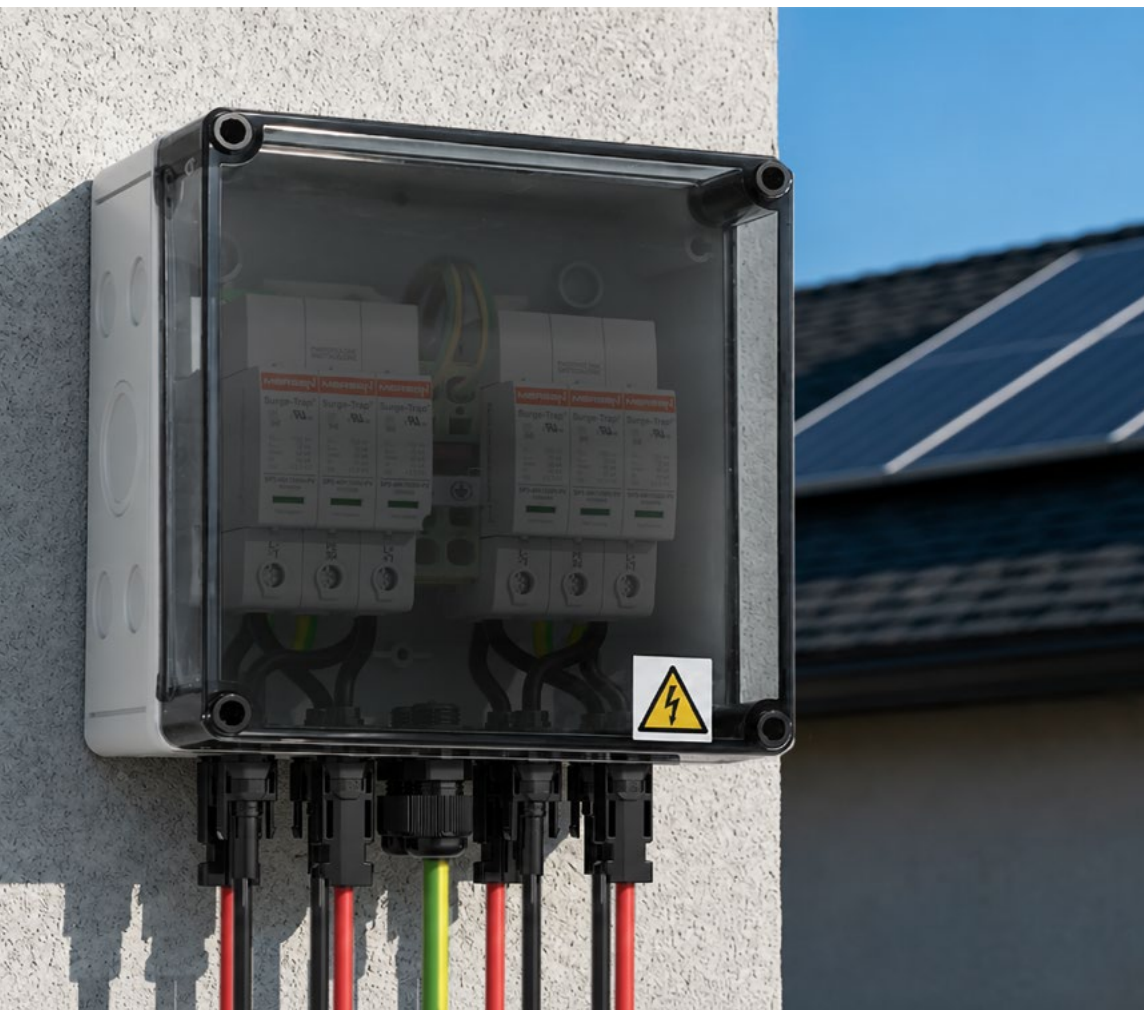


Surge-Trap® PV String boxes

DC surge protection for residential and light commercial rooftop PV systems

PV String Boxes are DC photovoltaic junction boxes designed for installation upstream of string inverters in residential and light commercial rooftop systems.

They are suitable for systems with single or multiple MPPT trackers, primarily in 1000 Vdc installations, and are available in different configurations to match common PV system layouts.

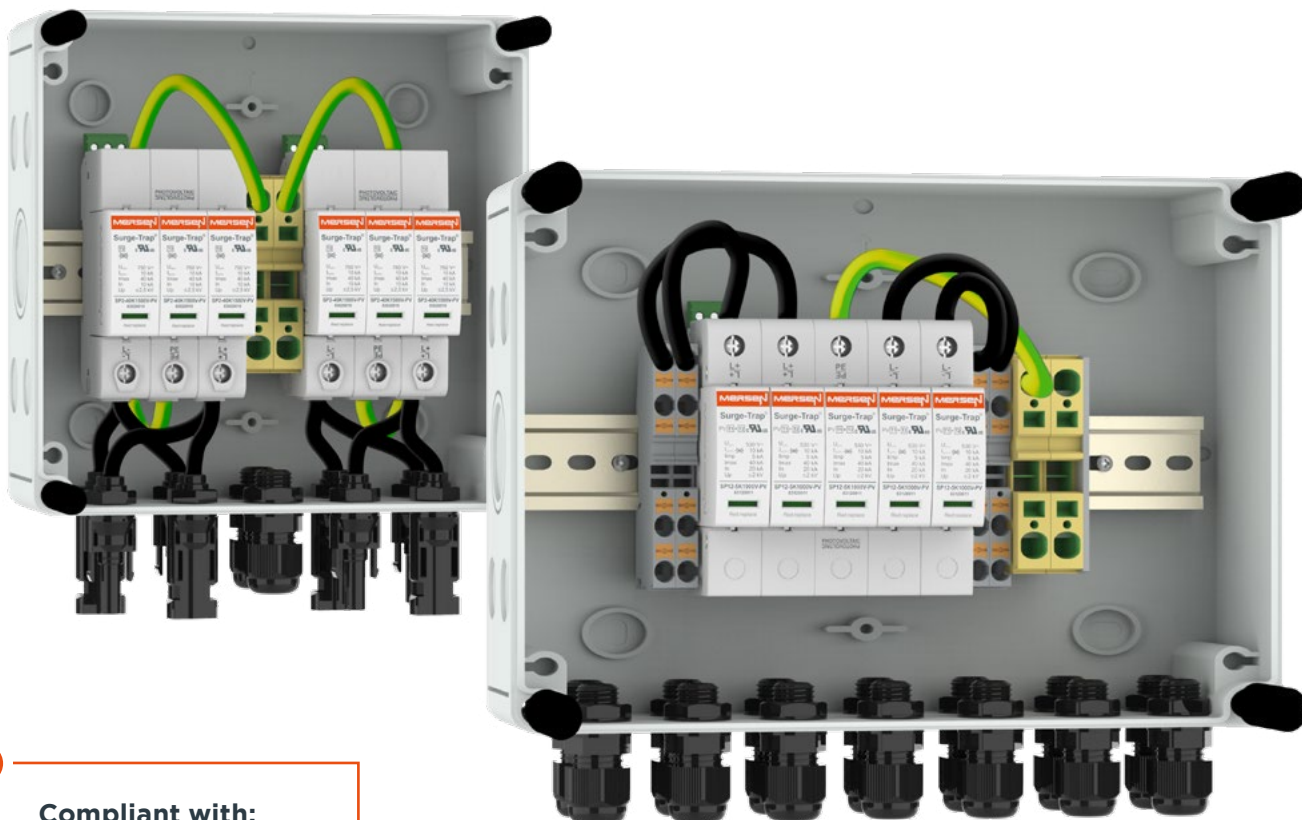


SPD Type
T12 & T2

MPPTs
1 or 2

strings/MPPT
1 or 2

Connections
MC4
Cable Gland



Compliant with:

- EN IEC 61439-1
- EN IEC 61439-2
- EN IEC 61643-31

Enhanced protection for PV installations

Integrated Type 1+2 and Type 2 DC surge protection shields inverters and photovoltaic modules from transient overvoltages caused by lightning and switching events.

Time-saving preassembled solution

Factory-assembled surge protection components minimize on-site wiring, reducing installation time and potential errors.

Versatile DC connection options

Available with MC4 plug-in connectors or cable gland entries, allowing straightforward integration into a wide range of PV system layouts.

PHOTOVOLTAIC SPDs

PV STRING BOXES



PV BOX is the series of DC photovoltaic surge protection connection boxes for inverters to EN IEC standard. Such boxes are ready for installation and just need to be connected in parallel upstream of residential and lite commercial string inverters of several MPP trackers, mainly 1000VDC rooftop installations.

Available in several configurations for one and two MPP tracker applications, including Type 1 or Type 2 surge protection with MC4 or cable gland connectors.

Please check availability and models for other special configurations: different number of MPPT or strings, with DC switch disconnecter and/or other requirements.



Standards

- EN IEC 61439-1
- EN IEC 61439-2
- EN IEC 61643-31

More info
Type 1+2



More info
Type 2



Part numbers

Type 1+2

Item number	Item description	Number of MPP Trackers	String inputs per MPPT	I _{max} per string [kA]	Pluggable cartridge	Dimensions	Electrical diagram	Connection type
83070102	PVBT12-1000V-BH-113	1	1	40	SP12-5K1000V-PV	I	A	MC4
83070106	PVBT12-1000V-BH-213	2	1	40	SP12-5K1000V-PV	II	B	MC4
83070110	PVBT12-1000V-BH-225	2	2	20	SP12-5K1000V-PV	III	D	MC4
83070010	PVBT12-1000V-B-225	2	2	20	SP12-5K1000V-PV	III	D	Cable Gland
83070002	PVBT12-1000V-B-113	1	1	40	SP12-5K1000V-PV	I	A	Cable Gland
83070006	PVBT12-1000V-B-213	2	1	40	SP12-5K1000V-PV	II	B	Cable Gland
83070016	PVBT12-1000V-B-215	2	1	40	SP12-5K1000V-PV	II	C	Cable Gland

Type 2

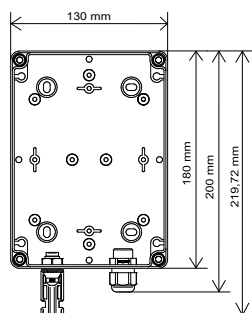
Item number	Item description	Number of MPP Trackers	String inputs per MPPT	I _{max} per string [kA]	Pluggable cartridge	Dimensions	Electrical diagram	Connection type
83070100	PVBT2-1000V-BH-113	1	1	40	SP2-40K1000V-PV	I	A	MC4
83070104	PVBT2-1000V-BH-213	2	1	40	SP2-40K1000V-PV	II	B	MC4
83070108	PVBT2-1000V-BH-225	2	2	20	SP2-40K1000V-PV	III	D	MC4
83070008	PVBT2-1000V-B-225	2	2	20	SP2-40K1000V-PV	III	D	Cable Gland
83070000	PVBT2-1000V-B-113	1	1	40	SP2-40K1000V-PV	I	A	Cable Gland
83070004	PVBT2-1000V-B-213	2	1	40	SP2-40K1000V-PV	II	B	Cable Gland
83070014	PVBT2-1000V-B-215	2	1	40	SP2-40K1000V-PV	II	C	Cable Gland

PHOTOVOLTAIC SPDs

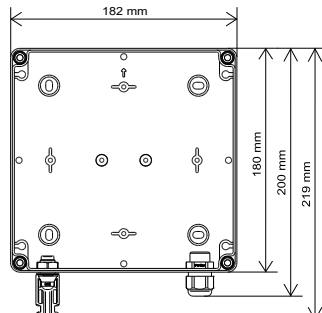
PV STRING BOXES

Dimensions

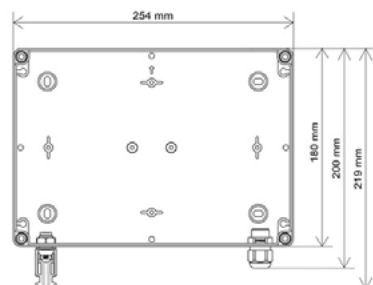
I



II

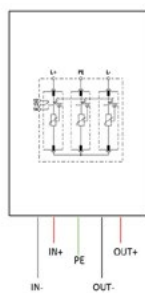


III

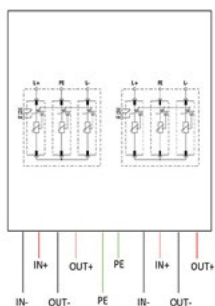


Electrical diagram

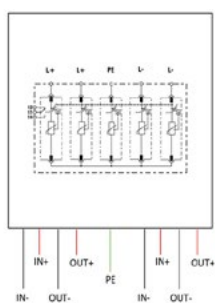
A



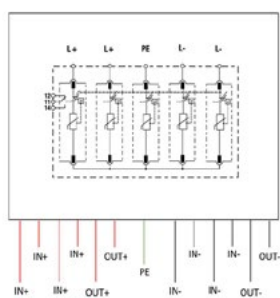
B



C



D





SURGE PROTECTION DEVICES
LED LIGHTNING SPDs

NEED FOR PROTECTION

Comprehensive protection

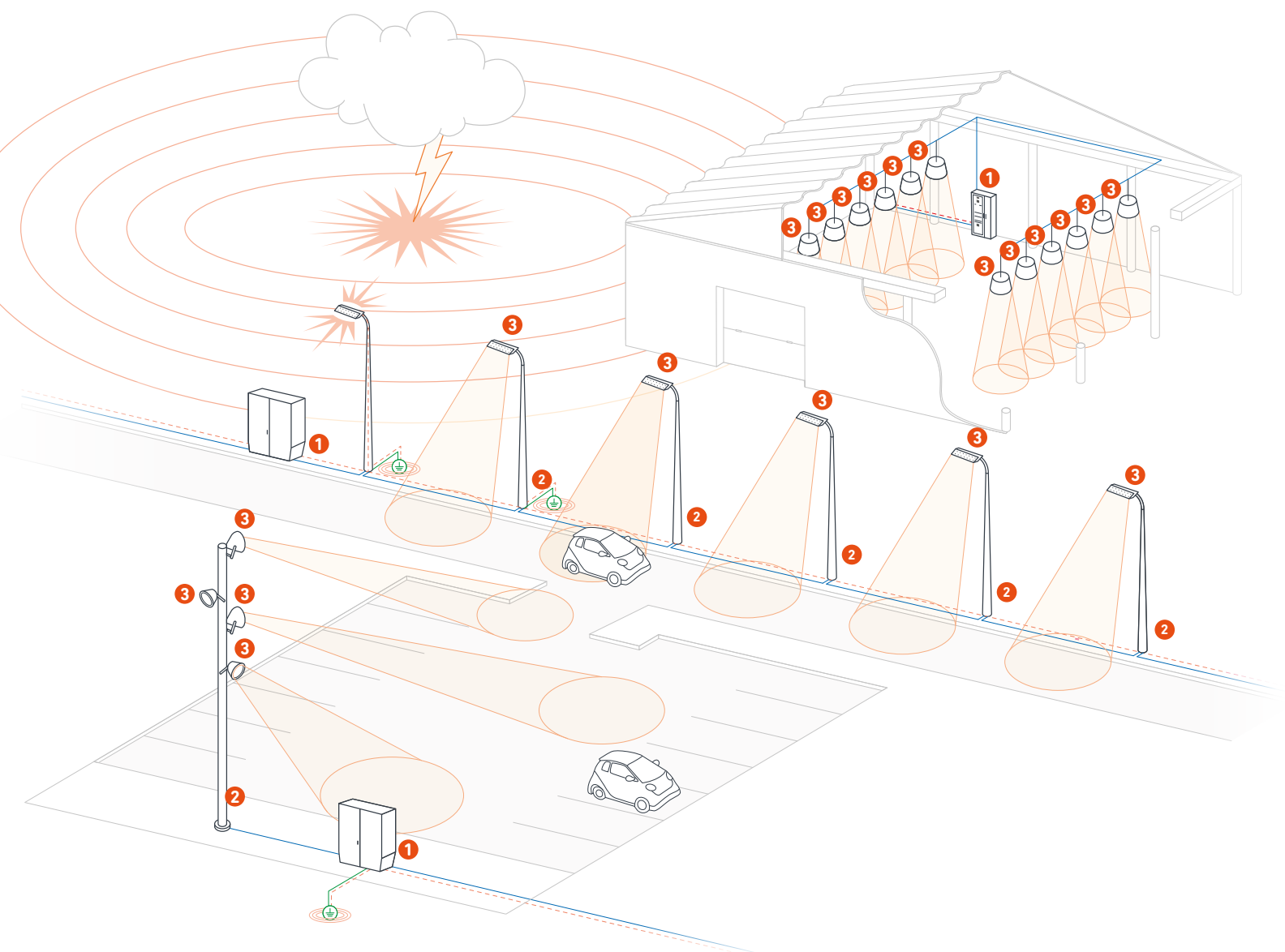
Surge protection devices (SPD) protect equipment by discharging the overvoltage to earth, thus limiting the voltage reaching the equipment (residual voltage).

An effective overvoltage protection design comprises of staggered protection, with stages for each of the sensitive components in the installation. With this method, part of the overvoltage is discharged in each protection stage until only a small residual voltage is left close to the luminaire.

Protection in the lighting panel ① although necessary, is by itself insufficient because overvoltages can also be induced in long cable runs, which means that the final **protection should always be as close as possible to the equipment being protected ② ③.**

Protection stages

- ① In the lighting panel
- ② In the mast (fuse box)
- ③ In the luminaire



In the luminaire:

STL T23 range

Certified

- DEKRA certification to IEC 61643-11
- First SPD for lighting fixtures to have ENEC certification



Proven quality

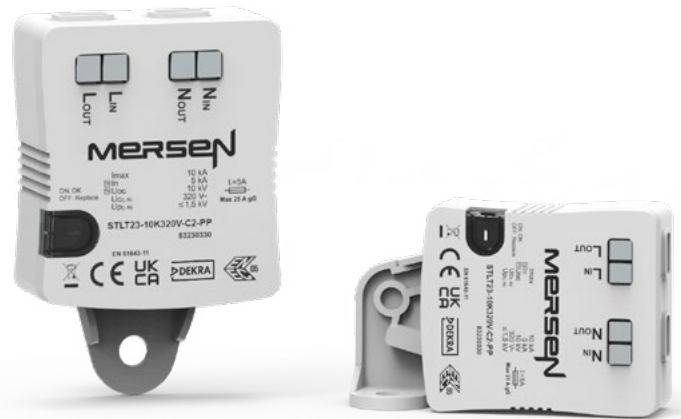
- STL series protects LED outdoor luminaires since 2011
- More than 8.000.000 effectively protected luminaires

Double end-of-life indication

- Disconnection, if installed in series, the SPD will turn the luminaire off when it reaches end-of-life.
- Visual LED indication.

No leakage current

- STL with common mode protection has no leakage current to earth.



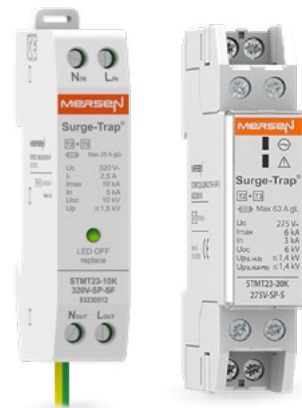
Versatile assembly

The SPD can be installed upright or flat depending on the space constraints of the luminaire

In the mast (fuse box):

STM T23 range

- Design adapted for the **fuse box**
- Perfect for **retrofitting**
- Compact and robust (**10 kV / 10 kA**)
- **Ground** cable/Ground terminal options



In the lightning panel:

POP + SPD range

- Combined power frequency overvoltage protection and surge protection device
- First step of protection
- Remote and visual **indication of life status** of the protection device



SURGE-TRAP® STL T23 PP SERIES



Type 2+3 surge protection device (SPD) for transient overvoltages with I_{max} 10 kA, push-in quick connection and hardwired. The Surge-Trap® STL T23 PP Series range is suitable for protection of LED lighting installations with extremely sensitive electronics.

Standards

- EN IEC 61643-11

Optional accessory providing maximum installation flexibility, allowing the SPD to be mounted in either a vertical or horizontal position depending on the available space inside the luminaire. Please contact our sales team for more information.

More info

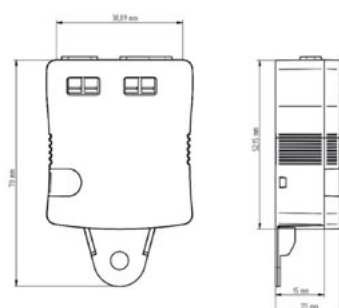


Part numbers

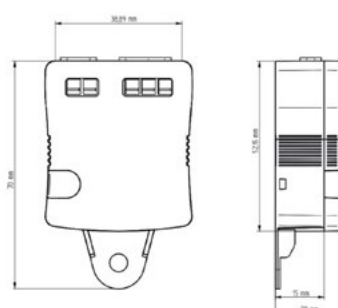
Item number	Item description	Internal conf.	Uc [V]	Un [V]	I _{max} [kA]	In [kA]	IL [A]	Up at In [kV]	Uoc [kV]
83230333	STLT23-10K320V-C4-PP	C4	320	230/400	10	5	5	≤1,5	10
83230330	STLT23-10K320V-C2-PP	C2	320	230/400	10	5	5	≤1,5	10

Dimensions

C2

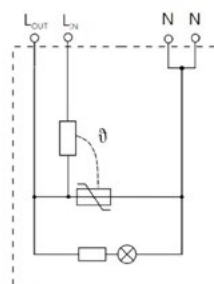


C4

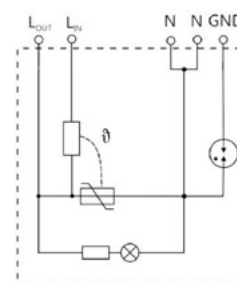


Internal configuration

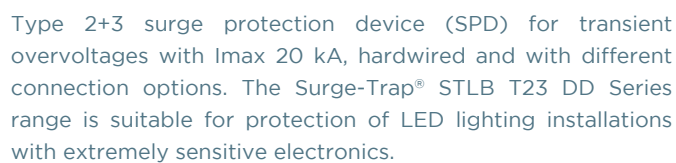
C2



C4



SURGE-TRAP® STLB T23 DD SERIES

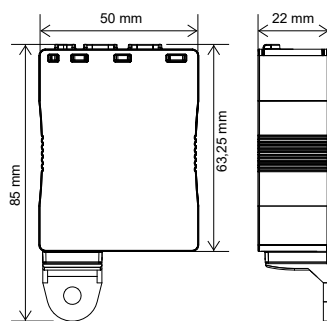


- EN IEC 61643-11

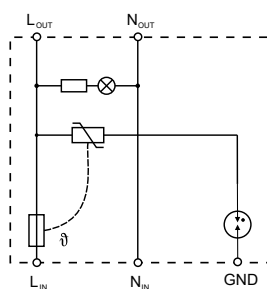


Item number	Item description	Internal conf.	Uc [V]	Un [V]	I _{max} [kA]	I _n [kA]	I _L [A]	Up at I _n [kV]	Uoc [kV]
83230321	STLBT23-20K275V-C4-DD	C4	275	230/400	20	10	2.5	≤1.5	20

C4



C4





Type 2+3 surge protection device (SPD) for transient overvoltages with I_{max} 10kA, hardwired and with different connection options. The Surge-Trap® STLBT23 IP Series range, IP66 model, is suitable for protection of LED lighting installations with extremely sensitive electronics.

Standards

- EN IEC 61643-11



More info

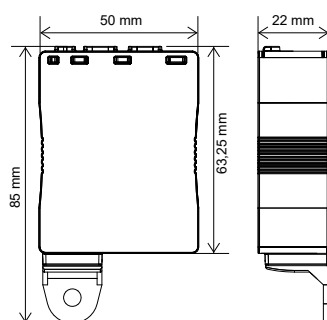


Part numbers

Item number	Item description	Internal conf.	U_c [V]	U_n [V]	I_{max} [kA]	I_n [kA]	I_L [A]	Up at I_n [kV]	U_{oc} [kV]
83230311	STLBT23-10K320V-C4-WW-IP	C4	320	230/400	10	5	2.5	≤1,5	10

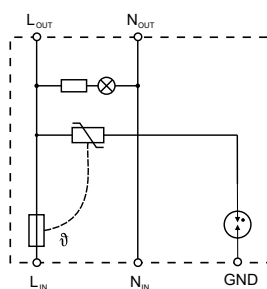
Dimensions

C4



Internal configuration

C4



SURGE-TRAP® MONOBLOC STMT23 SE SERIES

Type 2+3 surge protection device (SPD) for transient overvoltages, with I_{max} 10kA, compact design with earth lead. The Surge-Trap® Monobloc STMT23 SE Series range is suitable to be installed in the pole within the fuse box.

Standards

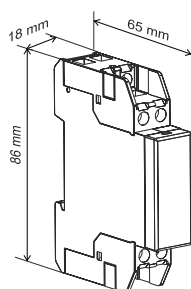
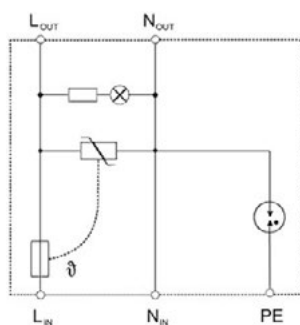
- EN IEC 61643-11



More info

**Part numbers**

Item number	Item description	Internal conf.	Network configuration	U_c [V]	U_n [V]	I_{max} [kA]	I_n [kA]	I_L [A]	U_p at I_n [kV]	U_{oc} [kV]
83230515	STMT23-10K320V-SP-SE	1+1	TT, TNS	320	230	10	5	10	$\leq 1,5$	10

Dimensions**TT, TNS (1+1)****Internal configuration****TT, TNS (1+1)**

LED LIGHTING SPDs

SURGE-TRAP® MONOBLOC STMT23 SF SERIES



Type 2+3 surge protection device (SPD) for transient overvoltages, with I_{max} 10kA, compact design and with lead. The Surge-Trap® Monobloc STMT23 SF Series range is suitable to be installed in the pole within the fuse box.

Standards

- EN IEC 61643-1

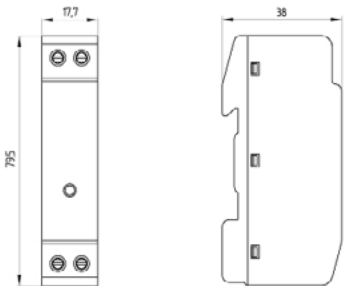


Part numbers

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	I _{max} [kA]	I _n [kA]	I _L [A]	Up at I _n [kV]	Uoc [kV]
83230512	STMT23-10K320V-SP-SF	1+1	TT, TNS	320	230	10	5	2.5	≤1,5	10

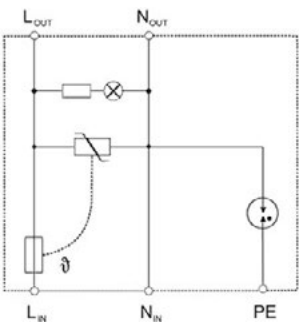
Dimensions

TT, TNS (1+1)



Internal configuration

TT, TNS (1+1)





Type 2 surge protection device (SPD) for transient overvoltages. The Surge-Trap® POP + SPD Type 2 - For Contactor range is suitable for LED lighting installations.

Standards

- EN IEC 61643-11



More info

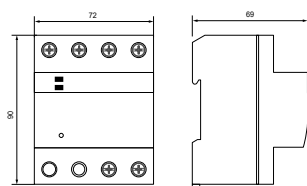


Part numbers

Item number	Item description	N° poles+conf	N° DIN rail modules	Actuation method	Uc (L-N) [V]	Un [V]	I _{max} [kA]	I _n (L-N) [kA]	Remote (M)
83060100	POP-40K230V-CT-4P	4 Poles, 3P+N	4	Contactor	400	230/400	40	15	
83060101	POP-40K230V-CT-4PM	4 Poles, 3P+N	4	Contactor	400	230/400	40	15	✓

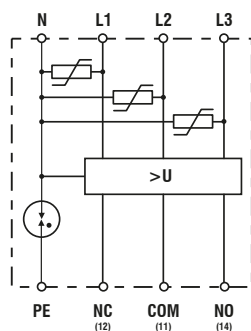
Dimensions

Three-phase



Internal configuration

Three-phase





SURGE PROTECTION DEVICES

SIGNAL LINE SPDs

SIGNAL LINE SPDs

SURGE-TRAP® SIGNAL - STS NET- IN LINE



Surge protection device (SPD) for transient overvoltages
Aerial mounting design. The Surge-Trap® Signal - STS NET- IN
LINE range is suitable for protecting low-voltage installations
against overvoltages.

Standards

- EN IEC 61643-21

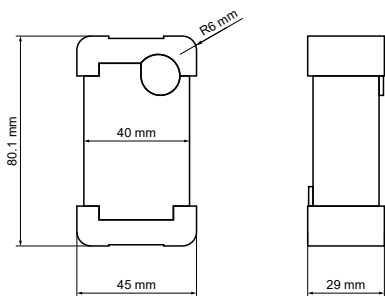


Part numbers

Item number	Item description	Uc (L-PE) [V]	Un [V]	In (L-PE) [kA]	IL [A]	Up at In [V]	Bandwidth [MHz]	Protected Wires	Input connector	Output connector
83040520	STS-NET-CAT6-1P	6	5	0.25	1	≤35	250	4 Pairs	RJ45 (Male) UTP	RJ45 (Male) UTP
83040525	STS-NET-CAT6-POE-1P	6	5 (signal); 48 (power)	0.25	1	≤35	250	4 Pairs	RJ45 (Female)	RJ45 (Female)

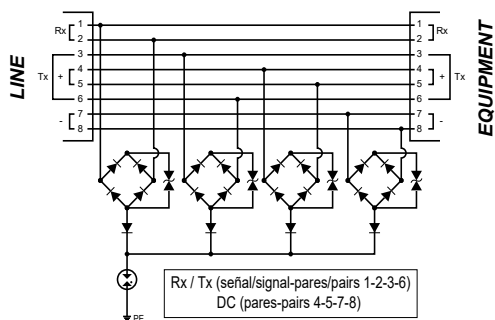
Dimensions

In line



Internal configuration

In line





Surge protection device (SPD) for transient overvoltages for DIN rail mounting. The Surge-Trap® Signal - STS 485 range is suitable for protecting low-voltage installations against overvoltages.

Standards

- EN IEC 61643-21



More info



Part numbers

2 wires

Item number	Item description	Format	Uc (L-PE) [V]	Un [V]	In (L-PE) [kA]	Up at In [V]	Bandwidth [MHz]	Protected Wires
83040112	STS485-16V-2W	DIN	16	12	5	≤20	1.2	1 Pair
83040113	STS485-27V-2W	DIN	27	24	5	≤40	4	1 Pair
83040111	STS485-7V-2W	DIN	7	6	5	≤10	1	1 Pair

2 wires + GND

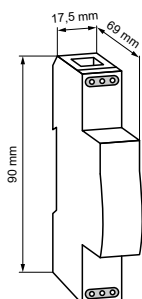
Item number	Item description	Format	Uc (L-PE) [V]	Un [V]	In (L-PE) [kA]	Up at In [V]	Bandwidth [MHz]	Protected Wires
83040110	STS485-15V-3WI	DIN	15	12	5	≤45	10	1 Pair + GND

4 wires + GND

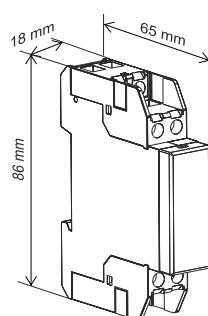
Item number	Item description	Format	Uc (L-PE) [V]	Un [V]	In (L-PE) [kA]	Up at In [V]	Bandwidth [MHz]	Protected Wires
83040120	STS485-5V-4WG	DIN	5.2	5	10	≤30	60	2 Pairs + GND

Dimensions

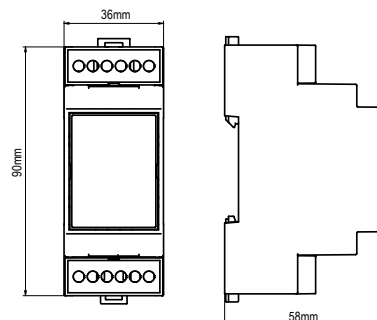
2W



3WI

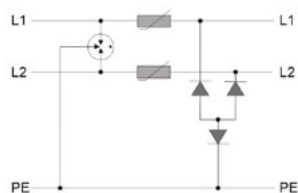


4WG

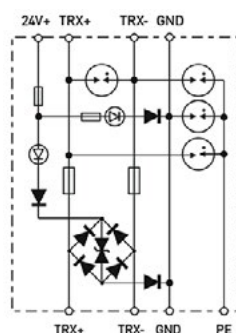


Internal configuration

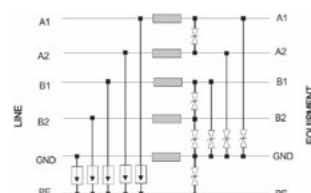
2W



3WI

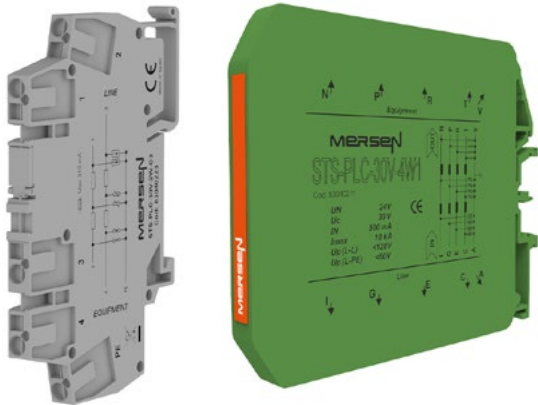


4WG



SIGNAL LINE SPDs

SURGE-TRAP® SIGNAL - STS PLC



Surge protection device (SPD) for transient overvoltages for DIN rail mounting PLC compatible. The Surge-Trap® Signal - STS PLC range is suitable for measurement and control equipment installed on PLC digital networks.

Standards

- EN IEC 61643-21

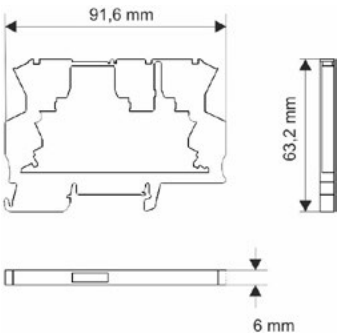


Part numbers

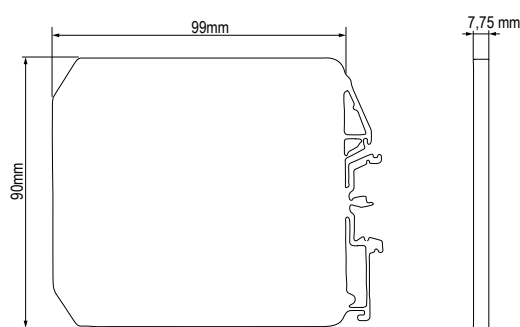
Item number	Item description	Format	Uc (L-PE) [V]	Un [V]	I _{max} (L-PE) [kA]	I _n (L-PE) [kA]	I _L [A]	Up at I _n [V]	Bandwidth [MHz]	Protected Wires
83040223	STS-PLC-30V-2W-C3	DIN	30	24	5	5	0.3	≤40	2	2 Wires
83040211	STS-PLC-30V-4W1	DIN	30	24	10	5	0.3	≤120	2	4 Wires
83040220	STS-PLC-30V-2W	DIN	30	24	5	5	0.3	≤45	3	2 Wires

Dimensions

2W

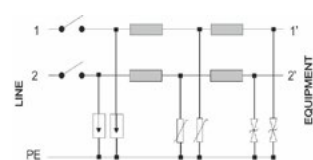


4W

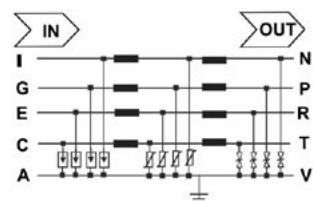


Internal configuration

2W



4W



SIGNAL LINE SPDs

SURGE-TRAP® SIGNAL - STS RF



Surge protection device (SPD) for transient overvoltages coaxial format. The Surge-Trap® Signal - STS RF range is suitable for RF transmission and reception equipment.

Standards

- EN IEC 61643-21



More info

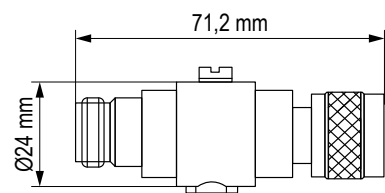


Part numbers

Item number	Item description	Uc (L-PE) [V]	I _{max} (L-PE) [kA]	I _n (L-PE) [kA]	Up at I _n [V]	Bandwidth [MHz]	Impedance [Ohm]	Peak power [W]	Input connector	Output connector
83040715	STS-RF-N	230	20	10	≤600	3000	50	100	N (Male)	N (Female)

Dimensions

RF





SURGE PROTECTION DEVICES

Other Surge-Trap[®] ranges

SURGE-TRAP® MONOBLOC STMT1 SERIES - 50kA

Type 1 surge protection device (SPD) for transient overvoltages monobloc design robust design with Iimp 50 kA. The Surge-Trap® Monobloc STMT1 Series - 50kA range is suitable for installations with lightning rods or Aerial line entries.

Standards

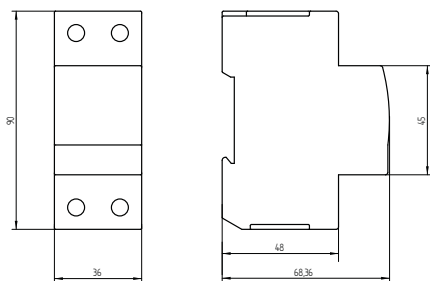
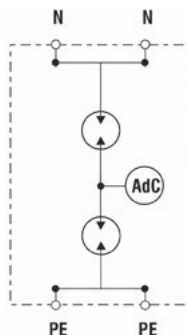
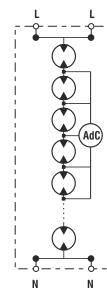
- EN IEC 61643-11



More info

**Part numbers****1 Pole**

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	Iimp [kA]	In [kA]	Up at In [kV]
83010103	STMT1-50K150V-1P	1+0	TNS, TNC, TT (only L-N)	150	120	50	50	≤2
83010102	STMT1-100K-N	0+1	TT, TNS	255	Neutral	100	100	≤2
83010100	STMT1-50K275V-1P	1+0	TNS, TNC, TT (only L-N)	275	230	50	50	≤2
83010104	STMT1-50K320V-1P	1+0	TNS, TNC, TT (only L-N)	320	277	50	50	≤2
83010107	STMT1-50K440V-1P	1+0	TNS, TNC, TT (only L-N)	440	400	50	50	≤2,5

Dimensions**1 Pole****Internal configuration****TT, TNS (0+1)****TNS, TNC, TT (only L-N) (1+0)**

SURGE-TRAP® PLUGGABLE SERIES - 25kA



Type 1+2 surge protection device (SPD) for transient overvoltages pluggable with limp 25 kA. The Surge-Trap® Pluggable STPT12 Series - 25kA range is suitable as a first level of protection in the main distribution board.

Standards

- EN IEC 61643-11



More info



Part numbers

1 Pole

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	limp [kA]	Imax [kA]	In [kA]	Up at In [kV]	Remote (M)
83120166	STPT12-100K-N	0+1	TT, TNS	255	Neutral	100	100	50	≤1,5	
83120152	STPT12-25K275V-1P	1+0	TNS, TNC, TT (only L-N)	275	230	25	100	25	≤1,5	
83120153	STPT12-25K275V-1PM	1+0	TNS, TNC, TT (only L-N)	275	230	25	100	25	≤1,5	✓

2 Poles

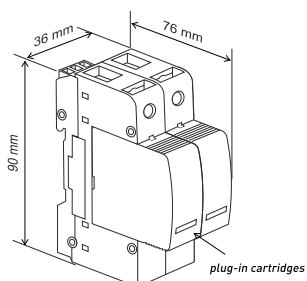
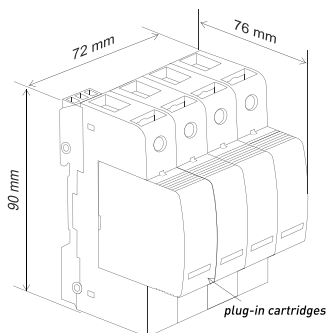
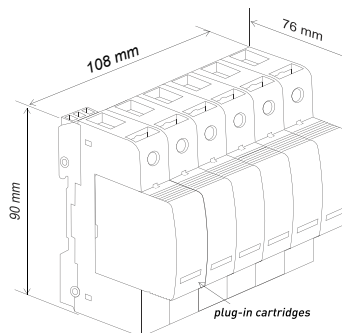
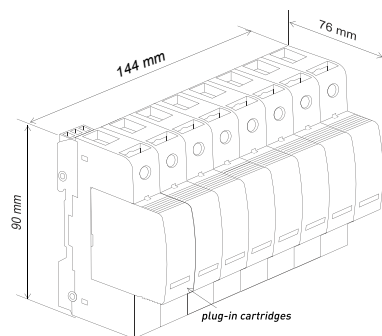
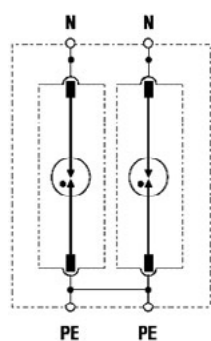
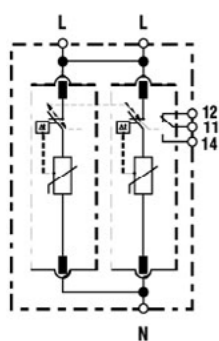
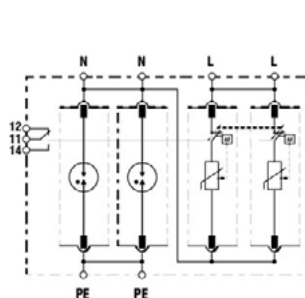
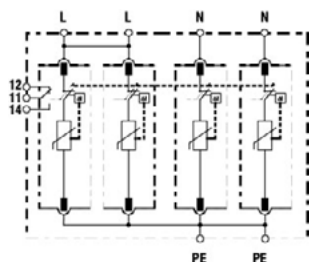
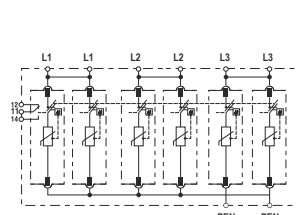
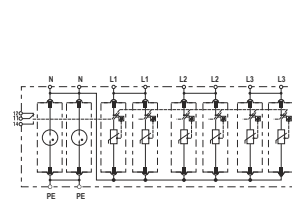
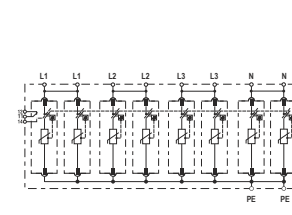
Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	limp [kA]	Imax [kA]	In [kA]	Up at In [kV]	Remote (M)
83120154	STPT12-25K275V-2PG	1+1	TT, TNS	275	230	25	100	25	≤1,5	
83120155	STPT12-25K275V-2PGM	1+1	TT, TNS	275	230	25	100	25	≤1,5	✓
83120156	STPT12-25K275V-2P	2+0	TNS	275	230	25	100	25	≤1,5	
83120157	STPT12-25K275V-2PM	2+0	TNS	275	230	25	100	25	≤1,5	✓

3 Poles

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	limp [kA]	Imax [kA]	In [kA]	Up at In [kV]	Remote (M)
83120158	STPT12-25K275V-3P	3+0	TNC	275	230/400	25	100	25	≤1,5	
83120159	STPT12-25K275V-3PM	3+0	TNC	275	230/400	25	100	25	≤1,5	✓

4 Poles

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	limp [kA]	Imax [kA]	In [kA]	Up at In [kV]	Remote (M)
83120150	STPT12-25K275V-4PG	3+1	TT, TNS	275	230/400	25	100	25	≤1,5	
83120151	STPT12-25K275V-4PGM	3+1	TT, TNS	275	230/400	25	100	25	≤1,5	✓
83120160	STPT12-25K275V-4P	4+0	TNS	275	230/400	25	100	25	≤1,5	
83120161	STPT12-25K275V-4PM	4+0	TNS	275	230/400	25	100	25	≤1,5	✓

Dimensions**1 Pole****2 Poles****3 Poles****4 Poles****Internal configuration****TT, TNS (0+1)****TNS, TNC, TT (only L-N) (1+0)****TT, TNS (1+1)****TNS (2+0)****TNC (3+0)****TT, TNS (3+1)****TNS (4+0)**

SURGE-TRAP® PLUGGABLE STPT12 SERIES - 12.5kA



Type 1+2 surge protection device (SPD) for transient overvoltages pluggable with limp 12.5 kA. The Surge-Trap® Pluggable STPT12 Series - 12.5kA range is suitable as a first level of protection in the main distribution board.

Standards

- EN IEC 61643-11

More info



Part numbers

1 Pole

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	Iimp [kA]	I _{max} [kA]	In [kA]	Up at In [kV]	Remote (M)
83120101	STPT12-12K150V-1PM	1+0	TNS, TNC, TT (only L-N)	150	120	12.5	50	20	≤1	✓
83120108	STPT12-25K-N	0+1	TT, TNS	255	Neutral	25	50	25	≤1,5	
83120102	STPT12-12K275V-1P	1+0	TNS, TNC, TT (only L-N)	275	230	12.5	50	20	≤1,3	
83120103	STPT12-12K275V-1PM	1+0	TNS, TNC, TT (only L-N)	275	230	12.5	50	20	≤1,3	✓
83120104	STPT12-12K320V-1P	1+0	TNS, TNC, TT (only L-N)	320	277	12.5	50	20	≤1,4	
83120106	STPT12-12K440V-1P	1+0	TNS, TNC, TT (only L-N)	440	400	12.5	50	20	≤1,8	
83120107	STPT12-12K440V-1PM	1+0	TNS, TNC, TT (only L-N)	440	400	12.5	50	20	≤1,8	✓

2 Poles

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	Iimp [kA]	I _{max} [kA]	In [kA]	Up at In [kV]	Remote (M)
83120112	STPT12-12K150V-2PG	1+1	TT, TNS	150	120	12.5	50	20	≤1	
83120113	STPT12-12K150V-2PGM	1+1	TT, TNS	150	120	12.5	50	20	≤1	✓
83120114	STPT12-12K275V-2PG	1+1	TT, TNS	275	230	12.5	50	20	≤1,3	
83120115	STPT12-12K275V-2PGM	1+1	TT, TNS	275	230	12.5	50	20	≤1,3	✓
83120116	STPT12-12K320V-2PG	1+1	TT, TNS	320	277	12.5	50	20	≤1,4	
83120117	STPT12-12K320V-2PGM	1+1	TT, TNS	320	277	12.5	50	20	≤1,4	✓
83120127	STPT12-12K75V-2PM	2+0	TNS	75	60	12.5	50	20	≤0,65	✓
83120119	STPT12-12K150V-2PM	2+0	TNS	150	120	12.5	50	20	≤1	✓
83120120	STPT12-12K275V-2P	2+0	TNS	275	230	12.5	50	20	≤1,3	
83120121	STPT12-12K275V-2PM	2+0	TNS	275	230	12.5	50	20	≤1,3	✓
83120122	STPT12-12K320V-2P	2+0	TNS	320	277	12.5	50	20	≤1,4	
83120123	STPT12-12K320V-2PM	2+0	TNS	320	277	12.5	50	20	≤1,4	✓
83120125	STPT12-12K440V-2PM*	2+0	TNS	440	400	12.5	50	20	≤1,8	✓

*Also suitable for 230 V IT network configuration.

3 Poles

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	Iimp [kA]	I _{max} [kA]	In [kA]	Up at In [kV]	Remote (M)
83120128	STPT12-12K150V-3P	3+0	TNC	150	120/208	12.5	50	20	≤1	
83120130	STPT12-12K275V-3P	3+0	TNC	275	230/400	12.5	50	20	≤1,3	

Continue **3 Poles**

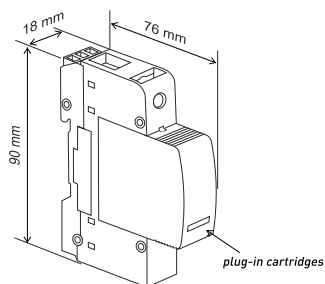
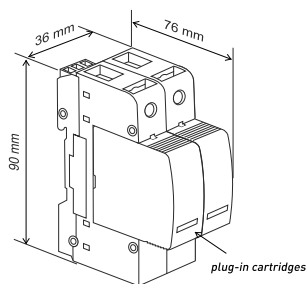
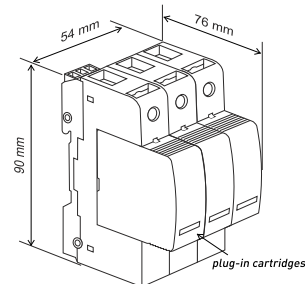
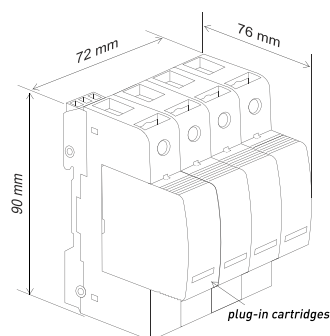
Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	Iimp [kA]	I _{max} [kA]	In [kA]	Up at In [kV]	Remote (M)
83120131	STPT12-12K275V-3PM	3+0	TNC	275	230/400	12.5	50	20	≤1,3	✓
83120132	STPT12-12K320V-3P	3+0	TNC	320	277/480	12.5	50	20	≤1,4	
83120133	STPT12-12K320V-3PM	3+0	TNC	320	277/480	12.5	50	20	≤1,4	✓
83120134	STPT12-12K440V-3P*	3+0	TNC	440	400/690	12.5	50	20	≤2	
83120135	STPT12-12K440V-3PM*	3+0	TNC	440	400/690	12.5	50	20	≤2	✓

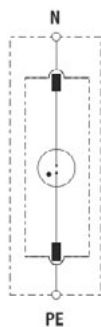
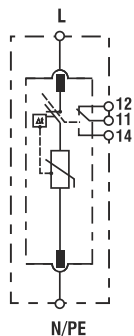
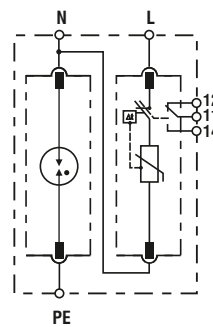
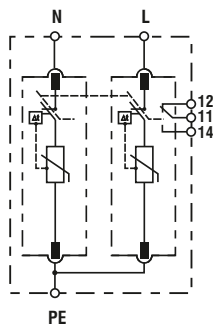
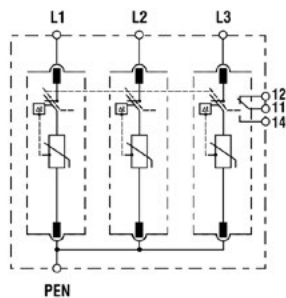
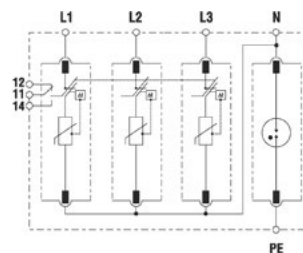
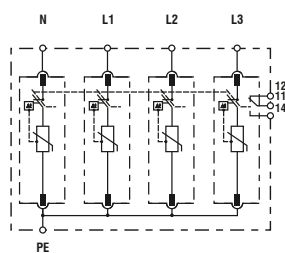
*Also suitable for ~/400 V IT network configuration.

4 Poles

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	Iimp [kA]	I _{max} [kA]	In [kA]	Up at In [kV]	Remote (M)
83120136	STPT12-12K150V-4PG	3+1	TT, TNS	150	120/208	12.5	50	20	≤1	
83120137	STPT12-12K150V-4PGM	3+1	TT, TNS	150	120/208	12.5	50	20	≤1	✓
83120138	STPT12-12K275V-4PG	3+1	TT, TNS	275	230/400	12.5	50	20	≤1,3	
83120139	STPT12-12K275V-4PGM	3+1	TT, TNS	275	230/400	12.5	50	20	≤1,3	✓
83120140	STPT12-12K320V-4PG	3+1	TT, TNS	320	277/480	12.5	50	20	≤1,4	
83120141	STPT12-12K320V-4PGM	3+1	TT, TNS	320	277/480	12.5	50	20	≤1,4	✓
83120142	STPT12-12K150V-4P	4+0	TNS	150	120/208	12.5	50	20	≤1	
83120143	STPT12-12K150V-4PM	4+0	TNS	150	120/208	12.5	50	20	≤1	✓
83120144	STPT12-12K275V-4P	4+0	TNS	275	230/400	12.5	50	20	≤1,3	
83120145	STPT12-12K275V-4PM	4+0	TNS	275	230/400	12.5	50	20	≤1,3	✓
83120146	STPT12-12K320V-4P	4+0	TNS	320	277/480	12.5	50	20	≤1,4	
83120147	STPT12-12K320V-4PM	4+0	TNS	320	277/480	12.5	50	20	≤1,4	✓
83120148	STPT12-12K440V-4P*	4+0	TNS	440	400/690	12.5	50	20	≤2	
83120149	STPT12-12K440V-4PM*	4+0	TNS	440	400/690	12.5	50	20	≤2	✓

*Also suitable for 230/400 V IT network configuration.

Dimensions**1 Pole****2 Poles****3 Poles****4 Poles**

Internal configuration**TT, TNS (0+1)****TNS, TNC, TT (only L-N) (1+0)****TT, TNS (1+1)****TNS (2+0)****TNC (3+0)****TT, TNS (3+1)****TNS (4+0)**

SURGE-TRAP® PLUGGABLE STPT2 SERIES - 40kA



Type 2 surge protection device (SPD) for transient overvoltages pluggable with I_{max} 40 kA. The Surge-Trap® Pluggable STPT2 Series - 40kA range is suitable for protecting low-voltage installations against overvoltages.

Standards

- EN IEC 61643-11
- UL 1449 5th Edition



More info



Part numbers

1 Pole

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	Imax [kA]	In [kA]	Up at In [kV]	Remote (M)
83020104	STPT2-40K150V-1P	1+0	TNS, TNC, TT (only L-N)	175	120	40	20	≤1	
83020105	STPT2-40K150V-1PM	1+0	TNS, TNC, TT (only L-N)	175	120	40	20	≤1	✓
83020106	STPT2-40K275V-1P	1+0	TNS, TNC, TT (only L-N)	275	230	40	20	≤1,3	
83020107	STPT2-40K275V-1PM	1+0	TNS, TNC, TT (only L-N)	275	230	40	20	≤1,3	✓
83020112	STPT2-40K-N	0+1	TT, TNS	277	Neutral	40	20	≤1,5	✓
83020108	STPT2-40K320V-1P	1+0	TNS, TNC, TT (only L-N)	320	277	40	20	≤1,5	
83020109	STPT2-40K320V-1PM	1+0	TNS, TNC, TT (only L-N)	320	277	40	20	≤1,5	✓
83020110	STPT2-40K440V-1P	1+0	TNS, TNC, TT (only L-N)	440	400	40	20	≤2	
83020111	STPT2-40K440V-1PM	1+0	TNS, TNC, TT (only L-N)	440	400	40	20	≤2	✓
83020100	STPT2-30K750V-1P	1+0	TNS, TNC, TT (only L-N)	750	480	30	15	≤3	
83020101	STPT2-30K750V-1PM	1+0	TNS, TNC, TT (only L-N)	750	480	30	15	≤3	✓

2 Poles

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	Imax [kA]	In [kA]	Up at In [kV]	Remote (M)
83020114	STPT2-40K150V-2PG	1+1	TT, TNS	175	120	40	20	≤1	
83020115	STPT2-40K150V-2PGM	1+1	TT, TNS	175	120	40	20	≤1	✓
83020116	STPT2-40K275V-2PG	1+1	TT, TNS	275	230	40	20	≤1,3	
83020117	STPT2-40K275V-2PGM	1+1	TT, TNS	275	230	40	20	≤1,3	✓
83020118	STPT2-40K320V-2PG	1+1	TT, TNS	320	277	40	20	≤1,5	
83020119	STPT2-40K320V-2PGM	1+1	TT, TNS	320	277	40	20	≤1,5	✓
83020128	STPT2-40K60V-2P	2+0	TNS	60	48	40	20	≤0,7	
83020129	STPT2-40K60V-2PM	2+0	TNS	60	48	40	20	≤0,7	✓
83020130	STPT2-40K75V-2P	2+0	TNS	75	60	40	20	≤0,8	
83020131	STPT2-40K75V-2PM	2+0	TNS	75	60	40	20	≤0,8	✓
83020120	STPT2-40K150V-2P	2+0	TNS	175	120	40	20	≤1	
83020121	STPT2-40K150V-2PM	2+0	TNS	175	120	40	20	≤1	✓
83020122	STPT2-40K275V-2P	2+0	TNS	275	230	40	20	≤1,3	
83020123	STPT2-40K275V-2PM	2+0	TNS	275	230	40	20	≤1,3	✓
83020124	STPT2-40K320V-2P	2+0	TNS	320	277	40	20	≤1,5	
83020125	STPT2-40K320V-2PM	2+0	TNS	320	277	40	20	≤1,5	✓

Continue **2 Poles**

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	I _{max} [kA]	In [kA]	Up at In [kV]	Remote (M)
83020126	STPT2-40K440V-2P*	2+0	TNS	440	400	40	20	≤2	
83020127	STPT2-40K440V-2PM*	2+0	TNS	440	400	40	20	≤2	✓

*Also suitable for 230 V IT network configuration.

3 Poles

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	I _{max} [kA]	In [kA]	Up at In [kV]	Remote (M)
83020132	STPT2-40K150V-3P	3+0	TNC	175	120/208	40	20	≤1	
83020133	STPT2-40K150V-3PM	3+0	TNC	175	120/208	40	20	≤1	✓
83020134	STPT2-40K275V-3P	3+0	TNC	275	230/400	40	20	≤1,3	
83020135	STPT2-40K275V-3PM	3+0	TNC	275	230/400	40	20	≤1,3	✓
83020136	STPT2-40K320V-3P	3+0	TNC	320	277/480	40	20	≤1,5	
83020137	STPT2-40K320V-3PM	3+0	TNC	320	277/480	40	20	≤1,5	✓
83020142	STPT2-40K440V-3P*	3+0	TNC	440	400/690	40	20	≤2	
83020143	STPT2-40K440V-3PM*	3+0	TNC	440	400/690	40	20	≤2	✓
83020102	STPT2-30K750V-3P	3+0	TNC	750	480/830	30	15	≤3	
83020103	STPT2-30K750V-3PM	3+0	TNC	750	480/830	30	15	≤3	✓
83020246	STPT2-30K850V-3P	3+0	TNC	850	480/830	30	15	≤3	
83020247	STPT2-30K850V-3PM	3+0	TNC	850	480/830	30	15	≤3	✓

*Also suitable for -/400 V IT network configuration.

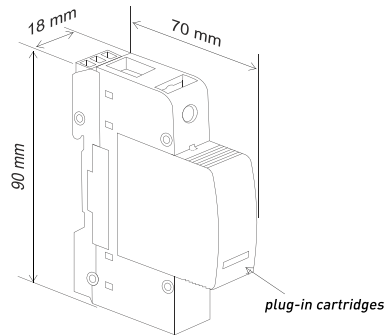
4 Poles

Item number	Item description	Internal conf.	Network configuration	Uc [V]	Un [V]	I _{max} [kA]	In [kA]	Up at In [kV]	Remote (M)
83020144	STPT2-40K150V-4PG	3+1	TT, TNS	175	120/208	40	20	≤1	
83020145	STPT2-40K150V-4PGM	3+1	TT, TNS	175	120/208	40	20	≤1	✓
83020146	STPT2-40K275V-4PG	3+1	TT, TNS	275	230/400	40	20	≤1,3	
83020147	STPT2-40K275V-4PGM	3+1	TT, TNS	275	230/400	40	20	≤1,3	✓
83020148	STPT2-40K320V-4PG	3+1	TT, TNS	320	277/480	40	20	≤1,5	
83020149	STPT2-40K320V-4PGM	3+1	TT, TNS	320	277/480	40	20	≤1,5	✓
83020150	STPT2-40K150V-4P	4+0	TNS	175	120/208	40	20	≤1	
83020151	STPT2-40K150V-4PM	4+0	TNS	175	120/208	40	20	≤1	✓
83020152	STPT2-40K275V-4P	4+0	TNS	275	230/400	40	20	≤1,3	
83020153	STPT2-40K275V-4PM	4+0	TNS	275	230/400	40	20	≤1,3	✓
83020154	STPT2-40K320V-4P	4+0	TNS	320	277/480	40	20	≤1,5	
83020155	STPT2-40K320V-4PM	4+0	TNS	320	277/480	40	20	≤1,5	✓
83020156	STPT2-40K440V-4P*	4+0	TNS	440	230/400	40	20	≤2	
83020157	STPT2-40K440V-4PM*	4+0	TNS	440	230/400	40	20	≤2	✓

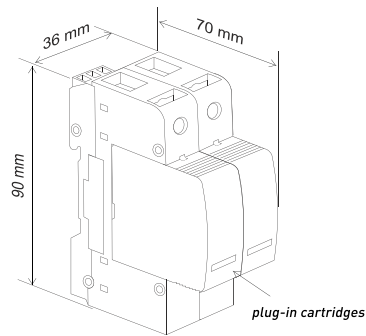
*Also suitable for 230/400 V IT network configuration.

Dimensions

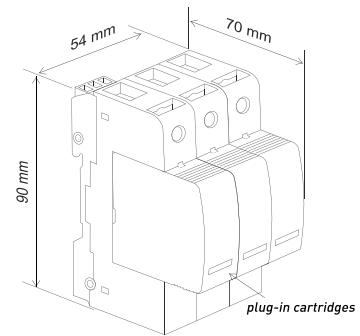
1 Pole



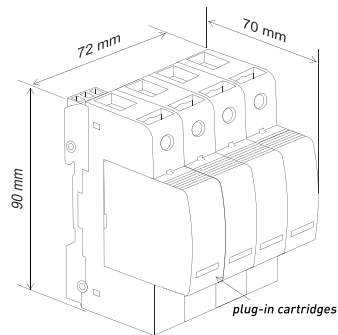
2 Poles

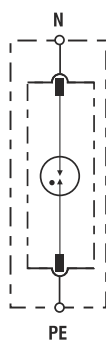
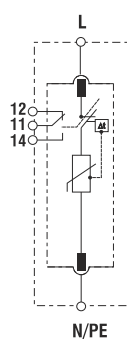
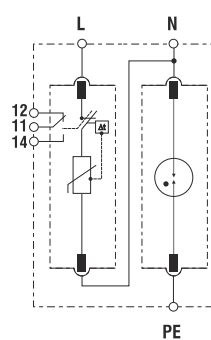
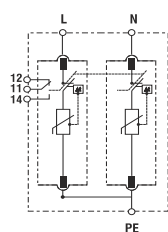
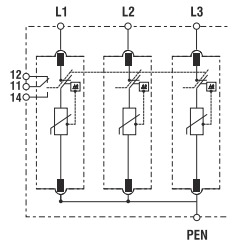
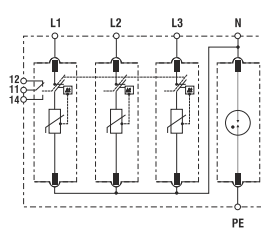
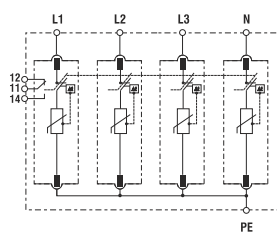


3 Poles



4 Poles



Internal configuration**TT, TNS (0+1)****TNS, TNC, TT (only L-N) (1+0)****TT, TNS (1+1)****TNS (2+0)****TNC (3+0)****TT, TNS (3+1)****TNS (4+0)**

SURGE-TRAP® PLUGGABLE STPT12 SERIES - YPV

Type 1+2 surge protection device (SPD) for transient overvoltages pluggable with I_{imp} 5 kA. The Surge-Trap® Pluggable STPT12 Series - YPV range is suitable for PV installations.

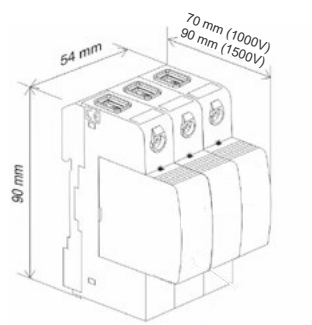
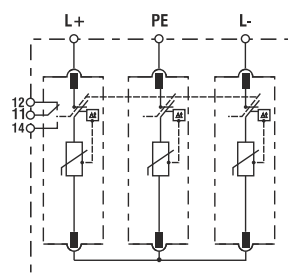
Standards

- EN IEC 61643-31
- UL 1449 5th Edition

More info

**Part numbers**

Item number	Item description	Ucpv [V]	Internal conf.	I_{imp} [kA]	I_{max} [kA]	I_n [kA]	Up at I_n [kV]	I_{scpv} [kA]	Remote (M)
83120167	STPT12-5K1000V-YPV	1060	+,-,PE	5	40	20	≤ 4	10	
83120168	STPT12-5K1000V-YPVM	1060	+,-,PE	5	40	20	≤ 4	10	✓
83120193	STPT12-5K1500V-YPV	1500	+,-,PE	5	40	20	≤ 5	10	
83120194	STPT12-5K1500V-YPVM	1500	+,-,PE	5	40	20	≤ 5	10	✓

Dimensions**YPV****Internal configuration****+,-, PE (YPV)**

SURGE-TRAP® PLUGGABLE STPT12 SERIES - 5YPV

Type 1+2 surge protection device (SPD) for transient overvoltages, 5-pole pluggable multipole design with limp 5 kA. The Surge-Trap® Pluggable STPT12 Series - 5YPV range is suitable for PV installations, to protect 2-3 MPPT inputs, helping save space and wiring in compact PV combiner boxes.

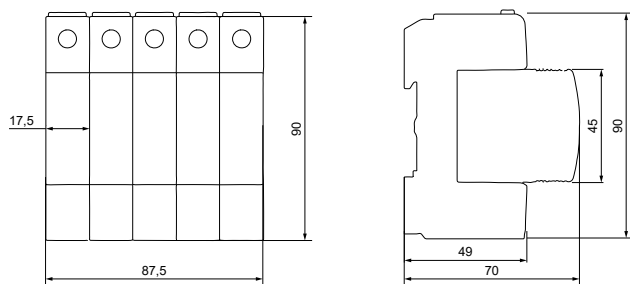
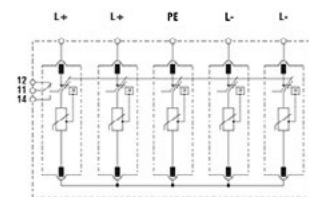
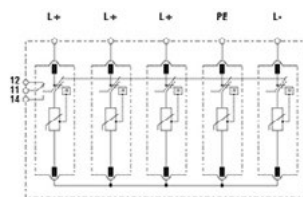
Standards

- EN IEC 61643-31
- UL 1449 5th Edition

More info

**Part numbers**

Item number	Item description	Ucpv [V]	Internal conf.	Iimp [kA]	Imax [kA]	In [kA]	Up at In [kV]	Iscpv [kA]	Remote (M)
83120192	STPT12-5K1000V-5YPVM	1060	3+, 1-, PE	5	40	20	4	10	✓
83120206	STPT12-5K1000V-5Y2PVM	1060	2+, 2-, PE	5	40	20	4	10	✓

Dimensions**5YPV****Internal configuration****3+, 1-, PE (5YPV)****2+, 2-, PE (5Y2PV)**

PHOTOVOLTAIC SPDs

SURGE-TRAP® PLUGGABLE STPT12 SERIES - 8YPV



Type 1+2 surge protection device (SPD) for transient overvoltages, 8-pole pluggable multipole design with limp 5 kA. The Surge-Trap® Pluggable STPT12 Series - 8YPV range is suitable for PV installations, to protect 6 MPPT inputs, helping save space and wiring in compact PV combiner boxes.

Standards

- EN IEC 61643-31
- UL 1449 5th Edition

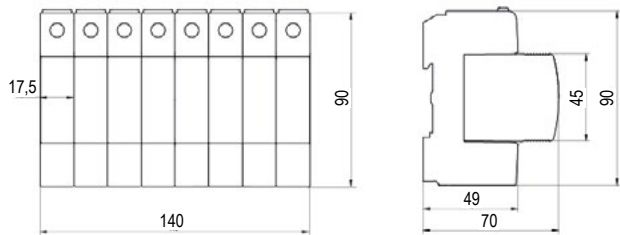


Part numbers

Item number	Item description	Ucpv [V]	Internal conf.	Iimp [kA]	Imax [kA]	In [kA]	Up at In [kV]	Iscpv [kA]	Remote (M)
83120190	STPT12-5K1000V-8YPVM	1060	6+, 1-, PE	5	40	20	≤4	10	✓

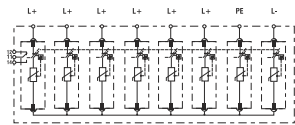
Dimensions

8YPV



Internal configuration

6+, 1-, PE (8YPV)





Type 2 surge protection device (SPD) for transient overvoltages pluggable with I_{max} 40 kA. The Surge-Trap® Pluggable STPT2 Series - YPV range is suitable for PV installations.

Standards

- EN IEC 61643-31
- UL 1449 5th Edition

More info

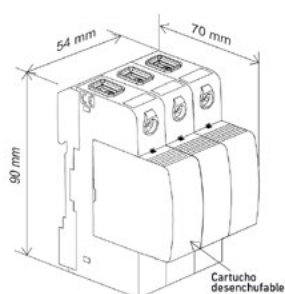


Part numbers

Item number	Item description	Ucpv [V]	Internal conf.	I _{max} [kA]	I _n [kA]	Up at I _n [kV]	Iscpv [kA]	Remote (M)
83020138	STPT2-40K600V-YPV	660	+, -, PE	40	20	≤2,6	10	
83020139	STPT2-40K600V-YPVM	660	+, -, PE	40	20	≤2,6	10	✓
83020140	STPT2-40K1000V-YPV	1060	+, -, PE	40	20	≤4	10	
83020141	STPT2-40K1000V-YPVM	1060	+, -, PE	40	20	≤4	10	✓
83020158	STPT2-40K1500V-YPV	1500	+, -, PE	40	15	≤5	10	
83020159	STPT2-40K1500V-YPVM	1500	+, -, PE	40	15	≤5	10	✓

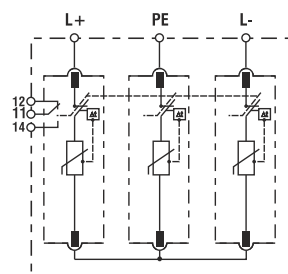
Dimensions

YPV



Internal configuration

+, -, PE (YPV)



SURGE-TRAP® PLUGGABLE STPT2 SERIES - 5YPV

Type 2 surge protection device (SPD) for transient overvoltages, 5-pole pluggable multipole design with I_{max} 40 kA. The Surge-Trap® Pluggable STPT2 Series - 5YPV range is suitable for PV installations, to protect 2-3 MPPT inputs, helping save space and wiring in compact PV combiner boxes.

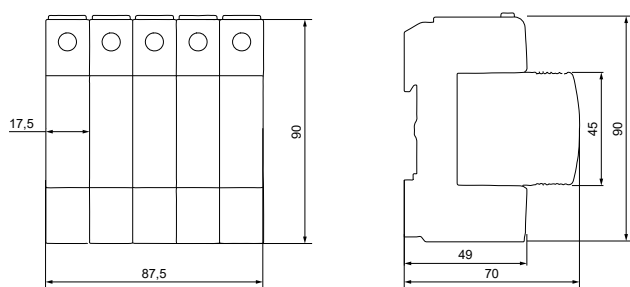
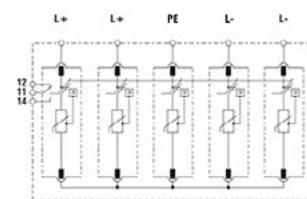
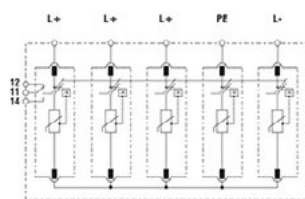
Standards

- EN IEC 61643-31
- UL 1449 5th Edition

More info

**Part numbers**

Item number	Item description	Ucpv [V]	Internal conf.	I_{max} [kA]	I_n [kA]	Up at I_n [kV]	I_{scpv} [kA]	Remote (M)
83020188	STPT2-40K1000V-5YPVM	1060	3+, 1-, PE	40	20	4	10	✓
83020223	STPT2-40K1000V-5Y2PVM	1060	2+, 2-, PE	40	20	4	10	✓

Dimensions**5YPV****Internal configuration****3+, 1-, PE (5YPV)****2+, 2-, PE (5Y2PV)**

PHOTOVOLTAIC SPDs

SURGE-TRAP® PLUGGABLE STPT2 SERIES - 8YPV



Type 2 surge protection device (SPD) for transient overvoltages, 8-pole pluggable multipole design with I_{max} 40 kA. The Surge-Trap® Pluggable STPT2 Series - 8YPV range is suitable for PV installations, to protect 6 MPPT inputs, helping save space and wiring in compact PV combiner boxes.

Standards

- EN IEC 61643-31
- UL 1449 5th Edition



More info

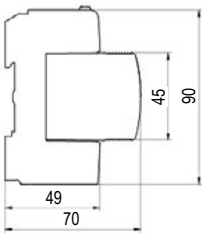
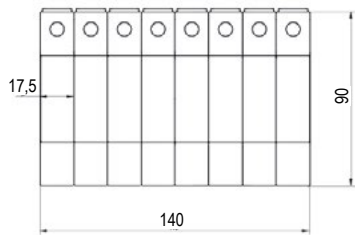


Part numbers

Item number	Item description	Ucpv [V]	Internal conf.	I _{max} [kA]	I _n [kA]	Up at I _n [kV]	Iscpv [kA]	Remote (M)
83020204	STPT2-40K1000V-8YPVM	1060	6+, 1-, PE	40	20	≤4	10	✓

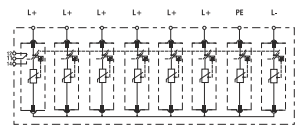
Dimensions

8YPV



Internal configuration

6+, 1-, PE (8YPV)





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