

THE BEST SOLUTIONS SINCE 1998



ELKO-BIS

LIGHTNING PROTECTION SYSTEMS

INTERNAL AND EXTERNAL
LIGHTNING PROTECTION

SURGE PROTECTIVE DEVICES

CATALOG 2025

www.elkobis.com

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ABOUT US

FAMILIAL

REGIONAL

GLOBAL

ELKO-BIS Lightning Protection Systems LTD is a familial company located in Wrocław, specialized in producing comprehensive lightning protection and earthing systems since 1998. Company operates not only in Poland, but also in most European countries, and outside Europe in markets such as Singapore, United Arab Emirates and Thailand. Every year ELKO-BIS expands the offer and is constantly growing.



DAILY CHALLENGES YOU MEET IN YOUR LIFE

ELKO-BIS offer provides full lightning protection systems with accessories, enabling appropriate selection for each facility, regardless its purpose. Protection starts from large investments, such as the LNG terminal in Świnoujście, through public use facilities, sports facilities or Warsaw

underground tube lines, and numerous residential buildings and individual investments. Offer is also dedicated for pipelines protection and the increasingly popular photovoltaic panels.



WE WOULD BE HAPPY TO ANSWER YOUR QUESTIONS

Cooperation with ELKO-BIS gives you:

- ▶ the highest quality internal and external lightning protection system,
- ▶ immediate orders execution,
- ▶ sales, technical and designing support at every stage,
- ▶ the longest product warranty on the market

SAFETY AT THE HIGHEST LEVEL!

Our company's priority is ensuring that our products comply with applicable standards, as confirmed by research, and maintaining the highest quality — guaranteed for up to five years. Our technical design team is available to answer all questions, including those concerning the increasingly relevant topic of lightning protection for photovoltaic panels. We prepare free design proposals tailored to the specific needs of each investor's site.

We focus on the quality of our products and on safety, which we monitor through extensive testing.

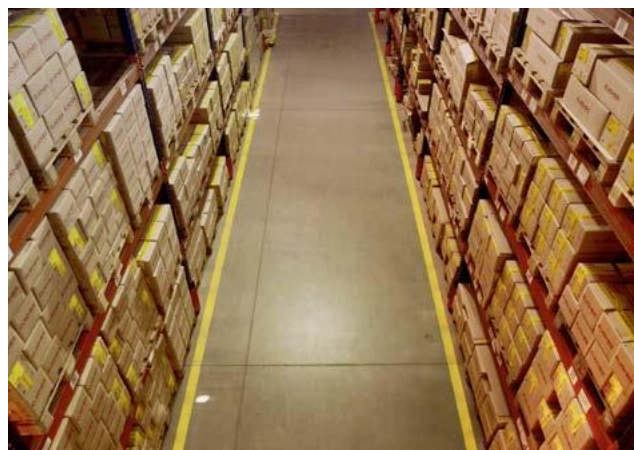
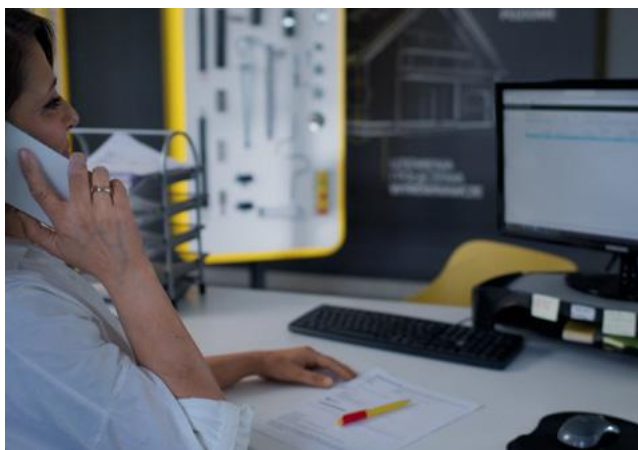
The certifications and awards we have received are a testament to our success and have earned us the trust of our clients. We are committed to raising awareness about

the importance of properly designed lightning protection systems for all of us. We challenge common misconceptions, striving to make the information we share clear and accessible for potential investors.

There is still much work ahead, but we are driven by strong motivation — and we believe that's the key to success. As you can see, we set the bar very high when it comes to our company's growth.

And besides that...

We are a team where people with different skills, competencies, and passions have found their place — we learn from one another and achieve our goals together!



OUR EXPERIENCED SPECIALISTS



Looking for **the right solution** for your business?

Have questions about our services?

Our team is ready to assist you!

Our technical department provides support at every stage of project execution. A dedicated team of specialists is ready to assist in optimizing designs while ensuring compliance with current standards. For more complex installations, we offer a free on-site visit to assess the situation thoroughly and propose the best-suited solution. Our experience and commitment guarantee the highest level of collaboration.

We will be happy to help you:

Technical support:

+48 71 330 66 13

techniczny@elkobis.com.pl

SPD Specialist Support:

+48 71 330 66 13

SPD@elkobis.com.pl

Useful data, security, ecology



Safety Notes

Products operate with life-threatening electrical voltage. Only a person with the appropriate qualification certificate may install electrical equipment. Before installation, the relevant electrical circuit must be disconnected from all sources of electrical power.



Legal Notes

ELKO-BIS Lightning Protection Systems Sp. z o.o. is the manufacturer of the ESPAC and ESPPV families of surge protective devices.

The full range of products and technical parameters can be found in this catalog and on the website:

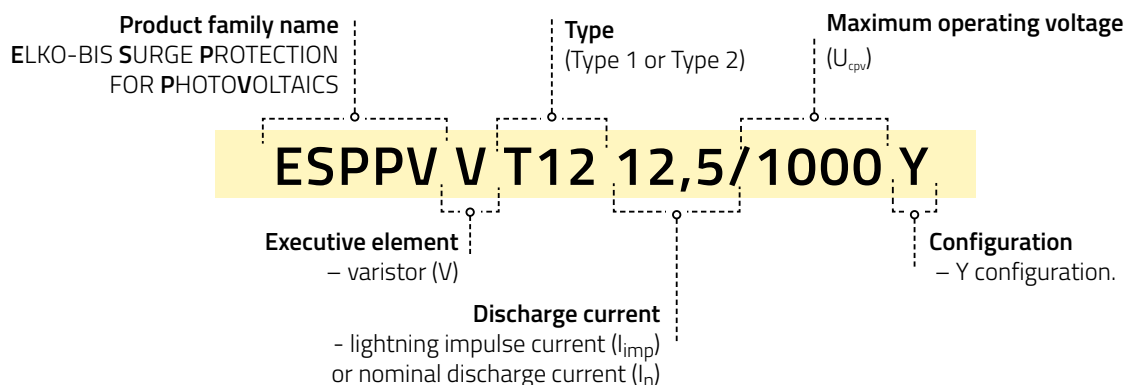
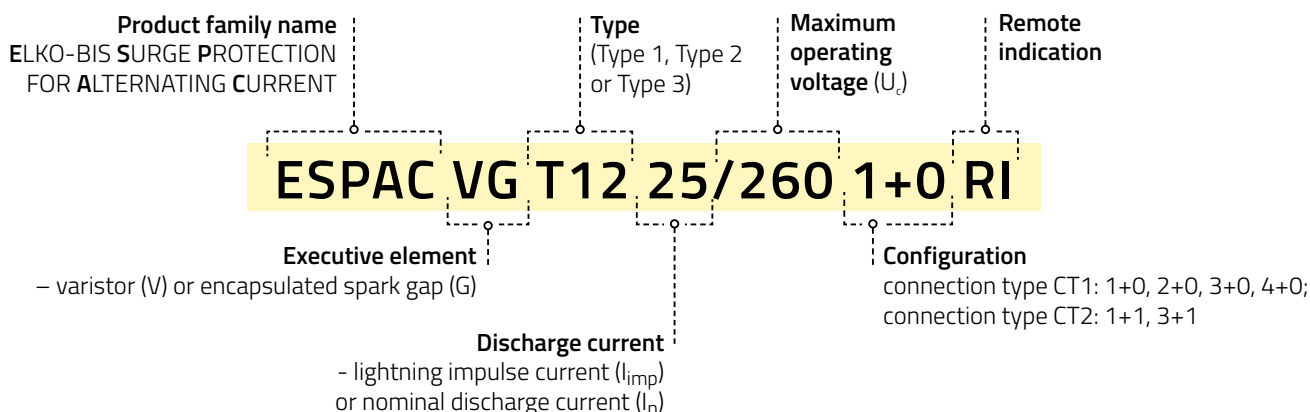
<https://elkobis.com>



Environmental considerations

Products marked with the graphic symbol of a crossed-out garbage are electronic waste as defined by EU Regulation (2012/19/EU). The product must be disposed of in an environmentally friendly manner. It must be disposed of at a designated location. The materials and technological procedures used comply with the requirements of Directive 2011/65/EU of the European Parliament and of the Council (RoHS) and Regulation 1907/2006/EC of the European Parliament and of the Council (REACH) in their latest applicable version.

Designation



1. Protection against lightning discharges and surges

1.1. Introduction

The use of modern advanced electrical equipment, consumer electronics and control systems places high demands on their electromagnetic compatibility. Modern electronic control systems equipped with circuits manifesting a very high level of integration are becoming increasingly sensitive to electromagnetic interferences and surges. Installation of surge protective devices in accordance with current legal standards increases the safety of consumers and their electrical installations connected to the electrical system. Surge arresters are defined by standards harmonized with EU standards:

- ▶ Technical data on protective connections for the same potential, including conductor cross-sections, main and additional connections, are specified in standards PN-EN 50310 (EN 50310), PN-HD 60364-5-54 (IEC 60364-5-54), PN-HD 60364-4-41 (IEC 60364-4-41).
- ▶ Lightning protection is specified in EN 62305-1 (IEC 62305), harmonized with European standards.

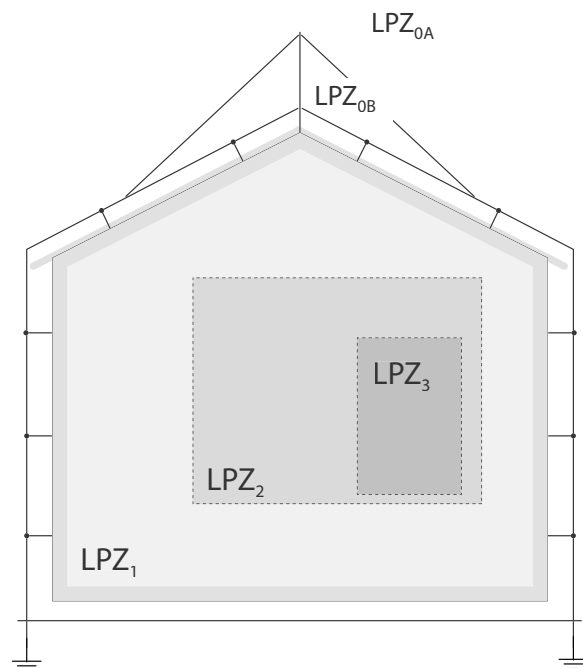
LPL (Lightning Protection Level)	Highest value of lightning current depending on Lightning Protection Level (LPL)
LPL	Lightning impulse current
LPL I	200 kA
LPL II	150 kA
LPL III	100 kA
LPL IV	100 kA



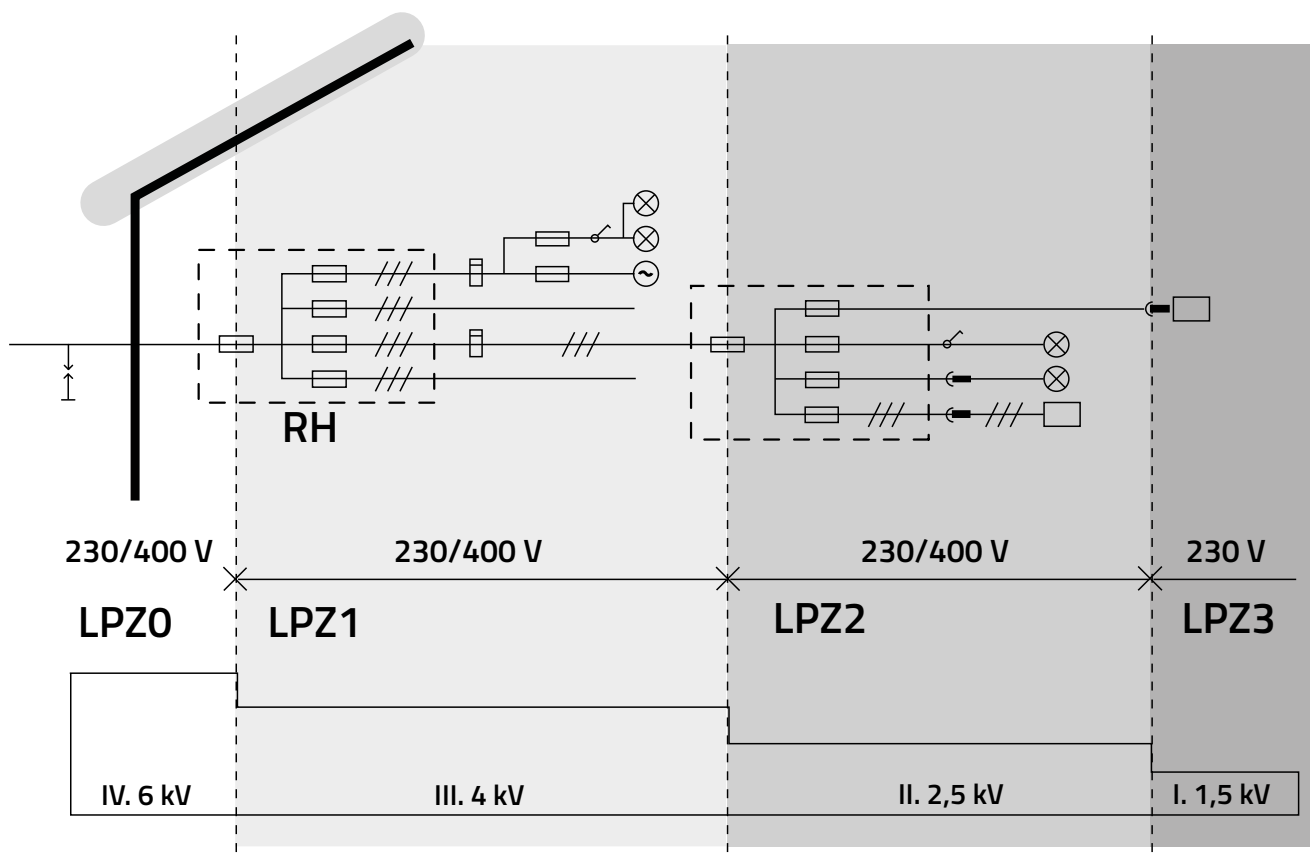
1.2 Lightning protection zones

EN 62305-4 (IEC 62305-4) defines Lightning Protection Zones (LPZ) in the context of direct and indirect overvoltage resulting from lightning discharge:

- ▶ **LPZ_{0A}** – zone in which there is a danger of direct impact of lightning current and electromagnetic field;
- ▶ **LPZ_{0B}** – zone in which there is no danger of direct lightning. Impact of lightning current, induced currents and electromagnetic field;
- ▶ **LPZ_{1...N}** – Zones created inside the building, in which there is a threat from limited lightning current, induced currents and electromagnetic fields.

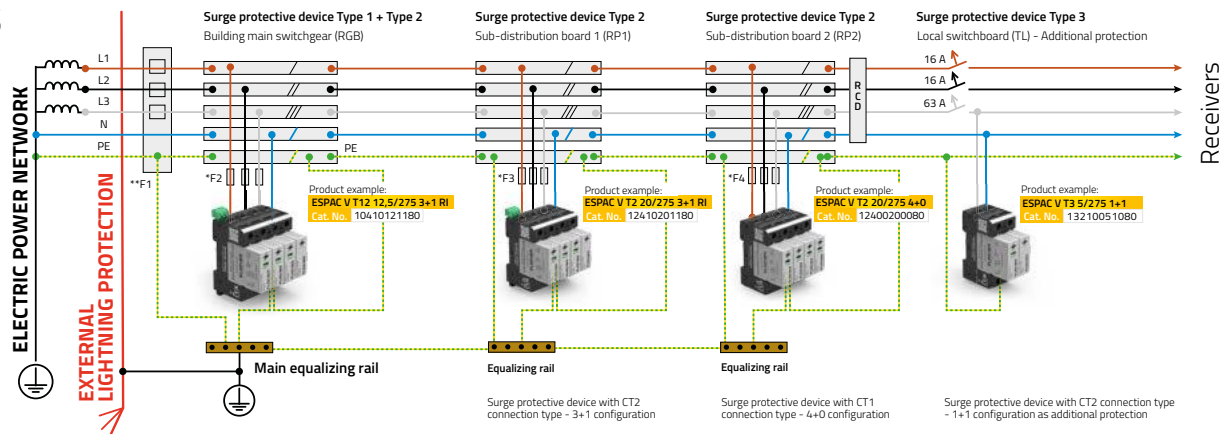


Permissible surge voltages for individual surge categories of electrical equipment according to PN-EN 60664-1 (IEC 60664-1).

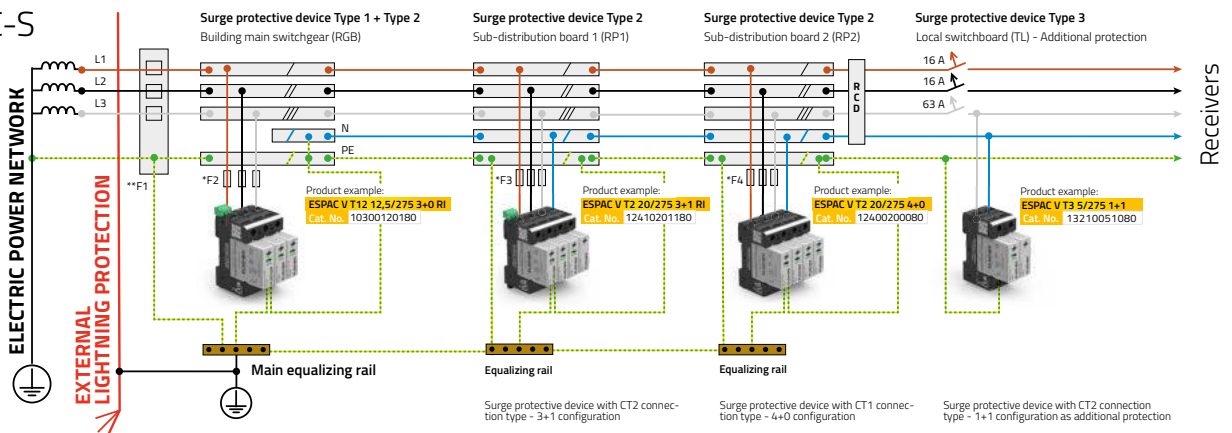


Application of surge arresters in electrical installations:

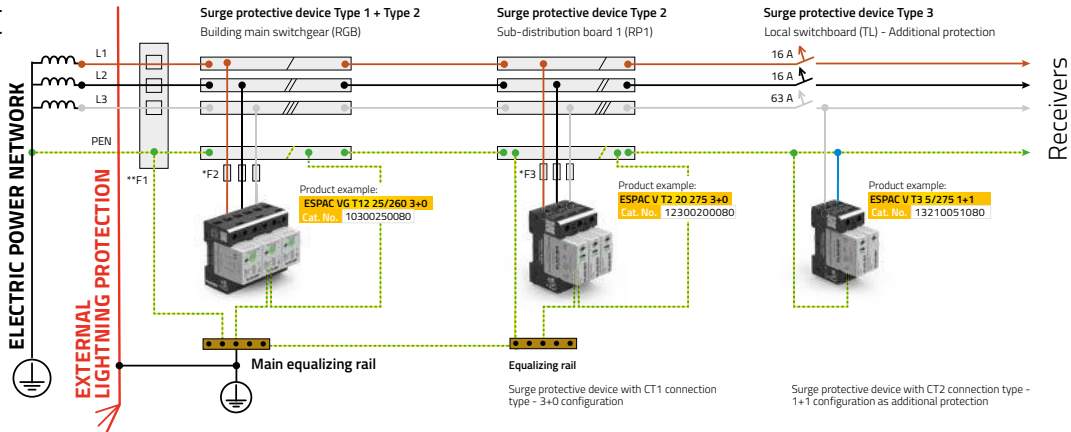
TN-S



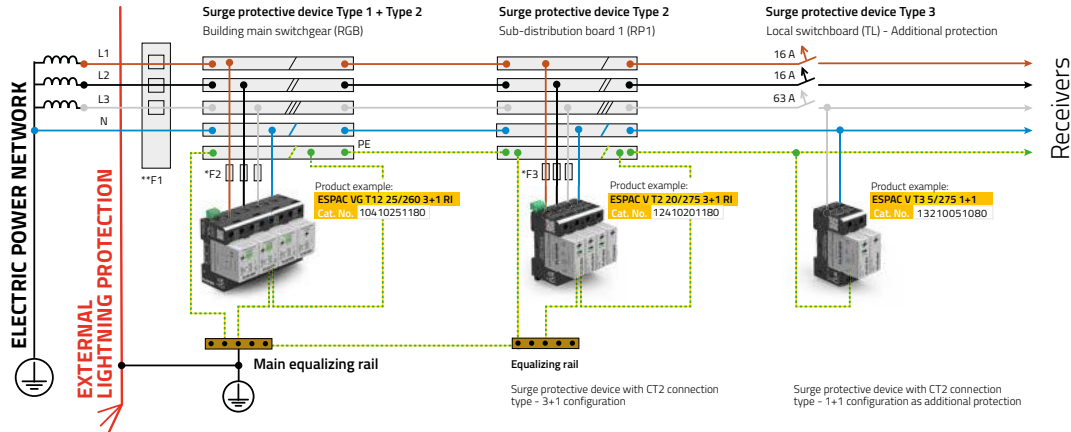
TN-C-S



TN-C



TT



1.3 Values of key technical parameters and application of surge arresters

APPLICATION OF ELKO-BIS SURGE PROTECTION - SURGE PROTECTIVE DEVICE TYPE 1 + 2

PN-EN 62305 (IEC 62305)

LOCATION OF SPD TYPE 1 + 2 ON THE BORDER OF ZONES LPZ₀ AND LPZ₁ IN THE MAIN SWITCHBOARD

LPL

Lightning current

I or II

up to 200 kA

Conditions met by a series of surge arresters:

ESPAC VG T12 25/260

- large industrial facilities,
- facilities of special importance,
- technological facilities,
- administrative facilities,
- public facilities,
- single-family houses and larger residential buildings,
- telecommunication and electrical installations
- near transformer stations.

III or IV

up to 100 kA

ESPAC V T12 12,5/275

- single-family houses in LPL class III or IV;
- other residential facilities in LPL class III or IV - surge arresters are recommended to be installed at a distance of no more than 10 m from sensitive electronic and electrical equipment;
- office and industrial facilities in LPL class III or IV - surge arresters are recommended to be installed in subordinate electrical switchgear if they are more than 10 m away from main switchgear of the building.

APPLICATION OF ELKO-BIS SURGE PROTECTION - SURGE PROTECTIVE DEVICE TYPE 2

IEC (EN) 62305

LOCATION OF SPD TYPE 2 ON THE BORDER OF ZONES LPZ₁ AND LPZ₂ IN THE MAIN SWITCHBOARD

Conditions met by a series of surge arresters:

ESPAC V T2 20/275

Type 2 should be used to protect against lightning effects like lightning current and switching surges. When the protected building does not have an LPS and is supplied by a cable line, Type 2 surge arresters can be used as the main surge protection for the facility.

APPLICATION OF ELKO-BIS SURGE PROTECTION - SURGE PROTECTIVE DEVICE TYPE 3

IEC (EN) 62305

LOCATION OF SPD TYPE 3 ON THE BORDER OF LPZ₂ AND LPZ₃ ZONES IN THE MAIN SWITCHBOARD

Conditions met by a series of surge arresters:

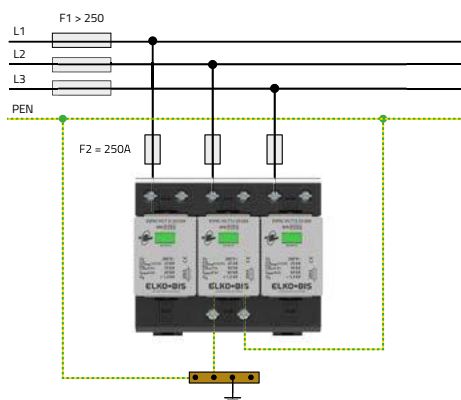
ESPAC V T3 5/275

Additional protection and effective protection of sensitive electrical or electronic equipment, use Type 3 surge arresters.

It is recommended to use a dedicated short-circuit protection (F2) for the surge protective device. It is necessary to ensure selectivity coordination (selectivity of tripping) between the main protection (F1) and the dedicated protection for the surge arrester (F2). In the absence of such coordination, it is permissible to use the main protection (F1) as a short-circuit protection of the surge arrester. The basic condition is that the value of the fuse current should not exceed the maximum values specified by the manufacturer. Then the surge arrester protection will be at the same time the main protection

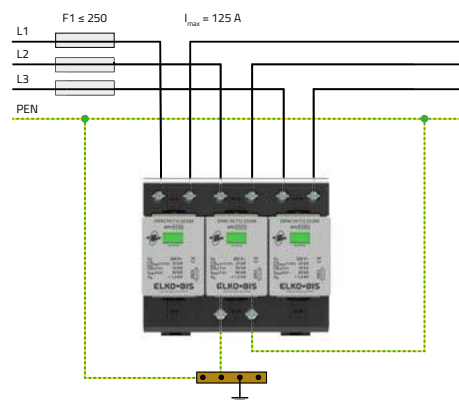
of the installation (F1). The disadvantage of such a solution will be the deprivation of power to the entire facility in the event that the surge arrester is damaged. This type of solution can be used only for objects and installations that do not require a high degree of power supply reliability, for example: single-family buildings, installations for supplying general consumers. It is recommended to check the status of short-circuit protection and SPD after each lightning event. If the surge arrester is damaged and/or the surge arrester protection (F2) tripped, the protected facility will be deprived of surge protection.

Parallel connection ESPAC VG T12 25/260 3+0

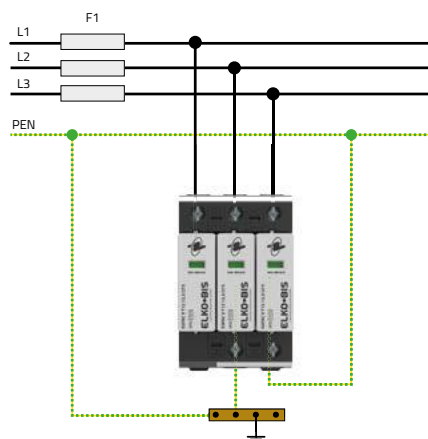


$F1 > 250 \text{ A} \rightarrow F2$
 $F1 \leq 250 \text{ A} \rightarrow \text{X}$
 $\leftarrow F1 > 125 \text{ A}$
 $\leftarrow F1 \leq 125 \text{ A} \rightarrow$

Serial connection ESPAC VG T12 25/260 3+0

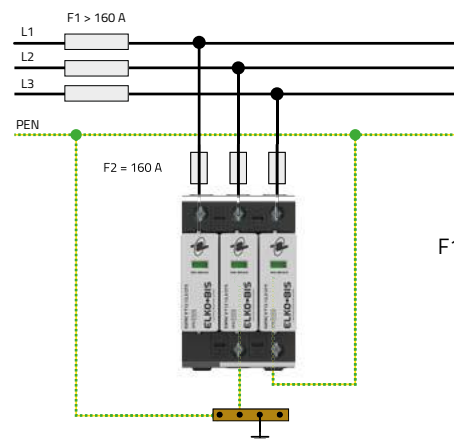


Parallel connection ESPAC V T12 12,5/275 3+0



$F1 > 160 \text{ A} \rightarrow F2$
 $\leftarrow F1 \leq 160 \text{ A} \rightarrow \text{X}$

Parallel connection ESPAC V T12 12,5/275 3+0



$F1 \leq 160 \text{ A}$

2. Installation of surge protective devices

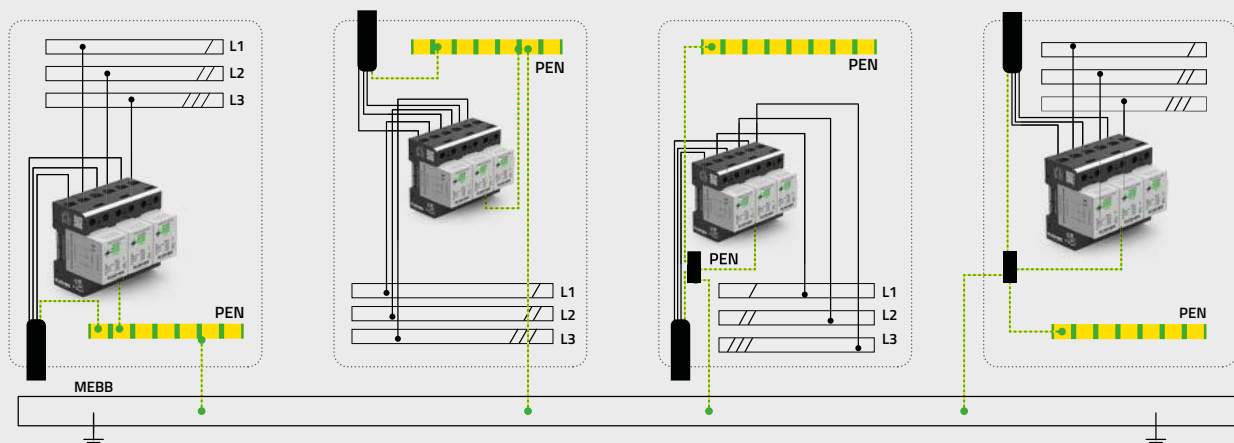
Surge protective devices must not be placed haphazardly in the switchgear. It should be noted that the surge protective device should be placed close to the power cable of the switchgear to minimize the induction loop area. Another important condition for connecting SPDs is to minimize the impedance of the connecting wires. It is also important that the length of the connecting wires should be as small as possible - PN-HD 60364-5-534. The cross-section of the connecting wires ought to be

as large as possible, while the minimum cross-section of the connecting wires is specified in PN-EN 60364-5-54. If SPDs are placed in circuits where ground fault circuit interrupters are installed, the surge arrester should be placed before the residual current device (RCD) to prevent unnecessary tripping of the RCD caused by the leakage current of the surge arrester. If the surge protective device is placed in the circuit of residual current device, it is recommended to apply S or G type RCD.



Surge protective device ESPPV V T2 15/1000 Y after installation in a small PV distribution board.

Installation of a surge protective device in a switchboard

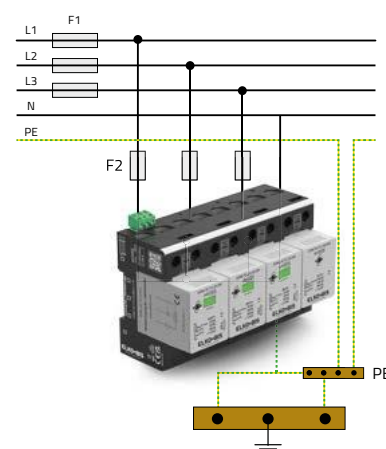
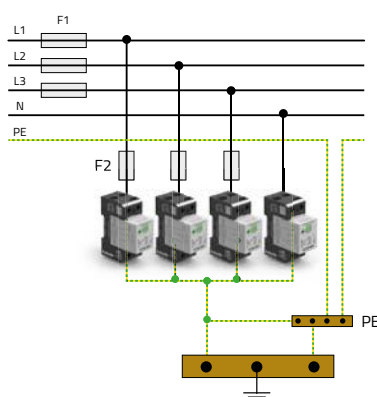
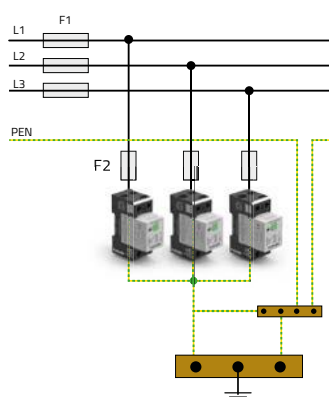


3. Dimensioning of surge protective devices technical parameters

The dimensioning of Type 1 surge arresters should be based on the determination of the lightning protection class (LPL) for the lightning protection system (LPS). The table from standard IEC (CLC/TS) 61643-12 below shows

the minimum values of lightning discharge currents, taking into account the lightning protection class level (LPL) of the building for Type 1 surge arresters.

If the LPL class is unknown, assume a worst-case scenario			Low voltage network										
LPL	Maximum lightning current corresponding to LPL class	Number of conductors (N)	TT			TN-C	TN-S			IT without N		IT with N	
			Configuration				Configuration			Configuration			
			CT1	CT2			CT1	CT2		CT1		CT2	
			L-PE N-PE	L-N	N-PE	L-PEN	L-PE N-PE	L-N	N-PE	L-PE		L-N	N-PE
I or unknown	200 kA		I _{imp} (kA)										
		5	N/A	N/A	N/A	N/A	20,0	20,0	80,0	N/A		N/A	N/A
		4	25,0	25,0	100,0	25,0	N/A	N/A	N/A	N/A		25,0	100,0
		3	N/A	N/A	N/A	N/A	33,3	33,3	66,7	33,3		N/A	N/A
		2	50,0	50,0	100,0	50,0	N/A	N/A	N/A	N/A		50,0	100,0
II or unknown	150 kA		I _{imp} (kA)										
		5	N/A	N/A	N/A	N/A	15,0	15,0	60,0	N/A		N/A	N/A
		4	18,8	18,8	75,0	18,8	N/A	N/A	N/A	N/A		18,8	75,0
		3	N/A	N/A	N/A	N/A	25,0	25,0	50,0	25,0		N/A	N/A
		2	37,5	37,5	75,0	37,5	N/A	N/A	N/A	N/A		37,5	75,0
III or IV	100 kA		I _{imp} (kA)										
		5	N/A	N/A	N/A	N/A	10,0	10,0	40,0	N/A		N/A	N/A
		4	12,5	12,5	50,0	12,5	N/A	N/A	N/A	N/A		12,5	50,0
		3	N/A	N/A	N/A	N/A	16,7	16,7	33,3	16,7		N/A	N/A
		2	25,0	25,0	50,0	25,0	N/A	N/A	N/A	N/A		25,0	50,0



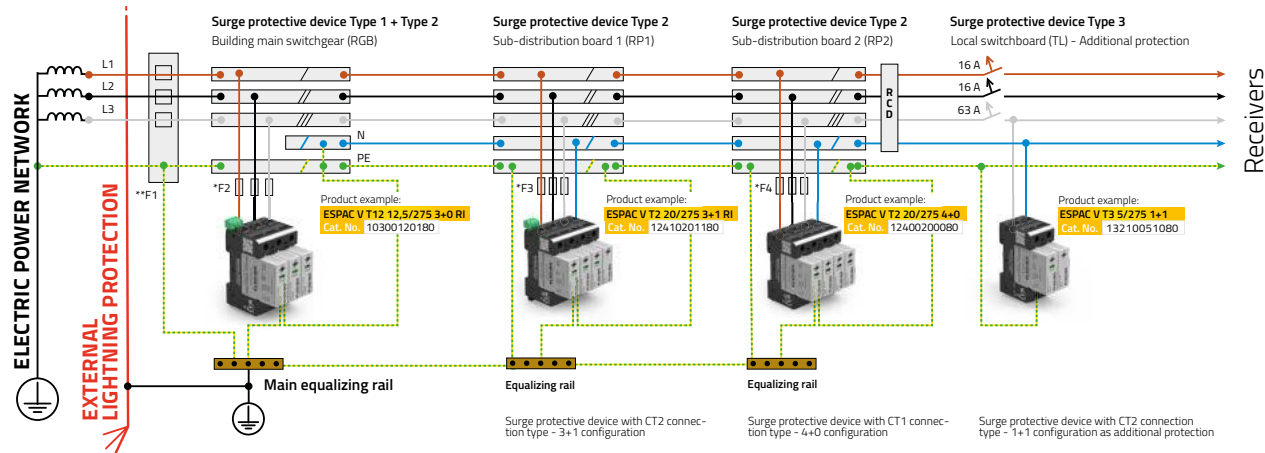
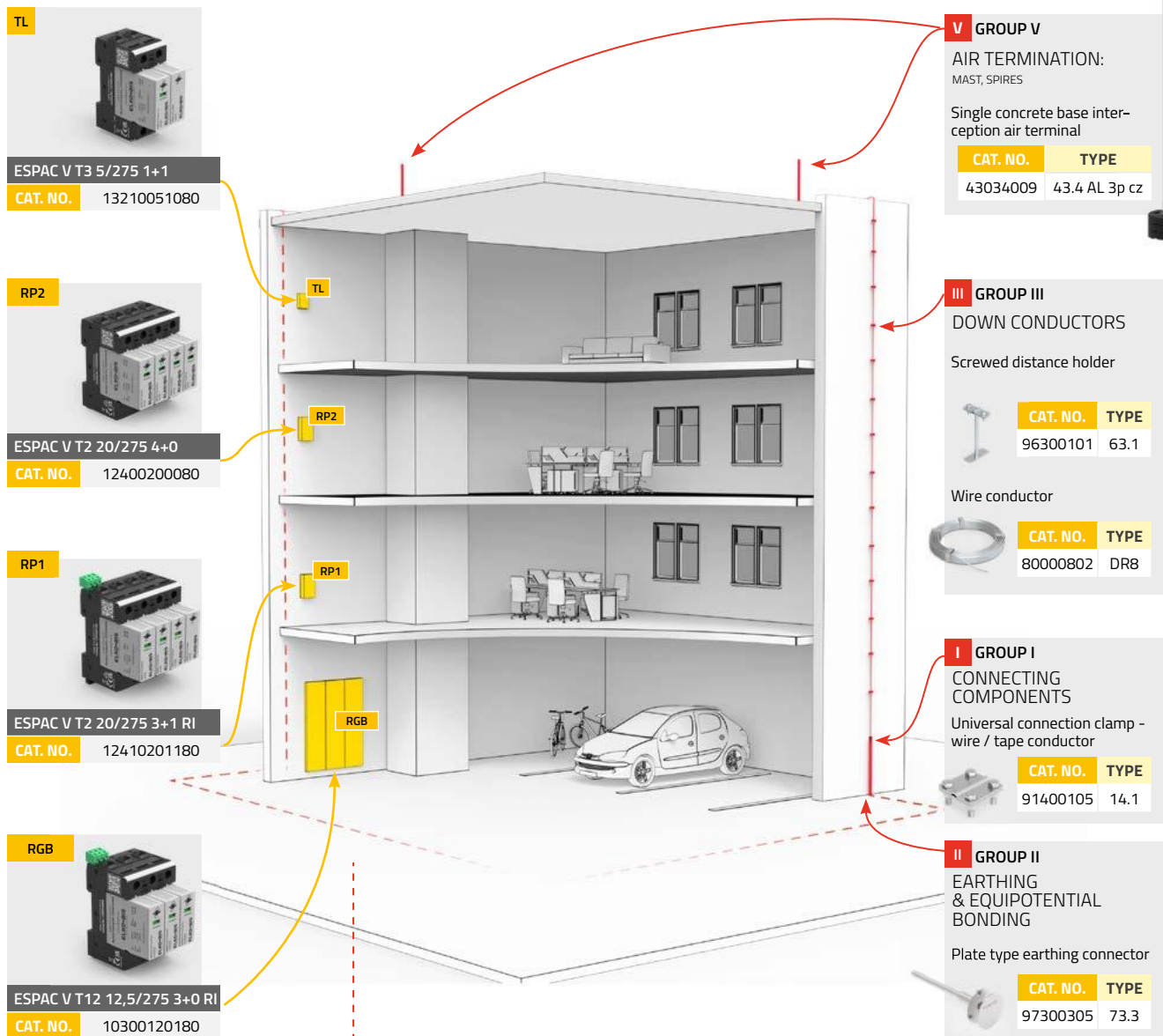
When using surge arresters from series ESPAC VG T12 25/260 or ESPAC V T12 12.5/275 in low voltage networks of 230/400 V AC, it is not required to install any additional SPD (for example SPD type 3) in the event that the length of the electric circuit from the surge arrester

to the protected electrical receivers does not exceed 10 meters, and the lengths of the SPD connection wires are not longer than 0.5 meters, as specified in the installation instructions of the applied surge protective device.

Suggestions for selection of lightning and surge protective equipment

INTERNAL LIGHTNING PROTECTION

EXTERNAL LIGHTNING PROTECTION



Exemplary selection of surge protective devices in electrical installations of various buildings

Type of building:								
Single-family houses, administrative buildings, technological facilities, industrial facilities								
Network system	Main switchgear of the building (RGB)		Subordinate switchgear 1 (RP1)		Local distribution switchboard (TL) - additional protection			
	CAT. NO.	NAME	CAT. NO.	NAME	CAT. NO.	NAME		
3-ph TN-C	10300250080	ESPAC VG T12 25/260 3+0	12300200080	ESPAC V T2 20/275 3+0	distance> 5 m			
			12300200180	ESPAC V T2 20/275 3+0 RI				
			distance > 50					
			10300120080	ESPAC V T12 12,5/275 3+0				
	10300250180	ESPAC VG T12 25/260 3+0 RI	10300120180	ESPAC V T12 12,5/275 3+0 RI			modular surge protective devices for TH 35 (DIN 35) rail:	
			distance > 100					
			10300250080	ESPAC VG T12 25/260 3+0				
			10300250180	ESPAC VG T12 25/260 3+0 RI				
3-ph TN-S	10400250080	ESPAC VG T12 25/260 4+0	12400200080	ESPAC V T2 20/275 4+0	distance> 5 m			
			12400200180	ESPAC V T2 20/275 4+0 RI				
			distance > 50					
			10400120080	ESPAC V T12 12,5/275 4+0			13210051080	ESPAC V T3 5/275 1+1
	10400250180	ESPAC VG T12 25/260 4+0 RI	10400120180	ESPAC V T12 12,5/275 4+0 RI	(up to 63 A)			
			distance > 100		13210051180	ESPAC V T3 5/275 1+1 RI		
			10400250080	ESPAC VG T12 25/260 4+0				
			10400250180	ESPAC VG T12 25/260 4+0 RI				
3-ph TN-C-S	10300250080	ESPAC VG T12 25/260 3+0	12400200080	ESPAC V T2 20/275 4+0				
			12400200180	ESPAC V T2 20/275 4+0 RI				
			distance > 50					
			10400120080	ESPAC V T12 12,5/275 4+0				
	10300250180	ESPAC VG T12 25/260 3+0 RI	10400120180	ESPAC V T12 12,5/275 4+0 RI				
			distance > 100					
			10400250080	ESPAC VG T12 25/260 4+0				
			10400250180	ESPAC VG T12 25/260 4+0 RI				

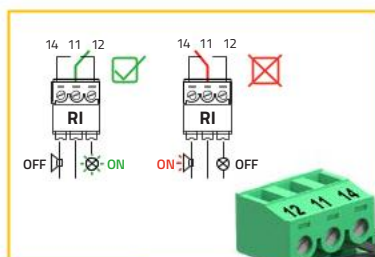
Type of building:						
Residential buildings with the number of apartments of 12 or more (SPD located in estate buildings)						
Network system	Main switchgear of the building (RGB)		Subordinate switchgear 1 (RP1)		Local distribution switchboard (TL) - additional protection	
	CAT. NO.	NAME	CAT. NO.	NAME	CAT. NO.	NAME
3-ph TN-C			10300120080	ESPAC V T12 12,5/275 3+0	distance> 5 m	
			10300120180	ESPAC V T12 12,5/275 3+0 RI		
3-ph TN-S			10400120080	ESPAC V T12 12,5/275 4+0	modular surge protective devices for TH 35 (DIN 35) rail:	
			10400120180	ESPAC V T12 12,5/275 4+0 RI		
3-ph TN-C-S	Decoupling point in the main building distribution board		10300120080	ESPAC V T12 12,5/275 3+0	13210051080	ESPAC V T3 5/275 1+1
			10300120180	ESPAC V T12 12,5/275 3+0 RI	(up to 63 A)	
1-ph TN-C			10210251180	ESPAC VG T12 25/260 1+1 RI	13210051180	ESPAC V T3 5/275 1+1 RI
1-ph TN-S			10200120080	ESPAC V T12 12,5/275 2+0		
			10200120180	ESPAC V T12 12,5/275 2+0 RI		

Exemplary selection of surge protective devices in electrical installations of various buildings

Type of building								
Demanding facilities (facilities - plants classified as explosive hazards, chemical plants, facilities of very high importance)								
Network system	Main switchgear of the building (RGB)		Subordinate switchgear 1 (RP1)		Local distribution switchboard (TL) - additional protection			
	CAT. NO.	NAME	CAT. NO.	NAME	CAT. NO.	NAME		
3-ph TN-C	10300250080	ESPAC VG T12 25/260 3+0	12300200080	ESPAC V T2 20/275 3+0	distance> 5 m			
			12300200180	ESPAC V T2 20/275 3+0 RI				
			distance > 50					
	10300120080	ESPAC V T12 12,5/275 3+0	distance> 100					
	10300120180	ESPAC V T12 12,5/275 3+0 RI						
10300250180	ESPAC VG T12 25/260 3+0 RI	10300250080	ESPAC VG T12 25/260 3+0					
		10300250180	ESPAC VG T12 25/260 3+0 RI					
		12400200080	ESPAC V T2 20/275 4+0					
3-ph TN-S	10400250080	ESPAC VG T12 25/260 4+0	12400200180	ESPAC V T2 20/275 4+0 RI			modular surge protective devices for TH 35 (DIN 35) rail:	
			distance > 50					
			10400120080	ESPAC V T12 12,5/275 4+0				
	10400120180	ESPAC V T12 12,5/275 4+0 RI	13210051080	ESPAC V T3 5/275 1+1 (up to 63 A)				
	distance > 100							
	10400250080	ESPAC VG T12 25/260 4+0						
10400250180	ESPAC VG T12 25/260 4+0 RI	10400250180	ESPAC VG T12 25/260 4+0 RI	13210051180	ESPAC V T3 5/275 1+1 RI			
3-ph TN-C-S	Decoupling point in the main building distribution board		12400200080	ESPAC V T2 20/275 4+0				
			12400200180	ESPAC V T2 20/275 4+0 RI				
			distance > 50					
	10400120080	ESPAC V T12 12,5/275 4+0	10400120180	ESPAC V T12 12,5/275 4+0 RI				
	10300250080	ESPAC VG T12 25/260 3+0						
	distance > 100							
10300250180	ESPAC VG T12 25/260 3+0 RI	10400250080	ESPAC VG T12 25/260 4+0					
		10400250180	ESPAC VG T12 25/260 4+0 RI					

Type of building								
Buildings with single-phase technological installations								
Network system	Main switchgear of the building (RGB)		Subordinate switchgear 1 (RP1)		Local distribution switchboard (TL) - additional protection			
	CAT. NO.	NAME	CAT. NO.	NAME	CAT. NO.	NAME		
1-ph TN-C	10100250080	ESPAC VG T12 25/260 1+0	12100200080	ESPAC V T2 20/275 1+0	distance> 5 m			
			12100200180	ESPAC V T2 20/275 1+0 RI				
			distance > 50					
			10100120080	ESPAC V T12 12,5/275 1+0				
	10100250180	ESPAC VG T12 25/260 3+0 RI	10100120180	ESPAC V T12 12,5/275 1+0 RI				
			distance > 100					
			10100250080	ESPAC VG T12 25/260 1+0				
			10100250180	ESPAC VG T12 25/260 1+0 RI				
1-ph TN-S	10200250080	ESPAC VG T12 25/260 2+0	12200200080	ESPAC V T2 20/275 2+0			modular surge protective devices for TH 35 (DIN 35) rail:	13210051080 ESPAC V T3 5/275 1+1 (up to 63 A)
			12200200180	ESPAC V T2 20/275 2+0 RI				
			distance > 50					
			10200120080	ESPAC V T12 12,5/275 2+0				
	10200250180	ESPAC VG T12 25/260 2+0 RI	10200120180	ESPAC V T12 12,5/275 2+0 RI				
			distance > 100					
			12200200080	ESPAC V T2 20/275 2+0				
			12200200180	ESPAC V T2 20/275 2+0 RI				
1-ph TN-C-S	Decoupling point in the main building distribution board		12200200080	ESPAC V T2 20/275 2+0				
			12200200180	ESPAC V T2 20/275 2+0 RI				
	10100250080	ESPAC VG T12 25/260 1+0	distance > 50					
			10200120080	ESPAC V T12 12,5/275 2+0				
			10200120180	ESPAC V T12 12,5/275 2+0 RI				
			distance > 100					
	10100250180	ESPAC VG T12 25/260 1+0 RI	10200250080	ESPAC VG T12 25/260 2+0				
			10200250180	ESPAC VG T12 25/260 2+0 RI				

ESPAC - MODULAR SURGE PROTECTIVE DEVICES



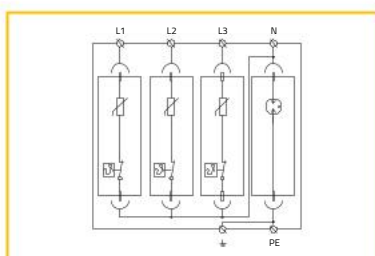
Varistor damage **signalization contact** (RI - Remote Indicator).



Terminals for wires and connecting rails - fork and prong type.



All surge arresters from the ESPAC family have the option of **easy and quick module replacement**.



High-quality current path executive elements - thermal disconnector and varistor.



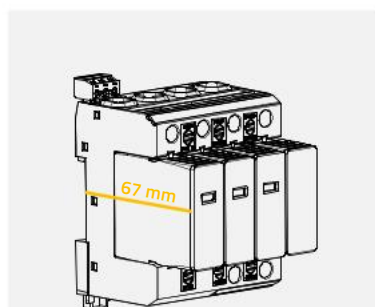
Optical indicator (red window colour - should be replaced; green window colour - functional).



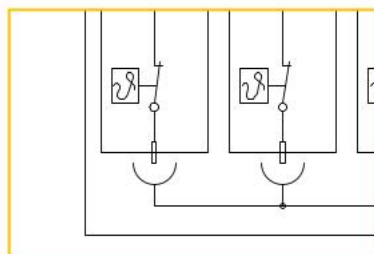
Printed information about **basic technical parameters** of surge protective devices and compliance with standards.



Mounting locks - solid surge arrester installation on TH35 (DIN) rail



The installation depth for ESPAC family surge protective devices is **67 mm**.



Each surge arrester from the ESPAC family is equipped with a **thermal disconnector** in every current path. In the event of a discharge current that is greater than the I_{max} value or an increase in the system temperature to the limit values, the dedicated mechanism will disconnect the surge protective device from the network.



Mechanical coding - all surge arresters have dedicated elements. It is not possible to install a different replaceable module than the one dedicated to the given surge protective device base.

Type 1 + Type 2 25 kA ESPAC VG T12 25/260

ESPAC VG T12 25/260 surge protective devices are designed for internal use in the main switchboard of a building as Type 1 or Type 2 protection against surges caused by direct and indirect atmospheric discharges or surges caused by switching of electrical apparatuses. The devices are equipped with thermal protection and optical signalling, which, by changing color from green to red, indicates the need to replace the arrester module. The ESPAC VG T12 25/260 series of arresters is used in buildings with a TN (TN-S, TN-C, TN-C-S) and TT network system.



SERIES CHARACTERISTICS

- ▶ High-performance series of surge arresters in single, two, three and four-pole versions with a modular width from two (36 mm) to eight modules (144 mm).
- ▶ Provided protection against surges resulting from direct and indirect lightning strikes – homes, offices or industrial buildings, recommended for use in main switchboards of large buildings.
- ▶ Possible remote signalization of damage with a voltage and current signal - 250V/0,5A AC and 250V/0,1A DC.
- ▶ No leakage current, no follow current.
- ▶ Optical indicator informing about the device status: green - functional, red - replace.
- ▶ Possibility of installing the surge protective device in two positions on a TH 35 rail.
- ▶ Replaceable modules.
- ▶ Possibility of feeding to the power terminals with a cable or a rail – prong or fork type.

Replacement modules for ESPAC VG T12 25/260

REPLACEABLE MODULE			SURGE PROTECTIVE DEVICE NOTE	
P.	NAME	CATALOG NUMBER	NAME	NOTE
50	ESPAC VG T12 25/260	10630253280	ESPAC VG T12 25/260 1+0	-
			ESPAC VG T12 25/260 2+0	
			ESPAC VG T12 25/260 3+0	
			ESPAC VG T12 25/260 4+0	
			ESPAC VG T12 25/260 1+0 RI	
			ESPAC VG T12 25/260 2+0 RI	
			ESPAC VG T12 25/260 3+0 RI	
			ESPAC VG T12 25/260 4+0 RI	
52	ESPAC VG T12 50 NPE	10640503280	ESPAC VG T12 25/260 1+1 RI	Additional module type for 1+1 or 3+1 configurations - NPE
51	ESPAC VG T12 100 NPE	10641003280	ESPAC VG T12 25/260 3+1 RI	Additional module type for 1+1 or 3+1 configurations - NPE

PRODUCT DATA

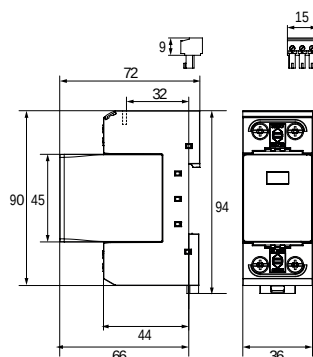
SPD Series ESPAC VG T12 25/260

NAME	CATALOG NUMBER	I_{imp} (10/350 μ s) [kA]	NETWORK SYSTEM	REMOTE INDICATOR
ESPAC VG T12 25/260 1+0	10100250080	25	TN-S, TN-C, TN-C-S	NO
ESPAC VG T12 25/260 2+0	10200250080		TN-S, TN-C, TN-C-S	
ESPAC VG T12 25/260 3+0	10300250080		TN-C	
ESPAC VG T12 25/260 4+0	10400250080		TN-S, TN-C-S	
ESPAC VG T12 25/260 1+0 RI	10100250180		TN-S, TN-C, TN-C-S	YES
ESPAC VG T12 25/260 2+0 RI	10200250180		TN-S, TN-C, TN-C-S	
ESPAC VG T12 25/260 3+0 RI	10300250180		TN-C	
ESPAC VG T12 25/260 4+0 RI	10400250180		TN-S, TN-C-S	
ESPAC VG T12 25/260 1+1 RI	10210251180		TT, TN-S, TN-C, TN-C-S	
ESPAC VG T12 25/260 3+1 RI	10410251180		TT, TN-S, TN-C-S	

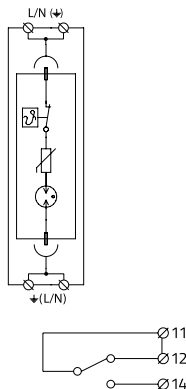
Type 1 + Type 2 25 kA

ESPAC VG T12 25/260 1+0
ESPAC VG T12 25/260 1+0 RI

DIMENSIONS *



CIRCUIT DIAGRAM



* All dimensions in mm

TECHNICAL DATA

Name	ESPAC VG T12 25/260 1+0	ESPAC VG T12 25/260 1+0 RI
Catalog Number	10100250080	10100250180
U_n Nominal voltage	230 V AC	
U_c Maximum operating voltage	260 V AC	
I_L Nominal load current for „V“ connection	125 A	
I_{imp} Lightning impulse current (10/350 μ s)	25 kA	
I_n Nominal discharge current (8/20 μ s)	30 kA	
I_{max} Maximum discharge current (8/20 μ s)	60 kA	
U_p Voltage protection level	1,5 kV	
U_{oc} Class test T3: Test voltage	20 kV	
I_{SCCR} Short-circuit current rating	50 kA	
t_a Response time	100 ns	
Maximum overcurrent protection	250 A gL/gG	
Maximum overcurrent protection for „V“ connection	125 A gL/gG	
Cross-section of connected conductors solid (min/max)	2,5 mm ² / 50 mm ²	
Cross-section of connected conductors stranded (min/max)	2,5 mm ² / 35 mm ²	
Fault indication	red indication field	
Remote indication	-	potential-free change-over contact
Remote indication contacts	-	250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors	-	1,5 mm ²
Degree of protection	IP 20	
Range of operating temperatures (min/max)	-40°C ... +80°C	
Humidity	5 - 95 %	
Mounting	DIN rail 35 mm	
According to standard	EN 61643-11:2012, IEC 61643-11:2011	
Certifications:	 VDE Certification	

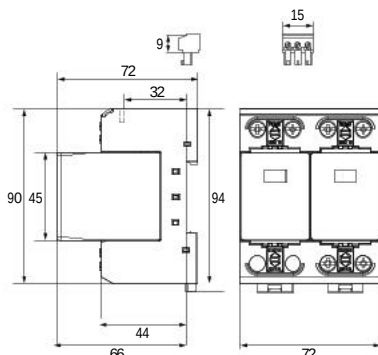
DEVICE CHARACTERISTICS

- High-performance combined surge arresters in single-pole versions with a modular width of 36 mm.
- Provided protection against surges resulting from direct and indirect lightning strikes – homes, offices or industrial buildings, recommended for use in main switchboards of large buildings.
- Installation on the boundary of LPZ 0 and LPZ 1 zones or higher in the main distribution board of the building (recommended).
- Dedicated for TN (TN-S, TN-C, TN-C-S) network systems and single phase main and sub-distribution boards.
- Optical indicator informing about the device status: green - functional, red - replace.
- Possibility of installing the surge protective device in two positions on a TH 35 rail.
- Replaceable modules.
- Possibility of feeding to the power terminals with a cable or a rail - prong or fork type.
- No leakage current, no follow current.

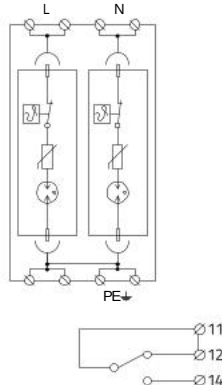
Type 1 + Type 2 25 kA

ESPAC VG T12 25/260 2+0
ESPAC VG T12 25/260 2+0 RI

DIMENSIONS *



CIRCUIT DIAGRAM



* All dimensions in mm

TECHNICAL DATA

Name	ESPAC VG T12 25/260 2+0	ESPAC VG T12 25/260 2+0 RI
Catalog Number	10200250080	10200250180
U_n Nominal voltage	230 V AC	
U_c Maximum operating voltage	260 V AC	
I_L Nominal load current for „V“ connection	125 A	
I_{imp} Lightning impulse current (10/350 μ s)	25 kA	
I_n Nominal discharge current (8/20 μ s)	30 kA	
I_{max} Maximum discharge current (8/20 μ s)	60 kA	
U_p Voltage protection level	1,5 kV	
U_{oc} Class test T3: Test voltage	20 kV	
I_{scCR} Short-circuit current rating	50 kA	
t_a Response time	100 ns	
Maximum overcurrent protection	250 A gL/gG	
Maximum overcurrent protection for „V“ connection	125 A gL/gG	
Cross-section of connected conductors solid (min/max)	2,5 mm ² / 50 mm ²	
Cross-section of connected conductors stranded (min/max)	2,5 mm ² / 35 mm ²	
Fault indication	red indication field	
Remote indication	-	potential-free change-over contact
Remote indication contacts	-	250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors	-	1,5 mm ²
Degree of protection	IP 20	
Range of operating temperatures (min/max)	-40°C ... +80°C	
Humidity	5 - 95 %	
Mounting	DIN rail 35 mm	
According to standard	EN 61643-11:2012, IEC 61643-11:2011	
Certifications:	 VDE Certification	

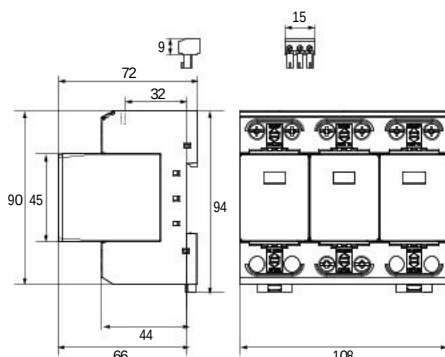
DEVICE CHARACTERISTICS

- High-performance combined surge arresters in two-pole versions with a modular width of 72 mm.
- Provided protection against surges resulting from direct and indirect lightning strikes – homes, offices or industrial buildings, recommended for use in main switchboards of large buildings.
- Installation on the boundary of LPZ 0 and LPZ 1 zones or higher in the main distribution board of the building (recommended).
- Dedicated for TN (TN-S, TN-C, TN-C-S) network systems and single phase main and sub-distribution boards.
- Optical indicator informing about the device status: green - functional, red - replace.
- Possibility of installing the surge protective device in two positions on a TH 35 rail.
- Replaceable modules.
- Possibility of feeding to the power terminals with a cable or a rail - prong or fork type.
- No leakage current, no follow current.

Type 1 + Type 2 25 kA

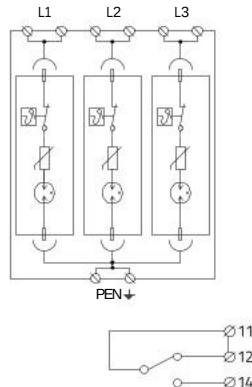
ESPAC VG T12 25/260 3+0
ESPAC VG T12 25/260 3+0 RI

DIMENSIONS *



* All dimensions in mm

CIRCUIT DIAGRAM



TECHNICAL DATA

Name	ESPAC VG T12 25/260 3+0	ESPAC VG T12 25/260 3+0 RI
Catalog Number	10300250080	10300250180
U_n Nominal voltage	230 V AC	
U_c Maximum operating voltage	260 V AC	
I_L Nominal load current for „V“ connection	125 A	
I_{imp} Lightning impulse current (10/350 μ s)	25 kA	
I_n Nominal discharge current (8/20 μ s)	30 kA	
I_{max} Maximum discharge current (8/20 μ s)	60 kA	
U_p Voltage protection level	1,5 kV	
U_{oc} Class test T3: Test voltage	20 kV	
I_{scCR} Short-circuit current rating	50 kA	
t_a Response time	100 ns	
Maximum overcurrent protection	250 A gL/gG	
Maximum overcurrent protection for „V“ connection	125 A gL/gG	
Cross-section of connected conductors solid (min/max)	2,5 mm ² / 50 mm ²	
Cross-section of connected conductors stranded (min/max)	2,5 mm ² / 35 mm ²	
Fault indication	red indication field	
Remote indication	-	potential-free change-over contact
Remote indication contacts	-	250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors	-	1,5 mm ²
Degree of protection	IP 20	
Range of operating temperatures (min/max)	-40°C ... +80°C	
Humidity	5 - 95 %	
Mounting	DIN rail 35 mm	
According to standard	EN 61643-11:2012, IEC 61643-11:2011	
Certifications:	 VDE Certification	

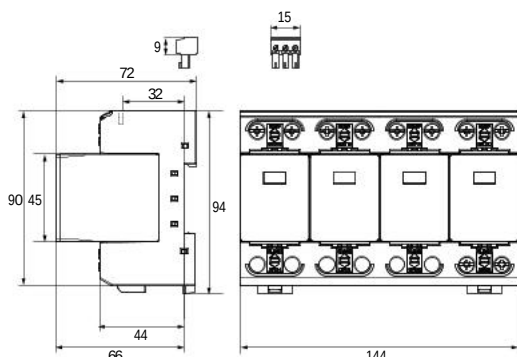
DEVICE CHARACTERISTICS

- High-performance combined surge arresters in three-pole versions with a modular width of 108 mm.
- Provided protection against surges resulting from direct and indirect lightning strikes – homes, offices or industrial buildings, recommended for use in main switchboards of large buildings.
- Installation on the boundary of LPZ₀ and LPZ₁ zones or higher in the main distribution board of the building (recommended).
- Dedicated for TN-C network system.
- Optical indicator informing about the device status: green - functional, red - replace.
- Possibility of installing the surge protective device in two positions on a TH 35 rail.
- Replaceable modules.
- Possibility of feeding to the power terminals with a cable or a rail - prong or fork type.
- No leakage current, no follow current.

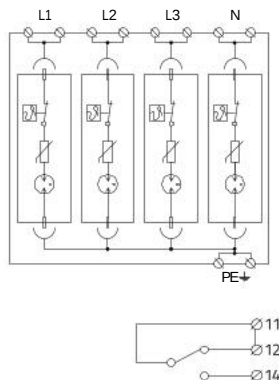
Type 1 + Type 2 25 kA

ESPAC VG T12 25/260 4+0
ESPAC VG T12 25/260 4+0 RI

DIMENSIONS *



CIRCUIT DIAGRAM



* All dimensions in mm

TECHNICAL DATA

Name	ESPAC VG T12 25/260 4+0	ESPAC VG T12 25/260 4+0 RI
Catalog Number	10400250080	10400250180
U_n Nominal voltage	230 V AC	
U_c Maximum operating voltage	260 V AC	
I_L Nominal load current for „V“ connection	125 A	
I_{imp} Lightning impulse current (10/350 μ s)	25 kA	
I_n Nominal discharge current (8/20 μ s)	30 kA	
I_{max} Maximum discharge current (8/20 μ s)	60 kA	
U_p Voltage protection level	1,5 kV	
U_{oc} Class test T3: Test voltage	20 kV	
I_{scCR} Short-circuit current rating	50 kA	
t_a Response time	100 ns	
Maximum overcurrent protection	250 A gL/gG	
Maximum overcurrent protection for „V“ connection	125 A gL/gG	
Cross-section of connected conductors solid (min/max)	2,5 mm ² / 50 mm ²	
Cross-section of connected conductors stranded (min/max)	2,5 mm ² / 35 mm ²	
Fault indication	red indication field	
Remote indication	-	potential-free change-over contact
Remote indication contacts	-	250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors	-	1,5 mm ²
Degree of protection	IP 20	
Range of operating temperatures (min/max)	-40°C ... +80°C	
Humidity	5 - 95 %	
Mounting	DIN rail 35 mm	
According to standard	EN 61643-11:2012, IEC 61643-11:2011	
Certifications:	 VDE Certification	

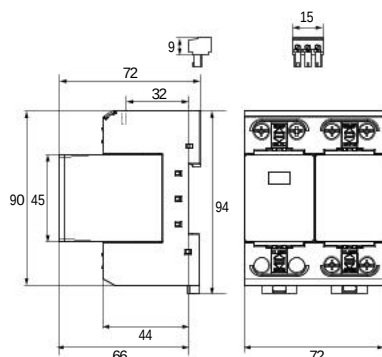
DEVICE CHARACTERISTICS

- High-performance combined surge arresters in four-pole versions with a modular width of 144 mm.
- Provided protection against surges resulting from direct and indirect lightning strikes – homes, offices or industrial buildings, recommended for use in main switchboards of large buildings.
- Installation on the boundary of LPZ 0 and LPZ 1 zones or higher in the main distribution board of the building (recommended).
- Dedicated for TN-S and TN-C-S network systems.
- Optical indicator informing about the device status: green - functional, red - replace.
- Possibility of installing the surge protective device in two positions on a TH 35 rail.
- Replaceable modules.
- Possibility of feeding to the power terminals with a cable or a rail – prong or fork type.
- No leakage current, no follow current.

Type 1 + Type 2 25 kA

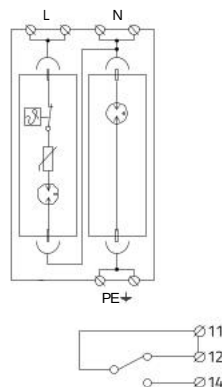
ESPAC VG T12 25/260 1+1 RI

DIMENSIONS *



* All dimensions in mm

CIRCUIT DIAGRAM



TECHNICAL DATA

Name	ESPAC VG T12 25/260 1+1 RI	
Catalog Number	10210251180	
U_n Nominal voltage	230 V AC	
U_c Maximum operating voltage L-N	260 V AC	
U_c Maximum operating voltage N-PE	255 V AC	
I_L Nominal load current for „V“ connection	125 A	
I_{imp} Lightning impulse current (10/350 μ s) L-N	25 kA	
I_{imp} Lightning impulse current (10/350 μ s) N-PE	50 kA	
I_n Nominal discharge current (8/20 μ s) L-N	30 kA	
I_n Nominal discharge current (8/20 μ s) N-PE	50 kA	
I_{max} Maximum discharge current (8/20 μ s) L-N	60 kA	
I_{max} Maximum discharge current (8/20 μ s) N-PE	100 kA	
U_p Voltage protection level L-N	1,5 kV	
U_p Voltage protection level N-PE	1,5 kV	
U_p Voltage protection level L-PE	2,2 kV	
U_{oc} Class test T3: Test voltage	20 kV	
I_{fi} Ability to independently switch off the following current N-PE	0,1 kA	
I_{SCCR} Short-circuit current rating	50 kA	
t_a Response time L-N	100 ns	
t_a Response time N-PE	100 ns	
Maximum overcurrent protection	250 A gL/gG	
Maximum overcurrent protection for „V“ connection	125 A gL/gG	
Cross-section of connected conductors solid (min/max)	2,5 mm ² / 50 mm ²	
Cross-section of connected conductors stranded (min/max)	2,5 mm ² / 35 mm ²	
Fault indication L-N	red indication field	
Fault indication N-PE	no	
Remote indication	potential-free change-over contact	
Remote indication contacts	250 V / 0,5 A AC, 250 V / 0,1 A DC	
Cross-section of remote indication conductors	1,5 mm ²	
Degree of protection	IP 20	
Range of operating temperatures (min/max)	-40°C ... +80°C	
Humidity	5 - 95 %	
Mounting	DIN rail 35 mm	
According to standard	EN 61643-11:2012, IEC 61643-11:2011	
Certifications:	 VDE Certification	

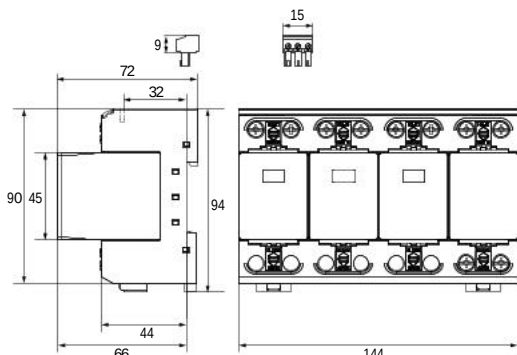
DEVICE CHARACTERISTICS

- ▶ Varistor and encapsulated spark gaps as executive elements, connected in the 1+1 mode.
- ▶ High-performance combined surge arresters in two-pole versions with a modular width of 72 mm.
- ▶ Provided protection against surges resulting from direct and indirect lightning strikes – homes, offices or industrial buildings, recommended for use in main switchboards of large buildings.
- ▶ Installation on the boundary of LPZ 0 and LPZ 1 zones or higher in the main distribution board of the building (recommended).
- ▶ Dedicated for TT, TN-S, TN-C and TN-C-S network systems.
- ▶ Optical indicator informing about the device status: green - functional, red - replace.
- ▶ Possibility of installing the surge protective device in two positions on a TH 35 rail.
- ▶ Replaceable modules.
- ▶ Possibility of feeding to the power terminals with a cable or a rail - prong or fork type.
- ▶ No leakage current, no follow current.

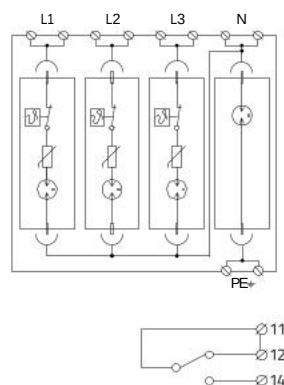
Type 1 + Type 2 25 kA

ESPAC VG T12 25/260 3+1 RI

DIMENSIONS *



CIRCUIT DIAGRAM



* All dimensions in mm

TECHNICAL DATA

Name	ESPAC VG T12 25/260 3+1 RI
Catalog Number	10410251180
U_n Nominal voltage	230 V AC
U_c Maximum operating voltage L-N	260 V AC
U_c Maximum operating voltage N-PE	255 V AC
I_L Nominal load current for „V“ connection	125 kA
I_{imp} Lightning impulse current (10/350 μ s) L-N	25 kA
I_{imp} Lightning impulse current (10/350 μ s) N-PE	100 kA
I_n Nominal discharge current (8/20 μ s) L-N	30 kA
I_n Nominal discharge current (8/20 μ s) N-PE	100 kA
I_{max} Maximum discharge current (8/20 μ s) L-N	60 kA
I_{max} Maximum discharge current (8/20 μ s) N-PE	100 kA
U_p Voltage protection level L-N	1,5 kV
U_p Voltage protection level N-PE	1,5 kV
U_p Voltage protection level L-PE	2,2 kV
I_{fi} Ability to independently switch off the following current N-PE	0,1 kA
U_{oc} Class test T3: Test voltage	20 kV
I_{SCCR} Short-circuit current rating	50 kV
t_a Response time L-N	100 ns
t_a Response time N-PE	100 ns
Maximum overcurrent protection	250 A gL/gG
Maximum overcurrent protection for „V“ connection	125 A gL/gG
Cross-section of connected conductors solid (min/max)	2,5 mm ² / 50 mm ²
Cross-section of connected conductors stranded (min/max)	2,5 mm ² / 35 mm ²
Fault indication L-N	red indication field
Fault indication N-PE	no
Remote indication	potential-free change-over contact
Remote indication contacts	250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors	1,5 mm ²
Degree of protection	IP 20
Range of operating temperatures (min/max)	-40°C ... +80°C
Humidity	5 - 95 %
Mounting	DIN rail 35 mm
According to standard	EN 61643-11:2012, IEC 61643-11:2011
Certifications:	VDE Certification

DEVICE CHARACTERISTICS

- ▶ Varistor and encapsulated spark gaps as executive elements, connected in the 3+1 mode.
- ▶ High-performance combined surge arresters in four-pole versions with a modular width of 144 mm.
- ▶ Provided protection against surges resulting from direct and indirect lightning strikes – homes, offices or industrial buildings, recommended for use in main switchboards of large buildings.
- ▶ Installation on the boundary of LPZ 0 and LPZ 1 zones or higher in the main distribution board of the building (recommended).
- ▶ Dedicated for TT, TN-S and TN-C-S network systems.
- ▶ Optical indicator informing about the device status: green - functional, red - replace.
- ▶ Possibility of installing the surge protective device in two positions on a TH 35 rail.
- ▶ Replaceable modules.
- ▶ Possibility of feeding to the power terminals with a cable or a rail - prong or fork type.
- ▶ No leakage current, no follow current.

Type 1 + Type 2 12,5 kA

ESPAC V T12 12,5/275

ESPAC V T12 12,5/275 surge protective devices are designed for internal use in the main switchboard or sub-distribution boards of a building as Type 1 or Type 2 protection against surges caused by direct and indirect atmospheric discharges or surges caused by switching of electrical apparatuses. The devices are equipped with thermal protection and optical signalling, which, by changing color from green to red, indicates the need to replace the arrester module. The ESPAC V T12 12,5/275 series of surge arresters is used in buildings with a TN (TN-S, TN-C, TN-C-S) and TT network system.



SERIES CHARACTERISTICS

- High-performance series of surge arresters in single, two, three and four-pole versions with a modular width from one (18 mm) to four modules (72 mm).
- Provided protection against surges resulting from direct and indirect lightning strikes – homes, offices or industrial buildings, recommended for use in main or sub-distribution boards of a building.
- Possible remote signalization of damage with a voltage and current signal - 250V/0,5A AC and 250V/0,1A DC.
- Optical indicator informing about the device status: green - functional, red - replace.
- Possibility of installing the surge protective device in two positions on a TH 35 rail.
- Replaceable modules.
- Possibility of feeding to the power terminals with a cable or a rail - prong or fork type.

Replacement modules for ESPAC V T12 12,5/275

REPLACEABLE MODULE			SURGE PROTECTIVE DEVICE	
P.	NAME	CATALOG NUMBER	NAME	NOTE
55	ESPAC V T12 12,5/275	10530123280	ESPAC V T12 12,5/275 1+0	-
			ESPAC V T12 12,5/275 2+0	
			ESPAC V T12 12,5/275 3+0	
			ESPAC V T12 12,5/275 4+0	
			ESPAC V T12 12,5/275 1+0 RI	
			ESPAC V T12 12,5/275 2+0 RI	
			ESPAC V T12 12,5/275 3+0 RI	
			ESPAC V T12 12,5/275 4+0 RI	
			ESPAC V T12 12,5/275 1+1	
54	ESPAC V T12 25 NPE	10540253280	ESPAC V T12 12,5/275 1+1	Additional module type for 1+1 or 3+1 configurations - NPE
			ESPAC V T12 12,5/275 1+1 RI	
53	ESPAC V T12 50 NPE	10540503280	ESPAC V T12 12,5/275 3+1	Additional module type for 1+1 or 3+1 configurations - NPE
			ESPAC V T12 12,5/275 3+1 RI	

PRODUCT DATA

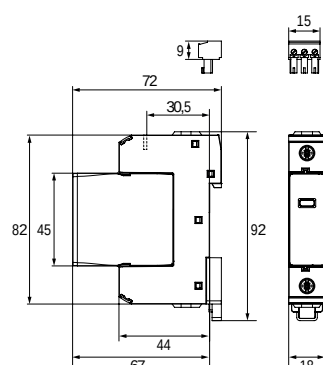
SPD Series ESPAC V T12 12,5/275

NAME	CATALOG NUMBER	I_{imp} (10/350 μ s) [kA]	NETWORK SYSTEM	REMOTE INDICATOR
ESPAC V T12 12,5/275 1+0	10100120080	12,5	TN-S, TN-C, TN-C-S	NO
ESPAC V T12 12,5/275 2+0	10200120080		TN-S, TN-C, TN-C-S	
ESPAC V T12 12,5/275 3+0	10300120080		TN-C	
ESPAC V T12 12,5/275 4+0	10400120080		TN-S, TN-C-S	YES
ESPAC V T12 12,5/275 1+0 RI	10100120180		TN-S, TN-C, TN-C-S	
ESPAC V T12 12,5/275 2+0 RI	10200120180		TN-S, TN-C, TN-C-S	
ESPAC V T12 12,5/275 3+0 RI	10300120180		TN-C	
ESPAC V T12 12,5/275 4+0 RI	10400120180		TN-S, TN-C-S	
ESPAC V T12 12,5/275 1+1	10210121080		TT, TN-S, TN-C, TN-C-S	NO
ESPAC V T12 12,5/275 3+1	10410121080		TT, TN-S, TN-C-S	
ESPAC V T12 12,5/275 1+1 RI	10210121180		TT, TN-S, TN-C, TN-C-S	YES
ESPAC V T12 12,5/275 3+1 RI	10410121180		TT, TN-S, TN-C-S	

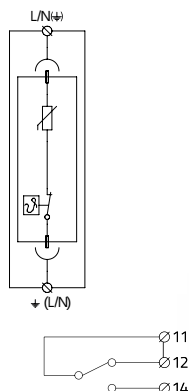
Type 1 + Type 2 12,5 kA

ESPAC V T12 12,5/275 1+0
ESPAC V T12 12,5/275 1+0 RI

DIMENSIONS *



CIRCUIT DIAGRAM



* All dimensions in mm

TECHNICAL DATA

Name	ESPAC V T12 12,5/275 1+0	ESPAC V T12 12,5/275 1+0 RI
Catalog Number	10100120080	10100120180
U_n Nominal voltage	230 V AC	
U_c Maximum operating voltage	275 V AC / 350 V DC	
I_{imp} Lightning impulse current (10/350 μ s)	12,5 kA	
I_n Nominal discharge current (8/20 μ s)	30 kA	
I_{max} Maximum discharge current (8/20 μ s)	60 kA	
U_p Voltage protection level at 5 kA	0,9 kV	
U_p Voltage protection level	1,5 kV	
I_{SCCR} Short-circuit current rating	50 kA	
t_a Response time	25 ns	
Maximum overcurrent protection	160 A gL/gG	
Cross-section of connected conductors solid (min/max)	1 mm ² / 35 mm ²	
Cross-section of connected conductors stranded (min/max)	1 mm ² / 25 mm ²	
Fault indication	red indication field	
Remote indication	-	potential-free change-over contact
Remote indication contacts	-	250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors	-	1,5 mm ²
Degree of protection	IP 20	
Range of operating temperatures (min/max)	-40°C ... +80°C	
Humidity	5 - 95 %	
Mounting	DIN rail 35 mm	
According to standard	EN 61643-11:2012, IEC 61643-11:2011	
Certifications:	ezú EZÚ Certification	

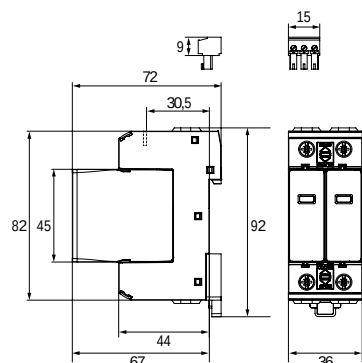
DEVICE CHARACTERISTICS

- High-performance varistor surge arresters in single-pole versions with a modular width of 18 mm.
- Provided protection against surges resulting from direct and indirect lightning strikes – homes, offices or industrial buildings, recommended for use in main or sub-distribution boards of a building.
- Installation at the boundary of zones LPZ 0 and LPZ 1 or higher, for buildings with LPL III and IV.
- Dedicated for TN (TN-S, TN-C, TN-C-S) network systems and single phase main and sub-distribution boards.
- Optical indicator informing about the device status: green - functional, red - replace.
- Possibility of installing the surge protective device in two positions on a TH 35 rail.
- Replaceable modules.
- Possibility of feeding to the power terminals with a cable or a rail - prong or fork type.

Type 1 + Type 2 12,5 kA

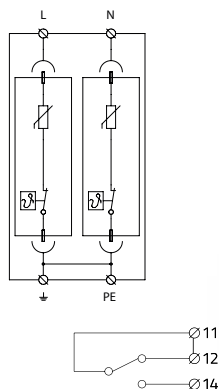
ESPAC V T12 12,5/275 2+0
ESPAC V T12 12,5/275 2+0 RI

DIMENSIONS *



* All dimensions in mm

CIRCUIT DIAGRAM



TECHNICAL DATA

Name	ESPAC V T12 12,5/275 2+0	ESPAC V T12 12,5/275 2+0 RI
CATALOG NUMBER	10200120080	10200120180
U_n Nominal voltage	230 V AC	
U_c Maximum operating voltage	275 V AC / 350 V DC	
I_{imp} Lightning impulse current (10/350 μ s)	12,5 kA	
I_n Nominal discharge current (8/20 μ s)	30 kA	
I_{max} Maximum discharge current (8/20 μ s)	60 kA	
U_p Voltage protection level at 5 kA	0,9 kV	
U_p Voltage protection level	1,5 kV	
I_{scCR} Short-circuit current rating	50 kA	
t_a Response time	25 ns	
Maximum overcurrent protection	160 A gL/gG	
Cross-section of connected conductors solid (min/max)	1 mm ² / 35 mm ²	
Cross-section of connected conductors stranded (min/max)	1 mm ² / 25 mm ²	
Fault indication	red indication field	
Remote indication	-	potential-free change-over contact
Remote indication contacts	-	250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors	-	1,5 mm ²
Degree of protection	IP 20	
Range of operating temperatures (min/max)	-40°C ... +80°C	
Humidity	5 - 95 %	
Mounting	DIN rail 35 mm	
According to standard	EN 61643-11:2012, IEC 61643-11:2011	
Certifications:	ezú EZÚ Certification	

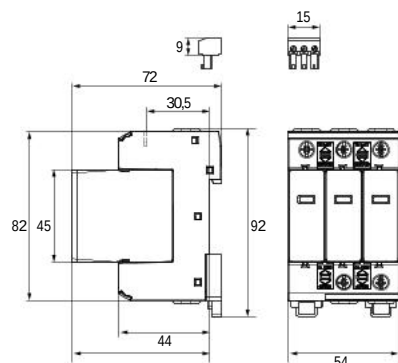
DEVICE CHARACTERISTICS

- High-performance varistor surge arresters in two-pole versions with a modular width of 36 mm.
- Provided protection against surges resulting from direct and indirect lightning strikes – homes, offices or industrial buildings, recommended for use in main or sub-distribution boards of a building.
- Installation at the boundary of zones LPZ 0 and LPZ 1 or higher, for buildings with LPL III and IV.
- Dedicated for TN (TN-S, TN-C, TN-C-S) network systems and single phase main and sub-distribution boards.
- Optical indicator informing about the device status: green - functional, red - replace.
- Possibility of installing the surge protective device in two positions on a TH 35 rail.
- Replaceable modules.
- Possibility of feeding to the power terminals with a cable or a rail – prong or fork type.

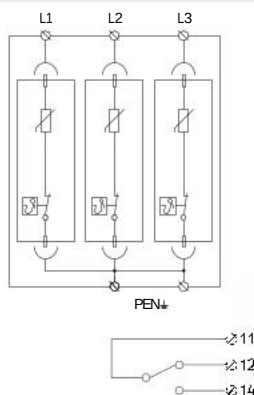
Type 1 + Type 2 12,5 kA

ESPAC V T12 12,5/275 3+0
ESPAC V T12 12,5/275 3+0 RI

DIMENSIONS *



CIRCUIT DIAGRAM



* All dimensions in mm

TECHNICAL DATA

Name	ESPAC V T12 12,5/275 3+0	ESPAC V T12 12,5/275 3+0 RI
Catalog Number	10300120080	10300120180
U_n Nominal voltage	230 V AC	
U_c Maximum operating voltage	275 V AC / 350 V DC	
I_{imp} Lightning impulse current (10/350 μ s)	12,5 kA	
I_n Nominal discharge current (8/20 μ s)	30 kA	
I_{max} Maximum discharge current (8/20 μ s)	60 kA	
U_p Voltage protection level at 5 kA	0,9 kV	
U_p Voltage protection level	1,5 kV	
I_{SCCR} Short-circuit current rating	50 kA	
t_a Response time	25 ns	
Maximum overcurrent protection	160 A gL/gG	
Cross-section of connected conductors solid (min/max)	1 mm ² / 35 mm ²	
Cross-section of connected conductors stranded (min/max)	1 mm ² / 25 mm ²	
Fault indication	red indication field	
Remote indication	-	potential-free change-over contact
Remote indication contacts	-	250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors	-	1,5 mm ²
Degree of protection	IP 20	
Range of operating temperatures (min/max)	-40°C ... +80°C	
Humidity	5 - 95 %	
Mounting	DIN rail 35 mm	
According to standard	EN 61643-11:2012, IEC 61643-11:2011	
Certifications:	ezú EZÚ Certification	

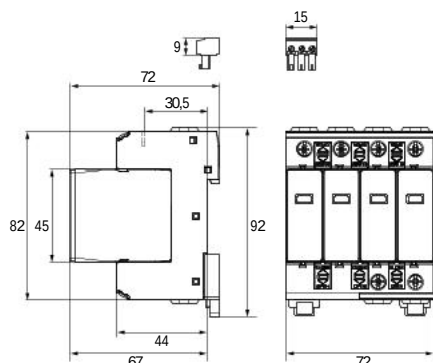
DEVICE CHARACTERISTICS

- High-performance varistor surge arresters in three-pole versions with a modular width of 54 mm.
- Provided protection against surges resulting from direct and indirect lightning strikes – homes, offices or industrial buildings, recommended for use in main or sub-distribution boards of a building.
- Installation at the boundary of zones LPZ 0 and LPZ 1 or higher, for buildings with LPL III and IV.
- Dedicated for TN-C network system.
- Optical indicator informing about the device status: green - functional, red - replace.
- Possibility of installing the surge protective device in two positions on a TH 35 rail.
- Replaceable modules.
- Possibility of feeding to the power terminals with a cable or a rail – prong or fork type.

Type 1 + Type 2 12,5 kA

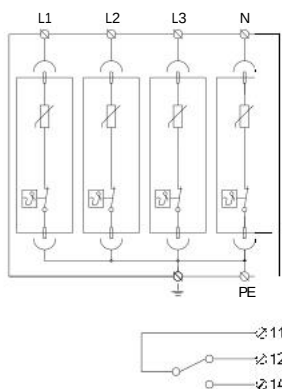
ESPAC V T12 12,5/275 4+0
ESPAC V T12 12,5/275 4+0 RI

DIMENSIONS *



* All dimensions in mm

CIRCUIT DIAGRAM



TECHNICAL DATA

Name	ESPAC V T12 12,5/275 4+0	ESPAC V T12 12,5/275 4+0 RI
Catalog Number	10400120080	10400120180
U_n Nominal voltage	230 V AC	
U_c Maximum operating voltage	275 V AC / 350 V DC	
I_{imp} Lightning impulse current (10/350 μ s)	12,5 kA	
I_n Nominal discharge current (8/20 μ s)	30 kA	
I_{max} Maximum discharge current (8/20 μ s)	60 kA	
U_p Voltage protection level at 5 kA	0,9 kV	
U_p Voltage protection level	1,5 kV	
I_{SCCR} Short-circuit current rating	50 kA	
t_a Response time	25 ns	
Maximum overcurrent protection	160 A gL/gG	
Cross-section of connected conductors solid (min/max)	1 mm ² / 35 mm ²	
Cross-section of connected conductors stranded (min/max)	1 mm ² / 25 mm ²	
Fault indication	red indication field	
Remote indication	-	potential-free change-over contact
Remote indication contacts	-	250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors	-	1,5 mm ²
Degree of protection	IP 20	
Range of operating temperatures (min/max)	-40°C ... +80°C	
Humidity	5 - 95 %	
Mounting	DIN rail 35 mm	
According to standard	EN 61643-11:2012, IEC 61643-11:2011	
Certifications:	ezü EZÜ Certification	

DEVICE CHARACTERISTICS

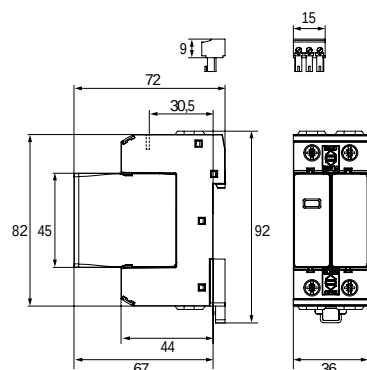
- High-performance varistor surge arresters in four-pole versions with a modular width of 72 mm.
- Provided protection against surges resulting from direct and indirect lightning strikes – homes, offices or industrial buildings, recommended for use in main or sub-distribution boards of a building.
- Installation at the boundary of zones LPZ 0 and LPZ 1 or higher, for buildings with LPL III and IV.
- Dedicated for TN-S and TN-C-S network systems.
- Optical indicator informing about the device status: green - functional, red - replace.
- Possibility of installing the surge protective device in two positions on a TH 35 rail.
- Replaceable modules.
- Possibility of feeding to the power terminals with a cable or a rail - prong or fork type.

Type 1 + Type 2 12,5 kA

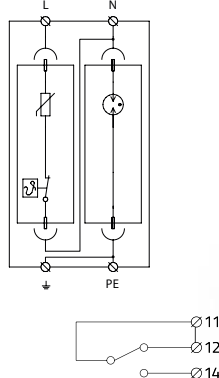
ESPAC V T12 12,5/275 1+1

ESPAC V T12 12,5/275 1+1 RI

DIMENSIONS *



CIRCUIT DIAGRAM



* All dimensions in mm

TECHNICAL DATA

Name		ESPAC V T12 12,5/275 1+1	ESPAC V T12 12,5/275 1+1 RI
CATALOG NUMBER		10210121080	10210121180
U _n	Nominal voltage		230 V AC
U _c	Maximum operating voltage L-N		275 V AC
U _c	Maximum operating voltage N-PE		255 V AC
I _{imp}	Lightning impulse current (10/350 μs) L-N		12,5 kA
I _{imp}	Lightning impulse current (10/350 μs) N-PE		25 kA
I _n	Nominal discharge current (8/20 μs) L-N		30 kA
I _n	Nominal discharge current (8/20 μs) N-PE		30 kA
I _{max}	Maximum discharge current (8/20 μs) L-N		60 kA
I _{max}	Maximum discharge current (8/20 μs) N-PE		60 kA
U _p	Voltage protection level at 5 kA L-N		0,9 kV
U _p	Voltage protection level L-N		1,5 kV
U _p	Voltage protection level N-PE		1,5 kV
U _p	Voltage protection level L-PE		1,5 kV
I _{fi}	Ability to independently switch off the following current N-PE		0,1 kA
I _{scCR}	Short-circuit current rating		50 kA
t _a	Response time L-N		25 ns
t _a	Response time N-PE		100 ns
Maximum overcurrent protection			160 A gL/gG
Cross-section of connected conductors solid (min/max)			1 mm ² / 35 mm ²
Cross-section of connected conductors stranded (min/max)			1 mm ² / 25 mm ²
Fault indication L-N			red indication field
Remote indication		-	potential-free change-over contact
Remote indication contacts		-	250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors		-	1,5 mm ²
Degree of protection			IP 20
Range of operating temperatures (min/max)			-40°C ... +80°C
Humidity			5 - 95 %
Mounting			DIN rail 35 mm
According to standard			EN 61643-11:2012, IEC 61643-11:2011
Certifications:			ezü EZÜ Certification

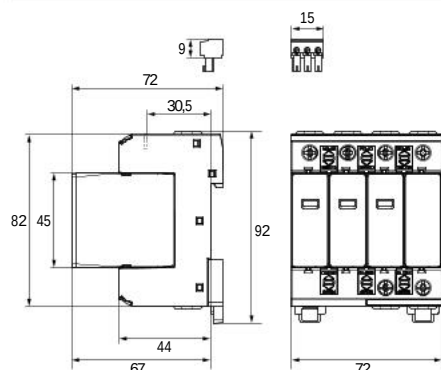
ARACTERISTICS

- ▶ Varistor and encapsulated spark gap as executive elements, connected in the 1+1 mode.
- ▶ High-performance varistor surge arresters in two-pole versions with a modular width of 36 mm.
- ▶ Provided protection against surges resulting from direct and indirect lightning strikes – homes, offices or industrial buildings, recommended for use in main or sub-distribution boards of a building.
- ▶ Installation at the boundary of zones LPZ 0 and LPZ 1 or higher, for buildings with LPL III and IV.
- ▶ Dedicated for TT and TN network systems.
- ▶ Optical indicator informing about the device status: green - functional, red - replace.
- ▶ Possibility of installing the surge protective device in two positions on a TH 35 rail.
- ▶ Replaceable modules.
- ▶ Possibility of feeding to the power terminals with a cable or a rail - prong or fork type.

Type 1 + Type 2 12,5 kA

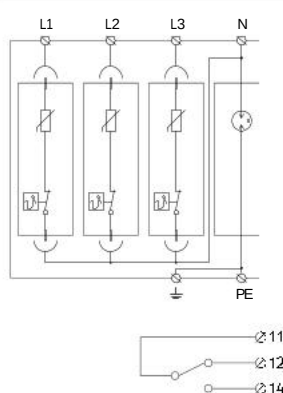
ESPAC V T12 12,5/275 3+1
ESPAC V T12 12,5/275 3+1 RI

DIMENSIONS *



* All dimensions in mm

CIRCUIT DIAGRAM



TECHNICAL DATA

Name	ESPAC V T12 12,5/275 3+1	ESPAC V T12 12,5/275 3+1 RI
Catalog Number	10410121080	10410121180
U_n Nominal voltage		230 V AC
U_c Maximum operating voltage L-N		275 V AC
U_c Maximum operating voltage N-PE		255 V AC
I_{imp} Lightning impulse current (10/350 μ s) L-N		12,5 kA
I_{imp} Lightning impulse current (10/350 μ s) N-PE		50 kA
I_n Nominal discharge current (8/20 μ s) L-N		30 kA
I_n Nominal discharge current (8/20 μ s) N-PE		50 kA
I_{max} Maximum discharge current (8/20 μ s) L-N		60 kA
I_{max} Maximum discharge current (8/20 μ s) N-PE		100 kA
U_p Voltage protection level at 5 kA L-N		0,9 kV
U_p Voltage protection level L-N		1,5 kV
U_p Voltage protection level N-PE		1,5 kV
U_p Voltage protection level L-PE		1,5 kV
I_{fi} Ability to independently switch off the following current N-PE		0,1 kA
I_{SCCR} Short-circuit current rating		50 kA
t_a Response time L-N		25 ns
t_a Response time N-PE		100 ns
Maximum overcurrent protection		160 A gL/gG
Cross-section of connected conductors solid (min/max)		1 mm ² / 35 mm ²
Cross-section of connected conductors stranded (min/max)		1 mm ² / 25 mm ²
Fault indication L-N		red indication field
Remote indication	-	potential-free change-over contact
Remote indication contacts	-	250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors	-	1,5 mm ²
Degree of protection		IP 20
Range of operating temperatures (min/max)		-40 °C ... +80 °C
Humidity		5 - 95 %
Mounting		DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011
Certifications:	ezū EZŪ Certification	

DEVICE CHARACTERISTICS

- Varistors and encapsulated spark gap as executive elements, connected in the 3+1 mode.
- High-performance varistor surge arresters in four-pole versions with a modular width of 72 mm.
- Provided protection against surges resulting from direct and indirect lightning strikes – homes, offices or industrial buildings, recommended for use in main or sub-distribution boards of a building.
- Installation at the boundary of zones LPZ 0 and LPZ 1 or higher, for buildings with LPL III and IV.
- Dedicated for TT and TN network systems.
- Optical indicator informing about the device status: green - functional, red - replace.
- Possibility of installing the surge protective device in two positions on a TH 35 rail.
- Replaceable modules.
- Possibility of feeding to the power terminals with a cable or a rail – prong or fork type.

Type 2 20 kA

ESPAC V T2 20/275

The ESPAC V T2 20/275 and ESPAC V T2 20/600 surge protective devices are designed for indoor use, mainly in sub-switchboards of a building and, in specific cases, in the main switchboard of a building as Type 2 protection against surges caused by indirect atmospheric discharges or surges caused by switching of electrical apparatuses. The devices are equipped with thermal protection and optical signalization, which, by changing color from green to red, indicates the need to change the replaceable arrester module. The ESPAC V T2 20/275 series of arresters is used in buildings with a TN (TN-S, TN-C, TN-C-S) and TT network layout. The ESPAC V T2 20/600 GROUP of arresters is used in buildings with an IT network layout.



SERIES CHARACTERISTICS

- ▶ Surge arresters in single, two, three and four-pole versions with a modular width from one (18 mm) to four modules (72 mm).
- ▶ Provided protection against surges resulting from indirect lightning strikes – homes, offices or industrial buildings, recommended for use in main or sub-distribution boards of a building.
- ▶ Possible remote signalization of damage with a voltage and current signal – 250V/0,5A AC and 250V/0,1A DC.
- ▶ Optical indicator informing about the device status: green – functional, red – replace.
- ▶ Possibility of installing the surge protective device in two positions on a TH 35 rail.
- ▶ Replaceable modules.
- ▶ Possibility of feeding to the power terminals with a cable or a rail – prong or fork type.

Replacement modules for ESPAC V T2 20/275

REPLACEMENT MODULE			SURGE PROTECTIVE DEVICE	
P	NAME	CATALOG NUMBER	NAME	NOTE
57	ESPAC V T2 20/275	12530203280	ESPAC V T2 20/275 1+0	-
			ESPAC V T2 20/275 2+0	
			ESPAC V T2 20/275 3+0	
			ESPAC V T2 20/275 4+0	
			ESPAC V T2 20/275 1+0 RI	
			ESPAC V T2 20/275 2+0 RI	
			ESPAC V T2 20/275 3+0 RI	
			ESPAC V T2 20/275 4+0 RI	
			ESPAC V T2 20/275 1+1	
			ESPAC V T2 20/275 3+1	
58	ESPAC V T2 20 NPE	12540203280	ESPAC V T2 20/275 1+1	Additional module type for 1+1 or 3+1 configurations – NPE
			ESPAC V T2 20/275 3+1	
			ESPAC V T2 20/275 1+1 RI	
			ESPAC V T2 20/275 3+1 RI	
56	ESPAC V T2 20/600	12530103280	ESPAC V T2 20/600 3+0 RI	-

PRODUCT DATA

SPD Series ESPAC V T2 20/275 and ESPAC V T2 20/600

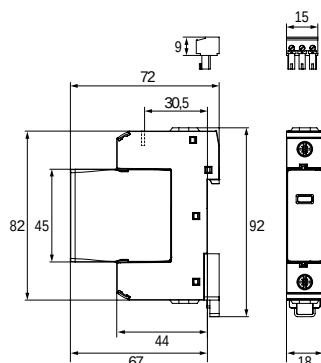
NAME	CATALOG NUMBER	I_n (8/20 μ s) [kA]	NETWORK SYSTEM	REMOTE INDICATOR
ESPAC V T2 20/275 1+0	12100200080	20	TN-S, TN-C, TN-C-S	NO
ESPAC V T2 20/275 2+0	12200200080		TN-S, TN-C, TN-C-S	
ESPAC V T2 20/275 3+0	12300200080		TN-C	
ESPAC V T2 20/275 4+0	12400200080		TN-S, TN-C-S	
ESPAC V T2 20/275 1+0 RI	12100200180		TN-S, TN-C, TN-C-S	YES
ESPAC V T2 20/275 2+0 RI	12200200180		TN-S, TN-C, TN-C-S	
ESPAC V T2 20/275 3+0 RI	12300200180		TN-C	
ESPAC V T2 20/275 4+0 RI	12400200180		TN-S, TN-C-S	
ESPAC V T2 20/275 1+1	12210201080		TT, TN-S, TN-C, TN-C-S	NO
ESPAC V T2 20/275 3+1	12410201080		TT, TN-S, TN-C-S	
ESPAC V T2 20/275 1+1 RI	12210201180		TT, TN-S, TN-C, TN-C-S	YES
ESPAC V T2 20/275 3+1 RI	12410201180		TT, TN-S, TN-C-S	
ESPAC V T2 20/600 3+0 RI	12300102180		IT	

Type 2 20 kA

ESPAC V T2 20/275 1+0

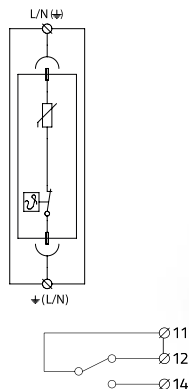
ESPAC V T2 20/275 1+0 RI

DIMENSIONS *



* All dimensions in mm

CIRCUIT DIAGRAM



TECHNICAL DATA

Name		ESPAC V T2 20/275 1+0	ESPAC V T2 20/275 1+0 RI
Catalog Number		12100200080	12100200180
U _n	Nominal voltage	230 V AC	
U _c	Maximum operating voltage	275 V AC / 350 V DC	
I _n	Nominal discharge current (8/20 μs)	20 kA	
I _{max}	Maximum discharge current (8/20 μs)	40 kA	
U _p	Voltage protection level at 5 kA	0,9 kV	
U _p	Voltage protection level	1,35 kV	
I _{scCR}	Short-circuit current rating	50 kA	
t _a	Response time	25 ns	
Maximum overcurrent protection		160 A gL/gG	
Cross-section of connected conductors solid (min/max)		1 mm ² / 35 mm ²	
Cross-section of connected conductors stranded (min/max)		1 mm ² / 25 mm ²	
Fault indication		red indication field	
Remote indication		-	potential-free change-over contact
Remote indication contacts		-	250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors		-	1,5 mm ²
Degree of protection		IP 20	
Range of operating temperatures (min/max)		-40°C ... +80°C	
Humidity		5 - 95 %	
Mounting		DIN rail 35 mm	
According to standard		EN 61643-11:2012, IEC 61643-11:2011	
Certifications:		 VDE Certification	

DEVICE CHARACTERISTICS

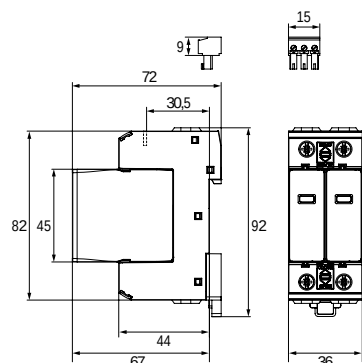
- ▶ Varistor surge arrester in single-pole versions with a modular width of 18 mm.
- ▶ Provided protection against surges resulting from indirect lightning strikes – homes, offices or industrial buildings, recommended for use in main or sub-distribution boards of a building.
- ▶ Dedicated for TN (TN-S, TN-C, TN-C-S) network systems and single phase main and sub-distribution boards.
- ▶ Optical indicator informing about the device status: green - functional, red - replace.
- ▶ Possibility of installing the surge protective device in two positions on a TH 35 rail.
- ▶ Replaceable modules.
- ▶ Possibility of feeding to the power terminals with a cable or a rail - prong or fork type.

Type 2 20 kA

ESPAC V T2 20/275 2+0

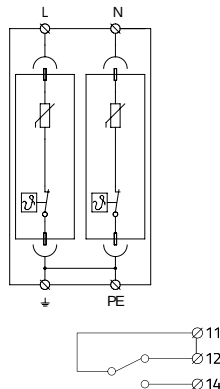
ESPAC V T2 20/275 2+0 RI

DIMENSIONS *



* All dimensions in mm

CIRCUIT DIAGRAM



TECHNICAL DATA

Name		ESPAC V T2 20/275 2+0	ESPAC V T2 20/275 2+0 RI
Catalog Number		12200200080	12200200180
U_n	Nominal voltage	230 V AC	
U_c	Maximum operating voltage	275 V AC / 350 V DC	
I_n	Nominal discharge current (8/20 μ s)	20 kA	
I_{max}	Maximum discharge current (8/20 μ s)	40 kA	
U_p	Voltage protection level at 5 kA	0,9 kV	
U_p	Voltage protection level	1,35 kV	
I_{SCCR}	Short-circuit current rating	50 kA	
t_a	Response time	25 ns	
Maximum overcurrent protection		160 A gL/gG	
Cross-section of connected conductors solid (min/max)		1 mm ² / 35 mm ²	
Cross-section of connected conductors stranded (min/max)		1 mm ² / 25 mm ²	
Fault indication		red indication field	
Remote indication		-	potential-free change-over contact
Remote indication contacts		-	250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors		-	1,5 mm ²
Degree of protection		IP 20	
Range of operating temperatures (min/max)		-40°C ... +80°C	
Humidity		5 - 95 %	
Mounting		DIN rail 35 mm	
According to standard		EN 61643-11:2012, IEC 61643-11:2011	
Certifications:		 VDE Certification	

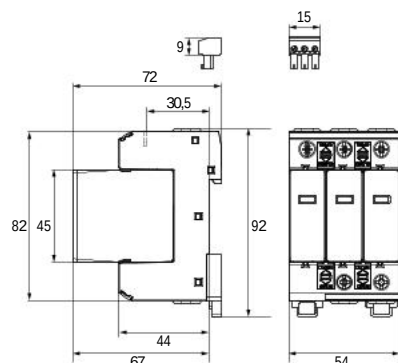
DEVICE CHARACTERISTICS

- ▶ Varistor surge arrester in two-pole versions with a modular width of 36 mm.
- ▶ Provided protection against surges resulting from indirect lightning strikes – homes, offices or industrial buildings, recommended for use in main or sub-distribution boards of a building.
- ▶ Dedicated for TN (TN-S, TN-C, TN-C-S) network systems and single phase main and sub-distribution boards.
- ▶ Optical indicator informing about the device status: green - functional, red - replace.
- ▶ Possibility of installing the surge protective device in two positions on a TH 35 rail.
- ▶ Replaceable modules.
- ▶ Possibility of feeding to the power terminals with a cable or a rail - prong or fork type.

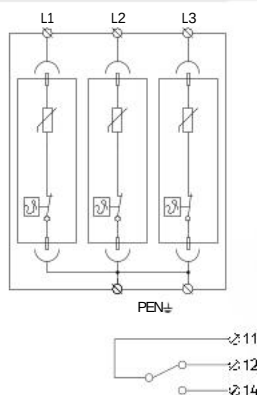
Type 2 20 kA

ESPAC V T2 20/275 3+0
ESPAC V T2 20/275 3+0 RI

DIMENSIONS *



CIRCUIT DIAGRAM



* All dimensions in mm

TECHNICAL DATA

Name		ESPAC V T2 20/275 3+0	ESPAC V T2 20/275 3+0 RI
Catalog Number		12300200080	12300200180
U_n	Nominal voltage	230 V AC	
U_c	Maximum operating voltage	275 V AC / 350 V DC	
I_n	Nominal discharge current (8/20 μ s)	20 kA	
I_{max}	Maximum discharge current (8/20 μ s)	40 kA	
U_p	Voltage protection level at 5 kA	0,9 kV	
U_p	Voltage protection level	1,35 kV	
I_{SCCR}	Short-circuit current rating	50 kA	
t_a	Response time	25 ns	
Maximum overcurrent protection		160 A gL/gG	
Cross-section of connected conductors solid (min/max)		1 mm ² / 35 mm ²	
Cross-section of connected conductors stranded (min/max)		1 mm ² / 25 mm ²	
Fault indication		red indication field	
Remote indication		-	potential-free change-over contact
Remote indication contacts		-	250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors		-	1,5 mm ²
Degree of protection		IP 20	
Range of operating temperatures (min/max)		-40°C ... +80°C	
Humidity		5 - 95 %	
Mounting		DIN rail 35 mm	
According to standard		EN 61643-11:2012, IEC 61643-11:2011	
Certifications:		 VDE Certification	

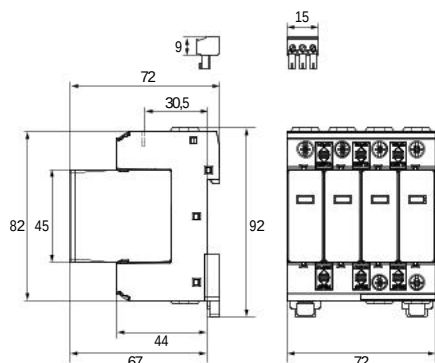
DEVICE CHARACTERISTICS

- Varistor surge arrester in three-pole versions with a modular width of 54 mm.
- Provided protection against surges resulting from indirect lightning strikes – homes, offices or industrial buildings, recommended for use in main or sub-distribution boards of a building.
- Dedicated for TN-C network system.
- Optical indicator informing about the device status: green - functional, red - replace.
- Possibility of installing the surge protective device in two positions on a TH 35 rail.
- Replaceable modules.
- Possibility of feeding to the power terminals with a cable or a rail – prong or fork type.

Type 2 20 kA

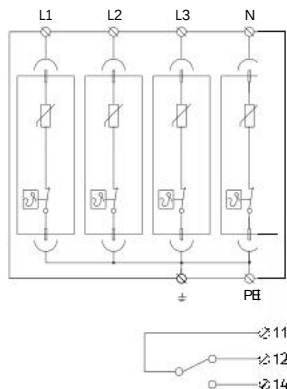
ESPAC V T2 20/275 4+0
ESPAC V T2 20/275 4+0 RI

DIMENSIONS *



* All dimensions in mm

CIRCUIT DIAGRAM



TECHNICAL DATA

Name	ESPAC V T2 20/275 4+0	ESPAC V T2 20/275 4+0 RI
Catalog Number	12400200080	12400200180
U _n Nominal voltage	230 V AC	
U _c Maximum operating voltage	275 V AC / 350 V DC	
I _n Nominal discharge current (8/20 μs)	20 kA	
I _{max} Maximum discharge current (8/20 μs)	40 kA	
U _p Voltage protection level at 5 kA	0,9 kV	
U _p Voltage protection level	1,35 kV	
I _{scCR} Short-circuit current rating	50 kA	
t _a Response time	25 ns	
Maximum overcurrent protection	160 A gL/gG	
Cross-section of connected conductors solid (min/max)	1 mm ² / 35 mm ²	
Cross-section of connected conductors stranded (min/max)	1 mm ² / 25 mm ²	
Fault indication	red indication field	
Remote indication	-	potential-free change-over contact
Remote indication contacts	-	250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors	-	1,5 mm ²
Degree of protection	IP 20	
Range of operating temperatures (min/max)	-40°C ... +80°C	
Humidity	5 - 95 %	
Mounting	DIN rail 35 mm	
According to standard	EN 61643-11:2012, IEC 61643-11:2011	
Certifications:	 VDE Certification	

DEVICE CHARACTERISTICS

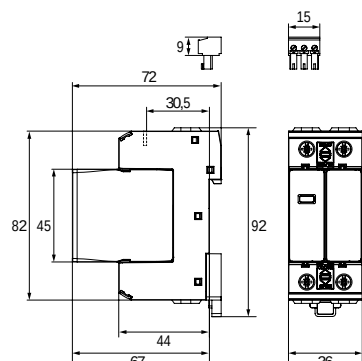
- ▶ Varistor surge arrester in four-pole versions with a modular width of 72 mm.
- ▶ Provided protection against surges resulting from indirect lightning strikes – homes, offices or industrial buildings, recommended for use in main or sub-distribution boards of a building.
- ▶ Dedicated for TN-S and TN-C-S network systems.
- ▶ Optical indicator informing about the device status: green - functional, red - replace.
- ▶ Possibility of installing the surge protective device in two positions on a TH 35 rail.
- ▶ Replaceable modules.
- ▶ Possibility of feeding to the power terminals with a cable or a rail – prong or fork type.

Type 2 20 kA

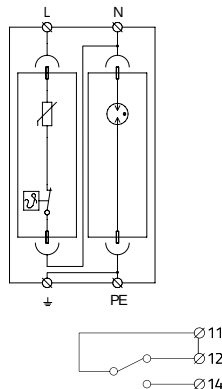
ESPAC V T2 20/275 1+1

ESPAC V T2 20/275 1+1 RI

DIMENSIONS *



CIRCUIT DIAGRAM



* All dimensions in mm

TECHNICAL DATA

Name	ESPAC V T2 20/275 1+1	ESPAC V T2 20/275 1+1 RI
Catalog Number	12210201080	12210201180
U_n Nominal voltage		230 V AC
U_c Maximum operating voltage L-N		275 V AC
U_c Maximum operating voltage N-PE		255 V AC
I_n Nominal discharge current (8/20 μ s) L-N		20 kA
I_n Nominal discharge current (8/20 μ s) N-PE		20 kA
I_{max} Maximum discharge current (8/20 μ s) L-N		40 kA
I_{max} Maximum discharge current (8/20 μ s) N-PE		40 kA
U_p Voltage protection level at 5 kA L-N		0,9 kV
U_p Voltage protection level L-N		1,35 kV
U_p Voltage protection level N-PE		1,5 kV
U_p Voltage protection level L-PE		1,5 kV
I_{fi} Ability to independently switch off the following current N-PE		0,1 kA
I_{SCCR} Short-circuit current rating		50 kA
t_a Response time L-N		25 ns
t_a Response time N-PE		100 ns
Maximum overcurrent protection		160 A gL/gG
Cross-section of connected conductors solid (min/max)		1 mm ² / 35 mm ²
Cross-section of connected conductors stranded (min/max)		1 mm ² / 25 mm ²
Fault indication L-N		red indication field
Fault indication N-PE		no
Remote indication	-	potential-free change-over contact
Remote indication contacts	-	250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors	-	1,5 mm ²
Degree of protection		IP 20
Range of operating temperatures (min/max)		-40°C ... +80°C
Humidity		5 - 95 %
Mounting		DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011
Certifications:		DVE Certification

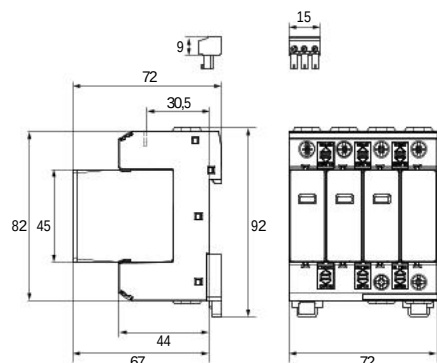
DEVICE CHARACTERISTICS

- ▶ Varistor and encapsulated spark gap as executive elements, connected in the 1+1 mode.
- ▶ Varistor surge arrester in two-pole versions with a modular width of 36 mm.
- ▶ Provided protection against surges resulting from indirect lightning strikes – homes, offices or industrial buildings, recommended for use in main or sub-distribution boards of a building.
- ▶ Dedicated for TT and TN network systems.
- ▶ Optical indicator informing about the device status: green - functional, red - replace.
- ▶ Possibility of installing the surge protective device in two positions on a TH 35 rail.
- ▶ Replaceable modules.
- ▶ Possibility of feeding to the power terminals with a cable or a rail – prong or fork type.

Type 2 20 kA

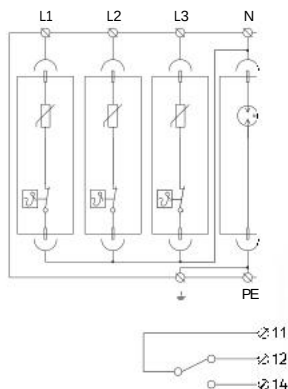
ESPAC V T2 20/275 3+1
ESPAC V T2 20/275 3+1 RI

DIMENSIONS *



* All dimensions in mm

CIRCUIT DIAGRAM



TECHNICAL DATA

Name	ESPAC V T2 20/275 3+1	ESPAC V T2 20/275 3+1 RI
Catalog Number	12410201080	12410201180
U_n Nominal voltage		230 V AC
U_c Maximum operating voltage L-N		275 V AC
U_c Maximum operating voltage N-PE		255 V AC
I_n Nominal discharge current (8/20 μ s) L-N		20 kA
I_n Nominal discharge current (8/20 μ s) N-PE		20 kA
I_{max} Maximum discharge current (8/20 μ s) L-N		40 kA
I_{max} Maximum discharge current (8/20 μ s) N-PE		40 kA
U_p Voltage protection level at 5 kA L-N		0,9 kV
U_p Voltage protection level L-N		1,35 kV
U_p Voltage protection level N-PE		1,5 kV
U_p Voltage protection level L-PE		1,5 kV
I_{fi} Ability to independently switch off the following current N-PE		0,1 kA
I_{SCCR} Short-circuit current rating		50 kA
t_a Response time L-N		25 ns
t_a Response time N-PE		100 ns
Maximum overcurrent protection		160 A gL/gG
Cross-section of connected conductors solid (min/max)		1 mm ² / 35 mm ²
Cross-section of connected conductors stranded (min/max)		1 mm ² / 25 mm ²
Fault indication L-N		red indication field
Fault indication N-PE		no
Remote indication	-	potential-free change-over contact
Remote indication contacts	-	250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors	-	1,5 mm ²
Degree of protection		IP 20
Range of operating temperatures (min/max)		-40°C ... +80°C
Humidity		5 - 95 %
Mounting		DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011
Certifications:		 VDE Certification

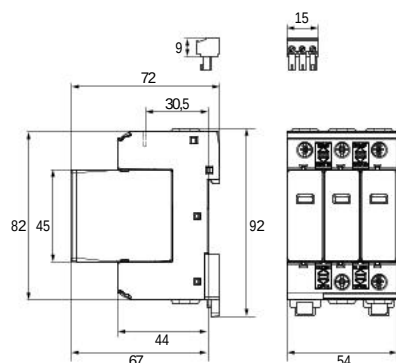
DEVICE CHARACTERISTICS

- ▶ Varistor and encapsulated spark gap as executive elements, connected in the 1+1 mode.
- ▶ Varistor surge arrester in four-pole versions with a modular width of 72 mm.
- ▶ Provided protection against surges resulting from indirect lightning strikes – homes, offices or industrial buildings, recommended for use in main or sub-distribution boards of a building.
- ▶ Dedicated for TT and TN network systems.
- ▶ Optical indicator informing about the device status: green - functional, red - replace.
- ▶ Possibility of installing the surge protective device in two positions on a TH 35 rail.
- ▶ Replaceable modules.
- ▶ Possibility of feeding to the power terminals with a cable or a rail – prong or fork type.

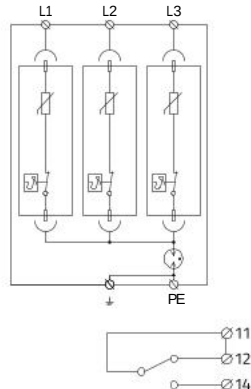
Type 2 20 kA

ESPAC V T2 20/600 3+0 RI

DIMENSIONS *



CIRCUIT DIAGRAM



* All dimensions in mm

TECHNICAL DATA

Name	ESPAC V T2 20/600 3+0 RI	
Catalog Number	12300102180	
U_n Nominal voltage	400-690 V AC	
U_c Maximum operating voltage	760 V AC	
I_n Nominal discharge current (8/20 μ s)	20 kA	
I_{max} Maximum discharge current (8/20 μ s)	40 kA	
U_p Voltage protection level	3,4 kV	
U_p Voltage protection level at 5 kA	2,5 kV	
I_{sccr} Short-circuit current rating	25 kA	
t_a Response time	100 ns	
Maximum overcurrent protection	100 A gL/gG	
Cross-section of connected conductors solid (min/max)	1 mm ² / 35 mm ²	
Cross-section of connected conductors stranded (min/max)	1 mm ² / 25 mm ²	
Fault indication	red indication field	
Remote indication	potential-free change-over contact	
Remote indication contacts	250 V / 0,5 A AC, 250 V / 0,1 A DC	
Cross-section of remote indication conductors	1,5 mm ²	
Degree of protection	IP 20	
Range of operating temperatures (min/max)	-40 °C ... +80 °C	
Humidity	5 - 95 %	
Mounting	DIN rail 35 mm	
According to standard	EN 61643-11	
Certifications:	ezü EZÜ Certification	

DEVICE CHARACTERISTICS

- Varistor surge arrester in three-pole versions with a modular width of 54 mm.
- Provided protection against surges resulting from indirect lightning strikes – homes, offices or industrial buildings, recommended for use in main or sub-distribution boards of a building.
- Dedicated for IT network system.
- Optical indicator informing about the device status: green - functional, red - replace.
- Possibility of installing the surge protective device in two positions on a TH 35 rail.
- Replaceable modules.
- Possibility of feeding to the power terminals with a cable or a rail – prong or fork type.

Type 3 5 kA

ESPAC V T3 5/275

ESPAC V T3 5/275 surge arresters are designed for internal use in subordinate, single-phase switchboards of a building as or Type 3 protection against commutative or indirect surges. Protective devices from this series are very often used as additional surge protection for sensitive electronic devices. The surge protective devices are equipped with thermal protection and optical signalization, which, by changing color from green to red, indicates the need to change the replaceable arrester module. The ESPAC V T3 5/275 series of arresters is used in buildings with a TN network system (TN-S, TN-C, TN-C-S) and TT.



SERIES CHARACTERISTICS

- ▶ Surge arresters in two-pole versions with a modular width of 36 mm.
- ▶ Provided protection against surges resulting from indirect lightning strikes – homes, offices or industrial buildings, recommended for use in one phase sub-distribution boards of a building.
- ▶ Additional surge protection of electronic devices.
- ▶ Possible remote signalization of damage with a voltage and current signal - 250V/0,5A AC and 250V/0,1A DC.
- ▶ Optical indicator informing about the device status: green - functional, red - replace.
- ▶ Possibility of installing the surge protective device in two positions on a TH 35 rail.
- ▶ Replaceable modules.
- ▶ Possibility of feeding to the power terminals with a cable or a rail - prong or fork type.

Replacement modules for ESPAC V T3 5/275

REPLACEABLE MODULE			SURGE PROTECTIVE DEVICE	
PAGE	NAME	CATALOG NUMBER	NAME	NOTE
59	ESPAC V T3 5/275	13530053280	ESPAC V T3 5/275 1+1	Additional module type for 1+1 - NPE
			ESPAC V T3 5/275 1+1 RI	
60	ESPAC V T3 5 NPE	13540053280	ESPAC V T3 5/275 1+1	Additional module type for 1+1 - NPE
			ESPAC V T3 5/275 1+1 RI	

PRODUCT DATA

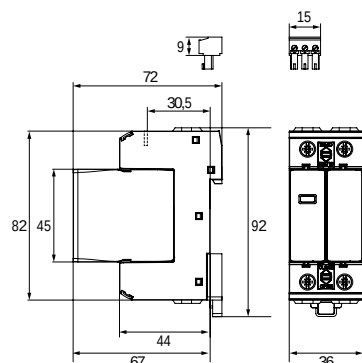
SPD Series ESPAC V T3 5/275

NAME	CATALOG NUMBER	I_n (8/20 μ s) [kA]	NETWORK SYSTEM	REMOTE INDICATOR
ESPAC V T3 5/275 1+1	13210051080	5	TT, TN-S, TN-C, TN-C-S	NO
ESPAC V T3 5/275 1+1 RI	13210051180		TT, TN-S, TN-C, TN-C-S	YES

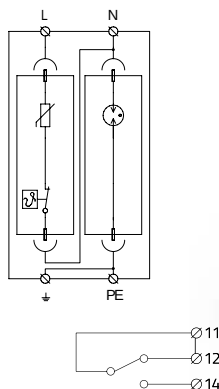
Type 3 5 kA

ESPAC V T3 5/275 1+1
ESPAC V T3 5/275 1+1 RI

DIMENSIONS *



CIRCUIT DIAGRAM



* All dimensions in mm

TECHNICAL DATA

Name	ESPAC V T3 5/275 1+1	ESPAC V T3 5/275 1+1 RI
Catalog Number	13210051080	13210051180
U_n Nominal voltage		230 V AC
U_c Maximum operating voltage L-N		275 V AC
U_c Maximum operating voltage N-PE		255 V AC
I_n Nominal discharge current (8/20 μ s) L-N		5 kA
I_n Nominal discharge current (8/20 μ s) N-PE		10 kA
U_{oc} Class test T3: Test voltage L-N		10 kV
U_{oc} Class test T3: Test voltage N-PE		20 kV
U_p Voltage protection level L-N		1 kV
U_p Voltage protection level L-PE		1,5 kV
U_p Voltage protection level N-PE		1,5 kV
I_{fi} Ability to independently switch off the following current N-PE		0,1 kA
t_a Response time		25 ns
t_a Response time L-N		25 ns
t_a Response time N-PE		100 ns
Maximum overcurrent protection		63 A gL/gG or C 63 A
Cross-section of connected conductors solid (min/max)		1 mm ² / 35 mm ²
Cross-section of connected conductors stranded (min/max)		1 mm ² / 25 mm ²
Fault indication L-N		red indication field
Fault indication N-PE		no
Remote indication	-	potential-free change-over contact
Remote indication contacts	-	250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors	-	1,5 mm ²
Degree of protection		IP 20
Range of operating temperatures (min/max)		-40°C ... +80°C
Humidity		5 - 95 %
Mounting		DIN rail 35 mm
According to standard		EN 61643-11:2012, IEC 61643-11:2011
Certifications:		ezū EZÚ Certification

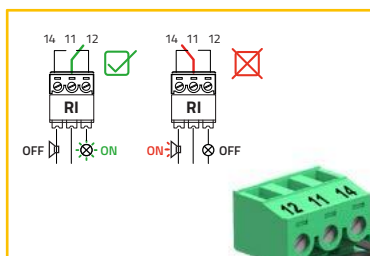
DEVICE CHARACTERISTICS

- ▶ Varistor and encapsulated spark gap as executive elements, connected in the 1+1 mode.
- ▶ Provided protection against surges resulting from indirect lightning strikes – homes, offices or industrial buildings, recommended for use in one phase sub-distribution boards of a building.
- ▶ Additional surge protection of electronic devices.
- ▶ Surge arresters in two-pole versions with a modular width of 36 mm.
- ▶ Possibility of installing the surge protective device in two positions on a TH 35 rail.
- ▶ Optical indicator informing about the device status: green - functional, red - replace.

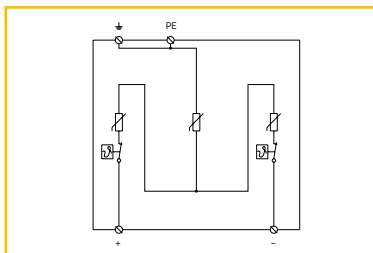
ESPPV - MODULAR SURGE PROTECTIVE DEVICES



Clamp terminals for conductors



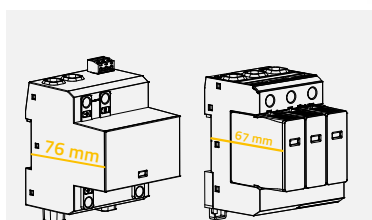
Varistor damage **signalization contact** (RI - Remote Indicator).



Each arrester from the ESPPV T12 12,5 kA series is equipped with **thermal disconnect** in the +/- and -/+ current path.

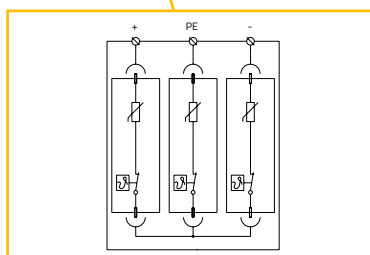


Spring clamp for quick and secure **mounting on TH35 (DIN) rail.**



The installation depth for ESPPV T12 12,5 kA surge protective devices is **76 mm**.

The installation depth for ESPPV T2 20 kA and 15 kA surge protective devices is **67 mm**.



All surge protective devices from the ESPPV family were made in a Y configuration. Each current path is protected with a dedicated high-quality varistor.



▶ The ESPPV Type 1 + Type 2 12,5 kA surge arresters series is available as a monoblock design. It has increased mechanical and electrical strength.

▶ The ESPPV Type 2 20 kA and 15 kA surge arresters series is available in a design with replaceable modules.



Optical indicator (red window colour - should be replaced; green window colour - functional).



ESPPV T2 Type 2 20 kA and 15 kA series of surge protective devices have the option of easy and quick module replacement.



Printed information about basic technical parameters of surge protective devices and compliance with standards.

Type 1 + Type 2 12,5 kA ESPPV T12 12,5

The ESPPV V T12 12,5/1000 and ESPPV V T12 12,5/1500 surge protective devices are used to protect photovoltaic installations against surges caused by direct and indirect atmospheric discharges or surges caused by switching of electrical apparatuses. They are used in facilities equipped with an external lightning protection system. The executive elements of these arresters are 3 varistors connected in a Y configuration. The devices are equipped with thermal protection and optical signalization, which, by changing color from green to red, indicates the need to replace the surge arrester. Protective device dedicated to use in a situation where the arrangement of panels, which are a key element of every photovoltaic installation, did not allow for maintaining separation distances.

SERIES CHARACTERISTICS

- ▶ High-performance series of surge arresters in Y configuration with a modular width of 72 mm (4 modules).
 - ▶ Provided protection against surges resulting from direct and indirect lightning strikes – homes, offices or industrial buildings, recommended for use in switchboards of PV installations.
 - ▶ Possible remote signalization of damage with a voltage and current signal – 250V/0,5A AC and 250V/0,1A DC.
 - ▶ Optical indicator informing about the device status: green - functional, red - replace.
 - ▶ Possibility of installing the surge protective device in two positions on a TH 35 rail.
- Execution of surge protective devices as monoblocks (no replaceable modules).



PRODUCT DATA

SPD Series ESPPV T12 12,5

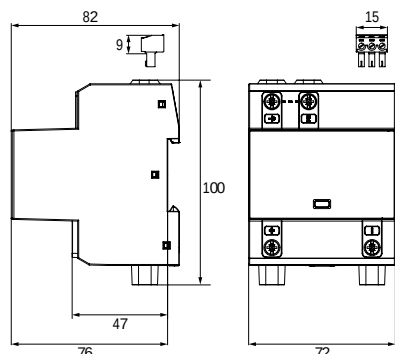
NAME	CATALOG NUMBER	I_{imp} (10/350 μ s) [kA]	REPLACEABLE MODULE	REMOTE INDICATOR
ESPPV V T12 12,5/1000 Y	20121003080	12,5	NO	NO
ESPPV V T12 12,5/1000 Y RI	20121003180			YES
ESPPV V T12 12,5/1500 Y	20121503080			NO
ESPPV V T12 12,5/1500 Y RI	20121503180			YES

Type 1 + Type 2 12,5 kA

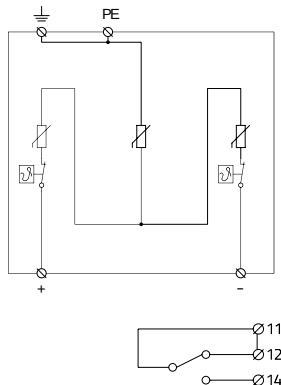
ESPPV V T12 12,5/1000 Y

ESPPV V T12 12,5/1000 Y RI

DIMENSIONS *



CIRCUIT DIAGRAM



* All dimensions in mm

TECHNICAL DATA

Name	ESPPV V T12 12,5/1000 Y	ESPPV V T12 12,5/1000 Y RI
CATALOG NUMBER	20121003080	20121003180
U_{cpv} Maximum operating voltage +/-, +/-PE, -/PE	1 050 V DC	
I_{Total} Total discharge current (10/350 μ s)	12,5 kA	
I_{Total} Total discharge current (8/20 μ s)	80 kA	
I_{max} Maximum discharge current (8/20 μ s)	40 kA	
I_n Nominal discharge current (8/20 μ s)	20 kA	
U_p Voltage protection level +/-	3,8 kV	
U_p Voltage protection level +/-PE, -/PE	3,8 kV	
I_{SCP} Short-circuit current rating	20 kA DC	
t_a Response time	25 ns	
I_{pE} Residual current mode +/-PE, -/PE	10 μ A DC	
I_{pE} Residual current mode +/-PE, -/PE	500 μ A AC	
Cross-section of connected conductors solid (min/max)	4 mm ² / 35 mm ²	
Cross-section of connected conductors stranded (min/max)	4 mm ² / 25 mm ²	
Fault indication	red indication field	
Remote indication	-	potential-free change-over contact
Remote indication contacts	-	250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors	-	1,5 mm ²
Degree of protection	IP 20	
Range of operating temperatures (min/max)	-40°C ... +80°C	
Humidity	5 - 95 %	
Mounting	DIN rail 35 mm	
According to standard	EN 61643-31, IEC 61643-31	
Certifications:	 VDE Certification	

DEVICE CHARACTERISTICS

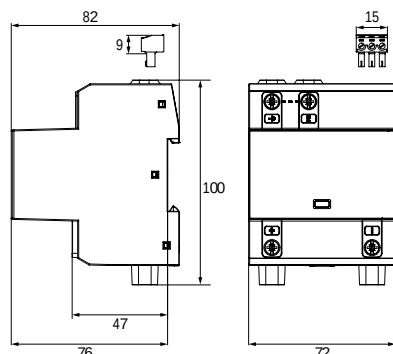
- High-performance series of surge arresters made in a Y configuration with a modular width of four modules (72mm).
- Provided protection against overvoltages resulting from direct and indirect lightning strikes in the event that the building has an LPS and the PV panel separation distances have not been maintained – photo-voltaic farms.
- Continuous operating voltage for PV circuit voltage: $U_{cpv} \geq 1.2 \times U_{OC\ STC}$ (Open Circuit voltage under Standard Test Conditions).
- Optical indicator informing about the device status: green - functional, red - replace.
- Possibility of installing the surge protective device in two positions on a TH 35 rail.
- Design of surge protective devices as monoblocks - increased mechanical and electrical strength, no replaceable modules.

Type 1 + Type 2 12,5 kA

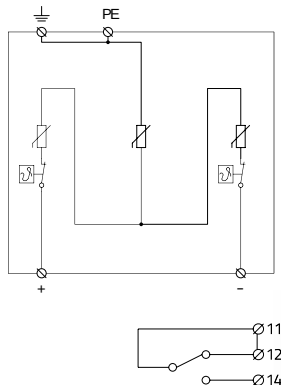
ESPPV V T12 12,5/1500 Y

ESPPV V T12 12,5/1500 Y RI

DIMENSIONS *



CIRCUIT DIAGRAM



* All dimensions in mm

TECHNICAL DATA

Name	ESPPV V T12 12,5/1500 Y	ESPPV V T12 12,5/1500 Y RI
Catalog Number	20121503080	20121503180
U_{CPV} Maximum operating voltage +/-, +/-PE, -/PE	1 500 V DC	
I_{Total} Total discharge current (10/350 μ s)	12,5 kA	
I_{Total} Total discharge current (8/20 μ s)	80 kA	
I_{max} Maximum discharge current (8/20 μ s)	40 kA	
I_n Nominal discharge current (8/20 μ s)	20 kA	
U_p Voltage protection level +/-	5,4 kV	
U_p Voltage protection level +/-PE, -/PE	5,4 kV	
I_{SCP} Short-circuit current rating	20 kA DC	
t_a Response time	25 ns	
I_{PE} Residual current mode +/-PE, -/PE	10 μ A DC	
I_{PE} Residual current mode +/-PE, -/PE	500 μ A AC	
Cross-section of connected conductors solid (min/max)	4 mm ² / 35 mm ²	
Cross-section of connected conductors stranded (min/max)	4 mm ² / 25 mm ²	
Fault indication	red indication field	
Remote indication	-	potential-free change-over contact
Remote indication contacts	-	250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors	-	1,5 mm ²
Degree of protection	IP 20	
Range of operating temperatures (min/max)	-40°C ... +80°C	
Humidity	5 - 95 %	
Mounting	DIN rail 35 mm	
According to standard	EN 61643-31, IEC 61643-31	
Certifications:	 VDE Certification	

DEVICE CHARACTERISTICS

- High-performance series of surge arresters made in a Y configuration with a modular width of four modules (72mm).
- Provided protection against overvoltages resulting from direct and indirect lightning strikes in the event that the building has an LPS and the PV panel separation distances have not been maintained – photovoltaic farms.
- Continuous operating voltage for PV circuit voltage: $U_{CPV} \geq 1,2 \times U_{OCSTC}$ (Open Circuit voltage under Standard Test Conditions).
- Optical indicator informing about the device status: green – functional, red – replace.
- Possibility of installing the surge protective device in two positions on a TH 35 rail.
- Design of surge protective devices as monoblocks – increased mechanical and electrical strength, no replaceable modules.

Type 2 20 kA and 15 kA ESPPV T2

The ESPPV V T2 15/700 and ESPPV V T2 15/1000 surge arresters are used to protect photovoltaic installations against surges from indirect atmospheric discharges or surges caused by switching of electrical apparatuses. They are used in facilities without an external lightning protection system as their main surge protective device. The executive elements of these arresters are 3 varistors connected in a Y configuration. The devices are equipped with thermal protection and optical signalization, which, by changing color from green to red, indicates the need to change the replaceable arrester module. The surge arresters are dedicated for use in situations where the arrangement of panels, which are a key element of every photovoltaic installation, allows for maintaining separation distances, or when the building is not equipped with a lightning protection system (building without LPS).



SERIES CHARACTERISTICS

- ▶ Series of surge arresters in Y configuration with a modular width of 54 mm (3 modules).
- ▶ Provided protection against surges resulting from indirect lightning strikes – homes, offices or industrial buildings, recommended for use in switchboards of PV photovoltaic installations.
- ▶ Possible remote signalization of damage with a voltage and current signal – 250V/0,5A AC and 250V/0,1A DC.
- ▶ Optical indicator informing about the device status: green - functional, red - replace.
- ▶ Possibility of installing the surge protective device in two positions on a TH 35 rail.
- ▶ Replaceable modules.

Replacement modules for ESPPV T2

REPLACEABLE MODULE			SURGE PROTECTIVE DEVICE
PAGE	NAME	CATALOG NUMBER	NAME
61	ESPPV V T2 20/700	22530703280	ESPPV V T2 20/700 Y
			ESPPV V T2 20/700 Y RI
62	ESPPV V T2 15/1000	22531003280	ESPPV V T2 15/1000 Y
			ESPPV V T2 15/1000 Y RI

PRODUCT DATA

SPD Series ESPPV T2 20

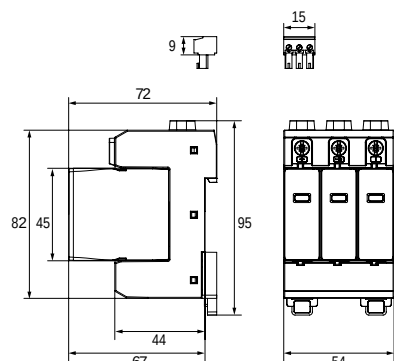
NAME	CATALOG NUMBER	I _n (8/20 μs) [kA]	REPLACEABLE MODULE	REMOTE INDICATOR
ESPPV V T2 20/700 Y	22120703080	20	YES	NO
ESPPV V T2 20/700 Y RI	22120703180			YES
ESPPV V T2 15/1000 Y	22121003080	15		NO
ESPPV V T2 15/1000 Y RI	22121003180			YES

Type 2 20 kA and 15 kA

ESPPV V T2 20/700 Y

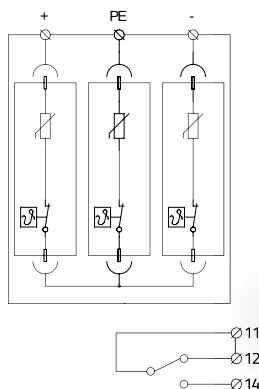
ESPPV V T2 20/700 Y RI

DIMENSIONS *



* All dimensions in mm

CIRCUIT DIAGRAM



TECHNICAL DATA

Name	ESPPV V T2 20/700 Y	ESPPV V T2 20/700 Y RI
Catalog Number	22120703080	22120703180
U_{CPV} Maximum operating voltage +/-, +/-PE, -/PE	750 V DC	
I_n Nominal discharge current (8/20 μ s)	20 kA	
I_{max} Maximum discharge current (8/20 μ s)	40 kA	
I_{Total} Total discharge current (8/20 μ s)	40 kA	
U_p Voltage protection level +/-	3,6 kV	
U_p Voltage protection level +/-PE, -/PE	3,6 kV	
I_{SCP} Short-circuit current rating	10 kA DC	
t_a Response time	25 ns	
I_{PE} Residual current mode +/-PE, -/PE	5 μ A DC	
I_{PE} Residual current mode +/-PE, -/PE	250 μ A AC	
Cross-section of connected conductors solid (min/max)	4 mm ² / 35 mm ²	
Cross-section of connected conductors stranded (min/max)	4 mm ² / 25 mm ²	
Fault indication	red indication field	
Remote indication	-	potential-free change-over contact
Remote indication contacts	-	250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors	-	1,5 mm ²
Degree of protection	IP 20	
Range of operating temperatures (min/max)	-40°C ... +80°C	
Humidity	5 - 95 %	
Mounting	DIN rail 35 mm	
According to standard	EN 61643-31, IEC 61643-31	
Certifications:	ezü EZÜ Certification	

DEVICE CHARACTERISTICS

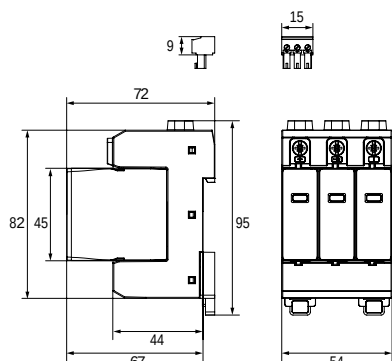
- Series of surge arresters made in a Y configuration with a modular width of three modules (54 mm).
- Provided protection against surges resulting from indirect lightning strikes – homes, offices or industrial buildings, recommended for use in switchboards of PV photovoltaic installations. For protection of PV systems where the separating spark-over distance is kept or building is without LPS.
- Continuous operating voltage for PV circuit voltage: $U_{CPV} \geq 1.2 \times U_{OC,STC}$ (Open Circuit voltage under Standard Test Conditions).
- Optical indicator informing about the device status: green - functional, red - replace.
- Possibility of installing the surge protective device in two positions on a TH 35 rail.
- Replaceable modules.

Type 2 20 kA and 15 kA

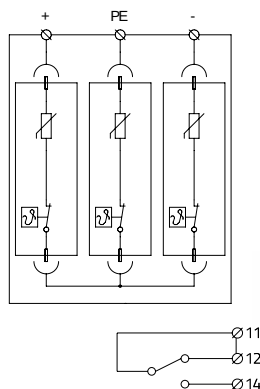
ESPPV V T2 15/1000

ESPPV V T2 15/1000 Y RI

DIMENSIONS *



CIRCUIT DIAGRAM



* All dimensions in mm

TECHNICAL DATA

Name	ESPPV V T2 15/1000 Y	ESPPV V T2 15/1000 Y RI
Catalog Number	22121003080	22121003180
U_{CPV} Maximum operating voltage +/-, +/-PE, -/PE		1 020 V DC
I_n Nominal discharge current (8/20 μ s)		15 kA
I_{max} Maximum discharge current (8/20 μ s)		40 kA
I_{Total} Total discharge current (8/20 μ s)		40 kA
U_p Voltage protection level +/-		4 kV
U_p Voltage protection level +/-PE, -/PE		4 kV
I_{SCP} Short-circuit current rating		10 kA DC
t_a Response time		25 ns
I_{PE} Residual current mode +/-PE, -/PE		5 μ A DC
I_{PE} Residual current mode +/-PE, -/PE		250 μ A AC
Cross-section of connected conductors solid (min/max)		4 mm ² / 35 mm ²
Cross-section of connected conductors stranded (min/max)		4 mm ² / 25 mm ²
Fault indication		red indication field
Remote indication	-	potential-free change-over contact
Remote indication contacts	-	250 V / 0,5 A AC, 250 V / 0,1 A DC
Cross-section of remote indication conductors	-	1,5 mm ²
Degree of protection		IP 20
Range of operating temperatures (min/max)		-40°C ... +80°C
Humidity		5 - 95 %
Mounting		DIN rail 35 mm
According to standard		EN 61643-31, IEC 61643-31
Certifications:		 VDE Certification

DEVICE CHARACTERISTICS

- Series of surge arresters made in a Y configuration with a modular width of three modules (54 mm).
- Provided protection against surges resulting from indirect lightning strikes – homes, offices or industrial buildings, recommended for use in switchboards of PV photovoltaic installations. For protection of PV systems where the separating spark-over distance is kept or building is without LPS.
- Continuous operating voltage for PV circuit voltage: $U_{CPV} \geq 1.2 \times U_{OC\ STC}$ (Open Circuit voltage under Standard Test Conditions).
- Optical indicator informing about the device status: green - functional, red - replace.
- Possibility of installing the surge protective device in two positions on a TH 35 rail.
- Replaceable modules.

Replacement modules

Replaceable surge protective devices modules are an extremely practical and convenient technical solution when a fault occurs.

When the optical indicator of the surge arrester (visible on each replaceable module) changes colour from green to red, it should be replaced immediately with a new one.

In order to ensure continuous protection of the electrical installation against surges, it is possible to use a signalling contact and regularly send a signal to a remote signalization device, for example a lamp on the switchboard housing.



Selection table of replaceable modules - SPDs from ESPAC and ESPPV families

REPLACEABLE MODULE		SURGE PROTECTIVE DEVICE		NOTE
NAME	CATALOG NUMBER	NAME	CATALOG NUMBER	
ESPAC VG T12 25/260	10630253280	ESPAC VG T12 25/260 1+0	10100250080	-
		ESPAC VG T12 25/260 2+0	10200250080	
		ESPAC VG T12 25/260 3+0	10300250080	
		ESPAC VG T12 25/260 4+0	10400250080	
		ESPAC VG T12 25/260 1+0 RI	10100250180	
		ESPAC VG T12 25/260 2+0 RI	10200250180	
		ESPAC VG T12 25/260 3+0 RI	10300250180	
		ESPAC VG T12 25/260 4+0 RI	10400250180	
		ESPAC VG T12 25/260 1+1 RI	10210251180	
		ESPAC VG T12 25/260 3+1 RI	10410251180	
ESPAC VG T12 50 NPE	10640503280	ESPAC VG T12 25/260 1+1 RI	10210251180	Additional module type for 1+1 or 3+1 configurations - NPE
ESPAC VG T12 100 NPE	10641003280	ESPAC VG T12 25/260 3+1 RI	10410251180	Additional module type for 1+1 or 3+1 configurations - NPE
ESPAC V T12 12,5/275	10530123280	ESPAC V T12 12,5/275 1+0	10100120080	-
		ESPAC V T12 12,5/275 2+0	10200120080	
		ESPAC V T12 12,5/275 3+0	10300120080	
		ESPAC V T12 12,5/275 4+0	10400120080	
		ESPAC V T12 12,5/275 1+0 RI	10100120180	
		ESPAC V T12 12,5/275 2+0 RI	10200120180	
		ESPAC V T12 12,5/275 3+0 RI	10300120180	
		ESPAC V T12 12,5/275 4+0 RI	10400120180	
		ESPAC V T12 12,5/275 1+1	10210121080	
		ESPAC V T12 12,5/275 3+1	10410121080	
		ESPAC V T12 12,5/275 1+1 RI	10210121180	
		ESPAC V T12 12,5/275 3+1 RI	10410121180	
ESPAC V T12 25 NPE	10540253280	ESPAC V T12 12,5/275 1+1	10210121080	Additional module type for 1+1 or 3+1 configurations - NPE
		ESPAC V T12 12,5/275 1+1 RI	10210121180	
ESPAC V T12 50 NPE	10540503280	ESPAC V T12 12,5/275 3+1	10410121080	Additional module type for 1+1 or 3+1 configurations - NPE
		ESPAC V T12 12,5/275 3+1 RI	10410121180	

Replacement modules

Selection table of replaceable modules - SPDs from ESPAC and ESPPV families

REPLACEABLE MODULE		SURGE PROTECTIVE DEVICE		NOTE
NAME	CATALOG NUMBER	NAME	CATALOG NUMBER	
ESPAC V T2 20/275	12530203280	ESPAC V T2 20/275 1+0	12100200080	-
		ESPAC V T2 20/275 2+0	12200200080	
		ESPAC V T2 20/275 3+0	12300200080	
		ESPAC V T2 20/275 4+0	12400200080	
		ESPAC V T2 20/275 1+0 RI	12100200180	
		ESPAC V T2 20/275 2+0 RI	12200200180	
		ESPAC V T2 20/275 3+0 RI	12300200180	
		ESPAC V T2 20/275 4+0 RI	12400200180	
		ESPAC V T2 20/275 1+1	12210201080	
		ESPAC V T2 20/275 3+1	12410201080	
		ESPAC V T2 20/275 1+1 RI	12210201180	
		ESPAC V T2 20/275 3+1 RI	12410201180	
ESPAC V T2 20 NPE	12540203280	ESPAC V T2 20/275 1+1	12210201080	Additional module type for 1+1 or 3+1 configurations - NPE
		ESPAC V T2 20/275 3+1	12410201080	
		ESPAC V T2 20/275 1+1 RI	12210201180	
		ESPAC V T2 20/275 3+1 RI	12410201180	
ESPAC V T2 20/600	12530103280	ESPAC V T2 20/600 3+0 RI	12300102180	-
ESPAC V T3 5/275	13530053280	ESPAC V T3 5/275 1+1	13210051080	Additional module type for 1+1 - NPE
		ESPAC V T3 5/275 1+1 RI	13210051180	Additional module type for 1+1 - NPE
ESPAC V T3 5 NPE	13540053280	ESPAC V T3 5/275 1+1	13210051080	Additional module type for 1+1 - NPE
		ESPAC V T3 5/275 1+1 RI	13210051180	Additional module type for 1+1 - NPE
-	-	ESPPV V T12 12,5/1500 Y	20121503080	No replaceable modules - monoblock
		ESPPV V T12 12,5/1500 Y RI	20121503180	
		ESPPV V T12 12,5/1000 Y	20121003080	
		ESPPV V T12 12,5/1000 Y RI	20121003180	
ESPPV V T2 20/700	22530703280	ESPPV V T2 20/700 Y	22120703080	-
		ESPPV V T2 20/700 Y RI	22120703180	-
ESPPV V T2 15/1000	22531003280	ESPPV V T2 15/1000 Y	22121003080	-
		ESPPV V T2 15/1000 Y RI	22121003180	-

ATTENTION!

In order to ensure correct replacement of the module in the surge arrester, it is recommended to read the contents of the technical instructions in detail. In case of any ambiguities, please contact our Technical Support Department.



CHECK QR
for more information

We will be happy to help you:

Technical support:

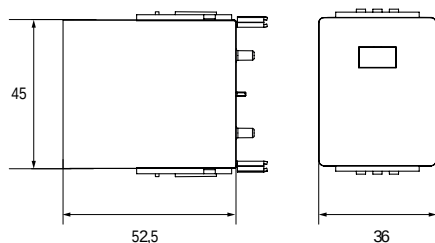
+48 665 252 580

SPD@elkobis.com.pl

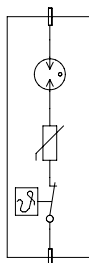
Replacement modules

ESPAC VG T12 25/260

DIMENSIONS *



CIRCUIT DIAGRAM



* All dimensions in mm

TECHNICAL DATA

Name	ESPAC VG T12 25/260	
Catalog Number	10630253280	
U_c	Maximum operating voltage L-N	260 V~
I_{imp}	Lightning impulse current (10/350 μ s) L-N	25 kA
I_n	Nominal discharge current (8/20 μ s) L-N	30 kA
I_{max}	Maximum discharge current (8/20 μ s) L-N	60 kA
U_p	Voltage protection level	< 1,5 kV
Maximum overcurrent protection		250A
According to standard		IEC/EN 61643-11

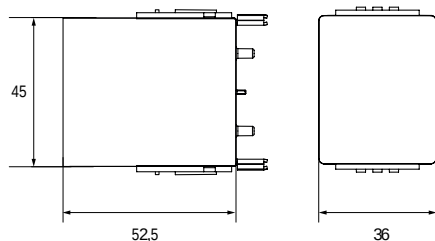
COMPATIBILITY TABLE

PAGE	SURGE PROTECTIVE DEVICE		NOTE
	NAME	CATALOG NUMBER	
18	ESPAC VG T12 25/260 1+0	10100250080	-
19	ESPAC VG T12 25/260 2+0	10200250080	
20	ESPAC VG T12 25/260 3+0	10300250080	
21	ESPAC VG T12 25/260 4+0	10400250080	
18	ESPAC VG T12 25/260 1+0 RI	10100250180	
19	ESPAC VG T12 25/260 2+0 RI	10200250180	
20	ESPAC VG T12 25/260 3+0 RI	10300250180	
21	ESPAC VG T12 25/260 4+0 RI	10400250180	
22	ESPAC VG T12 25/260 1+1 RI	10210251180	
23	ESPAC VG T12 25/260 3+1 RI	10410251180	

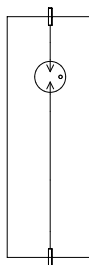
Replacement modules

ESPAC VG T12 100 NPE

DIMENSIONS *



CIRCUIT DIAGRAM



* All dimensions in mm

TECHNICAL DATA

Name	ESPAC VG T12 100 NPE	
Catalog Number	10641003280	
U_c	Maximum operating voltage N-PE	255 V~
I_{imp}	Lightning impulse current (10/350 μ s) N-PE	100 kA
I_n	Nominal discharge current (8/20 μ s) N-PE	100 kA
I_{max}	Maximum discharge current (8/20 μ s) N-PE	100 kA
U_p	Voltage protection level	< 1,5 kV
According to standard		IEC/EN 61643-11

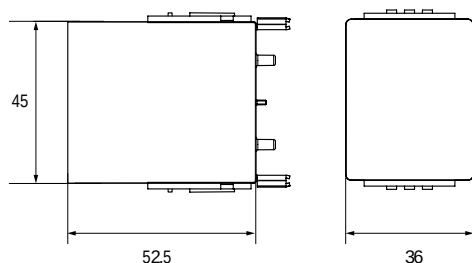
COMPATIBILITY TABLE

PAGE	SURGE PROTECTIVE DEVICE		NOTE
	NAME	CATALOG NUMBER	
23	ESPAC VG T12 25/260 3+1 RI	10410251180	Additional module type for 1+1 or 3+1 configurations - NPE

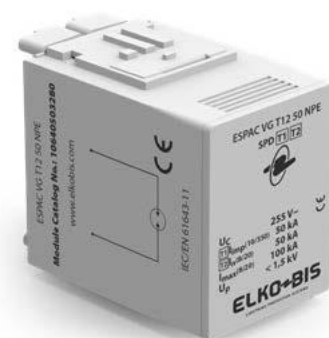
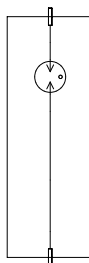
Replacement modules

ESPAC VG T12 50 NPE

DIMENSIONS *



CIRCUIT DIAGRAM



* All dimensions in mm

TECHNICAL DATA

Name	ESPAC VG T12 50 NPE	
Catalog Number	10640503280	
U_c	Maximum operating voltage N-PE	255 V~
I_{imp}	Lightning impulse current (10/350 μ s) N-PE	50 kA
I_n	Nominal discharge current (8/20 μ s) N-PE	50 kA
I_{max}	Maximum discharge current (8/20 μ s) N-PE	100 kA
U_p	Voltage protection level	< 1,5 kV
According to standard	IEC/EN 61643-11	

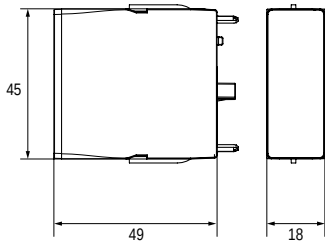
COMPATIBILITY TABLE

PAGE	SURGE PROTECTIVE DEVICE		NOTE
	NAME	CATALOG NUMBER	
22	ESPAC VG T12 25/260 1+1 RI	10210251180	Additional module type for 1+1 or 3+1 configurations - NPE

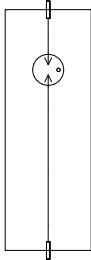
Replacement modules

ESPAC V T12 50 NPE

DIMENSIONS *



CIRCUIT DIAGRAM



* All dimensions in mm

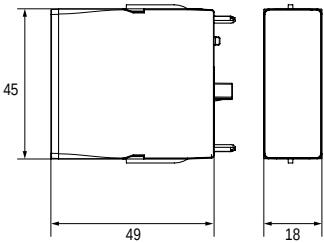
TECHNICAL DATA		
Name	ESPAC V T12 50 NPE	
CATALOG NUMBER	10540503280	
U _c	Maximum operating voltage N-PE	255 V~
I _{max}	Maximum discharge current (8/20 μs) N-PE	100 kA
U _p	Voltage protection level	<1,5 kV
I _{imp}	Lightning impulse current	50 kA
I _n	Nominal discharge current	50 kA
According to standard		IEC/EN 61643-11

COMPATIBILITY TABLE			
SURGE PROTECTIVE DEVICE			NOTE
PAGE	NAME	CATALOG NUMBER	
30	ESPAC V T12 12,5/275 3+1	10410121080	Additional module type for 1+1 or 3+1 configurations - NPE
30	ESPAC V T12 12,5/275 3+1 RI	10410121180	

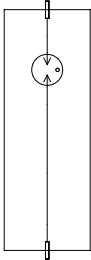
Replacement modules

ESPAC V T12 25 NPE

DIMENSIONS *



CIRCUIT DIAGRAM



* All dimensions in mm

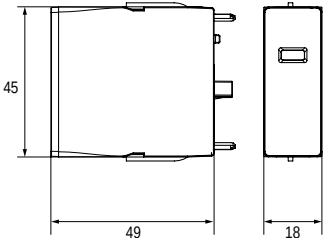
TECHNICAL DATA		
Name		ESPAC V T12 25 NPE
Catalog Number		10540253280
U _c	Maximum operating voltage N-PE	255 V~
I _{max}	Maximum discharge current (8/20 μs) N-PE	60 kA
U _p	Voltage protection level	<1,5 kV
I _{imp}	Lightning impulse current	25 kA
I _n	Nominal discharge current	30 kA
According to standard		IEC/EN 61643-11

COMPATIBILITY TABLE			
SURGE PROTECTIVE DEVICE			NOTE
PAGE	NAME	CATALOG NUMBER	
29	ESPAC V T12 12,5/275 1+1	10210121080	Additional module type for 1+1 or 3+1 configurations - NPE
29	ESPAC V T12 12,5/275 1+1 RI	10210121180	

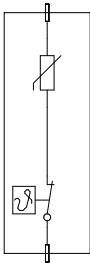
Replacement modules

ESPAC V T12 12,5/275

DIMENSIONS *



CIRCUIT DIAGRAM



* All dimensions in mm

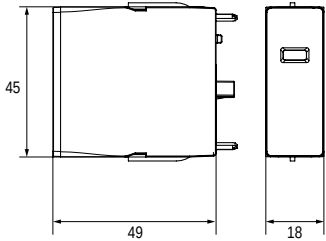
TECHNICAL DATA		
Name		ESPAC V T12 12,5/275
CATALOG NUMBER		10530123280
U _c	Maximum operating voltage	275 V~
I _{max}	Maximum discharge current (8/20 μs)	60 kA
U _p	Voltage protection level	<1,5 kV
I _{imp}	Lightning impulse current (10/350 μs)	12,5 kA
I _n	Nominal discharge current	30 kA
Maximum overcurrent protection		160 A
According to standard		IEC/EN 61643-11

COMPATIBILITY TABLE			
SURGE PROTECTIVE DEVICE			NOTE
PAGE	NAME	CATALOG NUMBER	
25	ESPAC V T12 12,5/275 1+0	10100120080	-
26	ESPAC V T12 12,5/275 2+0	10200120080	
27	ESPAC V T12 12,5/275 3+0	10300120080	
28	ESPAC V T12 12,5/275 4+0	10400120080	
25	ESPAC V T12 12,5/275 1+0 RI	10100120180	
26	ESPAC V T12 12,5/275 2+0 RI	10200120180	
27	ESPAC V T12 12,5/275 3+0 RI	10300120180	
28	ESPAC V T12 12,5/275 4+0 RI	10400120180	
29	ESPAC V T12 12,5/275 1+1	10210121080	
30	ESPAC V T12 12,5/275 3+1	10410121080	
29	ESPAC V T12 12,5/275 1+1 RI	10210121180	
30	ESPAC V T12 12,5/275 3+1 RI	10410121180	

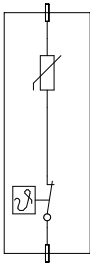
Replacement modules

ESPAC V T2 20/600

DIMENSIONS *



CIRCUIT DIAGRAM



* All dimensions in mm

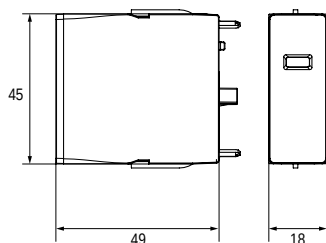
TECHNICAL DATA		
Name		ESPAC V T2 20/600
Catalog Number		12530103280
U _c	Maximum operating voltage	760 V~
U _p	Voltage protection level	<3,4 kV
I _n	Nominal discharge current (8/20 μs)	20 kA
I _{max}	Maximum discharge current (8/20 μs)	40 kA
Maximum overcurrent protection		100 A
According to standard		IEC/EN 61643-11

COMPATIBILITY TABLE			
SURGE PROTECTIVE DEVICE			NOTE
PAGE	NAME	CATALOG NUMBER	
38	ESPAC V T2 20/600 3+0 RI	12300102180	-

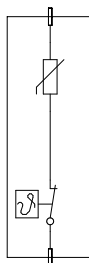
Replacement modules

ESPAC V T2 20/275

DIMENSIONS *



CIRCUIT DIAGRAM



* All dimensions in mm

TECHNICAL DATA

Name	ESPAC V T2 20/275	
Catalog Number	12530203280	
U_c	Maximum operating voltage	275 V~
U_p	Voltage protection level	<1,35 kV
I_n	Nominal discharge current (8/20 μ s)	20 kA
I_{max}	Maximum discharge current (8/20 μ s)	40 kA
Maximum overcurrent protection		160 A
According to standard		IEC/EN 61643-11

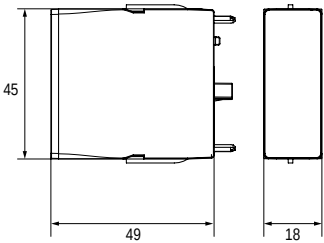
COMPATIBILITY TABLE

SURGE PROTECTIVE DEVICE			NOTE
PAGE	NAME	CATALOG NUMBER	
32	ESPAC V T2 20/275 1+0	12100200080	-
33	ESPAC V T2 20/275 2+0	12200200080	
34	ESPAC V T2 20/275 3+0	12300200080	
35	ESPAC V T2 20/275 4+0	12400200080	
32	ESPAC V T2 20/275 1+0 RI	12100200180	
33	ESPAC V T2 20/275 2+0 RI	12200200180	
34	ESPAC V T2 20/275 3+0 RI	12300200180	
35	ESPAC V T2 20/275 4+0 RI	12400200180	
36	ESPAC V T2 20/275 1+1	12210201080	
37	ESPAC V T2 20/275 3+1	12410201080	
36	ESPAC V T2 20/275 1+1 RI	12210201180	
37	ESPAC V T2 20/275 3+1 RI	12410201180	

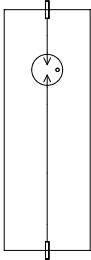
Replacement modules

ESPAC V T2 20 NPE

DIMENSIONS *



CIRCUIT DIAGRAM



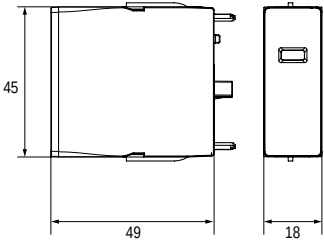
* All dimensions in mm

TECHNICAL DATA		
Name		ESPAC V T2 20 NPE
Catalog Number		12540203280
U _c	Maximum operating voltage N-PE	255 V~
U _p	Voltage protection level N-PE	<1,5 kV
I _n	Nominal discharge current (8/20 μs)	20 kA
I _{max}	Maximum discharge current (8/20 μs)	40 kA
According to standard		IEC/EN 61643-11

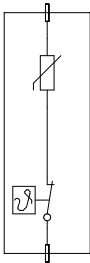
COMPATIBILITY TABLE			
SURGE PROTECTIVE DEVICE			NOTE
PAGE	NAME	CATALOG NUMBER	
36	ESPAC V T2 20/275 1+1	12210201080	Additional module type for 1+1 or 3+1 configurations - NPE
37	ESPAC V T2 20/275 3+1	12410201080	
36	ESPAC V T2 20/275 1+1 RI	12210201180	
37	ESPAC V T2 20/275 3+1 RI	12410201180	

Replacement modules ESPAC V T3 5/275

DIMENSIONS *



CIRCUIT DIAGRAM



* All dimensions in mm

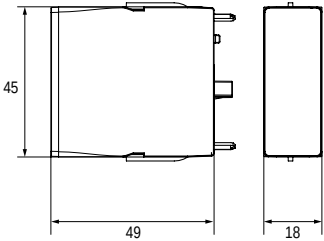
TECHNICAL DATA		
Name	ESPAC V T3 5/275	
Catalog Number	13530053280	
U _c	Maximum operating voltage	275 V~
U _p	Voltage protection level L-N	<1,0 kV
U _{oc}	Class test T3: Test voltage L-N	10 kV
I _n	Nominal discharge current (8/20 μs)	5 kA
Maximum overcurrent protection		63 A
According to standard		IEC/EN 61643-11

COMPATIBILITY TABLE			
SURGE PROTECTIVE DEVICE			NOTE
PAGE	NAME	CATALOG NUMBER	
40	ESPAC V T3 5/275 1+1	13210051080	Additional module type for 1+1 - NPE
41	ESPAC V T3 5/275 1+1 RI	13210051180	

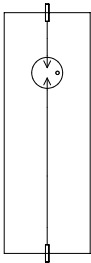
Replacement modules

ESPAC V T3 5 NPE

DIMENSIONS *



CIRCUIT DIAGRAM



* All dimensions in mm

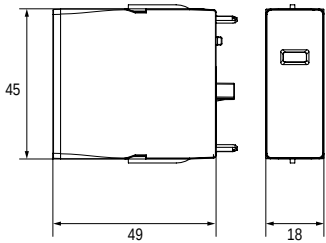
TECHNICAL DATA		
Name		ESPAC V T3 5 NPE
Catalog Number		13540053280
U _c	Maximum operating voltage N-PE	255 V~
U _p	Voltage protection level N-PE	<1,5 kV
U _{oc}	Class test T3: Test voltage L-N	20 kV
I _n	Nominal discharge current (8/20 μs) N-PE	10 kA
According to standard		IEC/EN 61643-11

COMPATIBILITY TABLE			
SURGE PROTECTIVE DEVICE			NOTE
PAGE	NAME	CATALOG NUMBER	
40	ESPAC V T3 5/275 1+1	13210051080	Additional module type for 1+1 - NPE
40	ESPAC V T3 5/275 1+1 RI	13210051180	

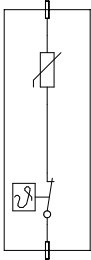
Replacement modules

ESPPV V T2 20/700

DIMENSIONS *



CIRCUIT DIAGRAM



* All dimensions in mm

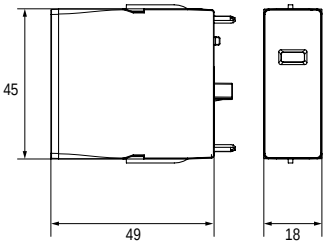
TECHNICAL DATA		
Name		ESPPV V T2 20/700
Catalog Number		22530703280
U _{cpv}	Maximum operating voltage +/-, +/-PE, -/PE	375 V~
U _p	Voltage protection level +/-PE, -/PE	<1,8 kV
I _n	Nominal discharge current (8/20 µs)	20 kA
I _{max}	Maximum discharge current (8/20 µs)	40 kA
According to standard		IEC/EN 61643-31

COMPATIBILITY TABLE			
SURGE PROTECTIVE DEVICE			NOTE
PAGE	NAME	CATALOG NUMBER	
46	ESPPV V T2 20/700 Y	22120703080	-
46	ESPPV V T2 20/700 Y RI	22120703180	

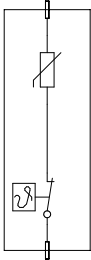
Replacement modules

ESPPV V T2 15/1000

DIMENSIONS *



CIRCUIT DIAGRAM



* All dimensions in mm

TECHNICAL DATA		
Name		ESPPV V T2 15/1000
Catalog Number		22531003280
U_{cpv}	Maximum operating voltage	510 V~
U_p	Voltage protection level	<2,0 kV
I_n	Nominal discharge current (8/20 μ s)	15 kA
I_{max}	Maximum discharge current (8/20 μ s)	40 kA
According to standard		IEC/EN 61643-31

COMPATIBILITY TABLE			
SURGE PROTECTIVE DEVICE			NOTE
PAGE	NAME	CATALOG NUMBER	
47	ESPPV V T2 15/1000 Y	22121003080	-
47	ESPPV V T2 15/1000 Y RI	22121003180	



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