



Surge Arresters

SurgeGuard

Functions

Protection of an electrical installation and all electrical and electronic devices connected to this installation against destructive surges. Such voltage surges can be generated by lightning induced currents, by network polluting devices (such a motors, frequency converters, dimmers, etc..) and by power supply networks switching operations.

Standards

IEC 61643-I
IEC 61643-II
DIN VDE 0675-6
NF C61-740
BS 6651

Marking



Applications



Surge arresters cover the protection of home appliances (TV, Hifi, VCR, laundry machine, dishwasher...), commercial building equipment (computer, data networks, intrusion and alarm systems, access control and building automation systems), but also industrial equipment (PLC, instrumentation, medical apparatus, monitoring devices) and even the protection of entire off-shore drilling platforms.

Features

- The line of surge arresters includes a full range of compact protectors for installation on DIN rail. The SPD's are especially designed to provide complete and effective protection against surges, protecting equipment and property connected to the low voltage network.
- The range includes Class I/B 15 kA to 100 kA surge arresters in 10/350 ms wave form, and Class II/C surge arresters with different discharge capacities: 15 kA, 40 kA and 100 kA in wave form 8/20 ms. Class II SPD's for DC photo-voltaic applications, communication and TV lines are also available. The most suitable value will be selected according to the type of installation, premises and equipments to be protected.
- Several different formats one pole, single phase, two phase and three phases are available for all types of electrical net systems: TT, TN-S, TN-C, IT.
- Additionally, dedicated versions for temporary overvoltage (TOV) are included in the offer.
TOV is a voltage peak of hundreds of volts for an indeterminate period due to the unbalance of the network (normally caused by neutral fault).

Parameters

Impulse current (Iimp)

This is the peak current that the SPD can withstand without failing. The waveform of the applied current is normalised as 10/350 μ s, used in Class I SPD.

Maximum discharge current (Imax)

This is the peak current it can withstand in a single pulse without failing. The waveform of the applied current is normalised as 8/20 μ s. Used in Class II SPD.

Nominal discharge current (In)

This is the current that the device is capable of shunting to ground at least 20 times without failing.

Level of protection (Up)

This is the parameter that characterises the action of the protection device against surges by limiting the voltage between its terminals. It must be less than the surge withstand capacity given by the category of the equipment to be protected. However, if the protector is far from the equipment to be protected it may be necessary to use additional protectors.

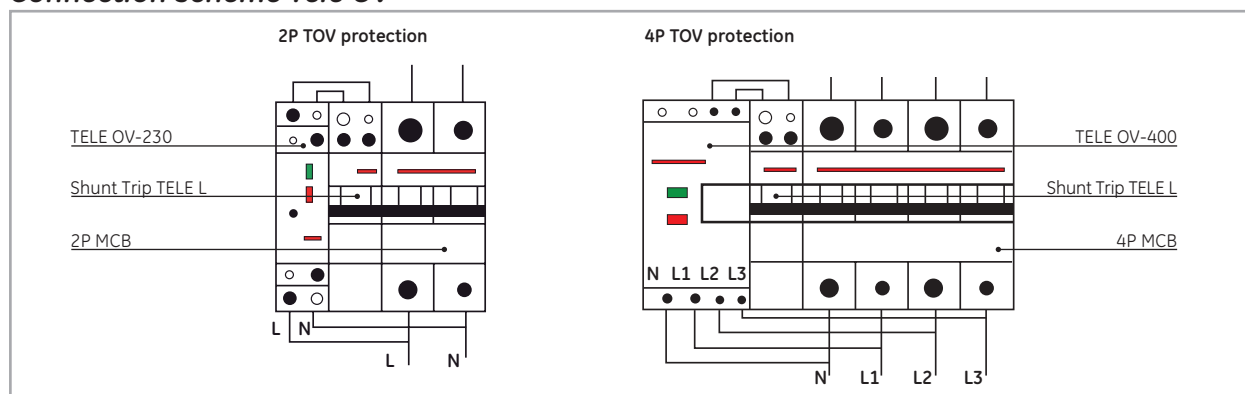
Maximum continuous operating voltage Umax (Uc)

This is the maximum AC or DC voltage which may be continuously applied to the terminals of the SPD.

Performance


	SA BLOCK I	SA BLOCK I&II	SA PLUGIN II single phase	SA PLUGIN II multi-phase	SA BLOCK II single phase	SA BLOCK II multi-phase
Energy impulse wave	10/350 μ s	10/350 μ s and 8/20 μ s	8/20 μ s	8/20 μ s	8/20 μ s	8/20 μ s
Response time	<100ns	<100ns	<25ns	<25ns	<25ns	<25ns
Thermal fuse	no	yes	yes	yes	yes	yes
Thermal fuse healthy indication	no	yes	yes	yes	yes	yes
Nominal voltage	230V or 400V	230V or 400V	230V or 400V	230V or 400V	230V or 400V	230V or 400V
Frequency	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz
Useable in networks	TT, TN-S, TT, IT	TT, TN-S, TT, IT	TT, TN-S, TT, IT	TT, TN-S	TT, TN-S, TT, IT	TT, TN-S
Operating temperature	-40°C...+80°C	-40°C...+80°C	-40°C...+75°C	-40°C...+75°C	-40°C...+80°C	-40°C...+80°C
Screws	Pozidriv 3	Pozidriv 3	Pozidriv 3	Pozidriv 3	Pozidriv 3	Pozidriv 3
Terminal capacity: min	6mm ²	6mm ²	6mm ²	6mm ²	6mm ²	6mm ²
max (flexible/rigid)	35/50mm ²	25/35mm ²	25/50mm ²	25/50mm ²	25/35mm ²	25/35mm ²

Connection scheme Tele OV




SurgeGuard - Surge Arresters - Class I/B

The surge arresters have the capacity to divert excess energy for low voltage line protection.
Class I surge arresters should be installed in areas at high risk from direct lightning strike discharge.

Single phase		Iimp	In	Up	Up (L-N)	Up (N-PE)	Umax	No. of poles	Auxiliary contact	No. modules	Cat. No.	Ref. No.	Pack
	TT, TN-S TN-C, IT	35kA	-	4000V	-	-	255V	1P	-	1	SA BLOCK I 35	667470	1
		100kA	-	4000V	-	-	255V	1P	-	1	SA BLOCK I 100 N	667471	1
		100kA	100kA	-	-	-	500V	1P	-	1	SA BLOCK I PC	667472	1





SurgeGuard - Surge Arresters - Class I and II

The surge arrester can operate as a Class I and Class II protection in accordance with the IEC 61643-11 Class I/B and Class II/C integrated in only one device. Used in main panelboards (incomer of installations) with high risk from direct lightning strike discharge. Decoupling coils not needed

Single phase		Iimp Class I/Class II	In Class II	Up	Up (L-N)	Up (N-PE)	Umax	No. of poles	Auxiliary contact	No. modules	Cat. No.	Ref. No.	Pack
	TT, TN-S TN-C, IT	15kA / 100kA	30kA	1300V	-	-	275V	1P	-	2	SA BLOCK I&II 100	667486	1
		30kA / 100kA	60kA	1500V	-	-	275V	1P	-	2	SA BLOCK I&II 100N	667487	1
		7,5kA / 65kA	20kA	1300V	-	-	275V	1P	-	1	SA BLOCK I&II 65	667517	1
		12kA / 65kA	20kA	1500V	-	-	275V	1P	-	1	SA BLOCK I&II 65N	667518	1

SurgeGuard - Surge Arresters - Class II

The Class II protection is the most frequently used because it offers high protection and is compatible with most equipments.

Single phase plug-in (base+module)		Iimp	In	Up	Up (L-N)	Up (N-PE)	Umax	No. of poles	Auxiliary contact	No. modules	Cat. No.	Ref. No.	Pack	
	TT, TN-S TN-C, IT	15kA	5kA	1200V	-	-	280V	1P	-	1	SA PLUGIN II 15/230	667500	1	
		15kA	5kA	1300V	-	-	440V	1P	-	1	SA PLUGIN II 15/400	667501	1	
		40kA	20kA	1300V	-	-	280V	1P	-	1	SA PLUGIN II 40/230	667502	1	
		40kA	20kA	1300V	-	-	280V	1P	1CO	1	SA PLUGIN II 40/230 C	667504	1	
		40kA	20kA	1900V	-	-	440V	1P	-	1	SA PLUGIN II 40/400	667503	1	
		40kA	20kA	1900V	-	-	440V	1P	1CO	1	SA PLUGIN II 40/400 C	667505	1	
	Multi-phase plug-in (base+module)	40kA	20kA	-	1300V	1500V	280V	2P	-	2	SA PLUGIN II 40/230 LNE	667506	1	
		40kA	20kA	-	1300V	1500V	440V	4P	-	4	SA PLUGIN II 40/230 3L+NE	667507	1	
	Single phase monobloc	15kA	5kA	1200V	-	-	275V	1P	-	1	SA BLOCK II 15/230	667473	1	
		15kA	5kA	1200V	-	-	275V	1P	1CO	1	SA BLOCK II 15/230 C	667475	1	
		15kA	5kA	1800V	-	-	420V	1P	-	1	SA BLOCK II 15/400	667474	1	
		15kA	5kA	1800V	-	-	420V	1P	1CO	1	SA BLOCK II 15/400 C	667476	1	
		15kA	5kA	850V	-	-	255V	1P	-	1	SA BLOCK II 15N	667481	1	
		40kA	15kA	1300V	-	-	275V	1P	-	1	SA BLOCK II 40/230	667477	1	
		40kA	15kA	1300V	-	-	275V	1P	1CO	1	SA BLOCK II 40/230 C	667479	1	
		40kA	15kA	1800V	-	-	420V	1P	-	1	SA BLOCK II 40/400	667478	1	
		40kA	15kA	1800V	-	-	420V	1P	1CO	1	SA BLOCK II 40/400 C	667480	1	
		40kA	20kA	1200V	-	-	275V	1P	-	1	SA BLOCK II 40N	667482	1	
	Multi-phase monobloc	Common and differential mode protection												
		15kA	5kA	-	1200V	1500V	275V	2P	-	1	SA BLOCK II 15LN	667483	1	
		15kA	5kA	-	1200V	1500V	275V	2P	-	2	SA BLOCK II 15/230 LNE	667488	1	
		40kA	15kA	-	1300V	1500V	275V	2P	-	2	SA BLOCK II 40/230 LNE	667490	1	
		15kA	5kA	-	1200V	1500V	440V	4P	-	4	SA BLOCK II 15/400 3L+NE	667494	1	
		40kA	15kA	-	1300V	1500V	440V	4P	-	4	SA BLOCK II 40/400 3L+NE	667496	1	
		Common mode protection												
		15kA	5kA	1200V	-	-	275V	2P	-	2	SA BLOCK II 15/230 LLE	667489	1	
		40kA	15kA	1300V	-	-	275V	2P	-	2	SA BLOCK II 40/230 LLE	667491	1	
		15kA	5kA	1200V	-	-	440V	4P	-	4	SA BLOCK II 15/400 4L/NE	667495	1	
40kA	15kA	1300V	-	-	440V	4P	-	4	SA BLOCK II 40/400 4L/NE	667497	1			
40kA	15kA	1300V	-	-	440V	4P	1CO	4	SA BLOCK II 40/400 4L/NE C	667498	1			

Comfort functions

A

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X


New



SurgeGuard - Surge Arresters - Class II


Protection for (DC) photovoltaic applications	Iimp	In	Up	Up (L-N)	Up (N-PE)	Umax	No. of poles	Auxiliary contact	No. modules	Cat. No.	Ref. No.	Pack
	40kA	15kA	2600V	-	-	600Vdc	2P	-	2	SA PHOT 600V	667508	1
	40kA	15kA	3800V	-	-	1000Vdc	2P	-	2	SA PHOT 1000V	667509	1

The Protective devices should be installed for sensitive equipment both in home and industries.


For communication lines (telephone, modem, router, alarm installations, home automation)	I _{max}	In	Up	Up (L-N)	Up (N-PE)	Umax	fg Bandwidth	protection type	No. modules	Cat. No.	Ref. No.	Pack
	10kA	5kA	200V	-	-	180V	3MHz	1 par	1	SA BLOCK ADSL	667484	1
	20kA	10kA	600V	-	-	230V	3GHz	BNC	-	SA TV	667510	1

Accessories

Class II - Replacement mod. for plug-in versions	I _{max}	In	Up (L-PE)	Umax	No. of poles	Auxiliary contact	No. modules	Cat. No.	Ref. No.	Pack
	15kA	5kA	1200V	280V	1P	-	1	SA MODULE 15/230	667512	1
	15kA	5kA	1300V	440V	1P	-	1	SA MODULE 15/400	667513	1
	40kA	20kA	1200V	280V	1P	-	1	SA MODULE 40/230	667514	1
	40kA	20kA	1300V	440V	1P	-	1	SA MODULE 40/400	667515	1
	60kA	20kA	1500V	255V	1P	-	1	SA MODULE 60 NGND	667516	1

Decoupling coil	I _{max}	In	Up (L-PE)	Umax	No. of poles	Auxiliary contact	No. modules	Cat. No.	Ref. No.	Pack
	-	35A	-	-	1P	-	2	SA C35	667492	1
	-	63A	-	-	1P	-	4	SA C63	667499	1

TELE OV - Temporary overvoltage protection (TOV)⁽¹⁾

Temporally overvoltage protection	In	Ua L-N	Tripping time (Ua) (400V)	Un	No. of poles	No. modules	Cat. No.	Ref. No.	Pack
	MCB's	254V	<4s <0,5s	230V	2	1	TELE OV 230	667485	1
	MCB's	254V	<4s <0,5s	400V	4	2	TELE OV 400	667493	1

Busbars

No. of poles	I(A)	Cat. No.	Ref. No.	Pack
2P	80	EV-G.1.2.80-90°	624993	20
3P	80	EV-G.1.3.80-90°	644893	20
4P	80	EV-G.1.4.80-90°	568106	20
8P	80	EV-G.1.8.80-90°	644897	20

(1) Connection scheme Tele OV, see page D.37



New

Terminal capacity

Impulse switches - Pulsar S

Comfort functions

A

B

C

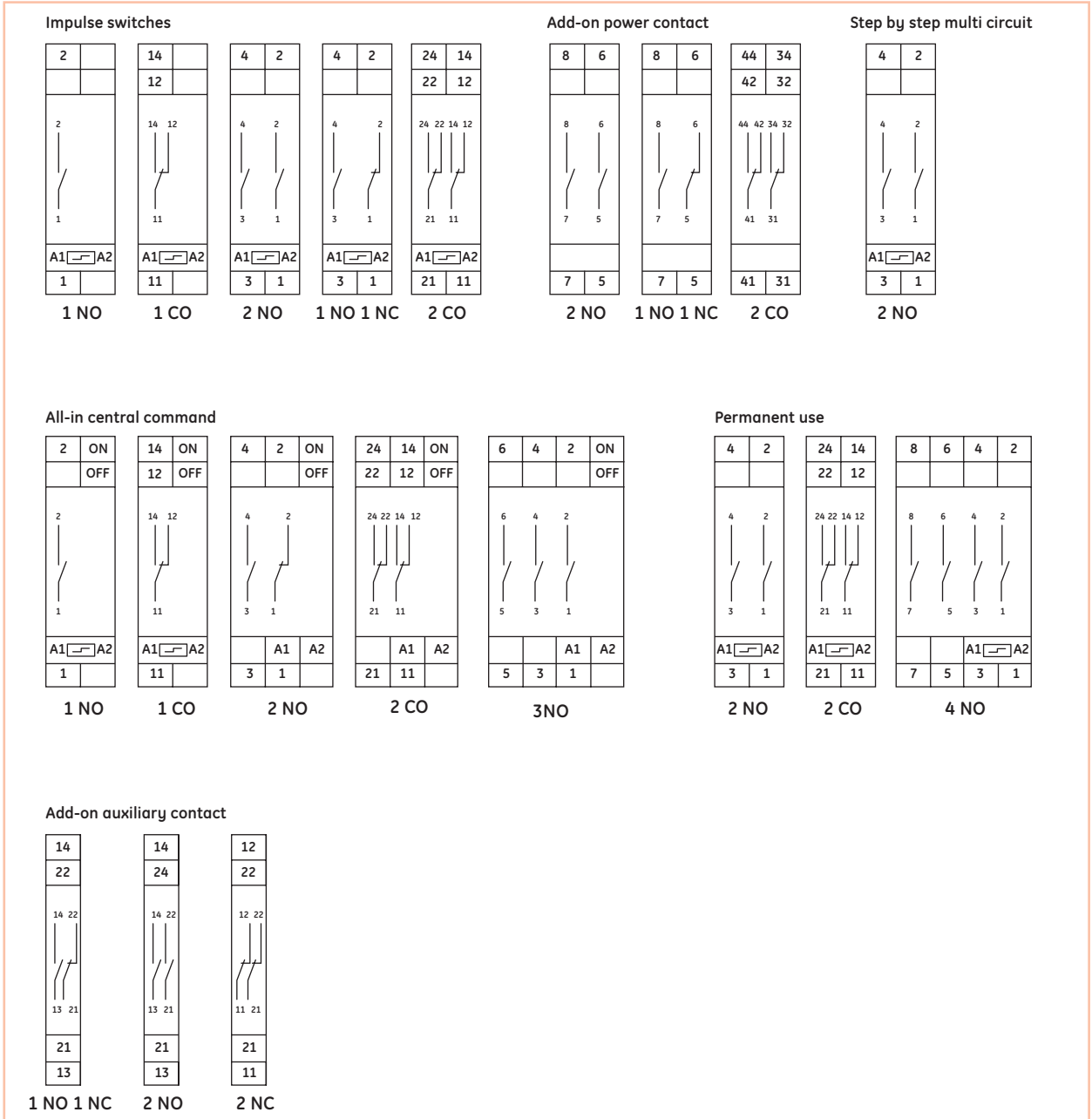
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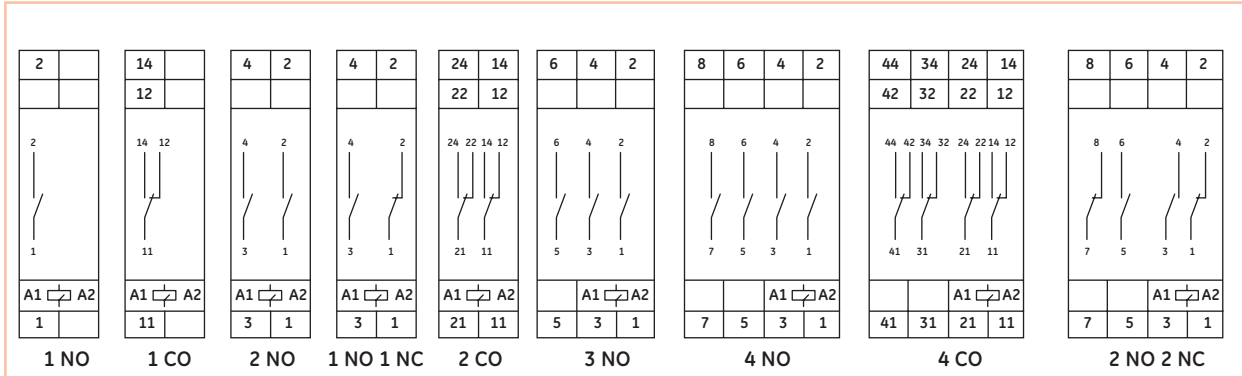
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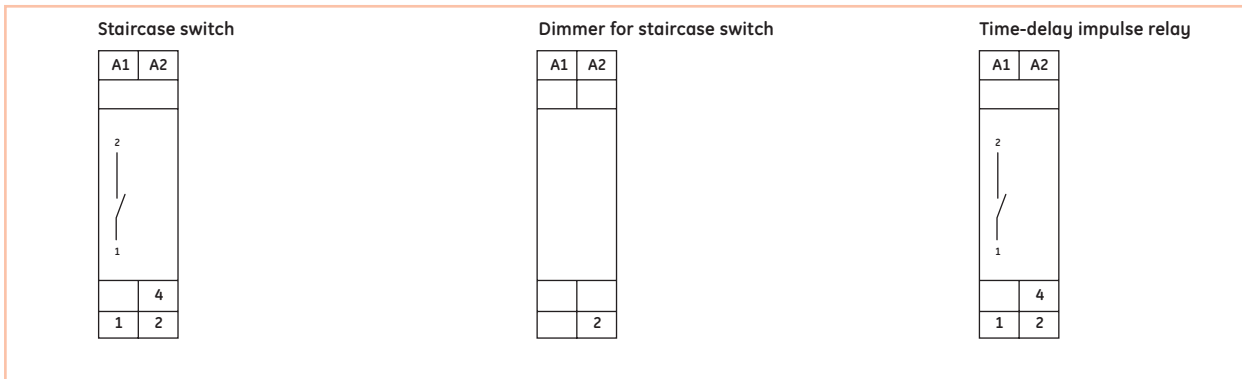
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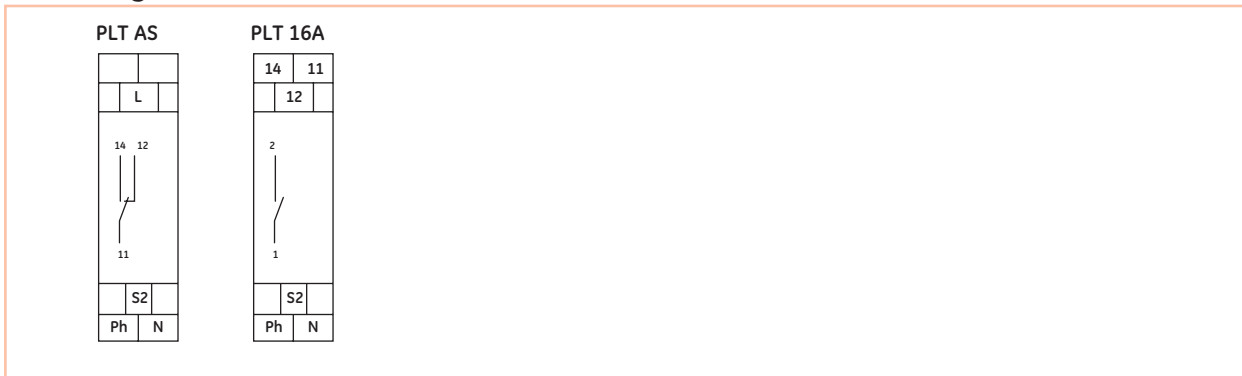
Relays - Contax R



Staircase switches - Pulsar TS



Time relays - Pulsar T



Pulsar

A

B

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Dimensional drawings

Surge arresters - SurgeGuard

Comfort functions

A

B

C

D

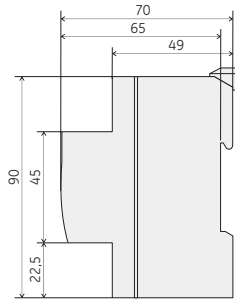
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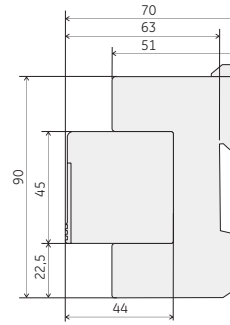
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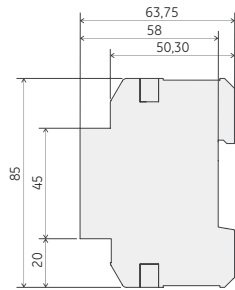
SA BLOCK, SA PHOT x 2 MODULES, SA BLOCK ADSL, SA C



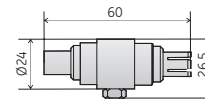
Plug-in types



SA BLOCK II 15 LN



For coax cables



TELE OV - Overvoltage protection

