

Selection guide

Surge protection

SURGYS surge protection devices



Applications	PV sites	Sites equipped with lightning conductors				Sites exposed to frequent lightning strikes or industrial networks subject to operating voltage surges			Sensitive loads or electrical receivers	Strategic facilities subject to lightning strikes		
Type of protected network	PV DC network	Installation incomers		Installation incomers equipped with sensitive devices					Protection of RS422/485, T2 digital phone and Ethernet 10baseT links	Protection of field bus (Profibus, Fieldbus, LONworks, Interbus, etc.)	Protection of analogue, modem, autocom, telephone alarm and ADSL lines	
Model	<i>G51-PV</i>	<i>G140-F</i>	<i>G100-F</i>	<i>G50-FE</i>	<i>G40-FE</i>	<i>G70</i>	<i>D40</i>	<i>E10</i>	<i>RS-3</i>	<i>mA-3/mA-3x2</i>	<i>TEL-3</i>	

Protection

Type	Type 2	Type 1	Types 1 and 2	Types 1 and 2	Types 1 and 2	Type 2	Type 2	Types 2 and 3	Low currents	Low currents	Low currents
Mode	MC / MD	MC	MC	MC	MC	MC	MC / MD	MC / MD	MC / MD	MC / MD	MC / MD

Characteristics

Technology	Metal oxide varistor	Multi metal oxide varistor	Metal oxide varistor	Metal oxide varistor	Varistor and gas discharge tube	Multi metal oxide varistor	Varistor and gas discharge tube	Varistor and gas discharge tube	Gas discharge tube diode	Gas discharge tube diode	Gas discharge tube diode
Nominal voltage U_n	From 500 to 1500 VDC	230 / 400 VAC	230 / 400 VAC	230 / 400 VAC	230 / 400 VAC	230 / 400 VAC	230 / 400 VAC	230 / 400 VAC	12 V	48 V	150 V
Operating voltage U_c	From 600 to 1500 VDC	440 VAC	440 VAC	440 VAC	255 VAC	400 VAC	255 - 400 VAC	255 - 400 VAC	15 V	53 V	170 V
Neutral system		TN, IT, TT	TN, IT	TN, IT, TT	TN, IT, TT	TN, IT	TN, IT, TT	TN, IT, TT			
Protection level U_p	From 2.2 to 3.4 kV	1.5 kV	1.5 kV	1.3 kV	1.5 kV	1.8 kV	1.25 - 1.8 kV	0.9 - 1.3 kV	30 V	75 V	220 V
Discharge current I_n / I_{max}	15 kA / 40 kA	25 kA / 140 kA	25 kA / 100 kA	12.5 kA / 50 kA	20 kA / 40 kA	30 kA / 70 kA	20 kA / 40 kA	5 kA / 15 kA	5 kA / 20 kA	5 kA / 20 kA	5 kA / 20 kA
Impulse current I_{imp} (per pole)		25 kA	25 kA	12.5 kA	15 kA						
Plug-in modules.	•		•	•		•	•	•	•	•	•
Remote signalling	•	•	•	•	•	•	•	•			
Associated Fpf fuses	Not applicable	315 A gG	315 A gG	125 A gG	125 A gG	100 A gG	50 A gG	20 A gG	Not applicable	Not applicable	Not applicable
Examples of references (MC with TN, IT arrangement)	4982 2520 (1000 V)	4981 1541 (4 P) 4981 1531 (3 P)	4981 1040 (4 P) 4981 1030 (3 P)	4981 0540 (4 P) 4981 0530 (3 P)	4981 0440 (4 P) 4981 0430 (3 P)	4982 1740 (4 P) 4982 1730 (3 P)	4982 1442 (4 P) 4982 1432 (3 P)	4983 1145 (4 P) 4983 1125 (2 P)	4986 3020 (1 pair)	4987 3420 (1 pair)	4985 3170 (1 pair)

MC: Common mode to earth

MD: Differential mode between live conductors.

Choice of Type 1 or Type 2 primary surge protection (SPD1)

1

On exposed sites (equipped with lightning conductor)

- > Waterbody, high voltage electricity pylon
- > Building of metallic structure



G140-F



G100-F

- > Low Voltage Panel Board (LVPB) < 2 m and sensitive equipment



G40-FE



G50-FE

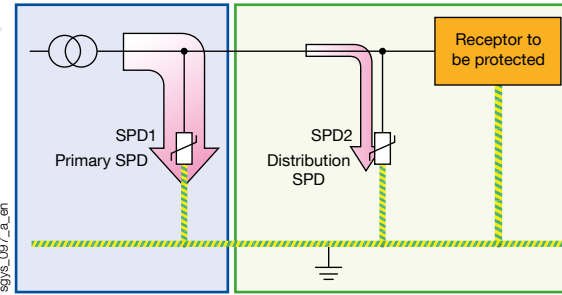
Unexposed site (buried incomers)

- > HV switching surge



G70

SURGYS overvoltage protection



$U_p \text{ SURGYS} < U_w$ of the receiver to be protected

Standards and installation:

- IEC 60364 part 5-534
- IEC 61643-11

Choice of Type 2 or Type 3 distribution surge protection (SPD2)

2



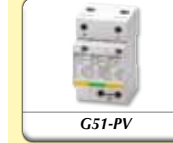
D40

- > Protection of the entire installation against switching surges and lightning



E10

- > Protection of downstream receivers and sensitive loads

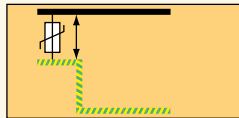


G51-PV

- > Protection of PV installations (up to 1500 VDC)

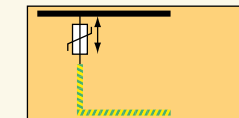
Installation regulations (50 cm max. total length of connection)

- > New LVPB



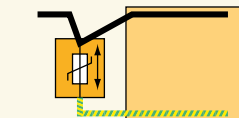
Bar custom fitted

- > Adaptable LVPB



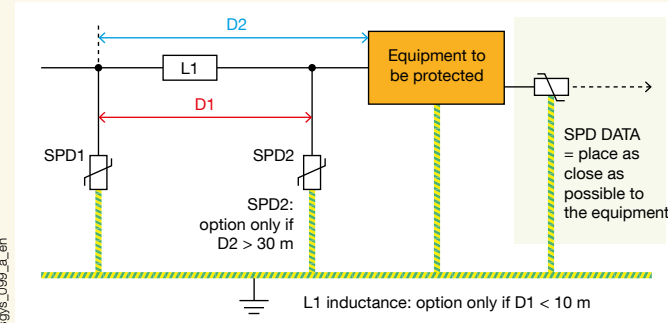
Earthing bar lift up

- > Non adaptable LVPB



Installation of an external enclosure

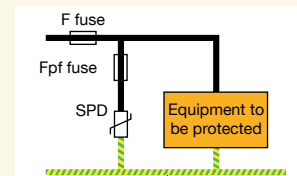
- > Co-ordination between surge protection devices



- > Choice of operating priority

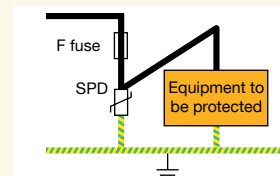
F fuse: general protection fuse

Fpf fuse: fuse associated with surge protection device, recommended rating in the selection guide



Service continuity

Fpf fuse rating always < the rating of fuse F



Protection of the equipment

The fuse F can provide the functions of the Fpf fuse however the rating must be lower than that of the recommended Fpf fuse.

4

Choice of surge protection device for low currents (SPD DATA)

3

Data line protection



SURGYS RS-3

- > Serial link, Ethernet



SURGYS mA-3

- > Field bus



SURGYS TEL-3

- > Analog line, ADSL

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sgys_099_a_en

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