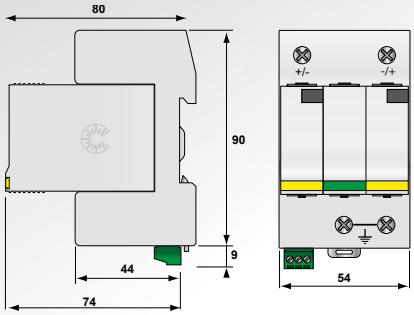
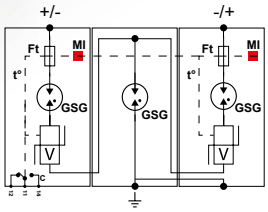
Data Sheet

Type 2 PV Surge Protector
DS50VGPV-G/51 series





GSG: Gas-filled spark gap
V : High energy MOV
Ft : Thermal fuse
t° : Thermal disconnection mechanism
C : Contact for remote signal
MI : Disconnection indicator

- **Type 2 Surge Protector for Photovoltaic**
- **VG-Technology**
- **No leakage, no operating currents**
- **Improved life expectancy**
- **Impulse currents In/Imax : 15/40 kA**
- **Common Mode and Differential protection**
- **Remote Signaling (option)**
- **EN 50539-11 compliance**
- **UL, VDE and OVE approved**

DS50VGPVS-xxxG/51

- Network voltage
- «S» option remote signalling status
- «VG» : VG Technology

Characteristics

CITEL Model		DS50VGPV-600G/51	DS50VGPV-1000G/51	DS50VGPV-1500G/51
Description		Type 2 PV surge protector - 600 Vdc - VG technology	Type 2 PV surge protector - 1000 Vdc - VG technology	Type 2 PV surge protector - 1500 Vdc - VG technology
Network	Uocstc	PV network 600 Vdc	PV network 1000 Vdc	PV network 1250 Vdc
Connection mode		+/-/PE	+/-/PE	+/-/PE
Protection mode(s)		CM/DM	CM/DM	CM/DM
Max. PV operating voltage	Ucpv	720 Vdc	1200 Vdc	1500 Vdc
Permanente operating current - *Leakage current at Ucpv*	Icpv	None	None	None
Residual current - *Leakage current at Ucpv*	Ipe	None	None	None
Nominal discharge current - *15 x 8/20 µs impulses*	In	15 kA	15 kA	15 kA
Max. discharge current -*max. withstand @ 8/20 µs by pole*	Imax	40 kA	40 kA	40 kA
Total Maximal discharge current - *max. total withstand @ 8/20 µs*	Itotal	60 kA	60 kA	60 kA
Protection level CM/DM *@In (8/20µs) and @ 6kV (1.2/50µs)*	Up	2.2/3.4 kV	2.8/5.1 kV	3.4/6.8 kV
Current withstand short circuit PV	Iscpv	15000 A	15000 A	15000 A
Associated disconnectors				
Thermal disconnector		internal		
Fuses		without		
Mechnical characteristics				
Dimensions		see diagram		
Connection to Network		Screw terminals: 2.5-25mm²		
Disconnection indicator		2 mechanical indicators		
Remote signaling of disconnection		Option DS50VGPVS-600G/51 - output on changeover contact	Option DS50VGPVS-1000G/51 - output on changeover contact	Option DS50VGPVS-1500G/51 - output on changeover contact
Mounting		Symmetrical rail 35 mm (EN60715)		
Operating temperature		-40/+85°C		
Protection rating		IP20		
Housing material		Thermoplastic UL94-V0		
Standards compliance		EN 50539-11		
Certification		EAC	VDE / OVE / EAC / UL	EAC
Part number		481401	481301	481501

*) CM = Common mode (+/PE or -/PE) - DM = Differential mode (+/-)

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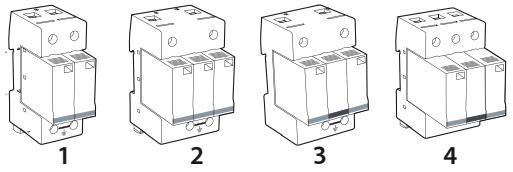
INSTALLATION INSTRUCTIONS - NOTICE D'INSTALLATION
NOTICIA DE INSTALACIÓN - INSTALLATIONSHINWEISE
ISTRUZIONI PER L'INSTALLAZIONE
INSTRUCOES DE INSTALACAO - MONTÁŽNÍ NÁVOD
РУКОВОДСТВО ПО МОНТАЖУ - 安装指导书

DC Surge protector for photovoltaic
Parafoudre pour Photovoltaïque
Protectiones Fotovoltaica
Überspannungsschutz für Photovoltaik
Scaricatori da sovratensioni per impianto fotovoltaico
Proteção contra surtos de energia fotovoltaica

Configurations (1, 2, 3 or 4):



DS50PV series
DS50VGPV series

Technical Data

2000 m max. 6500 ft max.
-40/+85°C max. -40/+185°F max.
IP20 when fully installed indoor use only
Humidity range 5% - 95%

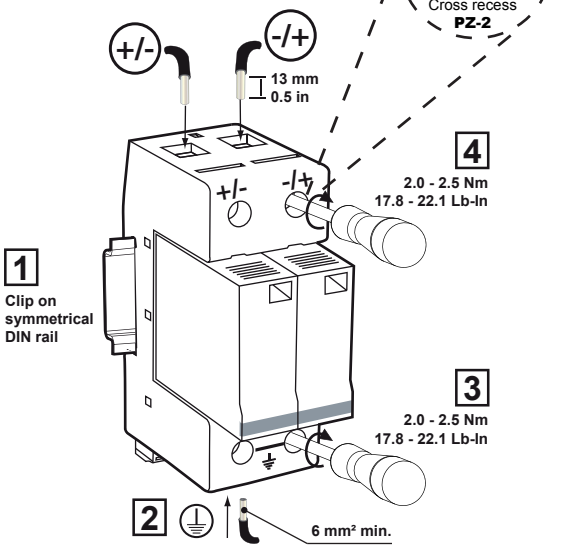
		P/N	DS50PV(S)-500	DS50PV(S)-600	DS50PV(S)-800	DS50PV(S)-1000	DS50PV(S)-1000/51	DS50PV(S)-500/G	DS50PV(S)-800/G	DS50PV(S)-1000/G	DS50PV(S)-500/51	DS50PV(S)-600/51	DS50PV(S)-500G/51	DS50PV(S)-600G/51	DS50PV(S)-800G/51	DS50PV(S)-1000G/51	DS50PV(S)-1000/51V	DS50VGPV(S)-500	DS50VGPV(S)-1000	DS50VGPV(S)-600G/51	DS50VGPV(S)-1000G/51	DS50VGPV(S)-1500G/51	DS50PV(S)-1500/51
PV Network (Uocstc)																							
500	**Vdc**		●					●			●		●					●						
600	**Vdc**			●								●		●						●				
800	**Vdc**				●				●						●									
1000	**Vdc**					●	●			●						●	●		●		●			
1250	**Vdc**																					●	●
Characteristics																							
Configurations (see drawing)			1	1	2	2	2	3	3	3	1	1	3	3	3	3	2	2	2	4	4	4	4
Port configuration			1 - port SPD																				
I_{scpv}			70 A								15000 A									1000 A			
I_{PE} (AC and DC)			< 1 mA / (< 1 µA for G and VG version)																				
I_{max}			40 kA																				
I_{total}			60 kA																				
SPD overload behaviour mode			Open Circuit Mode (OCM)																				
SCCR at Uocstc-Fuseless (kA)*			NA	100	NA	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	100	NA	100	50	NA	NA	50	NA

Remote signal option: S: e.g DS50PV<u>S</u>-500
*** Following UL1449**

Table 1

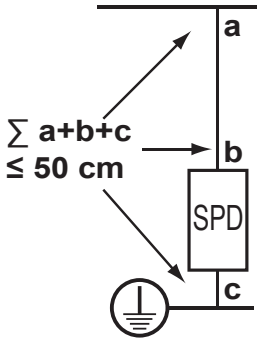
Installation

min-max ∅		
	2.5 - 35 mm²	13 - 2 AWG
	2.5 - 25 mm²	13 - 4 AWG

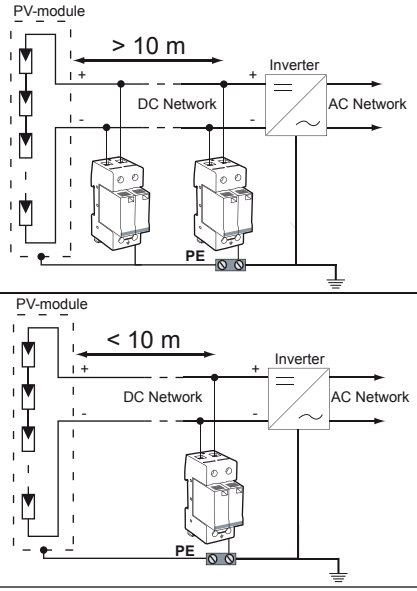


Wiring

All configurations



Configuration 1



Configuration 2, 3 or 4

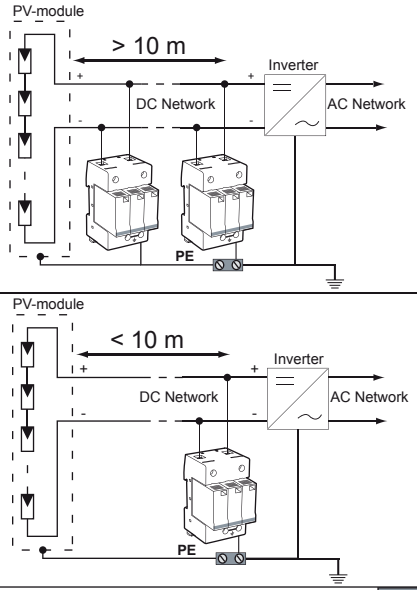
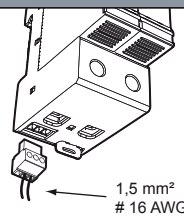


Table 2

Remote contact wiring



2.1 Lb-In
0,5 Nm max.
250 Vac / 0.5 A max.
30 Vdc / 3 A max.

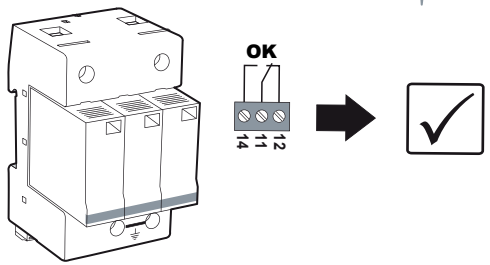
Remote signal for disconnection information

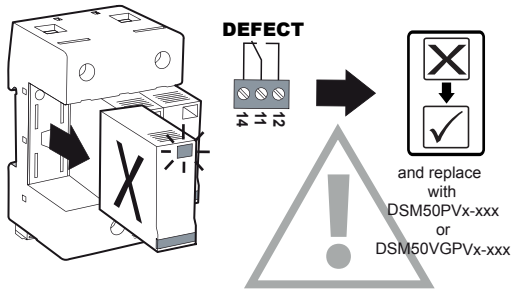
11-12 Closed = SPD OK
11-14 Open = SPD OK

11-12 Open = SPD disconnect
11-14 Closed = SPD disconnect

Table 3

Maintenance





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SAFETY INSTRUCTIONS
CONSIGNES DE SECURITE
SICHERHEITSHINWEISE
ADVERTENCIA DE SEGURIDAD
AVVERTENZE IMPORTANTI
AVISOS IMPORTANTES
МЕРЫ БЕЗОПАСНОСТИ
BEZPEČNOSTNÍ POKYNY
安全须知

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ATTENTION ! GB

- Installation must be performed only by electrically skilled operator.
- National electrical installation rules must be followed.
- The unit must be used only as surge protector and according the conditions described in this document.
- Surge protectors must be selected in relation with an dedicated network.
- In case of red indicator, the surge protector must be replaced.

ATTENTION ! FR

- L'installation ne doit être effectuée que par un opérateur électricien dûment qualifié.
- Les régles générales d'installation électrique nationales doivent être respectées.
- Le produit est uniquement destiné à un usage parafoudre et doit être utilisé dans les conditions décrites dans ce document.
- Les parafoudres sont utilisés en fonction d'un réseau déterminé.
- En cas d'indicateur passant au rouge, le parafoudre doit être remplacé.

WARNUNG ! D

- Die Montage und der Anschluss des Gerätes dürfen nur durch eine Elektrofachkraft durchgeführt werden.
- Nationale Installations Vorschriften sind zu beachten.
- Das Gerät ist nur im Rahmen dieser Installationshilfe und seiner technischen Daten zu verwenden.
- Die Ableiter sind nach der max. Spannung auszuwählen (siehe Tabelle 1).
- Ist die Anzeige im Sichtfenster auf ROT umgeschaltet, so ist das Modul DEFEKT und muss ausgetauscht werden.

ATENCION ! ES

- Solo un operador eléctrico capacitado puede realizar la instalación.
- Las reglas generales nacionales de instalación eléctrica deben ser respectadas.
- El producto solo tiene un uso de protección contra sobretensiones transitorias y debe ser utilizado en las condiciones mencionadas en este documento.
- Las protecciones contra sobretensiones transitorias se usan en relación con una red determinada.
- Se debe sustituir la protección cuando el indicador esta puesto en rojo.

ATTENZIONE ! IT

- L'installazione deve essere fatta solamente da elettricisti qualificati.
- Devono essere rispettate le regolamentazioni nazionali e locali riguardanti l'installazione di apparati elettrici.
- L'unità deve essere usata solo come protezione da sovratensioni e secondo le condizioni descritte in questo documento.
- Le protezioni da sovratensione devono essere scelte in funzione della corrente alternata di rete (vedere la tabella 1).
- Nel caso in cui si accenda l'indicatore rosso, l'unità di protezione da sovratensione deve essere sostituita.

AVISO ! PT

- A instalação deve ser feita por um electricista habilitado.
- Devem ser seguidas todas as regras de segurança indicadas pelo operador eléctrico.
- Esta protecção deve ser utilizada apenas como protecção contra sobretensões e de acordo com as condições mencionadas neste documento.
- A protecção deve ser escolhida de acordo com a rede eléctrica AC (ver quadro 1).
- Caso o indicador vermelho esteja activo, dever-se-á substituir a protecção.

ВНИМАНИЕ! RUS

- монтаж и подключение изделия должны производится только специалистами-электриками.
- необходимо учитывать требования местных норм и стандартов.
- изделие может использоваться только для защиты от импульсных перенапряжений в соответствии с настоящей инструкцией.
- параметры сети должны соответствовать характеристикам изделия.
- при обнаружении индикатора состояния красного цвета изделие должно быть заменено.

VAROVÁNÍ CZ

- Montáž a připojení svodiče přepětí smí provádět pouze pracovník s příslušnou elektrotechnickou kvalifikací.
- Je zapotřebí dodržovat zásady bezpečnosti práce i platné národní elektrotechnické předpisy.
- Svodič přepětí se smí používat pouze v souladu se svými technickými parametry a podle těchto montážních pokynů.
- Svodiče přepětí je zapotřebí zvolit a používat tak, aby odpovídaly napájecí síti (viz tabulka 1).
- Pokud ukazatel správné funkce má ČERVENOU barvu, pak svodič/modul je VADNÝ a musí být vyměněn.

安全须知！ 中文

- 产品安装只能由具备专业资质的人员实施；
- 请遵守国家电气安装相关规范；
- 本产品仅作为浪涌保护器且在本文件所规定的条件下使用；
- 请根据不同的电源网络制式选用浪涌保护器，参见 Table 1；
- 当状态指示变为红色时，须及时更换浪涌保护器；