

# PV-SET 3ST/1000DC/15A-3MPP-SC - Surge protection device set



2800833

<https://www.phoenixcontact.com/us/products/2800833>

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Surge protection in IP65 housing for the DC side of an inverter with three MPP trackers up to 1000 V DC, connection via SUNCLIX plug/socket, plug-in varistors with thermal disconnect device between L+, L-, and ground/PE.

## Commercial data

Item number	2800833
Packing unit	1 pc
Minimum order quantity	1 pc
Product key	CL1341
GTIN	4046356654814
Weight per piece (including packing)	3,250 g
Weight per piece (excluding packing)	3,250 g
Country of origin	DE

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## Technical data

### Product properties

IEC test classification	PV T2
Type	Installation housing
Distance between live and grounded parts	8 mm
Surge protection fault message	optical

### Insulation characteristics

Protection class	II
Overvoltage category	III
Pollution degree	2

### Electrical properties

Nominal current $I_N$	25 A DC (per MPP)
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### Indicator/remote signaling

Switching function	Changeover contact, 1-pos.
Operating voltage	5 V AC ... 250 V AC
	30 V DC
Operating current	5 mA AC ... 1.5 A
	1.5 A DC

### Connection data

#### PE

Connection method	Screw terminal blocks
Screw thread	M5
Tightening torque, min	4.5 Nm
Tightening torque	30 lb <sub>F</sub> -in. (UL)
Stripping length	16 mm
Connection method	MC 1,5/3
Screw thread	M2
Tightening torque, min	0.25 Nm
Tightening torque	2 lb <sub>F</sub> -in. ... 4 lb <sub>F</sub> -in.
Stripping length	7 mm
Conductor cross-section flexible min.	0.14 mm <sup>2</sup>
Conductor cross-section flexible max.	1.5 mm <sup>2</sup>
Conductor cross-section, rigid min.	0.14 mm <sup>2</sup>
Conductor cross-section, rigid max.	1.5 mm <sup>2</sup>

### Dimensions

Width	300 mm
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Height	300 mm
Depth	142 mm
Horizontal pitch	14 Div.

## Material specifications

Flammability rating according to UL 94	V2 (Gehäuse / Deckel)
	V0 (Steckverbinder)
Cover material	Polycarbonate, transparent
Housing material	Polycarbonate, glass-fiber-reinforced
Connector material	PA

## Protective circuit

Direction of action	(L+)-PE & (L-)-PE & (L+)-(L-)
Maximum continuous operating voltage $U_C$	1000 V DC
Rated load current $I_L$	$\leq 80$ A DC
Protective conductor current $I_{PE}$	$\leq 20$ $\mu$ A
	$\leq 250$ $\mu$ A AC
Standby power consumption $P_C$	$\leq 20$ mW
Nominal discharge current $I_n$ (8/20) $\mu$ s (L+) - (L-)	15 kA
Nominal discharge current $I_n$ (8/20) $\mu$ s (L-) - PE	15 kA
Maximum discharge current $I_{max}$ (8/20) $\mu$ s (L+) - (L-)	40 kA
Total discharge current $I_{Total}$ (8/20) $\mu$ s	40 kA
Voltage protection level $U_p$ (L+) - (L-)	$\leq 3.7$ kV
Voltage protection level $U_p$ (L+) - PE	$\leq 3.7$ kV
Voltage protection level $U_p$ (L-) - PE	$\leq 3.7$ kV
Residual voltage $U_{res}$ (L+) - (L-)	$\leq 3.7$ kV (at $I_n$ )
	$\leq 3.1$ kV (at 5 kA)
	$\leq 3.5$ kV (at 10 kA)
	$\leq 4$ kV (at 20 kA)
	$\leq 4.6$ kV (at 30 kA)
	$\leq 5$ kV (at 40 kA)
Residual voltage $U_{res}$ (L+) - PE	$\leq 3.7$ kV (at $I_n$ )
	$\leq 3.1$ kV (at 5 kA)
	$\leq 3.5$ kV (at 10 kA)
	$\leq 4$ kV (at 20 kA)
	$\leq 4.6$ kV (at 30 kA)
	$\leq 5$ kV (at 40 kA)
Residual voltage $U_{res}$ (L-) - PE	$\leq 3.7$ kV (at $I_n$ )
	$\leq 3.1$ kV (at 5 kA)
	$\leq 3.5$ kV (at 10 kA)
	$\leq 4$ kV (at 20 kA)
	$\leq 4.6$ kV (at 30 kA)
	$\leq 5$ kV (at 40 kA)

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Response time $t_A$ (L+) - (L-)	$\leq 25$ ns
Response time $t_A$ (L+) - PE	$\leq 25$ ns
Response time $t_A$ (L-) - PE	$\leq 25$ ns
Max. backup fuse with branch wiring	not required

## Protective circuit DC voltage side (DC)

Rated surge voltage resistance $U_{imp}$	6 kV
Short-circuit current $I_{SCSTC}$	25 A DC (per MPP)
Open-circuit voltage $U_{OCSTC}$	830 V DC (Solar generator)
Maximum discharge current $I_{max}$ (8/20) $\mu$ s (L+) - (L-)	40 kA
Maximum discharge current $I_{max}$ (8/20) $\mu$ s (L-) - PE	40 kA
Maximum discharge current $I_{max}$ (8/20) $\mu$ s (L+) - PE	40 kA
Response time $t_A$ (L+) - (L-)	$\leq 25$ ns
Response time $t_A$ (L+) - PE	$\leq 25$ ns
Response time $t_A$ (L-) - PE	$\leq 25$ ns
Recommended backup fuse maximum	not required
Total discharge current $I_{Total}$ (8/20) $\mu$ s	40 kA
Insulation resistance $R_{iso}$	$> 5$ G $\Omega$ (at 500 V DC)
Max. backup fuse with branch wiring	not required
Nominal discharge current $I_n$ (8/20) $\mu$ s (L+) - (L-)	15 kA
Nominal discharge current $I_n$ (8/20) $\mu$ s (L+) - PE	15 kA
Nominal discharge current $I_n$ (8/20) $\mu$ s (L-) - PE	15 kA
Rated load current $I_L$	$\leq 80$ A DC
Residual voltage $U_{res}$ (L+) - (L-)	$\leq 3.7$ kV (at $I_n$ )
	$\leq 3.1$ kV (at 5 kA)
	$\leq 3.5$ kV (at 10 kA)
	$\leq 4$ kV (at 20 kA)
	$\leq 4.6$ kV (at 30 kA)
	$\leq 5$ kV (at 40 kA)
Residual voltage $U_{res}$ (L+) - PE	$\leq 3.7$ kV (at $I_n$ )
	$\leq 3.1$ kV (at 5 kA)
	$\leq 3.5$ kV (at 10 kA)
	$\leq 4$ kV (at 20 kA)
	$\leq 4.6$ kV (at 30 kA)
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Residual voltage $U_{res}$ (L-) - PE	$\leq 3.7$ kV (at $I_n$ )
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	$\leq 3.5$ kV (at 10 kA)
	$\leq 4$ kV (at 20 kA)
	$\leq 4.6$ kV (at 30 kA)
	$\leq 5$ kV (at 40 kA)
Protective conductor current $I_{PE}$	$\leq 20$ $\mu$ A
	$\leq 250$ $\mu$ A AC

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Voltage protection level $U_p$ (L+) - (L-)	$\leq 3.7$ kV
Voltage protection level $U_p$ (L+) - PE	$\leq 3.7$ kV
Voltage protection level $U_p$ (L-) - PE	$\leq 3.7$ kV
Standby power consumption $P_C$	$\leq 20$ mW

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP65
	IP65
Impact strength	IK08
Ambient conditions	A, B
Ambient temperature (operation)	-30 °C ... 55 °C

## Standards and regulations

### Air clearances and creepage distances

Standards/regulations	EN 50539-11
Standards/specifications	IEC 61439-2
Note	2011
Standards/specifications	EN 61439-2
Note	2011
Standards/specifications	EN 50539-11
Note	Surge protection

## Mounting

Mounting type	Surface/Panel mounting
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# PV-SET 3ST/1000DC/15A-3MPP-SC - Surge protection device set

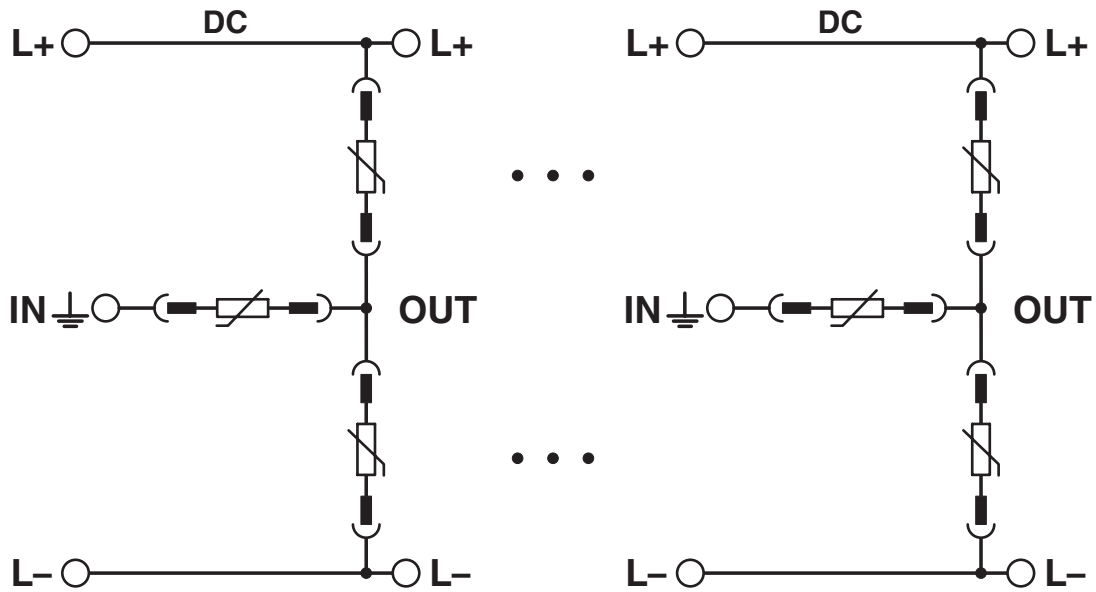


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## Drawings

Circuit diagram



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## Environmental product compliance

### EU REACH SVHC

REACH candidate substance (CAS No.)	
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	No substance above 0.1 wt%
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