

VAL-SPP-T1-1500DC-PV-2+V-UT-R - Surge arrester



1784481

<https://www.phoenixcontact.com/gb/products/1784481>

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Surge arrester for 2-pos. insulated and grounded 1500 V DC PV systems, for DIN rail mounting, 3-pos. base element with remote indication contact, three pluggable protective elements, two of them temperature monitored, status message on + and - plugs.

Your advantages

- Easy and safe installation with forward-thinking handling and safety features
- Reliable system protection with maximum performance and endurance
- Can be used in a wide range of applications due to the optimized design and broad portfolio
- Simple planning due to comprehensive digital data and selectors

Commercial data

Item number	1784481
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to order (non-returnable)
Sales key	CL11E1
Product key	CL11E1
GTIN	4067923401587
Weight per piece (including packing)	551.85 g
Weight per piece (excluding packing)	496.34 g
Customs tariff number	85354000
Country of origin	DE

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Technical data

Product properties

Product type	PV arrester
IEC test classification	PV I / II
EN type	PV T1 / T2
IEC power supply system	DC
Type	DIN rail module, two-section, divisible
Environment	Indoor
Installation location of the disconnect device	Internal
Accessibility	Accessible
End-of-life mode	OCFM (Open-Circuit Failure Mode)
Surge protection fault message	Optical, remote indicator contact
Number of ports	One

Insulation characteristics

Overvoltage category	III
	II
Pollution degree (Main circuit)	2
Pollution degree (Auxiliary circuit)	2

Electrical properties

Maximum power dissipation for nominal condition	≤ 150 mVA
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Indicator/remote signaling

Connection name	remote fault indicator contact (11, 12, 14)
Switching contact	Changeover contact
AC operating voltage	5 V AC ... 250 V AC
AC operating current	5 mA AC ... 1 A AC
DC operating voltage	5 V DC ... 30 V DC
DC operating current	5 mA DC ... 1 A DC
DC operating voltage	5 V DC ... 125 V DC
DC operating current	5 mA DC ... 200 mA DC
Max. required back-up fuse	1 A (gG)
Insulation type (between the main and auxiliary circuit)	Double/reinforced insulation

Connection data

protection circuit (DC+, DC-, PE)

Connection method	Screw connection
Screw thread	M5
Stripping length	12 mm
Conductor cross-section rigid	1.5 mm ² ... 25 mm ²
Conductor cross-section flexible	1.5 mm ² ... 16 mm ²
Conductor cross-section AWG	15 ... 4

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Conductor cross-section, flexible, with ferrule, without plastic sleeve	1.5 mm ² ... 16 mm ²
Conductor cross-section, flexible, with ferrule, with plastic sleeve	1.5 mm ² ... 16 mm ²
2 conductors with same cross section, rigid	1.5 mm ² ... 6 mm ²
2 conductors with same cross section, flexible	1.5 mm ² ... 6 mm ²
2 conductors with same cross section, flexible, with ferrule without plastic sleeve	1.5 mm ² ... 6 mm ²
2 conductors with the same cross section, flexible, with ferrule with plastic sleeve	1.5 mm ² ... 6 mm ²
2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve	1.5 mm ² ... 6 mm ²
Drive size	PZSL 2
	PZ/S 2
Tightening torque	2.5 Nm ... 3 Nm

remote fault indicator contact (11, 12, 14)

Connection method	Screw connection
Screw thread	M3
Stripping length	7 mm
Conductor cross-section rigid	0.25 mm ² ... 1.5 mm ²
Conductor cross-section flexible	0.25 mm ² ... 1.5 mm ²
Conductor cross-section AWG	24 ... 16
Conductor cross-section, flexible, with ferrule, without plastic sleeve	0.25 mm ² ... 1.5 mm ²
Conductor cross-section, flexible, with ferrule, with plastic sleeve	0.25 mm ² ... 1.5 mm ²

Dimensions

Dimensional drawing	
Width	53.4 mm
Height	96.6 mm
Depth	95.5 mm (incl. DIN rail 7.5 mm)
Horizontal pitch	3 Div.

Material specifications

Color	gray (RAL 7042)
	light gray (RAL 7035)
Material Housing	PA 6.6-FR 20 % GF
	PBT
Flammability rating according to UL 94	V-0
Insulating material	PA 6.6-FR 20 % GF
	PBT

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Mechanical properties

Mechanical data

Open side panel	No
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Protective circuit

Mode of protection	(DC+) - (DC-)
	(DC+) - PE
	(DC-) - PE
Max. continuous voltage U_{CPV}	1500 V DC
Open-circuit voltage U_{OCSTC}	1250 V DC
Protective conductor current I_{PE}	$\leq 700 \mu\text{A AC}$
	$\leq 100 \mu\text{A DC}$
Continuous current I_{CPV}	$\leq 100 \mu\text{A DC}$
Maximum power dissipation for nominal condition	$\leq 150 \text{ mVA}$
Nominal discharge current I_n (8/20) μs	20 kA
Max. discharge current I_{max} (8/20) μs	40 kA
Impulse discharge current	6.25 kA (3.1 As / 9.8 kJ/ Ω)
Total discharge current I_{Total} (8/20) μs	60 kA
Total discharge current I_{Total} (10/350) μs	12.5 kA
Short-circuit current rating I_{SCPV}	15000 A
Voltage protection level U_p	$\leq 4.5 \text{ kV}$
Residual voltage U_{res}	$\leq 4.5 \text{ kV}$ (at I_n)
	$\leq 4.5 \text{ kV}$ (at I_n)
	$\leq 4.5 \text{ kV}$ (at I_n)
	$\leq 4.5 \text{ kV}$ (at I_n)
Response time t_A	$\leq 25 \text{ ns}$

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20C (under touch protection cover)
Ambient temperature (operation)	-40 °C ... 85 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Ambient temperature (assembly)	-5 °C ... 50 °C
Altitude	$\leq 2000 \text{ m}$ (amsl)
	For higher altitudes, see Table 2
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	25g (Half-sine / 11 ms / 3x $\pm X$, $\pm Y$, $\pm Z$)
Vibration (operation)	5g (5-500 Hz/2.5 h/XYZ)

Standards and regulations

Standards/specifications	IEC 61643-31
Note	2018

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Standards/specifications	EN 61643-31
Note	2019 + AC: 2022

Mounting

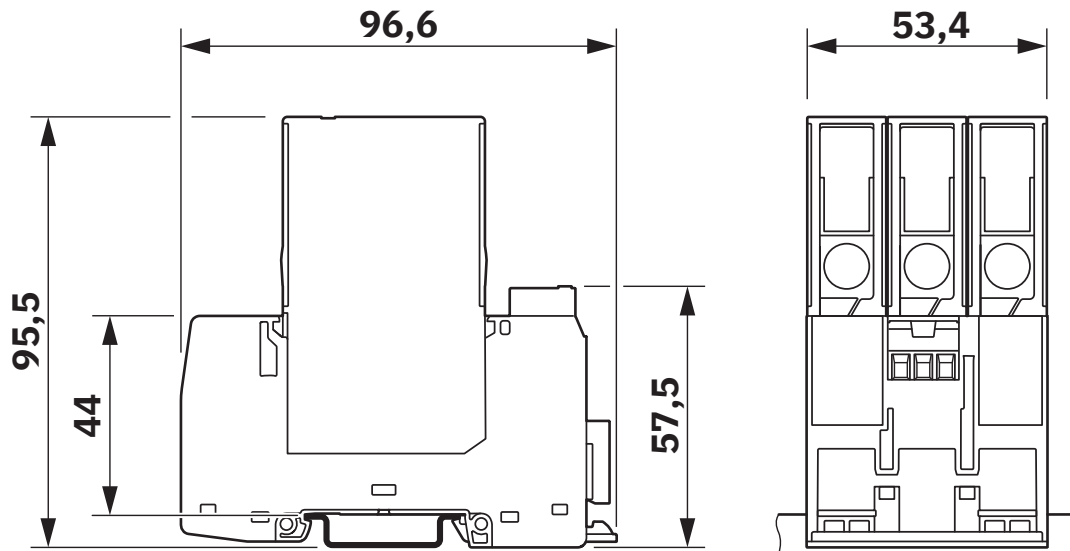
Mounting type	DIN rail: 35 mm
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Drawings

Dimensional drawing

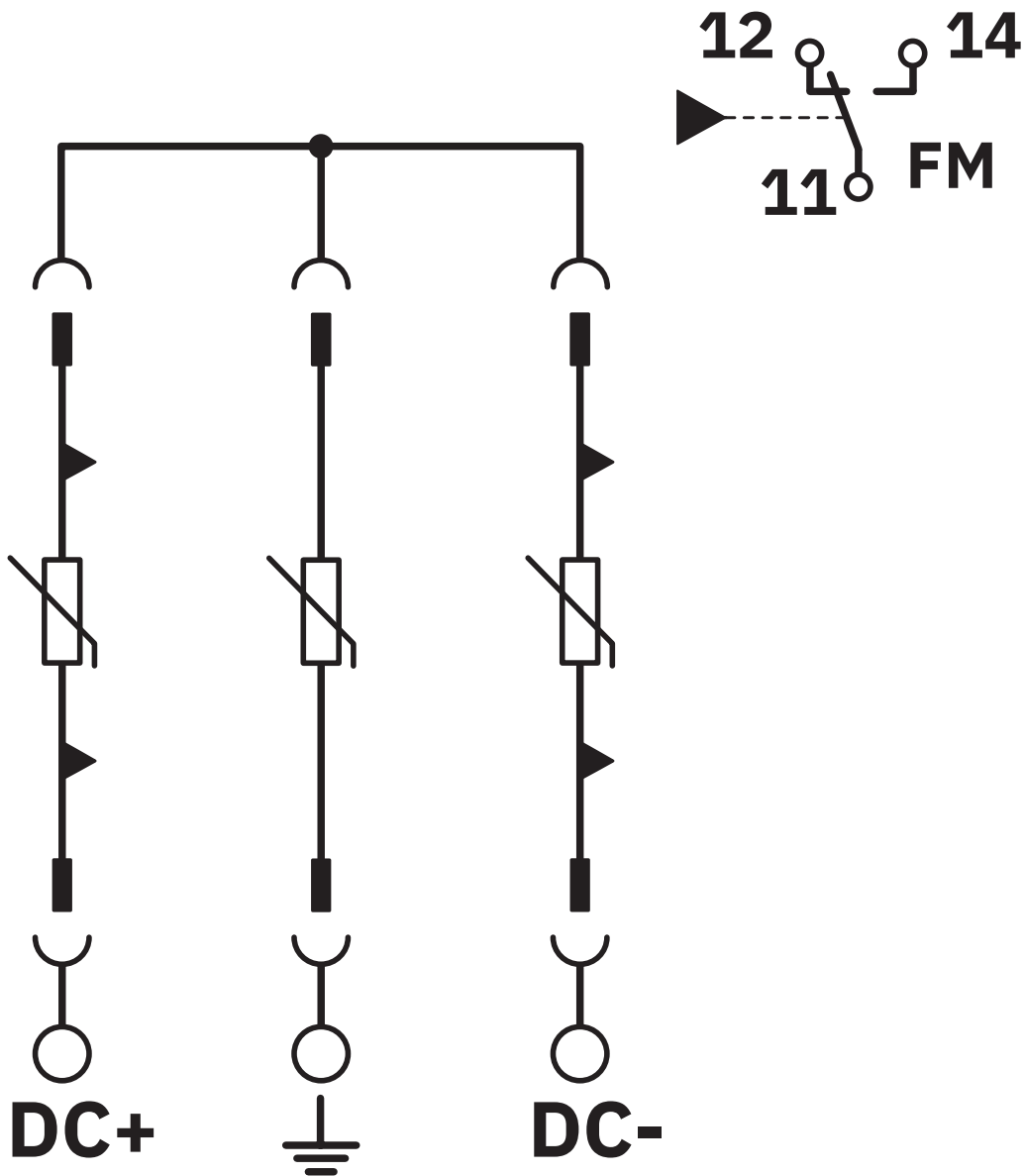


Schematic diagram

Altitude	>2000 m ... ≤4000 m
Rated voltage	5 V ... 150 V AC 5 V ... 30 V DC (5 mA ... 1 A DC) 30 V DC ... 125 V DC (5 mA ... 200 mA DC)
Insulation type between main and auxiliary circuit	Double / Reinforced insulation

Table 2: Technical data for remote fault indicator contact

Circuit diagram



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Approvals

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DEKRA

Approval ID: 31-172928

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Classifications

ECLASS

ECLASS-13.0	27171401
ECLASS-15.0	27171401

ETIM

ETIM 10.0	EC000381
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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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China RoHS

Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits

EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
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PHOENIX CONTACT Ltd
Halesfield 13, Telford
Shropshire, TF7 4PG
01952 681700
info@phoenixcontact.co.uk