

VAL-MS 600DC-PV/2+V - Type 2 surge arrester



2800642

<https://www.phoenixcontact.com/us/products/2800642>

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Surge protective device for 2-pos. isolated and grounded 600 V DC PV systems, for DIN rail mounting, 3-pos. base element, three pluggable temperature-monitored protective elements, status message on each plug.

Your advantages

- Quality proven millions of times over in the widest range of applications
- Rapid installation with bridges, thanks to industry-standard overall width of 1 HP
- Easy testing and insulation measurement, thanks to pluggable protection modules
- Wide range of applications due to various nominal voltages
- High degree of modularity provides individual solutions for every application

Commercial data

Item number	2800642
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CL01
Product key	CL1324
Catalog page	Page 73 (C-4-2019)
GTIN	4046356614979
Weight per piece (including packing)	311.3 g
Weight per piece (excluding packing)	314.2 g
Customs tariff number	85363010
Country of origin	DE

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Technical data

Notes

General

Note	The device is intended for touch proof installation in a housing. Ensure that there is a gap of at least 8 mm between the active and grounded parts in the connection area.
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Product properties

IEC test classification	PV II PV T2
EN type	T2
IEC power supply system	DC
Type	DIN rail module, two-section, divisible
Distance between live and grounded parts	8 mm
Product type	PV arrester
Product family	VALVETRAB MS
Installation location	Interior
Installation location of the disconnect device	Internal
Accessibility	Accessible
Connection configuration	Y configuration
SPD failure behavior	OCFM (Open-Circuit Failure Mode)
Surge protection fault message	optical

Insulation characteristics

Overvoltage category	III
Pollution degree	2

Connection data

Connection method	Screw connection
Screw thread	M5
Tightening torque	3 Nm (1.5 mm ² ... 16 mm ²) 4.5 Nm (25 mm ² ... 35 mm ²)
Stripping length	16 mm
Conductor cross section flexible	1.5 mm ² ... 25 mm ²
Conductor cross section rigid	1.5 mm ² ... 35 mm ²
Conductor cross section AWG	15 ... 2
Connection method	Fork-type cable lug
Conductor cross section flexible	1.5 mm ² ... 16 mm ²

Dimensions

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Dimensional drawing	
Width	53.4 mm
Height	89.8 mm
Depth	65.7 mm (incl. DIN rail 7.5 mm)
Horizontal pitch	3 Div.

Material specifications

Color	black (RAL 9005) black (RAL 9005)
Flammability rating according to UL 94	V-0
CTI value of material	600
Insulating material	PA 6.6-FR PBT-FR
Material group	I
Housing material	PA 6.6-FR PBT-FR

Mechanical properties

Mechanical data

Open side panel	No
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Protective circuit

Mode of protection	(L+) - (L-) (L+) - PE (L-) - PE
Direction of action	(L+)-PE & (L-)-PE & (L+)-(L-)
Rated load current I_L	80 A
Residual current I_{PE}	$\leq 20 \mu\text{A DC}$ $\leq 300 \mu\text{A AC}$
Standby power consumption P_C	$\leq 20.00 \text{ mVA}$
Nominal discharge current I_n (8/20) μs	15 kA
Maximum discharge current I_{max} (8/20) μs	40 kA
Total discharge current I_{total} (8/20) μs	40 kA
Voltage protection level U_p	$\leq 2.7 \text{ kV}$
Residual voltage U_{res}	$\leq 2.7 \text{ kV}$ (at I_n) $\leq 2.2 \text{ kV}$ (at 5 kA) $\leq 2.5 \text{ kV}$ (at 10 kA) $\leq 2.9 \text{ kV}$ (at 20 kA) $\leq 3.4 \text{ kV}$ (at 30 kA) $\leq 3.8 \text{ kV}$ (at 40 kA)

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Response time t_A	≤ 25 ns
PV protective circuit	
Connection configuration	Y configuration
SPD failure behavior	OCFM (Open-Circuit Failure Mode)
Protective circuit DC voltage side (DC)	
Open circuit voltage U_{OCSTC}	≤ 670 V DC
Maximum discharge current I_{max} (8/20) μ s	40 kA
Response time t_A	≤ 25 ns
Total discharge current I_{total} (8/20) μ s	40 kA
Insulation resistance R_{iso}	> 5 G Ω (at 500 V DC)
Nominal discharge current I_n (8/20) μ s	15 kA
Rated load current I_L	80 A
Continuous operating current I_{CPV}	20 μ A
Maximum continuous operating voltage U_{CPV}	800 V DC
Short-circuit current rating I_{SCPV}	2000 A
Residual voltage U_{res}	≤ 2.7 kV (at I_n)
	≤ 2.2 kV (at 5 kA)
	≤ 2.5 kV (at 10 kA)
	≤ 2.9 kV (at 20 kA)
	≤ 3.4 kV (at 30 kA)
	≤ 3.8 kV (at 40 kA)
Residual current I_{PE}	≤ 20 μ A DC
	≤ 300 μ A AC
Voltage protection level U_p	≤ 2.7 kV
Standby power consumption P_C	≤ 20.00 mVA

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20 (only when all terminal points are used)
Ambient temperature (operation)	-40 °C ... 80 °C
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Altitude	≤ 2000 m (amsl)
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	60g (Half-sine / 11 ms / 3x \pm X, \pm Y, \pm Z)
Vibration (operation)	7.5g (5-500 Hz/2.5 h/XYZ)

Approvals

UL specifications

Maximum continuous operating voltage MCOV	800 V DC
Short-circuit current rating (SCCR)	50 kA
Voltage protection rating VPR	2 kV
Nominal discharge current I_n	20 kA

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Mode of protection	(L+) - (L-)
	(L+) - G
	(L-) - G
Nominal voltage	800 V DC
Power distribution system	DC PV
SPD Type	1

UL connection data

Tightening torque	30 lb _f -in.
Conductor cross section AWG	14 ... 2

Standards and regulations

Standards/specifications	EN 61643-31
Note	2019
Standards/specifications	IEC 61643-31
Note	2018

Mounting

Mounting type	DIN rail: 35 mm
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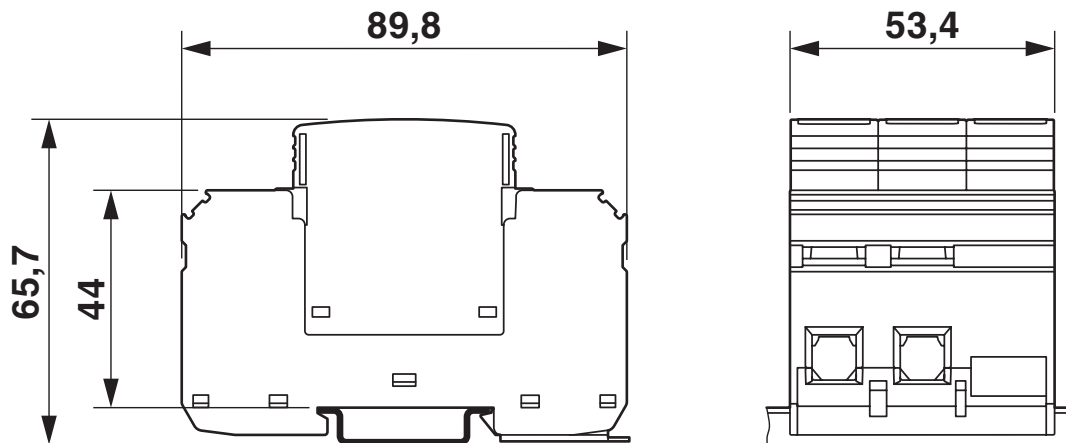
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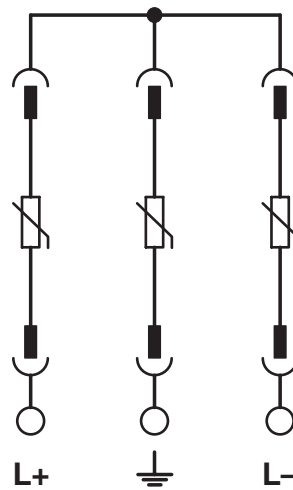
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Drawings

Dimensional drawing



Circuit diagram



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Approvals

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EAC

Approval ID: RU C-DE.*09.B.00169



KEMA-KEUR

Approval ID: 71-123544 REV.2



UL Listed

Approval ID: FILE E 330181



cUL Listed

Approval ID: FILE E 330181



IECEE CB Scheme

Approval ID: NL-81006/A1

CCA

Approval ID: NTR-NL 7937

UAE-RoHS

Approval ID: 22-09-51251

cULus Listed

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Classifications

ECLASS

ECLASS-11.0	27130805
ECLASS-13.0	27171402

ETIM

ETIM 9.0	EC000941
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UNSPSC

UNSPSC 21.0	39121620
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Environmental product compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

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