

Type 2 surge protection device - VAL-MS 1000DC-PV/2+V - 2800628

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Surge arrester for 2-pos. isolated 1000 V DC voltage systems, for DIN rail mounting, 3-pos. base element, three plug-in temperature-monitored protective elements, status message on each plug.

Product Features

- ✓ Increased safety, thanks to compliance with standard EN 50539-11
- ✓ Reliable contact, thanks to integrated rotating latch
- ✓ Easy replacement, thanks to plug-in arresters
- ✓ Optimum inverter protection, thanks to low protection level
- ✓ Efficient replacement of defective plugs, thanks to visual status indicator
- ✓ Optimized maintenance planning, thanks to remote signaling
- ✓ Protection against mismatching, thanks to keyed plugs and base elements
- ✓ Always the right arrester, thanks to universal type 1/type 2 protective components



Key commercial data

Packing unit	1 pc
Weight per Piece (excluding packing)	320.0 GRM
Custom tariff number	85363030
Country of origin	Germany

Technical data

Dimensions

Height	90 mm
Width	53.4 mm
Depth	65.5 mm
Horizontal pitch	3 Div.

Ambient conditions

Degree of protection	IP20 (only when all terminal points are used)
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Technical data

Ambient conditions

Ambient temperature (operation)	-40 °C ... 80 °C
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Altitude	≤ 2000 m (amsl (above mean sea level))
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	60g (Half sine/11 ms/3x #X#Y#Z)
Vibration (operation)	7.5g (5-500 Hz/2.5 h/XYZ)

General

Standards/specifications	EN 50539-11 2013
IEC test classification	PV T2
	PV T2
Number of ports	One
SPD failure behavior GRP	OCM (Open-circuit mode)
Connection configuration	Y configuration
SPD design	Voltage-limiting type
Installation location	Inside
Accessibility	Accessible
Installation location of the disconnect device	Internal
Mounting type	DIN rail: 35 mm
Color	jet black RAL 9005
Housing material	PA 6.6-FR
	PBT-FR
Pollution degree	2
Distance between live and grounded parts	8 mm
Inflammability class according to UL 94	V-0
Surge protection fault message	Optical

Additional descriptions

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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Protective circuit DC voltage side (DC)

Maximum continuous operating voltage U_{CPV}	1170 V DC
Open circuit voltage U_{OCSTC}	≤ 970 V DC
Short-circuit current rating I_{SCPV}	1000 A
Continuous operating current I_{CPV}	< 20 μ A
Rated load current I_L	80 A
Residual current I_{PE}	≤ 20 μ A DC

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Protective circuit DC voltage side (DC)

	$\leq 250 \mu\text{A AC}$
Standby power consumption P_c	$\leq 25 \text{ mVA}$
Nominal discharge current I_n (8/20) μs (L+) - (L-)	15 kA
Nominal discharge current I_n (8/20) μs (L+) - PE	15 kA
Nominal discharge current I_n (8/20) μs (L-) - PE	15 kA
Maximum discharge current I_{max} (8/20) μs (L+) - (L-)	40 kA
Maximum discharge current I_{max} (8/20) μs (L+) - PE	40 kA
Maximum discharge current I_{max} (8/20) μs (L-) - PE	40 kA
Total discharge current I_{Total} (8/20) μs	40 kA
Voltage protection level U_p (L+) - (L-)	$\leq 3.7 \text{ kV}$
Voltage protection level U_p (L+) - PE	$\leq 3.7 \text{ kV}$
Voltage protection level U_p (L-) - PE	$\leq 3.7 \text{ kV}$
Residual voltage U_{res} (L+) - (L-)	$\leq 3.7 \text{ kV}$ (at I_n)
	$\leq 3.1 \text{ kV}$ (at 5 kA)
	$\leq 3.5 \text{ kV}$ (at 10 kA)
	$\leq 4 \text{ kV}$ (at 20 kA)
	$\leq 4.6 \text{ kV}$ (at 30 kA)
	$\leq 5 \text{ kV}$ (at 40 kA)
Residual voltage U_{res} (L+) - PE	$\leq 3.7 \text{ kV}$ (at I_n)
	$\leq 3.1 \text{ kV}$ (at 5 kA)
	$\leq 3.5 \text{ kV}$ (at 10 kA)
	$\leq 4 \text{ kV}$ (at 20 kA)
	$\leq 4.6 \text{ kV}$ (at 30 kA)
	$\leq 5 \text{ kV}$ (at 40 kA)
Residual voltage U_{res} (L-) - PE	$\leq 3.7 \text{ kV}$ (at I_n)
	$\leq 3.1 \text{ kV}$ (at 5 kA)
	$\leq 3.5 \text{ kV}$ (at 10 kA)
	$\leq 4 \text{ kV}$ (at 20 kA)
	$\leq 4.6 \text{ kV}$ (at 30 kA)
	$\leq 5 \text{ kV}$ (at 40 kA)
Response time t_A (L+) - (L-)	$\leq 25 \text{ ns}$
Response time t_A (L+) - PE	$\leq 25 \text{ ns}$
Response time t_A (L-) - PE	$\leq 25 \text{ ns}$
Insulation resistance R_{iso}	$> 5 \text{ G}\Omega$ (at 500 V DC)

Connection data

Connection method	Screw connection
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Conductor cross section stranded min.	1.5 mm ²
Conductor cross section stranded max.	25 mm ²
Conductor cross section solid min.	1.5 mm ²
Conductor cross section solid max.	35 mm ²
AWG conductor cross section	15 ... 2
	10 ... 2 (UL)
Screw thread	M5
Tightening torque	4.5 Nm
	30 lb _r -in. (UL)
Stripping length	16 mm
Connection method	Biconnect terminal blocks
Conductor cross section stranded min.	1.5 mm ²
Conductor cross section stranded max.	16 mm ²
Screw thread	M5

UL specifications

UL class	Type 4 SPD for Type 2 photovoltaic applications
Maximum continuous operating voltage MCOV (L+) - (L-)	1170 V DC
Maximum continuous operating voltage MCOV (L+) - G	1170 V DC
Maximum continuous operating voltage MCOV (L-) - G	1170 V DC
Nom. voltage	970 V AC
Mode of protection	(L+) - (L-)
	(L+) - G
	(L-) - G
Power distribution system	1
Voltage protection rating VPR (L+) - (L-)	2.5 kV
Voltage protection rating VPR (L+) - G	2.5 kV
Voltage protection rating VPR (L-) - G	2.5 kV
Nominal discharge current I _n (L+) - (L-)	10 kA
Nominal discharge current I _n (L+) - G	10 kA
Nominal discharge current I _n (L-) - G	10 kA

Classifications

eCl@ss

eCl@ss 4.0	27140201
eCl@ss 4.1	27130801

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Classifications

eCl@ss

eCl@ss 5.0	27130801
eCl@ss 5.1	27130801
eCl@ss 6.0	27130805
eCl@ss 7.0	27130805
eCl@ss 8.0	27130805

ETIM

ETIM 3.0	EC000941
ETIM 4.0	EC000941
ETIM 5.0	EC000941

UNSPSC

UNSPSC 6.01	30212010
UNSPSC 7.0901	39121610
UNSPSC 11	39121610
UNSPSC 12.01	39121610
UNSPSC 13.2	39121620

Approvals

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UL Recognized / KEMA-KEUR / cUL Recognized / cULus Recognized

Ex Approvals

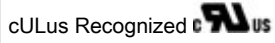
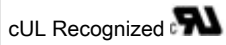
Approvals submitted

Approval details

UL Recognized 

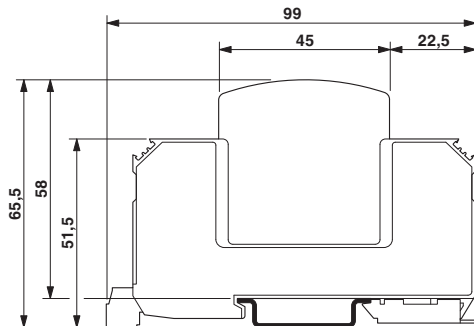
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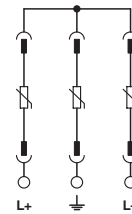


Drawings

Dimensioned drawing



Circuit diagram



The illustration shows the dimensional drawing for a version with remote indicator contact