

## Type 2 surge arrester - VAL-MS 600DC-PV/2+V-FM - 2800641

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Surge arrester for 2-pos. isolated 600 V DC voltage systems, for DIN rail mounting, 3-pos. base element with remote indication contact, three plug-in temperature-monitored protective elements, status message on each plug.

### Why buy this product

- ✓ 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 STK
GTIN	 4 046356 612562
GTIN	4046356612562

### Technical data

#### Dimensions

Height	99 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)
Ambient temperature (operation)	-40 °C ... 80 °C

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## Technical data

### Ambient conditions

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

IEC test classification	PV II
	PV T2
EN type	T2
SPD failure behavior	OCM (Open-circuit mode)
Connection configuration	Y configuration
Installation location	Inside
Accessibility	Accessible
Installation location of the disconnect device	Internal
Mode of protection	(L+) - (L-)
	(L+) - PE
	(L-) - PE
Mounting type	DIN rail: 35 mm
Color	jet black RAL 9005
Housing material	PA 6.6-FR
	PBT-FR
Degree of pollution	2
Distance between live and grounded parts	8 mm
Flammability rating according to UL 94	V-0
Design	DIN rail module, two-section, divisible
Surge protection fault message	Optical, remote indicator contact

### 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 $U_{CPV}$	800 V DC
Open circuit voltage $U_{OCSTC}$	≤ 670 V DC
Short-circuit current rating $I_{SCPV}$	1000 A
Continuous operating current $I_{CPV}$	20 μA
Rated load current $I_L$	80 A
Residual current $I_{PE}$	≤ 20 μA DC
	≤ 300 μA AC
Standby power consumption $P_C$	≤ 20 mVA
Nominal discharge current (8/20) μs	15 kA

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#### Protective circuit DC voltage side (DC)

Maximum discharge current $I_{\max}$ (8/20) $\mu\text{s}$	40 kA
Total discharge current $I_{\text{total}}$ (8/20) $\mu\text{s}$	40 kA
Voltage protection level $U_p$	$\leq 2.7$ kV
Residual voltage $U_{\text{res}}$	$\leq 2.7$ kV (at $I_n$ )
	$\leq 2.2$ kV (at 5 kA)
	$\leq 2.5$ kV (at 10 kA)
	$\leq 2.9$ kV (at 20 kA)
	$\leq 3.4$ kV (at 30 kA)
	$\leq 3.8$ kV (at 40 kA)
Response time $t_A$	$\leq 25$ ns
Insulation resistance $R_{\text{iso}}$	$> 5$ G $\Omega$ (at 500 V DC)

#### Indicator/remote signaling

Switching function	PDT contact
Operating voltage	5 V AC ... 250 V AC
	30 V DC
Operating current	5 mA AC ... 1.5 A AC
	1 A DC
Connection method	Screw connection
Screw thread	M2
Tightening torque	0.25 Nm
Stripping length	7 mm
Conductor cross section flexible	0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section solid	0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section AWG	28 ... 16

#### Connection data

Connection method	Screw connection
Screw thread	M5
Tightening torque	4.5 Nm
Stripping length	16 mm
Conductor cross section flexible	1.5 mm <sup>2</sup> ... 25 mm <sup>2</sup>
Conductor cross section solid	1.5 mm <sup>2</sup> ... 35 mm <sup>2</sup>
Conductor cross section AWG	15 ... 2
Connection method	Biconnect terminal blocks
Screw thread	M5
Conductor cross section flexible	1.5 mm <sup>2</sup> ... 16 mm <sup>2</sup>

#### UL specifications

SPD Type	4CA
Maximum continuous operating voltage MCOV (L+) - (L-)	800 V DC
Maximum continuous operating voltage MCOV (L+) - G	800 V DC

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## Technical data

### UL specifications

Maximum continuous operating voltage MCOV (L-) - G	800 V DC
Nominal voltage	670 V DC
Mode of protection	(L+) - (L-)
	(L+) - G
	(L-) - G
Power distribution system	1
Measured limiting voltage MLV (L+) - (L-)	3090 V
Measured limiting voltage MLV (L+) - G	3040 V
Measured limiting voltage MLV (L-) - G	3070 V
Nominal discharge current $I_n$ (L+) - (L-)	20 kA
Nominal discharge current $I_n$ (L+) - G	20 kA
Nominal discharge current $I_n$ (L-) - G	20 kA

### UL indicator/remote signaling

Operating voltage	125 V AC
Operating current	1 A AC
Tightening torque	4 lb <sub>F</sub> -in.
Conductor cross section AWG	30 ... 14

### UL connection data

Conductor cross section AWG	10 ... 2
Tightening torque	30 lb <sub>F</sub> -in.

### Standards and Regulations

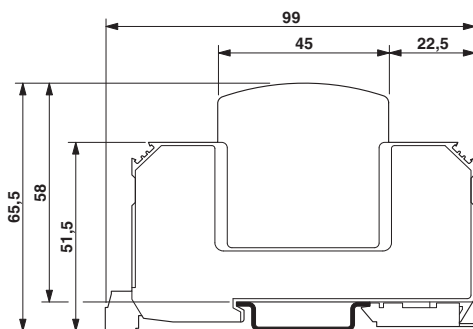
Standards/regulations	EN 50539-11 2013
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### Environmental Product Compliance

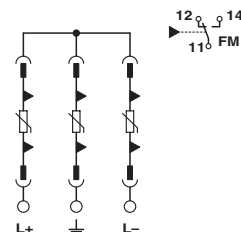
China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

## Drawings

Dimensional drawing



Circuit diagram



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## Approvals

### Approvals

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

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#### Ex Approvals

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### Approval details

UL Recognized		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 330181
KEMA-KEUR		<a href="http://www.dekra-certification.com">http://www.dekra-certification.com</a>	2171492.01
cUL Recognized		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 330181
EAC			EAC-Zulassung
EAC			RU C- DE.A*30.B01561
cULus Recognized		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	

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