

# Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 335/12.5/3+0 - 2800189

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Universal varistor-based plug-in lightning/surge arrester for 3-phase power supply networks with common N and PE (4-conductor system: L1, L2, L3, PEN).

## Why buy this product

- ✓ Plugs can be checked with CHECKMASTER
- ✓ Secure hold of plugs in the event of high lightning current loads and strong vibrations thanks to new latching
- ✓ Thermal disconnect device for each individual plug
- ✓ Pluggable
- ✓ Thermal disconnect device for each individual plug
- ✓ Mechanical coding of all slots



## Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 518604
GTIN	4046356518604

## Technical data

### Dimensions

Height	89.8 mm
Width	53.4 mm
Depth	77.5 mm (incl. DIN rail 7.5 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
Ambient temperature (storage/transport)	-40 °C ... 80 °C

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## Technical data

### Ambient conditions

Altitude	≤ 2000 m (amsl (above mean sea level))
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	30g (Half-sine / 11 ms / 3x ±X, ±Y, ±Z)
Vibration (operation)	7.5g (10 ... 500 Hz / 2.5 h / X, Y, Z)

### General

IEC test classification	I / II
	T1 / T2
	T1
	I
EN type	T1 / T2
	T1
IEC power supply system	TN-C
Mode of protection	L-PEN
Mounting type	DIN rail: 35 mm
Color	jet black RAL 9005
Housing material	PA 6.6
	PBT
Degree of pollution	2
Flammability rating according to UL 94	V-0
Type	DIN rail module, two-section, divisible
Number of positions	3
Surge protection fault message	optical

### Protective circuit

Nominal voltage $U_N$	240/415 V AC (TN-C)
Nominal frequency $f_N$	50 Hz (60 Hz)
Maximum continuous voltage $U_C$	335 V AC
Rated load current $I_L$	80 A
Residual current $I_{PE}$	≤ 2400 μA
Standby power consumption $P_C$	≤ 810 mVA
Nominal discharge current $I_n$ (8/20) μs	12.5 kA
Maximum discharge current $I_{max}$ (8/20) μs	50 kA
Impulse discharge current (10/350) μs, charge	6.25 As
Impulse discharge current (10/350) μs, specific energy	39 kJ/Ω
Impulse discharge current (10/350) μs, peak value $I_{imp}$	12.5 kA
Total discharge current $I_{total}$ (8/20) μs	150 kA
Total discharge current $I_{total}$ (10/350) μs	37.5 kA
Short-circuit current rating $I_{SCCR}$	25 kA
Voltage protection level $U_p$	≤ 1.2 kV

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### Protective circuit

	≤ 1.6 kV (30 kA - 8/20 μs)
Residual voltage $U_{res}$	≤ 1.2 kV (at $I_n$ )
	≤ 1.1 kV (at 10 kA)
	≤ 1 kV (at 5 kA)
	≤ 0.9 kV (at 3 kA)
TOV behavior at $U_T$	415 V AC (5 s / withstand mode)
	457 V AC (120 min / safe failure mode)
Response time $t_A$	≤ 25 ns
Max. backup fuse with V-type through wiring	80 A (gG - 16 mm <sup>2</sup> )
Max. backup fuse with branch wiring	160 A (gG)

### Connection data

Connection method	Screw connection
Screw thread	M5
Tightening torque	3 Nm (1,5 mm <sup>2</sup> ... 16 mm <sup>2</sup> )
	4.5 Nm (25 mm <sup>2</sup> ... 35 mm <sup>2</sup> )
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	Fork-type cable lug
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)	335 V AC
Maximum continuous operating voltage MCOV (L-G)	335 V AC
Nom. voltage	240 V AC
Mode of protection	L-L
	L-G
Power distribution system	3D
Nominal frequency	50/60 Hz
Measured limiting voltage MLV (L-L)	3570 V
Measured limiting voltage MLV (L-G)	2630 V
Nominal discharge current $I_n$ (L-L)	20 kA
Nominal discharge current $I_n$ (L-G)	20 kA

### UL connection data

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

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## Technical data

### Standards and Regulations

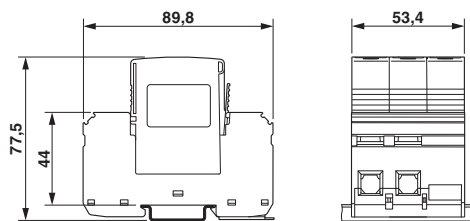
Standards/regulations	IEC 61643-11 2011
	EN 61643-11 2012

### Environmental Product Compliance

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

## Drawings

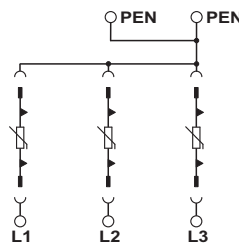
Dimensional drawing



Product drawing



Circuit diagram



## Approvals

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KEMA-KEUR / ÖVE / CCA / IECCEB Scheme / UL Recognized / cUL Recognized / EAC / EAC / DNV GL / cULus Recognized

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## Approvals

Ex Approvals

### Approval details

KEMA-KEUR		<a href="http://www.dekra-certification.com">http://www.dekra-certification.com</a>	2162496-01
ÖVE		<a href="https://www.ove.at/en/certification-pz/certification-register/">https://www.ove.at/en/certification-pz/certification-register/</a>	18583-009-06
CCA			NTR-AT 1906
IECEE CB Scheme		<a href="http://www.iecee.org/">http://www.iecee.org/</a>	AT 2584
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
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			RU C- DE.A*30.B01561
EAC			EAC-Zulassung
DNV GL		<a href="http://exchange.dnv.com/tari/">http://exchange.dnv.com/tari/</a>	TAE00001N9
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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