

# Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 175/12.5/3+0 - 2800673

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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).


The figure shows the 335 V version

## Your advantages

- ✓ 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
- ✓ Optical, mechanical status indication for the individual arresters
- ✓ Pluggable
- ✓ Mechanical coding of all slots



## Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 624329
GTIN	4046356624329

## Technical data

### Dimensions

Height	90 mm
Width	53.4 mm
Depth	77.5 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)	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
Surge protection fault message	optical

### Additional descriptions

Note	Nominal voltage UN = 120 V AC/240 V AC split-phase (separate GND)
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### Protective circuit

Nominal voltage $U_N$	120/208 V AC (TN-C)
Nominal frequency $f_N$	50 Hz (60 Hz)
Maximum continuous voltage $U_C$	175 V AC
Rated load current $I_L$	80 A
Residual current $I_{PE}$	≤ 2400 μA
Standby power consumption $P_C$	≤ 420 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

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### Protective circuit

Total discharge current $I_{total}$ (10/350) $\mu$ s	37.5 kA
Short-circuit current rating $I_{SCCR}$	25 kA
Voltage protection level $U_p$	$\leq 0.8$ kV
Residual voltage $U_{res}$	$\leq 0.8$ kV (at $I_n$ )
	$\leq 0.7$ kV (at 10 kA)
	$\leq 0.6$ kV (at 5 kA)
	$\leq 0.55$ kV (at 3 kA)
TOV behavior at $U_T$	208 V AC (5 s / withstand mode)
	229 V AC (120 min / withstand mode)
Response time $t_A$	$\leq 25$ 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	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

### UL specifications

SPD Type	4CA
Maximum continuous operating voltage MCOV (L-L)	350 V AC
Maximum continuous operating voltage MCOV (L-G)	175 V AC
Nom. voltage	208/120 V AC
Mode of protection	L-L
	L-G
Power distribution system	3Y
Nominal frequency	50/60 Hz
Measured limiting voltage MLV (L-L)	2800 V
Measured limiting voltage MLV (L-G)	2200 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.

### Standards and Regulations

# Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 175/12.5/3+0 - 2800673

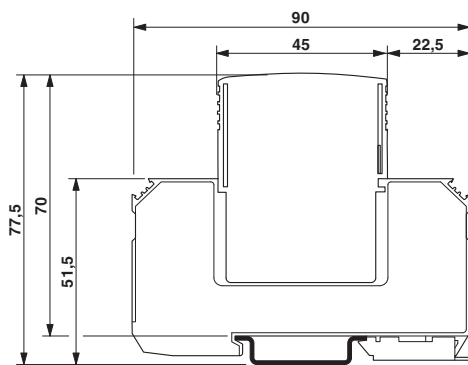
## Technical data

### Standards and Regulations

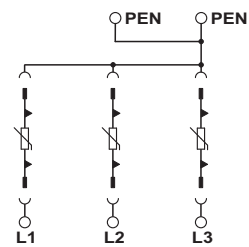
Standards/regulations	IEC 61643-11 2011
	EN 61643-11 2012

## Drawings

Dimensional drawing



Circuit diagram



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