

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



2801044

<https://www.phoenixcontact.com/us/products/2801044>

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Universal varistor-based plug-in lightning/surge arrester for 1-phase power supply networks with common N and PE (2-conductor system: L1, PEN), with remote indication contact.

## Commercial data

Item number	2801044
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	CL18
Product key	CL1151
GTIN	4046356698122
Weight per piece (including packing)	155.02 g
Weight per piece (excluding packing)	155.02 g
Customs tariff number	85363030
Country of origin	DE

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## Technical data

### Product properties

Product type	Arrester combination
Product family	VALVETRAB MS
IEC test classification	I / II T1 / T2
EN type	T1 / T2
IEC power supply system	TN-S TN-C TT
Type	DIN rail module, two-section, divisible
Surge protection fault message	Optical, remote indicator contact
Number of ports	One

### Insulation characteristics

Overvoltage category	III
Pollution degree	2

### Electrical properties

Nominal frequency $f_N$	50 Hz (60 Hz)
Nominal voltage $U_N$	120 V AC

### Indicator/remote signaling

Connection name	Remote fault indicator contact
Switching function	Changeover contact
Operating voltage	5 V AC ... 250 V AC 30 V DC
Operating current	5 mA AC ... 1 A AC 1 A DC

### 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 rigid	1.5 mm <sup>2</sup> ... 35 mm <sup>2</sup>
Conductor cross-section AWG	15 ... 2

### Remote fault indicator contact

Connection method	Screw connection
Screw thread	M2

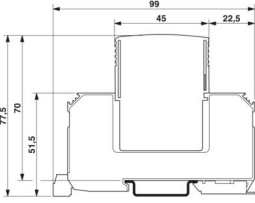
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Tightening torque	0.25 Nm
Stripping length	7 mm
Conductor cross-section flexible	0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross-section rigid	0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross-section AWG	28 ... 16

## Dimensions

Dimensional drawing	
Width	17.5 mm
Height	99 mm
Depth	77.5 mm
Horizontal pitch	1 Div.

## Material specifications

Flammability rating according to UL 94	V-0
CTI value of material	600
Insulating material	PA 6.6/PBT
Material group	I
Housing material	PA 6.6 PBT

## Mechanical properties

### Mechanical data

Open side panel	No
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## Protective circuit

Mode of protection	L-N
	L-PEN
Direction of action	L-N / L-PEN
Nominal voltage $U_N$	120 V AC (TN-C, TN-S)
	120 V AC (TT)
Nominal frequency $f_N$	50 Hz (60 Hz)
Maximum continuous operating voltage $U_C$	175 V AC
Rated load current $I_L$	80 A
Protective conductor current $I_{PE}$	≤ 800 μA
Standby power consumption $P_C$	≤ 140 mVA
Nominal discharge current $I_n$ (8/20) μs	12.5 kA

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Maximum discharge current $I_{\max}$ (8/20) $\mu\text{s}$	50 kA
Impulse discharge current (10/350) $\mu\text{s}$ , charge	6.25 As
Impulse discharge current (10/350) $\mu\text{s}$ , specific energy	39 kJ/ $\Omega$
Impulse discharge current (10/350) $\mu\text{s}$ , peak value $I_{\text{imp}}$	12.5 kA
Total discharge current $I_{\text{Total}}$ (8/20) $\mu\text{s}$	12.5 kA
Total discharge current $I_{\text{Total}}$ (10/350) $\mu\text{s}$	12.5 kA
Short-circuit current rating $I_{\text{SCCR}}$	25 kA
Voltage protection level $U_p$	$\leq 0.8$ kV
Residual voltage $U_{\text{res}}$	$\leq 0.8$ kV (at $I_n$ )
	$\leq 1.5$ kV (at 30 kA)
	$\leq 0.7$ 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)
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)

## 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	$\leq 2000$ m (amsl)
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	30g
Vibration (operation)	7.5g

## Standards and regulations

### Air clearances and creepage distances

Standards/regulations	EN 60664-1 / EN 61643-11
Standards/specifications	IEC 61643-11
Note	2011
Standards/specifications	EN 61643-11
Note	2012

## Mounting

Mounting type	DIN rail: 35 mm
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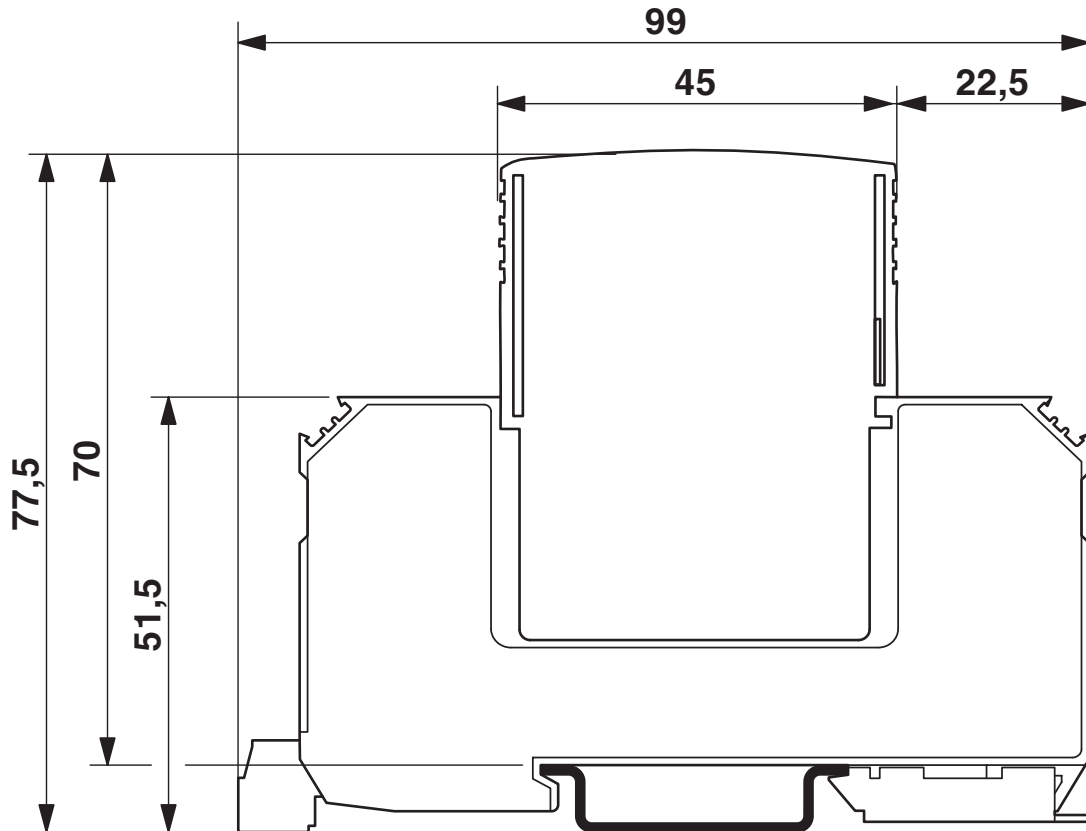
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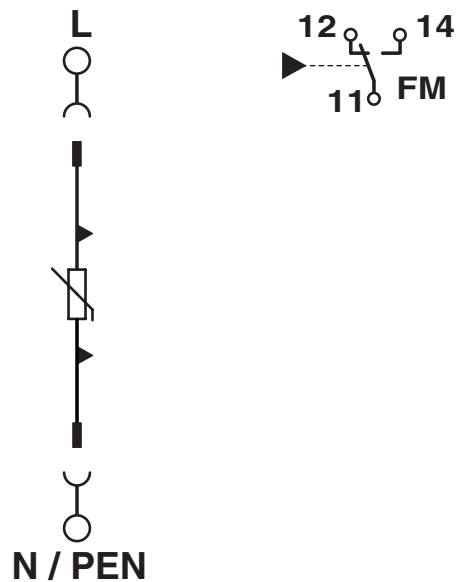
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## Drawings

Dimensional drawing



Circuit diagram



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## Environmental product compliance

### China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

### EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
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