

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



2800673

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The figure shows the 335 V
version

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).

Commercial data

Item number	2800673
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	CL18
Product key	CL1151
GTIN	4046356624329
Weight per piece (including packing)	455.2 g
Weight per piece (excluding packing)	455.2 g
Customs tariff number	85363030
Country of origin	DE

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Technical data

Notes

General

Note	Nominal voltage UN = 120 V AC/240 V AC split-phase (separate GND)
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Product properties

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

Insulation characteristics

Overvoltage category	III
Pollution degree	2

Electrical properties

Nominal frequency f_N	50 Hz (60 Hz)
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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 ² ... 25 mm ²
Conductor cross-section rigid	1.5 mm ² ... 35 mm ²
Conductor cross-section AWG	15 ... 2

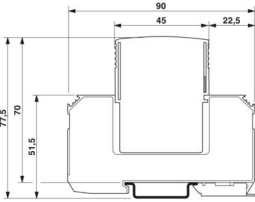
Dimensions

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Dimensional drawing	
Width	53.4 mm
Height	90 mm
Depth	77.5 mm
Horizontal pitch	3 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-PEN
Direction of action	3L-PEN
Nominal voltage U_N	120/208 V AC (TN-C)
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}	$\leq 2400 \mu\text{A}$
Standby power consumption P_C	$\leq 420 \text{ mVA}$
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	$\leq 0.8 \text{ kV}$ $\leq 0.8 \text{ kV (at } I_n)$

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Residual voltage U_{res}	≤ 0.7 kV (at 10 kA)
	≤ 0.6 kV (at 5 kA)
	≤ 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	≤ 25 ns
Max. backup fuse with V-type through wiring	80 A (gG - 16 mm ²)
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	≤ 2000 m (amsl)
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	30g (Half-sine / 11 ms / 3x $\pm X$, $\pm Y$, $\pm Z$)
Vibration (operation)	7.5g (10 ... 500 Hz / 2.5 h / X, Y, Z)

Approvals

UL specifications

Maximum continuous operating voltage MCOV (L-L)	350 V AC
Maximum continuous operating voltage MCOV (L-G)	175 V AC
Nominal discharge current I_n (L-L)	20 kA
Nominal discharge current I_n (L-G)	20 kA
Mode of protection	L-L
	L-G
Nominal voltage	208/120 V AC
Power distribution system	Wye
Nominal frequency	50/60 Hz
Measured limiting voltage MLV (L-L)	2800 V
Measured limiting voltage MLV (L-G)	2200 V
SPD Type	4CA

UL connection data

Tightening torque	30 lb _f -in.
Conductor cross-section AWG	10 ... 2

Standards and regulations

Standards/specifications	IEC 61643-11
Note	2011
Standards/specifications	EN 61643-11

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Note	2012
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Mounting

Mounting type	DIN rail: 35 mm
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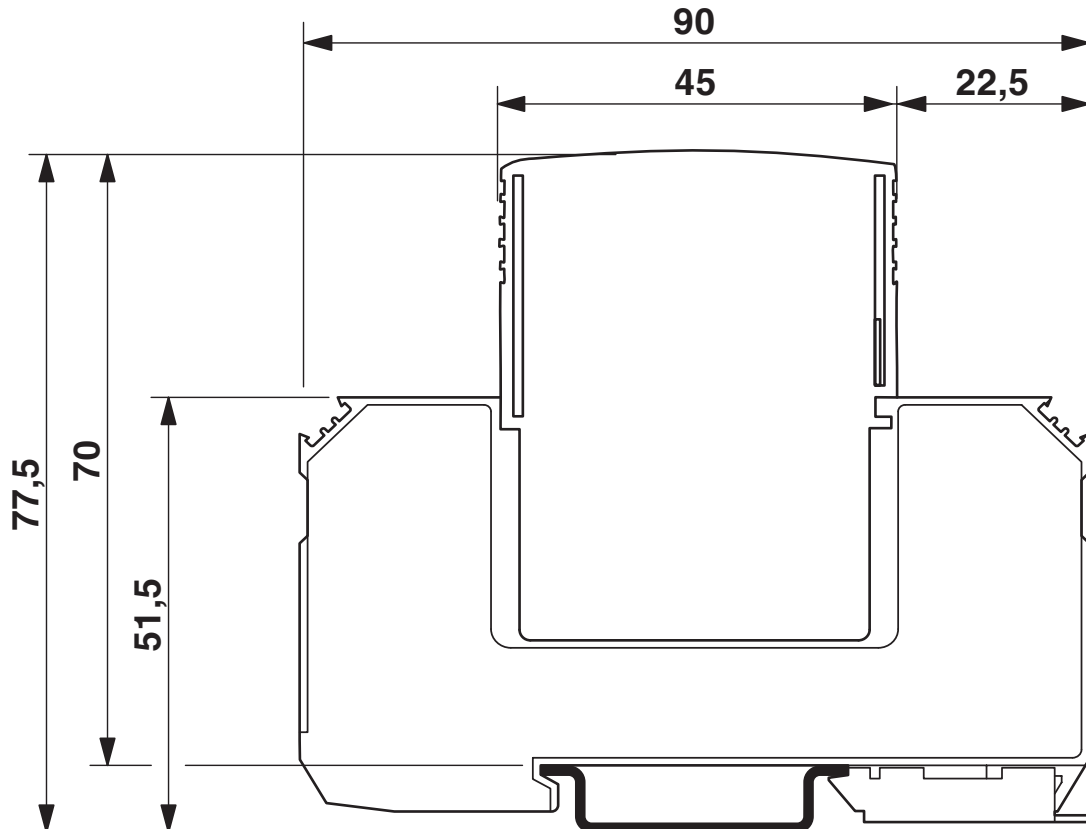
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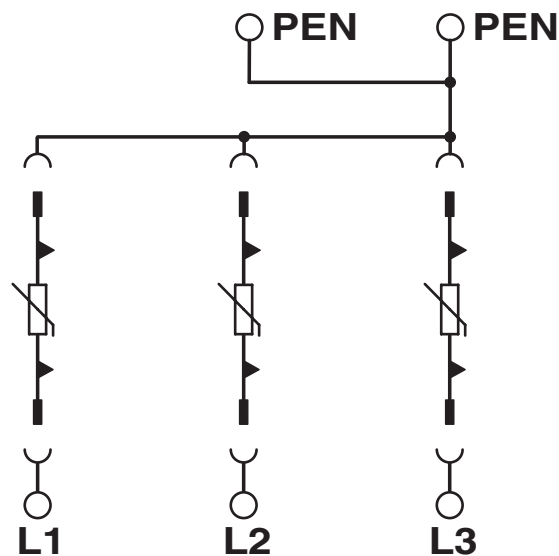
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Drawings

Dimensional drawing



Circuit diagram



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Environmental product compliance

EU REACH SVHC

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