

VAL-MS-T1/T2 75/12.5/1+1V-FM - Lightning/surge arrester type 1/2



2801149

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Universal varistor-based plug-in lightning/surge arrester for 48 V DC applications with grounded return conductor (positive pole), without risk assessment for Lightning Protection Levels III and IV, with remote indication contact.

Commercial data

Item number	2801149
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	CL18
Product key	CL1151
GTIN	4046356710817
Weight per piece (including packing)	332 g
Weight per piece (excluding packing)	332 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
Type	DIN rail module, two-section, divisible
Surge protection fault message	Optical, remote indicator contact

Insulation characteristics

Overvoltage category	III
Pollution degree	2

Electrical properties

Nominal frequency f_N	50 Hz (60 Hz)
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Indicator/remote signaling

Connection name	Remote fault indicator contact
Switching function	Changeover contact
Operating voltage	5 V AC ... 250 V AC
	125 V DC (200 mA DC)
Operating current	5 mA AC ... 1.5 A AC
	1 A DC (30 V 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 ² ... 25 mm ²
Conductor cross section rigid	1.5 mm ² ... 35 mm ²
Conductor cross section AWG	15 ... 2

Remote fault indicator contact

Connection method	Screw connection
Screw thread	M2
Tightening torque	0.25 Nm
Stripping length	7 mm
Conductor cross section flexible	0.14 mm ² ... 1.5 mm ²
Conductor cross section rigid	0.14 mm ² ... 1.5 mm ²
Conductor cross section AWG	28 ... 16

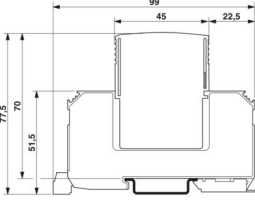
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Dimensions

Dimensional drawing	
Width	35.6 mm
Height	99 mm
Depth	77.5 mm
Horizontal pitch	2 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
	N-PE
	(L+) - (L-)
	(L+) - PE
Direction of action	L-L / L-PE
Nominal voltage U_N	60 V AC $\pm 10\%$ (TN)
	60 V DC $\pm 10\%$
Nominal frequency f_N	50 Hz (60 Hz)
Maximum continuous voltage U_C	75 V AC
	100 V DC
Rated load current I_L	80 A
Residual current I_{PE}	≤ 0.6 mA
Standby power consumption P_C	≤ 90.00 mVA
Nominal discharge current I_n (8/20) μ s	12.5 kA
Maximum discharge current I_{max} (8/20) μ s	50 kA
Impulse discharge current (10/350) μ s, charge	6.25 As

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Impulse discharge current (10/350) μ s, specific energy	39 kJ/ Ω
Impulse discharge current (10/350) μ s, peak value I_{imp}	12.5 kA
Total discharge current I_{total} (8/20) μ s	50 kA
Total discharge current I_{total} (10/350) μ s	12.5 kA
Short-circuit current rating I_{SCCR}	0.5 kA
Voltage protection level U_p	≤ 0.7 kV
Residual voltage U_{res}	≤ 0.7 kV (at I_n)
	≤ 0.65 kV (at 10 kA)
	≤ 0.6 kV (at 5 kV)
	≤ 0.55 kV (at 4 kA)
	≤ 0.55 kV (at 3 kA)
TOV behavior at U_T	208 V AC (5 s / withstand mode)
	100 V DC (5 s / 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-N)	75 V AC
Maximum continuous operating voltage MCOV (L-G)	75 V AC
Maximum continuous operating voltage MCOV (N-G)	75 V AC
Maximum continuous operating voltage MCOV (L+) - (L-)	100 V DC
Maximum continuous operating voltage MCOV (L+) - G	100 V DC
Maximum continuous operating voltage MCOV (L-) - G	100 V DC
Nominal discharge current I_n (L-N)	20 kA
Nominal discharge current I_n (L-G)	20 kA
Nominal discharge current I_n (N-G)	20 kA
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
L-N	

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Mode of protection	L-G
	N-G
	(L+) - G
	(L-) - G
	(L+) - (L-)
Nominal voltage	60 V AC
Nominal voltage	60 V DC
Power distribution system	Single phase
Nominal frequency	50/60 Hz
Measured limiting voltage MLV (L-N)	2080 V
Measured limiting voltage MLV (L-G)	3010 V
Measured limiting voltage MLV (N-G)	2080 V
Measured limiting voltage MLV (L+) - (L-)	2080 V
Measured limiting voltage MLV (L+) - G	2080 V
Measured limiting voltage MLV (L-) - G	3010 V
SPD Type	4CA

UL indicator/remote signaling

Operating voltage	125 V AC
AC operating current	1 A AC

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
Note	2012

Mounting

Mounting type	DIN rail: 35 mm
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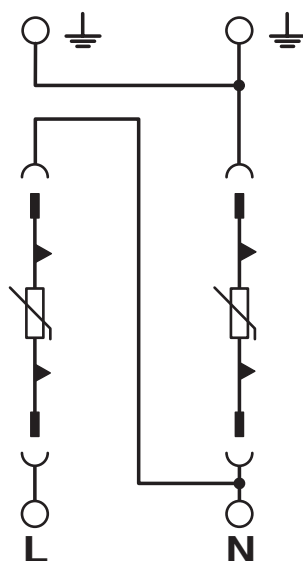
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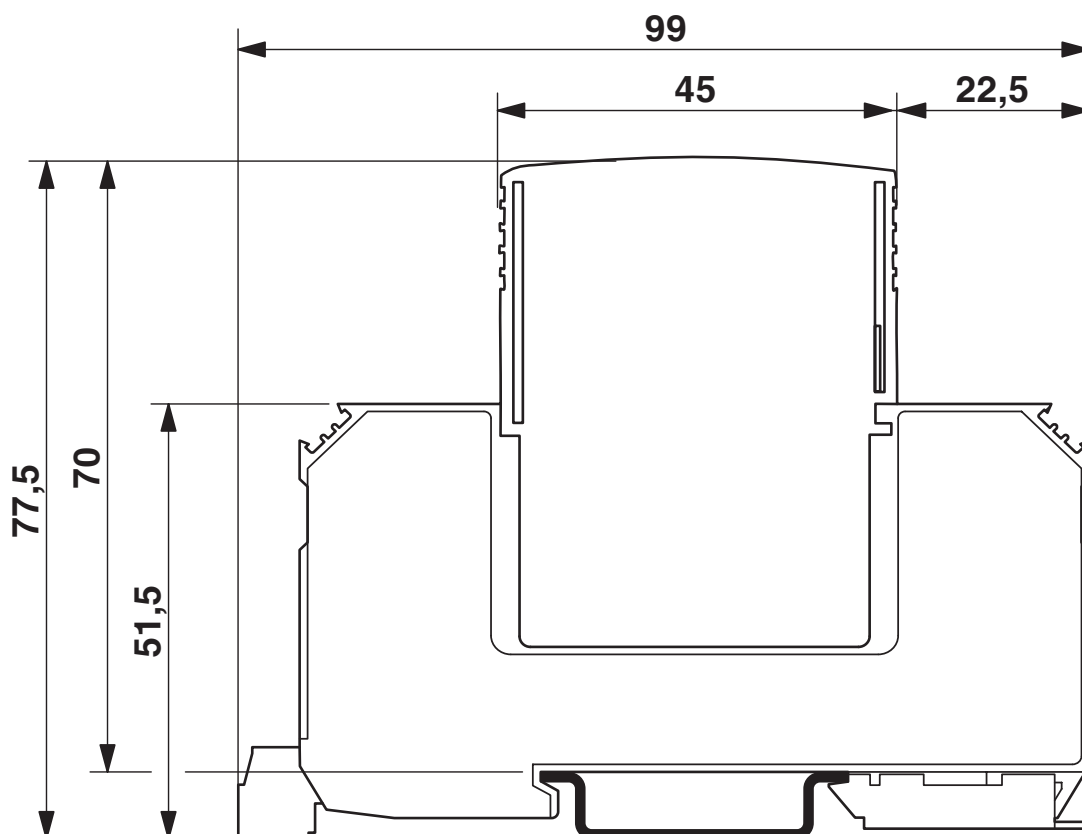
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Drawings

Circuit diagram



Dimensional drawing



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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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