

VAL-MS-T1/T2 48/12.5/O-FM - Lightning/surge arrester type 1/2



2906282

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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.

Your advantages

- Rack-mount 2U panel applications
- Plug-in direction parallel to the conductor axis
- DIN rail mounting
- Coding when protective plug is inserted for the first time
- Accepts Type 1 and Type 2 VAL-MS plugs
- Versions with and without floating remote indication contact

Commercial data

Item number	2906282
Packing unit	12 pc
Minimum order quantity	12 pc
Sales key	CL18
Product key	CL1151
Catalog page	Page 49 (C-4-2019)
GTIN	4055626063072
Weight per piece (including packing)	154.033 g
Weight per piece (excluding packing)	154.033 g
Customs tariff number	85363090
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
	I
EN type	T1 / T2
IEC power supply system	DC
Type	DIN rail module, two-section, divisible
Number of positions	1
Surge protection fault message	Optical, remote indicator contact

Insulation characteristics

Pollution degree	2
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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 AC (UL)
	125 V DC (200 mA DC)
Operating current	5 mA AC ... 1.5 A
	1 A (UL)
	1 A (30 V DC)

Connection data

Connection method	Screw connection
Screw thread	M5
Tightening torque	3 Nm ... 4.5 Nm (UL)
	27 lb _F -in. ... 40 lb _F -in. (UL)
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
	10 ... 2 (UL)

Remote fault indicator contact

Connection method	Screw connection
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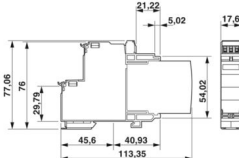


2906282

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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

Dimensions

Dimensional drawing	
Width	17.5 mm
Height	77.1 mm
Depth	89.2 mm
Horizontal pitch	1 Div.

Material specifications

Color	black (RAL 9005)
Flammability rating according to UL 94	V0
Housing material	PBT

Mechanical properties

Mechanical data

Open side panel	No
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Protective circuit

Mode of protection	L-PEN
	(L+) - (L-)
	(L-) - PE
	(L+) - PE
Direction of action	L-N / L-PEN
Nominal voltage U_N	-48 V DC (RRH)
	60 V DC
Nominal frequency f_N	50 Hz (60 Hz)
	75 V AC
Maximum continuous voltage U_C	100 V DC
	75 V AC
Maximum continuous operating voltage U_C (L-N)	100 V DC
	75 V AC
Maximum continuous operating voltage U_C (L-PEN)	100 V DC
	75 V AC

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Rated load current I_L	80 A
	80 A
Residual current I_{PE}	≤ 0.6 mA
	≤ 0.6 mA
Standby power consumption P_C	≤ 45.00 mVA
	≤ 45.00 mVA
Nominal discharge current I_n (8/20) μ s	12.5 kA
Nominal discharge current I_n (8/20) μ s (L-N)	12.5 kA
Nominal discharge current I_n (8/20) μ s (L-PEN)	12.5 kA
Maximum discharge current I_{max} (8/20) μ s	30 kA
Maximum discharge current I_{max} (8/20) μ s (L-N)	30 kA
Maximum discharge current I_{max} (8/20) μ s (L-PEN)	30 kA
Impulse discharge current (10/350) μ s, charge	6.25 As
Impulse discharge current (10/350) μ s, specific energy	39 kJ/ Ω
	12.5 kA
Impulse discharge current (10/350) μ s, peak value I_{imp}	12.5 kA
	12.5 kA
Impulse discharge current (10/350) μ s (L-N), charge	6.25 As
	6.25 As
	6.25 As
Impulse discharge current (10/350) μ s (L-N), specific energy	39 kJ/ Ω
	39 kJ/ Ω
	39 kJ/ Ω
Impulse discharge current (10/350) μ s (L-N), peak current value I_{imp}	12.5 kA
	12.5 kA
	12.5 kA
Short-circuit current rating I_{SCCR}	25 kA
Voltage protection level U_p	≤ 0.4 kV
Voltage protection level U_p (L-N)	≤ 0.4 kV
Voltage protection level U_p (L-PEN)	≤ 0.4 kV
Residual voltage U_{res}	≤ 0.4 kV (at I_n)
	≤ 0.35 kV (at 10 kA)
	≤ 0.3 kV (at 5 kA)
	≤ 0.275 kV (at 4 kA)
	≤ 0.25 kV (at 3 kA)
TOV behavior at U_T	100 V AC (5 s / withstand mode)
	130 V DC (5 s / withstand mode)
TOV behavior at U_T (L-N)	100 V AC (5 s / withstand mode)
	130 V DC (5 s / withstand mode)
TOV behavior at U_T (L-PEN)	100 V AC (5 s / withstand mode)
	130 V DC (5 s / withstand mode)
Response time t_A	≤ 25 ns
Response time t_A (L-N)	≤ 25 ns

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Response time t_A (L-PEN)	≤ 25 ns
Max. backup fuse with V-type through wiring	80 A AC (gG - 16 mm ²)
	80 A AC (gG - 16 mm ²)
Max. backup fuse with branch wiring	160 A AC (gG)
	160 A AC (gG)

Additional technical data

Maximum discharge current I_{max} (8/20) μ s	65 kA
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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	max. 2000 m
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	25g (Half-sine / 11 ms / 3x $\pm$ X, $\pm$ Y, $\pm$ Z)
Vibration (operation)	5g (10 ... 500 Hz / 2.5 h / X, Y, Z)

Approvals

UL specifications

Maximum continuous operating voltage MCOV	75 V AC
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 (L+) - (L-)	100 V DC
Maximum continuous operating voltage MCOV (L+/L-) - G	100 V DC
Voltage protection rating VPR	400 V
Voltage protection rating VPR (L-N)	400 V
Nominal discharge current I_n	20 kA
Nominal discharge current I_n (L-G)	20 kA
Nominal discharge current I_n (L+) - (L-)	20 kA
Mode of protection	L-L
	L-G
	(L+) - (L-)
	(L+) - G
	(L-) - G
Nominal voltage	60 V DC
Power distribution system	Single phase
Measured limiting voltage MLV	1240 V
Measured limiting voltage MLV (L-G)	1240 V
Measured limiting voltage MLV (L+) - (L-)	1230 V
SPD Type	1CA

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UL connection data

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

Standards and regulations

Air clearances and creepage distances

Standards/regulations	EN 61643-11 / UL 840
Standards/specifications	EN 61643-11/A11
Note	2007

Mounting

Mounting type	DIN rail: 35 mm
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