

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



2909629

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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.



Your advantages

- Dual-channel, panel mountable surge protective device
- Orthogonal mounting orientation to plug
- Base element with floating remote indication contact
- Rack-mount 1U panel applications

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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	TN-S
Type	DIN rail module, two-section, divisible
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	2.5 Nm ... 3 Nm
	22 lb _F in. ... 26.5 lb _F in. (UL)
Stripping length	16 mm
Conductor cross section flexible min.	1.5 mm ²
Conductor cross section flexible max.	25 mm ²
Conductor cross section, rigid min.	1.5 mm ²
Conductor cross section, rigid max.	35 mm ²
Conductor cross section AWG	15 ... 2
	10 ... 2 (UL)

Remote fault indicator contact

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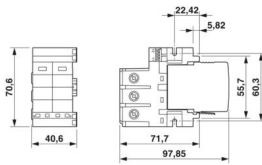


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Connection method	Push-in spring connection
Stripping length	6 mm
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	0.5 mm ²
Conductor cross section, rigid min.	0.14 mm ²
Conductor cross section, rigid max.	0.5 mm ²
Conductor cross section AWG	24 ... 20 (UL)

Dimensions

Dimensional drawing	
Width	70.6 mm
Height	40.6 mm
Height unit	1 U
Depth	98.1 mm

Material specifications

Color	gray (RAL 7042)
	gray (RAL 7042)
Flammability rating according to UL 94	V-0
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
Direction of action	L-N & L(N)-PE
Nominal voltage U_N	60 V AC ± 10 % (TN-S)
	-48 V DC ± 10 % (RRH)
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	≤ 45.00 mVA

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Nominal discharge current I_n (8/20) μs	12.5 kA
Maximum discharge current I_{max} (8/20) μs	30 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	50 kA
Short-circuit current rating I_{SCCR}	25 kA
Voltage protection level U_p	≤ 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)
Response time t_A	≤ 25 ns
Max. backup fuse with V-type through wiring	80 A AC (gG - 16 mm ²)
Max. backup fuse with branch wiring	160 A AC (gG)

Additional technical data

Maximum discharge current I_{max} (8/20) μs	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	≤ 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
	100 V DC
Mode of protection	N-G
	L-N
	(L+) - (L-)
	(L+) - G
	(L-) - G
Nominal voltage	60 V DC

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SPD Type	1CA
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

Mounting

Mounting type	Panel mount
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