

Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 48/12.5/1+1V - 2801532

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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.


The figure shows the VAL-MS-T1/T2 75/12.5/1+1V version

Why buy this product

- Plugs can be checked with CHECKMASTER
- With floating remote indication contact
- Secure hold of plugs in the event of high lightning current loads and strong vibrations thanks to new latching
- Optical, mechanical status indication for the individual arresters
- Pluggable
- Thermal disconnect device for each individual plug
- Mechanical coding of all slots



Key Commercial Data

Packing unit	1 STK
GTIN	 4 046356 811316
GTIN	4046356811316

Technical data

Dimensions

Height	90 mm
Width	35.6 mm
Depth	77.5 mm
Horizontal pitch	2 Div.

Ambient conditions

Degree of protection	IP20 (only when all terminal points are used)
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Technical data

Ambient conditions

Ambient temperature (operation)	-40 °C ... 80 °C
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Altitude	≤ 2000 m (amsl (above mean sea level))
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	30g (half sinus / 11 ms / 3x ±X, ±Y, ±Z)
Vibration (operation)	7.5g (10 ... 500 Hz / 2.5 h / X, Y, Z)

General

IEC test classification	I / II
	T1 / T2
	I
EN type	T1 / T2
IEC power supply system	TN-S
Mode of protection	L-N
	N-PE
	L-PE
	(L+) - (L-)
	(L+) - PE
	(L-) - PE
Mounting type	DIN rail: 35 mm
Color	jet black RAL 9005
Housing material	PA 6.6
	PBT
Degree of pollution	2
Flammability rating according to UL 94	V-0
Design	DIN rail module, two-section, divisible
Surge protection fault message	optical

Protective circuit

Nominal voltage U_N	60 V AC ±10 % (TN-S)
	60 V DC ±10 %
	-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	≤ 90 mVA
Nominal discharge current I_n (8/20) μ s	12.5 kA
Maximum discharge current I_{max} (8/20) μ s	30 kA

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Protective circuit

Impulse discharge current (10/350) μ s, charge	6.25 As
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}	25 kA
Voltage protection level U_p (L-N)	≤ 0.4 kV
Voltage protection level U_p (L-PE)	≤ 0.8 kV
Voltage protection level U_p (N-PE)	≤ 0.4 kV
Voltage protection level U_p (L+) - (L-)	≤ 0.4 kV
Voltage protection level U_p (L+) - PE	≤ 0.4 kV
Voltage protection level U_p (L-) - PE	≤ 0.8 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 branch wiring	160 A (gG)
Max. backup fuse with V-type through wiring	80 A (gG - 16 mm ²)

Additional technical data

Maximum discharge current I_{max} (8/20) μ s	65 kA
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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 solid	1.5 mm ² ... 35 mm ²
Conductor cross section AWG	15 ... 2

UL specifications

SPD Type	1CA
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

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UL specifications

Nominal voltage	60 V DC
Mode of protection	(L+) - (L-)
	(L+) - G
	(L-) - G
Voltage protection rating VPR (L+) - (L-)	400 V
Voltage protection rating VPR (L+) - G	400 V
Voltage protection rating VPR (L-) -G	600 V
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
Short-circuit current rating (SCCR)	5 kA

UL connection data

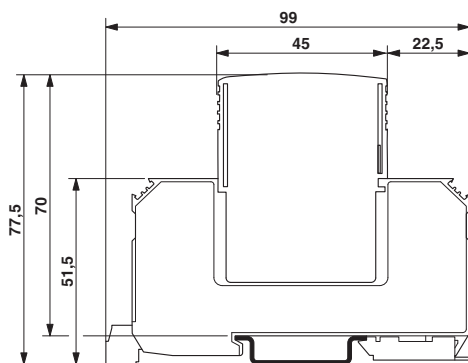
Conductor cross section AWG	10 ... 2
Tightening torque	30 lb _F -in.

Standards and Regulations

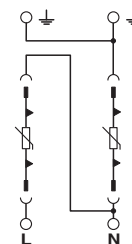
Standards/regulations	IEC 61643-11 2011
	EN 61643-11 2012

Drawings

Dimensional drawing



Circuit diagram



The illustration shows the dimensional drawing for a version with remote indicator contact

Approvals

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Approvals

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UL Recognized / cUL Recognized / KEMA-KEUR / VDE Zeichengenehmigung / EAC / CCA / IECEE CB Scheme / cULus Recognized

Ex Approvals

Approval details

UL Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 330181
cUL Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 330181
KEMA-KEUR		http://www.dekra-certification.com	2168290.01
VDE Zeichengenehmigung		http://www.vde.com/en/Institute/OnlineService/VDE-approved-products/Pages/Online-Search.aspx	40037097
EAC			RU C-DE.A*30.B01561
CCA			DE1-34421
IECEE CB Scheme		http://www.iecee.org/	DE1-54090
cULus Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	

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