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Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 175/12.5/1+1-FM - 2800674

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Universal varistor-based plug-in lightning/surge arrester for 1-phase power supply networks with separate N and PE (3-conductor system: L1, N, PE), with remote indication contact.

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
- ✓ Mechanical coding of all slots
- ✓ Optical, mechanical status indication for the individual arresters
- ✓ Pluggable
- ✓ Thermal disconnect device for each individual plug



Key Commercial Data

Packing unit	1 STK
GTIN	 4 046356 624336
GTIN	4046356624336

Technical data

Dimensions

Height	96.8 mm
Width	35.6 mm
Depth	77.5 mm (incl. DIN rail 7.5 mm)
Horizontal pitch	2 Div.

Ambient conditions

Degree of protection	IP20 (only when all terminal points are used)
Ambient temperature (operation)	-40 °C ... 80 °C

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Technical data

Ambient conditions

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-sine / 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
	T1
	I
EN type	T1 / T2
	T1
IEC power supply system	TT
	TN-C
	TN-S
Mode of protection	L-N
	L-PE
	N-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
Type	DIN rail module, two-section, divisible
Surge protection fault message	Optical, remote indicator contact

Additional descriptions

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

Nominal voltage U_N	120 V AC (TN-S)
	120 V AC (TT)
Nominal frequency f_N	50 Hz (60 Hz)
Maximum continuous operating voltage U_C (L-N)	175 V AC
Maximum continuous operating voltage U_C (L-PE)	175 V AC
Maximum continuous voltage U_C (N-PE)	264 V AC
Rated load current I_L	80 A
Residual current I_{PE}	≤ 5 μA
Standby power consumption P_C	≤ 140 mVA

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Technical data

Protective circuit

Nominal discharge current I_n (8/20) μs (L-N)	12.5 kA
Nominal discharge current I_n (8/20) μs (L-PE)	12.5 kA
Nominal discharge current I_n (8/20) μs (N-PE)	50 kA
Maximum discharge current I_{max} (8/20) μs	50 kA
Impulse discharge current (10/350) μs (L-N), charge	6.25 As
Impulse discharge current (10/350) μs (L-N), specific energy	39 kJ/ Ω
Impulse discharge current (10/350) μs (L-N), peak current value I_{imp}	12.5 kA
Impulse discharge current (10/350) μs (L-PE), charge	6.25 As
Impulse discharge current (10/350) μs (L-PE), specific energy	39 kJ/ Ω
Impulse discharge current (10/350) μs (L-PE), peak current value I_{imp}	12.5 kA
Impulse discharge current (10/350) μs (N-PE), charge	25 As
Impulse discharge current (10/350) μs (N-PE), specific energy	625 kJ/ Ω
Impulse discharge current (10/350) μs (N-PE), peak current value I_{imp}	50 kA
Total discharge current I_{total} (8/20) μs	50 kA
Total discharge current I_{total} (10/350) μs	25 kA
Follow current interrupt rating I_{fi} (N-PE)	100 A
Short-circuit current rating I_{SCCR}	25 kA
Voltage protection level U_p (L-N)	≤ 0.8 kV
Voltage protection level U_p (L-PE)	≤ 2 kV
Voltage protection level U_p (N-PE)	≤ 1.7 kV
Residual voltage U_{res} (L-N)	≤ 0.8 kV (at I_n)
	≤ 0.65 kV (at 10 kA)
	≤ 0.6 kV (at 5 kA)
	≤ 0.5 kV (at 3 kA)
Residual voltage U_{res} (L-PE)	≤ 2 kV (at I_n)
	≤ 1.5 kV (at 10 kA)
	≤ 1.4 kV (at 5 kA)
	≤ 1.3 kV (at 3 kA)
Residual voltage U_{res} (N-PE)	≤ 0.6 kV (at I_n)
	≤ 0.5 kV (at 10 kA)
	≤ 0.5 kV (at 5 kA)
	≤ 0.4 kV (at 3 kA)
TOV behavior at U_T (L-N)	208 V AC (5 s / withstand mode)
	229 V AC (120 min / withstand mode)
TOV behavior at U_T (N-PE)	1200 V AC (200 ms / withstand mode)
Response time t_A (L-N)	≤ 25 ns
Response time t_A (L-PE)	≤ 100 ns
Response time t_A (N-PE)	≤ 100 ns

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Technical data

Protective circuit

Max. backup fuse with V-type through wiring	80 A (gG - 16 mm ²)
Max. backup fuse with branch wiring	160 A (gG)

Indicator/remote signaling

Switching function	PDT contact
Operating voltage	5 V AC ... 250 V AC
	30 V DC
Operating current	5 mA AC ... 1.5 A AC
	1 A DC
Connection method	Plug-in/screw connection via COMBICON
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 solid	0.14 mm ² ... 1.5 mm ²
Conductor cross section AWG	28 ... 16

Connection data

Connection method	Screw connection
Screw thread	M5
Tightening torque	3 Nm (1,5 mm ² ... 16 mm ²)
	4.5 Nm (25 mm ² ... 35 mm ²)
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
Connection method	Fork-type cable lug
Conductor cross section flexible	1.5 mm ² ... 16 mm ²

UL specifications

SPD Type	4CA
Maximum continuous operating voltage MCOV (L-N)	175 V AC
Maximum continuous operating voltage MCOV (L-G)	175 V AC
Maximum continuous operating voltage MCOV (N-G)	264 V AC
Nom. voltage	120 V AC
Mode of protection	L-N
	L-G
	N-G
Power distribution system	1
Nominal frequency	50/60 Hz
Measured limiting voltage MLV (L-N)	2200 V

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Technical data

UL specifications

Measured limiting voltage MLV (L-G)	3160 V
Measured limiting voltage MLV (N-G)	2600 V
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

UL indicator/remote signaling

Operating voltage	125 V AC
Operating current	1 A AC
Tightening torque	4 lb _F -in.
Conductor cross section AWG	30 ... 14

UL connection data

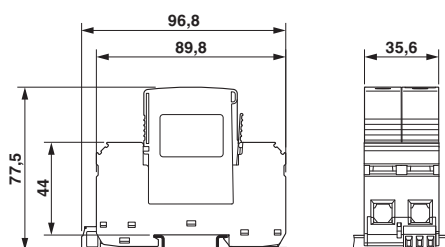
Conductor cross section AWG	10 ... 2
Tightening torque	30 lb _F -in.

Standards and Regulations

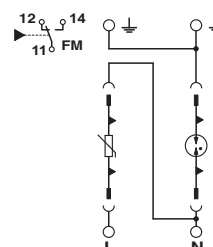
Standards/regulations	IEC 61643-11 2011
	EN 61643-11 2012

Drawings

Dimensional drawing



Circuit diagram



Approvals

Approvals

Approvals

KEMA-KEUR / IECCE CB Scheme / CCA / UL Recognized / cUL Recognized / EAC / DNV GL / cULus Recognized

Ex Approvals

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Approvals

Approval details

KEMA-KEUR		http://www.dekra-certification.com	2162496-01
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IECEE CB Scheme		http://www.iecee.org/	AT 2584
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CCA			NTR-AT 1906
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UL Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 330181
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cUL Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 330181
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EAC			RU C- DE.A*30.B01561
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DNV GL		http://exchange.dnv.com/tari/	TAE00001N9
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cULus Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	
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