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Especialistas en Automatización

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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

- With or without floating remote indication contact
- Plugs can be checked with CHECKMASTER
- Secure hold of plugs in the event of high lightning current loads and strong vibrations thanks to new latching
- Mechanical coding of all slots
- Thermal disconnect device for each individual plug
- Optical, mechanical status indication for the individual arresters



Key Commercial Data

Packing unit	1 STK
GTIN	 4 046356 624336

Technical data

Dimensions

Height	99 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)
Ambient temperature (operation)	-40 °C ... 80 °C
Ambient temperature (storage/transport)	-40 °C ... 80 °C

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Technical data

Ambient conditions

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

Standards/specifications	IEC 61643-11 2011
	EN 61643-11 2012
IEC test classification	I / II
	T1 / T2
	T1
	I
EN type	T1 / T2
	T1
IEC power supply system	TT
	TN-C
	TN-S
Number of ports	One
SPD design	Combination type
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 voltage U_C (N-PE)	264 V AC
Rated load current I_L	80 A

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Protective circuit

Residual current I_{PE}	$\leq 5 \mu\text{A}$
Standby power consumption P_c	$\leq 140 \text{ mVA}$
Nominal discharge current I_n (8/20) μs (L-N)	12.5 kA
Nominal discharge current I_n (8/20) μs (N-PE)	50 kA
Maximum discharge current I_{max} (8/20) μs (L-N)	50 kA
Maximum discharge current I_{max} (8/20) μs (N-PE)	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 (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 (264 V AC)
Short-circuit current rating I_{SCCR}	25 kA
Voltage protection level U_p (L-N)	$\leq 0.8 \text{ kV}$
Voltage protection level U_p (L-PE)	$\leq 2 \text{ kV}$
Voltage protection level U_p (N-PE)	$\leq 1.7 \text{ kV}$
Residual voltage U_{res} (L-N)	$\leq 0.8 \text{ kV}$ (at I_n)
	$\leq 0.65 \text{ kV}$ (at 10 kA)
	$\leq 0.6 \text{ kV}$ (at 5 kA)
	$\leq 0.5 \text{ kV}$ (at 3 kA)
Residual voltage U_{res} (L-PE)	$\leq 2 \text{ kV}$ (at I_n)
	$\leq 1.5 \text{ kV}$ (at 10 kA)
	$\leq 1.4 \text{ kV}$ (at 5 kA)
	$\leq 1.3 \text{ kV}$ (at 3 kA)
Residual voltage U_{res} (N-PE)	$\leq 0.6 \text{ kV}$ (at I_n)
	$\leq 0.5 \text{ kV}$ (at 10 kA)
	$\leq 0.5 \text{ kV}$ (at 5 kA)
	$\leq 0.4 \text{ kV}$ (at 3 kA)
Front of wave sparkover voltage at 6 kV (1.2/50) μs (N-PE)	$\leq 1.7 \text{ kV}$
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)	$\leq 25 \text{ ns}$
Response time t_A (L-PE)	$\leq 100 \text{ ns}$
Response time t_A (N-PE)	$\leq 100 \text{ ns}$

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Protective circuit

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

Indicator/remote signaling

Connection name	Remote fault indicator contact
Switching function	PDT contact
Operating voltage	5 V AC ... 250 V AC
	30 V DC
Operating current	5 mA AC ... 1.5 A
	1 A
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 solid	0.14 mm ² ... 1.5 mm ²
Conductor cross section AWG	28 ... 16

Connection data

Connection method	Screw connection
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
Screw thread	M5
Tightening torque	4.5 Nm
Stripping length	16 mm

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

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Technical data

UL specifications

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
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.

Classifications

eCl@ss

eCl@ss 4.0	27140201
eCl@ss 4.1	27130801
eCl@ss 5.0	27130801
eCl@ss 5.1	27130801
eCl@ss 6.0	27130802
eCl@ss 7.0	27130802
eCl@ss 8.0	27130802
eCl@ss 9.0	27130802

ETIM

ETIM 2.0	EC000941
ETIM 3.0	EC000941
ETIM 4.0	EC000381
ETIM 5.0	EC000381

UNSPSC

UNSPSC 6.01	30212010
UNSPSC 7.0901	39121610
UNSPSC 11	39121610
UNSPSC 12.01	39121610
UNSPSC 13.2	39121620

Approvals

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Approvals

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KEMA-KEUR / ÖVE / GL / IEC/IEC CB Scheme / CCA / UL Recognized / cUL Recognized / EAC / cULus Recognized

Ex Approvals

Approvals submitted

Approval details

KEMA-KEUR

ÖVE

GL

IECEE CB Scheme

CCA


UL Recognized

cUL Recognized

EAC

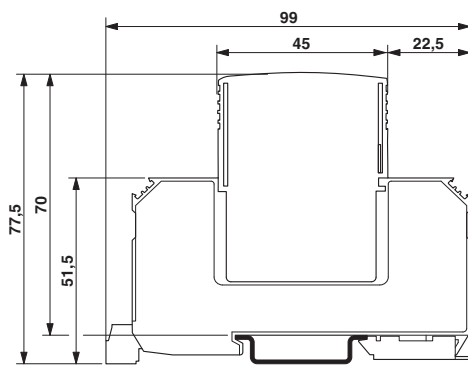
Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 175/12.5/1+1-FM - 2800674

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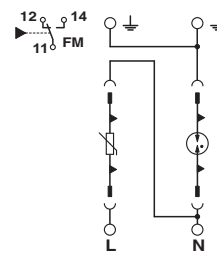
cULus Recognized 

Drawings

Dimensional drawing



Circuit diagram



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Product	Code	Reference	Product link
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