

Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 175/12.5/3+1-FM - 2800670

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Universal varistor-based plug-in lightning/surge arrester for 3-phase power supply networks with separate N and PE (5-conductor system: L1, L2, L3, N, PE), for Lightning Protection Levels III and IV, 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
- Optical, mechanical status indication for the individual arresters
- Thermal disconnect device for each individual plug



Key commercial data

Packing unit	1 pc
GTIN	 4 046356 624251
Weight per Piece (excluding packing)	580.3 g
Custom tariff number	85363030
Country of origin	Germany
Note	Made to Order (non-returnable)

Technical data

Dimensions

Height	99 mm
Width	71.2 mm
Depth	77.5 mm
Horizontal pitch	4 Div.

Ambient conditions

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Technical data

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 (above mean sea level))
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	30g
Vibration (operation)	7.5g

General

Standards/specifications	IEC 61643-11 2011
	EN 61643-11 2012
IEC test classification	I / II
	T1 / T2
EN type	T1 / T2
IEC power supply system	TT
	TN-C
	TN-S
Lightning protection class	III / IV
Number of ports	One
SPD design	Combination type
Mode of protection	L-N
	L-PE
	N-PE
Mounting type	DIN rail: 35 mm
Color	black
Housing material	PA 6.6
	PBT
Pollution degree	2
Inflammability class 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	120/208 V AC (TN-S)
	120/208 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

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Protective circuit

Rated load current I_L	80 A
Residual current I_{PE}	$\leq 5 \mu\text{A}$
Standby power consumption P_C	$\leq 420 \text{ mVA}$
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 (L-N)	50 kA
Maximum discharge current I_{max} (8/20) μs (L-PE)	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
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
Total discharge current I_{Total} (8/20) μs	50 kA
Total discharge current I_{Total} (10/350) μs	50 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)
	$\leq 0.75 \text{ kV}$ (at 10 kA)
	$\leq 0.65 \text{ kV}$ (at 5 kA)
	$\leq 0.6 \text{ kV}$ (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)	$\leq 1.7 \text{ kV}$

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Protective circuit

TOV behavior at U_T (L-N)	208 V AC (5 s / 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
Max. backup fuse with branch wiring	160 A AC (gG)
Max. backup fuse with V-type through wiring	80 A AC (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
	125 V AC (UL)
	30 V DC
Operating current	5 mA AC ... 1.5 A AC
	1 A AC (UL)
	1 A DC
Connection method	Screw connection
Screw thread	M2
Tightening torque	0.25 Nm
	4 lb _F -in. (UL)
Stripping length	7 mm
Conductor cross section stranded min.	0.14 mm ²
Conductor cross section stranded max.	1.5 mm ²
Conductor cross section solid min.	0.14 mm ²
Conductor cross section solid max.	1.5 mm ²
AWG conductor cross section	28 ... 16
	30 ... 14 (UL)

Connection data

Connection method	Screw connection
Conductor cross section stranded min.	1.5 mm ²
Conductor cross section stranded max.	25 mm ²
Conductor cross section solid min.	1.5 mm ²
Conductor cross section solid max.	35 mm ²
AWG conductor cross section	15 ... 2
	10 ... 2 (UL)
Screw thread	M5
Tightening torque	4.5 Nm
	30 lb _F -in. (UL)

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Technical data

Connection data

Stripping length	16 mm
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UL specifications

UL class	SPD type 4CA
Maximum continuous operating voltage MCOV (L-L)	350 V AC
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	120/208 V AC
Mode of protection	L-L
	L-N
	L-G
	N-G
Power distribution system	3Y
Nominal frequency	50/60 Hz
Measured limiting voltage MLV (L-L)	2800 V
Measured limiting voltage MLV (L-N)	2200 V
Measured limiting voltage MLV (L-G)	3160 V
Measured limiting voltage MLV (N-G)	2600 V
Nominal discharge current I _n (L-L)	20 kA
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

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

ETIM

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

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Classifications

UNSPSC

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

Approvals

Approvals

Approvals

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

Ex Approvals

Approvals submitted

Approval details

KEMA-KEUR

ÖVE

GL

IECEE CB Scheme

CCA

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Approvals

UL Recognized

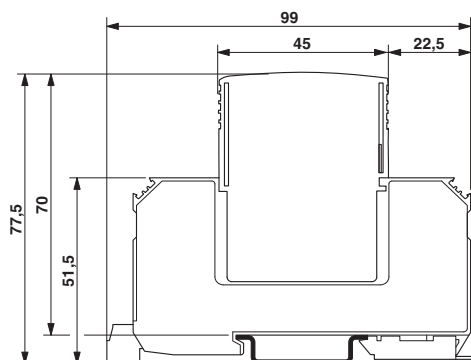
cUL Recognized

EAC

cULus Recognized

Drawings

Dimensioned drawing



Circuit diagram

