

Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 48/12.5/1+0 - 2801241


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Universal varistor-based plug-in lightning/surge arrester for 1-phase power supply networks with common N and PE (2-conductor system: L1, PEN).



Key commercial data

Packing unit	1 pc
GTIN	 4 046356 750172
Weight per Piece (excluding packing)	124.76 g
Custom tariff number	85363030
Country of origin	Germany

Technical data

Dimensions

Height	90 mm
Width	17.5 mm
Depth	77.5 mm
Horizontal pitch	1 Div.

Ambient conditions

Degree of protection	IP20
	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 (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

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Technical data

General

IEC test classification	I / II
	T1 / T2
EN type	T1 / T2
Number of ports	One
SPD design	Voltage-limiting type
Mode of protection	L-N
	L-PEN
	(L+) - (L-)
	(L-) - PE
	(L+) - 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

Protective circuit

Nominal voltage U_N	60 V AC $\pm 10\%$ (TN)
	60 V DC $\pm 10\%$
	-48 V DC $\pm 10\%$ (RRH)
Nominal frequency f_N	50 Hz (60 Hz)
Maximum continuous operating voltage U_C	75 V AC
	100 V DC
Maximum continuous operating voltage U_C (L-N)	75 V AC
	100 V DC
Maximum continuous operating voltage U_C (L-PEN)	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 mVA
Nominal discharge current I_n (8/20) μ s	12.5 kA
Nominal discharge current I_n (8/20) μ s (L-N)	12.5 kA
Nominal discharge current I_n (8/20) μ s (L-PEN)	12.5 kA
Maximum discharge current I_{max} (8/20) μ s	30 kA
Maximum discharge current I_{max} (8/20) μ s (L-N)	30 kA
Maximum discharge current I_{max} (8/20) μ s (L-PEN)	30 kA
Impulse discharge current (10/350) μ s (L-N), charge	6.25 As

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Protective circuit

Impulse discharge current (10/350) μ s (L-N), specific energy	39 kJ/ Ω
Impulse discharge current (10/350) μ s (L-N), peak current value I_{imp}	12.5 kA
Impulse discharge current (10/350) μ s (L-PEN), charge	6.25 As
Impulse discharge current (10/350) μ s (L-PEN), specific energy	39 kJ/ Ω
Impulse discharge current (10/350) μ s (L-PEN), peak current value I_{imp}	12.5 kA
Short-circuit current rating I_{SCCR}	25 kA
Voltage protection level U_p	≤ 0.4 kV
Voltage protection level U_p (L-N)	≤ 0.4 kV
Voltage protection level U_p (L-PEN)	≤ 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)
TOV behavior at U_T (L-N)	100 V AC (5 s / withstand mode)
	130 V DC (5 s / withstand mode)
TOV behavior at U_T (L-PEN)	100 V AC (5 s / withstand mode)
	130 V DC (5 s / withstand mode)
Response time t_A	≤ 25 ns
Response time t_A (L-N)	≤ 25 ns
Response time t_A (L-PEN)	≤ 25 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)

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)
Stripping length	16 mm

UL specifications

UL class	SPD type 4CA
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UL specifications

Maximum continuous operating voltage MCOV (L-G)	75 V AC
Maximum continuous operating voltage MCOV (L+) - (L-)	100 V DC
Nom. voltage	60 V AC
Nominal voltage	60 V DC
Mode of protection	L-L
	L-G
	(L+) - (L-)
	(L+) - G
	(L-) - G
Power distribution system	1
Nominal frequency	50/60 Hz
Measured limiting voltage MLV (L-G)	1240 V
Measured limiting voltage MLV (L+) - (L-)	1230 V
Nominal discharge current I _n (L-G)	20 kA
Nominal discharge current I _n (L+) - (L-)	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

UNSPSC

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

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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


Approvals submitted

Approval details

UL Recognized 


cUL Recognized 

KEMA-KEUR 

VDE Zeichengenehmigung 

EAC

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Accessories

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Bridge

Wiring bridge - MPB F600X16/ 1GS - 2818355



Wiring bridge flexible, diameter: 16 mm², with a fork-type cable lug on one side, length: 600 mm

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Wiring bridge flexible, diameter: 16 mm², with a fork-type cable lug on one side, length: 600 mm

Wiring bridge - MPB F200X16/ 1GS - 2818339



Wiring bridge flexible, diameter 16 mm², with a fork-type cable lug on one side, length: 200 mm

Wiring bridge - MPB 18/1-10/1.0.0 - 2830443



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 10 pitches with contact sequence 1-0-0

Wiring bridge - MPB 18/4-12 - 2809296



Wiring bridge for modules with connecting pitch 17.5 mm, 4-phase, 12-pos.

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Wiring bridge - MPB 18/4- 8 - 2809283



Wiring bridge for modules with connecting pitch 17.5 mm, 4-phase, 8-pos.

Wiring bridge - MPB 18/3- 6 - 2809241



Wiring bridge for modules with connecting pitch 17.5 mm, 3-phase, 6-pos.

Wiring bridge - MPB 18/1-57 - 2809238



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 57-pos.

Wiring bridge - MPB 18/1-12 - 2748593



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 12-pos.

Wiring bridge - MPB 18/1- 9 - 2748580



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 9-pos.

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Accessories

Wiring bridge - MPB 18/1- 8 - 2748577



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 8-pos.

Wiring bridge - MPB 18/1- 6 - 2748564



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 6-pos.

Wiring bridge - MPB 18/1- 4 - 2809225



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 4-pos.

- MPB 18/1- 3 - 2809212

Wiring bridge - MPB 18/1- 2 - 2809209



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 2-pos.

Device marking

Zack marker strip - ZBN 18:UNBEDRUCKT - 2809128



Zack marker strip, Strip, white, unlabeled, can be labeled with: Plotter, Mounting type: Snap into tall marker groove, for terminal block width: 18 mm, Lettering field: 18 x 5 mm

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Accessories

Feed-through terminal block

Feed-through terminal block - DK-BIC-35 - 2749880



Feed-through terminal block for VAL and FLT applications

Labeled device marker

Marker for terminal blocks - ZBN 18,LGS:ERDE - 2749589



Marker for terminal blocks, Strip, white, labeled, Horizontal: Grounding symbol, Mounting type: Snap into tall marker groove, for terminal block width: 18 mm, Lettering field: 18 x 5 mm

Marker for terminal blocks - ZBN 18,LGS:L1-N,ERDE - 2749576



Marker for terminal blocks, Strip, white, labeled, Horizontal: L1, L2, L3, N, GND, Mounting type: Snap into tall marker groove, for terminal block width: 18 mm, Lettering field: 18 x 5 mm

Marker pen

Marker pen - B-STIFT - 1051993



Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm

Spare parts

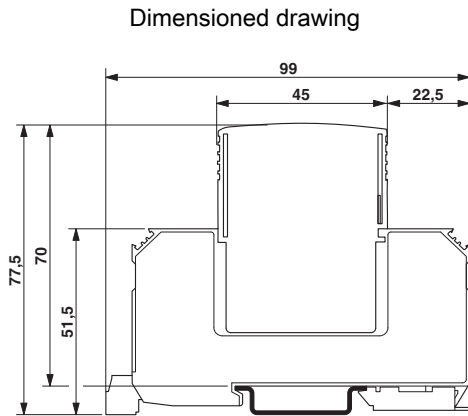
Type 1/2 surge protection plug - VAL-MS-T1/T2 48/12.5 ST - 2801242



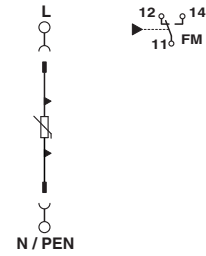
L-N replacement plug for VAL-MS-T1/T2 48/12.5 plug-in lightning/surge arrester.

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Drawings



Circuit diagram



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

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