Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 48/12.5/O - 2906281

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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), with remote indication contact.

Your advantages

- Plug-in direction parallel to the conductor axis
- Versions with and without floating remote indication contact
- Rack-mount 2U panel applications
- Accepts Type 1 and Type 2 VAL-MS plugs.
- Coding when protective plug is inserted for the first time
- DIN rail mounting

Key Commercial Data

Packing unit	12 pc
Minimum order quantity	12 pc
GTIN	4 055626 063065
GTIN	4055626063065
Weight per Piece (excluding packing)	149.000 g
Custom tariff number	85363090
Country of origin	Germany
Note	Made to Order (non-returnable)

Technical data

Dimensions

Height	77.1 mm
Width	17.5 mm
Depth	89.2 mm
Horizontal pitch	1 Div.

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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	max. 2000 m
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	25g (Half-sine / 11 ms / 3x ±X, ±Y, ±Z)
Vibration (operation)	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	DC
Mode of protection	L-PEN
	(L+) - (L-)
	(L-) - PE
	(L+) - PE
Mounting type	DIN rail: 35 mm
Color	black
Housing material	PBT
Degree of pollution	2
Flammability rating according to UL 94	V0
Type	DIN rail module, two-section, divisible
Number of positions	1
Surge protection fault message	Optical, remote indicator contact

Protective circuit

Nominal voltage U_N	-48 V DC (RRH)
	60 V DC
Nominal frequency f_N	50 Hz (60 Hz)
Maximum continuous voltage U_C	75 V AC
	100 V DC
Maximum continuous operating voltage U_C (L-PEN)	75 V AC
	100 V DC
	75 V AC
	100 V DC
Rated load current I_L	80 A
	80 A
Residual current I_{PE}	≤ 0.6 mA
	≤ 0.6 mA

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Protective circuit

Standby power consumption P_C	≤ 45 mVA
	≤ 45 mVA
Nominal discharge current I_n (8/20) µs	12.5 kA
Maximum discharge current I_{max} (8/20) µs	30 kA
	30 kA
Maximum discharge current I_{max} (8/20) µs (L-N)	30 kA
Maximum discharge current I_{max} (8/20) µs (L-PEN)	30 kA
Impulse discharge current (10/350) µs, charge	6.25 As
Impulse discharge current (10/350) µs, specific energy	39 kJ/Ω
Impulse discharge current (10/350) µs, peak value I_{imp}	12.5 kA
	12.5 kA
Impulse discharge current (10/350) µs (L-N), charge	6.25 As
	6.25 As
Impulse discharge current (10/350) µs (L-N), specific energy	39 kJ/Ω
	39 kJ/Ω
Impulse discharge current (10/350) µs (L-N), peak current value I_{imp}	12.5 kA
	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)
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 V-type through wiring	80 A AC (gG - 16 mm²)
	80 A AC (gG - 16 mm²)
Max. backup fuse with branch wiring	160 A AC (gG)
	160 A AC (gG)

Connection data

Connection method	Screw connection
Screw thread	M5
Tightening torque	4.5 Nm

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Technical data

Connection data

	30 lb_f-in. (UL)
Stripping length	16 mm
Conductor cross section flexible	1.5 mm² ... 25 mm²
Conductor cross section solid	1.5 mm² ... 35 mm²
Conductor cross section AWG	15 ... 2
	10 ... 2 (UL)

UL specifications

SPD Type	1CA
Maximum continuous operating voltage MCOV	75 V AC
Maximum continuous operating voltage MCOV (L-N)	75 V AC
Maximum continuous operating voltage MCOV (L-G)	75 V AC
Maximum continuous operating voltage MCOV (L+) - (L-)	100 V DC
Maximum continuous operating voltage MCOV (L+/L-) - G	100 V DC
Nominal voltage	60 V DC
Mode of protection	L-L
	L-G
	(L+) - (L-)
	(L+) - G
	(L-) - G
Power distribution system	Single phase
Voltage protection rating VPR	400 V
Voltage protection rating VPR (L-N)	400 V
Measured limiting voltage MLV	1240 V
Measured limiting voltage MLV (L-G)	1240 V
Measured limiting voltage MLV (L+) - (L-)	1230 V
Nominal discharge current I_n	20 kA
Nominal discharge current I_n (L-G)	20 kA
Nominal discharge current I_n (L+) - (L-)	20 kA

UL connection data

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

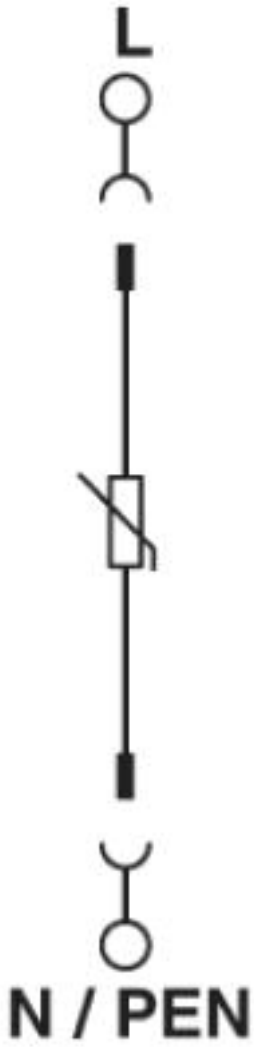
Environmental Product Compliance

REACh SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab “Downloads”, Category “Manufacturer's declaration”

Drawings

Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 48/12.5/O - 2906281

Circuit diagram



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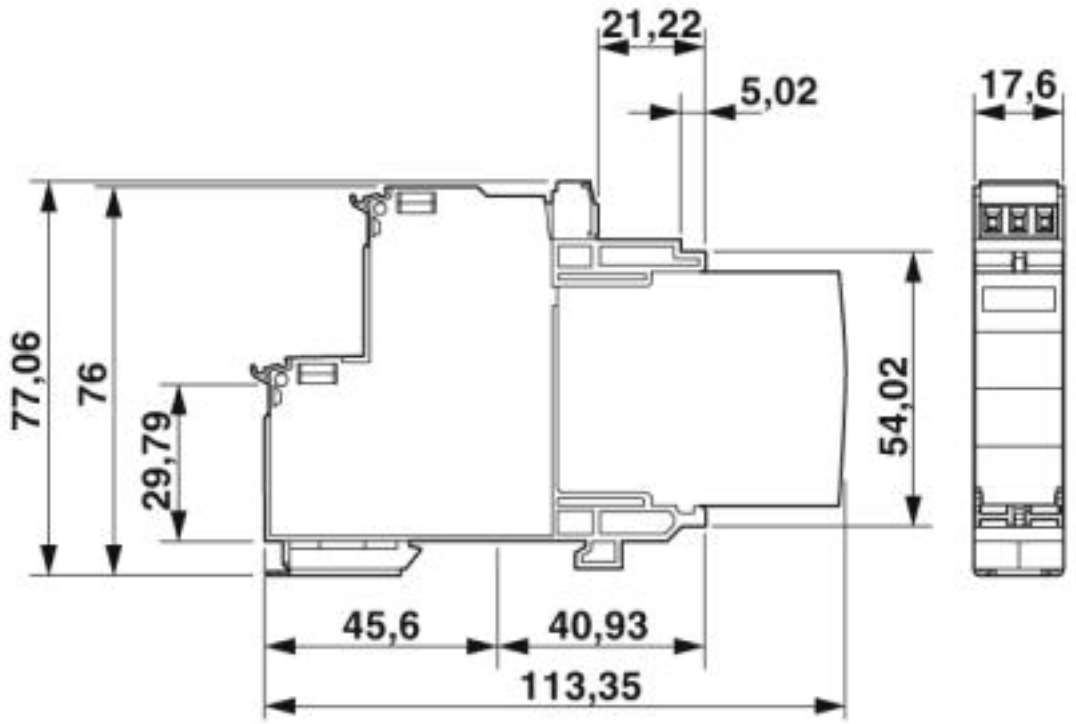
Dimensional drawing



FM version shown

Classifications

eCl@ss

eCl@ss 4.0	27130800
eCl@ss 4.1	27130800
eCl@ss 5.0	27130800
eCl@ss 5.1	27130800
eCl@ss 6.0	27130800
eCl@ss 7.0	27130802
eCl@ss 8.0	27130802
eCl@ss 9.0	27130802

ETIM

ETIM 5.0	EC000381
ETIM 6.0	EC000381
ETIM 7.0	EC000381

UNSPSC

UNSPSC 13.2	39121620
UNSPSC 18.0	39121620
UNSPSC 19.0	39121620

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Classifications

UNSPSC

UNSPSC 20.0	39121620
UNSPSC 21.0	39121620

Approvals

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UL Recognized / cUL Recognized / 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
cULus Recognized		

Accessories

Accessories

Bridge

Wiring bridge - MPB 18/1- 2 - 2809209

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

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Accessories

Wiring bridge - MPB 18/1- 3 - 2809212

Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 3-pos.

Wiring bridge - MPB 18/1- 4 - 2809225

Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 4-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- 7 BU - 2856278

Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 7-pos., color: Blue

Wiring bridge - MPB 18/1- 8 BU - 2858470

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

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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- 9 - 2748580

Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 9-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 18/1-57 - 2809238

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

Wiring bridge - MPB 18/3- 6 - 2809241

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

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Accessories

Wiring bridge - MPB 18/4- 8 - 2809283

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

Wiring bridge - MPB 18/4-12 - 2809296

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

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 F400X16/ 1GS - 2818342

Wiring bridge flexible, diameter 16 mm², with a fork-type cable lug on one side, length: 400 mm

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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Accessories

Wiring bridge - MPB F600X16/ 1GS - 2818355

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

Wiring bridge - MPB F400X16/ 1GS - 2818342

Wiring bridge flexible, diameter 16 mm², with a fork-type cable lug on one side, length: 400 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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Accessories

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.

Wiring bridge - MPB 18/1- 3 - 2809212

Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 3-pos.

Wiring bridge - MPB 18/1- 2 - 2809209

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

Device marking

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Accessories

Zack marker strip - ZBN 18:UNBEDRUCKT - 2809128

Zack marker strip, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snap into tall marker groove, for terminal block width: 18 mm, lettering field size: 18 x 5 mm, Number of individual labels: 5

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 size: 18 x 5 mm, Number of individual labels: 5

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 size: 18 x 5 mm, Number of individual labels: 5

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

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Accessories

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 lighting/surge arrester.

Type 2 surge protection base element - VAL-MS-T1/T2 BE/O-FM - 2905652

Base element for type 1/2 arresters from the VALVETRAB MS T1/T2 product range, with remote indication contact.
Version: 1-channel