

# Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 175/12.5/3+0 - 2800673

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Universal varistor-based plug-in lightning/surge arrester for 3-phase power supply networks with common N and PE (4-conductor system: L1, L2, L3, PEN).

The figure shows the 335 V version

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



## Key commercial data

Packing unit	1 pc
GTIN	 4 046356 624329
Weight per Piece (excluding packing)	455.2 g
Custom tariff number	85363030
Country of origin	Germany
Note	Made to Order (non-returnable)

## Technical data

### Dimensions

Height	90 mm
Width	53.4 mm
Depth	77.5 mm
Horizontal pitch	3 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	≤ 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	TN-C
Number of ports	One
SPD design	Voltage-limiting type
Mode of protection	L-PEN
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

### 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-C)
Nominal frequency $f_N$	50 Hz (60 Hz)
Maximum continuous operating voltage $U_C$ (L-PEN)	175 V AC
Rated load current $I_L$	80 A
Residual current $I_{PE}$	≤ 2400 $\mu$ A
Standby power consumption $P_C$	≤ 420 mVA
Nominal discharge current $I_n$ (8/20) $\mu$ s (L-PEN)	12.5 kA
Maximum discharge current $I_{max}$ (8/20) $\mu$ s (L-PEN)	50 kA
Impulse discharge current (10/350) $\mu$ s (L-PEN), charge	6.25 As
Impulse discharge current (10/350) $\mu$ s (L-PEN), specific energy	39 kJ/ $\Omega$

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## Technical data

### Protective circuit

Impulse discharge current (10/350) $\mu\text{s}$ (L-PEN), peak current value $I_{\text{imp}}$	12.5 kA
Total discharge current $I_{\text{Total}}$ (8/20) $\mu\text{s}$	150 kA
Total discharge current $I_{\text{Total}}$ (10/350) $\mu\text{s}$	37.5 kA
Short-circuit current rating $I_{\text{SCCR}}$	25 kA
Voltage protection level $U_p$ (L-PEN)	$\leq 0.8$ kV
Residual voltage $U_{\text{res}}$ (L-PEN)	$\leq 0.8$ kV (at $I_n$ )
	$\leq 0.7$ kV (at 10 kA)
	$\leq 0.6$ kV (at 5 kA)
	$\leq 0.55$ kV (at 3 kA)
TOV behavior at $U_T$ (L-PEN)	208 V AC (5 s / withstand mode)
Response time $t_A$ (L-PEN)	$\leq 25$ 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 <sup>2</sup> )

### Connection data

Connection method	Screw connection
Conductor cross section stranded min.	1.5 mm <sup>2</sup>
Conductor cross section stranded max.	25 mm <sup>2</sup>
Conductor cross section solid min.	1.5 mm <sup>2</sup>
Conductor cross section solid max.	35 mm <sup>2</sup>
AWG conductor cross section	15 ... 2
	10 ... 2 (UL)
Screw thread	M5
Tightening torque	4.5 Nm
	30 lb <sub>f</sub> -in. (UL)
Stripping length	16 mm

### UL specifications

UL class	SPD type 4CA
Maximum continuous operating voltage MCOV (L-L)	350 V AC
Maximum continuous operating voltage MCOV (L-G)	175 V AC
Nom. voltage	208/120 V AC
Mode of protection	L-L
	L-G
Power distribution system	3Y
Nominal frequency	50/60 Hz
Measured limiting voltage MLV (L-L)	2800 V
Measured limiting voltage MLV (L-G)	2200 V
Nominal discharge current $I_n$ (L-L)	20 kA

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## Technical data

### UL specifications

Nominal discharge current I <sub>n</sub> (L-G)	20 kA
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## 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

## Approvals

### Approvals

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#### Approvals

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

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#### Ex Approvals

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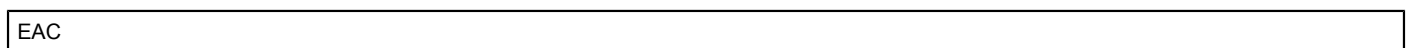
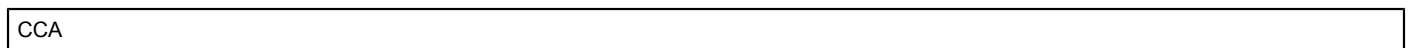
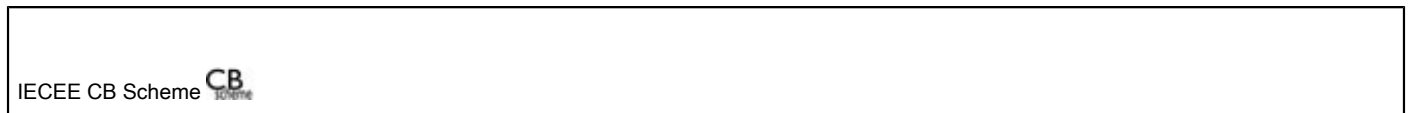
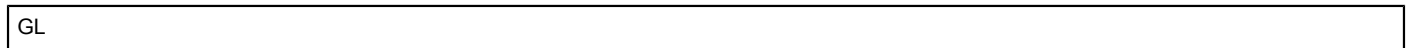
#### Approvals submitted

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#### Approval details

# Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 175/12.5/3+0 - 2800673

## Approvals



## Accessories

### Accessories

#### Bridge

Wiring bridge - MPB F600X16/ 1GS - 2818355



Wiring bridge flexible, diameter: 16 mm<sup>2</sup>, 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 mm<sup>2</sup>, with a fork-type cable lug on one side, length: 600 mm

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Wiring bridge - MPB F200X16/ 1GS - 2818339



Wiring bridge flexible, diameter 16 mm<sup>2</sup>, with a fork-type cable lug on one side, length: 200 mm

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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

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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.

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## Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 175/12.5/3+0 - 2800673

### Accessories

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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Wiring bridge - MPB 18/1-57 - 2809238



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

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Wiring bridge - MPB 18/1-12 - 2748593



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

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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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Wiring bridge - MPB 18/1- 8 - 2748577



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

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## Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 175/12.5/3+0 - 2800673

### Accessories

Wiring bridge - MPB 18/1- 6 - 2748564



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

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Wiring bridge - MPB 18/1- 4 - 2809225



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

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- MPB 18/1- 3 - 2809212

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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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### 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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### Feed-through terminal block

## Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 175/12.5/3+0 - 2800673

### Accessories

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



Feed-through terminal block for VAL and FLT applications

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### 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

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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

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### 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

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### Spare parts

Type 1/2 surge protection plug - VAL-MS-T1/T2 175/12.5 ST - 2800676



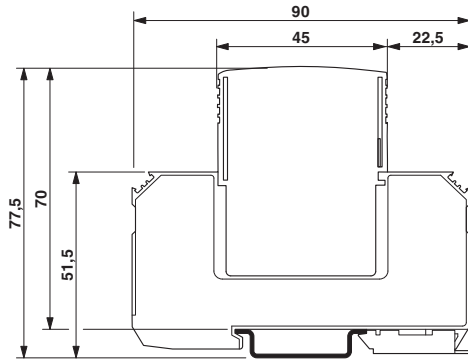
L-N replacement plug for VAL-MS-T1/T2 175/12.5 plug-in lightning/surge arrester.

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# Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 175/12.5/3+0 - 2800673

## Drawings

Dimensioned drawing



Circuit diagram

