

Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 335/12.5/3+1 - 2800184

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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.

Why buy this product

- 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
- Pluggable
- Thermal disconnect device for each individual plug
- Mechanical coding of all slots



Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 518567
Weight per Piece (excluding packing)	638.0 g
Country of origin	Germany

Technical data

Dimensions

Height	90 mm
Width	71.2 mm
Depth	77.5 mm
Horizontal pitch	4 Div.

Ambient conditions

Degree of protection	IP20 (only when all terminal points are used)
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Technical data

Ambient conditions

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

IEC test classification	I / II
	T1 / T2
	T1
EN type	T1 / T2
	T1
IEC power supply system	TT
	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

Protective circuit

Nominal voltage U_N	240/415 V AC (TN-S)
	240/415 V AC (TT)
Nominal frequency f_N	50 Hz (60 Hz)
Maximum continuous operating voltage U_C (L-N)	335 V AC
Maximum continuous operating voltage U_C (L-PE)	335 V AC
Maximum continuous voltage U_C (N-PE)	264 V AC
Rated load current I_L	80 A
Residual current I_{PE}	≤ 5 μA
Standby power consumption P_C	≤ 810 mVA
Nominal discharge current I_n (8/20) μs (L-N)	12.5 kA

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Protective circuit

Nominal discharge current I_n (8/20) μ s (L-PE)	12.5 kA
Nominal discharge current I_n (8/20) μ s (N-PE)	50 kA
Maximum discharge current I_{max} (8/20) μ s	50 kA
Impulse discharge current (10/350) μ s (L-N), charge	6.25 As
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-PE), charge	6.25 As
Impulse discharge current (10/350) μ s (L-PE), specific energy	39 kJ/ Ω
Impulse discharge current (10/350) μ s (L-PE), peak current value I_{imp}	12.5 kA
Impulse discharge current (10/350) μ s (N-PE), charge	25 As
Impulse discharge current (10/350) μ s (N-PE), specific energy	625 kJ/ Ω
Impulse discharge current (10/350) μ s (N-PE), peak current value I_{imp}	50 kA
Total discharge current I_{Total} (8/20) μ s	50 kA
Total discharge current I_{Total} (10/350) μ s	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)	≤ 1.2 kV ≤ 1.6 kV (30 kA - 8/20 μ s)
Voltage protection level U_p (L-PE)	≤ 2 kV
Voltage protection level U_p (N-PE)	≤ 1.7 kV
Residual voltage U_{res} (L-N)	≤ 1.2 kV (at I_n) ≤ 1.1 kV (at 10 kA) ≤ 1 kV (at 5 kA) ≤ 0.9 kV (at 3 kA)
Residual voltage U_{res} (L-PE)	≤ 2 kV (at I_n) ≤ 1.5 kV (at 10 kA) ≤ 1.2 kV (at 5 kA) ≤ 1.1 kV (at 3 kA)
Residual voltage U_{res} (N-PE)	≤ 0.6 kV (at I_n) ≤ 0.5 kV (at 10 kA) ≤ 0.5 kV (at 5 kA) ≤ 0.4 kV (at 3 kA)
Front of wave sparkover voltage at 6 kV (1.2/50) μ s (L-PE)	≤ 1.7 kV
Front of wave sparkover voltage at 6 kV (1.2/50) μ s (N-PE)	≤ 1.7 kV
TOV behavior at U_T (L-N)	415 V AC (5 s / withstand mode) 457 V AC (120 min / safe failure mode)
TOV behavior at U_T (N-PE)	1200 V AC (200 ms / withstand mode)
Response time t_A (L-N)	≤ 25 ns

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Protective circuit

Response time t_A (L-PE)	≤ 100 ns
Response time t_A (N-PE)	≤ 100 ns
Max. backup fuse with branch wiring	160 A (gG)
Max. backup fuse with V-type through wiring	80 A (gG - 16 mm ²)

Connection data

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

UL specifications

SPD Type	4CA
Maximum continuous operating voltage MCOV (L-L)	670 V AC
Maximum continuous operating voltage MCOV (L-N)	335 V AC
Maximum continuous operating voltage MCOV (L-G)	335 V AC
Maximum continuous operating voltage MCOV (N-G)	264 V AC
Nom. voltage	415/240 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)	3570 V
Measured limiting voltage MLV (L-N)	2630 V
Measured limiting voltage MLV (L-G)	3600 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

UL connection data

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

Standards and Regulations

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Technical data

Standards and Regulations

Standards/regulations	IEC 61643-11 2011
	EN 61643-11 2012

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

Ex Approvals

Approvals submitted

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Approval details


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Accessories

Accessories

Bridge

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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 F600X16/ 1GS - 2818355



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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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: Plotter, Mounting type: Snap into tall marker groove, for terminal block width: 18 mm, Lettering field: 18 x 5 mm

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 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 335/12.5 ST - 2800190



L-N replacement plug for VAL-MS-T1/T2 335/12.5 plug-in lightning/surge arrester.

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Accessories

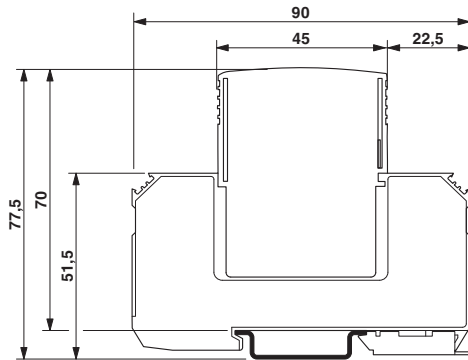
Type 1/2 surge protection plug - F-MS-T1/T2 50 ST - 2800191



N-PE replacement plug for VAL-MS-T1/T2 335/12.5 plug-in lightning/surge arrester.

Drawings

Dimensional drawing



Circuit diagram

