

Type 1 surge protection device - VAL-MS-T1/T2 335/12.5/1+1-FM - 2800186

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Universal varistor-based plug-in lightning arrester for single-phase power supply networks with separate N and PE (3-conductor system: L1, N, PE), for Lightning Protection Levels III and IV, with remote indication contact.

Product Features

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



Key commercial data

package_quantity	1
GTIN	4046356518574

Technical data

Dimensions

Height	99 mm
Width	35.6 mm
Depth	77.5 mm
Pitch unit	2 Div.

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 80 °C

General

IEC power supply system	TT
IEC power supply system	TN-C
IEC power supply system	TN-S
Housing material	PBT / PA
Inflammability class according to UL 94	V0

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Technical data

General

Color	black
Standards for air and creepage distances	DIN EN 60664-1
Standards for air and creepage distances	EN 61643-11
Mounting type	DIN rail: 35 mm
Design	DIN rail module, two-section, divisible
Number of positions	2
Message: Surge protection fault	Optical, remote indicator contact
Direction of action	1L-N & N-PE

Protective circuit

IEC test classification	I, II
IEC test classification	T1, T2
EN type	T1, T2
Nominal voltage U_N	240 V AC (230 V AC ... 240 V AC)
Maximum continuous operating voltage U_C	335 V AC
Maximum continuous operating voltage U_C (L-N)	335 V AC
Maximum continuous operating voltage U_C (N-PE)	264 V AC
U_T (TOV-proof)	415 V AC (5 s / L-N)
U_T (TOV-proof)	1200 V AC (200 ms / N-PE)
Nominal frequency f_N	50 Hz (60 Hz)
Rated load current I_L	80 A (with serial 16mm ² through wiring)
Residual current I_{PE}	≤ 5 μA (Per phase)
Standby power consumption P_c	≤ 268 mVA
Max. discharge current I_{max} (8/20) μs maximum (L-N)	50 kA
Max. discharge current I_{max} (8/20) μs maximum (N-PE)	50 kA
Nominal discharge current I_n (8/20) μs (L-N)	12.5 kA
Nominal discharge current I_n (8/20) μs (N-PE)	50 kA
Impulse discharge current (10/350) μs, charge	12.5 As
Impulse discharge current (10/350) μs, specific energy	160.00 kJ/Ω
Impulse discharge current (10/350) μs, peak value I_{imp}	25 kA
Impulse discharge current (10/350) μs, charge	25 As
Impulse discharge current (10/350) μs, specific energy	625.00 kJ/Ω
Impulse discharge current (10/350) μs, peak value I_{imp}	50 kA (N-PE)
Impulse discharge current (10/350) μs, charge	6.25 As
Impulse discharge current (10/350) μs, specific energy	39.00 kJ/Ω
Impulse discharge current (10/350) μs, peak value I_{imp}	12.5 kA (L-N)
Front of wave sparkover voltage at 6 kV (1.2/50) μs (N-PE)	≤ 1.7 kV
Voltage protection level U_P (L-N)	≤ 1.2 kV
Voltage protection level U_P (L-N)	≤ 1.6 kV (30 kA - 8/20μs)
Voltage protection level U_P (L-PE)	≤ 2 kV

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Protective circuit

Voltage protection level U_p (N-PE)	≤ 1.7 kV
Residual voltage (L-N)	≤ 1.1 kV (at 10 kA)
Residual voltage (L-N)	≤ 1 kV (at 5 kA)
Residual voltage (L-N)	≤ 0.9 kV (at 3 kA)
Residual voltage (L-N)	≤ 1.2 kV (at I_n)
Residual voltage (L-PE)	≤ 1.5 kV (at 10 kA)
Residual voltage (L-PE)	≤ 1.2 kV (at 5 kA)
Residual voltage (L-PE)	≤ 1.1 kV (at 3 kA)
Residual voltage (L-PE)	≤ 2 kV (at I_n)
Residual voltage (N-PE)	≤ 0.5 kV (at 10 kA)
Residual voltage (N-PE)	≤ 0.5 kV (at 5 kA)
Residual voltage (N-PE)	≤ 0.4 kV (at 3 kA)
Residual voltage (N-PE)	≤ 0.6 kV (at I_n)
Response time (L-N)	≤ 25 ns
Response time (L-PE)	≤ 100 ns
Response time (N-PE)	≤ 100 ns
Max. required backup fuse with branch wiring	160 A (gL/gG)
Max. required backup fuse with V-type through wiring	80 A (gL/gG / with 16 mm ²)
Short-circuit resistance I_p with max. backup fuse (effective)	25 kA _{rms}
Follow current quenching capacity I_f (N-PE)	100 A (264 V AC)

Connection, protective circuit

Connection method	Screw connection
Connection type IN	Biconnect screw terminal block
Connection type OUT	Biconnect screw terminal block
Connection method	Biconnect terminal block
Screw thread	M5
Tightening torque	4.5 Nm
Stripping length	16 mm
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
Conductor cross section AWG/kcmil min.	15
Conductor cross section AWG/kcmil max	2

Remote indicator contact

Connection name	Remote fault indicator contact
Switching function	PDT, 1-pos.
Connection method	Screw connection
Screw thread	M2

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Remote indicator contact

Tightening torque	0.25 Nm
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
Conductor cross section AWG/kcmil min.	28
Conductor cross section AWG/kcmil max	16
Maximum operating voltage U_{max.} AC	250 V AC
Maximum operating voltage U_{max.} DC	30 V DC
Max. operating current I_{max}	1.5 A AC (250 V AC)
Max. operating current I_{max}	1.5 A DC (30 V DC)

Standards and Regulations

Standards/regulations	IEC 61643-1 2005
Standards/regulations	EN 61643-11/A11 2007

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

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

Approval details

KEMA-KEUR 

ÖVE 

CCA

IECEE CB Scheme 

GL



UL Recognized 

cUL Recognized 

cULus Recognized 

accessories

Labeled device marker

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accessories

ZBN 18,LGS:ERDE - 2749589



ZBN 18,LGS:L1-N,ERDE - 2749576



Device marking

ZBN 18:UNBEDRUCKT - 2809128



Marker pen

B-STIFT - 1051993



Feed-through terminal block

DK-BIC-35 - 2749880



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accessories

accessories

ZBN 18:SO/CMS - 0800763



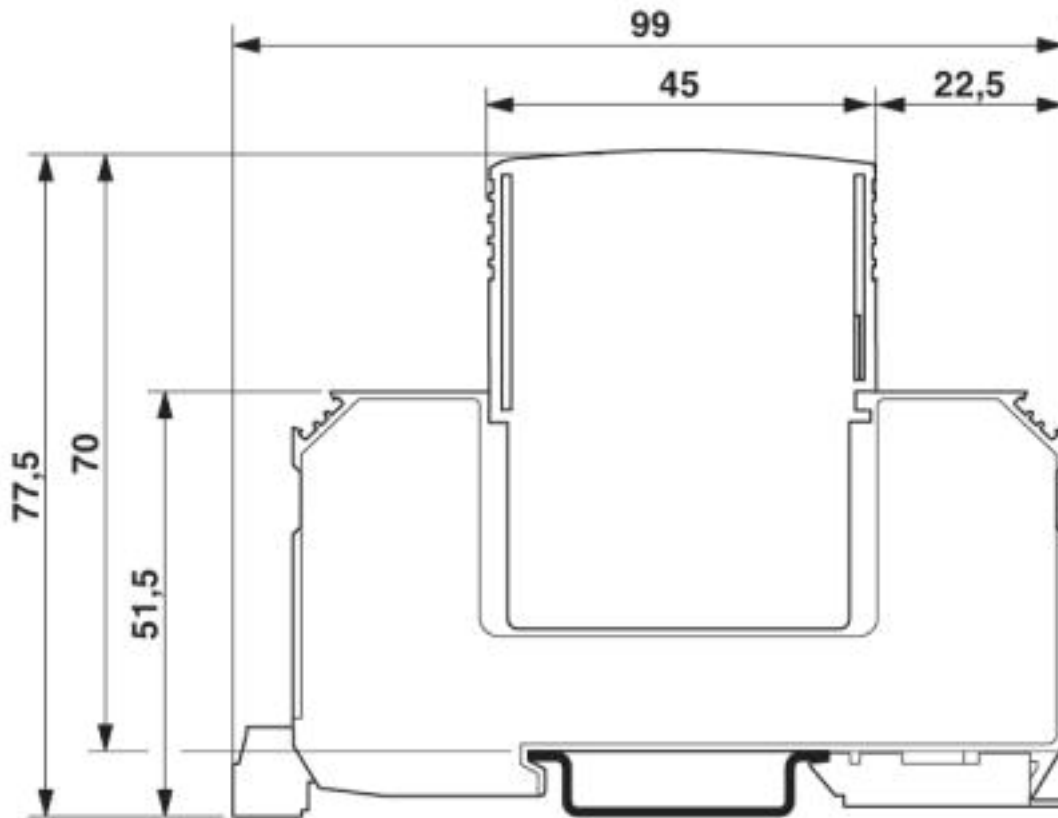
ZBN 18,LGS:L1-N,ERDE - 2830469



Drawings

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Dimensioned drawing



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Circuit diagram

