

**VAL-MS-T1/T2 335/12.5/3+1-FM**

Order No.: 2800183

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Universal varistor-based plug-in lightning 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, with remote indication contact.



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**Commercial data**

EAN	4046356518550
Pack	1 pcs.
Customs tariff	85363030
Weight/Piece	0.6809 KG
Product key	07004
country of origin	DE
Catalog page information	Page 196 (NTK-2010)

**Technical data****Standards**

Housing material	PBT / PA
Inflammability class acc. to UL 94	V0
Color	black
Standards for air and creepage distances	DIN EN 60664-1 EN 61643-11
Degree of protection	IP20
Mounting type	DIN rail 35 mm

Design	DIN rail module, two-section, divisible
Number of positions	4
Ambient temperature (operation)	-40 °C ... 80 °C
Message surge protection faulty	Optical, remote indicator contact
Direction of action	3L-N & N-PE
Width	71.20 mm
Height	77.50 mm
Length	99.00 mm
Pitch unit	4 Div.
<b>Protective circuit</b>	
IEC category	I, II
	T1, T2
EN type	T1, T2
Lightning protection class	III-IV /50 kA (TT, TN-C-S)
Nominal voltage $U_N$	240 V AC (230/400 V AC ... 240/415 V AC)
Arrester rated voltage $U_c$	335 V AC
Arrester rated voltage $U_c$ (L-N)	335 V AC
Arrester rated voltage $U_c$ (N-PE)	264 V AC
$U_T$ (TOV-proof)	415 V AC (5 s / L-N)
	1200 V AC (200 ms / N-PE)
Nominal frequency $f_N$	50 Hz (60 Hz)
Rated load current	80 A (with serial 16mm <sup>2</sup> through wiring)
Discharge current to PE at $U_c$	≤ 5 μA (Per phase)
Max. discharge surge current $I_{max}$ (8/20) μs maximum (L-N)	50 kA
Max. discharge surge current $I_{max}$ (8/20) μs maximum (N-PE)	50 kA
Nominal discharge surge current $I_n$ (8/20) μs (L-N)	12.5 kA
Nominal discharge surge current $I_n$ (8/20) μs (N-PE)	50 kA
Lightning test current (10/350) μs, charge	25 As
Lightning test current (10/350) μs, specific energy	625.00 kJ/Ω
Lightning test current (10/350) μs, peak value $I_{imp}$	50 kA (N-PE)
Lightning test current (10/350) μs, charge	6.25 As
Lightning test current (10/350) μs, specific energy	39.00 kJ/Ω
Lightning test current (10/350) μs, peak value $I_{imp}$	12.5 kA (L-N)

Lightning test current (10/350) $\mu$ s, charge	25 As
Lightning test current (10/350) $\mu$ s, specific energy	625.00 kJ/ $\Omega$
Lightning test current (10/350) $\mu$ s, peak value $I_{imp}$	50 kA
Impulse operate voltage at 6 kV (1.2/50) $\mu$ s (N-PE)	$\leq 1.7$ kV
Protection level $U_p$ (L-N)	$\leq 1.2$ kV
	$\leq 1.6$ kV (30 kA - 8/20 $\mu$ s)
Protection level $U_p$ (L-PE)	$\leq 2$ kV (IEC 60364-5-534)
Protection level $U_p$ (N-PE)	$\leq 1.7$ kV
Residual voltage (L-N)	$\leq 1.1$ kV (at 10 kA)
	$\leq 1$ kV (at 5 kA)
	$\leq 0.9$ kV (at 3 kA)
	$\leq 1.2$ kV
Residual voltage (L-PE)	$\leq 1.5$ kV (at 10 kA)
	$\leq 1.2$ kV (at 5 kA)
	$\leq 1.1$ kV (at 3 kA)
	$\leq 2$ kV
Residual voltage (N-PE)	$\leq 0.5$ kV (at 10 kA)
	$\leq 0.5$ kV (at 5 kA)
	$\leq 0.4$ kV (at 3 kA)
	$\leq 0.6$ kV
Response time (L-N)	$\leq 25$ ns
Response time (L-PE)	$\leq 100$ ns
Response time (N-PE)	$\leq 100$ 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 <sup>2</sup> )
Short circuit resistance $I_{CC}$ with max. backup fuse (effective)	25 kA
Follow current quenching capacity $I_f$ (N-PE)	100 A (264 V AC)

#### Connection, protective circuit

Type of connection	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 <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>
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.
Type of connection	Screw connection
Screw thread	M2
Tightening torque	0.25 Nm
Stripping length	7 mm
Conductor cross section stranded min.	0.14 mm <sup>2</sup>
Conductor cross section stranded max.	1.5 mm <sup>2</sup>
Conductor cross section solid min.	0.14 mm <sup>2</sup>
Conductor cross section solid max.	1.5 mm <sup>2</sup>
Conductor cross section AWG/kcmil min.	28
Conductor cross section AWG/kcmil max	16
Maximum operating voltage U <sub>max.</sub> AC	250 V AC
Max. operating current I <sub>max.</sub>	1.5 A (250 V AC)
	1.5 A (30 V DC)

#### Environmental conditions

Standards/regulations	IEC 61643-1
	DIN EN 61643-11/A11

#### Certificates / Approvals



Certification

CB, CCA, KEMA, OEVE

**Accessories**

Item	Designation	Description
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**General**

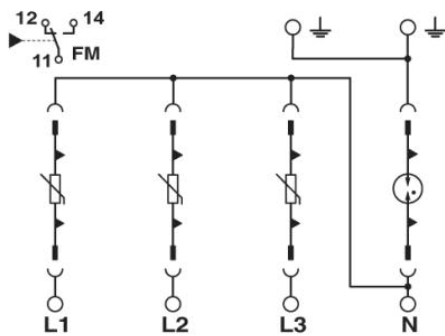
2749880	DK-BIC-35	Feed-through terminal block for VAL and FLT applications
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**Marking**

1051993	B-STIFT	Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm
2749589	ZBN 18,LGS:ERDE	Marking labels, printed horizontally, strips with 5 labels, GND (grounding symbol), color: White
2749576	ZBN 18,LGS:L1-N,ERDE	Marker labels, printed horizontally, strips with 5 labels, L1, L2, L3, N, GND, color: white
0800763	ZBN 18:SO/CMS	Marker labels, 5-section, special printing, labeled according to customer requirements (Please specify the required marking with order), for terminal width: 17.5 mm, color: White
2809128	ZBN 18:UNBEDRUCKT	Unprinted marker labels, strips with 5 labels for individual labeling with M-PEN or CMS system, for terminal block width: 17.5 mm, color: White

**Diagrams/Drawings**

Circuit diagram



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