

VAL-MS 320/3+1/FM-UD

Order No.: 2856689

The illustration shows the version VAL-MS 120/3+1/FM-UD



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Surge voltage arrester consisting of base element with remote indicator contact and ground connectors, for mounting on NS 35/7.5, nominal voltage: 320 V AC, 3 + 1 circuit



Commercial data

GTIN (EAN)	4017918877057
sales group	J022
Pack	1 pcs.
Customs tariff	85363030
Weight/Piece	0.4165 KG
Catalog page information	Page 31 (TT-2009)

Product notes

WEEE/RoHS-compliant since:
06/27/2006



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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
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	70.80 mm
Height	65.50 mm
Length	96.80 mm
Pitch unit	4 Div.

Protective circuit

IEC category	II
	T2
EN type	T2
Nominal voltage U_N	230 V AC (Max. 240/415 V AC)
	400 V AC
	230 V AC ... 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)	260 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)
Discharge current to PE at U_c	$\leq 1 \mu A$
Standby power consumption P_c	$\leq 360 \text{ mVA}$
Max. discharge surge current $I_{\max}$ (8/20) μs	40 kA
Max. discharge surge current $I_{\max}$ (8/20) μs maximum (L-N)	40 kA
Max. discharge surge current $I_{\max}$ (8/20) μs maximum (L-PE)	40 kA
Max. discharge surge current $I_{\max}$ (8/20) μs maximum (N-PE)	40 kA
Nominal discharge surge current I_n (8/20) μs (L-N)	20 kA

Nominal discharge surge current I_n (8/20) μ s (L-PE)	20 kA
Nominal discharge surge current I_n (8/20) μ s (N-PE)	20 kA
Lightning test current (10/350) μ s, peak value I_{imp}	12 kA (N-PE)
Impulse operate voltage at 6 kV (1.2/50) μ s (N-PE)	≤ 1.5 kV
Protection level U_p (L-N)	≤ 1.6 kV
Protection level U_p (L-PE)	≤ 1.75 kV
Protection level U_p (N-PE)	≤ 1.5 kV
Residual voltage (L-N)	≤ 1.6 kV (at I_n)
	≤ 1.35 kV (at 10 kA)
	≤ 1.25 kV (at 5 kA)
	≤ 1.2 kV (at 3 kA)
Residual voltage (L-PE)	≤ 1.75 kV (at I_n)
	≤ 1.45 kV (at 10 kA)
	≤ 1.35 kV (at 5 kA)
	≤ 1.25 kV (at 3 kA)
Residual voltage (N-PE)	≤ 0.4 kV (at I_n)
	≤ 0.25 kV (at 10 kA)
	≤ 0.15 kV (at 5 kA)
	≤ 0.1 kV (at 3 kA)
Clamping voltage SVR (L-N)	≤ 0.9 kV (6kV - 500 A)
Clamping voltage SVR (L-PE)	≤ 1.2 kV (6kV - 500 A)
Clamping voltage SVR (N-PE)	≤ 1 kV (6kV - 500 A)
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	125 A (gL)
Short circuit resistance I_{cc} with max. backup fuse (effective)	25 kA
Follow current quenching capacity I_f (N-PE)	100 A (260 V)

Connection, protective circuit

Type of connection	Screw connection
Connection type IN	Biconnect screw terminal block
Connection type OUT	Biconnect screw terminal block
Screw thread	M5

Tightening torque	4.5 Nm
Stripping length	14.5 mm
Conductor cross section stranded min.	0.5 mm ²
Conductor cross section stranded max.	25 mm ²
Conductor cross section solid min.	0.5 mm ²
Conductor cross section solid max.	35 mm ²
Conductor cross section AWG/kcmil min.	20
Conductor cross section AWG/kcmil max	2

Remote indicator contact

Connection name	Remote fault indicator contact
Switching function	PDT contact
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 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}	0.75 A (250 V AC)
	3 A (125 V AC)
	2 A (30 V DC)
Min. permissible switching capacity	0.12 VA (12 V, 10 mA)

Environmental conditions

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

Certificates / Approvals



Certification CUL, GOST, KEMA, UL

CUL

Nominal voltage U_N	277 V
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UL

Nominal voltage U_N	277 V
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Accessories

Item	Designation	Description
Bridges		
2809283	MPB 18/4- 8	Wiring bridge for modules with connecting pitch 17.5 mm, 4-phase, 8-pos.
2809296	MPB 18/4-12	Wiring bridge for modules with connecting pitch 17.5 mm, 4-phase, 12-pos.

General

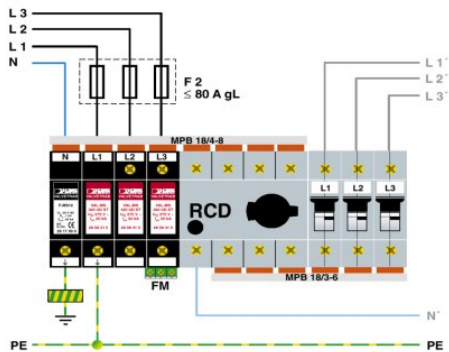
2749880	DK-BIC-35	Feed-through terminal block for VAL and FLT applications
2858315	VAL-MS 320-UD ST	Surge protection connector type 2 with high-capacity varistor for VAL-MS base element, thermal monitoring, visual fault warning. Design: 320 V AC

Marking

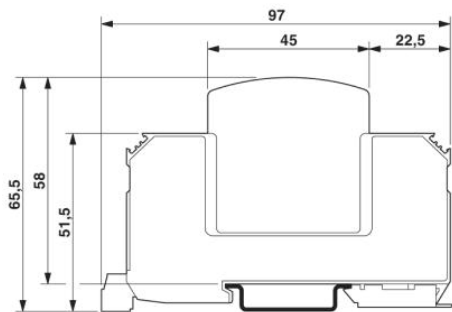
1051993	B-STIFT	Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm
2749589	ZBN 18,LGS:ERDE	Marking labels, printed horizontally, strips with 5 labels, GND (grounding symbol), color: White
2749576	ZBN 18,LGS:L1-N,ERDE	Marker labels, printed horizontally, 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

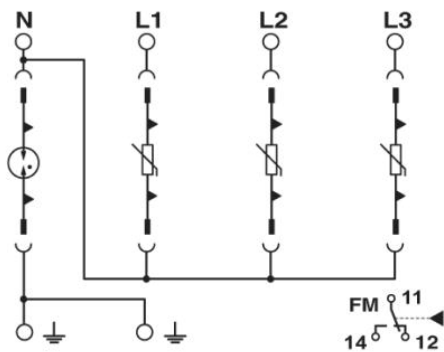
Application drawing



Dimensioned drawing



Circuit diagram



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