


VAL-MS 230/3+1 FM

Order No.: 2838199

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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: 230 V AC, 3 + 1 circuit



Commercial data	
GTIN (EAN)	 4 017918 172800
sales group	J022
Pack	1 pcs.
Customs tariff	85363030
Catalog page information	Page 30 (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 fault	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 (400 V AC)
	400 V AC
	230 V AC ... 415 V AC
Arrester rated voltage U_C	275 V AC
Arrester rated voltage U_C (L-N)	275 V AC
Arrester rated voltage U_C (N-PE)	260 V AC
U_T (TOV-proof)	335 V AC (5 s / L-N)
	1200 V AC (200 ms / N-PE)
Nominal frequency f_N	50 Hz (60 Hz)
Ground conductor current I_{PE}	$\leq 1 \mu A$
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) μs (L-PE)	20 kA
Nominal discharge surge current I_n (8/20) μs (N-PE)	20 kA
Lightning test current (10/350) μs , peak value I_{imp}	12 kA (N-PE)
Impulse operate voltage at 6 kV (1.2/50) μs (N-PE)	≤ 1.5 kV
Protection level U_p (L-N)	≤ 1.35 kV
Protection level U_p (L-PE)	≤ 1.6 kV
Protection level U_p (N-PE)	≤ 1.5 kV
Residual voltage (L-N)	≤ 1.35 kV (at I_n)
	≤ 1.2 kV (at 10 kA)
	≤ 1.1 kV (at 5 kA)
	≤ 0.95 kV (at 3 kA)
Residual voltage (L-PE)	≤ 1.6 kV (at I_n)
	≤ 1.35 kV (at 10 kA)
	≤ 1.2 kV (at 5 kA)
	≤ 1 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_p 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 AC (250 V AC) 3 A AC (125 V AC) 2 A DC (30 V DC)
Min. permissible switching capacity	0.12 VA (12 V, 10 mA)

Standards

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



Certification

CB, CCA, CUL, GL, GOST, KEMA, OEVE, UL

Accessories

Item	Designation	Description
Bridges		
2809209	MPB 18/1- 2	Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 2-pos.
2809212	MPB 18/1- 3	Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 3-pos.
2809225	MPB 18/1- 4	Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 4-pos.
2748564	MPB 18/1- 6	Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 6-pos.
2748577	MPB 18/1- 8	Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 8-pos.
2748580	MPB 18/1- 9	Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 9-pos.
2748593	MPB 18/1-12	Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 12-pos.
2809238	MPB 18/1-57	Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 57-pos.
2809283	MPB 18/4- 8	Wiring bridge for modules with connecting pitch 17.5 mm, 4-phase, 8-pos.
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.
2809296	MPB 18/4-12	Wiring bridge for modules with connecting pitch 17.5 mm, 4-phase, 12-pos.
2818339	MPB F200X16/ 1GS	Wiring bridge flexible, diameter 16 mm ² , with a fork-type cable lug on one side, length: 200 mm
2818339	MPB F200X16/ 1GS	Wiring bridge flexible, diameter 16 mm ² , with a fork-type cable lug on one side, length: 200 mm
2818342	MPB F400X16/ 1GS	Wiring bridge flexible, diameter 16 mm ² , with a fork-type cable lug on one side, length: 400 mm
2818342	MPB F400X16/ 1GS	Wiring bridge flexible, diameter 16 mm ² , with a fork-type cable lug on one side, length: 400 mm
2818355	MPB F600X16/ 1GS	Wiring bridge flexible, diameter: 16 mm ² , with a fork-type cable lug on one side, length: 600 mm
2818355	MPB F600X16/ 1GS	Wiring bridge flexible, diameter: 16 mm ² , with a fork-type cable lug on one side, length: 600 mm

General

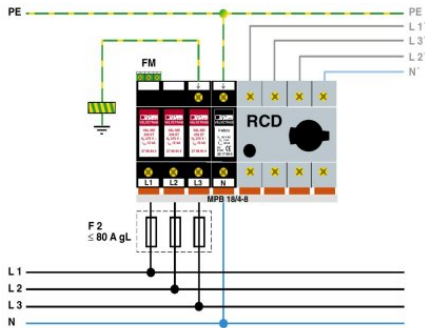
2749880	DK-BIC-35	Feed-through terminal block for VAL and FLT applications
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Marking

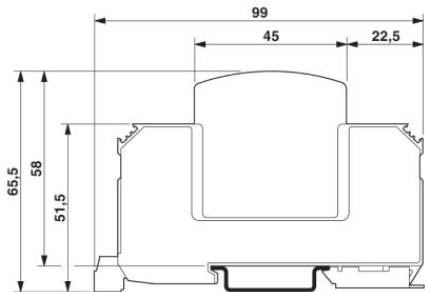
1051993	B-STIFT	Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm
2749589	ZBN 18,LGS:ERDE	Marking labels, printed horizontally, strips with 5 labels, GND (grounding symbol), color: White
2749576	ZBN 18,LGS:L1-N,ERDE	Marker labels, printed horizontally,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

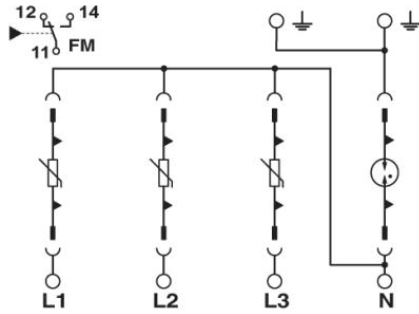
Application drawing



Dimensioned drawing



Circuit diagram



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