

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)	4017918172800
sales group	J022
Pack	1 pcs.
Customs tariff	85363030
Weight/Piece	0.4055 KG
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 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	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)
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)	≤ 1.35 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_{cc} with max. backup fuse (effective)	25 kA
Follow current quenching capacity I_f (N-PE)	100 A (260 V)

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

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

CUL

Nominal voltage U _N	230 V
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UL

Nominal voltage U _N	230 V
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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

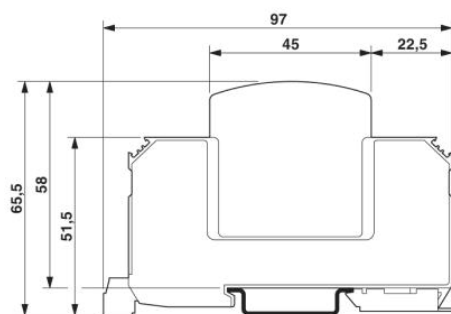
General

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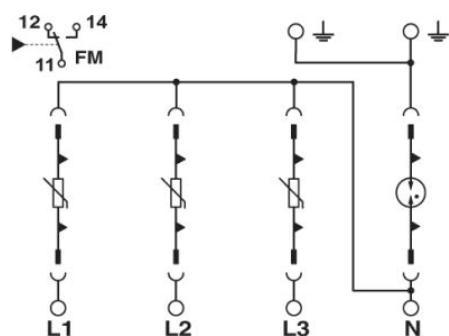
Marking

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

Diagrams/Drawings



Circuit diagram



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