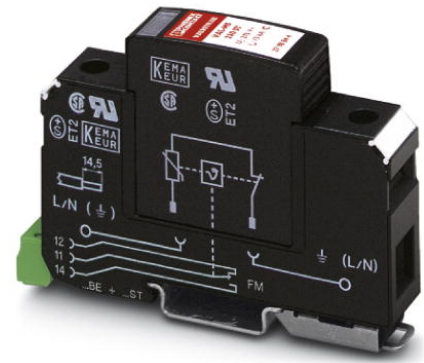


# VAL-MS 230/FM

Order No.: 2839130



<http://eshop.phoenixcontact.de/phoenix/treeViewClick.do?UID=2839130>

Surge voltage arrester consisting of base element with remote indicator contact and ground connector with high-capacity varistor, for mounting on NS 35/7.5, nominal voltage: 230 V AC, 1-channel



Commercial data	
GTIN (EAN)	
sales group	J022
Pack	1 pcs.
Customs tariff	85363030
Catalog page information	Page 38 (TT-2011)

**Product notes**

WEEE/RoHS-compliant since:  
05/03/2006

<http://www.download.phoenixcontact.com>  
Please note that the data given here has been taken from the online catalog. For comprehensive information and data, please refer to the user documentation. The General Terms and Conditions of Use apply to Internet downloads.

Technical data	
<b>Standards</b>	
Housing material	PA
Inflammability class according to UL 94	V0
Color	black

Standards for air and creepage distances	DIN VDE 0110-1
	IEC 664-1
Degree of protection	IP20
Mounting type	DIN rail: 35 mm
Design	DIN rail module, two-section, divisible
Number of positions	1
Ambient temperature (operation)	-40 °C ... 80 °C
Message: Surge protection fault	Optical, remote indicator contact
Direction of action	1L-N/PE
Width	17.70 mm
Height	65.50 mm
Length	96.80 mm
Pitch unit	1 Div.

**Protective circuit**

IEC category	II
	T2
EN type	T2
Nominal voltage $U_N$	230 V AC
Arrester rated voltage $U_C$	275 V AC
	350 V DC
Arrester rated voltage $U_C$ (L-N)	275 V AC
Arrester rated voltage $U_C$ (L-PEN)	275 V AC
Nominal frequency $f_N$	50 Hz (60 Hz)
Ground conductor current $I_{PE}$	$\leq 300 \mu A$ (at $U_N$ )
Operating effective current $I_C$ at $U_N$	$\leq 300 \mu A$
Max. discharge surge current $I_{max}$ (8/20) $\mu s$	40 kA
Max. discharge surge current $I_{max}$ (8/20) $\mu s$ maximum (L-N)	40 kA
Max. discharge surge current $I_{max}$ (8/20) $\mu s$ maximum (L-PEN)	40 kA
Nominal discharge surge current $I_n$ (8/20) $\mu s$	20 kA
Nominal discharge surge current $I_n$ (8/20) $\mu s$ (L-N)	20 kA
Nominal discharge surge current $I_n$ (8/20) $\mu s$ (L-PEN)	20 kA
Lightning test current (10/350) $\mu s$ , peak value $I_{imp}$	3 kA
Max. energy absorption (2 ms)	550 J

Protection level $U_p$	$\leq 1.35$ kV
Protection level $U_p$ (L-N)	$\leq 1.35$ kV
Protection level $U_p$ (L-PEN)	$\leq 1.35$ kV
Residual voltage	$\leq 1$ kV (at 5 kA)
Residual voltage (L-N)	$\leq 1$ kV (at 5 kA)
Residual voltage (L-PEN)	$\leq 1$ kV (at 5 kA)
Response time	$\leq 25$ ns
Response time (L-N)	$\leq 25$ ns
	$\leq 25$ ns
Max. required backup fuse with branch wiring	125 A (gL)
Short-circuit resistance $I_p$ with max. backup fuse (effective)	25 kA

#### Connection, protective circuit

Connection method	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 <sup>2</sup>
Conductor cross section stranded max.	25 mm <sup>2</sup>
Conductor cross section solid min.	0.5 mm <sup>2</sup>
Conductor cross section solid max.	35 mm <sup>2</sup>
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
Connection method	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
Maximum operating voltage U <sub>max</sub> DC	125 V DC
Max. operating current I <sub>max</sub>	1 A AC (inductive)
	1 A AC (ohmic)
	30 mA DC (inductive)
	200 mA DC (ohmic)
Min. permissible switching capacity	0.12 VA (12 V, 10 mA)

### Standards

Standards/regulations	IEC 61643-1 2005
	EN 61643-11/A11 2007
	NF C61-740 1995
	UL 1449

### Certificates / Approvals



Certification

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

### Accessories

Item	Designation	Description
<b>Bridges</b>		
2809209	MPB 18/1- 2	Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 2-pos.
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.
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.
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.
2748564	MPB 18/1- 6	Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 6-pos.
2856278	MPB 18/1- 7 BU	Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 7-pos., color: Blue
2748577	MPB 18/1- 8	Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 8-pos.
2748577	MPB 18/1- 8	Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 8-pos.
2858470	MPB 18/1- 8 BU	Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 8-pos., color: Blue
2748580	MPB 18/1- 9	Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 9-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.
2748593	MPB 18/1-12	Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 12-pos.
2830168	MPB 18/1-20/1.2.5	Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 20 pitches with contact sequence 1-2-0-0-5
2809238	MPB 18/1-57	Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 57-pos.
2809238	MPB 18/1-57	Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 57-pos.
2809241	MPB 18/3- 6	Wiring bridge for modules with connecting pitch 17.5 mm, 3-phase, 6-pos.
2809241	MPB 18/3- 6	Wiring bridge for modules with connecting pitch 17.5 mm, 3-phase, 6-pos.
2809254	MPB 18/3- 9	Wiring bridge for modules with connecting pitch 17.5 mm, 3-phase, 9-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 <sup>2</sup> , with a fork-type cable lug on one side, length: 200 mm
2818339	MPB F200X16/ 1GS	Wiring bridge flexible, diameter 16 mm <sup>2</sup> , with a fork-type cable lug on one side, length: 200 mm
2818342	MPB F400X16/ 1GS	Wiring bridge flexible, diameter 16 mm <sup>2</sup> , with a fork-type cable lug on one side, length: 400 mm
2818342	MPB F400X16/ 1GS	Wiring bridge flexible, diameter 16 mm <sup>2</sup> , with a fork-type cable lug on one side, length: 400 mm
2818355	MPB F600X16/ 1GS	Wiring bridge flexible, diameter: 16 mm <sup>2</sup> , with a fork-type cable lug on one side, length: 600 mm
2818355	MPB F600X16/ 1GS	Wiring bridge flexible, diameter: 16 mm <sup>2</sup> , with a fork-type cable lug on one side, length: 600 mm

**General**

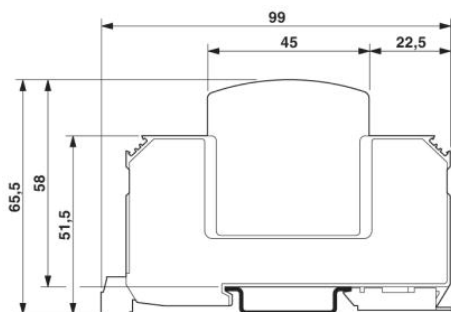
2749880	DK-BIC-35	Feed-through terminal block for VAL and FLT applications
2830443	MPB 18/1-10/1.0.0	Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 10 pitches with contact sequence 1-0-0

**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

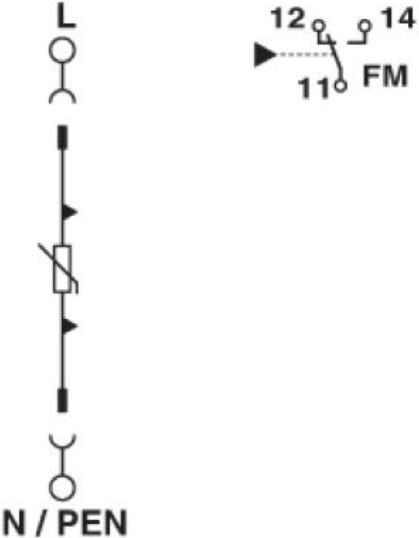
**Diagrams/Drawings**

Dimensioned drawing



Circuit diagram

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**Address**

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