

# Type 2 surge arrester - VAL-MS 230/FM

2839130

<https://www.phoenixcontact.com/us/products/2839130>

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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

## Your advantages

- Quality proven millions of times over in the widest range of applications
- Rapid installation with bridges, thanks to industry-standard overall width of 1 HP
- Easy testing and insulation measurement, thanks to pluggable protection modules
- Wide range of applications due to various nominal voltages
- High degree of modularity provides individual solutions for every application

## Commercial Data

Item number	2839130
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	C06
Product Key	CL1321
Catalog Page	Page 44 (C-6-2015)
GTIN	4017918182595
Weight per Piece (including packing)	135.9 g
Weight per Piece (excluding packing)	135.2 g
Customs tariff number	85363030
Country of origin	DE

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## Technical Data

### Product properties

IEC test classification	II
	T2
EN type	T2
IEC power supply system	TN
	TT
Type	DIN rail module, two-section, divisible
Product type	Surge arrester
Product family	VALVETRAB MS
Number of positions	1
Surge protection fault message	Optical, remote indicator contact

### Insulation characteristics

Overvoltage category	III
Pollution degree	2

### Electrical properties

Nominal frequency $f_N$	50 Hz (60 Hz)
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### Indicator/remote signaling

Connection name	Remote fault indicator contact
Switching function	Changeover contact
Operating voltage	5 V AC ... 250 V AC
	30 V DC
Operating current	5 mA AC ... 1 A AC
	1 A DC

### Connection data

Connection method	Screw connection
Screw thread	M5
Tightening torque	3 Nm (1.5 mm <sup>2</sup> ... 16 mm <sup>2</sup> )
	4.5 Nm (25 mm <sup>2</sup> ... 35 mm <sup>2</sup> )
Stripping length	16 mm
Conductor cross section flexible	1.5 mm <sup>2</sup> ... 25 mm <sup>2</sup>
Conductor cross section solid	1.5 mm <sup>2</sup> ... 35 mm <sup>2</sup>
Conductor cross section AWG	15 ... 2
Connection method	Fork-type cable lug
Conductor cross section flexible	1.5 mm <sup>2</sup> ... 16 mm <sup>2</sup>

### Remote fault indicator contact

Connection method	Plug-in/screw connection via COMBICON
Screw thread	M2
Tightening torque	0.25 Nm

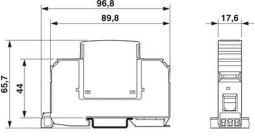
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Conductor cross section flexible	0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section solid	0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section AWG	28 ... 16

## Dimensions

Dimensional drawing	
Width	17.6 mm
Height	96.8 mm
Depth	65.7 mm (incl. DIN rail 7.5 mm)
Horizontal pitch	1 Div.

## Material specifications

Color	jet black RAL 9005
Flammability rating according to UL 94	V-0
CTI value of material	600
Insulating material	PA 6.6/PBT
Material group	I
Housing material	PA 6.6 PBT

## Protective circuit

Mode of protection	L-N L-PEN
Direction of action	1L-N/PE
Nominal voltage $U_N$	240/415 V AC (TN) 240/415 V AC (TT)
Nominal frequency $f_N$	50 Hz (60 Hz)
Maximum continuous voltage $U_C$	275 V AC
Rated load current $I_L$	80 A
Residual current $I_{PE}$	≤ 0.45 mA
Standby power consumption $P_C$	≤ 120 mVA
Nominal discharge current $I_n$ (8/20) $\mu$ s	20 kA
Maximum discharge current $I_{max}$ (8/20) $\mu$ s	40 kA
Short-circuit current rating $I_{SCCR}$	25 kA
Voltage protection level $U_p$	≤ 1.35 kV
Residual voltage $U_{res}$	≤ 1.35 kV (at $I_n$ ) ≤ 1.1 kV (at 10 kA) ≤ 1 kV (at 5 kA) ≤ 0.9 kV (at 3 kA)
TOV behavior at $U_T$	335 V AC (5 s / withstand mode)

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	440 V AC (120 min / safe failure mode)
Response time $t_A$	≤ 25 ns
Max. backup fuse with V-type through wiring	80 A (gG)
Max. backup fuse with branch wiring	125 A (gG)

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20 (only when all terminal points are used)
Ambient temperature (operation)	-40 °C ... 80 °C
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Altitude	≤ 2000 m (amsl (above mean sea level))
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	25g (Half-sine / 11 ms / 3x ±X, ±Y, ±Z)
Vibration (operation)	5g (10 ... 500 Hz / 2.5 h / X, Y, Z)

## Approval data

### UL specifications

Maximum continuous operating voltage MCOV (L-N)	275 V AC
Nominal discharge current $I_n$ (L-N)	20 kA
Mode of protection	L-N
Nominal voltage	230 V AC
Power distribution system	Single phase
Nominal frequency	50/60 Hz
Measured limiting voltage MLV (L-N)	1900 V
SPD Type	4CA

### UL indicator/remote signaling

AC operating voltage	125 V AC
AC operating current	1 A AC

### UL connection data

Tightening torque	30 lb <sub>F</sub> ·in.
Conductor cross section AWG	14 ... 2

## Standards and regulations

Standards/specifications	IEC 61643-11
Standards/specifications	EN 61643-11

## Mounting

Mounting type	DIN rail: 35 mm
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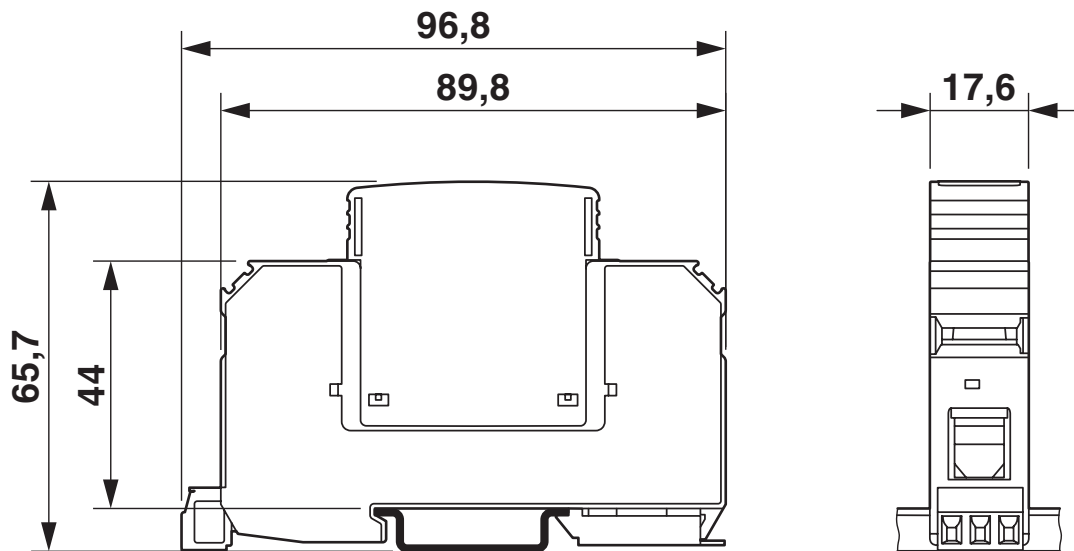
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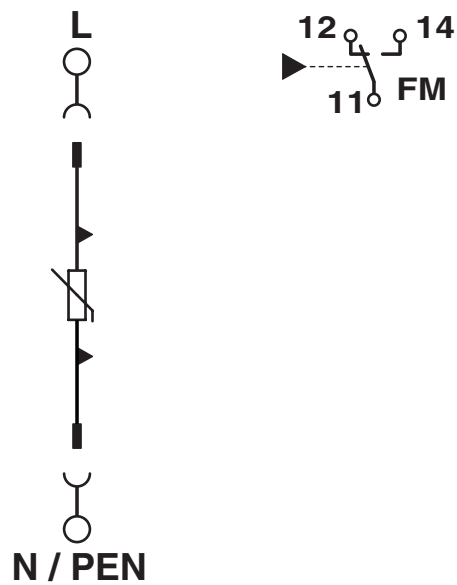
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## Drawings

Dimensional drawing



Circuit diagram



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## Approvals



**cUL Recognized**  
Approval ID: FILE E 330181



**UL Recognized**  
Approval ID: FILE E 330181



**IECEE CB Scheme**  
Approval ID: AT 2905/M1



**EAC**  
Approval ID: EAC-Zulassung

### CCA

Approval ID: NTR-AT 1947-A

Nominal Voltage  $U_N$

Nominal Current  $I_N$

Cross Section AWG

Cross Section  $\text{mm}^2$

-

-



**KEMA-KEUR**  
Approval ID: 71-113273 REV.1



**DNV GL**  
Approval ID: TAE000041M

Nominal Voltage  $U_N$

Nominal Current  $I_N$

Cross Section AWG

Cross Section  $\text{mm}^2$

-

-



**EAC**  
Approval ID: RU C-DE.\*09.B.00169



**CSA**  
Approval ID: 13631



**ÖVE**  
Approval ID: 18583-001-16

cULus Recognized

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## Classifications

### ECLASS

ECLASS-9.0	27130805
ECLASS-10.0.1	27130805
ECLASS-11.0	27130805
ECLASS-12.0	27171202
	27171202

### ETIM

ETIM 8.0	EC000941
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### UNSPSC

UNSPSC 21.0	39121600
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## Environmental Product Compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

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## Accessories

### Wiring bridge

Wiring bridge - MPB 18/1-10/1.0.0 - 2830443

<https://www.phoenixcontact.com/us/products/2830443>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 10 pitches with contact sequence 1-0-0

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### Wiring bridge

Wiring bridge - MPB 18/4- 8 - 2809283

<https://www.phoenixcontact.com/us/products/2809283>



Wiring bridge for modules with connecting pitch 17.5 mm, 4-phase, 8-pos.

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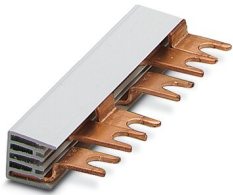
<https://www.phoenixcontact.com/us/products/2839130>

## Wiring bridge

Wiring bridge - MPB 18/3- 6 - 2809241

<https://www.phoenixcontact.com/us/products/2809241>

Wiring bridge for modules with connecting pitch 17.5 mm, 3-phase, 6-pos.



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## Wiring bridge

Wiring bridge - MPB 18/1-57 - 2809238

<https://www.phoenixcontact.com/us/products/2809238>

Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 57-pos.



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## Wiring bridge

Wiring bridge - MPB 18/1-12 - 2748593

<https://www.phoenixcontact.com/us/products/2748593>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 12-pos.

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## Wiring bridge

Wiring bridge - MPB 18/1- 9 - 2748580

<https://www.phoenixcontact.com/us/products/2748580>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 9-pos.

# Type 2 surge arrester - VAL-MS 230/FM

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## Wiring bridge

Wiring bridge - MPB 18/1- 8 - 2748577

<https://www.phoenixcontact.com/us/products/2748577>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 8-pos.

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## Wiring bridge

Wiring bridge - MPB 18/1- 6 - 2748564

<https://www.phoenixcontact.com/us/products/2748564>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 6-pos.

# Type 2 surge arrester - VAL-MS 230/FM

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## Wiring bridge

Wiring bridge - MPB 18/1- 4 - 2809225

<https://www.phoenixcontact.com/us/products/2809225>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 4-pos.

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## Wiring bridge

Wiring bridge - MPB 18/1- 3 - 2809212

<https://www.phoenixcontact.com/us/products/2809212>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 3-pos.

# Type 2 surge arrester - VAL-MS 230/FM

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## Wiring bridge

Wiring bridge - MPB 18/1- 2 - 2809209

<https://www.phoenixcontact.com/us/products/2809209>

Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 2-pos.



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## Marker for terminal blocks

Marker for terminal blocks - ZBN 18,LGS:ERDE - 2749589

<https://www.phoenixcontact.com/us/products/2749589>

Marker for terminal blocks, Strip, white, labeled, horizontal: Grounding symbol, mounting type: snapped, for terminal block width: 18 mm, lettering field size: 18 x 5 mm, Number of individual labels: 5



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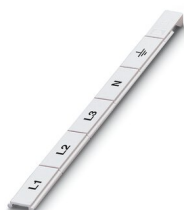
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<https://www.phoenixcontact.com/us/products/2839130>

## Marker for terminal blocks

Marker for terminal blocks - ZBN 18,LGS:L1-N,ERDE - 2749576

<https://www.phoenixcontact.com/us/products/2749576>



Marker for terminal blocks, Strip, white, labeled, horizontal: L1, L2, L3, N, GND, mounting type: snapped, for terminal block width: 18 mm, lettering field size: 18 x 5 mm, Number of individual labels: 5

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## Zack marker strip

Zack marker strip - ZBN 18:UNBEDRUCKT - 2809128

<https://www.phoenixcontact.com/us/products/2809128>



Zack marker strip, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snapped, for terminal block width: 18 mm, lettering field size: 18 x 5 mm, Number of individual labels: 5



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## Marker pen

Marker pen - B-STIFT - 1051993

<https://www.phoenixcontact.com/us/products/1051993>



Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm

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## Feed-through terminal block

Feed-through terminal block - DK-BIC-35 - 2749880

<https://www.phoenixcontact.com/us/products/2749880>



Feed-through terminal block for VAL and FLT applications

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## Wiring bridge

Wiring bridge - MPB 18/1- 2 - 2809209

<https://www.phoenixcontact.com/us/products/2809209>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 2-pos.

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## Wiring bridge

Wiring bridge - MPB 18/1- 3 - 2809212

<https://www.phoenixcontact.com/us/products/2809212>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 3-pos.

# Type 2 surge arrester - VAL-MS 230/FM

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<https://www.phoenixcontact.com/us/products/2839130>

## Wiring bridge

Wiring bridge - MPB 18/1- 4 - 2809225

<https://www.phoenixcontact.com/us/products/2809225>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 4-pos.

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## Wiring bridge

Wiring bridge - MPB 18/1- 6 - 2748564

<https://www.phoenixcontact.com/us/products/2748564>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 6-pos.

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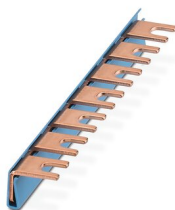
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## Wiring bridge

Wiring bridge - MPB 18/1- 7 BU - 2856278

<https://www.phoenixcontact.com/us/products/2856278>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 7-pos., color: Blue

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## Wiring bridge

Wiring bridge - MPB 18/1- 8 BU - 2858470

<https://www.phoenixcontact.com/us/products/2858470>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 8-pos., color: Blue

# Type 2 surge arrester - VAL-MS 230/FM

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<https://www.phoenixcontact.com/us/products/2839130>

## Wiring bridge

Wiring bridge - MPB 18/1- 8 - 2748577

<https://www.phoenixcontact.com/us/products/2748577>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 8-pos.

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## Wiring bridge

Wiring bridge - MPB 18/1- 9 - 2748580

<https://www.phoenixcontact.com/us/products/2748580>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 9-pos.

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## Wiring bridge

Wiring bridge - MPB 18/1-12 - 2748593

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Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 12-pos.

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## Wiring bridge

Wiring bridge - MPB 18/1-57 - 2809238

<https://www.phoenixcontact.com/us/products/2809238>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 57-pos.

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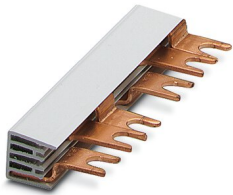
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## Wiring bridge

Wiring bridge - MPB 18/3- 6 - 2809241

<https://www.phoenixcontact.com/us/products/2809241>

Wiring bridge for modules with connecting pitch 17.5 mm, 3-phase, 6-pos.



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## Wiring bridge

Wiring bridge - MPB 18/4- 8 - 2809283

<https://www.phoenixcontact.com/us/products/2809283>

Wiring bridge for modules with connecting pitch 17.5 mm, 4-phase, 8-pos.



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## Type 2 surge protection plug

Type 2 surge protection plug - VAL-MS 230 ST - 2798844

<https://www.phoenixcontact.com/us/products/2798844>



Surge protection connector type 2 with high-capacity varistor for VAL-MS base element, thermal monitoring, visual fault warning. Design: 230 V AC

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## Type 2 surge protection base element

Type 2 surge protection base element - VAL-MS BE/FM - 2817738

<https://www.phoenixcontact.com/us/products/2817738>



Base element for type 2 arresters of the VALVETRAB MS series of products, with remote indication contact. Design: 1-channel

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