

## Type 2 surge arrester - VAL-MS 60 - 2868020

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Surge arresters consisting of base element and protective connector with high-capacity varistor, for mounting on NS 35/7.5, 1-channel


The figure shows the VAL-MS 230 version

### Why buy this product

- ✓ Single-channel, DIN-rail mountable protective devices
- ✓ Base element with/without floating remote indication contact
- ✓ Disconnect device on each individual plug
- ✓ Consists of base element and plug
- ✓ Mechanical coding of all slots
- ✓ Optical, mechanical status indication for the individual arresters



### Key Commercial Data

Packing unit	1 STK
GTIN	 4 017918 930042
GTIN	4017918930042
Weight per Piece (excluding packing)	120.000 g
Custom tariff number	85363010
Country of origin	Germany

### Technical data

#### Dimensions

Height	90 mm
Width	17.6 mm

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## Technical data

### Dimensions

Depth	58 mm
Horizontal pitch	1 Div.

### 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 sinus / 11 ms / 3x ±X, ±Y, ±Z)
Vibration (operation)	5g (10 ... 500 Hz / 2.5 h / X, Y, Z)

### General

IEC test classification	II
	T2
EN type	T2
IEC power supply system	TN
Mode of protection	L-PEN
Mounting type	DIN rail: 35 mm
Color	jet black RAL 9005
Housing material	PA 6.6
	PBT / PA
Degree of pollution	2
Flammability rating according to UL 94	V-0
Type	DIN rail module, two-section, divisible
Number of positions	1
Surge protection fault message	optical

### Protective circuit

Nominal voltage $U_N$	60 V AC (TN)
	60 V DC
	-48 V DC (RRH)
Nominal frequency $f_N$	50 Hz (60 Hz)
Maximum continuous voltage $U_C$	75 V AC
	100 V DC
Rated load current $I_L$	80 A
Residual current $I_{PE}$	≤ 0.45 mA
Standby power consumption $P_C$	≤ 35 mVA
Nominal discharge current $I_n$ (8/20) $\mu$ s	15 kA

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### Technical data

#### Protective circuit

Maximum discharge current $I_{\max}$ (8/20) $\mu$ s	40 kA
Short-circuit current rating $I_{\text{SCCR}}$	25 kA
Voltage protection level $U_p$	$\leq 0.55$ kV
Residual voltage $U_{\text{res}}$	$\leq 0.55$ kV (at $I_n$ )
	$\leq 0.425$ kV (at 10 kA)
	$\leq 0.325$ kV (at 5 kA)
	$\leq 0.275$ kV (at 3 kA)
TOV behavior at $U_T$	100 V AC (5 s / withstand mode)
Response time $t_A$	$\leq 25$ ns
Max. backup fuse with branch wiring	125 A AC (gG)
	50 A DC (gG)
Max. backup fuse with V-type through wiring	80 A AC (gG)

#### 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

#### UL specifications

SPD Type	4CA
Maximum continuous operating voltage MCOV (L-N)	75 V AC
Maximum continuous operating voltage MCOV (L+) - (L-)	100 V DC
Nom. voltage	60 V AC
Nominal voltage	60 V DC
Mode of protection	L-N
	(L+) - (L-)
Power distribution system	1
Nominal frequency	50/60 Hz
Measured limiting voltage MLV (L-N)	630 V
Measured limiting voltage MLV (L+) - (L-)	810 V
Nominal discharge current $I_n$ (L-N)	10 kA
Nominal discharge current $I_n$ (L+) - (L-)	10 kA

#### UL connection data

## Type 2 surge arrester - VAL-MS 60 - 2868020

### Technical data

#### UL connection data

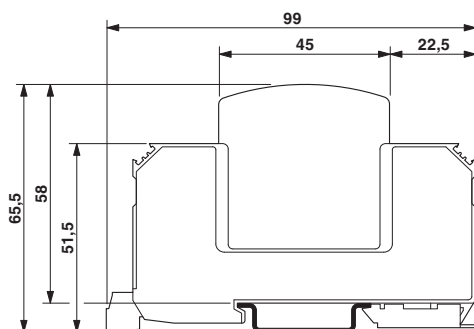
Conductor cross section AWG	10 ... 2
Tightening torque	30 lb <sub>F</sub> -in.

#### Standards and Regulations

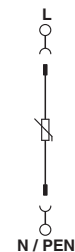
Standards/regulations	IEC 61643-11 2011
	EN 61643-11 2012

### Drawings

Dimensional drawing



Circuit diagram



The illustration shows the dimensional drawing for a version with remote indicator contact

### Classifications

#### eCl@ss

eCl@ss 4.0	27140201
eCl@ss 4.1	27130801
eCl@ss 5.0	27130801
eCl@ss 5.1	27130801
eCl@ss 6.0	27130805
eCl@ss 7.0	27130805
eCl@ss 8.0	27130805
eCl@ss 9.0	27130805

#### ETIM

ETIM 2.0	EC000941
ETIM 3.0	EC000941

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### Classifications

#### ETIM

ETIM 4.0	EC000941
ETIM 5.0	EC000941
ETIM 6.0	EC000941

#### UNSPSC

UNSPSC 6.01	30212010
UNSPSC 7.0901	39121610
UNSPSC 11	39121610
UNSPSC 12.01	39121610
UNSPSC 13.2	39121620

### Approvals

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UL Recognized / KEMA-KEUR / cUL Recognized / CSA / ÖVE / CCA / IECCE CB Scheme / EAC / cULus Recognized


#### Ex Approvals

#### Approval details

UL Recognized		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 330181
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KEMA-KEUR		<a href="http://www.dekra-certification.com">http://www.dekra-certification.com</a>	2170208.01
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cUL Recognized		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 330181
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CSA		<a href="http://www.csagroup.org/services/testing-and-certification/certified-product-listing/">http://www.csagroup.org/services/testing-and-certification/certified-product-listing/</a>	13631
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## Type 2 surge arrester - VAL-MS 60 - 2868020

### Approvals

ÖVE		<a href="https://www.ove.at/en/certification-pz/certification-register/">https://www.ove.at/en/certification-pz/certification-register/</a>	18583-001-12
CCA			NTR-AT 1947-A
IECEE CB Scheme		<a href="http://www.iecee.org/">http://www.iecee.org/</a>	AT 2905/M1
EAC			RU C- DE.A*30.B01561
cULus Recognized		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	

### Accessories

#### Accessories

#### Bridge

Wiring bridge - MPB 18/1- 2 - 2809209



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

Wiring bridge - MPB 18/1- 3 - 2809212



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

## Type 2 surge arrester - VAL-MS 60 - 2868020

### Accessories

Wiring bridge - MPB 18/1- 4 - 2809225



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

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Wiring bridge - MPB 18/1- 6 - 2748564



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

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



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

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



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

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Wiring bridge - MPB 18/1- 8 - 2748577



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

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## Type 2 surge arrester - VAL-MS 60 - 2868020

### Accessories

Wiring bridge - MPB 18/1- 9 - 2748580



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

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Wiring bridge - MPB 18/1-12 - 2748593



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

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Wiring bridge - MPB 18/1-57 - 2809238



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

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Wiring bridge - MPB 18/3- 6 - 2809241



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

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Wiring bridge - MPB 18/4- 8 - 2809283



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

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## Type 2 surge arrester - VAL-MS 60 - 2868020

### Accessories

Wiring bridge - MPB 18/4-12 - 2809296



Wiring bridge for modules with connecting pitch 17.5 mm, 4-phase, 12-pos.

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Wiring bridge - MPB F200X16/ 1GS - 2818339



Wiring bridge flexible, diameter 16 mm<sup>2</sup>, with a fork-type cable lug on one side, length: 200 mm

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Wiring bridge - MPB F400X16/ 1GS - 2818342



Wiring bridge flexible, diameter 16 mm<sup>2</sup>, with a fork-type cable lug on one side, length: 400 mm

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Wiring bridge - MPB F600X16/ 1GS - 2818355



Wiring bridge flexible, diameter: 16 mm<sup>2</sup>, with a fork-type cable lug on one side, length: 600 mm

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Wiring bridge - MPB F600X16/ 1GS - 2818355



Wiring bridge flexible, diameter: 16 mm<sup>2</sup>, with a fork-type cable lug on one side, length: 600 mm

## Type 2 surge arrester - VAL-MS 60 - 2868020

### Accessories

Wiring bridge - MPB F400X16/ 1GS - 2818342



Wiring bridge flexible, diameter 16 mm<sup>2</sup>, with a fork-type cable lug on one side, length: 400 mm

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Wiring bridge - MPB F200X16/ 1GS - 2818339



Wiring bridge flexible, diameter 16 mm<sup>2</sup>, with a fork-type cable lug on one side, length: 200 mm

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Wiring bridge - MPB 18/1-10/1.0.0 - 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 - MPB 18/4-12 - 2809296



Wiring bridge for modules with connecting pitch 17.5 mm, 4-phase, 12-pos.

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Wiring bridge - MPB 18/4- 8 - 2809283



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

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## Type 2 surge arrester - VAL-MS 60 - 2868020

### Accessories

Wiring bridge - MPB 18/3- 6 - 2809241



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

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Wiring bridge - MPB 18/1-57 - 2809238



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

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Wiring bridge - MPB 18/1-12 - 2748593



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

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Wiring bridge - MPB 18/1- 9 - 2748580



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

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Wiring bridge - MPB 18/1- 8 - 2748577



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

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## Type 2 surge arrester - VAL-MS 60 - 2868020

### Accessories

Wiring bridge - MPB 18/1- 6 - 2748564



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

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Wiring bridge - MPB 18/1- 4 - 2809225



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

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Wiring bridge - MPB 18/1- 3 - 2809212



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

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Wiring bridge - MPB 18/1- 2 - 2809209



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

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### Device marking

Zack marker strip - ZBN 18:UNBEDRUCKT - 2809128



Zack marker strip, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, Mounting type: Snap into tall marker groove, for terminal block width: 18 mm, Lettering field: 18 x 5 mm

## Type 2 surge arrester - VAL-MS 60 - 2868020

### Accessories

#### Feed-through terminal block

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



Feed-through terminal block for VAL and FLT applications

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#### Labeled device marker

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



Marker for terminal blocks, Strip, white, labeled, Horizontal: Grounding symbol, Mounting type: Snap into tall marker groove, for terminal block width: 18 mm, Lettering field: 18 x 5 mm

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



Marker for terminal blocks, Strip, white, labeled, Horizontal: L1, L2, L3, N, GND, Mounting type: Snap into tall marker groove, for terminal block width: 18 mm, Lettering field: 18 x 5 mm

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#### Marker pen

Marker pen - B-STIFT - 1051993



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

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#### Spare parts

## Type 2 surge arrester - VAL-MS 60 - 2868020

### Accessories

Type 2 surge protection plug - VAL-MS 60 ST - 2807573



Surge protection plug type 2 with high-capacity varistor for VAL-MS base element, thermal monitoring, visual fault warning. Design: 60 V AC

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Type 2 surge protection base element - VAL-MS BE - 2817741



Base element for type 2 arresters of the VALVETRAB MS series of products. Design: 1-channel