

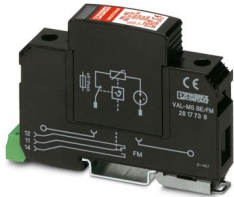
VAL-MS 350 VF/FM - Type 2 surge arrester



2856579

<https://www.phoenixcontact.com/pc/products/2856579>

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Surge voltage arrester consisting of base element with remote indicator contact and protective plug with a connection in series with a varistor and a gas-filled spark gap, 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
- Suitable for use in insulation-monitored systems due to combination of varistor and gas discharge tube free of leakage current
- Can be used in applications with increased insulation strength, e.g., railway technology

Commercial data

Item number	2856579
Packing unit	1 pc
Minimum order quantity	1 pc
Product key	CL1321
Catalog page	Page 62 (C-4-2019)
GTIN	4017918876852
Weight per piece (including packing)	134.7 g
Weight per piece (excluding packing)	134.9 g
Customs tariff number	85363030
Country of origin	DE

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Technical data

Notes

General

Note	Usable in all low-voltage systems between L-N or L-PEN. Only usable in IT Systems between L-PE, if the exposed-conductive-parts (bodies) of the equipment of the low-voltage installation is connected to the earthing arrangement of the transformer substation. (interconnected earthing arrangement of the HV-transformer substation with the bodies of the LV-installation. $R_E = R_A$ accordance to IEC 60364-4-442 / VDE 0100-442 Fig. 44D / Example a)
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Product properties

Product type	Surge arrester
Product family	VALVETRAB MS
IEC test classification	II
	T2
EN type	T2
IEC power supply system	TN
	TT
	IT
Type	DIN rail module, two-section, divisible
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 ² ... 16 mm ²)
	4.5 Nm (25 mm ² ... 35 mm ²)

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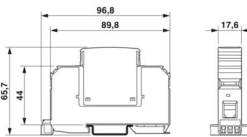
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Stripping length	16 mm
Conductor cross section flexible	1.5 mm ² ... 25 mm ²
Conductor cross section rigid	1.5 mm ² ... 35 mm ²
Conductor cross section AWG	15 ... 2
Connection method	Fork-type cable lug
Conductor cross section flexible	1.5 mm ² ... 16 mm ²

Remote fault indicator contact

Connection method	Plug-in/screw connection via COMBICON
Screw thread	M2
Tightening torque	0.25 Nm
Stripping length	7 mm
Conductor cross section flexible	0.14 mm ² ... 1.5 mm ²
Conductor cross section rigid	0.14 mm ² ... 1.5 mm ²
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	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-PE L-PEN
Direction of action	1L-N/PE
Nominal voltage U _N	240/415 V AC (TN) 240/415 V AC (TT) 230 V AC (IT)

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Nominal frequency f_N	50 Hz (60 Hz)
Maximum continuous voltage U_C	350 V AC
Rated load current I_L	80 A
Residual current I_{PE}	$\leq 5 \mu A$
Standby power consumption P_C	$\leq 2.00 \text{ mVA}$
Nominal discharge current I_n (8/20) μs	10 kA
Maximum discharge current I_{max} (8/20) μs	20 kA
Short-circuit current rating I_{SCCR}	25 kA
Voltage protection level U_p	$\leq 1.5 \text{ kV}$
Residual voltage U_{res}	$\leq 1.2 \text{ kV}$ (at I_n)
	$\leq 1.2 \text{ kV}$ (at 10 kA)
	$\leq 1.1 \text{ kV}$ (at 5 kA)
Front of wave sparkover voltage at 6 kV (1.2/50) μs	$\leq 1.5 \text{ kV}$
TOV behavior at U_T	415 V AC (5 s / withstand mode)
	440 V AC (120 min / withstand mode)
Response time t_A	$\leq 100 \text{ ns}$
Max. backup fuse with V-type through wiring	80 A (gG)
Max. backup fuse with branch wiring	125 A (gG)

Additional technical data

Impulse discharge current (10/350) μs , charge	0.25 As
Impulse discharge current (10/350) μs , specific energy	62.5 J/ Ω
Impulse discharge current (10/350) μs , peak value I_{imp}	500 A

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	$\leq 2000 \text{ m}$ (amsl)
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	25g (Half-sine / 11 ms / 3x $\pm X$, $\pm Y$, $\pm Z$)
Vibration (operation)	5g (10 ... 500 Hz / 2.5 h / X, Y, Z)

Approvals

UL specifications

Maximum continuous operating voltage MCOV (L-N)	350 V AC
Nominal discharge current I_n (L-N)	10 kA
Mode of protection	L-N
Nominal voltage	240 V AC
Power distribution system	Single phase
Nominal frequency	50/60 Hz
Measured limiting voltage MLV (L-N)	2420 V
SPD Type	4CA

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UL indicator/remote signaling

Operating voltage	125 V AC
AC operating current	1 A AC

UL connection data

Tightening torque	30 lb _F ·in.
Conductor cross section AWG	14 ... 2

Standards and regulations

Standards/specifications	IEC 61643-11
Note	2011
Standards/specifications	EN 61643-11
Note	2012

Mounting

Mounting type	DIN rail: 35 mm
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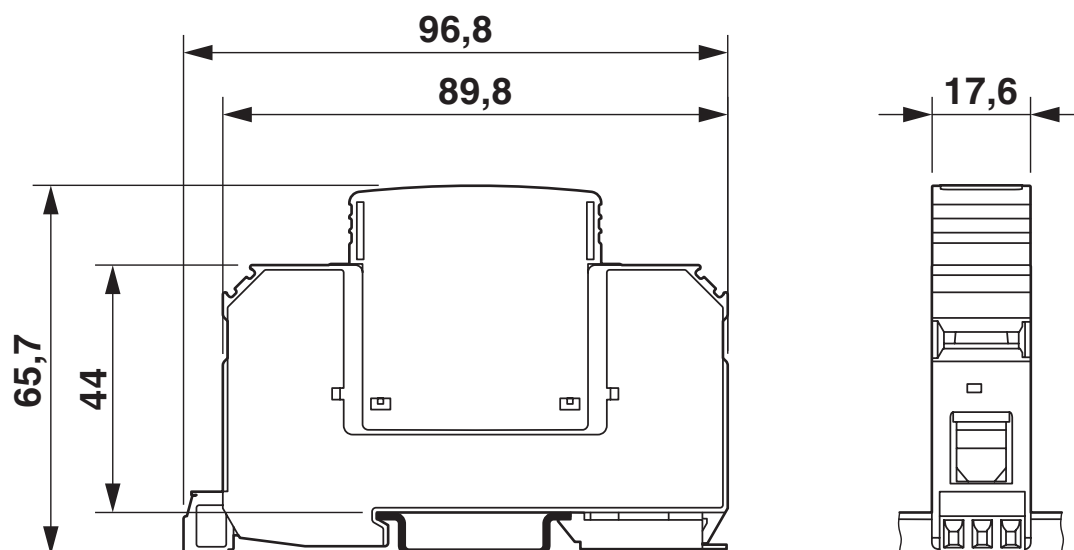
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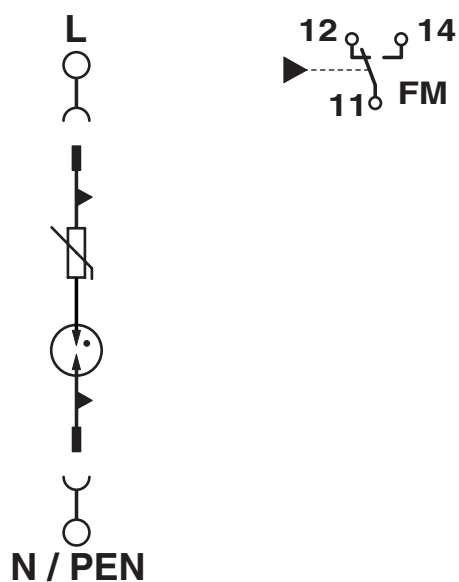


Drawings

Dimensional drawing



Circuit diagram



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/pc/products/2856579>



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



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



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



CSA
Approval ID: 13631



ÖVE
Approval ID: 18583-001-17

UAE-RoHS

Approval ID: 22-09-51251

cULus Recognized

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Classifications

ECLASS

ECLASS-11.0	27130805
ECLASS-13.0	27171202

ETIM

ETIM 9.0	EC000941
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UNSPSC

UNSPSC 21.0	39121600
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Environmental product compliance

EU RoHS	
Fulfills EU RoHS substance requirements	Yes, No exemptions
China RoHS	
Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits
EU REACH SVHC	
REACH candidate substance (CAS No.)	No substance above 0.1 wt%

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Accessories



Note: Applying some accessories below might limit this product.

MPB 18/1- 2 - Wiring bridge

2809209

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



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



Max. current carrying capacity: 125 A

MPB 18/1- 3 - Wiring bridge

2809212

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



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



Max. current carrying capacity: 125 A

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MPB 18/1- 4 - Wiring bridge

2809225

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



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

 Max. current carrying capacity: 125 A

MPB 18/1- 6 - Wiring bridge

2748564

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



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

 Max. current carrying capacity: 125 A

VAL-MS 350 VF/FM - Type 2 surge arrester



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MPB 18/1- 7 BU - Wiring bridge

2856278

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



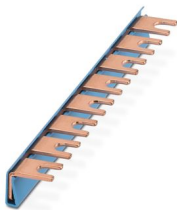
Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 7-pos., color: Blue

 Max. current carrying capacity: 125 A

MPB 18/1- 8 BU - Wiring bridge

2858470

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



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

 Max. current carrying capacity: 125 A

VAL-MS 350 VF/FM - Type 2 surge arrester

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MPB 18/1- 8 - Wiring bridge

2748577

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



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

 Max. current carrying capacity: 125 A

MPB 18/1- 9 - Wiring bridge

2748580

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



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

 Max. current carrying capacity: 125 A

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MPB 18/1-12 - Wiring bridge

2748593

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



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

 Max. current carrying capacity: 125 A

MPB 18/1-57 - Wiring bridge

2809238

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



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

 Max. current carrying capacity: 125 A

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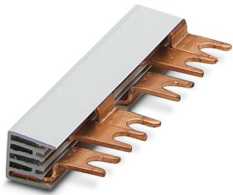


MPB 18/3- 6 - Wiring bridge

2809241

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

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



 Max. current carrying capacity: 80 A

MPB 18/4- 8 - Wiring bridge

2809283

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

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



 Max. current carrying capacity: 80 A

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ZBN 18,LGS:ERDE - Marker for terminal blocks

2749589

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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

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

2749576

<https://www.phoenixcontact.com/pc/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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ZBN 18:UNBEDRUCKT - Zack marker strip

2809128

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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

DK-BIC-35 - Feed-through terminal block

2749880

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



Feed-through terminal block for VAL and FLT applications

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ZBN 18 CUS - Zack marker strip

0825059

<https://www.phoenixcontact.com/pc/products/0825059>



Zack marker strip, can be ordered: Strip, white, labeled according to customer specifications, mounting type: snap into tall marker groove, for terminal block width: 18 mm, lettering field size: 18 x 5 mm, Number of individual labels: 5

B-STIFT - Marker pen

1051993

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



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

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SZK PZ2 VDE - Screwdriver

1206463

<https://www.phoenixcontact.com/pc/products/1206463>



Screwdriver, PZ crosshead, VDE insulated, size: PZ 2 x 100 mm, 2-component grip, with non-slip grip

VAL-MS 350 VF ST - Type 2 surge protection plug

2856595

<https://www.phoenixcontact.com/pc/products/2856595>



Surge protection connector type 2 with series connection consisting of varistor and gas-filled spark gap for VAL-MS base element, thermal monitoring, visual fault warning. Design: 350 V AC

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