

VAL-MS 400 ST - Type 2 surge protection plug

2816399

<https://www.phoenixcontact.com/in/products/2816399>

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Surge protection connector type 2 with high-capacity varistor for VAL-MS base element, thermal monitoring, visual fault warning. Design: 400 V AC

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	2816399
Packing unit	10 pc
Minimum order quantity	1 pc
Sales Key	CL1
Product Key	CL1321
Catalog Page	Page 69 (C-4-2019)
GTIN	4017918131593
Weight per Piece (including packing)	55.106 g
Weight per Piece (excluding packing)	51 g
Customs tariff number	85363010
Country of origin	IN

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Technical Data

Notes

Order information:	Use in DC applications on request
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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

IEC test classification	II
	T2
EN type	T2
IEC power supply system	TN
	TT
	IT
Type	DIN rail module, two-section, divisible
Product type	Replacement plug
Product family	VALVETRAB MS
Number of positions	1
Surge protection fault message	optical
Arrester can be tested with CHECKMASTER from software version:	From SW rev. 1.10

Insulation characteristics

Overvoltage category	III
Pollution degree	2

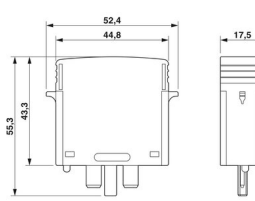
Electrical properties

Nominal frequency f_N	50 Hz (60 Hz)
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Connection data

Connection method	pluggable
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Dimensions

Dimensional drawing	
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Width	17.5 mm
Height	52.4 mm
Depth	55.3 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
Material group	I
Housing material	PA 6.6

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)
Nominal frequency f_N	50 Hz (60 Hz)
Maximum continuous voltage U_C	440 V AC
Residual current I_{PE}	≤ 0.45 mA
Standby power consumption P_C	≤ 200 mVA
Nominal discharge current I_n (8/20) μ s	20 kA
Maximum discharge current I_{max} (8/20) μ s	40 kA
Short-circuit current rating I_{SCCR}	25 kA
Voltage protection level U_p	≤ 2.2 kV
Residual voltage U_{res}	≤ 2.2 kV (at I_n)
	≤ 1.8 kV (at 10 kA)
	≤ 1.5 kV (at 5 kA)
	≤ 1.4 kV (at 3 kA)
TOV behavior at U_T	440 V AC (5 s / withstand mode)
	440 V AC (120 min / withstand mode)
Response time t_A	≤ 25 ns
Max. backup fuse with branch wiring	125 A (gG)

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 80 °C
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Altitude	≤ 2000 m (amsl (above mean sea level))

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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)

Approvals

UL specifications

Maximum continuous operating voltage MCOV (L-N)	440 V AC
Nominal discharge current I_n (L-N)	20 kA
Mode of protection	L-N
Nominal voltage	400 V AC
Power distribution system	Single phase
Nominal frequency	50/60 Hz
Measured limiting voltage MLV (L-N)	2280 V
SPD Type	4CA

Standards and regulations

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

Mounting

Mounting type	on base element
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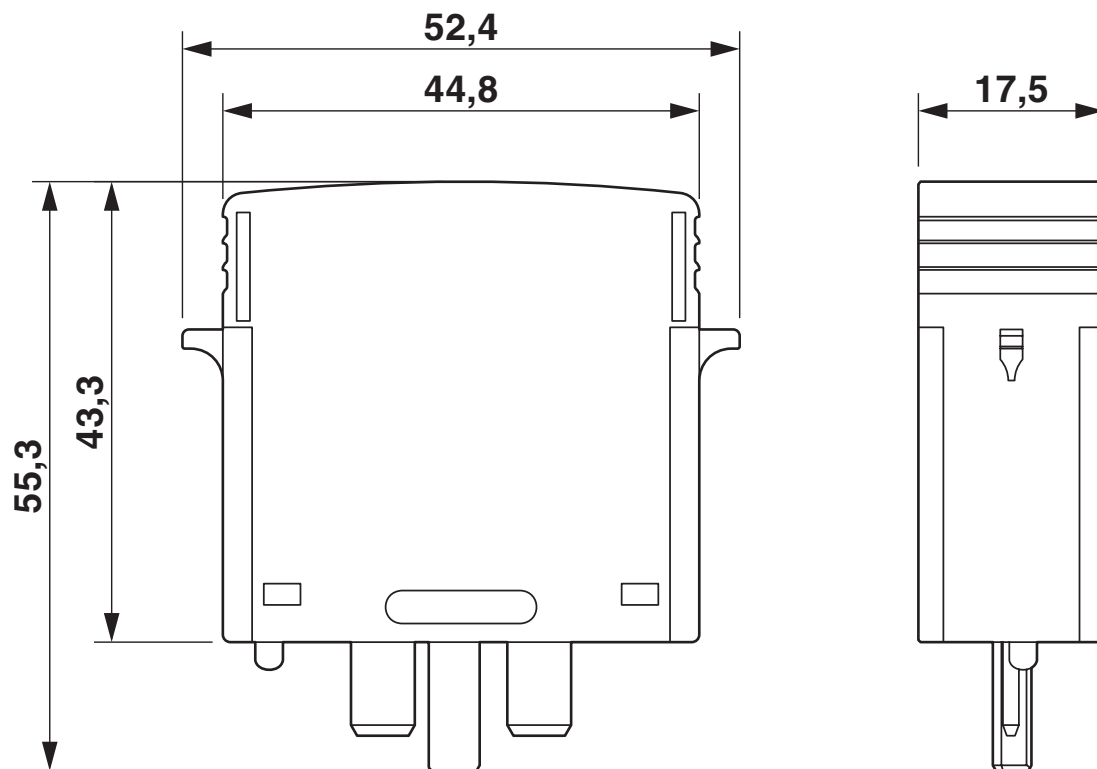


Drawings

Circuit diagram



Dimensional drawing



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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



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



DNV GL
Approval ID: TAE000041M



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



CSA
Approval ID: 13631



ÖVE
Approval ID: 18583-001-16

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Classifications

ECLASS

ECLASS-11.0

27130890

ETIM

ETIM 8.0

EC002496

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

MPB 18/1-10/1.0.0 - Wiring bridge

2830443

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



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

MPB 18/4- 8 - Wiring bridge

2809283

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



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

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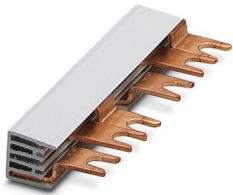


MPB 18/3- 6 - Wiring bridge

2809241

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

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



MPB 18/1-57 - Wiring bridge

2809238

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

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



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MPB 18/1-12 - Wiring bridge

2748593

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

MPB 18/1- 9 - Wiring bridge

2748580

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

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MPB 18/1- 8 - Wiring bridge

2748577

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

MPB 18/1- 6 - Wiring bridge

2748564

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

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MPB 18/1- 4 - Wiring bridge

2809225

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

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



MPB 18/1- 3 - Wiring bridge

2809212

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



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MPB 18/1- 2 - Wiring bridge

2809209

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

ZBN 18,LGS:ERDE - Marker for terminal blocks

2749589

<https://www.phoenixcontact.com/in/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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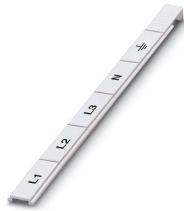
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ZBN 18,LGS:L1-N,ERDE - Marker for terminal blocks

2749576

<https://www.phoenixcontact.com/in/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

ZBN 18:UNBEDRUCKT - Zack marker strip

2809128

<https://www.phoenixcontact.com/in/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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B-STIFT - Marker pen

1051993

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



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

VAL-MS BE - Type 2 surge protection base element

2817741

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

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

2817738

<https://www.phoenixcontact.com/in/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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