

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

2798844

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

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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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## 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

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## Commercial Data

|                                      |                    |
|--------------------------------------|--------------------|
| Item number                          | 2798844            |
| Packing unit                         | 10 pc              |
| Minimum order quantity               | 1 pc               |
| Product Key                          | CL1321             |
| Catalog Page                         | Page 67 (C-4-2019) |
| GTIN                                 | 4017918073947      |
| Weight per Piece (including packing) | 42.52 g            |
| Weight per Piece (excluding packing) | 41.1 g             |
| Customs tariff number                | 85363010           |
| 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   | Replacement plug                        |
| 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   |

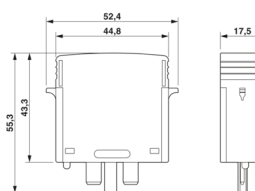
### Electrical properties

|                         |               |
|-------------------------|---------------|
| Nominal frequency $f_N$ | 50 Hz (60 Hz) |
|-------------------------|---------------|

### Connection data

|                   |           |
|-------------------|-----------|
| Connection method | pluggable |
|-------------------|-----------|

### Dimensions

|                     |  |
|---------------------|--|
| Dimensional drawing |  |
| 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             |

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## 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                               |
| Residual current $I_{PE}$                          | $\leq 0.45$ mA                         |
| Standby power consumption $P_C$                    | $\leq 120$ 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 $U_p$                     | $\leq 1.35$ kV                         |
| Residual voltage $U_{res}$                         | $\leq 1.35$ kV (at $I_n$ )             |
|  | $\leq 1.1$ kV (at 10 kA)               |
|  | $\leq 1$ kV (at 5 kA)                  |
|  | $\leq 0.9$ kV (at 3 kA)                |
| TOV behavior at $U_T$                              | 335 V AC (5 s / withstand mode)        |
|  | 440 V AC (120 min / safe failure mode) |
| Response time $t_A$                                | $\leq 25$ 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                                | $\leq 2000$ m (amsl (above mean sea level))            |
| 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)                   |

## 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)             | 1910 V       |

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|          |     |
|----------|-----|
| SPD Type | 4CA |
|----------|-----|

## Standards and regulations

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

## Mounting

|               |                 |
|---------------|-----------------|
| Mounting type | on base element |
|---------------|-----------------|

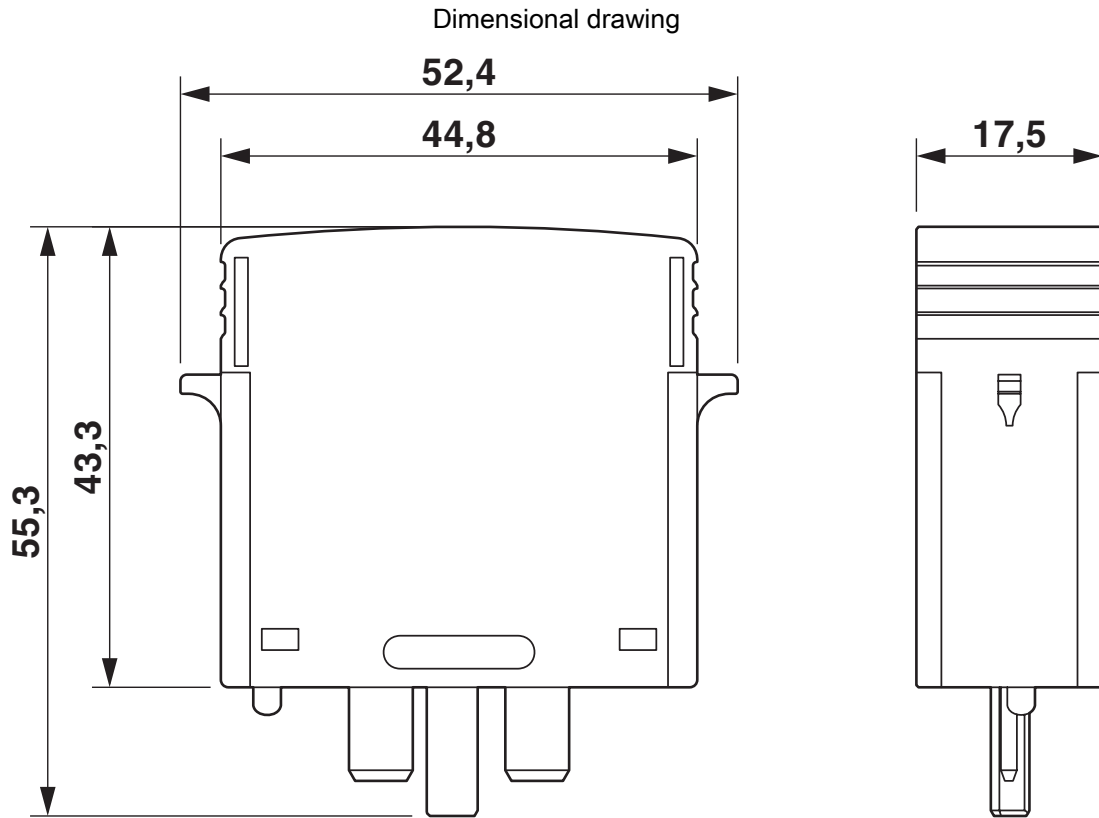
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## Drawings



Circuit diagram



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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



**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: 18583-001-15

**cULus Recognized**

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## Classifications

### ECLASS

|               |          |
|---------------|----------|
| ECLASS-9.0    | 27130890 |
| ECLASS-10.0.1 | 27130890 |
| 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

### Marker for terminal blocks

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

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



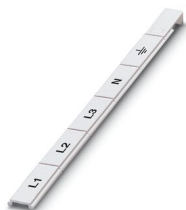
Marker for terminal blocks, Strip, white, labeled, horizontal: Grounding symbol, mounting type: snapped, for terminal block width: 18 mm, lettering field size: 18 x 5 mm, Number of individual labels: 5

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### Marker for terminal blocks

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

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



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

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## Type 2 surge protection base element

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

<https://www.phoenixcontact.com/il/products/2817741>

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



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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/il/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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