

# VAL-MS 1000DC/2+V - Type 2 surge protection device



2805091

<https://www.phoenixcontact.com/us/products/2805091>

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Surge arrester for 2-pos. isolated and grounded DC voltage systems 1000 V DC, for DIN rail mounting, 3-pos. base element (L+, L-, ground), three pluggable temperature-monitored varistors, status message on each connector.

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 2805091                        |
| Packing unit                         | 1 pc                           |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | NULL                           |
| Product key                          | CL1324                         |
| Catalog page                         | Page 63 (TT-2011)              |
| GTIN                                 | 4046356355766                  |
| Weight per piece (including packing) | 362.5 g                        |
| Weight per piece (excluding packing) | 351.2 g                        |
| Customs tariff number                | 85363010                       |
| Country of origin                    | DE                             |

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## Technical data

### Product properties

|                                |                                         |
|--------------------------------|-----------------------------------------|
| Product type                   | PV arrester                             |
| Product family                 | VALVETRAB MS                            |
| IEC test classification        | II                                      |
|                                | T2                                      |
| EN type                        | T2                                      |
| Type                           | DIN rail module, two-section, divisible |
| Number of positions            | 3                                       |
| Surge protection fault message | optical                                 |

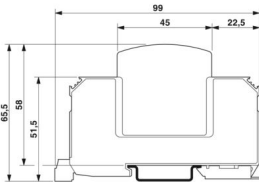
### Electrical properties

|                       |                                            |
|-----------------------|--------------------------------------------|
| Nominal voltage $U_N$ | 1000 V DC (Open-circuit voltage $U_{OC}$ ) |
|-----------------------|--------------------------------------------|

### Connection data

|                                       |                              |
|---------------------------------------|------------------------------|
| Connection method                     | Screw connection             |
| Screw thread                          | M5                           |
| Tightening torque, min                | 4.5 Nm                       |
| Tightening torque                     | 30 lb <sub>f</sub> -in. (UL) |
| Stripping length                      | 16 mm                        |
| Conductor cross section flexible min. | 1.5 mm <sup>2</sup>          |
| Conductor cross section flexible max. | 25 mm <sup>2</sup>           |
| Conductor cross section, rigid min.   | 1.5 mm <sup>2</sup>          |
| Conductor cross section, rigid max.   | 35 mm <sup>2</sup>           |
| Conductor cross section AWG           | 10 ... 2 (UL)                |

### Dimensions

|                     |                                                                                      |
|---------------------|--------------------------------------------------------------------------------------|
| Dimensional drawing |  |
| Width               | 53.4 mm                                                                              |
| Height              | 90 mm                                                                                |
| Depth               | 65.5 mm                                                                              |
| Horizontal pitch    | 3 Div.                                                                               |

### Material specifications

|                                        |        |
|----------------------------------------|--------|
| Flammability rating according to UL 94 | V0     |
| Housing material                       | PBT/PA |

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## Mechanical properties

### Mechanical data

|                 |    |
|-----------------|----|
| Open side panel | No |
|-----------------|----|

## Protective circuit

|                                                    |                               |
|----------------------------------------------------|-------------------------------|
| Direction of action                                | (L+)-PE & (L-)-PE & (L+)-(L-) |
| Maximum continuous voltage $U_C$                   | 1000 V DC                     |
| Rated load current $I_L$                           | $\leq 80$ A DC                |
| Residual current $I_{PE}$                          | $\leq 20$ $\mu$ A             |
| Standby power consumption $P_C$                    | $\leq 20.00$ mW               |
| Nominal discharge current $I_n$ (8/20) $\mu$ s     | 15 kA                         |
| Maximum discharge current $I_{max}$ (8/20) $\mu$ s | 30 kA                         |
| Voltage protection level $U_p$                     | $\leq 5$ kV                   |
| Voltage protection level $U_p$ (L+) - (L-)         | $\leq 5$ kV                   |
| Voltage protection level $U_p$ (L+/L-) - PE        | $\leq 5$ kV                   |
| Response time $t_A$                                | $\leq 25$ ns                  |
| Response time $t_A$ (L+) - (L-)                    | $\leq 25$ ns                  |
| Response time $t_A$ (L+/L-) - PE                   | $\leq 25$ ns                  |

### Protective circuit DC voltage side (DC)

|                                                    |                   |
|----------------------------------------------------|-------------------|
| Maximum discharge current $I_{max}$ (8/20) $\mu$ s | 30 kA             |
| Response time $t_A$                                | $\leq 25$ ns      |
| Response time $t_A$ (L+) - (L-)                    | $\leq 25$ ns      |
| Response time $t_A$ (L+/L-) - PE                   | $\leq 25$ ns      |
| Nominal discharge current $I_n$ (8/20) $\mu$ s     | 15 kA             |
| Rated load current $I_L$                           | $\leq 80$ A DC    |
| Short-circuit current rating $I_{SCPv}$            | 80 A              |
| Residual current $I_{PE}$                          | $\leq 20$ $\mu$ A |
| Voltage protection level $U_p$                     | $\leq 5$ kV       |
| Voltage protection level $U_p$ (L+) - (L-)         | $\leq 5$ kV       |
| Voltage protection level $U_p$ (L+/L-) - PE        | $\leq 5$ kV       |
| Standby power consumption $P_C$                    | $\leq 20.00$ mW   |

## Environmental and real-life conditions

### Ambient conditions

|                                 |                  |
|---------------------------------|------------------|
| Degree of protection            | IP20             |
| Ambient temperature (operation) | -40 °C ... 80 °C |

## Standards and regulations

### Air clearances and creepage distances

|                       |                                  |
|-----------------------|----------------------------------|
| Standards/regulations | DIN EN 60664-1 / DIN EN 61643-11 |
|-----------------------|----------------------------------|

### Standards

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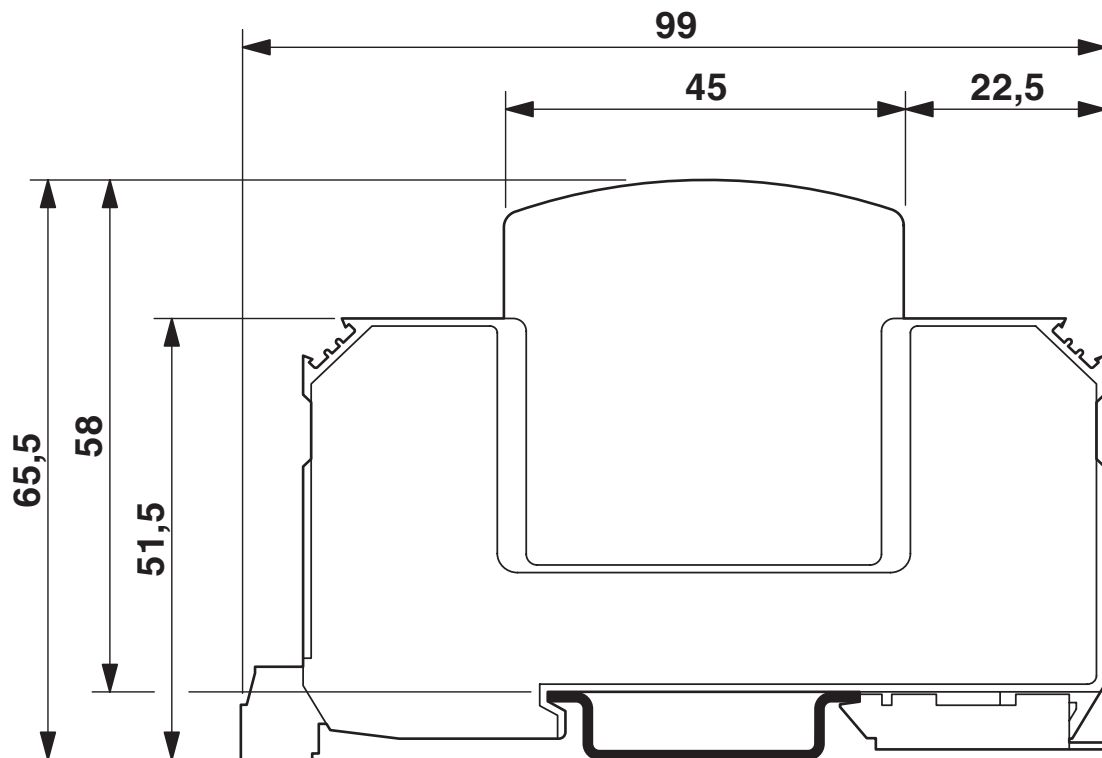
|                          |                 |
|--------------------------|-----------------|
| Standards/regulations    | DIN EN 61643-11 |
|                          | IEC 61643-1     |
|                          | IEC 60364-7-712 |
| Standards/specifications | DIN EN 61643-11 |
| Note                     | 2002            |
| Standards/specifications | IEC 61643-1     |
| Note                     | 2005            |
| Standards/specifications | IEC 60364-7-712 |
| Note                     | 2002            |

## Mounting

|               |                 |
|---------------|-----------------|
| Mounting type | DIN rail: 35 mm |
|---------------|-----------------|

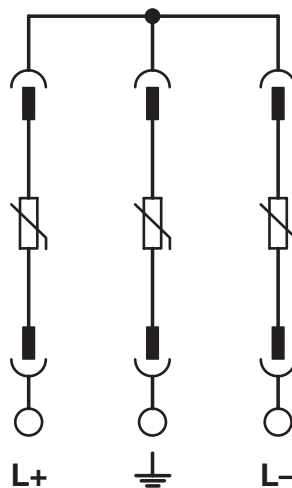
## Drawings

Dimensional drawing



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

Circuit diagram



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## Accessories

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

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

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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## ZBN 18:UNBEDRUCKT - Zack marker strip

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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## B-STIFT - Marker pen

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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## MPB F200X16/ 1GS - Wiring bridge

2818339

<https://www.phoenixcontact.com/us/products/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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## MPB F400X16/ 1GS - Wiring bridge

2818342

<https://www.phoenixcontact.com/us/products/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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## MPB F600X16/ 1GS - Wiring bridge

2818355

<https://www.phoenixcontact.com/us/products/2818355>



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

## VAL-MS 1000PV ST - Type 2 surge protection plug

2805185

<https://www.phoenixcontact.com/us/products/2805185>



Replacement plug for PV arrester combinations of the VAL-MS 1000 DC... product range

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