

# VAL-MS 1000DC-PV/2+V-FM - Type 2 surge arrester



2800627

<https://www.phoenixcontact.com/ro/produse/2800627>

Vă rugăm să țineți cont de faptul că datele afișate în acest document PDF au fost generate din catalogul nostru online. Datele complete sunt disponibile în documentația pentru utilizator. În cazul descărcărilor, se aplică Termenii și condițiile generale de utilizare ale companiei noastre.



Surge protective device for 2-pos. isolated and grounded 1,000 V DC PV systems, for DIN rail mounting, 3-pos. base element with remote indication contact, three pluggable temperature-monitored protective elements, status message on each plug.

## Avantajele dumneavoastră

- 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

## Date comerciale

|                                         |                      |
|-----------------------------------------|----------------------|
| Număr articol                           | 2800627              |
| Unitate de ambalare                     | 1 Bucată             |
| Cantitate minimă pentru comandă         | 1 Bucată             |
| Cod produs                              | CL1324               |
| Pagina de catalog                       | Pagina 73 (C-4-2019) |
| GTIN                                    | 4046356615075        |
| Greutate pe bucată (inclusiv ambalajul) | 340,2 g              |
| Greutate pe bucată (fără ambalaj)       | 330 g                |
| Cod tarifar vamal                       | 85363090             |
| Țara de origine                         | CN                   |

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## Date tehnice

### Notes

#### General

|      |                                                                                                                                                                             |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note | The device is intended for touch proof installation in a housing. Ensure that there is a gap of at least 8 mm between the active and grounded parts in the connection area. |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Product properties

|                                                |                                         |
|------------------------------------------------|-----------------------------------------|
| Product type                                   | PV arrester                             |
| Product family                                 | VALVETRAB MS                            |
| IEC test classification                        | PV II                                   |
|                                                | PV T2                                   |
| EN type                                        | T2                                      |
| IEC power supply system                        | DC                                      |
| Type                                           | DIN rail module, two-section, divisible |
| Distance between live and grounded parts       | 8 mm                                    |
| Installation location                          | Interior                                |
| Installation location of the disconnect device | Internal                                |
| Accessibility                                  | Accessible                              |
| Connection configuration                       | Y configuration                         |
| SPD failure behavior                           | OCFM (Open-Circuit Failure Mode)        |
| Surge protection fault message                 | Optical, remote indicator contact       |

#### Data management status

|                  |    |
|------------------|----|
| Article revision | 12 |
|------------------|----|

#### Insulation characteristics

|                      |     |
|----------------------|-----|
| Overvoltage category | III |
| Pollution degree     | 2   |

### Electrical properties

#### 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 ... 1.5 A AC           |
|                    | 1 A DC                         |

### Connection data

|                   |                                                    |
|-------------------|----------------------------------------------------|
| Connection method | Screw connection                                   |
| Screw thread      | M5                                                 |
| Tightening torque | 3 Nm (1.5 mm <sup>2</sup> ... 16 mm <sup>2</sup> ) |

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|                                  |                                                     |
|----------------------------------|-----------------------------------------------------|
|                                  | 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 rigid    | 1.5 mm <sup>2</sup> ... 35 mm <sup>2</sup>          |
| Conductor cross section AWG      | 15 ... 2                                            |
| Connection method                | Fork-type cable lug                                 |
| Conductor cross section flexible | 1.5 mm <sup>2</sup> ... 16 mm <sup>2</sup>          |

## 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 <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross section rigid    | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross section AWG      | 28 ... 16                                    |

## Dimensions

|                     |                                 |
|---------------------|---------------------------------|
| Dimensional drawing |                                 |
| Width               | 53.4 mm                         |
| Height              | 98.7 mm                         |
| Depth               | 65.7 mm (incl. DIN rail 7.5 mm) |
| Horizontal pitch    | 3 Div.                          |

## Material specifications

|                                        |                  |
|----------------------------------------|------------------|
| Color                                  | black (RAL 9005) |
|                                        | black (RAL 9005) |
| Flammability rating according to UL 94 | V-0              |
| CTI value of material                  | 600              |
| Insulating material                    | PA 6.6-FR        |
|                                        | PBT-FR           |
| Material group                         | I                |
| Housing material                       | PA 6.6-FR        |
|                                        | PBT-FR           |

## Mechanical properties

### Mechanical data

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

## Protective circuit

# VAL-MS 1000DC-PV/2+V-FM - Type 2 surge arrester



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|                                                                 |                                   |
|-----------------------------------------------------------------|-----------------------------------|
| Mode of protection                                              | (L+) - (L-)                       |
|                                                                 | (L+) - PE                         |
|                                                                 | (L-) - PE                         |
| Direction of action                                             | (L+)-PE & (L-)-PE & (L+)-(L-)     |
| Rated load current $I_L$                                        | 80 A                              |
| Residual current $I_{PE}$                                       | $\leq 20 \mu\text{A DC}$          |
|                                                                 | $\leq 250 \mu\text{A AC}$         |
| Standby power consumption $P_C$                                 | $\leq 25.00 \text{ mVA}$          |
| Nominal discharge current $I_n$ (8/20) $\mu\text{s}$            | 15 kA                             |
| Maximum discharge current $I_{\text{max}}$ (8/20) $\mu\text{s}$ | 40 kA                             |
| Total discharge current $I_{\text{total}}$ (8/20) $\mu\text{s}$ | 40 kA                             |
| Voltage protection level $U_p$                                  | $\leq 3.7 \text{ kV}$             |
| Residual voltage $U_{\text{res}}$                               | $\leq 3.7 \text{ kV}$ (at $I_n$ ) |
|                                                                 | $\leq 3.1 \text{ kV}$ (at 5 kA)   |
|                                                                 | $\leq 3.5 \text{ kV}$ (at 10 kA)  |
|                                                                 | $\leq 4 \text{ kV}$ (at 20 kA)    |
|                                                                 | $\leq 4.6 \text{ kV}$ (at 30 kA)  |
|                                                                 | $\leq 5 \text{ kV}$ (at 40 kA)    |
| Response time $t_A$                                             | $\leq 25 \text{ ns}$              |

## PV protective circuit

|                          |                                  |
|--------------------------|----------------------------------|
| Connection configuration | Y configuration                  |
| SPD failure behavior     | OCFM (Open-Circuit Failure Mode) |

## Protective circuit DC voltage side (DC)

|                                                                 |                                     |
|-----------------------------------------------------------------|-------------------------------------|
| Open circuit voltage $U_{\text{OCSTC}}$                         | $\leq 975 \text{ V DC}$             |
| Maximum discharge current $I_{\text{max}}$ (8/20) $\mu\text{s}$ | 40 kA                               |
| Response time $t_A$                                             | $\leq 25 \text{ ns}$                |
| Total discharge current $I_{\text{total}}$ (8/20) $\mu\text{s}$ | 40 kA                               |
| Insulation resistance $R_{\text{iso}}$                          | $> 5 \text{ G}\Omega$ (at 500 V DC) |
| Nominal discharge current $I_n$ (8/20) $\mu\text{s}$            | 15 kA                               |
| Rated load current $I_L$                                        | 80 A                                |
| Continuous operating current $I_{\text{CPV}}$                   | $< 20 \mu\text{A}$                  |
| Maximum continuous operating voltage $U_{\text{CPV}}$           | 1170 V DC                           |
| Short-circuit current rating $I_{\text{SCPV}}$                  | 2000 A                              |
| Residual voltage $U_{\text{res}}$                               | $\leq 3.7 \text{ kV}$ (at $I_n$ )   |
|                                                                 | $\leq 3.1 \text{ kV}$ (at 5 kA)     |
|                                                                 | $\leq 3.5 \text{ kV}$ (at 10 kA)    |
|                                                                 | $\leq 4 \text{ kV}$ (at 20 kA)      |
|                                                                 | $\leq 4.6 \text{ kV}$ (at 30 kA)    |
|                                                                 | $\leq 5 \text{ kV}$ (at 40 kA)      |
| Residual current $I_{PE}$                                       | $\leq 20 \mu\text{A DC}$            |
|                                                                 | $\leq 250 \mu\text{A AC}$           |
| Voltage protection level $U_p$                                  | $\leq 3.7 \text{ kV}$               |
| Standby power consumption $P_C$                                 | $\leq 25.00 \text{ mVA}$            |

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## 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                                | ≤ 2000 m (amsl)                               |
| Permissible humidity (operation)        | 5 % ... 95 %                                  |
| Shock (operation)                       | 60g (Half-sine / 11 ms / 3x ±X, ±Y, ±Z)       |
| Vibration (operation)                   | 7.5g (5-500 Hz/2.5 h/XYZ)                     |

## Approvals

### UL specifications

|                                           |             |
|-------------------------------------------|-------------|
| Maximum continuous operating voltage MCOV | 1170 V DC   |
| Short-circuit current rating (SCCR)       | 50 kA       |
| Voltage protection rating VPR             | 3 kV        |
| Nominal discharge current $I_n$           | 10 kA       |
| Mode of protection                        | (L+) - (L-) |
|                                           | (L+) - G    |
|                                           | (L-) - G    |
| Nominal voltage                           | 1170 V DC   |
| Power distribution system                 | DC PV       |
| SPD Type                                  | 1CA         |

### UL indicator/remote signaling

|                      |          |
|----------------------|----------|
| Operating voltage    | 125 V AC |
| AC operating current | 1 A AC   |

### UL connection data

|                             |                         |
|-----------------------------|-------------------------|
| Tightening torque           | 30 lb <sub>f</sub> ·in. |
| Conductor cross section AWG | 14 ... 2                |

## Standards and regulations

|                          |              |
|--------------------------|--------------|
| Standards/specifications | EN 61643-31  |
| Note                     | 2019         |
| Standards/specifications | IEC 61643-31 |
| Note                     | 2018         |

## Mounting

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

# VAL-MS 1000DC-PV/2+V-FM - Type 2 surge arrester

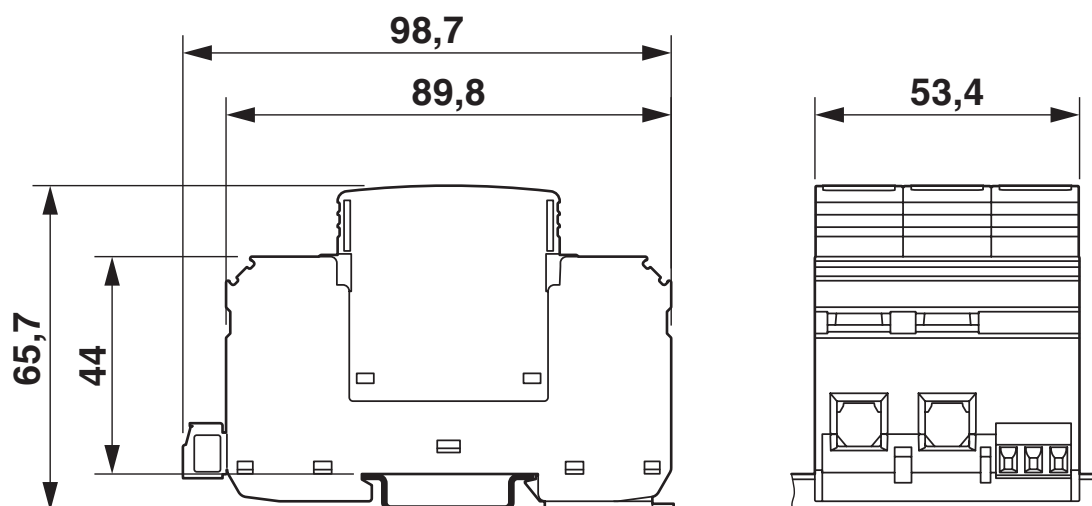


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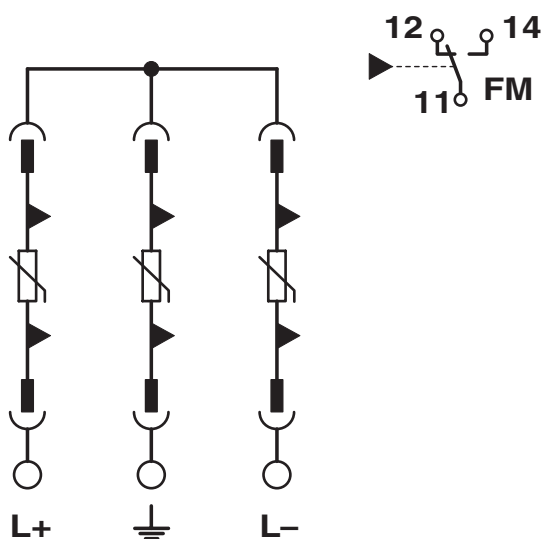
<https://www.phoenixcontact.com/ro/produse/2800627>

## Desene

Dimensional drawing



Circuit diagram



# VAL-MS 1000DC-PV/2+V-FM - Type 2 surge arrester



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## Aprobări

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/ro/produse/2800627>



**cUL Recognized**

ID de înregistrare: FILE E 330181



**UL Recognized**

ID de înregistrare: FILE E 330181



**EAC**

ID de înregistrare: RU C-DE.\*09.B.00169



**KEMA-KEUR**

ID de înregistrare: 71-123544 REV.2



**IECEE CB Scheme**

ID de înregistrare: NL-81006/A1

**CCA**

ID de înregistrare: NTR-NL 7937

**UAE-RoHS**

ID de înregistrare: 22-09-51250

**cULus Recognized**

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## Clasificări

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27130805 |
| ECLASS-13.0 | 27171402 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC000941 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 39121620 |
|-------------|----------|

## Environmental product compliance

### EU RoHS

|                                                |                                           |
|------------------------------------------------|-------------------------------------------|
| Îndeplinește cerințele conform directivei RoHS | Da, Nicio reglementare privind excepțiile |
|------------------------------------------------|-------------------------------------------|

### China RoHS

|                                        |                                                       |
|----------------------------------------|-------------------------------------------------------|
| Environment friendly use period (EFUP) | EFUP-E                                                |
|                                        | Nu există substanțe periculoase peste valorile limită |

### EU REACH SVHC

|                                                  |                                                         |
|--------------------------------------------------|---------------------------------------------------------|
| Trimitere la substanța candidată REACH (nr. CAS) | Nicio substanță cu un procentaj masic mai mare de 0,1 % |
|--------------------------------------------------|---------------------------------------------------------|

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## Accesorii

### ZBN 18 CUS - Zack marker strip

0825059

<https://www.phoenixcontact.com/ro/produse/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

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

2749589

<https://www.phoenixcontact.com/ro/produse/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/ro/produse/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/ro/produse/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

## VAL-MS 1000DC-PV/2+V-FM - Type 2 surge arrester

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<https://www.phoenixcontact.com/ro/produse/2800627>



## ATP-QTTCB - Partition plate

3206238

<https://www.phoenixcontact.com/ro/produse/3206238>

Partition plate, depth: 54 mm, width: 2 mm, height: 102 mm, color: gray



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## B-STIFT - Marker pen

1051993

<https://www.phoenixcontact.com/ro/produse/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/ro/produse/1206463>



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

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

2800624

<https://www.phoenixcontact.com/ro/produse/2800624>



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

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