

# VAL-US-240/40/2+1-FM - Surge protection device



2910365

<https://www.phoenixcontact.com/us/products/2910365>

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Surge protective device, UL Listed type 1 and IEC type 2, three channel with remote indicator contact for 240/480 V split phase AC, 3-wire plus ground.

## Your advantages

- With floating remote indication contact
- Optical, mechanical status indication for the individual arresters
- Multi-channel type 2 protective devices
- Mechanical coding of all slots

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 2910365       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | CL17          |
| Product key                          | CL132U        |
| GTIN                                 | 4055626445045 |
| Weight per piece (including packing) | 335 g         |
| Weight per piece (excluding packing) | 309 g         |
| Customs tariff number                | 85363030      |
| Country of origin                    | DE            |

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## Technical data

### Product properties

|                                |  |
|--------------------------------|--|
| Product type                   | Surge protection for NEMA power supply units |
| Product family                 | VALVETRAB US                                 |
| IEC test classification        | II<br>T2                                     |
| EN type                        | T2   |
| IEC power supply system        | TN-S<br>TT                                   |
| Type                           | DIN rail module, two-section, divisible      |
| Number of positions            | 3  |
| Surge protection fault message | Optical, remote indicator contact            |
| Number of ports                | One  |

### Insulation characteristics

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

### Electrical properties

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

### Indicator/remote signaling

|                    |                                 |
|--------------------|---------------------------------|
| Connection name    | Remote fault indicator contact  |
| Switching function | Changeover contact              |
| Operating voltage  | 5 V AC ... 250 V AC<br>30 V DC  |
| Operating current  | 5 mA AC ... 750 mA AC<br>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> )<br>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                                    |

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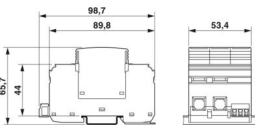


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|                                  |  |
|----------------------------------|--|
| Tightening torque                | 0.25 Nm                                      |
| Stripping length                 | 7 mm   |
| Conductor cross-section flexible | 0.14 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) |
| 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<br>PBT    |

## Mechanical properties

### Mechanical data

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

## Protective circuit

|  |                     |
|--|---------------------|
| Mode of protection                                 | L-N<br>N-PE         |
| Direction of action                                | 2L-N & N-GND        |
| Nominal voltage $U_N$                              | 240/480 V AC (TN-S) |
| Nominal frequency $f_N$                            | 50 Hz (60 Hz)       |
| Maximum continuous operating voltage $U_C$ (L-N)   | 385 V AC            |
| Maximum continuous operating voltage $U_C$ (L-PE)  | 385 V AC            |
| Maximum continuous operating voltage $U_C$ (N-PE)  | 305 V AC            |
| Nominal discharge current $I_n$ (8/20) $\mu$ s     | 20 kA               |
| Maximum discharge current $I_{max}$ (8/20) $\mu$ s | 40 kA               |
| Follow current interrupt rating $I_{fi}$ (N-PE)    | 100 A (305 V AC)    |
| Short-circuit current rating $I_{SCCR}$            | 25 kA               |
| Voltage protection level $U_p$ (L-N)               | $\leq 1.8$ kV       |

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|                                       |                                     |
|---------------------------------------|-------------------------------------|
| Voltage protection level $U_p$ (N-PE) | $\leq 1.5$ kV                       |
| Residual voltage $U_{res}$ (L-N)      | $\leq 1.8$ kV (at $I_n$ )           |
|                                       | $\leq 1.6$ kV (at 10 kA)            |
|                                       | $\leq 1.4$ kV (at 5 kA)             |
|                                       | $\leq 1.3$ kV (at 3 kA)             |
| Residual voltage $U_{res}$ (L-PE)     | $\leq 2.2$ kV (at $I_n$ )           |
|                                       | $\leq 1.7$ kV (at 10 kA)            |
|                                       | $\leq 1.5$ kV (at 5 kA)             |
|                                       | $\leq 1.4$ kV (at 3 kA)             |
| Residual voltage $U_{res}$ (N-PE)     | $\leq 0.4$ kV (at $I_n$ )           |
|                                       | $\leq 0.25$ kV (at 10 kA)           |
|                                       | $\leq 0.15$ kV (at 5 kA)            |
|                                       | $\leq 0.1$ kV (at 3 kA)             |
| TOV behavior at $U_T$ (L-N)           | 415 V AC (5 s / withstand mode)     |
|                                       | 440 V AC (120 min / withstand mode) |
| TOV behavior at $U_T$ (N-PE)          | 1200 V AC (200 ms / withstand mode) |
| Response time $t_A$ (L-N)             | $\leq 25$ ns                        |
| Response time $t_A$ (L-PE)            | $\leq 100$ ns                       |
| Response time $t_A$ (N-PE)            | $\leq 100$ ns                       |
| Max. backup fuse with branch wiring   | 125 A (gG)                          |

## 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                                | $\leq 2000$ 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-L) | 750 V AC |
| Maximum continuous operating voltage MCOV (L-N) | 385 V AC |
| Maximum continuous operating voltage MCOV (L-G) | 385 V AC |
| Maximum continuous operating voltage MCOV (N-G) | 305 V AC |
| Short-circuit current rating (SCCR)             | 200 kA   |
| Voltage protection rating VPR (L-L)             | 2500 V   |
| Voltage protection rating VPR (L-N)             | 1500 V   |
| Voltage protection rating VPR (L-G)             | 2000 V   |
| Voltage protection rating VPR (N-G)             | 1200 V   |
| UL type   | type 1   |

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|                                 |                            |
|---------------------------------|----------------------------|
| Nominal discharge current $I_n$ | 20 kA                      |
| Maximum Surge Current per Phase | 40 kA                      |
| Mode of protection              | L-L                        |
|                                 | L-N                        |
|                                 | L-G                        |
|                                 | N-G                        |
| Nominal voltage                 | 240/480 V AC (Split phase) |
| Power distribution system       | Split phase                |
| Nominal frequency               | 50/60 Hz                   |
| SPD Type                        | 1                          |

## 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

### Air clearances and creepage distances

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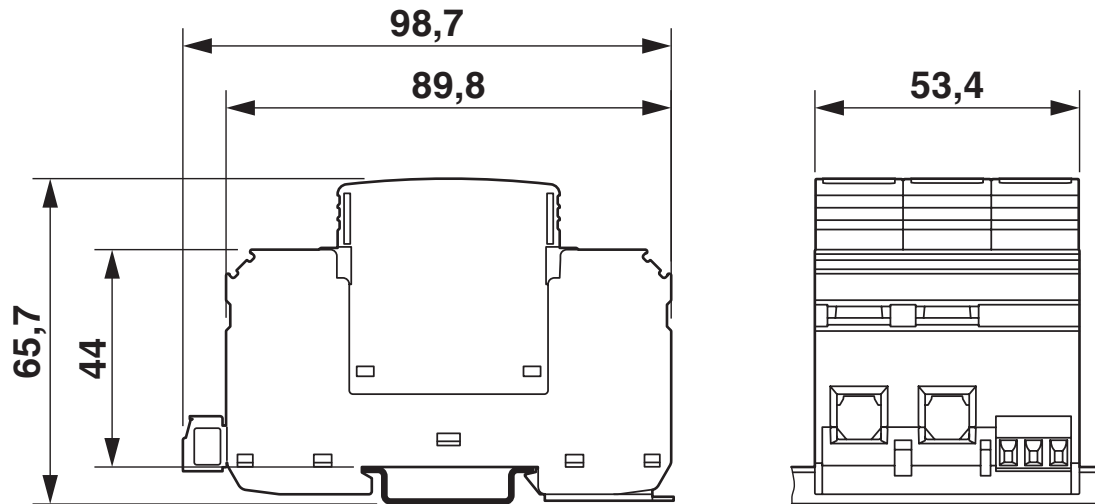


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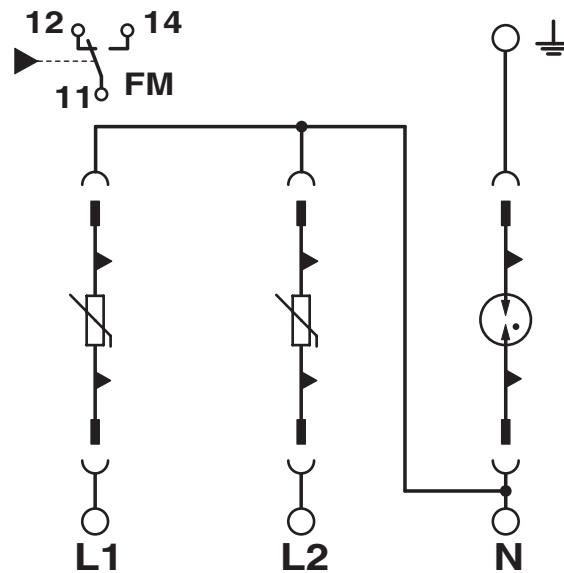
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## Drawings

Dimensional drawing



Circuit diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2910365>



**UL Listed**

Approval ID: FILE E 330181



**cUL Listed**

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27171202 |
| ECLASS-15.0 | 27171202 |

### ETIM

|           |          |
|-----------|----------|
| ETIM 10.0 | EC000941 |
|-----------|----------|

### 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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