

# VAL-US-120/65/3+0-FM - Surge protection device



2910359

<https://www.phoenixcontact.com/nl/products/2910359>

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Surge protective device, UL Listed type 1 and IEC type 2, three-channel with remote indicator contact for 120/240 V split-phase or 120/208 V Wye three-phase AC, 4-wire.

## Your advantages

- With floating remote indication contact
- UL open terminal listed SPD
- Thermal disconnect device for each individual plug
- Mechanical coding of all slots
- Optical, mechanical status indication for the individual arresters
- Pluggable
- Secure hold of plugs in the event of high lightning current loads and strong vibrations thanks to new latching

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 2910359       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | CL115U        |
| Product key                          | CL115U        |
| GTIN                                 | 4055626444994 |
| Weight per piece (including packing) | 436,7 g       |
| Weight per piece (excluding packing) | 405 g         |
| Customs tariff number                | 85363030      |
| Country of origin                    | DE            |

## Technical data

### Product properties

|                                |                                         |
|--------------------------------|-----------------------------------------|
| Product family                 | VALVETRAB US                            |
| IEC test classification        | I / II                                  |
|                                | T1 / T2                                 |
| EN type                        | T1 / T2                                 |
| IEC power supply system        | TN-C                                    |
| Type                           | DIN rail module, two-section, divisible |
| Number of positions            | 3                                       |
| Surge protection fault message | Optical, remote indicator contact       |

### 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            |
|                    | 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                | 4.5 Nm (1.5 mm <sup>2</sup> ... 16 mm <sup>2</sup> ) |
|                                  | 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                                             |

### Remote fault indicator contact

|                                  |                                              |
|----------------------------------|----------------------------------------------|
| Connection method                | Screw connection                             |
| 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                                    |

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## Dimensions

|                     |                                 |
|---------------------|---------------------------------|
| Dimensional drawing |                                 |
| Width               | 53.4 mm                         |
| Height              | 98.7 mm                         |
| Depth               | 77.5 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-PEN                                                                                                         |
| Direction of action                                    | 3L-GND                                                                                                        |
| Nominal voltage $U_N$                                  | 120/208 V AC (TN-C)                                                                                           |
| Nominal frequency $f_N$                                | 50 Hz (60 Hz)                                                                                                 |
| Maximum continuous operating voltage $U_C$ (L-PEN)     | 175 V AC                                                                                                      |
| Rated load current $I_L$                               | 80 A                                                                                                          |
| Protective conductor current $I_{PE}$                  | $\leq 0.8$ mA                                                                                                 |
| Nominal discharge current $I_n$ (8/20) $\mu$ s         | 20 kA                                                                                                         |
| Nominal discharge current $I_n$ (8/20) $\mu$ s (L-PEN) | 12.5 kA                                                                                                       |
| Maximum discharge current $I_{max}$ (8/20) $\mu$ s     | 65 kA                                                                                                         |
| Total discharge current $I_{Total}$ (10/350) $\mu$ s   | 37.5 kA                                                                                                       |
| Short-circuit current rating $I_{SCCR}$                | 25 kA                                                                                                         |
| Voltage protection level $U_p$                         | $\leq 0.8$ kV                                                                                                 |
| Residual voltage $U_{res}$                             | $\leq 0.8$ kV (at $I_n$ )<br>$\leq 0.75$ kV (at 10 kA)<br>$\leq 0.65$ kV (at 5 kA)<br>$\leq 0.5$ kV (at 3 kA) |
| TOV behavior at $U_T$                                  | 208 V AC (5 s / withstand mode)                                                                               |

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|                                             |                                        |
|---------------------------------------------|----------------------------------------|
|                                             | 240 V AC (120 min / safe failure mode) |
| Response time $t_A$                         | $\leq 25$ ns                           |
| Max. backup fuse with V-type through wiring | 80 A (gG)                              |
| Max. backup fuse with branch wiring         | 160 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)                       | 30g (Half-sine / 11 ms / 3x $\pm X$ , $\pm Y$ , $\pm Z$ ) |
| Vibration (operation)                   | 7.5g (10 ... 500 Hz / 2.5 h / X, Y, Z)                    |

## Approvals

### UL specifications

|                                                 |                                                          |
|-------------------------------------------------|----------------------------------------------------------|
| Maximum continuous operating voltage MCOV (L-L) | 350 V AC                                                 |
| Maximum continuous operating voltage MCOV (L-N) | 350 V (120/240S)                                         |
| Maximum continuous operating voltage MCOV (L-G) | 175 V AC                                                 |
| Maximum continuous operating voltage MCOV (N-G) | 175 V (120/240S)                                         |
| Short-circuit current rating (SCCR)             | 200 kA                                                   |
| Voltage protection rating VPR (L-L)             | 1200 V                                                   |
| Voltage protection rating VPR (L-N)             | 1200 V (120/240S)                                        |
| Voltage protection rating VPR (L-G)             | 700 V                                                    |
| Voltage protection rating VPR (N-G)             | 700 V (120/240S)                                         |
| UL type                                         | type 1                                                   |
| Nominal discharge current $I_n$                 | 20 kA                                                    |
| Maximum Surge Current per Phase                 | 65 kA (acc. IEC61643-1)<br>80 kA (acc. NEMA LS1)         |
| Mode of protection                              | L-L<br>L-G                                               |
| Nominal voltage                                 | 120/208 V AC (3-phase Wye)<br>120/240 V AC (Split phase) |
| Power distribution system                       | Wye                                                      |
| 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. |
|-------------------|-------------------------|

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|                             |          |
|-----------------------------|----------|
| Conductor cross-section AWG | 14 ... 2 |
|-----------------------------|----------|

## Standards and regulations

### Air clearances and creepage distances

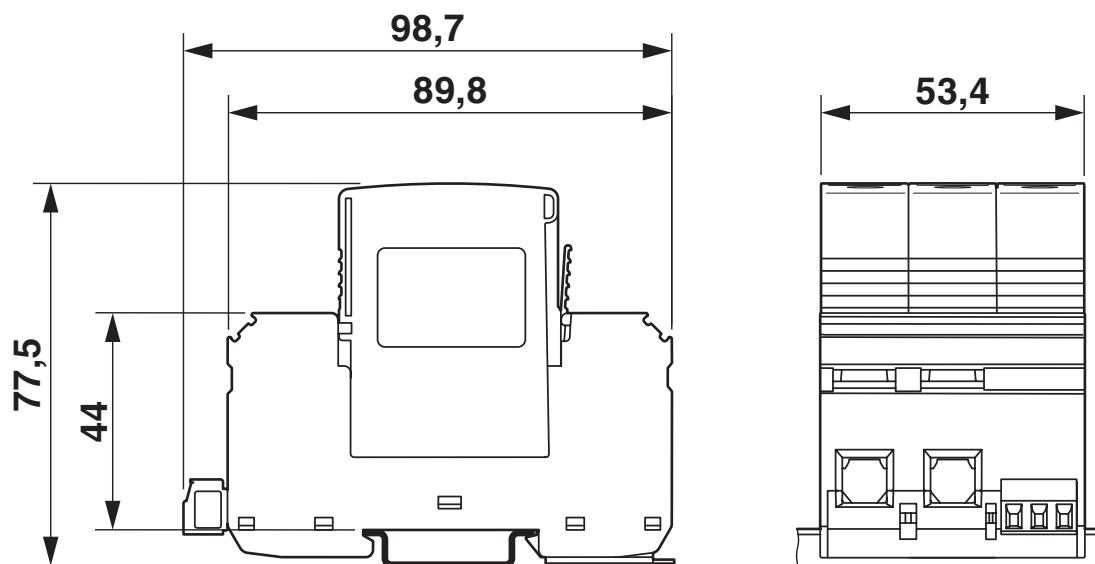
|                          |                          |
|--------------------------|--------------------------|
| Standards/regulations    | EN 60664-1 / EN 61643-11 |
| Standards/specifications | IEC 61643-11             |
| Note                     | 2011                     |
| Standards/specifications | EN 61643-11              |
| Note                     | 2012                     |

## Mounting

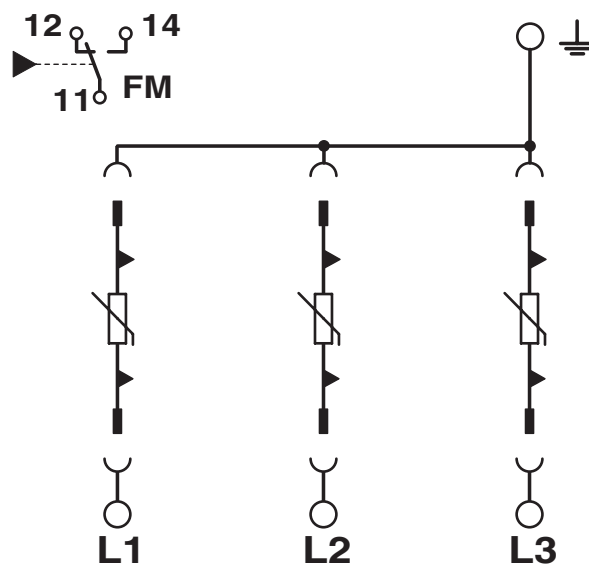
|               |                 |
|---------------|-----------------|
| Mounting type | DIN rail: 35 mm |
|---------------|-----------------|

## Drawings

Dimensional drawing



Circuit diagram



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## Approvals

🔗 To download certificates, visit the product detail page: <https://www.phoenixcontact.com/nl/products/2910359>



**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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PHOENIX CONTACT B.V.  
Hengelder 56 6902 PA Zevenaar  
Postbus 246 6900 AE Zevenaar  
(0316) 59 17 20  
[sales@phoenixcontact.nl](mailto:sales@phoenixcontact.nl)