

# VAL-US-120/40-P - Type 1 surge protection plug



2910335

<https://www.phoenixcontact.com/pc/products/2910335>

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UL Recognized type 1 SPD and IEC type 2 surge protection plug with a varistor and thermal disconnect for use with VAL-US base elements, mechanical and visual fault warning

## Product description

Surge protective device replacement plug

## Your advantages

- Thermal disconnect device for each individual plug
- Optical, mechanical status indication for the individual arresters
- Pluggable
- Mechanical coding of all slots
- Consists of base element and plug

## Commercial data

|                                      |                    |
|--------------------------------------|--------------------|
| Item number                          | 2910335            |
| Packing unit                         | 1 pc               |
| Minimum order quantity               | 1 pc               |
| Product key                          | CL1321             |
| Catalog page                         | Page 92 (C-4-2019) |
| GTIN                                 | 4055626444475      |
| Weight per piece (including packing) | 39.8 g             |
| Weight per piece (excluding packing) | 33 g               |
| Customs tariff number                | 85363030           |
| Country of origin                    | DE                 |

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## Technical data

### Notes

|         |          |
|---------|----------|
| General | Used in: |
|---------|----------|

### Product properties

|                                |                  |
|--------------------------------|------------------|
| Product type                   | Replacement plug |
| Product family                 | VALVETRAB MS     |
| IEC test classification        | II               |
|                                | T2               |
| EN type                        | T2               |
| Type                           | Male             |
| Number of positions            | 1                |
| Surge protection fault message | optical          |

### Insulation characteristics

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

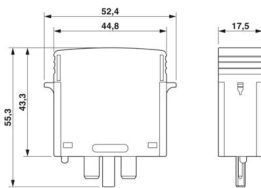
### Electrical properties

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

### Connection data

|                   |                          |
|-------------------|--------------------------|
| Connection method | VALVETRAB plug-in system |
|-------------------|--------------------------|

### Dimensions

|                     |                                                                                      |
|---------------------|--------------------------------------------------------------------------------------|
| Dimensional drawing |  |
| Width               | 17.5 mm                                                                              |
| Height              | 52.4 mm                                                                              |
| Depth               | 55.3 mm                                                                              |
| Horizontal pitch    | 1 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           |

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PBT

## Protective circuit

|                                                    |                                     |
|----------------------------------------------------|-------------------------------------|
| Mode of protection                                 | L-N                                 |
|                                                    | L-PEN                               |
|                                                    | N-PE                                |
| Direction of action                                | 1L-N/PE                             |
| Nominal voltage $U_N$                              | 120/208 V AC                        |
|                                                    | 120/240 V AC                        |
| Nominal frequency $f_N$                            | 50 Hz (60 Hz)                       |
| Maximum continuous voltage $U_C$                   | 175 V AC                            |
| Residual current $I_{PE}$                          | $\leq 450 \mu A$                    |
| Standby power consumption $P_C$                    | $\leq 400.00 \text{ mVA}$           |
| 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 $U_p$                     | $\leq 0.9 \text{ kV}$               |
| Residual voltage $U_{res}$                         | $\leq 0.8 \text{ kV}$ (at $I_n$ )   |
|                                                    | $\leq 0.7 \text{ kV}$ (at 10 kA)    |
|                                                    | $\leq 0.6 \text{ kV}$ (at 5 kA)     |
|                                                    | $\leq 0.5 \text{ kV}$ (at 3 kA)     |
| TOV behavior at $U_T$                              | 208 V AC (5 s / withstand mode)     |
|                                                    | 229 V AC (120 min / withstand mode) |
| Max. backup fuse with branch wiring                | 100 A (gG)                          |

## Additional technical data

|                                                    |       |
|----------------------------------------------------|-------|
| Maximum discharge current $I_{max}$ (8/20) $\mu s$ | 40 kA |
|----------------------------------------------------|-------|

## 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                                | $\leq 2000 \text{ m}$ (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 | 175 V AC |
| Short-circuit current rating (SCCR)       | 200 kA   |
| Voltage protection rating VPR             | 700 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-N          |
|                                 | L-G          |
|                                 | N-G          |
| Nominal voltage                 | 120/240 V AC |
| Power distribution system       | Single phase |
| Nominal frequency               | 50/60 Hz     |
| SPD Type                        | 1CA          |

## 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 | on base element |
|---------------|-----------------|

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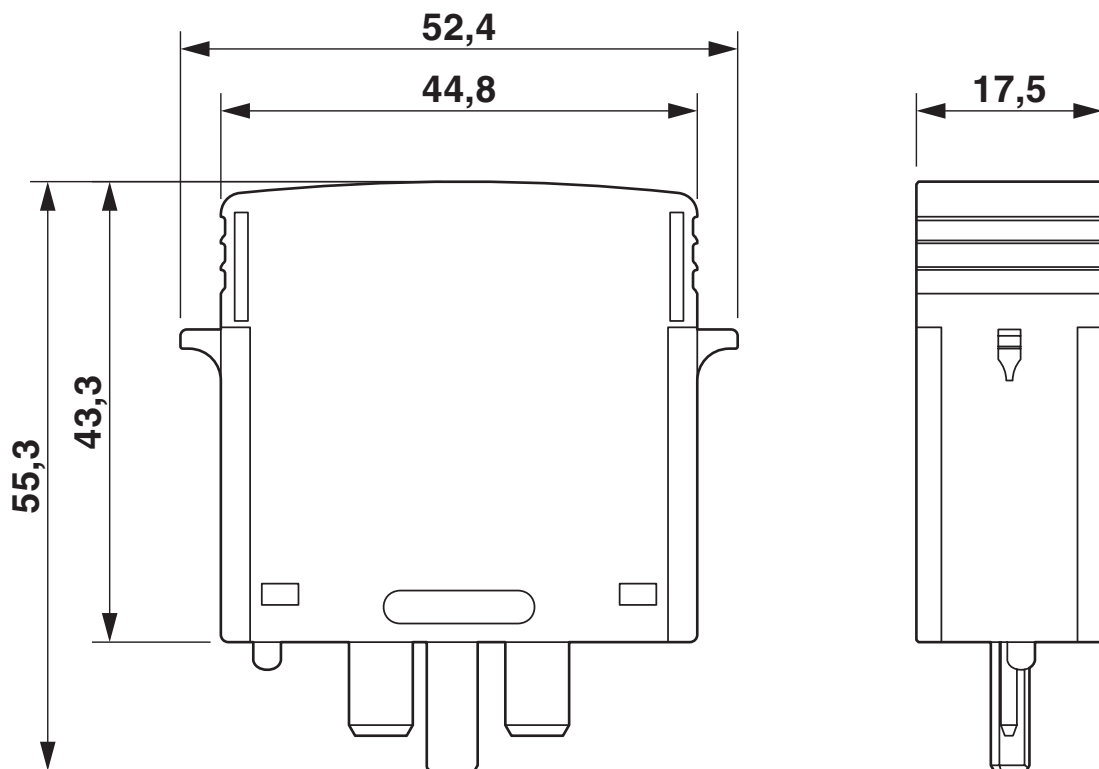


## Drawings

Circuit diagram



Dimensional drawing



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/pc/products/2910335>



**cUL Recognized**  
Approval ID: FILE E 330181



**UL Recognized**  
Approval ID: FILE E 330181

**cULus Recognized**

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27130890 |
| ECLASS-13.0 | 27171292 |

### ETIM

|          |          |
|----------|----------|
| ETIM 8.0 | EC002496 |
|----------|----------|

### 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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## Accessories

### VAL-US-120/40/1+0-FM - Type 1 surge protection device

2910348

<https://www.phoenixcontact.com/pc/products/2910348>



Surge protective device, single channel with remote indicator contact for 120 V AC

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### VAL-US-120/40/1+1-FM - Type 1 surge protection device

2910349

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Surge protective device, two channel with remote indicator contact for 120 V AC, 2-wire plus ground.

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## VAL-US-120/40/2+0-FM - Type 1 surge protection device

2910351

<https://www.phoenixcontact.com/pc/products/2910351>



Surge protective device, two channel with remote indicator contact for 120/240 V split phase AC, 3-wire.

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## VAL-US-120/40/2+1-FM - Type 1 surge protection device

2910352

<https://www.phoenixcontact.com/pc/products/2910352>



Surge protective device, three channel with remote indicator contact for 120/240 V split phase AC, 3-wire plus ground.

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## VAL-US-120/40/3+0-FM - Type 1 surge protection device

2910353

<https://www.phoenixcontact.com/pc/products/2910353>



Surge protective device, three-channel with remote indicator contact for 120/240 V split-phase or 120/208 V Wye three-phase AC, 4-wire.

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## VAL-US-120/40/3+1-FM - Type 1 surge protection device

2910354

<https://www.phoenixcontact.com/pc/products/2910354>



Surge protective device, four channel with remote indicator contact for 120/208 V Wye three phase AC, 4-wire plus ground.

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## VAL-US-240HLD/40/3+1-FM - Type 1 surge protection device

2910371

<https://www.phoenixcontact.com/pc/products/2910371>



Surge protective device, four channel with remote indicator contact for 240 V AC high-leg DELTA.

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