

# VAL-US-48/65/1+1V-FM - Surge protection device



2910346

<https://www.phoenixcontact.com/us/products/2910346>

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Surge protective device, UL Listed type 1 and IEC type 1/2, two channels with remote indicator contact for 48 V DC, 2-wire plus ground

## Your advantages

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

## Commercial data

Item number	2910346
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CL17
Product key	CL115U
GTIN	4055626444888
Weight per piece (including packing)	262 g
Weight per piece (excluding packing)	262 g
Customs tariff number	85363030
Country of origin	DE

## Technical data

### Product properties

Product type	Surge protection for NEMA power supply units
Product family	VALVETRAB US
IEC test classification	I / II
	T1 / T2
EN type	T1 / T2
IEC power supply system	DC
Type	DIN rail module, two-section, divisible
Number of positions	2
Surge protection fault message	Optical, remote indicator contact
Number of ports	One

### 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 (30 V 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>

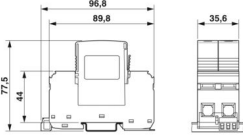
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Conductor cross-section AWG	28 ... 16
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## Dimensions

Dimensional drawing	
Width	35.6 mm
Height	96.8 mm
Depth	77.5 mm (incl. DIN rail 7.5 mm)
Horizontal pitch	2 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 PBT

## Mechanical properties

Mechanical data	
Open side panel	No

## Protective circuit

Direction of action	1L-N & N-GND
Nominal voltage $U_N$	60 V AC $\pm 10\%$ (TN-S) 60 V DC $\pm 10\%$ -48 V DC $\pm 10\%$ (RRH)
Maximum continuous operating voltage $U_C$	100 V DC 75 V AC
Rated load current $I_L$	80 A
Protective conductor current $I_{PE}$	$\leq 0.6$ mA
Nominal discharge current $I_n$ (8/20) $\mu$ s	12.5 kA
Maximum discharge current $I_{max}$ (8/20) $\mu$ s	65 kA
Total discharge current $I_{Total}$ (10/350) $\mu$ s	12.5 kA
Short-circuit current rating $I_{SCCR}$	5 kA
Voltage protection level $U_p$	$\leq 0.4$ kV
TOV behavior at $U_T$	130 V DC (5 s / withstand 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	≤ 2000 m (amsl)
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	30g (Half-sine / 11 ms / 3x ±X, ±Y, ±Z)
Vibration (operation)	7.5g (10 ... 500 Hz / 2.5 h / X, Y, Z)

## Approvals

### UL specifications

Short-circuit current rating (SCCR)	5 kA (DC)
Voltage protection rating VPR (DC+) - (DC-)	400 V
Voltage protection rating VPR (DC+) - G	400 V
Voltage protection rating VPR (DC-) - G	600 V
UL type	type 1
Nominal discharge current $I_n$	20 kA
Maximum Surge Current per Phase	65 kA
Mode of protection	(DC+) - (DC-) (DC+) - G
Nominal voltage	48 V DC
Power distribution system	DC
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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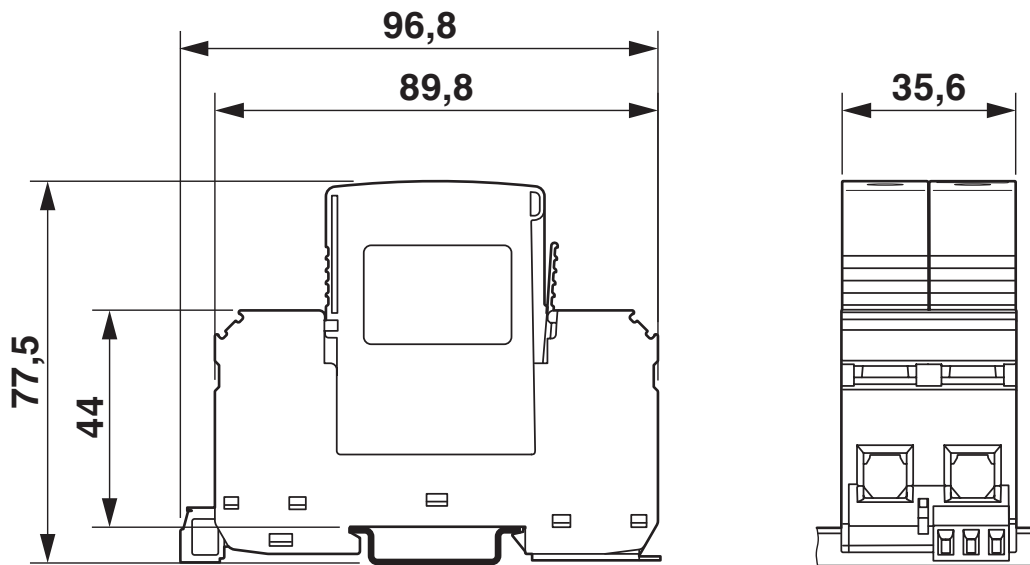
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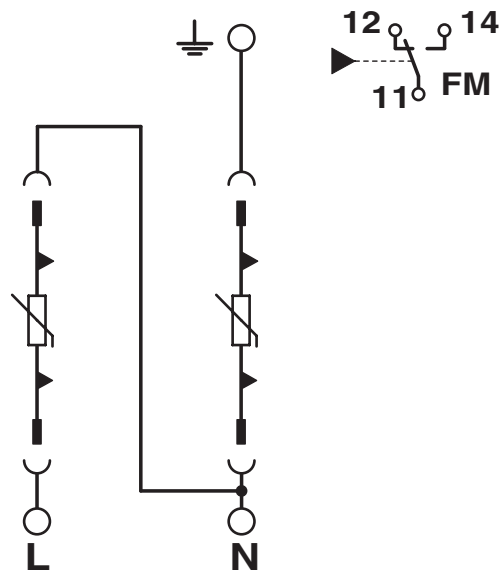
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## Drawings

Dimensional drawing



Circuit diagram



Base marked 'L' and 'N' for AC applications can be connected to '-' and '+' respectively for DC applications.

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2910346>



**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
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### UNSPSC

UNSPSC 21.0	39121600
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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### 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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