

# VAL-US 60/1+1/1U/FM - Type 2 surge arrester



2909630

<https://www.phoenixcontact.com/us/products/2909630>

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Universal varistor-based plug-in surge arrester for 48 - 60 V DC applications with two conductors plus ground, with remote indication contact



## Your advantages

- Dual-channel, panel mountable surge protective device
- Orthogonal mounting orientation to plug
- Base element with floating remote indication contact
- Rack-mount 1U panel applications

## Commercial data

Item number	2909630
Packing unit	1 pc
Minimum order quantity	6 pc
Sales key	CL18
Product key	CL1321
GTIN	4055626370538
Weight per piece (including packing)	222.22 g
Weight per piece (excluding packing)	222.22 g
Customs tariff number	85363010
Country of origin	US

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## Technical data

### Product properties

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

### Insulation characteristics

Pollution degree	2
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### Electrical properties

Nominal frequency $f_N$	50 Hz (60 Hz)
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### Indicator/remote signaling

Connection name	Remote fault indicator contact
Switching function	Changeover contact
Operating voltage	5 V AC ... 250 V AC 125 V AC (UL) 125 V DC (200 mA DC)
Operating current	5 mA AC ... 1.5 A 1 A (UL) 1 A (30 V DC)

### Connection data

Connection method	Screw connection
Screw thread	M5
Tightening torque	2.5 Nm ... 3 Nm 22 lb <sub>F</sub> -in. ... 26.5 lb <sub>F</sub> -in. (UL)
Stripping length	16 mm
Conductor cross-section flexible min.	1.5 mm <sup>2</sup>
Conductor cross-section flexible max.	25 mm <sup>2</sup>
Conductor cross-section, rigid min.	1.5 mm <sup>2</sup>
Conductor cross-section, rigid max.	35 mm <sup>2</sup>
Conductor cross-section AWG	15 ... 2 10 ... 2 (UL)

### Remote fault indicator contact

Connection method	Push-in spring connection
Stripping length	6 mm

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Conductor cross-section flexible min.	0.2 mm <sup>2</sup>
Conductor cross-section flexible max.	0.5 mm <sup>2</sup>
Conductor cross-section, rigid min.	0.14 mm <sup>2</sup>
Conductor cross-section, rigid max.	0.5 mm <sup>2</sup>
Conductor cross-section AWG	24 ... 20 (UL)

## Dimensions

Dimensional drawing	
Width	70.6 mm
Height	40.6 mm
Rack unit	1 U
Depth	85.6 mm

## Material specifications

Color	gray (RAL 7042)
	gray (RAL 7042)
Flammability rating according to UL 94	V-0
Housing material	PA 6.6
	PBT

## Mechanical properties

### Mechanical data

Open side panel	No
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## Protective circuit

Mode of protection	L-N
	N-PE
Direction of action	L-N & L(N)-PE
Nominal voltage $U_N$	60 V AC $\pm 10\%$ (TN-S)
	-48 V DC $\pm 10\%$ (RRH)
Nominal frequency $f_N$	50 Hz (60 Hz)
Maximum continuous operating voltage $U_C$	75 V AC
	100 V DC
Rated load current $I_L$	80 A
Protective conductor current $I_{PE}$	$\leq 0.45$ mA
Standby power consumption $P_C$	$\leq 35$ mVA
Nominal discharge current $I_n$ (8/20) $\mu$ s	15 kA
Maximum discharge current $I_{max}$ (8/20) $\mu$ s	40 kA
Short-circuit current rating $I_{SCCR}$	25 kA

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Voltage protection level $U_p$	$\leq 0.55$ kV
Residual voltage $U_{res}$	$\leq 0.55$ kV (at $I_n$ )
	$\leq 0.425$ kV (at 10 kA)
	$\leq 0.325$ kV (at 5 kA)
	$\leq 0.275$ kV (at 3 kA)
TOV behavior at $U_T$	100 V AC (5 s / withstand mode)
Response time $t_A$	$\leq 25$ ns
Max. backup fuse with V-type through wiring	80 A AC (gG - 16 mm <sup>2</sup> )
Max. backup fuse with branch wiring	160 A AC (gG)

## Additional technical data

Maximum discharge current $I_{max}$ (8/20) $\mu$ s	40 kA
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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	$\leq 2000$ 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-N)	75 V AC
	100 V DC
Mode of protection	N-G
	L-N
	(L+) - (L-)
	(L+) - G
(L-) - G	
Nominal voltage	60 V DC
Power distribution system	DC
SPD Type	4CA

### 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	10 ... 2

## Mounting

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Mounting type	Panel mount
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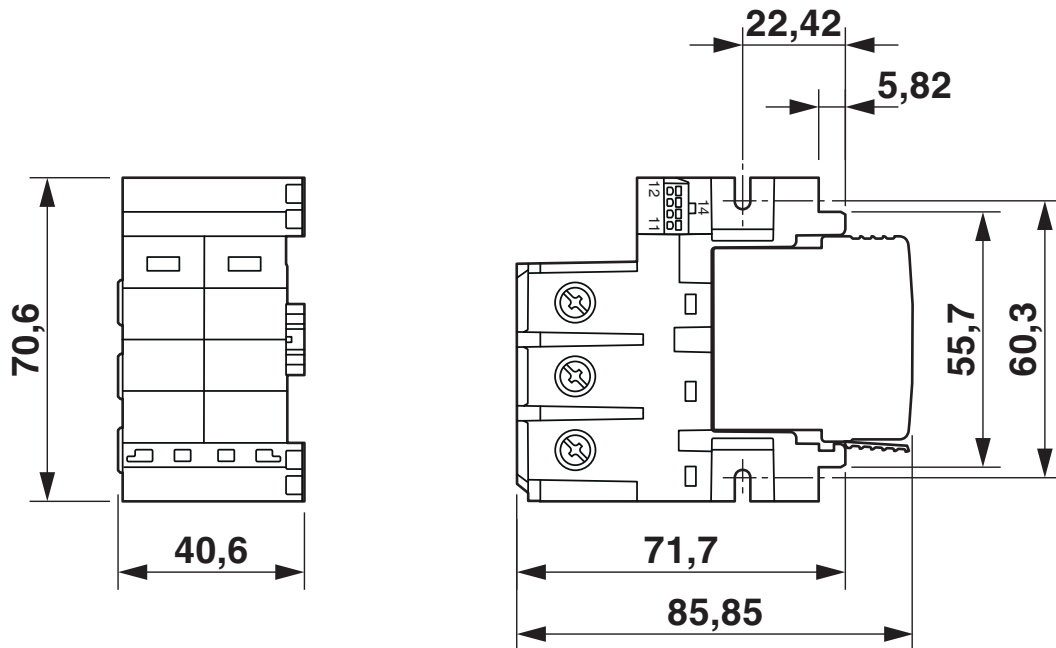
# VAL-US 60/1+1/1U/FM - Type 2 surge arrester

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## Drawings

Dimensional drawing



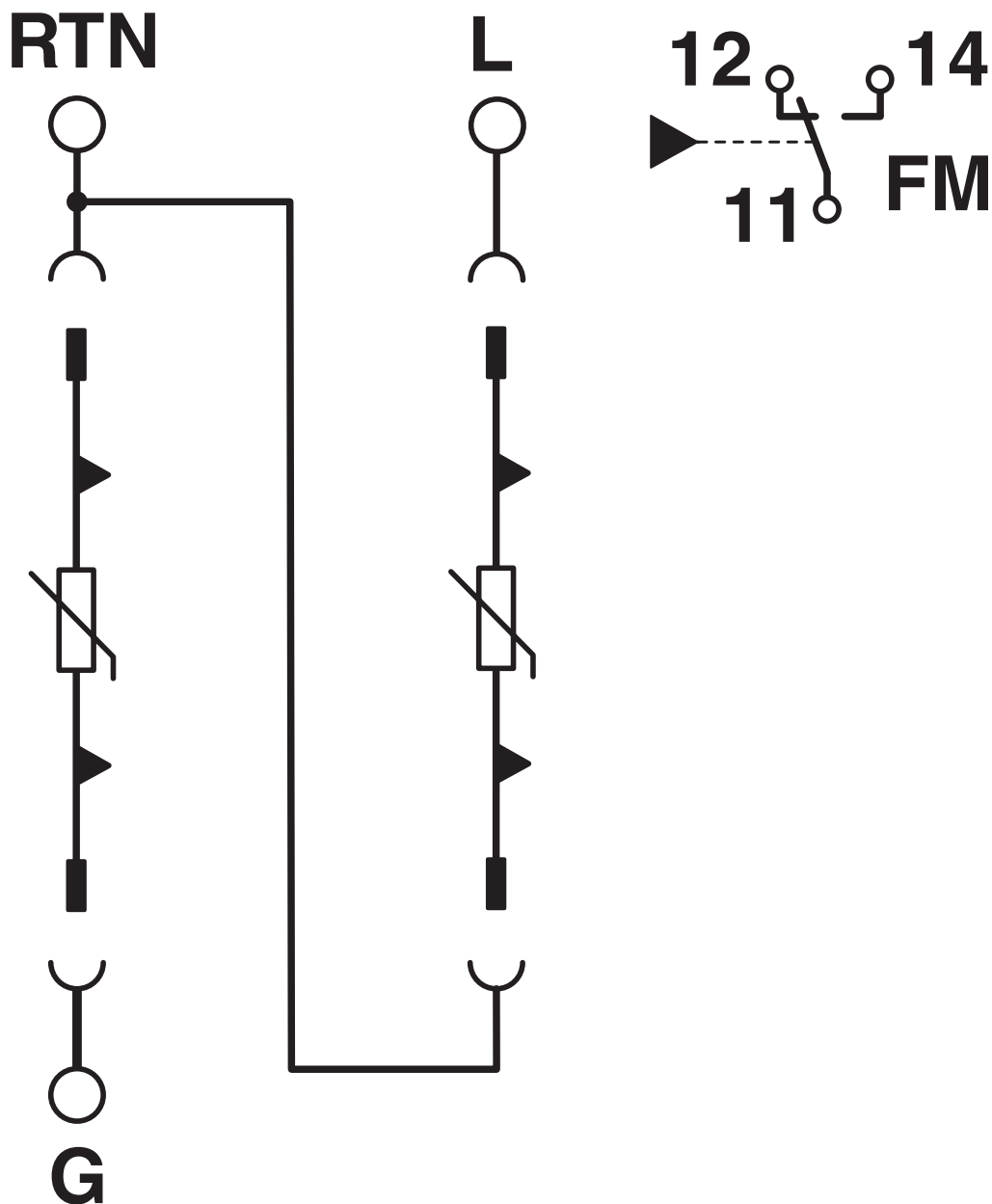
# VAL-US 60/1+1/1U/FM - Type 2 surge arrester



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Circuit diagram



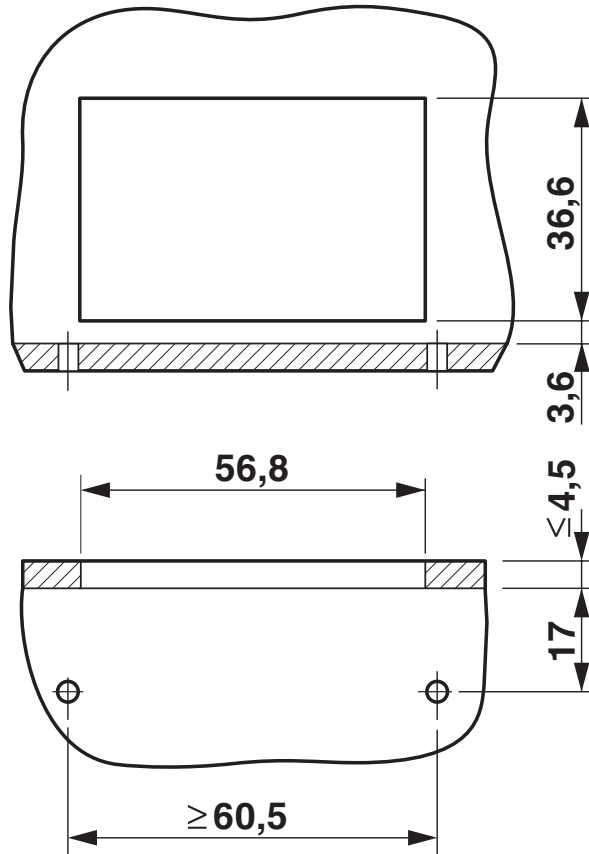
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Drilling plan/solder pad geometry



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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

### China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

### EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
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