

# VAL-CP-1S-350/O - Type 2 surge arrester



2881036

<https://www.phoenixcontact.com/us/products/2881036>

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Plug-in type 2 arrester (surge arrester) for single-phase power supply networks with separate N and PE (3-conductor system: L1, N, PE).

## Commercial data

Item number	2881036
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	CL01
Product key	CL1311
GTIN	4046356049252
Weight per piece (including packing)	210.7 g
Weight per piece (excluding packing)	210.7 g
Customs tariff number	85363030
Country of origin	DE

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## Technical data

### Notes

Notes on operation	Does not apply to VAL-CP.../O. These versions do not have remote indication.
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### Product properties

Product type	Surge arrester
IEC test classification	II T2
EN type	T2
IEC power supply system	TN-S TT
Type	DIN rail module, two-section, divisible
Number of positions	2
Surge protection fault message	optical
Number of ports	One

### Insulation characteristics

Overvoltage category	III
Pollution degree	2

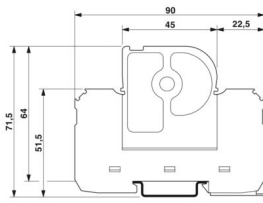
### Electrical properties

Nominal frequency $f_N$	50 Hz (60 Hz)
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### Connection data

Connection method	Screw connection
Screw thread	M5
Tightening torque	4.5 Nm
Stripping length	16 mm
Conductor cross-section flexible	2.5 mm <sup>2</sup> ... 16 mm <sup>2</sup>
Conductor cross-section rigid	2.5 mm <sup>2</sup> ... 25 mm <sup>2</sup>
Conductor cross-section AWG	12 ... 4

### Dimensions

Dimensional drawing	
Width	25.3 mm
Height	90 mm
Depth	71.5 mm

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Horizontal pitch	1.4 Div.
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## Material specifications

Flammability rating according to UL 94	V-0
CTI value of material	600
Insulating material	PBT-FR
Material group	I
Housing material	PBT-FR

## Protective circuit

Mode of protection	L-N
	L-PE
	N-PE
Direction of action	1L-N & N-PE
Nominal voltage $U_N$	240 V AC (TN-S)
	240 V AC (TT)
Nominal frequency $f_N$	50 Hz (60 Hz)
Maximum continuous operating voltage $U_C$ (L-N)	350 V AC
Maximum continuous operating voltage $U_C$ (L-PE)	350 V AC
Maximum continuous operating voltage $U_C$ (N-PE)	264 V AC
Rated load current $I_L$	40 A (Biconnect M4 fork-type cable lug 6 mm <sup>2</sup> )
	63 A (TWIN ferrule 2 x 10 mm <sup>2</sup> )
Protective conductor current $I_{PE}$	$\leq 1 \mu\text{A}$
Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (L-N)	20 kA
Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (N-PE)	20 kA
Maximum discharge current $I_{max}$ (8/20) $\mu\text{s}$ (L-N)	40 kA
Maximum discharge current $I_{max}$ (8/20) $\mu\text{s}$ (N-PE)	40 kA
Follow current interrupt rating $I_{fi}$ (N-PE)	100 A (264 V AC)
Short-circuit current rating $I_{SCCR}$	25 kA
Voltage protection level $U_p$ (L-N)	$\leq 1.5 \text{ kV}$
Voltage protection level $U_p$ (L-PE)	$\leq 1.9 \text{ kV}$
Voltage protection level $U_p$ (N-PE)	$\leq 1.5 \text{ kV}$
Residual voltage $U_{res}$ (L-N)	$\leq 1.5 \text{ kV}$ (at $I_n$ )
	$\leq 1.3 \text{ kV}$ (at 10 kA)
	$\leq 1.2 \text{ kV}$ (at 5 kA)
	$\leq 1.1 \text{ kV}$ (at 4 kA)
	$\leq 1 \text{ kV}$ (at 2 kA)
Residual voltage $U_{res}$ (N-PE)	$\leq 0.5 \text{ kV}$ (at $I_n$ )
	$\leq 0.5 \text{ kV}$ (at 10 kA)
	$\leq 0.5 \text{ kV}$ (at 5 kA)
	$\leq 0.5 \text{ kV}$ (at 4 kA)
	$\leq 0.5 \text{ kV}$ (at 2 kA)
TOV behavior at $U_T$ (L-N)	415 V AC (5 s / withstand mode)
	440 V AC (120 min / safe failure mode)

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TOV behavior at $U_T$ (N-PE)	1200 V AC (200 ms / withstand mode)
Response time $t_A$ (L-N)	≤ 25 ns
Response time $t_A$ (N-PE)	≤ 100 ns
Max. backup fuse with V-type through wiring	40 A (gG / Biconnect M4 fork-type cable lug, 6 mm <sup>2</sup> ) 63 A (gG / TWIN ferrule 2x 10mm <sup>2</sup> )
Max. backup fuse with branch wiring	315 A (gG)

## 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	≤ 2000 m (amsl)
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	30g (Half-sine / 11 ms / 3x ±X, ±Y, ±Z)
Vibration (operation)	5g (10 ... 500 Hz / 2.5 h / X, Y, Z)

## Approvals

### UL specifications

Maximum continuous operating voltage MCOV (L-N)	350 V AC
Maximum continuous operating voltage MCOV (L-G)	350 V AC
Maximum continuous operating voltage MCOV (N-G)	264 V AC
Nominal discharge current $I_n$ (L-N)	20 kA
Nominal discharge current $I_n$ (L-G)	20 kA
Nominal discharge current $I_n$ (N-G)	20 kA
Mode of protection	L-N L-G N-G
Nominal voltage	240 V AC
Power distribution system	Single phase
Nominal frequency	50/60 Hz
Measured limiting voltage MLV (L-N)	2000 V
Measured limiting voltage MLV (L-G)	2080 V
Measured limiting voltage MLV (N-G)	950 V
Follow current (L-G)	200 A (264 V AC)
SPD Type	4CA

### UL connection data

Tightening torque	40 lb <sub>F</sub> -in. ... 50 lb <sub>F</sub> -in.
Conductor cross-section AWG	14 ... 2 (solid) 14 ... 4 (flexible)

## Standards and regulations

Standards/specifications	IEC 61643-11
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Note	2011
Standards/specifications	EN 61643-11
Note	2012

## Mounting

Mounting type	DIN rail: 35 mm
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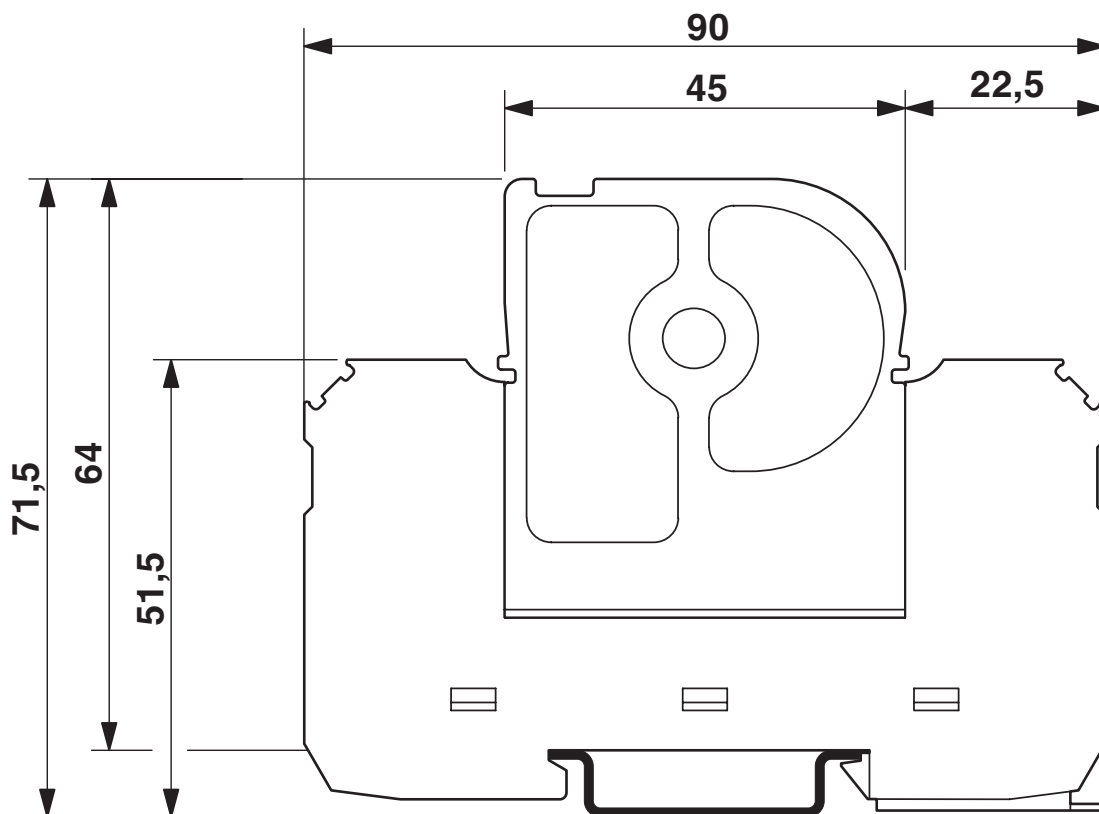


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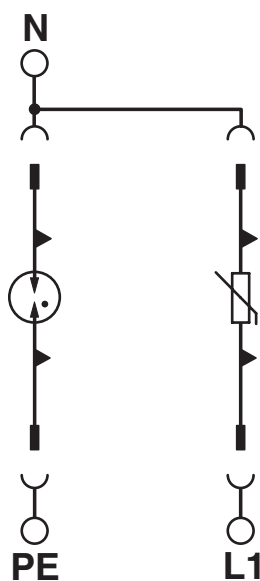
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## Drawings

Dimensional drawing



Circuit diagram



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## Environmental product compliance

EU REACH SVHC

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