

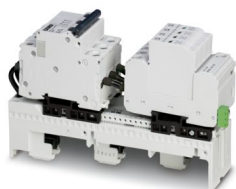
# VAL-CP-MOSO 60-3S-FM - Type 2 surge arrester



2804403

<https://www.phoenixcontact.com/us/products/2804403>

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Combination of type 2 surge protection and arrester backup fuse, with arrester monitoring, in combination with a status indicator and remote indication contact. Design: 5-conductor system (L1, L2, L3, N, PE), mounting on 60 mm system technology (power rail system)

## Your advantages

- Tool-free mounting on 5 and 10 mm busbars
- Disconnect device on each individual plug
- Excellent level of information provided by visual status indicator and remote indication contact
- Type 2 consistent plug-in surge arresters

## Commercial data

Item number	2804403
Packing unit	1 pc
Minimum order quantity	1 pc
Product key	CL1313
GTIN	4046356317825
Weight per piece (including packing)	1,375.3 g
Weight per piece (excluding packing)	1,208 g
Country of origin	DE

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## Technical data

### Product properties

Product type	Surge arrester
IEC test classification	II
	T2
EN type	T2
IEC power supply system	TN-S
	TT
Type	Module for 60 mm system technology
Number of positions	4
Surge protection fault message	Optical, remote indicator contact
Number of ports	One

### Insulation characteristics

Overvoltage category	III
Pollution degree	2

### Electrical properties

Nominal frequency $f_N$	50 Hz (60 Hz)
Nominal voltage $U_N$	240 V AC (230/400 V AC ... 240/415 V AC)

### Indicator/remote signaling

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

### Connection data

#### PE conductor connection

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

#### N conductor connection

Connection method	Screw connection
Screw thread	M5
Tightening torque	4.5 Nm

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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

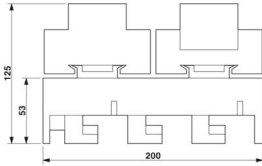
## Phase conductor connection

Connection method	60 mm power rail system
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## Remote fault indicator contact

Connection method	Pluggable 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

## Dimensions

Dimensional drawing	
Width	54 mm
Height	220 mm
Depth	134 mm

## Material specifications

Color	light gray (RAL 7035)
Flammability rating according to UL 94	V-0
CTI value of material	600
Insulating material	PBT, PA6, PA66
Material group	I
Housing material	PBT PA 6 PA 6.6

## Protective circuit

Mode of protection	L-N
	L-PE
	N-PE
Direction of action	3L-N & N-PE
Nominal voltage U <sub>N</sub>	240/415 V AC (TN-S)
	240/415 V AC (TT)

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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
Protective conductor current $I_{PE}$	$\leq 1 \mu\text{A}$
Nominal discharge current $I_n$ (8/20) $\mu\text{s}$	20 kA
Maximum discharge current $I_{max}$ (8/20) $\mu\text{s}$ (L-N)	25 kA
Maximum discharge current $I_{max}$ (8/20) $\mu\text{s}$ (L-PE)	25 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)	$\leq 2.5 \text{ kV}$
Voltage protection level $U_p$ (N-PE)	$\leq 1.5 \text{ kV}$
Residual voltage $U_{res}$ (L-N)	$\leq 2.1 \text{ kV}$ (at $I_n$ )
	$\leq 1.9 \text{ kV}$ (at 10 kA)
	$\leq 1.8 \text{ kV}$ (at 5 kA)
	$\leq 1.7 \text{ kV}$ (at 3 kA)
Residual voltage $U_{res}$ (L-PE)	$\leq 2.3 \text{ kV}$ (at $I_n$ )
	$\leq 2 \text{ kV}$ (at 10 kA)
	$\leq 1.9 \text{ kV}$ (at 5 kA)
	$\leq 1.8 \text{ kV}$ (at 3 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 3 kA)
TOV behavior at $U_T$ (L-N)	415 V AC (5 s / withstand mode)
	440 V AC (120 min / safe failure mode)
TOV behavior at $U_T$ (N-PE)	1200 V AC (200 ms / withstand mode)
Response time $t_A$ (L-N)	$\leq 25 \text{ ns}$
Response time $t_A$ (L-PE)	$\leq 100 \text{ ns}$
Response time $t_A$ (N-PE)	$\leq 100 \text{ ns}$
Max. backup fuse with branch wiring	not required

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 55 °C
Ambient temperature (storage/transport)	-40 °C ... 75 °C
Altitude	$\leq 2000 \text{ m}$ (amsl)
Permissible humidity (operation)	5 % ... 95 %

## Standards and regulations

### Air clearances and creepage distances

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Standards/regulations	DIN VDE 0110-1 / IEC 60664-1 / IEC 61643-11
Standards/specifications	IEC 61643-11
Note	2011
Standards/specifications	EN 61643-11
Note	2012

## Mounting

Mounting type	60 mm system technology (power rail)
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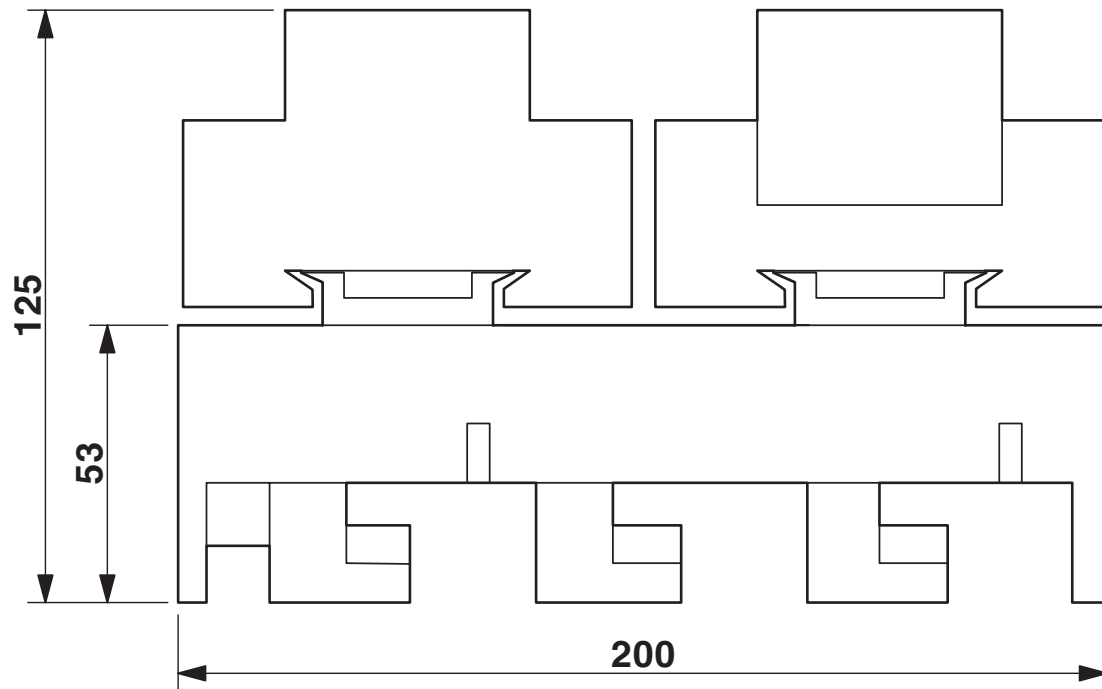


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## Drawings

Dimensional drawing



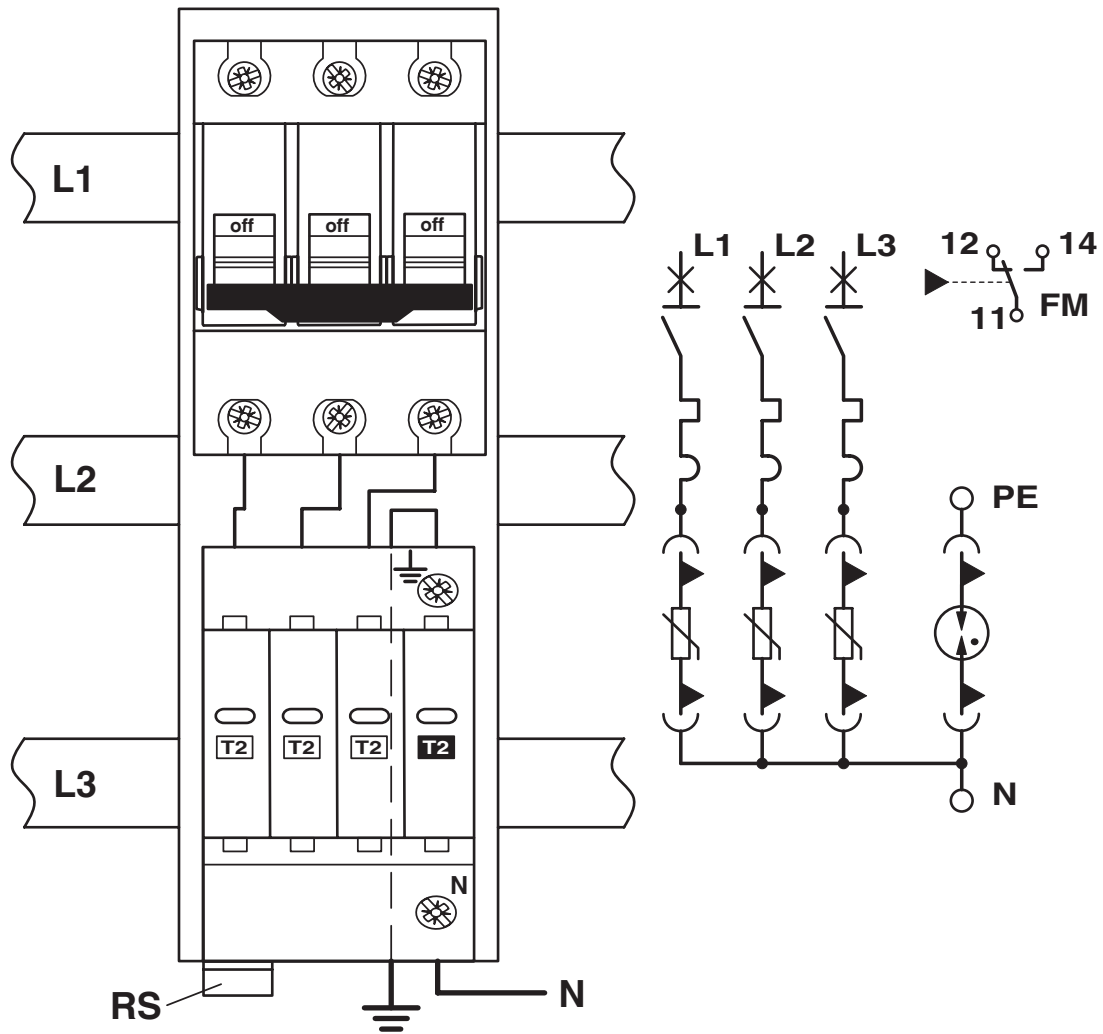
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Application drawing

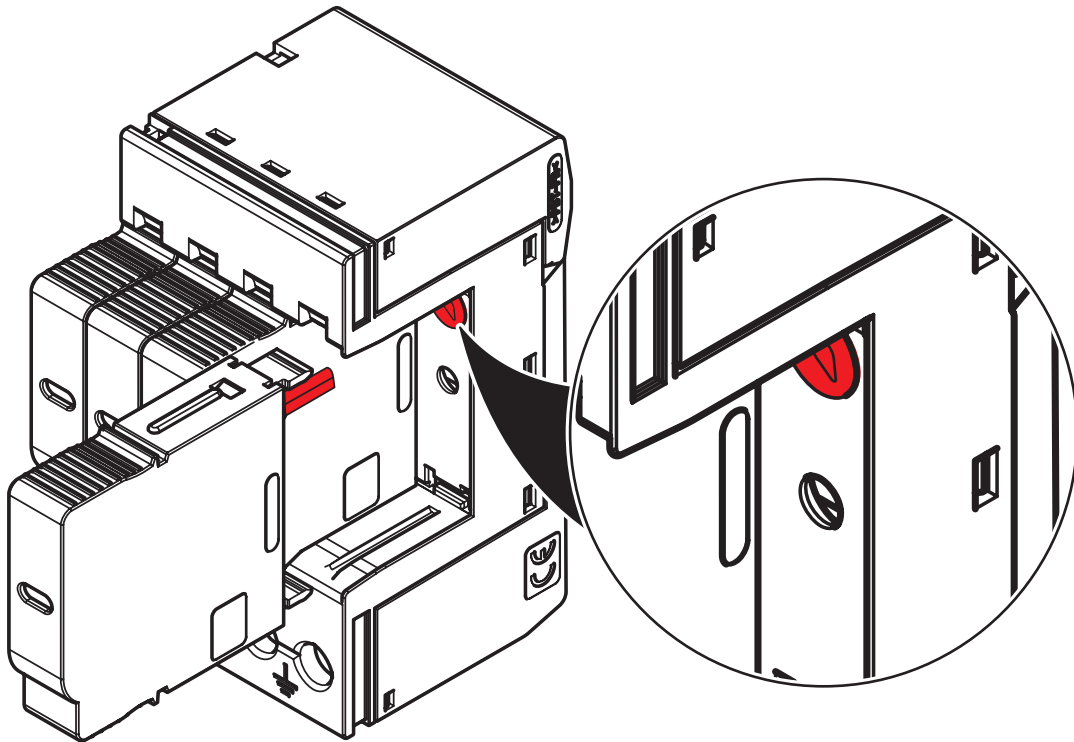


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Schematic diagram



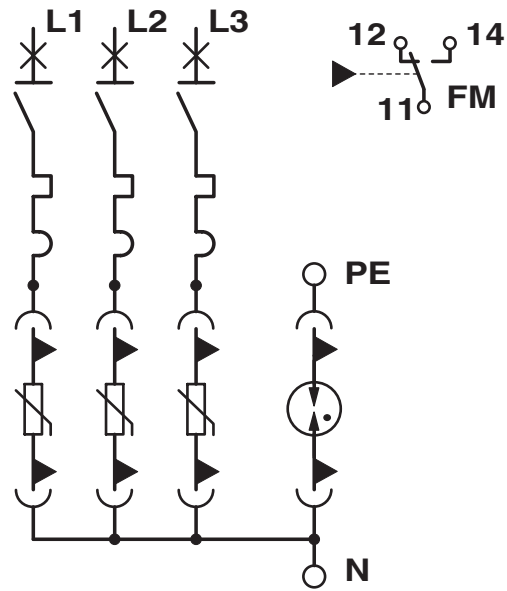
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Circuit diagram



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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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