

# SFP2-1S-1-20A-230AC-UT - EMC filter surge protection device



1292605

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EMC filter (mains filter) for single-phase AC systems, for mounting on NS 35, integrated surge protective device (type 2 SPD), nominal voltage: 230 V AC, nominal current: 20 A

## Your advantages

- Reliable protection of sensitive equipment against high-frequency conducted interference and against surge voltage and surge current pulses
- Effective attenuation with current-coupled coils and X and Y capacitors
- Versatile in use with universal circuit design
- Effective surge protection on the input and output side of the EMC filter
- User-friendly handling thanks to easy assembly and installation with screw connection technology (UT)

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1292605       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | CL29          |
| Product key                          | CLC161        |
| GTIN                                 | 4063151526214 |
| Weight per piece (including packing) | 690.3 g       |
| Weight per piece (excluding packing) | 622 g         |
| Customs tariff number                | 85480090      |
| Country of origin                    | CN            |

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## Technical data

### Notes

#### General

|      |                                                                                                                                                                                                                                                                                                                                                                                                       |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note | Only for use in IT systems between L-PE if the exposed conductive parts of the equipment of the low-voltage electrical installation are connected to the grounding system of the transformer station. (common grounding of the HV transformer station and the exposed conductive parts of the LV consumer installation. RE = RA in accordance with IEC 60364-4-44:2007 Figure 44.A1 and Table 44.A1). |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Product properties

|                                |                                   |
|--------------------------------|-----------------------------------|
| Product type                   | EMC filters                       |
| IEC power supply system        | TN                                |
|                                | TT                                |
|                                | IT                                |
| Type                           | DIN rail module, one-piece        |
| Number of positions            | 2                                 |
| Surge protection fault message | Optical, remote indicator contact |

#### Insulation characteristics

|                         |     |
|-------------------------|-----|
| Overvoltage category    | III |
| Pollution degree        | 2   |
| IEC test classification | T2  |
| EN type                 | T2  |
| Number of ports         | Two |

### Electrical properties

|                                                 |                    |
|-------------------------------------------------|--------------------|
| Maximum power dissipation for nominal condition | $\leq 6 \text{ W}$ |
|-------------------------------------------------|--------------------|

#### Indicator/remote signaling

|                    |                                |
|--------------------|--------------------------------|
| Connection name    | Remote fault indicator contact |
| Switching function | Changeover contact             |
| Operating voltage  | 12 V AC ... 250 V AC           |
|                    | 250 V DC (250 mA DC)           |
| Operating current  | 100 mA AC ... 1 A AC           |
|                    | 1 A DC (48 V DC)               |

### Connection data

|                                  |                                           |
|----------------------------------|-------------------------------------------|
| Connection method                | Screw terminal blocks                     |
| Screw thread                     | M3                                        |
| Tightening torque                | 0.6 Nm ... 0.8 Nm                         |
| Conductor cross-section flexible | 0.5 mm <sup>2</sup> ... 6 mm <sup>2</sup> |

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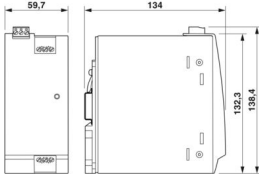


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|                               |                                           |
|-------------------------------|-------------------------------------------|
| Conductor cross-section rigid | 0.5 mm <sup>2</sup> ... 6 mm <sup>2</sup> |
| Conductor cross-section AWG   | 20 ... 10                                 |

## Dimensions

|                     |                                                                                    |
|---------------------|------------------------------------------------------------------------------------|
| Dimensional drawing |  |
| Width               | 60 mm                                                                              |
| Height              | 130 mm                                                                             |
| Depth               | 133 mm                                                                             |

## Material specifications

|                                        |                       |
|----------------------------------------|-----------------------|
| Color                                  | light gray (RAL 7035) |
| Flammability rating according to UL 94 | V-0                   |
| Insulating material                    | PC                    |
| Housing material                       | PC-GF10               |
|                                        | Metal                 |

## Mechanical properties

### Mechanical data

|                 |    |
|-----------------|----|
| Open side panel | No |
|-----------------|----|

## Protective circuit

|                                                |                                        |
|------------------------------------------------|----------------------------------------|
| Mode of protection                             | L-N                                    |
|                                                | L-PE                                   |
|                                                | N-PE                                   |
| Nominal voltage $U_N$                          | 240 V AC (TN)                          |
|                                                | 240 V AC (TT - only in use with RCD)   |
|                                                | 240 V AC (IT - see note)               |
| Nominal frequency $f_N$                        | 50 Hz (60 Hz)                          |
| Maximum continuous operating voltage $U_C$     | 264 V AC                               |
| Rated load current $I_L$                       | 20 A (50 °C)                           |
| Protective conductor current $I_{PE}$          | ≤ 0.5 mA                               |
| Reference test voltage $U_{REF}$               | 264 V AC                               |
| Nominal discharge current $I_n$ (8/20) $\mu$ s | 5 kA                                   |
| Voltage protection level $U_p$                 | ≤ 1.1 kV                               |
| TOV behavior at $U_T$ (L-N)                    | 457 V AC (5 s / withstand mode)        |
|                                                | 457 V AC (120 min / safe failure mode) |
|                                                | 457 V AC (5 s / withstand mode)        |

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|                                                |                                               |
|------------------------------------------------|-----------------------------------------------|
| TOV behavior at $U_T$ (L-PE)                   | 457 V AC (120 min / withstand mode)           |
|                                                | 1464 V AC (200 ms / safe failure mode)        |
| TOV behavior at $U_T$ (N-PE)                   | 1200 V AC (200 ms / safe failure mode)        |
| Response time $t_A$                            | $\leq 100$ ns                                 |
| Capacity (L-N)                                 | $2 \times 1 \mu\text{F} \pm 20 \%$ (X2-250 V) |
|                                                | $10 \text{ nF} \pm 20 \%$ (X2-275 V)          |
| Capacity (L-PE)                                | $2.2 \text{ nF} \pm 20 \%$ (Y2-250 V)         |
| Capacitance (N-PE)                             | $2.2 \text{ nF} \pm 20 \%$ (Y2-250 V)         |
| Max. required back-up fuse                     | 20 A (MCB B)                                  |
| Input attenuation aE, sym.                     | 20 dB ( $\geq 100$ kHz / 50 $\Omega$ )        |
| Input attenuation aE, asym.                    | 30 dB ( $\geq 1$ MHz / 50 $\Omega$ )          |
| Short-circuit current rating $I_{\text{SCCR}}$ | 6 kA AC                                       |

## Filter data

|                      |                               |
|----------------------|-------------------------------|
| Discharge resistance | 940 k $\Omega$ ( $\pm 1 \%$ ) |
|----------------------|-------------------------------|

## Environmental and real-life conditions

### Ambient conditions

|                                         |                                                            |
|-----------------------------------------|------------------------------------------------------------|
| Degree of protection                    | IP20                                                       |
| Ambient temperature (operation)         | -40 °C ... 70 °C                                           |
| Ambient temperature (storage/transport) | -40 °C ... 70 °C                                           |
| Altitude                                | $\leq 2000$ m (amsl)                                       |
| Permissible humidity (operation)        | 5 % ... 95 %                                               |
| Shock (operation)                       | 15g (Half-sine / 6 ms / 100x $\pm X$ , $\pm Y$ , $\pm Z$ ) |
| Vibration (operation)                   | 1g (1-150 Hz/10 cycles/XYZ)                                |

## Standards and regulations

|                          |                  |
|--------------------------|------------------|
| Standards/specifications | IEC 61643-11     |
| Note                     | 2011             |
| Standards/specifications | EN 61643-11      |
| Note                     | 2012 + A11:2018  |
| Standards/specifications | EN 60939-2       |
| Note                     | 2006 + AMD1:2023 |

## Mounting

|               |                 |
|---------------|-----------------|
| Mounting type | DIN rail: 35 mm |
|---------------|-----------------|

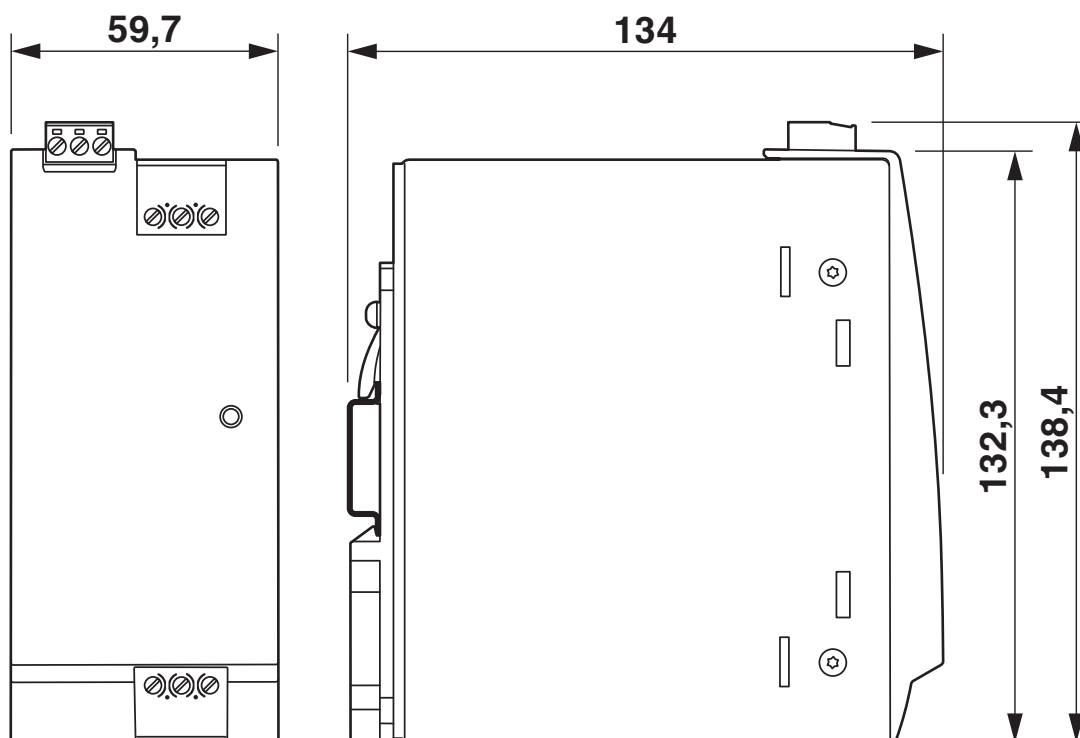
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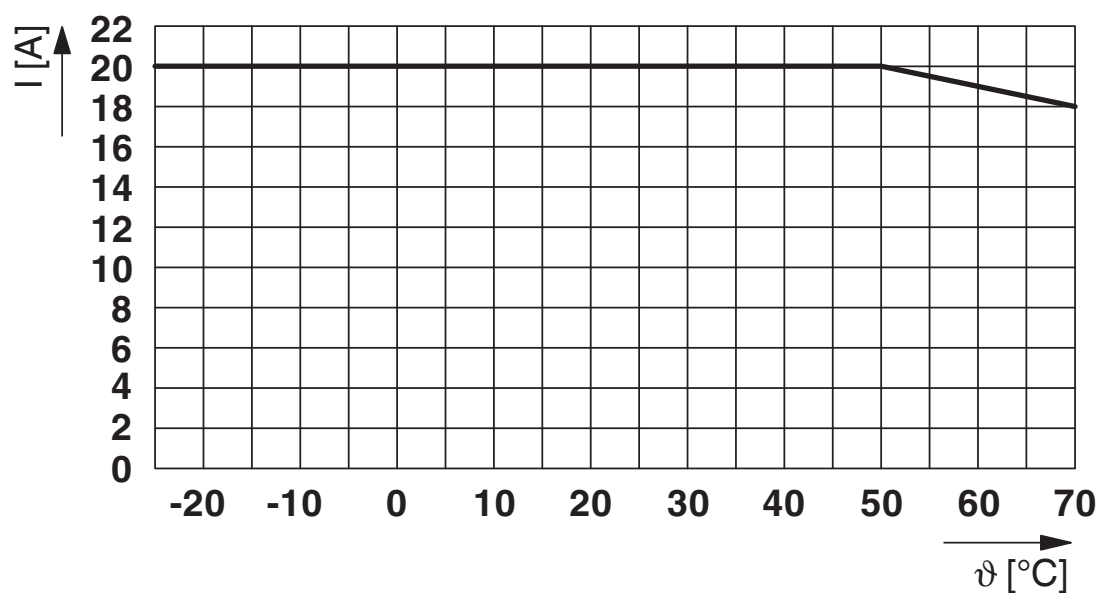
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## Drawings

Dimensional drawing



Diagram

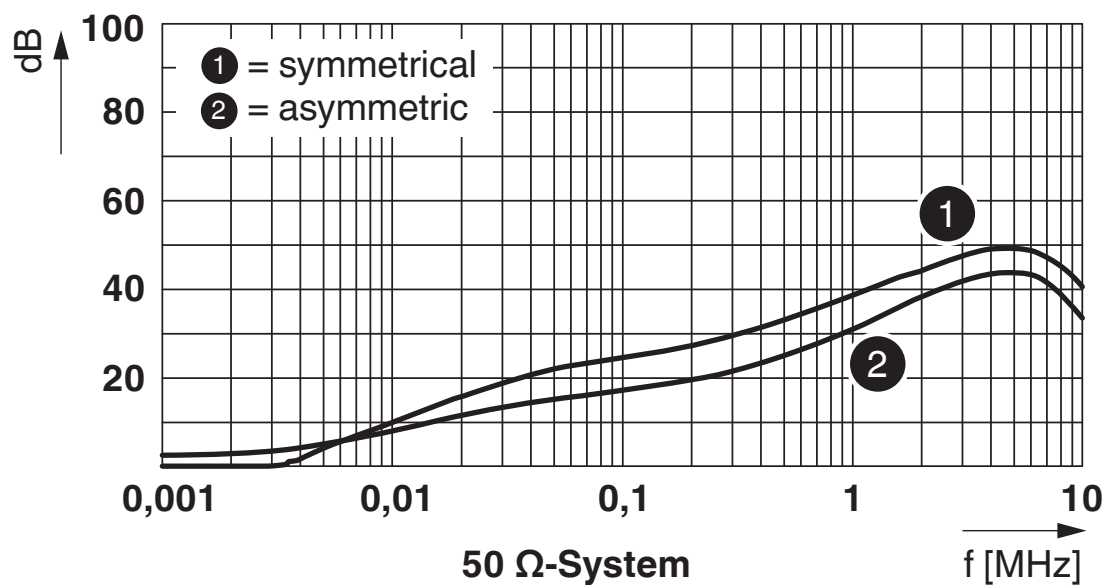


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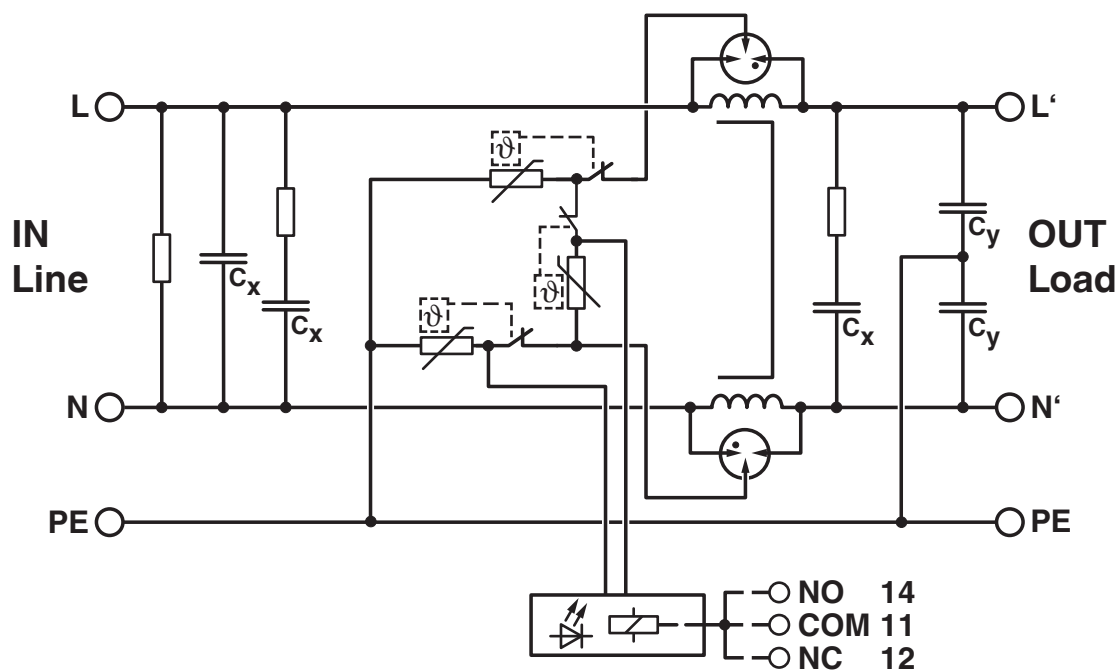
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Diagram



Circuit diagram



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## Approvals

📄 To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1292605>



**VDE Zeichengenehmigung**

Approval ID: 40060084

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27420208 |
| ECLASS-15.0 | 27420208 |

### ETIM

|           |          |
|-----------|----------|
| ETIM 10.0 | EC002564 |
|-----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 39121500 |
|-------------|----------|



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## Environmental product compliance

### EU RoHS

|                                         |      |
|-----------------------------------------|------|
| Fulfills EU RoHS substance requirements | Yes  |
| Exemption                               | 7(a) |

### China RoHS

|                                        |                                                                                                                                                                                                                                   |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Environment friendly use period (EFUP) | EFUP-25                                                                                                                                                                                                                           |
|                                        | 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.) | Hexahydromethylphthalic anhydride(CAS: n/a) |
|                                     | Lead(CAS: 7439-92-1)                        |

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