

# EMG 12-OV- 5DC/240AC/1 - Solid-state relay module



2948801

<https://www.phoenixcontact.com/us/products/2948801>

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Power solid-state relay, with LED and protective circuit in input and output circuits, input: 5 V DC, output: 24 - 280 V AC/max. 1 A

The figure shows version EMG 12-OV, with AC voltage output, max. 1 A

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 2948801                        |
| Packing unit                         | 1 pc                           |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | C460                           |
| Product key                          | DK61C3                         |
| GTIN                                 | 4017918083472                  |
| Weight per piece (including packing) | 49.98 g                        |
| Weight per piece (excluding packing) | 49.98 g                        |
| Customs tariff number                | 85364190                       |
| Country of origin                    | DE                             |

## Technical data

### Product properties

|                |                          |
|----------------|--------------------------|
| Product type   | Solid-state relay module |
| Application    | Output function          |
| Operating mode | 100% operating factor    |

### Insulation characteristics

|            |                  |
|------------|------------------|
| Insulation | Basic insulation |
|------------|------------------|

### Data management status

|                              |            |
|------------------------------|------------|
| Date of last data management | 15.09.2025 |
|------------------------------|------------|

### Electrical properties

|                             |                          |
|-----------------------------|--------------------------|
| Test voltage (Input/output) | 3.5 kV AC (Input/output) |
|-----------------------------|--------------------------|

### Input data

|  |  |
|--|--|
| Nominal input voltage $U_N$                          | 5 V DC   |
| Input voltage range in reference to $U_N$            | 0.8 ... 1.1  |
| Input voltage range                                  | 4 V DC ... 5.5 V DC  |
| Switching threshold "0" signal in reference to $U_N$ | $\leq 0.4$   |
| Switching threshold "1" signal in reference to $U_N$ | $\geq 0.8$   |
| Typical input current at $U_N$                       | 10 mA  |
| Typical response time                                | max. one half cycle - zero-voltage crossing  |
| Typical turn-off time                                | max. one half cycle - zero-current crossing  |
| Status display                                       | LED (yellow)   |
| Protective circuit                                   | Reverse polarity protection; Polarity protection diode<br>Surge protection; Varistor |
| Transmission frequency                               | 25 Hz  |

### Output data

|  |  |
|--|--|
| Design of digital output                         | electronic   |
| Output nominal voltage                           | 240 V AC   |
| Output voltage range                             | 24 V AC ... 280 V AC (50 Hz ... 60 Hz)                     |
| Limiting continuous current                      | 1 A (see derating curve)                                   |
| Min. load current                                | 50 mA  |
| Leakage current                                  | 3.5 mA   |
| Surge current                                    | 125 A (t = 10 ms)  |
| Phase angle $\cos \phi$ min                      | 0.5  |
| Max. load value                                  | $78 \text{ A}^2\text{s}$ ( $I^2 \times t$ where t = 10 ms) |
| Peak offstate voltage                            | 600 V (Periodic peak reverse voltage)                      |
| Voltage drop at max. limiting continuous current | $\leq 1.5 \text{ V}$                                       |
| Output circuit                                   | 2-conductor, floating                                      |
| Protective circuit                               | RC element; RC element                                     |

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## Connection data

### Input side

|                                  |   |
|----------------------------------|---|
| Connection method                | Screw connection                            |
| Stripping length                 | 8 mm  |
| Screw thread                     | M3  |
| Conductor cross-section rigid    | 0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>   |
| Conductor cross-section flexible | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> |
| Conductor cross-section AWG      | 24 ... 12                                   |

### Output side

|                                  |   |
|----------------------------------|---|
| Connection method                | Screw connection                            |
| Stripping length                 | 8 mm  |
| Screw thread                     | M3  |
| Conductor cross-section rigid    | 0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>   |
| Conductor cross-section flexible | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> |
| Conductor cross-section AWG      | 24 ... 12                                   |

## Dimensions

|        |         |
|--------|---------|
| Width  | 12.5 mm |
| Height | 75 mm   |
| Depth  | 102 mm  |

## Material specifications

|  |                  |
|--|------------------|
| Color                                  | green (RAL 6021) |
| Flammability rating according to UL 94 | V0               |

## Environmental and real-life conditions

### Ambient conditions

|   |                  |
|---|------------------|
| Degree of protection                    | IP20             |
| Ambient temperature (operation)         | -20 °C ... 60 °C |
| Ambient temperature (storage/transport) | -20 °C ... 70 °C |

## Standards and regulations

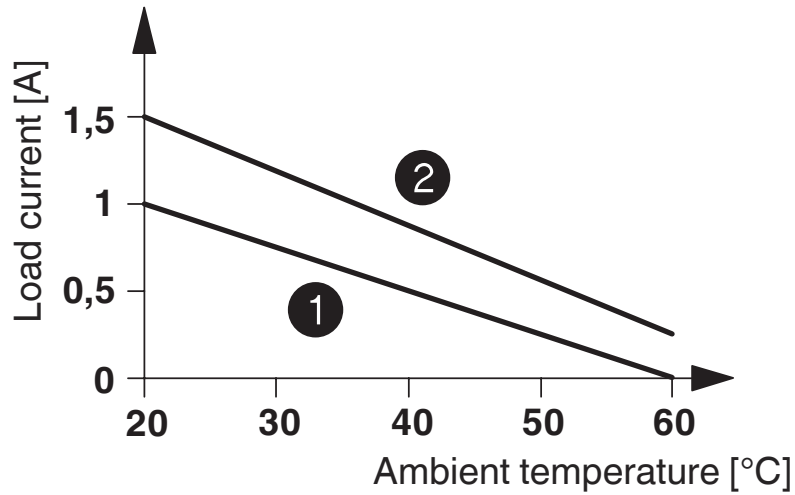
|                       |           |
|-----------------------|-----------|
| Standards/regulations | IEC 60664 |
|                       | EN 50178  |

## Mounting

|                   |  |
|-------------------|--|
| Mounting type     | DIN rail mounting  |
| Assembly note     | Mounted in rows with zero spacing: Horizontal/not in rows: Any |
| Mounting position | any  |

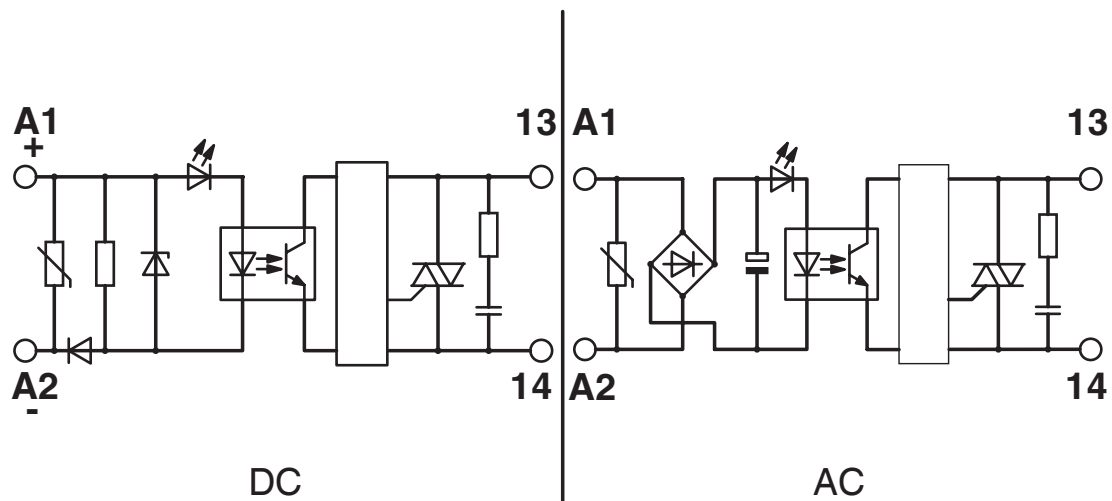
## Drawings

Diagram



- ① In rows with zero spacing
- ② stand-alone device

Circuit diagram



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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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