

# TRIO-PS67/1AC/24DC/10/M12 - Power supply unit



1111634

<https://www.phoenixcontact.com/us/products/1111634>

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Primary-switched power supply unit TRIO POWER, M12 circular connector, Wall mounting, input: 1-phase, output: 24 V DC / 10 A

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1111634       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | CM08          |
| Product key                          | CMPF13        |
| GTIN                                 | 4063151031824 |
| Weight per piece (including packing) | 1,613 g       |
| Weight per piece (excluding packing) | 1,252 g       |
| Customs tariff number                | 85044095      |
| Country of origin                    | CN            |

## Technical data

### Input data

#### AC operation

|                                          |                                                                                                      |
|------------------------------------------|------------------------------------------------------------------------------------------------------|
| Supply system configuration              | Star network (TN, TT, IT (PE))                                                                       |
| Nominal input voltage range              | 100 V AC ... 240 V AC                                                                                |
| Input voltage range                      | 100 V AC ... 240 V AC $\pm 10$ %                                                                     |
| Switch-on voltage                        | > 75 V AC                                                                                            |
| Shut-down voltage                        | < 70 V AC                                                                                            |
| Electric strength, max.                  | $\leq 300$ V AC 15 s                                                                                 |
| Typical national grid voltage            | 120 V AC                                                                                             |
|                                          | 230 V AC                                                                                             |
| Voltage type of supply voltage           | AC/DC                                                                                                |
| Inrush current                           | $\leq 25$ A (typical)                                                                                |
| Inrush current integral ( $I^2t$ )       | < 0.5 A <sup>2</sup> s                                                                               |
| Inrush current limitation                | typ. 25 A (after 1 ms)                                                                               |
| AC frequency range                       | 50 Hz ... 60 Hz $\pm 10$ %                                                                           |
| Frequency range ( $f_N$ )                | 50 Hz ... 60 Hz $\pm 10$ %                                                                           |
| Mains buffering time                     | > 15 ms (120 V AC)                                                                                   |
|                                          | > 15 ms (230 V AC)                                                                                   |
| Current consumption                      | 2.8 A (100 V AC)                                                                                     |
|                                          | 1.2 A (240 V AC)                                                                                     |
| Nominal power consumption                | 285 VA                                                                                               |
| Protective circuit                       | Transient surge protection; Varistor                                                                 |
| Power factor (cos phi)                   | > 0.93                                                                                               |
| Switch-on time                           | < 1 s                                                                                                |
| Input fuse                               | 6.3 A (internal (device protection))                                                                 |
| Recommended breaker for input protection | 6 A ... 16 A (US/CAN: branch circuit protection < 20 A)<br>(Characteristic B, C, D, K or comparable) |
| Discharge current to PE                  | < 3.5 mA                                                                                             |

#### DC operation

|                                |                                  |
|--------------------------------|----------------------------------|
| Nominal input voltage range    | 110 V DC ... 250 V DC            |
| Input voltage range            | 110 V DC ... 250 V DC $\pm 10$ % |
| Switch-on voltage              | $\geq 95$ V DC                   |
| Shut-down voltage              | < 95 V DC                        |
| Voltage type of supply voltage | AC/DC                            |
| Mains buffering time           | > 15 ms (230 V AC)               |
| Current consumption            | 2.4 A (110 V DC)                 |
|                                | 1.1 A (250 V DC)                 |

### Output data

|            |                      |
|------------|----------------------|
| Efficiency | typ. 90 % (120 V AC) |
|------------|----------------------|

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|                                                    |                                                  |
|----------------------------------------------------|--------------------------------------------------|
|                                                    | typ. 92 % (230 V AC)                             |
| Nominal output voltage                             | 24 V DC $\pm 1$ %                                |
| Nominal output current ( $I_N$ )                   | 10 A                                             |
| Dynamic Boost ( $I_{\text{Dyn.Boost}}$ )           | 15 A (5 s)                                       |
| Derating                                           | > 60 °C ... 70 °C (2.5 %/K)                      |
| Feedback voltage resistance                        | $\leq 35$ V DC                                   |
| Protection against overvoltage at the output (OVP) | $\leq 30$ V DC                                   |
| Control deviation                                  | < 1 % (change in load, static 10 % ... 90 %)     |
|                                                    | < 3 % (Dynamic load change 10 % ... 90 %, 10 Hz) |
|                                                    | < 0.1 % (change in input voltage $\pm 10$ %)     |
| Residual ripple                                    | $\leq 10$ mV <sub>PP</sub>                       |
| Short-circuit-proof                                | yes                                              |
| No-load proof                                      | yes                                              |
| Output power                                       | 240 W                                            |
|                                                    | 360 W                                            |
| Maximum no-load power dissipation                  | < 10 W (120 V AC)                                |
|                                                    | < 6 W (230 V AC)                                 |
| Power loss nominal load max.                       | < 22 W (120 V AC)                                |
|                                                    | < 17 W (230 V AC)                                |
| Rise time                                          | $\leq 12$ ms ( $U_{\text{OUT}}$ (10 % ... 90 %)) |
| Connection in parallel                             | yes, for redundancy and increased capacity       |
| Connection in series                               | yes                                              |

## Signal: DC OK

|                           |            |
|---------------------------|------------|
| Maximum switching voltage | 30 V AC/DC |
| Continuous load current   | 100 mA     |

## Signal relay 13/14

|         |                        |
|---------|------------------------|
| Default | closed                 |
| Digital | 30 V AC 30 V DC 100 mA |

## Connection data

### Input

|                     |                        |
|---------------------|------------------------|
| Connection method   | M12 circular connector |
| Coding              | S                      |
| Type of locking     | M12 screw locking      |
| Number of positions | 3                      |

### Output

|                     |                        |
|---------------------|------------------------|
| Connection method   | M12 circular connector |
| Coding              | L                      |
| Type of locking     | M12 screw locking      |
| Number of positions | 4                      |

## Signaling

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|                    |                         |
|--------------------|-------------------------|
| Types of signaling | LED                     |
|                    | Floating signal contact |
| Status display     | 2 x LED (green)         |

## Signal output: LED status indicator

|                           |                                                           |
|---------------------------|-----------------------------------------------------------|
| Signalization designation | AC OK                                                     |
| Status display            | LED                                                       |
| Color                     | green                                                     |
| AC OK                     | $AC_{In} > 0.55 \times AC_N$ ( $AC_N = 90 \text{ V AC}$ ) |

## Signal output: LED status indicator

|                           |                                                        |
|---------------------------|--------------------------------------------------------|
| Signalization designation | DC OK                                                  |
| Status display            | LED                                                    |
| Color                     | green                                                  |
| DC OK                     | $U_{OUT} > 0.9 \times U_N$ ( $U_N = 24 \text{ V DC}$ ) |

## Electrical properties

|                                 |                          |
|---------------------------------|--------------------------|
| Number of phases                | 1.00                     |
| Insulation voltage input/output | 3 kV AC (type test)      |
|                                 | 1.5 kV AC (routine test) |

## Product properties

|                            |                     |
|----------------------------|---------------------|
| Product type               | Power supply        |
| Product family             | TRIO POWER          |
| MTBF (IEC 61709, SN 29500) | > 1200000 h (25 °C) |
|                            | > 700000 h (40 °C)  |
|                            | > 300000 h (60 °C)  |

## Data management status

|                  |    |
|------------------|----|
| Article revision | 02 |
|------------------|----|

## Insulation characteristics

|                  |                 |
|------------------|-----------------|
| Protection class | I               |
| Pollution degree | 2 (IEC 61010-1) |

## Dimensions

### Item dimensions

|        |        |
|--------|--------|
| Width  | 136 mm |
| Height | 240 mm |
| Depth  | 53 mm  |

### Drill hole

|          |        |
|----------|--------|
| Diameter | 5.6 mm |
|----------|--------|

### Installation dimensions

|                                  |               |
|----------------------------------|---------------|
| Installation distance right/left | 10 mm / 10 mm |
| Installation distance top/bottom | 0 mm / 100 mm |

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## Mounting

|                         |                                                                                |
|-------------------------|--------------------------------------------------------------------------------|
| Mounting type           | Wall mounting                                                                  |
| Assembly note           | Alignable: 20 mm horizontally, 50 mm vertically above, 100 mm vertically below |
| With protective coating | no                                                                             |

## Material specifications

|                                                                    |                  |
|--------------------------------------------------------------------|------------------|
| Flammability rating according to UL 94 (housing / terminal blocks) | V0               |
| Housing material                                                   | Metal            |
| Type of housing                                                    | Aluminum (AlMg3) |

## Environmental and real-life conditions

### Ambient conditions

|                                                |                                                                                          |
|------------------------------------------------|------------------------------------------------------------------------------------------|
| Degree of protection                           | IP67                                                                                     |
| Ambient temperature (operation)                | -25 °C ... 70 °C (Derating >60°C: 2.5 %/K)                                               |
| Ambient temperature (storage/transport)        | -40 °C ... 85 °C                                                                         |
| Ambient temperature (start-up type tested)     | -40 °C                                                                                   |
| Maximum altitude                               | ≤ 4000 m (> 2000 m, Derating: 10 %/1000 m)                                               |
| Climatic class                                 | 4K26 (EN 60721-3-4)                                                                      |
| Max. permissible relative humidity (operation) | ≤ 100 % (at 25 °C, non-condensing)                                                       |
| Permissible humidity (operation)               | ≤ 100 % (at 25 °C, non-condensing)                                                       |
| Shock                                          | 18 ms, 30g, in each space direction (according to IEC 60068-2-27)                        |
| Vibration (operation)                          | < 15 Hz, amplitude ±2.5 mm (according to IEC 60068-2-6)<br>15 Hz ... 150 Hz, 4g, 90 min. |

## Standards and regulations

### Overvoltage category

|            |                                 |
|------------|---------------------------------|
| EN 61010-1 | III (≤ 2000 m)<br>II (≤ 4000 m) |
|------------|---------------------------------|

### Electrical safety

|                          |                   |
|--------------------------|-------------------|
| Standard designation     | Electrical safety |
| Standards/specifications | IEC 61010-1       |

### Protective extra-low voltage

|                          |                                              |
|--------------------------|----------------------------------------------|
| Standard designation     | Protective extra-low voltage                 |
| Standards/specifications | IEC 61010-1 (SELV)<br>IEC 61010-2-201 (PELV) |

### Safe isolation

|                      |                |
|----------------------|----------------|
| Standard designation | Safe isolation |
|----------------------|----------------|

### Low-voltage power supplies, DC output

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|                          |                                       |
|--------------------------|---------------------------------------|
| Standard designation     | Low-voltage power supplies, DC output |
| Standards/specifications | EN 61204-3                            |

## Safety requirements for electrical equipment for measurement, control, and laboratory use

|                          |                                                                                           |
|--------------------------|-------------------------------------------------------------------------------------------|
| Standard designation     | Safety requirements for electrical equipment for measurement, control, and laboratory use |
| Standards/specifications | IEC 61010-1                                                                               |

## Limit values for harmonic currents

|                          |                                    |
|--------------------------|------------------------------------|
| Standard designation     | Limit values for harmonic currents |
| Standards/specifications | EN 61000-3-2                       |

## Degrees of protection provided by enclosures (IP code)

|                          |                                                        |
|--------------------------|--------------------------------------------------------|
| Standard designation     | Degrees of protection provided by enclosures (IP code) |
| Standards/specifications | EN/IEC 60529                                           |

## Approvals

### UL

|                |                           |
|----------------|---------------------------|
| Identification | UL/C-UL Listed UL 61010-1 |
|----------------|---------------------------|

### UL

|                |                               |
|----------------|-------------------------------|
| Identification | UL/C-UL Listed UL 61010-2-201 |
|----------------|-------------------------------|

## EMC data

|                               |                                                                                                                  |
|-------------------------------|------------------------------------------------------------------------------------------------------------------|
| Low Voltage Directive         | Conformance with Low Voltage Directive 2014/35/EC                                                                |
| Interference emission         | Interference emission in accordance with EN 61000-6-3 (residential and commercial) and EN 61000-6-4 (industrial) |
| Noise immunity                | Immunity in accordance with EN 61000-6-1 (residential), EN 61000-6-2 (industrial)                                |
| Electromagnetic compatibility | Conformance with EMC Directive 2014/30/EU                                                                        |
| Conducted noise emission      | EN 55016<br>EN 61000-6-3 (Class B)                                                                               |
| Noise emission                | EN 55011 (EN 55022)                                                                                              |
| Noise emission                | EN 55016<br>EN 61000-6-3 (Class B)                                                                               |

## Harmonic currents

|                       |                                        |
|-----------------------|----------------------------------------|
| Standards/regulations | EN 61000-3-2<br>EN 61000-3-2 (Class A) |
|-----------------------|----------------------------------------|

## Electrostatic discharge

|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-2 |
|-----------------------|--------------|

## Electrostatic discharge

|                   |                     |
|-------------------|---------------------|
| Contact discharge | 6 kV (Test Level 3) |
| Comments          | Criterion A         |

## Electromagnetic HF field

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|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-3 |
|-----------------------|--------------|

## Electromagnetic HF field

|                     |                       |
|---------------------|-----------------------|
| Frequency range     | 80 MHz ... 1 GHz      |
| Test field strength | 10 V/m (Test Level 3) |
| Frequency range     | 1 GHz ... 2 GHz       |
| Test field strength | 10 V/m (Test Level 3) |
| Frequency range     | 2 GHz ... 6 GHz       |
| Test field strength | 10 V/m (Test Level 3) |
| Comments            | Criterion A           |

## Fast transients (burst)

|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-4 |
|-----------------------|--------------|

## Fast transients (burst)

|          |                                    |
|----------|------------------------------------|
| Input    | 4 kV (Test Level 3 - asymmetrical) |
| Output   | 2 kV (Test Level 3 - asymmetrical) |
| Signal   | 2 kV (Test Level 3 - asymmetrical) |
| Comments | Criterion A                        |

## Surge voltage load (surge)

|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-5 |
|-----------------------|--------------|

## Surge voltage load (surge)

|          |                                      |
|----------|--------------------------------------|
| Input    | 1 kV (Test Level 1 - symmetrical)    |
|          | 2 kV (Test Level 1 - asymmetrical)   |
| Output   | 0.5 kV (Test Level 1 - symmetrical)  |
|          | 0.5 kV (Test Level 1 - asymmetrical) |
| Signal   | 1 kV (Test Level 2 - asymmetrical)   |
| Comments | Criterion B                          |

## Conducted interference

|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-6 |
|-----------------------|--------------|

## Conducted interference

|                 |                     |
|-----------------|---------------------|
| Input/Output    | asymmetrical        |
| Frequency range | 0.15 MHz ... 80 MHz |
| Comments        | Criterion A         |
| Voltage         | 10 V (Test Level 3) |

## Voltage dips

|                       |               |
|-----------------------|---------------|
| Standards/regulations | EN 61000-4-11 |
| Voltage               | 230 V AC      |
| Frequency             | 50 Hz         |
| Voltage dip           | 70 %          |
| Number of periods     | 25 periods    |
| Comments              | Criterion A   |
| Voltage dip           | 40 %          |

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|                   |             |
|-------------------|-------------|
| Number of periods | 10 periods  |
| Comments          | Criterion A |
| Voltage dip       | 0 %         |
| Number of periods | 1 period    |
| Comments          | Criterion A |

## Emitted interference

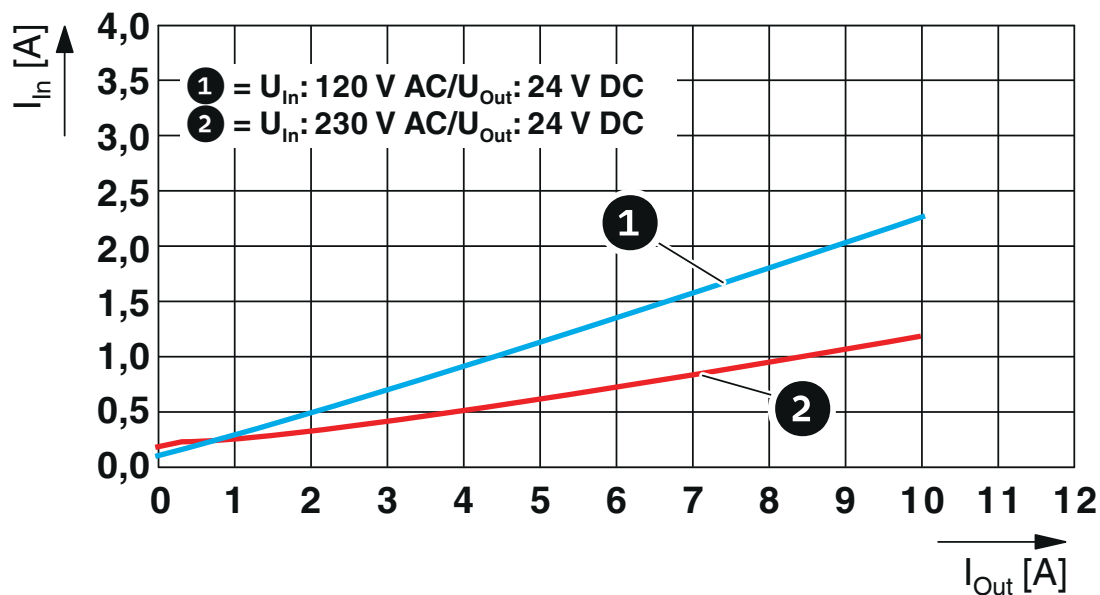
|                                                  |                                                                            |
|--------------------------------------------------|----------------------------------------------------------------------------|
| Standards/regulations                            | EN 61000-6-3                                                               |
| Radio interference voltage in acc. with EN 55011 | EN 55011 (EN 55022) Class B, area of application: Industry and residential |
| Emitted radio interference in acc. with EN 55011 | EN 55011 (EN 55022) Class B, area of application: Industry and residential |

## Criteria

|             |                                                                                                                                                            |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Criterion A | Normal operating behavior within the specified limits.                                                                                                     |
| Criterion B | Temporary impairment to operational behavior that is corrected by the device itself.                                                                       |
| Criterion C | Temporary adverse effects on the operating behavior, which the device corrects automatically or which can be restored by actuating the operating elements. |

## Drawings

Diagram



Input current/output current

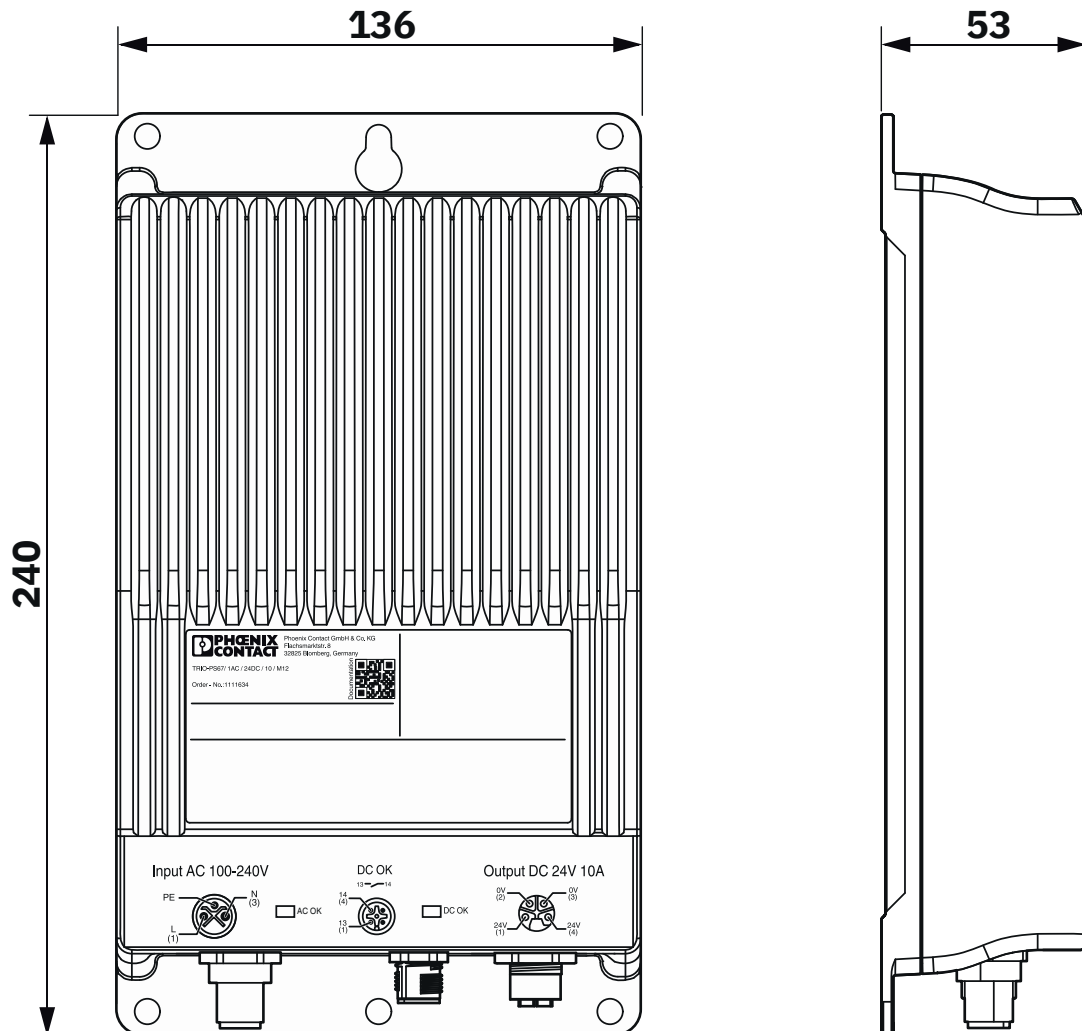
# TRIO-PS67/1AC/24DC/10/M12 - Power supply unit

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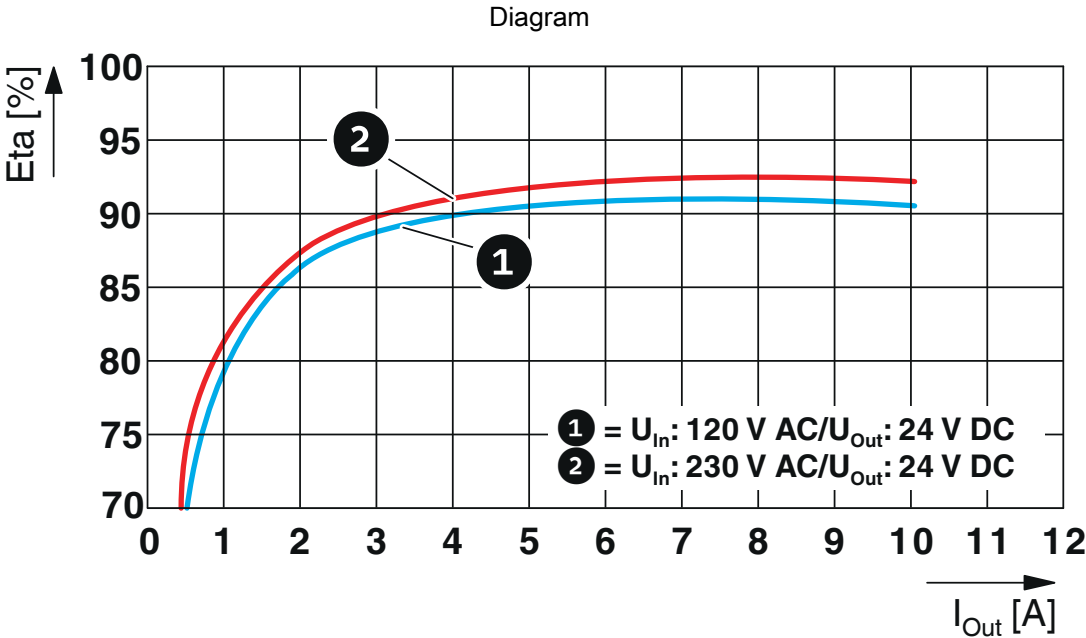
Dimensional drawing



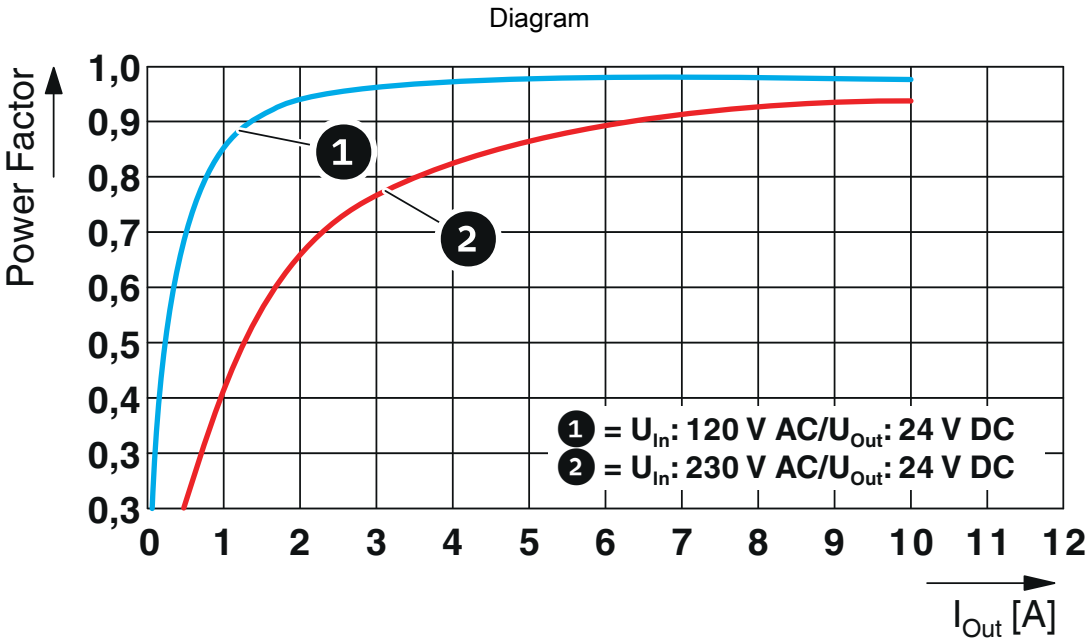
Device dimensions (dimensions in mm)

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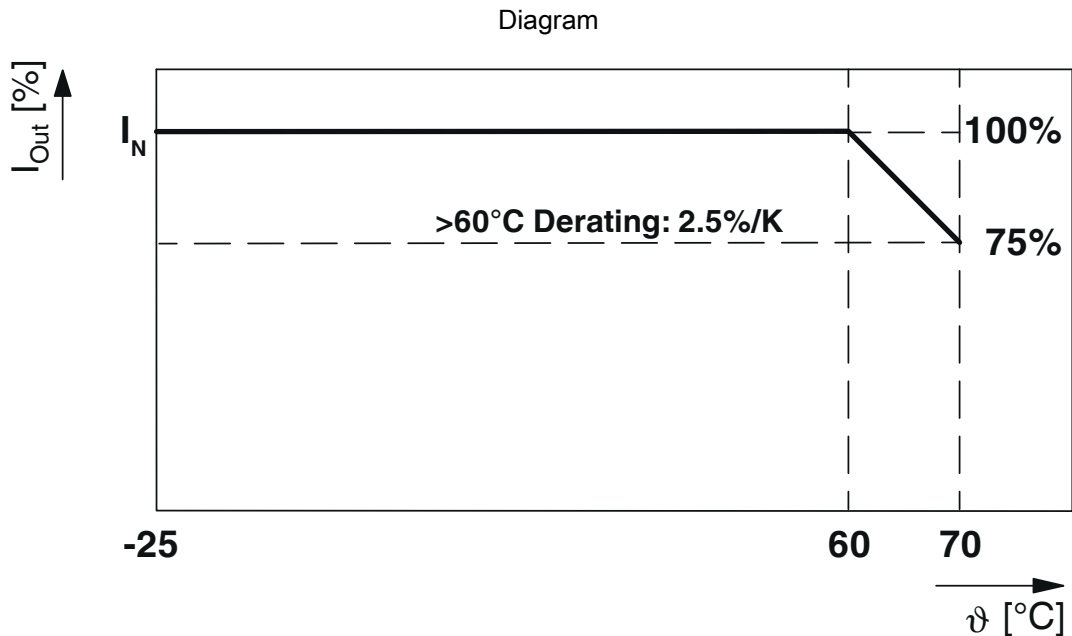
Efficiency



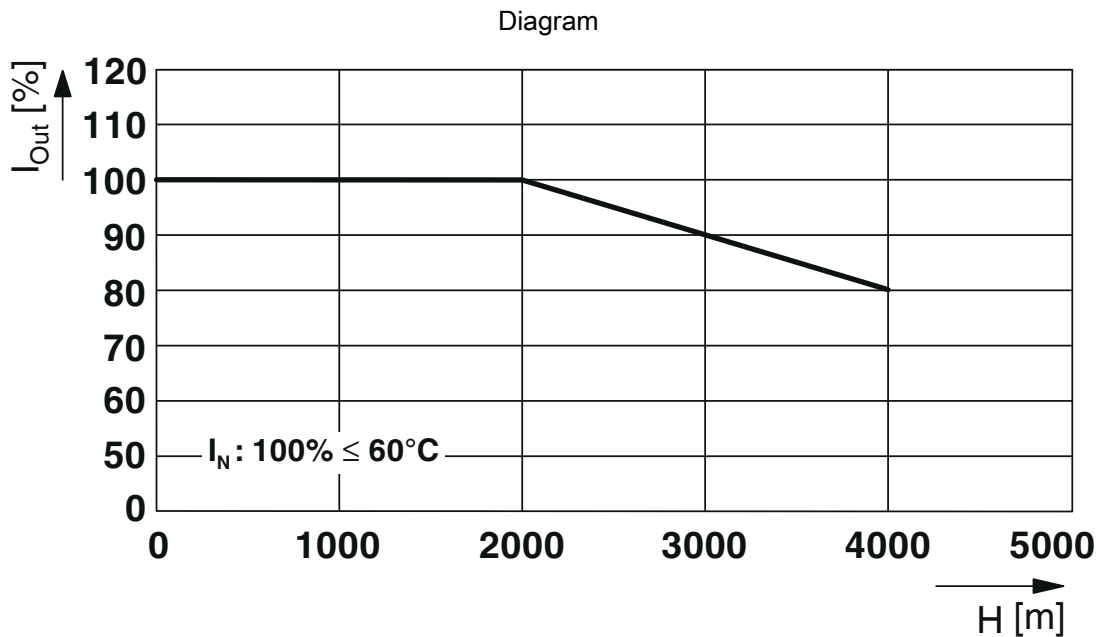
Power factor

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Output current/ambient temperature



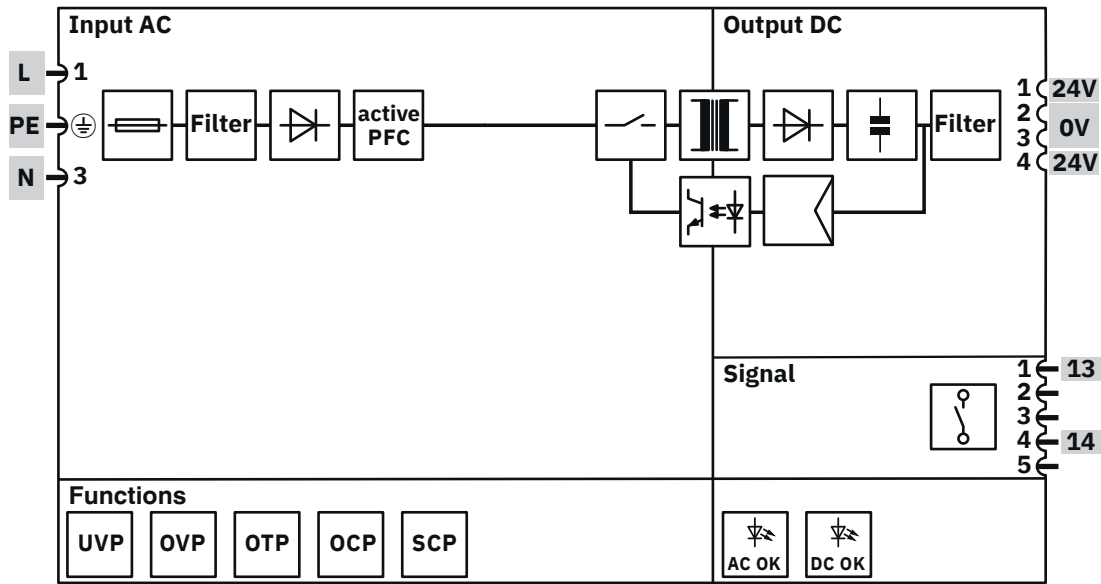
Output current/installation altitude

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Block diagram



Block diagram

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1111634>



### IECEE CB Scheme

Approval ID: DK-135371-A1-UL



### cULus Listed

Approval ID: FILE E 123528



### EAC

Approval ID: RU S-DE.BL08.W.00764

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27040701 |
| ECLASS-12.0 | 27040701 |
| ECLASS-13.0 | 27040701 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC002540 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 39121000 |
|-------------|----------|

Environmental product compliance

|                                         |                                                                                                                                                                                                                                   |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EU RoHS                                 |                                                                                                                                                                                                                                   |
| Fulfills EU RoHS substance requirements | Yes                                                                                                                                                                                                                               |
| Exemption                               | 6(c), 7(a), 7(c)-I                                                                                                                                                                                                                |
| 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.)     | Lead(CAS: 7439-92-1)                                                                                                                                                                                                              |
| SCIP                                    | ef887251-5e49-42fc-b03f-616a36ecb14e                                                                                                                                                                                              |

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## Accessories

### SACC-M12FSS-2PEPL-CM SH - Power connector

1080227

<https://www.phoenixcontact.com/us/products/1080227>



Power connector, Power, 3-position, shielded, Socket straight M12, coding: S, Push-lock spring connection, knurl material: Brass, nickel-plated, external cable diameter 6 mm ... 11 mm

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### SAC-3P- 1,0-PUR/M12FSS PE - Power cable

1176479

<https://www.phoenixcontact.com/us/products/1176479>



Power cable, 3-position, PUR halogen-free, black, free cable end, on Socket straight M12, coding: S, cable length: 1 m, For alternating current up to 16 A/690 V

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## SACC-M12MSL-4PL-CM SH - Power connector

1080239

<https://www.phoenixcontact.com/us/products/1080239>



Power connector, Power, 4-position, shielded, Plug straight M12, coding: L, Push-lock spring connection, knurl material: Brass, nickel-plated, external cable diameter 6 mm ... 11 mm

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## SAC-4P-M12MSL/ 1,5-105 - Power cable

1425025

<https://www.phoenixcontact.com/us/products/1425025>



Power cable, 4-position, PUR halogen-free, black-gray RAL 7021, Plug straight M12, coding: L, on free cable end, cable length: 1.5 m, For direct current up to 12 A/63 V

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## SACC-M12FS-5PL M - Connector

1424652

<https://www.phoenixcontact.com/us/products/1424652>



Connector, Universal, 5-position, unshielded, Socket straight M12, coding: A, Push-lock spring connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

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## SAC-5P- 1,5-PUR/M12FS - Sensor/actuator cable

1669822

<https://www.phoenixcontact.com/us/products/1669822>



Sensor/actuator cable, 5-position, PUR halogen-free, black-gray RAL 7021, free cable end, on Socket straight M12, coding: A, cable length: 1.5 m

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