# QUINT4-PS/1AC/12DC/7.5/PT - Power supply

2904607

https://www.phoenixcontact.com/us/products/2904607

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Primary-switched power supply unit QUINT POWER, Push-in connection, DIN rail mounting, input: 1-phase, output: 12 V DC / 7.5 A, adjustable from 12 V DC ... 15 V DC

## Product description

Our small QUINT POWER power supplies cover the power range from 30 to 100 W. These compact power supplies provide you with a perfect combination of preventive function monitoring and exceptional power reserves in a compact size.

## Your advantages

- Starting of heavy loads with dynamic boost
- Preventive function monitoring indicates critical operating states before errors occur
- High efficiency and long service life, with low power dissipation and low heating
- Space savings in the control cabinet, thanks to a narrow, slim-line design
- Fast and easy startup, thanks to tool-free Push-in connection technology

ELEKTROGERÄTE RÜCKNAHME

## Commercial data

| | |
|---|---|
| Item number | 2904607 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | CM10 |
| Product key | CMPI12 |
| GTIN | 4055626255767 |
| Weight per piece (including packing) | 375 g |
| Weight per piece (excluding packing) | 307 g |

| | |
|---|---|
| Customs tariff number | 85044095 |
| Country of origin | VN |

# Technical data

## Input data

AC operation

| | |
|---|---|
| Input voltage range | 100 V AC ... 240 V AC -15 % ... +10 % |
| Electric strength, max. | 300 V AC 60 s |
| Typical national grid voltage | 120 V AC |
| | 230 V AC |
| Voltage type of supply voltage | AC |
| Inrush current | typ. 11.4 A (at 25 °C) |
| Inrush current integral ($I^2t$) | < 0.2 $A^2s$ |
| Inrush current limitation | < 11.4 A |
| Frequency range ($f_N$) | 50 Hz ... 60 Hz -10 % ... +10 % |
| Mains buffering time | typ. 48 ms (120 V AC) |
| | typ. 48 ms (230 V AC) |
| Current consumption | 1 A (100 V AC) |
| | 0.85 A (120 V AC) |
| | 0.46 A (230 V AC) |
| | 0.44 A (240 V AC) |
| Nominal power consumption | 96.3 VA |
| Protective circuit | Transient surge protection; Varistor |
| Typical response time | 300 ms |
| Input fuse | 3.15 A (slow-blow, internal) |
| Recommended breaker for input protection | 6 A ... 16 A (Characteristic B, C or comparable) |
| Discharge current to PE | < 0.25 mA (264 V AC, 60 Hz) |
| | < 0.17 mA |

DC operation

| | |
|---|---|
| Input voltage range | 110 V DC ... 250 V DC -20 % ... +40 % |
| Voltage type of supply voltage | DC |
| Current consumption | 0.92 A (110 V DC) |
| | 0.4 A (250 V DC) |

## Output data

| | |
|---|---|
| Efficiency | typ. 91.5 % (120 V AC) |
| | typ. 92.5 % (230 V AC) |
| Nominal output voltage | 12 V DC |
| Setting range of the output voltage ($U_{Set}$) | 12 V DC ... 15 V DC (constant capacity) |
| Nominal output current ($I_N$) | 7.5 A |
| Dynamic Boost ($I_{Dyn.Boost}$) | 12.75 A (≤ 60 °C (5 s)) |
| Feedback voltage resistance | ≤ 25 V DC |
| Protection against overvoltage at the output (OVP) | ≤ 18 V DC |
| | < 0.3 % (Static load change 10 % ... 90 %) |

| | |
|---|---|
| Control deviation | < 3 % (Dynamic load change 10 % ... 90 %, (10 Hz)) |
| | < 0.1 % (change in input voltage ±10 %) |
| Residual ripple | < 35 $mV_{PP}$ (with nominal values) |
| Short-circuit-proof | yes |
| No-load proof | yes |
| Output power | 90 W |
| | 150 W |
| Maximum no-load power dissipation | < 0.6 W (230 V AC) |
| | < 0.6 W (120 V AC) |
| Power loss nominal load max. | < 8.1 W (120 V AC) |
| | < 7.1 W (230 V AC) |
| Crest factor | typ. 1.57 (120 V AC) |
| | typ. 1.67 (230 V AC) |
| Rise time | 50 ms ($U_{Out}$ = 10 % ... 90 %) |
| Connection in parallel | yes, for redundancy and increased capacity |
| Connection in series | yes |
| Fuse protection (secondary side) | electronic |

Signal (configurable)

| | |
|---|---|
| Digital | 0 V DC 12 V DC 24 mA |
| Default | 12 V DC 24 mA 12 V DC for $U_{Out}$ > 0.9 x $U_{Set}$ |

## Connection data

Input

| | |
|---|---|
| Connection method | Push-in connection |
| Conductor cross-section, rigid min. | 0.2 mm² |
| Conductor cross-section, rigid max. | 2.5 mm² |
| Conductor cross-section flexible min. | 0.2 mm² |
| Conductor cross-section flexible max. | 2.5 mm² |
| Single conductor/terminal point, stranded, with ferrule, min. | 0.25 mm² |
| Single conductor/terminal point, stranded, with ferrule, max. | 2.5 mm² |
| Conductor cross-section AWG min. | 24 |
| Conductor cross-section AWG max. | 14 |
| Stripping length | 10 mm |

Output

| | |
|---|---|
| Connection method | Push-in connection |
| Conductor cross-section, rigid min. | 0.2 mm² |
| Conductor cross-section, rigid max. | 2.5 mm² |
| Conductor cross-section flexible min. | 0.2 mm² |
| Conductor cross-section flexible max. | 2.5 mm² |
| Single conductor/terminal point, stranded, with ferrule, min. | 0.25 mm² |
| Single conductor/terminal point, stranded, with ferrule, max. | 2.5 mm² |
| Conductor cross-section AWG min. | 24 |

| | |
|---|---|
| Conductor cross-section AWG max. | 14 |
| Stripping length | 10 mm |

Signal

| | |
|---|---|
| Connection method | Push-in connection |
| Conductor cross-section, rigid min. | 0.2 mm² |
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| Conductor cross-section flexible min. | 0.2 mm² |
| Conductor cross-section flexible max. | 2.5 mm² |
| Single conductor/terminal point, stranded, with ferrule, min. | 0.25 mm² |
| Single conductor/terminal point, stranded, with ferrule, max. | 2.5 mm² |
| Conductor cross-section AWG min. | 24 |
| Conductor cross-section AWG max. | 14 |
| Stripping length | 10 mm |

## Signaling

| | |
|---|---|
| Types of signaling | LED |

Signal output

| | |
|---|---|
| $P_{Out}$ | > $P_{Thr}$ (LED lights up yellow, output power > $P_{Thr}$, depending on the rotary selector switch setting) |
| $U_{Out}$ | > 0.9 x $U_{Set}$ (LED lights up green) |
| | < 0.9 x $U_{Set}$ (LED flashes green) |

## Electrical properties

| | |
|---|---|
| Number of phases | 1 |
| Insulation voltage input/output | 4 kV AC (type test) |
| | 3 kV AC (routine test) |
| Switching frequency | 4.00 kHz ... 70.00 kHz (Auxiliary converter stage) |
| | 80.00 kHz ... 190.00 kHz (Main converter stage) |
| | 30.00 kHz ... 150.00 kHz (PFC stage) |

## Product properties

| | |
|---|---|
| Product type | Power supply |
| Product family | QUINT POWER |
| MTBF (IEC 61709, SN 29500) | > 1221000 h (25 °C) |
| | > 671000 h (40 °C) |
| | > 248000 h (60 °C) |

Insulation characteristics

| | |
|---|---|
| Protection class | II |
| Overvoltage category (EN 61010-1) | II (≤ 5000 m) |
| Overvoltage category (EN 62477-1) | III (≤ 2000 m) |
| Degree of pollution | 2 |

Life expectancy (electrolytic capacitors)

| | |
|---|---|
| Current | 7.5 A |
| Temperature | 40 °C |
| Time | 96000 h |
| Additional text | 120 V AC |

Life expectancy (electrolytic capacitors)

| | |
|---|---|
| Current | 7.5 A |
| Temperature | 40 °C |
| Time | 145000 h |
| Additional text | 230 V AC |

Life expectancy (electrolytic capacitors)

| | |
|---|---|
| Current | 7.5 A |
| Temperature | 25 °C |
| Time | 280000 h |
| Additional text | 120 V AC |

Life expectancy (electrolytic capacitors)

| | |
|---|---|
| Current | 7.5 A |
| Temperature | 25 °C |
| Time | 430000 h |
| Additional text | 230 V AC |

## Dimensions

| | |
|---|---|
| Width | 45 mm |
| Height | 106 mm |
| Depth | 90 mm |

Installation dimensions

| | |
|---|---|
| Installation distance right/left (active) | 15 mm / 15 mm ($P_{Out}$ ≥50% ) |
| Installation distance right/left (passive) | 5 mm / 5 mm ($P_{Out}$ ≥50% ) |
| Installation distance right/left (active, passive) | 0 mm / 0 mm ($P_{Out}$ ≤50 %) |
| Installation distance top/bottom (active) | 30 mm / 30 mm ($P_{Out}$ ≥50% ) |
| Installation distance top/bottom (passive) | 30 mm / 30 mm ($P_{Out}$ ≥50% ) |
| Installation distance top/bottom (active, passive) | 30 mm / 30 mm ($P_{Out}$ ≤50 %) |

## Mounting

| | |
|---|---|
| Mounting type | DIN rail mounting |
| With protective coating | no |

## Material specifications

| | |
|---|---|
| Flammability rating according to UL 94 (housing / terminal blocks) | V0 |
| Housing material | Plastic |
| Type of housing | Polycarbonate |
| Hood version | Polycarbonate |

## Environmental and real-life conditions

### Ambient conditions

| | |
|---|---|
| Degree of protection | IP20 |
| Ambient temperature (operation) | -25 °C ... 70 °C (> 60 °C Derating: 2,5 %/K) |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Ambient temperature (start-up type tested) | -40 °C |
| Maximum altitude | ≤ 5000 m (> 2000 m, observe derating) |
| Climatic class | 3K3 (in acc. with EN 60721) |
| Max. permissible relative humidity (operation) | ≤ 95 % (at 25 °C, non-condensing) |
| Shock | 18 ms, 30g, in each space direction (according to IEC 60068-2-27) |
| Vibration (operation) | < 15 Hz, ±2.5 mm amplitude; 15 Hz ... 100 Hz: 2.3 g 90 Min. (in accordance with IEC 60068-2-6) |
| Temp code | T4 (-25 ... +70 °C; > 60 °C, Derating: 2,5 %/K) |

## Standards and regulations

| | |
|---|---|
| Standard – Limitation of mains harmonic currents | EN 61000-3-2 |
| Standard – Safety extra-low voltage | IEC 61010-1 (SELV) |
| | IEC 61010-2-201 (PELV) |
| Standard - Safe isolation | IEC 61558-2-16 |
| | IEC 61010-2-201 |
| Standard - safety for equipment for measurement, control, and laboratory use | IEC 61010-1 |
| | IEC 61010-2-201 (SELV) |
| Standard - Safety of transformers | EN 61558-2-16 |

## Approvals

| | |
|---|---|
| SIQ | CB-Scheme (IEC 61010-1, IEC 61010-2-201) |
| UL approvals | UL Listed UL 61010-1 |
| | UL Listed UL 61010-2-201 |
| | UL 121201 & CSA C22.2 No. 213-17 Class I, Division 2, Groups A, B, C, D T4 (Hazardous Location) |

## EMC data

| | |
|---|---|
| Electromagnetic compatibility | Conformance with EMC Directive 2014/30/EU |
| EMC requirements for noise emission | EN 61000-6-3 |
| | EN 61000-6-4 |
| EMC requirements for noise immunity | EN 61000-6-1 |
| | EN 61000-6-2 |
| EMC requirements for power supply | IEC 61850-3 (G,H) |
| | EN 61000-6-5 (switching devices) |

### Conducted noise emission

| | |
|---|---|
| Standards/regulations | EN 55016 |
| | EN 61000-6-3 (Class B) |

Noise emission

| | |
|---|---|
| Standards/regulations | Additional basic standard EN 61000-6-5 (immunity in switching devices), IEC/EN 61850-3 (power supply) |

Noise emission

| | |
|---|---|
| Standards/regulations | EN 55016 |
| | EN 61000-6-3 (Class B) |

Harmonic currents

| | |
|---|---|
| Standards/regulations | EN 61000-3-2 |
| | EN 61000-3-2 (Class A) |
| Frequency range | 0 kHz ... 2 kHz |

Flicker

| | |
|---|---|
| Standards/regulations | EN 61000-3-3 |
| Frequency range | 0 kHz ... 2 kHz |

Electrostatic discharge

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

Electrostatic discharge

| | |
|---|---|
| Contact discharge | 8 kV (Test Level 4) |
| Discharge in air | 15 kV (Test Level 4) |
| Comments | Criterion A |

Electromagnetic HF field

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

Electromagnetic HF field

| | |
|---|---|
| Frequency range | 80 MHz ... 1 GHz |
| Test field strength | 20 V/m (Test Level 3) |
| Frequency range | 1 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 4 - asymmetrical) |
| Output | 4 kV (Test Level 4 - asymmetrical) |
| Signal | 4 kV (Test Level 4 - asymmetrical) |
| Comments | Criterion A |

Surge voltage load (surge)

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

Surge voltage load (surge)

| | |
|---|---|
| Input | 2 kV (Test Level 4 - symmetrical) |

| | |
|---|---|
| | 4 kV (Test Level 4 - asymmetrical) |
| Output | 1 kV (Test Level 3 - symmetrical) |
| | 2 kV (Test Level 3 - asymmetrical) |
| Signal | 0.5 kV (Test Level 2 - symmetrical) |
| | 1 kV (Test Level 2 - asymmetrical) |
| Comments | Criterion A |

Conducted interference

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

Conducted interference

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

Power frequency magnetic field

| | |
|---|---|
| Standards/regulations | EN 61000-4-8 |
| Frequency | 16.67 Hz |
| | 50 Hz |
| | 60 Hz |
| Test field strength | 100 A/m |
| Additional text | 60 s |
| Comments | Criterion A |
| Frequency | 50 Hz |
| | 60 Hz |
| Frequency range | 50 Hz ... 60 Hz |
| Test field strength | 1 kA/m |
| Additional text | 3 s |
| Frequency | 0 Hz |
| Test field strength | 300 A/m |
| Additional text | DC, 60 s |

Voltage dips

| | |
|---|---|
| Standards/regulations | EN 61000-4-11 |
| Voltage | 100 V AC |
| Frequency | 60 Hz |
| Voltage dip | 70 % |
| Number of periods | 0.5 / 1 / 30 periods |
| Additional text | Test Level 2 |
| Comments | Criterion A |
| Voltage dip | 40 % |
| Number of periods | 5 / 10 / 50 periods |
| Additional text | Test Level 2 |
| Comments | Criterion B |
| Voltage dip | 0 % |

| | |
|---|---|
| Number of periods | 0.5 / 1 / 5 / 50 periods |
| Additional text | Test Level 2 |
| Comments | Criterion B |

Pulse-shape magnetic field

| | |
|---|---|
| Standards/regulations | EN 61000-4-9 |
| Test field strength | 1000 A/m |
| Comments | Criterion A |

Attenuated sinusoidal oscillations (ring wave)

| | |
|---|---|
| Standards/regulations | EN 61000-4-12 |
| Input | 2 kV (symmetrical) |
| | 4 kV (asymmetrical) |
| Comments | Criterion A |

Asymmetrical conducted disturbance variables

| | |
|---|---|
| Standards/regulations | EN 61000-4-16 |
| Test level 1 | 16.67 Hz 50 Hz 60 Hz 150 Hz 180 Hz (Test Level 3) |
| Voltage | 30 V (10 s) |
| Test level 2 | 16.67 Hz 50 Hz 60 Hz (Test Level 2) |
| Voltage | 300 V (1 s) |
| Comments | Criterion A |

Attenuated oscillating wave

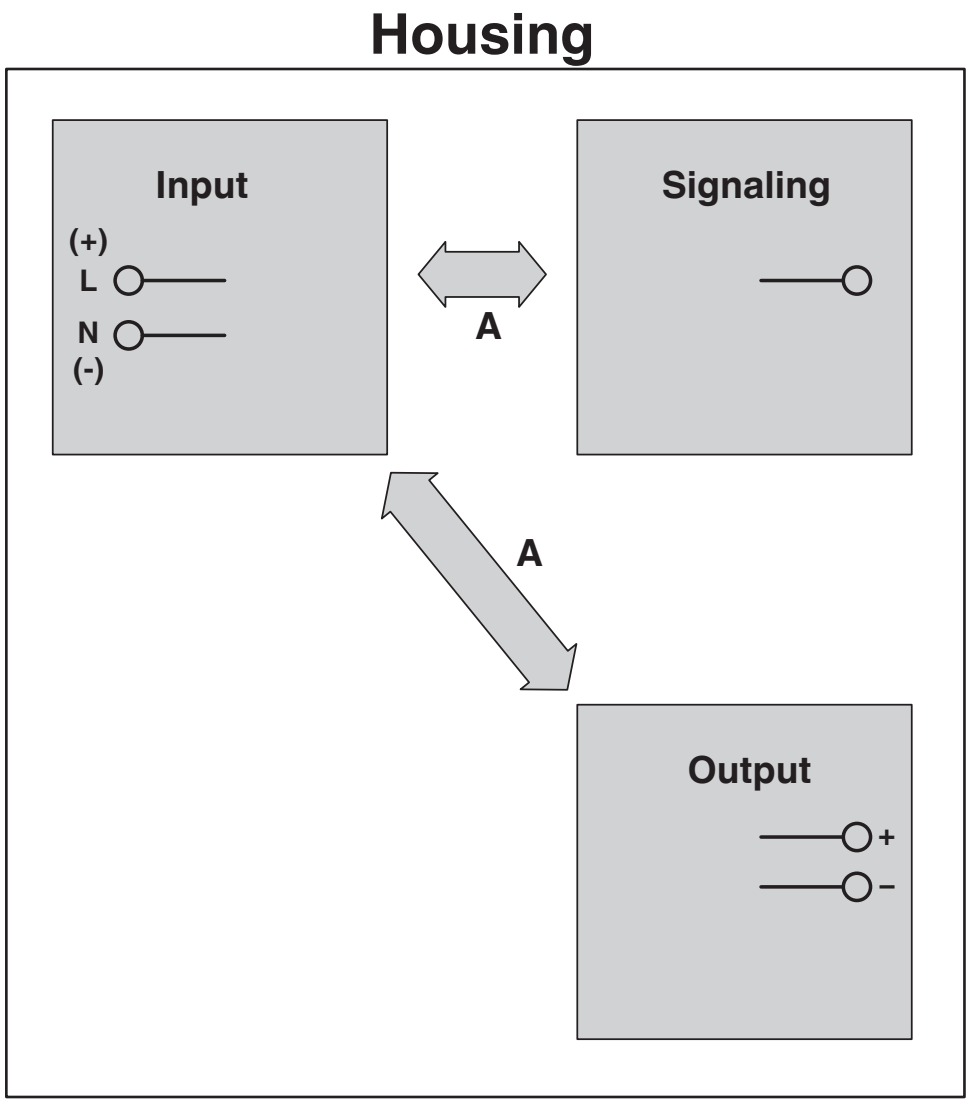
| | |
|---|---|
| Standards/regulations | EN 61000-4-18 |
| Voltage | 1 kV (symmetrical) |
| | 2.5 kV (asymmetrical) |
| | 1 kV (symmetrical) |
| Comments | Criterion A |

Criteria

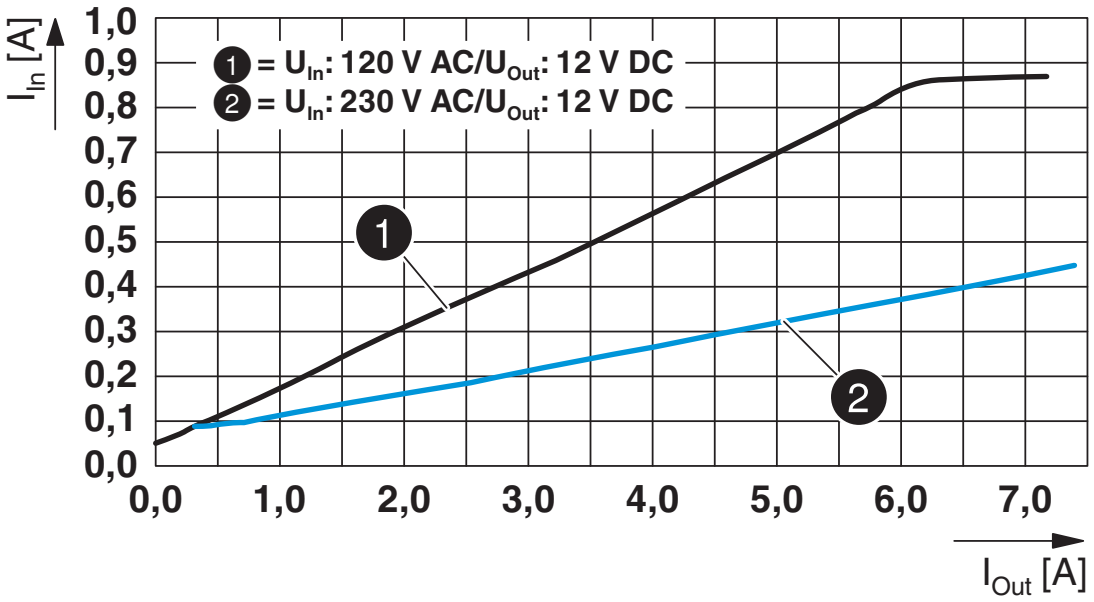
| | |
|---|---|
| Criterion A | Normal operating behavior within the specified limits. |
| Criterion B | Temporary impairment to operational behavior that is corrected by the device itself. |
| Criterion C | Temporary adverse effects on the operating behavior, which the device corrects automatically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

## Drawings

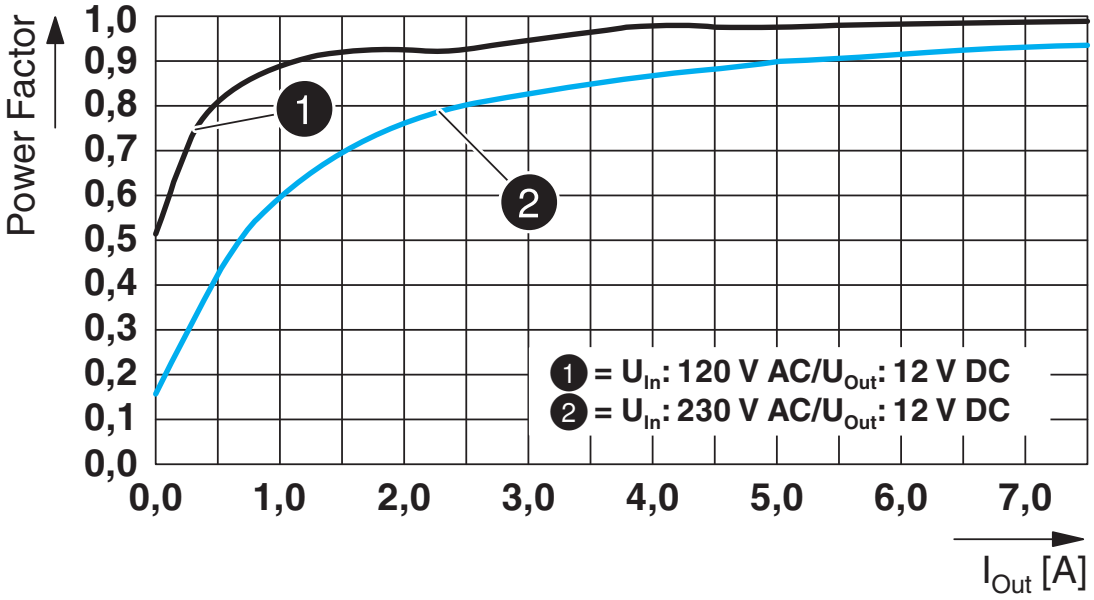
Schematic diagram



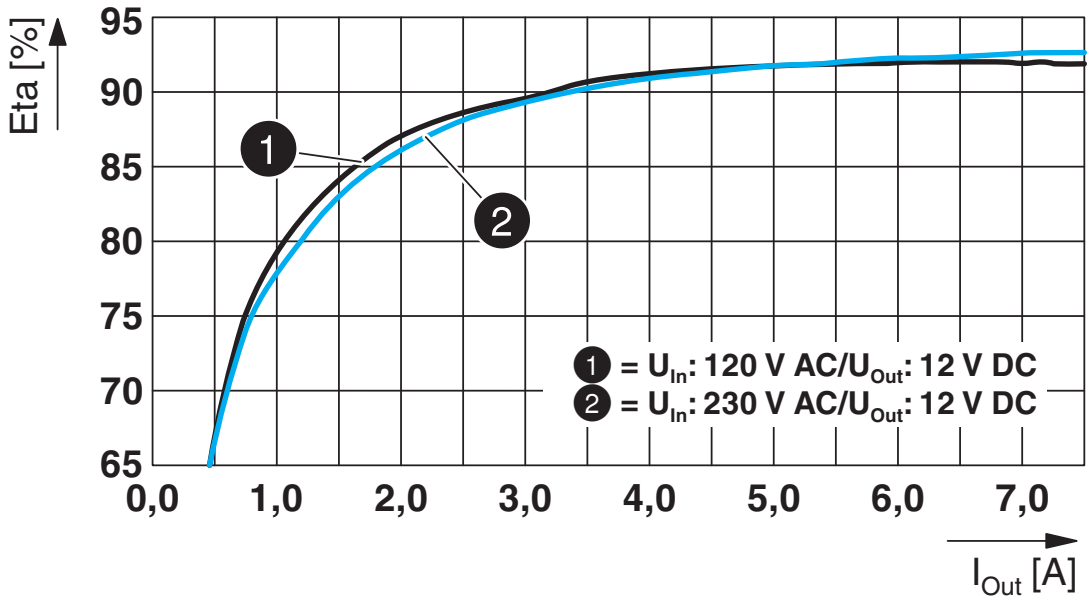
Diagram



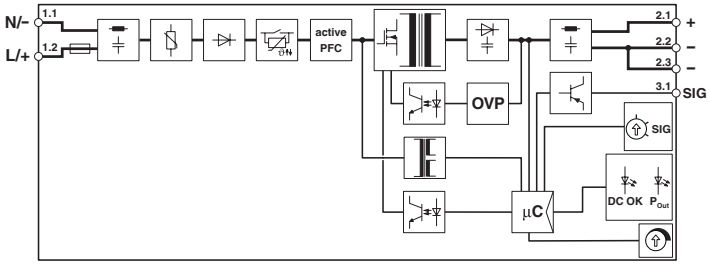

Diagram



Diagram




Block diagram



## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/2904607

**IECEE CB Scheme**
Approval ID: SI-12911

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

**UL Listed**
Approval ID: E123528

**cUL Listed**
Approval ID: E123528

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

**DNV**
Approval ID: TAA00001YD

**BV**
Approval ID: 44621/B1 BV

**SIQ Mark**
Approval ID: SI-SIQ BG 005/117

**EAC**
Approval ID: KZ7500651 0101 12535

**cUL Listed**
Approval ID: E199827

**UL Listed**
Approval ID: E199827

## Classifications

### ECLASS

| | |
|---|---|
| ECLASS-13.0 | 27040701 |
| ECLASS-15.0 | 27040701 |

### ETIM

| | |
|---|---|
| ETIM 10.0 | EC002540 |

### UNSPSC

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

## Environmental product compliance

EU RoHS

| | |
|---|---|
| Fulfills EU RoHS substance requirements | Yes |
| Exemption | 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 | 0c7ace05-b5de-466f-8ef2-05caf4801fbd |

EF3.1 Climate Change

| | |
|---|---|
| CO2e kg | 10.764 kg CO2e |


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