

Power supply unit - QUINT4-PS/1AC/48DC/5 - 2904610

Please be informed that the data shown in this PDF Document is generated from our Online Catalog. Please find the complete data in the user's documentation. Our General Terms of Use for Downloads are valid (<http://phoenixcontact.com/download>)



Primary-switched QUINT POWER power supply for DIN rail mounting with free choice of output characteristic curve and SFB (Selective Fuse Breaking) technology, input: 1-phase, output: 48 V DC / 5 A

Product Description


The fourth generation of the high-performance QUINT POWER power supplies ensures superior system availability by means of new functions. Signaling thresholds and characteristic curves can be individually adjusted via the NFC interface. The unique SFB technology and preventive function monitoring of the QUINT POWER power supply increase the availability of your application.

Your advantages

- ✓ Preventive function monitoring indicates critical operating states before errors occur
- ✓ Signaling thresholds and characteristic curves that can be adjusted via NFC maximize system availability
- ✓ Power reserve for easy system extension thanks to static boost with sustained power of up to 125% and ability to start difficult loads thanks to dynamic boost with up to 200% for 5 seconds
- ✓ High degree of immunity, thanks to integrated gas-filled surge arrester and mains failure bridging time of more than 20 milliseconds
- ✓ Robust design thanks to metal housing and wide temperature range from -40°C to +70°C
- ✓ Worldwide use thanks to the wide range input and international approval package



Key Commercial Data

| | |
|--------------|---|
| Packing unit | 1 pc |
| GTIN |  4 055626 355061 |
| GTIN | 4055626355061 |

Technical data

Dimensions

| | |
|----------------------------------|--------|
| Width | 50 mm |
| Height | 130 mm |
| Depth | 125 mm |
| Width with alternative assembly | 122 mm |
| Height with alternative assembly | 130 mm |
| Depth with alternative assembly | 53 mm |

Power supply unit - QUINT4-PS/1AC/48DC/5 - 2904610

Technical data

Ambient conditions

| | |
|--|--|
| Degree of protection | IP20 |
| Ambient temperature (operation) | -25 °C ... 70 °C (> 60 °C Derating: 2.5 %/K) |
| Ambient temperature (start-up type tested) | -40 °C |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Max. permissible relative humidity (operation) | ≤ 95 % (at 25 °C, non-condensing) |
| Climatic class | 3K3 (in acc. with EN 60721) |
| Degree of pollution | 2 |
| Installation height | ≤ 5000 m (> 2000 m, observe derating) |

Input data

| | |
|--|--|
| Nominal input voltage range | 100 V AC ... 240 V AC 110 V DC ... 250 V DC |
| Input voltage range | 100 V AC ... 240 V AC -15 % ... +10 % 110 V DC ... 250 V DC -18 % ... +40 % |
| Dielectric strength maximum | 300 V AC 60 s |
| AC frequency range | 50 Hz ... 60 Hz -10 % ... +10 % |
| Frequency range (f_N) | 50 Hz ... 60 Hz -10 % ... +10 % 16.7 Hz (acc. to EN 50163) |
| Discharge current to PE | < 3.5 mA |
| Current consumption | 3.4 A (100 V AC) 2.8 A (120 V AC) 1.5 A (230 V AC) 1.5 A (240 V AC) |
| Nominal power consumption | 271 VA |
| Inrush current | typ. 16 A (at 25 °C) |
| Mains buffering time | typ. 43 ms (120 V AC) typ. 43 ms (230 V AC) |
| Input fuse | 8 A (slow-blow, internal) |
| Recommended breaker for input protection | 10 A ... 16 A (Characteristic B, C, D, K or comparable) |
| Type of protection | Transient surge protection |
| Protective circuit/component | Varistor, gas-filled surge arrester |

Output data

| | |
|---|--|
| Nominal output voltage | 48 V DC |
| Setting range of the output voltage (U_{Set}) | 48 V DC ... 56 V DC (constant capacity) |
| Nominal output current (I_N) | 5 A |
| Static Boost ($I_{Stat.Boost}$) | 6.25 A |
| Dynamic Boost ($I_{Dyn.Boost}$) | 10 A (5 s) |
| Selective Fuse Breaking (I_{SFB}) | 30 A (15 ms) |
| Derating | > 60 °C (2.5%/K) |
| Connection in parallel | Yes, for redundancy and increased capacity |

Power supply unit - QUINT4-PS/1AC/48DC/5 - 2904610

Technical data

Output data

| | |
|--|--|
| Connection in series | yes |
| Feedback voltage resistance | ≤ 60 V DC |
| Protection against overvoltage at the output (OVP) | ≤ 60 V DC |
| Control deviation | < 0.5 % (Static load change 10 % ... 90 %) |
| | < 4 % (Dynamic load change 10 % ... 90 %, (10 Hz)) |
| | < 0.25 % (change in input voltage ±10 %) |
| Residual ripple | < 70 mV _{PP} (with nominal values) |
| Output power | 240 W |
| Typical response time | 300 ms (from SLEEP MODE) |
| Maximum power dissipation in no-load condition | < 3 W (120 V AC) |
| | < 3 W (230 V AC) |
| Power loss nominal load max. | < 19 W (120 V AC) |
| | < 16 W (230 V AC) |

General

| | |
|---------------------------------|--|
| Net weight | 1 kg |
| Efficiency | typ. 92.3 % (120 V AC) |
| | typ. 93.5 % (230 V AC) |
| Insulation voltage input/output | 4 kV AC (type test) |
| | 2 kV AC (routine test) |
| Insulation voltage input / PE | 3.5 kV AC (type test) |
| | 2.4 kV AC (routine test) |
| Insulation voltage output / PE | 0.5 kV DC (type test) |
| | 0.5 kV DC (routine test) |
| Protection class | I |
| Degree of protection | IP20 |
| MTBF (IEC 61709, SN 29500) | > 1242000 h (25 °C) |
| | > 784000 h (40 °C) |
| | > 374000 h (60 °C) |
| Mounting position | horizontal DIN rail NS 35, EN 60715 |
| Assembly instructions | alignable: P _N ≥ 50%, 5 mm horizontally, 15 mm next to active components, 50 mm vertically alignable: P _N < 50%, 0 mm horizontally, 40 mm vertically top, 20 mm vertically bottom |

Connection data, input

| | |
|---------------------------------------|---------------------|
| Connection method | Screw connection |
| Conductor cross section solid min. | 0.2 mm ² |
| Conductor cross section solid max. | 2.5 mm ² |
| Conductor cross section flexible min. | 0.2 mm ² |
| Conductor cross section flexible max. | 2.5 mm ² |
| Conductor cross section AWG min. | 24 |
| Conductor cross section AWG max. | 14 |

Power supply unit - QUINT4-PS/1AC/48DC/5 - 2904610

Technical data

Connection data, input

| | |
|------------------|--------|
| Stripping length | 6.5 mm |
|------------------|--------|

Connection data, output

| | |
|---------------------------------------|---------------------|
| Connection method | Screw connection |
| Conductor cross section solid min. | 0.2 mm ² |
| Conductor cross section solid max. | 2.5 mm ² |
| Conductor cross section flexible min. | 0.2 mm ² |
| Conductor cross section flexible max. | 2.5 mm ² |
| Conductor cross section AWG min. | 24 |
| Conductor cross section AWG max. | 14 |
| Stripping length | 6.5 mm |

Connection data for signaling

| | |
|---------------------------------------|---------------------|
| Connection method | Push-in connection |
| Conductor cross section solid min. | 0.2 mm ² |
| Conductor cross section solid max. | 1 mm ² |
| Conductor cross section flexible min. | 0.2 mm ² |
| Conductor cross section flexible max. | 1.5 mm ² |
| Conductor cross section AWG min. | 24 |
| Conductor cross section AWG max. | 16 |
| Stripping length | 8 mm |

Standards

| | |
|--|--|
| EMC requirements for noise immunity | EN 61000-6-1 |
| | EN 61000-6-2 |
| EMC requirements for noise emission | EN 61000-6-3 |
| | EN 61000-6-4 |
| EMC requirements, power plant | IEC 61850-3 |
| | EN 61000-6-5 |
| HART FSK Physical Layer Test Specification Compliance | Output voltage U _{Out} compliant |
| Standard - Safety of transformers | EN 61558-2-16 (air clearances and creepage distances only) |
| Standard - Electrical safety | IEC 60950-1/VDE 0805 (SELV) |
| Standard - safety for equipment for measurement, control, and laboratory use | IEC 61010-1 |
| Standard – Safety extra-low voltage | IEC 60950-1 (SELV) |
| | EN 60204-1 (PELV) |
| Standard – Limitation of mains harmonic currents | EN 61000-3-2 |
| Mains variation/undervoltage | SEMI F47-0706; EN 61000-4-11 |
| Rail applications | EN 50121-3-2 |
| | EN 50121-4 |
| | EN 50121-5 |
| | IEC 62236-3-2 |
| | IEC 62236-4 |

Power supply unit - QUINT4-PS/1AC/48DC/5 - 2904610

Technical data

Standards

| | |
|--|-------------|
| | IEC 62236-5 |
|--|-------------|

Conformance/approvals

| | |
|--------------|--|
| UL approvals | UL Listed UL 508 |
| | UL/C-UL Recognized UL 60950-1 |
| | UL ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C, D (Hazardous Location) |
| CSA | CAN/CSA-C22.2 No. 60950-1-07 |
| | CSA-C22.2 No. 107.1-01 |

EMC data

| | |
|-------------------------------|---|
| Electromagnetic compatibility | Conformance with EMC Directive 2014/30/EU |
| Low Voltage Directive | Conformance with Low Voltage Directive 2014/35/EC |
| Conducted noise emission | EN 55016 |
| | EN 61000-6-3 (Class B) |
| Noise emission | EN 55016 |
| | EN 61000-6-3 (Class B) |
| Harmonic currents | EN 61000-3-2 |
| | EN 61000-3-2 (Class A) |
| Flicker | EN 61000-3-3 |
| | EN 61000-3-3 |
| Electrostatic discharge | EN 61000-4-2 |
| Contact discharge | 8 kV (Test Level 4) |
| Discharge in air | 15 kV (Test Level 4) |
| Electromagnetic HF field | EN 61000-4-3 |
| 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) |
| Frequency range | 1 GHz ... 6 GHz |
| Test field strength | 10 V/m (Test Level 3) |
| Comments | Criterion A |
| Fast transients (burst) | EN 61000-4-4 |
| Input | 4 kV (Test Level 4 - asymmetrical) |
| Output | 4 kV (Test Level 4 - asymmetrical) |
| Signal | 4 kV (Test Level 4 - asymmetrical) |
| Comments | Criterion A |
| Input | 3 kV (Test Level 4 - symmetrical) |
| | 6 kV (Test Level 4 - asymmetrical) |
| Output | 1 kV (Test Level 3 - symmetrical) |
| | 2 kV (Test Level 3 - asymmetrical) |
| Signal | 4 kV (Test Level 4 - asymmetrical) |

Power supply unit - QUINT4-PS/1AC/48DC/5 - 2904610

Technical data

EMC data

| | |
|-----------------------------------|--|
| Comments | Criterion A |
| I/O/S | asymmetrical |
| Frequency range | 0.15 MHz ... 80 MHz |
| Voltage | 10 V (Test Level 3) |
| Comments | Criterion A |
| Frequency | 16.7 Hz |
| | 50 Hz |
| | 60 Hz |
| Test field strength | 100 A/m |
| Additional text | 60 s |
| Comments | Criterion A |
| Frequency | 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 | EN 61000-4-11 |
| Voltage | 230 V AC |
| Frequency | 50 Hz |
| Voltage dip | 70 % |
| Number of periods | 0.5 / 1 / 25 periods |
| Additional text | Test Level 2 |
| Comments | Criterion A: 0.5 / 1 / 25 periods |
| Voltage dip | 40 % |
| Number of periods | 5 / 10 / 50 periods |
| Additional text | Test Level 2 |
| Comments | Criterion A |
| Voltage dip | 0 % |
| Number of periods | 0,5 / 1 / 5 / 50 / 250 periods |
| Additional text | Test Level 2 |
| Comments | Criterion A: 0.5 / 1 period Criterion B: 5 / 50 / 250 periods |
| Pulse-shape magnetic field | EN 61000-4-9 |
| Test field strength | 1000 A/m |
| Comments | Criterion A |
| Damped oscillating magnetic field | EN 61000-4-10 |
| Test field strength | 110 A/m |
| Test level 1 | 100 kHz |
| Test field strength | 110 A/m |

Power supply unit - QUINT4-PS/1AC/48DC/5 - 2904610

Technical data

EMC data

| | |
|--|--|
| Test level 2 | 1 MHz |
| Comments | Criterion A |
| Attenuated sinusoidal oscillations (ring wave) | EN 61000-4-12 |
| Input | 2 kV (Test Level 4 - symmetrical) |
| | 4 kV (Test Level 4 - asymmetrical) |
| Comments | Criterion A |
| Asymmetrical conducted disturbance variables | EN 61000-4-16 |
| Test level 1 | 15 Hz 150 Hz (Test Level 4) |
| Voltage | 30 V 3 V |
| Test level 2 | 150 Hz 1.5 kHz (Test Level 4) |
| Voltage | 3 V |
| Test level 3 | 1.5 kHz 15 kHz (Test Level 4) |
| Voltage | 3 V 30 V |
| Test level 4 | 15 kHz 150 kHz (Test Level 4) |
| Voltage | 30 V |
| Test level 5 | 16.7 Hz 50 Hz 60 Hz (Test Level 4) |
| Voltage | 30 V (Permanent) |
| Test level 6 | 16.7 Hz 50 Hz 60 Hz (Test Level 4) |
| Voltage | 300 V (1 s) |
| Comments | Criterion A |
| Attenuated oscillating wave | EN 61000-4-18 |
| Input, output (test level 1) | 100 kHz 1 MHz (Test Level 3 - symmetrical) |
| Voltage | 1 kV |
| Input, output (test level 2) | 10 MHz |
| Voltage | 1 kV |
| Input, output (test level 1) | 100 kHz 1 MHz (Test Level 3 - asymmetrical) |
| Voltage | 2.5 kV |
| Signals (test level 1) | 100 kHz 1 MHz (Test Level 3 - symmetrical) |
| Voltage | 1 kV |
| Signals (test level 2) | 100 kHz 1 MHz (Test Level 3 - asymmetrical) |
| Voltage | 2.5 kV |
| Comments | Criterion A |
| 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. |

Environmental Product Compliance

| | |
|------------|---|
| REACH SVHC | Lead 7439-92-1 |
| China RoHS | Environmentally Friendly Use Period = 25; |

Power supply unit - QUINT4-PS/1AC/48DC/5 - 2904610

Technical data

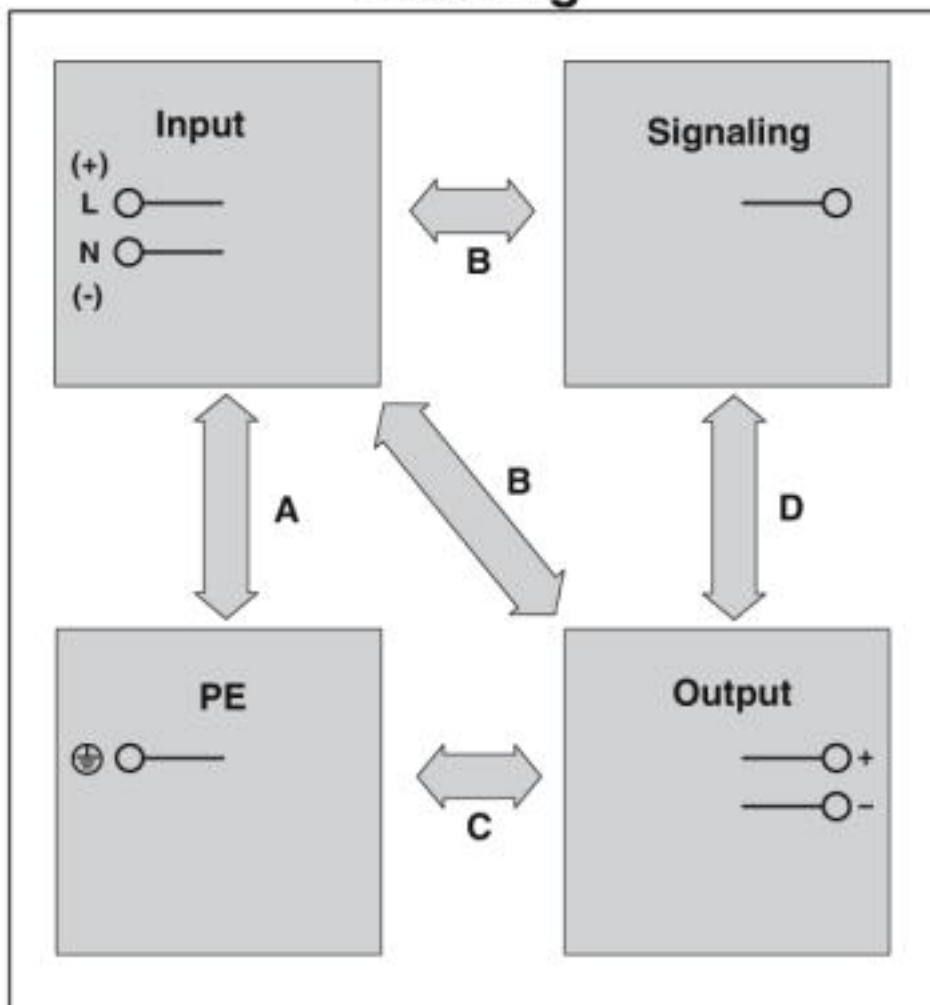
Environmental Product Compliance

| | |
|--|---|
| | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |
|--|---|

Drawings

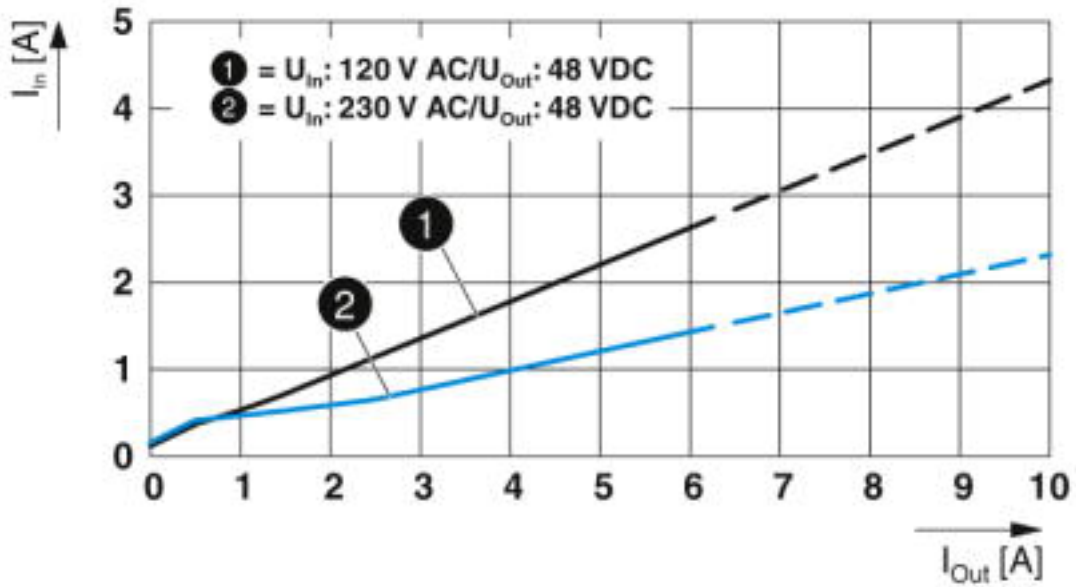
Schematic diagram

Housing

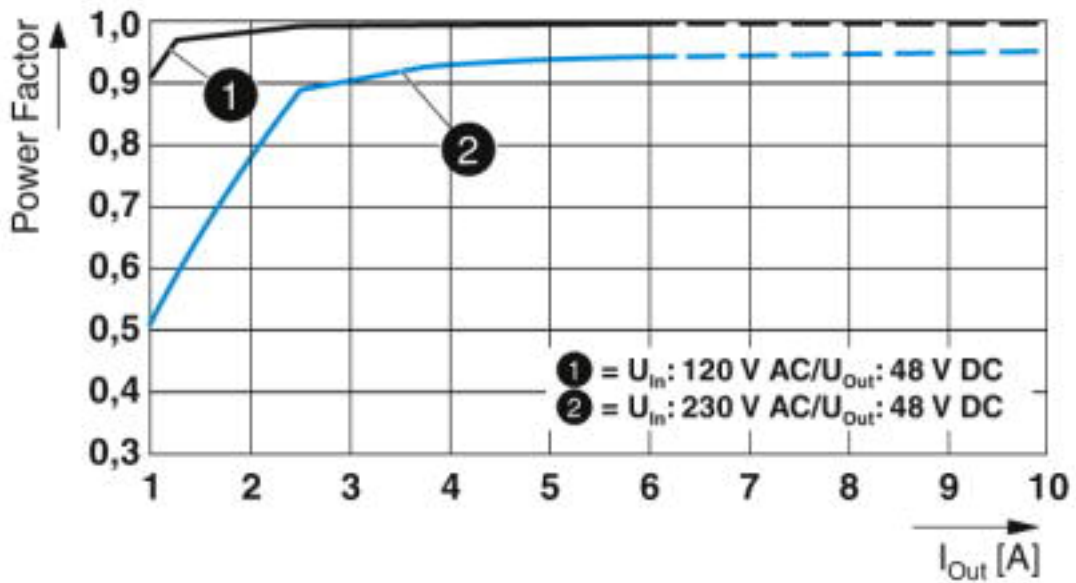


Power supply unit - QUINT4-PS/1AC/48DC/5 - 2904610

Diagram

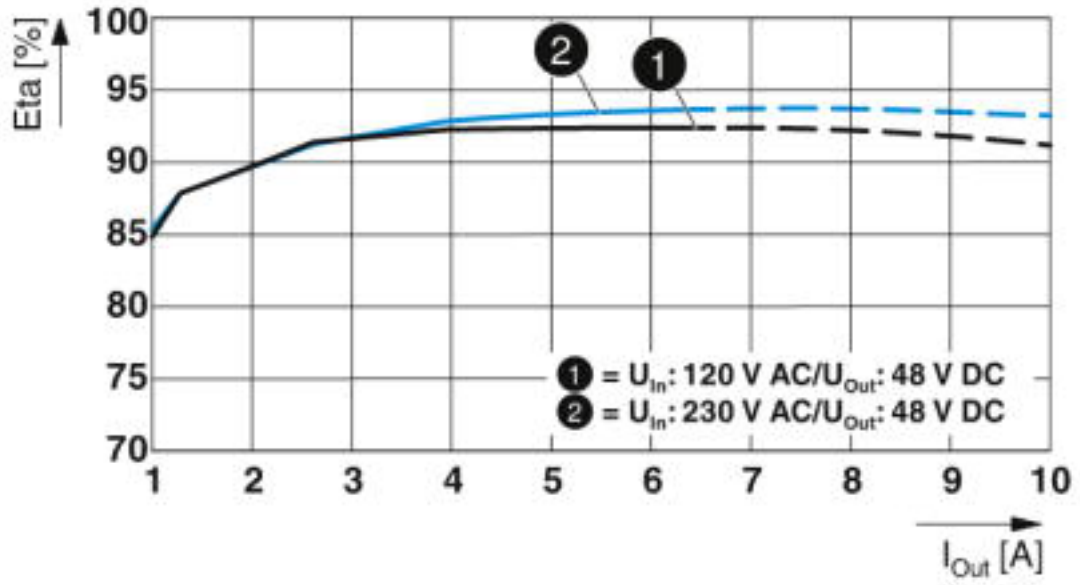


Diagram



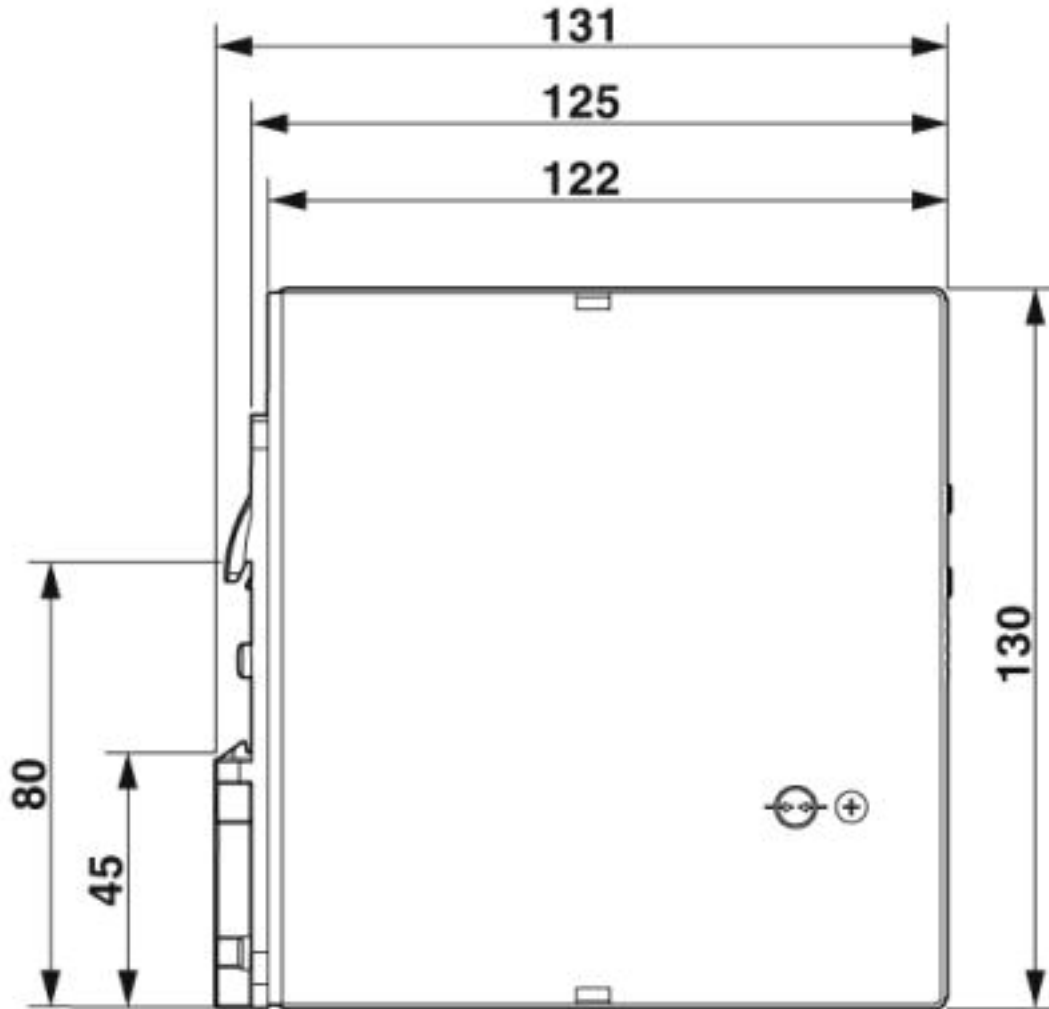
Power supply unit - QUINT4-PS/1AC/48DC/5 - 2904610

Diagram



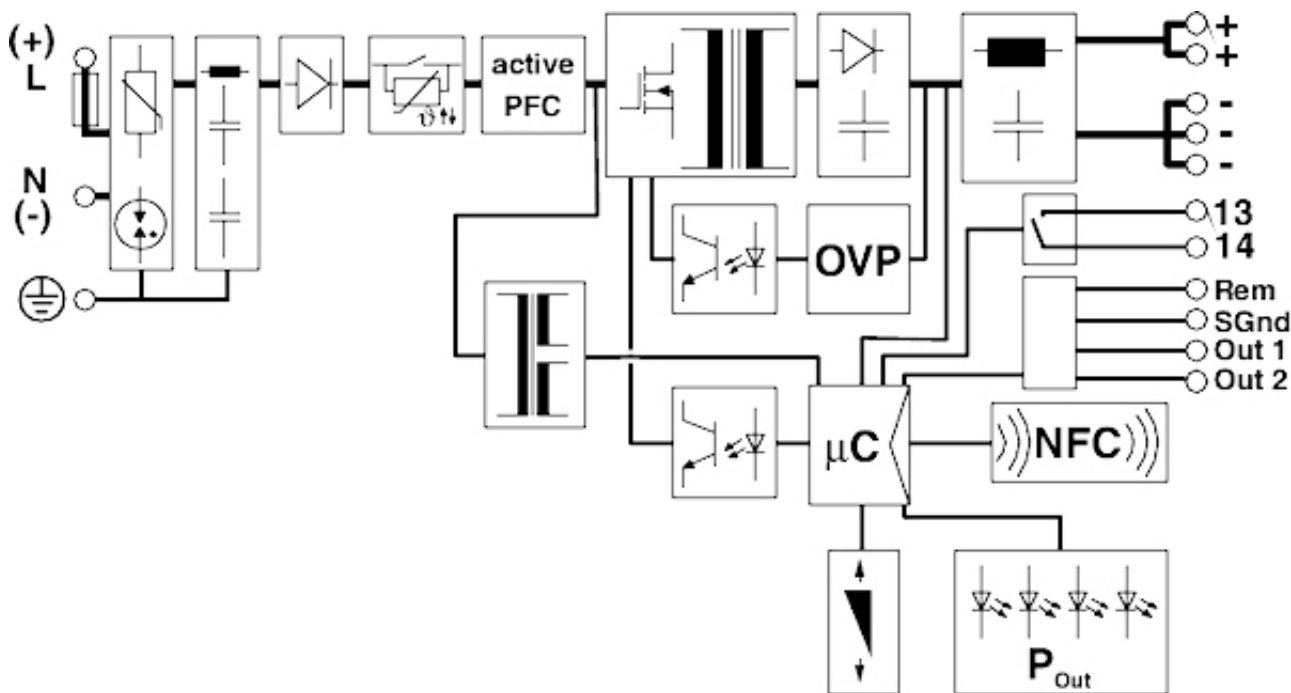
Power supply unit - QUINT4-PS/1AC/48DC/5 - 2904610

Dimensional drawing



Power supply unit - QUINT4-PS/1AC/48DC/5 - 2904610

Block diagram



Approvals

Approvals

Approvals

DNV GL / UL Listed / UL Recognized / cUL Recognized / cUL Listed / CSA / IEC CB Scheme / CSAus / EAC / cULus Recognized / cULus Listed

Ex Approvals

UL Listed / cUL Listed / cULus Listed

Approval details

| | | | |
|--------|--|---|------------|
| DNV GL | | https://approvalfinder.dnvgl.com/ | TAA00000BV |
|--------|--|---|------------|

Power supply unit - QUINT4-PS/1AC/48DC/5 - 2904610

Approvals

| | | | |
|------------------|--|---|--------------------------|
| UL Listed | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 123528 |
| UL Recognized | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 211944 |
| cUL Recognized | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 211944 |
| cUL Listed | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 123528 |
| CSA | | http://www.csagroup.org/services-industries/product-listing/ | 70176673 |
| IECEE CB Scheme | | http://www.iecee.org/ | SI-6370 |
| CSAus | | http://www.csagroup.org/services-industries/product-listing/ | 70176673 |
| EAC | | | RU C- DE.A*30.B.01082 |
| cULus Recognized | | | |
| cULus Listed | | | |

Phoenix Contact 2019 © - all rights reserved
<http://www.phoenixcontact.com>

PHOENIX CONTACT GmbH & Co. KG
Flachsmarktstr. 8
32825 Blomberg
Germany
Tel. +49 5235 300
Fax +49 5235 3 41200
<http://www.phoenixcontact.com>