

## Power supply unit - QUINT4-PS/1AC/24DC/10 - 2904601

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Primary-switched QUINT POWER power supply with free choice of output characteristic curve, SFB (selective fuse breaking) technology, and NFC interface, input: 1-phase, output: 24 V DC/10 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.

### Why buy this product

- ✓ SFB technology trips standard circuit breakers selectively, loads that are connected in parallel continue working
- ✓ Preventive function monitoring indicates critical operating states before errors occur
- ✓ Signaling thresholds and characteristic curves that can be adjusted via NFC maximize system availability
- ✓ Easy system extension thanks to static boost; starting of difficult loads thanks to dynamic boost
- ✓ 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 STK   |
| GTIN                                 | <br>4 046356 985338 |
| GTIN                                 | 4046356985338   |
| Weight per Piece (excluding packing) | 1,120.000 g   |
| Custom tariff number                 | 85044030  |
| Country of origin                    | Thailand  |

### Technical data

#### Dimensions

# Power supply unit - QUINT4-PS/1AC/24DC/10 - 2904601

## 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  |

### 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   |
| Max. permissible relative humidity (operation) | ≤ 95 % (at 25 °C, non-condensing)  |
| Noise immunity                                 | Immunity according to EN 61000-6-1 (residential), EN 61000-6-2 (industrial), and EN 61000-6-5 (power station equipment zone), IEC/EN 61850-3 (energy supply) |
| 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 %                         |
| 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           | 257 W   |
| Inrush surge current                | typ. 18 A (at 25 °C)                                    |
| Power failure bypass                | ≥ 35 ms (120 V AC)                                      |
|                                     | ≥ 35 ms (230 V AC)                                      |
| Input fuse                          | 8 A (slow-blow, internal)                               |
| Choice of suitable circuit breakers | 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 | 24 V DC |
|------------------------|---------|

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## Technical data

### Output data

|   |  |
|---|--|
| Setting range of the output voltage ( $U_{Set}$ ) | 24 V DC ... 29.5 V DC (constant capacity)          |
| Nominal output current ( $I_N$ )                  | 10 A   |
| Static Boost ( $I_{Stat.Boost}$ )                 | 12.5 A   |
| Dynamic Boost ( $I_{Dyn.Boost}$ )                 | 20 A (5 s)   |
| Selective Fuse Breaking ( $I_{SFB}$ )             | 60 A (15 ms)                                       |
| Derating  | > 60 °C (2.5%/K)                                   |
| Connection in parallel                            | Yes, for redundancy and increased capacity         |
| Connection in series                              | yes  |
| Control deviation                                 | < 0.5 % (Static load change 10 % ... 90 %)         |
|   | < 4 % (Dynamic load change 10 % ... 90 %, (10 Hz)) |
|   | < 0.25 % (change in input voltage $\pm 10$ %)      |
| Residual ripple                                   | < 80 mV <sub>PP</sub> (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.                      | < 17 W (230 V AC)                                  |

### General

|                                 |   |
|---------------------------------|---|
| Net weight                      | 0.9 kg  |
| Efficiency                      | typ. 92.5 % (120 V AC)  |
|                                 | typ. 93.4 % (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   |
| MTBF (IEC 61709, SN 29500)      | > 1250000 h (25 °C)   |
|                                 | > 783000 h (40 °C)  |
|                                 | > 377000 h (60 °C)  |
| Mounting position               | horizontal DIN rail NS 35, EN 60715   |
| Assembly instructions           | Alignable: 5 mm horizontally, 15 mm next to active components, 50 mm vertically |

### Connection data, input

|                   |                  |
|-------------------|------------------|
| Connection method | Screw connection |
|-------------------|------------------|

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## Technical data

### Connection data, input

|                                       |                     |
|---------------------------------------|---------------------|
| Conductor cross section solid min.    | 0.2 mm <sup>2</sup> |
| Conductor cross section solid max.    | 2.5 mm <sup>2</sup> |
| Conductor cross section flexible min. | 0.2 mm <sup>2</sup> |
| Conductor cross section flexible max. | 2.5 mm <sup>2</sup> |
| Conductor cross section AWG min.      | 30                  |
| Conductor cross section AWG max.      | 12                  |
| Stripping length                      | 6.5 mm              |

### Connection data, output

|                                       |                     |
|---------------------------------------|---------------------|
| Connection method                     | Screw connection    |
| Conductor cross section solid min.    | 0.2 mm <sup>2</sup> |
| Conductor cross section solid max.    | 2.5 mm <sup>2</sup> |
| Conductor cross section flexible min. | 0.2 mm <sup>2</sup> |
| Conductor cross section flexible max. | 2.5 mm <sup>2</sup> |
| Conductor cross section AWG min.      | 30                  |
| Conductor cross section AWG max.      | 12                  |
| Stripping length                      | 6.5 mm              |

### Connection data for signaling

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

### Standards and Regulations

|                               |  |
|-------------------------------|--|
| Electromagnetic compatibility | Conformance with EMC Directive 2014/30/EU  |
| Shock                         | 18 ms, 30g, in each space direction (according to IEC 60068-2-27)  |
| Noise emission                | Additional basic standard EN 61000-6-5 (immunity in power station), IEC/EN 61850-3 (energy supply)   |
| Noise immunity                | Immunity according to EN 61000-6-1 (residential), EN 61000-6-2 (industrial), and EN 61000-6-5 (power station equipment zone), IEC/EN 61850-3 (energy supply) |
| Standards/regulations         | EN 61000-4-2   |
| Contact discharge             | 4 kV (Test Level 2)  |
| Standards/regulations         | EN 61000-4-3   |
| Frequency range               | 80 MHz ... 1 GHz   |

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## Technical data

### Standards and Regulations

|  |   |
|--|---|
| Test field strength  | 10 V/m (Test Level 3)   |
| Frequency range  | 1.4 GHz ... 2 GHz   |
| Test field strength  | 3 V/m (Test Level 2)  |
| Standards/regulations  | EN 61000-4-4  |
| Comments   | Criterion B   |
| Standards/regulations  | EN 61000-4-5  |
| Signal   | 0.5 kV (Test Level 1 - asymmetrical)  |
| Standards/regulations  | EN 61000-4-6  |
| Frequency range  | 0.15 MHz ... 80 MHz   |
| Voltage  | 10 V (Test Level 3)   |
| Standards/regulations  | EN 61000-4-8  |
|  | EN 61000-4-11   |
|  | EN 61000-4-9  |
|  | EN 61000-4-12   |
|  | EN 61000-4-16   |
|  | EN 61000-4-18   |
| Standard - Safety of transformers  | EN 61558-2-16 (air clearances and creepage distances only)  |
| Standard - Electrical safety   | IEC 60950-1/VDE 0805 (SELV)   |
| Standard - power supply devices for low voltage with DC output   | EN 61204-3  |
| Standard – Electronic equipment for use in electrical power installations and their assembly into electrical power installations | EN 50178/VDE 0160 (PELV)  |
| Standard – Safety extra-low voltage  | IEC 60950-1 (SELV)  |
|  | EN 60204-1 (PELV)   |
| Standard - Safe isolation  | DIN VDE 0100-410  |
| Standard – Limitation of mains harmonic currents   | EN 61000-3-2  |
| Shipbuilding approval  | DNV GL, PRS, BV, LR, ABS  |
| UL approvals   | UL Listed UL 508  |
|  | UL/C-UL Recognized UL 60950   |
|  | UL ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C, D (Hazardous Location)                              |
| Vibration (operation)  | 5 Hz - 100 Hz resonance search 2.3g, 90 min., resonance frequency 2.3g, 90 min. (according to DNV GL Class C) |
| Low Voltage Directive  | Conformance with Low Voltage Directive 2014/35/EC   |
| Approval - requirement of the semiconductor industry with regard to mains voltage dips   | SEMI F47-0706 Compliance Certificate; EN 61000-4-11   |
| Rail applications  | EN 50121-3-2  |
| Overvoltage category (EN 60950-1)  | II  |
| Overvoltage category (EN 61010-1)  | II  |

# Power supply unit - QUINT4-PS/1AC/24DC/10 - 2904601

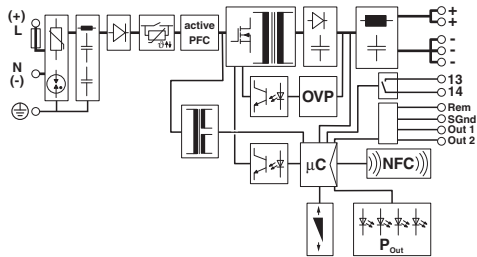
## Technical data

### Standards and Regulations

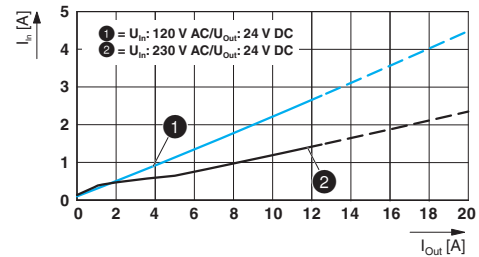
|                                   |     |
|-----------------------------------|-----|
| Overvoltage category (EN 62477-1) | III |
|-----------------------------------|-----|

## Drawings

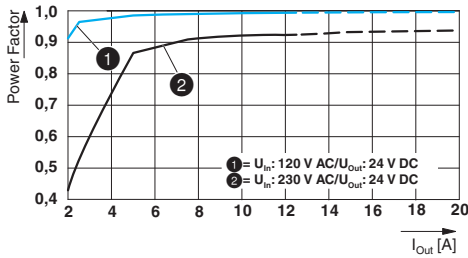
Block diagram



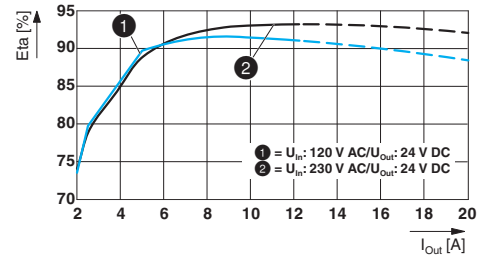
Diagram



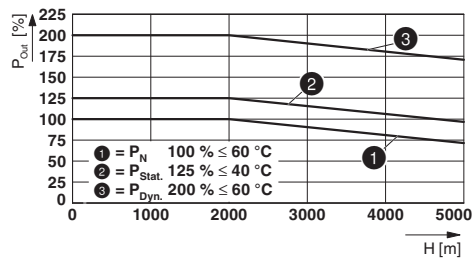
Diagram



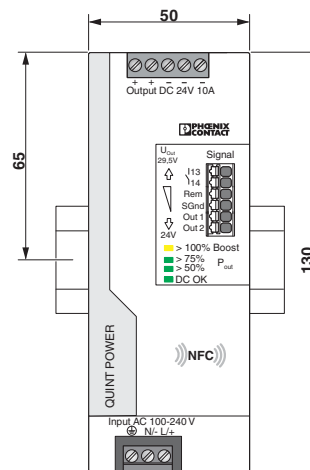
Diagram



Diagram

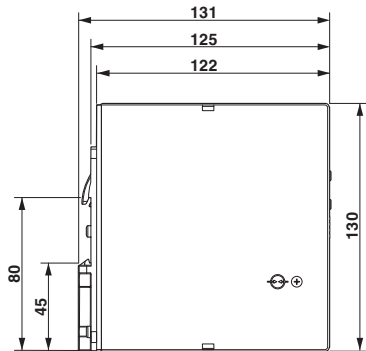


Dimensional drawing

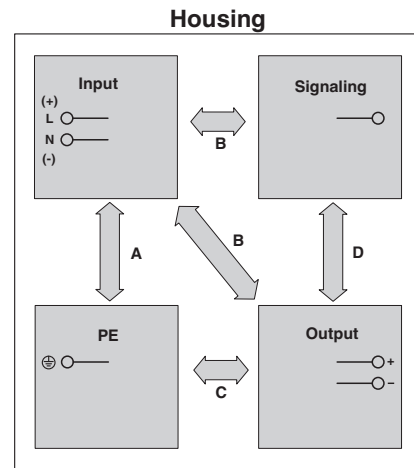


# Power supply unit - QUINT4-PS/1AC/24DC/10 - 2904601

Dimensional drawing



Schematic diagram



## Classifications

### eCl@ss

|            |          |
|------------|----------|
| eCl@ss 5.1 | 27242213 |
| eCl@ss 8.0 | 27049002 |
| eCl@ss 9.0 | 27040701 |

### ETIM

|          |          |
|----------|----------|
| ETIM 5.0 | EC002540 |
| ETIM 6.0 | EC002540 |

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 13.2 | 39121004 |
|-------------|----------|

## Approvals

### Approvals

#### Approvals

EAC / UL Recognized / cUL Recognized / DNV GL / PRS / CSA / UL Listed / cUL Listed / Bauartgeprüft / cULus Listed

#### Ex Approvals

UL Listed / cUL Listed / cULus Listed

### Approval details

# Power supply unit - QUINT4-PS/1AC/24DC/10 - 2904601

## Approvals

|                |  |   |                          |
|----------------|--|---|--------------------------|
| EAC            |  |   | RU C-<br>DE.A*30.B.01082 |
| UL Recognized  |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>                                     | FILE E 211944            |
| cUL Recognized |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>                                     | FILE E 211944            |
| DNV GL         |  | <a href="http://exchange.dnv.com/tari/">http://exchange.dnv.com/tari/</a>   | TAA0000BV                |
| PRS            |  | <a href="http://www.prs.pl/">http://www.prs.pl/</a>   | TE/2104/880590/16        |
| CSA            |  | <a href="http://www.csagroup.org/services/testing-and-certification/certified-product-listing/">http://www.csagroup.org/services/testing-and-certification/certified-product-listing/</a> | 70076166                 |
| UL Listed      |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>                                     | FILE E 123528            |
| cUL Listed     |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>                                     | FILE E 123528            |
| Bauartgeprüft  |  |   | SI-SIQ BG 005/026        |
| cULus Listed   |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>                                     |                          |

## Power supply unit - QUINT4-PS/1AC/24DC/10 - 2904601

### Accessories

#### Accessories

#### Assembly adapter

##### Assembly adapters - UWA 182/52 - 2938235



Universal wall adapter for securely mounting the power supply in the event of strong vibrations. The power supply is screwed directly onto the mounting surface. The universal wall adapter is attached at the top/bottom.

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##### Assembly adapters - UWA 130 - 2901664



2-piece universal wall adapter for securely mounting the power supply in the event of strong vibrations. The profiles that are screwed onto the side of the power supply are screwed directly onto the mounting surface. The universal wall adapter is attached on the left/right.

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##### Assembly adapters - QUINT-PS-ADAPTERS7/1 - 2938196



Assembly adapter for QUINT-PS... power supply on S7-300 rail

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### Device circuit breakers

#### Electronic device circuit breaker - CBMC E4 24DC/1-4A NO - 2906031



Multi-channel electronic device circuit breaker for protecting four loads at 24 V DC in the event of overload and short circuit. With electronic locking of the set nominal currents. For installation on DIN rails.

## Power supply unit - QUINT4-PS/1AC/24DC/10 - 2904601

### Accessories

Electronic device circuit breaker - CBMC E4 24DC/1-10A NO - 2906032



Multi-channel electronic device circuit breaker for protecting four loads at 24 V DC in the event of overload and short circuit. With electronic locking of the set nominal currents. For installation on DIN rails.

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### Device protection

Type 3 surge protection device - PLT-SEC-T3-230-FM - 2905229



Pluggable device protection, according to type 3/class III, for 1-phase power supply networks with separate N and PE (3-conductor system: L1, N, PE), with integrated surge-proof fuse and remote indication contact. Also suitable for DC applications.

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### Programming adapter

Programming adapter - TWN4 MIFARE NFC USB ADAPTER - 2909681



Near Field Communication (NFC) programming adapter with USB interface for the wireless configuration of NFC-capable products from PHOENIX CONTACT with software. No separate USB driver is required.