

## Power supply unit - QUINT4-PS/3AC/24DC/20 - 2904622

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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: 3-phase, output: 24 V DC/20 A

### 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

### Key Commercial Data

|                                      |             |
|--------------------------------------|-------------|
| Packing unit                         | 1 STK       |
| Weight per Piece (excluding packing) | 1,500.000 g |
| Custom tariff number                 | 85044030    |
| Country of origin                    | Thailand    |

### Technical data

#### Dimensions

|                                  |        |
|----------------------------------|--------|
| Width                            | 70 mm  |
| Height                           | 130 mm |
| Depth                            | 125 mm |
| Width with alternative assembly  | 122 mm |
| Height with alternative assembly | 130 mm |
| Depth with alternative assembly  | 73 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)            |

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### Ambient conditions

|                  |   |
|------------------|---|
| Noise immunity   | Immunity according to EN 61000-6-1 (residential), EN 61000-6-2 (industrial), and EN 61000-6-5 (power station equipment zone 1, 2) |
| Maximum altitude | ≤ 5000 m (> 2000 m, observe derating)   |

### Input data

|                                     |   |
|-------------------------------------|---|
| Nominal input voltage range         | 3x 400 V AC ... 500 V AC                    |
|                                     | 2x 400 V AC ... 500 V AC                    |
|                                     | ± 260 V DC ... 300 V DC                     |
| Input voltage range                 | 3x 400 V AC ... 500 V AC -20 % ... +10 %    |
|                                     | 2x 400 V AC ... 500 V AC -10 % ... +10 %    |
|                                     | ± 260 V DC ... 300 V DC -13 % ... +30 %     |
| AC frequency range                  | 50 Hz ... 60 Hz -10 % ... +10 %             |
| Discharge current to PE             | < 3.5 mA                                    |
| Current consumption                 | 3x 1 A (400 V AC)                           |
|                                     | 3x 0.9 A (480 V AC)                         |
|                                     | 3x 0.8 A (500 V AC)                         |
|                                     | 2x 1.7 A (400 V AC)                         |
|                                     | 2x 1.3 A (480 V AC)                         |
|                                     | 2x 1.23 A (500 V AC)                        |
| Inrush surge current                | < 2 A (at 25 °C)                            |
| Power failure bypass                | ≥ 25 ms (3x 400 V AC)                       |
|                                     | ≥ 25 ms (3x 480 V AC)                       |
| Choice of suitable circuit breakers | 3x 20 A (Characteristic B, C or comparable) |
| Type of protection                  | Transient surge protection                  |
| Protective circuit/component        | Varistor, gas-filled surge arrester         |

### Output data

|   |  |
|---|--|
| Nominal output voltage                            | 24 V DC  |
| Setting range of the output voltage ( $U_{Set}$ ) | 24 V DC ... 29.5 V DC (constant capacity)          |
| Nominal output current ( $I_N$ )                  | 20 A   |
| Static Boost ( $I_{Stat.Boost}$ )                 | 25 A   |
| Dynamic Boost ( $I_{Dyn.Boost}$ )                 | 30 A (5 s)   |
| Selective Fuse Breaking ( $I_{SFB}$ )             | 120 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 %)         |
|   | < 3 % (Dynamic load change 10 % ... 90 %, (10 Hz)) |

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## Technical data

### Output data

|  |   |
|--|---|
|  | < 0.25 % (change in input voltage $\pm 10$ %) |
| Residual ripple                                | < 60 mV <sub>pp</sub> (with nominal values)   |
| Output power                                   | 480 W   |
| Typical response time                          | 300 ms (from SLEEP MODE)                      |
| Maximum power dissipation in no-load condition | < 7 W (400 V AC)                              |
|  | < 7 W (480 V AC)                              |
| Power loss nominal load max.                   | < 30 W (400 V AC)                             |

### General

|                                 |   |
|---------------------------------|---|
| Net weight                      | 1.1 kg  |
| Efficiency                      | typ. 93.9 % (400 V AC)  |
|                                 | typ. 93.8 % (480 V AC)  |
| Insulation voltage input/output | 4 kV AC (type test)   |
|                                 | 2.4 kV AC (routine test)  |
| Protection class                | I   |
| MTBF (IEC 61709, SN 29500)      | > 985000 h (25 °C)  |
|                                 | > 638000 h (40°C)   |
|                                 | > 311000 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    |
| Conductor cross section solid min.    | 0.2 mm <sup>2</sup> |
| Conductor cross section solid max.    | 6 mm <sup>2</sup>   |
| Conductor cross section flexible min. | 0.2 mm <sup>2</sup> |
| Conductor cross section flexible max. | 4 mm <sup>2</sup>   |
| Conductor cross section AWG min.      | 30                  |
| Conductor cross section AWG max.      | 10                  |
| Stripping length                      | 8 mm                |

### Connection data, output

|                                       |                     |
|---------------------------------------|---------------------|
| Connection method                     | Screw connection    |
| Conductor cross section solid min.    | 0.2 mm <sup>2</sup> |
| Conductor cross section solid max.    | 6 mm <sup>2</sup>   |
| Conductor cross section flexible min. | 0.2 mm <sup>2</sup> |
| Conductor cross section flexible max. | 4 mm <sup>2</sup>   |
| Conductor cross section AWG min.      | 30                  |

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## Technical data

### Connection data, output

|                                  |      |
|----------------------------------|------|
| Conductor cross section AWG max. | 10   |
| Stripping length                 | 8 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 2004/108/EC  |
| 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)  |
| Noise immunity   | Immunity according to EN 61000-6-1 (residential), EN 61000-6-2 (industrial), and EN 61000-6-5 (power station equipment zone 1, 2) |
| Standards/regulations  | EN 61000-4-2  |
|  | EN 61000-4-3  |
|  | EN 61000-4-4  |
|  | EN 61000-4-5  |
|  | EN 61000-4-6  |
|  | 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) and EN 60204-1 (PELV)  |
| Standard - Safe isolation  | DIN VDE 0100-410  |
| Standard – Limitation of mains harmonic currents   | EN 61000-3-2  |
| UL approvals   | UL Listed UL 508  |

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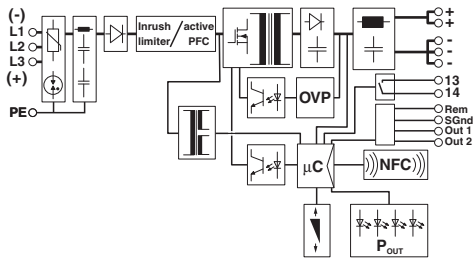
## Technical data

### Standards and Regulations

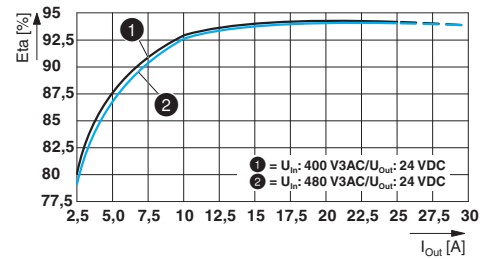
|                                   |   |
|-----------------------------------|---|
|                                   | UL/C-UL Recognized UL 60950   |
| Vibration (operation)             | 5 Hz - 100 Hz resonance search 2.3g, 90 min., resonance frequency 2.3g, 90 min. (according to DNV GL Class C) |
| Low Voltage Directive             | Conformance with Low Voltage Directive 2014/35/EC   |
| Rail applications                 | EN 50121-3-2  |
| Overvoltage category (EN 60950-1) | II  |
| Overvoltage category (EN 61010-1) | II  |
| Overvoltage category (EN 62477-1) | III   |

## Drawings

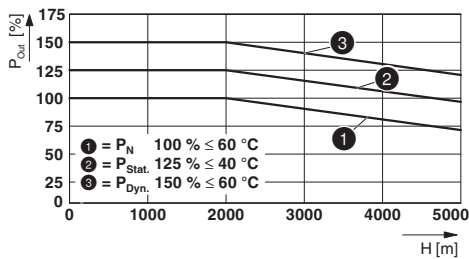
Block diagram



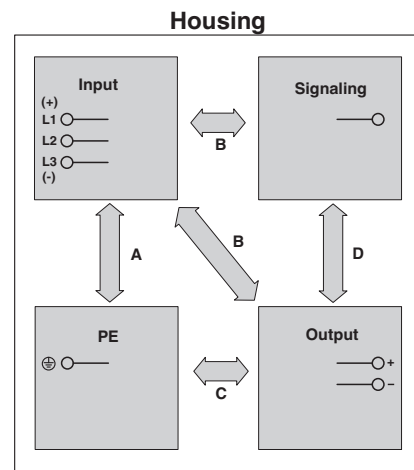
Diagram



Diagram



Schematic diagram



## Classifications

eCl@ss

|            |          |
|------------|----------|
| eCl@ss 5.1 | 27242213 |
|------------|----------|

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## Classifications

### eCl@ss

|            |          |
|------------|----------|
| eCl@ss 6.0 | 27049005 |
| eCl@ss 8.0 | 27049002 |
| eCl@ss 9.0 | 27040701 |

### ETIM

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

## Approvals

### Approvals

#### Approvals

EAC / UL Recognized / UL Listed / cUL Recognized / cUL Listed / cULus Listed

#### Ex Approvals

### Approval details

EAC 7500651.22.01.00242

UL Recognized <http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm> FILE E 211944

UL Listed <http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm> FILE E 123528

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

cULus Listed  <http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm>

## Accessories

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Assembly adapter

## Power supply unit - QUINT4-PS/3AC/24DC/20 - 2904622

### Accessories

#### 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.

#### 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.

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



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

### Device protection

#### Type 3 surge protection device - PLT-SEC-T3-3S-230-FM - 2905230



Plug-in device protection, according to type 3/class III, for 3-phase power supply networks with separate N and PE (5-conductor system: L1, L2, L3, N, PE), with integrated surge-proof fuse and remote indication contact.

### Fuse

#### Fuse - FUSE 10,3X38 6A PV A - 3062778



Fuse, for the photovoltaics industry according to UL 2579, Length: 38 mm, Diameter: 10.3 mm, Color: white

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### Accessories

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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.

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