

# Power supply unit - QUINT-PS-3X400-500AC/24DC/10 - 2938617

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DIN rail power supply unit 24 V DC/10 A, primary switched-mode, 3-phase.

## Product Description

QUINT POWER is the powerful 60 - 960 W DC power supply unit for universal use. With its wide-range input, single and three-phase versions, and international approval package, this solution is unrivalled. QUINT POWER provides reliable power supply: generously dimensioned capacitors ensure mains buffering of over 20 ms at full load. Full output power is provided by all three-phase devices, even in the event of a permanent phase failure. The Power Boost power reserve easily starts loads with high inrush currents and ensures that fuses are reliably tripped. Preventive function monitoring diagnoses impermissible operating states and minimizes downtimes in your system. Remote monitoring is provided by an active transistor switching output and a floating relay contact. All devices are idling-proof and short-circuit-proof, and are available with a regulated and adjustable output voltage of 12, 24, and 48 V DC with output currents of 2.5, 5, 10, 20, 30, and 40 A. Power supply units for use in Ex zone 2, uninterruptible solutions, AS-i power supply units, and a QUINT diode complete this comprehensive product range.



## Key commercial data

|                  |               |
|------------------|---------------|
| package_quantity | 1             |
| GTIN             | 4017918908379 |

## Technical data

### Dimensions

|                                  |        |
|----------------------------------|--------|
| Width                            | 85 mm  |
| Height                           | 130 mm |
| Depth                            | 125 mm |
| Width with alternative assembly  | 122 mm |
| Height with alternative assembly | 130 mm |
| Depth with alternative assembly  | 88 mm  |

### Ambient conditions

|  |                                     |
|--|-------------------------------------|
| Degree of protection                           | IP20                                |
| Ambient temperature (operation)                | -25 °C ... 70 °C (> 60 °C derating) |
| Ambient temperature (storage/transport)        | -40 °C ... 85 °C                    |
| Max. permissible relative humidity (operation) | 95 % (at 25 °C, non-condensing)     |
| Noise immunity                                 | EN 61000-6-2:2005                   |

### Input data

|                     |   |
|---------------------|---|
| Input voltage range | 3x 320 V AC ... 575 V AC (for all three phases) |
|---------------------|---|

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## Technical data

### Input data

|                              |  |
|------------------------------|--|
| Input voltage range          | 450 V DC ... 800 V DC                        |
| AC frequency range           | 45 Hz ... 65 Hz                              |
| Frequency range DC           | 0 Hz   |
| Current consumption          | approx. 3x 0.63 A (400 V AC)                 |
| Current consumption          | 3x 0.57 A (480 V AC)                         |
| Nominal power consumption    | 240 W  |
| Inrush surge current         | < 15 A (typical)                             |
| Power failure bypass         | > 40 ms (400 V AC)                           |
| Power failure bypass         | > 40 ms (480 V AC)                           |
| Input fuse                   | 5 A (slow-blow, internal)                    |
| Choice of suitable fuses     | 3x 6 A ... 16 A (Characteristics B, C, D, K) |
| Type of protection           | Transient surge protection                   |
| Protective circuit/component | Varistor                                     |

### Output data

|                                      |   |
|--------------------------------------|---|
| Nominal output voltage               | 24 V DC $\pm$ 1%                              |
| Setting range of the output voltage  | 22.5 V ... 28.5 V                             |
| Output current                       | 10 A (up to 60°C)                             |
| Output current                       | 15 A (with POWER BOOST)                       |
| Derating                             | 60 °C ... 70 °C (2.5%/K)                      |
| Connection in parallel               | Yes, for redundancy and increased capacity    |
| Connection in series                 | Yes   |
| Current limitation                   | ca. $I_{BOOST} = 15$ A (for short-circuit)    |
| Control deviation                    | < 1 % (change in load, static 10 % ... 90 %)  |
| Control deviation                    | < 2 % (change in load, dynamic 10 % ... 90 %) |
| Control deviation                    | < 0.1 % (change in input voltage $\pm$ 10 %)  |
| Residual ripple                      | < 20 mV <sub>PP</sub> (with nominal values)   |
| Peak switching voltages nominal load | < 100 mV <sub>PP</sub> (20 MHz)               |
| Maximum power dissipation NO-Load    | < 4 W   |
| Power loss nominal load max.         | < 28 W  |

### General

|                                 |   |
|---------------------------------|---|
| Net weight                      | 1.1 kg  |
| Operating voltage display       | Green LED   |
| Efficiency                      | > 90 %  |
| Insulation voltage input/output | 4 kV AC (type test)                                 |
| Insulation voltage input/output | 2 kV AC (routine test)                              |
| Protection class                | I (with PE connection)                              |
| MTBF (IEC 61709, SN 29500)      | > 500000 h  |
| Mounting position               | horizontal DIN rail NS 35, EN 60715                 |
| Assembly instructions           | Can be aligned: Horizontally 0 mm, vertically 50 mm |
| Electromagnetic compatibility   | Conformance with EMC directive 89/336/EC            |

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## Technical data

### General

|  |  |
|--|--|
| Noise emission   | EN 50081-2   |
| Standard – Electrical equipment of machines  | EN 60204   |
| Standard - Safety of transformers  | EN 61558-2-17  |
| Standard - Electrical safety   | EN 60950-1/VDE 0805 (SELV)   |
| Standard - Electrical safety   | EN 61558-2-17  |
| Shipbuilding approval  | Germanischer Lloyd (EMC 2), ABS  |
| 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  | EN 60950-1 (SELV)  |
| Standard – Safety extra-low voltage  | EN 60204 (PELV)  |
| Standard - Safe isolation  | DIN VDE 0100-410   |
| Standard - Safe isolation  | DIN VDE 0106-1010  |
| Standard – Protection against electric shock   | DIN 57100-410  |
| Standard – Protection against shock currents, basic requirements for protective separation in electrical equipment               | DIN VDE 0106-101   |
| Standard – Limitation of mains harmonic currents   | EN 61000-3-2   |
| Standard - Equipment safety  | GS (tested safety)   |
| Information technology equipment - safety (CB scheme)  | CB Scheme  |
| UL approvals   | UL/C-UL listed UL 508  |
| UL approvals   | UL/C-UL Recognized UL 60950  |
| UL approvals   | UL ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C, D (Hazardous Location) |
| Surge voltage category   | III  |

### Connection data, input

|  |                     |
|--|---------------------|
| 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 stranded min.  | 0.2 mm <sup>2</sup> |
| Conductor cross section stranded max.  | 2.5 mm <sup>2</sup> |
| Conductor cross section AWG/kcmil min. | 24                  |
| Conductor cross section AWG/kcmil max  | 12                  |
| Stripping length                       | 8 mm                |
| Screw thread                           | M3                  |

### 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 stranded min.  | 0.2 mm <sup>2</sup> |
| Conductor cross section stranded max.  | 2.5 mm <sup>2</sup> |
| Conductor cross section AWG/kcmil min. | 24                  |
| Conductor cross section AWG/kcmil max  | 12                  |

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## Technical data

### Connection data, output

|                  |      |
|------------------|------|
| Stripping length | 8 mm |
|------------------|------|

### Signaling

|  |  |
|--|--|
| Output name                            | DC OK active   |
| Output description                     | $U_{OUT} > 0.9 \times U_N$ : High signal                   |
| Maximum switching voltage              | $\leq 24$ V  |
| Output voltage                         | + 24 V DC (Signal)   |
| Maximum inrush current                 | $\leq 40$ mA   |
| Continuous load current                | $\leq 40$ mA   |
| Status display                         | "DC OK" LED green  |
| Note on status display                 | $U_{OUT} < 0.9 \times U_N$ : LED flashing                  |
| 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 stranded min.  | 0.2 mm <sup>2</sup>  |
| Conductor cross section stranded max.  | 2.5 mm <sup>2</sup>  |
| Conductor cross section AWG/kcmil min. | 24   |
| Conductor cross section AWG/kcmil max  | 12   |
| Tightening torque, min                 | 0.5 Nm   |
| Tightening torque max                  | 0.6 Nm   |
| Screw thread                           | M3   |
| Output name                            | DC OK floating   |
| Output description                     | Relay contact, $U_{OUT} > 0.9 \times U_N$ : Contact closed |
| Maximum switching voltage              | $\leq 30$ V AC/DC  |
| Maximum inrush current                 | $\leq 1$ A   |
| Continuous load current                | $\leq 1$ A   |
| Status display                         | "DC OK" LED green  |

## classifications

### eCl@ss

|            |          |
|------------|----------|
| eCl@ss 4.0 | 27040702 |
| eCl@ss 4.1 | 27040702 |
| eCl@ss 5.0 | 27049002 |
| eCl@ss 5.1 | 27049002 |
| eCl@ss 6.0 | 27049002 |
| eCl@ss 7.0 | 27049002 |
| eCl@ss 8.0 | 27049002 |

### ETIM

|          |          |
|----------|----------|
| ETIM 2.0 | EC001039 |
| ETIM 3.0 | EC001039 |
| ETIM 4.0 | EC000599 |

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## classifications

### ETIM

|                 |          |
|-----------------|----------|
| <b>ETIM 5.0</b> | EC002540 |
|-----------------|----------|

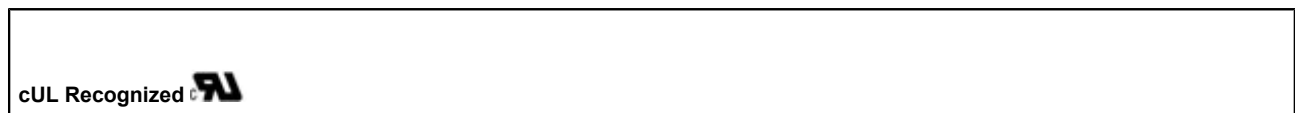
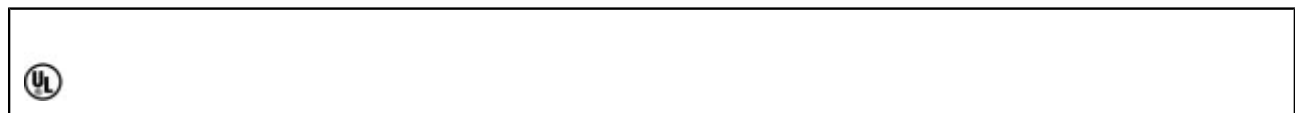
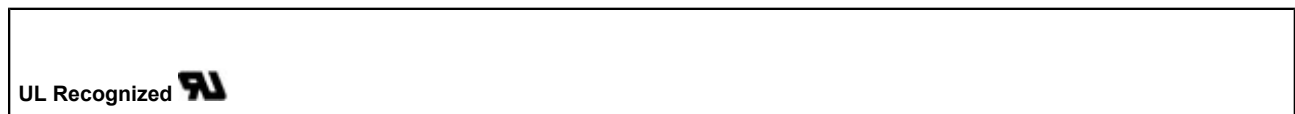
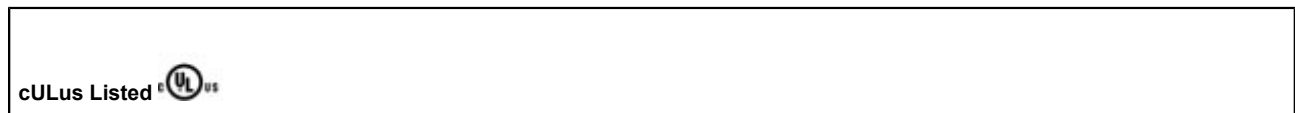
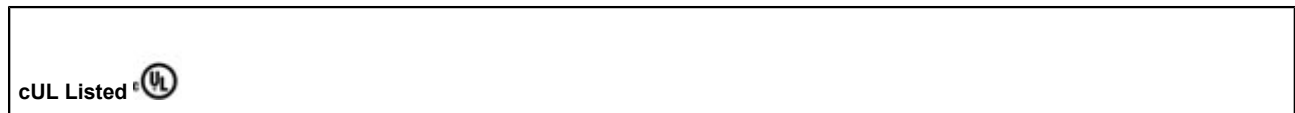
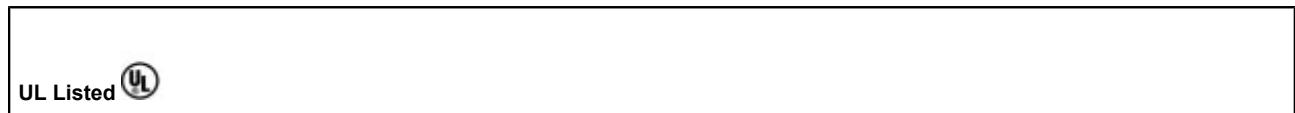
### UNSPSC

|                      |          |
|----------------------|----------|
| <b>UNSPSC 6.01</b>   | 30211502 |
| <b>UNSPSC 7.0901</b> | 39121004 |
| <b>UNSPSC 11</b>     | 39121004 |
| <b>UNSPSC 12.01</b>  | 39121004 |
| <b>UNSPSC 13.2</b>   | 39121004 |

## approvals

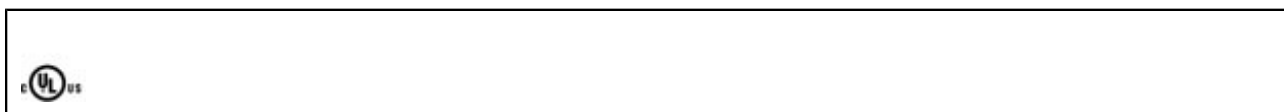
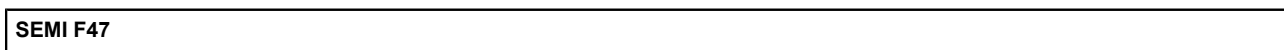
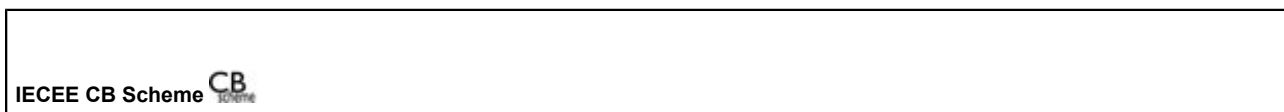
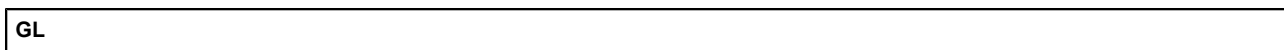
UL Listed / cUL Listed / cULus Listed / UL Recognized / UL Listed / cUL Recognized / GOST / cUL Listed / GL / DNV / IECCE CB Scheme / SEMI F47 / cULus Recognized / cULus Listed /

### Approval details



# Power supply unit - QUINT-PS-3X400-500AC/24DC/10 - 2938617

## approvals



## accessories

### Assembly adapter

QUINT-PS-ADAPTERS7/2 - 2938206



UWA 182/52 - 2938235



### Mounting rail adapter

# Power supply unit - QUINT-PS-3X400-500AC/24DC/10 - 2938617

accessories

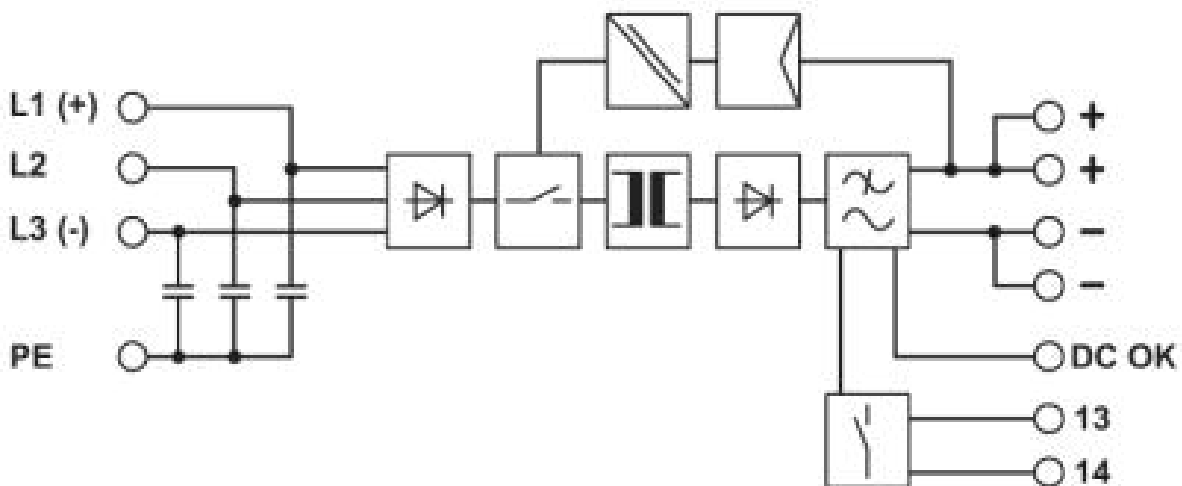
UTA 107 - 2853983



## Drawings

Connection diagram

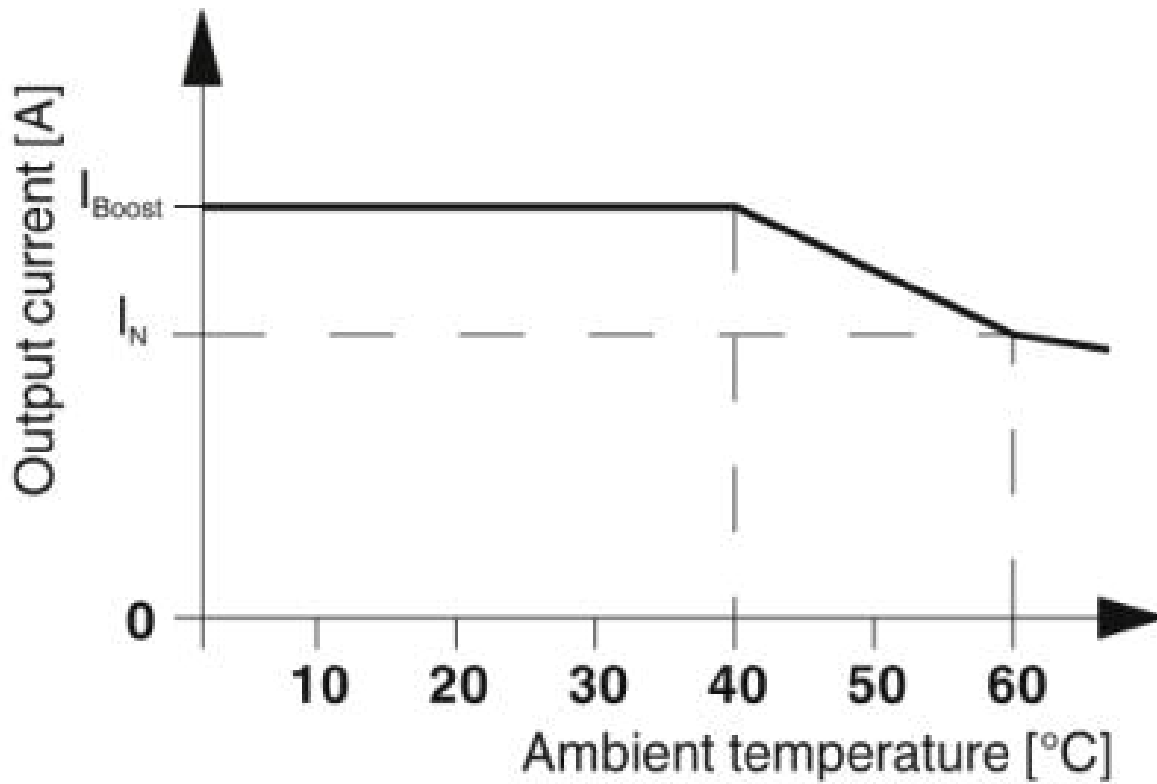
Block diagram



Diagram

# Power supply unit - QUINT-PS-3X400-500AC/24DC/10 - 2938617

Diagram



Dimensioned drawing

Dimensioned drawing

Product drawing

Product drawing

Product drawing



## Power supply unit - QUINT-PS-3X400-500AC/24DC/10 - 2938617

Circuit diagram

Circuit diagram

Circuit diagram

Circuit diagram

Circuit diagram

Schematic diagram

Schematic diagram

Schematic diagram

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