

# Power supply unit - QUINT-PS/3AC/48DC/20 - 2320827

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Primary-switched QUINT POWER power supply for DIN rail mounting with SFB (Selective Fuse Breaking) Technology, input: 3-phase, output: 48 V DC/20 A

## Product Description

QUINT POWER power supplies with maximum functionality

QUINT POWER circuit breakers magnetically and therefore quickly trip at six times the nominal current, for selective and therefore cost-effective system protection. The high level of system availability is additionally ensured, thanks to preventive function monitoring, as it reports critical operating states before errors occur.


Reliable starting of heavy loads takes place via the static power reserve POWER BOOST. Thanks to the adjustable voltage, all ranges between 5 V DC ... 56 V DC are covered.

## Why buy this product

- Adjustable output voltage of 30 to 56 V DC
- Reliable starting of difficult loads with the static POWER BOOST power reserve with up to 1.5 times the nominal current permanently
- Fast tripping of standard circuit breakers with dynamic power reserve SFB (selective fuse breaking) technology with up to 6 times the nominal current for 12 ms
- Preventive function monitoring indicates critical operating states before errors occur



## Key Commercial Data

|                                      |   |
|--------------------------------------|---|
| Packing unit                         | 1 STK   |
| GTIN                                 | <br>4 046356 547734 |
| GTIN                                 | 4046356547734   |
| Weight per Piece (excluding packing) | 2,500.000 g   |
| Custom tariff number                 | 85044030  |
| Country of origin                    | Thailand  |

## Technical data

### Dimensions

|        |        |
|--------|--------|
| Width  | 96 mm  |
| Height | 130 mm |
| Depth  | 179 mm |

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## Technical data

### Dimensions

|                                  |        |
|----------------------------------|--------|
| Width with alternative assembly  | 176 mm |
| Height with alternative assembly | 130 mm |
| Depth with alternative assembly  | 99 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                                 | EN 61000-6-2:2005                            |
| Maximum altitude                               | 4000 m                                       |

### Input data

|                                     |   |
|-------------------------------------|---|
| Nominal input voltage range         | 3x 400 V AC ... 500 V AC                      |
| Input voltage range                 | 3x 320 V AC ... 575 V AC                      |
|                                     | 2x 360 V AC ... 575 V AC (Not approved by UL) |
|                                     | 450 V DC ... 800 V DC                         |
| AC frequency range                  | 45 Hz ... 65 Hz                               |
| Frequency range DC                  | 0 Hz  |
| Discharge current to PE             | < 3.5 mA                                      |
| Current consumption                 | 3x 2.1 A (400 V AC)                           |
|                                     | 3x 1.7 A (500 V AC)                           |
|                                     | 1.7 A (600 V DC)                              |
| Inrush surge current                | < 20 A (typical)                              |
| Power failure bypass                | > 25 ms (400 V AC)                            |
|                                     | > 35 ms (500 V AC)                            |
| Choice of suitable circuit breakers | 6 A ... 16 A (AC: Characteristics B, C, D, K) |
| Type of protection                  | Transient surge protection                    |
| Protective circuit/component        | Varistor                                      |

### Output data

|   |   |
|---|---|
| Nominal output voltage                            | 48 V DC ±1 %  |
| Setting range of the output voltage ( $U_{Set}$ ) | 30 V DC ... 56 V DC (> 48 V DC, constant capacity restricted) |
| Nominal output current ( $I_N$ )                  | 20 A (-25°C ... 60°C, $U_{OUT}$ = 48 V DC)                    |
| POWER BOOST ( $I_{Boost}$ )                       | 22.5 A (-25°C ... 40°C permanent, $U_{OUT}$ = 48 V DC )       |
| Selective Fuse Breaking ( $I_{SFB}$ )             | 100 A (12 ms)   |
| Derating  | 60 °C ... 70 °C (2.5%/K)                                      |
| Connection in parallel                            | Yes, for redundancy and increased capacity                    |
| Connection in series                              | yes   |
| Active current limitation                         | Approx. $I_{BOOST}$ = 22.5 A (for short-circuit)              |
| Control deviation                                 | < 1 % (change in load, static 10 % ... 90 %)                  |
|   | < 4 % (change in load, dynamic 10 % ... 90 %)                 |

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## Technical data

### Output data

|  |  |
|--|--|
|  | < 0.1 % (change in input voltage $\pm 10$ %) |
| Residual ripple                                | < 50 mV <sub>PP</sub> (with nominal values)  |
| Output power                                   | 960 W  |
| Typical response time                          | < 1 s  |
| Maximum power dissipation in no-load condition | 24 W   |
| Power loss nominal load max.                   | 70 W   |

### General

|                                 |   |
|---------------------------------|---|
| Net weight                      | 2.5 kg  |
| Efficiency                      | > 93 % (at 400 V AC and nominal values)   |
| Insulation voltage input/output | 4 kV AC (type test)<br>2 kV AC (routine test)                                   |
| Protection class                | I   |
| MTBF (IEC 61709, SN 29500)      | > 890000 h (25 °C)<br>> 509000 h (40 °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.      | 18                  |
| Conductor cross section AWG max.      | 10                  |
| Stripping length                      | 7 mm                |
| Screw thread                          | M3                  |

### Connection data, output

|                                       |                     |
|---------------------------------------|---------------------|
| Connection method                     | Screw connection    |
| Conductor cross section solid min.    | 0.5 mm <sup>2</sup> |
| Conductor cross section solid max.    | 16 mm <sup>2</sup>  |
| Conductor cross section flexible min. | 0.5 mm <sup>2</sup> |
| Conductor cross section flexible max. | 16 mm <sup>2</sup>  |
| Conductor cross section AWG min.      | 8                   |
| Conductor cross section AWG max.      | 6                   |
| Stripping length                      | 10 mm               |
| Screw thread                          | M3                  |

### Connection data for signaling

|                                    |                     |
|------------------------------------|---------------------|
| Conductor cross section solid min. | 0.2 mm <sup>2</sup> |
|------------------------------------|---------------------|

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## Technical data

### Connection data for signaling

|                                       |                     |
|---------------------------------------|---------------------|
| 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.      | 18                  |
| Conductor cross section AWG max.      | 10                  |
| Screw thread                          | M3                  |

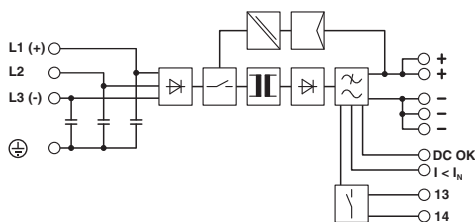
### Standards and Regulations

|  |  |
|--|--|
| Electromagnetic compatibility  | Conformance with EMC Directive 2014/30/EU  |
| Shock  | 18 ms, 30g, in each space direction (according to IEC 60068-2-27)                |
| Noise immunity   | EN 61000-6-2:2005  |
| Connection in acc. with standard   | CSA  |
| Standards/regulations  | EN 61000-4-2   |
|  | EN 61000-4-3   |
|  | EN 61000-4-4   |
|  | EN 61000-4-5   |
|  | EN 61000-4-6   |
| Standard - Safety of transformers  | IEC 61558-2-17   |
| Standard - Electrical safety   | IEC 60950-1/VDE 0805 (SELV)  |
| 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 – Protection against shock currents, basic requirements for protective separation in electrical equipment               | EN 50178   |
| Standard – Limitation of mains harmonic currents   | EN 61000-3-2   |
| Standard - Equipment safety  | BG (design tested)   |
| Standard - Approval for medical use  | IEC 60601-1, 2 x MOOP  |
| UL approvals   | UL Listed UL 508   |
|  | UL/C-UL Recognized UL 60950-1 (3-wire + PE, star net)                            |
|  | UL ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C, D (Hazardous Location) |
| Vibration (operation)  | < 15 Hz, amplitude ±2.5 mm (according to IEC 60068-2-6)                          |
|  | 15 Hz ... 150 Hz, 2.3g, 90 min.  |
| Low Voltage Directive  | Conformance with LV directive 2006/95/EC   |
| Information technology equipment - safety (CB scheme)  | CB Scheme  |
| Rail applications  | EN 50121-4   |
| Overvoltage category (EN 62477-1)  | III  |

## Drawings

# Power supply unit - QUINT-PS/3AC/48DC/20 - 2320827

Block diagram



## Classifications

### eCl@ss

|            |          |
|------------|----------|
| eCl@ss 4.0 | 27040702 |
| eCl@ss 4.1 | 27040702 |
| eCl@ss 5.0 | 27242213 |
| eCl@ss 5.1 | 27242213 |
| eCl@ss 6.0 | 27049002 |
| eCl@ss 7.0 | 27049002 |
| eCl@ss 8.0 | 27049002 |
| eCl@ss 9.0 | 27040701 |

### ETIM

|          |          |
|----------|----------|
| ETIM 3.0 | EC001039 |
| ETIM 4.0 | EC002540 |
| ETIM 5.0 | EC002540 |
| ETIM 6.0 | EC002540 |

### UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 6.01   | 30211502 |
| UNSPSC 7.0901 | 39121004 |
| UNSPSC 11     | 39121004 |
| UNSPSC 12.01  | 39121004 |
| UNSPSC 13.2   | 39121004 |

## Approvals

### Approvals

#### Approvals

CSA / UL Listed / cUL Listed / IECCE CB Scheme / UL Recognized / cUL Recognized / Bauartgeprüft / EAC / EAC / cULus Recognized / cULus Listed

#### Ex Approvals

UL Listed / cUL Listed / cULus Listed

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## Approvals

### Approval details

|                  |  |   |                     |
|------------------|--|---|---------------------|
| 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> | 2386029             |
| 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       |
| IECEE CB Scheme  |  | <a href="http://www.iecee.org/">http://www.iecee.org/</a>   | SI-2899             |
| 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       |
| Bauartgeprüft    |  |   | 005-006             |
| EAC              |  |   | EAC-Zulassung       |
| EAC              |  |   | 7500651.22.01.00242 |
| cULus 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>                                     |                     |

## Power supply unit - QUINT-PS/3AC/48DC/20 - 2320827

### Approvals

cULus Listed



### 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.

##### Mounting rail adapter

Electronic housing - UTA 107 - 2853983

Universal DIN rail adapter



##### Redundancy module

Diode - QUINT-DIODE/48DC/2X20/1X40 - 2320160



DIN rail diode module 48 V DC/2x20 A or 1x40 A. Uniform redundancy up to the consumer.

Redundancy module - TRIO-DIODE/48DC/2X10/1X20 - 2866527



Redundancy module with function monitoring, 48 V DC, 2x 10 A, 1x 20 A

##### Thermomagnetic device circuit breakers

## Power supply unit - QUINT-PS/3AC/48DC/20 - 2320827

### Accessories

Thermomagnetic device circuit breaker - CB TM1 1A SFB P - 2800836



Thermomagnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 PDT contact, plug for base element.

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Thermomagnetic device circuit breaker - CB TM1 2A SFB P - 2800837



Thermomagnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 PDT contact, plug for base element.

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Thermomagnetic device circuit breaker - CB TM1 3A SFB P - 2800838



Thermomagnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 PDT contact, plug for base element.

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Thermomagnetic device circuit breaker - CB TM1 4A SFB P - 2800839



Thermomagnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 PDT contact, plug for base element.

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Thermomagnetic device circuit breaker - CB TM1 5A SFB P - 2800840



Thermomagnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 PDT contact, plug for base element.

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## Power supply unit - QUINT-PS/3AC/48DC/20 - 2320827

### Accessories

Thermomagnetic device circuit breaker - CB TM1 6A SFB P - 2800841



Thermomagnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 PDT contact, plug for base element.

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Thermomagnetic device circuit breaker - CB TM1 8A SFB P - 2800842



Thermomagnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 PDT contact, plug for base element.

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Thermomagnetic device circuit breaker - CB TM1 10A SFB P - 2800843



Thermomagnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 PDT contact, plug for base element.

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