

# Power supply unit - QUINT-PS/1AC/24DC/ 5 - 2866750

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Primary-switched QUINT POWER power supply for DIN rail mounting with SFB (Selective Fuse Breaking) Technology, input: 1-phase, output: 24 V DC/5 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.

## Your advantages

- ✓ 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
- ✓ For superior system availability
- ✓ Preventive function monitoring



## Key Commercial Data

|                                      |                                                                                                         |
|--------------------------------------|---------------------------------------------------------------------------------------------------------|
| Packing unit                         | 1 pc                                                                                                    |
| GTIN                                 | <br>4 046356 113786 |
| GTIN                                 | 4046356113786                                                                                           |
| Weight per Piece (excluding packing) | 1,022.000 g                                                                                             |
| Custom tariff number                 | 85044030                                                                                                |
| Country of origin                    | Thailand                                                                                                |

## Technical data

### Dimensions

|        |        |
|--------|--------|
| Width  | 40 mm  |
| Height | 130 mm |
| Depth  | 125 mm |

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## Technical data

### Dimensions

|                                  |        |
|----------------------------------|--------|
| Width with alternative assembly  | 122 mm |
| Height with alternative assembly | 130 mm |
| Depth with alternative assembly  | 43 mm  |

### 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                                       |

### Input data

|                                     |                                               |
|-------------------------------------|-----------------------------------------------|
| Nominal input voltage range         | 100 V AC ... 240 V AC                         |
| Input voltage range                 | 85 V AC ... 264 V AC                          |
|                                     | 90 V DC ... 350 V DC                          |
| Dielectric strength maximum         | 300 V AC                                      |
| AC frequency range                  | 45 Hz ... 65 Hz                               |
| Frequency range DC                  | 0 Hz                                          |
| Discharge current to PE             | < 3.5 mA                                      |
| Current consumption                 | 1.2 A (120 V AC)                              |
|                                     | 0.6 A (230 V AC)                              |
|                                     | 1.3 A (110 V DC)                              |
|                                     | 0.6 A (220 V DC)                              |
| Nominal power consumption           | 145 VA                                        |
| Inrush surge current                | < 15 A                                        |
| Mains buffering                     | > 55 ms (120 V AC)                            |
|                                     | > 55 ms (230 V AC)                            |
| Input fuse                          | 5 A (slow-blow, internal)                     |
| 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                            | 24 V DC ±1 %                                                    |
| Setting range of the output voltage ( $U_{Set}$ ) | 18 V DC ... 29.5 V DC (> 24 V DC, constant capacity restricted) |
| Nominal output current ( $I_N$ )                  | 5 A (-25 °C ... 60 °C, $U_{OUT} = 24$ V DC)                     |
| POWER BOOST ( $I_{Boost}$ )                       | 7.5 A (-25 °C ... 40 °C permanent, $U_{OUT} = 24$ V DC )        |
| Selective Fuse Breaking ( $I_{SFB}$ )             | 30 A (12 ms)                                                    |
| Derating                                          | 60 °C ... 70 °C (2.5%/K)                                        |

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## Technical data

### Output data

|                                                |                                               |
|------------------------------------------------|-----------------------------------------------|
| Connection in parallel                         | Yes, for redundancy and increased capacity    |
| Connection in series                           | yes                                           |
| Feedback resistance                            | max. 35 V DC                                  |
| Protection against surge voltage on the output | < 35 V DC                                     |
| Control deviation                              | < 1 % (change in load, static 10 % ... 90 %)  |
|                                                | < 2 % (change in load, dynamic 10 % ... 90 %) |
|                                                | < 0.1 % (change in input voltage $\pm 10$ %)  |
| Residual ripple                                | < 40 mV <sub>PP</sub> (with nominal values)   |
| Output power                                   | 120 W                                         |
| Typical response time                          | < 0.15 s                                      |
| Maximum power dissipation in no-load condition | 3 W                                           |
| Power loss nominal load max.                   | 15 W                                          |

### General

|                                 |                                                                                                                                                                                                                   |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Net weight                      | 0.7 kg                                                                                                                                                                                                            |
| Efficiency                      | > 90 % (for 230 V AC and nominal values)                                                                                                                                                                          |
| 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 kV AC (routine test)                                                                                                                                                                                            |
| Insulation voltage output / PE  | 500 V DC (routine test)                                                                                                                                                                                           |
| Protection class                | I                                                                                                                                                                                                                 |
| Degree of protection            | IP20                                                                                                                                                                                                              |
| MTBF (IEC 61709, SN 29500)      | > 1134000 h (25 °C)                                                                                                                                                                                               |
|                                 | > 635000 h (40 °C)                                                                                                                                                                                                |
|                                 | > 270000 h (60 °C)                                                                                                                                                                                                |
| Mounting position               | horizontal DIN rail NS 35, EN 60715                                                                                                                                                                               |
| Assembly instructions           | alignable: P <sub>N</sub> $\geq 50\%$ , 5 mm horizontally, 15 mm next to active components, 50 mm vertically<br>alignable: P <sub>N</sub> < 50%, 0 mm horizontally, 40 mm vertically top, 20 mm vertically bottom |

### Connection data, input

|                                       |                            |
|---------------------------------------|----------------------------|
| Connection method                     | Pluggable 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.      | 20                         |
| Conductor cross section AWG max.      | 12                         |
| Stripping length                      | 7 mm                       |
| Screw thread                          | M3                         |

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## Technical data

### Connection data, output

|                                       |                            |
|---------------------------------------|----------------------------|
| Connection method                     | Pluggable 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.      | 20                         |
| Conductor cross section AWG max.      | 12                         |
| Stripping length                      | 7 mm                       |
| Screw thread                          | M3                         |

### Connection data for signaling

|                                       |                     |
|---------------------------------------|---------------------|
| 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.      | 20                  |
| Conductor cross section AWG max.      | 12                  |
| Screw thread                          | M3                  |

### Standards and Regulations

|                                                                                                                                  |                                           |
|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| Electromagnetic compatibility                                                                                                    | Conformance with EMC Directive 2014/30/EU |
| Noise emission                                                                                                                   | EN 55011 (EN 55022)                       |
| Noise immunity                                                                                                                   | EN 61000-6-2:2005                         |
| Connection in acc. with standard                                                                                                 | CSA                                       |
| 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                          |
| 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 61000-6-3                              |
|                                                                                                                                  | EN 61000-4-6                              |
| Frequency range                                                                                                                  | 0.15 MHz ... 80 MHz                       |
| Voltage                                                                                                                          | 10 V (Test Level 3)                       |
| Low Voltage Directive                                                                                                            | Conformance with LV directive 2006/95/EC  |
| 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)  |

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## Technical data

### Standards and Regulations

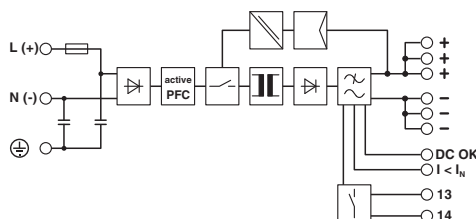
|                                                                                        |                                                                                  |
|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Standard - Safe isolation                                                              | DIN VDE 0100-410                                                                 |
| 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                                                            |
| Shipbuilding approval                                                                  | DNV GL (EMC A), ABS, LR, RINA, NK, BV                                            |
| 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) |
| DeviceNet approval                                                                     | DeviceNet™ Power Supply Conformance Tested                                       |
| Shock                                                                                  | 18 ms, 30g, in each space direction (according to IEC 60068-2-27)                |
| Vibration (operation)                                                                  | < 15 Hz, amplitude ±2.5 mm (according to IEC 60068-2-6)                          |
|                                                                                        | 15 Hz ... 150 Hz, 2.3g, 90 min.                                                  |
| Approval - requirement of the semiconductor industry with regard to mains voltage dips | SEMI F47-0706 Compliance Certificate                                             |
| Information technology equipment - safety (CB scheme)                                  | IEC 60950-1 (2 <sup>nd</sup> Edition)                                            |
| Rail applications                                                                      | EN 50121-4                                                                       |
| Overvoltage category (EN 62477-1)                                                      | III                                                                              |

### Environmental Product Compliance

|            |                                                                                                     |
|------------|-----------------------------------------------------------------------------------------------------|
| REACH SVHC | Lead 7439-92-1                                                                                      |
| China RoHS | Environmentally Friendly Use Period = 25;                                                           |
|            | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

## Drawings

Block diagram



## Classifications

eCl@ss

|            |          |
|------------|----------|
| eCl@ss 4.0 | 27040702 |
| eCl@ss 4.1 | 27040702 |
| eCl@ss 5.0 | 27049002 |
| eCl@ss 5.1 | 27049000 |
| eCl@ss 6.0 | 27049000 |

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## Classifications

### eCl@ss

|            |          |
|------------|----------|
| eCl@ss 7.0 | 27049002 |
| eCl@ss 8.0 | 27049002 |
| eCl@ss 9.0 | 27040701 |

### ETIM

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

DNV GL / CSA / BV / LR / NK / ABS / RINA / UL Listed / UL Recognized / cUL Recognized / IECCE CB Scheme / SEMI F47 / Bauartgeprüft / DeviceNet / EAC / EAC / cULus Recognized

#### Ex Approvals

UL Listed / cUL Listed / cULus Listed

### Approval details

|        |                                                                                     |                                                                           |            |
|--------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------|------------|
| DNV GL |  | <a href="http://exchange.dnv.com/tari/">http://exchange.dnv.com/tari/</a> | TAE000014W |
|--------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------|------------|

|     |                                                                                     |                                                                                                                                         |         |
|-----|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|---------|
| CSA |  | <a href="http://www.csagroup.org/services-industries/product-listing/">http://www.csagroup.org/services-industries/product-listing/</a> | 1897779 |
|-----|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|---------|

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## Approvals

|                 |  |                                                                                                                                                                                                                               |                    |
|-----------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| BV              |  | <a href="http://www.veristar.com/portal/veristarinfo/generalinfo/approved/approvedProducts/equipmentAndMaterials">http://www.veristar.com/portal/veristarinfo/generalinfo/approved/approvedProducts/equipmentAndMaterials</a> | 21004-B0 BV        |
| LR              |  | <a href="http://www.lr.org/en">http://www.lr.org/en</a>                                                                                                                                                                       | 08/20069 E3        |
| NK              |  | <a href="http://www.classnk.or.jp/hp/en/">http://www.classnk.or.jp/hp/en/</a>                                                                                                                                                 | 08A039             |
| ABS             |  | <a href="http://www.eagle.org/eagleExternalPortalWEB/">http://www.eagle.org/eagleExternalPortalWEB/</a>                                                                                                                       | 15-HG1375463-1-PDA |
| RINA            |  | <a href="http://www.rina.org/en">http://www.rina.org/en</a>                                                                                                                                                                   | ELE316517XG        |
| 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      |
| 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      |
| IECEE CB Scheme |  | <a href="http://www.iecee.org/">http://www.iecee.org/</a>                                                                                                                                                                     | SI-6188 A1         |
| SEMI F47        |  |                                                                                                                                                                                                                               | SEMI F47           |
| Bauartgeprüft   |  |                                                                                                                                                                                                                               | SI-SIQ BG 005/004  |

# Power supply unit - QUINT-PS/1AC/24DC/ 5 - 2866750

## Approvals

|           |  |                                                       |                  |
|-----------|--|-------------------------------------------------------|------------------|
| DeviceNet |  | <a href="http://www.odva.org">http://www.odva.org</a> | 10825/05.01.2010 |
|-----------|--|-------------------------------------------------------|------------------|

|     |  |  |               |
|-----|--|--|---------------|
| EAC |  |  | EAC-Zulassung |
|-----|--|--|---------------|

|     |  |  |                          |
|-----|--|--|--------------------------|
| EAC |  |  | RU C-<br>DE.A*30.B.01082 |
|-----|--|--|--------------------------|

|                  |  |  |  |
|------------------|--|--|--|
| cULus Recognized |  |  |  |
|------------------|--|--|--|

## Accessories

### Accessories

#### Assembly adapter

Assembly adapters - UTA 107/30 - 2320089



Universal DIN rail 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.

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



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



## Power supply unit - QUINT-PS/1AC/24DC/ 5 - 2866750

### Accessories

#### Device protection

Type 3 surge protection device - PLT-SEC-T3-230-FM-UT - 2907919



Type 2/3 surge protection, consisting of protective plug and base element, with integrated status indicator and remote signaling for single-phase power supply networks. Nominal voltage 230 V AC/DC.

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Type 3 surge protection device - PLT-SEC-T3-24-FM-UT - 2907916



Type 3 surge protection, consisting of protective plug and base element, with integrated status indicator and remote signaling for single-phase power supply networks. Nominal voltage 24 V AC/DC.

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#### Fan

Fan - QUINT-PS/FAN/4 - 2320076



The fan for QUINT-PS/1AC and .../3AC can be mounted without the need for tools or other accessories. By using the fan, optimum cooling is ensured at high ambient temperatures or if the mounting position is rotated.

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#### Redundancy module

Diode - QUINT-DIODE/12-24DC/2X20/1X40 - 2320157



DIN rail diode module 12-24 V DC/2x20 A or 1x40 A. Uniform redundancy up to the consumer.

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Redundancy module, with protective coating - QUINT-ORING/24DC/2X10/1X20 - 2320173



Active QUINT redundancy module for DIN rail mounting with Auto Current Balancing ACB technology and monitoring functions, input: 24 V DC, output: 24 V DC/2 x 10 A or 1 x 20 A, including mounted UTA 107/30 universal DIN rail adapter

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## Power supply unit - QUINT-PS/1AC/24DC/ 5 - 2866750

### Accessories

Redundancy module - TRIO-DIODE/12-24DC/2X10/1X20 - 2866514



Redundancy module with function monitoring, 12 ... 24 V DC, 2x 10 A, 1x 20 A

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### Thermomagnetic device circuit breakers

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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