

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.

Product Features

- 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 |
| Weight per Piece (excluding packing) | 1011.4 g |
| Country of origin | Thailand |

Technical data

Dimensions

| | |
|----------------------------------|--------|
| Width | 40 mm |
| Height | 130 mm |
| Depth | 125 mm |
| Width with alternative assembly | 122 mm |
| Height with alternative assembly | 130 mm |

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Dimensions

| | |
|---------------------------------|-------|
| 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 (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 | 6000 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) |
| Inrush surge current | < 15 A (typical) |
| Power failure bypass | > 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) |
| Connection in parallel | Yes, for redundancy and increased capacity |
| Connection in series | Yes |

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Output data

| | |
|--|---|
| Control deviation | < 1 % (change in load, static 10 % ... 90 %) |
| | < 2 % (change in load, dynamic 10 % ... 90 %) |
| | < 0.1 % (change in input voltage ± 10 %) |
| Residual ripple | < 40 mV _{pp} (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) |
| Protection class | I |
| 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: 5 mm horizontally, 15 mm next to active components, 50 mm vertically |

Connection data, input

| | |
|---------------------------------------|----------------------------|
| Connection method | Pluggable screw connection |
| Conductor cross section solid min. | 0.2 mm ² |
| Conductor cross section solid max. | 2.5 mm ² |
| Conductor cross section flexible min. | 0.2 mm ² |
| Conductor cross section flexible max. | 2.5 mm ² |
| Conductor cross section AWG min. | 20 |
| Conductor cross section AWG max. | 12 |
| Stripping length | 7 mm |
| Screw thread | M3 |

Connection data, output

| | |
|---------------------------------------|----------------------------|
| Connection method | Pluggable screw connection |
| Conductor cross section solid min. | 0.2 mm ² |
| Conductor cross section solid max. | 2.5 mm ² |
| Conductor cross section flexible min. | 0.2 mm ² |
| Conductor cross section flexible max. | 2.5 mm ² |

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Connection data, output

| | |
|----------------------------------|------|
| 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 ² |
| Conductor cross section solid max. | 2.5 mm ² |
| Conductor cross section flexible min. | 0.2 mm ² |
| Conductor cross section flexible max. | 2.5 mm ² |
| Conductor cross section AWG min. | 20 |
| Conductor cross section AWG max. | 12 |
| Screw thread | M3 |

Standards and Regulations

| | |
|--|--|
| Electromagnetic compatibility | Conformance with EMC Directive 2004/108/EC |
| 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 |
| | EN 61000-4-3 |
| | EN 61000-4-4 |
| | EN 61000-4-5 |
| | EN 61000-4-6 |
| Standard – Electrical equipment of machines | EN 60204-1 |
| 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 – 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 | Germanischer Lloyd (EMC 2), ABS, LR, RINA, NK, DNV, 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 |

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Standards and Regulations

| | |
|--|--|
| 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 |
| Approval - requirement of the semiconductor industry with regard to mains voltage dips | SEMI F47-0706 Compliance Certificate |
| Information technology equipment - safety (CB scheme) | CB Scheme |
| Rail applications | EN 50121-4 |
| Overvoltage category (EN 62477-1) | III |

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 |
| eCl@ss 9.0 | 27040701 |

ETIM

| | |
|----------|----------|
| ETIM 2.0 | EC001039 |
| ETIM 3.0 | EC001039 |
| ETIM 4.0 | EC000599 |
| ETIM 5.0 | EC002540 |

UNSPSC

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

Approvals

Approvals

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Approvals

Approvals


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


Ex Approvals

UL Listed / cUL Listed / cULus Listed

Approvals submitted

Approval details

CSA 

UL Recognized 

UL Listed 

cUL Recognized 

LR

GL

BV

DNV


ABS

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Approvals

NK

RINA

IECEE CB Scheme 


SEMI F47

Bauartgeprüft

EAC

DeviceNet

EAC

cULus Recognized 

Accessories

Accessories

Assembly adapter

Assembly adapters - UTA 107/30 - 2320089



Universal DIN rail adapter

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Accessories

Assembly adapters - UWA 182/52 - 2938235



Universal wall adapter

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



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

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.

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.

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



Active QUINT redundancy module for DIN rail mounting with ACB (auto current balancing) 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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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

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.

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.

Drawings

Block diagram

