

Power supply unit, dip coated - QUINT-PS/ 1AC/24DC/20/CO - 2320898

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Primary-switched QUINT power supply for DIN rail mounting, input: 1-phase, output: 24 V DC/20 A, dip-coated PCB, with integrated SFB (selective fuse breaking) technology, including mounted universal DIN rail adapter UTA 107

Product Description

QUINT POWER power supply units – Maximum system availability with SFB technology Compact power supply units of the new QUINT POWER generation maximize the availability of your system. With the SFB technology (Selective Fuse Breaking Technology), six times the nominal current for 12 ms, even the standard power circuit-breakers can now also be triggered reliably and quickly. Faulty current paths are switched off selectively, the fault is located and important system parts continue to operate. Comprehensive diagnostics are provided through constant monitoring of output voltage and current. This preventive function monitoring visualizes critical operating modes and reports them to the control unit before an error can occur.

Product Features

- For maximum system availability
- 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



Key commercial data

| | |
|------------------|---------------|
| package_quantity | 1 |
| GTIN | 4046356520003 |

Technical data

Dimensions

| | |
|----------------------------------|--------|
| Width | 90 mm |
| Height | 130 mm |
| Depth | 125 mm |
| Width with alternative assembly | 122 mm |
| Height with alternative assembly | 130 mm |
| Depth with alternative assembly | 93 mm |

Ambient conditions

| | |
|----------------------|------|
| Degree of protection | IP20 |
|----------------------|------|

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Ambient conditions

| | |
|---|-------------------------------------|
| Ambient temperature (operation) | -25 °C ... 70 °C (> 60 °C derating) |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Max. permissible relative humidity (operation) | 100 % (at 25 °C, no condensation) |
| Noise immunity | EN 61000-6-2:2005 |

Input data

| | |
|-------------------------------------|---|
| Nominal input voltage range | 100 V AC ... 240 V AC |
| Input voltage range AC | 85 V AC ... 264 V AC |
| Input voltage range DC | 90 V DC ... 410 V DC + 5 % (UL 508: ≤ 250 V DC) |
| Short-term input voltage | 300 V AC |
| AC frequency range | 45 Hz ... 65 Hz |
| Frequency range DC | 0 Hz |
| Current consumption | 5.1 A (120 V AC) |
| Current consumption | 2.3 A (230 V AC) |
| Inrush surge current | < 20 A (typical) |
| Power failure bypass | > 20 ms (120 V AC) |
| Power failure bypass | > 20 ms (230 V AC) |
| Input fuse | 12 A (slow-blow, internal) |
| Choice of suitable fuses | 10 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 ±1% |
| Setting range of the output voltage | 18 V DC ... 29.5 V DC (> 24 V constant capacity) |
| Output current | 20 A (-25°C ... 60°C, U _{OUT} = 24 V DC) |
| Output current | 26 A (with POWER BOOST, -25°C ... 40°C permanently, U _{OUT} = 24 V DC) |
| Output current | 120 A (SFB technology, 12 ms) |
| Output current | 26 A (U _{in} ≥ 100 V AC) |
| Magnetic fuse tripping | B2 |
| Magnetic fuse tripping | B4 |
| Magnetic fuse tripping | B6 |
| Magnetic fuse tripping | B10 |
| Magnetic fuse tripping | B16 |
| Magnetic fuse tripping | C2 |
| Magnetic fuse tripping | C4 |
| Magnetic fuse tripping | C6 |
| 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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Technical data

Output data

| | |
|-----------------------------------|---|
| 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 | < 30 mV _{PP} (with nominal values) |
| Maximum power dissipation NO-Load | 8 W |
| Power loss nominal load max. | 40 W |

General

| | |
|--|---|
| Net weight | 1.7 kg |
| Efficiency | > 93 % (for 230 V AC and nominal values) |
| Insulation voltage input/output | 4 kV AC (type test) |
| Insulation voltage input/output | 2 kV AC (routine test) |
| Protection class | I |
| MTBF (IEC 61709, SN 29500) | > 520000 h (According to EN 29500) |
| Mounting position | horizontal DIN rail NS 35, EN 60715 |
| Assembly instructions | Alignable: 5 mm horizontally, 15 mm next to active components, 50 mm vertically |
| Electromagnetic compatibility | Conformance with EMC Directive 2004/108/EC |
| Noise emission | EN 50081-2 |
| Low Voltage Directive | Conformance with LV directive 2006/95/EC |
| Standard – Electrical equipment of machines | EN 60204 |
| Standard - Electrical safety | IEC 60950-1/VDE 0805 (SELV) |
| Shipbuilding approval | Germanischer Lloyd (EMC 1, only with upstream filter), ABS, LR, RINA, NK, DNV, BV |
| 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 (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 | BG (design tested) |
| Standard - Approval for medical use | IEC 60601 |
| 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 |
| 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) |

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General

| | |
|-------------------------------|--|
| Surge voltage category | III |
| DeviceNet approval | DeviceNet™ Power Supply Conformance Tested |

Connection data, input

| | |
|---|---------------------|
| Connection method | Screw connection |
| Conductor cross section solid min. | 0.2 mm ² |
| Conductor cross section solid max. | 6 mm ² |
| Conductor cross section stranded min. | 0.2 mm ² |
| Conductor cross section stranded max. | 4 mm ² |
| Conductor cross section AWG/kcmil min. | 18 |
| Conductor cross section AWG/kcmil max | 10 |
| Stripping length | 7 mm |
| Screw thread | M4 |

Connection data, output

| | |
|---|---------------------|
| Connection method | Screw connection |
| Conductor cross section solid min. | 0.2 mm ² |
| Conductor cross section solid max. | 6 mm ² |
| Conductor cross section stranded min. | 0.2 mm ² |
| Conductor cross section stranded max. | 4 mm ² |
| Conductor cross section AWG/kcmil min. | 12 |
| Conductor cross section AWG/kcmil max | 10 |
| Stripping length | 7 mm |

Signaling

| | |
|---|---|
| Output name | DC OK active |
| Output description | $U_{OUT} > 0.9 \times U_N$: High signal |
| Maximum inrush current | 20 mA (short-circuit resistant) |
| Continuous load current | ≤ 20 mA |
| Status display | $U_{OUT} > 0.9 \times U_N$: "DC OK" LED green |
| Note on status display | $U_{OUT} < 0.9 \times U_N$: Flashing "DC OK" LED |
| Note on status display | $I_{OUT} < I_N$: LED ON |
| Conductor cross section solid min. | 0.2 mm ² |
| Conductor cross section solid max. | 6 mm ² |
| Conductor cross section stranded min. | 0.2 mm ² |
| Conductor cross section stranded max. | 4 mm ² |
| Conductor cross section AWG/kcmil min. | 18 |
| Conductor cross section AWG/kcmil max | 10 |
| Tightening torque, min | 0.5 Nm |
| Tightening torque max | 0.6 Nm |
| Screw thread | M4 |

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Technical data

Signaling

| | |
|----------------------------------|--|
| Output name | DC OK floating |
| Output description | Relay contact, $U_{OUT} > 0.9 \times U_N$: Contact closed |
| Maximum switching voltage | ≤ 30 V AC/DC |
| Maximum inrush current | ≤ 1 A |
| Continuous load current | ≤ 1 A |
| Status display | $U_{OUT} > 0.9 \times U_N$: "DC OK" LED green |
| Note on status display | $U_{OUT} < 0.9 \times U_N$: Flashing "DC OK" LED |
| Output name | POWER BOOST, active |
| Output description | $I_{OUT} < I_N$: High signal |
| Output voltage | + 24 V DC |
| Maximum inrush current | min. 20 mA (short-circuit resistant) |
| Continuous load current | ≤ 20 mA |
| Status display | $I_{OUT} > I_N$: LED "BOOST" yellow |

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 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

UL Listed / cUL Listed / cULus Listed / CSA / UL Recognized / UL Listed / cUL Recognized / GOST / GL / IECCEB Scheme / Bauartgeprüft / cULus Recognized /

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approvals

Approval details

| |
|---|
| UL Listed  |
| cUL Listed  |
| cULus Listed  |
| CSA  |
| UL Recognized  |
|  |
| cUL Recognized  |
| GOST  |
| GL |
| IECEE CB Scheme  |
| Bauartgeprüft |

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approvals

cULus Recognized  US

accessories

Mounting rail adapter

UTA 107 - 2853983



Assembly adapter

UWA 182/52 - 2938235

Fan

QUINT-PS/FAN/4 - 2320076



Redundancy module

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



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accessories

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



QUINT-ORING/24DC/2X20/1X40 - 2320186



Thermomagnetic device circuit breakers

CB TM1 1A SFB P - 2800836



CB TM1 2A SFB P - 2800837



CB TM1 3A SFB P - 2800838



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accessories

CB TM1 4A SFB P - 2800839



CB TM1 5A SFB P - 2800840



CB TM1 6A SFB P - 2800841



CB TM1 8A SFB P - 2800842



CB TM1 10A SFB P - 2800843



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accessories

CB TM1 12A SFB P - 2800844



CB TM1 16A SFB P - 2800845



accessories

ME-MAX-NEF/QUINT20A - 2319919



Drawings

Block diagram

