

Power supply unit - QUINT-PS/1AC/24DC/ 3.5



2866747

<https://www.phoenixcontact.com/pc/products/2866747>

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Primary-switched power supply unit, QUINT POWER, Screw connection, SFB Technology (Selective Fuse Breaking), input: 1-phase, output: 24 V DC / 3.5 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

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2866747

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Commercial Data

Item number	2866747
Packing unit	1 pc
Minimum order quantity	1 pc
Product Key	CMPQ13
Catalog Page	Page 242 (C-4-2019)
GTIN	4046356113779
Weight per Piece (including packing)	852.6 g
Weight per Piece (excluding packing)	500 g
Customs tariff number	85044030
Country of origin	TH

Technical Data

Input data

AC operation

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
Input voltage range AC	85 V AC ... 264 V AC
Input voltage range DC	90 V DC ... 350 V DC
Electric strength, max.	300 V AC
Voltage type of supply voltage	AC/DC
Inrush current	< 20 A (typical)
Inrush current integral (I^2t)	< 2 A ² s
AC frequency range	45 Hz ... 65 Hz
Frequency range DC	0 Hz
Mains buffering time	typ. 20 ms (120 V AC)
	typ. 80 ms (230 V AC)
Current consumption	1.4 A (120 V AC)
	0.8 A (230 V AC)
	0.9 A (110 V DC)
	0.4 A (220 V DC)
Nominal power consumption	180 VA
Protective circuit	Transient surge protection; Varistor
Typical response time	< 0.05 s
Input fuse	5 A (slow-blow, internal)
Permissible backup fuse	B6 B10 B16 AC:
Permissible DC backup fuse	DC: Connect a suitable fuse upstream
Recommended breaker for input protection	6 A ... 20 A (AC: Characteristics B, C, D, K)
Discharge current to PE	< 3.5 mA

Output data

Efficiency	> 88 % (for 230 V AC and nominal values)
Output characteristic	U/I
Nominal output voltage	24 V DC \pm 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)	3.5 A (-25 °C ... 60 °C, U_{OUT} = 24 V DC)
POWER BOOST (I_{Boost})	4 A (-25 °C ... 40 °C permanent, U_{OUT} = 24 V DC)
Selective Fuse Breaking (I_{SFB})	15 A (12 ms)
Magnetic circuit breaker tripping	B2
Derating	60 °C ... 70 °C (2.5%/K)
Feedback voltage resistance	max. 35 V DC
Protection against overvoltage at the output (OVP)	< 35 V DC
	< 1 % (change in load, static 10 % ... 90 %)

Power supply unit - QUINT-PS/1AC/24DC/ 3.5



2866747

<https://www.phoenixcontact.com/pc/products/2866747>

Control deviation	< 2 % (change in load, dynamic 10 % ... 90 %)
	< 0.1 % (change in input voltage ± 10 %)
Residual ripple	< 50 mV _{PP} (with nominal values)
Output power	84 W
Maximum no-load power dissipation	3.5 W
Power loss nominal load max.	11 W
Rise time	< 0.04 s (U_{OUT} (10 % ... 90 %))
Connection in parallel	yes, for redundancy and increased capacity
Connection in series	yes

Signal: DC OK active

Output description	$U_{OUT} > 0.9 \times U_N$: High signal
Switching voltage range	18 V DC ... 24 V DC
Maximum inrush current	≤ 20 mA (short-circuit-proof)
Continuous load current	≤ 20 mA

Signal: DC OK floating

Output description	Relay contact, $U_{OUT} > 0.9 \times U_N$: Contact closed
Maximum switching voltage	30 V AC/DC
	24 V DC
Maximum inrush current	0.5 A
	1 A
Continuous load current	≤ 1 A

Signal: POWER BOOST, active

Output description	$I_{OUT} < I_N$: High signal
Switching voltage range	18 V DC ... 24 V DC
Output voltage	+ 24 V DC
Maximum inrush current	≤ 20 mA (short-circuit-proof)
Continuous load current	≤ 20 mA

Signal: DC OK active

Output description	$U_{OUT} > 0.9 \times U_N$: High signal
Switching voltage range	18 V DC ... 24 V DC
Maximum inrush current	≤ 20 mA (short-circuit-proof)
Continuous load current	≤ 20 mA

Signal: DC OK floating

Output description	Relay contact, $U_{OUT} > 0.9 \times U_N$: Contact closed
Maximum switching voltage	30 V AC/DC
	24 V DC
Maximum inrush current	0.5 A
	1 A
Continuous load current	≤ 1 A

Signal: POWER BOOST, active

Output description	$I_{OUT} < I_N$: High signal
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Power supply unit - QUINT-PS/1AC/24DC/ 3.5



2866747

<https://www.phoenixcontact.com/pc/products/2866747>

Switching voltage range	18 V DC ... 24 V DC
Output voltage	+ 24 V DC
Maximum inrush current	≤ 20 mA (short-circuit-proof)
Continuous load current	≤ 20 mA

Signal: DC OK active

Output description	$U_{OUT} > 0.9 \times U_N$: High signal
Switching voltage range	18 V DC ... 24 V DC
Maximum inrush current	≤ 20 mA (short-circuit-proof)
Continuous load current	≤ 20 mA

Signal: DC OK floating

Output description	Relay contact, $U_{OUT} > 0.9 \times U_N$: Contact closed
Maximum switching voltage	30 V AC/DC
	24 V DC
Maximum inrush current	0.5 A
	1 A
Continuous load current	≤ 1 A

Signal: POWER BOOST, active

Output description	$I_{OUT} < I_N$: High signal
Switching voltage range	18 V DC ... 24 V DC
Output voltage	+ 24 V DC
Maximum inrush current	≤ 20 mA (short-circuit-proof)
Continuous load current	≤ 20 mA

Connection data

Input

Connection method	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
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

Output

Connection method	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

Power supply unit - QUINT-PS/1AC/24DC/ 3.5



2866747

<https://www.phoenixcontact.com/pc/products/2866747>

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
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

Signal

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
Screw thread	M3
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

LED signaling

Types of signaling	LED
	Active switching output
	Relay contact
Operating voltage display	Green LED

Signal output: DC OK active

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
	$I_{OUT} < I_N$: LED ON

Signal output: DC OK floating

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

Signal output: POWER BOOST, active

Status display	$I_{OUT} > I_N$: LED "BOOST" yellow
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Electrical properties

Number of phases	1.00
Insulation voltage input/output	4 kV AC (type test)
	2 kV AC (routine test)
Insulation voltage output / PE	500 V DC (routine test)
Insulation voltage input / PE	3.5 kV AC (type test)
	2 kV AC (routine test)

Power supply unit - QUINT-PS/1AC/24DC/ 3.5



2866747

<https://www.phoenixcontact.com/pc/products/2866747>

Product properties

Product type	Power supply
MTBF (IEC 61709, SN 29500)	> 1433000 h (25 °C)
	> 820000 h (40 °C)
	> 360000 h (60 °C)

Insulation characteristics

Protection class	I
Degree of pollution	2

Dimensions

Width	32 mm
Height	130 mm
Depth	125 mm

Installation dimensions

Installation distance right/left	5 mm / 5 mm
Installation distance top/bottom	50 mm / 50 mm

Alternative assembly

Width	122 mm
Height	130 mm
Depth	35 mm

Mounting

Assembly instructions	alignable: $P_N \geq 50\%$, 5 mm horizontally, 15 mm next to active components, 50 mm vertically alignable: $P_N < 50\%$, 0 mm horizontally, 40 mm vertically top, 20 mm vertically bottom
Mounting position	horizontal DIN rail NS 35, EN 60715

Material specifications

Color	aluminium
Housing material	Metal
Hood version	Galvanized sheet steel, free from chrome (VI)
Side element version	Aluminum

Environmental and real-life conditions

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
Maximum altitude	5000 m
Climatic class	3K3 (in acc. with EN 60721)
Max. permissible relative humidity (operation)	≤ 95 % (at 25 °C, non-condensing)

Power supply unit - QUINT-PS/1AC/24DC/ 3.5



2866747

<https://www.phoenixcontact.com/pc/products/2866747>

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.

Standards and regulations

Rail applications	EN 50121-4
Standard – Limitation of mains harmonic currents	EN 61000-3-2
Standard - Electrical safety	IEC 61010-2-201 (SELV)
Standard - Equipment safety	BG (design tested)
Standard - Approval for medical use	IEC 60601-1, 2 x MOOP
Standard – Protection against shock currents, basic requirements for protective separation in electrical equipment	EN 50178
Standard – Safety extra-low voltage	IEC 61010-1 (SELV)
	IEC 61010-2-201 (PELV)
Standard - Safe isolation	IEC 61010-2-201
Standard - safety for equipment for measurement, control, and laboratory use	IEC 61010-1
Approval - requirement of the semiconductor industry with regard to mains voltage dips	SEMI F47-0706 Compliance Certificate
DeviceNet approval	DeviceNet™ Power Supply Conformance Tested

Overvoltage category

EN 62477-1	III
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Approval data

CSA	CAN/CSA-C22.2 No. 60950-1-07
	CSA-C22.2 No. 107.1-01
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

Conformity/Approvals

SIL in accordance with IEC 61508	0
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EMC data

Low Voltage Directive	Conformance with Low Voltage Directive 2014/35/EC
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
EMC requirements for noise emission	EN 61000-6-3
	EN 61000-6-4
EMC requirements for noise immunity	EN 61000-6-1
	EN 61000-6-2
Noise emission	EN 55011 (EN 55022)
Noise immunity	EN 61000-6-2

Power supply unit - QUINT-PS/1AC/24DC/ 3.5



2866747

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Electrostatic discharge

Standards/regulations	EN 61000-4-2
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Electrostatic discharge

Contact discharge	8 kV (Test Level 4)
Discharge in air	8 kV (Test Level 3)
Comments	Criterion A

Electromagnetic HF field

Standards/regulations	EN 61000-4-3
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Electromagnetic HF field

Frequency range	80 MHz ... 1 GHz
Test field strength	20 V/m (Test Level 3)
Frequency range	1 GHz ... 2 GHz
Test field strength	10 V/m (Test Level 3)
Frequency range	2 GHz ... 3 GHz
Test field strength	10 V/m (Test Level 3)
Comments	Criterion A

Fast transients (burst)

Standards/regulations	EN 61000-4-4
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Fast transients (burst)

Input	4 kV (Test Level 4 - asymmetrical)
Output	2 kV (Test Level 3 - asymmetrical)
Signal	2 kV (Test Level 4 - asymmetrical)
Comments	Criterion A

Surge voltage load (surge)

Standards/regulations	EN 61000-4-5
Input	2 kV (Test Level 3 - symmetrical)
	4 kV (Test Level 4 - asymmetrical)
Output	1 kV (Test Level 2 - symmetrical)
	2 kV (Test Level 3 - asymmetrical)
Signal	1 kV (Test Level 2 - asymmetrical)
Comments	Criterion A

Conducted interference

Standards/regulations	EN 61000-4-6
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Conducted interference

I/O/S	asymmetrical
Frequency range	0.15 MHz ... 80 MHz
Comments	Criterion A
Voltage	10 V (Test Level 3)

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Emitted interference

Standards/regulations	EN 61000-6-3
Radio interference voltage in acc. with EN 55011	EN 55011 (EN 55022) Class B, area of application: Industry and residential
Emitted radio interference in acc. with EN 55011	EN 55011 (EN 55022) Class B, area of application: Industry and residential
Criterion A	Normal operating behavior within the specified limits.
Criterion B	Temporary impairment to operational behavior that is corrected by the device itself.

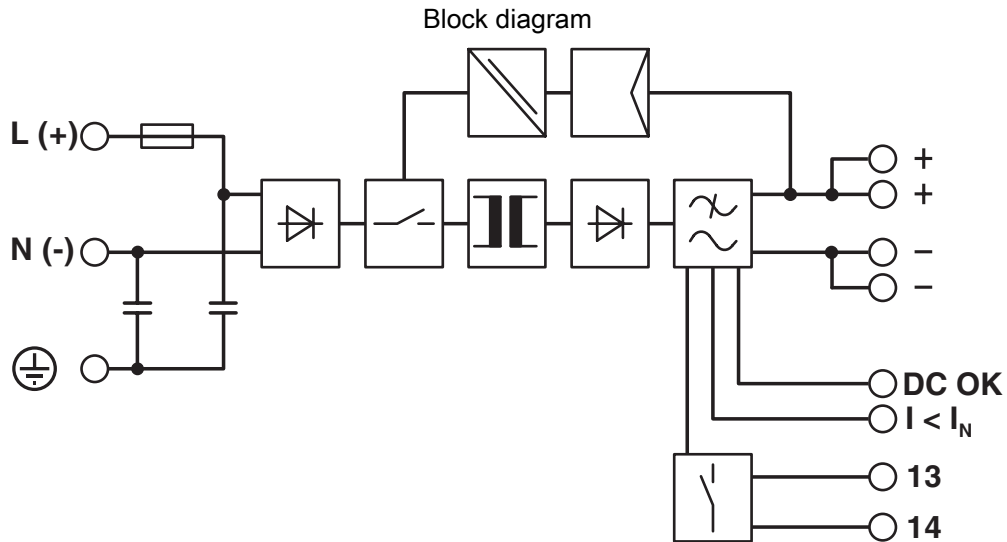
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Drawings



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Approvals

 **CSA**
Approval ID: 1897767

 **cUL Recognized**
Approval ID: FILE E 211944

 **UL Recognized**
Approval ID: FILE E 211944


 **IECEE CB Scheme**
Approval ID: SI-1865 A2


 **EAC**
Approval ID: EAC-Zulassung


 **DNV GL**
Approval ID: TAA000030X


 **LR**
Approval ID: 08/20069 E4

 **ClassNK** **NK**
Approval ID: TA19643M

 **BV**
Approval ID: 21004-C0 BV

 **EAC**
Approval ID: RU S-DE.BL08.W.00764

 **UL Listed**
Approval ID: FILE E 123528

 **cUL Listed**
Approval ID: FILE E 123528

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RINA

Approval ID: ELE316517XG

ABS

Approval ID: 20-2022476-PDA

DeviceNet™

DeviceNet

Approval ID: 10824/06.01.2010

SEMI F47

Approval ID: SEMI F47



EAC

Approval ID: RU S-DE.BL08.W.00764



cUL Listed

Approval ID: FILE E 199827



UL Listed

Approval ID: FILE E 199827

cULus Recognized

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Classifications

ECLASS

ECLASS-9.0	27040701
ECLASS-10.0.1	27040701
ECLASS-11.0	27040701

ETIM

ETIM 8.0	EC002540
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UNSPSC

UNSPSC 21.0	
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Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 25;
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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Accessories

Redundancy module, with protective coating

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

<https://www.phoenixcontact.com/pc/products/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

Fan

Fan - QUINT-PS/FAN/4 - 2320076

<https://www.phoenixcontact.com/pc/products/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

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

<https://www.phoenixcontact.com/pc/products/2320157>



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

Redundancy module

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

<https://www.phoenixcontact.com/pc/products/2866514>



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

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Type 3 surge protection device

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

<https://www.phoenixcontact.com/pc/products/2907919>



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

Type 3 surge protection device

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

<https://www.phoenixcontact.com/pc/products/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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Mounting adapter

Mounting adapter - UTA 107/30 - 2320089

<https://www.phoenixcontact.com/pc/products/2320089>

Universal DIN rail adapter



Mounting adapter

Mounting adapter - UWA 182/52 - 2938235

<https://www.phoenixcontact.com/pc/products/2938235>

Universal wall adapter for securely mounting the device in the event of strong vibrations. The device is screwed directly onto the mounting surface. The universal wall adapter is attached on the top/bottom.



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Mounting adapter

Mounting adapter - QUINT-PS-ADAPTERS7/1 - 2938196

<https://www.phoenixcontact.com/pc/products/2938196>

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



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