

QUINT-PS/3AC/24DC/20 - Power supply



2866792

<https://www.phoenixcontact.com/pc/products/2866792>

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Primary-switched power supply unit QUINT POWER, Screw connection, SFB Technology (Selective Fuse Breaking), input: 3-phase, output: 24 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.

Your advantages

- Reliable starting of difficult loads
- High level of system availability even in the event of permanent phase failure
- Preventive function monitoring

Commercial data

Item number	2866792
Packing unit	1 pc
Minimum order quantity	1 pc
Product key	CMPQ33
GTIN	4046356152907
Weight per piece (including packing)	1,837.4 g
Weight per piece (excluding packing)	1,504 g
Customs tariff number	85044095
Country of origin	TH

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Technical data

Input data

AC operation

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
	450 V DC ... 800 V DC
Input voltage range DC	450 V DC ... 800 V DC
Voltage type of supply voltage	AC
Inrush current	< 20 A (typical)
Inrush current integral (I^2t)	< 3.2 A ² s
AC frequency range	45 Hz ... 65 Hz
Frequency range DC	0 Hz
Mains buffering time	> 20 ms (400 V AC)
	> 30 ms (500 V AC)
Current consumption	3x 1.6 A (400 V AC)
	3x 1.3 A (500 V AC)
	0.9 A (600 V DC)
Nominal power consumption	783 VA
Protective circuit	Transient surge protection; Varistor, gas-filled surge arrester
Power factor (cos phi)	0.66
Typical response time	< 0.16 s
Permissible backup fuse	B6 B10 B16 AC:
Permissible DC backup fuse	DC: Connect a suitable fuse upstream
Recommended breaker for input protection	6 A ... 16 A (AC: Characteristics B, C, D, K)
Discharge current to PE	< 3.5 mA

DC operation

Voltage type of supply voltage	DC
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Output data

Efficiency	> 93 % (at 400 V AC and nominal values)
Output characteristic	U/I
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)	20 A (-25 °C ... 60 °C, U_{OUT} = 24 V DC)
POWER BOOST (I_{Boost})	26 A (-25 °C ... 40 °C permanent, U_{OUT} = 24 V DC)
Selective Fuse Breaking (I_{SFB})	120 A (12 ms)
Magnetic circuit breaker tripping	B2 / B4 / B6 / B10 / B16 / C2 / C4 / C6
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

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Control deviation	< 1 % (change in load, static 10 % ... 90 %)
	< 3 % (change in load, dynamic 10 % ... 90 %)
	< 0.1 % (change in input voltage ± 10 %)
Residual ripple	< 40 mV _{PP} (with nominal values)
Output power	480 W
Peak switching voltages nominal load	< 40 mV _{PP} (at nominal values, 20 MHz)
Maximum no-load power dissipation	11 W
Power loss nominal load max.	40 W
Rise time	< 0.05 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 ... 24 V
Output voltage	+ 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 ... 24 V
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, rigid min.	0.2 mm ²
Conductor cross-section, rigid max.	6 mm ²
Conductor cross-section flexible min.	0.2 mm ²
Conductor cross-section flexible max.	4 mm ²
Conductor cross-section AWG min.	18
Conductor cross-section AWG max.	10
Stripping length	7 mm
Screw thread	M4

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Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

Output

Connection method	Screw connection
Conductor cross-section, rigid min.	0.2 mm ²
Conductor cross-section, rigid max.	6 mm ²
Conductor cross-section flexible min.	0.2 mm ²
Conductor cross-section flexible max.	4 mm ²
Conductor cross-section AWG min.	12
Conductor cross-section AWG max.	10
Stripping length	7 mm
Screw thread	M4
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

Signal

Connection method	Screw connection
Conductor cross-section, rigid min.	0.2 mm ²
Conductor cross-section, rigid max.	6 mm ²
Conductor cross-section flexible min.	0.2 mm ²
Conductor cross-section flexible max.	4 mm ²
Conductor cross-section AWG min.	18
Conductor cross-section AWG max.	10
Screw thread	M4
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

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

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

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Number of phases	3
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)

Product properties

Product type	Power supply
Product family	QUINT POWER
MTBF (IEC 61709, SN 29500)	> 900000 h (25 °C)
	> 534000 h (40 °C)
	> 250000 h (60 °C)

Insulation characteristics

Protection class	I
Degree of pollution	2

Dimensions

Width	69 mm
Height	130 mm
Depth	122 mm

Alternative assembly

Width	122 mm
Height	130 mm
Depth	72 mm

Mounting

Assembly note	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
With protective coating	no

Material specifications

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

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Ambient temperature (start-up type tested)	-40 °C
Maximum altitude	5000 m
Climatic class	3K3 (in acc. with EN 60721)
Max. permissible relative humidity (operation)	95 % (at 25 °C, non-condensing)
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.
Temp code	T4 (-25 ... +60 °C)

Standards and regulations

Rail applications	EN 50121-4 EN 50121-3-2
Standard – Limitation of mains harmonic currents	EN 61000-3-2
Standard - Electrical safety	IEC 61010-2-201 (SELV)
Standard - Equipment safety	GS (tested safety)
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
Standard - surge resistance	VDE 0160 (curve W2)
Approval - requirement of the semiconductor industry with regard to mains voltage dips	SEMI F47-0706 Compliance Certificate

Overvoltage category

EN 62477-1	III
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Approvals

CSA	CAN/CSA-C22.2 No. 60950-1-07 CSA-C22.2 No. 107.1-01
Shipbuilding approval	DNV GL (EMC B), ABS, LR, RINA, NK, BV
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 T4 (Hazardous Location)

EMC data

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

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	EN 61000-6-2
Electrostatic discharge	
Standards/regulations	EN 61000-4-2
Electrostatic discharge	
Contact discharge	8 kV (Test Level 4)
Discharge in air	15 kV (Test Level 4)
Comments	Criterion A
Electromagnetic HF field	
Standards/regulations	EN 61000-4-3
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
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 B
Surge voltage load (surge)	
Standards/regulations	EN 61000-4-5
Surge voltage load (surge)	
Input	3 kV (Test Level 3 - symmetrical)
	6 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
Conducted interference	
Input/output/signal	asymmetrical
Frequency range	0.15 MHz ... 80 MHz

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Comments	Criterion A
Voltage	10 V (Test Level 3)

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

Criteria

Criterion A	Normal operating behavior within the specified limits.
Criterion B	Temporary impairment to operational behavior that is corrected by the device itself.

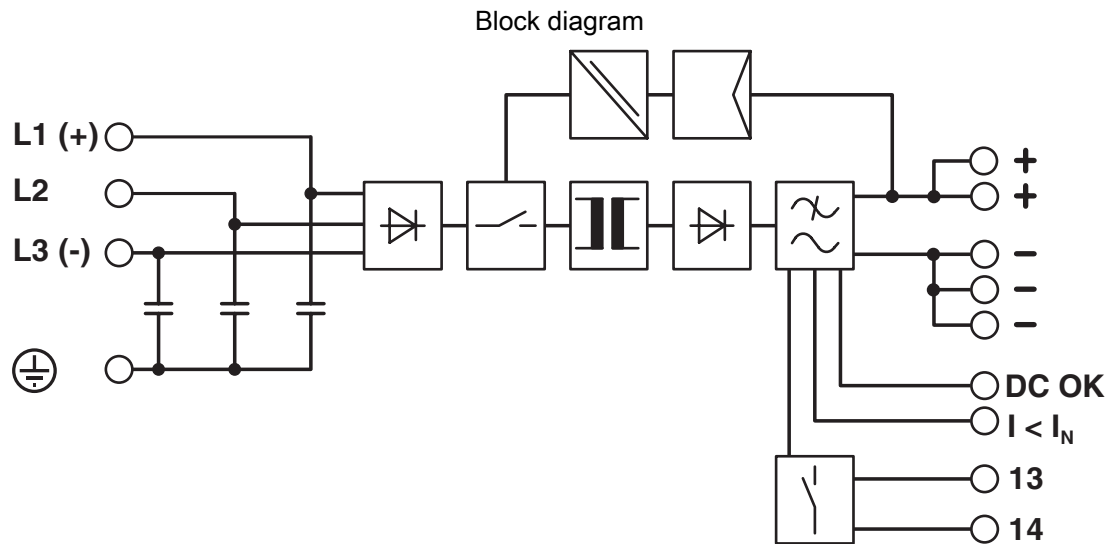
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Drawings



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/pc/products/2866792>



cUL Recognized

Approval ID: E211944



UL Recognized

Approval ID: E211944



IECEE CB Scheme

Approval ID: SI-2794



EAC

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



LR

Approval ID: LR22301698TA-02



NK

Approval ID: TA24091M



BV

Approval ID: 21004/D0 BV



EAC

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



UL Listed

Approval ID: E123528

BSH

Approval ID: 581



RINA

Approval ID: ELE333522XG

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ABS

Approval ID: 23-2355407-PDA



Type approved

Approval ID: SI-SIQ BG 005/002

SEMI F47

Approval ID: SEMI F47

DNV

Approval ID: TAA000030X



cCSAus

Approval ID: 1925529



UL Listed

Approval ID: E199827

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Classifications

ECLASS

ECLASS-13.0	27040701
ECLASS-15.0	27040701

ETIM

ETIM 9.0	EC002540
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UNSPSC

UNSPSC 21.0	39121000
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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I

China RoHS

Environment friendly use period (EFUP)	EFUP-25
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	3c5729f1-3b1b-48d2-a3cd-bf324d61eff3

EF3.0 Climate Change

CO2e kg	55.091 kg CO2e
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Accessories

UTA 107 - DIN rail adapter

2853983

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Universal DIN rail adapter, for screwing on switchgear



UWA 182/52 - Mounting adapter

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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QUINT-PS-ADAPTERS7/2 - Mounting adapter

2938206

<https://www.phoenixcontact.com/pc/products/2938206>

Assembly adapter for QUINT POWER 10A on S7-300 rail



QUINT-PS/FAN/4 - Fan

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

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.

QUINT-ORING/24DC/2X20/1X40 - Redundancy module, with protective coating

2320186

<https://www.phoenixcontact.com/pc/products/2320186>



Active QUINT redundancy module for DIN rail mounting with ACB (Auto Current Balancing) Technology and monitoring functions, input: 24 V DC/2x 20 A, output: 24 V DC/1 x 40 A, including mounted UTA 107/30 universal DIN rail adapter

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CB TM1 1A SFB P - Thermal-magnetic device circuit breaker

2800836

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Thermal-magnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 changeover contact, plug for base element.

CB TM1 2A SFB P - Thermal-magnetic device circuit breaker

2800837

<https://www.phoenixcontact.com/pc/products/2800837>



Thermal-magnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 changeover contact, plug for base element.

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CB TM1 3A SFB P - Thermal-magnetic device circuit breaker

2800838

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Thermal-magnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 changeover contact, plug for base element.

CB TM1 4A SFB P - Thermal-magnetic device circuit breaker

2800839

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Thermal-magnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 changeover contact, plug for base element.

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CB TM1 5A SFB P - Thermal-magnetic device circuit breaker

2800840

<https://www.phoenixcontact.com/pc/products/2800840>



Thermal-magnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 changeover contact, plug for base element.

CB TM1 6A SFB P - Thermal-magnetic device circuit breaker

2800841

<https://www.phoenixcontact.com/pc/products/2800841>



Thermal-magnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 changeover contact, plug for base element.

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CB TM1 8A SFB P - Thermal-magnetic device circuit breaker

2800842

<https://www.phoenixcontact.com/pc/products/2800842>



Thermal-magnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 changeover contact, plug for base element.

CB TM1 10A SFB P - Thermal-magnetic device circuit breaker

2800843

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Thermal-magnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 changeover contact, plug for base element.

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PLT-SEC-T3-3S-230-FM - Type 3 surge protection device

2905230

<https://www.phoenixcontact.com/pc/products/2905230>



Plug-in device protection, according to type 3/class III, for 3-phase power supply networks with separate N and PE (5-conductor system: L1, L2, L3, N, PE), with integrated surge-proof fuse and remote indication contact.

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

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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