

Power supply unit - QUINT4-PS/3AC/24DC/20 - 2904622

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Primary-switched QUINT POWER power supply with free choice of output characteristic curve, SFB (selective fuse breaking) technology, and NFC interface, input: 3-phase, output: 24 V DC/20 A

Product Description

The fourth generation of the high-performance QUINT POWER power supplies ensures superior system availability by means of new functions. Signaling thresholds and characteristic curves can be individually adjusted via the NFC interface. The unique SFB technology and preventive function monitoring of the QUINT POWER power supply increase the availability of your application.

Why buy this product

- ✓ SFB technology trips standard circuit breakers selectively, loads that are connected in parallel continue working
- ✓ Preventive function monitoring indicates critical operating states before errors occur
- ✓ Signaling thresholds and characteristic curves that can be adjusted via NFC maximize system availability
- ✓ Easy system extension thanks to static boost; starting of difficult loads thanks to dynamic boost
- ✓ High degree of immunity, thanks to integrated gas-filled surge arrester and mains failure bridging time of more than 20 milliseconds
- ✓ Robust design thanks to metal housing and wide temperature range from -40°C to +70°C
- ✓ Worldwide use thanks to the wide range input and international approval package



Key Commercial Data

Packing unit	1 STK
GTIN	 4 046356 986885
GTIN	4046356986885
Weight per Piece (excluding packing)	1,500.000 g
Custom tariff number	85044030
Country of origin	Thailand

Technical data

Dimensions

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Technical data

Dimensions

Width	70 mm
Height	130 mm
Depth	125 mm
Width with alternative assembly	122 mm
Height with alternative assembly	130 mm
Depth with alternative assembly	73 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	Immunity according to EN 61000-6-1 (residential), EN 61000-6-2 (industrial), and EN 61000-6-5 (power station equipment zone), IEC/EN 61850-3 (energy supply)
Installation height	≤ 5000 m (> 2000 m, observe derating)

Input data

Nominal input voltage range	3x 400 V AC ... 500 V AC
	2x 400 V AC ... 500 V AC
	± 260 V DC ... 300 V DC
Input voltage range	3x 400 V AC ... 500 V AC -20 % ... +10 %
	2x 400 V AC ... 500 V AC -10 % ... +10 %
	± 260 V DC ... 300 V DC -13 % ... +30 %
AC frequency range	50 Hz ... 60 Hz -10 % ... +10 %
Discharge current to PE	< 3.5 mA
Current consumption	3x 0.99 A (400 V AC)
	3x 0.81 A (480 V AC)
	2x 1.62 A (400 V AC)
	2x 1.37 A (480 V AC)
	3x 0.8 A (500 V AC)
	2x 1.23 A (500 V AC)
Nominal power consumption	508 W
Inrush surge current	typ. 2 A (at 25 °C)
Power failure bypass	≥ 25 ms (3x 400 V AC)
	≥ 25 ms (3x 480 V AC)
Choice of suitable circuit breakers	3x 4 A ... 20 A (Characteristic B, C or comparable)
Type of protection	Transient surge protection
Protective circuit/component	Varistor, gas-filled surge arrester

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Output data

Nominal output voltage	24 V DC
Setting range of the output voltage (U_{Set})	24 V DC ... 29.5 V DC (constant capacity)
Nominal output current (I_N)	20 A
Static Boost ($I_{Stat.Boost}$)	25 A
Dynamic Boost ($I_{Dyn.Boost}$)	30 A (5 s)
Selective Fuse Breaking (I_{SFB})	120 A (15 ms)
Derating	> 60 °C (2.5%/K)
Connection in parallel	Yes, for redundancy and increased capacity
Connection in series	yes
Control deviation	< 0.5 % (Static load change 10 % ... 90 %)
	< 3 % (Dynamic load change 10 % ... 90 %, (10 Hz))
	< 0.25 % (change in input voltage ± 10 %)
Residual ripple	< 60 mV _{pp} (with nominal values)
Output power	480 W
Typical response time	300 ms (from SLEEP MODE)
Maximum power dissipation in no-load condition	< 7 W (400 V AC)
	< 7 W (480 V AC)
Power loss nominal load max.	< 30 W (400 V AC)

General

Net weight	1.1 kg
Efficiency	typ. 93.9 % (400 V AC)
	typ. 93.8 % (480 V AC)
Insulation voltage input/output	4 kV AC (type test)
	2.4 kV AC (routine test)
Insulation voltage input / PE	3.5 kV AC (type test)
	2.4 kV AC (routine test)
Insulation voltage output / PE	0.5 kV DC (type test)
	0.5 kV DC (routine test)
Protection class	I
MTBF (IEC 61709, SN 29500)	> 985000 h (25 °C)
	> 638000 h (40 °C)
	> 311000 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

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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 flexible min.	0.2 mm ²
Conductor cross section flexible max.	4 mm ²
Conductor cross section AWG min.	30
Conductor cross section AWG max.	10
Stripping length	8 mm

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 flexible min.	0.2 mm ²
Conductor cross section flexible max.	4 mm ²
Conductor cross section AWG min.	30
Conductor cross section AWG max.	10
Stripping length	8 mm

Connection data for signaling

Connection method	Push-in connection
Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	1.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	1.5 mm ²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	16
Stripping length	8 mm

Standards and Regulations

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Shock	18 ms, 30g, in each space direction (according to IEC 60068-2-27)
Noise emission	Additional basic standard EN 61000-6-5 (immunity in power station), IEC/EN 61850-3 (energy supply)
Noise immunity	Immunity according to EN 61000-6-1 (residential), EN 61000-6-2 (industrial), and EN 61000-6-5 (power station equipment zone), IEC/EN 61850-3 (energy supply)
Standards/regulations	EN 61000-4-2
Contact discharge	4 kV (Test Level 2)
Standards/regulations	EN 61000-4-3

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Standards and Regulations

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 61000-4-5
Signal	0.5 kV (Test Level 1 - asymmetrical)
Standards/regulations	EN 61000-4-6
Frequency range	0.15 MHz ... 80 MHz
Voltage	10 V (Test Level 3)
Standards/regulations	EN 61000-4-8
	EN 61000-4-11
	EN 61000-4-9
	EN 61000-4-12
	EN 61000-4-16
	EN 61000-4-18
Standard - Safety of transformers	EN 61558-2-16 (air clearances and creepage distances only)
Standard - Electrical safety	IEC 60950-1/VDE 0805 (SELV)
Standard - power supply devices for low voltage with DC output	EN 61204-3
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
Shipbuilding approval	DNV GL, PRS, BV, LR, ABS
UL approvals	UL Listed UL 508
	UL/C-UL Recognized UL 60950
	UL ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C, D (Hazardous Location)
Vibration (operation)	5 Hz - 100 Hz resonance search 2.3g, 90 min., resonance frequency 2.3g, 90 min. (according to DNV GL Class C)
Low Voltage Directive	Conformance with Low Voltage Directive 2014/35/EC
Approval - requirement of the semiconductor industry with regard to mains voltage dips	SEMI F47-0706 Compliance Certificate; EN 61000-4-11
Rail applications	EN 50121-3-2
Overvoltage category (EN 60950-1)	II
Overvoltage category (EN 61010-1)	II

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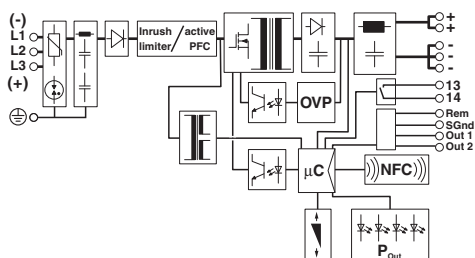
Technical data

Standards and Regulations

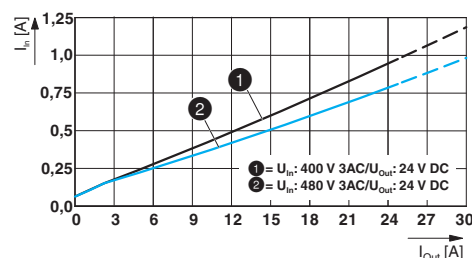
Overvoltage category (EN 62477-1)	III
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Drawings

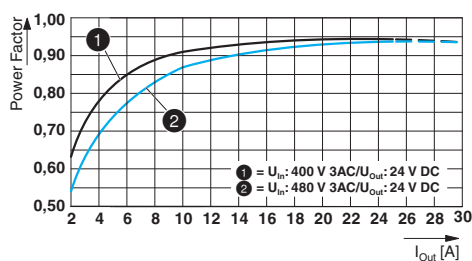
Block diagram



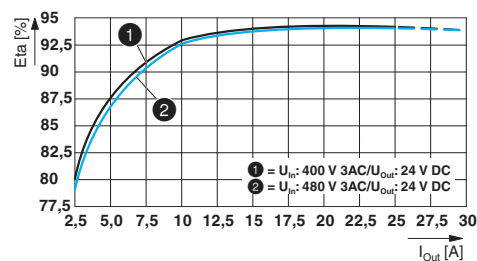
Diagram



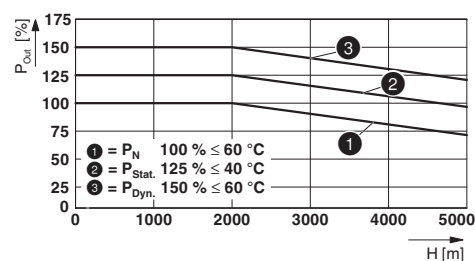
Diagram



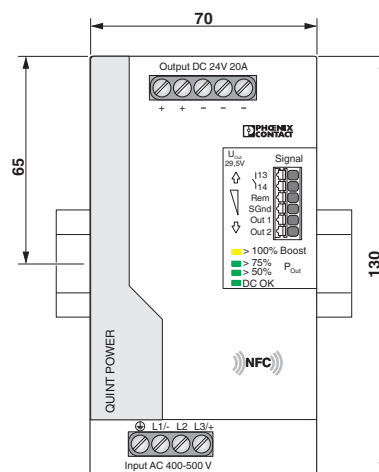
Diagram



Diagram

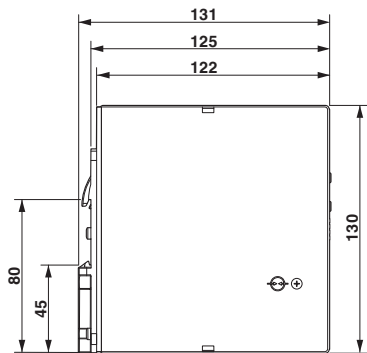


Dimensional drawing

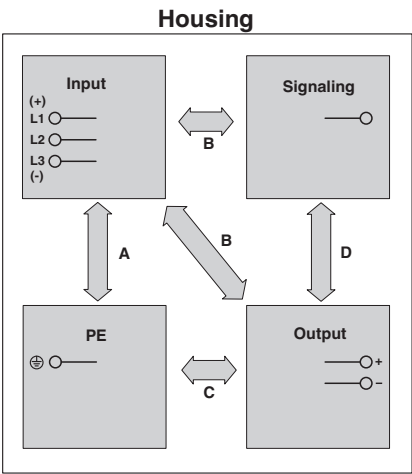


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Dimensional drawing



Schematic diagram



Approvals

Approvals

Approvals

EAC / UL Recognized / UL Listed / cUL Recognized / cUL Listed / CSA / CSAus / Bauartgeprüft / cULus Listed

Ex Approvals

UL Listed / cUL Listed / cULus Listed

Approval details

EAC		RU C- DE.A*30.B.01082
UL Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm FILE E 211944
UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm FILE E 123528

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cUL Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 211944
cUL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 123528
CSA		http://www.csagroup.org/services/testing-and-certification/certified-product-listing/	70098201
CSAus		http://www.csagroup.org/services/testing-and-certification/certified-product-listing/	70098201
Bauartgeprüft			SI-SIQ BG 005/031 A1
cULus Listed		http://www.csagroup.org/services/testing-and-certification/certified-product-listing/	