

# Power supply unit - QUINT-PS-3X400-500AC/24DC/20 - 2938727

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DIN rail power supply unit 24 V DC/20 A, primary switched-mode, 3-phase.

## Product Description

QUINT POWER is the powerful 60 - 960 W DC power supply unit for universal use. With its wide-range input, single and three-phase versions, and international approval package, this solution is unrivalled. QUINT POWER provides reliable power supply: generously dimensioned capacitors ensure mains buffering of over 20 ms at full load. Full output power is provided by all three-phase devices, even in the event of a permanent phase failure. The Power Boost power reserve easily starts loads with high inrush currents and ensures that fuses are reliably tripped. Preventive function monitoring diagnoses impermissible operating states and minimizes downtimes in your system. Remote monitoring is provided by an active transistor switching output and a floating relay contact. All devices are idling-proof and short-circuit-proof, and are available with a regulated and adjustable output voltage of 12, 24, and 48 V DC with output currents of 2.5, 5, 10, 20, 30, and 40 A. Power supply units for use in Ex zone 2, uninterruptible solutions, AS-i power supply units, and a QUINT diode complete this comprehensive product range.



## Key commercial data

package_quantity	1
GTIN	4017918899547

## Technical data

### Dimensions

Width	160 mm
Height	130 mm
Depth	125 mm
Width with alternative assembly	122 mm
Height with alternative assembly	130 mm
Depth with alternative assembly	163 mm

### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 70 °C (> 60 °C derating)
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

### Input data

Input voltage range	3x 320 V AC ... 575 V AC (for all three phases)
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## Technical data

### Input data

Input voltage range	450 V DC ... 800 V DC
AC frequency range	45 Hz ... 65 Hz
Frequency range DC	0 Hz
Current consumption	approx. 3x 1.1 A (400 V AC)
Current consumption	3x 1 A (480 V AC)
Nominal power consumption	480 W
Inrush surge current	< 15 A (typical)
Power failure bypass	> 23 ms (400 V AC)
Power failure bypass	> 25 ms (480 V AC)
Choice of suitable fuses	3x 6 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 $\pm$ 1%
Setting range of the output voltage	22.5 V ... 28.5 V
Output current	20 A (up to 60°C)
Output current	27 A (with POWER BOOST)
Derating	60 °C (2.5%/K)
Connection in parallel	Yes, for redundancy and increased capacity
Connection in series	Yes
Current limitation	Approx. $I_{BOOST} = 27$ A (for short-circuit)
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	< 10 mV <sub>PP</sub> (with nominal values)
Peak switching voltages nominal load	< 60 mV <sub>PP</sub> (20 MHz)
Maximum power dissipation NO-Load	< 7 W
Power loss nominal load max.	< 47 W

### General

Net weight	1.93 kg
Operating voltage display	Green LED
Efficiency	> 91 % (at 400 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 (with PE connection)
MTBF (IEC 61709, SN 29500)	> 500000 h
Mounting position	horizontal DIN rail NS 35, EN 60715
Assembly instructions	Can be aligned: Horizontally 0 mm, vertically 50 mm
Electromagnetic compatibility	Conformance with EMC directive 89/336/EC
Noise emission	EN 50081-2

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## Technical data

### General

Standard – Electrical equipment of machines	EN 60204
Standard - Safety of transformers	EN 61558-2-17
Standard - Electrical safety	EN 60950-1/VDE 0805 (SELV)
Standard - Electrical safety	EN 61558-2-17
Shipbuilding approval	Germanischer Lloyd (EMC 2), ABS
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	EN 60950-1 (SELV)
Standard – Safety extra-low voltage	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	GS (tested safety)
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/C-UL Listed UL 1604 Class I, Division 2, Groups A, B, C, D
Surge voltage category	III

### Connection data, input

Connection method	Screw connection
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	6 mm <sup>2</sup>
Conductor cross section stranded min.	0.2 mm <sup>2</sup>
Conductor cross section stranded max.	4 mm <sup>2</sup>
Conductor cross section AWG/kcmil min.	24
Conductor cross section AWG/kcmil max	10
Stripping length	8 mm
Screw thread	M3

### Connection data, output

Connection method	Screw connection
Conductor cross section solid min.	0.5 mm <sup>2</sup>
Conductor cross section solid max.	16 mm <sup>2</sup>
Conductor cross section stranded min.	0.5 mm <sup>2</sup>
Conductor cross section stranded max.	10 mm <sup>2</sup>
Conductor cross section AWG/kcmil min.	20
Conductor cross section AWG/kcmil max	6
Stripping length	10 mm

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## Technical data

### Signaling

<b>Output name</b>	DC OK active
<b>Output description</b>	$U_{OUT} > 0.9 \times U_N$ : High signal
<b>Maximum switching voltage</b>	$\leq 24$ V
<b>Output voltage</b>	+ 24 V DC (Signal)
<b>Maximum inrush current</b>	$\leq 40$ mA
<b>Continuous load current</b>	$\leq 40$ mA
<b>Status display</b>	"DC OK" LED green
<b>Note on status display</b>	$U_{OUT} < 0.9 \times U_N$ : LED flashing
<b>Conductor cross section solid min.</b>	0.5 mm <sup>2</sup>
<b>Conductor cross section solid max.</b>	16 mm <sup>2</sup>
<b>Conductor cross section stranded min.</b>	0.5 mm <sup>2</sup>
<b>Conductor cross section stranded max.</b>	10 mm <sup>2</sup>
<b>Conductor cross section AWG/kcmil min.</b>	20
<b>Conductor cross section AWG/kcmil max</b>	6
<b>Tightening torque, min</b>	1.2 Nm
<b>Tightening torque max</b>	1.5 Nm
<b>Screw thread</b>	M4
<b>Output name</b>	DC OK floating
<b>Output description</b>	Relay contact, $U_{OUT} > 0.9 \times U_N$ : Contact closed
<b>Maximum switching voltage</b>	$\leq 30$ V AC/DC
<b>Maximum inrush current</b>	$\leq 1$ A
<b>Continuous load current</b>	$\leq 1$ A
<b>Status display</b>	"DC OK" LED green

## classifications

### eCl@ss

<b>eCl@ss 4.0</b>	27040702
<b>eCl@ss 4.1</b>	27040702
<b>eCl@ss 5.0</b>	27049002
<b>eCl@ss 5.1</b>	27049002
<b>eCl@ss 6.0</b>	27049002
<b>eCl@ss 7.0</b>	27049002
<b>eCl@ss 8.0</b>	27049002

### ETIM

<b>ETIM 2.0</b>	EC001039
<b>ETIM 3.0</b>	EC001039
<b>ETIM 4.0</b>	EC000599
<b>ETIM 5.0</b>	EC002540

### UNSPSC

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## classifications

### 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 / UL Recognized / UL Listed / cUL Recognized / GOST / cUL Listed / GL / DNV / IECCE CB Scheme / SEMI F47 / cULus Recognized / cULus Listed /

### Approval details

UL Listed

cUL Listed

cULus Listed

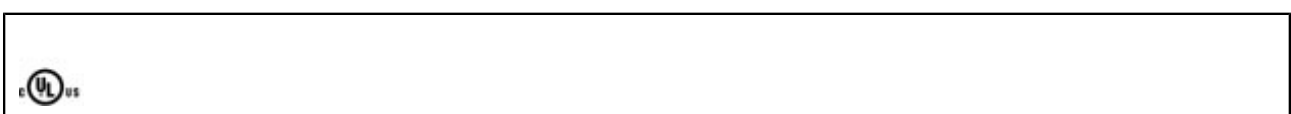
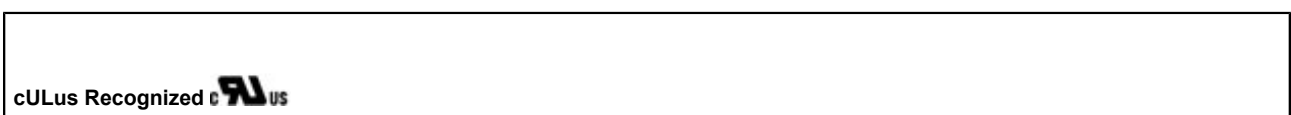
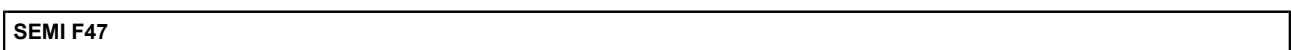
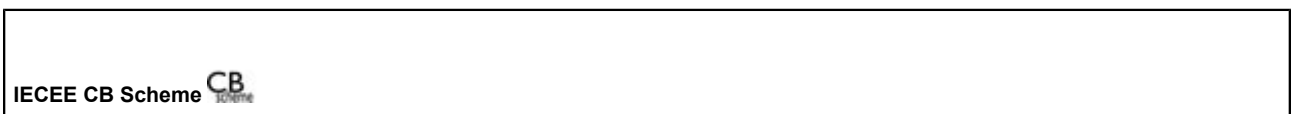
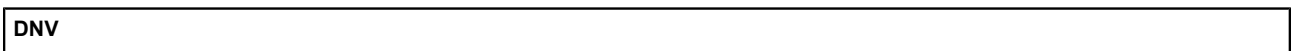
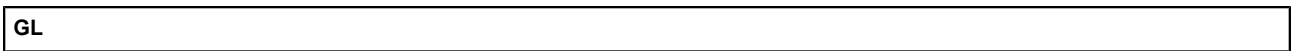
UL Recognized

cUL Recognized

GOST

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## approvals



## accessories

### Assembly adapter

UWA 182/52 - 2938235



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### Mounting rail adapter

UTA 107 - 2853983

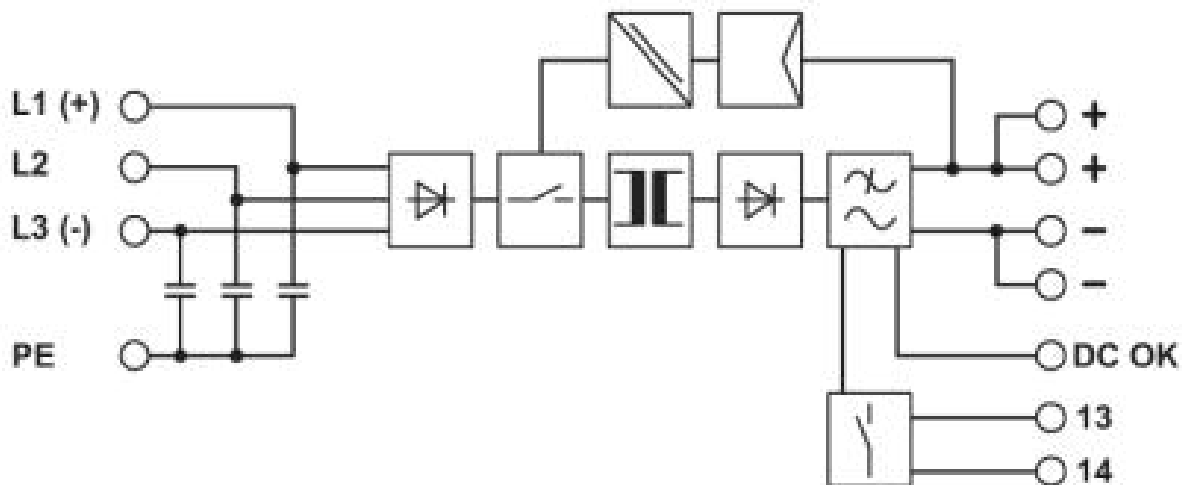


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## Drawings

Connection diagram

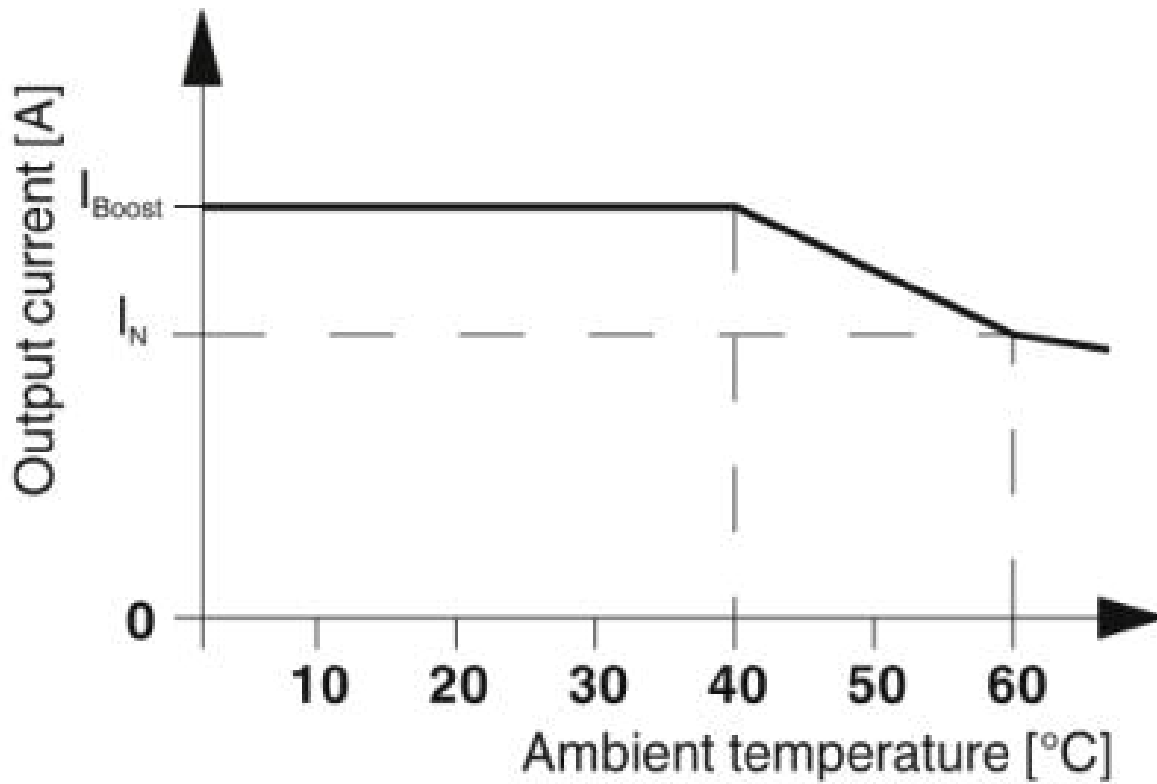
Block diagram



Diagram

# Power supply unit - QUINT-PS-3X400-500AC/24DC/20 - 2938727

Diagram



Dimensioned drawing

Dimensioned drawing

Product drawing

Product drawing

Product drawing



## Power supply unit - QUINT-PS-3X400-500AC/24DC/20 - 2938727

Circuit diagram

Circuit diagram

Circuit diagram

Circuit diagram

Circuit diagram

Schematic diagram

Schematic diagram

Schematic diagram

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