

# QUINT-UPS/ 24DC/12DC/5/24DC/10 - Uninterruptible power supply



2320461

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Uninterruptible power supply with IQ technology for DIN rail mounting, input: 24 V DC, output: 24 V DC/10 A and 12 V DC/5 A, including mounted universal DIN rail adapter UTA 107/30

## Product description

The UPS module for 24 V DC with output currents ranging from 5 to 40 A allows you to create a custom solution combining a power supply, UPS module, and energy storage.

## Your advantages

- Easy handling thanks to automatic battery detection, tool-free battery replacement during operation, and communication via the IFS interface
- Optimum use of the buffer time and preventive monitoring of the energy storage
- Rapid battery charging
- Comprehensive signaling and parameterization
- Fast tripping of standard circuit breakers with SFB (selective fuse breaking) technology
- Optimum protection with dip coating for 100 % humidity
- One UPS module - two voltages
- Maximum flexibility, thanks to the dual output

## Commercial data

Item number	2320461
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CM20
Product key	CMUQ43
GTIN	4046356731515
Weight per piece (including packing)	793 g
Weight per piece (excluding packing)	600 g
Customs tariff number	85371091
Country of origin	IN

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## Technical data

### Input data

#### DC operation

Input voltage	24 V DC
Nominal input voltage range	18 V DC ... 30 V DC
Input voltage range	18 V DC ... 30 V DC
Input voltage range DC	18 V DC ... 30 V DC
Voltage type of supply voltage	DC
Buffer period	3 h (With battery module 38 AH)
Current consumption	16 A (maximum, mains operation) 104 mA (No load, mains operation) 4 A (Charging, mains operation)
Fixed backup threshold	≤ 22 V DC
Variable connect threshold	1 V/0.1 s
Recommended breaker for input protection	16 A ... 20 A (Characteristic B)

### Output data

Efficiency	> 98 % (Mains operation, with charged energy storage) > 93 % (Mains operation, with charged energy storage)
Nominal output voltage	24 V DC
Output voltage range	18 V DC ... 30 V DC ( $U_{OUT} = U_{IN} - 0.5 \text{ V DC}$ )
Nominal output current ( $I_N$ )	10 A (-25 °C ... 60 °C) 5 A (-25 °C ... 60 °C)
Output current limit	In mains mode according to connected upstream current limiting device > 15 A (Battery operation)
Derating	60 °C ... 70 °C (2.5 %/K) 60 °C ... 70 °C (2.5 %/K)
UPS connection in parallel	yes
UPS connection in series	no
Output power	240 W
Total power $P_{12V} + P_{24V}$	max. 360 W
Power dissipation	2.6 W (Mains operation) 4.6 W (Mains operation) 2.9 W (Battery operation) 5.27 W (Battery operation)
Connection in parallel	yes, up to 2 modules with redundancy module 2 (Devices)
Connection in series	no no

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## Mains operation

Nominal output voltage	12 V DC
	24 V DC
Output voltage range	18 V DC ... 30 V DC ( $U_{OUT} = U_{IN} - 0.5 \text{ V DC}$ )
Nominal output current ( $I_N$ )	5 A (-25 °C ... 60 °C)
	10 A (-25 °C ... 60 °C)
POWER BOOST ( $I_{Boost}$ )	7.5 A (-25 °C ... 40 °C)
	15 A (-25 °C ... 40 °C)
Selective Fuse Breaking ( $I_{SFB}$ )	60 A (-25 °C ... 60 °C)
Duration	12 ms (SFB technology)

## Battery operation

Nominal output voltage	12 V DC
	24 V DC
Output voltage range	19.2 V DC ... 27.6 V DC ( $U_{OUT} = U_{BAT} - 0.5 \text{ V DC}$ )
Nominal output current ( $I_N$ )	5 A (-25 °C ... 60 °C)
	10 A (-25 °C ... 60 °C)
POWER BOOST ( $I_{Boost}$ )	7.5 A (-25 °C ... 40 °C)
	15 A (-25 °C ... 40 °C)
Selective Fuse Breaking ( $I_{SFB}$ )	65 A (-25 °C ... 60 °C)
Duration	15 ms (SFB technology)

## Signal: Alarm

Output description	Relay (floating)
Maximum switching voltage	$\leq 30 \text{ V AC/DC}$
Continuous load current	$\leq 100 \text{ mA}$

## Signal: Battery charge

Output description	Relay (floating)
Maximum switching voltage	$\leq 30 \text{ V AC/DC}$
Output voltage	24 V
Continuous load current	$\leq 100 \text{ mA}$

## Signal: Battery mode

Output description	Relay (floating)
Maximum switching voltage	$\leq 30 \text{ V AC/DC}$
Output voltage	24 V
Continuous load current	$\leq 100 \text{ mA}$

## Signal: POWER BOOST

Output voltage	24 V DC
Continuous load current	100 mA

## Energy storage

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Nominal voltage $U_N$	24 V DC
End-of-charge voltage	24 V DC ... 29 V DC (temperature compensated)
Charging current	0.2 A ... 2.88 A
Nominal capacity range	1.3 Ah ... 60 Ah
Battery presence check/time interval	1 min
Battery presence check (cyclic)	60 s
Energy storage device connection in parallel	yes, 15 (observe line protection)
Energy storage device connection in series	no
IQ technology	Yes
Temperature compensation	42 mV/K (preset)
Temperature compensation (preset)	42 mV/K
Network management	Yes

## Connection data

### Input

Connection method	Screw connection
Conductor cross-section, rigid min.	0.2 mm <sup>2</sup>
Conductor cross-section, rigid max.	2.5 mm <sup>2</sup>
Conductor cross-section flexible min.	0.2 mm <sup>2</sup>
Conductor cross-section flexible max.	2.5 mm <sup>2</sup>
Conductor cross-section AWG min.	16
Conductor cross-section AWG max.	12
Stripping length	7 mm
Screw thread	M4
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 <sup>2</sup>
Conductor cross-section, rigid max.	2.5 mm <sup>2</sup>
Conductor cross-section flexible min.	0.2 mm <sup>2</sup>
Conductor cross-section flexible max.	2.5 mm <sup>2</sup>
Conductor cross-section AWG min.	16
Conductor cross-section AWG max.	12
Stripping length	7 mm
Screw thread	M4
Tightening torque, min	0.5 Nm
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### Signal

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Conductor cross-section, rigid max.	2.5 mm <sup>2</sup>
Conductor cross-section flexible min.	0.2 mm <sup>2</sup>
Conductor cross-section flexible max.	2.5 mm <sup>2</sup>
Conductor cross-section AWG min.	24
Conductor cross-section AWG max.	12
Stripping length	7 mm
Screw thread	M4
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

## Interfaces

Interface	IFS (Interface system data port)
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## Signaling

Types of signaling	LED
	Relay contact
	Interface/software

### Signal output

Signalization designation	Power In OK
Status display	LED
Note on status display	static on
	static on

### Signal output: Switching output

Signalization designation	Alarm
Status display	LED
Note on status display	static on
Color	red
Note on status display	static on

### Signal output: Switching output

Signalization designation	Battery charge
Status display	LED bar graph
Note on status display	dynamic
Color	red/green
Note on status display	dynamic

### Signal output: Switching output

Signalization designation	Battery mode
Status display	LED
Note on status display	static on
Color	yellow
Note on status display	static on

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Signal output: Transistor output, active

Signalization designation	POWER BOOST
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## Electrical properties

Insulation voltage input/output	500 V DC
Insulation voltage input, output / housing	750 V DC

## Product properties

Product type	DC UPS
Product family	QUINT DC UPS
IQ technology	Yes
MTBF (IEC 61709, SN 29500)	> 652000 h (40 °C)

Insulation characteristics

Protection class	III
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Life expectancy (electrolytic capacitors)

Time	33941 h
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## Dimensions

Width	35 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	123 mm
Height	130 mm
Depth	39 mm

## Mounting

Mounting type	DIN rail mounting
Assembly note	alignable: horizontal 5 mm, vertical 50 mm
Mounting position	horizontal DIN rail NS 35, EN 60715

## Material specifications

Housing material	Metal
Housing material	Steel sheet, zinc-plated
Type of housing	Aluminum (AlMg3)
Hood version	Galvanized sheet steel, free from chrome (VI)

## Environmental and real-life conditions

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## Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Climatic class	3K3 (in acc. with EN 60721)
Max. permissible relative humidity (operation)	≤ 95 % (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 t <sub>v</sub> = 90 min.

## Standards and regulations

Rail applications	EN 50121-4
Standard – Electronic equipment for use in electrical power installations and their assembly into electrical power installations	EN 50178/VDE 0160 (PELV)
Standard - Electrical safety	EN 60950-1/VDE 0805 (SELV)

## Approvals

UL approvals	UL Listed UL 508 UL/C-UL Recognized UL 60950-1
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## 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 EN 61000-6-2

## Electrostatic discharge

Standards/regulations	EN 61000-4-2
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## 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
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## Electromagnetic HF field

Frequency range	80 MHz ... 1 GHz
Test field strength	20 V/m
Frequency range	1 GHz ... 2 GHz
Test field strength	10 V/m

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Frequency range	2 GHz ... 3 GHz
Test field strength	3 V/m
Comments	Criterion A

## Fast transients (burst)

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

Input	2 kV (Test Level 3 - 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
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## Surge voltage load (surge)

Input	1 kV (Test Level 2 - symmetrical)
	2 kV (Test Level 3 - 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

Input/output/signal	asymmetrical
Frequency range	0.15 MHz ... 80 MHz
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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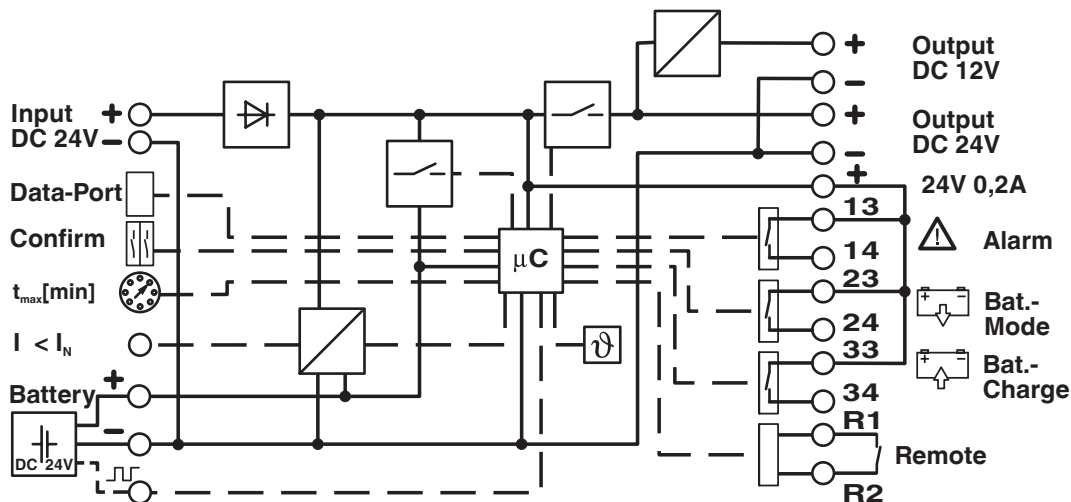


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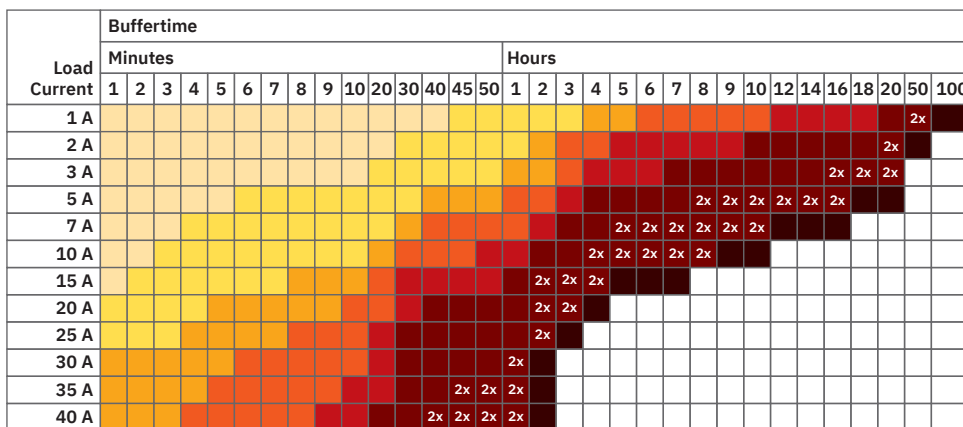
## Drawings

Block diagram



Block diagram

Graphic



2x: In this case, two battery modules of the same capacity are required. The data is based on an ambient temperature of +25 °C at the start of use.

- 1274520 UPS-BAT/PB/24DC/1.2AH
- 1274119 UPS-BAT/PB/24DC/12AH
- 1474660 UPS-BAT/PB/24DC/110AH
- 1274117 UPS-BAT/PB/24DC/4AH
- 1348516 UPS-BAT/PB/24DC/20AH
- 1354641 UPS-BAT/PB/24DC/40AH
- 1274118 UPS-BAT/PB/24DC/7AH

QUINT DC UPS buffer times for PB battery module



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2320461>



**cUL Recognized**  
Approval ID: E211944



**UL Recognized**  
Approval ID: E211944



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



**EAC**  
Approval ID: RU-DE.B.00184/20



**UL Listed**  
Approval ID: E123528



**cUL Listed**  
Approval ID: E123528



**IECEE CB Scheme**  
Approval ID: DE/PTZ/0049

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## Classifications

### ECLASS

ECLASS-13.0	27040705
ECLASS-15.0	27040705

### ETIM

ETIM 10.0	EC000382
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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	ed70e474-fcc1-4ca7-940f-d5acd7fa39c5

### EF3.1 Climate Change

CO2e kg	20.872 kg CO2e
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