

# QUINT4-UPS/24DC/24DC/5/USB - Uninterruptible power supply



2906991

<https://www.phoenixcontact.com/in/products/2906991>

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QUINT USV, IQ Technology, USB (Modbus/RTU), DIN rail mounting, Screw connection, input: 24 V DC, output: 24 V DC / 5 A, charging current: 1.5 A

## Product Description

The intelligent QUINT UPS for integration into established industrial networks: your systems continue to be supplied with uninterrupted power, even in the event of a mains failure. The battery management system with IQ Technology and a powerful battery charger ensures superior system availability.

## Your advantages

- Easy integration into networks using PROFINET, EtherNet/IP, EtherCAT<sup>®</sup> and USB interfaces
- Evaluation of state of health (SOH) and state of charge (SOC), thanks to the intelligent battery management system (BMS)
- Automatic recognition of the battery capacities and technologies (VRLA-WTR, LI-ION)
- Monitoring of output current and voltage, as well as manual connection and disconnection of the system
- SFB Technology selectively trips standard miniature circuit breakers. Loads connected in parallel continue working.

## Commercial Data

Item number	2906991
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	CMU
Product Key	CMUI43
Catalog Page	Page 322 (C-4-2019)
GTIN	4055626171234
Weight per Piece (including packing)	527.5 g
Weight per Piece (excluding packing)	465 g
Customs tariff number	85371091
Country of origin	CN

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## Technical Data

### Input data

Input voltage	24 V DC
Input voltage range	18 V DC ... 30 V DC
	18 V DC ... 32 V DC
Electric strength, max.	35 V DC (Protected against polarity reversal)
Internal input fuse	no
Voltage type of supply voltage	DC
Inrush current	$\leq 7 \text{ A}$ ( $\leq 4 \text{ ms}$ )
Reverse polarity protection	yes
Fixed backup threshold	22 V DC
Dynamic activation threshold	$> 1 \text{ V} / 100 \text{ ms}$
Switch-on time	max. 3 s
Switch-on time during battery operation (Bat.-Start)	8 s
Voltage drop, input/output	0.3 V DC
Current consumption $I_N$ ( $U_N, I_{OUT} = I_N, I_{charge} = 0$ )	5.1 A
Current consumption $I_{max}$ ( $U_N, I_{OUT} = I_{Stat.Boost}, I_{charge} = max$ )	8.3 A
Current consumption $I_{No-Load}$ ( $U_N, I_{OUT} = 0, I_{charge} = 0$ )	45 mA
Current consumption $I_{charge}$ ( $U_N, I_{OUT} = 0, I_{charge} = max$ )	1.8 A
Power consumption $P_N$ ( $U_N, I_{OUT} = I_N, I_{charge} = 0$ )	121 W
Power consumption $P_{max}$ ( $U_N, I_{OUT} = I_{Stat.Boost}, I_{charge} = max$ )	211 W
Power consumption $P_{No-Load}$ ( $U_N, I_{OUT} = 0, I_{charge} = 0$ )	1.1 W
Power consumption $P_{charge}$ ( $U_N, I_{OUT} = 0, I_{charge} = max$ )	43 W

### Output data

Efficiency	typ. 98 %
Number of outputs	1
Short-circuit-proof	yes
No-load proof	yes
Switch-over time	0 ms
UPS connection in parallel	no
UPS connection in series	no
Energy storage device connection in parallel	Yes, 5 (observe line protection)
Energy storage device connection in series	no

### Mains operation

Output voltage	24 V DC ( $U_{OUT} = U_{IN} - 0.3 \text{ V DC}$ )
Output voltage range	18 V DC ... 30 V DC ( $U_{Out} = U_{In} - 0.3 \text{ V DC}$ )
	18 V DC ... 32 V DC
Output current $I_N$	5 A
Static Boost ( $I_{Stat.Boost}$ )	6.25 A

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Dynamic Boost ( $I_{\text{Dyn.Boost}}$ )	10 A (5 s)
Selective Fuse Breaking ( $I_{\text{SFB}}$ )	30 A (15 ms)
Output power $P_{\text{OUT}}$ ( $U_{\text{N}}$ , $I_{\text{OUT}} = I_{\text{N}}$ )	120 W
Output power $P_{\text{OUT}}$ ( $U_{\text{N}}$ , $I_{\text{OUT}} = I_{\text{stat.Boost}}$ )	155 W
Output power $P_{\text{OUT}}$ ( $U_{\text{N}}$ , $I_{\text{OUT}} = I_{\text{dyn.Boost}}$ )	240 W (5 s)
Power dissipation No load ( $U_{\text{N}}$ , $I_{\text{Out}} = 0$ , $I_{\text{Charge}} = 0$ )	1 W
Power dissipation Nominal load ( $U_{\text{N}}$ , $I_{\text{Out}} = I_{\text{N}}$ , $I_{\text{Charge}} = 0$ )	3 W

## Battery operation

Output voltage	24 V DC ( $U_{\text{OUT}} = U_{\text{BAT}} - 0.3 \text{ V DC}$ )
Output voltage range	19 V DC ... 32 V DC ( $U_{\text{OUT}} = U_{\text{BAT}} - 0.3 \text{ V DC}$ )
Output current $I_{\text{N}}$	5 A
Static Boost ( $I_{\text{Stat.Boost}}$ )	6.25 A
Dynamic Boost ( $I_{\text{Dyn.Boost}}$ )	10 A (5 s)
Selective Fuse Breaking ( $I_{\text{SFB}}$ )	30 A (15 ms)
Output power $P_{\text{OUT}}$ ( $U_{\text{N}}$ , $I_{\text{OUT}} = I_{\text{N}}$ )	120 W
Output power $P_{\text{OUT}}$ ( $U_{\text{N}}$ , $I_{\text{OUT}} = I_{\text{stat.Boost}}$ )	150 W
Output power $P_{\text{OUT}}$ ( $U_{\text{N}}$ , $I_{\text{OUT}} = I_{\text{dyn.Boost}}$ )	240 W (5 s)
Power dissipation No load ( $U_{\text{N}}$ , $I_{\text{Out}} = 0$ , $I_{\text{Charge}} = 0$ )	2 W
Power dissipation Nominal load ( $U_{\text{N}}$ , $I_{\text{Out}} = I_{\text{N}}$ , $I_{\text{Charge}} = 0$ )	3 W

## Energy storage

End-of-charge voltage	32 V DC
End-of-charge voltage (temperature-compensated)	25 V DC ... 32 V DC
Charging current (configurable)	max. 1.5 A
Nominal capacity (without additional charger)	0.8 Ah ... 30 Ah
Max. capacity	40 Ah
Charging time	2.5 h (3.4 Ah)
Buffer time	25 min. (3.4 Ah)
Deep discharge protection (configurable)	19.2 V DC
Battery technology	VRLA, VRLA-WTR, LI-ION
Charge characteristic curve	IU <sub>0</sub> U
IQ-Technology	yes
Temperature sensor	yes
Temperature compensation (configurable)	42 mV/K

## Interfaces

### Communication

Slave address	192
Start bit	1
Data bits	8
Parity	even
Stop bit	1

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Interface	USB (Modbus/RTU)
Number of interfaces	1
Connection method	MINI-USB Type B
Connection marking	X1
Locking	Screw
Transmission physics	USB 2.0
Topology	Point-to-point
Transmission speed	9600 baud ... 115200 baud (Default: 115200 baud)
Transmission length	max. 5 m
Access time	≤ 2 s
Supported protocols	Modbus/RTU
Chipset	Silicon Labs CP210x
Electrical isolation	Yes, UL approved

## Signaling

Types of signaling	DC OK (green)
	Alarm (red)
	Bat.-Mode (yellow)
	SOC (red, green)
	Data (red, green)

## Product properties

Product type	DC UPS
Product family	QUINT USV
MTBF (IEC 61709, SN 29500)	> 1430000 h (25 °C)
	> 916900 h (40 °C)
	> 480100 h (60 °C)
Environmental protection directive	RoHS Directive 2011/65/EU
	WEEE
	Reach

## Insulation characteristics

Protection class	III (without PE)
Degree of pollution	2

## Life expectancy (electrolytic capacitors)

Time	224011 h
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## Dimensions

Width	35 mm
Height	130 mm
Depth	125 mm

## Installation dimensions

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Installation distance right/left (active)	5 mm / 5 mm ( $P_{Out} \geq 50\%$ )
Installation distance right/left (passive)	0 mm / 0 mm ( $P_{Out} \geq 50\%$ )
Installation distance right/left (active, passive)	0 mm / 0 mm ( $P_{Out} \leq 50\%$ )
Installation distance top/bottom (active)	50 mm / 50 mm ( $P_{Out} \geq 50\%$ )
Installation distance top/bottom (passive)	40 mm / 20 mm ( $P_{Out} \geq 50\%$ )
Installation distance top/bottom (active, passive)	40 mm / 20 mm ( $P_{Out} \leq 50\%$ )

## Alternative assembly

Width	123 mm
Height	130 mm
Depth	37 mm

## Mounting

Mounting type	DIN rail mounting
Mounting position	On horizontal DIN rail NS 35/7.5 and NS 35/15 acc. to EN 60715

## Material specifications

Flammability rating according to UL 94 (housing / terminal blocks)	V0
Housing material	Metal
Hood version	Stainless steel X6Cr17
Side element version	Aluminum AlMg3

## 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
Ambient temperature (start-up type tested)	-40 °C
Maximum altitude	≤ 4000 m
Climatic class	3K3 (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)	2.3g

## Standards and regulations

### Overvoltage category

EN 61010-1	II (≤ 4000 m)
EN 61010-2-201	II (≤ 4000 m)

### Protective extra-low voltage

Standards/specifications	IEC 61010-1 (SELV)
	IEC 61010-2-201 (PELV)

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## Approvals

UL

Identification	UL/C-UL Listed UL 61010-1
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UL

Identification	UL/C-UL Listed UL 61010-2-201
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UL

Identification	UL/C-UL Listed ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C, D T4 (Hazardous Location)
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CSA

Identification	CAN/CSA-C22.2 No. 61010-1-12
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CSA

Identification	CAN/CSA-IEC 61010-2-201
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CSA

Identification	CAN/CSA-C22.2 No. 213 Class I, Division 2, Groups A, B, C, D T4 (Hazardous Location)
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CB scheme

Identification	IEC 61010-1
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CB scheme

Identification	IEC 61010-2-201
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DNV

Identification	Class Guideline DNVGL-CG-0339
Note	Location classes: Temperature D (see Application/Limitation), Humidity B, Vibration A/C, EMC B

## EMC data

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
Noise immunity	Immunity in accordance with EN 61000-6-1 (residential), EN 61000-6-2 (industrial), and EN 61000-6-5 (power station equipment zone), IEC/EN 61850-3 (power supply)
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise emission	Additional basic standard EN 61000-6-5 (immunity in power station), IEC/EN 61850-3 (energy supply)

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 B

## 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 ... 6 GHz
Test field strength	10 V/m (Test Level 3)
Frequency range	1 GHz ... 6 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	4 kV (Test Level 4 - asymmetrical)
Signal	4 kV (Test Level 4 - asymmetrical)
Comments	Criterion B

## Surge voltage load (surge)

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

## 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)

## Power frequency magnetic field

Standards/regulations	EN 61000-4-8
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Frequency	16.67 Hz
	50 Hz
	60 Hz
Test field strength	100 A/m
Additional text	60 s
Comments	Criterion A
Frequency	50 Hz
	60 Hz
Frequency range	50 Hz ... 60 Hz
Test field strength	1 kA/m
Additional text	3 s
Frequency	0 Hz
Test field strength	300 A/m
Additional text	DC, 60 s

## Criteria

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



# QUINT4-UPS/24DC/24DC/5/USB - Uninterruptible power supply

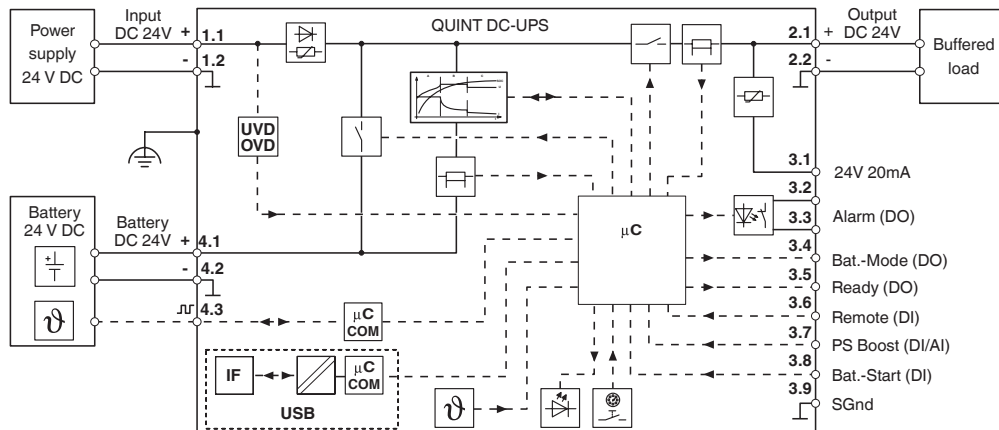


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## Drawings

Block diagram



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## Approvals



**EAC**

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



**UL Listed**

Approval ID: FILE E 123528



**cUL Listed**

Approval ID: FILE E 123528



**EAC**

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



**KC**

Approval ID: R-R-PCK-2906991



**cUL Listed**

Approval ID: FILE E 199827



**UL Listed**

Approval ID: FILE E 199827

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## Classifications

### ECLASS

ECLASS-11.0	27040705
ECLASS-12.0	27040705
ECLASS-13.0	27040705

### ETIM

ETIM 8.0	EC000382
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### UNSPSC

UNSPSC 21.0	39121000
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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

### UPS-BAT/PB/24DC/1.2AH - Energy storage

1274520

<https://www.phoenixcontact.com/in/products/1274520>



Energy storage, VRLA-AGM, 24 V DC, 1.2 Ah, automatic detection and communication with QUINT UPS-IQ

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### UPS-BAT/PB/24DC/4AH - Energy storage

1274117

<https://www.phoenixcontact.com/in/products/1274117>



Energy storage, VRLA-AGM, 24 V DC, 4 Ah, automatic detection and communication with QUINT UPS-IQ

# QUINT4-UPS/24DC/24DC/5/USB - Uninterruptible power supply



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## UPS-BAT/PB/24DC/7AH - Energy storage

1274118

<https://www.phoenixcontact.com/in/products/1274118>



Energy storage, VRLA-AGM, 24 V DC, 7 Ah, automatic detection and communication with QUINT UPS-IQ

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## UPS-BAT/PB/24DC/12AH - Energy storage

1274119

<https://www.phoenixcontact.com/in/products/1274119>



Energy storage, VRLA-AGM, 24 V DC, 12 Ah, automatic detection and communication with QUINT UPS-IQ

# QUINT4-UPS/24DC/24DC/5/USB - Uninterruptible power supply



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## UPS-BAT/PB/24DC/20AH - Energy storage

1348516

<https://www.phoenixcontact.com/in/products/1348516>



Energy storage, VRLA-AGM, 24 V DC, 20 Ah, automatic detection and communication with QUINT UPS-IQ

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## UPS-BAT/PB/24DC/40AH - Energy storage

1354641

<https://www.phoenixcontact.com/in/products/1354641>



Energy storage, VRLA-AGM, 24 V DC, 40 Ah, automatic detection and communication with QUINT UPS-IQ

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## UPS-BAT/LI/24DC/128WH - Energy storage

1396415

<https://www.phoenixcontact.com/in/products/1396415>



Energy storage, Lithium-Ion (LiFePO<sub>4</sub>), 24 V DC, 128 Wh. For use with a QUINT UPS for ambient temperatures (charging) of 0°C ... 60°C and a maximum charging current of 5 A. For charging below 0°C, please note the permissible UPS V/C level.

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## UPS-BAT/VRLA-WTR/24DC/13AH - Energy storage

2320416

<https://www.phoenixcontact.com/in/products/2320416>



Energy storage device, lead AGM, VRLA technology, 24 V DC, 13 Ah, tool-free battery replacement, automatic detection, and communication with QUINT UPS-IQ



# QUINT4-UPS/24DC/24DC/5/USB - Uninterruptible power supply



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## UPS-BAT/VRLA-WTR/24DC/26AH - Energy storage

2320429

<https://www.phoenixcontact.com/in/products/2320429>

Energy storage device, lead AGM, VRLA technology, 24 V DC, 26 Ah, tool-free battery replacement, automatic detection, and communication with QUINT UPS-IQ



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## POWER MANAGEMENT SUITE - Configuration software

1252232

<https://www.phoenixcontact.com/in/products/1252232>

Configuration and management software



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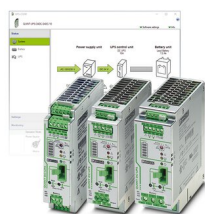
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## UPS-CONF - Configuration software

2320403

<https://www.phoenixcontact.com/in/products/2320403>



Configuration software for QUINT UPS IQ and TRIO UPS uninterruptible power supplies (available for free under Downloads).

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## MINI-SCREW-USB-DATACABLE - Data cable

2908217

<https://www.phoenixcontact.com/in/products/2908217>



Used for communication between an industrial PC and Phoenix Contact devices with USB-Mini-B connection.

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PHOENIX CONTACT (I) Pvt. Ltd.

A-58/2, Okhla Industrial Area, Phase - II, New Delhi-110 020

+91.1275.71420

[info@phoenixcontact.co.in](mailto:info@phoenixcontact.co.in)