

Uninterruptible power supply - QUINT4-UPS/24DC/24DC/40



2907077

<https://www.phoenixcontact.com/in/products/2907077>

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QUINT UPS with IQ Technology, for DIN rail mounting, input: 24 V DC, output: 24 V DC / 40 A, charging current: 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[®] 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.

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Commercial Data

Order Key	2907077
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	CMU
Product Key	CMUI43
Catalog Page	Page 325 (C-4-2019)
GTIN	4055626170053
Weight per Piece (including packing)	748 g
Weight per Piece (excluding packing)	739.3 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
Electric strength, max.	35 V DC (Protected against polarity reversal)
Internal input fuse	no
Typical national grid voltage	24 V DC
Voltage type of supply voltage	DC
Inrush current	$\leq 9 \text{ A}$ ($\leq 4 \text{ ms}$)
Reverse polarity protection	yes
Fixed backup threshold	22 V DC 30 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	0.5 V DC
Current consumption I_N ($U_N, I_{OUT} = I_N, I_{charge} = 0$)	40.1 A
Current consumption I_{max} ($U_N, I_{OUT} = I_{Stat.Boost}, I_{charge} = max$)	51.2 A
Current consumption $I_{No-Load}$ ($U_N, I_{OUT} = 0, I_{charge} = 0$)	50 mA
Current consumption I_{charge} ($U_N, I_{OUT} = 0, I_{charge} = max$)	6.1 A
Power consumption P_N ($U_N, I_{OUT} = I_N, I_{charge} = 0$)	965 W
Power consumption P_{max} ($U_N, I_{OUT} = I_{Stat.Boost}, I_{charge} = max$)	1120 W
Power consumption $P_{No-Load}$ ($U_N, I_{OUT} = 0, I_{charge} = 0$)	1.3 W
Power consumption P_{charge} ($U_N, I_{OUT} = 0, I_{charge} = max$)	147 W

Signal state Bat.-Start

Connection labeling	3.8 (+)
Channel	DI (digital input)
State	Bat.-Mode
State condition	Low level (30 ms)
Signal - state assignment	low - active
Reference potential	3.9 (SGnd, identical to 1.2, 2.2, 4.2)
LED status indicator	Yellow (Bat.-Mode)

Signal state PS Boost

Connection labeling	3.7 (+)
Channel (configurable)	DI (digital input) default, AI (analog input)
State (configurable)	Charging current reduced
State condition	Low level
Signal - state assignment	low - active
Unit signal	I (mA)
Reference potential	3.9 (SGnd, identical to 1.2, 2.2, 4.2)

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Signal state Remote

Connection labeling	3.6 (+)
Channel	DI (digital input)
State (configurable)	Disconnection
State condition	Low level
Signal - state assignment	low - active
Reference potential	3.9 (SGnd, identical to 1.2, 2.2, 4.2)
LED status indicator	Green, flashing (DC OK)

Output data

Efficiency	typ. 98 %
Number of outputs	1
Short-circuit-proof	yes
No-load proof	yes
Switch-over time	0 ms
Output current limit	In mains mode according to connected upstream current limiting device > 45 A (Battery operation)
Power dissipation	2.8 W (Mains operation) 13 W (Mains operation) 3.51 W (Battery operation) 16.4 W (Battery operation)
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 ($U_{OUT} = U_{IN} - 0.5 \text{ V DC}$)
Output voltage range	18 V DC ... 30 V DC 18 V DC ... 32 V DC
Output current I_N	40 A
Static Boost ($I_{Stat.Boost}$)	45 A
Dynamic Boost ($I_{Dyn.Boost}$)	60 A (5 s)
Selective Fuse Breaking (I_{SFB})	215 A (15 ms)
Output power P_{OUT} ($U_N, I_{OUT} = I_N$)	960 W
Output power P_{OUT} ($U_N, I_{OUT} = I_{stat.Boost}$)	1080 W

Battery operation

Output voltage	24 V DC ($U_{OUT} = U_{BAT} - 0.5 \text{ V DC}$)
Output voltage range	19 V DC ... 32 V DC
Output current I_N	40 A
Static Boost ($I_{Stat.Boost}$)	45 A
Dynamic Boost ($I_{Dyn.Boost}$)	60 A (5 s)
Selective Fuse Breaking (I_{SFB})	215 A (15 ms)

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Output power P_{OUT} (U_N , $I_{OUT} = I_N$)	960 W
Output power P_{OUT} (U_N , $I_{OUT} = I_{stat.Boost}$)	1080 W

Signal supply 24 V DC, 20 mA, SGnd

Connection labeling	3.1 (+), 3.9 (SGnd)
Reference potential	3.9 (SGnd, identical to 1.2, 2.2, 4.2)

Signal state Alarm

Connection labeling	3.2, 3.3
Channel	DO (digital output)
Switching voltage	max. 30 V AC/DC
Switch contact (floating)	OptoMOS
State (configurable)	Group alarm
State condition (configurable)	Alarm threshold
Current carrying capacity	max. 100 mA
State - signal assignment	NC (Normally Closed)
LED status indicator	red (Alarm)

Signal state Bat. mode

Connection labeling	3.4 (+)
Channel	DO (digital output)
Semiconductor output	MOSFET
State (configurable)	Bat.-Mode
State condition (configurable)	$U_{IN} < 18$ V DC, $U_{IN} > 30$ V DC, Bat.-Start
State - signal assignment	active - high
Reference potential	3.9 (SGnd, identical to 1.2, 2.2, 4.2)
LED status indicator	Yellow (Bat.-Mode)

Signal state Ready

Connection labeling	3.5 (+)
Channel	DO (digital output)
Semiconductor output	MOSFET
State (configurable)	Ready
State condition (configurable)	SOC = 100 %
State - signal assignment	active - high
Reference potential	3.9 (SGnd, identical to 1.2, 2.2, 4.2)
LED status indicator	Green (state of charge - SOC)

Energy storage

Nominal voltage U_N	24 V DC
End-of-charge voltage (temperature-compensated)	25 V DC ... 32 V DC
End-of-charge voltage (configurable)	27.6 V DC
Charging current (configurable)	max. 5 A
Nominal capacity (without additional charger)	7 Ah ... 135 Ah
Max. capacity	135 Ah
Charging time	500 min. (38 Ah)

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Buffer time	33 min. (38 Ah)
Deep discharge protection (configurable)	19.2 V DC
Battery technology	VRLA, VRLA-WTR, LI-ION
Charge characteristic curve	IU ₀ U
IQ-Technology	yes
Temperature sensor	yes
Temperature compensation (configurable)	42 mV/K

Connection data

Input

Connection method	Screw connection
Conductor cross section solid	0.5 mm ² ... 16 mm ²
Conductor cross section flexible	0.5 mm ² ... 16 mm ²
Flexible conductor cross-section with ferrule	0.5 mm ² ... 16 mm ²
Conductor cross section AWG	8 ... 6
Stripping length	10 mm
Torque	1.2 Nm ... 1.5 Nm

Output

Connection method	Screw connection
Conductor cross section solid	0.5 mm ² ... 16 mm ²
Conductor cross section flexible	0.5 mm ² ... 16 mm ²
Flexible conductor cross-section with ferrule	0.5 mm ² ... 16 mm ²
Conductor cross section AWG	8 ... 6
Stripping length	10 mm
Torque	1.2 Nm ... 1.5 Nm

Signal

Connection method	Push-in connection
Conductor cross section solid	0.2 mm ² ... 1 mm ²
Conductor cross section flexible	0.2 mm ² ... 1 mm ²
Flexible conductor cross section (ferrule with plastic sleeve)	0.2 mm ² ... 0.75 mm ²
Flexible conductor cross section flexible (ferrule, w/o plastic sleeve)	0.2 mm ² ... 0.75 mm ²
Conductor cross section AWG	24 ... 16
Stripping length	8 mm

LED signaling

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

Product properties

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MTBF (IEC 61709, SN 29500)	> 1980000 h (25 °C)
	> 1205000 h (40 °C)
	> 604200 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	126720 h
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Dimensions

Width	47 mm
Height	130 mm
Depth	125 mm

Installation dimensions

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	49 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

Inflammability class in acc. with 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)

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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)

Approval data

UL approval

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

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

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
	IEC 61010-2-201

DNV

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

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EMC data

Low Voltage Directive	Conformance with Low Voltage Directive 2014/35/EC
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
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
Interference emission	Noise emission according to EN 61000-6-3 (residential and commercial)
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)
	Immunity according to EN 61000-6-2 (industrial)

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

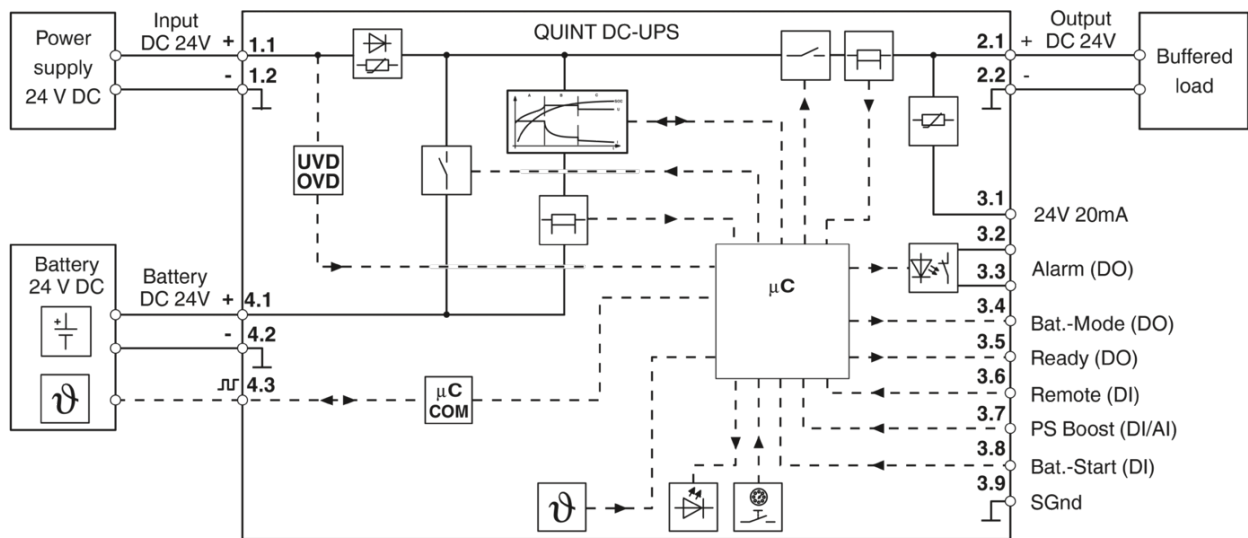
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Drawings

Block diagram



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Approvals

EAC

UL Listed

cUL Listed

DNV GL

EAC

cUL Listed

UL Listed

cULus Listed

cULus Listed

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Classifications

ECLASS

ECLASS-9.0	27040705
ECLASS-10.0.1	27040705
ECLASS-11.0	27040705

ETIM

ETIM 6.0	EC000382
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UNSPSC

UNSPSC 19.0	39121011
UNSPSC 20.0	39121011
UNSPSC 21.0	39121011

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Environmental Product Compliance

REACH SVHC

Lead 7439-92-1

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Accessories

Energy storage

Energy storage - UPS-BAT/PB/24DC/7AH - 1274118



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

Energy storage

Energy storage - UPS-BAT/PB/24DC/12AH - 1274119



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

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Energy storage

Energy storage - UPS-BAT/VRLA/24DC/20AH - 1109004



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

Energy storage

Energy storage - UPS-BAT/VRLA/24DC/7.2AH - 2320319



Energy storage device, lead AGM, VRLA technology, 24 V DC, 7.2 Ah, tool-free battery replacement, automatic detection, and communication with QUINT UPS-IQ

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Energy storage

Energy storage - UPS-BAT/VRLA/24DC/12AH - 2320322



Please use the following item in new systems: 1274119.

Energy storage device, lead AGM, VRLA technology, 24 V DC, 12 Ah, tool-free battery replacement, automatic detection, and communication with QUINT UPS-IQ

Energy storage

Energy storage - UPS-BAT/VRLA/24DC/38AH - 2320335



Energy storage device, lead AGM, VRLA technology, 24 V DC, 38 Ah, automatic detection, and communication with QUINT UPS-IQ

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Energy storage

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

Energy storage

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

Energy storage - UPS-BAT/LI-ION/24DC/120WH - 2320351



Energy storage device, LI-ION technology, 24 V DC, 120 Wh, for ambient temperatures of -20°C ... 60°C, automatic detection and communication with QUINT UPS-IQ

Energy storage

Energy storage - UPS-BAT/LI-ION/24DC/924WH - 2908232



Energy storage device, LI-ION technology, 24 V DC, 924 Wh, for ambient temperatures of -25 °C ... 60 °C, automatic detection and communication with QUINT UPS-IQ

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