

# QUINT4-CAP/24DC/5/4KJ - DC UPS with integrated capacity



2320539

<https://www.phoenixcontact.com/us/products/2320539>

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QUINT DC UPS with integrated capacitor, with maintenance-free energy storage based on double-layer capacitor, USB (Modbus/RTU), DIN rail mounting, input: 24 V DC, output: 24 V DC / 5 A / 4 kJ incl. mounted UTA 107 universal DIN rail adapter. The "POWER MANAGEMENT SUITE" software (Item No. 1252232) available in the download area can be used for configuration.

## Product description

The maintenance-free QUINT CAP capacity module is ideal for cyclical failures lasting up to 30 seconds. It combines an electronic switch-over unit and maintenance-free, capacitor-based energy storage in the same housing. The USB interface makes it convenient to shut down your PC.

## Your advantages

- Convenient shutdown of PCs
- Maintenance-free with a long service life
- Space savings, thanks to the compact design
- Long buffer time, thanks to high memory capacity
- Lockable USB interface for connecting to industrial PCs, for example

## Commercial data

Item number	2320539
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CM21
Product key	CMUIC3
GTIN	4055626246918
Weight per piece (including packing)	1,474 g
Weight per piece (excluding packing)	1,263.26 g
Customs tariff number	85322900
Country of origin	CN

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## Technical data

### Input data

#### DC operation

Input voltage	24 V DC (SELV)
Input voltage range	22.5 V DC ... 30 V DC
Fixed backup threshold	< 22 V DC
	> 30 V DC
Current consumption $I_N$ ( $U_N, I_{OUT} = I_N, I_{charge} = 0$ )	7 A (max.)
Current consumption $I_{max}$ ( $U_N, I_{OUT} = I_{Stat.Boost}, I_{charge} = max$ )	7 A
Current consumption $I_{No-Load}$ ( $U_N, I_{OUT} = 0, I_{charge} = 0$ )	0.1 A (No-load)
Current consumption $I_{charge}$ ( $U_N, I_{OUT} = 0, I_{charge} = max$ )	0.8 A (charging process)
Power consumption $P_{max}$ ( $U_N, I_{OUT} = I_{Stat.Boost}, I_{charge} = max$ )	180 W
Power consumption $P_N$ ( $U_N, I_{OUT} = I_N, I_{charge} = 0$ )	124 W
Power consumption $P_{charge}$ ( $U_N, I_{OUT} = 0, I_{charge} = max$ )	21.6 W
Buffer time	3 min (1 A)
	30 s (5 A)
	30 s (5 A)
Charging time	approx. 18 min
Recharging time	approx. 12 min
Inrush current	$\leq 7$ A ( $\leq \square$ ms)
Switch-on time	1 ms (buffer mode)
Internal input fuse	no
Dielectric strength	max. 35 V DC (Reverse polarity protection)
Voltage drop, input/output	0.5 V DC

### Output data

Efficiency	> 97 % (with charged energy storage device)
Connection in parallel	no
Connection in series	no

#### Mains operation

Output voltage	24 V DC (depending on the input voltage)
Output current $I_N$	5 A
Static Boost ( $I_{Stat.Boost}$ )	6.25 A
Output power $P_{OUT}$ ( $U_N, I_{OUT} = I_N$ )	120 W
Output power $P_{OUT}$ ( $U_N, I_{OUT} = I_{stat.Boost}$ )	150 W
Power dissipation No load ( $U_N, I_{Out} = 0, I_{charge} = 0$ )	2.5 W
Power dissipation Nominal load ( $U_N, I_{Out} = I_N, I_{charge} = 0$ )	4 W
Short-circuit-proof	yes (with input fuse)
Idling-proof	yes

#### Battery operation

Output voltage	24 V DC (typical)
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Output current $I_N$	5 A (depending on output current)
Static Boost ( $I_{\text{Stat.Boost}}$ )	6.25 A
Output power $P_{\text{OUT}}$ ( $U_N, I_{\text{OUT}} = I_N$ )	120 W
Output power $P_{\text{OUT}}$ ( $U_N, I_{\text{OUT}} = I_{\text{Stat.Boost}}$ )	150 W
Short-circuit-proof	yes
Idling-proof	yes

## Energy storage

### Input

Nominal capacity	0.04 Ah
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### General

Capacity	4 kJ
IQ-Technology	no
Storage medium	Double-layer capacitor
Buffer time	3 min (1 A) 30 s (5 A) 30 s (5 A)

## Connection data

### Input

Position	1.x
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### Connection technology

Position marking	1.1 (+), 1.2 (-)
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### Conductor connection

Connection method	Screw connection
rigid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
flexible with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
flexible with ferrule with plastic sleeve	0.25 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
rigid (AWG)	30 ... 12
Stripping length	6.5 mm
Tightening torque	0.5 Nm ... 0.6 Nm
Drive form screw head	Slotted L

### 2-conductor connection

rigid	0.2 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>
flexible	0.2 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>
flexible with TWIN ferrule with plastic sleeve	0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>

### Output

Position	2.x
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### Connection technology

# QUINT4-CAP/24DC/5/4KJ - DC UPS with integrated capacity



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Position marking	2.1 (+), 2.2 (-)
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## Conductor connection

Connection method	Screw connection
rigid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
flexible with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
flexible with ferrule with plastic sleeve	0.25 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
rigid (AWG)	30 ... 12
Stripping length	6.5 mm
Tightening torque	0.5 Nm ... 0.6 Nm
Drive form screw head	Slotted L

## 2-conductor connection

rigid	0.2 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>
flexible	0.2 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>
flexible with TWIN ferrule with plastic sleeve	0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>

## Signal

Position	3.x
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## Conductor connection

Connection method	Push-in connection
rigid	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
flexible	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
flexible with ferrule without plastic sleeve	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
flexible with ferrule with plastic sleeve	0.2 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>
rigid (AWG)	24 ... 18
Stripping length	8 mm

## Interfaces

Interface	USB (Modbus/RTU)
Number of interfaces	1
Connection method	MINI-USB Type B
Position	5.x
Locking	Screw
Transmission physics	USB 2.0
Topology	Point-to-point
Transmission speed	9600 baud
Transmission length	max. 5 m
Access time	≤ 2 s
Chipset	Silicon Labs CP2104-F03-GM
Electrical isolation	Yes, UL approved

## Signaling

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## Signal state Remote

Connection labeling	3.5
Channel	DI (digital input)
State (configurable)	Remote
State condition	Remote
Low signal	<3 kΩ to SGnd
High signal	open (>470 kΩ between Remote and SGnd)
Signal - state assignment	low - active
Reference potential	3.6 (SGnd, identical to 1.2, 2.2)

## Signal state Alarm

Connection labeling	3.3
Channel	DO (digital output)
Switching output	Transistor
State (configurable)	Group alarm
State condition (configurable)	Alarm
Output voltage	24 V ( $U_N - 1$ V (typical))
Output can be loaded	max. 20 mA
State - signal assignment	active - low
Reference potential	3.6 (SGnd, identical to 1.2, 2.2)
LED status indicator	red (Alarm)

## Signal state UIN OK

Connection labeling	3.1, 3.2
Channel	DO (digital output)
Switching output	Electronic relays (OptoMOS)
State (configurable)	$U_{In}$ OK
State condition (configurable)	$U_{In} > 22,5$ V DC, $U_{In} < 30$ V DC
Output voltage	max. 30 V
Output can be loaded	300 mA
State - signal assignment	active - high
LED status indicator	green ( $U_{In}$ OK)

## Signal state Ready

Connection labeling	3.4
Channel	DO (digital output)
Switching output	Transistor
State (configurable)	Ready
State condition (configurable)	State of charge = 100% or buffer mode
Output voltage	24 V ( $U_N - 1$ V (typical))
Output can be loaded	max. 20 mA
State - signal assignment	active - high
Reference potential	3.6 (SGnd, identical to 1.2, 2.2)
LED status indicator	Green (state of charge - SOC)

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## Signal ground SGnd

Connection labeling	3.6
Switching voltage	0 V
Current carrying capacity	max. 60 mA
Function	Signal ground
Reference potential	3.3 Alarm, 3.4 Ready, 3.5 Remote

## Electrical properties

Insulation voltage input, output / housing	500 V
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## Product properties

Product type	DC UPS with integrated capacitor
Product family	QUINT DC UPS with integrated capacitor
MTBF (IEC 61709, SN 29500)	1900327 h (25 °C)
	1301923 h (40 °C)
	673204 h (60 °C)

## Insulation characteristics

Protection class	III (SELV)
Degree of pollution	2

## Life expectancy (electrolytic capacitors)

Time	87088 h
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## Dimensions

### Item dimensions

Width	94 mm
Height	130 mm
Depth	125 mm

### Installation dimensions

Installation distance right/left	0 mm / 0 mm
Installation distance top/bottom	50 mm / 50 mm

## Mounting

Mounting type	DIN rail mounting
Assembly note	alignable: horizontally 0 mm, vertically 50 mm
Mounting position	horizontal DIN rail NS 35, EN 60715

## Material specifications

Flammability rating according to UL 94 (housing / terminal blocks)	V0
Housing material	Metal

## Environmental and real-life conditions

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## Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 60 °C (> 40 °C Derating: 1 %/K)
Ambient temperature (storage/transport)	-40 °C ... 60 °C
Ambient temperature (start-up type tested)	-40 °C
Maximum altitude	≤ 4000 m
Climatic class	3K3 (in acc. with EN 60721)
Max. permissible relative humidity (operation)	≤ 95 %
Shock	30g, 18 ms per spatial direction (in accordance with IEC 60068-2-27)
Vibration (operation)	0,7g

## Standards and regulations

### Protective extra-low voltage

Standard designation	Protective extra-low voltage
Standards/specifications	UL 61010-2-201

## Approvals

### UL

Identification	UL/C-UL Listed UL 508
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### UL

Identification	UL/C-UL Recognized UL 60950-1
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### UL

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

Identification	CAN/CSA-C22.2 No. 107.1-01
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### CB scheme

Identification	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

### Noise emission

Standards/regulations	EN 55016
	EN 61000-6-3

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## Electrostatic discharge

Standards/regulations	EN 61000-4-2
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## Electrostatic discharge

Contact discharge	6 kV (Test Level 3)
Discharge in air	8 kV (Test Level 3)
Comments	Criterion B

## Electromagnetic HF field

Standards/regulations	EN 61000-4-3
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## Electromagnetic HF field

Frequency range	80 MHz ... 6 GHz
Test field strength	10 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 3 - asymmetrical)
Comments	Criterion B

## Surge voltage load (surge)

Standards/regulations	EN 61000-4-5
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## Surge voltage load (surge)

Signal	1 kV (Test Level 2 - asymmetrical)
Comments	Criterion B
Input/Output	1 kV (Test Level 2 - symmetrical) 2 kV (Test Level 3 - asymmetrical)

## Conducted interference

Standards/regulations	EN 61000-4-6
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## Conducted interference

Frequency range	0.15 MHz ... 80 MHz
Comments	Criterion A
Voltage	10 V

## 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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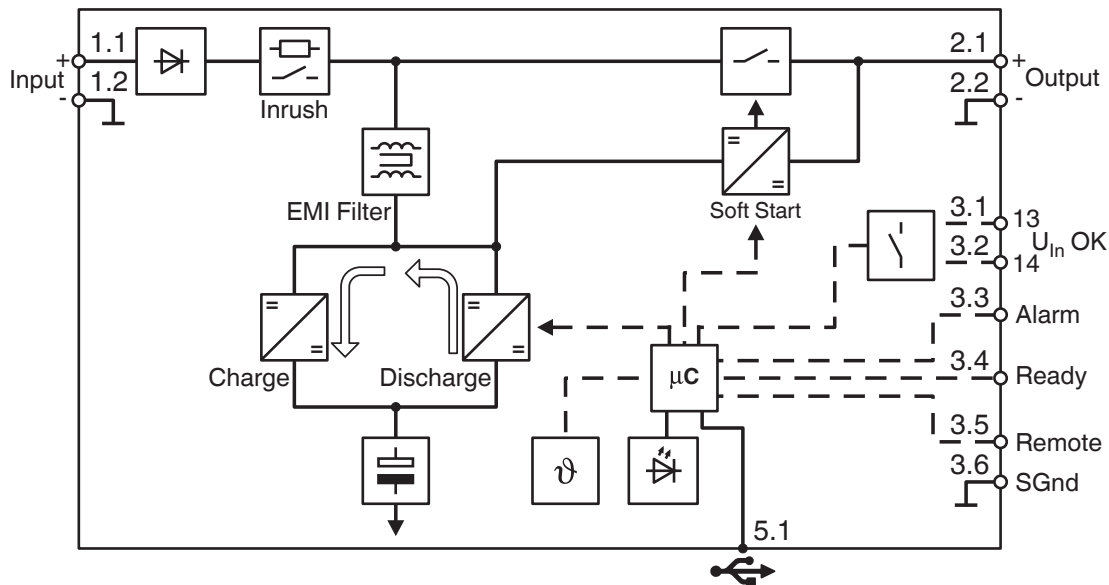


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## Drawings

Block diagram



Graphic

Load Current	Buffertime																
	Seconds							Minutes									
	9	10	15	20	30	40	50	1	2	3	5	10	20	30	40	50	60
0.05 A																	
0.50 A																	
1.00 A																	
2.00 A																	
2.50 A																	
3.80 A																	
5.00 A																	
6.25 A																	
7.50 A																	
10.0 A																	
12.5 A																	
15.0 A																	
20.0 A																	
25.0 A																	

The data is based on an ambient temperature of +25 °C.

- 2320526 QUINT4-CAP/24DC/3.8/1KJ/PT
- 2320571 QUINT4-CAP/24DC/10/8KJ/PT
- 2320539 QUINT4-CAP/24DC/5/4KJ/PT
- QUINT4-CAP/24DC/20/16KJ/...

QUINT CAP buffer times

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2320539>



**cUL Recognized**  
Approval ID: E211944



**UL Recognized**  
Approval ID: E211944



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



**EAC**  
Approval ID: RU\*DE\*HB54.B05799/20



**IECEE CB Scheme**  
Approval ID: DE/PTZ/0063



**cULus Listed**  
Approval ID: 20180112-E123528



**cUL Listed**  
Approval ID: E199827



**UL Listed**  
Approval ID: E199827

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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	26111700
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(c), 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.)	Diboron trioxide(CAS: 1303-86-2)
	Lead monoxide (lead oxide)(CAS: 1317-36-8)
	Lead(CAS: 7439-92-1)
SCIP	5ed903a5-5f72-4a25-8115-b43256e9e1eb

### EF3.1 Climate Change

CO2e kg	28.49 kg CO2e
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