# Capacity module - QUINT4-CAP/24DC/5/4KJ

2320539

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

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QUINT capacity module, with maintenance-free energy storage based on double-layer capacitor, 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 | C14 |
| Product Key | CMUIC3 |
| Catalog Page | Page 346 (C-4-2019) |
| GTIN | 4055626246918 |
| Weight per Piece (including packing) | 1,474 g |
| Weight per Piece (excluding packing) | 1,474 g |
| Customs tariff number | 85322900 |
| Country of origin | CN |

## Technical Data

### Input data

| | |
|---|---|
| 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 $I_{No\text{-}Load}$($U_N$, $I_{OUT}$ = 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) | 24 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 | ≤ 7 A (☐ 4 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 |

#### 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 k☐ between Remote and SGnd) |
| Signal - state assignment | low - active |
| Reference potential | 3.6 (SGnd, identical to 1.2, 2.2) |

### 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 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 | 22 V DC (typical) |
| Output current $I_N$ | 5 A (depending on output current) |
| 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 |
| Short-circuit-proof | yes |
| Idling-proof | yes |

Signal state Alarm

| | |
|---|---|
| Connection labeling | 3.3 |
| Channel | DO (digital output) |
| Switching output | Transistor |
| State (configurable) | Group alarm |
| State condition (configurable) | Alarm |
| 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 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 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) |

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 can be loaded | 300 mA |
| State - signal assignment | active - high |
| LED status indicator | green ($U_{In}$ OK) |

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 |

## Energy storage

| | |
|---|---|
| Nominal capacity | 0.04 Ah |
| Capacity | 4 kJ |
| Buffer time | 3 min. (1 A) |
| | 30 s (5 A) |
| | 30 s (5 A) |
| Storage medium | Double-layer capacitor |
| IQ-Technology | no |

## Connection data

Input

| | |
|---|---|
| Position | 1.x |

Conductor connection

| | |
|---|---|
| Connection method | Screw connection |
| rigid | 0.2 mm² ... 2.5 mm² |
| flexible | 0.2 mm² ... 2.5 mm² |
| flexible with ferrule without plastic sleeve | 0.25 mm² ... 2.5 mm² |
| flexible with ferrule with plastic sleeve | 0.25 mm² ... 2.5 mm² |
| rigid (AWG) | 30 ... 12 |
| Stripping length | 6.5 mm |
| Torque | 0.5 Nm ... 0.6 Nm |
| Drive form screw head | Slotted L |

2-conductor connection

| | |
|---|---|
| rigid | 0.2 mm² ... 0.75 mm² |
| flexible | 0.2 mm² ... 0.75 mm² |
| flexible with TWIN ferrule with plastic sleeve | 0.5 mm² ... 1.5 mm² |

Output

| | |
|---|---|
| Position | 2.x |

Conductor connection

| | |
|---|---|
| Connection method | Screw connection |
| rigid | 0.2 mm² ... 2.5 mm² |
| flexible | 0.2 mm² ... 2.5 mm² |
| flexible with ferrule without plastic sleeve | 0.25 mm² ... 2.5 mm² |
| flexible with ferrule with plastic sleeve | 0.25 mm² ... 2.5 mm² |

| | |
|---|---|
| rigid (AWG) | 30 ... 12 |
| Stripping length | 6.5 mm |
| Torque | 0.5 Nm ... 0.6 Nm |
| Drive form screw head | Slotted L |

2-conductor connection

| | |
|---|---|
| rigid | 0.2 mm² ... 0.75 mm² |
| flexible | 0.2 mm² ... 0.75 mm² |
| flexible with TWIN ferrule with plastic sleeve | 0.5 mm² ... 1.5 mm² |

Signal

| | |
|---|---|
| Position | 3.x |

Conductor connection

| | |
|---|---|
| Connection method | Push-in connection |
| rigid | 0.2 mm² ... 1.5 mm² |
| flexible | 0.2 mm² ... 1.5 mm² |
| flexible with ferrule without plastic sleeve | 0.2 mm² ... 1.5 mm² |
| flexible with ferrule with plastic sleeve | 0.2 mm² ... 0.75 mm² |
| rigid (AWG) | 24 ... 18 |
| Stripping length | 8 mm |

## Interfaces

| | |
|---|---|
| Interface | USB (Modbus/RTU) |
| Number of interfaces | 1 |
| Connection method | MINI-USB Type B |
| Connection marking | 5.1 |
| 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 |

## Electrical properties

| | |
|---|---|
| Insulation voltage input, output / housing | 500 V |

## Product properties

| | |
|---|---|
| Product type | Capacity module |
| 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 |

## 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 instructions | alignable: horizontally 0 mm, vertically 50 mm |
| Mounting position | horizontal DIN rail NS 35, EN 60715 |

## Material specifications

| | |
|---|---|
| Inflammability class in acc. with UL 94 (housing / terminal blocks) | V0 |
| Housing material | Metal |

## Environmental and real-life conditions

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

Overvoltage category

| | |
|---|---|
| UL 60950-1 | II |

Protective extra-low voltage

| | |
|---|---|
| Standards/specifications | UL 61010-2-201 |

## Approval data

UL

| | |
|---|---|
| Identification | UL/C-UL Listed UL 508 |

UL

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

UL

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

UL

| | |
|---|---|
| Identification | CAN/CSA-C22.2 No. 107.1-01 |

UL

| | |
|---|---|
| Identification | UL 60950-1 |

## 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 in accordance with EN 61000-6-3 and EN 61000-6-4 |
| Noise emission | EN 55016 |
| | EN 61000-6-3 |
| Noise immunity | Device immunity in accordance with EN 61000-6-2 |

Electrostatic discharge

| | |
|---|---|
| Standards/regulations | EN 61000-4-2 |

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 |

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 |

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 |
| 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

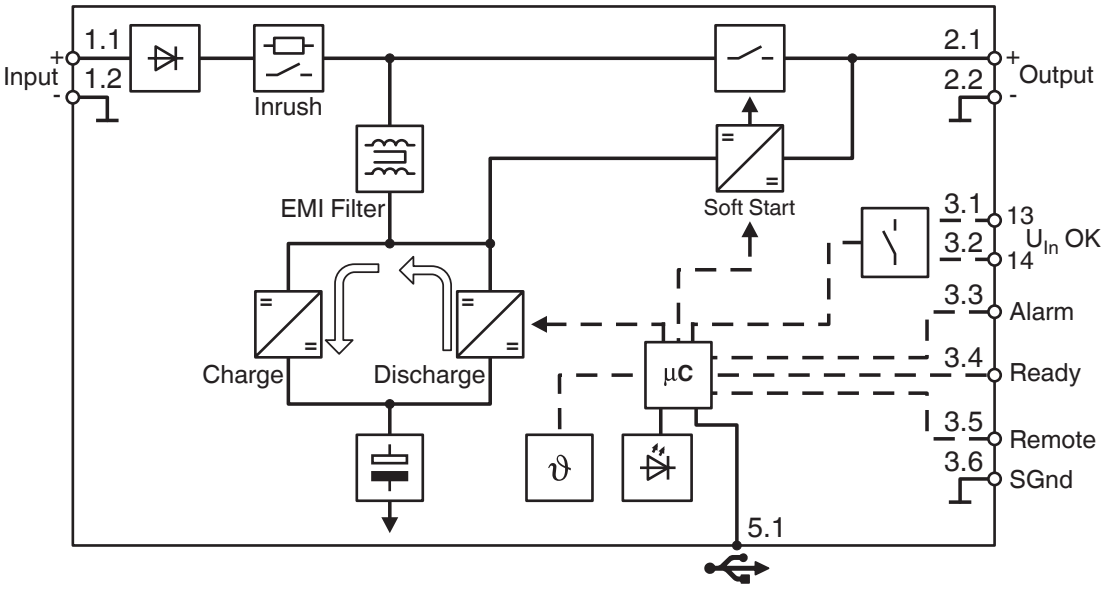
| | |
|---|---|
| Standards/regulations | EN 61000-4-6 |

Conducted interference

| | |
|---|---|
| Frequency range | 0.15 MHz ... 80 MHz |
| Comments | Criterion A |
| Voltage | 10 V |
| Criterion A | Normal operating behavior within the specified limits. |
| Criterion B | Temporary impairment to operational behavior that is corrected by the device itself. |

## Drawings

Block diagram



## Approvals

**cUL Recognized**
Approval ID: FILE E 211944

**UL Recognized**
Approval ID: FILE E 211944

**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*HB54.B05799/20

**cUL Listed**
Approval ID: FILE E 199827

**UL Listed**
Approval ID: FILE E 199827

**cULus Recognized**

**cULus Listed**

**cULus Listed**

## Classifications

### ECLASS

| | |
|---|---|
| ECLASS-9.0 | 27049201 |
| ECLASS-11.0 | 27040692 |

### ETIM

| | |
|---|---|
| ETIM 8.0 | EC002850 |

### UNSPSC

| | |
|---|---|
| UNSPSC 21.0 | 26111700 |

## 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” |

## Accessories

### Mounting adapter

Mounting adapter - UWA 130 - 2901664

https://www.phoenixcontact.com/us/products/2901664

2-piece universal wall adapter for securely mounting the device in the event of strong vibrations. The profiles that are screwed onto the side of the device are screwed directly onto the mounting surface. The universal wall adapter is attached on the left/right.

### Mounting adapter

Mounting adapter - UWA 182/52 - 2938235

https://www.phoenixcontact.com/us/products/2938235

Universal wall adapter for securely mounting the device in the event of strong vibrations. The device is screwed directly onto the mounting surface. The universal wall adapter is attached on the top/bottom.

## Data cable

Data cable - MINI-SCREW-USB-DATACABLE - 2908217

https://www.phoenixcontact.com/us/products/2908217

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

## Configuration software

Configuration software - POWER MANAGEMENT SUITE - 1252232

https://www.phoenixcontact.com/us/products/1252232

Configuration and management software

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