

# QUINT4-CAP/24DC/3.8/1KJ/PT - DC UPS with integrated capacity



2320526

<https://www.phoenixcontact.com/us/products/2320526>

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QUINT DC UPS with integrated capacitor, with maintenance-free energy storage based on double-layer capacitor, DIN rail mounting, input: 24 V DC, output: 24 V DC / 3.8 A / 1 kJ

## Product description

The QUINT capacity module combines an electronic switch-over unit and energy storage in the same housing. The capacity module stores the energy required to bridge mains failures in maintenance-free double-layer capacitors. Long mains buffering is possible depending on the required load current.

## Your advantages

- Maintenance-free with a long service life
- Space savings, thanks to the compact design
- Long buffer time, thanks to high memory capacity

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 2320526       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | CM21          |
| Product key                          | CMUIC3        |
| GTIN                                 | 4055626246925 |
| Weight per piece (including packing) | 605 g         |
| Weight per piece (excluding packing) | 454 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                 |
| Current consumption $I_{\max}$ ( $U_N$ , $I_{OUT} = I_{\text{Stat.Boost}}$ , $I_{\text{Charge}} = \max$ ) | 4.3 A                     |
| Current consumption $I_{\text{No-Load}}$ ( $U_N$ , $I_{OUT} = 0$ , $I_{\text{charge}} = 0$ )              | 0.08 A                    |
| Current consumption $I_{\text{charge}}$ ( $U_N$ , $I_{OUT} = 0$ , $I_{\text{charge}} = \max$ )            | 0.43 A                    |
| Buffer time   | 9 s (3.8 A)<br>30 s (1 A) |
| Charging time   | 4 min (0.43 A)            |
| Recharging time   | 3 min (0.43 A)            |

### Output data

|                        |   |
|------------------------|---|
| Efficiency             | > 97 % (with charged energy storage device) |
| Connection in parallel | yes<br>max. 2 (with decoupling module)      |
| Connection in series   | no  |

#### Mains operation

|  |  |
|--|--|
| Output voltage                                     | 24 V DC (depending on the input voltage) |
| Output current $I_N$                               | 3.8 A                                    |
| Output power $P_{OUT}$ ( $U_N$ , $I_{OUT} = I_N$ ) | 91.2 W                                   |
| Maximum no-load power dissipation                  | < 2 W                                    |

#### Battery operation

|                      |         |
|----------------------|---------|
| Output voltage       | 24 V DC |
| Output current $I_N$ | 3.8 A   |

### Energy storage

#### General

|                |                           |
|----------------|---------------------------|
| Capacity       | 1 kJ                      |
| Storage medium | Double-layer capacitor    |
| Buffer time    | 9 s (3.8 A)<br>30 s (1 A) |

### Connection data

#### Conductor connection

|                   |   |
|-------------------|---|
| Connection method | Push-in connection                          |
| rigid             | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> |

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|  |  |
|--|--|
| 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)                                  | 24 ... 14                                    |
| Stripping length                             | 10 mm  |

## Conductor connection

|  |  |
|--|--|
| Connection method                            | Push-in 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)                                  | 24 ... 14                                    |
| Stripping length                             | 10 mm  |

## Conductor connection

|  |  |
|--|--|
| Connection method                            | Push-in 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)                                  | 24 ... 14                                    |
| Stripping length                             | 10 mm  |

## Signaling

### Signal state Remote

|                      |        |
|----------------------|--------|
| Connection labeling  | 3.3    |
| State (configurable) | Remote |
| State condition      | Remote |

### Signal state UIN OK

|                      |                                       |
|----------------------|---------------------------------------|
| Connection labeling  | 3.1                                   |
| Switching output     | Transistor output, active             |
| State (configurable) | U <sub>in</sub> OK                    |
| Output voltage       | 24 V (U <sub>N</sub> - 1 V (typical)) |
| Output can be loaded | 20 mA                                 |
| LED status indicator | green (U <sub>in</sub> OK)            |
| Signal threshold     | Input voltage in the valid range      |

### Signal state Ready

|                                |                                       |
|--------------------------------|---------------------------------------|
| Connection labeling            | 3.2                                   |
| Switching output               | Transistor output, active             |
| State (configurable)           | Ready                                 |
| State condition (configurable) | State of charge = 100% or buffer mode |

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|                      |                               |
|----------------------|-------------------------------|
| Output voltage       | 24 V ( $U_N - 1$ V (typical)) |
| Output can be loaded | 20 mA                         |
| LED status indicator | green (Ready)                 |

## Signal ground SGnd

|                     |  |
|---------------------|--|
| Connection labeling | 3.4  |
| Function            | Signal ground                                |
| Reference potential | $U_{In}$ OK (3.1), Ready (3.2), Remote (3.3) |

## Electrical properties

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

## Product properties

|                            |  |
|----------------------------|--|
| Product type               | DC UPS with integrated capacitor       |
| Product family             | QUINT DC UPS with integrated capacitor |
| MTBF (IEC 61709, SN 29500) | 996550 h (40 °C)                       |
|                            | 1631804 h (25 °C)                      |
|                            | 449865 h (60 °C)                       |

## Insulation characteristics

|                      |     |
|----------------------|-----|
| Protection class     | III |
| Overvoltage category | II  |
| Degree of pollution  | 2   |

## Dimensions

### Item dimensions

|        |          |
|--------|----------|
| Width  | 85 mm    |
| Height | 102.5 mm |
| Depth  | 90 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 | Any, on NS 35 DIN rail                         |

## Material specifications

|                  |         |
|------------------|---------|
| Housing material | Plastic |
|------------------|---------|

## Environmental and real-life conditions

### Ambient conditions

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|  |                             |
|--|-----------------------------|
| Degree of protection                           | IP20                        |
|  | IP20                        |
| Ambient temperature (operation)                | -25 °C ... 60 °C            |
| 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 %                      |

## Approvals

UL

|                |                      |
|----------------|----------------------|
| Identification | UL Listed UL 61010-1 |
|----------------|----------------------|

UL

|                |                          |
|----------------|--------------------------|
| Identification | UL Listed UL 61010-2-201 |
|----------------|--------------------------|

UL

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

UL

|                |           |
|----------------|-----------|
| Identification | UL 121201 |
|----------------|-----------|

CSA

|                |   |
|----------------|---|
| Identification | CSA C22.2 No. 223 class 2 (buffer mode) |
|----------------|---|

CSA

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

CSA

|                |                                  |
|----------------|----------------------------------|
| Identification | CAN/CSA C22.2 No. 61010-2-201:14 |
|----------------|----------------------------------|

CSA

|                |                      |
|----------------|----------------------|
| Identification | CSA C22.2 No. 213-17 |
|----------------|----------------------|

UL NEC

|                |                               |
|----------------|-------------------------------|
| Identification | UL 1310 class 2 (buffer mode) |
|----------------|-------------------------------|

CB scheme

|                |                 |
|----------------|-----------------|
| Identification | IEC 61010-1     |
|                | IEC 61010-2-201 |
|                | EN 61010-1      |
|                | EN 61010-2-201  |

## EMC data

|                               |   |
|-------------------------------|---|
| Electromagnetic compatibility | Conformance with EMC Directive 2014/30/EU         |
| Low Voltage Directive         | Conformance with Low Voltage Directive 2014/35/EC |

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## Noise emission

|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-6-3 |
|-----------------------|--------------|

## 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 4 - asymmetrical) |
| Comments | Criterion B                        |

## Surge voltage load (surge)

|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-5 |
|-----------------------|--------------|

## Surge voltage load (surge)

|          |                                    |
|----------|------------------------------------|
| 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 1 - asymmetrical) |
| Comments | Criterion B                        |

## Conducted interference

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

## Conducted interference

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

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## 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-CAP/24DC/3.8/1KJ/PT - DC UPS with integrated capacity

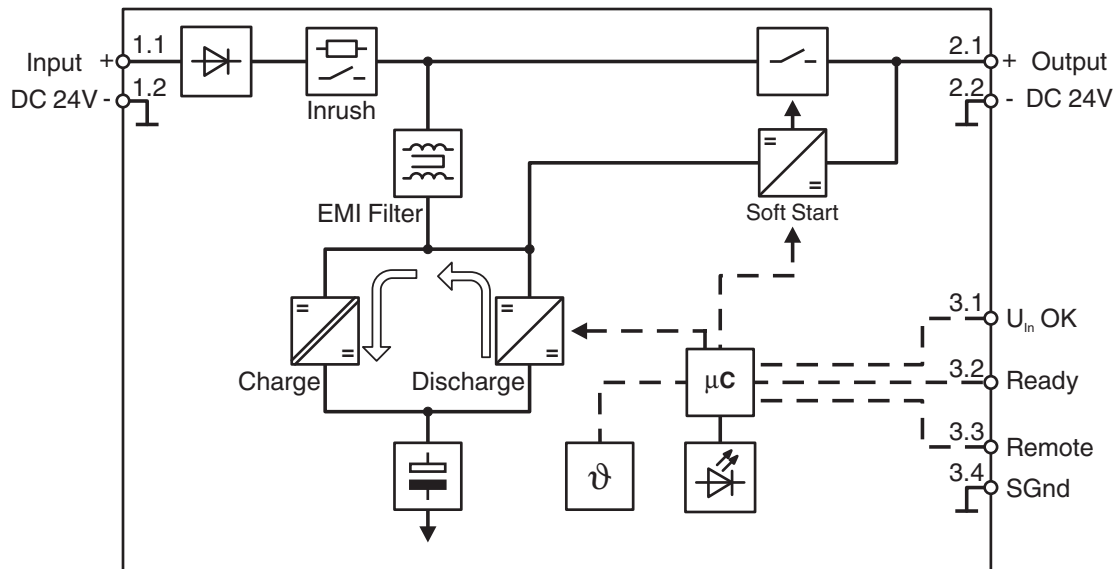


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## Drawings

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/2320526>



**EAC**

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



**cULus Listed**

Approval ID: 20180522-E123528



**cUL Listed**

Approval ID: E199827



**UL Listed**

Approval ID: E199827

# QUINT4-CAP/24DC/3.8/1KJ/PT - DC UPS with integrated capacity



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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27040705 |
| ECLASS-15.0 | 27040705 |

### ETIM

|           |          |
|-----------|----------|
| ETIM 10.0 | EC000382 |
|-----------|----------|

### UNSPSC

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

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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.) | Diboron trioxide(CAS: 1303-86-2)           |
|                                     | Lead monoxide (lead oxide)(CAS: 1317-36-8) |
|                                     | Lead(CAS: 7439-92-1)                       |
| SCIP                                | 313ab9c8-36f0-4fea-99d9-5c5e525da79c       |

### EF3.1 Climate Change

|         |               |
|---------|---------------|
| CO2e kg | 20.96 kg CO2e |
|---------|---------------|

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