

# QUINT-UPS/ 24DC/ 24DC/40 - Uninterruptible power supply



2320241

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Uninterruptible power supply with IQ technology for DIN rail mounting, input: 24 V DC, output: 24 V DC/40 A, including mounted universal DIN rail adapter UTA 107/30

## Product description

The UPS module for 24 V DC with output currents ranging from 5 to 40 A allows you to create a custom solution combining a power supply, UPS module, and energy storage.

## Your advantages

- Easy handling thanks to automatic battery detection, tool-free battery replacement during operation, and communication via the IFS interface
- Optimum use of the buffer time and preventive monitoring of the energy storage
- Rapid battery charging
- Comprehensive signaling and parameterization
- Fast tripping of standard circuit breakers with SFB (selective fuse breaking) technology
- Reliable starting of difficult loads with the static POWER BOOST power reserve with up to 1.5 times the nominal current permanently

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 2320241       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | CMUQ43        |
| Product key                          | CMUQ43        |
| GTIN                                 | 4046356554121 |
| Weight per piece (including packing) | 930 g         |
| Weight per piece (excluding packing) | 708 g         |
| Customs tariff number                | 85371091      |
| Country of origin                    | IN            |

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## Technical data

### Input data

#### DC operation

|                                |                                    |
|--------------------------------|------------------------------------|
| Input voltage                  | 24 V DC                            |
| Nominal input voltage range    | 24 V DC                            |
| Input voltage range            | 18 V DC ... 30 V DC                |
| Input voltage range DC         | 18 V DC ... 30 V DC                |
| Voltage type of supply voltage | DC                                 |
| Buffer period                  | 0.5 h (With battery module 38 AH)  |
| Current consumption            | 51.9 A (maximum, mains operation)  |
|                                | 10.6 mA (No load, mains operation) |
|                                | 6.9 A (Charging, mains operation)  |
| Fixed backup threshold         | ≤ 22 V DC                          |
| Variable connect threshold     | 1 V/0.1 s                          |

### Output data

|                                  |   |
|----------------------------------|---|
| Efficiency                       | > 99 % (Mains operation, with charged energy storage)                 |
|                                  | 98 % (Battery operation)  |
| Nominal output voltage           | 24 V DC   |
| Output voltage range             | 18 V DC ... 30 V DC   |
| Nominal output current ( $I_N$ ) | 40 A (-25 °C ... 50 °C)   |
| Output current limit             | In mains mode according to connected upstream current limiting device |
|                                  | > 45 A (Battery operation)  |
| Derating                         | 60 °C ... 70 °C (2.5 %/K)   |
|                                  | 60 °C ... 70 °C (2.5 %/K)   |
| Output power                     | 960 W   |
| Power dissipation                | 2.8 W (Mains operation)   |
|                                  | 13 W (Mains operation)  |
|                                  | 3.51 W (Battery operation)  |
|                                  | 16.4 W (Battery operation)  |
| Connection in parallel           | yes, up to 2 modules with redundancy module                           |
|                                  | 2 (Devices)   |
| Connection in series             | no  |
|                                  | no  |

#### Mains operation

|                                       |                          |
|---------------------------------------|--------------------------|
| Nominal output voltage                | 24 V DC                  |
| Output voltage range                  | 18 V DC ... 30 V DC      |
| Nominal output current ( $I_N$ )      | 40 A (-25 °C ... 50 °C)  |
| POWER BOOST ( $I_{Boost}$ )           | 45 A (-25 °C ... 40 °C)  |
| Selective Fuse Breaking ( $I_{SFB}$ ) | 215 A (-25 °C ... 60 °C) |

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2320241

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|          |                        |
|----------|------------------------|
| Duration | 12 ms (SFB technology) |
|----------|------------------------|

## Battery operation

|                                       |  |
|---------------------------------------|--|
| Nominal output voltage                | 24 V DC  |
| Output voltage range                  | 19.2 V DC ... 27.6 V DC ( $U_{OUT} = U_{BAT} - 0,5 \text{ V DC}$ ) |
| Nominal output current ( $I_N$ )      | 40 A (-25 °C ... 60 °C)  |
| POWER BOOST ( $I_{Boost}$ )           | 45 A (-25 °C ... 40 °C)  |
| Selective Fuse Breaking ( $I_{SFB}$ ) | 215 A (-25 °C ... 60 °C)   |
| Duration                              | 15 ms (SFB technology)   |

## Signal: Alarm

|                           |                           |
|---------------------------|---------------------------|
| Output description        | Relay (floating)          |
| Maximum switching voltage | $\leq 30 \text{ V AC/DC}$ |
| Continuous load current   | $\leq 100 \text{ mA}$     |

## Signal: Battery charge

|                           |                           |
|---------------------------|---------------------------|
| Output description        | Relay (floating)          |
| Maximum switching voltage | $\leq 30 \text{ V AC/DC}$ |
| Output voltage            | 24 V                      |
| Continuous load current   | $\leq 100 \text{ mA}$     |

## Signal: Battery mode

|                           |                           |
|---------------------------|---------------------------|
| Output description        | Relay (floating)          |
| Maximum switching voltage | $\leq 30 \text{ V AC/DC}$ |
| Output voltage            | 24 V                      |
| Continuous load current   | $\leq 100 \text{ mA}$     |

## Energy storage

|                                      |   |
|--------------------------------------|---|
| Nominal voltage $U_N$                | 24 V DC                                       |
| End-of-charge voltage                | 24 V DC ... 29 V DC (temperature compensated) |
| Charging current                     | 0.2 A ... 5 A                                 |
| Nominal capacity range               | 7 Ah ... 200 Ah                               |
| Battery presence check/time interval | 1 min   |
| Battery presence check (cyclic)      | 60 s  |
| IQ technology                        | Yes   |
| Temperature compensation             | 42 mV/K (preset)                              |
| Temperature compensation (preset)    | 42 mV/K                                       |
| Network management                   | Yes   |

## Connection data

### Input

|                                       |                     |
|---------------------------------------|---------------------|
| Connection method                     | Screw connection    |
| Conductor cross section, rigid min.   | 0.5 mm <sup>2</sup> |
| Conductor cross section, rigid max.   | 16 mm <sup>2</sup>  |
| Conductor cross section flexible min. | 0.5 mm <sup>2</sup> |

# QUINT-UPS/ 24DC/ 24DC/40 - Uninterruptible power supply



2320241

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|                                       |                    |
|---------------------------------------|--------------------|
| Conductor cross section flexible max. | 16 mm <sup>2</sup> |
| Conductor cross section AWG min.      | 8                  |
| Conductor cross section AWG max.      | 6                  |
| Stripping length                      | 10 mm              |
| Screw thread                          | M4                 |
| Tightening torque, min                | 1.2 Nm             |
| Tightening torque max                 | 1.5 Nm             |

## Output

|                                       |                     |
|---------------------------------------|---------------------|
| Connection method                     | Screw connection    |
| Conductor cross section, rigid min.   | 0.5 mm <sup>2</sup> |
| Conductor cross section, rigid max.   | 16 mm <sup>2</sup>  |
| Conductor cross section flexible min. | 0.5 mm <sup>2</sup> |
| Conductor cross section flexible max. | 16 mm <sup>2</sup>  |
| Conductor cross section AWG min.      | 8                   |
| Conductor cross section AWG max.      | 6                   |
| Stripping length                      | 10 mm               |
| Screw thread                          | M4                  |
| Tightening torque, min                | 1.2 Nm              |
| Tightening torque max                 | 1.5 Nm              |

## Signal

|                                       |                     |
|---------------------------------------|---------------------|
| Conductor cross section, rigid min.   | 0.2 mm <sup>2</sup> |
| Conductor cross section, rigid max.   | 4 mm <sup>2</sup>   |
| Conductor cross section flexible min. | 0.2 mm <sup>2</sup> |
| Conductor cross section flexible max. | 2.5 mm <sup>2</sup> |
| Conductor cross section AWG min.      | 24                  |
| Conductor cross section AWG max.      | 12                  |
| Screw thread                          | M4                  |
| Tightening torque, min                | 0.5 Nm              |
| Tightening torque max                 | 0.6 Nm              |

## Interfaces

|           |                                  |
|-----------|----------------------------------|
| Interface | IFS (Interface system data port) |
|-----------|----------------------------------|

## Signaling

|                    |                    |
|--------------------|--------------------|
| Types of signaling | LED                |
|                    | Relay contact      |
|                    | Interface/software |

## Signal output

|                           |             |
|---------------------------|-------------|
| Signalization designation | Power In OK |
| Status display            | LED         |
| Note on status display    | static on   |
|                           | static on   |

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2320241

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## Signal output: Switching output

|                           |           |
|---------------------------|-----------|
| Signalization designation | Alarm     |
| Status display            | LED       |
| Note on status display    | static on |
| Color                     | red       |
| Note on status display    | static on |

## Signal output: Switching output

|                           |                |
|---------------------------|----------------|
| Signalization designation | Battery charge |
| Status display            | LED bar graph  |
| Note on status display    | dynamic        |
| Color                     | green/red      |
| Note on status display    | dynamic        |

## Signal output: Switching output

|                           |              |
|---------------------------|--------------|
| Signalization designation | Battery mode |
| Status display            | LED          |
| Note on status display    | static on    |
| Color                     | yellow       |
| Note on status display    | static on    |

## Electrical properties

|  |          |
|--|----------|
| Insulation voltage input/output            | 500 V DC |
| Insulation voltage input, output / housing | 750 V DC |

## Product properties

|                            |                    |
|----------------------------|--------------------|
| Product type               | DC UPS             |
| Product family             | QUINT UPS          |
| IQ technology              | Yes                |
| MTBF (IEC 61709, SN 29500) | > 500000 h (40 °C) |

## Insulation characteristics

|                  |     |
|------------------|-----|
| Protection class | III |
|------------------|-----|

## Life expectancy (electrolytic capacitors)

|      |          |
|------|----------|
| Time | 147792 h |
|------|----------|

## Dimensions

|        |        |
|--------|--------|
| Width  | 47 mm  |
| Height | 130 mm |
| Depth  | 125 mm |

## Installation dimensions

|                                  |               |
|----------------------------------|---------------|
| Installation distance right/left | 5 mm / 5 mm   |
| Installation distance top/bottom | 50 mm / 50 mm |

## Alternative assembly

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2320241

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|        |        |
|--------|--------|
| Width  | 123 mm |
| Height | 130 mm |
| Depth  | 51 mm  |

## Mounting

|                   |  |
|-------------------|--|
| Mounting type     | DIN rail mounting                          |
| Assembly note     | alignable: horizontal 5 mm, vertical 50 mm |
| Mounting position | horizontal DIN rail NS 35, EN 60715        |

## Material specifications

|                  |   |
|------------------|---|
| Housing material | Metal   |
| Housing material | Steel sheet, zinc-plated                      |
| Type of housing  | Aluminum (AlMg3)                              |
| Hood version     | Galvanized sheet steel, free from chrome (VI) |

## Environmental and real-life conditions

### Ambient conditions

|  |  |
|--|--|
| Degree of protection                           | IP20   |
| Ambient temperature (operation)                | -25 °C ... 70 °C   |
| Ambient temperature (storage/transport)        | -40 °C ... 85 °C   |
| Climatic class                                 | 3K3 (in acc. with EN 60721)  |
| Max. permissible relative humidity (operation) | ≤ 95 % (25 °C, non-condensing)   |
| Shock  | 18 ms, 30g, in each space direction (according to IEC 60068-2-27)  |
| Vibration (operation)                          | < 15 Hz, amplitude ±2.5 mm (according to IEC 60068-2-6)<br>15 Hz ... 150 Hz, 2.3g t <sub>v</sub> = 90 min. |

## Standards and regulations

|  |                            |
|--|----------------------------|
| Rail applications  | EN 50121-4                 |
| Standard – Electronic equipment for use in electrical power installations and their assembly into electrical power installations | EN 50178/VDE 0160 (PELV)   |
| Standard - Electrical safety   | EN 60950-1/VDE 0805 (SELV) |

## Approvals

|              |  |
|--------------|--|
| UL approvals | UL Listed UL 508   |
|              | UL/C-UL Recognized UL 60950-1  |
|              | UL ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C, D (Hazardous Location) |

## 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                                      |

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2320241

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|                            |                                    |
|----------------------------|------------------------------------|
|                            | EN 61000-6-2                       |
| Electrostatic discharge    |                                    |
| Standards/regulations      | EN 61000-4-2                       |
| Electrostatic discharge    |                                    |
| Contact discharge          | 8 kV (Test Level 4)                |
| Discharge in air           | 15 kV (Test Level 4)               |
| Comments                   | Criterion A                        |
| Electromagnetic HF field   |                                    |
| Standards/regulations      | EN 61000-4-3                       |
| Electromagnetic HF field   |                                    |
| Frequency range            | 80 MHz ... 1 GHz                   |
| Test field strength        | 20 V/m                             |
| Frequency range            | 1 GHz ... 3 GHz                    |
| Test field strength        | 10 V/m                             |
| Frequency range            | 2 GHz ... 3 GHz                    |
| Test field strength        | 3 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 A                        |
| Surge voltage load (surge) |                                    |
| Standards/regulations      | EN 61000-4-5                       |
| Surge voltage load (surge) |                                    |
| Input                      | 1 kV (Test Level 2 - symmetrical)  |
|                            | 2 kV (Test Level 3 - asymmetrical) |
| Output                     | 1 kV (Test Level 2 - symmetrical)  |
|                            | 2 kV (Test Level 3 - asymmetrical) |
| Signal                     | 1 kV (Test Level 2 - asymmetrical) |
| Comments                   | Criterion A                        |
| Conducted interference     |                                    |
| Standards/regulations      | EN 61000-4-6                       |
| Conducted interference     |                                    |
| Input/output/signal        | asymmetrical                       |
| Frequency range            | 0.15 MHz ... 80 MHz                |

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2320241

<https://www.phoenixcontact.com/gb/products/2320241>

|          |                     |
|----------|---------------------|
| Comments | Criterion A         |
| Voltage  | 10 V (Test Level 3) |

## Emitted interference

|  |  |
|--|--|
| Standards/regulations                            | EN 61000-6-3   |
| Radio interference voltage in acc. with EN 55011 | EN 55011 (EN 55022) Class B, area of application: Industry and residential |
| Emitted radio interference in acc. with EN 55011 | EN 55011 (EN 55022) Class B, area of application: Industry and residential |

## 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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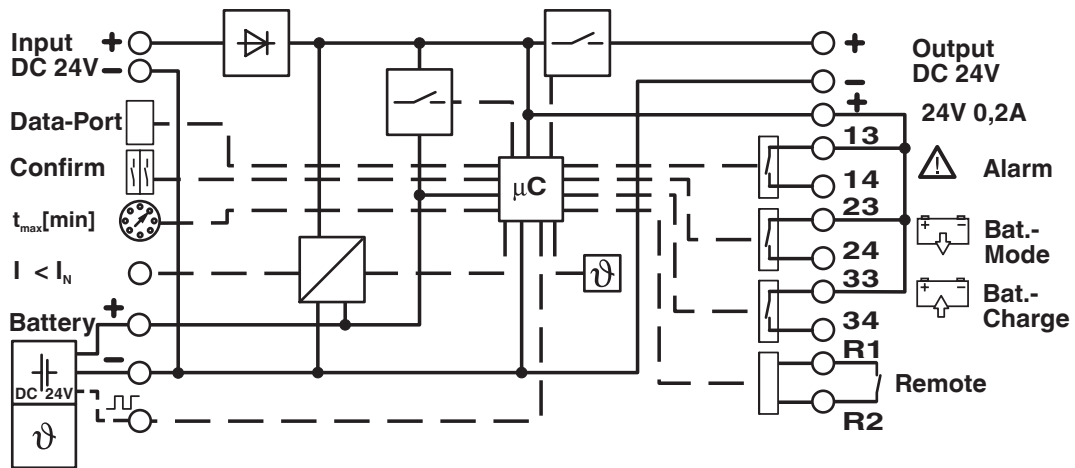


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## Drawings

Block diagram



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## Approvals

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**cUL Recognized**  
Approval ID: E211944



**UL Recognized**  
Approval ID: E211944



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



**LR**  
Approval ID: LR22136091TA



**BV**  
Approval ID: 41516/B0 BV



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



**UL Listed**  
Approval ID: E123528



**cUL Listed**  
Approval ID: FILE E 123528

**ABS**

Approval ID: 22-2244289-PDA



**KC**  
Approval ID: R-R-PCK-2320241



**IECEE CB Scheme**  
Approval ID: DE/PTZ/0049

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**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 9.0 | EC000382 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 39121000 |
|-------------|----------|

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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.) | Lead(CAS: 7439-92-1)                 |
| SCIP                                | 3fe036c0-36dc-4a18-97ce-5a275628e487 |

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