

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



2320241

<https://www.phoenixcontact.com/us/products/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 | CM20 |
| 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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| | |
|----------|------------------------|
| 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 ² |
| Conductor cross-section, rigid max. | 16 mm ² |
| Conductor cross-section flexible min. | 0.5 mm ² |

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| | |
|---------------------------------------|--------------------|
| Conductor cross-section flexible max. | 16 mm ² |
| 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 ² |
| Conductor cross-section, rigid max. | 16 mm ² |
| Conductor cross-section flexible min. | 0.5 mm ² |
| Conductor cross-section flexible max. | 16 mm ² |
| 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 ² |
| Conductor cross-section, rigid max. | 4 mm ² |
| Conductor cross-section flexible min. | 0.2 mm ² |
| Conductor cross-section flexible max. | 2.5 mm ² |
| 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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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 DC 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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| | |
|--------|--------|
| 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) 15 Hz ... 150 Hz, 2.3g t _v = 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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| | |
|----------------------------|------------------------------------|
| | 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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| | |
|----------|---------------------|
| 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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Graphic

| Load Current | Buffertime | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------|------------|----|----|----|----|----|----|----|----|----|-------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|
| | Minutes | | | | | | | | | | Hours | | | | | | | | | | | | | | | |
| | 10 | 12 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 12 | 14 | 16 | 18 | 20 |
| 1 A | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 2 A | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 3 A | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 5 A | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 7 A | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 10 A | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 15 A | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 20 A | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 25 A | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 30 A | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 35 A | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 40 A | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |

The data is based on an ambient temperature of +25 °C at the start of use.

■ 2320416 UPS-BAT/VRLA-WTR/24DC/13AH ■ 2320429 UPS-BAT/VRLA-WTR/24DC/26AH

QUINT DC UPS buffer times and VRLA-WTR battery module

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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 10.0 | 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 |

EF3.1 Climate Change

| | |
|---------|----------------|
| CO2e kg | 26.409 kg CO2e |
|---------|----------------|

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