

QUINT4-UPS/24DC/24DC/40/USB - Uninterruptible power supply



2907078

<https://www.phoenixcontact.com/gb/products/2907078>

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QUINT UPS, IQ Technology, USB (Modbus/RTU), DIN rail mounting, Screw connection, input: 24 V DC, output: 24 V DC / 40 A, charging current: 5 A

Product description

The intelligent QUINT UPS for integration into established industrial networks: your systems continue to be supplied with uninterrupted power, even in the event of a mains failure. The battery management system with IQ Technology and a powerful battery charger ensures superior system availability.

Your advantages

- Easy integration into networks using PROFINET, EtherNet/IP, EtherCAT® and USB interfaces
- Evaluation of state of health (SOH) and state of charge (SOC), thanks to the intelligent battery management system (BMS)
- Automatic recognition of the battery capacities and technologies (VRLA-WTR, LI-ION)
- Monitoring of output current and voltage, as well as manual connection and disconnection of the system
- SFB Technology selectively trips standard miniature circuit breakers. Loads connected in parallel continue working.

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 2907078 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | CMUI43 |
| Product key | CMUI43 |
| GTIN | 4055626170046 |
| Weight per piece (including packing) | 725 g |
| Weight per piece (excluding packing) | 565 g |
| Customs tariff number | 85371091 |
| Country of origin | CN |

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Technical data

Input data

| | |
|---|---------------------|
| Input voltage | 24 V DC |
| Input voltage range | 18 V DC ... 30 V DC |
| | 18 V DC ... 32 V DC |
| Electric strength, max. | 35 V DC |
| Internal input fuse | no |
| Voltage type of supply voltage | DC |
| Inrush current | ≤ 9 A (≤ 4 ms) |
| Reverse polarity protection | yes |
| Fixed backup threshold | 22 V DC |
| Dynamic activation threshold | > 1 V / 100 ms |
| Switch-on time | max. 3 s |
| Switch-on time during battery operation (Bat.-Start) | 8 s |
| Voltage drop, input/output | 0.5 V DC |
| Current consumption I_N ($U_N, I_{OUT} = I_N, I_{charge} = 0$) | 40.1 A |
| Current consumption I_{max} ($U_N, I_{OUT} = I_{Stat.Boost}, I_{charge} = max$) | 51.2 A |
| Current consumption $I_{No-Load}$ ($U_N, I_{OUT} = 0, I_{charge} = 0$) | 50 mA |
| Current consumption I_{charge} ($U_N, I_{OUT} = 0, I_{charge} = max$) | 6.1 A |
| Power consumption P_N ($U_N, I_{OUT} = I_N, I_{charge} = 0$) | 965 W |
| Power consumption P_{max} ($U_N, I_{OUT} = I_{Stat.Boost}, I_{charge} = max$) | 1120 W |
| Power consumption $P_{No-Load}$ ($U_N, I_{OUT} = 0, I_{charge} = 0$) | 1.3 W |
| Power consumption P_{charge} ($U_N, I_{OUT} = 0, I_{charge} = max$) | 147 W |

Output data

| | |
|--|---|
| Efficiency | typ. 98 % |
| Number of outputs | 1 |
| Nominal output current (I_N) | 40 A (-25 °C ... 50 °C) |
| Short-circuit-proof | yes |
| No-load proof | yes |
| Switch-over time | 0 ms |
| Power dissipation | 2.8 W (Mains operation) |
| | 13 W (Mains operation) |
| | 3.51 W (Battery operation) |
| | 16.4 W (Battery operation) |
| UPS connection in parallel | yes, with decoupling modules (to increase the buffer time and for redundancy) |
| UPS connection in series | no |
| Energy storage device connection in parallel | Yes, 5 (observe line protection) |
| Energy storage device connection in series | no |

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Mains operation

| | |
|--|---|
| Output voltage | 24 V DC ($U_{OUT} = U_{IN} - 0.5 \text{ V DC}$) |
| Output voltage range | 18 V DC ... 30 V DC |
| | 18 V DC ... 32 V DC |
| Output current I_N | 40 A |
| Static Boost ($I_{Stat.Boost}$) | 45 A |
| Dynamic Boost ($I_{Dyn.Boost}$) | 60 A (5 s) |
| Selective Fuse Breaking (I_{SFB}) | 215 A (15 ms) |
| Output power P_{OUT} ($U_N, I_{OUT} = I_N$) | 960 W |
| Output power P_{OUT} ($U_N, I_{OUT} = I_{stat.Boost}$) | 1080 W |

Battery operation

| | |
|--|--|
| Output voltage | 24 V DC ($U_{OUT} = U_{BAT} - 0.5 \text{ V DC}$) |
| Output voltage range | 19 V DC ... 32 V DC |
| Output current I_N | 40 A |
| Static Boost ($I_{Stat.Boost}$) | 45 A |
| Selective Fuse Breaking (I_{SFB}) | 215 A (15 ms) |
| Output power P_{OUT} ($U_N, I_{OUT} = I_N$) | 960 W |
| Output power P_{OUT} ($U_N, I_{OUT} = I_{stat.Boost}$) | 1080 W |

Energy storage

| | |
|---|------------------------|
| End-of-charge voltage | 32 V DC |
| End-of-charge voltage (temperature-compensated) | 25 V DC ... 32 V DC |
| Charging current (configurable) | 5 A |
| Nominal capacity (without additional charger) | 7 Ah ... 100 Ah |
| Max. capacity | 135 Ah |
| Charging time | 202.5 h |
| Buffer time | 45 min (38 Ah) |
| Deep discharge protection | 19.2 V DC |
| Battery technology | VRLA, VRLA-WTR, LI-ION |
| Charge characteristic curve | IU_0U |
| IQ-Technology | yes |
| Temperature sensor | yes |
| Temperature compensation (configurable) | 42 mV/K |

Connection data

Input

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

Conductor connection

| | |
|-------------------|--|
| Connection method | Screw connection |
| rigid | 0.5 mm ² ... 16 mm ² |
| flexible | 0.5 mm ² ... 16 mm ² |

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| | |
|--|--|
| flexible with ferrule without plastic sleeve | 0.5 mm ² ... 16 mm ² |
| flexible with ferrule with plastic sleeve | 0.5 mm ² ... 16 mm ² |
| rigid (AWG) | 8 ... 6 (Cu) |
| Stripping length | 10 mm (rigid/flexible) |
| Tightening torque | 1.2 Nm ... 1.5 Nm |
| Drive form screw head | Slotted L |

Output

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

Conductor connection

| | |
|--|--|
| Connection method | Screw connection |
| rigid | 0.5 mm ² ... 16 mm ² |
| flexible | 0.5 mm ² ... 16 mm ² |
| flexible with ferrule without plastic sleeve | 0.5 mm ² ... 16 mm ² |
| flexible with ferrule with plastic sleeve | 0.5 mm ² ... 16 mm ² |
| rigid (AWG) | 8 ... 6 (Cu) |
| Stripping length | 10 mm (rigid/flexible) 8 mm (Ferrule) |
| Tightening torque | 1.2 Nm ... 1.5 Nm |
| Drive form screw head | Slotted L |

Signal

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


Conductor connection

| | |
|--|---|
| Connection method | Push-in connection |
| rigid | 0.2 mm ² ... 1 mm ² |
| flexible | 0.2 mm ² ... 1 mm ² |
| flexible with ferrule without plastic sleeve | 0.2 mm ² ... 0.75 mm ² 0.5 mm ² (recommended) |
| flexible with ferrule with plastic sleeve | 0.2 mm ² ... 0.75 mm ² |
| rigid (AWG) | 24 ... 16 (Cu) |
| Stripping length | 8 mm (rigid/flexible) |

Battery

| | |
|----------|-----|
| Position | 4.x |
|----------|-----|

Connection technology

| | |
|------------------|--|
| Position marking | 4.1 (+), 4.2 (-), 4.3 (⏏ ) |
|------------------|--|

Conductor connection

| | |
|--|--|
| Connection method | Screw connection |
| rigid | 0.5 mm ² ... 16 mm ² |
| flexible | 0.5 mm ² ... 16 mm ² |
| flexible with ferrule without plastic sleeve | 0.5 mm ² ... 16 mm ² |

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| | |
|---|--|
| flexible with ferrule with plastic sleeve | 0.5 mm ² ... 16 mm ² |
| rigid (AWG) | 20 ... 6 (Cu) |
| Stripping length | 10 mm (rigid/flexible) |
| Tightening torque | 1.2 Nm ... 1.5 Nm |
| Drive form screw head | Slotted L |

Interfaces

Communication

| | |
|----------------------|--|
| Slave address | 192 |
| Start bit | 1 |
| Data bits | 8 |
| Parity | even |
| Stop bit | 1 |
| Interface | USB (Modbus/RTU) |
| Number of interfaces | 1 |
| Connection method | MINI-USB Type B |
| Supported protocols | Modbus/RTU |
| Connection marking | X1 |
| Locking | Screw |
| Transmission physics | USB 2.0 |
| Topology | Point-to-point |
| Transmission speed | 9600 baud ... 115200 baud (Default: 115200 baud) |
| Transmission length | max. 5 m |
| Access time | ≤ 2 s |
| Chipset | Silicon Labs CP210x |
| Electrical isolation | Yes, UL approved |

Signaling

LED signaling

| | |
|--------------------|--------------------|
| Types of signaling | DC OK (green) |
| | Alarm (red) |
| | Bat.-Mode (yellow) |
| | SOC (red, green) |
| | Data (red, green) |

Product properties

| | |
|----------------------------|---------------------------|
| Product type | DC UPS |
| Product family | QUINT UPS |
| MTBF (IEC 61709, SN 29500) | > 1376000 h (25 °C) |
| | > 888400 h (40 °C) |
| | > 467600 h (60 °C) |
| | RoHS Directive 2011/65/EU |

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| | |
|---|------------------|
| Environmental protection directive | WEEE |
| | Reach |
| Insulation characteristics | |
| Protection class | III (without PE) |
| Degree of pollution | 2 |
| Life expectancy (electrolytic capacitors) | |
| Time | 126720 h |

Dimensions

Item dimensions

| | |
|--|---|
| Width | 47 mm |
| Height | 130 mm |
| Depth | 125 mm |
| Depth (Device depth (DIN rail mounting)) | 125 mm (Device depth (DIN rail mounting)) |

Item dimensions with alternative mounting

| | |
|--------|--------|
| Width | 123 mm |
| Height | 130 mm |
| Depth | 49 mm |

Installation dimensions

| | |
|--|---------------------------------------|
| Installation distance right/left (active) | 5 mm / 5 mm ($P_{Out} \geq 50\%$) |
| Installation distance right/left (passive) | 0 mm / 0 mm ($P_{Out} \geq 50\%$) |
| Installation distance right/left (active, passive) | 0 mm / 0 mm ($P_{Out} \leq 50\%$) |
| Installation distance top/bottom (active) | 50 mm / 50 mm ($P_{Out} \geq 50\%$) |
| Installation distance top/bottom (passive) | 40 mm / 20 mm ($P_{Out} \geq 50\%$) |
| Installation distance top/bottom (active, passive) | 40 mm / 20 mm ($P_{Out} \leq 50\%$) |

Mounting

| | |
|-------------------|--|
| Mounting type | DIN rail mounting |
| Mounting position | On horizontal DIN rail NS 35/7.5 and NS 35/15 acc. to EN 60715 |

Material specifications

| | |
|--|------------------------|
| Flammability rating according to UL 94 (housing / terminal blocks) | V0 |
| Housing material | Metal |
| Hood version | Stainless steel X6Cr17 |
| Side element version | Aluminum AlMg3 |

Environmental and real-life conditions

Ambient conditions

| | |
|----------------------|------|
| Degree of protection | IP20 |
|----------------------|------|

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| | |
|--|---|
| Ambient temperature (operation) | -25 °C ... 70 °C (> 60 °C Derating: 2,5 %/K) |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Ambient temperature (start-up type tested) | -40 °C |
| Maximum altitude | ≤ 4000 m |
| Climatic class | 3K3 (EN 60721) |
| Max. permissible relative humidity (operation) | ≤ 95 % (at 25 °C, non-condensing) |
| Shock | 18 ms, 30g, in each space direction (according to IEC 60068-2-27) |
| Vibration (operation) | 2.3g |

Standards and regulations

Protective extra-low voltage

| | |
|--------------------------|------------------------------|
| Standard designation | Protective extra-low voltage |
| Standards/specifications | IEC 61010-1 (SELV) |
| | IEC 61010-2-201 (PELV) |

Approvals

UL approval

| | |
|----------------|---------------------------|
| Identification | UL/C-UL Listed UL 61010-1 |
|----------------|---------------------------|

UL approval

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

UL approval

| | |
|----------------|---|
| Identification | UL/C-UL Listed ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C, D T4 (Hazardous Location) |
|----------------|---|

CSA

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

CSA

| | |
|----------------|-------------------------|
| Identification | CAN/CSA-IEC 61010-2-201 |
|----------------|-------------------------|

CSA

| | |
|----------------|--|
| Identification | CAN/CSA-C22.2 No. 213 Class I, Division 2, Groups A, B, C, D T4 (Hazardous Location) |
|----------------|--|

CB scheme

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

DNV

| | |
|----------------|--|
| Identification | Class Guideline DNVGL-CG-0339 |
| Note | Location classes: Temperature D (see Application/Limitation), Humidity B, Vibration A/C, EMC B |

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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 immunity | Immunity in accordance with EN 61000-6-1 (residential), EN 61000-6-2 (industrial), and EN 61000-6-5 (switching devices), IEC/EN 61850-3 (power supply) |

Noise emission

| | |
|-----------------------|---|
| Standards/regulations | Additional basic standard EN 61000-6-5 (immunity in switching devices), IEC/EN 61850-3 (power supply) |
|-----------------------|---|

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 B |

Electromagnetic HF field

| | |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-3 |
|-----------------------|--------------|

Electromagnetic HF field

| | |
|---------------------|-----------------------|
| Frequency range | 80 MHz ... 1 GHz |
| Test field strength | 20 V/m (Test Level 3) |
| Frequency range | 1 GHz ... 6 GHz |
| Test field strength | 10 V/m (Test Level 3) |
| Frequency range | 1 GHz ... 6 GHz |
| Test field strength | 10 V/m (Test Level 3) |
| Comments | Criterion A |

Fast transients (burst)

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

Fast transients (burst)

| | |
|----------|------------------------------------|
| Input | 4 kV (Test Level 4 - asymmetrical) |
| Output | 4 kV (Test Level 4 - asymmetrical) |
| Signal | 4 kV (Test Level 4 - asymmetrical) |
| Comments | Criterion B |

Surge voltage load (surge)

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

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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 2 - asymmetrical) |
| Comments | Criterion B |

Conducted interference

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

Conducted interference

| | |
|---------------------|---------------------|
| Input/output/signal | asymmetrical |
| Frequency range | 0.15 MHz ... 80 MHz |
| Comments | Criterion A |
| Voltage | 10 V (Test Level 3) |

Power frequency magnetic field

| | |
|-----------------------|-----------------|
| Standards/regulations | EN 61000-4-8 |
| Frequency | 16.67 Hz |
| | 50 Hz |
| | 60 Hz |
| Test field strength | 100 A/m |
| Additional text | 60 s |
| Comments | Criterion A |
| Frequency | 50 Hz |
| | 60 Hz |
| Frequency range | 50 Hz ... 60 Hz |
| Test field strength | 1 kA/m |
| Additional text | 3 s |
| Frequency | 0 Hz |
| Test field strength | 300 A/m |
| Additional text | DC, 60 s |

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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Approvals

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EAC

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



UL Listed

Approval ID: E123528



cUL Listed

Approval ID: E123528



EAC

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

ABS

Approval ID: 23-2416092-PDA

DNV

Approval ID: TAA00002K4



RINA

Approval ID: ELE382621XG



LR

Approval ID: LR21417906TA



NK

Approval ID: TA22372M



BV

Approval ID: 69394/A0 BV



KC

Approval ID: R-R-PCK-2907078

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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 | 7288f7d3-7512-4fdc-a38f-9ae461ccf21a |

EF3.0 Climate Change

| | |
|---------|---------------|
| CO2e kg | 21.77 kg CO2e |
|---------|---------------|

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