

QUINT-UPS/ 1AC/ 1AC/500VA - Uninterruptible power supply



2320270

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Uninterruptible power supply with IQ technology 1AC/1AC/500 VA. For 120 V AC/230 V AC applications. Provides information regarding the charging state, remaining runtime, and service life of your rechargeable battery module at all times and thereby increases system availability.

Product description

The UPS module for 120 V AC/230 V AC delivers a pure sine curve at the output. For 400 W/500 VA of power, only one energy storage is required, the power supply is already integrated.

Your advantages

- Optimum use of the buffer time and preventive monitoring of the energy storage
- Can be used worldwide
- Maximum efficiency
- Comprehensive signaling and parameterization
- Simplified startup

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 2320270 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | CM20 |
| Product key | CMUQ15 |
| GTIN | 4046356560078 |
| Weight per piece (including packing) | 2,518 g |
| Weight per piece (excluding packing) | 2,244 g |
| Customs tariff number | 85371091 |
| Country of origin | DE |

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Technical data

Input data

AC operation

| | |
|--------------------------------|--|
| Input voltage | 240 V AC |
| | 100 V AC |
| | 120 V AC -20 % / +15 % |
| | 230 V AC -20 % / +15 % |
| Nominal input voltage range | 100 V AC ... 240 V AC |
| Input voltage range | 184 V AC ... 264 V AC |
| | 96 V AC ... 138 V AC |
| | 96 V AC ... 264 V AC |
| Input voltage range AC | 196 V AC ... 264 V AC |
| | 102 V AC ... 138 V AC |
| | 96 V AC ... 264 V AC |
| Voltage type of supply voltage | AC |
| Nominal frequency | 50 Hz ... 60 Hz |
| | 50 Hz ... 60 Hz |
| AC frequency range | 45 Hz ... 65 Hz |
| Buffer period | 1 h (38 AH) |
| Current consumption | 2.2 A (230 V AC) |
| | 0.18 A (230 V AC) |
| | 0.8 A (230 V AC) |
| | 3.7 A (230 V AC) |
| | 4.3 A (120 V AC) |
| | 0.35 A (120 V AC) |
| | 1.3 A (120 V AC) |
| 6.8 A (120 V AC) | |
| Fixed backup threshold | Configurable, 10 % deviation from nominal input voltage set by default |
| Variable connect threshold | Can be configured using UPS-CONF software |
| Power factor (cos phi) | 0.8 |
| Device mains fuse | 10 A |
| Permissible backup fuse | B16 230 V AC |
| | 20 A 120 V AC, Listed breaker |

Digital Control Low-Active (configurable)

| | |
|---|---|
| Battery-operated start 120 V AC Default | Plug-in bridge (output +24 V DC, 30 mA to input A1) |
| Battery-operated start 230 V AC Default | Plug-in bridge (output +24 V DC, 30 mA to input A2) |

Output data

| | |
|---|--------------------------|
| Classification according to IEC 62040-3 | VFD-SS-311 |
| | > 98 % (Mains operation) |

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| | |
|----------------------------------|------------------------------------|
| Efficiency | > 98 % (120 V AC) |
| | > 86 % (Battery operation) |
| Nominal output voltage | 120 V AC |
| | 230 V AC |
| Output voltage range | 96 V AC ... 144 V AC |
| | 184 V AC ... 264 V AC |
| Form of output voltage | Pure sine |
| Nominal output current (I_N) | 4.3 A (120 V AC, -25 °C ... 50 °C) |
| | 2.2 A (230 V AC, -25 °C ... 40 °C) |
| Output current limit | 5.2 A (120 V AC) |
| | 2.7 A (230 V AC) |
| POWER BOOST (I_{Boost}) | 5.2 A (120 V AC, -25 °C ... 40 °C) |
| | 2.7 A (230 V AC, -25 °C ... 40 °C) |
| Bridging time | 3600 s |
| Derating | > 50 °C ... 70 °C (2.5 %/K) |
| UPS connection in parallel | no |
| UPS connection in series | no |
| Output power | 516 W |
| Apparent power | 500 VA |
| Nominal power | 400 W |
| Crest factor | 2.8 |
| Switch-over time | < 10 ms |
| Connection in parallel | no |
| Connection in series | no |

Mains operation

| | |
|----------------------------------|--|
| Nominal output voltage | 120 V AC |
| | 230 V AC |
| Output voltage range | 102 V AC ... 138 V AC |
| | 196 V AC ... 264 V AC |
| Nominal output current (I_N) | 4.3 A (120 V AC) |
| | 2.2 A (230 V AC) |
| POWER BOOST (I_{Boost}) | 5.2 A |
| | 2.7 A |
| Permissible backup fuse | AC: 1 x circuit breaker - recommended fuse |

Battery operation

| | |
|----------------------------------|--|
| Nominal output voltage | 120 V AC |
| | 230 V AC |
| Nominal output current (I_N) | 2.2 A (230 V AC) |
| | 4.3 A (120 V AC) |
| POWER BOOST (I_{Boost}) | 2.7 A (230 V AC) |
| | 5.2 A (120 V AC) |
| Permissible backup fuse | 25 A in parallel operation of 3.5 AH and 60 WH |
| | 50 A in parallel operation of 7.2 AH, 12 AH, and 38 AH |

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| | |
|---------------|-------------------------|
| Buffer period | 10 min (400 W / 7,2 Ah) |
|---------------|-------------------------|

Signal: Alarm

| | |
|---------------------------|-------------|
| Maximum switching voltage | ≤ 30 V DC |
| Output voltage | 24 V (SELV) |
| Continuous load current | ≤ 30 mA |

Signal: Battery mode

| | |
|---------------------------|-------------|
| Maximum switching voltage | ≤ 30 V DC |
| Output voltage | 24 V (SELV) |
| Continuous load current | ≤ 30 mA |

Signal: POWER BOOST

| | |
|---------------------------|-------------|
| Maximum switching voltage | ≤ 30 V DC |
| Output voltage | 24 V (SELV) |
| Continuous load current | ≤ 30 mA |

Energy storage

| | |
|--|---|
| Nominal voltage U_N | 24 V DC |
| End-of-charge voltage | 25 V DC ... 30 V DC (temperature compensated) |
| Charging current | 2 A |
| Nominal capacity range | 3.4 Ah ... 114 Ah (3x 38 Ah) |
| Battery presence check/time interval | 1 min |
| Battery presence check (cyclic) | 60 s |
| Energy storage device connection in parallel | yes, 3 (observe line protection) |
| Energy storage device connection in series | no |
| IQ technology | Yes |
| Temperature compensation | 42 mV/K (preset) |
| Temperature compensation (preset) | -42 mV/K |
| Permissible backup fuse | 50 A |
| Network management | Yes |

Connection data

Input

| | |
|---------------------------------------|---------------------|
| Connection method | Screw connection |
| Conductor cross-section, rigid min. | 1.5 mm ² |
| Conductor cross-section, rigid max. | 6 mm ² |
| Conductor cross-section flexible min. | 1.5 mm ² |
| Conductor cross-section flexible max. | 4 mm ² |
| Conductor cross-section AWG min. | 18 |
| Conductor cross-section AWG max. | 10 |
| Stripping length | 8 mm |
| Screw thread | M4 |
| Tightening torque, min | 0.5 Nm |
| Tightening torque max | 0.6 Nm |

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Output

| | |
|---------------------------------------|---------------------|
| Connection method | Screw connection |
| Conductor cross-section, rigid min. | 1.5 mm ² |
| Conductor cross-section, rigid max. | 6 mm ² |
| Conductor cross-section flexible min. | 1.5 mm ² |
| Conductor cross-section flexible max. | 4 mm ² |
| Conductor cross-section AWG min. | 18 |
| Conductor cross-section AWG max. | 10 |
| Stripping length | 8 mm |
| Screw thread | M4 |
| Tightening torque, min | 0.5 Nm |
| Tightening torque max | 0.6 Nm |

Signal

| | |
|---------------------------------------|---------------------|
| Connection method | Screw connection |
| Conductor cross-section, rigid min. | 0.2 mm ² |
| Conductor cross-section, rigid max. | 2.5 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. | 10 |
| Stripping length | 8 mm |
| Screw thread | M4 |
| Tightening torque, min | 0.5 Nm |
| Tightening torque max | 0.6 Nm |

Interfaces

| | |
|-----------|----------------------------------|
| Interface | IFS (Interface system data port) |
| | MINI-USB type B |

Signaling

| | |
|--------------------|--------------------------|
| Types of signaling | LED |
| | Active switching outputs |
| | Interface/software |

Signal output: Status indicator 120 V AC

| | |
|---------------------------|----------------------|
| Signalization designation | AC mode of operation |
| Status display | LED |
| Note on status display | static on |

Signal output: Status indicator 230 V AC

| | |
|---------------------------|----------------------|
| Signalization designation | AC mode of operation |
| Status display | LED |
| Color | green |
| Note on status display | static on |

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Signal output: Transistor output, active

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

Signal output: Transistor output, active

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

Signal output: Transistor output, active

| | |
|---------------------------|-------------|
| Signalization designation | POWER BOOST |
| Status display | LED |
| Color | yellow |
| Note on status display | static on |

Signal output

| | |
|---------------------------|----------------|
| Signalization designation | Battery charge |
| Status display | Bar graph |
| Color | red/green |

Electrical properties

| | |
|--|-----------|
| Insulation voltage input, output / housing | 1.5 kV AC |
| | 2.1 kV DC |

Product properties

| | |
|----------------------------|--------------------|
| Product type | AC UPS |
| Product family | QUINT AC UPS |
| IQ technology | Yes |
| MTBF (IEC 61709, SN 29500) | > 240513 h (40 °C) |

Insulation characteristics

| | |
|------------------|---|
| Protection class | I |
|------------------|---|

Life expectancy (electrolytic capacitors)

| | |
|------|----------|
| Time | 184982 h |
|------|----------|

Dimensions

| | |
|--------|--------|
| Width | 125 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 |

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Mounting

| | |
|-------------------|---|
| Mounting type | DIN rail mounting |
| Assembly note | alignable: $P_N \geq 50\%$, 5 mm horizontally, 15 mm next to active components, 50 mm vertically alignable: $P_N < 50\%$, 0 mm horizontally, 40 mm vertically top, 20 mm vertically bottom |
| 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) |
| Side element version | Aluminum |

Environmental and real-life conditions

Ambient conditions

| | |
|--|---|
| Degree of protection | IP20 |
| Ambient temperature (operation) | -25 °C ... 70 °C (> 50 °C Derating: 2.5 %/K) |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Ambient temperature (start-up type tested) | -40 °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 |
|-------------------|------------|

Standards

| | |
|---|------------|
| Standard uninterruptible power supply systems | EN 62040-1 |
|---|------------|

Uninterruptible power supply systems

| | |
|--------------------------|--------------------------------------|
| Standard designation | Uninterruptible power supply systems |
| Standards/specifications | EN 62040-1 |

Approvals

UL

| | |
|----------------|----------------------------|
| Identification | UL/C-UL Recognized UL 1778 |
|----------------|----------------------------|

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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| | |
|-----------------------|--|
| Interference emission | Noise emission in accordance with EN 62040-2 |
| Noise immunity | Immunity in accordance with EN 62040-2 |

Conducted noise emission

| | |
|-----------------------|------------------------|
| Standards/regulations | EN 62040-02 (Class C1) |
|-----------------------|------------------------|

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 ... 3 GHz |
| Test field strength | 10 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) |
| Comments | Criterion A |

Conducted interference

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

Conducted interference

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

Emitted interference

| | |
|----------------------------|-----------------------|
| Radio interference voltage | EN 62040-2 (Class C1) |
|----------------------------|-----------------------|

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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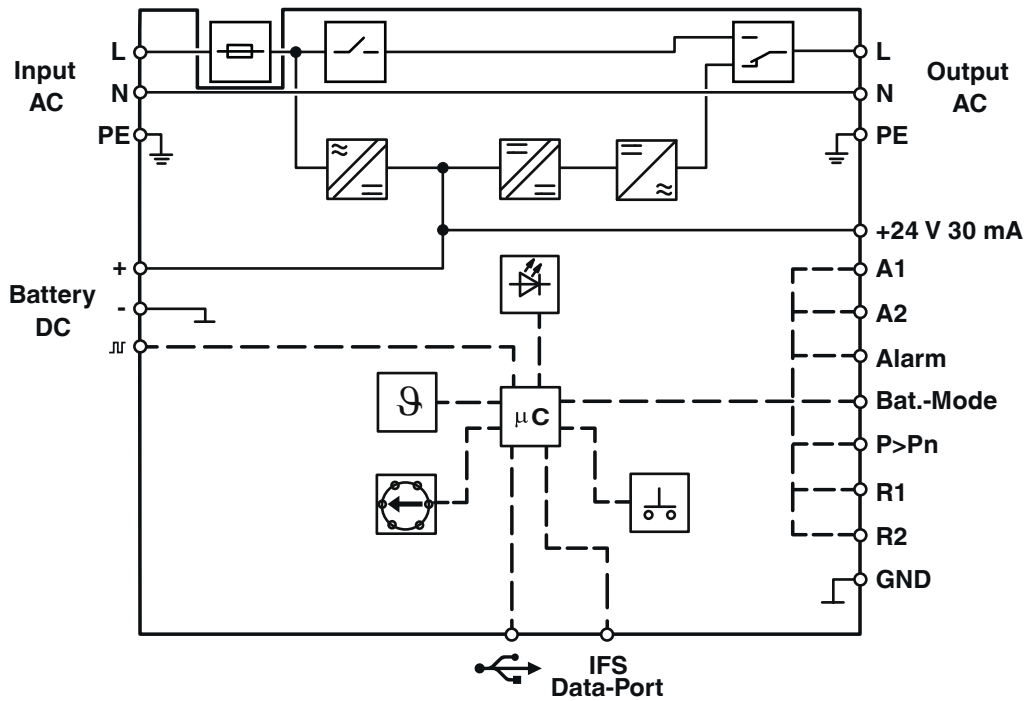


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Drawings

Block diagram



Block diagram

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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2320270>



cUL Recognized
Approval ID: FILE E 342453



UL Recognized
Approval ID: FILE E 342453



IECEE CB Scheme
Approval ID: SI-7771



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



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



KC
Approval ID: R-R-PCK-2320270



cUL Recognized
Approval ID: FILE E 359066



UL Recognized
Approval ID: FILE E 359066

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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, No exemptions |
|---|--------------------|

China RoHS

| | |
|--|--|
| Environment friendly use period (EFUP) | EFUP-E |
| | No hazardous substances above the limits |

EU REACH SVHC

| | |
|-------------------------------------|----------------------------|
| REACH candidate substance (CAS No.) | No substance above 0.1 wt% |
|-------------------------------------|----------------------------|

EF3.1 Climate Change

| | |
|---------|----------------|
| CO2e kg | 71.277 kg CO2e |
|---------|----------------|

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