Power supplies

For maximum system availability

PHOENIX CONTACT
INSPIRING INNOVATIONS

Power for maximum system availability

Leading technology and high quality – power supply units and UPS systems ensure your system is always reliably supplied with power.

Thanks to high-quality products featuring leading technology, with our power supply solutions from the QUINT, TRIO, MINI, and STEP product ranges you are optimally equipped to handle competitors on an international scale.

Functionality and designs are tailored to the requirements of various different sectors and always offer the ideal solution.

Choose from our wide range of power supply units, DC/DC converters, UPS systems, and redundancy modules.

Contents

Technology Page 4 - 5

Power supply units

Comparison of the advantages Page 14

QUINT POWER with SFB technology Page 6 - 10

TRIO POWER Page 11

MINI POWER Page 12

STEP POWER Page 13

DC/DC converters Page 20 - 21

UPS systems

Uninterruptible power supply units with IQ technology Page 24 - 29

New — Power storage devices for IQ technology Page 30 - 31

Modular solutions for AC networks Page 41

New — Software and integration in higher-level systems Page 36 - 39

Redundancy modules Page 44 - 45

Product overviews

Power supply units Page 15 - 19

New — DC/DC converters Page 22 - 23

UPS modules Page 32 - 35

New — UPS modules with integrated power storage device Page 40

UPS modules with integrated power supply unit Page 42 - 43

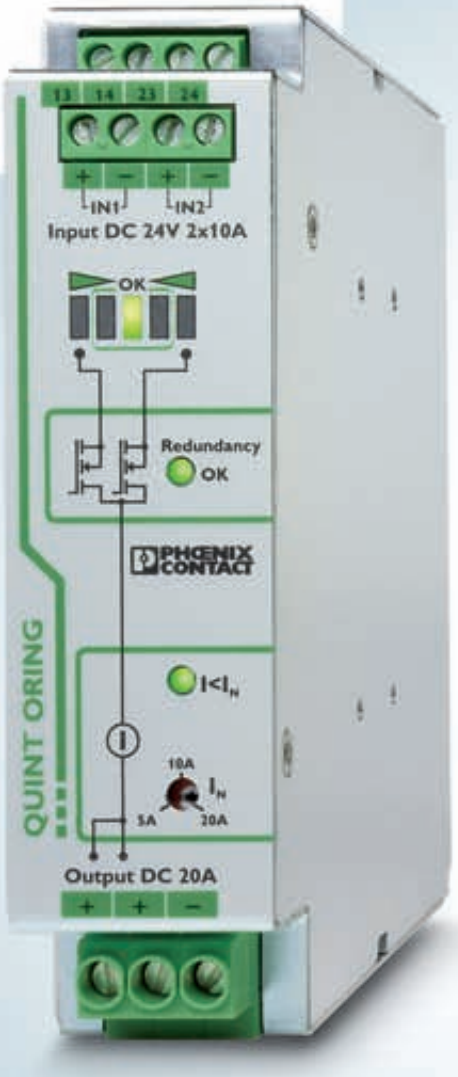
Redundancy modules Page 46 - 47

Standards and approvals Page 48 - 51

Groundbreaking technology – power supply solutions

In their search for the ideal power supply, our engineers are constantly developing new technologies. The final goal is always maximum availability for your plants and systems.

The QUINT POWER product range offers functionality at the highest level. The three new device series are setting the standard in their class.



ACB TECHNOLOGY

Redundancy modules with ACB technology

ACB (auto current balancing) technology doubles the service life of your redundant power supply units. This technology ensures that both power supply units are utilized to an equal degree. Critical operating states are detected at an early stage and you are alerted in good time.

For more information, refer to page 44 and onwards.

IQ TECHNOLOGY

Uninterruptible power supply units with IQ technology

The IQ technology with continuous monitoring and intelligent management provides you with information on the charging state, remaining runtime, and service life of your power storage device at all times. Intelligent communication informs you when a situation becomes critical. This reduces the amount of maintenance involved and increases your system availability.

For more information, refer to page 24 and onwards.

SFB TECHNOLOGY

Power supply units and DC/DC converters with SFB technology

SFB (selective fuse breaking) technology reliably switches off faulty current paths in the event of a short circuit. In this case, it supplies six times the nominal current for 12 ms. SFB technology reliably trips standard circuit breakers. You can then quickly locate the fault and ensure that important parts of your system remain in operation.

For more information, refer to page 6 and onwards.

Power supply units – maximum system availability thanks to SFB technology

Compact power supply units and DC/DC converters from the QUINT POWER range maximize the availability of your system.

Even standard circuit breakers can be tripped reliably and quickly with SFB (selective fuse breaking) technology and six times the nominal current for 12 ms. Faulty current paths are switched off selectively, the fault is located, and important system parts remain in operation.

Comprehensive diagnostics are provided through constant monitoring of the output voltage and output current. This preventive function monitoring visualizes critical operating states and indicates them to the controller before errors can occur.

QUINT POWER guarantees maximum system availability.

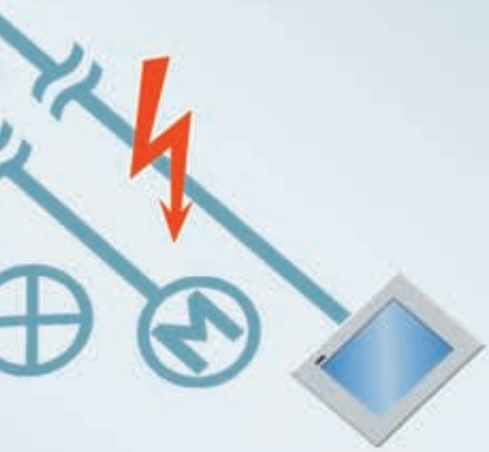
SFB TECHNOLOGY

Cost-effective selective fuse protection with SFB technology

In order to trip standard circuit breakers magnetically and quickly, power supply units must be able to supply several times the nominal current for a short period. With SFB (selective fuse breaking) technology, which supplies up to six times the nominal current for 12 ms, a dynamic power reserve is available.

In addition, tailored thermomagnetic circuit breakers, which ensure safe tripping even with extremely long cables, are designed specifically for the SFB technology.

Example: frayed display cable - the fuse trips, the lower-level display is dark. The controller, sensors, and actuators continue to operate without interruption. Production continues.



QUINT POWER power supply units for maximum system availability

The unique SFB technology and preventive function monitoring of the QUINT POWER power supply unit increase the availability of your application.

- **Worldwide use**
  Thanks to the wide-range input and international approval package
- **High operational reliability**
  Thanks to high MTBF > 500,000 h, long mains buffering times > 20 ms, high dielectric strength of single-phase devices of up to 300 V AC
- **Three-phase devices**
  Error-free operation, even in the event of a permanent phase failure, high surge resistance of up to 6 kV thanks to integrated gas-filled surge arrester
- **SEMI F47**
  Meets the stringent requirements of semiconductor production. A dip in the nominal voltage is bridged by the power supply unit.

SFB TECHNOLOGY

Your advantages

Fast tripping of standard circuit breakers

- Dynamic power reserve with SFB technology with up to six times the nominal current for 12 ms

Preventive function monitoring

- Indicates critical operating states before errors occur, thanks to permanent monitoring of the output voltage and output current
- Remote monitoring using active switching outputs and floating relay contact

Reliable starting of heavy loads

- POWER BOOST static power reserve with up to 1.5 times the nominal current permanently

Easy-maintenance connection technology

- Keyed COMBICON plug-in connectors (up to and including 10 A)

Minimize installation costs

- Third negative terminal block for grounding on the secondary side

Compensation of voltage drops

- Output voltage can be set on the front
- A voltage range of 5 … 56 V DC can be covered with three power supply units with output voltages of 12, 24, and 48 V DC

Saves over 50% space in the control cabinet

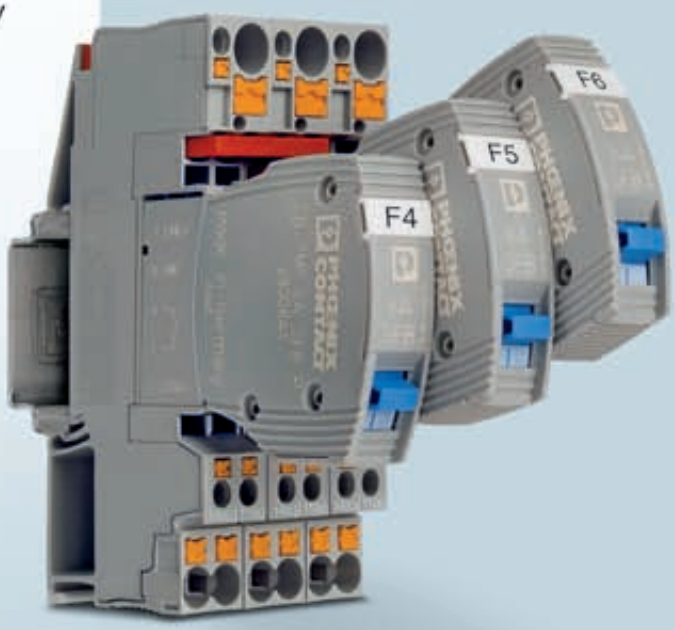
- Narrow design, e.g., 40 A output current in 96 mm wide housing

Robust design

- Metal housing and wide temperature range from -25°C to +70°C

Device circuit breakers – protection with SFB trigger characteristic

Thermomagnetic device circuit breakers with the SFB trigger characteristic provide maximum overcurrent protection – even in large systems with long cable paths or low cable cross sections.
Electronic circuit breakers complete the product range.



Your advantages

Modular expansion possible
- Thanks to the uniform, plug-in housing concept

Monitoring from any location
- With the sophisticated remote signaling concept

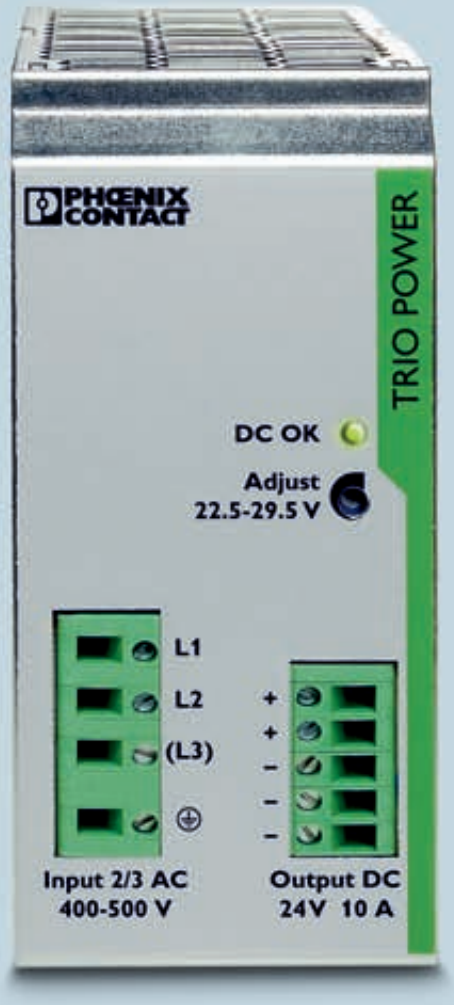
Maximum overcurrent protection
- Over long cable paths thanks to SFB trigger characteristic

Supply/remote signaling can be bridged
- With CLIPLINE complete accessories

When designing your system, consider the configuration matrix that describes the maximum cable lengths depending on the performance class of devices, the cable cross section, and the circuit breaker. Those interested can download the matrix from the Phoenix Contact homepage free of charge.

TRIO POWER power supply units – basic functionality at the highest level

TRIO POWER combines basic functionality with high quality and reliability. This makes the power supply units ideal for use in standard machine production.



Your advantages

Robust design
- Metal housing and wide temperature range from -25°C to +70°C

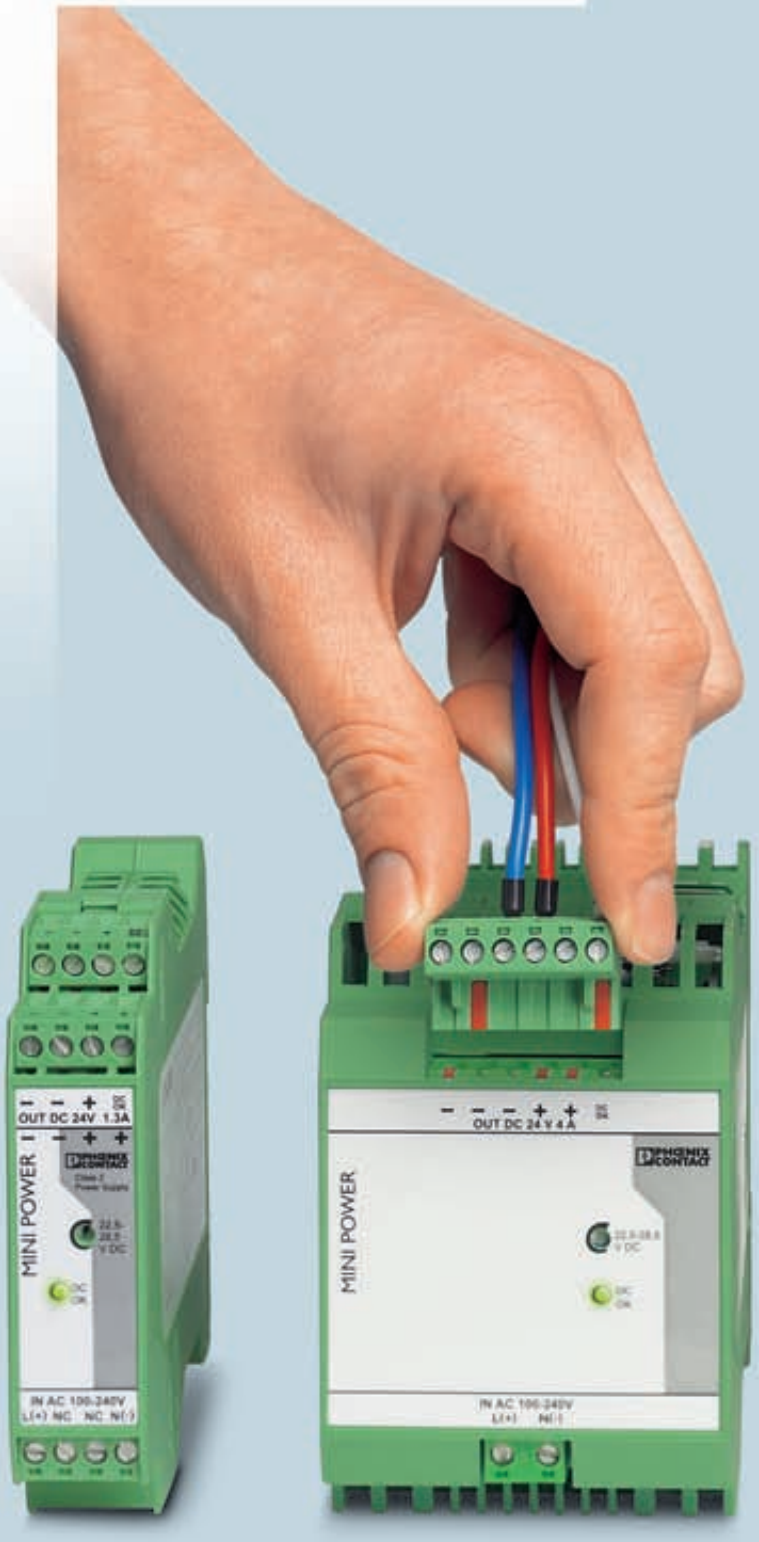
Minimize installation costs
- Third negative terminal block for grounding on the secondary side

High operational reliability
- High MTBF > 500,000 h
- High dielectric strength of single-phase devices of up to 300 V AC

Compensation of voltage drops
- Output voltage can be set on the front

MINI POWER power supply units for measurement and control technology

Modular electronics housing has become standard in measurement and control technology. MINI POWER is the ideal power supply unit.



Your advantages

Easy-maintenance connection technology
- Keyed COMBICON plug-in connectors

Flexible
- Numerous output voltages and versions available

Function monitoring
- Active function monitoring via the switching output for remote monitoring of the output voltage

STEP POWER power supply units for installation distributors

Mounting on level surfaces: lugs integrated in the housing eliminate the need for additional mounting material.

The STEP POWER range of power supply units is the ideal choice for installation distributors and flat control panels.
The low idling losses and the high degree of efficiency ensure maximum energy efficiency in its class.

Your advantages

Flexible mounting
- Snapping onto the DIN rail or screwing onto a level surface

Save energy
- Special ASIC (application-specific integrated circuit) enables maximum energy efficiency and incredibly low idling losses

Outdoor installation
- Wide temperature range from -25°C to +70°C

Reliable supply
- High MTBF > 500,000 h
- U/I characteristic curve for supplying capacitive loads

Power supply units – a comparison of the advantages

Choose the range of power supply units that best suits your requirements based on functionality and power.

The product ranges are suitable for different requirements with regard to the output power and their functionality.

QUINT POWER	TRIO POWER	MINI POWER	STEP POWER	
•	•	•	•	**Worldwide use** thanks to the wide-range input and international approval package
•	•	•	•	**High operational reliability** thanks to high MTBF > 500,000 h
•	•	•	•	**High operational reliability** thanks to long mains buffering times > 20 ms
•	•	•	•	**Can be connected in parallel** for increased performance and redundancy
•	•	•	•	**Simplified startup** thanks to LED function monitoring
•	•	•	•	**Outdoor installation permitted** thanks to wide temperature range
•	•	•	•	**Compensation of voltage drops** and charging of rechargeable batteries by means of adjustable output voltage
•		•		**Easy-maintenance connection technology** thanks to COMBICON plug-in connectors (up to and including 10 A)
•		•		**Active function monitoring** by means of switching output for remote diagnostics
•		•		**Reliable starting of difficult loads** with POWER BOOST power reserve
•	•			**Error-free operation** of three-phase devices even when a phase fails permanently
•				**Preventive function monitoring** indicates critical operating states before errors occur
•				**Fast tripping** of circuit breakers thanks to SFB technology

QUINT POWER 1~

SFB TECHNOLOGY

Input: single-phase, 85 ... 264 V AC, 90 ... 350 V DC

24 V/3.5 A	**24 V/5 A**	**24 V/10 A**	**24 V/20 A**	**24 V/40 A**
QUINT-PS/1AC/24DC/3.5 2866747	QUINT-PS/1AC/24DC/5 2866750	QUINT-PS/1AC/24DC/10 2866763	QUINT-PS/1AC/24DC/20 2866776	QUINT-PS/1AC/24DC/40 2866789
		48 V/5 A	**48 V/10 A**	**48 V/20 A**
		QUINT-PS/1AC/48DC/5 2866679	QUINT-PS/1AC/48DC/10 2866682	QUINT-PS/1AC/48DC/20 2866695
		12 V/15 A	**12 V/20 A**	
		QUINT-PS/1AC/12DC/15 2866718	QUINT-PS/1AC/12DC/20 2866721	

QUINT POWER 3~

SFB TECHNOLOGY

Input: 3-phase, 3 x 320 ... 575 V AC, 450 ... 800 V DC

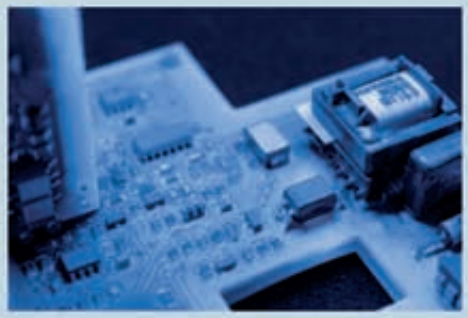
24 V/5 A	**24 V/10 A**	**24 V/20 A**	**24 V/40 A**
QUINT-PS/3AC/24DC/5 2866734	QUINT-PS/3AC/24DC/10 2866705	QUINT-PS/3AC/24DC/20 2866792	QUINT-PS/3AC/24DC/40 2866802
			48 V/20 A
			QUINT-PS/3AC/48DC/20 2320827

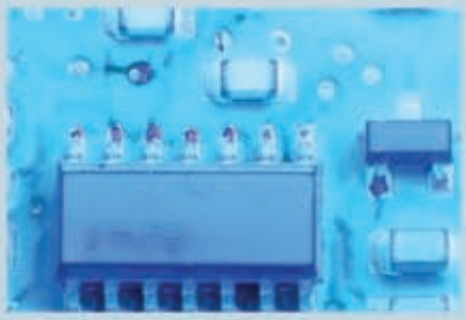
QUINT POWER, dip-coated

SFB TECHNOLOGY

Input: single-phase: 85 ... 264 V AC, 90 ... 350 V DC/3-phase: 3 x 320 ... 575 V AC, 450 ... 800 V DC

1 AC/24 V/5 A	**1 AC/24 V/10 A**	**1 AC/24 V/20 A**	**3 AC/24 V/20 A**
QUINT-PS/1AC/24DC/5/CO **2320908**	**QUINT-PS/1AC/24DC/10/CO** **2320911**	**QUINT-PS/1AC/24DC/20/CO** **2320898**	**QUINT-PS/3AC/24DC/20/CO** **2320924**





It is only through the dip-coating process used for QUINT POWER power supply units that inaccessible parts of the PCB are also reached (coated areas appear blue)

Dip-coated power supply units

- Optimum protection with dip-coating for 100% humidity: unlike spray coating, even wired components such as bridge rectifiers and power semiconductors are coated completely, as are the bottom of components, cavities or the cutting edges of PCBs.
- A protective coating is required for extreme environments in order to prevent failure of the power supply unit, e.g., caused by electrochemical migration or corrosion-related creepage currents.
- Electrochemical migration: a film of moisture forms on the PCB. This reduces the surface resistance and with it the insulation capability. Conductors and solder materials are affected and no longer function correctly.
- Corrosion-related creepage currents: these occur at copper contacts, primarily in sulfidizing atmospheres with a relative humidity of over 60%.

TRIO POWER 1~

Input: single-phase, 85 ... 264 V AC

24 V/2.5 A	24 V/5 A	24 V/10 A	24 V/20 A
TRIO-PS/1AC/24DC/2.5 2866268	TRIO-PS/1AC/24DC/5 2866310	TRIO-PS/1AC/24DC/10 2866323	TRIO-PS/1AC/24DC/20 2866381
12 V/5 A	**12 V/10 A**	**48 V/5 A**	**48 V/10 A**
TRIO-PS/1AC/12DC/5 2866475	TRIO-PS/1AC/12DC/10 2866488	TRIO-PS/1AC/48DC/5 2866491	TRIO-PS/1AC/48DC/10 2866501

TRIO POWER 3~

Input: 3-phase, 3 x 320 ... 575 V AC

24 V/5 A	24 V/10 A	24 V/20 A	24 V/40 A
TRIO-PS/3AC/24DC/5 2866462	TRIO-PS/3AC/24DC/10 2866459	TRIO-PS/3AC/24DC/20 2866394	TRIO-PS/3AC/24DC/40 2866404

TRIO for frequency inverters

Input: 450 V DC ... 840 V DC

24 V/20 A

TRIO-PS/600DC/24DC/20
2866530

- Direct connection to the 600 V DC intermediate circuit of a frequency inverter
- Mains failure: 24 V loads continue to be supplied using the kinetic energy of the motor. In this case, the motors act as generators: as long as they are moving, they supply energy to the intermediate circuit.
- Used, for example, for the controlled shutdown of industrial PCs

MINI POWER

Input: single-phase, 85 ... 264 V AC, 90 ... 350 V DC

24 V/1.3 A

MINI-PS-100-240AC/24DC/1.3
2866446

5 V/3 A

MINI-PS-100-240AC/5DC/3
2938714

24 V/2 A

MINI-PS-100-240AC/24DC/2
2938730

±15 V/1 A

MINI-PS-100-240AC/2x15DC/1
2938743

10 ... 15 V/2 A

MINI-PS-100-240AC/10-15DC/2
2938756

24 V/4 A

MINI-PS-100-240AC/24DC/4
2938837

10 ... 15 V/8 A

MINI-PS-100-240AC/10-15DC/8
2866297

24 V/100 W

MINI-PS-100-240AC/24DC/C2LPS
2866336

Certified according to UL 1310/508 Listed Class 2

Input: single-phase, 85 ... 264 V AC

24 V/1.5 A

MINI-SYS-PS-100-240AC/24DC/1.5
2866983

24 V/1.5 A

MINI-PS-100-240AC/24DC/1.5/EX
2866653

DIN rail connector

ME 17,5 TBUS 1.5/5-ST-3,82 GN
2709561

Optional, 2 required per power supply unit (24 V/1.5 A)

STEP POWER

Input: single-phase, 85 ... 264 V AC, 95 ... 250 V DC

24 V/0.5 A

STEP-PS/1AC/24DC/0.5
2868596

Flat design

24 V/0.75 A FL

STEP-PS/1AC/24DC/0.75/FL
2868622

24 V/0.75 A

STEP-PS/1AC/24DC/0.75
2868635

24 V/1.75 A

STEP-PS/1AC/24DC/1.75
2868648

12 V/1 A

STEP-PS/1AC/12DC/1
2868538

12 V/1.5 A FL

STEP-PS/1AC/12DC/1.5/FL
2868554

12 V/1.5 A

STEP-PS/1AC/12DC/1.5
2868567

12 V/3 A

STEP-PS/1AC/12DC/3
2868570

24 V/2.5 A

STEP-PS/1AC/24DC/2.5
2868651

12 V/5 A

STEP-PS/1AC/12DC/5
2868583

5 V/6.5 A

STEP-PS/1AC/5DC/6.5
2868541

15 V/4 A

STEP-PS/1AC/15DC/4
2868619

24 V/4.2 A

STEP-PS/1AC/24DC/4.2
2868664

48 V/2 A

STEP-PS/1AC/48DC/2
2868680

24 V/100 W

STEP-PS/1AC/24DC/3.8/C2LPS
2868677

Certified according to UL 1310/508
Listed Class 2

STEP for AC applications

Input: single-phase, 43 ... 52 V AC, 60 ... 80 V DC

48 V AC/24 DC/0.5 A

STEP-PS/48AC/24DC/0.5
2868716

- An application is supplied with 48 V AC for safety reasons. This module simultaneously provides a regulated 24 V DC voltage for supplying sensitive loads.

DC/DC converters adapt voltages

QUINT and MINI DC/DC converters alter the voltage level, regenerate the voltage at the end of long cables or enable the creation of independent supply systems by means of electrical isolation.

Your advantages

Regeneration of the output voltage

- Constant voltage, even at the end of long cables
- Wide input voltage range
  - **24 V**: 18 ... 32 V DC, from 14 ... 32 V DC during operation
  - **12 V**: 9 ... 18 V DC
  - **48 V**: 30 ... 60 V DC

Preventive function monitoring

- Indicates critical operating states before errors occur, thanks to permanent monitoring of the input voltage, output voltage, and output current
- Remote monitoring using active switching output and floating relay contact

Reliable starting of difficult loads

- POWER BOOST static power reserve with up to 1.25 times the nominal current permanently

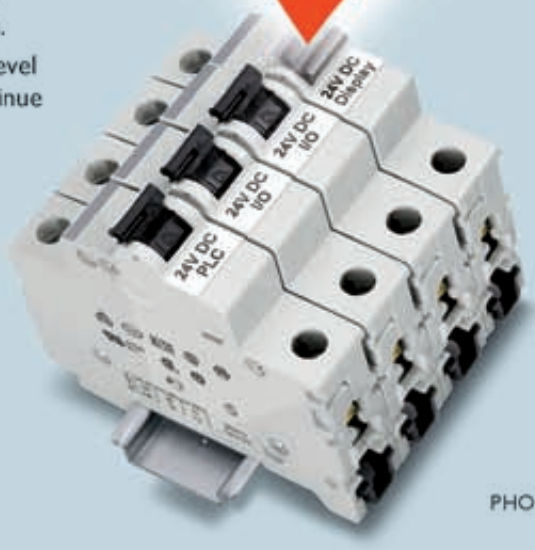
SFB TECHNOLOGY

Cost-effective selective fuse protection with SFB technology

Fast tripping of standard circuit breakers

Dynamic power reserve with SFB (selective fuse breaking) technology trips standard circuit breakers magnetically and quickly with up to six times the nominal current for 12 ms.

Example: frayed display cable - the fuse trips, the lower-level display is dark. The controller, sensors, and actuators continue to operate without interruption.
Production continues.



QUINT DC/DC converters

Input: single-phase, 18 ... 32 V DC

24 V DC/24 V DC/5 A

QUINT-PS/24DC/24DC/5
2320034

24 V DC/24 V DC/10 A

QUINT-PS/24DC/24DC/10
2320092

24 V DC/24 V DC/20 A

QUINT-PS/24DC/24DC/20
2320102

Input: single-phase, 18 ... 32 V DC

24 V DC/12 V DC/8 A

QUINT-PS/24DC/12DC/8
2320115

24 V DC/48 V DC/5 A

QUINT-PS/24DC/48DC/5
2320128

Input: single-phase, 9 ... 18 V DC

12 V DC/24 V DC/5 A

QUINT-PS/12DC/24DC/5
2320131

Input: single-phase, 30 ... 60 V DC

48 V DC/24 V DC/5 A

QUINT-PS/48DC/24DC/5
2320144

Matching voltage levels

When it comes to altering voltage levels, you'll find suitable modules in the DC/DC converter product range. The designation below each product indicates the nominal values for the input voltage, output voltage, and current.

Voltage levels of QUINT DC/DC converters

TRIO for frequency inverters

Input: 450 V DC ... 840 V DC

- Connection to 600 V DC intermediate circuits
- Mains failure: 24 V loads are supplied using the kinetic energy of the motor

24 V/20 A

TRIO-PS/600DC/24DC/20
2866530

Accessories for MINI DC/DC converters

Input: single-phase, 10 ... 42 V AC

- AC power terminal block supplies MINI DC/DC converters
- AC voltage of a transformer is rectified and filtered

10 ... 42 V AC/15 ... 60 V DC/3 A

MINI-PS-10-42AC/15-60DC/3
2320199

MINI DC/DC converters

Input: single-phase, 10 ... 32 V DC, 36 ... 75 V DC

12 ... 24 V DC/24 V DC/1 A

MINI-PS-12-24VDC/24DC/1
2866284

48 ... 60 V DC/24 V DC/1 A

MINI-PS-48-60DC/24DC/1
2866271

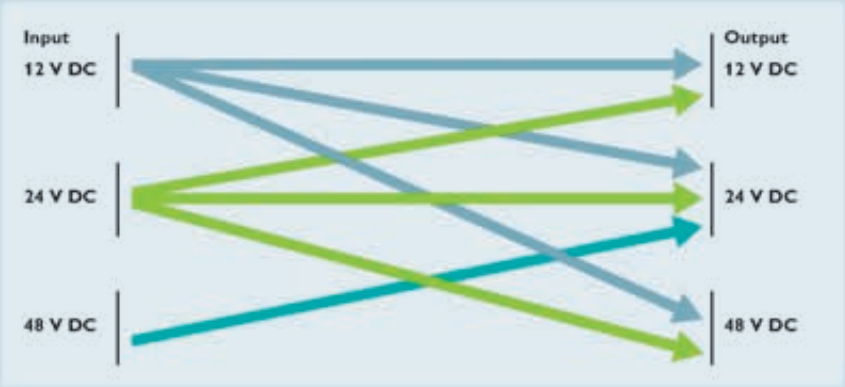
12 ... 24 V DC/5 ... 15 V DC/2 A

MINI-PS-12-24DC/5-15DC/2
2320018

12 ... 24 V DC/48 V DC/0.7 A

MINI-PS-12-24DC/48DC/0.7
2320021

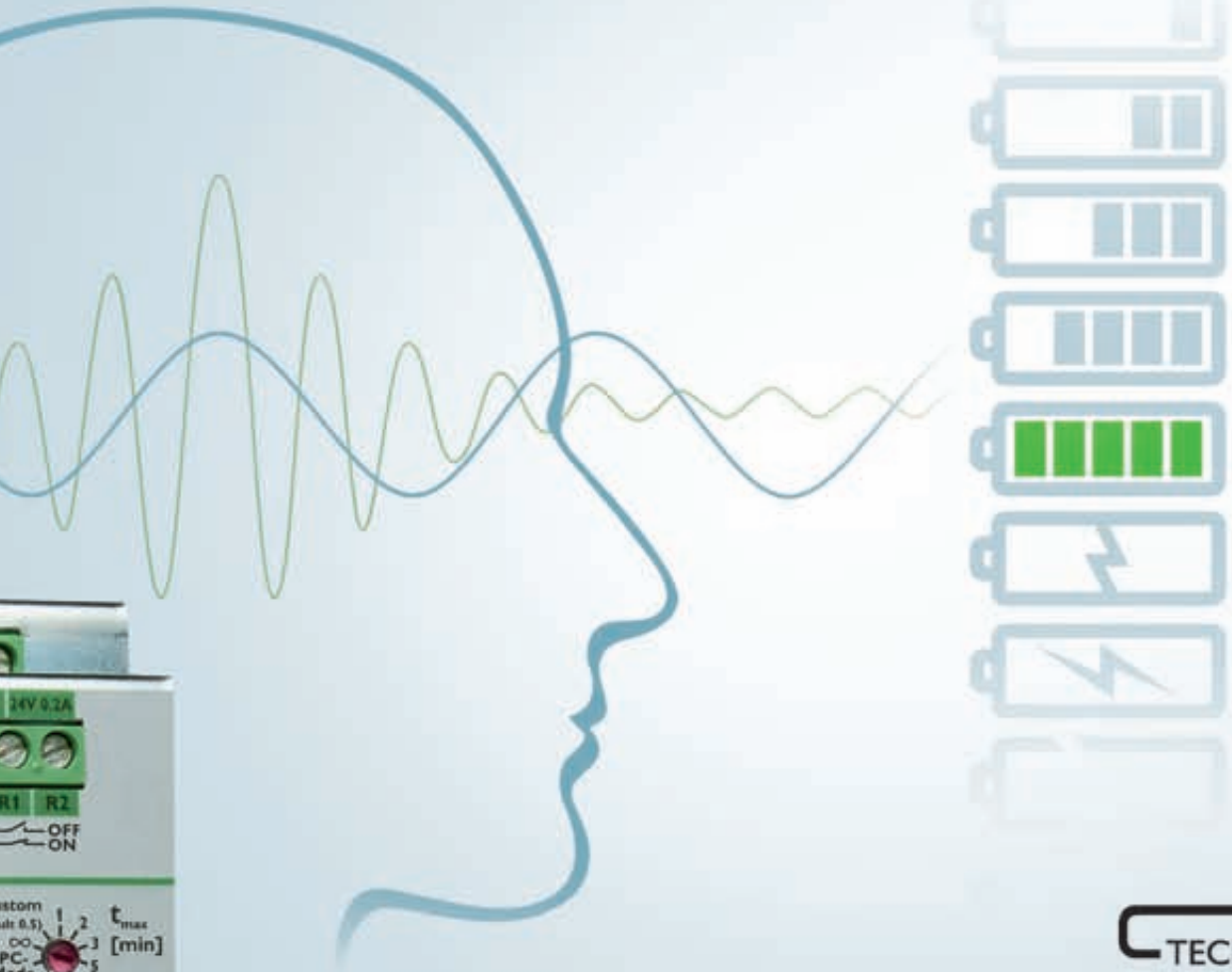
Voltage levels of MINI DC/DC converters



The intelligent UPS system ensures maximum system availability

Uninterruptible power supply units (UPS) continue to deliver power even in the event of mains failure. With IQ technology, you are one step ahead:

- You are kept informed of the charging state and remaining runtime of your power storage device at all times.
- You are provided with information about the remaining life expectancy of your power storage device and warned of failure at an early stage.
- You can be sure that the QUINT UPS-IQ will automatically recognize the connected power storage device, charge it optimally, and therefore extend the service life.
- You can transfer all relevant information quickly and easily to your computer and higher-level controllers for further processing.
- You can be sure that the QUINT UPS-IQ will reliably start high loads thanks to its large power reserves.



IQ TECHNOLOGY

Intelligence for maximum system availability

Task: an industrial PC must be continuously supplied with 24 V DC.

Previous solution: the UPS with 3.4 Ah buffers 24 V DC/5 A for 20 minutes under optimum conditions. **Can the power storage device actually bridge this time?** Charging state, performance, and remaining runtime of the power storage device are unknown.

Solution with QUINT UPS-IQ: The intelligent UPS determines all relevant power storage device states. This ensures the transparency required to guarantee the stability of the supply and optimum use of the power storage device at all times.

The intelligent battery management detects the current charging state of the connected power storage device and uses this to calculate the remaining runtime.
The QUINT UPS-IQ also indicates whether the buffer time is actually 20 minutes. As soon as an adjustable threshold value is reached, a warning message is sent via the floating relay contact, the software or directly to higher-level controllers. The IPC continues working for as long as possible and is shut down before the battery voltage runs out.

Intelligence in any combination

Create your own individual solution – tailored to your application.

1. Choose your power supply unit:
Compact QUINT POWER power supply units ensure maximum system availability.

2. Choose your UPS module:
The intelligent QUINT UPS-IQ actively informs you when necessary.

3. Choose your power storage device:
- UPS-CAP for maximum service life
- UPS-BAT/LI-ION for long service life with long buffer times
- UPS-BAT/VRLA and VRLA-WTR for maximum buffer times

Compact versions are also available:

Maintenance-free
The QUINT BUFFER buffer module for failures lasting several seconds combines a UPS module and maintenance-free capacitors in the same housing

Easy to retrofit
QUINT-UPS combines the UPS module and power storage device with lead AGM technology in the same housing

IQ TECHNOLOGY

What makes the QUINT UPS-IQ an intelligent UPS?

The IQ technology is intuitive and provides you with information as soon as it is required.

Intelligent battery management:

SOC (state of charge) – current charging state and remaining runtime of the power storage device.

SOH (state of health) – remaining life expectancy of the power storage device, warns of failure at an early stage.

SOF (state of function) – determines the current performance of the power storage device.

Intelligent battery control
Detects the connected battery type automatically and maximizes the remaining service life of the power storage device via an optimally adapted charging characteristic.

Intelligent charging
Adapts the charging current, thereby ensuring the fastest possible recharging and availability.

Data port
Used for communication between the UPS module and PC/higher-level controller.

UPS modules for DC applications

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

IQ TECHNOLOGY

SFB TECHNOLOGY

Your advantages

Optimum use of the buffer time and preventive monitoring of the power storage device

- Detects the current charging state of the power storage device and calculates the remaining runtime
- Calculates the current life expectancy of the power storage device

Substantial power reserve

- For mains and battery operation
- POWER BOOST static power reserve
- Dynamic power reserve with SFB (selective fuse breaking) technology

Fast battery charging

- Adaptive current management charges the battery twice as fast as before, while simultaneously providing sufficient energy for the loads

Comprehensive signaling and parameterization

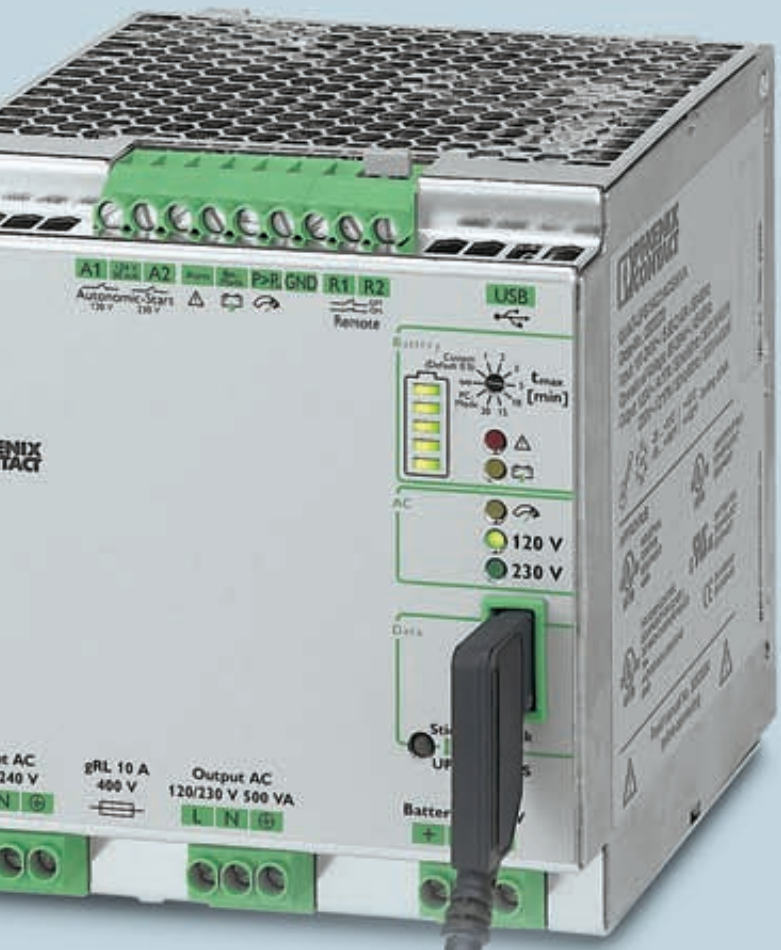
- Floating relay contacts
- Data port
- Parameterization with memory stick

Power supply unit **UPS module** Power storage device

UPS module for AC applications

The UPS module for 120 V AC/230 V AC with 400 W/500 VA power can be combined with UPS-CAP and UPS-BAT power storage devices. The power supply unit is already integrated.

IQ TECHNOLOGY



Power supply unit **UPS module** Power storage device

Your advantages

Optimum use of the buffer time and preventive monitoring of the power storage device

- Detects the current charging state of the power storage device and calculates the remaining runtime
- Calculates the current life expectancy of the power storage device

Worldwide use

- Input voltages from 96 … 264 V AC
- Storage of the level and frequency of the input voltage, in the event of mains failure, the output is automatically supplied with 120 V AC/60 Hz or 230 V AC/50 Hz
- Manual voltage preselection is possible

Maximum energy efficiency

- Offline operation: 98% efficiency for charged power storage device

Comprehensive signaling and parameterization

- Switching outputs
- USB interface
- Data port
- Parameterization with memory stick

Simplified startup

- The UPS can be switched on without a power supply network

QUINT UPS-IQ
power storage devices

You can always find the ideal solution for maximum system availability with the new modular system for uninterruptible power supply units.

The various storage media feature a wide range of different properties: long service life or very long buffer time, no maintenance or use at extreme ambient temperatures.

Whatever your requirements, we offer the ideal power storage device.

Type	Buffer time (typical)	Temperature
UPS-CAP...	< 5 min.	**-40 to +60°C**
UPS-BAT/LI-ION...	> 40 min.	-20 to +58°C
UPS-BAT/VRLA-WTR...	**> 5 h**	**-40 to +60°C**
UPS-BAT/VRLA...	**> 8 h**	0 to +40°C

UPS-BAT/VRLA-WTR...
(Valve Regulated Lead Acid/ Wide Temperature Range)

- Maximum buffer times at extreme temperatures
- Pure lead AGM (Absorbent Glass Mat) technology

UPS-BAT/VRLA...
(Valve Regulated Lead Acid)

- Maximum buffer times
- Lead AGM (Absorbent Glass Mat) technology

Service life at 20°C	Service life at 50°C	Charging cycles at 20°C	Weight (standardized)
> 20 years	8 years	> 500,000	0.4 kg
15 years	2 years	7000	0.5 kg
15 years	1.5 years	300	1.3 kg
6 to 9 years	1 year	250	1 kg

Your advantages

Fast installation

- Automatic detection of the power storage device by QUINT UPS-IQ
- Tool-free replacement during operation

Maximum availability

- Constant communication with QUINT UPS-IQ for continuous monitoring and intelligent management

Extremely long service life

- Optimum charging characteristic according to the technology and ambient conditions

BATTERY CHARGE 100%

Immediate availability:
All power storage devices leave our warehouse fully charged.

UPS-BAT/LI-ION...

- Long service life with long buffer times
- Lithium-ion technology

UPS-CAP (Capacitor)

- Maximum service life
- Maintenance-free double-layer capacitors

Uninterruptible power supply with IQ technology

Buffer times for DC UPS modules

Select your **UPS-BAT** and **UPS-CAP** for 24 V DC applications here.
Example: 20 A should be buffered for 6 minutes

➔ ▭

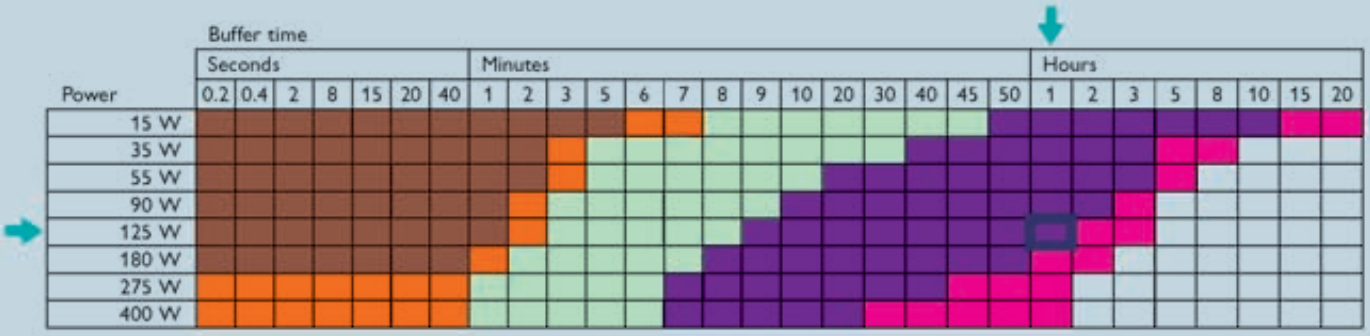
➔ QUINT-DC-UPS/24DC/20A and UPS-BAT/VRLA-WTR/24DC/13AH

Buffer times for AC UPS module

Select your **UPS-BAT** and **UPS-CAP** for 120 V AC/230 V AC applications here.
Example: 125 W should be buffered for one hour:

➔ ▭

➔ QUINT-UPS/1AC/1AC/500VA and UPS-BAT/VRLA-WTR/24DC/13AH



1+1 … Two rechargeable battery modules of the same capacity are required in this case.
The data is based on an ambient temperature of 20°C.

IQ TECHNOLOGY

DC UPS module

24 V/5 A

QUINT-UPS/ 24DC/24DC/5 2320212

Recommended:
UPS-CAP
UPS-BAT/VRLA-WTR
UPS-BAT/LI-ION

24 V/10 A

QUINT-UPS/ 24DC/24DC/10 2320225

Recommended:
UPS-CAP
UPS-BAT/VRLA-WTR
UPS-BAT/LI-ION

24 V/20 A

QUINT-UPS/ 24DC/24DC/20 2320238

Recommended:
UPS-CAP 20 A
UPS-BAT/VRLA-WTR
UPS-BAT/LI-ION

24 V/40 A

QUINT-UPS/ 24DC/24DC/40 2320241

Recommended:
UPS-BAT/VRLA-WTR

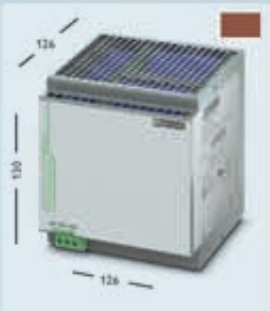
AC UPS module

400 W/500 VA

QUINT-UPS/ 1AC/1AC/500VA 2320270

Recommended:
UPS-CAP 20 A
UPS-BAT/VRLA-WTR
UPS-BAT/LI-ION

UPS-CAP power storage device



24 V DC/10 A/10 kJ

UPS-CAP/ 24DC/10A/10KJ 2320377

24 V DC/20 A/20 kJ

UPS-CAP/ 24DC/20A/20KJ 2320380

UPS-BAT/VRLA-WTR power storage device

24 V DC/13 Ah

UPS-BAT/VRLA-WTR/ 24DC/13AH 2320416

24 V DC/26 Ah

UPS-BAT/VRLA-WTR/ 24DC/26AH 2320429

UPS-BAT/LI-ION power storage device

120 WH

UPS-BAT/LI-ION/ 24DC/120WH 2320351

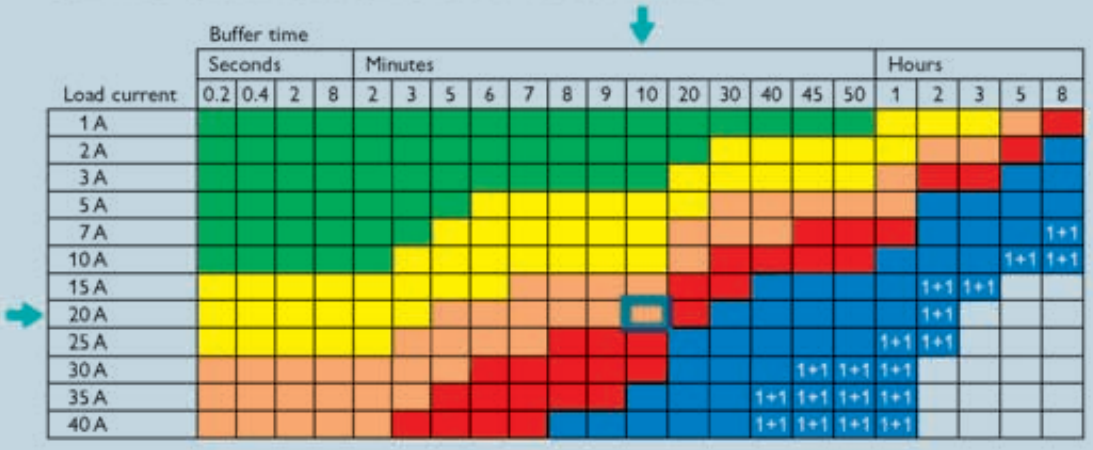
Uninterruptible power supply with IQ technology

Buffer times for DC UPS modules

Select your **UPS-BAT** for 24 V DC applications here.
Example: 20 A should be buffered for 10 minutes

➔ ▭

➔ QUINT-DC-UPS/24DC/20A and UPS-BAT/VRLA/24DC/7.2AH

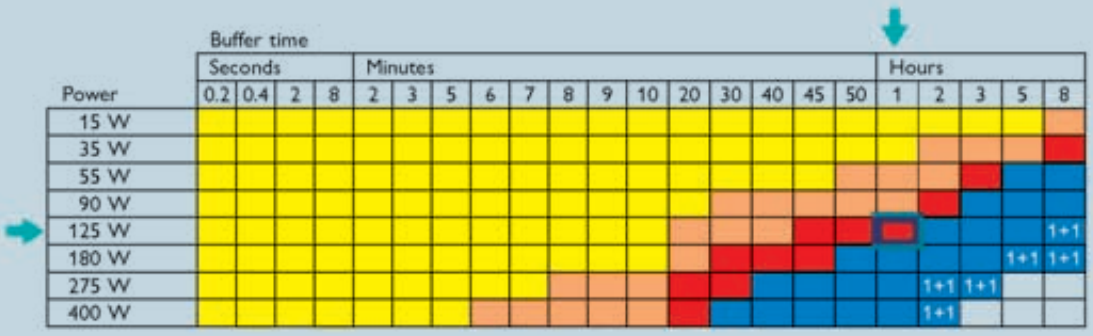


Buffer times for AC UPS module

Select your **UPS-BAT** for 120 V AC/230 V AC applications here.
Example: 125 W should be buffered for one hour

➔ ▭

➔ QUINT-UPS/1AC/1AC/500VA and UPS-BAT/VRLA/24DC/12AH



1+1 … Two rechargeable battery modules of the same capacity are required in this case.
The data is based on an ambient temperature of 20°C.

IQ TECHNOLOGY

DC UPS module

24 V/5 A

QUINT-UPS/ 24DC/24DC/5 2320212

Recommended:
UPS BAT/ VRLA/24DC...
1.3 Ah ... 12 Ah

24 V/10 A

QUINT-UPS/ 24DC/24DC/10 2320225

Recommended:
UPS BAT/ VRLA/24DC...
1.3 Ah ... 38 Ah

24 V/20 A

QUINT-UPS/ 24DC/24DC/20 2320238

Recommended:
UPS BAT/ VRLA/24DC...
3.4 Ah ... 38 Ah

24 V/40 A

QUINT-UPS/ 24DC/24DC/40 2320241

Recommended:
UPS BAT/ VRLA/24DC...
7.2 Ah ... 38 Ah

AC UPS module

400 W/500 VA

QUINT-UPS/ 1AC/1AC/500VA 2320270

Recommended:
UPS BAT/ VRLA/24DC...
3.4 Ah ... 38 Ah

UPS-BAT/VRLA power storage device

1.3 Ah

UPS-BAT/ VRLA/24DC/1.3AH 2320296

3.4 Ah

UPS-BAT/ VRLA/24DC/3.4AH 2320306

7.2 Ah

UPS-BAT/ VRLA/24DC/7.2AH 2320319

12 Ah

UPS-BAT/ VRLA/24DC/12AH 2320322

38 Ah

UPS-BAT/ VRLA/24DC/38AH 2320335

QUINT UPS-IQ
Signaling and configuration

Monitor and configure your UPS system using the UPS-CONF configuration and management software.

The software can be downloaded free of charge at: www.phoenixcontact.net/catalog.

For quick startup, important information is provided in the poster-sized brief instructions. Pictures and screen shots aid hardware and software installation and help explain the method of operation of UPS CONF.

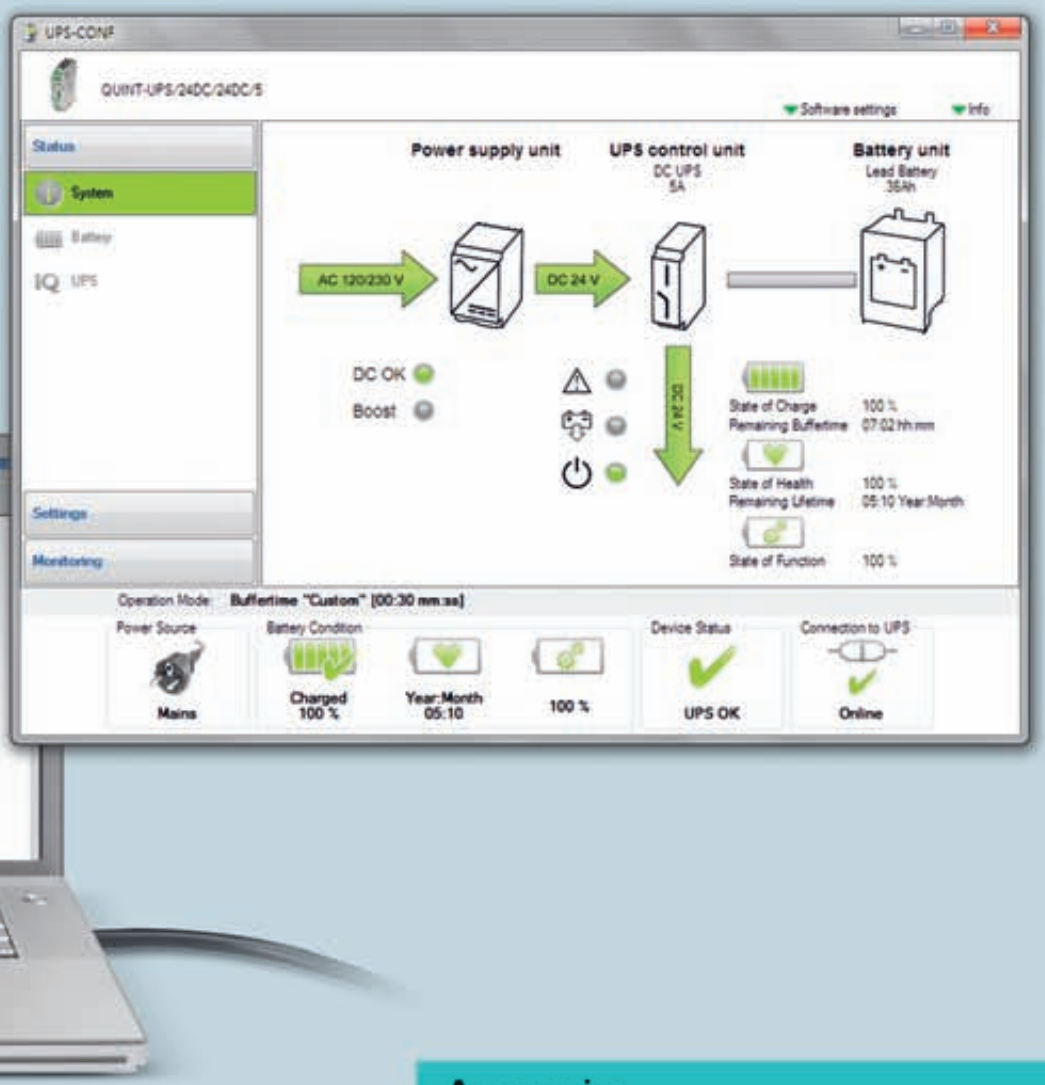
Signaling via contacts

LEDs and floating relay contacts provide function monitoring. QUINT UPS-IQ supplies the following information via the wired contacts:

- The load is being supplied by the power storage device
- The power storage device is being charged
- An alarm is present

USB interface is ideal for:

- Monitoring and configuration with UPS-CONF
- Safe shutdown of industrial PCs with optimum utilization of the power storage device



Configurable

- Flexible adaptation of QUINT UPS-IQ behavior to individual requirements

Preventive function monitoring

- All relevant operating parameters are displayed graphically
- Important messages appear in the foreground

Integrated data recorder

- Log file archives events, e.g., when and for how long QUINT UPS-IQ has bridged mains failures

Accessories

Software

UPS-CONF V2.1 or later
2320403

- Free download at www.phoenixcontact.net/catalog

USB data cable

IFS-USB-DATACABLE
2320500

- For communication between UPS module and UPS-CONF
- Length: 3 m

Memory stick

IFS-CONFSTICK
2986122

- For saving and transferring configured values to other QUINT UPS-IQ

QUINT UPS-IQ Communication

Use the available data cables to integrate the UPS module into your application. You can therefore benefit from all the advantages of IQ technology and be kept informed of the state of your UPS solution.

The information provided by QUINT UPS-IQ can, for example, be forwarded to higher-level controllers via Ethernet or be implemented directly in control solutions from Phoenix Contact.

The QUINT UPS-IQ function block for the PC WORX software is available free of charge at: www.phoenixcontact.net/catalog.

Communication with the ILC

The IFS-MINI-DIN DATACABLE is suitable for direct communication with the 100 series higher-level ILC (Inline Controller).
The function block for the PC WORX software is used to process the information provided.

Accessories

RS-232 data cable

IFS-RS232-DATACABLE
2320490

- Modbus communication with RS-232 interface
- COM server from Phoenix Contact for Ethernet communication
- Address higher-level controllers such as Inline controllers (ILCs) or Remote Field Controllers (RFCs) directly
- Use the Inline controller from Phoenix Contact as a gateway and access other communication protocols
- Length: 2 m

MINI DIN data cable

IFS-MINI-DIN-DATACABLE
2320487

- For direct communication with the ILC controller from the Phoenix Contact Inline system (100 series)
- Length: 2 m

QUINT UPS-IQ function blocks

FB_UPS-IQ_PC WORX_6

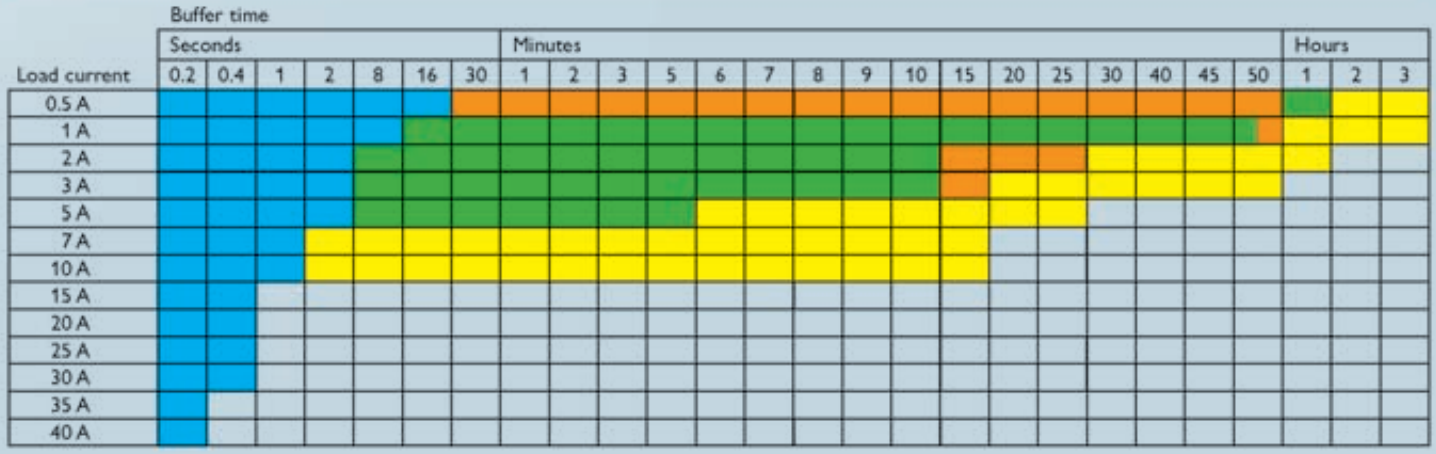
- For further processing information communicated via data cables
- Free download at www.phoenixcontact.net/catalog

UPS modules with integrated power storage device

Particularly space saving and easy to retrofit, the UPS module and power storage device are combined in the same housing. The maintenance-free buffer module is now also available with 40 A load current.

Power supply unit **UPS module** **Power storage device**

Buffer times for DC UPS modules



QUINT UPS

Input: single-phase, 18 ... 30 V DC

24 V DC/24 V DC/5 A/1.3 Ah

QUINT-UPS/24DC/24DC/5/1.3AH
2320254

24 V DC/24 V DC/10 A/3.4 Ah

QUINT-UPS/24DC/24DC/10/3.4AH
2320267

- Power storage device with lead AGM technology

QUINT BUFFER

24 V/40 A

QUINT-BUFFER/24DC/24DC/40
2320393

- Capacitor-based power storage device

STEP UPS

Input: single-phase, 22.5 ... 29.5 V DC

24 V DC/24 V DC/3 A

STEP-UPS/24DC/24DC/3
2868703

- LiPo-based power storage device

Modular solutions for AC networks

Your advantages

Safety shutdown
- Thanks to integration into safety concepts via two-pos. connection

Easy battery replacement
- Batteries can be changed while installed (hot swap)

Optimum legibility of the display
- Control panel can be swiveled 90°

Reliable protection against power failure
- Highest VFI-SS-111 classification according to IEC 62040-3

Long battery life
- Thanks to special charge control with ripple-free DC voltage

Class VFI-SS-111 single-phase uninterruptible power supply units are available as a stand-alone device or for mounting in a 19" rack.

The devices protect the connected loads against any faults on the mains side. The loads are permanently supplied with an output voltage or output frequency that is independent of the mains input.

For additional information, please refer to the "Uninterruptible power supply – modular solutions for AC grids" brochure.

UPS modules with integrated power supply unit

The UPS module and power supply unit are combined in the same housing in a particularly space saving way. Only one power storage device is required to complete the UPS system.

MINI UPS

Power storage devices with lead AGM technology for output voltages of 24 or 12 V DC. Buffer times of up to 50 minutes with 1 A load current.

TRIO UPS

Power storage devices with lead AGM technology buffer failures lasting up to 2 hours with 5 A load current.

Power supply unit **UPS module** Power storage device

MINI UPS

Input: single-phase, 85 ... 264 V AC, 100 ... 350 V DC

Output: 24 V DC/2 A
MINI-DC-UPS/24DC/2
Order No. 2866640

Output: 12 V DC/4 A
MINI-DC-UPS/12DC/4
Order No. 2866598

With the MINI-DC-UPS/12DC/4, buffer times are double those of the MINI-DC-UPS/24DC/2.

TRIO UPS

Input: single-phase, 85 ... 264 V AC, 100 ... 350 V DC

TRIO-UPS/1AC/24DC/5
Order No. 2866611

The **UPS-CONF-TRIO configuration software (Order No. 2320348)** for TRIO-UPS/24DC/5 can be downloaded free of charge from our homepage.

Select your **MINI-BAT** for MINI UPS and
QUINT-BAT for TRIO UPS here.
Example: 2 A should be buffered for 20 minutes

→ ■

→ MINI-DC-UPS/24DC/2 and MINI-BAT/24DC/1.3AH

	Minutes													Hours		
	2	3	5	6	7	8	9	10	20	30	40	45	50	1	2	3
0.5 A																
1 A																
1.5 A																
2 A																
3 A																
4 A																
5 A																

MINI-BAT for MINI UPS

24 V DC/0.8 Ah

MINI-BAT/24DC/0.8AH
2866666

24 V DC/1.3 Ah

MINI-BAT/24DC/1.3AH
2866417

12 V DC/1.6 Ah

MINI-BAT/12DC/1.6AH
2866572

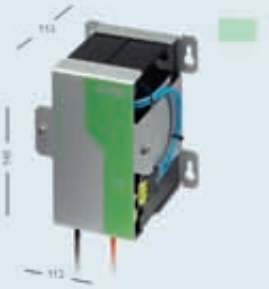
12 V DC/2.6 Ah

MINI-BAT/12DC/2.6AH
2866569

QUINT-BAT for TRIO UPS

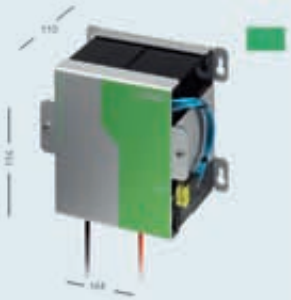
24 V/1.3 Ah

MINI-BAT/24DC/1.3AH
2866417



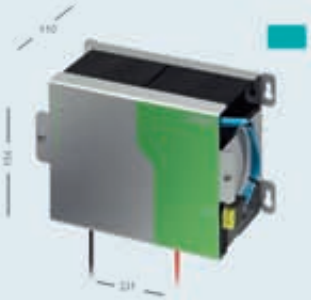
24 V/3.4 Ah

QUINT-BAT/24DC/3.4AH
2866349



24 V/7.2 Ah

QUINT-BAT/24DC/7.2AH
2866352



12 Ah

QUINT-BAT/24DC/12AH
2866365

Active redundancy module for maximum system availability

The newly developed ACB (auto current balancing) technology of the QUINT ORING modules doubles the service life of your redundantly operated power supply units by utilizing both power supply units to an equal degree. The load current is automatically distributed symmetrically. MOSFETs are used instead of conventional Schottky or silicon diodes, saving up to 70% energy.

50%
power

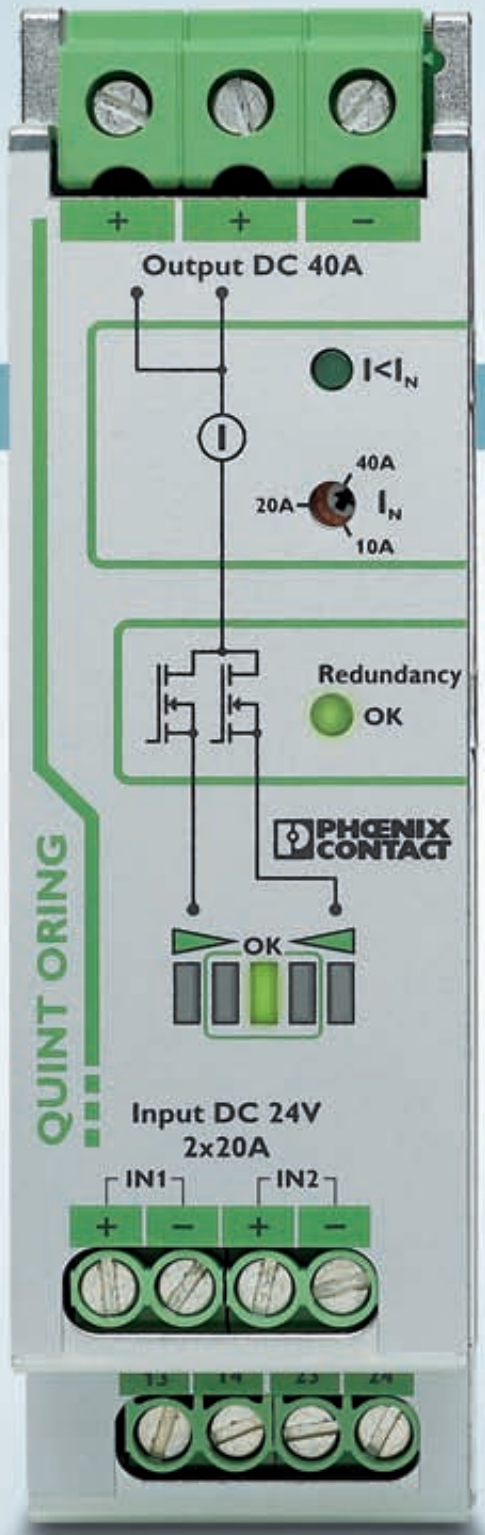
ACB
TECHNOLOGY

ACB technology doubles the service life

In applications with the highest demands regarding operational reliability, redundant power supply solutions are implemented to ensure that the failure of a power supply unit does not result in system downtime.

As a result of asymmetries, the load is often supplied by a single power supply unit, while the other runs in no-load operation. This results in a thermal load on the working power supply unit and thereby rapid aging. If the power supply unit is operated at half the nominal current, it remains significantly cooler.

The ACB technology of the QUINT ORING modules ensures symmetrical loading of the power supply units and thereby up to double the service life of the redundant system.



50% power

Your advantages

Double the service life
- Thanks to uniform load distribution

Save 70% energy
- Decoupling is implemented with MOSFETs instead of diodes

Consistent redundancy
- Using two positive output terminal blocks for redundant wiring up to the load

Consistent monitoring
- Permanent monitoring of the input voltage, output current, and decoupling section

Decoupling, monitoring, and controlling redundancy modules

A redundant power supply system is the result of the parallel connection of two power supply units. This solution can be optimized: in order to increase system availability, the power supply units must be decoupled and the redundancy should be monitored. The following are ideal solutions:

Decoupling, monitoring, and control

Decoupling with active redundancy module + monitoring of the power supply unit voltages, the wiring, decoupling, and the load current

ACB TECHNOLOGY

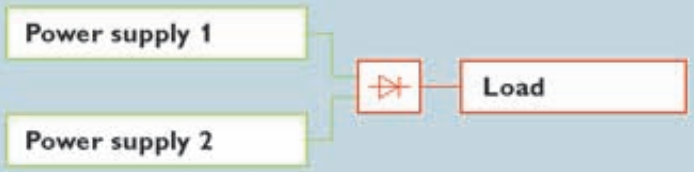
QUINT ORING

Input: 18 ... 30 V DC

24 V/2 x 10 A/1 x 20 A	24 V/2 x 20 A/1 x 40 A
QUINT-ORING/24DC/2x10/1x20 2320173	QUINT-ORING/24DC/2x20/1x40 2320186

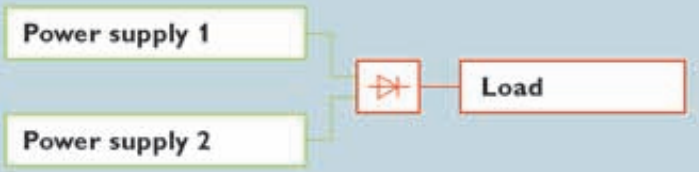
Decoupling and monitoring

Decoupling with redundancy module + monitoring of the power supply unit voltages and the wiring



Decoupling

Decoupling with diode



TRIO DIODE

Input: 10 ... 30 V DC, 30 ... 56 V DC

12 ... 24 V/2 x 10 A/1 x 20 A

TRIO-DIODE/12-24DC/2x10/1x20
2866514

48 V/2 x 10 A/1 x 20 A

TRIO-DIODE/48DC/2x10/1x20
2866527

QUINT DIODE

Input: 10 ... 30 V DC, 30 ... 56 V DC

12 ... 24 V/2 x 20 A/1 x 40 A

QUINT-DIODE/12-24DC/2x20/1x40
2320157

48 V/2 x 20 A/1 x 40 A

QUINT-DIODE/48DC/2x20/1x40
2320160

STEP DIODE

Input: 4.5 V ... 30 V DC

5 ... 24 V/2 x 5 A/1 x 10 A

STEP-DIODE/5-24DC/2x5/1x10
2868606

			UL				CSA		Ship							Ex								
	Order No.	CE	UL 508	UL 60950	UL Listed ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C, D	UL 1310 NEC Class 2	CSA 22.2 No 107.1-01	CSA 22.2 No 60950-1-07	GL - Germanischer Lloyd	ABS - American Bureau of Shipping	BV - Bureau Veritas	LR - Lloyd's Register	NK - Nippon Kaiji Kyokai	DNV - Det Norske Veritas	RINA	ATEX	IEC Ex	DeviceNet	SEMI F47-0706 Compliance Certificate PQ Star	CB Scheme	Medical standard IEC 60601	GOST	Startup at -40°C	Installation height
QUINT POWER power supply units																								
QUINT-PS/1AC/24DC/3.5	2866747	•	•	•	•		•	•	•	•	•	•	•		•			•	•	•	•	•		c
QUINT-PS/1AC/24DC/5	2866750	•	•	•	•		•	•	•	•	•	•	•	•	•			•	•	•	•	•	•	d
QUINT-PS/1AC/24DC/10	2866763	•	•	•	•		•	•	•	•	•	•	•	•	•			•	•	•	•	•	•	c
QUINT-PS/1AC/24DC/20	2866776	•	•	•	•		•	•	•	•	•	•	•	•	•				•	•	•	•	•	d
QUINT-PS/1AC/24DC/40	2866789	•	•	•			•	•	•	•	•	•	•	•	•				•	•		•	•	b
QUINT-PS/1AC/12DC/15	2866718	•	•	•	•		•	•											•	•	•	•		c
QUINT-PS/1AC/12DC/20	2866721	•	•	•	•		•	•											•	•	•	•		d
QUINT-PS/1AC/48DC/5	2866679	•	•	•	•		•	•											•	•	•	•		c
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QUINT-PS/3AC/24DC/20	2866792	•	•	•	•		•	•	•	•	•	•	•	•	•				•	•		•	•	c
QUINT-PS/3AC/24DC/40	2866802	•	•	•	•		•	•	•	•	•	•	•	•	•				•	•		•	•	d
QUINT-PS/3AC/48DC/20	2320827	•	•	•			•	•												•		•		b
QUINT-PS/1AC/24DC/5/CO	2320908	•	•	•	•		•	•	•							•	•	•	•	•	•	•	•	d
QUINT-PS/1AC/24DC/10/CO	2320911	•	•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	c
QUINT-PS/1AC/24DC/20/CO	2320898	•	•	•	•		•	•	•									•	•	•	•	•	•	d
QUINT-PS/3AC/24DC/20/CO	2320924	•	•	•	•		•	•	•										•	•		•	•	c
TRIO POWER power supply units																								
TRIO-PS/1AC/24DC/2.5	2866268	•	•				•	•	•													•		c
TRIO-PS/1AC/24DC/5	2866310	•	•				•	•	•													•		b
TRIO-PS/1AC/24DC/10	2866323	•	•				•	•														•		c
TRIO-PS/1AC/24DC/20	2866381	•	•				•	•														•		b
TRIO-PS/1AC/12DC/5	2866475	•	•				•	•														•		d
TRIO-PS/1AC/12DC/10	2866488	•	•				•	•														•		d
TRIO-PS/1AC/48DC/5	2866491	•	•				•	•														•		a
TRIO-PS/1AC/48DC/10	2866501	•	•				•	•														•		b
TRIO-PS/3AC/24DC/5	2866462	•	•				•	•																a
TRIO-PS/3AC/24DC/10	2866459	•	•				•	•																b
TRIO-PS/3AC/24DC/20	2866394	•	•				•	•																b
TRIO-PS/3AC/24DC/40	2866404	•	•	•			•	•														•		b
TRIO-PS/600DC/24DC/20	2866530	•	•	•			•	•														•	•	

			UL				CSA		Ship							Ex								
	Order No.	CE	UL 508	UL 60950	UL Listed ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C, D	UL 1310 NEC Class 2	CSA 22.2 No 107.1-01	CSA 22.2 No 60950-1-07	GL - Germanischer Lloyd	ABS - American Bureau of Shipping	BV - Bureau Veritas	LR - Lloyd's Register	NK - Nippon Kaiji Kyokai	DNV - Det Norske Veritas	RINA	ATEX	IEC Ex	DeviceNet	SEMI F47-0706 Compliance Certificate PQ Star	CB Scheme	Medical standard IEC 60601	GOST	Startup at -40°C	Installation height
MINI POWER power supply units																								
MINI-PS-100-240AC/24DC/1.3	2866446	•	•	•		•	•	•														•		d
MINI-SYS-PS-100-240 AC/24 DC/1.5	2866983	•	•	•			•	•														•		a
MINI-SYS-PS-100-240AC/24DC/1.5/EX	2866653	•	•	•			•	•								•						•		a
MINI-PS-100-240AC/24DC/2	2938730	•	•	•		•	•	•														•		
MINI-PS-100-240AC/24DC/C2LPS	2866336	•	•	•		•	•	•														•		
MINI-PS-100-240AC/24DC/4	2938837	•	•	•			•	•														•		a
MINI-PS-100-240AC/5DC/3	2938714	•	•	•			•	•														•		
MINI-PS-100-240AC/10-15DC/2	2938756	•	•	•			•	•														•		
MINI-PS-100-240AC/10-15DC/8	2866297	•	•	•			•															•		a
MINI-PS-100-240AC/2x15DC/1	2938743	•	•	•				•														•		b
MINI-PS/10-42AC/15-60DC/3	2320199	•	•	•			•	•														•		
STEP POWER power supply units																								
STEP-PS/48AC/24DC/0.5	2868716	•	•	•		•	•	•														•	•	b
STEP-PS/1AC/24DC/0.5	2868596	•	•	•		•	•	•												•		•	•	b
STEP-PS/1AC/24DC/0.75FL	2868622	•	•	•	•	•	•	•												•		•	•	c
STEP-PS/1AC/24DC/0.75	2868635	•	•	•	•	•	•	•	•	•	•	•	•	•	•					•		•	•	c
STEP-PS/1AC/24DC/1.75	2868648	•	•	•	•	•	•	•	•	•			•							•		•	•	c
STEP-PS/1AC/24DC/2.5	2868651	•	•	•	•	•	•	•	•	•	•	•	•	•	•					•		•	•	a
STEP-PS/1AC/24DC/3.8/C2LPS	2868677	•	•	•	•	•	•	•												•		•	•	d
STEP-PS/1AC/24DC/4.2	2868664	•	•	•	•		•	•	•	•			•							•		•	•	d
STEP-PS/1AC/5DC/6.5	2868541	•	•	•	•		•	•	•	•			•							•		•	•	d
STEP-PS/1AC/15DC/4	2868619	•	•	•	•		•	•	•	•			•							•		•	•	c
STEP-PS/1AC/48DC/2	2868680	•	•	•	•		•	•	•	•			•							•		•	•	d
STEP-PS/1AC/12DC/1	2868538	•	•	•		•	•	•												•		•	•	b
STEP-PS/1AC/12DC/1.5FL	2868554	•	•	•	•	•	•	•												•		•	•	c
STEP-PS/1AC/12DC/1.5	2868567	•	•	•	•	•	•	•	•	•			•							•		•	•	c
STEP-PS/1AC/12DC/3	2868570	•	•	•	•	•	•	•	•	•			•							•		•	•	c
STEP-PS/1AC/12DC/5	2868583	•	•	•	•		•	•	•	•			•							•		•	•	d

a) Max. 3000 m
b) Max. 4000 m
c) Max. 5000 m
d) Max. 6000 m

			UL				CSA		Ship							Ex							
	Order No.	CE	UL 508	UL 60950	UL Listed ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C, D	UL 1310 NEC Class 2	CSA 22.2 No 107.1-01	CSA 22.2 No 60950-1-07	GL - Germanischer Lloyd	ABS - American Bureau of Shipping	BV - Bureau Veritas	LR - Lloyd's Register	NK - Nippon Kaiji Kyokai	DNV - Det Norske Veritas	RINA	ATEX	DeviceNet	SEMI F47-0706 Compliance Certificate PQ Star	CB Scheme	Medical standard IEC 60601	GOST	Startup at -40°C	Installation height
Uninterruptible power supply units																							
QUINT-UPS/24DC/24DC/5	2320212	•	•	•																	•	•	d
QUINT-UPS/24DC/24DC/10	2320225	•	•	•																	•	•	d
QUINT-UPS/24DC/24DC/20	2320238	•	•	•																	•	•	d
QUINT-UPS/24DC/24DC/40	2320241	•	•	•																	•	•	d
QUINT-UPS/24DC/24DC/5/1.3AH	2320254	•																			•		d
QUINT-UPS/24DC/24DC/10/3.4AH	2320267	•																			•		d
QUINT-UPS/1AC/1AC/500VA	2320270	•																			•	•	
QUINT-BUFFER/24DC/40	2320393	•																			•		
UPS-BAT/VRLA/24DC/1.3AH	2320296	•	•	•	•																•		d
UPS-BAT/VRLA/24DC/3.4AH	2320306	•	•	•	•																•		d
UPS-BAT/VRLA/24DC/7.2AH	2320319	•	•	•	•																•		d
UPS-BAT/VRLA/24DC/12AH	2320322	•	•	•	•																•		d
UPS-BAT/VRLA/24DC/38AH	2320335	•	•	•	•																•		d
UPS-BAT/VRLA-WTR/24DC/13AH	2320416																				•	•	d
UPS-BAT/VRLA-WTR/24DC/26AH	2320429																				•	•	d
UPS-BAT/LI-ION/24DC/120WH	2320351	•	•	•	•																•		d
UPS-CAP/24DC/10A/10KJ	2320377																				•	•	d
UPS-CAP/24DC/20A/20KJ	2320380																				•	•	d
TRIO-UPS/1AC/24DC/5	2866611	•	•	•																	•		d
STEP-UPS/24DC/24DC/3	2868703	•																			•		
STEP-BAT/LIPO/18,5DC/1.4AH	2320364	•																			•		
MINI-DC-UPS/24DC/2	2866640	•	•	•						•	•										•		c
MINI-BAT/24DC/0.8AH	2866666	•																			•		d
MINI-BAT/24DC/1.3AH	2866417	•																			•		d
MINI-DC-UPS/12DC/4	2866598	•	•	•						•	•										•		d
MINI-BAT/12DC/1.6AH	2866572	•																			•		d
MINI-BAT/12DC/2.6AH	2866569	•																			•		d

			UL				CSA		Ship							Ex									
	Order No.	CE	UL 508	UL 60950	UL Listed ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C, D	UL 1310 NEC Class 2	CSA 22.2 No 107.1-01	CSA 22.2 No 60950-1-07	GL - Germanischer Lloyd	ABS - American Bureau of Shipping	BV - Bureau Veritas	LR - Lloyd's Register	NK - Nippon Kaiji Kyokai	DNV - Det Norske Veritas	RINA	ATEX	DeviceNet	SEMI F47-0706 Compliance Certificate PQ Star	CB Scheme	Medical standard IEC 60601	GOST	EN 50155	EN 50121	Startup at -40°C	Installation height
DC/DC converters																									
QUINT-PS/24DC/24DC/5	2320034	•	•	•	•		•	•	•														•	•	d
QUINT-PS/24DC/24DC/10	2320092	•	•	•	•		•	•	•														•	•	d
QUINT-PS/24DC/24DC/20	2320102	•	•	•	•		•	•	•														•	•	d
QUINT-PS/24DC/12DC/8	2320115	•	•	•	•		•	•	•														•	•	d
QUINT-PS/24DC/48DC/5	2320128	•	•	•	•		•	•	•														•	•	d
QUINT-PS/12DC/24DC/5	2320131	•	•	•			•	•															•	•	d
QUINT-PS/48DC/24DC/5	2320144	•	•	•			•	•															•	•	d
MINI-PS-12-24DC/24DC/1	2866284	•	•	•			•	•															•		d
MINI-PS-12-24DC/5-15DC/2	2320018	•	•	•			•	•															•		d
MINI-PS-12-24DC/48DC/0.7	2320021	•	•	•			•	•															•		d
MINI-PS-48-60DC/24DC/1	2866271	•	•	•	•		•	•															•		d

			UL				CSA		Ship							Ex									
	Order No.	CE	UL 508	UL 60950	UL Listed ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C, D	UL 1310 NEC Class 2	CSA 22.2 No 107.1-01	CSA 22.2 No 60950-1-07	GL - Germanischer Lloyd	ABS - American Bureau of Shipping	BV - Bureau Veritas	LR - Lloyd's Register	NK - Nippon Kaiji Kyokai	DNV - Det Norske Veritas	RINA	ATEX	IEC Ex	DeviceNet	SEMI F47-0706 Compliance Certificate PQ Star	CB Scheme	Medical standard IEC 60601	GS - Geprüfte Sicherheit (tested safety)	Type tested	GOST	Startup at -40°C
Redundancy modules																									
QUINT-ORING/24DC/2x10A	2320173	•	•	•	•				•															•	
QUINT-ORING/24DC/2x20A	2320186	•	•	•	•				•															•	
QUINT-DIODE/24DC/2x20A	2320157	•	•	•	•											•	•							•	•
QUINT-DIODE/48DC/2x20A	2320160	•	•	•	•											•	•							•	•
TRIO-DIODE/12-24DC/2x10/1x20	2866514	•	•	•																				•	•
TRIO-DIODE/48DC/2x10/1x20	2866527	•	•	•																				•	•
STEP-DIODE/5-24DC/2x5/1x10	2868606	•	•	•			•	•																•	•

a) Max. 3000 m
b) Max. 4000 m
c) Max. 5000 m
d) Max. 6000 m

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Printed in Germany
MNR 52004103/01.04.2012-04

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