

QUINT-UPS/ 24DC/12DC/5/24DC/10 - Uninterruptible power supply



2320461

<https://www.phoenixcontact.com/us/products/2320461>

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Uninterruptible power supply with IQ technology for DIN rail mounting, input: 24 V DC, output: 24 V DC/10 A and 12 V DC/5 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
- Optimum protection with dip coating for 100 % humidity
- One UPS module - two voltages
- Maximum flexibility, thanks to the dual output

Commercial data

Item number	2320461
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CM20
Product key	CMUQ43
GTIN	4046356731515
Weight per piece (including packing)	799 g
Weight per piece (excluding packing)	600 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	18 V DC ... 30 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	3 h (With battery module 38 AH)
Current consumption	16 A (maximum, mains operation)
	104 mA (No load, mains operation)
	4 A (Charging, mains operation)
Fixed backup threshold	≤ 22 V DC
Variable connect threshold	1 V/0.1 s
Recommended breaker for input protection	16 A ... 20 A (Characteristic B)

Output data

Efficiency	> 98 % (Mains operation, with charged energy storage)
	> 93 % (Mains operation, with charged energy storage)
Nominal output voltage	24 V DC
Output voltage range	18 V DC ... 30 V DC ($U_{OUT} = U_{IN} - 0.5 \text{ V DC}$)
Nominal output current (I_N)	10 A (-25 °C ... 60 °C)
	5 A (-25 °C ... 60 °C)
Output current limit	In mains mode according to connected upstream current limiting device
	> 15 A (Battery operation)
Derating	60 °C ... 70 °C (2.5 %/K)
	60 °C ... 70 °C (2.5 %/K)
UPS connection in parallel	yes
UPS connection in series	no
Output power	240 W
Total power $P_{12V} + P_{24V}$	max. 360 W
Power dissipation	2.6 W (Mains operation)
	4.6 W (Mains operation)
	2.9 W (Battery operation)
	5.27 W (Battery operation)
Connection in parallel	yes, up to 2 modules with redundancy module
	2 (Devices)
Connection in series	no
	no

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Mains operation

Nominal output voltage	12 V DC
	24 V DC
Output voltage range	18 V DC ... 30 V DC ($U_{OUT} = U_{IN} - 0.5 \text{ V DC}$)
Nominal output current (I_N)	5 A (-25 °C ... 60 °C)
	10 A (-25 °C ... 60 °C)
POWER BOOST (I_{Boost})	7.5 A (-25 °C ... 40 °C)
	15 A (-25 °C ... 40 °C)
Selective Fuse Breaking (I_{SFB})	60 A (-25 °C ... 60 °C)
Duration	12 ms (SFB technology)

Battery operation

Nominal output voltage	12 V DC
	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)	5 A (-25 °C ... 60 °C)
	10 A (-25 °C ... 60 °C)
POWER BOOST (I_{Boost})	7.5 A (-25 °C ... 40 °C)
	15 A (-25 °C ... 40 °C)
Selective Fuse Breaking (I_{SFB})	65 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	$\leq 100 \text{ mA}$

Signal: POWER BOOST

Output voltage	24 V DC
Continuous load current	100 mA

Energy storage

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Nominal voltage U_N	24 V DC
End-of-charge voltage	24 V DC ... 29 V DC (temperature compensated)
Charging current	0.2 A ... 2.88 A
Nominal capacity range	1.3 Ah ... 60 Ah
Battery presence check/time interval	1 min
Battery presence check (cyclic)	60 s
Energy storage device connection in parallel	yes, 15 (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
Network management	Yes

Connection data

Input

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.	16
Conductor cross-section AWG max.	12
Stripping length	7 mm
Screw thread	M4
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

Output

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.	16
Conductor cross-section AWG max.	12
Stripping length	7 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

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Conductor cross-section, rigid max.	2.5 mm²
Conductor cross-section flexible min.	0.2 mm²
Conductor cross-section flexible max.	2.5 mm²
Conductor cross-section AWG min.	24
Conductor cross-section AWG max.	12
Stripping length	7 mm
Screw thread	M4
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

Interfaces

Interface	IFS (Interface system data port)
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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

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	red/green
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

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Signal output: Transistor output, active

Signalization designation	POWER BOOST
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Electrical properties

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

Product properties

Product type	DC UPS
Product family	QUINT UPS
IQ technology	Yes
MTBF (IEC 61709, SN 29500)	> 652000 h (40 °C)

Insulation characteristics

Protection class	III
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Life expectancy (electrolytic capacitors)

Time	33941 h
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Dimensions

Width	35 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

Width	123 mm
Height	130 mm
Depth	39 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

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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

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

Electrostatic discharge

Standards/regulations	EN 61000-4-2
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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
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Electromagnetic HF field

Frequency range	80 MHz ... 1 GHz
Test field strength	20 V/m
Frequency range	1 GHz ... 2 GHz
Test field strength	10 V/m

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Frequency range	2 GHz ... 3 GHz
Test field strength	3 V/m
Comments	Criterion A

Fast transients (burst)

Standards/regulations	EN 61000-4-4
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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
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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
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Conducted interference

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

Emitted interference

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

Criteria

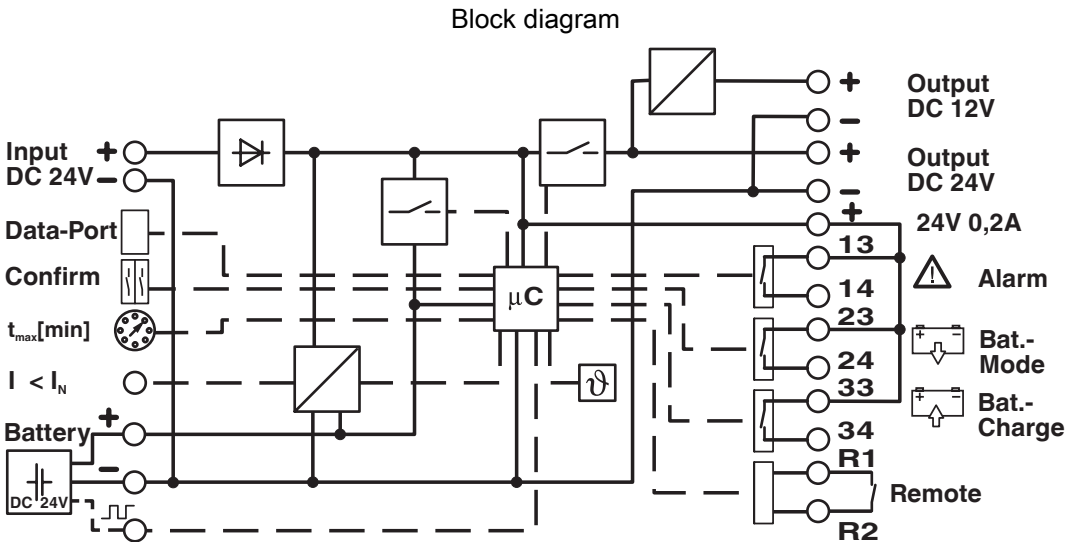
Criterion A	Normal operating behavior within the specified limits.
Criterion B	Temporary impairment to operational behavior that is corrected by the device itself.

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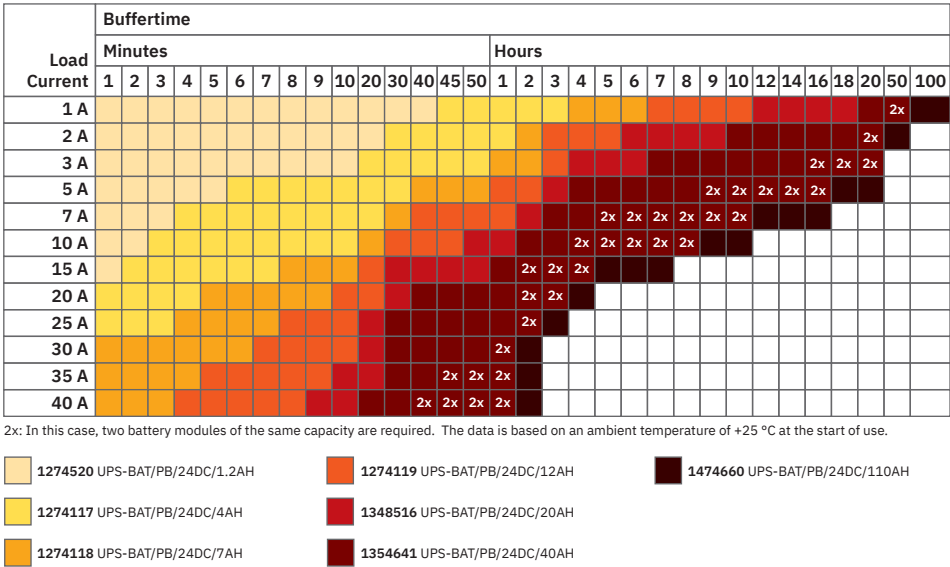
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Drawings



Block diagram

Graphic



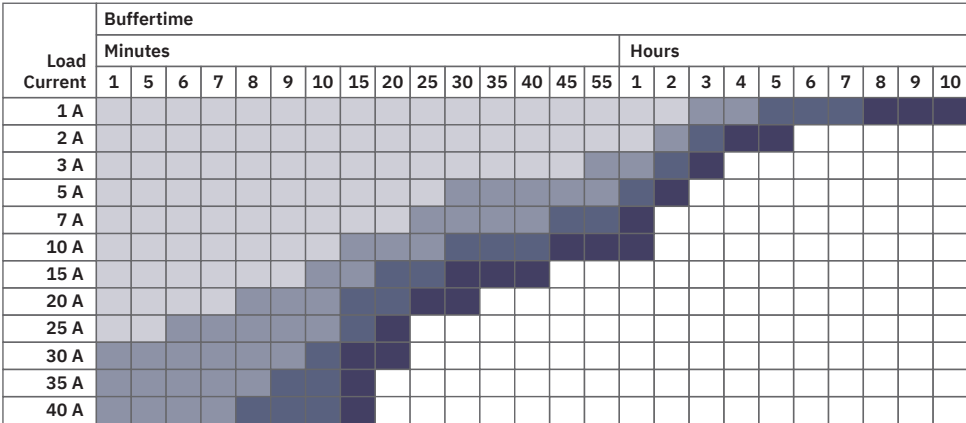
QUINT DC UPS buffer times for PB battery module

QUINT-UPS/ 24DC/12DC/5/24DC/10 - Uninterruptible power supply



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Graphic

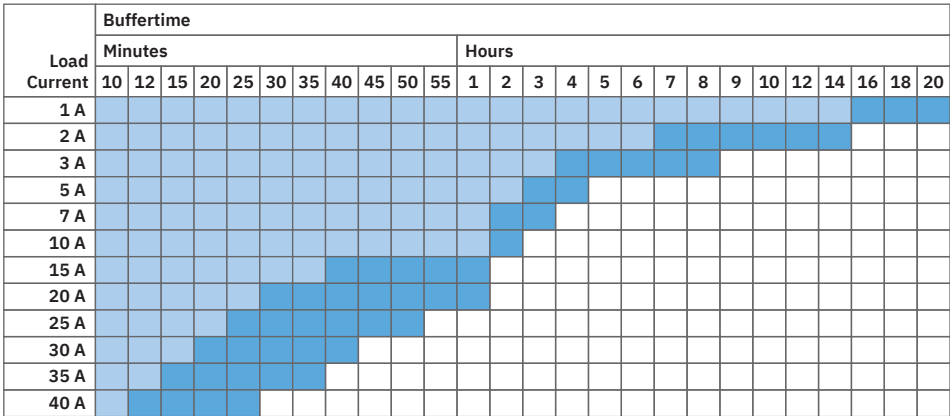


The data is based on an ambient temperature of +25 °C at the start of use.

1460921 UPS-BAT/LI/24DC/64WH 1460922 UPS-BAT/LI/24DC/189WH
1396415 UPS-BAT/LI/24DC/128WH 1460923 UPS-BAT/LI/24DC/284WH

QUINT DC UPS buffer times for LI battery module

Graphic



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



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



UL Listed
Approval ID: E123528



cUL Listed
Approval ID: E123528



IECEE CB Scheme
Approval ID: DE/PTZ/0049

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Classifications

ECLASS

ECLASS-13.0	27040705
ECLASS-15.0	27040705

ETIM

ETIM 9.0	EC000382
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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	ed70e474-fcc1-4ca7-940f-d5acd7fa39c5

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Mandatory accessories

UPS-BAT/PB/24DC/1.2AH - Battery module

1274520

<https://www.phoenixcontact.com/us/products/1274520>



Battery module (device with battery), VRLA-AGM, 24 V DC, 1.2 Ah, automatic detection and communication with QUINT UPS-IQ

UPS-BAT/PB/24DC/4AH - Battery module

1274117

<https://www.phoenixcontact.com/us/products/1274117>



Battery module (device with battery), VRLA-AGM, 24 V DC, 4 Ah, automatic detection and communication with QUINT UPS-IQ

QUINT-UPS/ 24DC/12DC/5/24DC/10 - Uninterruptible power supply



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UPS-BAT/PB/24DC/7AH - Battery module

1274118

<https://www.phoenixcontact.com/us/products/1274118>



Battery module (device with battery), VRLA-AGM, 24 V DC, 7 Ah, automatic detection and communication with QUINT UPS-IQ

UPS-BAT/PB/24DC/12AH - Battery module

1274119

<https://www.phoenixcontact.com/us/products/1274119>



Battery module (device with battery), VRLA-AGM, 24 V DC, 12 Ah, automatic detection and communication with QUINT UPS-IQ

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UPS-BAT/PB/24DC/20AH - Battery module

1348516

<https://www.phoenixcontact.com/us/products/1348516>



Battery module (device with battery), VRLA-AGM, 24 V DC, 20 Ah, automatic detection and communication with QUINT UPS-IQ

UPS-BAT/PB/24DC/40AH - Battery module

1354641

<https://www.phoenixcontact.com/us/products/1354641>



Battery module (device with battery), VRLA-AGM, 24 V DC, 40 Ah, automatic detection and communication with QUINT UPS-IQ

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UPS-BAT/LI/24DC/128WH - Battery module

1396415

<https://www.phoenixcontact.com/us/products/1396415>



Battery module (device with battery), Lithium-Ion (LiFePO₄), 24 V DC, 128 Wh. For use with a QUINT UPS for ambient temperatures (charging) of 0°C ... 60°C and a maximum charging current of 5 A. For charging below 0°C, please note the permissible UPS V/C level.

UPS-BAT/VRLA-WTR/24DC/13AH - Battery module

2320416

<https://www.phoenixcontact.com/us/products/2320416>



Battery module (device with battery), lead AGM, VRLA technology 24 V DC, 13 Ah, tool-free battery change, automatic detection, and communication with QUINT UPS-IQ

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UPS-BAT/VRLA-WTR/24DC/26AH - Battery module

2320429

<https://www.phoenixcontact.com/us/products/2320429>



Battery module (device with battery), lead AGM, VRLA technology 24 V DC, 26 Ah, tool-free battery change, automatic detection, and communication with QUINT UPS-IQ

UPS-CAP/24DC/10A/10KJ - Energy storage

2320377

<https://www.phoenixcontact.com/us/products/2320377>



Maintenance-free energy storage based on double-layer capacitor, 24 V DC, 10 kJ, automatic detection and communication with QUINT UPS-IQ

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UPS-CAP/24DC/20A/20KJ - Energy storage

2320380

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Maintenance-free energy storage based on double-layer capacitor, 24 V DC, 20 kJ, automatic detection and communication with QUINT UPS-IQ

Accessories

IFS-USB-DATACABLE - Data cable

2320500

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Used for communicating between industrial PCs and Phoenix Contact devices with the 12-pos. IFS data port, such as QUINT UPS or TRIO UPS.

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QUINT-PS-ADAPTERS7/1 - Mounting adapter

2938196

<https://www.phoenixcontact.com/us/products/2938196>

Assembly adapter for QUINT-PS... power supply on S7-300 rail



IFS-MINI-DIN-DATACABLE - Data cable

2320487

<https://www.phoenixcontact.com/us/products/2320487>

Data cable for communication, e.g., between Phoenix Contact type ILC 1xx Inline controllers and Phoenix Contact devices with the 12-pos. IFS data port, such as QUINT UPS-IQ UPS or TRIO UPS



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IFS-OPEN-END-DATACABLE - Data cable

2320450

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Data cable with open cable ends for communication, e.g., between a Phoenix Contact Inline communication terminal (IB IL RS UNI-PAC, 2700893) and Phoenix Contact devices with the 12-pos. IFS data port, such as QUINT UPS-IQ or TRIO UPS

IFS-RS232-DATACABLE - Data cable

2320490

<https://www.phoenixcontact.com/us/products/2320490>



Data cable for communication between devices with a D-SUB 9 RS-232 connection and Phoenix Contact devices with the 12-pos. IFS data port such as QUINT UPS-IQ or TRIO UPS.

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UWA 182/52 - Mounting adapter

2938235

<https://www.phoenixcontact.com/us/products/2938235>

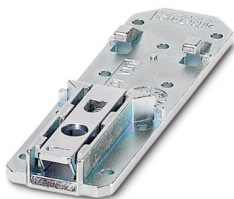


Universal wall adapter for securely mounting the device in the event of strong vibrations. The device is screwed directly onto the mounting surface. The universal wall adapter is attached on the top/bottom.

UTA 107/30 - Mounting adapter

2320089

<https://www.phoenixcontact.com/us/products/2320089>



Universal DIN rail adapter

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IFS-CONFSTICK-L - Memory block

2901103

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Multi-functional memory block with handle for the INTERFACE system; for easy storage and back up of the configuration.

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Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com