

2906990

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QUINT UPS, IQ Technology, DIN rail mounting, Screw connection, input: 24 V DC, output: 24 V DC / 5 A, charging current: 1.5 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	2906990
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CM21
Product key	CMUI43
GTIN	4055626171227
Weight per piece (including packing)	509.6 g
Weight per piece (excluding packing)	413 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
Electric strength, max.	35 V DC (Protected against polarity reversal)
Internal input fuse	no
Typical national grid voltage	24 V DC
Voltage type of supply voltage	DC
Inrush current	≤ 7 A (≤ 4 ms)
Reverse polarity protection	yes
Fixed backup threshold	22 V DC
	30 V DC
Dynamic activation threshold	> 1 V / 100 ms
Switch-on time	max. 3 s
Switch-on time during battery operation (BatStart)	8 s
Voltage drop, input/output	0.3 V DC
Current consumption $I_N (U_N, I_{OUT} = I_N, I_{charge} = 0)$	5.1 A
Current consumption I _{max} (U _N , I _{OUT} = I _{Stat.Boost} , I _{Charge} = max)	8.3 A
Current consumption I _{No-Load} (U _N , I _{OUT} = 0, I _{charge} = 0)	45 mA
Current consumption I _{charge} (U _N , I _{OUT} = 0, I _{charge} = max)	1.8 A
Power consumption $P_N (U_N, I_{OUT} = I_N, I_{charge} = 0)$	121 W
Power consumption P_{max} (U_N , $I_{OUT} = I_{Stat.Boost}$, $I_{charge} = max$)	211 W
Power consumption P _{No-Load} (U _N , I _{OUT} = 0, I _{charge} = 0)	1.1 W
Power consumption P _{charge} (U _N , I _{OUT} = 0, I _{charge} = max)	43 W

Output data

Efficiency	typ. 98 %
Number of outputs	1
Short-circuit-proof	yes
No-load proof	yes
Switch-over time	0 ms
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

Mains operation

Output voltage	24 V DC (U _{OUT} = U _{IN} - 0.3 V DC)
Output voltage range	18 V DC 30 V DC (U _{Out} = U _{In} - 0.3 V DC)
	18 V DC 32 V DC (U _{Out} = U _{In} - 0.3 V DC)
Output current I _N	5 A
Static Boost (I _{Stat.Boost})	6.25 A



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Dynamic Boost (I _{Dyn.Boost})	10 A (5 s)
Selective Fuse Breaking (I _{SFB})	30 A (15 ms)
Output power $P_{OUT}(U_N, I_{OUT} = I_N)$	120 W
Output power P _{OUT} (U _N , I _{OUT} = I _{stat.Boost})	150 W
Output power $P_{OUT}(U_N, I_{OUT} = I_{dyn.Boost})$	240 W (5 s)
Power dissipation No load (U _N , I _{Out} = 0, I _{Charge} = 0)	3 W
Power dissipation Nominal load (U _N , I _{Out} = I _N , I _{Charoe} = 0)	4 W

Battery operation

Output voltage	24 V DC (U _{OUT} = U _{BAT} - 0.3 V DC)
Output voltage range	19 V DC 28 V DC (U _{OUT} = U _{BAT} - 0.3 V DC)
Output current I _N	5 A
Static Boost (I _{Stat.Boost})	6.25 A
Selective Fuse Breaking (I _{SFB})	30 A (15 ms)
Output power $P_{OUT}(U_N, I_{OUT} = I_N)$	120 W
Output power P _{OUT} (U _N , I _{OUT} = I _{stat.Boost})	150 W
Output power $P_{OUT}(U_N, I_{OUT} = I_{dyn.Boost})$	240 W (5 s)
Power dissipation No load (U_N , $I_{Out} = 0$, $I_{Charge} = 0$)	2 W
Power dissipation Nominal load $(U_N, I_{Out} = I_N, I_{Charge} = 0)$	4 W

Energy storage

Nominal voltage U _N	24 V DC
End-of-charge voltage (temperature-compensated)	25 V DC 32 V DC
End-of-charge voltage (configurable)	27.6 V DC
Charging current (configurable)	max. 1.5 A
Nominal capacity (without additional charger)	0.8 Ah 40 Ah
Max. capacity	40 Ah
Charging time	150 min (3.4 Ah)
Buffer time	25 min (3.4 Ah)
Deep discharge protection (configurable)	19.2 V DC
Battery technology	VRLA, VRLA-WTR, LI-ION
Charge characteristic curve	IU ₀ U
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	0.2 mm² 2.5 mm²
flexible	0.2 mm² 2 mm²
flexible with ferrule without plastic sleeve	0.2 mm² 2.5 mm²



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flexible with ferrule with plastic sleeve	0.2 mm ² 2.5 mm ²
rigid (AWG)	30 12 (Cu)
Stripping length	6.5 mm (rigid/flexible)
Tightening torque	0.5 Nm 0.6 Nm
Drive form screw head	Slotted L
Dutput	
Position	2.x
Conductor connection	
Connection method	Screw connection
rigid	0.2 mm² 2.5 mm²
flexible	0.2 mm² 2.5 mm²
flexible with ferrule without plastic sleeve	0.2 mm² 2.5 mm²
flexible with ferrule with plastic sleeve	0.2 mm² 2.5 mm²
rigid (AWG)	30 12 (Cu)
Stripping length	6.5 mm (rigid/flexible)
Tightening torque	0.5 Nm 0.6 Nm
Drive form screw head	Slotted L
Signal	
Signal Position	3.x
FOSILIOTI	3.X
Conductor connection	
Connection method	Push-in connection
rigid	0.2 mm² 1 mm²
flexible	0.2 mm² 1 mm²
flexible with ferrule without plastic sleeve	0.2 mm² 0.75 mm² (Cu)
	0.5 mm² (recommended)
flexible with ferrule with plastic sleeve	0.2 mm² 0.75 mm²
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 (几「監警
Conductor connection	
Connection method	Screw connection
rigid	0.2 mm² 2.5 mm²
flexible	0.2 mm² 2.5 mm²
flexible with ferrule without plastic sleeve	0.2 mm² 2.5 mm²
flexible with ferrule with plastic sleeve	0.2 mm² 2.5 mm²
rigid (AWG)	30 12 (Cu)
Stripping length	6.5 mm (rigid/flexible)
Culphing iongui	o.o min (ngia/nexible)



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Tightening torque	0.5 Nm 0.6 Nm
Drive form screw head	Slotted L
ignaling	
LED signaling	
Types of signaling	DC OK (green)
	Alarm (red)
	BatMode (yellow)
	SOC (red, green)
	Data (red, green)
Circul state Alexan	
Signal state Alarm	2.2.2.2
Connection labeling	3.2, 3.3
Channel	DO (digital output)
Switch contact (floating)	OptoMOS
State (configurable) State condition (configurable)	Group alarm Alarm threshold
Switching voltage	max. 30 V AC/DC
State - signal assignment Current carrying capacity	NC (Normally Closed) max. 100 mA
LED status indicator	
LED status indicator	red (Alarm)
Signal state BatMode	
Connection labeling	3.4 (+)
Channel	DO (digital output)
Semiconductor output	MOSFET
State (configurable)	BatMode
State condition (configurable)	U _{IN} < 18 V DC, U _{IN} > 30 V DC, BatStart
Output voltage	19 V DC 28 V DC (buffered)
Output can be loaded	max. 20 mA
State - signal assignment	active - high
Reference potential	3.9 (SGnd, identical to 1.2, 2.2, 4.2)
LED status indicator	Yellow (BatMode)
Signal state Ready	
Connection labeling	3.5 (+)
Channel	DO (digital output)
Semiconductor output	MOSFET
State (configurable)	Ready
State condition (configurable)	SOC = 100 %
Output voltage	19 V DC 28 V DC (buffered)
Output can be loaded	max. 20 mA
State - signal assignment	active - high
Reference potential	3.9 (SGnd, identical to 1.2, 2.2, 4.2)
LED status indicator	Green (state of charge - SOC)



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Signal	state	Remote
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Connection labeling	3.6 (+)
Channel	DI (digital input)
State (configurable)	Disconnection
State condition	Low level
Low signal	Input connected with SGnd (3.9) or <5 V DC
High signal	Input not connected or connected with 13 30 V DC
Signal - state assignment	low - active
Reference potential	3.9 (SGnd, identical to 1.2, 2.2, 4.2)
LED status indicator	Green, flashing (DC OK)

Signal state PS Boost

Connection labeling	3.7 (+)
Channel (configurable)	DI (digital input) default, AI (analog input)
State (configurable)	Charging current reduced
State condition	Low level
Low signal	Input connected with SGnd (3.9), <5 V DC or not connected
High signal	Input connected with 13 30 V DC
Signal - state assignment	low - active
Reference potential	3.9 (SGnd, identical to 1.2, 2.2, 4.2)
Unit signal	I (mA)
Resistance	390 Ω

Signal state Bat.-Start

Connection labeling	3.8 (+)
Channel	DI (digital input)
State condition	Low level (30 ms)
Low signal	Input connected with SGnd (3.9) or Bat
High signal	Input not connected or connected with >U _{Bat}
Signal - state assignment	low - active
Reference potential	3.9 (SGnd, identical to 1.2, 2.2, 4.2)
LED status indicator	Yellow (BatMode)

Signal output 24V DC 20 mA, SGnd

Connection labeling	3.1 (+), 3.9 (SGnd)
Output voltage	24 V DC
Output can be loaded	max. 20 mA
Reference potential	3.9 (SGnd, identical to 1.2, 2.2, 4.2)

Product properties

Product type	DC UPS
Product family	QUINT UPS
MTBF (IEC 61709, SN 29500)	> 2065000 h (25 °C)
	> 1184000 h (40 °C)
	> 522600 h (60 °C)



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Environmental protection directive	RoHS Directive 2011/65/EU
	WEEE
	Reach
Insulation characteristics	
Protection class	III (without PE)
Degree of pollution	2
Life expectancy (electrolytic capacitors)	
Time	224011 h
Dimensions	
Item dimensions	
Width	35 mm
Height	130 mm

Width	35 mm
Height	130 mm
Depth	132 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	37 mm

Installation dimensions

Installation distance right/left (active)	5 mm / 5 mm (P _{Out} ≥50%)
Installation distance right/left (passive)	0 mm / 0 mm (P _{Out} ≥50%)
Installation distance right/left (active, passive)	0 mm / 0 mm (P _{Out} ≤50 %)
Installation distance top/bottom (active)	50 mm / 50 mm (P _{Out} ≥50%)
Installation distance top/bottom (passive)	40 mm / 20 mm (P _{Out} ≥50%)
Installation distance top/bottom (active, passive)	40 mm / 20 mm (P _{Out} ≤50 %)

Mounting

Mounting type DIN rail mounting	y
Mounting position On horizontal DIN	N 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
Ambient temperature (operation)	-25 °C 70 °C (> 60 °C Derating: 2,5 %/K)



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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

Overvolt	age c	ategory
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EN 61010-1	II (≤ 4000 m)
EN 61010-2-201	II (≤ 4000 m)

Protective extra-low voltage

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

Approvals

UL	
Identification	UL/C-UL Listed UL 61010-1
UL	
Identification	UL/C-UL Listed UL 61010-2-201
UL	
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
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CB scheme

Identification	IEC 61010-2-201
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DNV

Identification	Class Guideline DNVGL-CG-0339
Identification	Class Guideline Divide-CG-0339



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Note	Location classes: Temperature D (see Application/Limitation), Humidity B, Vibration A/C, EMC B
IC 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 device 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
	Chlorida
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)	



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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
Standards/regulations	EN 01000-4-0
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.

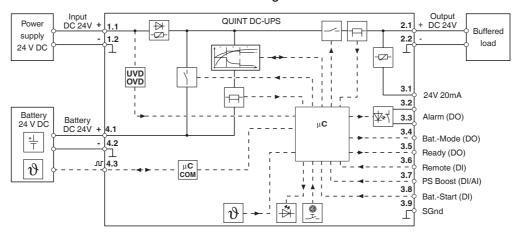


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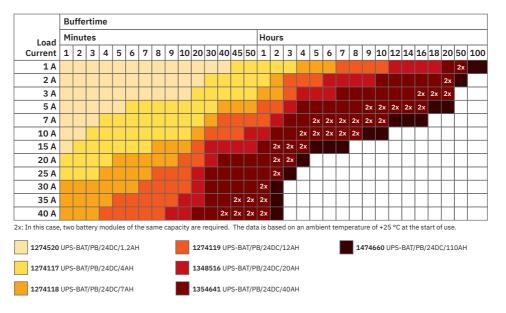
Drawings





Block diagram

Graphic



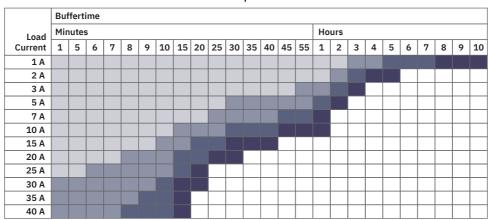
QUINT DC UPS buffer times for PB battery module



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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

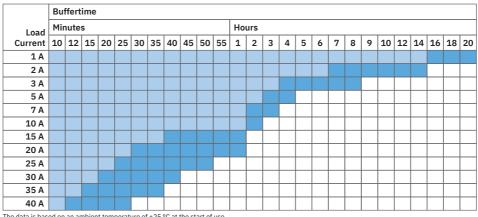
1460922 UPS-BAT/LI/24DC/189WH

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 $^{\circ}\text{C}$ 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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EAC

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



UL Listed

Approval ID: E123528



cUL Listed

Approval ID: E123528



EAC

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



Approval ID: TAA00002K4



KC

Approval ID: R-R-PCK-2906990



_R

Approval ID: LR21417906TA



NK

Approval ID: TA22372M



BV

Approval ID: 69394/A0 BV



RINA

Approval ID: ELE382621XG

ABS

Approval ID: 23-2416092-PDA



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IECEE CB Scheme Approval ID: DK-68191-M1-UL



IECEE CB Scheme





cUL Listed

Approval ID: E123528



UL Listed

Approval ID: E123528



Approval ID: 23-2416092-PDA



ΒV

Approval ID: 69394/A0 BV



NK

Approval ID: TA22372M



RINA

Approval ID: ELE382621XG



LR

Approval ID: LR21417906TA



EAC

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



EAC

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



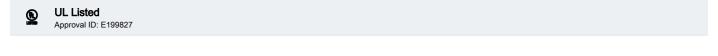
KC:

Approval ID: R-R-PCK-2906990



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Classifications

ECLASS

	ECLASS-13.0	27040705	
	ECLASS-15.0	27040705	
ETIM			
		F0000000	
	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.)	Diboron trioxide(CAS: 1303-86-2)
	Lead(CAS: 7439-92-1)
SCIP	35e144c1-c3fe-4656-8239-8948bf93c9cc
EF3.0 Climate Change	
CO2e kg	17.29 kg CO2e



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Mandatory accessories

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

1274520

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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

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



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

1274118

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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

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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

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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

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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

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Battery module (device with battery), Lithium-Ion (LiFePO $_4$), 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

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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-BAT/LI/24DC/64WH - Battery module

1460921

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Battery module (device with battery), Lithium-Ion (LiFePO₄), 24 V DC, 64 Wh

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