

QUINT4-UPS/1AC/1AC/1KVA - Uninterruptible power supply



2320283

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Uninterruptible power supply with IQ technology for DIN rail mounting. Input: 120/230 V AC, output: 120/230 V AC/1 kVA. Provides information regarding the state of charge, remaining runtime, and service life of the rechargeable battery module at any time, thereby increasing system availability.

Product description

Supply AC loads reliably with the uninterruptible power supply from the QUINT range for DIN rails. Due to the online topology, the AC UPS delivers a pure sine curve in mains and battery operation. Combine the online UPS with various UPS-BAT energy storage devices. The USB interface makes it convenient to shut down your PC.

Your advantages

- Smooth transition due to online topology
- Pure sine curve in mains and battery operation
- USB interface for connecting to industrial PCs, for example
- Startup from the energy storage system possible, even without mains input
- Can be switched in parallel for redundancy and increased performance

Commercial data

Item number	2320283
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	*****
Product key	CMUI15
Catalog page	Page 331 (C-4-2019)
GTIN	4055626244563
Weight per piece (including packing)	5,630 g
Weight per piece (excluding packing)	5,151 g
Customs tariff number	85371091
Country of origin	DE

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Technical data

Input data

AC operation

Input voltage	100 V AC -10 % / +20 %
	110 V AC -10 % / +20 %
	120 V AC -10 % / +20 %
	130 V AC -10 % / +20 %
	200 V AC -20 % / +20 %
	210 V AC -20 % / +20 %
	220 V AC -20 % / +20 %
	230 V AC -20 % / +15 %
	240 V AC -20 % / +10 %
Input voltage range	90 V AC ... 264 V AC
Input voltage range AC	184 V AC ... 264 V AC
	96 V AC ... 144 V AC
Typical national grid voltage	120 V AC
	230 V AC
Voltage type of supply voltage	AC
AC frequency range	45 Hz ... 65 Hz
Buffer period	1 h (38 AH)
Current consumption	10.4 A (100 V AC)
	10.5 A (110 V AC)
	10.5 A (120 V AC)
	9.7 A (130 V AC)
	6.4 A (200 V AC)
	6 A (210 V AC)
	5.7 A (220 V AC)
	5.5 A (230 V AC)
	5.3 A (240 V AC)
Variable connect threshold	Can be configured using UPS-CONF software
Power factor (cos phi)	0.9
Bypass fuse	T 15 A / 250 V (MDA -15-R)
Permissible backup fuse	B16 230 V AC
	20 A (120 V AC, Listed breaker)

Digital Control (configurable)

Designation	Remote
Low signal	Connection to SGnd with < 2.7 kΩ
High signal	Open (> 35 kΩ between Remote and SGnd)

Digital Control Low-Active (configurable)

Battery-operated start 120 V AC low signal	Connection to SGnd with < 2.7 kΩ
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Battery-operated start 120 V AC high signal	Open (> 200 kΩ between Bat.-Start and SGnd)
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Output data

Classification according to IEC 62040-3	VFI-SS-111
Efficiency	> 92 % (120 V AC)
	> 94 % (230 V AC)
Nominal output voltage	100 V AC
	110 V AC
	120 V AC
	130 V AC
	200 V AC
	210 V AC
	220 V AC
	230 V AC
Form of output voltage	240 V AC
	Pure sine
Nominal output current (I_N)	7.8 A (100 V AC)
	8.1 A (110 V AC)
	8.3 A (120 V AC)
	7.7 A (130 V AC)
	5 A (200 V AC)
	4.8 A (210 V AC)
	4.5 A (220 V AC)
	4.3 A (230 V AC)
	4.2 A (240 V AC)
POWER BOOST (I_{Boost})	13 A (120 V AC)
	7 A (230 V AC)
Output power	778 VA (700 W)
	889 VA (800 W)
	1000 VA (900 W)
	1000 VA (900 W)
	1000 VA (900 W)
	1000 VA (900 W)
	1000 VA (900 W)
	1000 VA (900 W)
Apparent power	1 kVA ($U_N \geq \text{[square wave symbol]} \downarrow$ V AC)
Nominal power	900 W ($U_N \geq \text{[square wave symbol]} \downarrow$ V AC)
Maximum no-load power dissipation	typ. 17 W (120 V AC)
	typ. 25 W (230 V AC)
Power loss nominal load max.	typ. 79 W (120 V AC)
	typ. 55 W (230 V AC)
Crest factor	2.8
Switch-over time	0 ms

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Connection in parallel	yes, 2
Connection in series	no

Mains operation

Nominal output voltage	120 V AC $\pm 2\%$
	230 V AC $\pm 2\%$
Nominal output current (I_N)	8.3 A
	4.3 A (230 V AC)
POWER BOOST (I_{Boost})	13 A
	7 A

Battery operation

Nominal output voltage	120 V AC $\pm 2\%$
	230 V AC $\pm 2\%$
Nominal output current (I_N)	4.3 A (230 V AC)
	8.3 A (120 V AC)
POWER BOOST (I_{Boost})	7 A (230 V AC)
	13 A (120 V AC)
Nominal output frequency	$\pm 60\text{ Hz} \pm 0.5\%$ (At an input frequency of 55 Hz to < 65 Hz)
	$\pm 50\text{ Hz} \pm 0.5\%$ (At an input frequency of 45 Hz to < 55 Hz)

Signal: AC OK

Output voltage	24 V
Continuous load current	$\leq 20\text{ mA}$

Signal: Alarm

Output voltage	24 V
Continuous load current	$\leq 20\text{ mA}$

Signal: Battery mode

Output voltage	24 V
Continuous load current	$\leq 20\text{ mA}$

Signal: Ready

Output voltage	24 V
Continuous load current	$\leq 20\text{ mA}$

Signal: $P > P_n$

Output voltage	24 V (SELV)
Continuous load current	$\leq 20\text{ mA}$

Energy storage

Nominal voltage U_N	2x 24 V DC
End-of-charge voltage	58 V (temperature compensated)
Charging current	5 A
Nominal capacity range	3.4 Ah ... 190 Ah (5x 38 Ah)
Battery technology	VRLA, VRLA-WTR

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Charge characteristic curve	IU ₀ U
Permissible backup fuse	50 A / $\geq \text{⚡}$ V

Connection data

Input

Connection method	Screw connection
Conductor cross section, rigid min.	0.2 mm ²
Conductor cross section, rigid max.	6 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	4 mm ²
Single conductor/flexible terminal point with ferrule with plastic sleeve, min.	0.25 mm ²
Single conductor/flexible terminal point with ferrule with plastic sleeve, max.	4 mm ²
Single conductor/flexible terminal point with ferrule without plastic sleeve, min.	0.25 mm ²
Single conductor/flexible terminal point with ferrule without plastic sleeve, max.	4 mm ²
Conductor cross section AWG min.	30
Conductor cross section AWG max.	10
Stripping length	8 mm
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.	6 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	4 mm ²
Single conductor/flexible terminal point with ferrule with plastic sleeve, min.	0.25 mm ²
Single conductor/flexible terminal point with ferrule with plastic sleeve, max.	4 mm ²
Single conductor/flexible terminal point with ferrule without plastic sleeve, min.	0.25 mm ²
Single conductor/flexible terminal point with ferrule without plastic sleeve, max.	4 mm ²
Conductor cross section AWG min.	30
Conductor cross section AWG max.	10
Stripping length	8 mm
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 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	2.5 mm ²
Single conductor/flexible terminal point with ferrule with plastic sleeve, min.	0.2 mm ²
Single conductor/flexible terminal point with ferrule with plastic sleeve, max.	2.5 mm ²
Single conductor/flexible terminal point with ferrule without plastic sleeve, min.	0.2 mm ²
Single conductor/flexible terminal point with ferrule without plastic sleeve, max.	2.5 mm ²
Conductor cross section AWG min.	30
Conductor cross section AWG max.	12
Stripping length	8 mm
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

Interfaces

Interface	MINI-USB type B
Features	lockable
Maximum cable length	3 m

Signaling

Types of signaling	LED
	Active switching output

Signal output: Transistor output, active

Signalization designation	AC OK
Status display	LED
Color	green

Signal output: Transistor output, active

Signalization designation	Alarm
Status display	LED
Color	red

Signal output: Transistor output, active

Signalization designation	Battery mode
Status display	LED
Color	yellow

Signal output: Transistor output, active

Signalization designation	Ready
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Signal output: Transistor output, active

Signalization designation	P>P _n
Status display	LED
Color	green

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Signal output

Signalization designation	Reference potential for the signal inputs and outputs
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Electrical properties

Number of phases	1.00
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Product properties

Product type	AC UPS
Product family	QUINT AC UPS
MTBF (IEC 61709, SN 29500)	217546 h (230 V AC, at 40 °C)

Data management status

Article revision	04
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Insulation characteristics

Protection class	I
Overvoltage category	II
Pollution degree	3 ($\leq$ 130 V AC)
	2 ($>$ 200 V AC)

Life expectancy (electrolytic capacitors)

Time	68970 h
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Dimensions

Width	290 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

Mounting

Mounting type	DIN rail mounting
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Material specifications

Housing material	Metal
Hood version	Sheet steel, DIN EN ISO2081 coat - Fe/Zn 18/B/TopCoat transparent blue
Side element version	Aluminum plate, DIN EN 573-3

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 60 °C ($>$ 50 °C: 2,5 % / K)
Ambient temperature (storage/transport)	-40 °C ... 85 °C

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Maximum altitude	≤ 3000 m (> 2000 m: 0,6 % / 100 m)
Climatic class	3K3 (EN 60721)
Max. permissible relative humidity (operation)	≤ 95 %
Shock	15g in all directions (EN 60068-2-27)
Vibration (operation)	5 Hz ... 100 Hz, 0.7g (EN 60068-2-6)

Standards and regulations

Uninterruptible power supply systems

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

Approvals

UL

Identification	UL/C-UL Recognized UL 1778
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EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Low Voltage Directive	Conformance with Low Voltage Directive 2014/35/EC
Interference emission	Noise emission in accordance with EN 62040-2
Noise immunity	Immunity in accordance with EN 62040-2 Immunity in accordance with EN 61000-6-1 (residential), EN 61000-6-2 (industrial)
Conducted noise emission	EN 62040-02 (Class C2)

Electrostatic discharge

Standards/regulations	EN 61000-4-2
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Electrostatic discharge

Contact discharge	± 6 kV
Discharge in air	± 8 kV
Comments	Criterion A

Electromagnetic HF field

Standards/regulations	EN 61000-4-3
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Electromagnetic HF field

Frequency range	80 MHz ... 6 GHz
Test field strength	10 V/m
Comments	Criterion A

Fast transients (burst)

Standards/regulations	EN 61000-4-4
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Fast transients (burst)

Input	± 2 kV
	± 2 kV

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Output	± 2 kV
Signal	± 2 kV
	± 2 kV (USB)
Comments	Criterion A (B for USB)

Surge voltage load (surge)

Standards/regulations	EN 61000-4-5
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Surge voltage load (surge)

Signal	1 kV (asymmetrical)
Comments	Criterion B
Input/Output	± 1 kV (symmetrical)
	± 2 kV (asymmetrical)

Conducted interference

Standards/regulations	EN 61000-4-6
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Conducted interference

Frequency range	0.15 MHz ... 80 MHz
Comments	Criterion A
Voltage	10 V

Power frequency magnetic field

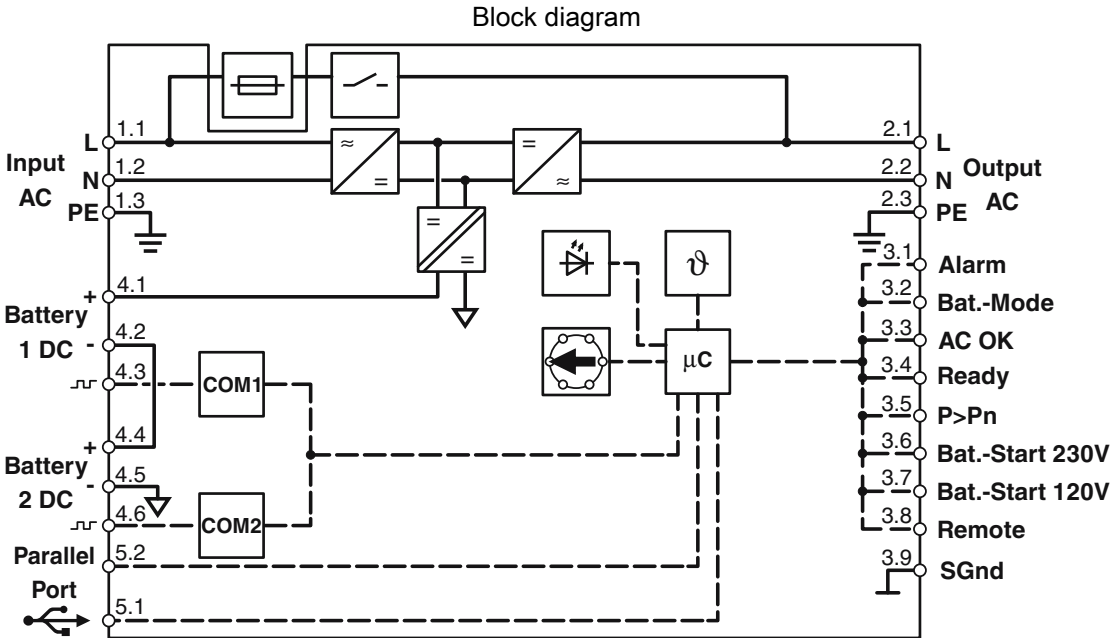
Standards/regulations	EN 61000-4-8
Frequency	50 Hz
	60 Hz
Test field strength	100 A/m
Comments	Criterion A

Criteria

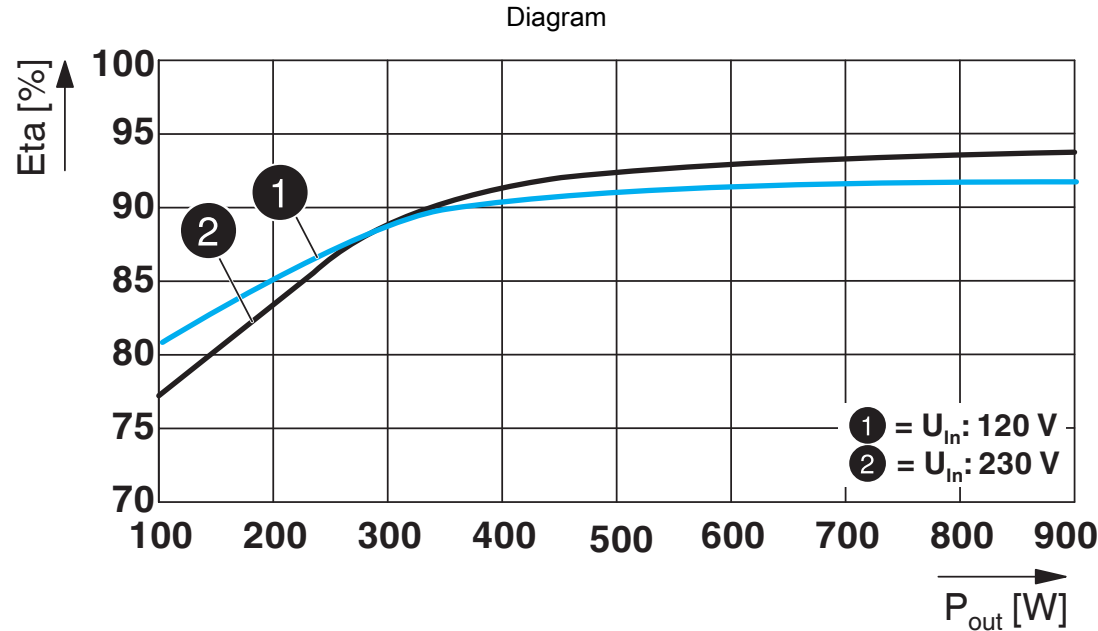
Criterion A	Normal operating behavior within the specified limits.
Criterion B	Temporary impairment to operational behavior that is corrected by the device itself.

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Drawings



Block diagram



Efficiency

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Graphic

Load Current	Buffertime														
	Minutes														Hours
	1	2	3	4	5	8	10	15	20	25	30	40	50	1	1.5
100 W	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x
200 W	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x		
300 W	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x				
400 W	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x					
500 W	2x	2x	2x	2x	2x	2x	2x	2x	2x						
600 W	2x	2x	2x	2x	2x	2x	2x	2x							
700 W	2x	2x	2x	2x	2x	2x	2x	2x							
800 W	2x	2x	2x	2x	2x	2x	2x								
900 W	2x	2x	2x	2x	2x	2x	2x								

2x: There are always two battery modules of the same capacity are required . The data is based on an ambient temperature of +25 °C at the start of use.

Buffer times for QUINT AC UPS 1 kVA for Li battery module

Graphic

Load Current	Buffertime																											
	Minutes														Hours													
	1	2	3	4	5	8	10	15	20	25	30	40	50	1	1.5	2	3	4	6	9	10	15	20	24	40			
100 W	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x		
200 W	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x		
300 W	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x		
400 W	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x		
500 W	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x		
600 W	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x		
700 W	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x		
800 W	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x		
900 W	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x		

2x: There are always two battery modules of the same capacity are required . The data is based on an ambient temperature of +25 °C at the start of use.

1274117 UPS-BAT/PB/24DC/4AH

1274119 UPS-BAT/PB/24DC/12AH

1354641 UPS-BAT/PB/24DC/40AH

1274118 UPS-BAT/PB/24DC/7AH

1348516 UPS-BAT/PB/24DC/20AH

1474660 UPS-BAT/PB/24DC/110AH

Buffer times for QUINT AC UPS 1 KVA with lead battery module

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Graphic

Load Current	Buffertime																			
	Minutes														Hours					
	1	2	3	4	5	8	10	15	20	25	30	40	50	1	1.5	2	3	4	6	9
100 W	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x
200 W	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x		
300 W	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x			
400 W	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x				
500 W	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x					
600 W	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x					
700 W	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x						
800 W	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x						
900 W	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x							

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

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

2x: There are always two battery modules of the same capacity are required . The data is based on an ambient temperature of +25 °C at the start of use.

Buffer times for QUINT AC UPS 1 kVA for VRLA-WTR battery module

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Approvals

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	cUL Recognized Approval ID: FILE E 342453
	UL Recognized Approval ID: FILE E 342453
	IECEE CB Scheme Approval ID: DK-70737-UL
	EAC Approval ID: RU S-DE.BL08.W.00764
	EAC Approval ID: RU-DE.B.00184/20
	DNV Approval ID: TAA00002JM
	cUL Recognized Approval ID: FILE E 359066
	UL Recognized Approval ID: FILE E 359066
	cULus Recognized
	cULus Recognized

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Classifications

ECLASS

ECLASS-11.0	27040705
ECLASS-13.0	27040705
ECLASS-12.0	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, No exemptions
China RoHS	
Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits
EU REACH SVHC	
REACH candidate substance (CAS No.)	No substance above 0.1 wt%

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