QUINT4-CAP/24DC/5/4KJ - Capacity module

2320539

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QUINT capacity module, with maintenance-free energy storage based on double-layer capacitor, DIN rail mounting, input: 24 V DC, output: 24 V DC / 5 A / 4 kJ incl. mounted UTA 107 universal DIN rail adapter. The “POWER MANAGEMENT SUITE” software (Item No. 1252232) available in the download area can be used for configuration.

Product description

The maintenance-free QUINT CAP capacity module is ideal for cyclical failures lasting up to 30 seconds. It combines an electronic switch-over unit and maintenance-free, capacitor-based energy storage in the same housing. The USB interface makes it convenient to shut down your PC.

Your advantages

- Convenient shutdown of PCs
- Maintenance-free with a long service life
- Space savings, thanks to the compact design
- Long buffer time, thanks to high memory capacity
- Lockable USB interface for connecting to industrial PCs, for example

Commercial data

Item number	2320539
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CM21
Product key	CMUIC3
Catalog page	Page 346 (C-4-2019)
GTIN	4055626246918
Weight per piece (including packing)	1,474 g
Weight per piece (excluding packing)	1,243 g
Customs tariff number	85322900
Country of origin	CN

Technical data

Input data

Input voltage	24 V DC (SELV)
Input voltage range	22.5 V DC ... 30 V DC
Fixed backup threshold	< 22 V DC
	> 30 V DC
Current consumption I_N (U_N, I_{OUT} = I_N, I_{charge} = 0)	7 A (max.)
Current consumption I_{max} (U_N, I_{OUT} = $I_{Stat.Boost}$, $I_{charge\ =\ max}$)	7 A
Current consumption $I_{No\text{-}Load}$(U_N, I_{OUT} = 0, I_{charge} = 0)	0.1 A (No-load)
Current consumption I_{charge} (U_N, I_{OUT} = 0, I_{charge} = max)	0.8 A (charging process)
Power consumption P_{max} (U_N, I_{OUT} = $I_{Stat.Boost}$, I_{charge} = max)	180 W
Power consumption P_N (U_N, I_{OUT} = I_N, I_{charge} = 0)	124 W
Power consumption P_{charge} (U_N, I_{OUT} = 0, I_{charge} = max)	21.6 W
Buffer time	3 min. (1 A)
	30 s (5 A)
	30 s (5 A)
Charging time	approx. 18 min.
Recharging time	approx. 12 min.
Inrush current	≤ 7 A (≤ 4 ms)
Switch-on time	1 ms (buffer mode)
Internal input fuse	no
Dielectric strength	max. 35 V DC (Reverse polarity protection)
Voltage drop, input/output	0.5 V DC

Output data

Efficiency	> 97 % (with charged energy storage device)
Connection in parallel	no
Connection in series	No

Mains operation

Output voltage	24 V DC (depending on the input voltage)
Output current I_N	5 A
Static Boost ($I_{Stat.Boost}$)	6.25 A
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
Power dissipation No load (U_N, I_{Out} = 0, I_{Charge} = 0)	2.5 W
Power dissipation Nominal load (U_N, I_{Out} = I_N, I_{Charge} = 0)	4 W
Short-circuit-proof	yes (with input fuse)
Idling-proof	yes

Battery operation

Output voltage	24 V DC (typical)
Output current I_N	5 A (depending on output current)

Static Boost ($I_{Stat.Boost}$)	6.25 A
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
Short-circuit-proof	yes
Idling-proof	yes

Energy storage

Input

Nominal capacity	0.04 Ah

General

Capacity	4 kJ
IQ-Technology	no
Storage medium	Double-layer capacitor
Buffer time	3 min. (1 A)
	30 s (5 A)
	30 s (5 A)

Connection data

Input

Position	1.x

Connection technology

Position marking	1.1 (+), 1.2 (-)

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	0.25 mm² ... 2.5 mm²
flexible with ferrule with plastic sleeve	0.25 mm² ... 2.5 mm²
rigid (AWG)	30 ... 12
Stripping length	6.5 mm
Tightening torque	0.5 Nm ... 0.6 Nm
Drive form screw head	Slotted L

2-conductor connection

rigid	0.2 mm² ... 0.75 mm²
flexible	0.2 mm² ... 0.75 mm²
flexible with TWIN ferrule with plastic sleeve	0.5 mm² ... 1.5 mm²

Output

Position	2.x

Connection technology

Position marking	2.1 (+), 2.2 (-)

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	0.25 mm² ... 2.5 mm²
flexible with ferrule with plastic sleeve	0.25 mm² ... 2.5 mm²
rigid (AWG)	30 ... 12
Stripping length	6.5 mm
Tightening torque	0.5 Nm ... 0.6 Nm
Drive form screw head	Slotted L

2-conductor connection

rigid	0.2 mm² ... 0.75 mm²
flexible	0.2 mm² ... 0.75 mm²
flexible with TWIN ferrule with plastic sleeve	0.5 mm² ... 1.5 mm²

Signal

Position	3.x

Conductor connection

Connection method	Push-in connection
rigid	0.2 mm² ... 1.5 mm²
flexible	0.2 mm² ... 1.5 mm²
flexible with ferrule without plastic sleeve	0.2 mm² ... 1.5 mm²
flexible with ferrule with plastic sleeve	0.2 mm² ... 0.75 mm²
rigid (AWG)	24 ... 18
Stripping length	8 mm

Interfaces

Interface	USB (Modbus/RTU)
Number of interfaces	1
Connection method	MINI-USB Type B
Position	5.x
Locking	Screw
Transmission physics	USB 2.0
Topology	Point-to-point
Transmission speed	9600 baud
Transmission length	max. 5 m
Access time	≤ 2 s
Chipset	Silicon Labs CP2104-F03-GM
Electrical isolation	Yes, UL approved

Signaling

Signal state Remote

Connection labeling	3.5
Channel	DI (digital input)
State (configurable)	Remote
State condition	Remote
Low signal	<3 kΩ to SGnd
High signal	open (>470 kΩ between Remote and SGnd)
Signal - state assignment	low - active
Reference potential	3.6 (SGnd, identical to 1.2, 2.2)

Signal state Alarm

Connection labeling	3.3
Channel	DO (digital output)
Switching output	Transistor
State (configurable)	Group alarm
State condition (configurable)	Alarm
Output voltage	24 V (U_N - 1 V (typical))
Output can be loaded	max. 20 mA
State - signal assignment	active - low
Reference potential	3.6 (SGnd, identical to 1.2, 2.2)
LED status indicator	red (Alarm)

Signal state UIN OK

Connection labeling	3.1, 3.2
Channel	DO (digital output)
Switching output	Electronic relays (OptoMOS)
State (configurable)	U_{In} OK
State condition (configurable)	U_{In} > 22,5 V DC, U_{In} < 30 V DC
Output voltage	max. 30 V
Output can be loaded	300 mA
State - signal assignment	active - high
LED status indicator	green (U_{In} OK)

Signal state Ready

Connection labeling	3.4
Channel	DO (digital output)
Switching output	Transistor
State (configurable)	Ready
State condition (configurable)	State of charge = 100% or buffer mode
Output voltage	24 V (U_N - 1 V (typical))
Output can be loaded	max. 20 mA
State - signal assignment	active - high
Reference potential	3.6 (SGnd, identical to 1.2, 2.2)
LED status indicator	Green (state of charge - SOC)

Signal ground SGnd

Connection labeling	3.6

Switching voltage	0 V
Current carrying capacity	max. 60 mA
Function	Signal ground
Reference potential	3.3 Alarm, 3.4 Ready, 3.5 Remote

Electrical properties

Insulation voltage input, output / housing	500 V

Product properties

Product type	DC UPS with integrated capacitor
Product family	QUINT capacity module
MTBF (IEC 61709, SN 29500)	1900327 h (25 °C)
	1301923 h (40 °C)
	673204 h (60 °C)

Insulation characteristics

Protection class	III (SELV)
Degree of pollution	2

Life expectancy (electrolytic capacitors)

Time	87088 h

Dimensions

Item dimensions

Width	94 mm
Height	130 mm
Depth	125 mm

Installation dimensions

Installation distance right/left	0 mm / 0 mm
Installation distance top/bottom	50 mm / 50 mm

Mounting

Mounting type	DIN rail mounting
Assembly instructions	alignable: horizontally 0 mm, vertically 50 mm
Mounting position	horizontal DIN rail NS 35, EN 60715

Material specifications

Flammability rating according to UL 94 (housing / terminal blocks)	V0
Housing material	Metal

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20

Ambient temperature (operation)	-25 °C ... 60 °C (> 40 °C Derating: 1 %/K)
Ambient temperature (storage/transport)	-40 °C ... 60 °C
Ambient temperature (start-up type tested)	-40 °C
Maximum altitude	≤ 4000 m
Climatic class	3K3 (in acc. with EN 60721)
Max. permissible relative humidity (operation)	≤ 95 %
Shock	30g, 18 ms per spatial direction (in accordance with IEC 60068-2-27)
Vibration (operation)	0,7g

Standards and regulations

Overvoltage category

UL 60950-1	II

Protective extra-low voltage

Standard designation	Protective extra-low voltage
Standards/specifications	UL 61010-2-201

Approvals

UL

Identification	UL/C-UL Listed UL 508

UL

Identification	UL/C-UL Recognized UL 60950-1

UL

Identification	UL ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C, D (Hazardous Location)

UL

Identification	CAN/CSA-C22.2 No. 107.1-01

CB scheme

Identification	UL 60950-1

EMC data

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
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise emission	EN 55016
	EN 61000-6-3

Electrostatic discharge

Standards/regulations	EN 61000-4-2

Electrostatic discharge

Contact discharge	6 kV (Test Level 3)
Discharge in air	8 kV (Test Level 3)
Comments	Criterion B

Electromagnetic HF field

Standards/regulations	EN 61000-4-3

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

Fast transients (burst)

Input	2 kV (Test Level 3 - asymmetrical)
Output	2 kV (Test Level 3 - asymmetrical)
Signal	2 kV (Test Level 3 - asymmetrical)
Comments	Criterion B

Surge voltage load (surge)

Standards/regulations	EN 61000-4-5
Signal	1 kV (Test Level 2 - asymmetrical)
Comments	Criterion B
Input/Output	1 kV (Test Level 2 - symmetrical)
	2 kV (Test Level 3 - asymmetrical)

Conducted interference

Standards/regulations	EN 61000-4-6

Conducted interference

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

Criteria

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

Classifications

ECLASS

ECLASS-11.0	27040705
ECLASS-12.0	27040705
ECLASS-13.0	27040705

ETIM

ETIM 9.0	EC000382

UNSPSC

UNSPSC 21.0	26111700

Environmental product compliance

REACh SVHC	Lead 7439-92-1

China RoHS	Environmentally Friendly Use Period = 25;
	For information on hazardous substances, refer to the manufacturer’s declaration available under “Downloads”

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