QUINT-BUFFER/24DC/20 - Buffer module

2866213

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Buffer module, 24 V DC/20 A, maintenance-free capacitor-based energy storage. Decoupled input and output. In the download area, there is a clearly arranged selection table available with load currents and buffer times, as well as charging times after buffer mode.

Product description

Short-term mains interruptions are bridged by QUINT BUFFER, a maintenance-free buffer module on a capacitor basis. Systems can therefore also run in unstable networks or are, in the event of failures of a longer duration, correctly shut down after all relevant process data is saved. The bridging time is 200 ms at 20 A and 4 s at 1 A. The buffer module also acts as a energy storage device for peak loads and for triggering fuses. For function monitoring, an active switching output and a control lamp are used. With the integrated diode, loads can be divided into buffered and unbuffered loads. Thus, the buffer period is extended and the buffered consumers are protected against errors in the internal network.

Commercial data

Item number	2866213
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CM20
Product key	CMUPE3
GTIN	4017918959739
Weight per piece (including packing)	1,130 g
Weight per piece (excluding packing)	1,000 g
Customs tariff number	85322200
Country of origin	CN

Technical data

Input data

Input voltage	24 V DC
Input voltage range	22.5 V DC ... 30 V DC
Input voltage range DC	22.5 V DC ... 30 V DC
Buffer period	0.2 s (20 A)
	4 s (1 A)
Current consumption	approx. 0.1 A
	0.6 A (charging process)
	20.6 A (max.)
Reverse polarity protection	yes
Charging delay	no
Fixed backup threshold	< 22 V DC
Variable connect threshold	(U_{IN} - 1 V)/0.1 s
Protective circuit	Transient surge protection; Suppressor diode, 35 V DC

Output data

Efficiency	> 95 %
Nominal output voltage	24 V DC (depending on the input voltage)
Setting range of the output voltage (U_{Set})	22 V DC ... 28.5 V DC
Nominal output current (I_N)	20 A
Output current limit	27 A (buffer mode)
Bridging time	200 ms
Feedback voltage resistance	< 35 V DC (buffer mode)
Protection against overvoltage at the output (OVP)	< 35 V DC
Residual ripple	< 100 mV_{PP} (buffer mode)
Output power	480 W
Peak switching voltages nominal load	< 100 mV_{PP} (20 MHz)
Power dissipation	2.5 W (ready at 27 A)
	9.8 W (buffer mode at 27 A)
Protective circuit	Transient surge protection; Suppressor diode, 35 V DC
Connection in parallel	yes, for increasing the buffer time and for redundancy
Connection in series	yes

Mains operation

Nominal output voltage	24 V DC
Nominal output current (I_N)	20 A

Battery operation

Nominal output voltage	24 V DC
Nominal output current (I_N)	20 A

Signal: Active (high = buffer module is loaded)

Output description	Power Good

Maximum switching voltage	≤ 24 V
Output voltage	+ 24 V
Continuous load current	≤ 20 mA

Energy storage

Charging current	500 mA
Nominal capacity	0.1 Ah
Charging time	< 27 s
Memory medium	internal, capacity
IQ technology	no

Connection data

Input

Connection method	Screw connection
Conductor cross-section, rigid min.	0.5 mm²
Conductor cross-section, rigid max.	16 mm²
Conductor cross-section flexible min.	0.5 mm²
Conductor cross-section flexible max.	10 mm²
Conductor cross-section AWG min.	20
Conductor cross-section AWG max.	6
Stripping length	10 mm
Screw thread	M4
Tightening torque, min	1.2 Nm
Tightening torque max	1.5 Nm

Output

Connection method	Screw connection
Conductor cross-section, rigid min.	0.5 mm²
Conductor cross-section, rigid max.	16 mm²
Conductor cross-section flexible min.	0.5 mm²
Conductor cross-section flexible max.	10 mm²
Conductor cross-section AWG min.	20
Conductor cross-section AWG max.	6
Stripping length	10 mm
Screw thread	M4
Tightening torque, min	1.2 Nm
Tightening torque max	1.5 Nm

Signal

Conductor cross-section, rigid min.	0.2 mm²
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

Screw thread	M3
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

Signaling

Types of signaling	LED
	Active switching output
Operating voltage display	Green LED

Signal output: Active (high = buffer module is loaded)

Status display	LED "Power Good", green
Note on status display	Buffer module is loaded: LED ON

Electrical properties

Insulation voltage input/output	1 kV (routine test)
	1 kV (type test)

Product properties

Product type	Buffer module
IQ technology	no
MTBF (IEC 61709, SN 29500)	> 500000 h

Insulation characteristics

Protection class	III
Degree of pollution	2

Dimensions

Width	64 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	122 mm
Height	130 mm
Depth	67 mm

Mounting

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

Material specifications

Housing material	Metal

Type of housing	AluNox (AlMg1)

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Maximum altitude	≤ 2000 m
Climatic class	3K3 (in acc. with 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)	< 15 Hz, amplitude ±2.5 mm (according to IEC 60068-2-6)
	15 Hz ... 150 Hz, 2.3g, 90 min.

Standards and regulations

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)
Standard – Safety extra-low voltage	EN 60950-1 (SELV) and EN 60204 (PELV)
Standard - Safe isolation	DIN VDE 0106-101
Standard - Safety of transformers	EN 61558-2-17

Approvals

Shipbuilding approval	DNV GL (EMC A), ABS
UL approvals	UL/C-UL listed UL 508
	UL/C-UL Recognized UL 60950-1
	UL/C-UL Listed UL 1604 Class I, Division 2, Groups A, B, C, D

EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Low Voltage Directive	Conformance with Low Voltage Directive 2014/35/EC
Noise immunity	EN 61000-6-2:2005

Noise emission

Standards/regulations	EN 55011 (EN 55022)

Electrostatic discharge

Standards/regulations	EN 61000-4-2
Housing	Level 4

Electrostatic discharge

Contact discharge	8 kV
Discharge in air	15 kV
Comments	Criterion B

Electromagnetic HF field

Standards/regulations	EN 61000-4-3

Electromagnetic HF field

Frequency range	80 MHz ... 1 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 (level 3 - asymmetrical: conductor to ground)
Output	2 kV (level 3 - asymmetrical: conductor to ground)
Signal	1 kV (level 2 - asymmetrical: conductor to ground)
Comments	Criterion B

Surge voltage load (surge)

Standards/regulations	EN 61000-4-5

Surge voltage load (surge)

Input/Output	0.5 kV (level 1 - asymmetrical: conductor to ground)
Input/Output/Signal	0.5 kV (level 1 - symmetrical: conductor to conductor)

Conducted interference

Standards/regulations	EN 61000-4-6

Conducted interference

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

Voltage dips

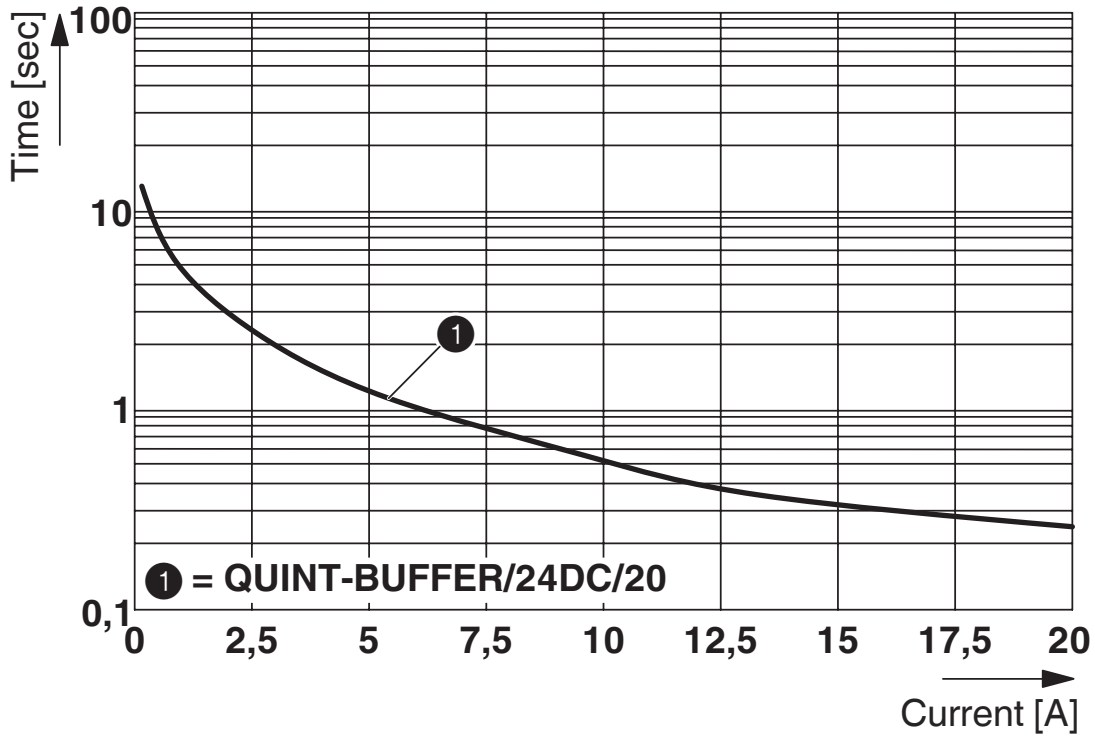
Standards/regulations	EN 61000-4-11

Emitted interference

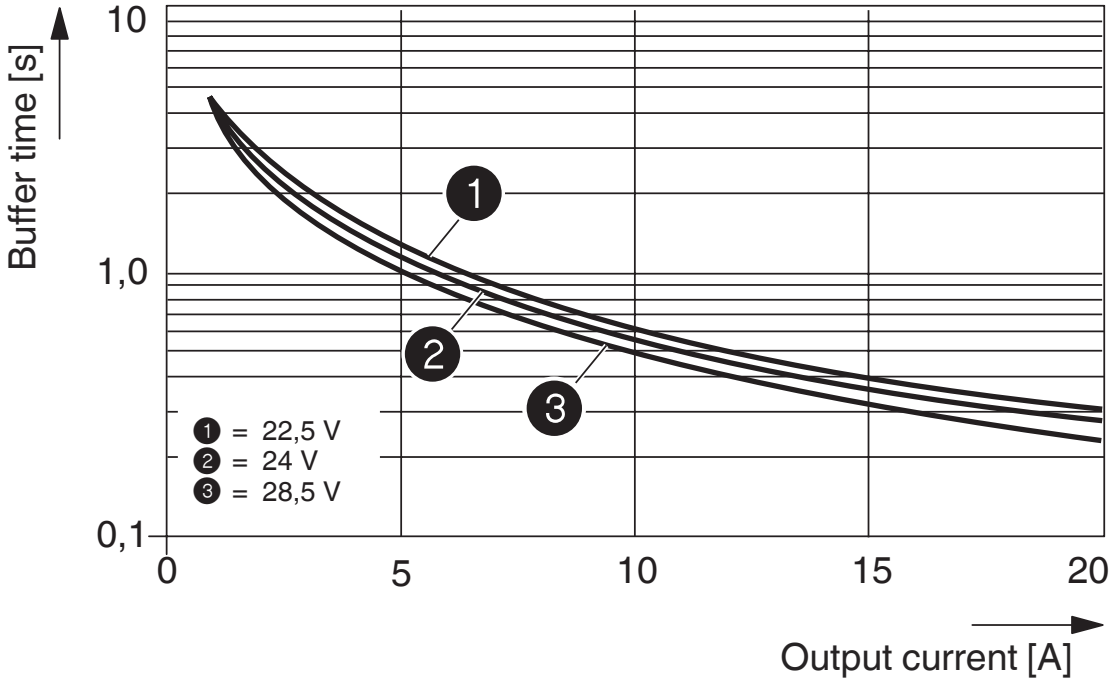
Standards/regulations	EN 61000-6-3
Radio interference voltage in acc. with EN 55011	EN 55011 (EN 55022) Class B, area of application: Industry and residential
Emitted radio interference in acc. with EN 55011	EN 55011 (EN 55022) Class B, area of application: Industry and residential

Drawings

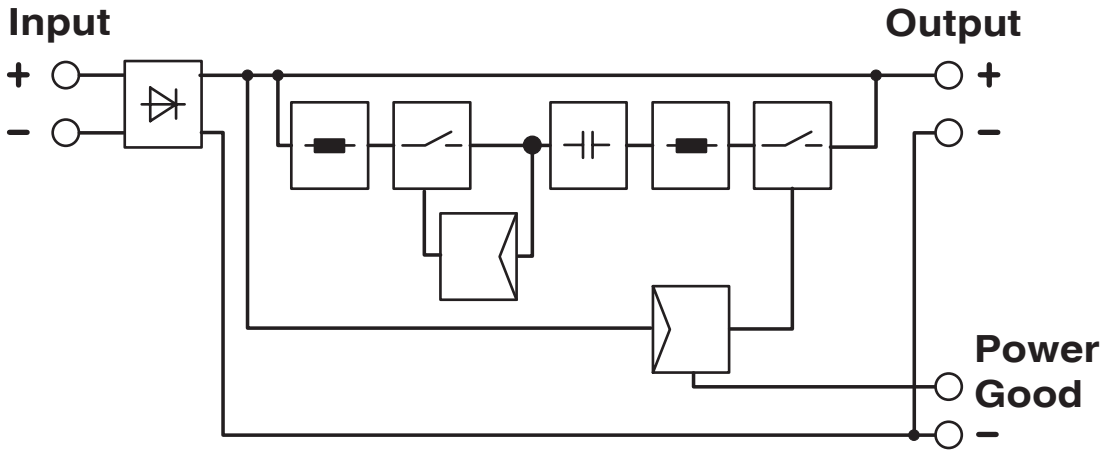
Diagram



Diagram



Block diagram



Approvals

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ABS
Approval ID: 22-2244289-PDA

cUL Recognized
Approval ID: FILE E 211944

UL Recognized
Approval ID: E211944

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

UL Listed
Approval ID: E123528

cUL Listed
Approval ID: E123528

DNV
Approval ID: TAA00002EW

IECEE CB Scheme
Approval ID: DE/PTZ/0072

cUL Listed
Approval ID: FILE E 199827

UL Listed
Approval ID: E199827

Classifications

ECLASS

ECLASS-13.0	27040692
ECLASS-15.0	27040692

ETIM

ETIM 9.0	EC002850

UNSPSC

UNSPSC 21.0	26111700

Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(c), 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: n/a)
SCIP	326eccbe-f364-430d-bc01-c3e734219f4b

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