DATA SHEET

Extension module CP-B EXT.2

Accessory for buffer modules CP-B range

The CP-B EXT.2 serves as an extension of CP-B range buffer modules and ensures extended buffering times. The extension module features a new technology of storing energy by using ultra-capacitors which entirely obviate the need for maintenance and exempt deep discharge in comparison to batteries.

2CDC 271 004 S0010

Characteristics

- Extension of buffer modules CP-B 24/3.0 and CP-B 24/20.0
- Maintenance free
- Temperature resistant
- No deep discharge

Order data

Redundancy unit

Type	Rated voltage	Voltage range	Order code
CP-B EXT.2	24 V DC	0-26.4 V DC	1SVR 427 065 R0000

Functions

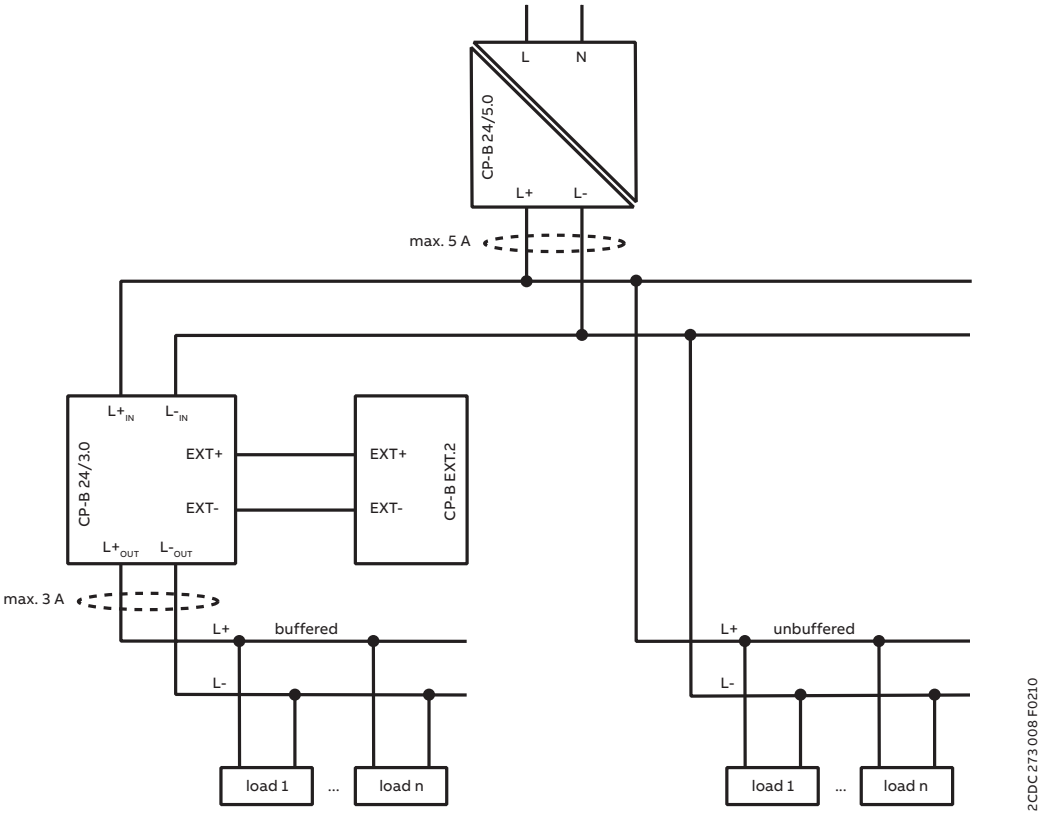
Operating controls and terminals

Terminal assignment
EXT+, EXT+, EXT-, EXT-:
Connection terminals for buffer module

Application

In most areas of energy management and automation technology power supply systems have to be highly reliable. Often batteries are used for supporting the supply system in case of mains failures. Batteries have limited lifetimes depending on environmental parameters and, therefore, have to be maintained regularly, which causes efforts and costs. Using the latest ultra-capacitor technology, ABB offers an innovative and completely maintenance-free new product for buffering the 24 V DC supply in case of interrupted mains on the primary side of the power supply. The CP-B EXT.2 extension module provides additional capacitance for ABB's ultra-capacitor buffered energy storages for extended buffering times.

hahaExample of application



Operating modes

In order to extend the buffer module's initial capacitance connect the terminals EXT+ and EXT- with the identically named terminals of the extension module (see 'Example of application' on page 2). Further extension modules are to be connected similarly.

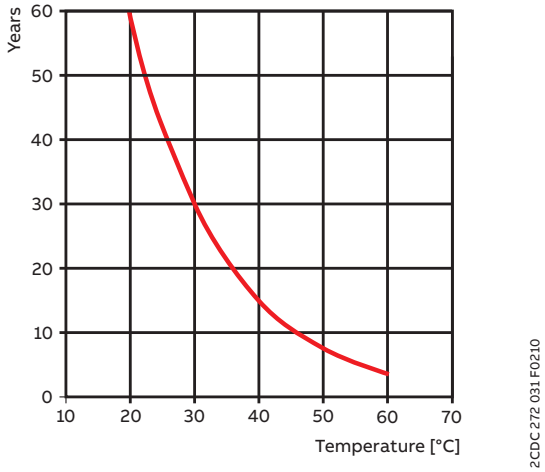
Once the input voltage has been applied to the buffer module it starts loading its ultra-capacitors and connected extension modules.

Please note that a higher capacitance enables longer buffering times but does also result in longer charging times.

Decommissioning

For save decommissioning please refer to the instruction manual of the buffer module.

Note: It is highly recommended that loads which do not need an uninterrupted supply are connected directly, in parallel to all buffered loads, with the power supply. Buffering such loads would only reduce the buffering time which is load dependent. Therefore loads should be selected as small as necessary in order to achieve high buffering times.



Capacitor's life span over temperature

Note: The capacitor's life span depends on the temperature exposed to as shown in the figure below as well as on the load current. The end of the life span is reached, when its capacitance drops below 70 % of its nominal capacitance. Using the buffer module continuously at its specified maximum applicable temperature, the expected product lifetime is approximately 5 years.

Installation

The device must be installed by qualified persons only and in accordance with the specific national regulations (e.g. VDE, etc.). The CP-B EXT.2 is a chassis-mounted unit. It is maintance-free and does not contain any integral setting elements and should therefore not be opened.

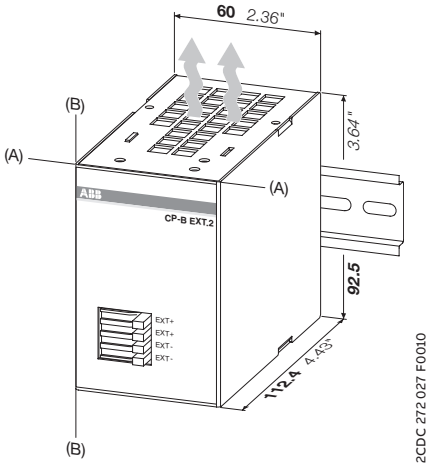
If the extension module is built into systems needing overvoltages for testing (e.g. EN 60204-1/ VDE0113 part1 19.4 voltage control), the module must be disconnected during the test. (Original text EN 60204-1: components, which are not dimensioned for the testing voltage must be separated during the testing.)

Note: The device is completely maintenance free. The enclosure is sealed.

DANGER!
Components with high stored energy
Danger to be electrocuted!

- Disconnect the system from the supply network and protect against switching on before any installation, maintenance or modification work.
- Discharge the buffer module and the extension module completely.
- Do not introduce any objects into the unit and do not open the unit.
- Ensure that the service personnel is protected against inadvertent contact with parts carrying energy.

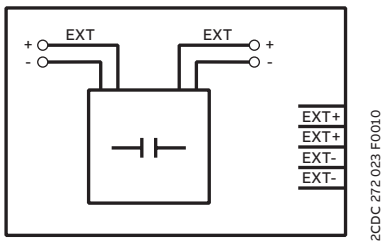
Mounting position



The device has to be mounted horizontally with the input terminals on the bottom. In order to ensure a sufficient convection, the minimum distance to the other modules must be not less than 40 mm (1.58 in) in vertical direction. Minimum distance in horizontal direction is not necessary.

Electrical connection

The installation must be executed according to EN 60950 and possible applicable local standards. The input side is protected by an internal input fuse.



Connection diagram

EXT+ EXT+ EXT- EXT- Connection terminals

Connect the extension module to the terminals EXT+ and EXT-.
In case of overload, the output current comprises the maximum current of the buffer module as well as the current of the power supply unit. The overload protection has to be realized externally.
Rate the lines for the maximum output current or provide separate fuse protection. It is recommended to choose the wire size as large as possible in order to minimize voltage drops. Observe the polarity. The device is overload and open-circuit proof.

Operation

DANGER!
High current
Risk of electric arcs and electric shocks!
- Do not modify the installation (primary and secondary side).
- Intended use.

CAUTION!
Enclosure can become very hot depending on the operation conditions
Risk of burns!
- In order to ensure sufficient air-cooling the distance to other devices has to be considered.

Before start of operation the following must be ensured:
1. Connect electrical lines according to the specific national regulations for class of protection III.
2. Power supply cables and unit must be sufficiently fused.
3. A disconnection device has to be provided for the power supply to disengage unit and supply cables from supply mains if required.
4. Rate the output lines for the output current of the buffer module and connect them with the correct polarity.

The device is intended for use as an extension module. Any other usage is not supported by the manufacturer. Other usage, improper installation or operation may impair safety and cause operational difficulties or destruction of the unit.

Service

The internal fuse is not user-replaceable. If the internal fuse blows, most probably the device is defective. In this case, an examination of the extension module by the manufacturer is necessary.

Technical data

Data at T_a = 25 °C and rated values, unless otherwise indicated.

Extension circuit

		EXT+ EXT+ EXT- EXT-
Rated voltage		24 V DC
Voltage range		0-26.4 V DC
Rated current		3 A DC
Internal input fuse (apparatus protection, not accessible)		4 A slow acting (PTC)
Short-circuit protection		via internal 3 A fuse
Overload protection		only in combination with CP-B 24/3.0 or CP-B 24/20.0

Indication of operational states

		status information and fault messages of the buffer module apply

General data

MTBF		available on request
Power consumption without load		0.5 W
Energy storage (min.)		2000 Ws
Efficiency		n.a.
Duty time		100 %
Dimensions		see "Dimensional drawings"
Weight	net	1.04 kg (2.30 lb)
Material of enclosure	cover	steel sheet powdered
	enclosure shell	steel sheet powdered
Mounting		DIN rail (IEC/EN 60715), snap-on mounting
Mounting position		horizontal
Minimum distance to other units	horizontal	not necessary
	vertical	40 mm (1.58 in)
Pollution degree		2
Degree of protection	enclosure	IP20
	terminal	IP20
Protection class (IEC/EN 61140)		III SELV / PELV (condition: power supply fulfills class III)

Electrical connection (pull spring terminals)

Extension circuit		
Connecting capacity	fine-strand with(out) wire end ferrule	0.08-1.0 mm² (28-16 AWG)
	rigid	0.08-1.5 mm² (28-12 AWG)
Stripping length		6.0 mm (0.24 in)

Environmental data

Ambient temperature	operation	-40...+60 °C
	storage	-40...+60 °C
Vibration, sinusoidal	based on IEC/EN 60068-2-6	1.5 mm, 3-57.55 Hz; 2 g, 57.55-500 Hz, 10 cycles
Shock, half-sine	based on IEC/EN 60068-2-27	15 g, 11 ms, 3 axes, 6 faces, 3 times for each face

Standards / Directives

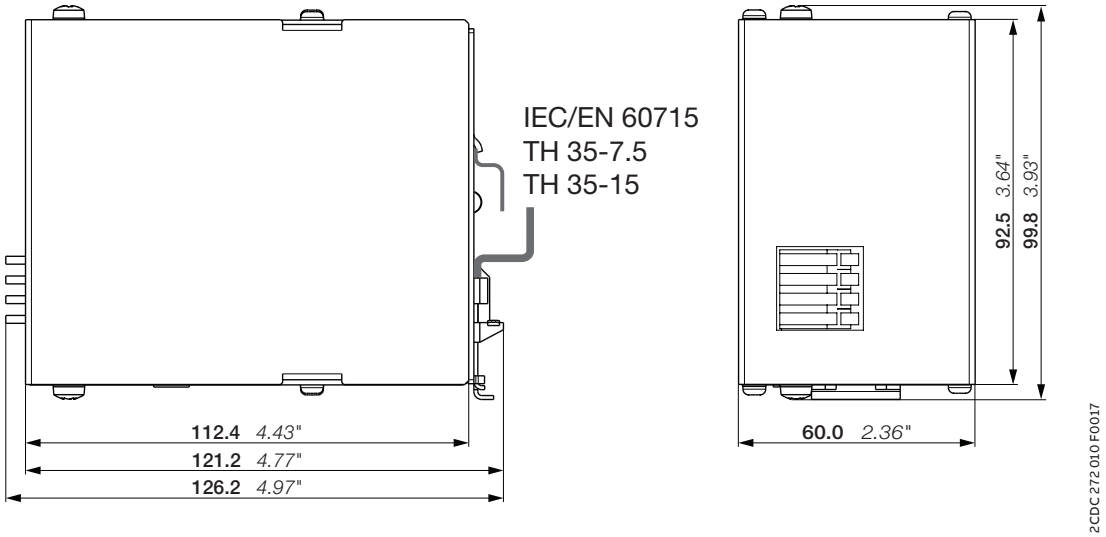
Standards	IEC/EN 62368-1, IEC/EN 61010-1, IEC/EN 62040-2
Low Voltage Directive	2014/35/EU
EMC Directive	2014/30/EU
RoHS Directive	2011/65/EU

Electromagnetic compatibility

Interference immunity to		IEC/EN 61000-6-2
electrostatic discharge	IEC/EN 61000-4-2	Level 3, 6 kV / 8 kV
radiated, radio-frequency, electromagnetic field	IEC/EN 61000-4-3	Level 3, 10 V/m (27-1000 MHz) / Level 2, 3 V/m (1400-2700 MHz)
electrical fast transient / burst	IEC/EN 61000-4-4	Level 3, 2(1) kV / 5 kHz
surge	IEC/EN 61000-4-5	Level 1, 0.5 kV
conducted disturbances, induced by radio-frequency fields	IEC/EN 61000-4-6	Level 3, 10 V (150 kHz-80 MHz)
voltage dips, short interruptions and voltage variations	IEC/EN 61000-4-11	buffered by ultra-capacitors
Interference emission		EN 61000-6-4
high-frequency radiated	DIN EN 55011	B/C1
high-frequency conducted	DIN EN 55011	B/C1

Dimensions

in mm and inches



Extension module CP-B EXT.2

Further documentation

Document title	Document type	Document number
Electronic relays and controls	Catalog	2CDC110004C02xx
CP-B EXT.2	Instruction sheet	1SVC427063M0000
CP-B 24/3.0	Data sheet	2CDC114083D0201
CP-B 24/3.0	Instruction sheet	1SVC427060M0000
CP-B 24/20.0	Data sheet	2CDC114081D0201
CP-B 24/20.0	Instruction sheet	1SVC427062M0000

You can find the documentation on the internet at www.abb.com/lowvoltage
-> Automation, control and protection -> Power supplies.

CAD system files

You can find the CAD files for CAD systems at http://abb-control-products.partcommunity.com
-> Low Voltage Products & Systems -> Control Products -> Power Supplies.

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