Backplane Modules

BB21A,BB21B,BB21C BB41A,BB41B ,BB41E

BB61A,BB61B,BB61R BB81A,BB81B

Data Sheet

Doc: 40462 v1.0

BRODERSEN

simplifying systems

INTRODUCTION TO LB2 I/O SERIES

Before using the LB2 Series I/O Modules, read the LB2 User manual.

The Brodersen LB2 modules can be used with the RTU32N and RTU32M series products. The I/O modules are in two parts, a bottom part containing the backplane bus, and a top part containing the I/O board and logic. All LB2 I/O modules are hot pluggable and equipped with a 200 MHz processor to handle filtering, de-bouncing and logic processing of I/O.

Module firmware updates are managed by the RTU using Brodersen Worksuite. Use only genuine Brodersen bus cables for connection to Brodersen RTUs and extension of I/O module blocks. The LB2 connection cables are made to handle the power and shielding requirements of the LB2 bus communications. The maximum overall length of complete system is 30m. Each I/O module & Power supply module is calculated as 2cm. The cables are as their length indicates, e.g. UCC-610/100 cable is 100 cm.

The maximum number of I/O modules on one LB2 Bus is 60.

Cable ordering codes:

UCC-610/25	25cm LB2 Cable
UCC-610/50	50cm LB2 Cable
UCC-610/100	100cm LB2 Cable
UCC-610/200	200cm LB2 Cable

INTRODUCTION TO BACKPLANE

The use of Backplanes in connecting LB2 I/O modules electrically and mechanically is crucial for the seamless operation of a system. Backplanes serve as a pathway that enables communications between various modules such as logical IO, CPU ,and Power supply modules .
Different type of backplanes are utilized depending on the specific module they are intended to connect. For instance, there are dedicated backplanes for power supply, CPU, communication and I/O modules. Each backplane is designed to cater to the unique requirments & functionalities of its corresponding module. To ensure compatibility and optimal performance, it is essential to select the appropriate backplane for each module. This task can be simplified by using the Brodersen online configurator. The brodersen online configurator assists in identifying the right backplane for a particular module.

POWER SUPPLY MODULES BACKPLANE PART

Description	Part Nr.
BUS module for Communication, Start	BB81A
BUS module for Communication, Middle	BB81B
Bus Module for CPU, Start	BB61A
Bus Module for CPU, Middle	BB61B
BUS mod. for standby CPU (redund.setup)	BB61R
BUS module for power supply, Start	BB41A
BUS module for power supply, Middle	BB41B
BUS module for power supply, Extension	BB41E
BUS module for IOs, Start	BB21A
BUS module for IOs, Middle	BB21B
BUS module for IOs, Extension	BB21C

VERSIONS / ORDERING CODES

Hardware basic version

Order code: **BB81A**
BB81B

Order code: **BB61A**
BB61B
BB61R

Order code: **BB41A**
BB41B
BB41E

Order code: **BB21A**
BB21B
BB21C

BACKPLANES FOR LB2 CPU MODULES:

There are three types of Backplane bus modules for the brodersen CPU module to use, such as BB61A,BB61B and BB61R. It all depends on where to use the CPU module in the rack. It can be used at the beginning of all modules without any communication module or to use in the middle of the connected modules after a communication module or to use the CPU as a redundant .

BB61A Backplane for CPU start position:
This backplane bus module is used when you don't have any brodersen LB2 communication modules such as SP04A, SP04B, CM02A, IM51A,.. that need to be connect to the left side of the CPU module , and the rack of the LB2 I/O modules start from the CPU (MP32A) module.

BB61B Backplane for CPU Middle position:
This backplane bus module is used in the middle of a set of connected modules ,it means that BB61B can be used when we need to connect any of the brodersen LB2 communication modules such as, SP04A, SP04B, CM02A, IM51A,.. to the left side of the CPU(MP32A) module.

BB61R Backplane for Redundant CPU module:
This backplane bus module is used to connect a redundant CPU(MP32A) module to the adjacent main CPU (MP32A) module . It is important that BB61R can be used only when you have the redundant CPU modules side by side .

BACKPLANE FOR COMMUNICATION MODULES:

There are two types of backplane bus modules for the brodersen communication modules to use, such as BB81A and BB81B. The communication modules includes SP04A, SP04B, CM02A, IM51A, IM51B . or LCD module DS16A.

BB81A Backplane for Communication module in the start position:
The BB81A backplane bus module is used at the start position of the modules for the communication modules such as SP04A, SP04B, CM02A, IM51A, IM51B , or LCD module DS16A.it can be used when there is no need to connect any other communication module on the left side of this module.

BB81A Backplane for Communication module in the middle position:
The BB81B backplane bus module is used in the middle position of the modules for the communication modules such as SP04A, SP04B, CM02A, IM51A, IM51B , or LCD module DS16A. By using the BB81B, it is possible to connect more communication modules on the left side of this module. This backplane bus module can also be used at the start position.

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BACKPLANES FOR POWER SUPPLY MODULES:

There are three types of backplane bus modules for the brodersen Power supply modules to use, such as BB41A,BB41B and BB41E .

BB41A
BUS mod, for Power supply, Start

BB41B
BUS mod, for Power supply, Middle

BB41E
BUS mod, for Power supply, Extension

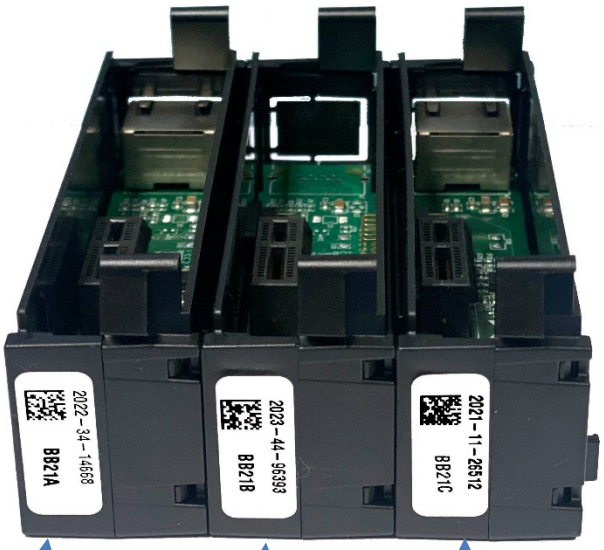
BB41A Backplane for Power supply Start position:
This backplane bus module is used for starting a new set of modules on a new DIN rail. It has a connector for the LB2 cable, so you can connect it to the set of modules on the previous DIN rail . it is important that this backplane can not be used for the first set of I/O modules and cannot be connected to the CPU module.

BB41B Backplane for Power supply Middle position:
This backplane bus module is used in the middle of a set of connected modules. This backplane bus module can also be used at the end of a set . This backplane bus module can also be used for the redundant power supply module.

BB41E Backplane for an extra power supply module:
This backplane bus module is used when the I/O modules needs more power that what the previous power supply module is supplying For example, if there is a large rack of I/O modules so we need an extra power supply so we need to use BB41E for that .This backplane also isolates power from the previous modules, it providing a new source of power to modules on its right side.

BACKPLANES FOR LB2 I/O MODULES:

There are three type of backplane bus modules used for the brodersen LB2 I/O modules, such as BB21A, BB21B and BB21C.



BB21A
BUS mod, for I/O modules, Start

BB21B
BUS mod, for I/O modules , Middle

BB21C
BUS mod, for I/O modules, Extension

BB21A Backplane for I/O modules Start position:
This backplane bus module is used for starting a new set of I/O modules. It can be used when there is no need for additional power supply .this backplane has a connector for the LB2 cable, so you can connect it to the previous set of modules on the Din rail.

BB21B Backplane for I/O modules middle position:
This backplane bus module is used in the middle of a set of connected modules. The BB21B can also be used at the end of a set of modules, it allow future expansion of the I/O modules.

BB21C Backplane for I/O modules at the end position:
This backplane bus module is used at the end of a set of connected modules . BB21C has a connector for the LB2 cable so you can connect it to the next set of I/O modules or power supply if it is required .

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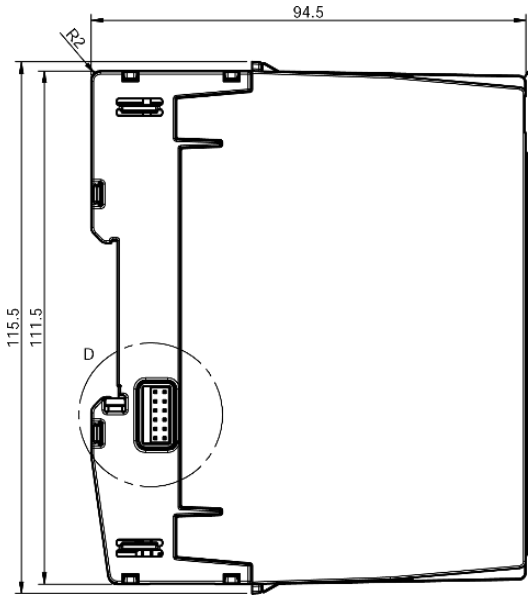
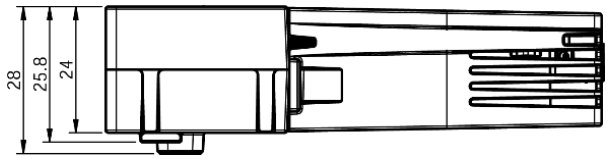
MECHANICAL





Mounting	DIN 35
Width	24 mm
Height	111.5 mm
Depth	94.5 mm
Weight	102 grams

ENVIRONMENTAL CONDITIONS

Ambient operating temperature range	-25°C to +75°C
Ambient operating temperature range	-40°C to +85°C
Marked degree of protection	IP20
Humidity	0...99.8%
Ventilation Restrictions	No
Pollution degree	2

STANDARDS

EMC:

- **IEC 61000-6-2**: EMC - Immunity standard for industrial environments
- **IEC 61000-6-4**: EMC - Emission standard for industrial environments
- **IEC 50121-4**: Railway applications - EMC - Emission and immunity of the signalling and telecommunications apparatus

Safety:

- **IEC 60950-1**: Safety requirements for Information technology equipment
- **IEC 61010-1**: Safety requirements for electrical equipment for measurement, control, and laboratory use

Environmental:

- **IEC 60068-2-1**: Environmental testing - Cold
- **IEC 60068-2-2**: Environmental testing - Dry heat
- **IEC 60068-2-30**: Environmental testing - Damp heat, cyclic (12 h + 12 h cycle)
- **IEC 60068-2-78**: Environmental testing - Damp heat, steady state
- **IEC 60068-2-6**: Environmental testing - Vibration (sinusoidal)
- **IEC 60068-2-27**: Environmental testing – Shock

SAFETY PRECAUTIONS

- Follow the national safety regulation (IEC 61010-1) ⚠
- Only skilled person is allowed to install and operate the modules.
- Modules can only be mounted in an end-use enclosure which provides protection against fire, electrical and mechanical hazards.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

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