PS24A

RTU32M Power Supply

Data Sheet

Doc: 40410 v1.05

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

POWER SUPPLY MODULE BACKPLANE PART

Description	Part Nr.
BUS module for power supply, Start	BB41A
BUS module for power supply, Middle	BB41B
BUS module for power supply, Extension	BB41E

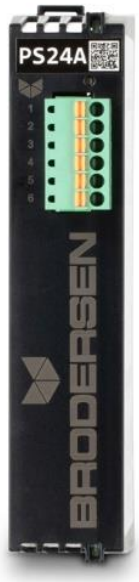
VERSIONS / ORDERING CODES

Hardware basic version

Order code: PS24A

I/O INTERFACE

1x 6 way 3.5mm pluggable spring clamp connectors. The maximum conductor cross sectional area is AWG 16 (1.3mm²). The wire conductor type should be Copper and it must meet the minimum temperature criteria of 105°C.



TERMINAL LAYOUT

Connector J301:

Pin 1:	Earth
Pin 2:	Earth
Pin 3:	+ Vin
Pin 4:	+ Vin
Pin 5:	- Vin
Pin 6:	- Vin

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ELECTRICAL

Module input power:
Input supply voltage:
10...30 VDC (Vin)

Input supply current:
Max 2 A @ 12V input voltage.
Max 1 A @ 24V input voltage.

Module output power:
Output voltage:
12 VDC ± 10% for I/O modules and electronics.

Output current:
Max 1.2A continuous for I/O modules.
Max 1.6A overload current limit / short circuit protection.

Power consumption (from backplane bus):

Current consumption:	60mA (typ.) @ 12V
Power consumption:	700mW (typ.)

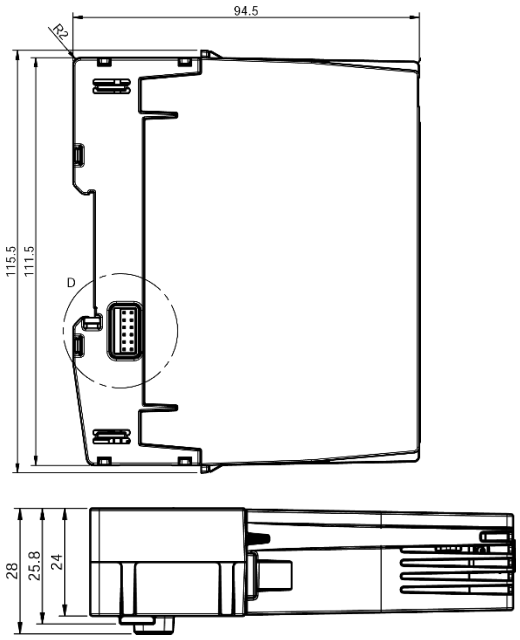
In case of an overload or short circuit, module will turn off and retry after approximately 10 seconds.

Module input voltage, current, and output voltage, current is monitored by CPU, and reported to RTU at regular intervals.

POWER SUPPLY REDUNDANCY

Two (or more) power supplies can be inserted next to each other, to provide power supply redundancy. The two power supplies will do simple load sharing. If the total load is 100%, one PSU will deliver e.g., 60%, and the second 40%.
Note: This is for redundancy only. If more than 100% (1.2 A) is needed, a new power supply segment is required.

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

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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

MODULE LED STATUS

A dual color (red/yellow) LED is provided on the module to indicate the module status. Yellow indicates the module mode / state and red indicates module error or warnings (according to the table below):

Status	Yellow	Red
Normal operating	ON	OFF
Communication timeout	Blinking	OFF
Module is not configured / wrong configuration	Single flashing	OFF
Module is configured but is in stopped mode (ready for being started)	Double flashing	OFF
Module is in firmware update mode	Quadruple flashing	OFF
Communication error	N/A	Blinking
Communication warning	N/A	Single flashing
Corrupted module info in EEPROM	N/A	Flickering
Hardware fatal error	OFF	ON
No module power	OFF	OFF

Each pattern / color will operate in 2 sec duty cycles. When the red LED is inactive (off), only the 2 sec yellow duty cycle will operate (yellow is always active). When the red LED is active, a switch between 2 sec yellow, and 2 sec red patterns will occur.

SAFETY PRECAUTIONS

- Follow the national safety regulation (IEC 61010-1). ⚠
- Only skilled person is allowed to install and operate the modules.
- Disconnect the input supply while working with power module.
- 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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