SP04A

Serial Communication Module (4 Ports)

BRODERSEN

simplifying systems

INTRODUCTION TO LB2 IO SERIES

Before using the LB2 Series Communications (comms) Modules, read the LB2 User manual.

The Brodersen LB2 communication modules can be used with the RTU32M series products. The comms modules are in two parts, a bottom part containing the backplane bus, and a top part containing the comms board and interfaces. All LB2 comms modules are hot pluggable.

The SP04A is a 4-port serial communication module that is 'plug and play'. The module is self-configuring and is managed via the RTU web server. The SP04A module is used to connect legacy serial equipment to your infrastructure using serial protocols that include DNP3, IEC 60870, Modbus, Omron and DF1.

BACKPLANE PARTS

Description	Part Nr.
BUS module for Comms, Start	BB81A
BUS module for Comms, Middle	BB81B

VERSIONS / ORDERING CODES

Hardware basic version

Order code: SP04A

TYPE OF COMMUNICATION PORTS

- 1x Isolated RS232/RS485 (COM1)
- 2x RS232 with RX/TX/RTS/CTS (COM2 & COM3)
- 1x RS232 with all null-modem signals (COM4)

INTERFACES

- 1x 3 way 3.5mm pluggable spring clamp connector for COM1. The wire conductor type should be Copper and it must meet the minimum temperature criteria of 105°C.

- 2x RJ12 (6P6C) connector for COM2 & COM3

- 1x 9-pin mail SUB-D male connector for COM4

- 2x Dip-switches, for COM1 configuration

- 1x Dual colour LED on front for module status.

MODULE FRONT VIEW

Figure 1: Front view of the SP04A module

COMMUNICATION PORTS

COM1: Isolated RS232/RS485, configurable (with 2x dip-switches), with 3-way 3.5mm Anytek (Phoenix MC) pluggable spring clamp connector. The pinout is:

Pin No.	RS232	RS485
Pin 1 (top)	GND	GND
Pin 2	TXD	Data+
Pin 3	RXD	Data-

For configuring COM1, two dip-switches are used:

DIP-SW No.	ON (left)	OFF (right)
DSW-2 (top)	RS485 mode	RS232 mode
DSW-1*	RS485 Termination ON	RS485 Termination OFF

Note: DSW-1 is used in RS485 mode only.

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COM2 & COM3: RS232, with RJ12 (6P6C) connectors. The pinout is:

Pin No.	RS232
Pin 1 (top)	RTS
Pin 2	TXD
Pin 3	GND
Pin 4	GND
Pin 5	RXD
Pin 6	CTS

COM4: RS232, with DB9M connector. The pinout is:

Pin No.	RS232
Pin 1	DCD
Pin 2	RXD
Pin 3	TXD
Pin 4	DTR
Pin 5 (top)	GND
Pin 6	DSR
Pin 7	RTS
Pin 8	CTS
Pin 9	RI

ELECTRICAL

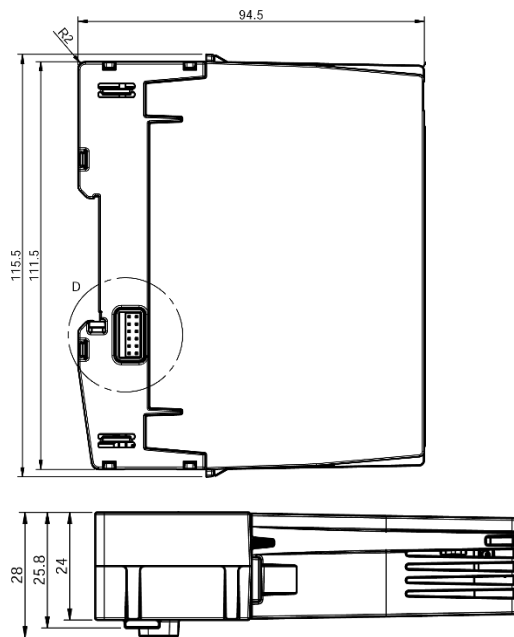**Power consumption (from backplane bus):**
- Current consumption: 100mA (typ.) @ 12V
- Power consumption: 1.2W (typ.)

Separated/Safe Extra Low Voltage (SELV) limits:

VAC (RMS)   30V
VAC (Peak)   42.4V
VDC   60V

Note: The SELV limits relies on input supply and all connected voltages.

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

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
Module is not configured / communication error	OFF	ON
No module power	OFF	OFF

SAFETY PRECAUTIONS

- Follow the national safety regulation (IEC 61010-1) ⚠
- Only skilled personnel are 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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