

CM02A

Communication Module (2 Ports) Serial RS232/485 and LAN 10/100

Data Sheet

Doc: 40437 v1.03



BRODERSEN
simplifying systems



INTRODUCTION

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 CM02A is a 2-port communication module with 1x 10/100 LAN port and 1x Isolated RS232/RS485 port 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 SYS-I/O, Start | BB81A |
| BUS module for SYS-I/O, Middle | BB81B |

VERSIONS / ORDERING CODES

Hardware basic version

Order code: CM02A

TYPE OF COMMUNICATION PORTS

- 1x Isolated RS232/RS485, configurable with 3x dip-switches (COM1)
- 1x LAN 10/100

INTERFACES

- 1x RJ45 for LAN
- 1x RJ12 (6P6C) COM1
- 3x Dip-switches, for COM1 configuration
- 1x Dual colour LED on front for module status.
- 2x COM-Port LED status RXD and TXD

MODULE FRONT SIDE



Figure 1: Front view of the CM02A module

COMMUNICATION PORTS

The CM02A serial communication module provides the following communication ports:

COM1: Isolated RS232/RS485, configurable (with 3x dip-switches), with RJ 12 (6P6C).

| Pin No. | RS232 | RS485 | RS485 FULL DUPLEX |
|-------------|-------|--------|-------------------|
| Pin 1 (Top) | NA | Data + | TX+ |
| Pin 2 | TXD | Data- | TX- |
| Pin 3 | GND | GND | GND |
| Pin 4 | GND | NA | GND |
| Pin 5 | RXD | NA | RX+ |
| Pin 6 | NA | NA | RX- |

For configuring COM port, dip-switches are used:

| DIP-SW No. | Function |
|------------|--|
| DSW-1 | LEFT RS485 mode RIGHT RS232 mode |
| DSW-2 | LEFT Half duplex RIGHT Full duplex |
| DSW-3 | LEFT Termination ON RIGHT Termination OFF |

- * It should be mentioned that the dip-switch for enabling/disabling termination resistor (DSW-3) is just functional in RS485 mode. In RS232 mode, the termination resistor is always disabled.



ELECTRICAL

Power consumption (from backplane bus):

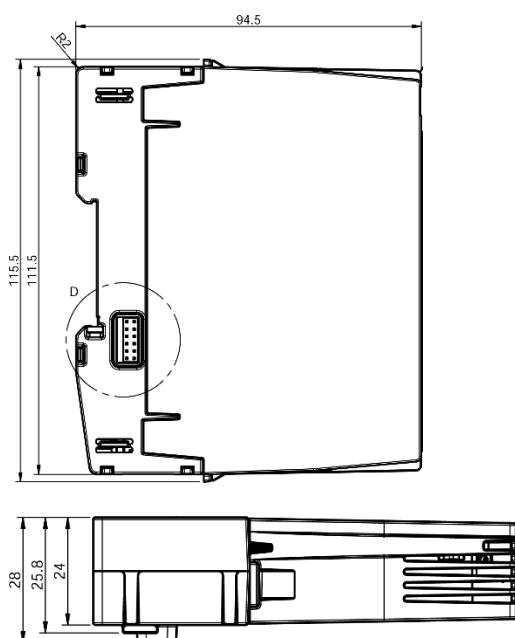
- Current consumption: 100mA (typ.) @ 12V
- Power consumption: 1.2W (typ.)

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 which indicates the module status (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.