:hager

SM210

RS485 - JBUS/MODBUS® for SM102E

GB User instructions

GB

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Preliminary operations

For personnel and product safety please read the contents of these operating instructions carefully before connecting.
Check the following points as soon as you receive the package:

- the packing is in good condition
- the product has not been damaged during transit
- the product reference number conforms to your order
- the package contains the product and the operating instructions.

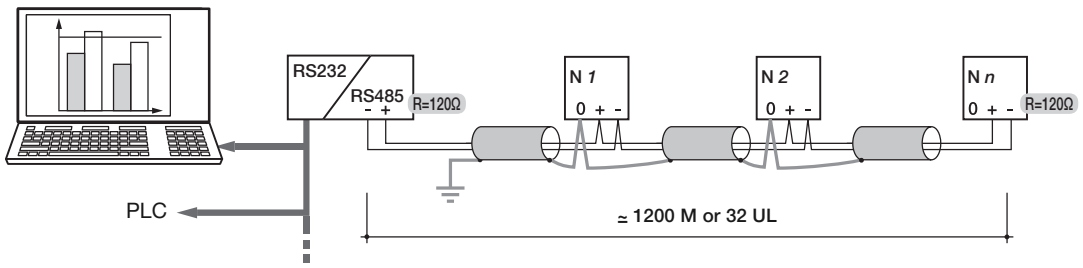
General informations

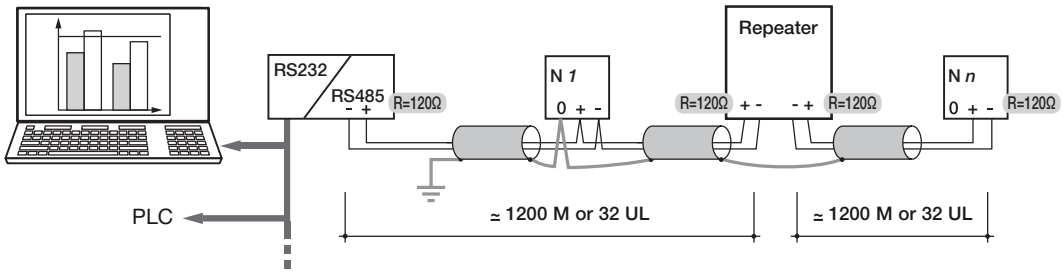
Functions

The optional IP Communication module must be connected to the SM102E. It provides an RS485 serial link (2 or 3 wires) with JBUS/MODBUS® protocol for the use of SM102E from a PC or PLC.

General points

For a standard configuration, an RS485 link is used to connect up to 31 SM102E or SM103E with a PC or a PLC over a distance of 1200 metres, using JBUS/MODBUS® protocol.





Recommendations

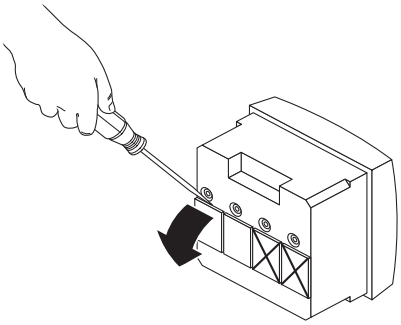
You should use a shielded twisted pair (LIYCY type). In a disturbed environment or large network (in terms of length) we recommend the use of a shielded twisted pair (type LIYCY-CY).
A repeater (1 channel) or an arrestor (4 channels) should be used if you intend to exceed the distance (1200 m.) and/or maximum number (31) of SM102E.
Please contact us for more information.

N.B.

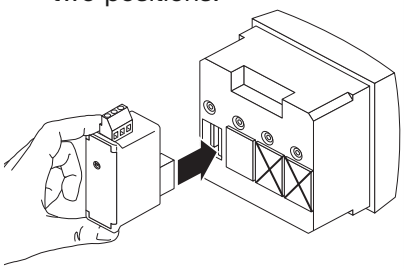
A 120 ohm resistance (found on the additional module) must be fixed at both ends of the link.

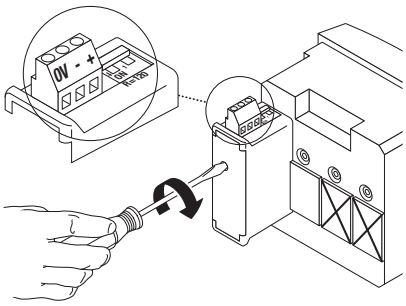
Installation

⚠ The SM102E product must be disconnected.

① 

② Fix the module in one of the two positions.

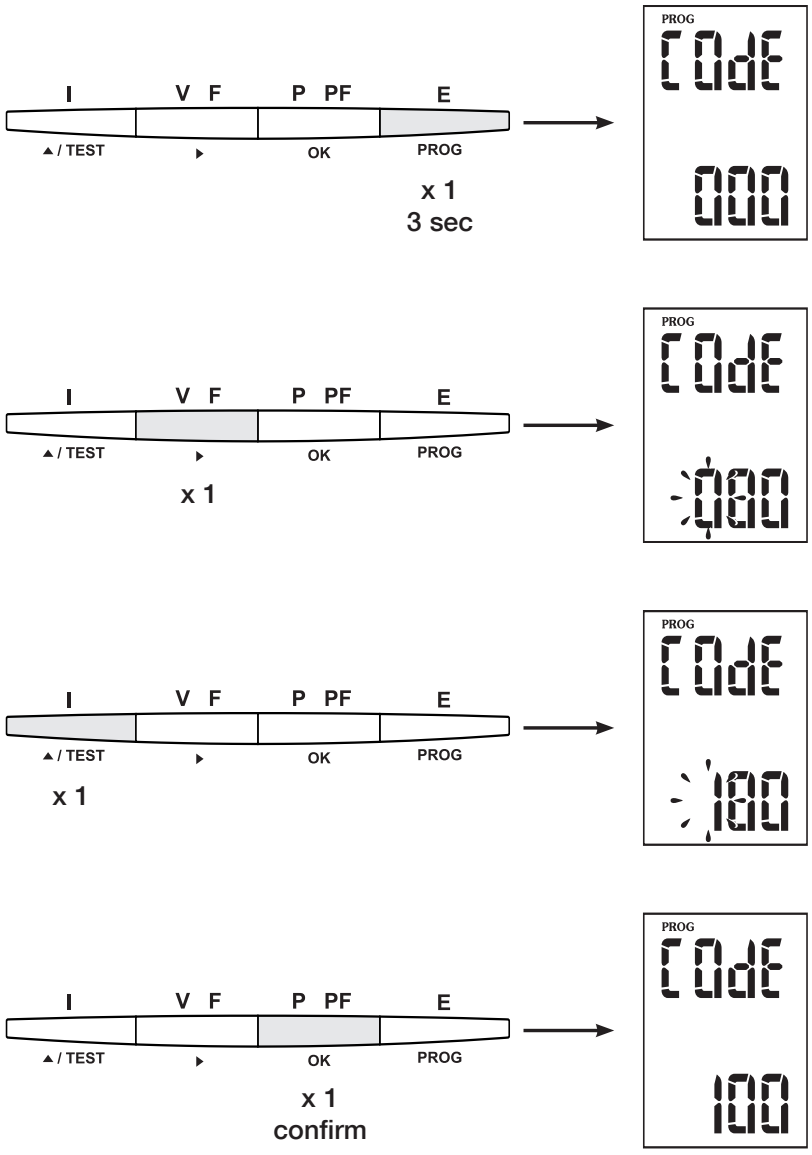


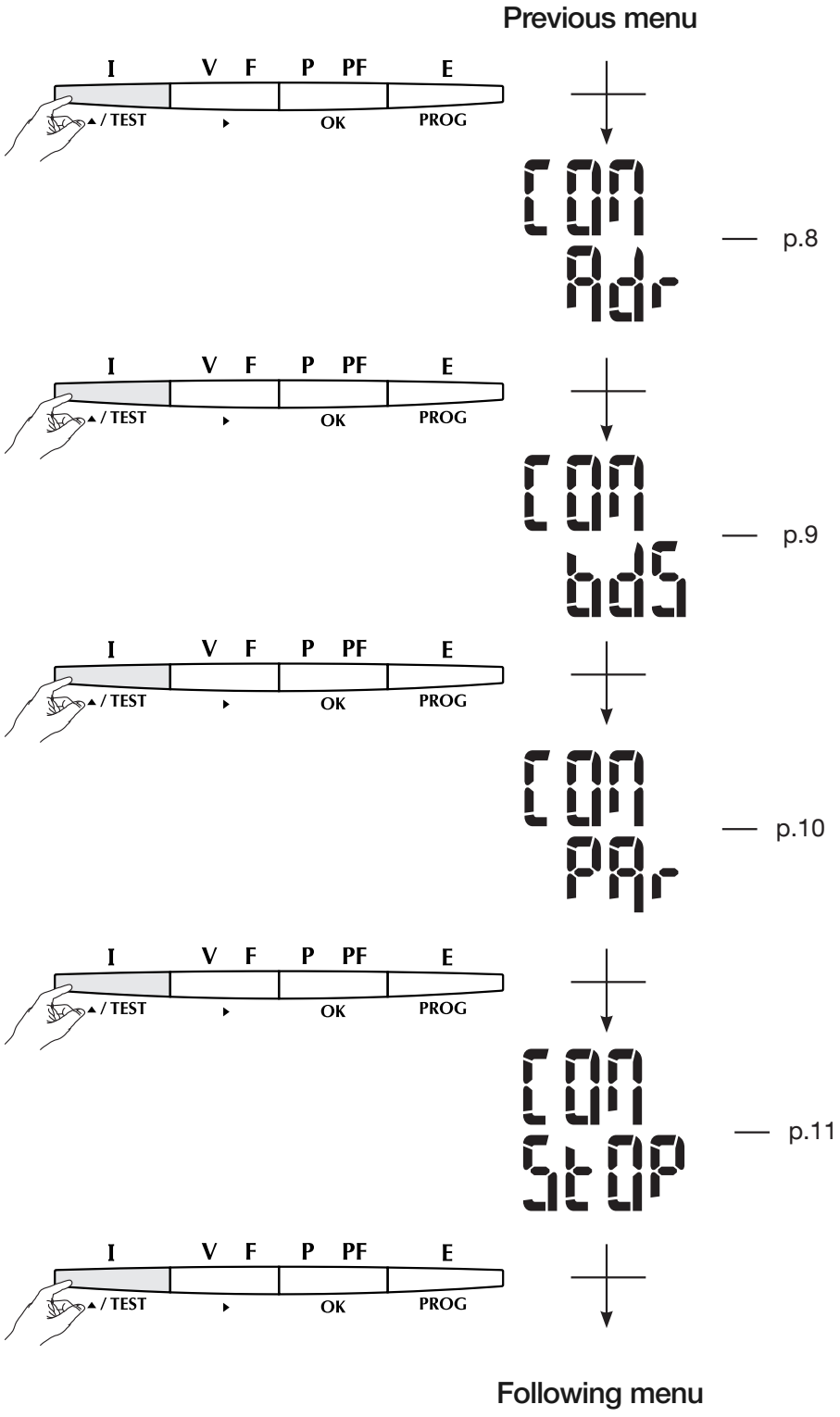
③ 

④ Follow indications when connecting the terminal.
Switch on voltage supply.

Notes

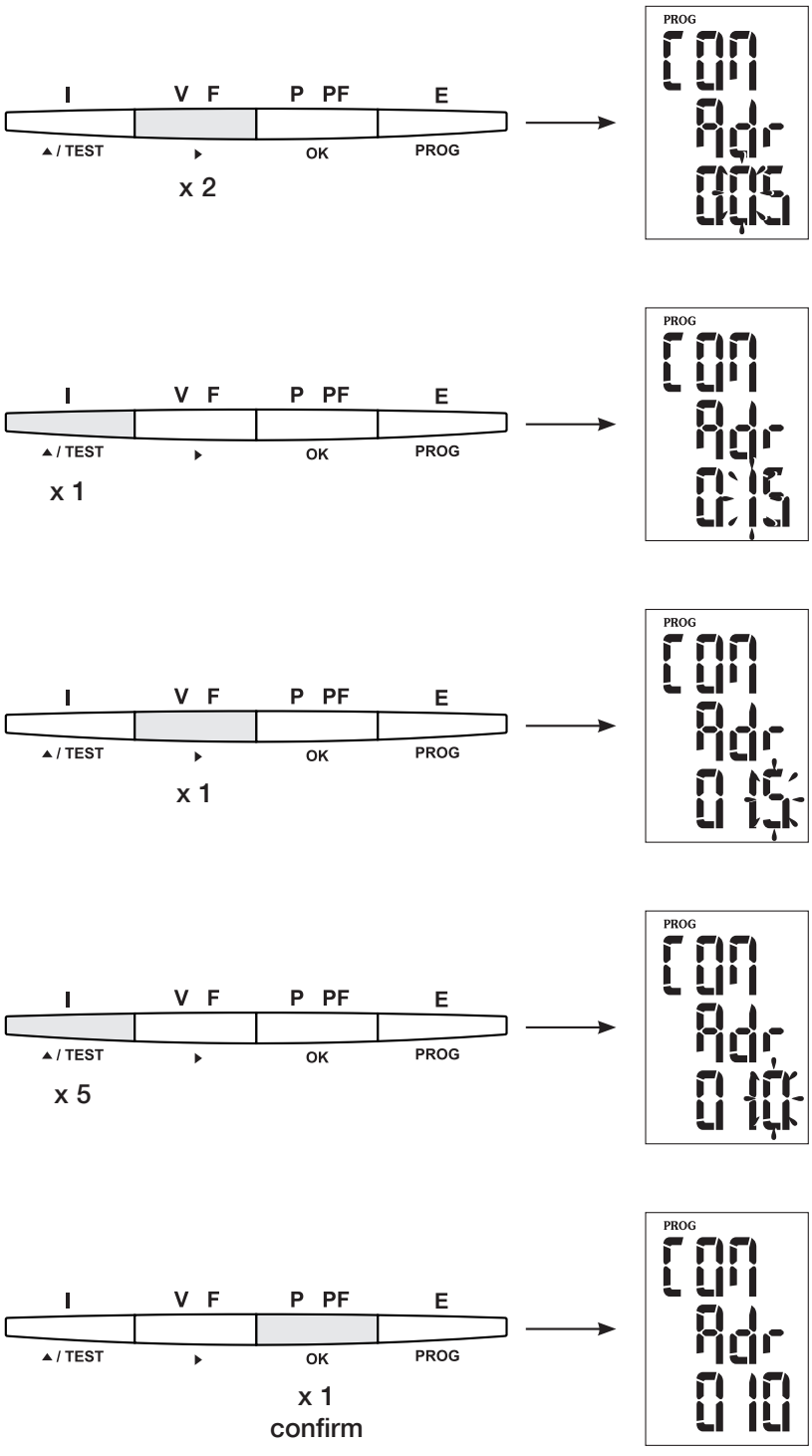
Access to programming mode (COdE = 100)




Previous menu
I V F P PF E
▲ / TEST
OK
PROG
COM
Adr
p.8
COM
bdS
p.9
COM
PAr
p.10
COM
StOP
p.11
Following menu

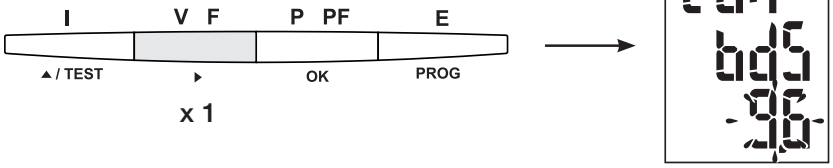
Communication address

Example: Adr = 10

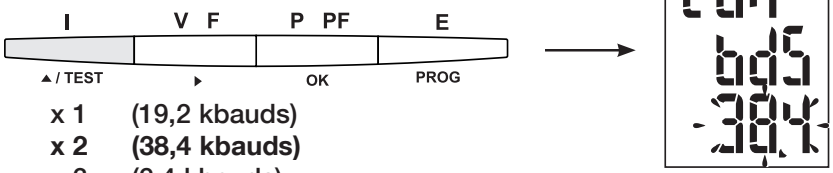


Communication speed

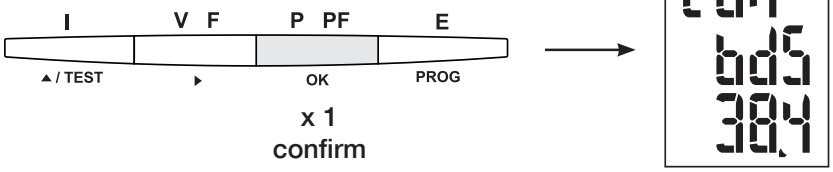
Example: BDS = 38,4 bauds



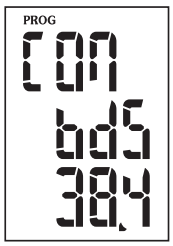
x 1



x 1 (19,2 kbauds)
x 2 (38,4 kbauds)
x 3 (2,4 kbauds)
x 4 (4,8 kbauds)
x 5 (9,6 kbauds)

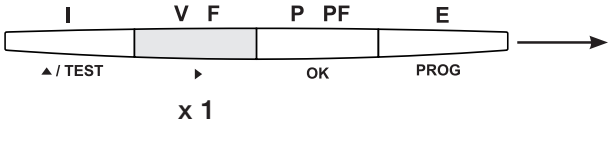


x 1
confirm

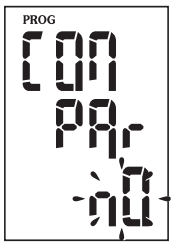


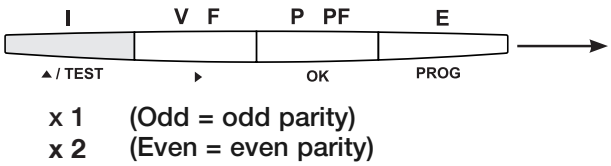
Communication parity

Example: PAr = EvEn

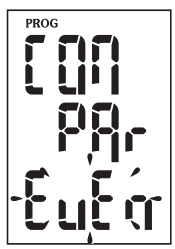


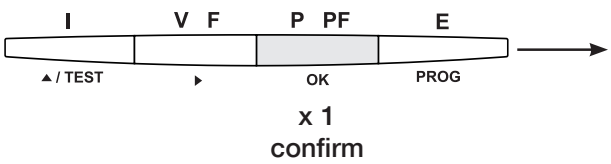
x 1



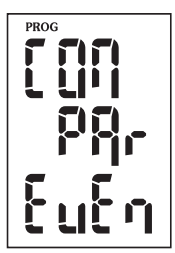


x 1 (Odd = odd parity)
x 2 (Even = even parity)
x 3 (no = without parity)



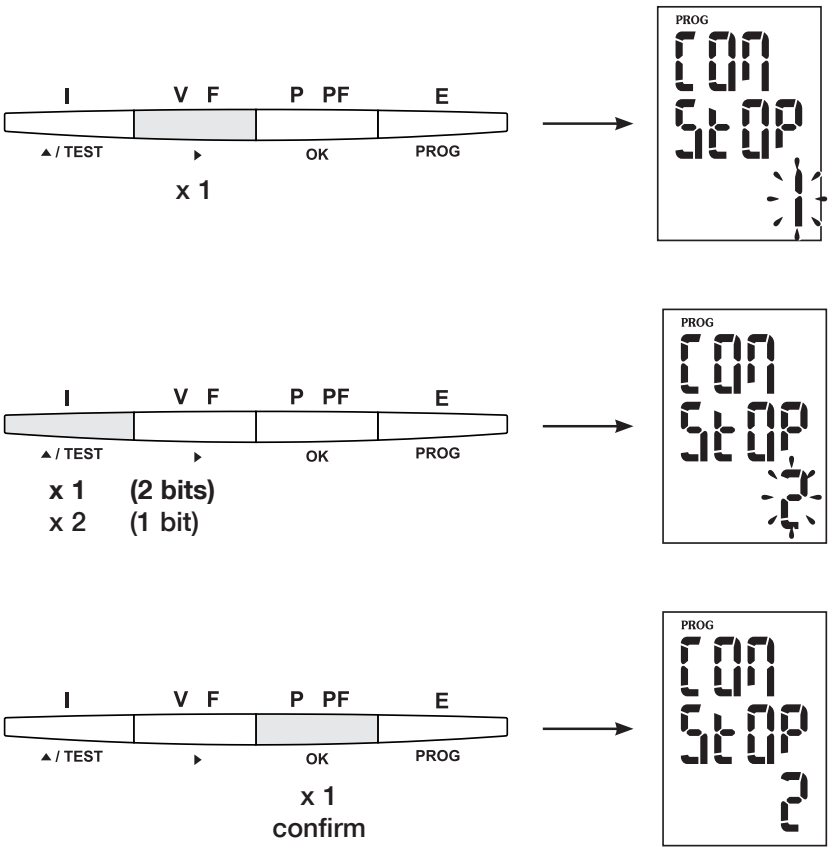


x 1
confirm

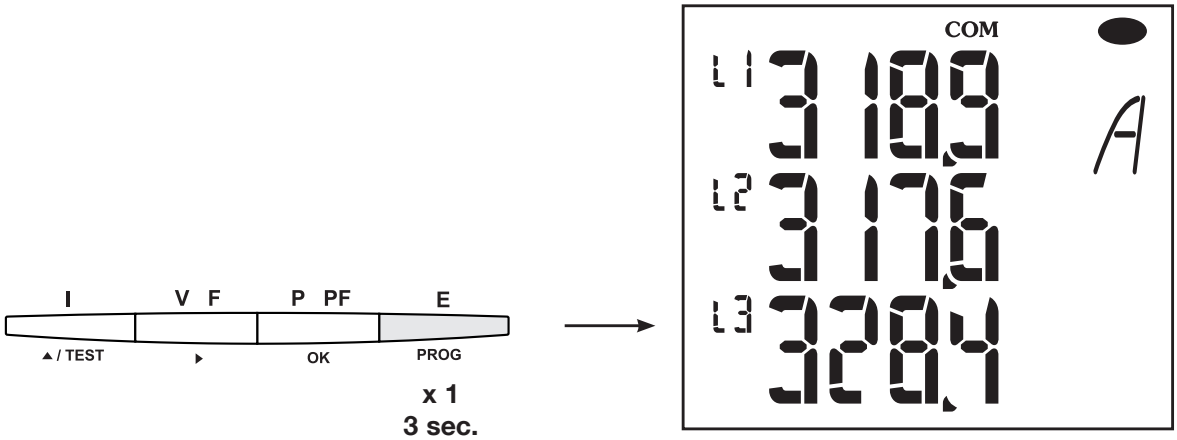


Communication stop bit

Example: STOP = 2



To quit programming



Communication

The JBUS/MODBUS® used by the SM102E involves a dialogue using a master-slave hierarchical structure. There are two possible dialogues:

- the master communicates with a slave and waits for its reply.
- The master communicates with all the slaves without waiting for their reply.

The mode of communication is the RTU (Remote Terminal Unit) using hexadecimal characters of at least 8 bits.

The standard communications frame

The standard communications frame consists of:

Slave address	Function code	Address	Data	CRC 16

According to the JBUS/MODBUS® protocol, transmission time must be less than 3 silences, i.e. the emission time of 3 characters so that the message is processed. To correctly use information, the following functions are important:

3 : to read *n* words (maximum 128).
6 : to write one word.
8 : to diagnose exchanges between the master and the slave via meters 1, 3, 4, 5 and 6.
16 : to write *n* words (maximum 128).

Nota

1 word <=> 2 octets <=> 16 bits
2 words <=> 4 octets <=> 32 bits

When selecting slave address 0, a message is sent to all the instruments present on the network (only for functions 6 and 16)

Comment

The response time (time out question/answer) is 250 ms maximum.

Communication table

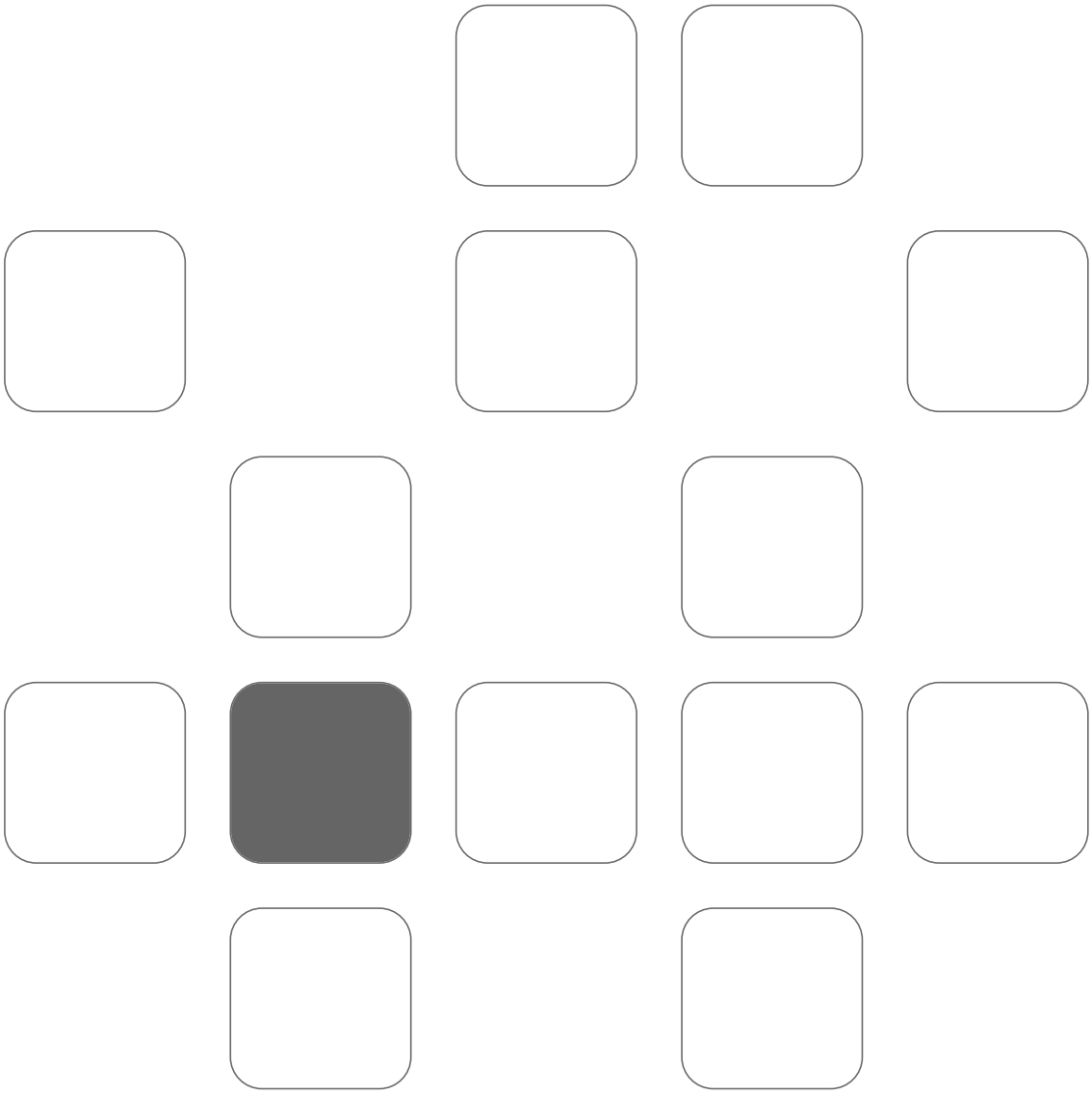
The communication tables are available on the CD-Rom supplied with the RS485 JBUS/MODBUS® for SM102E.

Technical characteristics

RS485	2 or 3 wires half duplex
Protocole	JBUS/MODBUS®/mode RTU
Speed	2400 to 38400 Bauds
Galvanic insulation	4 kV
Charging unit	1 UL (Unity of loads)

Glossary of abbreviations

COM	Communication
ADR	Slave address
BDS	Speed of communication in bauds
PAR	Communication frame parity
NO	Without parity
Even	Even parity
Odd	Odd parity
STOP	Frame-stop beep
1	1 stop bit
2	2 stop bits



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