:hager

SM213, SM214

Ethernet module JBUS/MODBUS for SM103E
Ethernet module + RS485 for SM103E

GB User instructions

GB

Contents

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

The module is available in 2 versions :

- Ethernet module (ref. SM213)
- Ethernet module with MODBUS RTU gateway (ref. SM214)

Functions

The optional ethernet module is linked to the SM103E and enables connections to be made to a type 10BaseT or 100BaseT ethernet network. It also enables the SM103E measurement units to be used and monitored from a PC or an PLC.

Functionalities and ethernet connections

- MODBUS/TCP protocols
  Communication: 502
  Number of connections available: 4
- JBUS/MODBUS RTU over TCP protocol
  Communication : 503
  Number of connections available: 4

A MODBUS address must be defined for SM103E to be able to use the MODBUS RTU protocol with TCP. Also, to use the RS485 gateway, a list must be defined of the parameters to be used: speed, stop bit, parity.

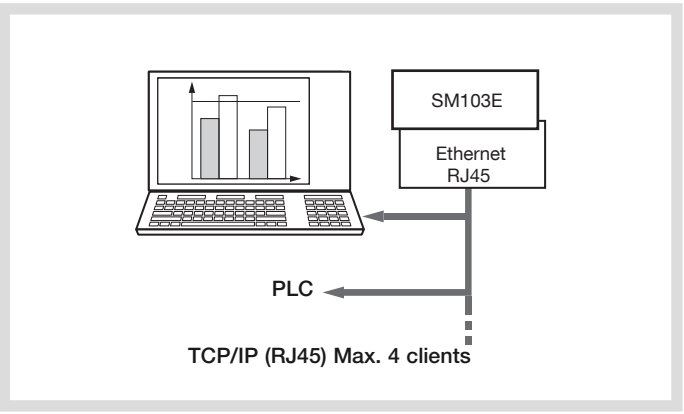
- Web server
  Number of connections available: 4

N.B.

The number of connections available depends on the brother used.

Ethernet Module (ref. SM213)

- Link to an RJ45 connection.
- Protocole MODBUS/TCP and JBUS/MODBUS RTU with TCP.
- Web server for viewing the main values and product configuration.

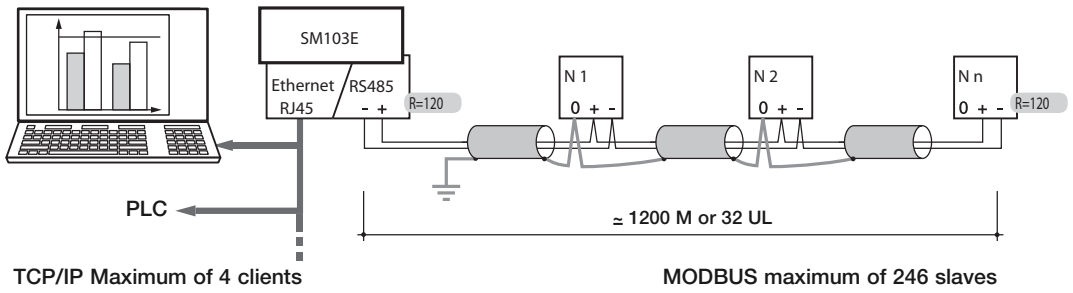


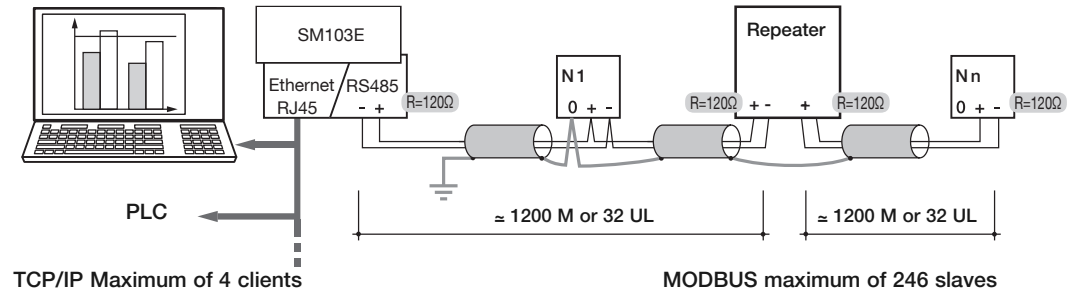
Ethernet Module with MODBUS RTU gateway (ref. SM214)

- As well as ethernet communication (see optional ethernet SM213 module), the optional SM214 module provides an RS485 serial link (2 or 3 wires) in JBUS/MODBUS® protocol. It enables SM103E to be used from a PC or PLC.

This option's gateway enables the module to be used as the master in an RS485 Jbus/Modbus network with a maximum of 246 slaves. To do this, it is necessary to configure a Jbus/Modbus address different to 255.

In a standard configuration, an RS485 link can connect 31 SM102E or SM103E units or any other communicating products with a PC or PLC over a distance of 1200 metres.





Recommendations

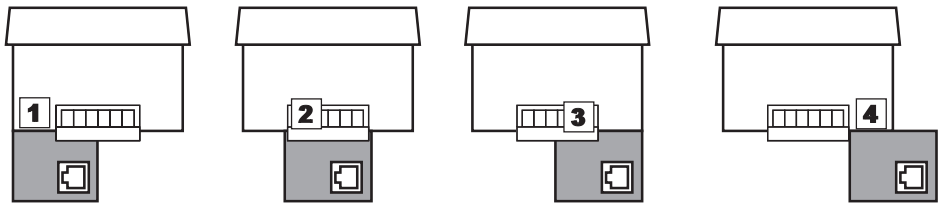
You should use a shielded twisted pair (LIYCY type). In a disturbed environment or large network (in terms of length) we recommend the use of a shielded twisted pair (type LIYCY-CY).
A repeater (1 channel) or an arrestor (4 channels) should be used if you intend to exceed the distance (1200 m.) and/or maximum number (31) of SM103E.
Please contact us for more information.

N.B.

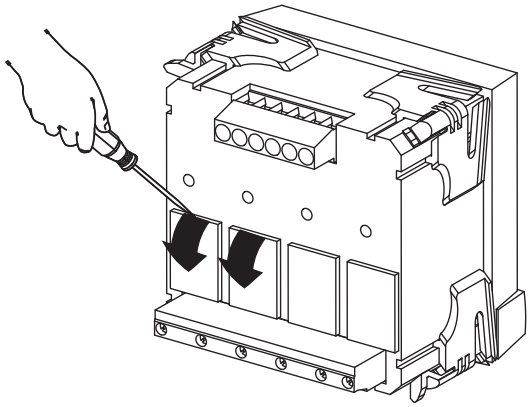
A 120 ohm resistance (found on the additional module) must be fixed at both ends of the link.

⚠ The SM103E product must be disconnected.

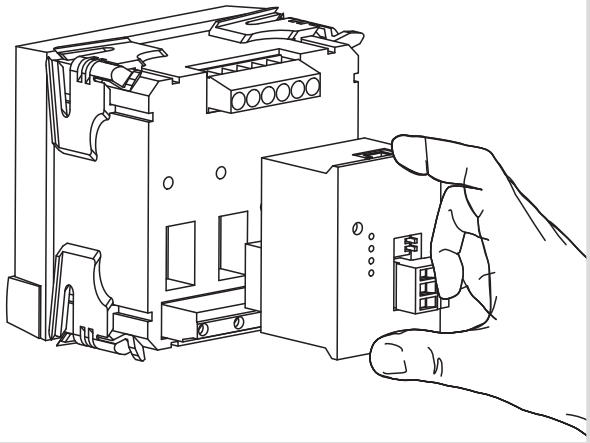
The module is fitted onto the back of the SM103E. Its width is that of 2 single option slots and it can be placed in any slot.



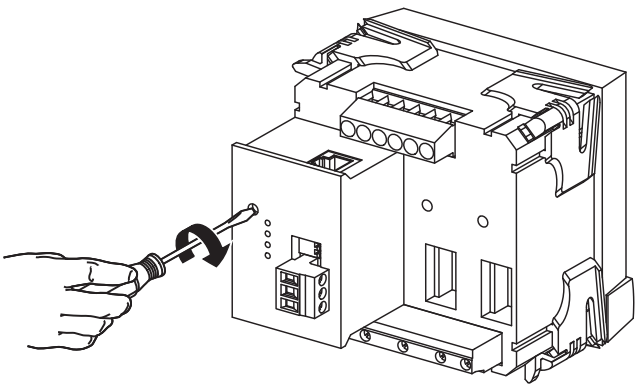
① Example of installation in slot 1.



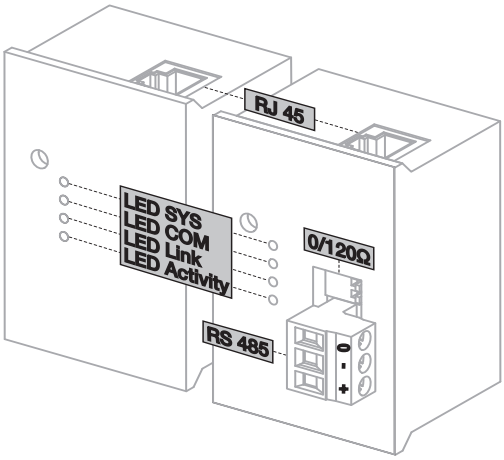
② Fix the module in one of the four positions.



③

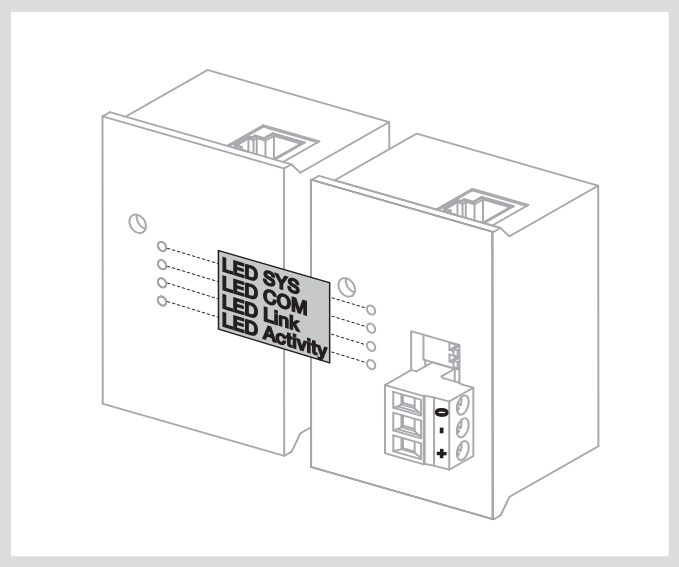


④ Follow indications when connecting the terminal. Switch on voltage supply.



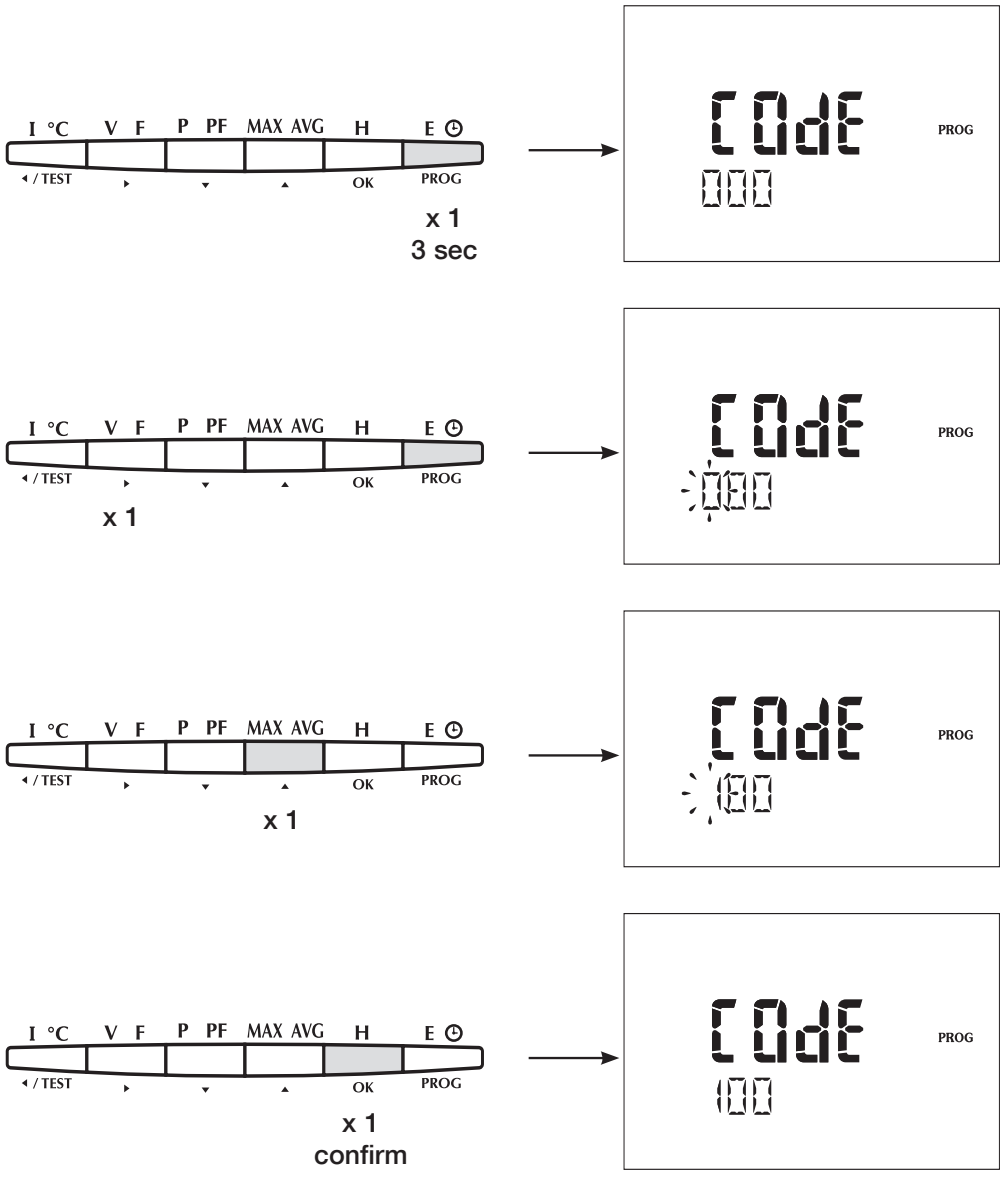
Visual diagnostic

• LED indicators



LED	Color	Status	Description
SYS	-	NOT LIT	No internal electrical supply Hardware is faulty
	Yellow	LIT	Loading phase of the software, waiting to start
		FLASHING AT 1 sec.	Error during the start-up phase
	Green	LIT	Operating system functioning
COM	Green	LIT	Normal operation
	Red	FLASHING	Ethernet or RS485 communication error
		LIT	Abnormal operation, check the ethernet module is correctly fitted
Link	Green	NOT LIT	No connection to the ethernet network
		LIT	Ethernet Network connected
Activity	Yellow	FLASHING	Sending/receiving ethernet frames

Access to programming mode (COdE = 100)



Ethernet configuration on SM103E

This involves setting up the IP parameters for the SM103E connected to the gateway

IP address (Rth Adr IP):
[CLASS A].[CLASS B].[CLASS C].[CLASS D]

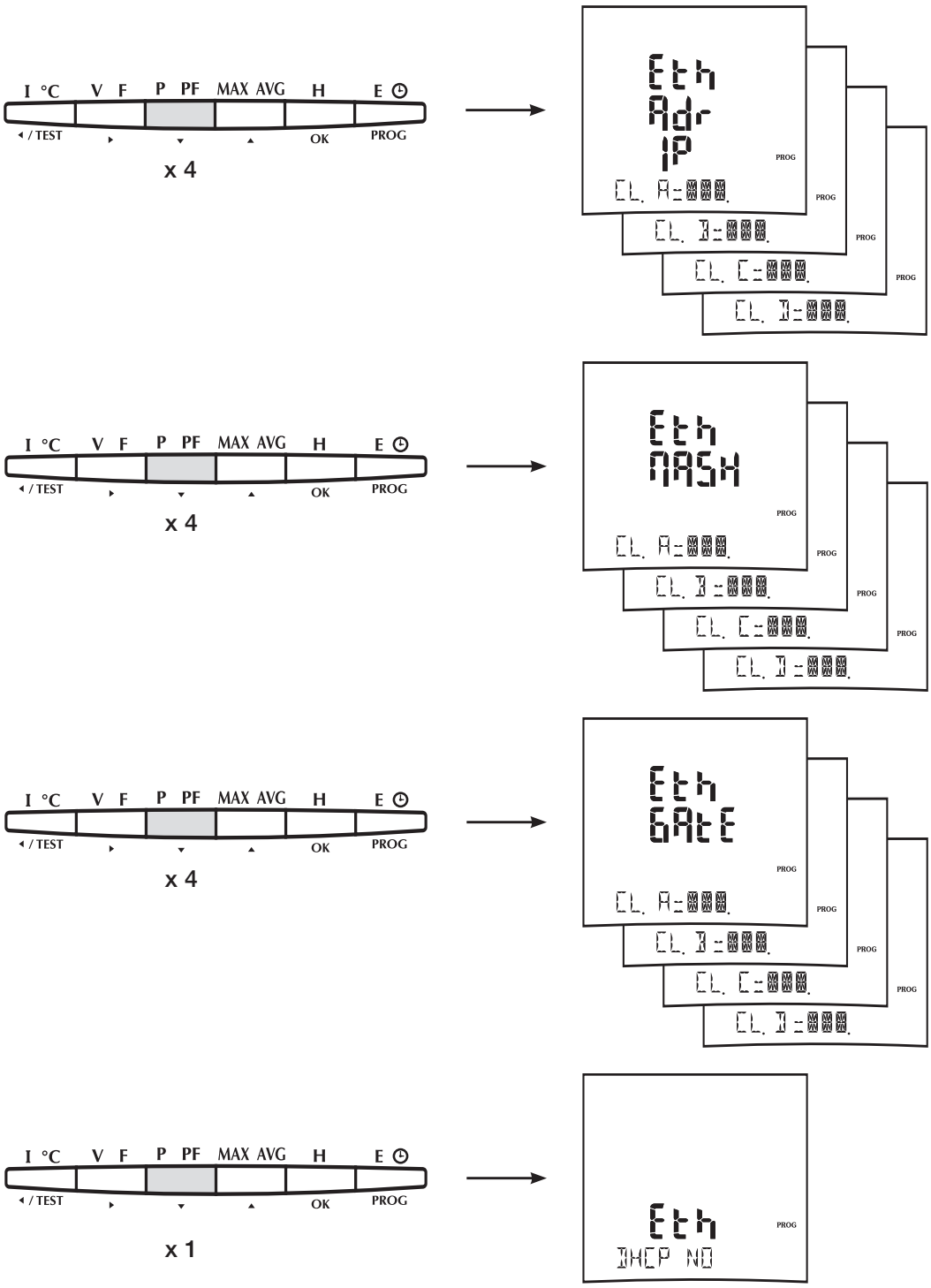
Subnet mask (Eth MASH):
[CLASS A].[CLASS B].[CLASS C].[CLASS D]

Gateway (Eth GATE):
[CLASS A].[CLASS B].[CLASS C].[CLASS D]

DHCP activation (Eth DHCP): Yes/No

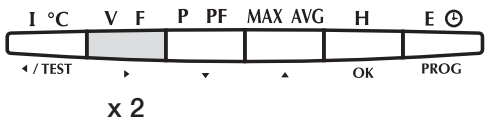
The factory setting is:

- **IP** 1address: 92.168.1.1
- **Subnet mask:** 255.255.255.0
- **Gateway:** 0.0.0.0
- **DHCP activation:** NO

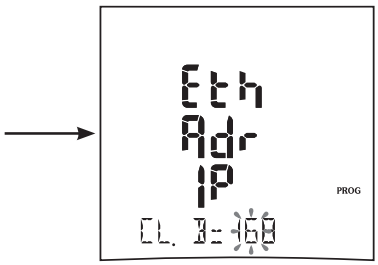


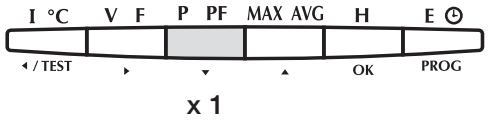
IP address

Example: programming the address 191.158.1.7
CLASS D = 158

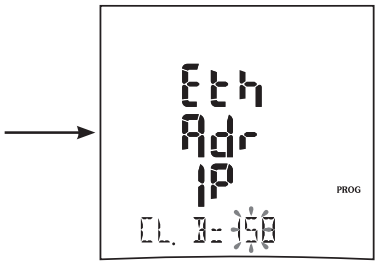


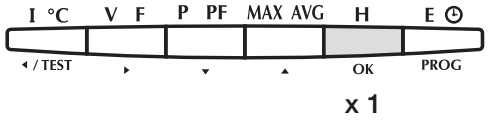
x 2



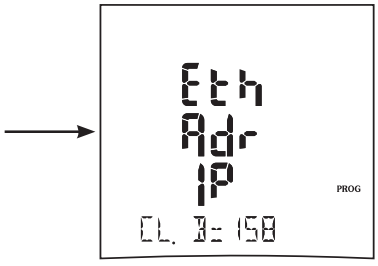


x 1

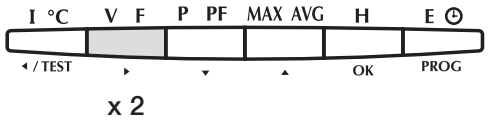




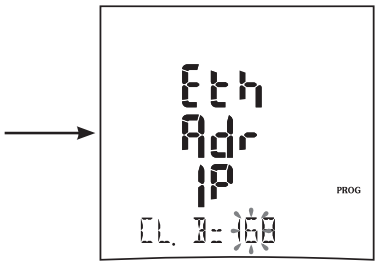
x 1

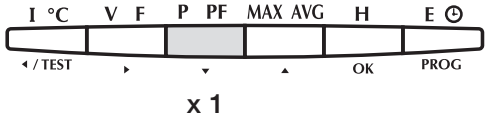


Example: programming the address 191.158.1.7
CLASS D = 158

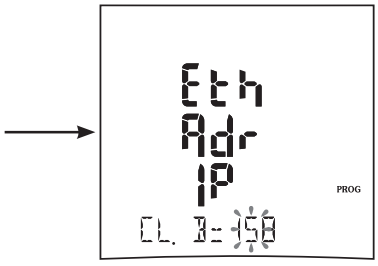


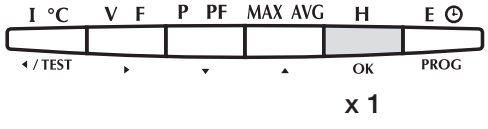
x 2



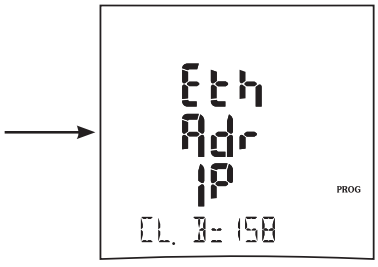


x 1



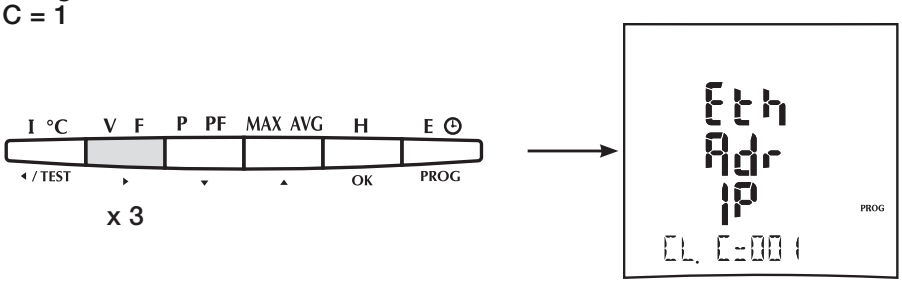


x 1

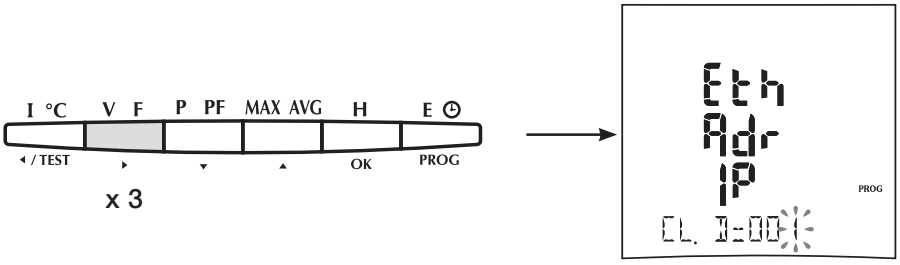


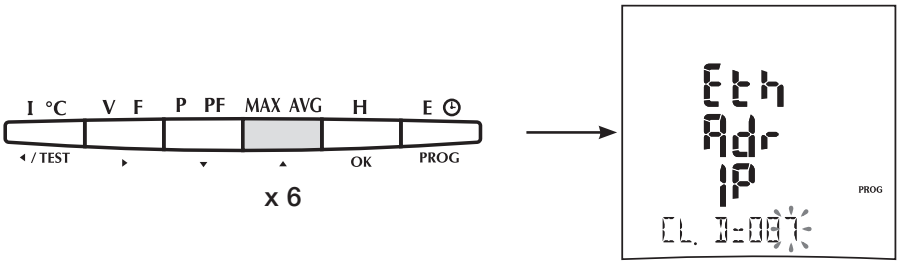
IP address

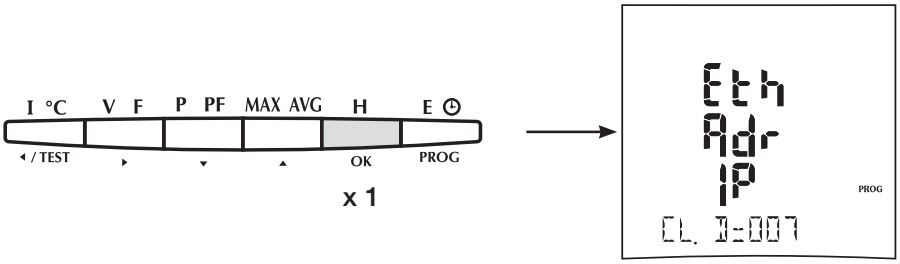
Example: programming the address 191.158.1.7
CLASS C = 1



Example: programming the address 191.158.1.7
CLASS C = 7

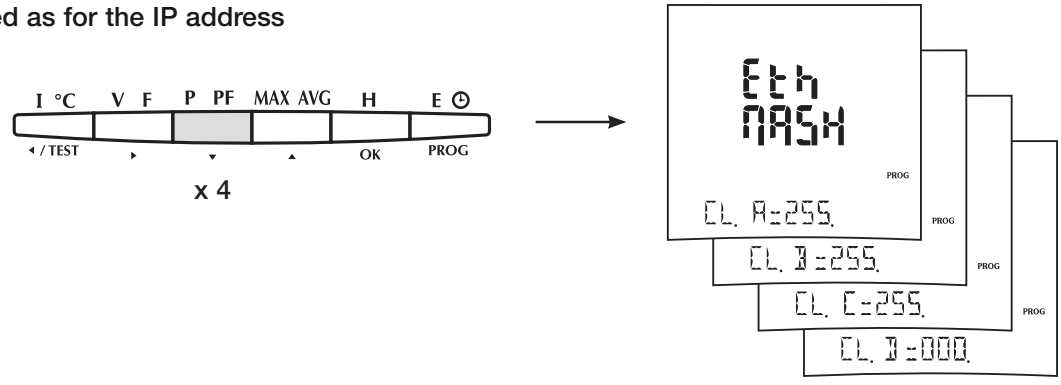






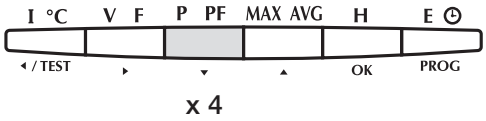
Mask

Example: 255.255.255.0
Proceed as for the IP address

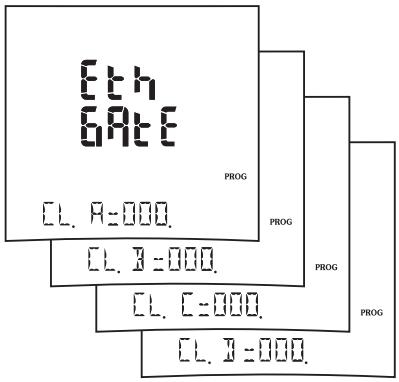


Gateway

Example: 0.0.0.0
Proceed as for the IP address

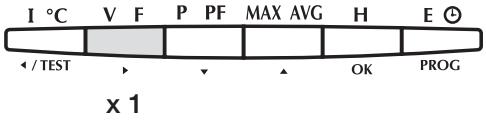


x 4

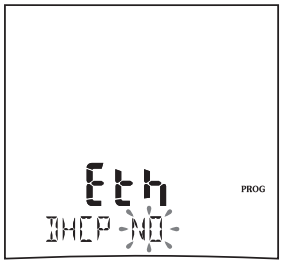


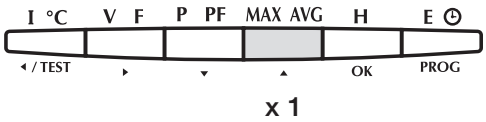
DHCP

The DHCP function is not recommended.
Contact the administrator of the IT network.

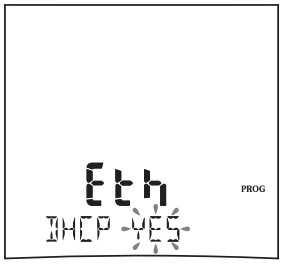


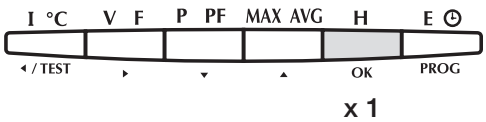
x 1
YES
NO



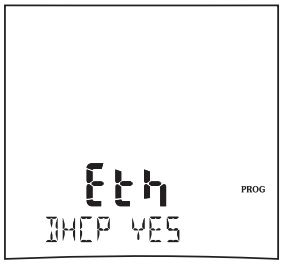


x 1





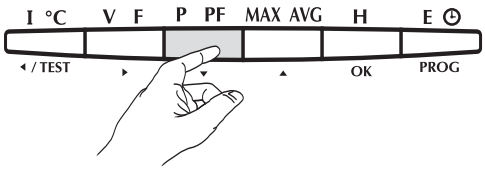
x 1

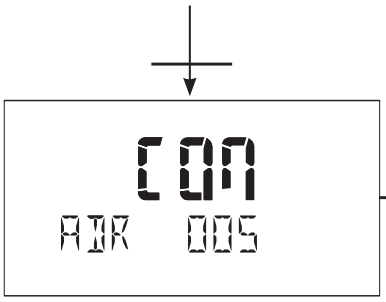


Parameters associated with the MODBUS RTU protocol and the RS485 gateway

Previous menu

Communication address





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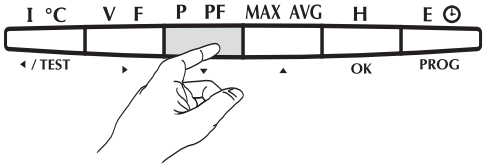
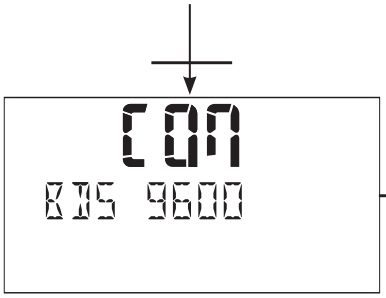
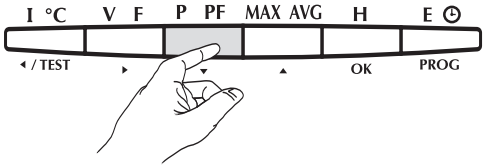
Communication speed

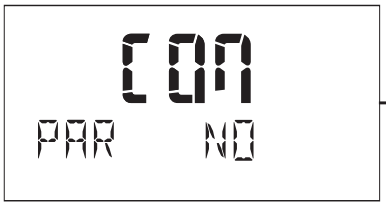




p.16

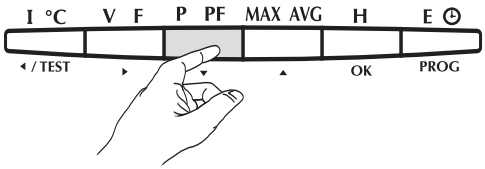
Communication parity



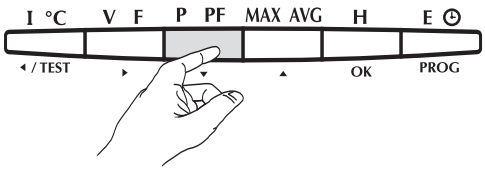


p.17

Communication stop bit



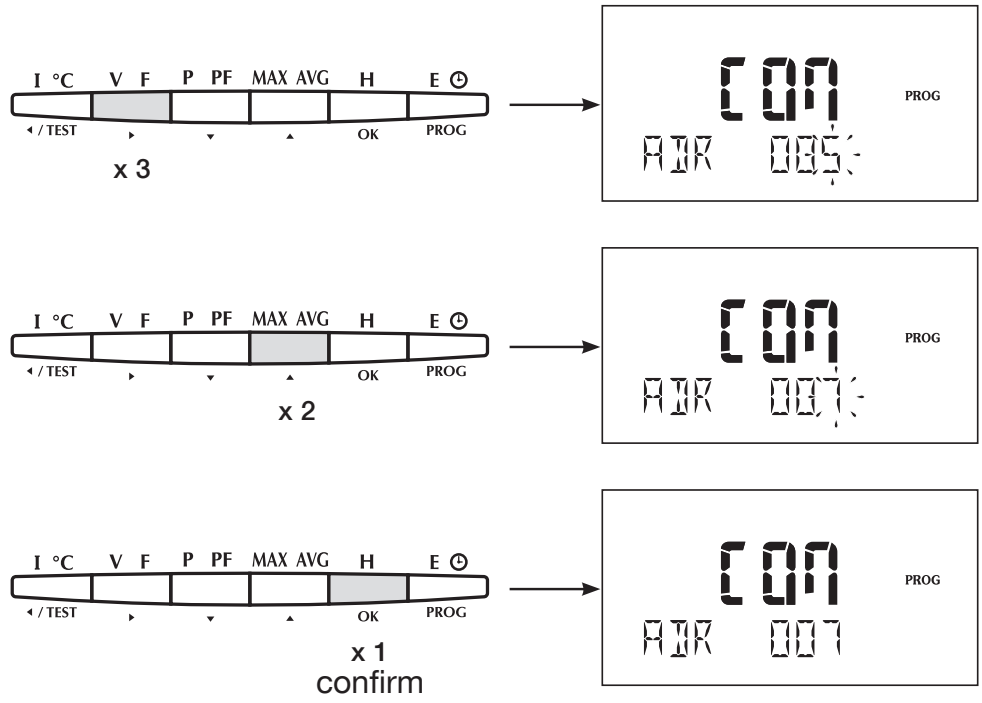
p.17



Previous menu

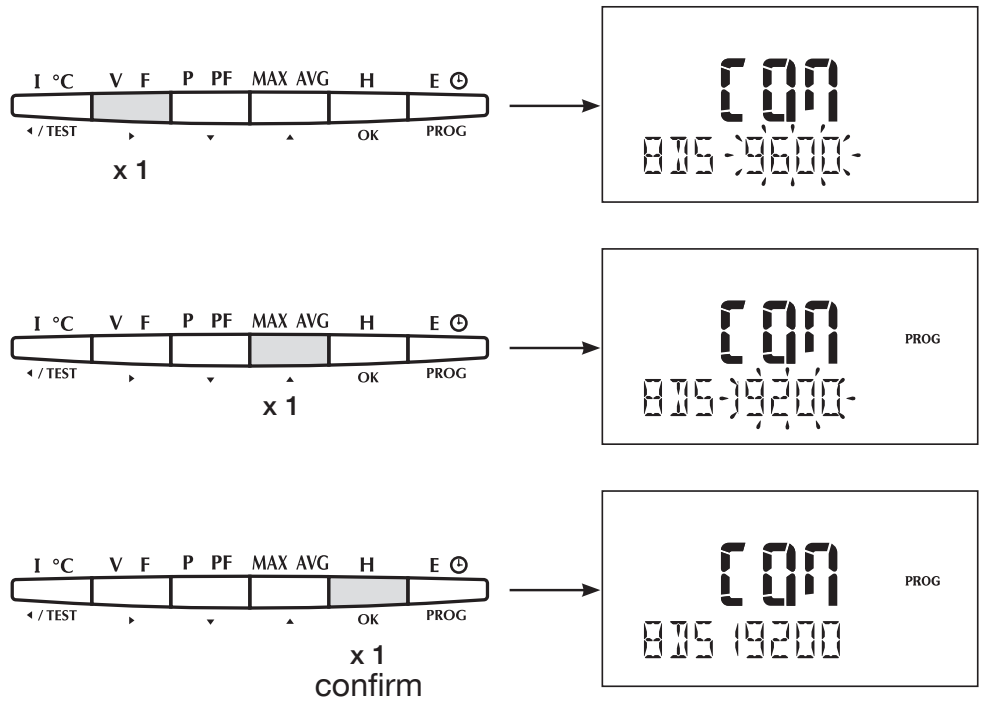
Communication address

Example: COM ADR = 7



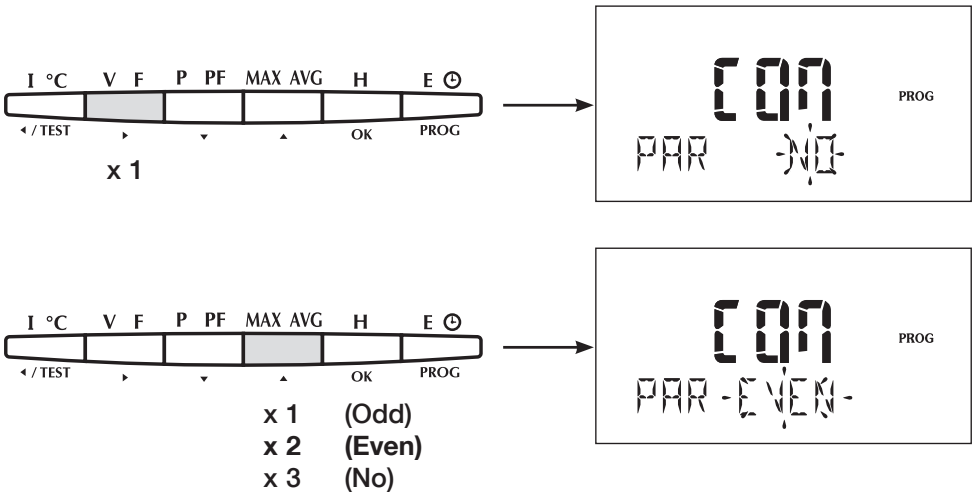
Communication speed

Example: BDS = 19 200 bauds



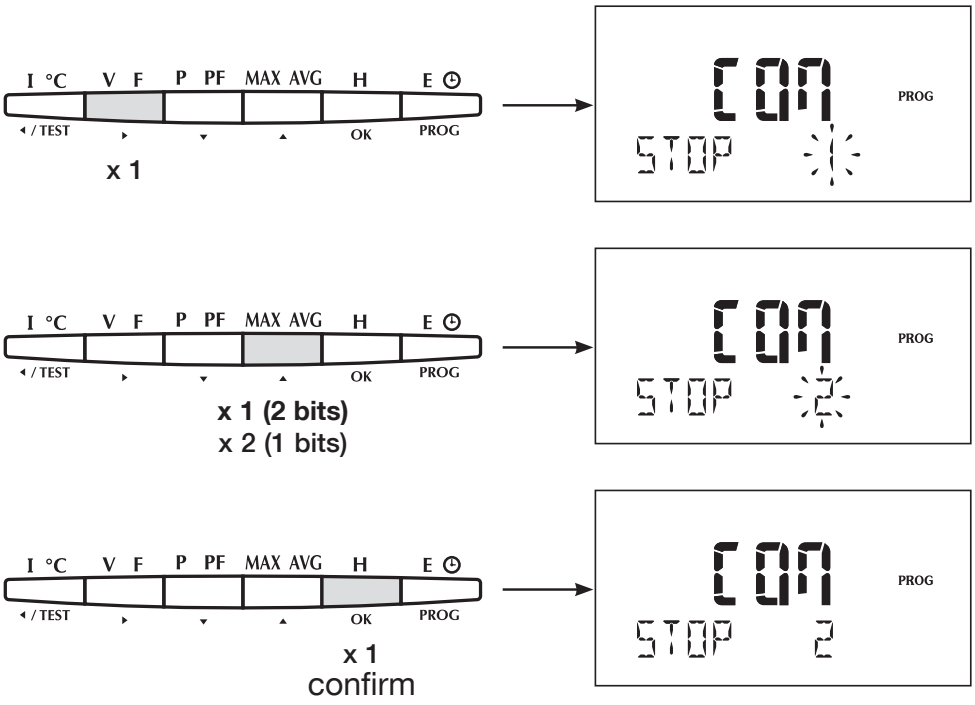
Communication parity

Example: PAr = EvEn

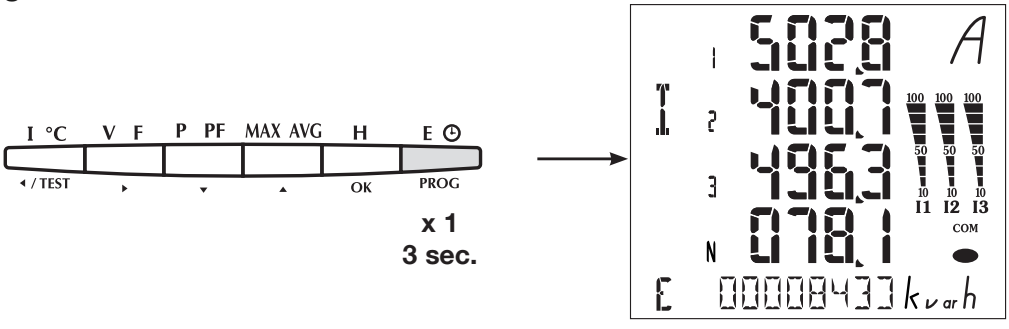


Communication stop bit

Example: STOP = 2



To quit programming



Web server

The web server can be accessed by entering the product's IP address into your internet browser.

IP address of the SM103E: 19.168.1.0
URL address: http://19.168.1.0

The web server display:

- The main SM103E database parameters.
- The main instantaneous and mean values measured and the meters.

Environmental conditions and type of test

Electromagnetic compatibility:

- Module connected to SM103E.

		Performance criteria required
Emission general standard	**EN 61326-1 (2006)**	
Conducted emission	EN 55011	
Radiated emission	EN 55011	Group 1, class B
Harmonic current emission	EN 61000-3-2	Group 1, class B
Flicker, and voltage fluctuations	EN 61000-3-3	Class A
Immunity general standard	**EN 61326-1 (2006)**	
Electrostatic discharges Air discharges Contact discharges	EN 61000-4-2 level = ± 8 kV level = ± 4 kV	B
Radiated electromagnetic field 80-1000 MHz 1000-000 MHz 000-700 MHz	EN 61000-4-3 AM : 1 kHz to 80 % level = 10 V/m level = 3 V/m level = 1 V/m	A
Electrical fast transient burst On power supply lines On I/O lines	EN 61000-4-4 level = ± 2 kV level = ± 1 kV	B
Surges 1,2/50 µs On AC power supply lines (MD) On AC power supply lines (MC) On I/O lines (MC)	EN 61000-4-5 level : ± 1 kV level : ± 2 kV level : ± 1 kV	B
Conducted disturbances inducted by AM radio frequency fields	EN 61000-4-6 level = 3 Vrm AM : 1 kHz to 80 %	A
Power frequency magnetic field 50 Hz	EN 61000-4-8 level = 30 A/m	A
Voltage variations/DIPS On power supply lines	EN 61000-4-11 Réduction 100 % ; 1 per Reduct 60 % ; 10 per Reduct 30 % ; 5 per Reduct > 95 % ; 50 per	 B C C C

Environmental conditions and type of test

• Conditions environnementales

Operational temperature	-10 to 55 °C
Storage temperature	-20 to 85 °C

RS485

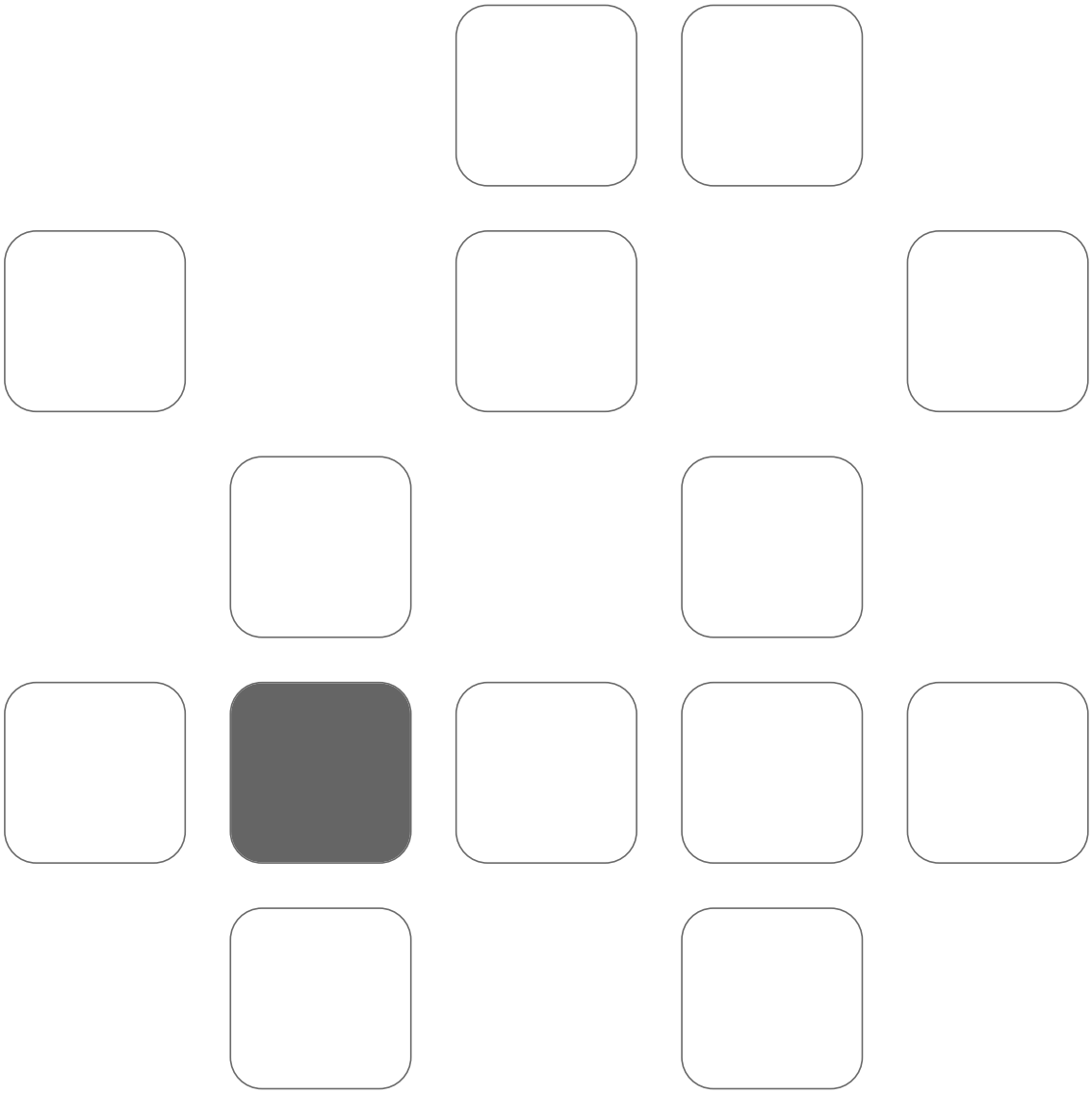
Electrical specification	RS485 EIA 2 fils half duplex
Transmission speed	400 to 38400 Bit/s
Stop bit	1, 2
Parity	without, odd, even
Maximum number of slaves	246

Ethernet

Electrical specification	RJ45 IEEE 80-3 standard Insulation: 1500V
Transmission speed	10MBits/s or 100MBits/s
Stop bit	MODBUS TCP JBUS/MODBUS RTU over TCP HTTP

Communication table

The communication tables are available on the CD-Rom supplied with the ethernet module SM213 and the ethernet/RS485 module SM214.



Hager 12.2011 OCOM 113007