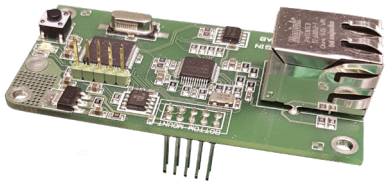
IOMB-TCP/IP INSTALLATION INSTRUCTION

EN



ENGLISH

GATEWAY FOR I/O-MODULES. Fits IOMB-02, IOMB-03 and IOMB-04.

TECHNICAL DATA

Supply voltage:	From the I/O-modules IOMB-02 IOMB-03/IOMB-04
Communication:	TCP/IP
Connection:	RJ45
Indications LED on PCB	
- Yellow, flash:	TCP/IP communication
- Yellow, double flash:	DHCP energising via push button
- Green, fixed:	Operation
- Green, blink:	Internal Modbus communication
Ambient temperature:	-20 till +50°C
Dimensions (WxHxD):	75x39x33 mm

USE

IOMB-TCP/IP is a gateway for IOMB-02, IOMB-03 and IOMB-04 that permits communication with the I/O modules via TCP/IP.

FUNCTION

The TCP/IP gateway communicates internally with the I/O module via modbus RTU and externally via TCP/IP. In order for the factory-set Modbus communication to work, all DIP switches On the I/O module must be set to OFF. You can change the Modbus communication settings in the web interface for the TCP/IP gateway, in which case you must also adjust the DIP switch settings in the I/O module. The TCP/IP gateway has the capacity to communicate with one external device (e.g. OPC server) at a time.

MOUNTING

The IOMB-TCP/IP is mounted using the 4 screws and washers provided, onto the I/O modules IOMB-02, IOMB-03 or IOMB-04.

By replacing the rubber gasket in the M20 screw in the I / O module with the supplied multi-hole gasket, a pre-contacted Cat5 / 6 can be used. See Figure 1.

Remove the termination jumper located on the I / O module. Please note that the 10-pin strip fits correctly during the assembling. See Figure 2.

INSTALLATION

The DIP switches (1–10) in the I/O module must be in their OFF positions to enable internal communication between the I/O module and the TCP/IP gateway.

Instruction, connection to network:

1. Connect the TCP/IP module to the designated location on IOMB-02, IOMB-03 or IOMB-04.
2. Fit the 4 accompanying washers and screws.
3. Energise the I/O module. The green and yellow LEDs on the TCP/IP module light up.
4. Press the button to the right of the yellow LED and hold it down until the yellow LED flashes twice. The TCP/IP gateway is now set to receive an IP address via DHCP.
5. Plug in the network cable.
6. To access the network settings, open a web browser and search for host name: ”http://calectrobrige”. If you experience problems locating the TCP/IP gateway, download and install the program: “Microchip TCPIP Discoverer” available-from Calectro’s website: http://www.calectro.se/products/#!/programvaror/. This program looks for all connected gateways that have a TCP/IP circuit from Microchip and displays their assigned IP addresses.
7. Log in to network settings with the user name: “admin” and password: “admin”.
8. Click NETWORK SETTINGS to access the network settings.
9. Under MODBUS SETTINGS you can manage internal communication between the I/O module and the TCP/IP gateway. You do not usually need to adjust this. The default settings in MODBUS SETTINGS correspond to the I/O module’s DIP switch in the OFF position.

MAINTENANCE

IOMB-TCP/IP is maintenance-free.

MODBUS-SETTINGS FOR I/O-MODUL

(DIP-SWITCH: 0 = OFF / 1 = ON)

Modbus ID	DIP-switch 1,2,3,4,5 and 6
1	000000
2	100000
3	010000
4	110000
5	001000
6	101000
7	011000
8	111000
9	000100
10	100100
11	010100
12	110100
13	001100
14	101100
15	011100
16	111100
17	000010
18	100010
...	...
64	111111

Modbus Parity	DIP-switch 7 and 8
None (2 stop bits)	00
None (1 stop bit)	11
Even (1 stop bit)	10
Odd (1 stop bit)	01

Modbus Baud rate	DIP-switch 9 and 10
9600	00
19200	10
38400	01
57600	11

Reservation for changes and printing errors.

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MODBUS REGISTER FOR IOMB-02

Coils (0x)	Function	Range
0x0001	Digital output #1	Off or On
0x0002	Digital output #2	Off or On
Discrete inputs (1x)	**Function**	**Range**
1x0003	Digital input #1	Off or On
1x0004	Digital input #2	Off or On
1x0005	Digital input #3	Off or On
1x0006	Digital input #4	Off or On
Input reg. (3x)	**Function**	**Range**
3x0009	Analog input #1 x100 (Volt)	0 to 1000
3x0010	Analog input #2 x100 (Volt)	0 to 1000
3x0011	Analog input #3 x100 (Volt)	0 to 1000
3x0012	Analog input #4 x100 (Volt)	0 to 1000
3x0013	Analog input #1 (Ohms)	0 to 1300
3x0014	Analog input #2 (Ohms)	0 to 1300
3x0015	Analog input #3 (Ohms)	0 to 1300
3x0016	Analog input #4 (Ohms)	0 to 1300
3x0017	Analog input #1 x10 (°C)	-500 to +500
3x0018	Analog input #2 x10 (°C)	-500 to +500
3x0019	Analog input #3 x10 (°C)	-500 to +500
3x0020	Analog input #4 x10 (°C)	-500 to +500
Holding reg. (4x)	**Function**	
4x0001	Digital output #1	Range
4x0002	Digital output #2	0 or 1
4x0003	Digital input #1	0 or 1
4x0004	Digital input #2	0 or 1
4x0005	Digital input #3	0 or 1
4x0006	Digital input #4	0 or 1
4x0007	Analog output #1 x100 (Volt) / PWM x10 (%)	0 or 1000
4x0008	Analog output #2 x100 (Volt) / PWM x10 (%)	0 to 1000
4x0009	Analog input #1 x100 (Volt)	0 to 1000
4x0010	Analog input #2 x100 (Volt)	0 to 1000
4x0011	Analog input #3 x100 (Volt)	0 to 1000
4x0012	Analog input #4 x100 (Volt)	0 to 1000
4x0013	Analog input #1 (Ohms)	0 to 1000
4x0014	Analog input #2 (Ohms)	0 to 1300
4x0015	Analog input #3 (Ohms)	0 to 1300
4x0016	Analog input #4 (Ohms)	0 to 1300
4x0017	Analog input #1 x10 (°C)	-500 to 500
4x0018	Analog input #2 x10 (°C)	-500 to 500
4x0019	Analog input #3 x10 (°C)	-500 to 500
4x0020	Analog input #4 x10 (°C)	-500 to 500
4x0021	Digital output #1 default value *1	0 or 1
4x0022	Digital output #2 default value *1	0 or 1
4x0023	Analog output #1 default value x100 (Volt) / PWM x10 (%) *1	0 to 1000
4x0024	Analog output #2 default value x100 (Volt) / PWM x10 (%) *1	0 to 1000
4x0025	Timeout for activating default values (4x0019-4x0024) *2	0-600 sec
4x0026	Setting of temperature sensor type, analog input 1: 0=Pt1000, 1=Ni1000LG	0 or 1
4x0027	Setting of temperature sensor type, analog input 2: 0=Pt1000, 1=Ni1000LG	0 or 1
4x0028	Setting of temperature sensor type, analog input 3: 0=Pt1000, 1=Ni1000LG	0 or 1
4x0029	Setting of temperature sensor type, analog input 4: 0=Pt1000, 1=Ni1000LG	0 or 1
4x0030	Analog output type, analog output 1: 0 = 0-10V, 1=PWM	0 or 1
4x0031	Analog output type, analog output 2: 0 = 0-10V, 1=PWM	0 or 1
4x0032	AC power supply detected 0=DC, 1=AC	0 or 1

*1 Selectable default value that can be activated in the event of communication failure on the Modbus loop.

*2 For communication failures (Modbus) that have lasted longer than the number of set seconds (1-600 sec), the adjustable default values for registers 4x0019 to 4x0024 are activated. To turn off the function, select 0 seconds (factory setting).

MODBUS-COMMUNICATION

Reference	Description
0x	Read/Write Discrete Outputs or Coils
1x	Read Discrete Inputs
3x	Read Input Registers
4x	Read/Write Output or Holding registers

MODBUS REGISTER FOR IOMB-03

Coils (0x)	Function	Range
0x0001	Digital output #1	Off or On
0x0002	Digital output #2	Off or On
0x0003	Digital output #3	Off or On
Discrete inputs (1x)	**Function**	**Range**
1x0004	Digital input #1	Off or On
1x0005	Digital input #2	Off or On
1x0006	Digital input #3	Off or On
Input reg. (3x)	**Function**	**Range**
3x0010	Analog input #1 x100 (Volt)	0 to 1000
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3x0012	Analog input #3 x100 (Volt)	0 to 1000
3x0013	Analog input #1 (Ohms)	0 to 1300
3x0014	Analog input #2 (Ohms)	0 to 1300
3x0015	Analog input #3 (Ohms)	0 to 1300
3x0016	Analog input #1 x10 (°C)	-50 to +50
3x0017	Analog input #2 x10 (°C)	-50 to +50
3x0018	Analog input #3 x10 (°C)	-50 to +50
Holding reg. (4x)	**Function**	**Range**
4x0001	Digital output #1	0 or 1
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4x0003	Digital output #3	0 or 1
4x0004	Digital input #1	0 or 1
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4x0007	Analog output #1 x100 (Volt)	0 to 1000
4x0008	Analog output #2 x100 (Volt)	0 to 1000
4x0009	Analog output #3 x100 (Volt)	0 to 1000
4x0010	Analog input #1 x100 (Volt)	0 to 1000
4x0011	Analog input #2 x100 (Volt)	0 to 1000
4x0012	Analog input #3 x100 (Volt)	0 to 1000
4x0013	Analog input #1 (Ohms)	0 to 1300
4x0014	Analog input #2 (Ohms)	0 to 1300
4x0015	Analog input #3 (Ohms)	0 to 1300
4x0016	Analog input #1 x10 (°C)	-500 to +500
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4x0018	Analog input #3 x10 (°C)	-500 to +500
4x0019	Digital output #1 default value *1	0 or 1
4x0020	Digital output #2 default value *1	0 or 1
4x0021	Digital output #3 default value *1	0 or 1
4x0022	Analog output #1 default value x100 (Volt) *1	0 to 1000
4x0023	Analog output #2 default value x100 (Volt) *1	0 to 1000
4x0024	Analog output #3 default value X100 (Volt) *1	0 to 1000
4x0025	Timeout for activating default values (4x0019-4x0024) *2	0-600 sec
4x0026	Setting of temperature sensor type, analog input 1: 0=Pt1000, 1=Ni1000LG	0 or 1
4x0027	Setting of temperature sensor type, analog input 2: 0=Pt1000, 1=Ni1000LG	0 or 1
4x0028	Setting of temperature sensor type, analog input 3: 0=Pt1000, 1=Ni1000LG	0 or 1

*1 Selectable default value that can be activated in the event of communication failure on the Modbus loop.

*2 For communication failures (Modbus) that have lasted longer than the number of set seconds (1-600 sec), the adjustable default values for registers 4x0019 to 4x0024 are activated. To turn off the function, select 0 seconds (factory setting).

MODBUS-COMMUNICATION

Reference	Description
0x	Read/Write Discrete Outputs or Coils
1x	Read Discrete Inputs
3x	Read Input Registers
4x	Read/Write Output or Holding registers

FIGURES

FIG. 1

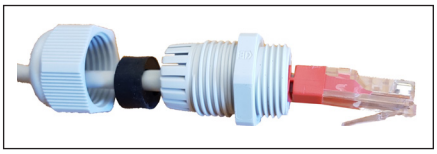

FIG. 2

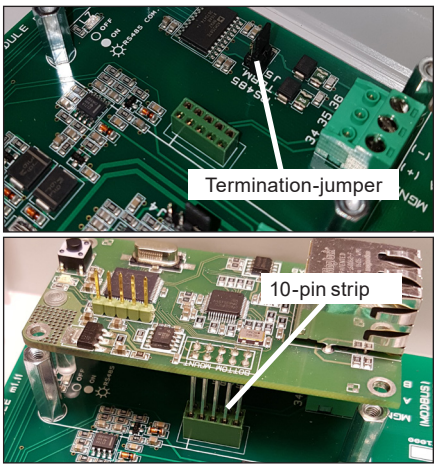

FIG. 3

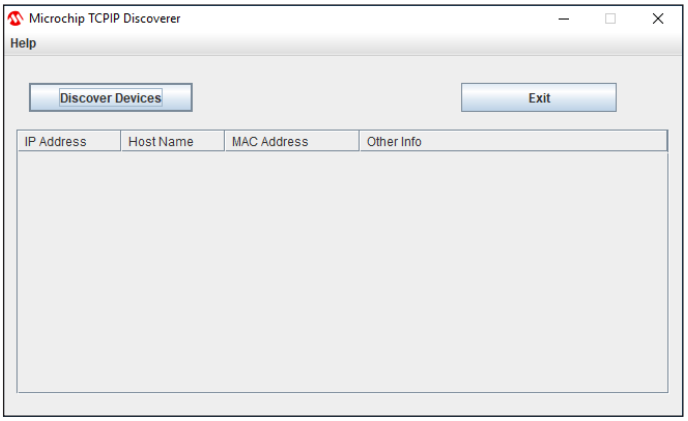

FIG. 4

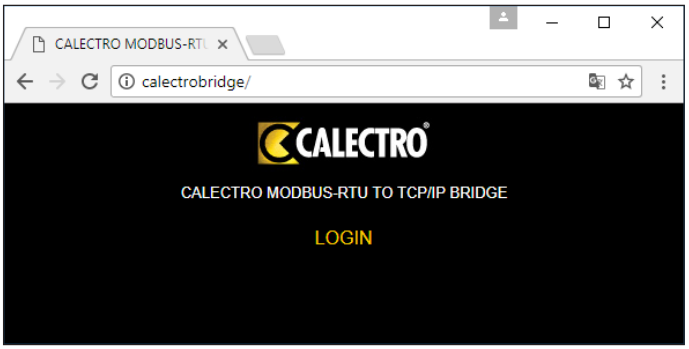

FIG. 5

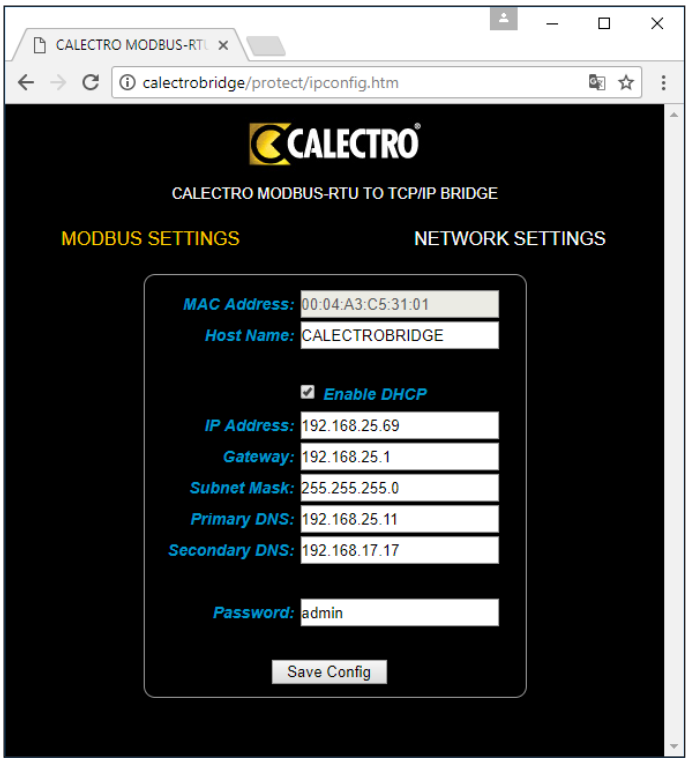
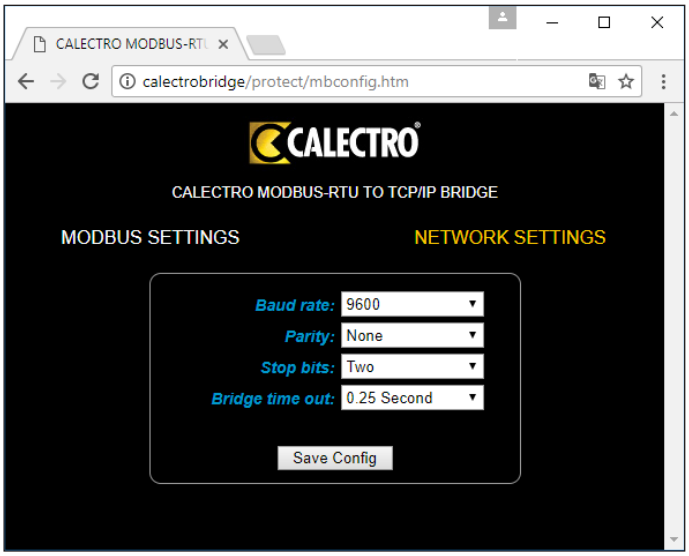
FIG. 6