

# MB-OT4

## Gateway ModBus - OpenTherm 4 channels

### Description

The gateway ModBus - OpenTherm 4 channels can be installed inside the electrical box on DIN guide (2 modules). The master Modbus controller that manages the gateway must have the Modbus RTU (RS 485) protocol. The communication parameters are indicated in the table in the next page. The gateway is equipped with 4 channels for the OpenTherm communication with 4 generators. All the connections are made with removable terminals. The module has LEDs used for status indication:

- PWR = power supply
- BUS = communication using Modbus protocol with the master Modbus controller
- OT1 / OT 2 / OT3 / OT4 = communication with the generators using OpenTherm

Inside the module there are 2 rotative dip switches with 16 positions that allow to set the Modbus slave address and the communication parameters.

### Main features

Installation	DIN guide	Storage and usage humidity	10...90% HR
Box modules	2	Maximum consumption	100 mA
Weight	90 gr	Power supply	12-14 Vdc
Dimensions (WxHxD)	36 x 90 x 59 mm	Protection class IP	IP00
Storage temperature	-40...+85°C	Safety class	A
Temperature of use	-20...+55°C	Number of generators	4

### Terms of Use

For safety reasons, the product must be installed and used in accordance with the manufacturer's instructions. The product must be adequately protected from water and dust. Have all installation and maintenance work carried out by qualified personnel.

### Safety and maintenance information

If the product is damaged when the box is opened or if liquid substances have penetrated inside, have it checked by an authorized service centre. Report any faults and/or anomalies immediately. Before carrying out installation, maintenance and repair work on the system, remember to switch off the power supply. Responsibility for installation, maintenance and repair work is in charge on the person or organisation carrying out the work. The manufacturer of the system in which the product is installed is responsible for arranging the system parts adequately to avoid any possibility of the operator coming into contact with live utilities. It is the task of the manufacturer of the system on which the product is installed: to evaluate the risks and potential dangerous situations, preparing any devices for the safety of the operator. All modifications and/or tampering of a hardware and/or software nature carried out on the product shall void any responsibility of the manufacturer regarding the conformity "CE".

### We decline all responsibility in the event that:

- the above-mentioned rules are not complied with;
- anomalies or damage to persons and / or things due to improper use of the product occur;
- anomalies or damage to persons and / or things occur due to improper use of the information contained in the manual;
- anomalies or damage to persons and / or things occur due to non-compliance with the rules and instructions indicated in this documentation.

### Disposal regulations

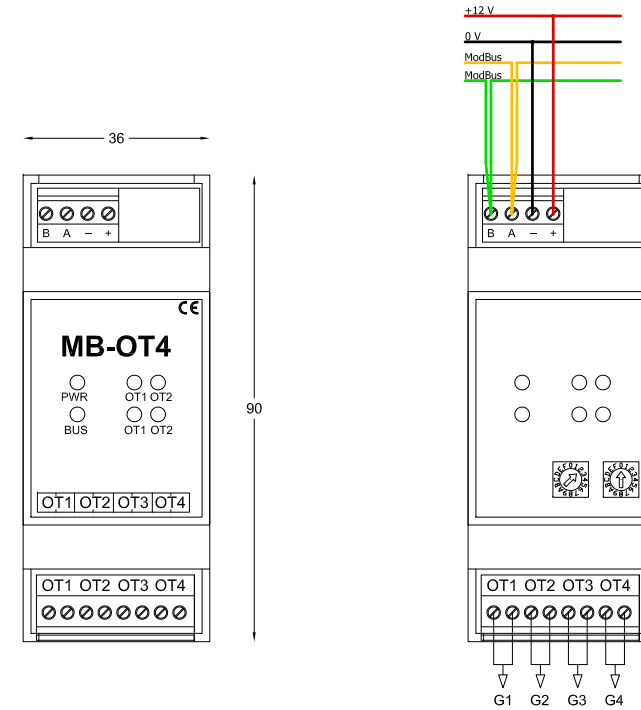


#### Disposal of electrical and electronic products at the end of the cycle of use

The symbol of the crossed-out bin above indicates that the product at the end of its useful life must be collected separately. Do not dispose of the device in household waste bins. Check local regulations for further information on product disposal.

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### Front view of the Module with dimensions (mm) and Electrical Connection



**Attention!** Always and only operate on the electrical connections with the module disconnected. Make sure that the voltage of the power supply (black wire "-" and red wire "+") complies with that required by the module. The yellow and green wires must be connected to the ModBus communication of the control system respecting the "in-out" connection. The OpenTherm connections to the generators are not polarised, therefore the respective cables can be reversed. The OpenTherm connection is point-to-point, therefore do not connect 2 or more generators in parallel to the same outlet. Each OT output must be connected to only one generator.

The positioning of the two switches, that can be accessed by removing the front mask of the module, must be defined according to the address and the communication parameters needed (see table on next page).

If the address has been changed, power off the module for 10 seconds and then power it on again so the new address can be correctly saved.

When the module is power on and correctly addressed and the master Modbus controller correctly programmed, the LED blink as below:

- PWR - green fix = correct power supply
- BUS - green blinking = the module is communicating in a correct way with the Modbus master \*
- O/T - yellow blinking = the module is communicating in a correct way with the generator via OpenTherm \*

\* The speed of the flash depends on how much data the module has to transmit.

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### Modbus Slave address setting

The rotative switch positions are indicated in the below table. When the address has been set, power off the module, wait 10 seconds and the power on the module, in this way the module saves the new address.

RECAP TABLE		DIP Switch Right	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
DIP Switch Left	Communication parameters	Gateway Modbus Slave address																
0	19200 baud, EVEN parity 19200, E, 8,1		N/A	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1			16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2			32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3			48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	19200 baud, NONE parity 19200, N, 8,1		N/A	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
5			16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
6			32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
7			48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
8	9600 baud, EVEN parity 9600, E, 8,1		N/A	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
9			16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
A			32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
B			48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
C	9600 baud, NONE parity 9600, N, 8,1		N/A	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
D			16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
E			32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
F			48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63