

DATA SHEET



mH-E16

Logic module / sixteen-channel controller of roller blinds / gates / awnings
of the F&Home system



Motor module mH-E16 is dedicated to controlling all motor receivers. It is suitable both for controlling external roller shutters (anti-burglary) powered by 230 V or 24 V motors, as well as vertical and horizontal blinds. The module is mounted in the switchgear where it occupies a field of 6 modules and is supplied with 24 V DC voltage. The buttons that are located on the building are directed to the inputs of the module and connected by UTP wires. The module manages the motors of roller shutters or blinds on an up-down (or right-left) basis via the mH-RE4-type relay actuator modules. The control is carried out fully on a 24 V low voltage line, which ensures full safety and allows for any layout of control buttons in the building. The mH-E16 module communicates with touch panels via the CAN line. Any module output can be triggered by touch panels by selecting a specific device or scene (device group). From the touch panel, it is possible to program a temporary automatic switching on/off of devices or groups of devices controlled from the input/output module. If more inputs/outputs are required, several motor modules can be used, bearing in mind that they must be modules of successive levels (mH-E16 - level 1, mH-E16 - level 2, ...).

The module is available in two versions:

mH-E16 - basic module, on sale from 2012.

mH-E16B - module with modified electronics. Functionally identical, it allows the installer to set the level.

Inputs / outputs

Inputs of the mH-E16 module are designed to connect monostable (bell) switches supplied with 24 V safe voltage. There are two inputs (up/down or left/right) to control each motor. The input is triggered when the switch is closed and +24 V is applied to the input of the module. Outputs of the mH-E16 module are adapted to work with the mH-RE4-type relay output modules. The choice of the number and type of relay modules depends on the number and load size of receivers. The software of the module makes it impossible to switch on the motors for motion in both directions at the same time.

The mH-E16 module is available for different levels, thus enabling the expansion of the I/O network connected to the F&Home system. First install the module from level 1, then from level 2, and so on. Each level has a separate numbering, which makes it easier to install the system. The input/output list for the mH-E16 module is shown in the following table.

Level	Inputs	Outputs
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1	33 - 64	Successive pairs of inputs enable direct switching of motors connected to the mH-E16 module via relay modules.	33 - 64	The outputs of the mH-E16 module can be triggered directly from the corresponding module inputs and can also be triggered remotely via a host computer and a touch panel.
2	161 – 192		129 – 156	
3	289 – 320		161 – 188	
For subsequent levels the numbering is shifted according to the relation: $33 + (N-1) \times 128$, where N is the level number.				

Power supply

Use a DC 24 V power supply unit common to the entire F&Home system located in the given switchgear. Therefore, it is necessary to use a power supply unit with a sufficient current capacity to supply the entire installation.

CAN

Two RJ-45 sockets on the front panel of the module are used to connect the CAN communication network cables, which must be connected to adjacent modules using the CAN cables provided with the system.

Operating principle

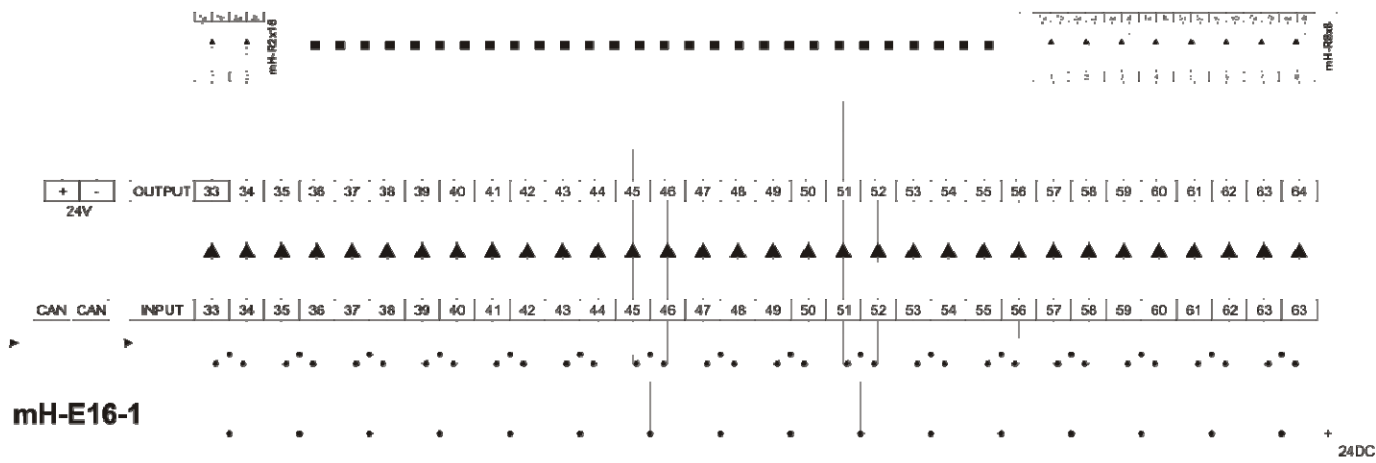
The **inputs** of the module are divided into pairs that enable control of subsequent motors connected via relay modules. Triggering the input causes the output corresponding to the triggered input to be activated as long as the input is triggered. The maximum activation time of the drive is defined in the software of the controller. Exceeding it will cause the motor to stop despite the switch being closed. The **outputs** enable switching on motor circuits via mH-RE4 relay modules. For each motor, there are two relays that allow for two-way motion, but the software of the module makes it impossible to force the motion in two directions at the same time. The outputs can be triggered locally and then the relay will be switched on as long as the switch at the input is on (with an imposed limitation in the form of maximum motor switching time). In addition, the outputs can be triggered remotely from the touch panel and in that case the relay is activated for a defined period of time.

Notes

- Inputs of the module are located at the bottom and outputs at the top.
- 24 V DC power supply. Power supply polarity is important!

Connection diagram

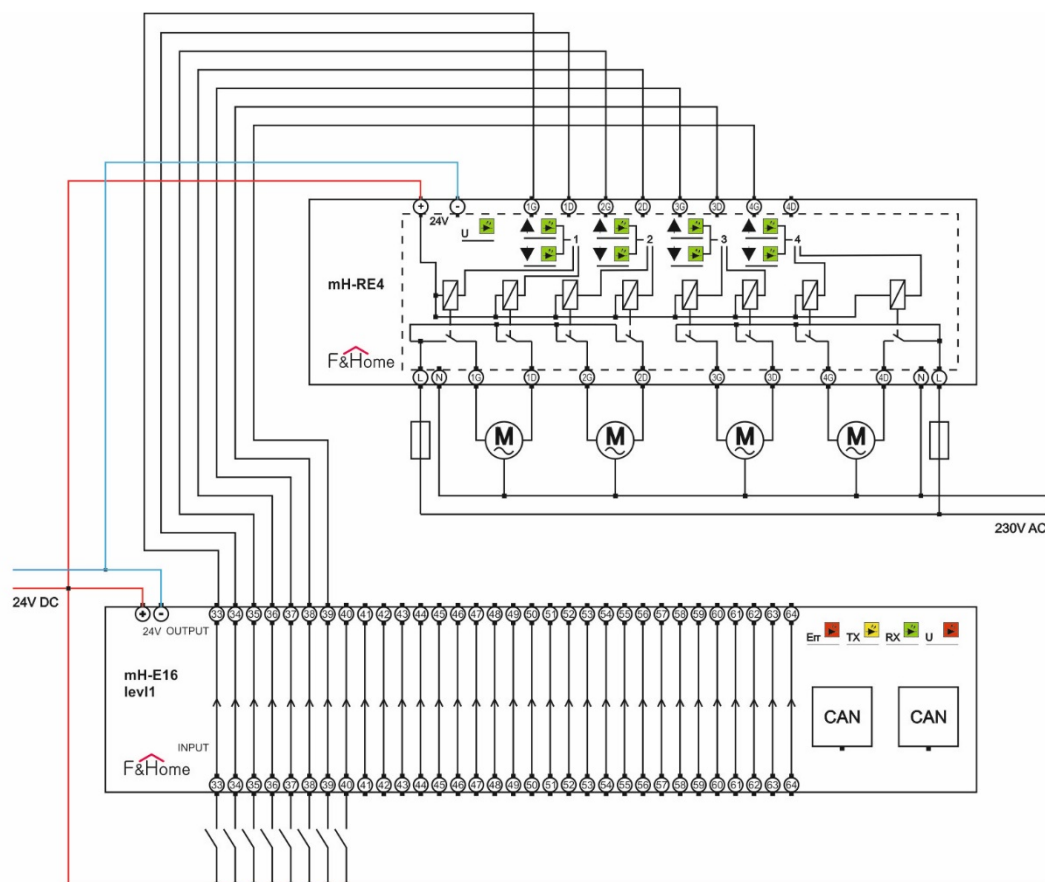
WARNING: The description and numbering in the connection diagram refer to level 1. For the remaining levels, the numbering is shifted according to the relation: $33 + (N-1) \times 128$, where N is the level number.



Operation signaling

The operation of the mH-A10 module is indicated by four LEDs on the front of the module. The meaning of the individual controls is as follows:

U	The blinking of the U diode means that the device is connected to the power supply and is working properly. The constantly lighted U diode indicates an error or malfunction of the module.
RX	Indicates that the module is in the process of receiving data through the CAN network.
TX	Indicates that the module is in the process of sending data through the CAN network.
Err	Indicates that there is no communication between the mH-E16 module and the host computer (possible power outage/damage to the host computer or damage to the communication cables).



Connecting the actuator module (relays - mH-RE4) to the motor module.

Notes to the diagram:

- Inputs in E16 module are marked as INPUT
- Outputs in E16 module are marked as OUTPUT
- Power supply for both modules: 24 V
- Module E16 module inputs controlled by 24V voltage plus
- A polarization of the module power supply is very important
- The relays in the actuator module are connected on a common potential by four (two blinds).
- Allowed control of monostable switches (pulse only).
- In this example, the first eight inputs in the E16 module control eight channels (four blinds) in the RE4 actuator relay.

Technical data table

Module type	logic (without actuator elements)
Rated supply voltage	24 V DC
Power supply voltage tolerance	-20%, +10%
Maximum current consumption	800 mA
Maximum input current for a single input.	10 mA
Maximum load capacity for a single output.	15 mA
Output voltage	24 V
Storage temperature	-20°C to +50°C
Operating temperature	0°C, +45°C
Humidity	<=85% (without condensation or aggressive gases)
Dimensions	105 x 65 x 90 mm (6 modules)
Dimensions of the packaging	119 x 104 x 75 mm
Ingress protection	IP20
Operating position	any
Enclosure type	for DIN rail
Net weight	175 g
Gross weight (including packaging)	260 g

WARNING

The method of connection is specified in this manual. Installation, connection and adjustment should be carried out by authorized electricians who are familiar with the operating instructions and the functions of the module.

The correct operation is affected by the way the module is transported, stored and used. Installation of the module is not recommended in the following cases: lack of components, damage to the module or its deformation.

In case of malfunction, please contact the manufacturer.