

DATA SHEET



mH-S4

Four-channel temperature sensor module
of the F&Home system



The mH-S4 module is a four-channel input for temperature sensors located in a building. The sensors are digitally controlled elements, which ensures high resistance to interference and allows to connect long cable sections without fear of temperature distortion. The sensors should be connected to independent three-core cables (separate cable for each sensor), preferably shielded (it can be an FTP cable). Cables should be routed in one section (without connection points) and led out in boxes under the buttons controlling lighting in a given room. The module is powered by a 24 V system power supply. The module inputs (signal from sensors) are supplied with 3.3 V. The module works in conjunction with the V valve module (via the CAN line) based on the temperature configuration entered via the touch panel. This means that correctly configured modules operate independently of the main panel and will control the temperature in the building even when the control panel is switched off. If it is required to control a larger number of heating circuits, additional modules of subsequent levels should be used, bearing in mind that the valve modules of the same level should also be used (for example, S4-1 and V4-1 or S4-2 and V4-2). Since the numbering is coinciding, the sensor module mH-S4 (level 1) and the actuator module mH-V8 (also level 1) can be used. In this way, we will get a temperature reading from four places in the building but we will be able to control only four valves (the first four in the numbering). The remaining outputs in the mH-V8 module will not be used.

Inputs / outputs

The mH-S4 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 output list for the mH-S4 module is shown in the following table.

Level	Inputs	
1	77 – 80	77 - input of temperature C1 sensor that controls the operation of the G1 valve connected to the mH-V4 actuator module 78 - input of temperature C2 sensor that controls the operation of the G2 valve connected to the mH-V4 actuator module 79 - input of temperature C3 sensor that controls the operation of the G3 valve connected to the mH-V4 actuator module 80 - input of temperature C4 sensor that controls the operation of the G4 valve connected to the mH-V4 actuator module
2	205 – 208	Sensor inputs operating in the same way as for level 1
3	333 – 336	Sensor inputs operating in the same way as for level 1

Power supply

The mH-S4 module is supplied with 24 V DC voltage. The polarization of the supply voltage is important.

CAN

Two RJ-45 sockets on the module front panel 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

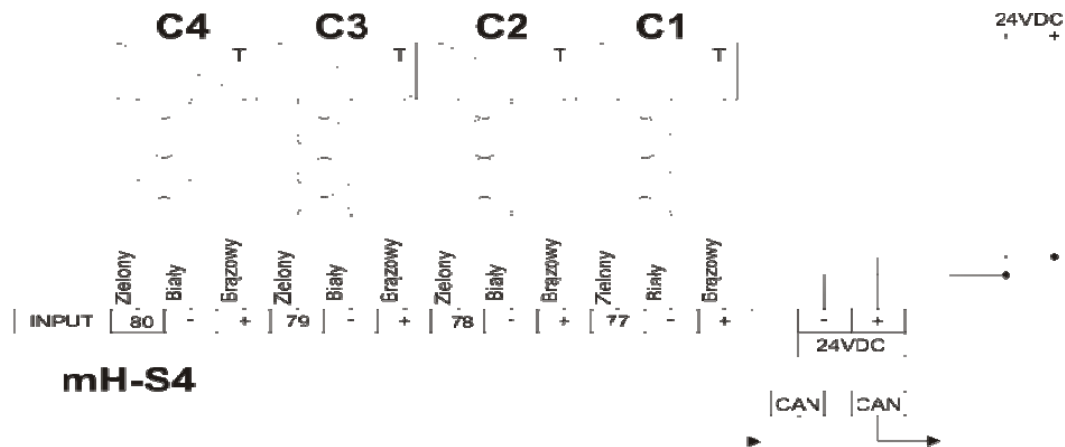
FTP cables from temperature sensors are led to the module (one cable for each sensor). The module works autonomously on the basis of detailed settings entered from the touch panel (temperature and hysteresis set independently for each room) and based of these settings directly controls the actuator module regulating the room temperature. The rule is that the operation of the first solenoid valve connected to the actuator module is controlled based on the indications of the first module. Programming of the module is done in an annual cycle with a step of 15 minutes, which allows you to take into account the time of the day, day of the week and time of the year. The temperature can be read from the main touch panel.

Notes

It is essential to comply with the method of connecting temperature sensors. Changing the cable order may result in damage to both the sensors and the mH-S4 module.

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.

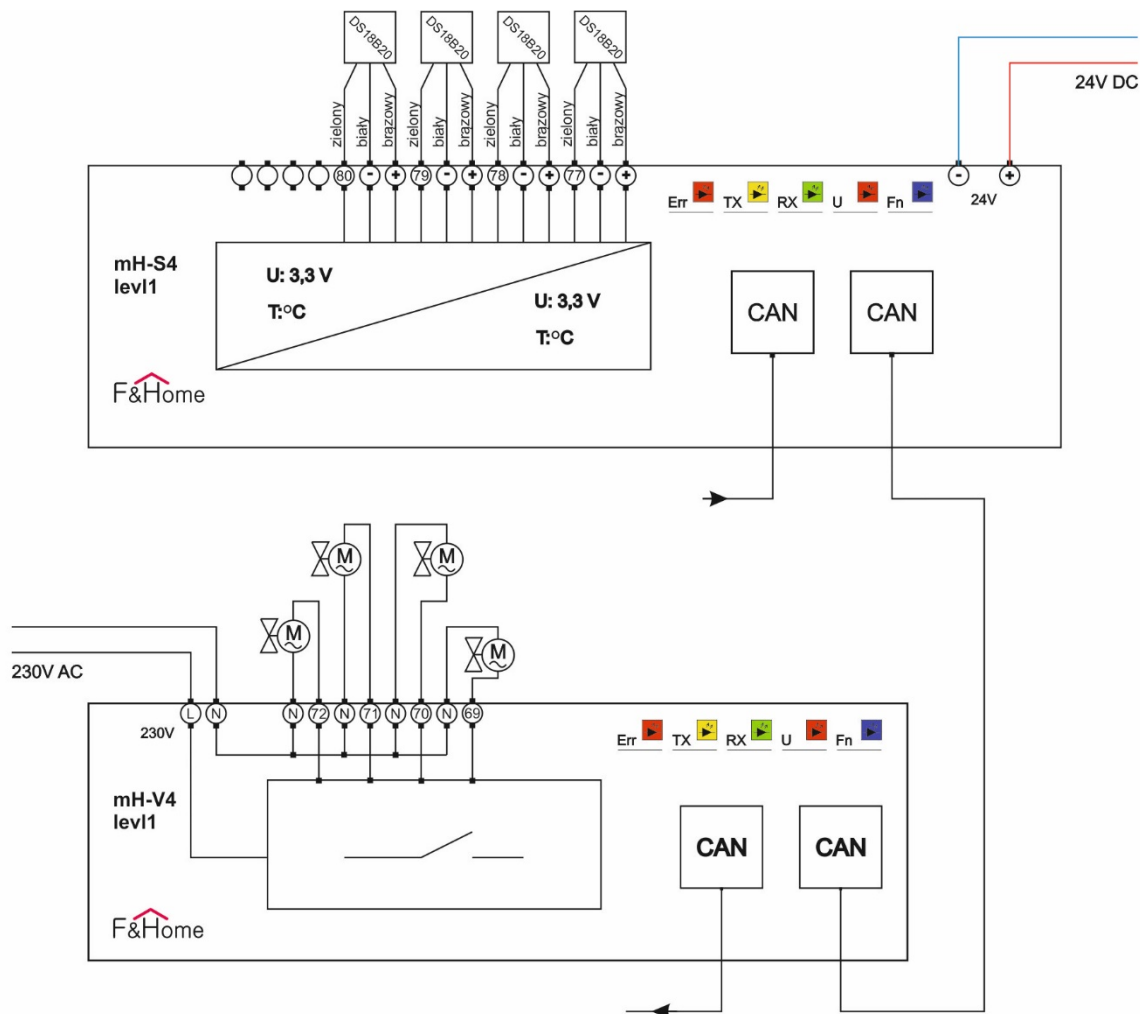


- Zielony - Green
- Biały - White
- Brązowy - Brown

Operation signaling

The operation of the mH-S4 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-S4 module and the host computer (possible power outage /damage to the host computer or damage to the communication cables).



The connection of the valve module and the sensor module.

Notes to the diagram:

- The polarization of sensor connection is very important.
- The actuator module is a valve module. 230 V power supply.
- Use the mh-SP (filter) protection on the supply line.
- Solenoid valves of the normally closed type - the valve opens when the power supply is switched on.
- Communication between modules via CAN bus.
- For level one the relation is as follows: input 77 - output 69; input 78 - output 70; input 79 - output 71; input 80 - output.

Technical data table

Module type	logic - 4 channels
Rated supply voltage	24 V DC
Power supply voltage tolerance	-20%, +10%
Sensor power supply voltage	3.3 V
Maximum current of the sensor	15 mA
Sensor type	DS18B20
Storage temperature	-20°C to +50°C
Operating temperature	0°C, +45°C
Humidity	<=85% (without condensation or aggressive gases)
Dimensions	87.5 x 65 x 90 mm (5 modules)
Dimensions of the packaging	105 x 104 x 75 mm
Ingress protection	IP20
Operating position	any
Enclosure type	for DIN rail
Net weight	145 g
Gross weight (including packaging)	210 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: missing components, damage to the module or its deformation.

In case of malfunction, please contact the manufacturer.