Water /Electrical Heating Thermostat

MH7-WH-EU / MH7-EH-EU

Introduction

MCOHome Water / Electrical Heating Thermostat is a Z-Wave enabled device for indoor temperature control. MH7-WH-EU is mainly applied to control wall mounted boiler, water valve/pump etc. , while MH7-EH-EU for electrical heating system. The device is of high reliability and practicability. And can be included and operated in any Z-Wave network with other Z-Wave certified devices from any other manufacturers.

Features：

- Capacitive touch buttons
- Tempered glass panel, PC alloy enclosure
- Precise temperature calibration function
- Attractive appearance
- Clear display, easy to operate

Specification

- Power Supply：AC220V±10％, 50/60HZ
- Output: MH7-WH-EU ≤5A ; MH7-EH-EU≤ 16A
- Self Consumption：≤1W
- Internal Temp. Sensor: NTC 15K
- External Temp. Sensor(optional): NTC   R25℃=15KΩ   B25℃/50℃=3550K
- Working Environment：0-50℃;   <90% RH（Non-condensation)
- Temperature Setting：5-37 ℃（41-98℉）（Adjustable）
- Dimension：86* 86*43mm
- Hole Pitch：60-61mm

Safety Information

To protect yourself and others from danger and to protect the device from damage, please read the safety information before using it.

Important!

- A qualified electrician with the understanding of wiring diagrams and knowledge of electrical safety should complete installation following the instructions.
- Before installation, please confirm the real voltage complying with the device's specification. Cut off any power supply to secure the safety of people and device.
- During installation, protect the device from any physical damage by dropping or bumping. If happens, please contact the supplier for maintenance.

- Keep the device away from acid-base and other corrosive solids, liquids, gases, to avoid damage.
- Avoid overexertion during operation, to protect device from mechanical damage.
- Read all instructions and documentation and save for future reference.

Installation & Wiring

Location:

Thermostat is suggested to be installed indoor, a place with around 1.5m height above the floor where represents the average room temperature. It should be away from direct sunlight, any cover, or any heat source, to avoid false signal for temperature control.
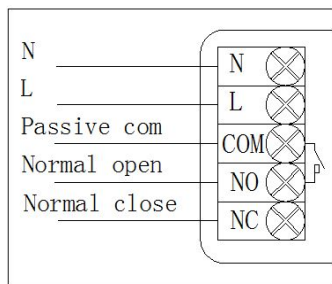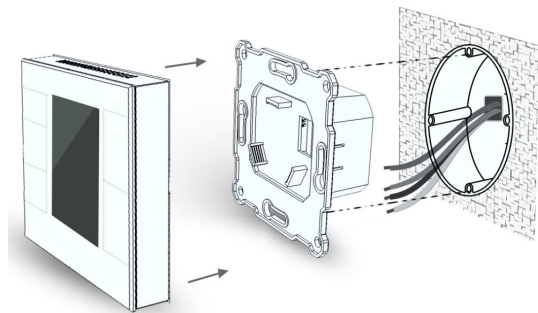
CAUTION: Cut off power supply at circuit breaker or fuse before installation to avoid fire, shock or death!

Step 1: Separate the device into two parts: the display panel and the bottom.
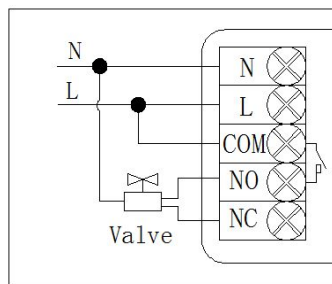**Step 2:** Insert all wires into the right terminals and tighten screws. Wiring diagrams are shown below.
Step 3: Push the bottom into the junction box and secure it with two screws, and then mount the touch panel back.
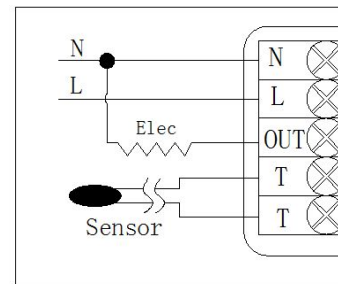**Step 4:** Confirm the device is well mounted, power on and it is ready to operate.
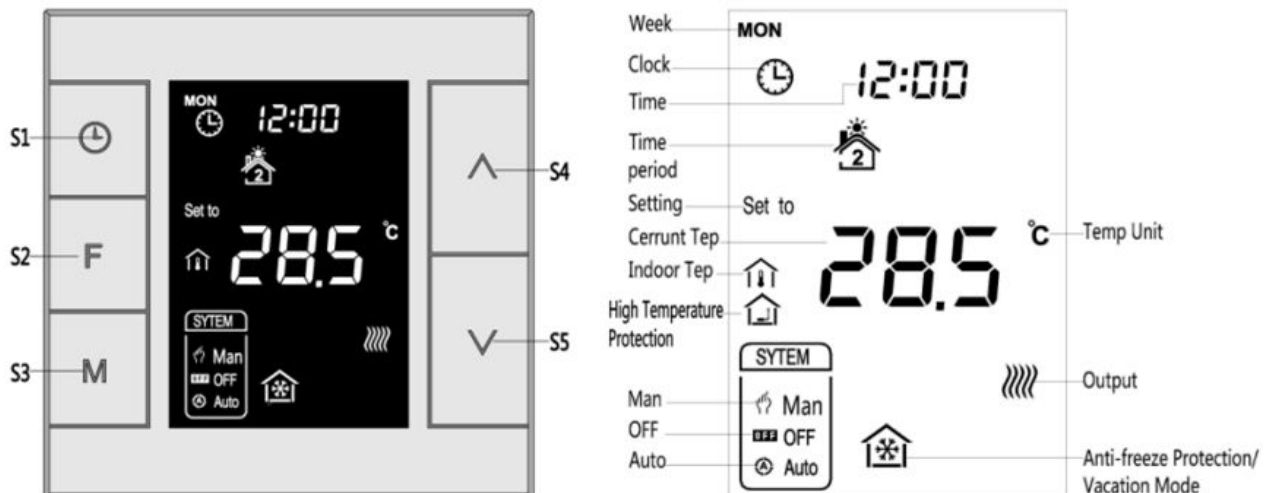
(1) Wall-boiler   (2) Normal close valve   (3) Electrical heating

Button & Display

Operation

On/Off operation

When power on, thermostat displays "OFF", all outputs are forced off. Touch S3 button to enter normal display. Device displays current week, local time, working mode, the current temperature, output status etc.

℃ / ℉ setting

In normal operating interface, long press S2 button can switch between ℃ and ℉.

Temperature setting

In normal operating interface, touch S4 or S5 can enter temperature setting. The setting range is 5-37 ℃（41-98℉）. Then press S4 or S5 can change value. Press S3 or wait 8 seconds without any key operation will save the setting and return to normal operation interface.

　　Auto Mode: The changed value only valid in the current time period for this time, and device will follow default setting in following time periods.

　　Manual Mode: The changed value will be valid until next manually setting.

　　Vacation mode: The changed value will be valid until next setting.

Working explanation

MH7-WH-EU

➢ Indoor temperature ≤ setting temperature - 0.5 ℃, output activated, and output icon displays.

➢ Indoor temperature ≥ setting temperature + 0.5 ℃, output turned off, and the icon disappears.

MH7-EH-EU

➢ Indoor temperature ≤ setting temperature - 1.5 ℃, output activated, and output icon displays.

➢ Indoor temperature ≥ setting temperature , output turned off, and the icon disappears.

Manual / Auto mode setting

Touch S3 can switch between Manual and Auto mode. Choose one and wait for 3 Sec can confirm the chose.

　　Auto Mode: Device follows the default time periods and temperature to control heating system automatically.

　　Manual Mode: Device follows the manually setting to control heating system.

Vacation mode setting

● In normal operating interface, touch S2 button to enter Vacation mode temperature setting. The default temperature is 10 ℃, and setting range is 5-37 ℃（41-98℉）. Press S4 or S5 to change value, then press S3 or wait 8 seconds without any key operation will return to normal operation interface. Vacation mode icon displays, and device will follow the setting.

- Touch S2 again will end Vacation mode and resume normal work, vacation mode icon will disappear.

Local Time Setting

- In normal working interface, long press S1 to enter the local time setting interface.
- In local time setting interface, press S3 key can switch among "week, hour & minute", and press S4 or S5 can set the value of the items.
- After finish local time setting, touch S1 or wait 8 seconds without any key operation will save the setting and return to normal display.

Time periods setting

- In normal working interface, touch S1 to enter time periods setting. Four time periods can be set for each day of the whole week.
- Press S3 can switch among "Hours, Minutes, Temperature value". Press S4 or S5 can change the value. Then press S3 save the setting and enter to set next period.
- After finished the setting of 4 time periods on Monday, press S1 and follow the same way to set periods of next days.
- After all periods set, press S1 /S2 or wait 8 seconds without any key operation will save the setting and return to normal display. Device will operate in accordance with the new setting.

The default setting is as follow:

Week\Periods	Period 1	Period 2	Period 3	Period 4
Mon~Fri	5:00 18℃	7:00 16℃	16:00 22℃	21:00 16℃
Sat~Sun	6:00 18℃	8:00 16℃	16:00 22℃	21:00 16℃

High temperature protection   (MH7-EH-EU ONLY)

If indoor temperature detected by temperature sensor ≥ 55 ℃ , device will open high temperature protection, electric heating will be forced off, and high temperature protection icon displays.

If indoor temperature detected by temperature sensor < 50 ℃ , device will end high temperature protection and return to normal work, high temperature protection icon disappears.

Anti-freeze protection function: (Optional)

In shutdown interface:

If indoor temperature detected by inner sensor≤ 5℃, device will open anti-freeze protection, electric heating will be forced open, and anti-freeze protection icon displays.

If indoor temperature detected by inner sensor > 8 ℃ , device will turn off anti-freeze protection and return to normal work, anti-freeze icon disappears.
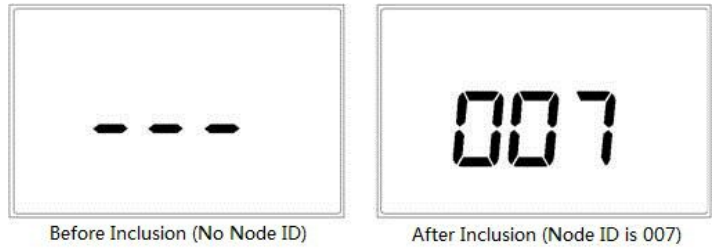
Z-Wave Operation

● **Including & Excluding of Z-Wave network**

Under the shutdown state, press & hold S2 to enter interface for inclusion or exclusion of Z-Wave network. Before device included into network, "- - -" will display on the screen. Then press S4 once, device will enter learning mode to get a node ID. If inclusion is success, a node ID will display on the screen in a few seconds.

A node ID can always inform us whether the device is in the network or not.

Note: Follow the same steps to exclude the device from the network.

After inclusion, turn off the device and then turn it on. Now the device is ready to be operated by controller/ gateway in Z-Wave network.

Before Inclusion (No Node ID)   After Inclusion (Node ID is 007)

● **Association Group**

Thermostat supports 1 association group. A gateway is suggested to associate with this group. Then if any changes happen, such as: temperature, working mode, etc., the thermostat will report to this associated device (gateway).

● **Command Class supported by the device:**

COMMAND_CLASS_BASIC;   COMMAND_CLASS_SENSOR_MULTILEVEL;

COMMAND_CLASS_THERMOSTAT_SETPOINT;   COMMAND_CLASS_ASSOCIATION;

COMMAND_CLASS_THERMOSTAT_MODE;   COMMAND_CLASS_VERSION;

COMMAND_CLASS_THERMOSTAT_OPERATING_STATE;   COMMAND_CLASS_MANUFACTURER_SPECIFIC

Note:

This device supports 4 kinds of modes in Z-Wave: **Off** mode; **Heating** mode (Manual); **Energy Saving heating** mode (Auto) ; **Away heating** mode (Vacation).

Users can set these 4 modes via COMMAND_CLASS_THERMOSTAT_MODE. And COMMAND_CLASS_BASIC can switch among Heating mode & Energy saving heating mode.

COMMAND_CLASS_THERMOSTAT_SETPOINT can be used to set the heating temperature threshold value in Heating mode or Energy saving heating mode.

1-year Limited Warranty

MCOHome warrants this product to be free from defects in material and workmanship under normal and proper use for one year from purchase date of the original purchaser. MCOHome will, at its option, either repair or replace any part of its products that prove defective by reason of improper workmanship or materials. THIS LIMITED WARRANTY DOES NOT COVER ANY DAMAGE TO THIS PRODUCT THAT RESULTS FROM IMPROPER INSTALLATION, ACCIDENT, ABUSE, MISUSE, NATURAL DISASTER, INSUFFICIENT OR EXCESSIVE ELECTRICAL SUPPLY, ABNORMAL MECHANICAL OR ENVIRONMENTAL CONDITIONS, OR ANY UNAUTHORIZED DISASSEMBLY, REPAIR OR MODIFICATION. This limited warranty shall not apply if: (i) the product was not used in accordance with any accompanying instructions, or (ii) the product was not used for its intended function. This limited warranty also does not apply to any product on which the original identification information has been altered, obliterated or removed, that has not been handled or packaged correctly, that has been sold as second-hand or that has been resold contrary to Country and other applicable export regulations.

Secret Menu

In shutdown state, long press S1+S5 synchronically can enter into secret menu. Press S4 or S5 to enter code 5138. Touch S3 to enter setting interface. Following are parameters which can be set.

Item	Explain	Default	Range	Remark
P00	Restore factory setting	Display: 53	00—99	Change 53 to 55, and press S3 to confirm
P01	Temp. Setting upper limit	37℃（98℉）	00—99.5℃（32-211℉）	Always confirm the upper limit ＞ bottom limit
P02	Temp. Setting bottom limit	5℃（41℉）	00—99.5℃（32-211℉）	
P03	Reserved	99.5℃	00-99℃	invalid
P04	Reserved	00℃	00—99℃	invalid
P05	Temp. differential for turn on device	MH7-WH-EU：0.5℃（1℉）	0—10℃（0-20℉）	MH7-EH-EU: 1.5℃（3℉）
P06	Temp. differential for turn off device	MH7-WH-EU：0.5℃（1℉）	0—10℃（0-20℉）	MH7-EH-EU: 0℃
P07	Anti-freeze protection function	OF	ON—OF	ON:open OF: close
P08	Anti-freeze open temp.	5℃（41℉）	0—10℃（32-50℉）	
P09	Anti-freeze close temp.	8℃（46℉）	0—10℃（32-50℉）	
P10	High temp. Protection	MH7-WH-EU 0:function closed	0--99℃（32-211℉）	MH7-EH-EU：55℃（131℉）
* P11	Power failure memory	2	0--2	
P12	Reserved	0	0--3	invalid
P13	Temp. calibration	0	-5--+5℃（-10--10℉）	
P14	Reserved	OF	ON-OF	invalid
P15	Backlit energy saving mode	ON	ON-OF	ON: open OF: close
P16	Reserved	0	0--3	invalid
P17	Temp. format	0	0--1	0:℃ 1:℉

* After power failure:

    0 indicates device will be in shutdown state ("OFF") when power on again;

    1 indicates device will be in working interface when power on again;

    2 (default) indicates device will stay the status before power failure when power on again.