

# Thermostat MH2910

MH2910 is a Z-Wave 800 series thermostat which is combination with fan coil module S230 to control 4-pipe fan coil system. It can read room temperature, and automatically control fan speed based on the temperature difference. The device is of high reliability and practicability. This product can be included and operated in any Z-Wave network with other Z-Wave certified devices from any other manufacturers.

## Specification

- Power Supply: rechargeable battery/ 5V USB Type-C
- Z-Wave 800 series
- Temperature Range: 0 ~ 99.9°C (32-211.82 °F)
- Humidity Range: 0% ~ 99%RH
- Working Environment:-20~+60°C <70%RH (Non-condensation)
- Dimension: 105\*105\*15.6 mm
- Z-Wave Frequency: Operating frequency range, defined by the regulatory bodies (for Z-wave in Europe: 868.4 MHz, or other regions 908.4/916.0 MHz , 921.4 MHz)
- Maximum Transmitting Power: +3dBm
- Housing: PC+ABS
- Hole pitch: 60.3mm
- Installation: wall-mounted or tabletop placing



## Declaration of Conformity

CE Hereby, we declare that the device is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.

## WEEE Directive Compliance

The device marked with this symbol should not be disposed of with household waste. It is the user's responsibility to deliver the used appliance to a designated recycling point.

## Z-Wave Compliance

The thermostat is a fully compatible Z-Wave Plus V2 device.

## Important Safety Instruction

- ⚠ Read the instructions before starting up the unit!
- ⚠ This product is not a toy. Keep out of reach of children and animals!
- ⚠ Do not expose the device to moisture, water or other liquids. Do not place liquids near or on the device!
- ⚠ Do not attempt to disassemble, repair or modify the device yourself!
- ⚠ This product is for indoor use only. Do not use outdoors!
- ⚠ CAUTIONS!

Flush-mount only into a UL/ETL/CE certified plastic junction box. The minimum size should be 65\*65\*45mm, minimum Volume is 190cm<sup>3</sup>. Use Copper Conductors Only.

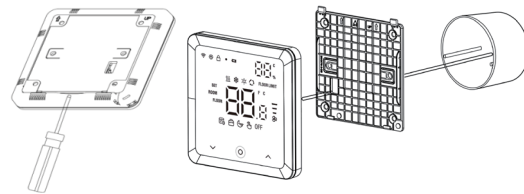
## Installation

### Preparation

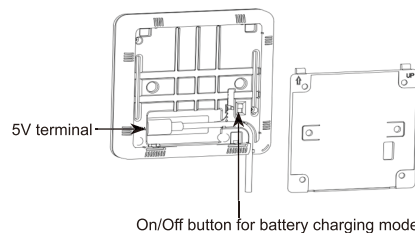
**CAUTION:** Cut off power supply at circuit breaker or fuse before installation to avoid fire, shock or death!

### Installation

**Step 1:** Separate the device into two parts: the front panel and the mounting plate.



**Step 2:** Put 5V adapter into the junction box, insert the wire into the 5V terminal by following the wiring diagram as below.

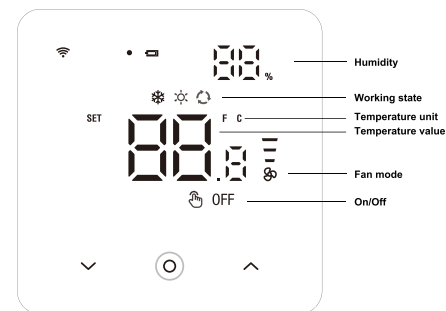


Note: If the power button on the back of the device is left in the OFF position for a long time, it should be turned ON and fully charged every six months or so. Otherwise, if the battery remains in a discharged state for too long, it will be damaged.

**Step 3:** Secure the bottom part onto a junction box with screws, and then mount the front panel back.

**Step 4:** Confirm the device is well mounted, power on and it is ready to operate.

## Display



1. Network Indicator
2. Battery Charging Indicator
3. Low Battery-Power Warning
4. SET Setpoint Temp

## Operation

### On/Off Setting

1. When the device is in the OFF mode, long press the "⊕" button for 3 seconds, the device turns ON and switches to the last working mode before the device shutdown. The device includes four working modes: heating, cooling, auto and fan. The working mode switching can only be set on the gateway.

2. When the device is not in the OFF mode, long press the "⊕" button for 3 seconds to shutdown the device, and only the "⊕" button is displayed during shutdown.

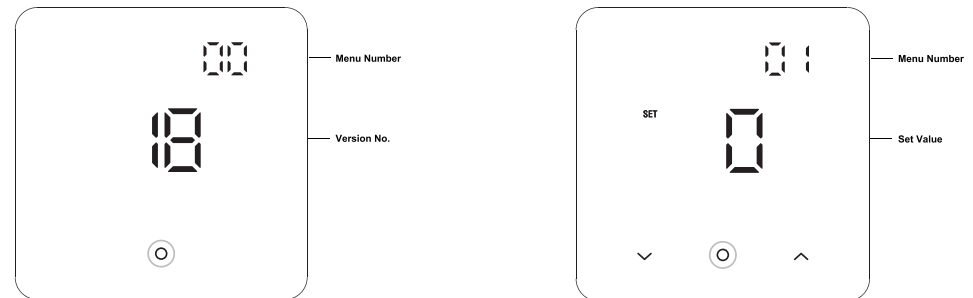
### Fan Mode Setting

1. Under the working interface and short press "⊕" button, the current fan mode icon will keep flashing, which means the fan mode is able to be set.
2. Short press "⊕" button to modify the fan mode among auto fan → low fan → medium fan → high fan → OFF mode.
3. 6 seconds without any key operation or touch the "up" or "down" button to complete the modification.

Note: Switching to OFF mode will turn off all output.

### Secret Menu

1. Under OFF state, long press ⊕ + ⊕ for 3 seconds to enter the interface of displaying the version number, see below:
2. After the version number is displayed, short press ⊕ to enter the interface of menu setting, short press any other buttons or wait for 10 seconds without any operations to switch to Home page.



3. Short press ⊕ or ⊖ to modify the setting value, short press ⊕ to set the next parameter.
4. Long press ⊕ and ⊕ synchronously for 3 seconds or wait for 20 seconds without any operations to exit the interface of menu setting.





No.	Name	Information	Default	Possible values
0	Version No.	Read only	17	0-255
1	Temperature unit	0: Celsius 1: Fahrenheit	0	0-1
2	Temperature difference reporting	Unit 0.1°C 3-255: n *0.1°C automatically report the temperature to the gateway when temperature variation greater than this value 0: Disabled	5	0, 3-255
		Unit 0.1F 3-255: n *0.1F automatically report the temperature to the gateway when temperature variation greater than this value 0: Disabled	10	0, 3-255
3	Humidity difference reporting	0: Disabled 1-99: Automatically report the humidity to the gateway when humidity variation greater than this value	6	0-99
4	Power failure memory	When power on again: 0: Device will be in shutdown state ( "OFF" ); 1: Device will stay the last status before power failure.	1	0-1
5	Timed reporting of temperature values to associated group 2	0: Do not send 10-255: If the current temperature has not been sent to the device associated with association group 2 within n*10 seconds, the device automatically reports the temperature once. Note: If the difference between the current temperature and the last reported temperature is greater than 3 °C, it will automatically sends the current temperature to the device associated with Association Group 2.	30	0, 10-255
6	Temperature upper limit	Temperature upper limit value	37 (Celsius) 98 (Fahrenheit)	1-99
7	Temperature lower limit	Temperature lower limit value	5 (Celsius) 41 (Fahrenheit)	0-98
8	Temperature offset	Temperature offset value (°C or °F) , accuracy 0.1 (n *0.1)	0	(-99~+99) (Celsius) (-99~+99) (Fahrenheit)
9	Automatic screen-off time	0: The screen will automatically turn off after 8 seconds without operation. 5 - 255: The screen will automatically turn off after n * 1 seconds without operation.	8	0, 5-255
10	Display the value of humidity	0: Disable 1: Enable	0	0-1

No.	Name	Information	Default	Possible values
11	Control type	0: Control fan coil system 1: Only control heating units, e.g. wall-mounted boiler. Note: If the device is deleted from the Z-Wave network, this parameter will not be restored to the default parameter. To ensure that the working mode of the gateway and the local working mode are consistent, the modified parameter needs to be added to the network again.	0	0-1
12	Temperature hysteresis	Temperature hysteresis (°C or °F) , accuracy: 0.1 Note: It is only valid when the control type is selected for heating units (parameter 11 is set to 1).	13 (Celsius) 25 (Fahrenheit)	3-99 (Celsius) 3-99 (Fahrenheit)
13	Beeper	0: Disable 1: Enable	1	0-1
14	Panel lock	0: All local operation is valid. 1. The local operation menu is invalid, other operation is valid. 2. The local operation for power on/off is valid, other local operation is invalid. 3. All local operation is invalid. Note: Adding or deleting the device from the gateway is not affected by this parameter and is valid all the time.	0	0-2
15	Alarm prompt when heating output on/off fails	0: Disable 1: When the heating output is activated for 45 minutes, it detects that the current temperature has not increased or is still decreasing; Or when the heating output turned off for 45 minutes, it detects that the current temperature is still rising, a "EE" alarm icon will be displayed on the screen	0	0-1
16	Screen brightness setting	Secret menu No. E5: 0: Off 1-8: 8 level backlight brightness, 1 is the dimmest, 8 is the brightest	7	0-8
17	The brightness of the circular button indicator light when the screen is off	0: Dim down 1-3: Brightness level	3	0-3
98	Restore factory setting	0: Disable 1: Enable	0	0-1
99	Version No.	Read only	17	0-255

### Associate with Fan Coil Module S230

- Associate the ID of S230 to the second association group of MH2910.
- MH2910 will send the current temperature to all S230 of the second association group at regular interval time, the interval time is able to be set by Z-Wave parameter 5.
- When the setting temperature, working mode, fan mode, and temperature unit of MH2910 are changed locally or on the gateway, the changed data will be sent to all S230 in the second association group, and up to 5 units of S230 can be associated.

### Including & Excluding of Z-Wave Network

- In the home page, long press  and  synchronously for 3 sec to enter into Z-Wave interface, Product ID will be displayed on the interface.
- If Product ID is 0, press  to include the device into Z-Wave network, if the inclusion is successful, it will not show 000 on the interface.
- If Product ID is not 0, press  to exclude the device from Z-Wave network, if the Exclusion is successful, it will show 000 on the interface.

### Association Group

AG identifier	Max Node ID	Command Classes	Trigger situation
1	1	COMMAND_CLASS_SENSOR_MULTILEVEL_V5, SENSOR_MULTILEVEL_REPORT_V5	1. The variation between current detected temperature value and the last temperature value reported to gateway is greater than the setting value set by parameter 2. 2. The variation between current detected humidity value and the last humidity value reported to gateway is greater than the setting value set by parameter 3.
		COMMAND_CLASS_THERMOSTAT_MODE_V2, THERMOSTAT_MODE_REPORT	Device Mode changes
		COMMAND_CLASS_THERMOSTAT_OPERATING_STATE, THERMOSTAT_OPERATING_STATE_REPORT	Device Status changes
		COMMAND_CLASS_THERMOSTAT_SETPOINT_V2, THERMOSTAT_SETPOINT_REPORT_V2	Setpoint value changes
		COMMAND_CLASS_THERMOSTAT_FAN_MODE, THERMOSTAT_FAN_MODE_REPORT	Fan mode changes
		COMMAND_CLASS_THERMOSTAT_FAN_STATE, THERMOSTAT_FAN_STATE_REPORT	Fan status changes
2	5	COMMAND_CLASS_DEVICE_RESET_LOCALLY, DEVICE_RESET_LOCALLY_NOTIFICATION	Restore to factory setting
		Associate with S230	When the definite-time of parameter 5 ends, working mode, fan mode or setpoint value changes

### Z-Wave Parameter Setting:

Number	Function	Size	Description	Default	Possible values
1	Temperature unit	1	0: Celsius 1: Fahrenheit	0	0-1
2	Temperature difference reporting	2	Unit 0.1°C 0: Disabled 3-255: n *0.1°C automatically report the temperature to the gateway when temperature variation greater than this value	5	0, 3-255
			Unit 0.1F 0: Disabled 3-255: n *0.1F automatically report the temperature to the gateway when temperature variation greater than this value	10	0,3-255
3	Humidity Difference Reporting	1	0: Disabled 1-99: Automatically report the humidity to the gateway when humidity variation greater than this value	6	0-99
4	Power failure memory	1	When power on again: 0: Device will be in shutdown state ( "OFF" ); 1: Device will stay the last status before power failure.	1	0-1
5	Timed reporting of temperature values to associated group 2	1	0: Do not send 10-255: If the current temperature has not been sent to the device associated with association group 2 within n*10 seconds, the device automatically reports the temperature once. Note: If the difference between the current temperature and the last reported temperature is greater than 3 ° C, it will automatically sends the current temperature to the device associated with Association Group 2.	30	0, 10-255
6	Temperature upper limit	1	Temperature upper limit value	37 (°C) 98 (°F)	1-99
7	Temperature lower limit	1	Temperature lower limit value	5 (°C) 41 (°F)	0-98
8	Temperature offset	1	Temperature offset value (°C or °F) , accuracy 0.1 (n *0.1)	0	(-99~+99) (°C) (-99~+99) (°F)
9	Automatic screen-off time	1	0: The screen will automatically turn off after 8 seconds without operation. 5 - 255: The screen will automatically turn off after n * 1 seconds without operation.	8	0, 5-255
10	Display the value of humidity	1	0: disable 1: enable	0	0-1
11	Control type	1	0: Control fan coil system 1: Only control heating units, e.g. wall-mounted boiler. Note: If the device is deleted from the Z-Wave network, this parameter will not be restored to the default parameter. To ensure that the working mode of the gateway and the local working mode are consistent, the modified parameter needs to be added to the network again.	0	0-1
12	Temperature hysteresis	1	Temperature hysteresis (°C or °F) , accuracy: 0.1	13 (Celsius) 25 (Fahrenheit)	3-99 (Celsius) 3-99 (Fahrenheit)
13	Beeper	1	0: Disable 1: Enable	1	0-1
14	Panel lock	1	0:All buttons are available. 2:Only on/off button available out of use. 3:All buttons are	0	0-3
15	Alarm prompt when heating output on/off fails	1	0: Disable 1: When the heating output is activated for 45 minutes, it detects that the current temperature has not increased or is still decreasing; Or when the heating output turned off for 45 minutes, it detects that the current temperature is still rising, a "EE" alarm icon will be displayed on the screen	0	0-1
16	Screen brightness setting	1	Secret menu No. E5: 0: Off 1-8: 8 level backlight brightness, 1 is the dimmest, 8 is the brightest	7	0-8
17	The brightness of the circular button indicator light when the screen is off	1	0: Dim down 1-3: Brightness level	3	0-3
255	Factory restore	1	1: Restore factory setting 0: Invalid	0	0-1

### 1-Year Limited Warranty

We warrant 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. We 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, abnormalmechanical 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.