

ALLOY

Home

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Electrical Heating Thermostat

MH4



SPECIFICATION

- Power supply: AC120V/AC240V, 60Hz
- Max output: 1800W at 120AC ; 3600W at 240AC
- Self-consumption: <2W
- Temp. format: °C/°F ; Time format: 12h / 24h
- Z-Wave frequency: 908.42MHz, 941.42MHz or other customized frequency
- Panel dimension: 76*120*20mm
- Vertical installation: hole pitch 82mm (American 120 box)

SAFETY INFORMATION

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

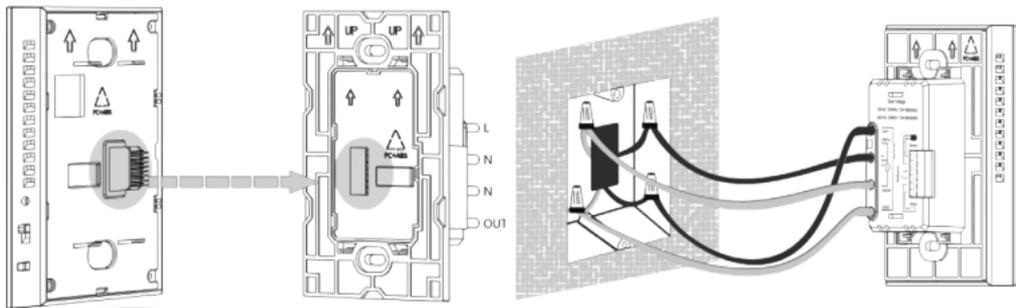
Important!

- A qualified electrician with an understanding of wiring diagrams and knowledge of electrical safety should complete the installation following these instructions.
- Before installation, confirm the actual voltage complies 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 such as dropping or bumping. If this does happen, please contact the supplier.
- Keep the device away from corrosive solids, liquids, and gases to avoid damage.
- Avoid overexertion during operation, to protect device from mechanical damage.
- Read all instructions and save them for future reference.

INSTALLATION & WIRING

Location: Indoor installation recommended, approximately 4.5' to 5' above the floor so as to accurately assess the average room temperature. It should be away from direct sunlight, any cover or any heat source to avoid an inaccurate reading for temperature control.

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

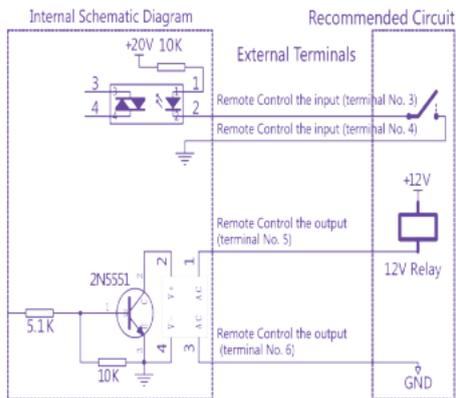
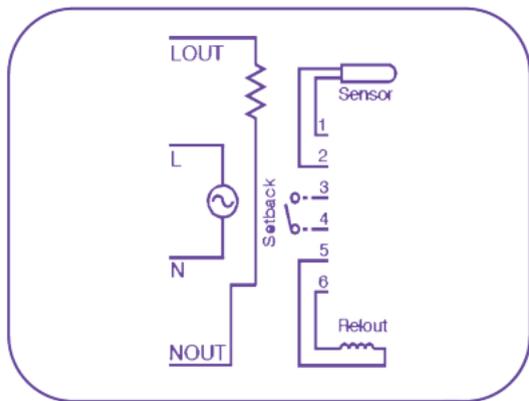


Step 1: Separate the device with a flat-head screwdriver into two parts: the display panel and the bottom case.

Step 2: Insert all wires into the right terminals and tighten screws. Wiring diagram is shown below.

Step 3: Push the bottom case 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.



Note:

Setback (terminals 3 & 4): the input terminal controlled by remote; one terminal connects to the internal power source with a 10K resistor, the other terminal connects to the internal ground wire.

Relout (terminals 5 & 6): the output terminal controlled by remote; inside circuit is a OC output, it can drive a relay that below 24V directly. The maximum drivable current is 30MA. The internal circuit is shown above.

OPERATION

On/Off Operation

- **ON:** When it displays OFF, slide up the ON/OFF button to turn it on. Local time, the corresponding temperature, working mode and output status will be displayed on the screen.
- **OFF:** In normal working interface, slide down the ON/OFF button to turn it off. It will display OFF on the screen and all outputs will be closed.

GFCI Test

- 1 - Set the thermostat to heating mode. Adjust the set point to make sure the heater engages.
- 2 - Press the GFCI button. Observe the GFCI icon displays on the screen, the heater shuts off and the indicator light is on. If not, replace the thermostat.

End GFCI test: Slide the ON/OFF button to OFF and then to ON. The device will resume normal operation.

Note: There is an electric leakage protector inside the thermostat. It is used to protect the operator from electric shock when the system is damaged.

Local Time Setting

In shutdown mode, long press  button to enter into the Time settings interface. The blinking icon is the current modifiable item, press  or  button to set the values; press  button to switch the setting value. Then press  button to confirm

or delay for 10s without any operation to save all the values and return to the normal working interface automatically. During setting, press  button at any time, which will return to the normal working interface and the values will be saved.

Working Mode Setting

- Icon  displays on the screen indicates it is in **Time Period Mode**;
- Icon  displays on the screen indicates it is in **Manual Mode**;
- Icon  displays on the screen indicates it is in **Energy-saving Mode**;
- Icon  displays on the screen indicates it is in **Vacation Mode**;

When the corresponding working mode icon is blinking, press  button to confirm. Or, wait 10s to save the values and return to the normal interface automatically.

Temperature Setting

In any mode, press  or  button to enter the temperature settings interface. “Set Temp” then blinks on the display:

- Press  button to decrease the temperature, press  button to increase the temperature.
- After changing the temp settings, long press  or  button to decrease/increase the temperature continuously.
- When done, press  button to confirm, or wait 10s to save and return to the main menu.

Check the Temperature

Press  and  buttons simultaneously. The displayed temperature will be switched between the room temp  and floor temp .

Keypad Lock

Press  and  buttons simultaneously to lock the keypad. The lock icon  displays on the screen. While the keypad is locked, you cannot make any changes. Press  and  buttons simultaneously to unlock the keypad. The icon then disappears and the keypad is back to its normal state.

Output Control

- **Floor Temperature Control Mode**

 : Floor Temperature Control,  : Room Temperature Control,

  : Room Temperature Control with floor high temperature protection.

When the  icon displays it indicates the system is in Floor Temperature control mode. The  icon displays beside the temperature value, indicating the current detected temperature is the floor temperature. When the detected floor temperature is \leq the set temperature by -1.5°C , heating engages and the  icon displays on the screen. When the detected floor temperature \geq the set temperature, heating turns off and the  icon disappears.

- **Room Temperature Control Mode**

When the  icons display on the screen indicates the system is in Room Temperature Control Mode. The  icon displays on the screen, indicating the current displayed temperature is the indoor temperature. When the detected indoor temperature \leq the set temperature by 2.5°C , heating engages and the  icon displays on the

screen. When the detected indoor temperature \geq the set temperature, heating turns off and the  icon disappears.

- **Room Temperature Control, Floor High Temperature Limit Mode**

If the   icon displays on the screen, it indicates the system is in Room Temperature Control, Floor High Temperature Limit Mode. When the  icon displays, it indicates the current temperature display is the indoor ambient temperature. When the detected indoor temperature \leq the set temperature by -2.5°C , the heater will turn on and the  icon will display. When the detected indoor temperature \geq the set temperature, the heater will turn off and the  icon will disappear. Pressing  and  buttons simultaneously will switch the displayed temperature the floor temperature and the  icon will display. When the temperature is higher than 45°C (113°F), the heater shuts off and the **FLOOR LIMIT** icon displays on the screen to avoid overheating the floor. When the floor temperature reduces to 40°C (104°F), the heater will turn on and the **FLOOR LIMIT** icon disappears.

Temperature Unit Switching

In the shutdown interface, long pressing  and  switches the temperature unit settings.

Z-Wave Network Inclusion and Exclusion

Press and hold  to enter the Z-Wave Network inclusion and exclusion menu. If the device is not included in a network, "--" displays on screen. Press  once and the device enters into learning mode to get a node ID. If inclusion is successful, a node ID will display on the screen. After inclusion, turn the device off and then on. The device is now ready to be operated by the Z-Wave network controller/gateway. *Note: Follow the same steps to exclude the device from the network.*

Configuration of User Parameters (Hidden Menu)

In the shutdown interface, press  and  simultaneously to enter into the parameters menu. Then, if applicable, input password 1234 using “Up” and “Down” buttons. Press  to switch, then press the “Confirm” button to enter into the setting interface:

No.	Parameter	Default	Range	Note
P1	High Temp Protection	45°C (113°F)	OF/45°~95° (113°-203°)	OF: Turn off the floor high temp protection
P2	Room Temperature Calibration	0 (00)	-9.5~9.5°C (-16~16°F)	
P3	Temperature Backlash Value	2°C (4°F)	0.5~10°C (1-18°F)	
P4	Key Volume Level	3	OF/1~9	OF: OFF 1~9: Key Volume
P5	Backlight Brightness	NO	NO/OF	NO: Always on OF: Backlight Energy Saving
P6	Control Mode	A-F	A-F/Air/Flo	Air: Ambient Room Temperature Control Mode Flo: Floor Temperature Control Mode A/F: Room Temperature Control with Floor High Temperature Limit Mode
P7	Time System	24	12/24	12: 12-hour time system 24: 24-hour time system
P8	Floor Temp Calibration	0 (00)	-9.5~9.5°C (-16~16°F)	
P9	Floor Temp Control Backlash Value	1.5°C (3°F)	0.5~10°C (01~18°F)	

No.	Parameter	Default	Range	Note
P10	Floor Protection Temp Backlash Value	5°C (9°F)	0.5~10°C (01~18°F)	
P11	Remote Control Mode Temp Setting	16.5°C (62°F)	5~37°C (41~99°F)	
P12	Factory Reset	53	0~99	Set to 55 then press S3 to confirm Factory Reset
P13	Heating Temp Increasing Speed	5	0-99	
P14	Celsius/Fahrenheit	OC	OC/OF	OC: Celsius OF: Fahrenheit (After settings modification, to restore factory settings)

TROUBLESHOOTING

Problem	Solution
Thermostat functions but no heat from the system	<ol style="list-style-type: none"> 1. Check wiring instructions and wire identification 2. If the GFCI is tripped, reset the thermostat with the side switch 3. Check the resistance of the floor warming system. Refer to the cable manufacturer installation manual
No Display	Check wiring connection on the back of the unit
GFCI is tripped	<ol style="list-style-type: none"> 1. Check wiring connections 2. Reset thermostat by switching off then back on 3. Check resistance of the floor warming system. Refer to the cable manufacturer installation manual

Problem	Solution
Heat occurs at wrong time	Check the current time and schedule are properly set at AM or PM
Error EEE	Check floor sensor resistance. Change if out of range

FCC Warning (Part 15.21) (USA only)

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Interference Statement (Part 15.105 (b)) (USA only)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



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, 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.