

ONYX

CONTROLS



Room Thermostat

We provide more control;

More Accuracy,

More Convenience for HVAC Application;

ONX908MTW-0/24V MULTI STAGE THERMOSTAT

Application: 24VAC, 2Heat/2cool

Installation and operation instructions

SPECIFICATION:

Electrical Rating.....	24VAC
Terminal Load.....	3.0 A per terminal (terminal Y1, W1, G: 5A)
Set point Temperature Range.....	5°C to 35°C
Dimensions.....	115mm×90mm ×28mm
Color.....	White

FEATURE:

- Large LCD display with backlight
- Set points and room temperature display simultaneously
- Maintains the temperature within the range of 0.5°C to the set point
- Fan switch with on and auto
- Manual change over
- Never lost user setting in the event of power-off, no battery is required
- Display temperature recalibrates
- Sleep mode option
- Compressor short cycling protection available

OPERATION

The Thermostat Buttons and Switches

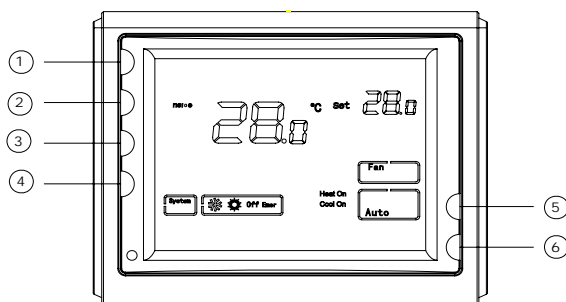


Figure 1

The Display

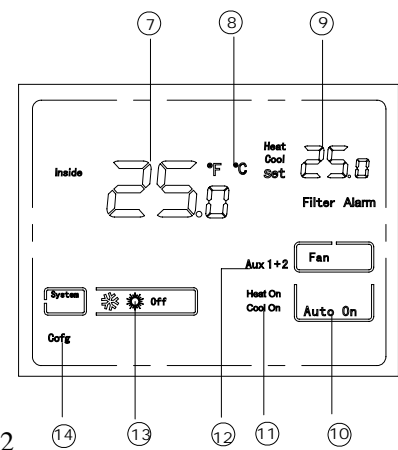
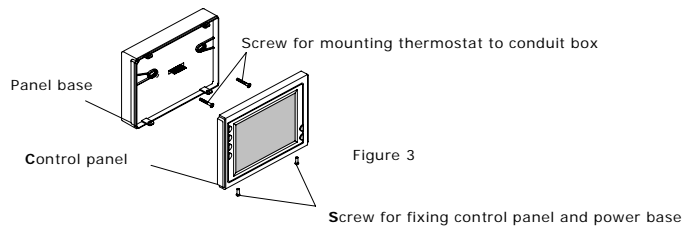


Figure 2

- (1) Power button
- (2) System switch (**HEAT, COOL**)
- (3) Fan switch (**AUTO, ON**)
- (4) Sleep operation button
- (5) ▲ Raises Temperature setting
- (6) ▼ Lower Temperature setting
- (7) Room temperature
- (8) Shows temperature display in °C or°F
- (9) Setting temperature
- (10) Indicate fan switch position
- (11) **Heat on** shows when the thermostat is calling for heat
- Cool on** shows when the thermostat is calling for cool.
- (12) **1**: Shows when thermostat is in the 1st stage cool or heat mode.
- 1+2**: Shows when both stages begin to operate in cool or heat.
- (13) Shows system mode
- (14) Shows thermostat is in configuration mode.

INSTALL THE THERMOSTAT

ATTACH THERMOSTAT BASE TO WALL



- 1.. Remove 2 screws from the bottom of thermostat. Gently pull the control panel straight off the base. Forcing or prying on the thermostat will cause damage to the unit.
2. Connect wires beneath terminal screws on power supply module using appropriate wiring schematic. See figure 4
3. Push power base into 86mmX86mm conduit box.
4. Using two mounting screws mount the power base to the wall. Place a level against bottom of base, adjust until level, and then tighten screws. (Leveling is for appearance only and will not affect thermostat operation.)
5. Replace control panel on the power base and fix power base and control panel by removed two screws in item 1

WIRING DIAGRAM

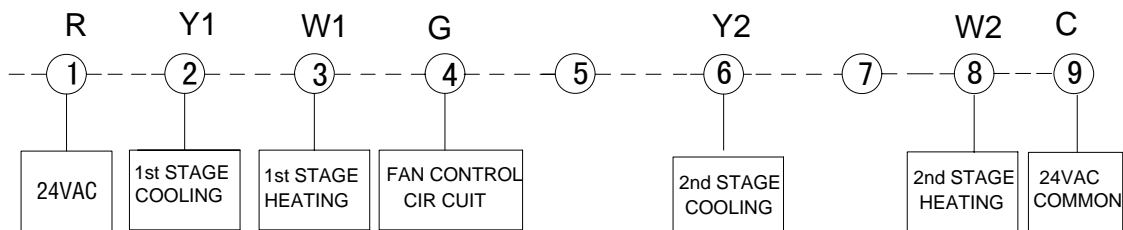


Figure 4

CHECK THERMOSTAT OPERATION

Switch on the thermostat

Fan operation

Set fan button to **On** or **Auto**

Auto is the most commonly selected setting and runs the fan only when the heating or cooling system is on.

Fan **On** runs the fan continuously for increased air circulation.

Heat system operation

1. Press system switch to heat mode (☀)
2. Press ▲ to adjust thermostat setting above room temperature. The 1 stage heating should begin to operate.
3. Both stages of heating system will begin to operate when the set point is 3°F (2°C) above ambient. **AUX 1+2** display will be shown. If +2 is flashing, the second stage will delay 15 minutes before starting. (See configuration menu 5)
4. Press ▼ to adjust temperature setting below room temperature. The heating system

should stop operating.

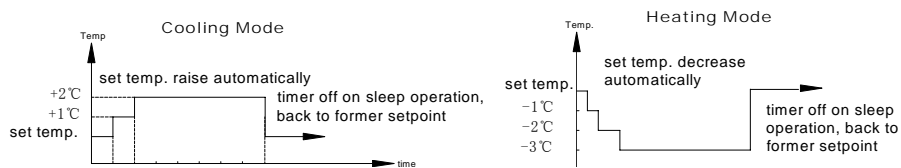
Cooling system operation

1. Press system switch to cool mode (❄)
2. Press ▼ to adjust thermostat setting below room temperature. The blower should come on immediately, followed by cold air circulation. If the **COOL ON** display is flashing, the 1st stage compressor is at off-time cycle protection (Note: See Configuration menu step 6)
3. Both stages of cooling system will begin to operate when the set point is 3°F (2°C) below ambient. **AUX 1+2** display will be shown. If +2 display is flashing, the second stage will delay 15 minutes before starting (Note: See Configuration menu item 5)
4. Press ▲ to adjust temperature setting above room temperature. The cooling system should stop operating.

If all functions operate properly, the thermostat is installed correctly.

Sleep operation

Push sleep operation button (Ⓜ), (Ⓜ) appears indicate during the following 8 hours, the thermostat will control heating or cooling according to following curve. Push sleep operation button again, (Ⓜ) disappears indicate the sleep operation feature is canceled.



Applications

System switch on cool mode: To achieve better sleep, 1 hour after sleeping mode setting, set point temperature will raise 1°C automatically, and 2 hours later, setting point temperature will raise 2°C and keep on with this temperature until timer off, which is 8 hours. After timer off, set point will be restored to formal setting automatically.

System switch on heat mode: To achieve better sleep, 0.5 hour after sleeping mode setting, set point temperature will decrease 1°C automatically, and 1 hour later, setting point temperature will decrease 2°C, 2 hours later, setting will decrease 3°C and keep on with this temperature until timer off, which is 8 hours. After timer off, set point will be restored to formal setting automatically.

CONFIGURATION

The configuration menu allows you to set certain thermostat operating characteristics to your system or personal requirements. Switch off the thermostat and hold the sleep operation Button ④ for over 3 second till power on again means you have entered the first configuration menu item. There are 6 menu items. Press button ④ to change to the next item. To exit the menu and return to the normal operation, switch off the thermostat and switch it on again. If no keys are pressed within 20 seconds the thermostat will be switched off.

Step	Press buttons	Displayed (factory default)	Press▲、▼to select	Descriptions
1	④ 3 seconds	01 (0)	-3 --- +3	Adjust temperature coefficient
2	④	02 (35℃)	20℃—35℃	Select maximum setting temperature for heating
3	④	03 (5℃)	5℃—20℃	Select minimum setting temperature for cooling
4	④	04 (rd)	rd, rE	Memorize option before power loss
5	④	05 (FA)	FA/SL	Second stage fast or slow
6	④	06 (1)	1、 2、 3	Display backlight option
7	④	06 (On)	On/Off	Fan option is heating mode.
8	④	07 (3)	0,3,5	Minimum compressor off-time setting

1) Select temperature recalibrates Adjustment 3 LO to 3 HI -

You can adjust the room temperature display up to 3 higher or lower. Your thermostat was accurately calibrated at the factory but you have the option to change the display temperature to match your previous thermostat.

2) Select maximum temperature for heating.

This feature provides a maximum setpoint temperature for heat. The default setting is 35℃, It can be changed between 30℃to 35℃

3) Select minimum temperature for cooling

This feature provides a minimum setpoint temperature for cooling. The default setting is 5℃, It can be changed between 5℃ to 20℃

4) Memorize option before power loss

Using ▲ & ▼ button to select between “rE” and “rd”. “rE” means the thermostat will Memorize its ON or OFF status before power loss. After power supply comes to normal again, the thermostat will remain ON or OFF according to what it is before power loss. “rd” means no matter the thermostat is switched on or off before power loss, after the power supply comes to normal again the thermostat will keep power off

5) Second stage fast or slow

Select FA to start 2nd stage immediately when the set point is manually raised more than 2℃ in HEAT or lowered more than 2℃ in COOL from room temperature . Select SL, the second stage will delay approximately 15 minutes before starting.

6) Display backlight option

Select 1 the light will be on when any button of the thermostat is touched. Select 2 the display will keep the light on continuously. Select 3 the display will keep the light off continuously Factory default is 1

7) Fan option in heating mode

If your system requires the thermostat to turn on the fan on a call for heat, select **On**. If your system does not require the thermostat to energize the fan on a call for heat such as fossil fuel (gas, oil, etc.), forced air system as well as hydraulic heating system, select **Off**.

8) Minimum compressor off-time cycle setting

To protect compressor from short cycling, you can select compressor off-time cycle, 3 means off-time cycle is 3 minutes, 5 means off-time cycle is 5 minutes. When the thermostat compressor time delay occurs it will flash Cool on display for the time you have selected. Select 0 means you have canceled the function.