HORUS




USER MANUAL

# HVAC Thermostat

## HSC6 (model HSC6S-HP)

Installation and operation | Rev. 1.0 | October 2026

## About this product

The HSC6S-HP is a Z-Wave 800 Series thermostat for 24 VAC heating and cooling systems. It controls up to 2 heating and 2 cooling stages, plus auxiliary heat on heat pump systems. It supports conventional systems, heat pumps with auxiliary and emergency heat, and 3-wire zone valves.

You can operate the thermostat on the device or from a Z-Wave controller, such as the Horus Nexxo 800.

## Safety instructions

**WARNING**
Turn off the power at the circuit breaker or fuse before installation. Failure to do so can cause fire, electric shock, or death.

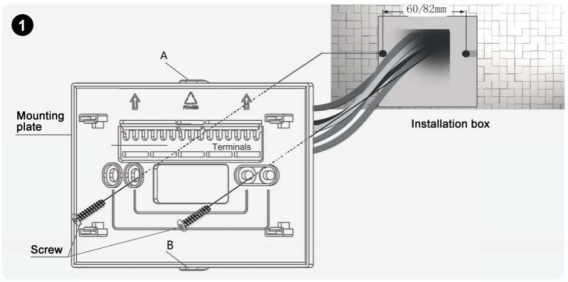
- A qualified HVAC technician or electrician must install this device.
- Before installation, make sure that the supply voltage agrees with the specification (24 VAC).
- Do not drop or hit the device during installation. If the device is damaged, contact your supplier.
- Keep the device away from acids, bases, and other corrosive solids, liquids, or gases.
- Do not use too much force on the buttons or housing.
- Read all instructions. Keep this manual for future reference.

## Specifications

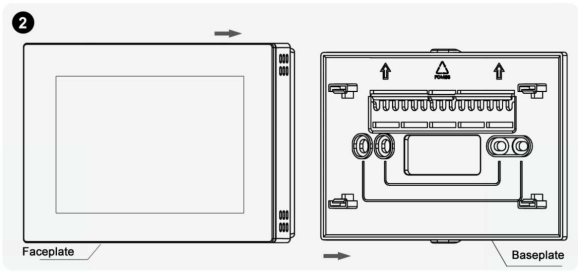
| | |
|---|---|
| **Power supply** | 24 VAC (20 to 28 VAC) from the HVAC system transformer |
| **Power consumption** | Less than 1 W |
| **Relay output** | Less than 1 A per output, resistive load |
| **Supported systems** | Conventional: up to 2 heat and 2 cool stages. Heat pump: up to 2 compressor stages with auxiliary and emergency heat. 3-wire zone valve |
| **Setpoint range** | 68 to 77 °F (19 to 28 °C), default |
| **Control accuracy** | ±1 °F (±0.5 °C) |
| **Wireless protocol** | Z-Wave 800 Series with S2 security, US frequency |
| **Housing** | Tempered glass front, PC body |
| **Dimensions (W x H x D)** | 136 x 94 x 26 mm (5.35 x 3.70 x 1.02 in) |
| **Mounting** | Junction box, 60 mm screw hole pitch |

## Installation

1. Turn off the power to the HVAC system.
2. Pull the faceplate and the baseplate apart at points A and B.
3. Put the wires into the correct terminals. Refer to the terminal table and the wiring diagram for your system.
4. Attach the baseplate to the junction box with M4 x 18 mm screws. Make sure that the baseplate points in the correct direction (refer to the figure).
5. Check all wires. Push the faceplate evenly onto the baseplate until the two parts fit tightly.

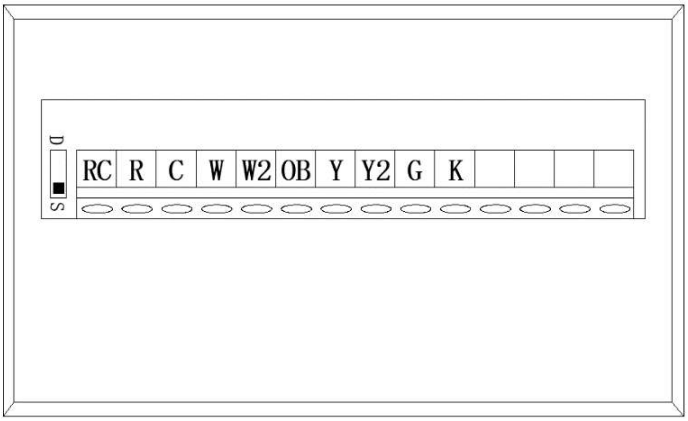



Attach the baseplate




Install the faceplate

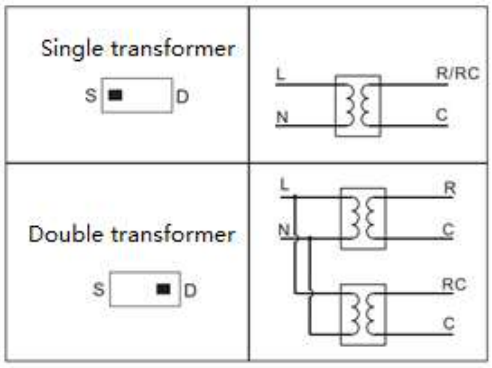
## Terminals




| Terminal | Definition |
|---|---|
| R | Power for heating. Connect to the secondary side of the heating system transformer |
| RC | Power for cooling. Connect to the secondary side of the cooling system transformer |
| C | Common wire for the secondary side of the cooling or heating transformer |
| W | Heating, stage 1 |
| W2 | Heating, stage 2 or auxiliary heat |
| O/B | Changeover valve (heat pump) |
| Y | Compressor, stage 1 |
| Y2 | Compressor, stage 2 |
| G | Fan |
| K | Connection to the wire saver module (4-5T module) |

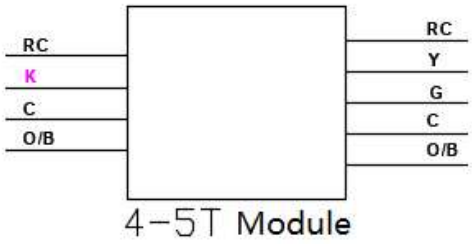
## Transformer switch

A switch on the wiring panel selects a single or a double transformer system. Set the switch to the correct position before you apply power.




### Systems without a C wire

Use a wire saver (4-5T module) if the system does not have a 24 VAC C wire. Install the module in or near the indoor unit (furnace or air handler). Connect it to terminal K.




## Select the system type

Set the system type with installer parameter 30 (default 12). ● = terminal must be wired. ○ = optional.

| Type | System | G | Y | Y2 | W | W2 | O/B | Diagram |
|---|---|---|---|---|---|---|---|---|
| 0 | One-stage conventional, cool only | ● | ● | | | | | Fig. 0 |
| 1 | Two-stage conventional, cool only | ● | ● | ● | | | | Fig. 1 |
| 2 | One-stage conventional, heat only | ● | | | ● | | | Fig. 2 |
| 3 | One-stage conventional, heat only, no fan | | | | ● | | | Fig. 3 |
| 4 | Two-stage conventional, heat only | ● | | | ● | ● | | Fig. 4 |
| 5 | One-stage conventional, heat and cool | ● | ● | | ● | | | Fig. 5, 5-2 |
| 6 | Two-stage conventional, heat and cool | ● | ● | ● | ● | ● | | Fig. 6, 6-2 |
| 7 | Heat pump, one-stage cool | ● | ● | | | | ○ | Fig. 7 |
| 8 | Heat pump, two-stage cool | ● | ● | ● | | | ○ | Fig. 8 |
| 9 | Heat pump, one-stage heat (aux optional) | ● | ● | | | ○ | ○ | Fig. 7, 9-2, 9-3 |
| 10 | Heat pump, two-stage heat (aux optional) | ● | ● | ● | | ○ | ○ | Fig. 8, 10-2, 10-3 |
| 11 | Heat pump, one-stage heat and cool (aux optional) | ● | ● | | | ○ | ● | Fig. 11, 11-2, 11-3 |
| 12 | Heat pump, two-stage heat and cool (aux optional) | ● | ● | ● | | ○ | ● | Fig. 12, 12-2, 12-3 |
| 13 | One-stage conventional, heat only, 3-wire zone valve, no fan | | ● | | ● | | | Fig. 13 |

## Wiring diagrams

Markers on the diagrams: (1) power input range is 20 to 28 VAC. (2) Transformer switch position. (3) In a cooling-only or heating-only heat pump system, O/B is optional.

### Conventional systems

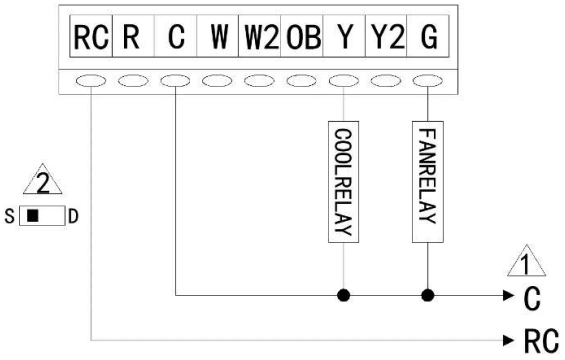



Fig. 0: One-stage conventional, cool only

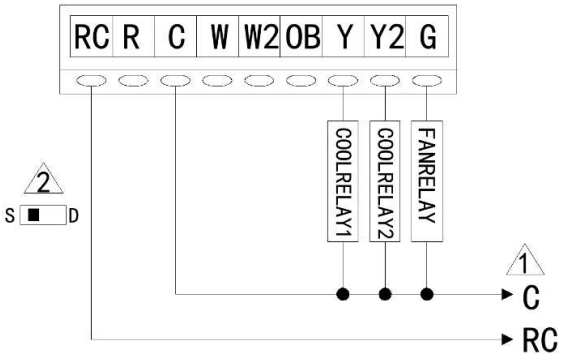



Fig. 1: Two-stage conventional, cool only

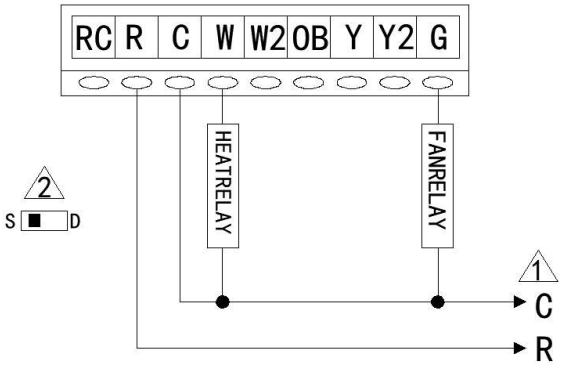



Fig. 2: One-stage conventional, heat only

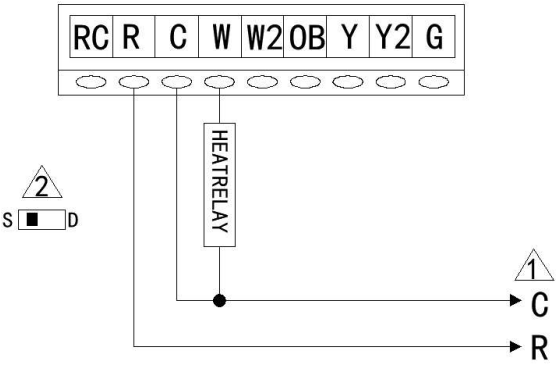



Fig. 3: One-stage conventional, heat only, no fan

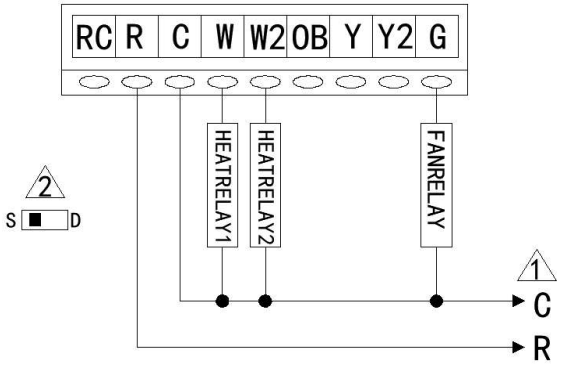



Fig. 4: Two-stage conventional, heat only

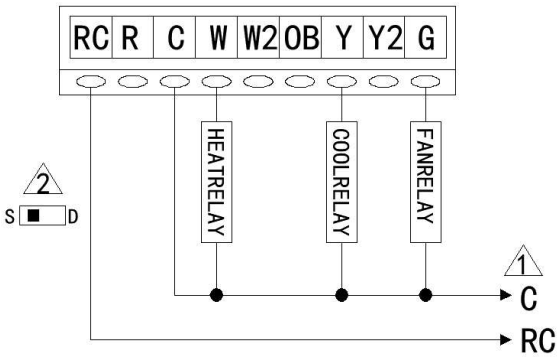



Fig. 5: One-stage heat and cool, single transformer

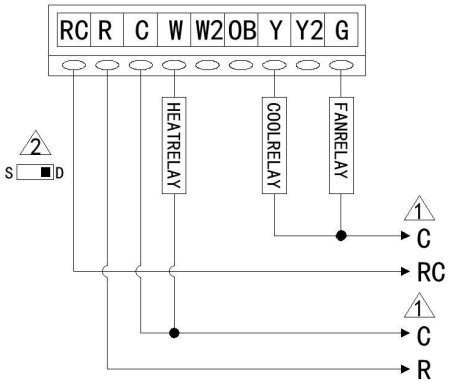



Fig. 5-2: One-stage heat and cool, double transformer

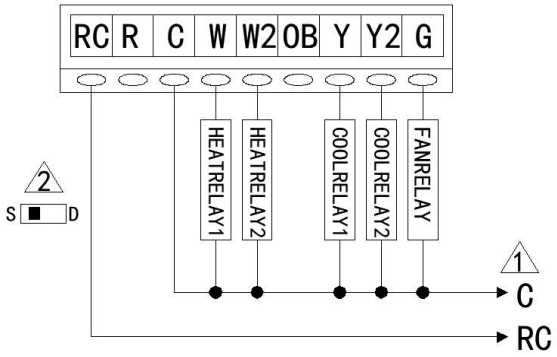



Fig. 6: Two-stage heat and cool, single transformer

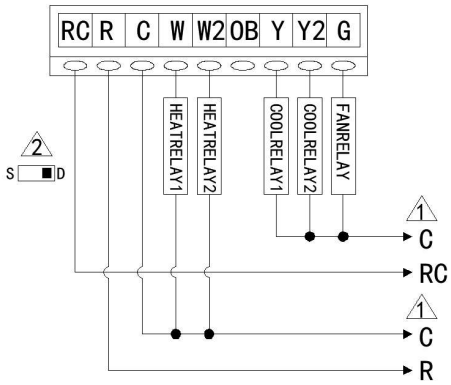



Fig. 6-2: Two-stage heat and cool, double transformer

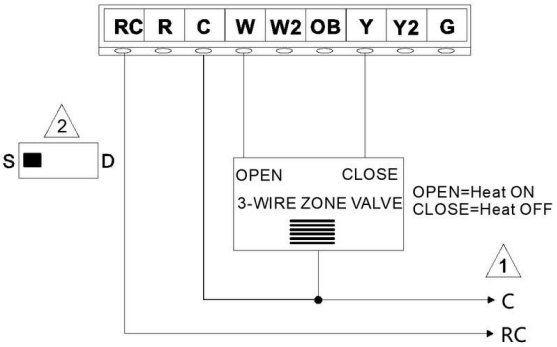



Fig. 13: One-stage heat only, 3-wire zone valve, no fan

## Heat pump systems

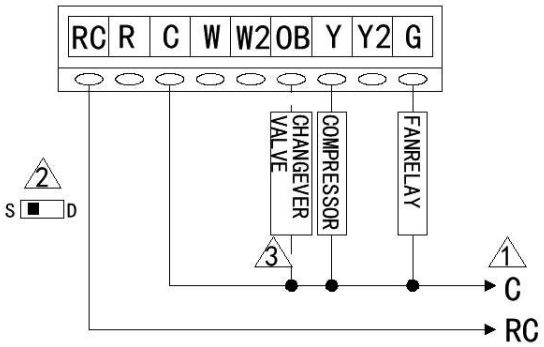



Fig. 7: Heat pump, one-stage cool or heat, no aux

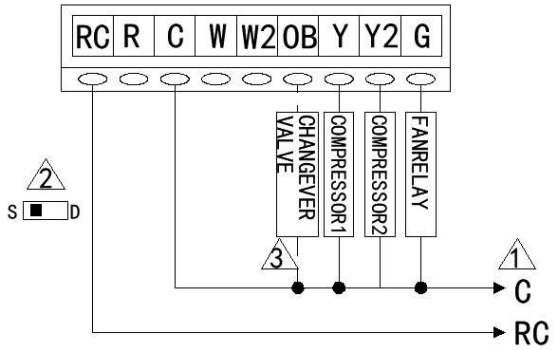



Fig. 8: Heat pump, two-stage cool or heat, no aux

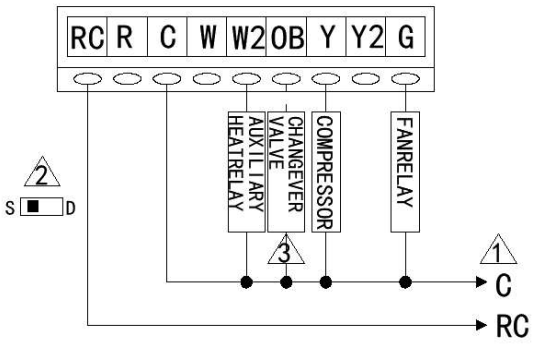



Fig. 9-2: Heat pump, one-stage heat with aux, single transformer

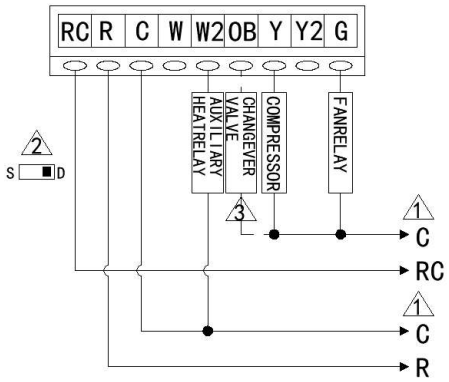



Fig. 9-3: Heat pump, one-stage heat with aux, double transformer

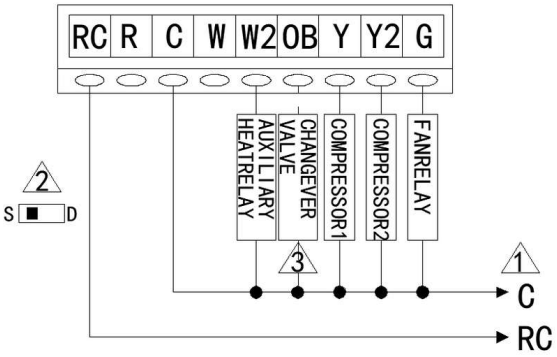



Fig. 10-2: Heat pump, two-stage heat with aux, single transformer

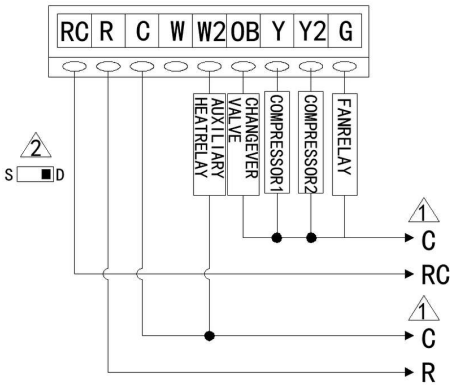



Fig. 10-3: Heat pump, two-stage heat with aux, double transformer

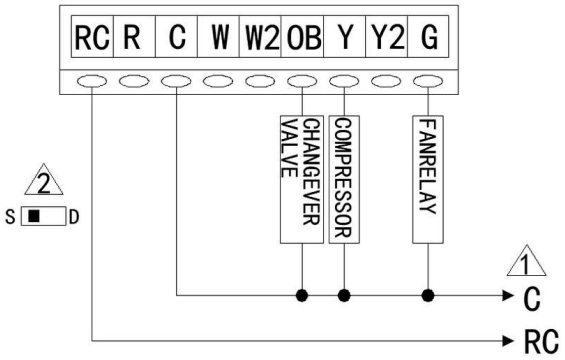



Fig. 11: Heat pump, one-stage heat and cool, no aux

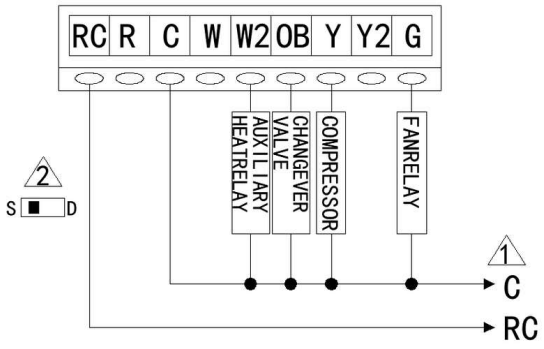



Fig. 11-2: Heat pump, one-stage heat and cool with aux, single transformer

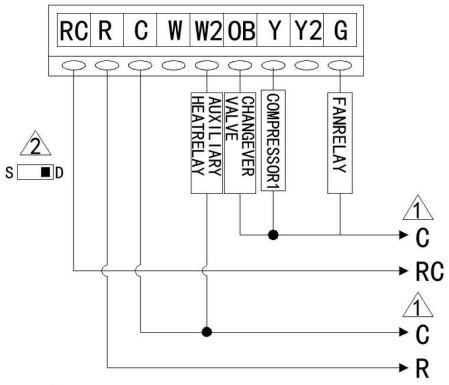



Fig. 11-3: Heat pump, one-stage heat and cool with aux, double transformer

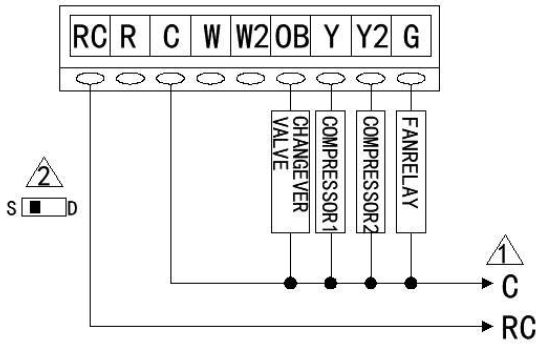



Fig. 12: Heat pump, two-stage heat and cool, no aux

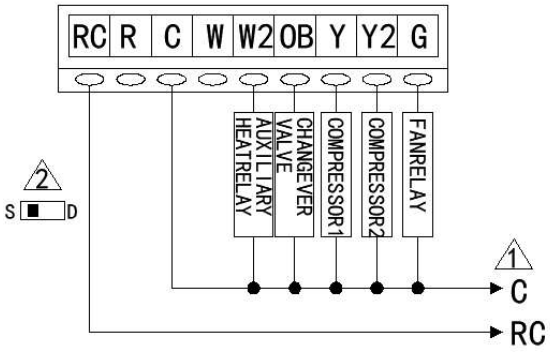



Fig. 12-2: Heat pump, two-stage heat and cool with aux, single transformer

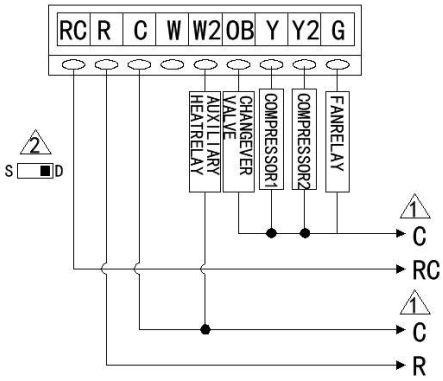



Fig. 12-3: Heat pump, two-stage heat and cool with aux, double transformer

## System test

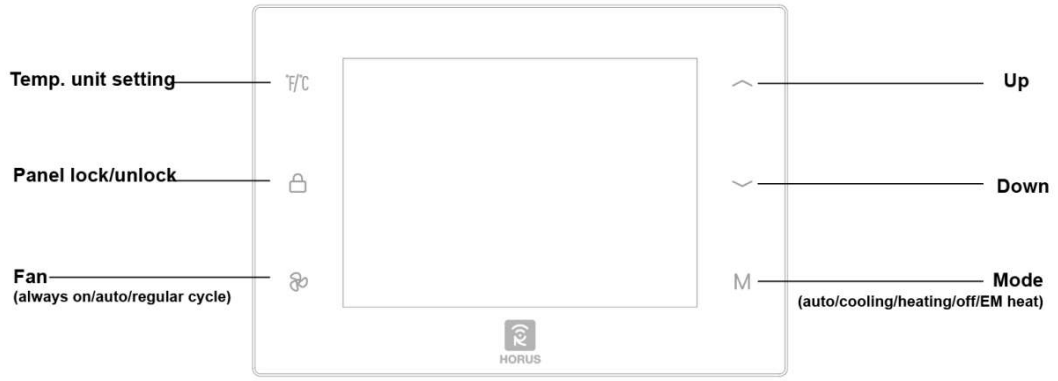
Use the test mode to check the heating, cooling, fan, and emergency heat outputs. The compressor protection delay stays active during the test.

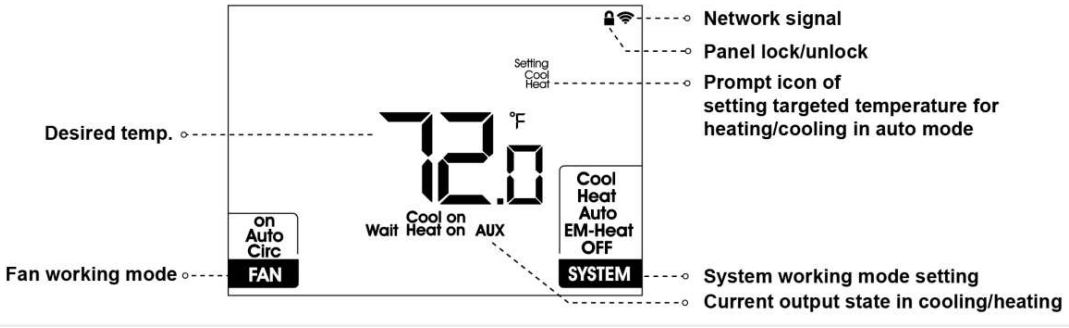
1. Set the thermostat to OFF.
2. Push and hold Lock and M together for 3 seconds. The installer menu opens.
3. Set parameter 0 to 5. Push Lock to confirm. The screen shows OFF and all outputs are off.
4. Push Down to step through the cooling tests. Push Up to step through the heating tests.
5. To exit, push Lock, M, °F/°C, or Fan. The test also ends after 30 minutes without input.

| Test | Display | Result |
|---|---|---|
| Cooling (Down) | cool on + 111 | Stage 1 cooling on, fan on, O/B on |
| Cooling (Down) | cool on + 222 | Stage 1 and stage 2 cooling on, fan on, O/B on |
| Cooling (Down) | FAN ON | Fan on only |
| Cooling (Down) | OFF | Outputs off, except O/B |
| Heating (Up) | heat on + 111 | Stage 1 heating on, fan on |
| Heating (Up) | heat on + 222 | Stage 1 and stage 2 heating on, fan on |
| Heating (Up) | AUX heat on + 333 | Stage 1, stage 2, and auxiliary heat on, fan on |

| Test | Display | Result |
|---|---|---|
| Heating (Up) | FAN ON | Fan on only |
| Heating (Up) | OFF | All outputs off |

## Display and buttons




| Button | Function |
|---|---|
| °F/°C | Push to change the temperature unit |
| Lock | Push and hold for 5 seconds to lock or unlock the panel. Confirms values in menus |
| Fan | Push to select the fan mode: On, Auto, or Circulate |
| Up / Down | Push to change the setpoint or a menu value |
| M | Push to select the system mode: Auto, Heat, Cool, Off, or Em Heat |

## Operation

### Set the temperature

Push Up or Down to change the setpoint. The default range is 68 to 77 °F (19 to 28 °C).

In Auto mode, push Up or Down. The "setting heat" or "setting cool" icon flashes. Push Lock, M, °F/°C, or Fan to change between the heat and cool setpoints. If you do not push a button for 2 seconds, the thermostat saves the setpoint.

### System mode

- **Auto:** the thermostat changes between heating and cooling to keep the room temperature in the set range.

- **Heat:** heating only.
- **Cool:** cooling only.
- **Off:** heating and cooling are off. The fan can stay on if parameter 9 is 2 and the fan mode is On.
- **Em Heat:** emergency heat for heat pump systems. This mode is off by default. Turn it on with parameter 33.

### Fan mode

- **On:** the fan runs all the time.
- **Auto:** the fan runs with heating or cooling. It stops when they stop, or after the delay in parameter 36.
- **Circulate:** when heating and cooling are off, the fan runs for part of each 30-minute cycle. The default run time is 11 minutes (parameter 35).

### Lock the panel

Push and hold Lock for 5 seconds. The lock icon shows and all buttons are disabled. Push and hold Lock for 5 seconds again to unlock.

## Installer menu

1. Set the thermostat to OFF.
2. Push and hold Lock and M together for 3 seconds.
3. Push Lock to go to the next parameter. Push Up or Down to change the value.
4. To save and exit, push Lock after the last parameter, or push and hold Lock for 3 seconds.

If you push °F/°C or Fan, or do not push a button for 20 seconds, the thermostat exits without saving.

| No. | Function | Default | Range | Description |
|---|---|---|---|---|
| 0 | Enter test mode | 0 | 0-99 | 5: Enter test mode. Other values: no action |
| 1 | Reset to factory default | 53 | 0-99 | 55: Reset all parameters. 50: Reset schedule settings only |
| 2 | Power-failure memory | 1 | 0-1 | 0: Off when power returns. 1: Restore the last mode |
| 4 | Beep | 1 | 0-1 | 0: Off. 1: On |
| 9 | Display and fan when off | 0 | 0-2 | 0-1: Show OFF only. 2: Show OFF and fan mode. Fan mode can be set |
| 10 | Backlight brightness | 0 | 0-5 | 0: Dim. 1-5: Brightness level |
| 11 | Screen-off time | 5 | 0-99 | 0-2: Backlight always at maximum. 3-99: Seconds without input before the screen turns off |
| 22 | Indoor temperature offset | 0 | -99 to 99 | Offset in °C or °F, step 0.1 |
| 23 | Indoor humidity offset | 0 | -20 to 20 | Offset in % RH |
| 24 | 1st stage hysteresis | 10 (1.0 °C) / 20 (2.0 °F) | 3-90 | Temperature difference that starts stage 1 heating or cooling. Step 0.1 degree (value n = n x 0.1) |
| 25 | 2nd stage hysteresis | 10 (1.0 °C) / 20 (2.0 °F) | 3-90 | Temperature difference that starts stage 2, added to stage 1. Step 0.1 degree (value n = n x 0.1) |
| 26 | 3rd stage hysteresis | 10 (1.0 °C) / 20 (2.0 °F) | 3-90 | Temperature difference that starts auxiliary heat, added to stages 1 and 2. Step 0.1 degree (value n = n x 0.1) |
| 30 | System type | 12 | 0-13 | See the system type table |
| 31 | Changeover valve logic | 0 | 0-1 | 0: O/B on in cooling, off in heating. 1: O/B on in heating, off in cooling |
| 32 | Compressor protection time | 1 | 0-10 | Minimum off time before the compressor starts again, in minutes |

| No. | Function | Default | Range | Description |
|---|---|---|---|---|
| 33 | Emergency heat mode | 0 | 0-1 | 0: Off. 1: On. Heat pump systems with heating only |
| 34 | Auxiliary heat | 0 | 0-1 | 0: Enabled. 1: Disabled. No effect when emergency heat is on |
| 35 | Fan circulation run time | 11 | 0-30 | Fan run time in minutes per 30-minute cycle |
| 36 | Fan shutdown delay | 0 | 0-127 | Auto fan mode only. 0: Fan stops with the compressor. 1-127: Delay in minutes |
| 59 | Firmware version | - | Read only | Firmware version, 1-255 |

## Add the thermostat to a Z-Wave network

1. Push and hold Up and Down together for 3 seconds. The Z-Wave screen shows.
2. If the screen shows "- - -", the thermostat is not in a network. Set the Z-Wave controller to inclusion (add) mode.
3. Push Down once. When inclusion is complete, the screen shows the node ID (for example, 005).

## Remove the thermostat from a Z-Wave network

1. Push and hold Up and Down together for 3 seconds.
2. Set the Z-Wave controller to exclusion (remove) mode.
3. Push Down once. When exclusion is complete, the screen shows "- - -".

## Z-Wave data

| | |
|---|---|
| **Command classes (S2)** | Version, Manufacturer Specific, Device Reset Locally, Multilevel Sensor, Thermostat Setpoint, Thermostat Mode, Thermostat Operating State, Thermostat Fan Mode, Thermostat Fan State, Time, Time Parameters, Configuration, Association, Multi Channel Association, Association Group Information, Firmware Update Meta Data |
| **Command classes (non-secure)** | Z-Wave Plus Info, Transport Service, Security 2, Supervision |

### Association group

| Group | Max nodes | Report | Trigger |
|---|---|---|---|
| 1 (Lifeline) | 1 | Multilevel Sensor Report (temperature, humidity) | Temperature or humidity changes by more than the value in parameter 2 or 3 |
| 1 (Lifeline) | 1 | Thermostat Mode Report | Thermostat mode changes |
| 1 (Lifeline) | 1 | Thermostat Operating State Report | Operating state changes |
| 1 (Lifeline) | 1 | Thermostat Setpoint Report | Setpoint changes |
| 1 (Lifeline) | 1 | Device Reset Locally Notification | Factory reset |

### Z-Wave configuration parameters

| No. | Function | Size | Default | Range | Description |
|---|---|---|---|---|---|
| 1 | Temperature unit | 1 | 1 | 0-1 | 0: Celsius. 1: Fahrenheit |
| 2 | Temperature report threshold | 2 | 5 (°C) / 10 (°F) | 0, 3-255 | 0: Disabled. 3-255: Report when temperature changes by n x 0.1 degree |

| No. | Function | Size | Default | Range | Description |
|---|---|---|---|---|---|
| 3 | Humidity report threshold | 1 | 4 | 0-99 | 0: Disabled. 1-99: Report when humidity changes by n % |
| 4 | Power-failure memory | 1 | 1 | 0-1 | 0: Off when power returns. 1: Restore the last mode |
| 6 | Beep | 1 | 1 | 0-1 | 0: Off. 1: On |
| 7 | Panel lock | 1 | 0 | 0-1 | 0: Disabled. 1: All buttons locked |
| 11 | Display and fan when off | 1 | 0 | 0-2 | Same as installer parameter 9 |
| 12 | Backlight brightness | 1 | 0 | 0-5 | Same as installer parameter 10 |
| 13 | Screen-off time | 1 | 5 | 0-99 | Same as installer parameter 11 |
| 22 | Temperature offset | 1 | 0 | -99 to 99 | Same as installer parameter 22 |
| 23 | Humidity offset | 1 | 0 | -20 to 20 | Same as installer parameter 23 |
| 24 | 1st stage hysteresis | 1 | 10 (°C) / 20 (°F) | 3-90 | Same as installer parameter 24 |
| 25 | 2nd stage hysteresis | 1 | 10 (°C) / 20 (°F) | 3-90 | Same as installer parameter 25 |
| 26 | 3rd stage hysteresis | 1 | 10 (°C) / 20 (°F) | 3-90 | Same as installer parameter 26 |
| 30 | System type | 1 | 12 | 0-13 | See the system type table |
| 31 | Changeover valve logic | 1 | 0 | 0-1 | Same as installer parameter 31 |
| 32 | Compressor protection time | 1 | 1 | 0-10 | Minutes |
| 33 | Emergency heat mode | 1 | 0 | 0-1 | 0: Off. 1: On |
| 34 | Auxiliary heat | 1 | 1 | 0-1 | 0: Enabled. 1: Disabled |
| 35 | Fan circulation run time | 1 | 11 | 0-30 | Minutes per 30-minute cycle |
| 36 | Fan shutdown delay | 1 | 0 | 0-127 | Minutes. Auto fan mode only |
| 255 | Factory reset | 1 | 0 | 0-1 | 1: Restore factory settings |

## Restore factory settings

Use installer parameter 1 (value 55), or set Z-Wave parameter 255 to 1. The thermostat sends a Device Reset Locally notification to the controller.

## Regulatory information

**FCC ID: [TBC: confirm FCC ID printed on the product label]**

### FCC Part 15.19 statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### FCC Part 15.21 statement

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

### FCC Part 15.105(b) statement

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 or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into 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.

## Limited warranty

Horus Automation warrants this product to be free from defects in material and workmanship under normal and proper use for one (1) year from the date of original purchase. During this period, Horus Automation will repair or replace, at its option, any part that is defective because of materials or workmanship.

This limited warranty does not cover damage that results from improper installation, accident, abuse, misuse, natural disaster, insufficient or excessive electrical supply, abnormal mechanical or environmental conditions, or unauthorized disassembly, repair, or modification.

This limited warranty does not apply if: (i) the product was not used in accordance with these instructions, (ii) the product was not used for its intended function, (iii) the identification label was altered, obliterated, or removed, or (iv) the product was sold second-hand.

## Support

For installation and technical support, contact your authorized Horus distributor or dealer.

Web: www.horusautomation.com | Email: sales@horusautomation.com

Specifications can change without notice.