

Honeywell

System Installation Guide

EConnect™ Wireless Thermostat Kit TL9160AR

With Equipment Interface Module

Français : voir la page 27 •

Español : vea la página 53

Installation guide for

- · Wireless equipment interface module
- EConnect™ wireless thermostat
- Wireless remote control
- · Wireless outdoor air sensor

IMPORTANT INSTRUCTIONS



ELECTRICAL HAZARD

Can cause electrical shock or equipment damage. **Disconnect power before beginning installation**.



Must be installed by a certified electrician. Read these instructions carefully. Failure to follow these instructions can damage the product or cause a hazardous condition.

Need Help?

For assistance with this product please visit http://customer.honeywell.com, or call Honeywell Customer Care toll-free at 1-800-468-1502.



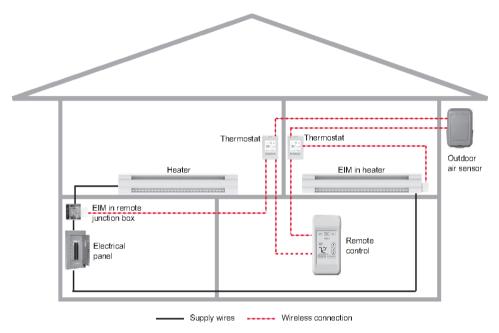




69-2474EFS-01

System installation at a glance

The equipment interface module (EIM) allows you to control a baseboard heater, a convector or a fan-forced heater in a 120-volt, 208-volt or 240-volt application from a EConnect™ wireless thermostat.



Installation procedure

| 1 | Install the equipment interface module (EIM) | Pages 3 - 6 |
|----|--|---------------|
| 2 | Install batteries in wireless devices | Page 7 |
| 3 | Link all devices to wireless network | Pages 7 - 10 |
| 4 | Exit wireless setup | Page 11 |
| 5 | Customize thermostat (installer setup) | Pages 11 - 19 |
| 6 | Mount thermostat and outdoor sensor | Pages 20 - 21 |
| Fo | or error codes, see page 21. | |

To verify the signal strength, see page 22.

To replace a wireless device, see pages 22-23.

For specifications and replacement parts, see page 24.

SAVE THESE INSTRUCTIONS

69-2474EFS-01

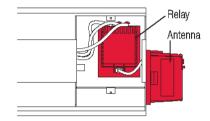
1 Install the Equipment Interface Module (EIM)

Determine the location

The equipment interface module (EIM) consists of a relay and an antenna. They can be installed either in the wiring compartment of the baseboard heater or in a 4-11/16" square junction box.

Install EIMs at a minimum distance of 2 feet (0.6 m) of each other. This minimum distance still applies even if the EIMs are on opposite sides of a wall.

Installing the EIM in a baseboard heater
 You can install the EIM in the wiring
 compartment of the baseboard heater if you
 have any of the heaters listed in the following
 table:

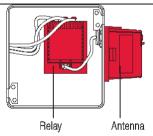


| Manufacturer / brand | Series |
|----------------------|---------------------------|
| Cadet | F |
| Global Commander | ССВ |
| King Electrical | K, CB, KP, M |
| Marley | 2500, BKOC, QMKC |
| Ouellet | ODBA, ODI, ODIA, OFM, OPR |
| Stelpro | CBB, N, SCA, SCAS |
| TPI | 2900C, 2900S, 3700, 3900 |



The product has been tested for compatibility with the heaters listed above. If your heater is not on the list, install the EIM on a 4-11/16" square junction box or replace your heater with one listed.

- Installing the EIM in a 4-11/16" square junction box You can use a 4-11/16" square junction box in either of the following conditions:
 - · You have a convector or fan-forced heater.
 - You cannot install or do not wish to install the EIM in the wiring compartment of the baseboard heater.
- The junction box can be installed anywhere in the house; for example, near the main electrical panel.



Installation in a baseboard heater

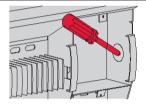


ELECTRICAL HAZARD

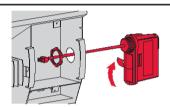
Can cause electrical shock or equipment damage. **Disconnect AC power before beginning installation.** Wiring must comply with local electrical codes. Use special CO/ALR solderless connectors if supply wires are made of aluminum.



Disconnect the heater wires from the supply wires. If the heater has a built-in thermostat, remove it.



1 Remove the knockout on the side of the heater.

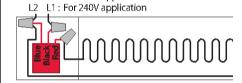


2 Remove the locknut from the antenna and peel off the adhesive backing. Feed the antenna cable through the knockout and install the antenna vertically as shown. Put the locknut and tighten.

N L : For 120V application



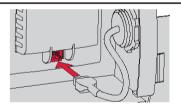
Clean the back panel inside the wiring compartment where the relay will be installed. Peel the adhesive backing off the relay and stick the relay on the back panel.



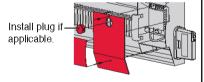
4 Connect the heater wires and the supply wires to the relay.



See page 6 if you are connecting more than one heater.



5 Insert the antenna plug into the relay receptacle until you hear a click.



6 Put the heater cover back. (If a built-in thermostat was removed, install one of the supplied plugs to cover the hole on the existing cover.) Apply power to the heater. Do not install the antenna cover yet.



ELECTRICAL HAZARD

Can cause electrical shock. Install heater cover plate before applying power.

Installation in a 4-11/16" square junction box

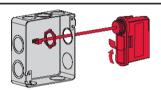


ELECTRICAL HAZARD

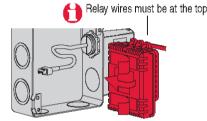
Can cause electrical shock or equipment damage. **Disconnect AC power before beginning installation.** Wiring must comply with local electrical codes. Use special CO/ALR solderless connectors if supply wires are made of aluminum.



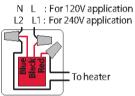
1 Mount the junction box on the wall. Punch out knockout(s), install strain relief bushing(s) and feed the supply wires and the heater wires. Punch out another knockout to install the antenna (step 2).



2 Remove the locknut from the antenna and peel off the adhesive backing. Feed the antenna cable through the knockout opening and mount the antenna. Put the locknut and tighten.



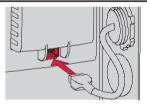
3 Clean the interior side of the junction box where the relay will be installed. Peel off the adhesive backing of the relay module and stick the relay inside the junction box.



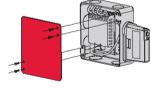
4 Connect the supply wires and heater wires to the relay.



See page 6 if you are connecting more than one heater.



5 Insert the antenna plug in the relay receptacle until you hear a click.



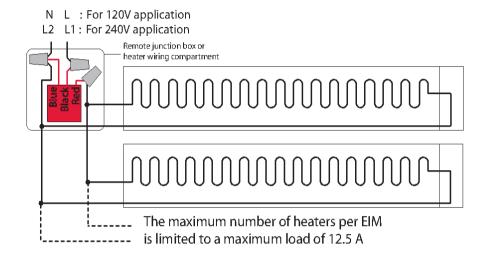
6 Install a cover plate on the junction box and apply power to the heater. Do not put the antenna cover back yet.



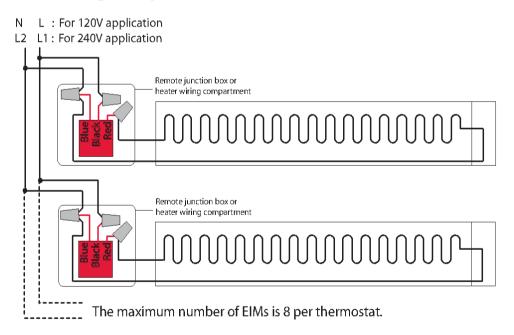
ELECTRICAL HAZARD

Can cause electrical shock. Install junction box cover plate before applying power.

Connecting multiple heaters to the same EIM

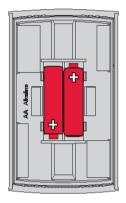


Connecting multiple EIMs on the same circuit



2 Install batteries in wireless devices

Thermostat



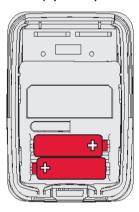
Install 2 AA alkaline batteries

Remote control (optional)



Install 3 AA alkaline batteries

Outdoor air sensor (optional)



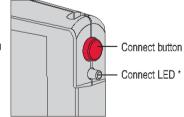
Install 2 AA lithium batteries

3 Link all devices to wireless network

Start wireless setup

Press the EIM Connect button on the antenna to place it in wireless setup. When the amber light changes to a green flashing light, you can begin to link devices to the wireless network (see pages 8-11).

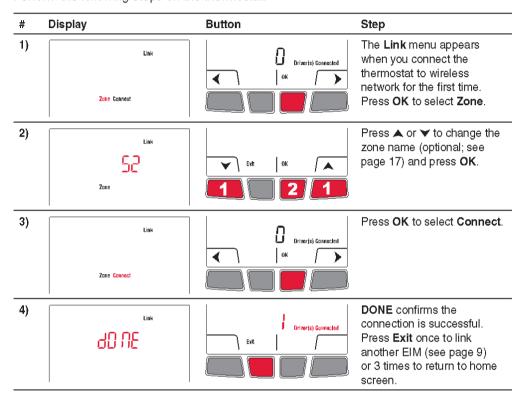
- If the amber light changes to a red light instead, there is another EIM currently in wireless setup. Press the Connect button on the other EIM to exit its wireless setup.
- If the green flashing light disappears (after a delay of 15 minutes) before you have time to link all your devices, press the connect button again.



^{*} Flashing green: Ready for connection Steady green: Connection established Steady red: Connection failure

Link thermostat and EIM to wireless network

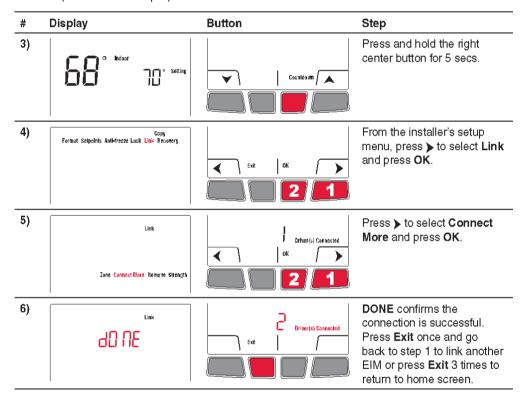
Perform the following steps on the thermostat:



If an error code (E followed by a number) appears on the screen, see its explanation on page 21.

Link additional EIM to wireless network (optional)

- Perform steps 1 to 6 for each additional EIM. You can link a maximum of 8 EIMs to the wireless network:
- 1 If the green light on the previously-linked EIM is flashing, press its Connect button. The green light will become steady.
- 2 Press the Connect button on the next EIM you wish to link and wait for its green flashing light.
 - Skip steps 3 and 4 if the thermostat is displaying the **Link** menu (as shown in step 5).

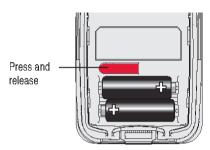


Link outdoor sensor to wireless network (optional)

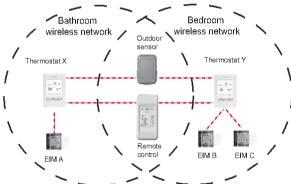
1 Make sure the Connect light on the EIM is flashing (see page 7).



If you have more than one wireless thermostat, make sure to activate the wireless setup from an EIM linked to the thermostat. For example, to display the outdoor temperature on thermostat Y, you must activate the wireless setup from either EIM B or C, not A.

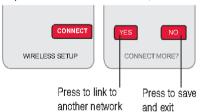


- 2 Press the **CONNECT** button on the back of the sensor.
- 3 After 15 seconds, check if the thermostat is displaying a value for the outdoor temperature reading.
- If you have more than one wireless thermostat, repeat steps 1 and 3 for each thermostat.



Link remote control to wireless network (optional)

- 1 Make sure the Connect light on the EIM is flashing (see page 7).
- If you have more than one wireless thermostat, make sure to activate the wireless setup from an EIM linked to the thermostat. For example, to link the remote control to thermostat Y, you must activate the wireless setup from either EIM B or C, not A.
- 2 Press CONNECT at the remote control.
- 3 When the remote control displays **Connected** (after a short delay), press **DONE**.
- 4 Press NO at the next screen to save and exit. (Or press YES and repeat steps 1-4 to link to another network).



4 Exit wireless setup

- 1 Press the EIM Connect button. Its green flashing light will change to a steady green light.
- If you do not press the connect button, the EIM will automatically exit wireless setup after 15 minutes of inactivity.
- 2 Put the cover back on the antenna module.

5 Customize the thermostat

Accessing the installer setup menu

 To access the installer setup menu from the home screen, press and hold the right center button for 5 secs.

Navigating the menus

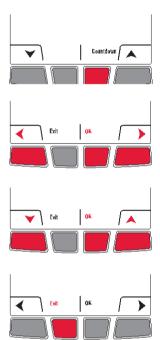
- Press OK to select the flashing menu or setup function.

Modifying the settings

- Press ▲ or ▼ to to modify the displayed setting.
- Press **OK** to save the displayed setting. The setting will flash to confirm that it has been saved.

Exiting the menus

- Press Exit once to return to the previous menu or as many times as necessary to return to the home screen.
- If you press **Exit** after you have changed a setting, the new setting will not be saved. Make sure you press **OK** to save the new setting before you press **Exit**.



Installer setup table

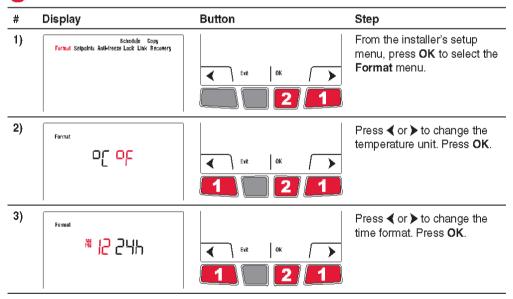
| Setup function | Options | Default setting | To modify, see |
|-------------------------------|----------------------------|-----------------|----------------|
| Temperature unit | °C / °F | °F | Page 12 |
| Time format | 12h / 24h | 12h | Page 12 |
| Minimum setpoint | 41°F to 86°F (5°C to 30°C) | 41°F (5°C) | Page 13 |
| Maximum setpoint | 41°F to 86°F (5°C to 30°C) | 86°F (30°C) | Page 13 |
| Anti-freeze | On / Off | On | Page 14 |
| Keypad lock | None / Partial / All | None | Page 15 |
| Zone name | 1,, 57 | 52 | Pages 16 - 17 |
| Adaptive Intelligent Recovery | On / Off | On | Page 18 |
| Programmable mode | On / Off | On | Page 18 |

To set the date & time, the schedule and the automatic daylight savings, refer to User's Guide.

Temperature unit / Time format

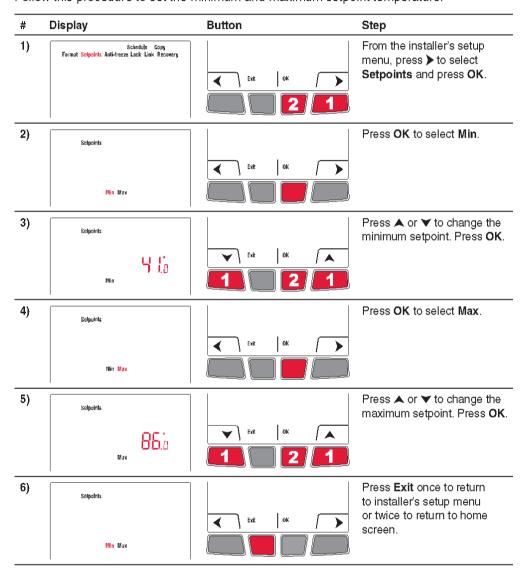
Follow this procedure to select the temperature unit (°C or °F) and time format (12h or 24h).

The time format selection is available only if the thermostat is in programmable mode.



Minimum and maximum setpoints

Follow this procedure to set the minimum and maximum setpoint temperature.



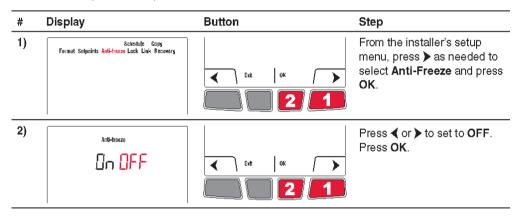
Anti-freeze

When this function is on, the EIM will maintain the room temperature at 55°F (13°C) if it loses communication with the thermostat or if the thermostat sensor is defective.



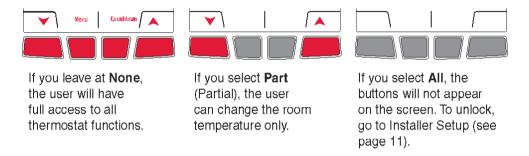
Leave the protection on unless the EIM is installed in a junction box in a separate room from the heater.

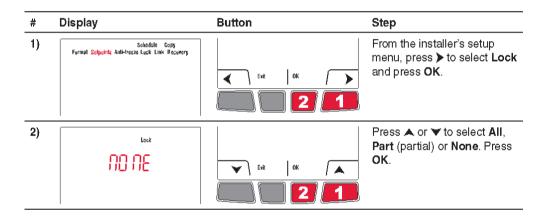
To turn off the protection, proceed as follows:



Keypad lock

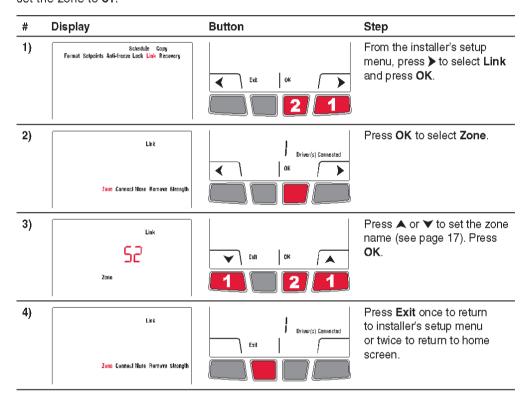
By default, the keypad lock is disabled.





Zone name

The zone name is used to identify the thermostat on the wireless remote control. By default, the zone name is **Thermostat** (zone name 52). If you have a wireless remote control and more than one wireless thermostat, change the zone name of the thermostat to identify it from the other thermostats. For example, if the thermostat is in the living room, set the zone to **31**.



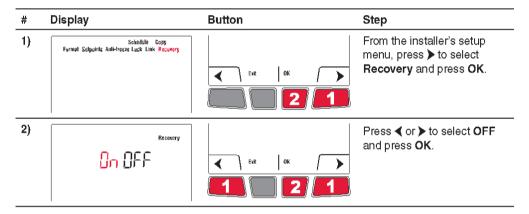
Zone name list

| Zone | Name | Zone | Name | Zone | Name | Zone | Name |
|------|---------------|------|---------------|------|-------------|------|----------------|
| 1 | Basement | 16 | Exercise Room | 30 | Library | 44 | Porch |
| 2 | Bathroom | 17 | Family Room | 31 | Living Room | 45 | Rec Room |
| 3 | Bathroom 1 | 18 | Fireplace | 32 | Lower Level | 46 | Sewing Room |
| 4 | Bathroom 2 | 19 | Foyer | 33 | Master Bath | 47 | Spa |
| 5 | Bathroom 3 | 20 | Game Room | 34 | Master Bed | 48 | Storage Room |
| 6 | Bedroom | 21 | Garage | 35 | Media Room | 49 | Studio |
| 7 | Bedroom 1 | 22 | Great Room | 36 | Music Room | 50 | Sun Room |
| 8 | Bedroom 2 | 23 | Guest Room | 37 | Nursery | 51 | Theater |
| 9 | Bedroom 3 | 24 | Gym | 38 | Office | 52 | Thermostat |
| 10 | Bedroom 4 | 25 | Kiďs Room | 39 | Office 1 | 53 | Upper Level |
| 11 | Boat House | 26 | Kitchen | 40 | Office 2 | 54 | Utility Room |
| 12 | Bonus Room | 27 | Kitchen 1 | 41 | Pantry | 55 | Walk In Closet |
| 13 | Computer Room | 28 | Kitchen 2 | 42 | Play Room | 56 | Wine Cellar |
| 14 | Den | 29 | Laundry Room | 43 | Pool Room | 57 | Workshop |
| 15 | Dining Room | | | | | | |

Adaptive Intelligent Recovery

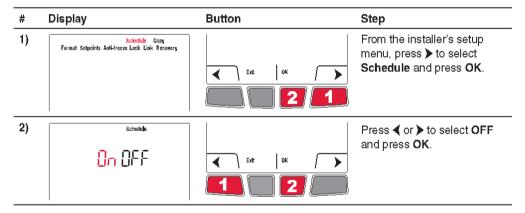
Available only if you use the thermostat in programmable mode.

When Adaptive Intelligent Recovery is on, the thermostat "learns" how long your heater takes to reach the set temperature. The thermostat will then determine when to activate heating so the desired temperature is attained at the desired time. The thermostat reassesses the heating start time daily based on the previous day's performance. When Adaptive Intelligent Recovery is off, heating starts at the set time.



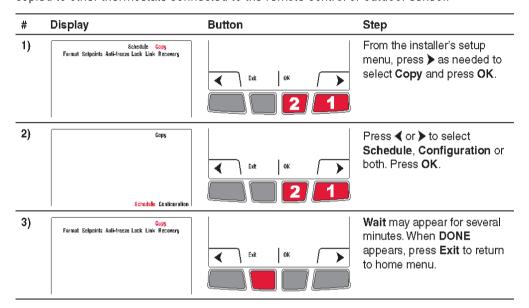
Programmable mode

The thermostat is factory-set as a 7-day programmable thermostat. To set it as a non-programmable thermostat, proceed as follows:



Copy

Use this function to copy the configuration settings, the schedule settings or both to other EConnect™ wireless thermostats in your house. This function is available only if the thermostat is connected either to a remote control or outdoor sensor. The settings are copied to other thermostats connected to the remote control or outdoor sensor.



System test

- 1 From the Home screen, press ▲ until the setpoint temperature is above the room ambient temperature by at least 2°. Press **Temporary**.
- 2 Wait for Heat On to display on the thermostat.
- 3 Verify if the heater becomes hot.
- 4 Press Cancel to return the thermostat to its previous mode.

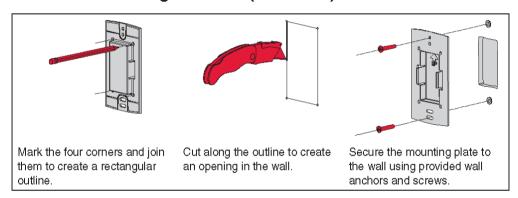
6 Mount thermostat and outdoor sensor

Follow the guidelines below when mounting the thermostat:

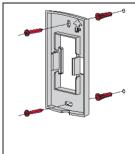
- Do NOT install the thermostat in an area where it can be exposed to water or rain.
- Avoid locations where there are air drafts (top of staircase, air outlet), dead air spots (behind a door), direct sunlight or concealed chimney or stove pipes.
- For a new installation, choose a location about 1.5 m (5 ft.) above the floor.
- · Install the thermostat on an inside wall facing the heater.
- Keep the thermostat's top and bottom air vents (openings) clean and unobstructed at all times.

Two mounting plates are provided for mounting the thermostat on the wall or on a junction box. Use **Method A** for a slimmer thermostat look. Choose **Method B** if you prefer not to make an opening in the wall. **Method C** must be used for installation on a junction box.

Recessed mounting on a wall (Method A)

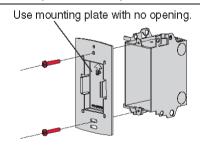


Mounting on a wall (Method B)



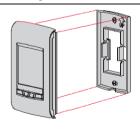
Secure the mounting plate to the wall using provided wall anchors and screws.

Mounting on a junction box (Method C)



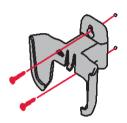
Secure the mounting plate to a junction box using provided mechanical screws.

Installing faceplate

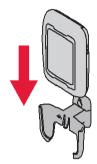


Complete the thermostat installation by pressing the faceplate against the mounting plate.

Mounting the outdoor sensor (optional)



Mount the sensor vertically on an exterior wall, at least 6 inches below any overhang. Choose a location protected from direct sunlight.



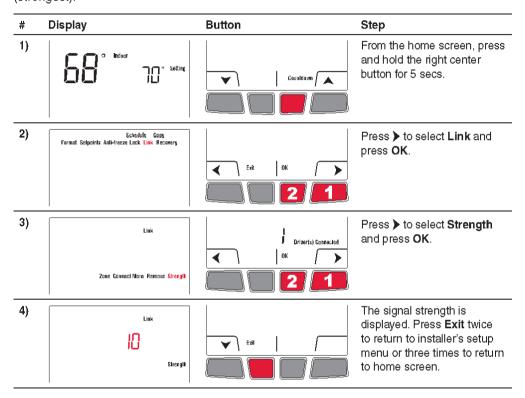
Place sensor securely in bracket, facing away from wall.

Error codes

| Display | Description |
|---------|--|
| LO | The indoor temperature is below 32°F (0°C). |
| HI | The indoor temperature is above 140°F (60°C). |
| | The temperature reading is currently unavailable or the sensor is defective. |
| E128 | The wireless network setup must be redone. |
| E129 | Attempting to connect incompatible wireless devices. |
| E130 | Invalid address. Call customer assistance. |
| E134 | Low signal strength. Move wireless device to a different location and try again. |
| E137 | Maximum number of devices is exceeded. |
| E138 | Make sure Connected light on EIM is flashing and you are 2+ feet away from EIM. |
| E152 | Incorrect order. Make sure to link EIM to proper thermostat. |

Verifying the signal strength between the EIM and the thermostat

If you have more than one EIM linked to the thermostat, the displayed value is between the thermostat and the first-linked EIM. The signal strength ranges from 0 (no signal) to 10 (strongest).



Replacing wireless devices

Thermostat

To replace the thermostat, install batteries in the new thermostat (see page 7) and link it to the wireless network (see page 8). To customize the thermostat, see pages 11-18.

If more than one EIM were linked to the old thermostat, you can link the new thermostat from any one of these EIMs.

Remote control or outdoor sensor

To replace the remote control or the outdoor sensor, install batteries in the new device (see page 7) and link it to the wireless network (see page 10).



If more than one EIM are linked to the same thermostat, you can link the remote control or the outdoor sensor from any one of these EIMs.

If you have more than one wireless thermostat, link the remote control or the outdoor sensor from one EIM of each of the wireless thermostats.

Equipment interface module (EIM)

If you have a remote control:

- 1 Press and hold, for about 3 seconds, the blank space (or arrow if present) in the lower right corner of the screen until the display changes.
- 2 Press REMOVE, then YES.

If you have only one EIM linked to the thermostat:

Remove the defective EIM, install a new one (see pages 3 - 6) and proceed as follows:

- 1 Check if the thermostat displays 0 Driver(s) connected as shown on the right. If so, go straight to step 5.
- 2 From the home screen, press and hold the right center button for 5 secs.
- 3 Press ➤ to select Link and press OK.
- 4 Press > to select Remove and press OK. The thermostat will display 0 Driver(s) connected.
- 5 Follow the procedures on pages 7-11 to set up a new network with the new EIM.

If you have more than one EIM linked to the thermostat:

Follow the procedure below to identify the defective EIM(s) and to re-establish all links:

- 1 Remove the antenna cover from each EIM in the network by squeezing the cover (as shown by red arrows) and pulling it out.
- 2 Press, for 10 seconds, the CONNECT button on every EIM that has a green light. Repeat this step until none of the EIM shows a green light.
- 3 Check if the thermostat displays 0 Driver(s) connected as shown on the right. If so, go straight to step 7.
- 4 From the home screen, press and hold the right center button for 5 secs.
- 5 Press > to select Link and press OK.
- 6 Press > to select Remove and press OK. The thermostat will display 0 Driver(s) connected.
- 7 Follow the procedures on pages 7-11 to create a new network. You will know that an EIM is defective if its light turns red or the thermostat displays an error code when you try to link the EIM to the network. Replace it before continuing to link other EIMs.







Specifications & replacement parts

Thermostat

Temperature setpoint range: 41°F - 86°F (5°C - 30°C)

Temperature setpoint resolution: 1°F (0.5°C)

Temperature display range: 32°F - 104°F (0°C - 40°C)

Temperature display resolution: 1°F (0.5°C) Heating cycle rate: 15 minutes

Programming: 5-2 days, 7 days, 1 day or Non-Programmable

Operating Ambient Temperature

Operating Relative Humidity

Thermostat: 5% - 90% (non-condensing)
Remote control: 5% - 90% (non-condensing)
EIM (relay): 5% - 95% (non-condensing)
EIM (antenna): 5% - 95% (non-condensing)
Outdoor air sensor: 0% - 100% (condensing)

Physical Dimensions (height, width, depth)

Thermostat: 5.13 x 3.22 x 1.14 inches (130 x 82 x 29 mm)
EIM (relay): 3.03 x 2.49 x 1.28 inches (73 x 63 x 29 mm)
EIM (antenna): 2.89 x 2.63 x 1.16 inches (71 x 62 x 33 mm)
Outdoor air sensor: 5.00 x 3.50 x 1.68 inches (127 x 89 x 43 mm)

Electrical Ratings (EIM)

Supply: 100-240 VAC, 50/60 Hz
Minimum load: 0.4 A (resistive only)
Maximum load: 12.5 A (resistive only)

Accessories & Replacement Parts

Antenna cover (almond)

 Item Part
 Number

 Equipment Interface Module (EIM)
 TLM1110R1000

 Remote control
 REM5000R1001

 Outdoor air sensor
 C7089R1013

 Antenna cover (white)
 50055751-001

50055751-003

Regulatory information

FCC Compliance Statement (Part 15.19) (USA only)

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
- This device must accept any interference received, including interference that may cause undesired operation.

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 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.

Equipment interface module, thermostats and outdoor sensor

To comply with FCC and Industry Canada RF exposure limits for general population/ uncontrolled exposure, the antenna(s) used for these transmitters must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

Remote Control

This portable transmitter with its antenna complies with FCC and Industry Canada RF exposure limits for general population/uncontrolled exposure. This device must not be co-located or operating in conjunction with any other antenna or transmitter.

Section 7.1.3 of RSS-GEN

Operation is subject to the following two conditions:

- 1) this device may not cause interference, and
- this device must accept any interference, including interference that may cause undesired operation of the device.

Section 7.1.2 of RSS-GEN

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.