

T6 Pro

Programmable Thermostat

Installation Instructions

Package Includes:

- T6 Pro Thermostat
- UWP™ Mounting System
- Honeywell Standard Installation Adapter (J-box adapter)
- Honeywell Decorative Cover Plate – Small; size 4-49/64 in x 4-49/64 in x 11/32 in (121 mm x 121 mm x 9 mm)
- Screws and anchors
- 2 AA Batteries
- Installation Instructions and User Guide

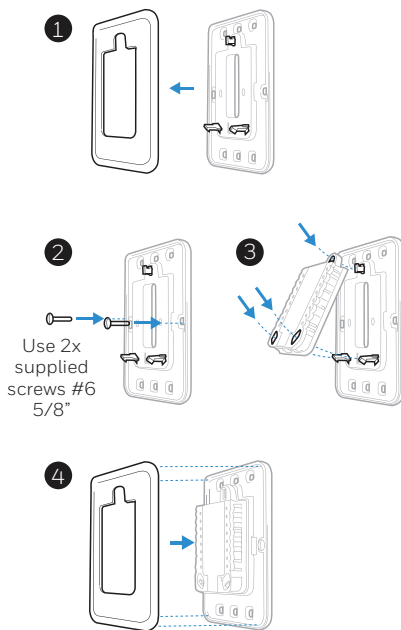


Optional Cover Plate installation

NOTE: If Optional Cover Plate is not required, see “UWP Mounting System installation” on next page.

Use the **Optional Cover Plate** when:

- Mounting the thermostat to an electrical junction box
 - Or when you need to cover paint gap from old thermostat.
1. Separate the Junction Box Adapter from the Cover Plate. See Figure 1.
 2. Mount the Junction Box Adapter to the wall or an electrical box using any of the eight screw holes. Insert and tighten mounting screws supplied with Cover Plate Kit. Do not overtighten. See Figure 2. Make sure the Adapter Plate is level.
 3. Attach the UWP by hanging it on the top hook of the Junction Box Adapter and then snapping the bottom of the UWP in place. See Figure 3.
 4. Snap the Cover Plate onto the Junction Box Adapter. See Figure 4.



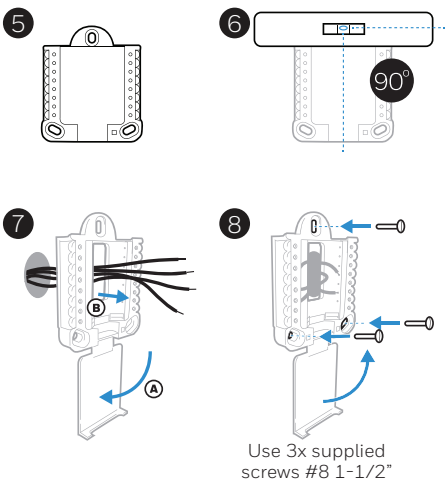
UWP Mounting System installation

- 5. Before starting, turn the power off at the breaker box or switch. Open package to find the UWP. See Figure 5.
- 6. Position the UWP on wall. Level and mark hole positions. See Figure 6.

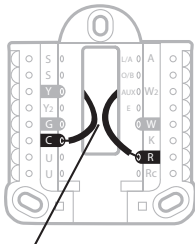
Drill holes at marked positions, and then lightly tap supplied wall anchors into the wall using a hammer.

- Drill 7/32" holes for drywall.

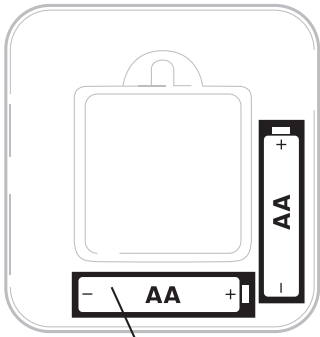
- 7. Pull the door open and insert the wires through wiring hole of the UWP. See Figure 7.
- 8. Place the UWP over the wall anchors. Insert and tighten mounting screws supplied with the UWP. Do not overtighten. Tighten until the UWP no longer moves. Close the door. See Figure 8.



Power options



Insert **R** and **C** wires into designated terminals for primary AC power (C terminal is optional if batteries are installed, but it is recommended). Remove wires by depressing the terminal tabs.



Insert AA batteries for primary or backup power.

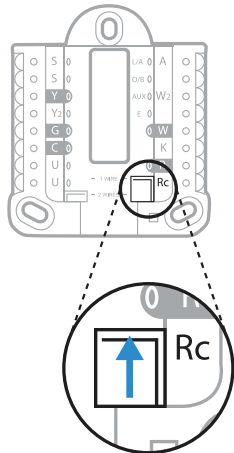
Setting Slider Tabs

Set R Slider Tab.

- Use built-in jumper (**R Slider Tab**) to differentiate between one or two transformer systems.
- If there is only one R wire, and it is connected to the **R**, **Rc**, or **RH** terminal, set the slider to the up position (**1 wire**).
- If there is one wire connected to the **R** terminal and one wire connected to the **Rc** terminal, set the slider to the down position (**2 wires**).

NOTE: Slider Tabs for U terminals should be left in place for T6 Pro models.

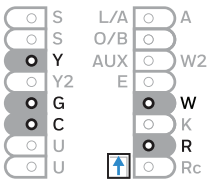
UWP Mounting System



R/Rc slider tab

Wiring terminal designations

S	Input for wired indoor or outdoor sensors (TH6320U and TH6220U only)	L/A - A	Heat Pump fault input (Common (C) wire required for LA/A)
S		O/B	Changeover valve
Y	Compressor contactor (stage 1)	AUX - W2	Auxiliary heat relay Heat relay (stage 2)
Y2	Compressor contactor (stage 2)	E	Emergency Heat relay
G	Fan Relay	W	Heat relay (stage 1)
C	24VAC common. For 2 transformer systems, use common wire from cooling transformer.	K	Connect to K on Wire Saver Module**
U	Unused	R	24VAC power from heating transformer*
U		Rc	24VAC power from cooling transformer*



Note: Not all terminals may be used, depending on the system type that is being wired. The most commonly used terminals are shaded.

* Terminal can be jumped using Slider Tab. See “Setting Slider Tabs” above.

** The THP9045A1023 Wire Saver Module is used on heat/cool systems when you only have four wires at the thermostat, and you need a fifth wire for a common wire. Use the K terminal in place of the Y and G terminals on conventional or heat pump systems to provide control of the fan and the compressor through a single wire—the unused wire then becomes your common wire. See THP9045 instructions for more information.

Wiring conventional systems: forced air and hydronics

Shaded areas below apply only to **TH6320U/TH6220U** or as otherwise noted.

1H/1C System (1 transformer)

R	Power [1]
Rc	[R+Rc joined by Slider Tab] [2]
Y	Compressor contactor
C	24VAC common [3]
W	Heat relay
G	Fan relay

Heat-only System

R	Power [1]
Rc	[R+Rc joined by Slider Tab] [2]
C	24VAC common [3]
W	Heat relay

Heat-only System (Series 20) [5]

R	Series 20 valve terminal "R" [1]
Rc	[R+Rc joined by Slider Tab] [2]
Y	Series 20 valve terminal "W"
C	24VAC common [3]
W	Series 20 valve terminal "B"

Heat-only System

(power open zone valve) [5]

R	Power [1]
Rc	[R+Rc joined by Slider Tab] [2]
W	Valve
C	24VAC common [3]

1H/1C System (2 transformers)

R	Power (heating transformer) [1]
Rc	Power (cooling transformer) [1]
Y	Compressor contactor
C	24VAC common [3, 4]
W	Heat relay
G	Fan relay

Heat-only System with Fan

R	Power [1]
Rc	[R+Rc joined by Slider Tab] [2]
C	24VAC common [3]
W	Heat relay
G	Fan relay

Cool-only System

R	Power [1]
Rc	[R+Rc joined by Slider Tab] [2]
Y	Compressor contactor
C	24VAC common [3]
G	Fan relay

2H/2C System (1 transformer) [6]

R	Power [1]
Rc	[R+Rc joined by Slider Tab] [2]
Y	Compressor contactor (stage 1)
C	24VAC common [3]
W	Heat relay (stage 1)
G	Fan relay
W2	Heat relay (stage 2)
Y2	Compressor contactor (stage 2)

NOTES

Wire specifications: Use 18- to 22-gauge thermostat wire. Shielded cable is not required.

- | | |
|--|---|
| [1] Power supply. Provide disconnect means and over-load protection as required. | [4] Common connection must come from cooling transformer. |
| [2] Move R-Slider Tab on UWP to the R setting. For more information, see "Setting Slider Tabs" on page 3 | [5] In ISU set Heat system type to Radiant Heat. Set number of cool stages to 0. |
| [3] Optional 24VAC common connection. | [6] In Installer Setup, set system type to 2Heat/2Cool Conventional. |

Wiring heat pump systems

Shaded areas below apply only to **TH6320U/TH6220U** or as otherwise noted.

1H/1C Heat Pump System

- R** Power [1]
Rc [R+Rc joined by Slider Tab] [2]
Y Compressor contactor
C 24VAC common [3]
O/B Changeover valve [7]
G Fan relay
W **Do not use this terminal for heat pump applications!**

2H/1C Heat Pump System [8]

- R** Power [1]
Rc [R+Rc joined by Slider Tab] [2]
Y Compressor contactor
C 24VAC common [3]
O/B Changeover valve [7]
G Fan relay
Aux Auxiliary heat
E Emergency heat relay
L Heat pump fault input
W **Do not use this terminal for heat pump applications!**

2H/2C Heat Pump System

(TH6320U only) [9]

- R** Power [1]
Rc [R+Rc joined by Slider Tab] [2]
Y Compressor contactor (stage 1)
C 24VAC common [3]
O/B Changeover valve [7]
G Fan relay
Y2 Compressor contactor (stage 2)
L Heat pump fault input
W **Do not use this terminal for heat pump applications!**

3H/2C Heat Pump System

(TH6320U only) [10]

- R** Power [1]
Rc [R+Rc joined by Slider Tab] [2]
Y Compressor contactor (stage 1)
C 24VAC common [3]
O/B Changeover valve [7]
G Fan relay
Aux Auxiliary heat
E Emergency heat relay
Y2 Compressor contactor (stage 2)
L Heat pump fault input
W **Do not use this terminal for heat pump applications!**

Dual Fuel System (TH6320U / TH6220U only)

- R** Power [1]
Rc [R+Rc joined by Slider Tab] [2]
Y Compressor contactor (stage 1)
C 24VAC common [3]
O/B Changeover valve [7]
G Fan relay
Aux Auxiliary heat
E Emergency heat relay
Y2 Compressor contactor (stage 2 - if needed) [11]
L Heat pump fault input
S Outdoor sensor
S Outdoor sensor
W **Do not use this terminal for heat pump applications!**

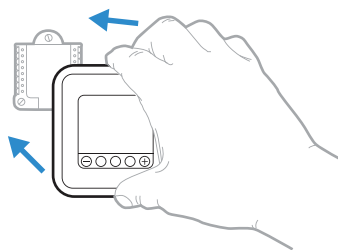
NOTES

Wire specifications: Use 18- to 22-gauge thermostat wire. Shielded cable is not required.

- [1] Power supply. Provide disconnect means and over-load protection as required.
[2] Move R-Slider Tab on UWP to the **R** setting. For more information, see "Setting Slider Tabs" on page 3
[3] Optional 24VAC common connection.
[6] In Installer Setup, set system type to 2Heat/2Cool Conventional.
[7] In Installer Setup, set changeover valve to O (for cool changeover) or B (for heat changeover).
[8] In ISU set Heat system type to Heat pump. 1 compressor and 1 stage of backup heat.
[9] In ISU set Heat system type to Heat pump. 2 compressors and 0 stage of backup heat.
[10] In ISU set Heat system type to Heat pump. 2 compressors and 1 stage of backup heat.
[11] Dual fuel with Y2 only for TH6320U.

Thermostat mounting

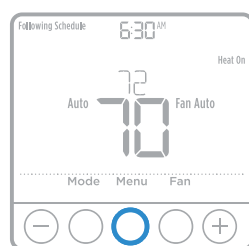
1. Push excess wire back into the wall opening.
2. Close the UWP door. It should remain closed without bulging.
3. Align the UWP with the thermostat, and push gently until the thermostat snaps in place.
4. Turn the power on at the breaker box or switch.



Set the time and date

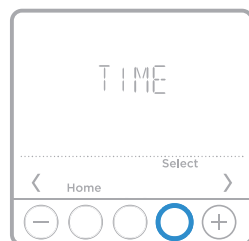
Time

- 1 Press **Menu** on your thermostat.
- 2 Press **+** or **-** to go to **TIME**. Press **Select**.
- 3 Press **+** or **-** to choose between 12 or 24 hour. Press **Select**.
- 4 Use **+** or **-** to adjust the hour. Press **Select**.
- 5 Use **+** or **-** to adjust the minutes. Press **Select** to exit Time menu.



Date

- 1 If previously setting time, continue to Step 2. If at the Home screen, press **Menu** on your thermostat.
- 2 Press **+** or **-** to go to **DATE**. Press **Select**.
- 3 Use **+** or **-** to adjust year. Press **Select**.
- 4 Use the **+** or **-** to adjust month. Press **Select**.
- 5 Use the **+** or **-** to adjust day. Press **Select** to save and exit Date menu.



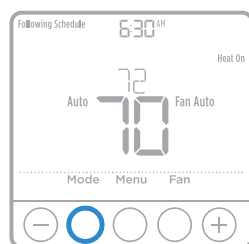
System operation settings

- 1 Press the **Mode** button to cycle to the next available System mode.
- 2 Cycle through the modes until the required System mode is displayed and leave it to activate.

NOTE: Available System modes vary by model and system settings.

System modes:

- **Auto**
- **Heat**
- **Cool**
- **Em Heat**
- **Off**



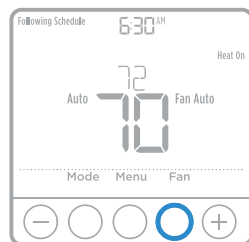
Fan operation settings

- 1 Press the **Fan** button to cycle to the next available Fan mode.
- 2 Cycle through the modes until the required Fan mode is displayed and leave it to activate.

NOTE: Available Fan modes vary with system settings.

Fan modes:

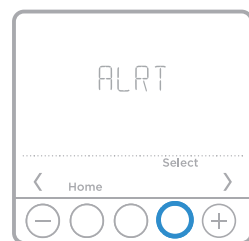
- **Auto:** Fan runs only when the heating or cooling system is on.
- **On:** Fan is always on.
- **Circ:** Fan runs randomly about 33% of the time.



Alerts or Reminders*

- 1 Press **Menu**, and then press **+** until display shows **ALRT**.
- 2 Press **Select** to display which alert(s) are present.
- 3 The word **SNZE** (SNOOZE) appears.
- 4 Press **Select** again to snooze the reminder for 7 days.
- 5 To clear the alert, press **Select**, and then press **+** to go to **CLER** (Clear).
- 6 Press **Select** to clear the reminder.

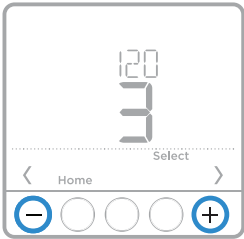
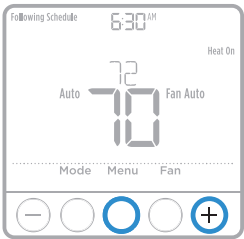
* Some alerts cannot be snoozed or cleared. Please call your local heating and cooling professional if this occurs. The heating and cooling system may require service.



Installer setup (ISU)

- 1 Press and hold **CENTER** and **+** buttons for approximately 3 seconds to enter advanced menu.
- 2 Press **Select** to enter **ISU**.
- 3 Press **Select** to cycle through menu setup options.
- 4 Press **+** or **-** to change values or select from available options.
- 5 Press **Select** and confirm your settings or press **Back** to ignore changes and return to ISU menu screen to continue editing another setup option.
- 6 To finish setup process and save your setting, press **Home** and return to Home screen.

NOTE: A complete list of all setup (ISU) parameters and options starts below and continues through page 10.



Advanced setup options (ISU)

NOTE: Depending on system settings, not all options may be available.

# ISU	ISU Name	ISU Options (factory default in bold)
120	Scheduling Options	0 = Non-Programmable 2 = 5-2 Programmable 3 = 5-1-1 Programmable 4 = 7-Day Programmable
125	Temperature Indication Scale	0 = Fahrenheit 1 = Celsius
130	Outdoor Sensor (TH6320U / TH6220U only)	0 = None 1 = Wired Outdoor Sensor
200	Heating System Type	1 = Conventional Forced Air Heat 2 = Heat Pump 3 = Radiant Heat 5 = None (Cool Only)
205	Heating Equipment Type	<i>Conventional Forced Air Heat:</i> 1 = Standard Efficiency Gas Forced Air 2 = High Efficiency Gas Forced Air 3 = Oil Forced Air 4 = Electric Forced Air 5 = Hot Water Fan Coil <i>Heat Pump:</i> 7 = Air to Air Heat Pump 8 = Geothermal Heat Pump <i>Radiant Heat:</i> 9 = Hot Water Radiant Heat 12 = Steam
218	Reversing Valve O/B	0 = O (O/B in Cool) 1 = B (O/B in Heat)
220	Cool Stages / Compressor Stages 200=Conv / 200=HP	0, 1, 2 <i>Note: Only 1 compressor stage available on TH6210U model. Only 1 compressor stage available on TH6220U model if configured for heat pump.</i>

Advanced setup options (ISU)

# ISU	ISU Name	ISU Options (factory default in bold)
221	Heat Stages / Backup Heat Stages	Heat Stages: 1, 2 Backup Heat Stages: 0, 1
230	Fan Control in Heat	1 = Equipment Controls Fan 2 = Thermostat Controls Fan
253	Aux/E terminal control (Fixed to "0" setting on all models except TH6320U)	0 = Drive both Aux & E together 1 = Aux and E independent
255	Backup Heat Source (Heat Pump Only) (TH6320U / TH6220U only)	1 = Electric Forced Air 2 = Gas/Oil Forced Air (or Fossil Forced Air)
256	Emergency Heat Source (TH6320U only)	1 = Electric Forced Air 2 = Gas/Oil Forced Air (or Fossil Forced Air)
260	External Fossil Fuel Kit (TH6320U / TH6220U only)	0 = Thermostat Controls Backup Heat 1 = External Fossil Fuel Kit Controls Backup Heat
300	System Changeover	0 = Manual 1 = Automatic
303	Auto Changeover Differential	0 °F to 5 °F 0.0 °C to 2.5 °C <i>Note: Differential is NOT deadband. Honeywell uses an advanced algorithm that fixes deadband at 0 °F. The differential setting is the minimum number of degrees from set-point needed to switch from the last mode running (heat or cool) to the opposite mode when the thermostat is in auto-changeover. This is more advanced than previous thermostats.</i>
340	Backup Heat Droop	0 = Comfort 9 = 9 °F 10 = 10 °F 11 = 11 °F 12 = 12 °F 13 = 13 °F 14 = 14 °F 15 = 15 °F <i>Note: 0 (comfort) setting only available if backup heat (ISU 255) is set to electric.</i>
350	Upstage Timer for Backup Heat	0 = Off 8 = 4 hours 9 = 5 hours 10 = 6 hours 11 = 8 hours 12 = 10 hours 13 = 12 hours 14 = 14 hours 16 = 16 hours
355	Compressor Lockout / Balance Point	-- = Off 5 °F to 60 °F (in 5 °F increments) -15.0 °C to 15.5 °C (in 2.5 °C or 3.0 °C increments) <i>Note: Use a wired sensor to set compressor lockout / balance point on TH6320U / TH6220U.</i>
356	Outdoor Lockout Backup Heat	-- = Off 5 °F to 65 °F (in 5 °F increments) -15.0 °C to 18.5 °C (in 2.5 °C or 3.0 °C increments)
365	Compressor Cycle Rate (Stage 1)	1 - 6
366	Compressor Cycle Rate (Stage 1)	1 - 6
370	Heating Cycle Rate (Stage 1)	1 - 12
371	Heating Cycle Rate (Stage 2)	1 - 12
375	Heating Cycle Rate Auxiliary Heat	1 - 12
378	Heating Cycle Rate Emergency Heat (TH6320U only)	1 - 12

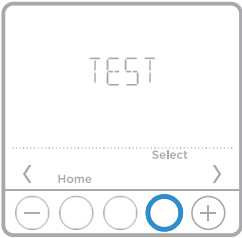
Advanced setup options (ISU)

# ISU	ISU Name	ISU Options (factory default in bold)
387	Compressor Protection	0 = Off 1 = 5 minutes
425	Adaptive Intelligent Recovery	0 = No 1 = Yes <i>Note: Adaptive Intelligent Recovery (AIR) is a comfort setting. Heating or cooling equipment will turn on earlier, ensuring the indoor temperature will match the setpoint at the scheduled time.</i>
430	Minimum Cool Setpoint	50 °F to 99 °F (50 °F) 10.0 °C to 37.0 °C (10.0 °C)
431	Maximum Heat Setpoint	40 °F to 90 °F (90 °F) 4.5 °C to 32.0 °C (32.0 °C)
435	Keypad Lockout	0 = None 1 = Partial 2 = Full
500	Is Indoor Temperature Sensor WIRED to your system? (TH6320U / TH6220U only)	0 = No 1 = Yes
515	Indoor Sensor type (TH6320U / TH6220U only)	0 = 10k 1 = 20k
520	Which Sensors will be used for TEMPERATURE Control? (Multiple Sensors are Averaged) TH6320U / TH6220U only)	1 = Thermostat Only 2 = Wired Only 3 = Average
702	Number of Air Filters	0 - 2
711	Air Filter 1 Replacement Reminder	0 = Off 1 = 10 Run Time Days 2 = 20 Run Time Days 3 = 30 Run Time Days 4 = 45 Run Time Days 5 = 60 Run Time Days 6 = 90 Run Time Days 7 = 120 Run Time Days 8 = 150 Run Time Days 9 = 30 Calendar Days 10 = 45 Calendar Days 11 = 60 Calendar Days 12 = 75 Calendar Days 13 = 3 Calendar Months 14 = 4 Calendar Months 15 = 5 Calendar Months 16 = 6 Calendar Months 17 = 9 Calendar Months 18 = 12 Calendar Months 19 = 15 Calendar Months
712	Air Filter 2 Replacement Reminder	0 = Off 1 = 10 Run Time Days 2 = 20 Run Time Days 3 = 30 Run Time Days 4 = 45 Run Time Days 5 = 60 Run Time Days 6 = 90 Run Time Days 7 = 120 Run Time Days 8 = 150 Run Time Days 9 = 30 Calendar Days 10 = 45 Calendar Days 11 = 60 Calendar Days 12 = 75 Calendar Days 13 = 3 Calendar Months 14 = 4 Calendar Months 15 = 5 Calendar Months 16 = 6 Calendar Months 17 = 9 Calendar Months 18 = 12 Calendar Months 19 = 15 Calendar Months
1400	Backlighting	0 = On Demand 1 = Continuous <i>Note: Common wire needed for continuous.</i>
1401	Backlight brightness	1 - 5 <i>Note: Only displayed if continuous backlight selected.</i>
1410	Clock Format	12 / 24
1415	Daylight Saving Time	0 = Off 1 = On
1420	Temperature Display Offset	-3 to 3F (0) -1.5 to 1.5C (0)

Installer system test

To perform a System Test:

- 1 Press and hold **CENTER** and **+** buttons for approximately 3 seconds to enter advanced menu.
- 2 Use **+** to go to **TEST**. Press **Select** to enter System Test.
- 3 Use **+** to change between Heat, Cool, Fan, Em Heat, or Ver (thermostat version information). Press **Select**.
- 4 Press **+** to turn stages on one at a time, and press **-** to turn them off.
- 5 Use the **Home** button to exit the System Test.



System test	System status
Shaded areas below apply <u>only</u> to TH6320U/TH6220U or as otherwise noted.	
Heat	0 All Off
	1 Heat Stage 1 on
	2 Heat Stage 2 also on
	3 Heat Stage 3 also on
Cool	0 All Off
	1 Cool Stage 1 on
	2 Cool Stage 2 also on
Em Heat	0 All Off
	1 Em Heat on
Fan	0 Fan Off
	1 Fan On

Specifications

Temperature Ranges

Heat: 40 °F to 90 °F (4.5 °C to 32.0 °C)
Cool: 50 °F to 99 °F (10.0 °C to 37.0 °C)

Working Ambient Temperature

32 °F to 120 °F (0 C° to 48.9 °C)

Operating Ambient Temperature

37 °F to 102 °F (2.8 °C to 38.9 °C)

Shipping Temperature

-20 °F to 120 °F (-28.9 °C to 48.9 °C)

Operating Relative Humidity

5% to 90% (non-condensing)

Physical Dimensions in inches (mm) (H x W x D)

4-1/16" H x 4-1/16" W x 1-5/32" D
103.5 mm H x 103.5 mm W x 29 mm D

Electrical Ratings

Terminal	Voltage (50/60Hz)	Running Current
W Heating (Powerpile)	20-30 Vac 750 mV DC	0.02-1.0 A 100 mA DC
W2 (Aux) Heating	20-30 Vac	0.02-1.0 A
E Emergency Heat	20-30 Vac	0.02-0.5 A
Y Compressor Stage 1	20-30 Vac	0.02-1.0 A
Y2 Compressor Stage 2	20-30 Vac	0.02-1.0 A
G Fan	20-30 Vac	0.02-0.5 A
O/B Changeover	20-30 Vac	0.02-0.5 A
L/A Input	20-30 Vac	0.02-0.5 A

Troubleshooting

If you have difficulty with your thermostat, please try the following suggestions. Most problems can be corrected quickly and easily.

Display is blank

- Check circuit breaker and reset if necessary.
- Make sure power switch for heating & cooling system is on.
- Make sure furnace door is closed securely.
- Make sure fresh AA alkaline batteries are correctly installed (see page 2).

Heating or cooling system does not respond

- Press **Mode** button to set system Heat (see page 7). Make sure the desired temperature is set higher than the inside temperature.
- Press **Mode** button to set system Cool (see page 7). Make sure the desired temperature is set lower than the inside temperature.
- Check circuit breaker and reset if necessary.
- Make sure power switch for heating & cooling system is on.
- Make sure furnace door is closed securely.
- Wait 5 minutes for the system to respond.

Temperature settings do not change

Make sure heating and cooling temperatures are set to acceptable ranges:

- Heat: 40 °F to 90 °F (4.5 °C to 32.0 °C)
- Cool: 50 °F to 99 °F (10.0 °C to 37.0 °C)

“Cool On” or “Heat On” is flashing

- Compressor protection feature is engaged. Wait 5 minutes for the system to restart safely, without damage to the compressor.

Aux heat runs in cooling

- For heat pump systems, verify there is not a wire attached to W on UWP systems. See “Wiring heat pump systems” on page 5.

Cool runs with a call for heat

- For heat pump systems, verify there is not a wire attached to W on UWP systems. See “Wiring heat pump systems” on page 5.

**CAUTION: ELECTRICAL HAZARD**

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

**CAUTION: EQUIPMENT DAMAGE HAZARD**

Compressor protection is bypassed during testing. To prevent equipment damage, avoid cycling the compressor quickly.

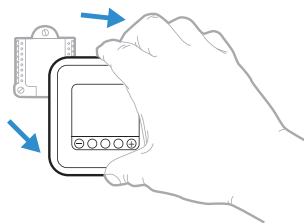
**CAUTION: MERCURY NOTICE**

If this product is replacing a control that contains mercury in a sealed tube, do not place the old control in the trash. Contact your local waste management authority for instructions regarding recycling and proper disposal.

Customer assistance

For assistance with this product, please visit **customer.honeywell.com**.

Or call Honeywell Customer Care toll-free at **1-800-468-1502**.



Pull to remove the thermostat from the UWP.

Home and Building Technologies

In the U.S.:

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33-00181EFS-11 M.S. Rev. 02-18

Printed in U.S.A.



33-00181EFS-11