LUTRON

Honeywell

Installation Guide

LUTRON Clear Connect™ Wireless

LR-HWLV-HVAC TouchPRO Wireless™

Touchscreen Thermostat

System Types

- Gas, oil, or electric heat with air conditioning
- Warm air, hot water, high efficiency furnaces, heat pumps, steam, gravity
- Heat only — including power to open and close zone valves (Series 20), and normally open zone valves
- Heat only with fan
- Cool only
- 750 mV heating systems

CAUTION: SHOCK HAZARD

Can cause electrical shock or equipment damage. If not avoided, could result in minor or moderate personal injury. Disconnect power before beginning installation or servicing.

MERCURY NOTICE

This thermostat does not contain mercury. However, do not place your old thermostat in the trash if it contains mercury in a sealed tube. Contact the Thermostat Recycling Corporation at www.thermostat-recycle.org or 800.238.8192 for information on how and where to properly and safely dispose of your old thermostat.

This thermostat contains a Lithium battery which may contain Perchlorate material.
Perchlorate Material—special handling may apply,
See www.dtsc.ca.gov/hazardouswaste/perchlorate

Technical Assistance | 24 hours a day, 7 days a week | www.lutron.com
U.S.A. / Canada: 1.800.523.9466 | Mexico: +1.888.235.2910
Other Countries: +1.610.282.3800

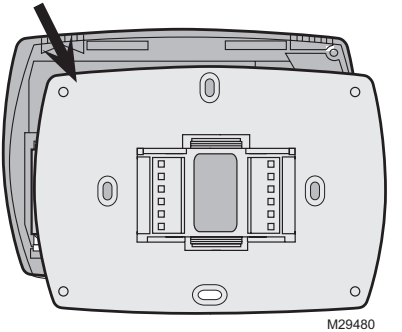
Warranty: For warranty information, please see the Warranty enclosed with the product, or visit www.lutron.com/resiinfo

69-2655EFS-01

Wallplate installation

1. Separate wallplate from thermostat.
2. Mount wallplate as shown below.

Grasp top and bottom of wallplate and pull to remove from thermostat.



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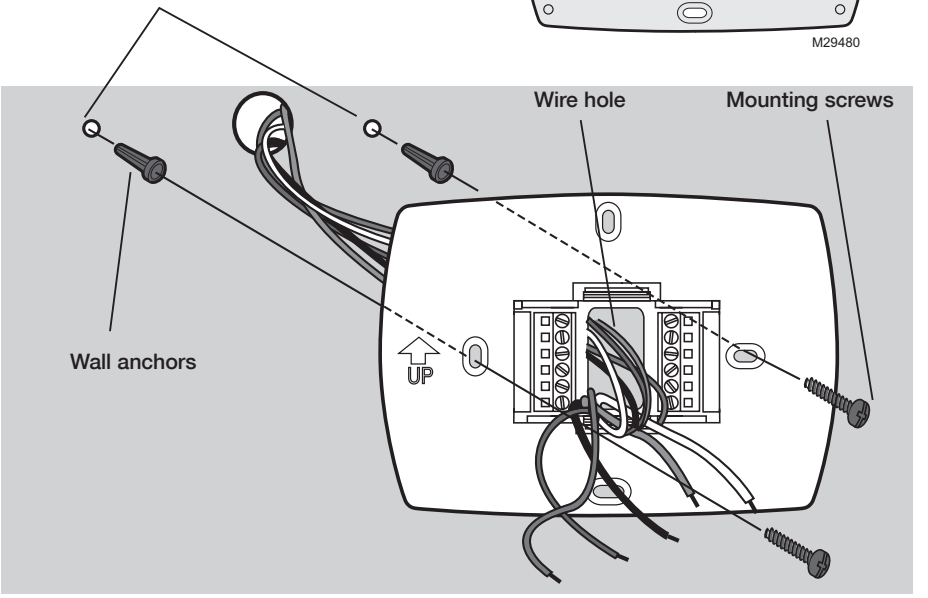
Drill 3/16 in (5 mm) holes for drywall.
Drill 7/32 in (6 mm) holes for plaster.



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CAUTION

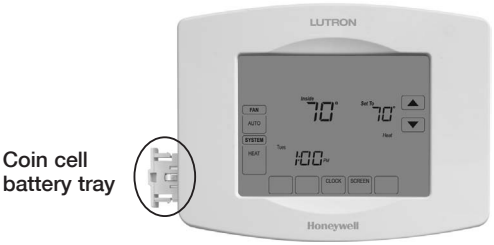
Thermostat should be installed by a climate control specialist to avoid damage to the equipment.

RF Device Placement

- The thermostat must be within 30 ft (9 m) of an RF signal repeater.

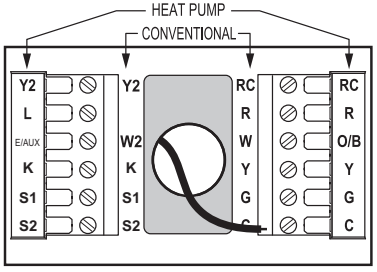
Battery Replacement

The TouchPRO Wireless thermostat has a coin cell battery that retains the time and date during a power failure. Under normal circumstances the coin cell should last five years. Should the time and date need to be reset after a power failure, this is an indication that the coin cell needs to be replaced. You should replace the battery every five years, or before leaving home for an extended period.



To replace the battery, remove the battery tray using a screw driver. Place a new coin cell (type CR2032 or equivalent) observing the correct polarity and push the battery tray into the battery cover assembly.

Power Requirements



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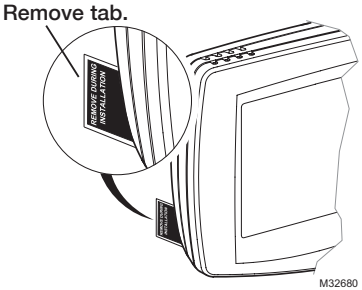
Connect the common side of the transformer to "C" terminal. This connection is mandatory.



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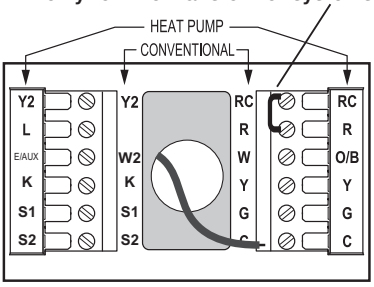
The TouchPRO Wireless thermostat is shipped from the factory with the coin cell installed. To keep the battery from discharging during shipment and storage, the TouchPRO Wireless thermostat is shipped with a plastic tab inserted in the battery holder. This tab must be removed during installation. Simply pull the plastic tab out of the battery tray. Make sure that the battery tray is fully inserted into the TouchPRO Wireless thermostat.

Wiring

Remove factory-installed jumper only for two-transformer systems.



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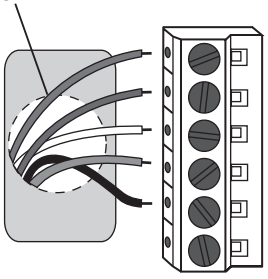
Push excess wire back into the wall opening. Plug wall opening with non-flammable insulation.



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Wiring

Terminal Designations

Conventional Terminal Letters:

R	Heating power. Connect to secondary side of heating system transformer.
Rc	Cooling power. Connect to secondary side of cooling system transformer.
C	Common wire from secondary side of cooling transformer (if 2 transformers). [3]
W	1st stage heat relay.
W2	2nd stage heat relay
Y	1st stage compressor contactor.
Y2	2nd stage compressor contactor.
G	Fan relay.
K	Optional THP9045 Wiring Module Terminal [9]
S1/S2	Optional remote sensor

Heat Pump Terminal Letters:

R	Heating power. Connect to secondary side of heating system transformer.
Rc	Cooling power. Connect to secondary side of cooling system transformer.
C	Common wire from secondary side of cooling system transformer. [3]
Y	1st stage compressor contactor.
Y2	2nd stage compressor contactor.
Aux/E	Auxiliary heat relay.
G	Fan relay.
L	Heat pump reset (powered continuously when System is set to Em Heat; system monitor when set to Heat, Cool or Off).
O/B	Changeover valve for heat pumps.
K	Optional THP9045 Wiring Module Terminal [9]
S1/S2	Optional remote sensor

Wiring guide—heat pump systems

1H/1C Heat Pump (no auxiliary heat)

Rc ⎫	Power [1]
R ⎭	[R+Rc joined by jumper]
O/B	Changeover valve [5]
Y	Compressor relay
G	Fan relay
C	24 V~ common [3]
K	Optional THP9045 Wiring Module Terminal [9]
S1/S2	Optional remote sensor

2H/1C Heat Pump (with auxiliary heat)

L	Equipment monitor [6, 7]
Aux/E	Auxiliary heat relay (Heat 2) [8]
Rc ⎫	Power [1]
R ⎭	[R+Rc joined by jumper]
O/B	Changeover valve [5]
Y	Compressor relay
G	Fan relay
C	24 V~ common [3]
K	Optional THP9045 Wiring Module Terminal [9]
S1/S2	Optional remote sensor

2H/2C Heat Pump (no auxiliary heat)

Y2	Compressor 2 relay
Rc ⎫	Power [1]
R ⎭	[R+Rc joined by jumper]
O/B	Changeover valve [5]
Y	Compressor 1 relay
G	Fan relay
C	24 V~ common [3]
K	Optional THP9045 Wiring Module Terminal [9]
S1/S2	Optional remote sensor

3H/2C Heat Pump (with auxiliary heat)

Y2	Compressor 2 relay
L	Equipment Monitor [6, 7]
Aux/E	Auxillary heat relay (Heat 2) [8]
Rc ⎫	Power
R ⎭	[R+Rc joined by jumper]
O/B	Changeover value [5]
Y	Compressor 1 relay
G	Fan relay
S1/S2	Optional remote sensor
C	24 V~ common [3]
K	Optional THP9045 Wiring Module Terminal [9]

See [notes] below

[1] Power supply. Provide disconnect means and overload protection as required.

[3] Connection to 24 V~ common at the transformer is required.

[5] O/B set to control as either O or B in installer setup.

[6] If L terminal is used, 24 V~ common (terminal C) must be connected.

[7] Heat pump reset (powered continuously when thermostat is set to Em. Heat mode; system monitor when set to Heat, Cool, or OFF).

[9] See page 14 for more details.

Wiring

Wiring guide—conventional systems

1H/1C System (1 transformer)

Rc)	Power [1]
R)	[R+Rc joined by jumper]
W	Heat relay
Y	Compressor contactor
G	Fan relay
C	24 V⁓ common [3]
K	Optional THP9045 Wiring Module Terminal [9]
S1/S2	Optional remote sensor

Heat Only System

Rc)	Power [1]
R)	[R+Rc joined by jumper]
W	Heat relay
C	24 V⁓ common [3]
S1/S2	Optional remote sensor

Heat Only System (Series 20)

Rc)	[R+Rc joined by jumper]
R)	Series 20 valve terminal “R” [1]
W	Series 20 valve terminal “B”
Y	Series 20 valve terminal “W”
C	24 V⁓ common [3]
S1/S2	Optional remote sensor

2H/2C System (1 transformer)

Y2	Cool relay 2
W2	Heat relay 2
Rc)	Power [1]
R)	[R+Rc joined by jumper]
W	Heat relay 1
Y	Cool relay 1
G	Fan relay
C	24 V⁓ common [3]
K	Optional THP9045 Wiring Module Terminal [9]
S1/S2	Optional remote sensor

1H/1C System (2 transformers)

Rc	Power (cooling transformer) [1, 2]
R	Power (heating transformer) [1, 2]
W	Heat relay
Y	Compressor contactor
G	Fan relay
C	24 V⁓ common [3, 4]
K	Optional THP9045 Wiring Module Terminal [9]
S1/S2	Optional remote sensor

Heat Only System With Fan

Rc)	Power [1]
R)	[R+Rc joined by jumper]
W	Heat relay
G	Fan relay
C	24 V⁓ common [3]
S1/S2	Optional remote sensor

Cool Only System

Rc)	Power [1]
R)	[R+Rc joined by jumper]
Y	Compressor contactor
G	Fan relay
C	24 V⁓ common [3]
K	Optional THP9045 Wiring Module Terminal [9]
S1/S2	Optional remote sensor

2H/2C System (2 transformers)

Y2	Cool relay 2
W2	Heat relay 2
Rc	Power (cooling transformer) [1, 2]
R	Power (heating transformer) [1, 2]
W	Heat relay 1
S1/S2	Optional remote sensor
Y	Cool relay 1
G	Fan relay
C	24 V⁓ common [3, 4]
K	Optional THP9045 Wiring Module Terminal [9]
S1/S2	Optional remote sensor

See [notes] below

[1] Power supply. Provide disconnect means and overload protection as required.

[2] Remove jumper for 2-transformer systems.

[3] Connection to 24 V⁓ common at the transformer is required.

[4] Common connection must come from cooling transformer.

[9] See page 14 for more details.

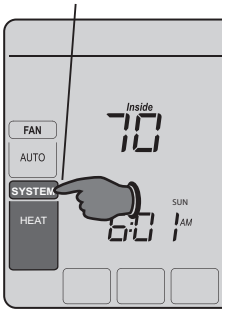
Verify battery function

It is important to test the battery to ensure that the time and date will be retained should a power failure occur. The following procedure will verify the battery is functioning correctly:

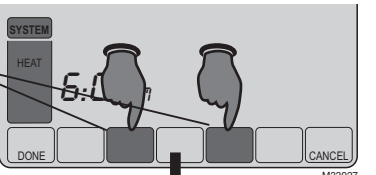
1. After receiving time and date from the TouchPRO Wireless thermostat, remove the thermostat from the wallplate.
2. Wait 10 seconds and replace the thermostat.
3. After a few seconds the thermostat should return to its normal display. If it does, you are done.
4. Remove the battery tray, adjust the metal tabs for good contact and verify battery polarity.
5. Re-install battery tray and repeat steps 1, 2 and 3.
6. If battery function cannot be verified, replace battery. If thermostat does not return to its normal display, do not install the thermostat. Return it for evaluation.

Installer setup

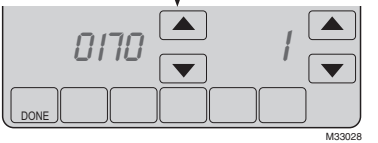
1. Press **SYSTEM.**

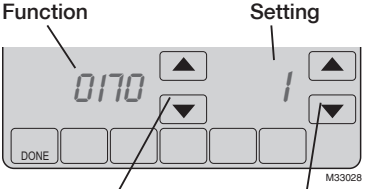


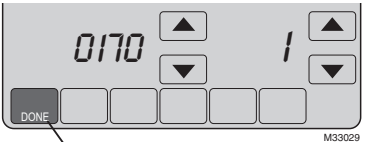
2. Press and hold these two buttons until the display changes.



3. Change settings as required (see pages 7-9).







Installer setup

Setup functions		Settings & Options (factory default in **bold**)	
0170	**System type**	**1**	**1 heat/1 cool conventional**
		2	1 heat/1 cool heat pump (no aux. heat)
		3	Heat only (2-wire systems)
		4	Heat only with fan
		5	Hot water Series 20 system (power to open & close zone valves/normally open zone valves)
		6	Cool only
		7	2 heat/1 cool heat pump (with aux. heat)
		8	2 heat/2 cool multistage conventional
		9	2 heat/1 cool multistage conventional
		10	1 heat/2 cool multistage conventional
		11	2 heat/2 cool heat pump (no aux. heat)
		12	3 heat/2 cool heat pump (with aux. heat)
0173	**Heat pump type**	**0**	**Air to air heat pump**
		1	Geothermal heat pump
0180	**Fan control (heating)**	**0**	**Gas/Oil heat (equipment controls heating fan)**
		1	Electric furnace (thermostat controls heating fan)
0190	**Changeover valve (O/B terminal)**	**0**	**O/B terminal controls valve in cooling**
		1	O/B terminal controls valve in heating
0200	**Auxiliary Heat**	**0**	**Electric backup heat**
		1	Fossil fuel backup heat
0210	**External Fossil Fuel Kit**	0	None
		1	**Yes**
0220	**1st Stage Cool/ Compressor cycle rate**	**3**	**Recommended for most compressors** [other options: 1, 2, 4, 5, or 6 CPH]
0230	**2nd Stage Cool/ Compressor cycle rate**	**3**	**Recommended for most compressors** [other options: 1, 2, 4, 5, or 6 CPH]
0240	**First stage heat cycle rate (CPH= cycles per hour)**	**5**	**Gas or oil furnaces of less than 90% efficiency**
		1	Steam or gravity systems
		3	Hot water systems & furnaces of 90%+ efficiency
		9	Electric furnaces [Other options: 2, 4, 6, 7, 8, 10, 11, 12 CPH]
0250	**Second stage heat cycle rate (CPH)**	**5**	**Gas or oil furnaces of less than 90% efficiency**
		1	Steam or gravity systems
		3	Hot water systems & furnaces of 90%+ efficiency
		9	Electric furnaces [Other options: 2, 4, 6, 7, 8, 10, 11, 12 CPH]
0260	**Third stage heat cycle rate (CPH)**	**9**	**Electric auxilliary heat**
		1	Steam or gravity systems
		3	Hot water systems & furnaces of 90%+ efficiency
		5	Gas or oil furnaces of less than 90% efficiency [Other options: 2, 4, 6, 7, 8, 10, 11, 12 CPH]
0280	**Backlight**	**0**	**Backlight ON for approx. 8 seconds after keypress**
		1	Backlight always on low intensity, full bright after keypress

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Installer setup

Setup functions		Settings & Options (factory default in **bold**)	
0300	**Manual/Auto changeover**	**1**	**Automatic changeover (Heat/Cool/Auto/OFF)**
		0	Manual changeover (Heat/Cool/OFF)
0320	**Temperature display**	**0**	**Fahrenheit (°F)**
		1	Celsius (°C)
0340	**Remote Temperature Sensor**	**0**	**None**
		1	Outdoor for Display
		2	Outdoor for Control
		3	Remote Indoor
0345	**Dual Fuel Heat Pump Control**	0	Balance point only
		1	**Balance point + Failed to Maintain Heat protection**
		2	Low lockout + High Lockout + Failed to Maintain protection in between.
0346	**Dual Fuel Heat Pump Upstage to Furnace Timer**	0	Disabled
		0.5	0.5 hours
		1	**1 hour**
		1.5	1.5 hours
		2	2 hours
		3	3 hours
		4	4 hours
		5	5 hours
		6	6 hours
		8	8 hours
		10	10 hours
		12	12 hours
		14	14 hours
		16	16 hours
0347	**Drop Temperature**	**2**	**2 °F 1.0 °C**
		3	3 °F 1.5 °C
		4	4 °F 2.0 °C
		5	5 °F 2.5 °C
0350	**HP Compressor Lockout also Balance Point**	**40**	**40 °F 4.5 °C**
		0	None
		5	5 °F -15.0 °C
		10	10 °F -12.0 °C
		15	15 °F -9.5 °C
		20	20 °F -6.5 °C
		25	25 °F -4.0 °C
		30	30 °F -1.0 °C
		35	35 °F 1.5 °C
		45	45 °F 7.0 °C
		50	50 °F 10.0 °C
		55	55 °F 13.0 °C
		60	60 °F 15.5 °C

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Installer setup

Setup functions		Settings & Options (factory default in **bold**)
0360	**HP Aux Lockout**	**40 40 ºF 4.5 ºC** 0 None 5 5 ºF -15.0 ºC 10 10 ºF -12.0 ºC 15 15 ºF -9.5 ºC 20 20 ºF -6.5 ºC 25 25 ºF -4.0 ºC 30 30 ºF -1.0 ºC 35 35 ºF 1.5 ºC 45 45 ºF 7.0 ºC 50 50 ºF 10.0 ºC 55 55 ºF 13.0 ºC 60 60 ºF 15.5 ºC 65 65 ºF 18.5 ºC
0500	**Furnace Filter 1 Change Reminder**	**0 Disabled** 1 10 R.T. Day 2 30 R.T. Day 3 60 R.T. Day 4 90 R.T. Day 5 120 R.T. Day 6 180 R.T. Day 7 270 R.T. Day 8 365 R.T. Day 9 30 C Days 10 60 C Days 11 90 C Days 12 120 C Days 13 180 C Days 14 365 C Days
0502	**Furnace filter reminder run time equipment counts**	**0 Counts heat and cool** 1 Counts cool only
0510	**Humidifier Pad Replacement Reminder**	**0 Disabled** 1 90 C Days, 30 R.T. Days 2 180 C Days, 60 R.T. Days 3 365 C Days, 90R.T. Days
0520	**UV Lamp Replacement Reminder**	**0 Disabled** 1 365 Days 2 730 Days (2 years)
0580	**Compressor protection**	**5 5 minute compressor OFF time** [Other options: 0, 1, 2, 3 or 4-minute off time]
0640	**Clock format**	**12 12-hour time (i.e., “3:30 pm”)** 24 24-hour time (i.e., “15:30”)
0650	**Extended fan timer (heat)**	**0 OFF** 90 Fan runs for 90 seconds after call for heat ends
0660	**Extended fan timer (cool)**	**0 OFF** 90 Fan runs for 90 seconds after call for cooling ends
0670	**Keypad lock**	**0 Keypad unlocked (fully functional)** 1 Partially locked (access to temperature settings only) 2 Fully locked

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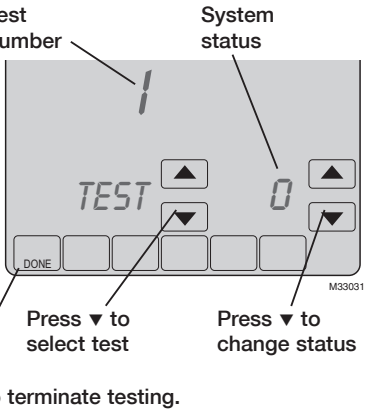
Installer setup

Setup functions		Settings & Options (factory default in **bold**)	
0680	**Heat temperature control**	**2**	**Standard temperature control (recommended)**
		1	Choose if room is warmer than set temperature
		3	Choose if room does not reach set temperature
0690	**Cool temperature control**	**2**	**Standard temperature control (recommended)**
		1	Choose if room is cooler than set temperature
		3	Choose if room does not reach set temperature
0700	**Temperature display offset**	**0**	Thermostat displays actual room temperature [Other options: -3 ºF, -2 ºF, -1 ºF, 1 ºF, 2 ºF, 3 ºF offset (-1.5 ºC, -1.0 ºC, -0.5 ºC, 0.5 ºC, 1.0 ºC, 1.5 ºC)]
0710	**Reset**	**0**	**No reset**
		1	Reset HVAC installer options to factory default (only date and time settings are retained) and remove from Lutron® system
0900*	**Lutron System Connection**	**0**	**Remove from Lutron system**
		1	Connected

*Note: Option only visible when connected to a Lutron system.

Installer system test

During installer setup, press ▼ repeatedly until "Test" appears.



System test		System status	
1	**Cooling system**	**0**	**OFF**
		1	Cool Stage 1
		2	Cool Stages 1 & 2
		3	Cool Stages 1, 2, & 3
2	**Fan system**	**0**	**OFF, dampers open if zoned**
		1	Fan On, dampers open if zoned
		2	Fan On, damper closes for this zone, all other dampers remain open
3	**Heating system**	**0**	**OFF**
		1	Heat Stage 1
		2	Heat Stages 1, 2
		3	Heat Stages 1, 2, 3
		4	Heat Stages 1, 2, 3, 4
4	**Emergency heating system**	**0**	**Em Heat OFF**
		1	Em Heat stage 1
		2	Em Heat stage 1, 2
		3	Em Heat stage 1, 2, 3

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

Adding the thermostat to a Lutron system

Programming by a Lutron Factory Trained Installer

For full functionality, the HVAC Controller must be programmed to a Repeater and PC software must be used by a Lutron factory-trained installer. For questions on how to become a qualified installer, please contact your local Lutron representative.

To add the thermostat to a Lutron system:

Use the Lutron PC software to start activation mode. When a Lutron system is in activation mode, an unaddressed thermostat will show “Device Is Unaddressed” at the top of the screen.

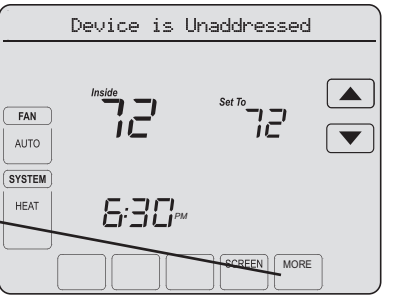
1. To activate thermostat press **MORE**.

The thermostat will now show the connection screen and display “Press Connect” at the top of the screen.

2. Press the **CONNECT** button. The **CONNECT** button will blink and the thermostat will display “Addressing” at the top of the screen.
3. Return to the Lutron software and confirm thermostat activation. When activated, the thermostat will exit the connect screen and display “Device Is Addressed” at the top of the screen.
4. The thermostat is now activated.

Note: The More button will disappear once the thermostat is addressed to a Lutron system.

Note: Use ISU setting 900 to remove the thermostat from the Lutron system. See page 10.



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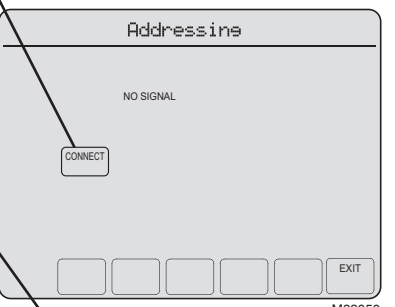

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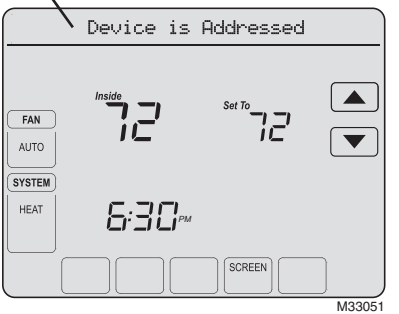

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Special functions

Auto Changeover (Setup Function 0300): When set to Auto, the thermostat automatically selects heating or cooling depending on the indoor temperature. Heat and cool settings must be at least 2 °F apart.

Compressor Protection (Setup Function 0580): Forces the compressor to wait a few minutes before restarting, to prevent damage. During this time, the message "Wait" flashes on the display.

Accessories & replacement parts

Please contact your distributor to order replacement parts.

Cover plate* ..... Honeywell Part Number 32003796-001
Outdoor Temperature Sensor ..... Honeywell Part Number C7089U1006
Remote Indoor Temperature Sensor ..... Honeywell Part Number C7189U1005
*(Use to cover marks left by old thermostats.)

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)

Operating Ambient Temperature

- 0 °F to 120 °F (-18 °C to 49 °C)

Shipping Temperature

- -30 °F to 150 °F (-34 °C to 66 °C)

Operating Relative Humidity

- 5% to 90% (non-condensing)

Physical Dimensions

- 4-15/16 in H x 6-9/16 in W x 1-7/16 in D (125 mm H x 166 mm W x 36 mm D)

Electrical Ratings

Terminal	Voltage (50/60 Hz)	Running Current
W Heating	20-30 V~	0.02-1.0 A
(Powerpile)	750 mV⎓	100 mA DC
W2 Heating	20-30 V~	0.02-0.6 A
Y Cooling	20-30 V~	0.02-1.0 A
Y2 Cooling	20-30 V~	0.02-0.6 A
Aux Auxiliary heat	20-30 V~	0.02-1.0 A
O/B Changeover	20-30 V~	0.02-0.6 A
E Emergency heat	20-30 V~	0.02-1.0 A
L Heat pump reset	20-30 V~	0.02-0.6 A

Optional THP9045 Wiring Module

The THP9045 Wiring Module is designed to be used with applicable thermostats in 1 Heat/1 Cool retrofit applications where only 4 wires are available. The K terminal on the thermostat can be used to operate both the fan and compressor on a single wire, and the module is designed to receive the signal from the K terminal, split that signal and reroute it to operate the compressor, and/or fan for normal operation. See the THP9045 manual for further details.

Technical Assistance | 24 hours a day, 7 days a week | www.lutron.com
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Warranty: For warranty information, please see the Warranty enclosed with the product, or visit www.lutron.com/resiinfo

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