Lutron® Comfort Controls
TouchPRO Wireless™ Thermostat

Add Lutron® Comfort Controls to your light and shade/drapery systems for convenient control of all aspects of an environment—natural light, artificial light, and temperature—from the touch of a button. Lutron® Comfort Controls allow heating and cooling systems to integrate seamlessly with Lutron® systems and must be located within 30 ft (9 m) of an RF signal repeater.

The TouchPRO Wireless™ Thermostat is designed by Honeywell and utilizes Lutron® Clear Connect® technology. The TouchPRO Wireless™ Thermostat installs like a conventional thermostat, and when used with a seeTemp™ Wall Display, it puts temperature control and measurement where it makes sense. In a RadioRA® 2 or HomeWorks® QS system, the TouchPRO Wireless™ Thermostat allows the ability to adjust heating and cooling systems any time of the day—even from your mobile device when you're away from home.

Press the "eco" button on the seeTemp™ Wall Display to trim HVAC settings automatically. The "eco" button trim is controlled by RadioRA® 2 and HomeWorks® QS systems. The TouchPRO Wireless™ Thermostat can only be used in systems that are programmed using the PC Programming Tool.

The TouchPRO Wireless™ Thermostat is easy to use and provides superior product quality and aesthetics.

TouchPRO Wireless™ Thermostat

Model Number

LR-HWLV-HVAC*   TouchPRO Wireless™ Thermostat

*Available in white.

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Specifications

Model Number	LR-HWLV-HVAC
Power	24 V∿ IEC PELV / NEC® Class 2
Typical Power Consumption	820 mW Test conditions: 24 V∿ input, backlight on full, four relays active.
Regulatory Approvals	FCC, IC, COFETEL
Environment	Ambient operating temperature: 0 °F to 120 °F (-18 °C to 49 °C), 5% to 90% humidity, non-condensing. Indoor use only.
Communications	TouchPRO Wireless™ Thermostat communicates with the system through Radio Frequency (RF) and must be located within 30 ft (9 m) of a repeater. System devices operate on frequencies between 431.0 MHz and 437.0 MHz.
ESD Protection	Tested to withstand electrostatic discharge without damage or memory loss, in accordance with IEC 61000-4-2.
Surge Protection	Tested to withstand surge voltages without damage or loss of operation, in accordance with IEEE C62.41-1991 Recommended Practice on Surge Voltages in Low-Voltage AC Power Circuits.
Power Failure	Power failure memory: should power be interrupted, the TouchPRO Wireless™ Thermostat will retain its programming when power is restored.
Mounting	Mount on a wall using conventional thermostat mounting methods.
Wiring	IEC PELV / NEC® Class 2, 22 AWG (0.5 mm^2) to 18 AWG (0.75 mm^2) solid wiring. Requires transformer common connection or THP9045 Wiring Module (included).
Warranty	For warranty information, please see the Warranty enclosed with the product, or visit www.lutron.com/resiinfo Warranty only valid if installed by a properly trained climate control specialist.

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Design Features

TouchPRO Wireless™ Thermostat

- Wires to HVAC equipment.
- Uses RF to communicate with seeTemp™ Wall Displays, and other Lutron® wireless devices.
- Requires 24 V∼ common connection from the HVAC equipment or use of the included wiring module. The wiring module can be mounted easily on or near HVAC equipment and is to be used when a 24 V∼ common connection is not available. For more information, refer to the instructions included with the wiring module.

seeTemp™ Wall Display

- Designer style opening that can be ganged with other devices like dimmers and keypads.
- Installs in a standard wallbox for low-profile appearance.
- Celsius and Fahrenheit models available.
- Multiple seeTemp™ Wall Displays can be used to control one TouchPRO Wireless™ Thermostat from multiple locations.
- Pressing the "eco" button saves energy by trimming the temperature a programmed amount. Default is +/- 2 °F (1 °C).
- 120 V∼ wiring requires hot and neutral wiring.
- 24 V∼ wiring requires 24 V∼ and common wiring from HVAC equipment transformer or other 24 V∼ IEC PELV / NEC® Class 2 transformer.

Lutron® System Features

- 7-day programmable schedule.
- Select alternate set points to save energy when on vacation or away from home.
- System features are programmed in the PC tool.

Control from Dynamic Keypads in HomeWorks® QS systems

- Control temperature from Dynamic Keypads.
- The Dynamic Keypad provides full control of multiple TouchPRO Wireless™ Thermostats from a single location without the need for seeTemp™ Wall Displays.
- Multiple Dynamic Keypads can be used to control one TouchPRO Wireless™ Thermostat from multiple locations.

Control from Mobile Devices

- Control temperature from Lutron® Home Control+ mobile device applications.
- Set and edit up to seven different daily schedules from your mobile device.
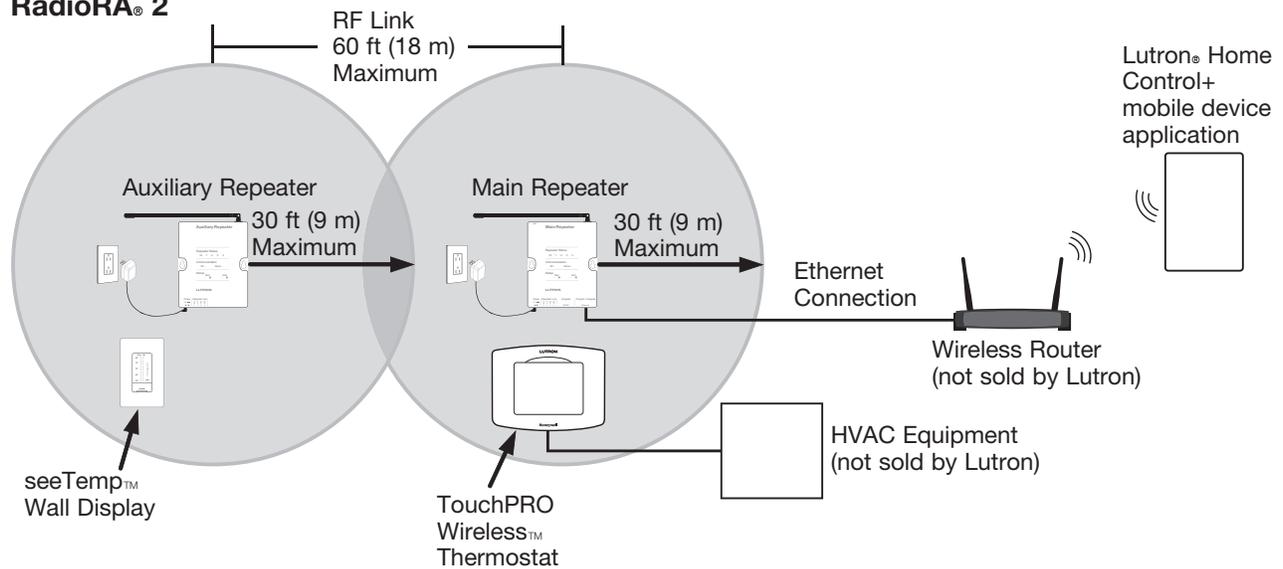
Lutron® Comfort Controls
TouchPRO Wireless® Thermostat

Compatibility

HVAC Type	Compatible?
Single Stage Cool	Yes
Two Stage Cool	Yes
Single Stage Heat	Yes
Two Stage Heat	Yes
Packaged Roof Top Units	Yes
Heat Pump	Yes
Dual Fuel Systems	Yes
Geothermal Heat Pump	Yes
Heat Pump with Auxiliary Electric (Emergency) Heat	Yes
Typical Variable Speed Fan (Equipment Controlled)	Yes
Multi-Zone Systems (Controllable Dampers)	Yes - Requires a separate Zone Controller (not sold by Lutron)
In-Floor Radiant Heat	Yes
Line Voltage Electric Baseboard	No
Mili-Volt System	No
Proprietary/Digital Control systems	No
Variable Speed Fan (Independent Relays)	No
Humidity Control	No
Humidity Sensing	No
Outdoor Temperature Sensing	Yes
VAV/VRV Systems	No

Lutron® Comfort Controls
TouchPRO Wireless™ Thermostat

System Examples

RadioRA® 2

RF Link
60 ft (18 m)
Maximum

Auxiliary Repeater

30 ft (9 m)
Maximum

Main Repeater

30 ft (9 m)
Maximum

Ethernet
Connection

Lutron® Home
Control+
mobile device
application

Wireless Router
(not sold by Lutron)

HVAC Equipment
(not sold by Lutron)

seeTemp™
Wall Display

TouchPRO
Wireless™
Thermostat

HomeWorks® QS

Dynamic
Keypad (RF)

Hybrid Repeater

30 ft (9 m)
Maximum

24 V⎓
Input

Ethernet
Connection

Processor

Lutron® Home
Control+
mobile device
application

Wireless Router
(not sold by Lutron)

Dynamic
Keypad (wired)

seeTemp™
Wall Display

TouchPRO
Wireless™
Thermostat

HVAC Equipment
(not sold by Lutron)

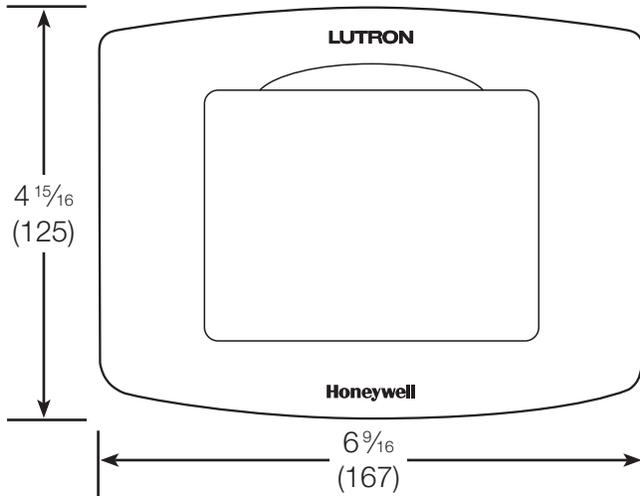## Lutron® Comfort Controls
TouchPRO Wireless® Thermostat

Dimensions

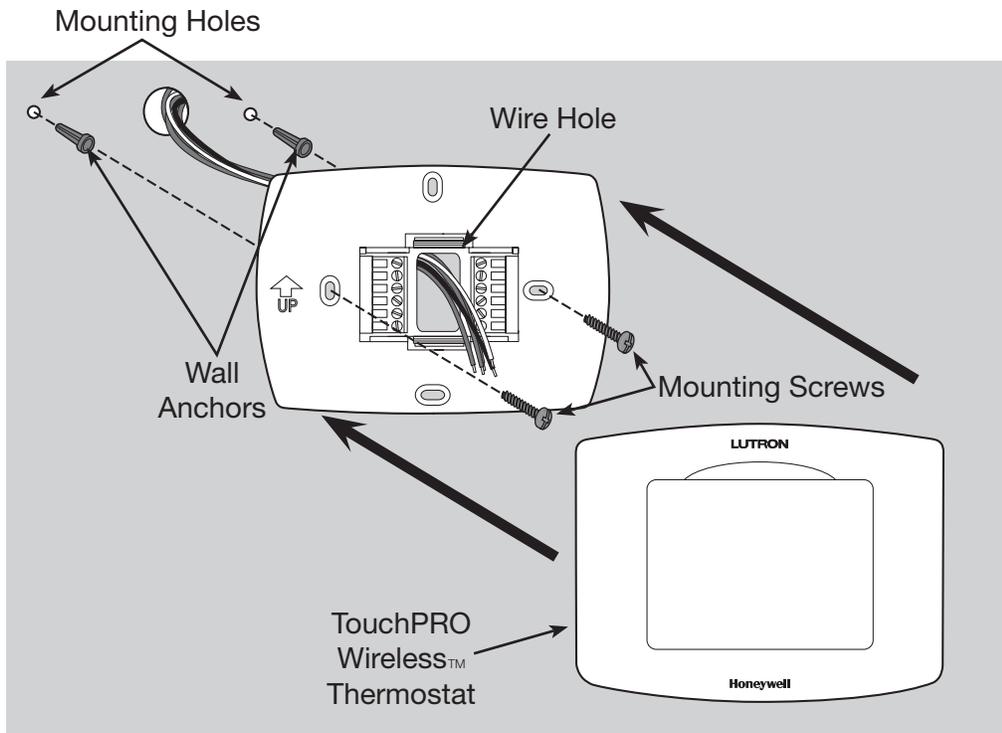All dimensions are shown as $\frac{in}{(mm)}$ unless otherwise noted.

Front View

Side View

4 $^{15}/_{16}$
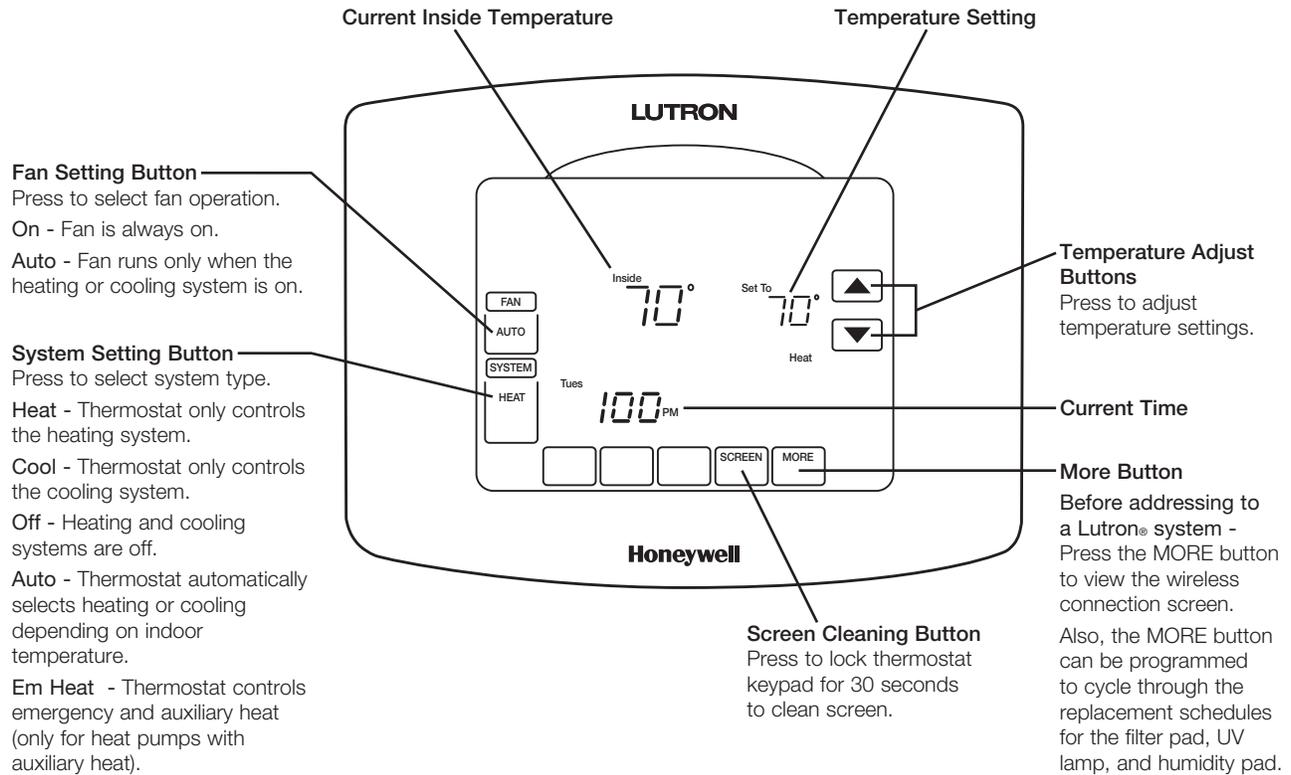(125)

6 $^{9}/_{16}$
(167)

1 $^{7}/_{16}$
(37)

Mounting and Parts Identification

Mounting Holes

Wire Hole

UP

Wall Anchors

Mounting Screws

TouchPRO WirelessTM Thermostat

Lutron® Comfort Controls
TouchPRO Wireless™ Thermostat

Operation

Current Inside Temperature

Temperature Setting

Fan Setting Button
Press to select fan operation.

On - Fan is always on.

Auto - Fan runs only when the heating or cooling system is on.

System Setting Button
Press to select system type.

Heat - Thermostat only controls the heating system.

Cool - Thermostat only controls the cooling system.

Off - Heating and cooling systems are off.

Auto - Thermostat automatically selects heating or cooling depending on indoor temperature.

Em Heat - Thermostat controls emergency and auxiliary heat (only for heat pumps with auxiliary heat).

Temperature Adjust Buttons
Press to adjust temperature settings.

Current Time

More Button

Before addressing to a Lutron® system - Press the MORE button to view the wireless connection screen.

Also, the MORE button can be programmed to cycle through the replacement schedules for the filter pad, UV lamp, and humidity pad.

Screen Cleaning Button
Press to lock thermostat keypad for 30 seconds to clean screen.

Lutron® Comfort Controls
TouchPRO Wireless® Thermostat

Terminal Designations
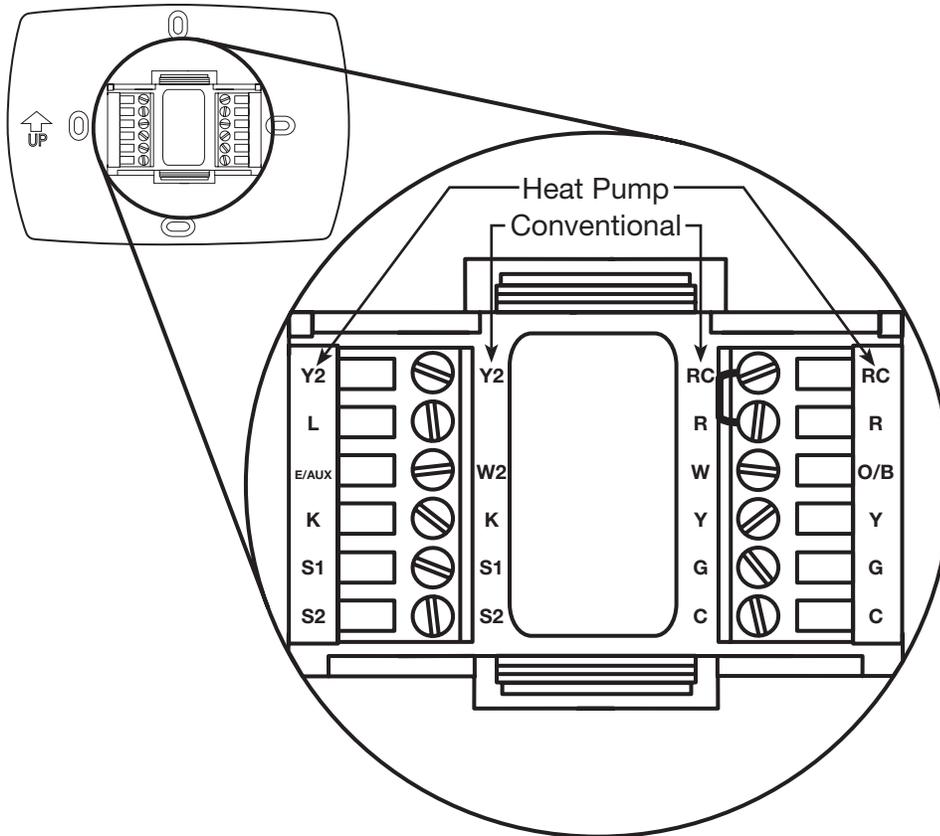
Terminal	Description
R	Heating power. Connect to secondary side of heating system transformer.
Rc	Cooling power. Connect to secondary side of cooling system transformer.
C	Required common wire from secondary side of cooling transformer (if 2 transformers)
W	1st stage heat relay.
W2	2nd stage heat relay.
Y	1st stage compressor contactor.
Y2	2nd stage compressor contactor.
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 wiring module terminal.
S1/S2	Optional remote sensor.

Lutron® Comfort Controls
TouchPRO Wireless™ Thermostat

Wiring Guide (for use with 24 V∿ common)

Conventional Systems

1H/1C System (1 transformer)

Rc	Power
R	R and Rc joined by jumper
W	Heat relay
Y	Compressor contactor
G	Fan relay
C	24 V∿ common
S1/S2	Optional remote sensor

1H/1C System (2 transformers)

Rc	Power (cooling transformer)
R	Power (heating transformer)
W	Heat relay
Y	Compressor contactor
G	Fan relay
C	24 V∿ common (cooling tranformer)
S1/S2	Optional remote sensor

Heat Only System

Rc	Power
R	R and Rc joined by jumper
W	Heat relay
C	24 V∿ common
S1/S2	Optional remote sensor

Heat Only System With Fan

Rc	Power
R	R and Rc joined by jumper
W	Heat relay
G	Fan relay
C	24 V∿ common
S1/S2	Optional remote sensor

Heat Only System (Series 20)

Rc	R and Rc joined by jumper
R	Series 20 valve terminal "R"
W	Series 20 valve terminal "B"
Y	Series 20 valve terminal "W"
C	24 V∿ common
S1/S2	Optional remote sensor

Cool Only System

Rc	Power
R	R and Rc joined by jumper
Y	Compressor contactor
G	Fan relay
C	24 V∿ common
S1/S2	Optional remote sensor

2H/2C System (1 transformer)

Y2	Compressor contactor 2
W2	Heat 2 relay
Rc	Power
R	R and Rc joined by jumper
W	Heat relay 1
Y	Compressor contactor 1
G	Fan relay
C	24 V∿ common
S1/S2	Optional remote sensor

2H/2C System (2 transformers)

Y2	Compressor contactor 2
W2	Heat relay 2
Rc	Power (cooling transformer)
R	Power (heating transformer)
W	Heat relay 1
S1/S2	Optional remote sensor
Y	Compressor contactor 1
G	Fan relay
C	24 V∿ common (cooling tranformer)

Lutron® Comfort Controls
TouchPRO Wireless® Thermostat

Wiring Guide (for use with 24 V∼ common)

Heat Pump Systems

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

Rc ⎫	Power
R ⎭	R and Rc joined by jumper
O/B	Changeover valve
Y	Compressor contactor
G	Fan relay
C	24 V∼ common
S1/S2	Optional remote sensor

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

Y2	Compressor contactor 2
Rc ⎫	Power
R ⎭	R and Rc joined by jumper
O/B	Changeover valve
Y	Compressor contactor 1
G	Fan relay
C	24 V∼ common
S1/S2	Optional remote sensor

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

L	Equipment monitor
E/Aux	Auxiliary heat relay (heat 2)
Rc ⎫	Power
R ⎭	R and Rc joined by jumper
O/B	Changeover valve
Y	Compressor contactor
G	Fan relay
C	24 V∼ common
S1/S2	Optional remote sensor

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

Y2	Compressor contactor 2
L	Equipment monitor
E/Aux	Auxiliary heat relay (heat 2)
Rc ⎫	Power
R ⎭	R and Rc joined by jumper
O/B	Changeover valve
Y	Compressor contactor 1
G	Fan relay
S1/S2	Optional remote sensor
C	24 V∼ common

Lutron® Comfort Controls
TouchPRO Wireless™ Thermostat

THP9045 Wiring Module

The THP9045 wiring module (included with the
TouchPRO Wireless® Thermostat) is used in retrofit
applications where no common wire is available
between the thermostat and the HVAC equipment.
It is wired between the HVAC equipment and the
TouchPRO and is mounted on or near the HVAC
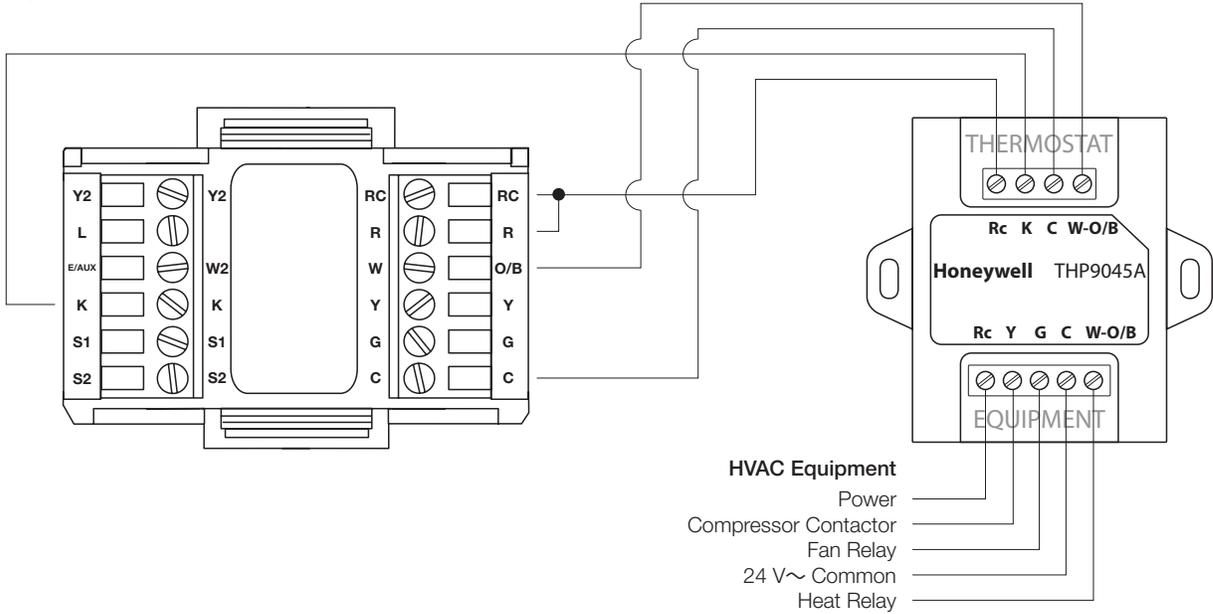equipment.
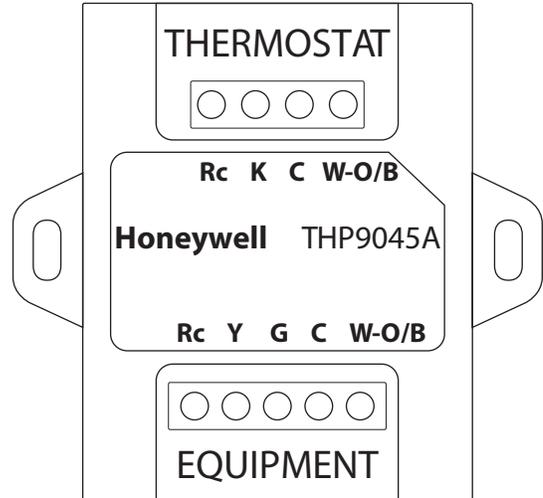
THERMOSTAT

Rc K C W-O/B

Honeywell   THP9045A

Rc Y G C W-O/B

EQUIPMENT

Lutron® Comfort Controls
TouchPRO Wireless® Thermostat

Wiring Guide (for use with the THP9045A Wiring Module)

Conventional Systems
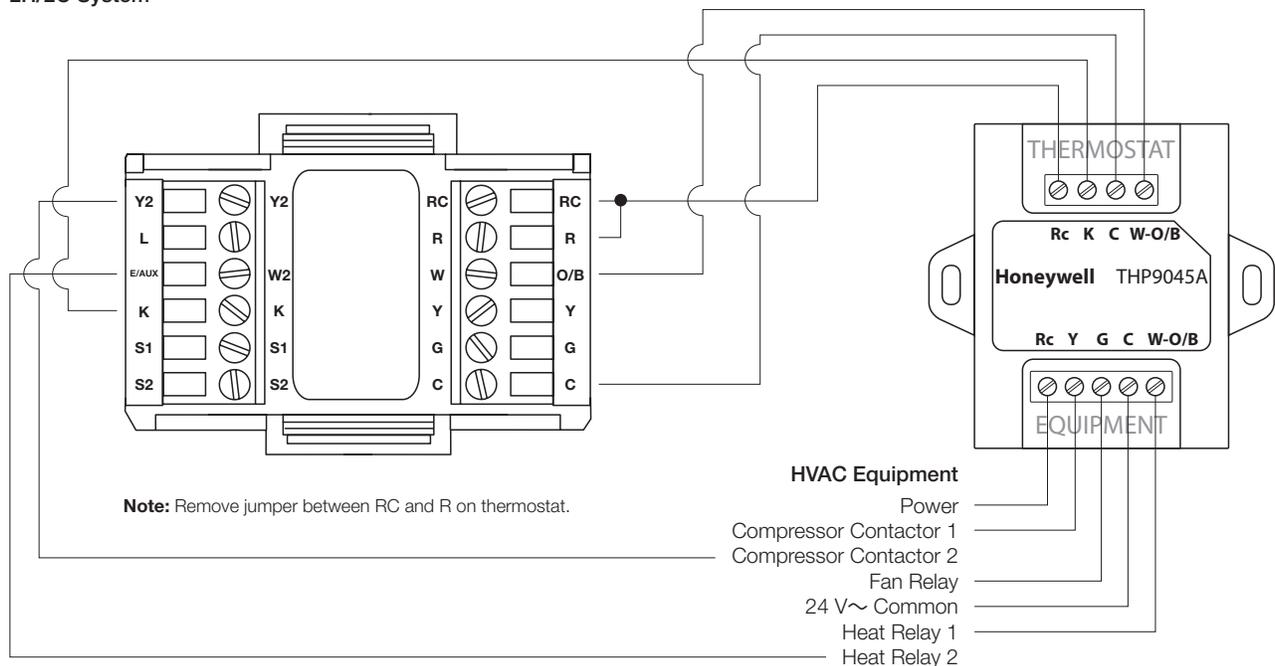
1H/1C System

HVAC Equipment
Power
Compressor Contactor
Fan Relay
24 V~ Common
Heat Relay

2H/2C System

Note: Remove jumper between RC and R on thermostat.

HVAC Equipment
Power
Compressor Contactor 1
Compressor Contactor 2
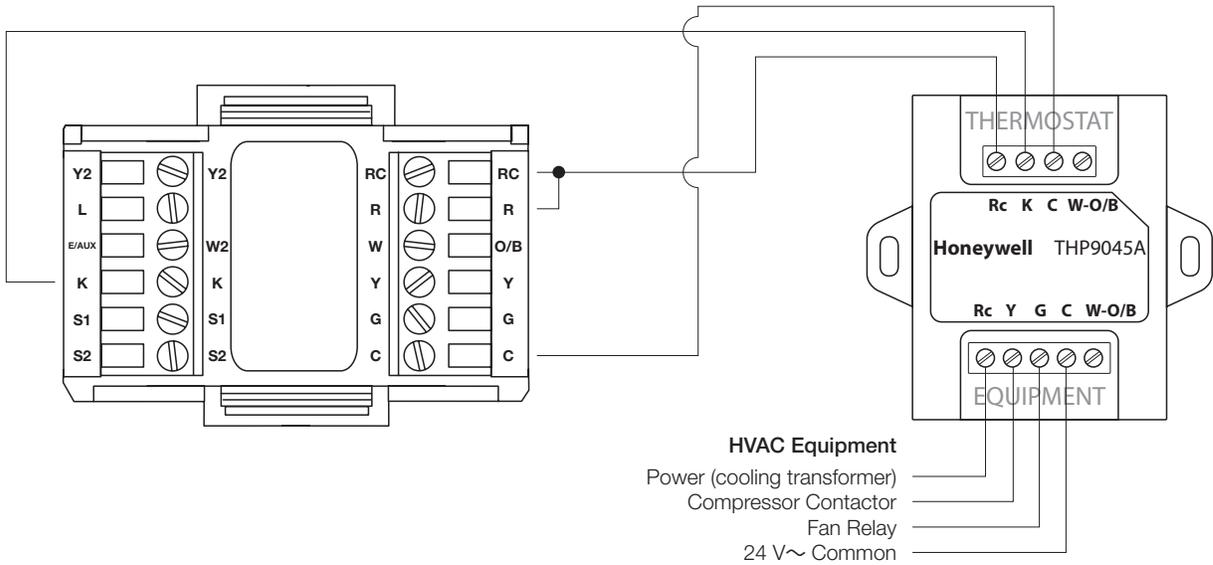Fan Relay
24 V~ Common
Heat Relay 1
Heat Relay 2

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Lutron® Comfort Controls
TouchPRO Wireless™ Thermostat

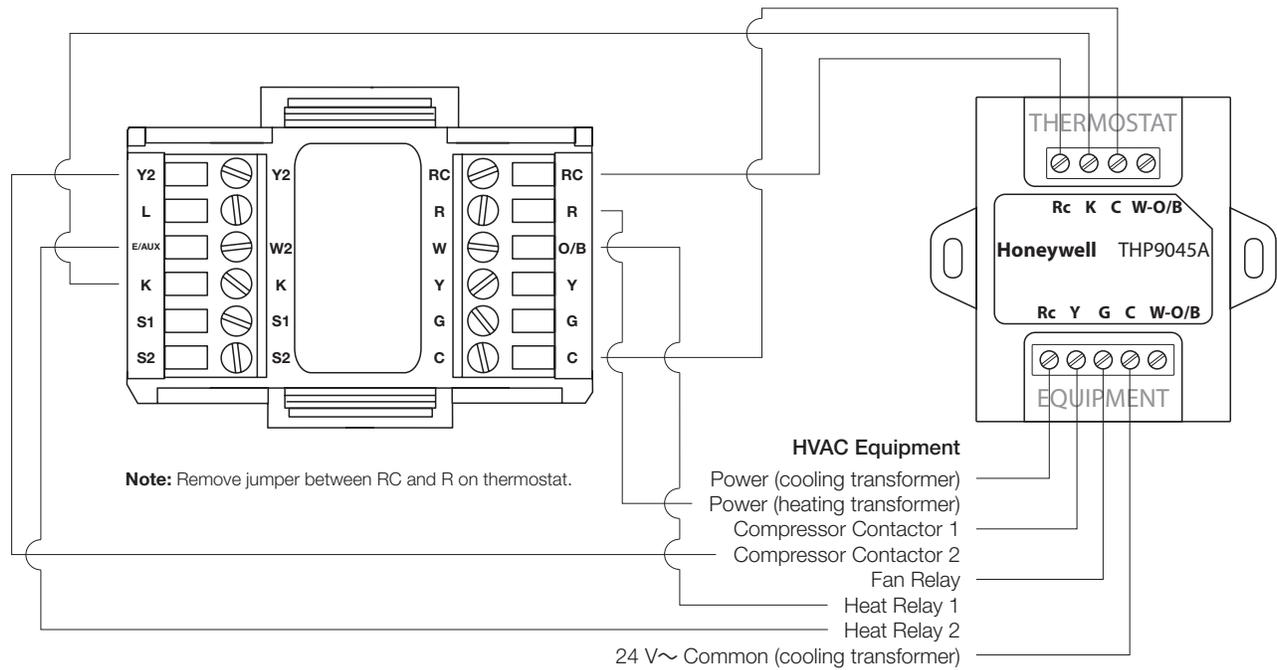## Wiring Guide (for use with the THP9045A Wiring Module) *(continued)*

Conventional Systems

Cool Only System
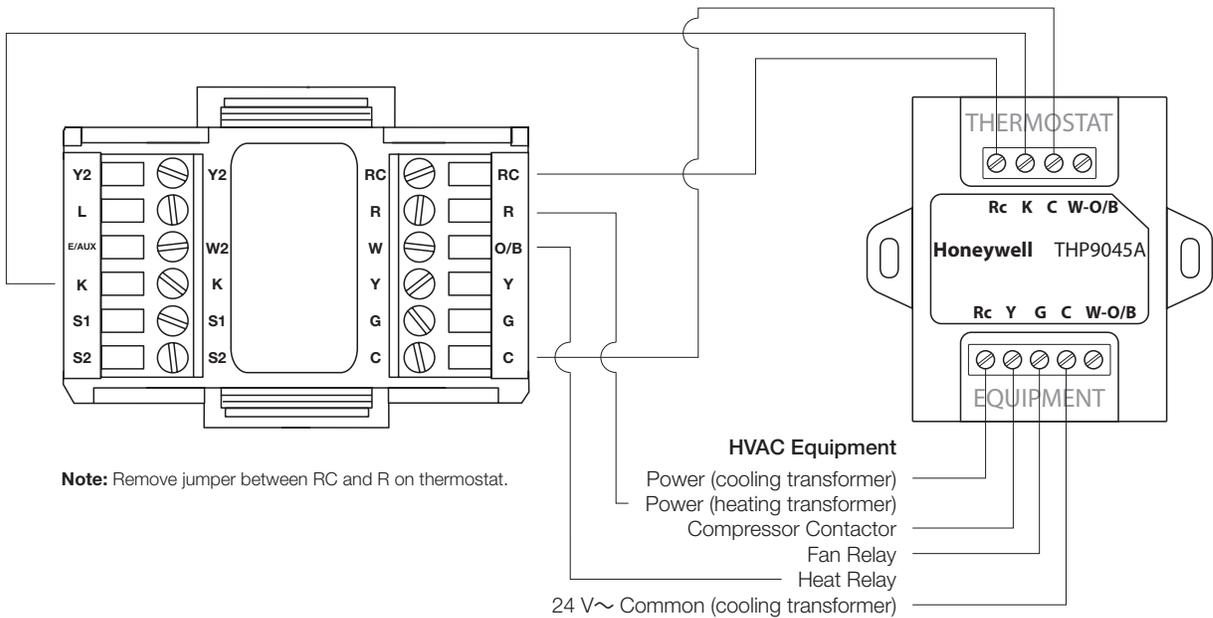
HVAC Equipment
Power (cooling transformer)
Compressor Contactor
Fan Relay
24 V∼ Common

1H/1C System (2 transformers)

Note: Remove jumper between RC and R on thermostat.

HVAC Equipment
Power (cooling transformer)
Power (heating transformer)
Compressor Contactor
Fan Relay
Heat Relay
24 V∼ Common (cooling transformer)

Continued on next page...

Lutron® Comfort Controls
TouchPRO Wireless® Thermostat

Wiring Guide (for use with the THP9045A Wiring Module) *(continued)*

Conventional Systems

2H/2C System (2 transformers)

Note: Remove jumper between RC and R on thermostat.

HVAC Equipment
Power (cooling transformer)
Power (heating transformer)
Compressor Contactor 1
Compressor Contactor 2
Fan Relay
Heat Relay 1
Heat Relay 2
24 V∼ Common (cooling transformer)

Heat Only System - Not compatibable with THP9045A Wiring Module

Heat Only System with Fan - Not compatibable with THP9045A Wiring Module
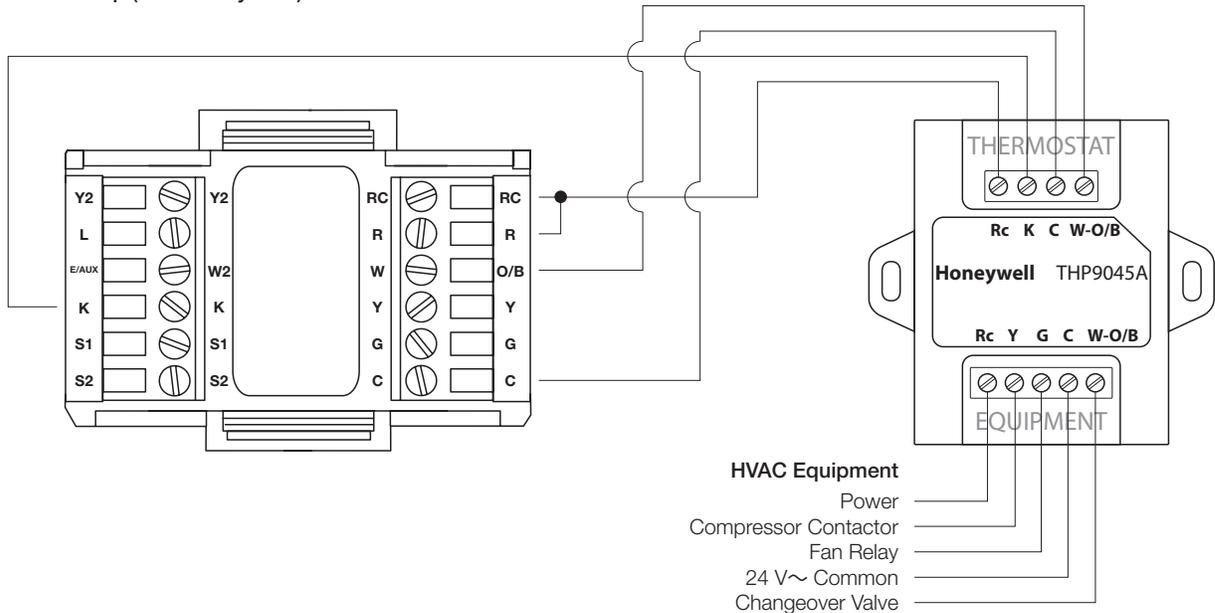
Heat Only System (Series 20) - Not compatibable with THP9045A Wiring Module

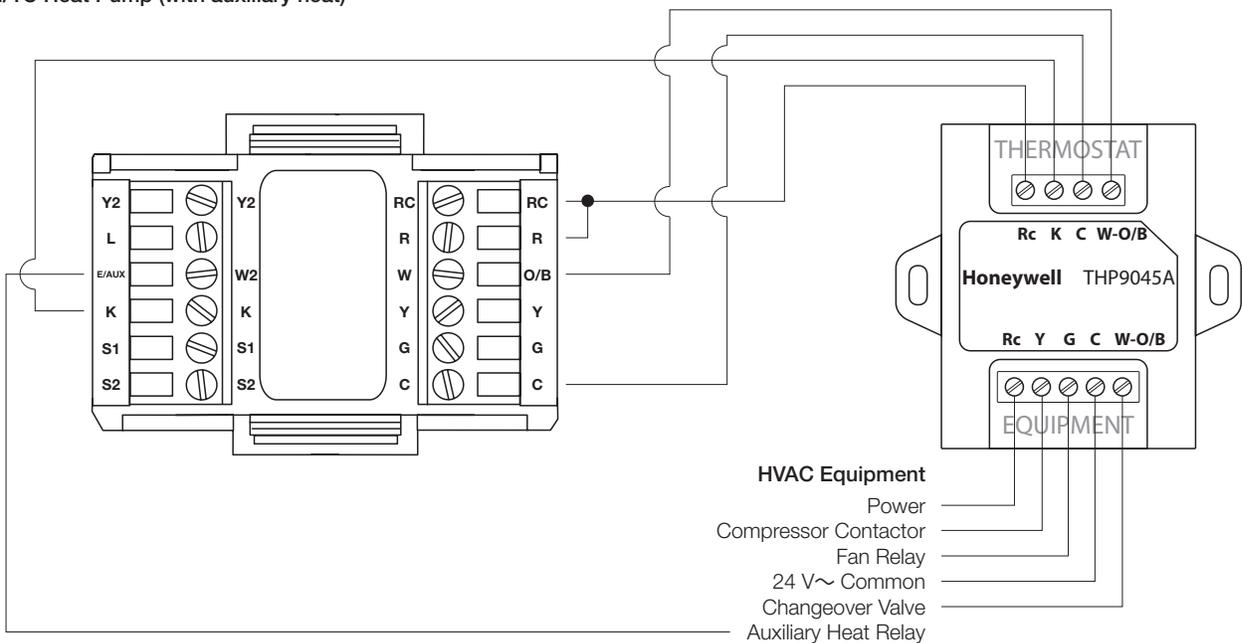## Lutron® Comfort Controls
TouchPRO Wireless™ Thermostat

Wiring Guide (for use with the THP9045A Wiring Module)

Heat Pump Systems

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

HVAC Equipment
Power
Compressor Contactor
Fan Relay
24 V∼ Common
Changeover Valve

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

HVAC Equipment
Power
Compressor Contactor
Fan Relay
24 V∼ Common
Changeover Valve
Auxiliary Heat Relay
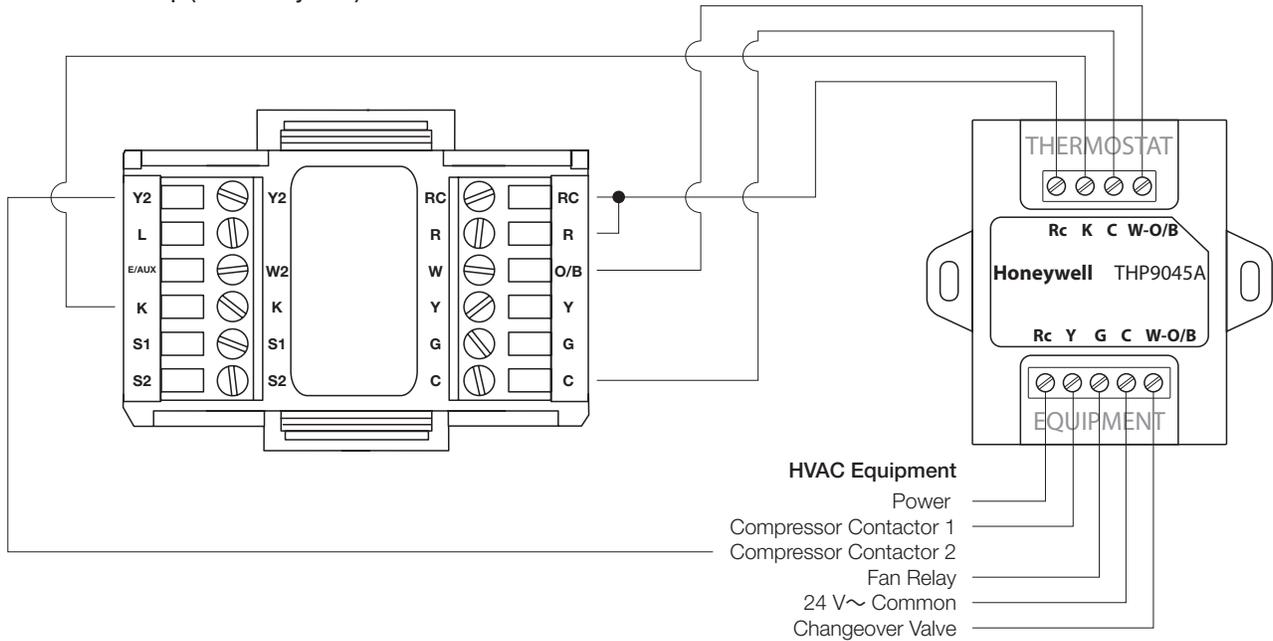
Lutron® Comfort Controls
TouchPRO Wireless® Thermostat

Wiring Guide (for use with the THP9045A Wiring Module) *(continued)*

Heat Pump Systems

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

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