2.72"
(69 mm)

4.99"
(126.8 mm)

Technical Data

Operating Voltage	24VAC +/- 10%

Maximum Load	1.3 Amps at 24VAC
	4 x MVA
	   (part number A3020522)
	6 x TVA (part number
	   A3010522, four-wire)
	6 x TVA (Canadian model only,
	   part number A3020416,
	   two-wire)

Display Range	38°F to 99°F (2°C to 37°C)
Setting Range	38°F to 99°F (2°C to 37°C) 68°F (20°C) default setting
Minimum Limit	38°F (2°C) to maximum limit 50°F (10°C) default minimum setting
Maximum Limit	Minimum limit to 99°F (37°C) 86°F (30°C) default maximum setting
Units	User-configurable Fahrenheit or Celsius
Memory	Permanent settings and mode without power
Freeze Protection	Activation at 38°F (3.3°C) De-activation at 39°F (3.8°C)
Resolution	1° displayed, 0.25° calculated

Temperature Ranges	Shipping and storage —
	   14°F to 158°F, (-10°C to 70°C)
	Operation —
	   32°F to 104°F, (0°C to 40°C)

Humidity	20 to 90% non-condensing
Size	5" H x 2.72" W x 0.91" D

Overview

The Uponor heat-only thermostat (A3030101) is designed for hydronic heating applications.

The thermostat is power-sharing, meaning it receives power for operation by sharing voltage with the connected wiring. This eliminates any need for a third wire or batteries, making the thermostat simple to install, wire and service.

Note: The thermostat works effortlessly with other Uponor components. However, some commonly used third-party devices (e.g., relays, zone valves, etc.) may have compatibility issues with the thermostat. If connecting the thermostat to a third-party control device, refer to that device's installation instructions for specific information regarding operation with a power-sharing thermostat. The Typical Wiring Schematics section in this instruction sheet features the most common wiring applications. For additional help, contact Technical Services.
Uponor U.S.: (800) 321-4739
Uponor Canada: (888) 994-7726

Tools Required

- Small, flathead screwdriver
- Phillips screwdriver (for mounting hardware)
- Wire stripper and cutter

Installation

Prior to installing the Uponor thermostat, follow the instructions below.

1. Thoroughly read this instruction sheet to understand the proper procedures for installation and operation. Failure to do so could result in damage to the thermostat or its connected equipment, and can also create a safety hazard.

2. Ensure the function and rating of the thermostat is suitable for the application.

3. Only experienced and trained professionals familiar with low-voltage wiring should attempt to install the thermostat.

4. Uponor recommends using 18AWG LVT wiring for all low-voltage connections (as regulated by local building codes).
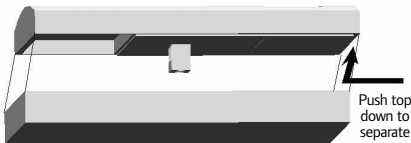
Placing the Thermostat

Where you place the thermostat is extremely important. Install the thermostat approximately five feet (1.75 meters) above the floor on a smooth, flat surface. Avoid mounting the thermostat in the following locations.
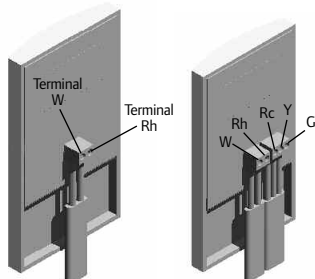
- Near or around windows
- On outside walls
- Near fireplaces
- In the corner of a room
- Behind doors
- On interior walls susceptible to solar gains
- Near stoves, lamps, televisions, etc.
- Damp areas

Mounting the Wall Plate

The thermostat case can mount to a standard electrical wall box or most wall surfaces using suitable hardware. To properly mount the wall plate, follow the instructions below.

Push top down to separate

1. Separate the front and back plates of the thermostat by gently applying downward pressure on the front plate to separate the front plate from the back plate.

2. Pull the thermostat wire through the round opening in the back plate.

3. Place the back plate against the wall at the desired location to cover the opening or electrical wall box.

4. Align the holes of the back plate to the holes in the wall or electrical wall box, and attach the plate with screws. If mounting the plate to drywall, use wall anchors and screws.

5. If the wall cavity behind the thermostat is susceptible to drafts (e.g., from a return-air plenum or an uninsulated wall), plug and seal any openings to prevent them from affecting temperature readings.

Wiring the Thermostat

Follow the instructions below to properly wire the thermostat.

Note: All wiring must comply with local electrical codes and standards.

Caution: Disconnect electrical power to the system to prevent electrical shock and damage.
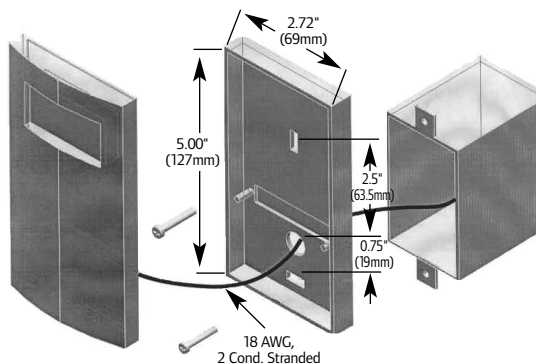
1. Remove ¼" of wire insulation from the wire ends. Ensure the bare wires are clean and free of corrosion.

2. Route the wires to the terminal blocks and place the end of the wires in the correct wiring locations.

Note: The heat terminals (Rh and W) are not polarity sensitive.

Mounting the Thermostat to the Wall Plate

To mount the thermostat to the wall plate, follow the instructions below.

1. Place the tabs at the bottom of the front enclosure into the grooves at the back of the wall plate.

2. Check the alignment between the two components.

3. Apply pressure to the top of the thermostat until you hear a click.

Operation

The dynamics of a radiant heating system differ from a typical baseboard or forced-air heating system. This is because radiant systems heat the mass and the objects in the room. The Uponor thermostat uses optimized control logic to control radiant systems. Refer to the paragraphs below for the two different modes of operation — differential mode and pulse width modulation (PWM) mode.

Differential Mode

When the room temperature falls 1°F (0.5°C) below the desired room setting, the control devices wired to the thermostat activate.

Pulse Width Modulation (PWM) Mode

When the room temperature is between 1 to 3°F (0.5 to 1.5°C) below the desired room setting, the thermostat manages the application of heat by varying the on-and-off cycles (PWM). The on-and-off times vary depending on the difference between room and desired temperatures — the further away, the greater the on time. This prevents the room temperature from rising above the desired temperature. The heating system will run continuously at temperature differences greater than 3°F (1.5°C).

Note: In PWM mode, the heating equipment may temporarily turn off even when the heating icon is flashing (indicating a call for heat).

Digital Filtering

The thermostat also features digital filtering, meaning the thermostat continuously measures the room temperature and employs a digital filter to create a stable reading and consistent operation. If each room temperature reading displayed as it is sensed, the temperature shown would appear erratic and inconsistent. The filtering technique throws out sensor readings with large differences from the displayed temperature and then limits the

amount any individual reading can affect the overall displayed reading. This results in a smooth display and operation.

Note: Due to filtering, the displayed room temperature can take up to a minute to change 1°F (0.5°C).

⚠️ **Important:** This product is not designed for use with forced-air furnaces. The thermostat conforms to universal industry standards. Uponor is not responsible for damages resulting from mis-application or misuse of its products. Install the thermostat with the power disconnected. Failure to do so can result in damage to the thermostat.

Note: The Uponor thermostat requires a minimum current to operate correctly. A 1,000 Ohm, 0.5 Watt resistor is included in this package and may be required for operation of third-party devices. Refer to the Typical Wiring Schematics section for additional information.

Setting and Adjusting the Thermostat

All user functions operate via two buttons (+ and –) located on the front of the thermostat case.

Power Up and Power Interruption

After completing all electrical connections and properly mounting the thermostat, apply power to the system. The thermostat reading automatically starts at 68°F (20°C) in Heat mode, which is the default temperature setting and mode.

The Uponor thermostat recalls the previous temperature setting and mode if power is interrupted. When power is restored, the thermostat's reading will start at the previous temperature setting and the previous mode (Heat or Off).

Normal Operation

The thermostat displays the current room temperature measured by the thermostat along with the mode of operation. The following icons indicate the mode of operation.

· **None** — Thermostat is off

· **Radiant panel** — Heat mode is active with no call for heat

· **Radiant panel with lines flashing above** — Heat mode is active with a call for heat

Adjusting the Temperature

The following instructions outline how to adjust the temperature setting. Pressing the + (increase or top button) or – (decrease or bottom button) changes the desired room temperature setting.

1. Press either button to enter the setting program mode.

2. The Heat icon will begin to flash.

3. Press the + (top button) to increase the room setting and the – (bottom button) to decrease the room setting. Press and hold the button to rapidly change the temperature setting.

4. The thermostat accepts the new setting five seconds after pressing the last button; then the thermostat reverts to displaying the current room temperature.

Note: When the mode is set to Off, you cannot change the temperature setting.

Changing Modes (Heat and Off)

This thermostat does not use a switch to change the mode from Heat to Off. Follow the instructions below to change the modes.

1. Press both (+ and –) buttons simultaneously to change the mode.

2. Ensure the program bar is flashing to indicate the thermostat is in the programming mode.

3. Press the + or – button to change the mode of operation. Using the + (top) button or the – (bottom) button changes the rotation sequence of the icons or modes.

The following icons indicate the mode.

· **None** — Thermostat is off

· **Floor icon** — Heating mode

The thermostat accepts changes five seconds after pressing the last button, and then the thermostat returns to normal operation

Note: The thermostat remembers the previous operating mode and settings after it is powered off.

Freeze Protection

The thermostat features automatic low-temperature protection to prevent freezing. Regardless of the temperature setting and mode (Heat or Off), the thermostat will activate the heating circuit at 38°F (3.3°C) until the room temperature reaches 39°F (3.8°C). You cannot disable this feature.

Advanced Settings

The Uponor thermostat features extra settings, which are accessed via the Special Setting button on the inside of the thermostat case. When using this button, the thermostat must be wired and have power, but needs to be separate from the wall mounting plate.

Note: Uponor recommends only qualified installers change these settings. Improper adjustment of these settings can result in incorrect operation of the heating system.

Units

The Uponor thermostat is capable of operating in either Fahrenheit or Celsius. To change the units setting, follow the instructions below.

1. Press the Special Setting button once.

2. The display shows the units icon (°F or °C).

3. Press the + (top) or – (bottom) button to change the units.

4. The thermostat accepts the change five seconds after pressing the last button, and then the thermostat returns to normal operation.

Upper Setting Limit

Follow the instructions below to set the upper limit of the allowable temperature setting range.

1. Press the Special Setting button twice.

2. The display will show the number 1 in the lower left of the display and the temperature setting.

3. Press the + (top) or – (bottom) button to increase or decrease the upper setting limit of the thermostat.

4. The thermostat accepts the change five seconds after pressing the last button, and then the thermostat returns to normal operation.

Lower Setting Limit

Follow the instructions below to set the lower limit of the allowable temperature setting range.

1. Press the Special Setting button three times.

2. The display shows the number 2 in the lower left of the display and the temperature setting.

3. Press the + (top) or – (bottom) button to increase or decrease the lower setting limit of the thermostat.

4. The thermostat accepts the change five seconds after pressing the last button, and then the thermostat returns to normal operation.

Note: Use the upper and lower limit for public thermostat operation. By setting these limits to the same value, a user cannot change the thermostat setting.

Sensor Reading Calibration
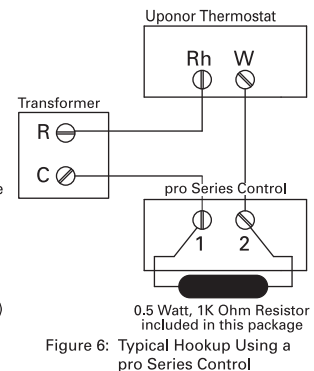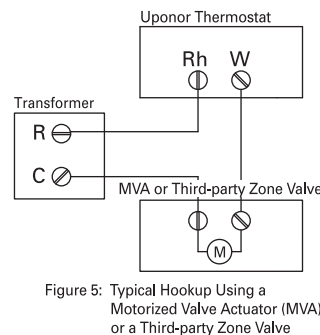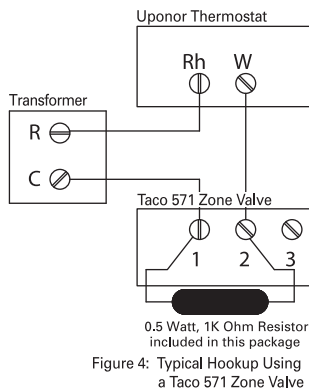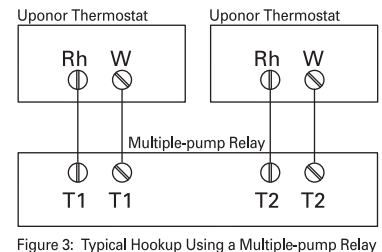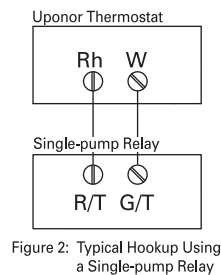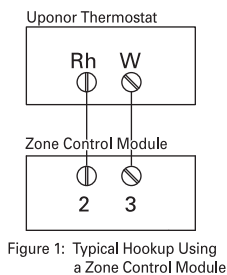
This setting varies the reading of the thermostat to overcome installation-related issues.

1. Press the Special Setting button and the + (top) button at the same time.

2. The display shows a single digit number and the set operating units.

3. Press the + (top) or – (bottom) button to increase or decrease the sensor reading offset. Positive numbers increase the sensor reading; negative numbers decrease the sensor reading.

4. The thermostat accepts the change five seconds after pressing the last button, and then the thermostat returns to normal operation.

⚠ **Important:** Adjust the sensor reading calibration as a last resort after first trying all other remedies.

Typical Wiring Schematics

Uponor Thermostat

Rh   W

Zone Control Module

2   3

Figure 1: Typical Hookup Using a Zone Control Module

Uponor Thermostat

Rh   W

Single-pump Relay

R/T G/T

Figure 2: Typical Hookup Using a Single-pump Relay

Uponor Thermostat   Uponor Thermostat

Rh   W   Rh   W

Multiple-pump Relay

T1   T1   T2   T2

Figure 3: Typical Hookup Using a Multiple-pump Relay

Uponor Thermostat

Rh   W

Transformer

R

C

Taco 571 Zone Valve

1   2   3

0.5 Watt, 1K Ohm Resistor included in this package

Figure 4: Typical Hookup Using a Taco 571 Zone Valve

Uponor Thermostat

Rh   W

Transformer

R

C

MVA or Third-party Zone Valve

M

Figure 5: Typical Hookup Using a Motorized Valve Actuator (MVA) or a Third-party Zone Valve

Uponor Thermostat

Rh   W

Transformer

R

C

pro Series Control

1   2

0.5 Watt, 1K Ohm Resistor included in this package

Figure 6: Typical Hookup Using a pro Series Control

uponor