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.

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

Technical Data

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<tr>
<th>Operating Voltage</th>
<th>24VAC +/- 10%</th>
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<tbody>
<tr>
<td>Maximum Load</td>
<td>1.3 Amps at 24VAC</td>
</tr>
<tr>
<td></td>
<td>4 x MVA (part number A3020522)</td>
</tr>
<tr>
<td></td>
<td>6 x TVA (part number A3010522, four-wire)</td>
</tr>
<tr>
<td></td>
<td>6 x TVA (Canadian model only, part number A3020416, two-wire)</td>
</tr>
<tr>
<td>Display Range</td>
<td>38°F to 99°F (2°C to 37°C)</td>
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<tr>
<td>Setting Range</td>
<td>38°F to 99°F (2°C to 37°C)</td>
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<td></td>
<td>68°F (20°C) default setting</td>
</tr>
<tr>
<td>Minimum Limit</td>
<td>38°F (2°C) to maximum limit</td>
</tr>
<tr>
<td></td>
<td>50°F (10°C) default minimum setting</td>
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<tr>
<td>Maximum Limit</td>
<td>Minimum limit to 99°F (37°C)</td>
</tr>
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<td></td>
<td>86°F (30°C) default maximum setting</td>
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<td>Temperature Ranges</td>
<td>Shipping and storage —</td>
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<td></td>
<td>14°F to 158°F, (-10°C to 70°C)</td>
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<td></td>
<td>Operation —</td>
</tr>
<tr>
<td></td>
<td>32°F to 104°F, (0°C to 40°C)</td>
</tr>
<tr>
<td>Humidity</td>
<td>20 to 90% non-condensing</td>
</tr>
<tr>
<td>Size</td>
<td>5” H x 2.72” W x 0.91” D</td>
</tr>
</tbody>
</table>
Caution: Disconnect electrical power to the system to prevent electrical shock and damage.

1. Remove \( \frac{1}{4} \)" 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
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, and then the thermostat returns to normal operation.

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

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.

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.

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).

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.

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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.

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.

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

Typical Wiring Schematics

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

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.

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.

Typical Wiring Schematics

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.

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.

Typical Wiring Schematics