Rinnai® Sens®
INTERNAL (INDOOR) CONDENSING TANKLESS WATER HEATER
RESIDENTIAL (WITH RECIRCULATION PUMP)

**RUR199i, RUR160i**

**FLEXIBLE VENTING OPTIONS**
- Concentric or Schedule 40 PVC/CPVC
- Direct Vent (Concentric and Twin Pipe)
- Non-Direct Vent (Room Air)
- Common Vent (Direct Vent and Room Air)
- Maximum Equivalent Vent Lengths:

| Twin Pipe: | Vent Sizes | 2 in. (51 mm) | 3 in. (76 mm) |
|           | Vent Lengths | 65 ft (20 m) | 150 ft (46 m) |

| Concentric: | Vent Sizes | 2 in. X 4 in. | 3 in. X 5 in. |
|            | Vent Lengths | 65 ft (20 m) | 150 ft (46 m) |

**CIRC-LOGIC RECIRCULATION TECHNOLOGY**

Rinnai Circ-Logic recirculation technology allows users to set recirculation patterns that coincide with their hot water usage patterns. Hot water is available when needed, without the expense of circulating it during times of inactivity. Two recirculation modes are available:
- **Dedicated Mode** - With a dedicated return line, the integrated pump recirculates water from the tankless water heater through the return line and back to the heater.
- **Crossover Mode** - In applications where a dedicated return line is not available or is difficult to install, ThermaCirc360® technology allows for the simple installation of a Thermal Bypass Valve (included with purchase) at the fixture farthest away from the water heater.

**THERMAL BYPASS VALVE**

- Room Air Screen, Condensate Neutralizer, ScaleCutter, Drain Down Kit, Additional Controllers, Pipe Cover, Recirculation Pump, DPS/MIS Switch, EZConnect® Cables, Control-R™ Wi-Fi Module, Wireless Accessories, and many more. Visit rinnai.us for a complete list of accessories.

**OPTIONAL ACCESSORIES**

**EASE OF INSTALLATION AND SERVICEABILITY**
- Compact Design to Save Space
- Wi-Fi Technology for Remote Monitoring and Management
- Sliding Mounting Bracket for Easy Installation
- Simple Gas Conversion

**CERTIFIED TO ANSI Z21.10.3 — CSA 4.3**
**SENSEI™ TECHNICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>SPECIFICATION</th>
<th>RUR199i</th>
<th>RUR160i</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions - w, h, d</td>
<td>18.5 in. x 26.4 in. x 11.4 in.</td>
<td>18.5 in. x 26.4 in. x 11.4 in.</td>
</tr>
<tr>
<td>Minimum Gas Consumption Btu/h</td>
<td>15,000</td>
<td>15,000</td>
</tr>
<tr>
<td>Maximum Gas Consumption Btu/h</td>
<td>199,000</td>
<td>160,000</td>
</tr>
<tr>
<td>Flow Rate¹ (Min - Max)</td>
<td>0.26 - 9.8 GPM (1.0 - 37 L/min)</td>
<td>0.26 - 8.0 GPM (1.0 - 30 L/min)</td>
</tr>
<tr>
<td>Max Flow Rate with Parameter Adjustment</td>
<td>11 GPM (42 L/min)</td>
<td>9 GPM (34 L/min)</td>
</tr>
<tr>
<td>Weight</td>
<td>73 lb (33 kg)</td>
<td>71 lb (32 kg)</td>
</tr>
<tr>
<td>Sound Level</td>
<td>49 dB</td>
<td>48 dB</td>
</tr>
<tr>
<td>Normal</td>
<td>84 W</td>
<td>52 W</td>
</tr>
<tr>
<td>Electrical</td>
<td>9.27 C</td>
<td>79 C</td>
</tr>
<tr>
<td>Freeze Protection</td>
<td>3.11 C</td>
<td>166 C</td>
</tr>
<tr>
<td>Max Current</td>
<td>4 Amps</td>
<td>4 Amps</td>
</tr>
<tr>
<td>Fuse</td>
<td>10 Amps</td>
<td>10 Amps</td>
</tr>
<tr>
<td>Temperature</td>
<td>Minimum: 98° F (37° C) Default</td>
<td>Maximum: 120° F (49° C) With Parameter Adjustment</td>
</tr>
<tr>
<td>By-Pass Flow Control</td>
<td>Electronic</td>
<td>Direct Electronic Ignition</td>
</tr>
<tr>
<td>Gas Supply Pressure²</td>
<td>Natural: 3.5 in. w.c. - 10.5 in. w.c.</td>
<td>Propane: 8.0 in. w.c. - 13.5 in. w.c.</td>
</tr>
<tr>
<td>Ignition System</td>
<td>Appliance: AC 120 Volts, 60Hz.</td>
<td>Temperature Controller: DC 12 Volts (Digital)</td>
</tr>
<tr>
<td>Electronic Connections</td>
<td>Water Supply Pressure</td>
<td>Minimum: 50 PSI (Recommended 60-80 PSI for max performance)</td>
</tr>
<tr>
<td>Water Supply Pressure</td>
<td>Controller Cable</td>
<td>Non-Polarized Two Core Cable (Minimum 22 AWG)</td>
</tr>
<tr>
<td>Service Connections</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clearances</td>
<td></td>
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</table>

**SENSEI™ DIMENSIONS**

<table>
<thead>
<tr>
<th>Connection</th>
<th>in.</th>
<th>mm</th>
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<tbody>
<tr>
<td>COLD</td>
<td>9.27</td>
<td>235</td>
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<tr>
<td>HOT</td>
<td>14.49</td>
<td>368</td>
</tr>
<tr>
<td>GAS</td>
<td>3.57</td>
<td>91</td>
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<tr>
<td>PRV</td>
<td>10.40</td>
<td>264</td>
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</tbody>
</table>

**SENSEI™ WATER FLOW CURVE**

Flow curves apply only to incoming water temperatures of 70° F (21° C) or less. For incoming water temperatures greater than 70° F (21° C), please contact Rinnai.

**NOTE:** Maximum flow rates may vary based on set temperature, Delta T and altitude.

Dashed lines represent flow rate after parameter adjustment.

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The RUR pump has an operation range of 1.05 GPM to 5.30 GPM

**Internal Recirculation Pump Control**

- Built-in Rinnai Circ-Logic: Recirculation program cycles internal pump

**Internal Pump**

- Integrated pump and bypass technology allow for recirculation through a dedicated return line or thermal bypass valve.

**Maximum Recirculation Pipe Lengths**

- 400 equivalent feet for 3/4 in. pipe diameter
- 100 equivalent feet for 1/2 in. pipe diameter

*Take equivalent elbow lengths into consideration when calculating pipe length.*

**For dedicated return lines:** Total length includes both hot water supply and dedicated return lines.

**Cross-over mode:** Total length includes both hot water supply and cold water piping length from the tankless water heater to the thermal bypass valve. Cross-over mode requires the use of a thermal bypass valve (included).