Control-R™ Wi-Fi Module
Installation Manual

For Your Records
If you have support questions, please call Customer Care and have your Control-R™ Wi-Fi module’s AYLA ID and Water Heater Serial Number available.

Water Heater Serial Number: ________________________________
(Location on side of water heater)

AYLA ID: ________________________________
(Location on back of Control-R™ Wi-Fi Module)
Welcome

This manual provides installation instructions for the Rinnai® Control-R™ Wi-Fi Module (referred to as module throughout this manual).

Before installing and operating the module, be sure to read these instructions to familiarize yourself with the module’s features and functionality.

For detailed information on the Rinnai Tankless Water Heater, including installation instructions, refer to the Tankless Water Heater Installation and Operation Manual or view an online version at rinnai.us.

If You Need Service

Call Rinnai Customer Care at 1-800-621-9419
Monday to Friday between 8 AM to 8 PM EST.

Please have the following information available:

- AYLA ID (Located on back of Control-R™ Wi-Fi Module)
- Water Heater Serial Number (Located on side of water heater)

FCC Part 15

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference
- This device must accept any interference received, including interference that may cause undesired operation

READ AND SAVE THESE INSTRUCTIONS
2 About the Module

With Rinnai’s Control-R™ Wi-Fi Module, new and existing Rinnai Residential and Commercial Tankless Water Heaters (2006 and newer) can be remotely monitored and controlled via smart devices. Rinnai now has the capability to provide a new option for management, control and maintenance of Rinnai Tankless Water Heaters.

- **Control and Monitoring**
  Control the Rinnai Tankless Water Heater from a smart phone or tablet to turn the system on/off, change the water temperature and monitor status.

- **Remote Diagnostics and Maintenance**
  Gives technicians detailed system information via automatic alerts and remote diagnostic tools before ever leaving their place of business, leading to shorter maintenance and repair times.

- **Accessibility and Convenience**
  Get instant access to technical bulletins, product warranty, product registration, manuals, step-by-step repair guides and more!

The Control-R™ Wi-Fi Module attaches easily to the Rinnai Tankless Water Heater by a two wire interface quickly connecting through the local Wi-Fi network. Once connected and the free Rinnai App is downloaded, the Rinnai Tankless Water Heater can be associated to the Rinnai independent dealer.
Specifications

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Rinnai Control-R™ Wi-Fi Module</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>RWM101</td>
</tr>
<tr>
<td>Dimensions (w, h, d):</td>
<td>Module: 3.69 in. x 3.69 in. x 1.18 in. (94 mm x 94 mm x 29.97 mm)</td>
</tr>
<tr>
<td></td>
<td>Shipping Carton: 6.125 in. x 2.88 in. x 6 in. (155.6 mm x 73 mm x 152.4 mm)</td>
</tr>
<tr>
<td>Weight</td>
<td>Module: 4.8 oz (0.14 kg)</td>
</tr>
<tr>
<td></td>
<td>Shipping Carton: 6 oz (0.17 kg)</td>
</tr>
<tr>
<td>Supported Devices</td>
<td>• Apple® devices (iPhone, iPad, etc.) running operating system 10.0 or higher</td>
</tr>
<tr>
<td></td>
<td>• Android® devices (phones, tablets, etc.) running operating system 5.0 or higher</td>
</tr>
<tr>
<td></td>
<td>• BlackBerry® devices are NOT supported</td>
</tr>
<tr>
<td>Compatibility</td>
<td>• Compatible with all Rinnai Tankless Water Heater models manufactured 2006 and later (except the RH180 Hybrid Tank-Tankless Water Heater).</td>
</tr>
<tr>
<td></td>
<td>Note: The Lime Condition (LC) notification will not appear in the Rinnai App when the module is paired with the following series of Rinnai tankless water heaters manufactured prior to 2009: VA, VB, KA and V53e.</td>
</tr>
<tr>
<td></td>
<td>• Compatible with the following Wireless Demand Recirculation Accessories: Push Button, Motion Sensor and Temperature Sensor.</td>
</tr>
<tr>
<td></td>
<td>• 802.11N Wi-Fi Network up to 2.4 GHz</td>
</tr>
<tr>
<td></td>
<td>• NOT COMPATIBLE with the MC-195T-US or MC-100V controllers</td>
</tr>
<tr>
<td>Installation</td>
<td>• Must be mounted indoors</td>
</tr>
<tr>
<td></td>
<td>• Attaches to the side of the water heater via the magnetic enclosure (indoor models only) or mounts to an indoor wall with supplied mounting hardware.</td>
</tr>
<tr>
<td>Pairing</td>
<td>• Module pairs to only 1 Rinnai Tankless Water Heater</td>
</tr>
</tbody>
</table>
3 What’s Inside the Box

Supplied Inside Box

Carefully unpack your system contents. If any part of the system appears damaged, do not attempt to use it. Contact Rinnai Customer Care at 1-800-621-9419 or your authorized Rinnai Service Provider.

WARNING: To avoid danger of suffocation, keep plastic bags out of the reach of children.

Check to be sure your system includes the following parts:

• Rinnai Control-R™ Module (including 5 feet/1.5 meters of wire for water heater connection)
• Wall mounting hardware (2 anchors/2 screws)
• Rinnai Control-R™ Wi-Fi Module Installation Manual (this document)
• Controller Cable for Rinnai SENSEI™ Models

Items Needed (Not Included)

The customer must supply the following devices, tools, and information.

• Mobile device connected to home/business network
• Router with Wi-Fi
• Wireless network name and Wi-Fi password
• 2.4GHZ Wi-Fi network with WPA 2 security protocols
• Water Heater Serial Number or QR Code (located on water heater left side panel on cardboard packaging)
• Tools (Below are example images of required tools and are for illustrative purposes only. Your tools may differ from the images shown below.)

Note: The above items, with the exception of the tools, are not required if operating only the Wireless Demand Recirculation accessories (Push Button, Motion Sensor and Temperature Sensor).

![Required tools]

Note: Wire Stripper/Crimping Tool required only if extending the length of the wires that connect the module to the water heater.
4 Select the Module Location

Use the following guidelines to select a location for the module.

- Choose a central location inside the home or business where the Wi-Fi signal is strong.
  
  Note: If the water heater is located where the Wi-Fi signal is weak (such as basements or a mechanical room), the module is designed so that wiring can run up to 300 feet (91 meters) away from the tankless water heater to ensure a strong Wi-Fi signal (18-22 gauge wire is required).

- Ensure that adequate space surrounds the module for service and support needs.

- For outdoor water heaters, the module must be installed indoors.

- The module is magnetic and can be placed on the side of the Rinnai tankless water heater (indoor models only) or mounted to a wall. See the next section for installation instructions.

5 Install the Module

Two options are available for installing the module:

Option 1: Magnetic Mount

The module contains a strong magnetic backing and can easily be placed on the side of the water heater (indoor models only).

Option 2: Wall Mount

The module can be mounted to a wall with the supplied mounting hardware. Refer to the next section for steps on mounting the module to a wall.

![Magnetic Mount Image](image1)

![Wall Mount Image](image2)
Mount Module to Wall

You Will Need:
- Two (2) anchors and two (2) screws (supplied with system)
- Tools shown in the What’s Inside the Box section

1. The module’s back panel contains two keyhole slots that support the module. Mark the location of each slot on the wall with a pencil. The distance between the two slots is 1.9 in. (48 mm).

   ![Keyhole slots](image)

2. Use a level to ensure the slots are even. Use a power drill to drill pilot holes for the module screws and anchors.

   ![Drilling pilot holes](image)

3. Insert the supplied 2 wall anchors into each hole until they sit flush against the wall.

   ![Inserting anchors](image)

4. Insert the supplied screws into the anchors and fasten to the wall leaving 1/4” exposed.

   ![Inserting screws](image)

5. Mount the module by placing the keyhole slots (on back of module) onto the screws.

   ![Mounting module](image)
Connect Module to Water Heater

**WARNING** To protect yourself from harm, follow the steps below before wiring the module:

- Turn off the electrical power supply by unplugging the power cord or by turning off the electricity at the circuit breaker. The temperature controller does not control the electrical power.
- Turn off the gas at the manual gas valve, usually located immediately below the water heater.
- Turn off the incoming water supply. This can be done at the isolation valve immediately below the water heater or by turning off the water supply to the building.

1. Unplug the water heater power cord.
   **Note:** Pressing the ON/OFF button on the controller does not completely power off the water heater.

2. Remove the water heater front panel.
   Remove the four (4) screws securing the front panel.

3. Two (2) wires are attached to the bottom of the module. Place these wires through the bottom opening of the water heater.

4. Attach each module wire to the remote control connection terminals by following the steps below:
   - Partially unscrew each of the two screws.
   - Insert the spade terminal (connected to the end of each wire) between the screw and the contact.
   - Tighten the screws.

5. Replace and tighten the four (4) screws on the water heater cover.

**Wiring Controller to PC Board**

**A**

**TERMINALS FOR CONTROLS**

1. Connect the stripped ends of field-supplied wire to the two crews labeled “TERMINAL FOR CONTROLS”

**B**

1. Remove the controller cable from the plastic bag located on the water heater front cover.
2. Connect the field-supplied wire to the stripped wire ends of the controller cable.
3. Connect the controller cable to the mating terminal at the bottom right side of the PC Board.
This Section Must be Performed by the Water Heater Owner (Homeowner/Business Owner)

1. Power on the water heater.
   The LED light on the module will blink yellow until boot-up is complete and will then turn solid red.

2. Download the Rinnai app from the Apple® Store or Google® Play Store.

3. Open the Rinnai app and sign up.
If you are the owner of the module, tap Consumer Sign Up.

If you are a dealer, tap Dealer Sign Up.

When complete, tap Sign up (or press Done on the onscreen keyboard).
A confirmation email is sent with a link embedded in the message to allow you to complete registration. When the account has been confirmed through the emailed link, return to the Rinnai app and log in with the registered email and password. Next, tap Sign In.

Tap Let’s Get Started.
If you have already registered a module to the Rinnai app, press the + symbol in the top, right corner to add another module to the Rinnai app.
Control-R Setup & Pairing

Step 1:
- Make sure the module has a solid red light.
- Locate and select the Rinnai access point in your mobile device’s Settings app.
- Navigate back to the Rinnai Control-R app.

Step 2:
- Join your Wi-Fi Network.

Verify that the module is displaying a solid red light and then tap CONNECT TO WI-FI.

IOS:

If using iOS, the Connect To Wi-Fi button will be disabled until you access your Wi-Fi settings and select the MAC address of the Control-R module (see right).
The app will scan for local Wi-Fi networks. Tap your network name.

Enter the network password and tap Connect.
- An onscreen keyboard appears when you select inside a text field.
- The LED light on the module will blink blue when the module is connected to the network.
Press the **Connect** button on the module.

Step 3:
Press the Connect Button on your Control-R module. Next, tap Register below to complete your setup.

**IMPORTANT:**
The registration process must be completed within 2 minutes from the time the **Connect** button is pressed.

Tap **Register** in the Rinnai app.
Enter the water heater serial number.
- The serial number can be scanned into the app if the water heater has a QR code located next to the serial number
- The serial number is located on the left side panel of the water heater and on the cardboard packaging (example: AB.CD-123456)

Tap any area within the **Serial #, Model #, or Model** area (highlighted in the box below).
Tap **Select Application Type** and select the type of system application.

Next, tap **Select Recirculation Type** and select the type of recirculation system.

The fields shown above should autofill from the Rinnai app user registration fields.

Enter any missing information and then press **Next**. All fields are required.
The Rinnai app allows you to select a Rinnai dealer to monitor your water heater for maintenance and status.

- To assign a dealer to your water heater, enter the dealer’s email address and tap **Assign Dealer Monitoring**.
- The email address can be obtained by contacting your preferred dealer.
- To complete this step at a later date, tap **Done**.
## LED Color Codes

<table>
<thead>
<tr>
<th>Color</th>
<th>Blink Frequency</th>
<th>State / Condition</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>YELLOW</strong></td>
<td>Solid</td>
<td>Start of Boot-up Sequence</td>
<td>Until next state change</td>
</tr>
<tr>
<td><strong>RED</strong></td>
<td>Solid</td>
<td>Error Condition / Not Provisioned</td>
<td>Until next state change</td>
</tr>
<tr>
<td><strong>RED</strong></td>
<td>0.5 Hz On 1 second, Off 1 second</td>
<td>Wi-Fi Provisioned, but No IP Address Yet</td>
<td>Until IP address obtained</td>
</tr>
<tr>
<td><strong>GREEN</strong></td>
<td>Solid</td>
<td>ZigBee* Pairing Mode Active</td>
<td>Until next state change: Timeout or successful ZigBee join</td>
</tr>
<tr>
<td><strong>GREEN</strong></td>
<td>0.5 Hz On 0.25 seconds, Off 0.25 seconds</td>
<td>ZigBee* Join Success</td>
<td>2 seconds</td>
</tr>
<tr>
<td><strong>BLUE</strong></td>
<td>2 Hz On 0.25 seconds, Off 0.25 seconds</td>
<td>Wi-Fi Network Successfully Joined</td>
<td>Until next state change: Cloud service connection</td>
</tr>
<tr>
<td><strong>BLUE</strong></td>
<td>0.5 Hz On 1 second, Off 1 second</td>
<td>Attempting Gateway Registration with Cloud Service</td>
<td>Until next state change: Successful registration with Cloud Service</td>
</tr>
<tr>
<td><strong>BLUE</strong></td>
<td>SOLID</td>
<td>Ready to Use / Normal Operation</td>
<td>Until next state change</td>
</tr>
<tr>
<td><strong>PURPLE</strong></td>
<td>0.5 Hz On 1 second, Off 1 second</td>
<td>Lost Connection to Wi-Fi Network</td>
<td>Until connection is re-established</td>
</tr>
<tr>
<td><strong>PURPLE</strong></td>
<td>SOLID</td>
<td>Lost Connection to Internet</td>
<td>Until connection is re-established</td>
</tr>
<tr>
<td><strong>WHITE</strong></td>
<td>0.5 Hz On 1 second, Off 1 second</td>
<td>Factory Reset Mode Possible</td>
<td>Until button is released</td>
</tr>
</tbody>
</table>

* ZigBee is a wireless technology that is used for remote control and sensor applications. Zigbee is used for device-to-device communication, such as Rinnai’s recirculation accessories and Control-R™ Wi-Fi Module.
## Troubleshooting

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Solution</th>
</tr>
</thead>
</table>
| LED on module does not turn on. | • Ensure the module is properly connected to the **Terminals for Control** on the PC Board.  
• Ensure power is supplied to the water heater. |
| Rinnai App cannot detect Local Area Network (LAN) Wi-Fi signal. | • Ensure the Local Area Network (LAN) Wi-Fi meets the requirements of the module.  
• Ensure Wi-Fi router is powered and properly functioning.  
• Ensure Local Area Network (LAN) Wi-Fi is functioning.  
• Ensure module is installed in a location with strong signal strength. |
| Local Area Network (LAN) Wi-Fi signal is detected but the Rinnai App cannot connect. | • Ensure correct Local Area Network (LAN) Wi-Fi password has been entered (if required).  
• Press **Cancel** in the Rinnai App and repeat the setup process starting from pairing the module with the Rinnai App. |
| Module is paired and connected (LED is blinking blue) to Local Area Network (LAN) Wi-Fi but registration is interrupted. | Return to the **Add Device** screen. Press the **Connect** button on the module and then press the **Register** button in the Rinnai App. |

- For further information on the Wi-Fi router, please contact the router manufacturer.  
- For further information on internet service, please contact the Internet Service Provider (ISP).  
- For all other questions, contact Rinnai Customer Care at 1-800-621-9419.

## Pairing Instructions

The module can be paired with the following Wireless Demand Recirculation Accessories: Push Button, Motion Sensor and Temperature Sensor.

**Push Button**  
Part Number RWMPB01

**Motion Sensor**  
Part Number RWMM501

**Temperature Sensor**  
Part Number RWMTS01

For complete instructions on installing and pairing the Wireless Demand Recirculation Accessories to the module, refer to the instructions included in the accessory package.

The accessory installation instructions can be viewed online at [www.rinnai.us/wifi](http://www.rinnai.us/wifi).
Learn more about Rinnai high-performance Tankless Water Heaters, Hybrid Water Heating Systems, Boilers, Vent-Free Fan Convectors and EnergySaver® Direct Vent Wall Furnaces at:

rinnai.us | rinnai.ca