

Rinnai RXP199iN

Rinnai RXP199iN Condensing Tankless Water Heater Instruction Manual

Model: RXP199iN

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation, installation, and maintenance of your Rinnai RXP199iN Condensing Tankless Water Heater. This model is designed for both indoor and outdoor installations and is compatible with either natural gas or propane, thanks to its Smart Sense gas control system and Versa Vent technology. It features a high Uniform Energy Factor (UEF) of 0.98 and includes Smart-Circ Intelligent Recirculation for enhanced hot water delivery and energy savings.

Please read this manual thoroughly before installation or operation and retain it for future reference. Proper installation and maintenance are crucial for optimal performance and safety.

2. SAFETY INFORMATION

WARNING: Improper installation, adjustment, alteration, service, or maintenance can cause property damage, injury, or death. Read the installation, operating, and maintenance instructions thoroughly before installing or servicing this equipment.

- **Professional Installation:** Installation and service must be performed by a qualified installer, service agency, or gas supplier. It is strongly recommended to visit the [Find a Rinnai PRO](#) page on the Rinnai website to locate a qualified technician.
- **Gas Type:** Ensure the unit is configured for the correct gas type (Natural Gas or Propane) before connection. The Smart Sense system allows conversion, but initial setup must be correct.
- **Ventilation:** Proper venting is critical for safety. Ensure all venting components are correctly installed according to local codes and manufacturer instructions.
- **Water Connections:** All water connections must be secure to prevent leaks.
- **Electrical Connections:** The unit requires a 120V electrical supply. All electrical work must comply with local codes.
- **Hazardous Materials:** Transportation and handling of this item are subject to hazardous materials regulations.

3. PRODUCT FEATURES AND COMPONENTS

The Rinnai RXP199iN tankless water heater integrates advanced technology for reliable and efficient hot water supply.

Rinnai®

2025 Consumer National Propane Rebate

- SENSEI™ and Condensing Tankless Water Heaters
- RE•SERIES™ Non-Condensing Tankless Water Heaters
- Non-Condensing Value Series Tankless Water Heaters
- Commercial Water Heating Products
- Condensing Boilers-Natural Gas
- EnergySaver® Direct Vent Heaters
- Hydronic Air Handler
- Vent-Free Fan Convectors
- Commercial Water Heating Products
- Heat Pump Companion Kit



[Rinnai Rebate Website](#)

Figure 3.1: Front view of the Rinnai RXP199iN tankless water heater, showing the Rinnai logo and digital display.



Figure 3.2: Internal view of the Rinnai RXP199iN, highlighting the heat exchangers, fan, and control boards.

Key Features:

- **Smart Sense Gas Control System:** Allows the unit to operate with either natural gas or propane.
- **Versa Vent:** Enables flexible indoor or outdoor installation with appropriate venting.
- **Smart-Circ Intelligent Recirculation:** An internal pump with intelligent technology that learns water

usage patterns to provide hot water more quickly and efficiently.

- **High Efficiency:** UEF of 0.98, making it an Energy Star qualified appliance.
- **Compact Design:** Space-saving footprint, comparable to a small suitcase.
- **Easy-to-Use Interface:** Digital display for temperature control and status monitoring.
- **Quick Flush Function:** Simplifies routine maintenance.
- **Wi-Fi Connectivity (Optional):** Compatible with the Control-R module (sold separately) for remote monitoring and control.

4. INSTALLATION

The Rinnai RXP199iN offers versatile installation options, suitable for both indoor and outdoor environments. Professional installation is highly recommended to ensure safety and compliance with all local codes.

4.1 Site Selection

- **Indoor Installation:** Mount the unit on a sturdy wall in a location with adequate ventilation and drainage. Ensure proper clearance for maintenance.
- **Outdoor Installation:** The unit can be installed outdoors with the RX-OVC vent cap (sold separately). Ensure it is protected from direct weather exposure and potential damage.



Figure 4.1: Example of an indoor installation, showing the unit mounted on a wall in a utility space.



Figure 4.2: Example of an outdoor installation, with the unit mounted on the exterior wall of a building.

4.2 Connections

Refer to the detailed diagrams below for connection points. All connections should be made by a qualified professional.



Figure 4.3: Rear view of the unit, indicating mounting brackets and vent connections.



Figure 4.4: Bottom connections for hot water outlet, cold water inlet, gas supply, and condensate drain.

- **Gas Line:** Connect the gas supply to the designated inlet. Ensure the gas type matches the unit's configuration.
- **Water Lines:** Connect the cold water supply to the inlet and the hot water outlet to your home's hot water distribution system.
- **Condensate Drain:** A condensate drain line must be installed, ideally with a condensate neutralizer, as this is a condensing unit.
- **Venting:** Install appropriate venting for indoor or outdoor use. For outdoor installations, the RX-OVC vent cap is required.
- **Electrical:** Connect to a dedicated 120V electrical circuit.

5. OPERATING INSTRUCTIONS

Once properly installed, operating your Rinnai RXP199iN is straightforward. The unit features an intuitive digital interface.

5.1 Initial Startup

1. Ensure all gas, water, and electrical connections are secure and leak-free.
2. Open the gas supply valve.
3. Open the cold water supply valve to the unit.
4. Plug in the unit or turn on the electrical breaker. The display should illuminate.
5. Purge air from the hot water lines by opening a hot water faucet in your home until water flows steadily.

5.2 Temperature Adjustment

Use the up and down arrows on the unit's digital display to adjust the desired hot water temperature. The maximum temperature setting is 140°F (60°C).

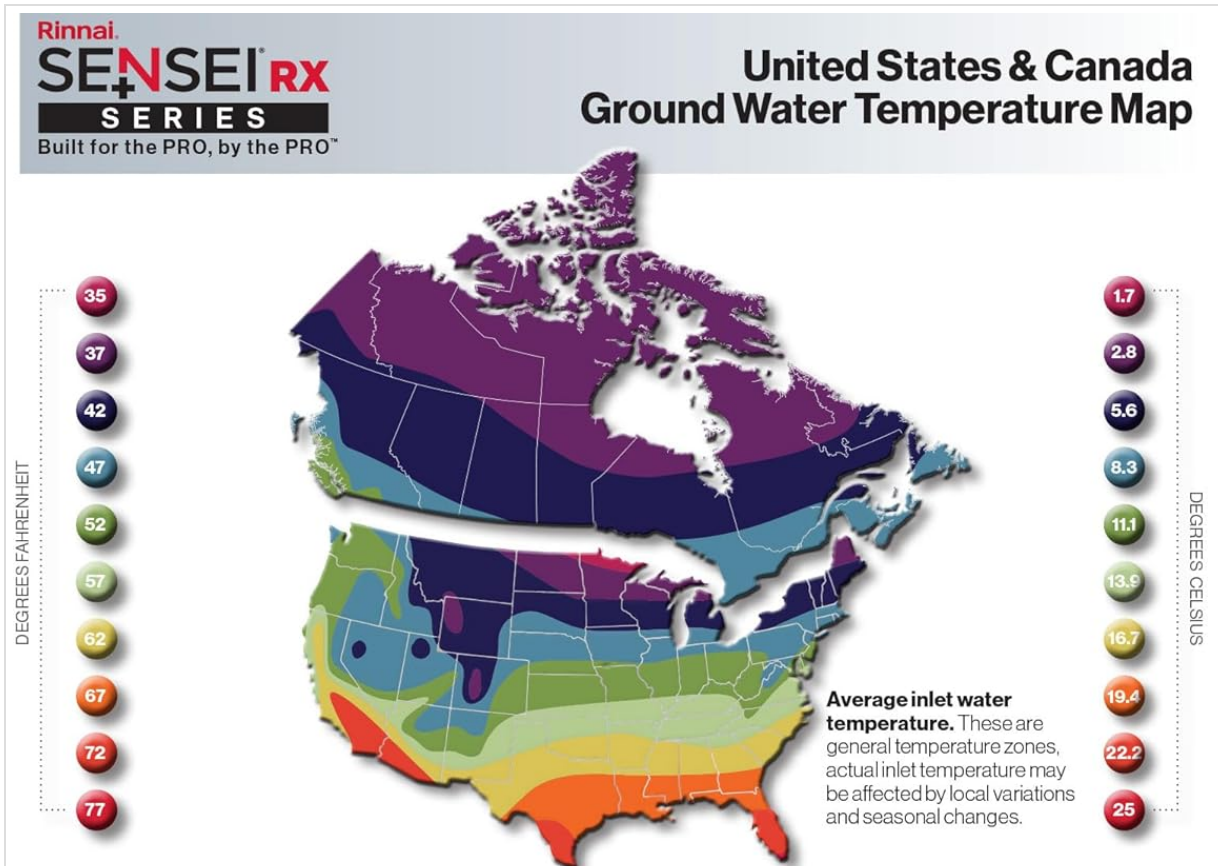
5.3 Smart-Circ Intelligent Recirculation

The Smart-Circ feature automatically learns your household's hot water usage patterns. It will activate the internal recirculation pump to pre-heat water, reducing wait times for hot water at fixtures. This feature operates automatically once enabled. For immediate hot water on demand, consider using an optional remote Bluetooth recirculation push button (RPB200).

5.4 Wi-Fi Connectivity (Optional)

For advanced control and monitoring, the Rinnai RXP199iN can be connected to Wi-Fi via the Control-R module (sold separately). This allows for remote temperature adjustment, system status checks, and troubleshooting assistance through the Rinnai Central App.

For more details on performance based on ground water temperature, refer to the Rinnai SENSEI RX Series Ground Water Temperature Map:



Use your location on the map to correlate with legend for average ground water temperature in the U.S. and Canada.
 For Hawaii and Puerto Rico, use ground water temperature of 75° F / 23.9° C.
 For Alaska, use ground water temperature range 35-42° F / 1.7-5.6° C

SENSEI®RX and CX Series Models: RX199iN and RXP199iN BTU: 199,000	Ground Water Temperature (° F / ° C)	Max Flow Rate (GPM / LPM)	Simultaneous Shower Use
	35° F / 1.7° C	4.6 / 17.3	3 shower heads
	37° F / 2.8° C	4.7 / 17.7	3 shower heads
	42° F / 5.6° C	5.0 / 18.8	3 shower heads
	47° F / 8.3° C	5.3 / 20.1	3 shower heads
	52° F / 11.1° C	5.7 / 21.6	4 shower heads
	57° F / 13.9° C	6.2 / 23.3	4 shower heads
	62° F / 16.7° C	6.7 / 25.3	4 shower heads
	67° F / 19.4° C	7.3 / 27.7	5 shower heads
	72° F / 22.2° C	8.1 / 30.6	5 shower heads
	77° F / 25° C	9.0 / 34.1	6 shower heads

Note: Simultaneous shower use was rounded to the nearest whole number based on the following data:
 Tankless set temperature of 120°F / 49°C, mixed shower temperature of 105°F / 40.6°C, ground water temperature as shown in the chart, and shower head flow rate of 2 gpm / 7.6 lpm.

Customer has the option of using the following appliances instead of a shower:
 Residential grade clothes washing machine, hand sink or dishwasher.
 Shower heads will be as above. If custom shower fixtures i.e. body sprays, high flow rate rain heads are used, please contact Rinnai.

Figure 5.1: Ground Water Temperature Map and performance chart for Rinnai SENSEI RX Series, showing maximum flow rate and simultaneous shower use based on inlet water temperature.

6. MAINTENANCE

Regular maintenance ensures the longevity and efficient operation of your Rinnai RXP199iN tankless water heater. It is recommended to have annual professional maintenance.

6.1 Quick Flush Function

The Quick Flush function simplifies the process of flushing the heat exchanger to remove mineral buildup. Consult your professional installer or the Rinnai Central App for detailed instructions on performing this procedure.

6.2 General Maintenance Tips

- Periodically inspect the unit for any visible leaks or damage.
- Ensure the area around the water heater is clear of obstructions and combustible materials.
- Check the condensate drain line for blockages.
- For optimal performance and to prevent scale buildup, especially in hard water areas, regular flushing of the heat exchanger is essential.

7. TROUBLESHOOTING

If you encounter issues with your Rinnai RXP199iN, refer to the following general troubleshooting steps. For complex problems or error codes, contact a qualified Rinnai service professional.

- **No Hot Water:**
 - Check if the gas supply is open.
 - Verify the electrical power supply to the unit.
 - Ensure the water inlet valve is fully open.
 - Check the unit's display for any error codes.
- **Inconsistent Water Temperature:**
 - Confirm the set temperature on the unit's display.
 - Ensure adequate water flow to the unit. Very low flow rates can sometimes cause issues.
 - Consider if multiple hot water fixtures are in use simultaneously, potentially exceeding the unit's capacity.
- **Unit Not Turning On:**
 - Check the power connection and circuit breaker.
 - Verify gas supply.
 - A simple reset by unplugging the unit for one minute and plugging it back in can sometimes resolve minor electronic glitches.

For all complex issues or persistent problems, contact a Rinnai certified technician. Do not attempt repairs beyond basic troubleshooting if you are not qualified.

8. SPECIFICATIONS

Detailed technical specifications for the Rinnai RXP199iN Condensing Tankless Water Heater.

Specification	Value
Model Number	RXP199iN
Brand	Rinnai
Product Dimensions	19"W x 31"H
Item Weight	58 pounds
Gas Type Compatibility	Natural Gas or Propane (Smart Sense gas control system)
Maximum Flow Rate	11.1 Gallons Per Minute (GPM)
Heat Output	199,000 British Thermal Units (BTU)
Uniform Energy Factor (UEF)	0.98
Electrical Requirements	120 Volts, 98 Watts
Maximum Temperature	140 Degrees Fahrenheit
Maximum Operating Pressure	150 Pound per Square Inch (PSI)
Mounting Type	Wall
Special Features	Smart Sense gas control system, Versa Vent, Smart-Circ Intelligent Recirculation, WiFi connectivity (Control-R module sold separately)
UPC	766156017308

For a cross-reference of Rinnai SENSEI and SENSEI RX series models and accessories, refer to the following:

Rinnai

SENSEI to SENSEI RX Cross-reference

SENSEI



SENSEI RX NEW

REDUCE YOUR SKUs from 24 MODELS to 6!		SENSEI Indoor/Outdoor Natural Gas/Propane		NEW SENSEI RX / RXP Default is Indoor Natural Gas Only. Unit can be modified to Outdoor and Propane (see details below).						
		Current	MAX KBTU	NEW	MAX KBTU	UEF	Included in the Box	Propane Conversion	Outdoor Conversion	Accessories (Sold Separately) NEW*
RESIDENTIAL (RX/RXP)	No Built-In Pump	RU190iN RU190iP RU190eN RU190eP	199	RX199iN	199	0.98	<ul style="list-style-type: none"> • Sensei/RX/RXP Water Heater • Wall Mounting Bracket • 4-Self Tapping Screws (4x25MM) • Gas Conversion label (Propane) • 2-Vent Screens • Installation and Operation Manual • Wall mounting Bracket Template 	<ul style="list-style-type: none"> • Field Convertible to Propane • Leverages Smart-Sense Adaptive Gas Valve built in the unit • No Conversion kit needed • Propane gas rating label provided with the unit 	Use Outdoor Versa-Vent Vent Cap (RXOVC) Sold separately	<ul style="list-style-type: none"> • Isolation Valves with PRV (MIVK-T-LW) • Outdoor Vent Cap (RXOVC)* • Internal add-on recirc. pump conversion Kit (RX2RXPCCK)* • Dedicated return with isolation valves and PRV (107000639)* • Pipe Cover (PCD11-SHS)* • Recess Box (RGBCTWHRX)* • Retrofit Door for RX/CX in RGB-CTWH-4 (104000335)* • Retrofit Door for RX/CX in RGB-CTWH-3,21 (104000336)* • Leak Detection Kit (RXLeakKit)* • Bottom plate for Pipe Cover(109001364)* • Recirculation Push Button (RPB200)* • Rinnai Wireless Module (RWM200)* • EZConnect Cable (REU-EZC-3)* • Gas conversion kit (Plating Plate Labels only) (104000330)* • Controllers-MC-601-BK/W, MC-195T-US • Condensate Neutralizer (804000074) • Scale Cutter (103000038), Scale Cutter Refill (103000039) • OPU Switch (REU-OPU3)
		RU180iN RU180iP RU180eN RU180eP	180	RX180iN	180	0.98				
		RU160iN RU160iP RU160eN RU160eP	160	RX160iN	160	0.97				
		RU130iN RU130iP RU130eN RU130eP	130	RX130iN	130	0.97				
	Recirculation with Built-In Pump	RSC199iN RSC199iP RSC199eN RSC199eP	199	RXP199iN	199	0.98	<ul style="list-style-type: none"> • All items listed above and 1- Thermal Bypass Valve (Cross-over valve) 			
		RSC160iN RSC160iP RSC160eN RSC160eP	160	RXP160iN	160	0.97				

Figure 8.1: Chart detailing the cross-reference between Rinnai SENSEI and SENSEI RX series, including specifications and available accessories.

9. WARRANTY AND SUPPORT

Rinnai products are built to high standards. For warranty information, it is crucial to register your product upon installation. Warranty terms typically vary based on components and registration status.

- **Product Registration:** Register your Rinnai RXP199iN water heater immediately after professional installation to ensure full warranty coverage.
- **Professional Assistance:** For any service, maintenance, or troubleshooting beyond basic steps, always contact a Rinnai certified professional.
- **Rinnai Central App:** Utilize the [Rinnai Central App](#) for assistance with setup, service scheduling, and troubleshooting.
- **Customer Support:** For direct support, visit the Rinnai website or contact their customer service.