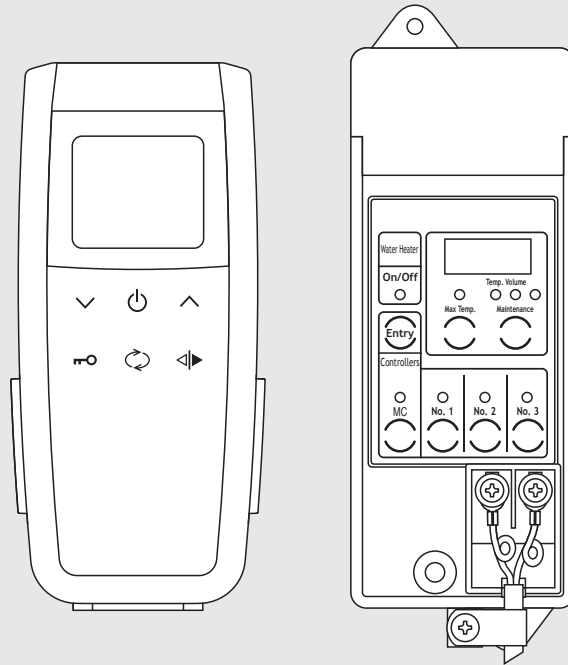


MODEL  
MC-503RC



# Wireless Water Controller

## Operation & Installation Manual

**Rinnai**

Your guide on how to use and install Rinnai Wireless Water Controllers.

This manual applies **ONLY** to the Rinnai MC-503RC wireless water controllers and transceivers.

These instructions **MUST BE** used in conjunction with the Rinnai Water Heater Operation / Installation Manual supplied with Rinnai water heaters.

MC-503RC water controllers are compatible **ONLY** with current Rinnai water heater and water controller models.

Refer to the Water Heater Operation / Installation Manual to confirm the maximum number and combination of water controllers that can be fitted to your Rinnai water heater model.

For information regarding compatibility with other Rinnai water heater and water controller models contact Rinnai.

This appliance must be installed in accordance with:

- Manufacturer's Installation Instructions
- Current AS/NZS 3000, AS/NZS 3500 & AS/NZS 5601
- Local Regulations and Municipal Building Codes including local OH&S requirements

This appliance must be installed, maintained and removed by an Authorised Person.

For continued safety of this appliance it must be installed and maintained in accordance with the manufacturer's instructions.



This Appliance complies  
with AS 3498  
SAI GLOBAL LIC. W208



**The Australian  
Gas Association**  
All Rinnai gas products  
sold in Australia are  
A.G.A certified

# OPERATION TABLE OF CONTENTS

<b>Warnings &amp; Important Information</b>	<b>4</b>
Regulatory Information .....	4
Warning About Hot Water .....	4
Installation and Servicing .....	4
Radio Communications .....	4
<b>Water Temperature Control</b>	<b>5</b>
Temperature Control .....	5
<b>Water Controller Configurations</b> .....	<b>5</b>
Wireless Only Configurations .....	5
Combined Wireless & Wired Configurations .....	5
<b>Water Controller Operation</b>	<b>6</b>
<b>Wireless Water Controller (MC-503RC)</b> .....	<b>6</b>
Turning On .....	6
Adjusting Temperature .....	6
Transferring Priority .....	7
Child Lock Function .....	7
To Activate the Child Lock .....	7
To Deactivate the Child Lock .....	7
Water Controller Batteries .....	8
<b>Smartstart Pre-Heat System</b> .....	<b>9</b>
Preheat Function .....	9
Preheat Operation .....	9
Water Controller Functions .....	9
<b>Care &amp; Maintenance</b>	<b>10</b>
<b>Error Codes</b> .....	<b>10</b>
No Power Display .....	11
<b>Service</b> .....	<b>11</b>
Scheduled Service Reminder .....	11
<b>Installation Table of Contents</b>	<b>12</b>
<b>Specifications</b>	<b>21</b>
<b>Dimensions</b> .....	<b>21</b>
<b>Contacts</b>	<b>24</b>

# WARNINGS & IMPORTANT INFORMATION



## READ ALL INSTRUCTIONS BEFORE USING THE APPLIANCE.

Always comply with the following precautions to avoid dangerous situations and to ensure optimum performance. Failure to carefully read and follow all instructions in this manual can result in equipment malfunction, property damage, personal injury and/or death.

**DANGER:** Indicates an imminently hazardous situation which, if not avoided, will result in personal injury or death.

**WARNINGS:** Indicates a potentially hazardous situation which, if not avoided, could result in personal injury or death.

**CAUTIONS:** Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury or damage to the appliance. It may also be used to alert against unsafe practices.

## REGULATORY INFORMATION

Water heaters and Wired water controllers **MUST** be installed correctly by an appropriately licensed tradesperson.

The installation of gas, water, and electricity must conform to local regulations, including local OH&S requirements.

The installation **MUST** also comply with the instructions supplied by Rinnai.

Please keep this instruction booklet in a safe place for future reference.

All dimensions referred to in these instructions are in millimetres, unless otherwise specified.

## WARNING ABOUT HOT WATER



Hot water can cause scalding. Those most at risk are children and disabled, elderly and infirm persons. (65°C water can severely burn a child in half a second).

Rinnai have water heater models which limit the delivery temperature to 50°C which significantly reduces the scald hazard. Temperature limiting devices may also be able to be fitted. Contact Rinnai for further information.

**ALWAYS** test the water temperature before use, such as when filling a bath or basin or entering a shower, to ensure it is suitable for the application and will not cause scald injury.

**ALWAYS** supervise children whenever they are in the bathroom or near other sources of hot water. Ensure any hot water taps are closed firmly after use.



## INSTALLATION AND SERVICING

Rinnai wireless transceivers may be connected to the current range of water heaters fitted with 'Ezi connect' by the end user in accordance with these instructions. An appropriately licensed tradesperson is not required for this task, yet may be engaged by the end-user for convenience.

Rinnai Wireless Transceivers are also compatible with some older water heater models not fitted with 'Ezi connect' and **MUST** be installed and commissioned by an appropriately licensed tradesperson. Contact Rinnai for information regarding compatibility with older water heaters.

Regardless of water controller or transceiver installation, all Rinnai water heaters **MUST ONLY** be installed by an appropriately licensed tradesperson.

Water controllers, transceivers and water heaters **DO NOT** contain user serviceable parts and **MUST ONLY** be serviced and repaired by an appropriately licensed tradesperson.

## RADIO COMMUNICATIONS

Rinnai wireless water controllers are classified as short range radio communications devices and referred to as Low Interference Potential Devices (LIPD's) in AS/NZS 4268 \*. As such, they operate in the same radio frequency spectrum as many other devices classified as LIPD's such as garage door openers and keyless automobile entry systems. Although interference with other LIPD's is unlikely, it is not guaranteed interference will not occur.

Rinnai wireless water controllers must not be used in the vicinity of other devices if radio interference with such devices could result in a dangerous situation, unless it is verified that interference will not occur. Possible examples are medical devices and fire alarms.

\*AS/NZS 4268 'Radio Equipment and systems – short range devices – Limits and methods of measurement'.

# WATER TEMPERATURE CONTROL

## TEMPERATURE CONTROL

Water controllers allow precise temperature control by the user. When used correctly, the hot water unit will deliver the selected temperature, even when the water flow is varied, or more than one tap is in use.

Only one MC model water controller can be designated as a 'Master' water controller and this is normally used in the kitchen. All the remaining water controllers are designated as 'Sub' water controllers and are for use in bathrooms, toilets and laundries. The maximum temperature limit for all 'Sub' water controllers is restricted to 50°C to minimise the risk of burns in these areas.

Any water controller that currently has priority is capable of setting the water temperature to be delivered, however the water heater can only assign 'priority' to one controller at a time and deliver the one set temperature.




**Whilst hot water outlets are open ONLY the control used to set to the delivery temperature may be used to further adjust it. Transfer of 'priority' between controllers is **NOT** possible until all hot water taps have been closed. These are safety features.**

The available temperatures (°C) are as follows:

Water Controller	Master (MC)	37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48, 50, 55 <sup>(1)</sup> , 60 <sup>(1)</sup> , 65 <sup>(1)</sup> , 75 <sup>(1)</sup>
Temperatures (°C) <sup>(2)</sup>	Sub (MC or BC)	37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48, 50

For hygiene in sanitary areas such as bathrooms, the suggested temperature should be 37°C ~ 43°C. This is a suggestion only, as you may find higher or lower temperatures more comfortable. However, maintaining lower temperatures also helps to save energy. To obtain water temperatures lower than 37°C, simply open the cold water tap and add cold water until the desired lower temperature is reached.



**The temperature of outgoing hot water is constantly monitored by a built-in sensor. If the temperature of the outgoing hot water rises to more than 3°C above the selected temperature shown on the digital monitor or the pre-set limit when water controllers are not fitted, the burner will automatically go out. The 'in use' indicator  will also go out. The burner will ignite again once the outgoing hot water temperature falls to that shown on the digital monitor (or the pre-set limit of the appliance).**

<sup>(1)</sup> Temperature may not be available on all installations. Some Rinnai Continuous Flow water heaters can be programmed to deliver higher temperatures from the master water controller, or may be programmed to restrict the maximum and minimum available delivery temperature. Contact Rinnai for more details.

<sup>(2)</sup> Temperature limiting devices (where fitted) may further control what maximum delivery temperature is available to outlets.

Universal and Wireless water controllers allow for temperature selection only. Both Deluxe water controllers have a clock display and the Deluxe Bathroom water controller also has a shower saver / bath fill function. Contact Rinnai for further information regarding Wireless and Deluxe water controllers or visit [www.rinnai.com.au](http://www.rinnai.com.au).

## WATER CONTROLLER CONFIGURATIONS

### Wireless Only Configurations

A maximum of **FOUR** <sup>(3)</sup> wireless water controllers can be fitted with the following limitations:

- Only **ONE** MC-503RC can be set as the Master Controller.

### Combined Wireless & Wired Configurations

A maximum of **FOUR** <sup>(3)</sup> water controllers can be fitted. Any combination of deluxe, universal and wireless controllers can be used with the following limitations:

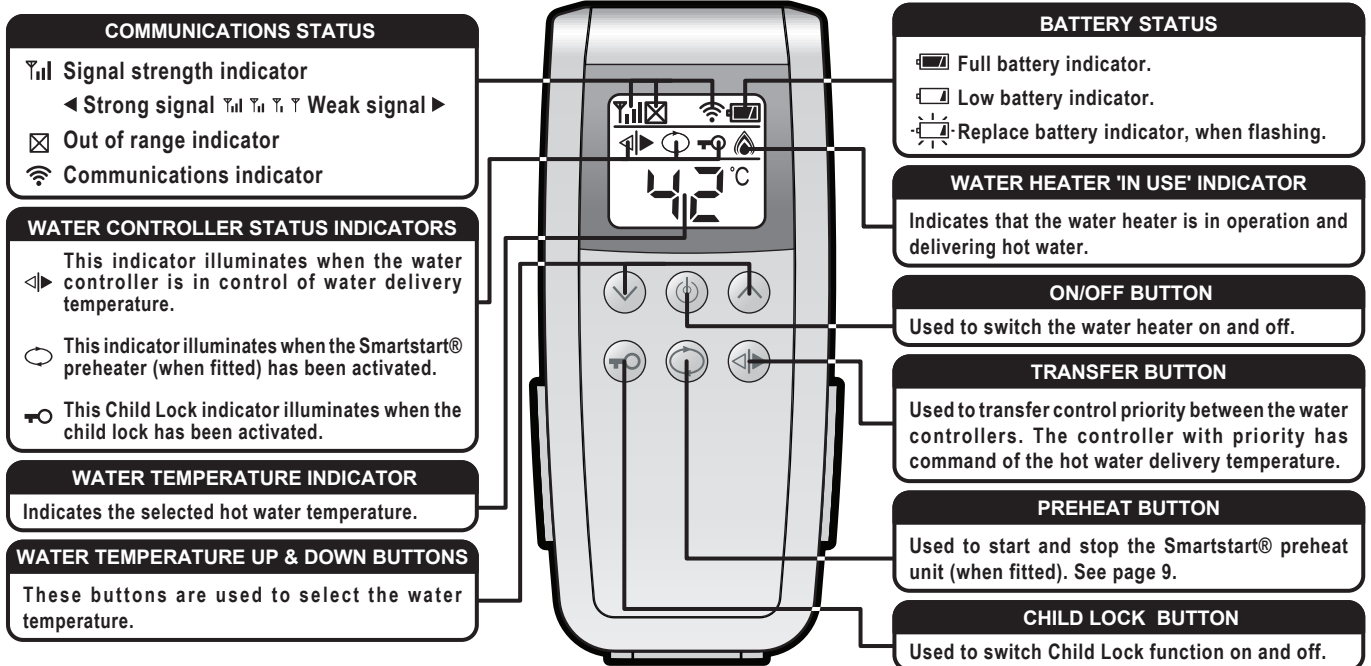
- Only **ONE** master controller can be installed. This can be a MC-145V, a MC-601Q (when programmed as a master controller) or a MC-503RC-S water controller. Note that when a MC-145V is fitted it will always function as a master controller, this is the default setting and can not be changed.
- Up to **ONE** BC-145V water controllers can be installed.
- The **FOURTH** water controller in any installation **MUST BE** a MC-503RC-S or a MC-601Q.



<sup>(3)</sup> Some Rinnai water heater models can only have a maximum of three water controllers fitted, refer to the Water Heater Operation / Installation Manual to confirm the maximum number and combination of water controllers that can be fitted to your Rinnai water heater model.

# WATER CONTROLLER OPERATION

## WIRELESS WATER CONTROLLER (MC-503RC)

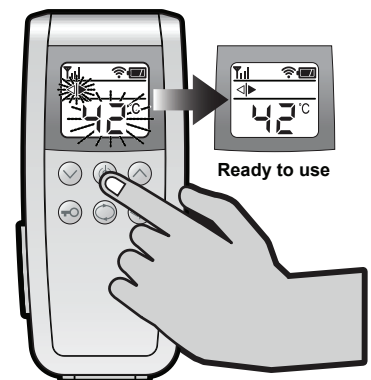


### Turning On

When the water heater is in the 'OFF' condition only the communications and battery status indicators are displayed on the digital monitor. To turn the water heater 'ON', press the On/Off button once. The communications indicator will briefly illuminate to confirm that a signal has been sent to the transceiver connected to the water heater.

If the Child Lock is activated see page 7.

The Priority indicator and the water temperature display will flash until communication between the controller and transceiver is complete. When the display stops flashing the water heater is ready to supply hot water.

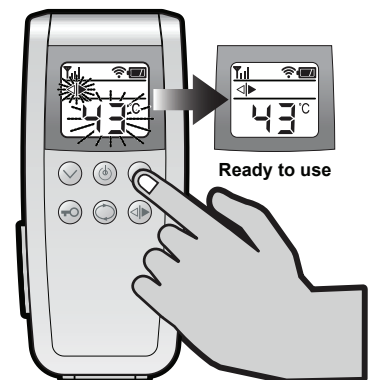


### Adjusting Temperature

Select the desired temperature using the Temperature or buttons until the required temperature is displayed on the digital monitor. The water temperature and any active status indicator will flash until communication between controller and transceiver is complete. **DO NOT** open the hot water tap until the flashing stops and the desired temperature is displayed.

To operate the hot water unit, open any hot water tap. This will automatically light the burner providing hot water. The water heater 'In Use' indicator will illuminate on the water controller(s).

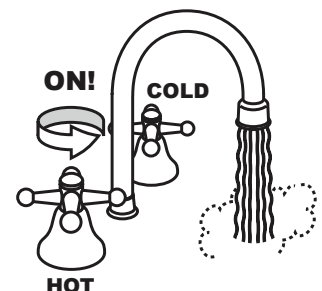
Once the hot water is running, if the set temperature is either too hot or cold press the Temperature or buttons until the desired temperature is reached.



**NOTE** Whilst hot water outlets are open the set temperature may be lowered, however it cannot then be raised above 43°C. In addition transfer of 'priority' between controllers is not possible. These are safety features. If the water heater is turned 'OFF' whilst hot water taps are open it can not be turned back 'ON' until all hot water taps have been closed.



**CAUTION** Always check water temperature at the outlet before use. A parent or carer should always check the temperature before a child is placed in contact with hot water, see "Warning About Hot Water" on page 4.



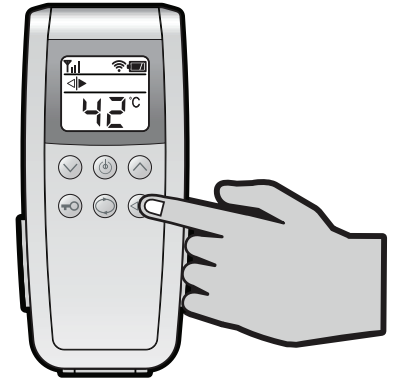
**Transferring Priority**

To control the water delivery temperatures when using two or more controllers it is necessary to have priority transferred to the water controller you wish to use. Transferring of priority will NOT be possible if the 'In Use' indicator is currently illuminated, as this indicates hot water is flowing and that another water controller already has priority.

An illuminated Priority <|> indicator confirms that the desired water controller is in control of the water delivery temperature.

If the Priority <|> indicator is not illuminated press the Transfer <|> button to transfer priority to the desired water controller.

The Priority <|> indicator on the water controller will now illuminate to indicate that priority has been transferred and that the water heater is ready to supply hot water once a hot water tap is opened.



Transferring of priority will **NOT** be possible if the 'In Use' indicator is currently illuminated, as this indicates hot water is flowing and that another water controller already has priority.

**HOT WATER CONTROL**

Temperatures higher than 50°C should only be able to be selected on the controller labelled 'Master' controller (used in the kitchen), not on those labelled 'Bathroom' controllers. This helps minimise the risk of burns.

The wireless transceiver has been incorrectly assigned if temperatures in excess of 50°C are able to be selected on controllers used in bathrooms, ensuites, toilets and laundries. Re-assign the wireless transceiver if this is the case.

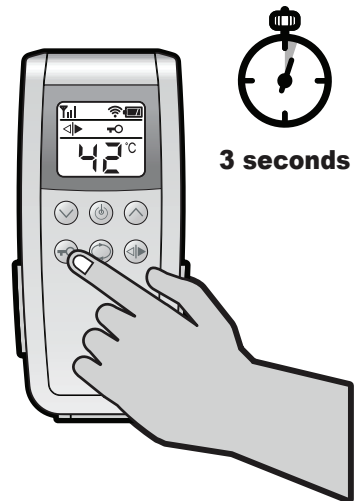
See "Removing Wireless Controllers" on page 19 and "Wireless Controllers Installation" on page 18.

**Child Lock Function**

The Child Lock function is designed to prevent small children or the infirm from operating the wireless controllers.

**To Activate the Child Lock**

To activate the Child Lock function press the Child Lock button for 3 seconds. The Child Lock indicator will illuminate to confirm that the function is now active.



Once activated only the initiating controller can then deactivate this function.

**To Deactivate the Child Lock**

To deactivate the Child Lock function press the Child Lock button for 3 seconds. The Child Lock indicator will go out to show that the function is no longer active.



Child Lock only applies to the water controller initiating the function and can be activated / de-activated regardless of Priority indicator status or whether the water heater is in the 'ON' or 'OFF' condition.

While the Child Lock is activated only the Child Lock and Off control buttons are functional from that controller.

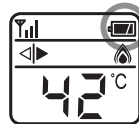
When the water heater is turned 'OFF' while the Child Lock is activated it can not be turned 'ON' again from a controller where the Child Lock is activated.




If the water heater is turned 'OFF' whilst hot water outlets are open it can not be turned back 'ON' until all hot water outlets have been closed.

Child Lock is de-activated during a battery change or when batteries fail.

**Water Controller Batteries**

Wireless water controllers use 2 x 1.5V AAA alkaline batteries. The battery symbol in the display monitor indicates the remaining charge in one of three levels.

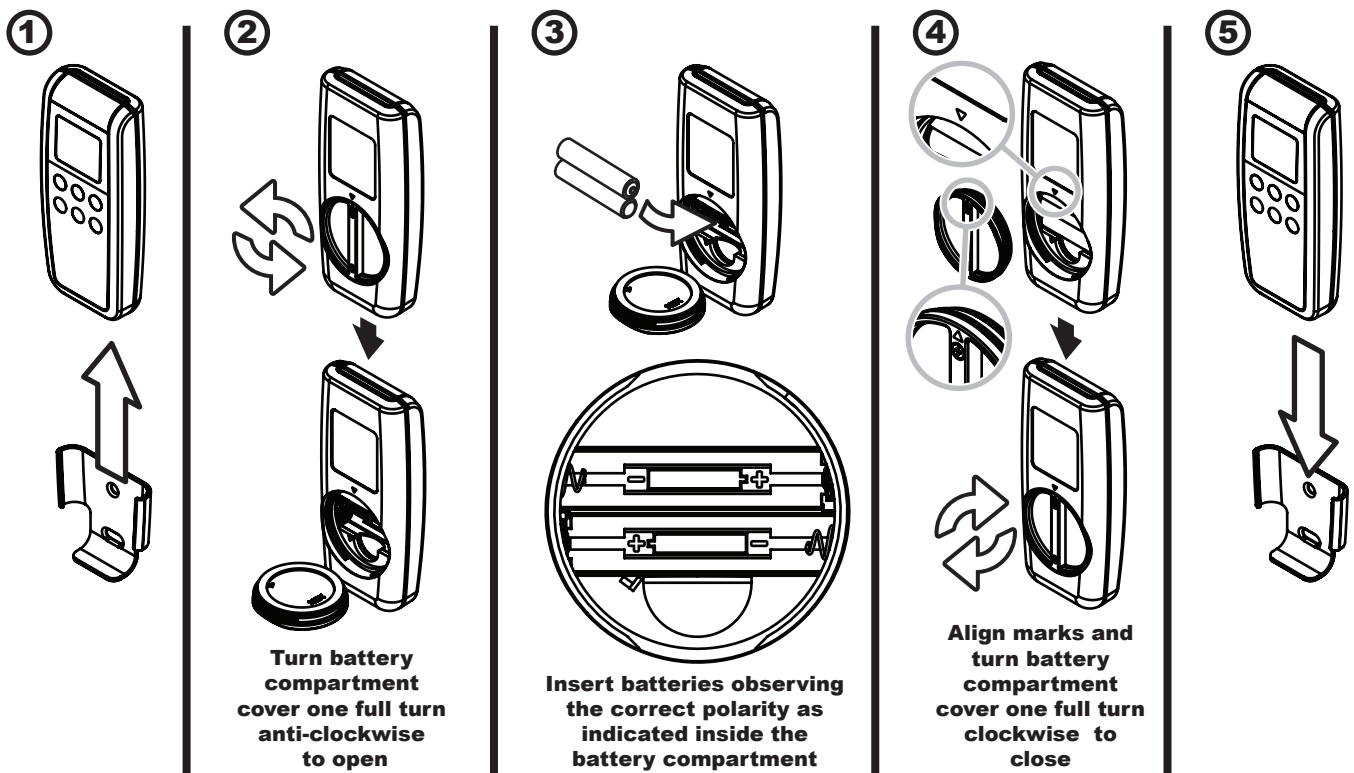


-  Battery charge level OK.
-  Battery charge level is low.
-  Batteries need replacing (when flashing).

**To replace the batteries:**

Before attempting to change the batteries first ensure that all moisture has been removed from the water controller. Failure to do so may allow water to enter the water controller causing damage.

1. Remove the water controller from the wall mounting bracket.
2. To open the battery compartment turn the battery compartment cover a full turn anti-clockwise.
3. Insert the batteries observing the correct polarity as shown on the rear of the controller.
4. To close the battery compartment align the " Δ " and " ▽ " marks on the battery compartment cover and the controller body. Then turn the battery compartment cover a full turn clockwise to obtain the correct seal.
5. Return the controller to the wall mounting bracket.



Use only 2 x 1.5V AAA alkaline batteries.

**DO NOT**

- mix old and new batteries.
- use different types of batteries at the same time.
- heat or expose to flame.
- take apart or short circuit.
- attempt to recharge alkaline batteries.
- use batteries if their covering has been damaged or peeled off.

Battery life is approximately 1 year.

- Dispose of used batteries according to the manufacturers instructions.

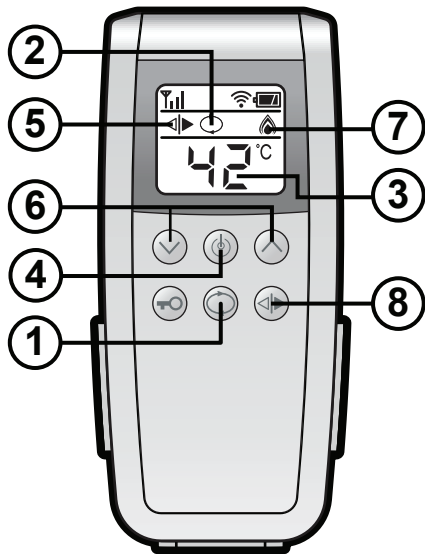
Remove batteries if the water controller is not going to be used for a long period. This will help avoid damage from leaking batteries.



**SMARTSTART PRE-HEAT SYSTEM**



The “Preheat” function is only available on Rinnai water heater models installed in conjunction with the optional Rinnai “Smartstart®” module.



- ① Preheat Button (Used to start and stop Smartstart preheater)
- ② Preheat Indicator (Indicates that Smartstart preheater is activated\*)
- ③ Water Temperature Indicator
- ④ On/Off button
- ⑤ Priority Indicator
- ⑥ Temperature Control or Buttons
- ⑦ Water Heater 'In Use' Indicator
- ⑧ Transfer Button

**Preheat Function**

When the “Preheat” function is activated and used in accordance with these instructions, water in the pipework connected between the water heater and the hot water outlets in your house is warmed before any outlets are opened. This results in water savings and added convenience.

**Preheat Operation**

1. Ensure that the hot water unit is on (temperature digits are displayed in the digital monitor ③). If more than one water controller is fitted press the Transfer button to pass on priority to your desired water controller. The Priority indicator will illuminate to confirm that priority has been assigned to this water controller and that the hot water unit is ready to deliver hot water.
2. Select the desired temperature using the Temperature Control or buttons until the required temperature is displayed in the digital monitor ③.
3. Press the Preheat button once. The Preheat indicator and the 'In Use' indicator will illuminate, signifying that the preheat system has been activated.
4. Wait for the 'In Use' indicator to go out (this may take 2 to 5 minutes). When this happens it signifies that the water in the pipework has now been pre-warmed and is ready for delivery, and that a hot water tap can now be opened.



The waiting time may be longer or shorter depending on your particular installation configuration. For best results always wait for the 'In Use' indicator to go out before opening a hot water tap.

The preheat function is cancelled 5 minutes after activation and the Preheat indicator will go out. This is to conserve energy. To reactivate, simply repeat steps 2 through 4 above.

\* If the Preheat button is pressed and the 'Smartstart' preheat unit is not installed, the Preheat indicator will still light however there will be no preheat function.

The Preheat indicator will go out after a short time and will not affect the other functions of the water controller or water heater.


**Water Controller Functions**

Water controller functions such as temperature control and transfer of priority between multiple controllers are not affected by the operation of the preheat. Such functions are described in the applicable sections of this manual.

# CARE & MAINTENANCE

## ERROR CODES

Your Rinnai Continuous Flow water heaters has a self diagnostic capability. If a fault occurs, an Error Code will flash on the digital monitor of your water controllers and where fitted on the status monitor on the front cover of the water heater. This assists with diagnosing the fault, and may enable you to overcome a problem without a service call. Please quote the code displayed when enquiring about service.

Code	Description	Remedy
-	Noticeable reduction in water flow.	Inlet water filter needs to be cleaned - Service call
03	Power interruption during Bath fill (Water will not flow on power reinstatement).	Turn off all hot water taps Press On/Off twice.
05	By-Pass Flow Control Failure.	Service Call
10	Air Supply or Exhaust or Condensate Pipe Blockage.	Service Call
11	No ignition / No gas supply.	Check gas is turned on at water heater and at gas meter or cylinder
12	Flame Failure / Low gas flow.	Check gas is turned on at water heater and gas meter or cylinder. Check there are no obstructions to the flue outlet.
14	Heat Exchanger Overheat Failure.	Service Call
15	Venturi Control Failure.	Service Call
16	Over Temperature Warning.	Service Call
17	Venturi Blockage.	Service Call
19	Electrical Earthing Failure.	Service Call
21	Data Transfer Error.	Service Call
25	Neutraliser Tank Sensor Fault.	Service Call
32	Outgoing Water Temperature Sensor Failure.	Service Call
33	Heat Exchanger Thermistor Failure.	Service Call
34	Combustion Air Temperature Sensor Failure.	Service Call
38	Exhaust Thermistor Failure.	Service Call
41	Freeze Protection Thermistor Failure.	Service Call
51	Inlet Thermistor Failure.	Service Call
52	Gas Valve Failure.	Service Call
54	High Exhaust Gas Temperature Failure.	Service Call
55	Scheduled Service Reminder (refer to page 11).	Service Call
5E	Cascade Connection Failure.	Service Call
61	Combustion Fan Failure.	Service Call
65	Water Flow Control Failure (Does not stop flow properly).	Service Call
70	PCB Failure.	Service Call
71	Solenoid Valve Circuit Failure.	Service Call
72	Flame Rod Failure.	Service Call
92	Neutraliser Warning.	Service Call
	Wireless water controller is 'Out of Range' due to the distance from transceiver or an obstruction.	Move wireless water controller or transceiver or remove the obstruction.

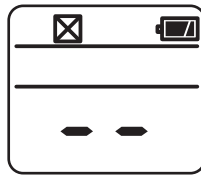


**Some fault codes are model specific and so not all codes will display on all models.**

**In the majority of cases, you may be able to clear the Error Code simply by turning the hot water tap OFF, then ON again. If this does not clear the Error Code, try pushing the On/Off button OFF, then ON again. If the Error Code still remains, contact Rinnai for advice.**

## No Power Display

When power to the water heater is disconnected the LCD of all wireless water controllers will display as shown. Check that power is available, the water heater is plugged in and that the power point is turned 'ON'.



Faults caused by insufficient gas supply, insufficient water supply, gas quality, water quality, installation errors or operation errors are not covered by the Rinnai warranty. Refer to the separate Warranty Booklet for full warranty details.

## SERVICE

Wired and wireless water controllers, transceivers and water heaters **DO NOT** contain user serviceable parts and must only be serviced and repaired by an appropriately licensed tradesperson.

Rinnai has a Service and Spare Parts network with personnel who are fully trained and equipped to give the best service on your Rinnai appliance. If your appliance requires service, please call our National Help Line or the Hot Water Service Line (contact numbers for which are on the back cover of this manual).



When making a service enquiry, having both the model and serial numbers available, will help our staff quickly identify your appliance and better attend to your needs.

This information should have been copied to the "Installation Record" for the water heaters Operation & Installation Manual by your installer, however if this is not the case, the information can also be found on the data plate located on the left hand side of the appliance.

## Scheduled Service Reminder

**For REU-N3237WC-AK (HD210e) and REU-N3237FFC-AK (HD210i) models ONLY:**

Rinnai recommends that commercial appliances be serviced annually.

Commercial models by default are set with a scheduled service reminder. When the set service period elapses code '55' is displayed as a reminder that the water heater is now due to be serviced. The reminder code flashes intermittently on the status monitor and water controllers (when fitted) in both standby and during operation, normal operation of the appliance is not affected.

When the scheduled service reminder is displayed contact Rinnai for advice.

**For all other models:**

Rinnai recommends that domestic appliances be serviced every 3 years. There is no scheduled service reminder for domestic models.

# INSTALLATION TABLE OF CONTENTS

<b>Water Controller Installation</b>	<b>13</b>
<b>General Information</b>	<b>13</b>
Wireless Water Controllers	13
Master / Sub Water Controllers & Associated Temperatures	13
Location	14
<b>Connection Transceiver - Mounting Transceiver</b>	<b>15</b>
<b>Connection Transceiver - Communication Cables</b>	<b>15</b>
Connecting Multiple Communication Cable(s)	15
<b>Connection Transceiver - Models Except Infinity Touch, E-Series &amp; N-Series</b>	<b>16</b>
<b>Connecting Transceiver - Infinity Touch</b>	<b>16</b>
<b>Connecting Transceiver - E-Series &amp; N-Series</b>	<b>17</b>
Connecting Comm. Cables to Mini-Plug	17
Connecting Comm. Cables to PCB	17
<b>Setting Transceiver Max Temperature</b>	<b>18</b>
<b>Wireless Controllers Installation</b>	<b>18</b>
Adding a Wireless Controller	18
Adding Additional Wireless Controllers	19
Trouble Shooting Channel Assignments	19
Removing Wireless Controllers	19
<b>Wired &amp; Wireless Controllers Installation</b>	<b>20</b>
<b>Mounting Wireless Controllers</b>	<b>20</b>
<b>Specifications</b>	<b>21</b>
<b>Dimensions</b>	<b>21</b>
<b>Contacts</b>	<b>24</b>

# WATER CONTROLLER INSTALLATION

## GENERAL INFORMATION



Other manufacturers water controllers are **NOT** compatible with Rinnai water heaters. Water controllers **MUST NOT** be used with any Solar Boost water heater. Rinnai water controllers brought in from other countries are not compatible with Rinnai appliances sold in Australia.

Regardless of water controller installation, all Rinnai water heaters **MUST** only be installed by an Appropriately licensed tradesperson.

Water controllers, transceivers and water heaters **DO NOT** contain user serviceable parts and must **ONLY** be serviced and repaired by an appropriately licensed tradesperson.

## Wireless Water Controllers

A wireless water controller installation utilises a transceiver and wireless water controllers (maximum of 4 <sup>(1)</sup>). Unlike most remote control systems, there is 'two way' communication between the transceiver and controllers.

The transceiver is connected by electrical cable to the water heater. The transceiver transmits control signals received from the wireless controllers operated by the user to the water heater. The transceiver transmits operational 'status' signals from the water heater which are received by individual wireless controllers to ensure controller displays reflect the operational status of the water heater.

Wireless water controllers can be installed in conjunction with Universal and Deluxe wired water controllers\* and will function as described in the Operation Section of this manual.



<sup>(1)</sup> Some Rinnai water heater models can only have a maximum of three water controllers fitted, refer to the Water Heater Operation / Installation Manual to confirm the maximum number and combination of water controllers that can be fitted to your Rinnai water heater model.

When deluxe kitchen or universal water controller is fitted it will always function as a master controller, this is the default setting and can not be changed. For further information regarding Rinnai Universal and Deluxe wired water controllers, contact Rinnai or visit: [www.rinnai.com.au](http://www.rinnai.com.au).

Rinnai wireless transceivers may be connected to the current range of water heaters fitted with 'Ezi connect' by the end user in accordance with these instructions. An appropriately licensed tradesperson is not required for this task, yet may be engaged by the end-user for convenience. Rinnai Wireless Transceivers are also compatible with some older water heater models not fitted with 'Ezi connect' and **MUST** be installed and commissioned by an appropriately licensed tradesperson. Contact Rinnai for information regarding compatibility with older water heaters.

## Master / Sub Water Controllers & Associated Temperatures

Only one MC model water controller can be designated as the 'Master' water controller. This water controller is normally used in the kitchen and usually has a maximum temperature of 55°C, which is sufficient for almost all kitchen applications. Temperatures higher than 55°C are possible but usually unnecessary and will result in higher gas use and increase the risk of burns.

Some additional conditions regarding Master Controller maximum temperatures apply when a wireless water controller is used as the 'Master' water controller.

- (i) Temperatures of 55°C or higher can only be selected on the controller designated as the 'Master' water controller if the transceiver 'Max Temp.' is also programmed to 55°C or higher.
- (ii) The temperature of hot water delivered is always limited to the maximum temperature programmed into the water heater itself. For example, if the transceiver maximum temperature is programmed to 55°C and the water heater is limited to 50°C, the maximum temperature that the water heater will deliver is 50°C. In this case 55°C will be displayed on the wireless Master Controller until a tap is opened after which the display will revert to 50°C.



The water heater maximum temperature cannot be adjusted by the user. These adjustments can **ONLY** be carried out by an appropriately licensed tradesperson.

The remaining water controllers are designated 'sub' controllers and are for use in bathrooms, toilets and laundries. The temperature limit for all 'Sub' controllers is always 50°C to minimise the risk of burns in these areas. Adhesive labels are included for individual identification of wireless water controllers as master (Kitchen) or sub (Bathroom) water controllers. These labels are usually placed on the top back of the wireless water controller body.

### Location



- **DO NOT** mount the transceiver behind pipework where the location can prevent access to the opening of the cover or to the controls.
- If mounting the transceiver to the lower mounting bracket of a water heater ensure it is installed in a vertical orientation and that access to the cover and to the controls is **NOT** obstructed.
- When mounting a transceiver within a premises then it is preferable that the transceiver should be located in an accessible location.
- If the transceiver is to be mounted within a roof cavity, then ease of access **MUST** also be considered. The mounting location should be as close as is practical to the roof cavity entry point, ideally being directly accessible from the roof cavity entry point.
- **DO NOT** install the transceiver or water controllers near a heat source, such as a cook top, stove or oven. Heat, steam, smoke and hot oil may cause damage.
- **DO NOT** install water controllers outdoors unless protection from water / dust ingress and sunlight are provided.
- When fitted **UNIVERSAL** (when set as the master controller) and **DELUXE KITCHEN** water controllers **MUST NOT** be installed in a bathroom.
- **DO NOT** install water controllers in direct sunlight.
- **DO NOT** install water controllers against a metal wall unless the wall is earthed in accordance with AS/NZS 3000.
- The transceiver and water controllers **MUST NOT** be installed where chemicals such as benzene, petrol, alcohol, turpentine, hydrogen sulphide, ammonia, chlorine or other similar chemicals are in use.
- The Water controller is a water resistant device, however excessive exposure to water may result in damage. Durability is improved when positioned outside the shower recess. **AVOID** direct exposure to water or steam as these conditions may cause a malfunction.
- Water controllers must be installed in shaded and clean locations. They should be fitted out of reach of children (suggested height from floor to be at least 1500 mm). Water controllers **MUST BE** installed at least 400 mm above the highest part of a sink, basin or bath.
- Metallic structures, appliances or magnetic fields in the vicinity of transceiver or wireless water controllers may reduce signal strength.
- When cleaning your water controller use **ONLY** a damp cloth and a mild detergent.

For transceiver and wireless water controller dimensions refer to "Dimensions" on page 21.

The transceiver comes supplied with a 1.5m length of communications cable.

The transceiver's antenna is located in the top. For the best results mount the transceiver so the top of the transceiver is higher than the top of the water heater. If the transceiver is mounted to the side or below the water heater signal strength may be reduced. The transceiver may be mounted inside metal recess boxes or pipe covers, however this may also reduce signal strength.

In some cases building construction and design can reduce signal strength and it may be necessary to locate the transceiver in a central location on the inside of the building, **ONLY** Rinnai supplied communication cables may be used for this purpose. For such extended conditions a 15 metre communication cable Part No. 92099241 is available for purchase from Rinnai. An alternative per metre communication cable option (up to 20 metres) is also available, Part No. 92078609.



**The per metre communication cable does not come supplied with spade connectors, spade connectors are available from your local electrical component retailer.**

Take the signal strength into consideration when determining the best location for both the transceiver and the wireless water controllers.

When connecting both wireless and wired water controllers to the water heater refer to the water controller installation section of the manual supplied with the appliance for the correct procedure for the connection of multiple communication cables.

**CONNECTION TRANSCEIVER - MOUNTING TRANSCEIVER**

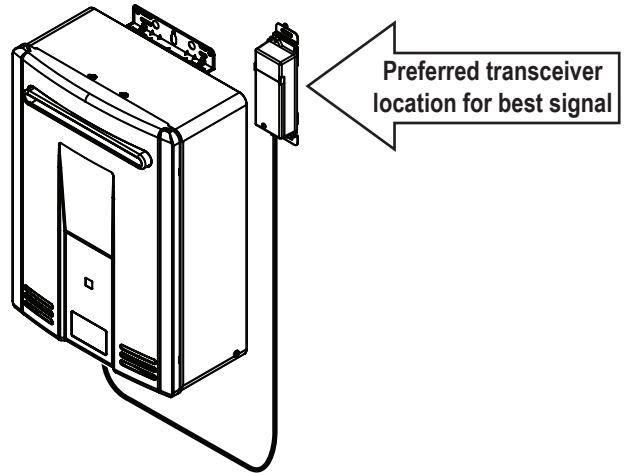


To determine the most suitable position for the transceiver, refer to "Location" on page 14 for further information regarding the location requirements.

The distance between the water heater and the transceiver **MUST NOT** exceed 20m.

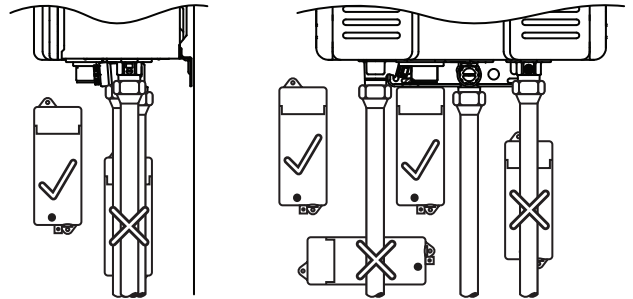
**DO NOT** install the transceiver in a location that prevents access to the opening of the cover or to the controls.

When installing the transceiver below the water heater **DO NOT** install it behind pipework where the location can prevent access to the opening of the cover or to the controls.



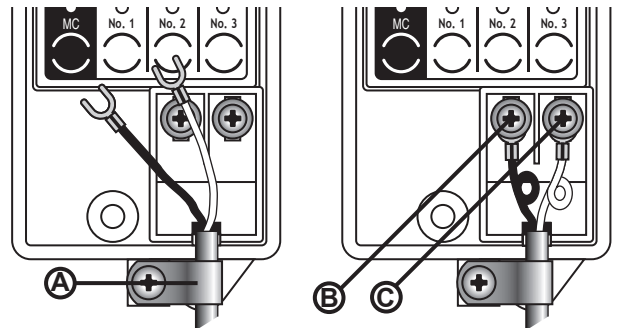
If your water heater is **NOT** fitted with an 'Ezi connect' cable connector or is **NOT** an Infinity Touch, then installation **MUST** be completed by an appropriately licensed tradesperson.

**DO NOT** attempt to connect cables to the transceiver unless the electric power to the water heater is switched 'OFF' otherwise damage to electrical components may occur.



**CONNECTION TRANSCEIVER - COMMUNICATION CABLES**

1. With the electric power supply still isolated, unscrew the transceiver access cover to reveal control keypad and terminals.
2. Thread the transceiver cable through the cable clamp (A), allowing sufficient cable length so that the sheath of the cable can be secured.
3. Loosen screws terminals (B) and (C) of the transceiver and connect the spade connectors of the cable to these terminals and re-tighten. Polarity is not important, either wire colour can be connected to either terminal.

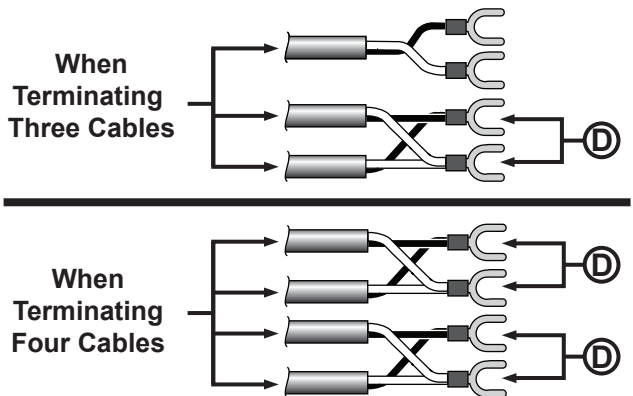


**Connecting Multiple Communication Cable(s)**

Transceivers and wired water controllers operate at an extra low voltage (12 Volts DC) which is supplied from the water heater. **ONLY** Rinnai supplied communication cables may be used. Optional longer communication cabling is available from Rinnai.

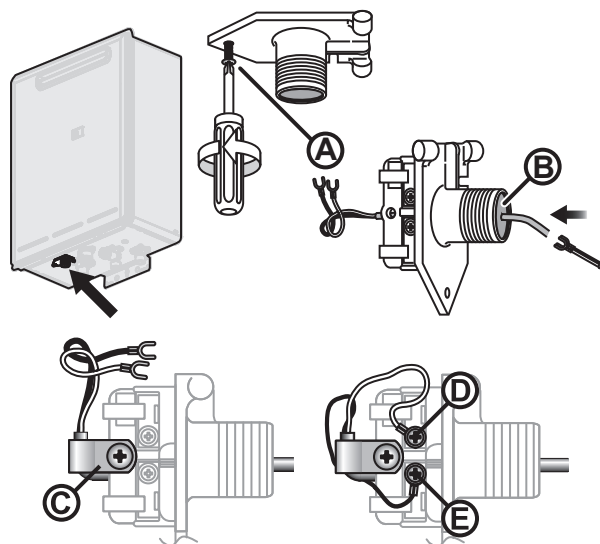
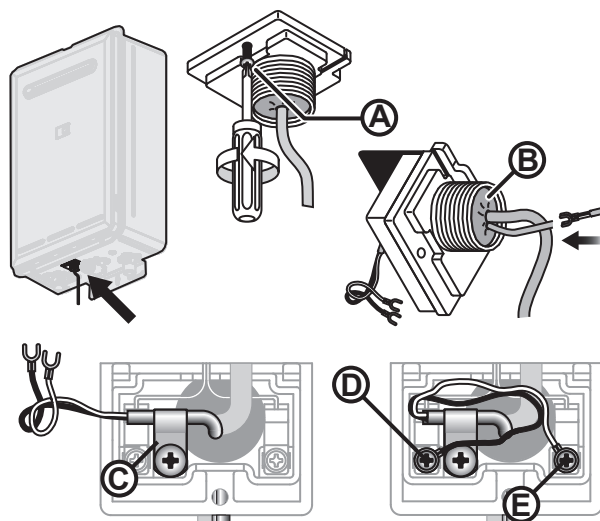
Where combinations of wireless and wired water controllers are to be fitted only two pairs of cables (4 spade connectors in total) may be terminated. When attaching three or four cables it is necessary to join the cable terminals as follows:

For each pair cut off the existing spade connectors and re-terminate each pair into a new spade connector (D) so that there are only two sets of spade connectors (4 spade connectors in total) to be terminated (spade connectors are available from your local electrical component retailer)



**CONNECTION TRANSCEIVER - MODELS EXCEPT INFINITY TOUCH, E-SERIES & N-SERIES**

1. Isolate the electric power supply by switching the power point off and removing the power plug of the water heater from the electric power socket
2. The transceiver can either be mounted to the wall above the appliance (preferred option) using the screws and/or anchors provided. Alternatively the transceiver can be mounted under the hot water unit as shown.
3. Connect the Communication to the Cable Ezi-Connect terminals.



**CAUTION** **DO NOT** attempt to connect cables to the 'Ezi connect' cable connector at the water heater unless the electric power to the water heater is switched 'OFF' otherwise damage to electrical components may occur.

If your water heater is **NOT** fitted with an 'Ezi connect' cable connector or is **NOT** an Infinity Touch, then installation **MUST** be completed by an appropriately licensed tradesperson.

Remove the retaining screw (A) of the 'Ezi connect' cable connector at the base of the appliance.

Swing the 'Ezi connect' cable connector door open and thread the cable through the weather seal of the cable access hole (B) in the direction shown allowing sufficient cable length so that the sheath of the cable can be secured with cable clamp (C).

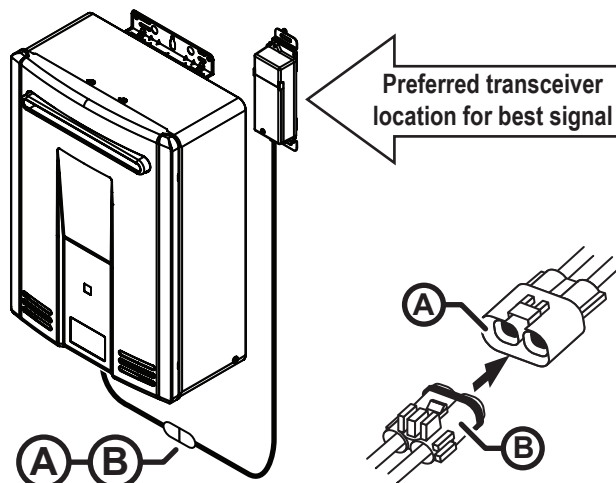
Loosen screw terminals (D) & (E) and connect the cable spade connectors to these terminals and re-tighten.

Polarity is not important, either wire colour can be connected to either terminal.

Return the 'Ezi connect' cable connector to the original position taking care not to damage cable wires in the process and replace the retaining screw (A).

**CONNECTING TRANSCEIVER - INFINITY TOUCH**

1. Isolate the electrical power supply to the water heater.
2. Determine the most suitable position for the transceiver.
3. The transceiver can be mounted to the wall above the appliance (preferred option) using the screws and/or anchors provided. Alternatively the transceiver can be mounted under the hot water unit as shown.
4. Connect the communication cable plug (A) of the transceiver to the communication cable socket (B) of the hot water unit.



**IMPORTANT** To install wired water controllers on Infinity Touch models water heaters, an additional controller loom Part No. 92099961 is required. This controller loom **MUST** be installed by an appropriately licensed tradesperson.



**CONNECTING TRANSCEIVER - E-SERIES & N-SERIES**



Installations on E-series and N-series water heaters **MUST** be completed by a qualified and licensed trades person.

**DO NOT** attempt to connect mini-plug or communication cables to the water heater unless the electric power to the water heater is switched 'off' otherwise damage to electrical components may occur.

**Connecting Comm. Cables to Mini-Plug**

Water controllers are connected to the PCB via a dedicated pre-wired mini-plug (A) (supplied with Water Heaters).

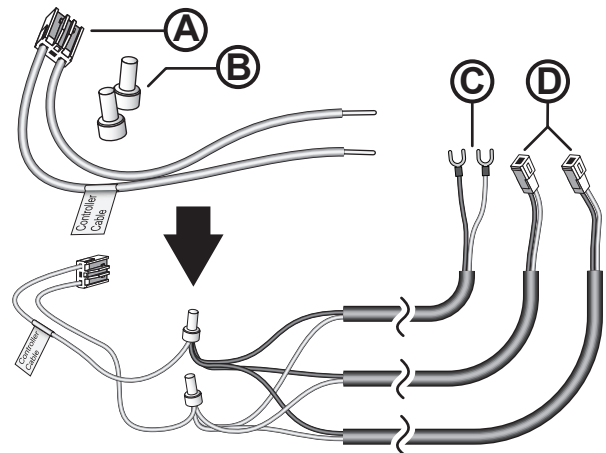
Use the supplied electrical cable connectors (B) to terminate the water controller wires to those of the mini-plug.

Removal of the existing connectors of the communication cable(s) will need to be removed prior to termination.

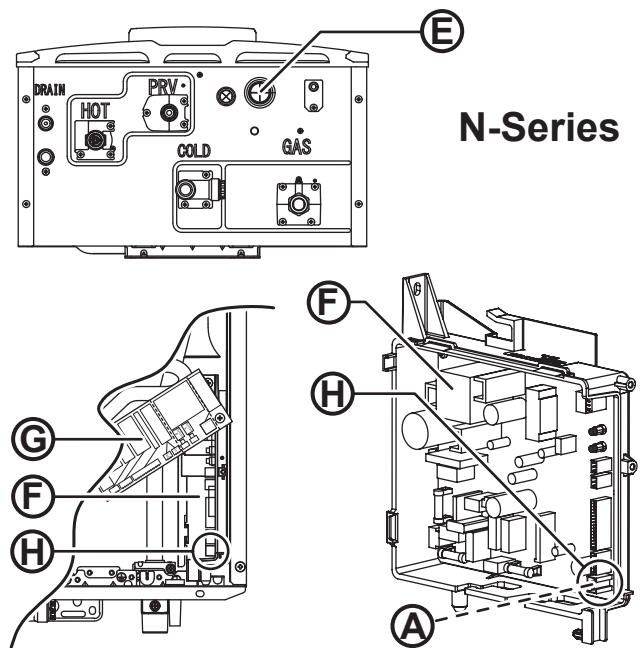
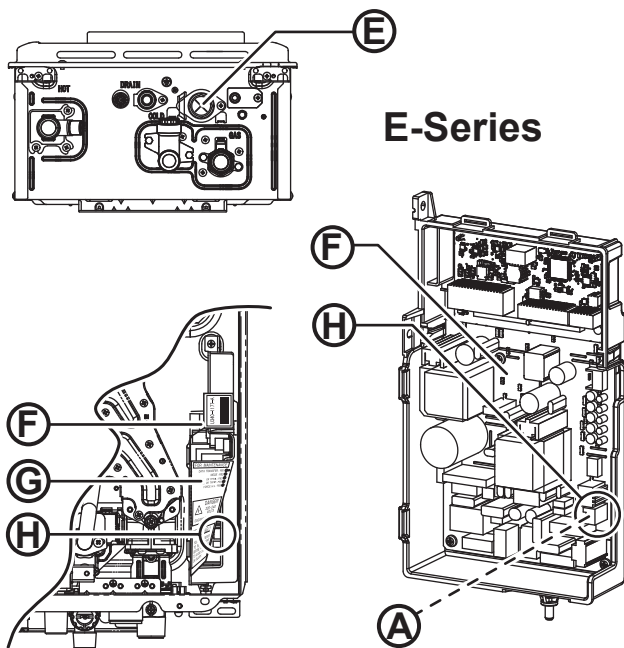
© (MC-145V, MC-503RC-M)

Ⓓ (MC-91Q, MC-601Q, BC-145V)

Controllers are not polarity sensitive, however to avoid confusion it is recommended that like coloured wires be terminated together.



**Connecting Comm. Cables to PCB**



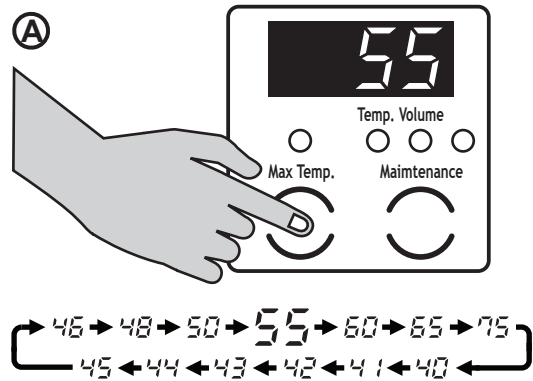
1. Isolate the electric power supply by switching the power point off and removing the power plug of the water heater from the electric power socket.
2. Remove the front cover of the appliance.
3. Insert the mini-plug and the connected water controller cables through the cable access (E) at the base of the appliance. Ensuring that the cable connectors are located inside the appliance for protection.
4. Locate the PCB (F), (bottom right of appliance), and carefully rotate the plastic safety cover (G) out of the way.
5. Locate the accessory port socket (H) (bottom front of the PCB).
6. Plug the mini-plug into the accessory port socket (H) (the plug and socket are keyed so that they can only be plugged in the one direction).
7. Proceed with the water controller installation and connect the communication cables to controllers.

**SETTING TRANSCIEVER MAX TEMPERATURE**

The default maximum delivery temperature of the transceiver is 55°C, however the maximum temperature of the transceiver can not exceed that of the appliance and is automatically set down to the appliances maximum temperature when a hot water tap is opened.

An appliance with a maximum delivery temperature that exceeds 55°C can not deliver this higher temperature until the transceiver is manually set to do so, as follows:

1. Ensure the power to the water heater is switched 'ON'.
2. Press the 'Max Temp.' button (A) until the maximum temperature is the same as that of the appliance.



Refer to "Master / Sub Water Controllers & Associated Temperatures" on page 13 for information regarding the use of maximum delivery temperatures with wireless water controllers.

**WIRELESS CONTROLLERS INSTALLATION**

**Adding a Wireless Controller**



This installation procedure applies to wireless water controller installations only. For combined wired and wireless water controller installations refer to "Wired & Wireless Controllers Installation" on page 20.

Up to 4 wireless water controllers can be installed. **ONLY** one of these can be designated as a 'Master Controller' (MC), others will be designated as 'Sub' controllers.

Only one wireless water controller can be installed at a time. **DO NOT** insert batteries until step 3.

1. Ensure the power to the water heater is switched 'ON'.
2. Press the 'Entry' button (A) on the transceiver for approximately 2 seconds to select a wireless controller channel for tuning. The first unassigned wireless controller channel LED will begin a fast flash, signifying that this channel has been selected for tuning.

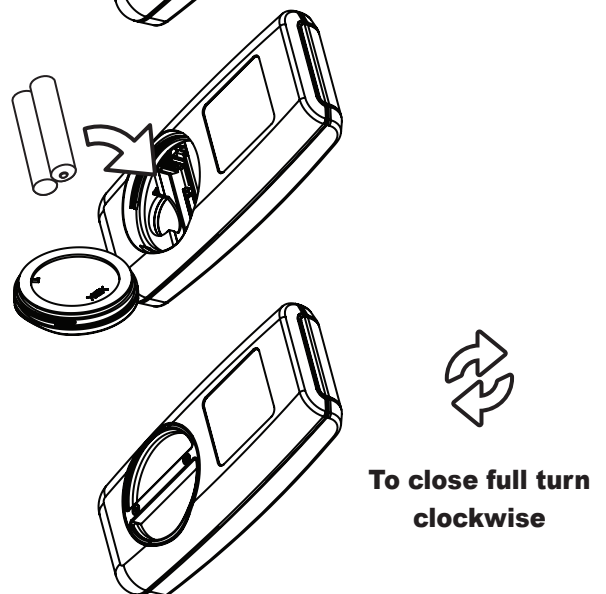
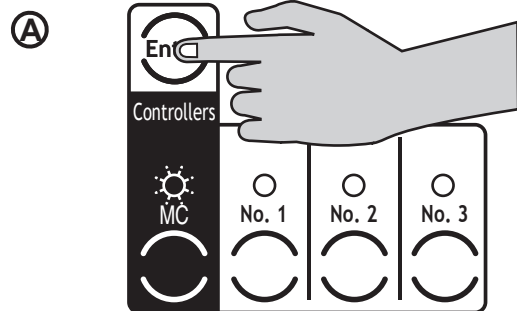


The default order of channel selection is as follows: → MC → No. 1 → No. 2 → No. 3 →

The wireless Master Controller is the only wireless controller capable of selecting maximum delivery Temperatures exceeding 50°C. Ensure that the Master Controller (Kitchen) label provided is placed on the top rear of the assigned controller.

3. Select a wireless water controller for tuning to the unassigned transceiver channel and remove the controller from the wall mounting bracket.

Open the battery compartment with a full turn anti-clockwise. Insert the batteries observing the correct polarity. Close the battery compartment with a full turn clockwise (B).



4. After battery installation the wireless controller will momentarily display an initialisation screen (C), which will then switch to screen (D) or (E).
  - (i) If screen (D) is displayed press and hold the On/Off (⏻) button until screen (E) is displayed. This takes approximately 3 seconds.
5. From screen (E) press the On/Off (⏻) button once to start the tuning process which will take approximately 5 seconds.
6. Once the controller is tuned the controller channel LED on the transceiver will become steady and the controller LCD will switch to either screen (F) or (G).
  - (i) If screen (F) is displayed, press the On/Off (⏻) button once.
  - (ii) If screen (G) is displayed, press the Transfer (⏪) button once to complete the tuning of this channel.

When screen (H) is displayed, the wireless water controller is now tuned and ready to control the delivery temperature of the water heater.

7. Apply one of the self-adhesive identification stickers to the rear of the controller, ensuring that the Master Controller sticker is only applied to the wireless water controller tuned to channel MC.

**Adding Additional Wireless Controllers**

To install subsequent wireless water controllers repeat steps 2 to 7 for each additional wireless water controller.

Once all wireless water controllers are installed re-secure the transceiver access cover.

**Trouble Shooting Channel Assignments**

If at the end of the installation process screen (E) is displayed do the following:

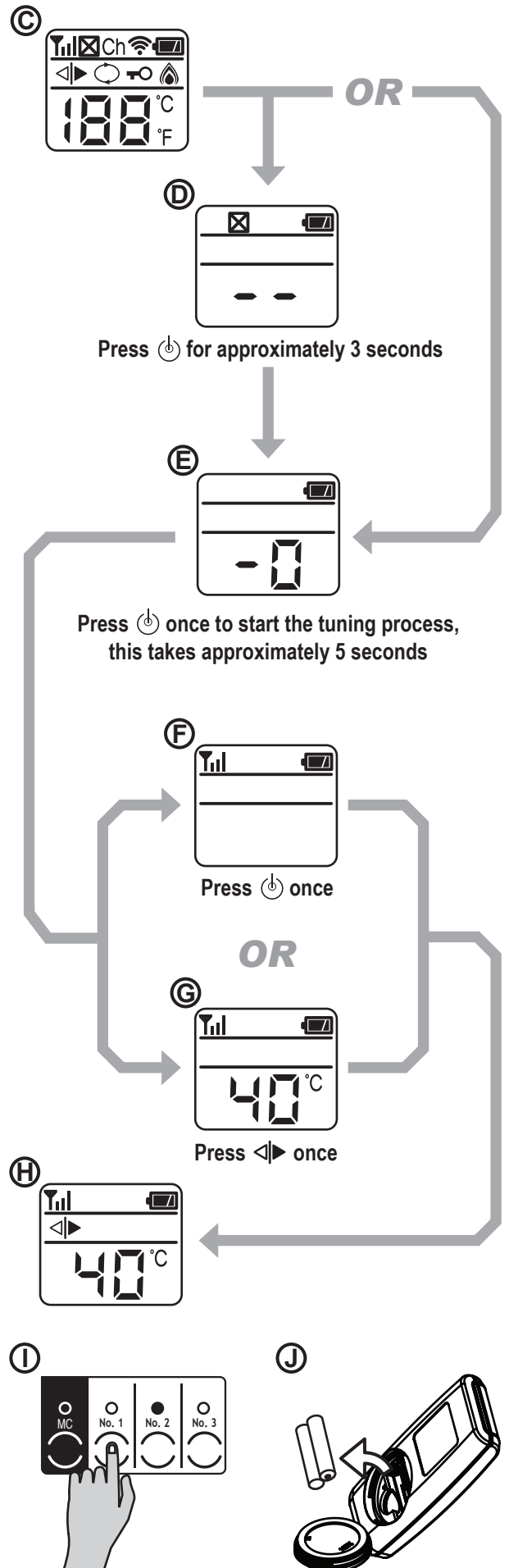
Confirm first that the power is still on at the water heater.

If the power is off, turn it back on. If the channels have been correctly assigned, then the display should show screens (F), (G) or (H).

**NOTE** If screen (E) is still displayed, reset the wireless controller by removing the batteries, then repeat the installation process.

**Removing Wireless Controllers**

1. Press the desired controller channel button (I). The LED will go out to signify that this channel is now unassigned.
2. Removing the batteries (J) from the wireless controller will reset the wireless controller and complete the process.



**WIRED & WIRELESS CONTROLLERS INSTALLATION**



When installing combinations of both wired and wireless controllers, all wired water controllers **MUST** be connected before the wireless water controllers are assigned to a transceiver channel. Refer to page 5 to confirm the maximum number and combination of water controllers that can be fitted

Wired water controllers can **ONLY** be added to an existing wireless installation when:

- All wireless transceiver channels have been unassigned.
- All wireless controllers have been reset and channels have been unassigned, refer to "Removing Wireless Controllers" on page 19.

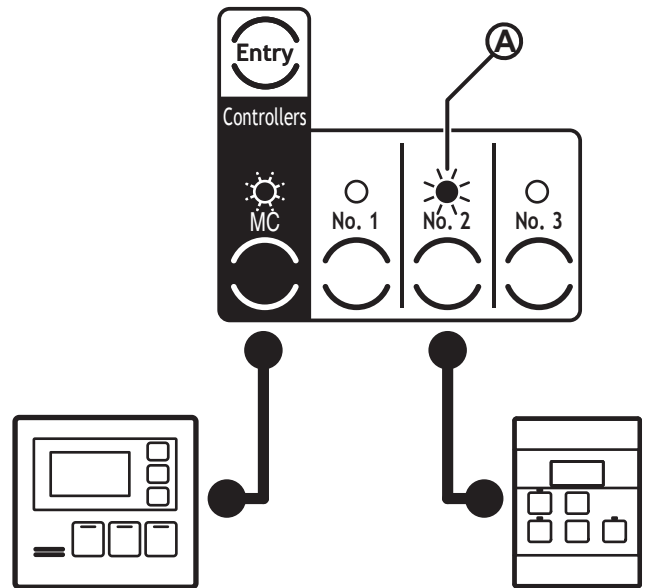
When the wireless transceiver is installed it automatically detects any wired water controllers already connected to the water heater.

The LEDs of the channels assigned to wired controllers (A) will slow flash. The channels for wired water controllers are assigned in sequence as follows:

MC-145V - Deluxe Kitchen or MC-601Q - Universal (programmed as a Master Controller) will automatically be assigned to the MC channel.

BC-145V - Deluxe Bathroom or MC-601Q - Universal (not programmed as a Master Controller) will automatically be assigned to an available channel other than the MC channel.

Install the wireless water controllers to any of the unassigned channels following steps 1 to 7 described in "Wireless Controllers Installation" on page 18.



**MOUNTING WIRELESS CONTROLLERS**



Determine the most suitable position for the wireless water controller, refer to "Location" on page 14 for further information regarding the location requirements.

For wireless water controller dimensions refer to "Specifications" on page 21.

1. Confirm the desired location has adequate signal strength, the 'Signal Strength' indicator displays one of four levels. ◀ **Strong** **Weak** ▶

The 'Out Of Range' indicator displays when the wireless water controller is out of range of the transceiver or when an object is obstructing the radio signal.

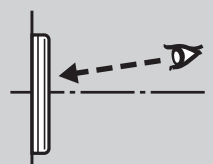
Wireless water controllers should be positioned such that the signal strength indicator displays at least '2 bars' next to the antenna symbol during installation. Signal strength varies with atmospheric and other conditions. If the signal strength is weaker than '2 bars' during installation, there may be other times when the signal is too weak to allow operation.

2. Slide the wireless water controller from the wall mounting bracket.
3. Use the wall mounting bracket as a template to mark off and drill 2 holes for use with mounting fixings.
4. Secure the wall mounting bracket to the wall with the screws and or anchors provided. Avoid over-tightening of fixings as this may cause damage. **DO NOT** use powered tools to tighten fixings.
5. Slide the wireless water controller back into the wall mounting bracket.



**ADDITIONAL WATER CONTROLLER MOUNTING CONSIDERATIONS.**

The **MC-503RC** uses Liquid Crystal Display (LCD) for the digital monitor. Light reflections can make the LCD difficult to see at direct eye level. For best results when installing **MC-503RC** and **MC-145V** mount the remote controller lower than your eye-level to avoid these light reflections.

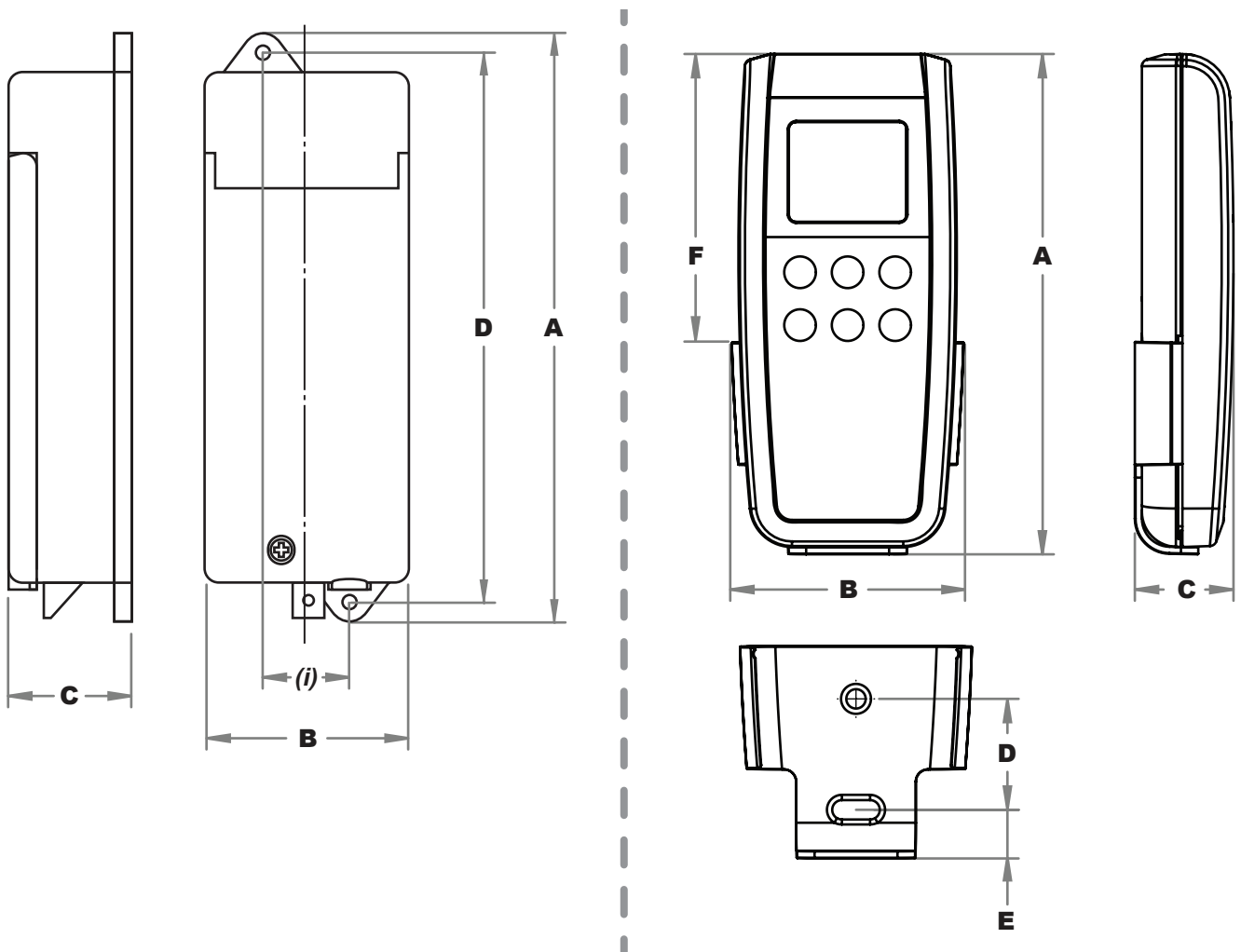


# SPECIFICATIONS

## DIMENSIONS

(all dimensions in mm)		Model	
		MC-503RC <i>Transceiver</i>	MC-503RC <i>Wireless Water Controller</i>
A	Height	167	142
B	Width	58	66.6
C	Depth	35	28
D	Vertical Mounting Hole Centres	157 (i)	31.5
E	Hole Height from Bracket Base	N/A	13.8
F	Height Controller Above Bracket	N/A	81.7

(i) The vertical alignment of the mounting holes for the transceiver are offset 25mm from each other and 12.25mm off the body centreline.



# NOTES





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Tel: (03) 9271 6625

## **National Help Line**

Tel: 1300 555 545\*

*Monday to Friday, 8.00 am to 5.00 pm EST.*

## **After Hours Hot Water Service Line**

Tel: 1800 000 340\*

*\*Cost of a local call may be higher from a mobile phone.  
(National calls from public phones in Australia are free.)*

For further information visit **[www.rinnai.com.au](http://www.rinnai.com.au)**  
or email **[enquiry@rinnai.com.au](mailto:enquiry@rinnai.com.au)**

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