Touch Controller

Installer Manual





Touch Controller Kit Scope

Please read these instructions carefully before installing this product. This manual covers the installation of the wall mounted **Touch Controller** for the following applications:

- · Gas Ducted Heating
- Gas Ducted Heating & Refrigerated Cooling (Dual Comfort)
- Evaporative Cooling
- Zoning, including ZonePlus

• The Touch Controller is compatible with selected units only. For information on compatibility please contact your Dealer.

• Pre-2010 compatible heaters will have limited on-board diagnostics.

For the installation of Heating and Cooling products please refer to the equipment Installer Manuals.

This manual is based on Australian Standards - for all other applications, please refer to relevant local codes and regulations.

Any deviations from these instructions may, at the discretion of the company, void the warranty. As a result, the customer and/or installer may be charged a fee for non-product warranty related call outs. Also, note that failure to comply with these instructions may preclude the company from being able to service the product.

Terminology:

Shall: Indicates a mandatory requirement of this manual. Should: Indicates a recommended requirement of this manual.

Disclaimer

IMPORTANT NOTICE: This document is a guide only. Laws, regulations and industry standards can vary between States and Territories. Accordingly, this guide must be read in conjunction with, and subject to, all laws, regulations and industry standards applicable in the State or Territory in which the products are installed. You must ensure that the installation of the products will comply with those laws, regulations and standards, and that the products recommended to customers are if for the purpose for which they are intended.

Contents and Description	Qty
Touch Controller	1
Interface Module	1
Power Transformer	1
Power & Communication Loom	1
Plug & Screw Kit (for Touch)	1
Screw (for Interface Module)	2
Screw Driver	1

Table 1: Touch Controller Kit Part No. B063047

Inspect the product to ensure it matches your order. In the event of damage or incorrect delivery, notify the supplier immediately. The company accepts no responsibility for installation of damaged or incorrect product.

Please read these installation instructions before undertaking the installation process.

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Mains electrical and other communication cables can cause interference with system *controls and low voltage circuits and wiring*. Always observe guidelines and instructions for specific

- products, and in general:
 - Ensure correct wiring type and minimum gauge is used.
 - DO NOT exceed maximum specified lengths.
 - Install a minimum distance of 40cm from all high frequency cables and devices such as:
 - 240V or 415V mains power cables
 - Computer / data cables
 - Broadcasting, TV antenna or Cable TV cables
 - Communication / telephone cables
 - High frequency cables within an appliance (e.g. heater igniter cable)

Failure to observe these requirements may adversely affect the performance and reliability of this appliance and not be covered by warranty.

Definitions

Networker

Networker is a term used for a temperature sensing or communicating device which communicates over two-wire bus. There can be only one Master Networker (n01), all others must be slaves (n02, n03n10).

Touch Controller

Primary user interface with touchscreen display. Where multiple Touch Controllers are installed, the "Master" Touch Controller can be identified by the letter "M" displayed in the bottom right hand corner of the screen. The Master has default sensor identification "**n01**".

The Touch Controller is a touchscreen thermostat which communicates over two-wire bus. It is compatible with NC-3, NC-6 and NT-1 sensors.

NC-6 Networker Controller

A user interface with LCD display. The NC-6 has default sensor identification "**n01 ID00:1**" (Master) and should be changed to a slave if used on the same system as the Touch Controller.

NT-1 Remote Temperature Sensor

Zone temperature sensor with an LED that blinks during communication with Master Touch Controller. Default NT-1 sensor identification is "n02". Additional Touch Controllers can be used in place of up to 3x NT-1 sensors. The NT-1 sensor can also be used as the outdoor temperature sensing device.

Zone

One room or a group of rooms; normally selected on the basis of usage or that have similar heating or cooling needs.

Controlled Zone

A zone that is separately controlled by its own zone sensor and zone damper. There are as many zone sensors in the home comfort system as there are Controlled Zones.

Common Zone

A zone that is not separately controlled by its own sensor and zone damper. It operates whenever heating or air conditioning is on, regardless of the status of any controlled zones.

Constant Zone

A predetermined zone, typically the largest and containing the return air grille, is designated as the Constant Zone. The Constant Zone functions as a Common Zone <u>only during refrigerated cooling</u> <u>mode</u> to ensure the minimum cooling airflow requirements are met.

Multi Temperature Set Point (MTSP) System

The zone temperature set point can be set independently across all Touchscreens and/or Temperature Sensors.

Single Temperature Set Point (STSP) System

The zone temperature set point is the same across all Touchscreens and/or Temperature Sensors.



Diagram 2: Add-On Home Screen



Diagram 3: Evaporative Cooling Home Screen



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2.0 Touch Controller Installation

The **Touch Controller** is connected to a compatible appliance through the Interface Module. A 20m, four core, **Power & Communication Loom (P&C Loom)**, connects the **Touch Controller** to the **Interface Module**. The **Power Transformer** (12VDC) supplies power to the **Interface Module**.



Diagram 4: Connection Diagram

To connect the appliance to the Touch Controller:

- 1. Determine location of the Touch Controller.
- 2. Determine location of the Interface Module.
- 3. Install the Touch Controller.
- 4. Install Interface Module.
- 5. Connect Interface Module to Appliance.

2.1 Location of the Touch Controller

For proper operation the **Touch Controller** must accurately monitor the temperature in the space it controls.

Guidelines:

The Touch Controller should be mounted:

- Approximately 1.5m above floor level (ensure hole into wall cavity is properly sealed).
- Close to the centre of the living space on an internal wall.
- On a section of wall that does not contain pipes, electrical wires, antenna cables or ductwork.

The Touch Controller should NOT be mounted:

- Where it is exposed to direct sunlight or other heat sources which may cause a false reading.
- Near or in the path of supply air outlets or return air grilles.
- On outside walls, near windows or doors leading to outside.
- In areas with poor air circulation such as recesses or behind doors.

Note: Do not install the wiring with the power turned on, as the fuse may blow, which is not be covered under warranty.

Note: When there are multiple Touch Controllers on a system, always ensure that the location of each is within 20m of the Interface Module

2.2 Location of the Interface Module

The **Interface Module** shall be located within 1.5m of a 10 Amp 240 volt fixed switched socket outlet. The Touch Controller shall be within 20m of the **Interface Module**. For an external 240 volt socket outlet, the Power Transformer shall be enclosed in a weatherproof enclosure (field supplied).

2.3 Install the Touch Controller

The Touch Controller **Backing Plate** must be installed prior to mounting the Touch Controller.

To mount the Backing Plate do the following:

- 1. Remove the Touch Controller **Backing Plate** from the packaging.
- 2. Use **Backing Plate** as a template and mark the two **Mounting Hole** centres and the **Loom Access** hole centre, refer to Diagram 5.
- 3. Install the supplied wall **Plug Kit** in the **Mounting Hole** locations. For drill sizes refer to Diagram 5.
- 4. Fasten Backing Plate with wall Plug Kit screws.

Diagram 5: Touch Controller "Backing Plate"



To mount the Touch Controller:

- 1. Run the supplied **P&C Loom** from the Touch Controller to the **Interface Module**.
- 2. Draw the loom from the wall cavity and feed through the **P&C Loom Access** opening on the **Touch Controller Backing Plate**.
- 3. Connect the **P&C Loom** terminal (female) to the **Touch Controller** terminal (male) before mounting it on the wall, refer to Diagram 6.
- Push excess cable back into the wall cavity and mount Touch Controller onto the Backing Plate. The three Male Clips on the Backing Plate will engage and secure the Touch Controller, refer to Diagram 7.

Diagram 6: Touch Controller P&C Loom Connection



Diagram 7: Mounting Touch Controller to Backing Plate



2.5 Install Interface Module

The **Interface Module** facilitates communication between the **Touch Controller** and the appliance(s) through the **P&C Loom**, and is capable of connecting up to four **Touch Controller** units. The **Interface Module** requires a 12VDC power supply from the **Power Transformer**.

The Interface Module also has an "Isolation Switch"; a red "Status L.E.D" indicates it is ON, refer to Diagram 8.

Diagram 8: Mounting Interface Module



To install the Interface Module:

- 1. Position in an environmentally protected area where the temperature does not exceed 70°C.
- 2. Locate within 1.5m of a 10 Amp 240 volt fixed switched socket outlet. For an external fixed switch socket outlet the 'Power Transformer; shall be enclosed in a weatherboard enclosure (field supplied).
- 3. Distance from Interface Module to Touch Controller shall be no more than 20m.
- 4. Mount with supplied screws as shown in Diagram 9.

Diagram 9: Mounting Interface Module on flat surface



2.6 Connection of Interface Module to P&C Loom

The **Interface Module** is capable of connecting up to four **Touch** Controllers. The **P&C Loom** can be connected to the **Interface Module** through any of the four ports, refer to Diagram 10.

Diagram 10: Connection of Interface Module to P&C Loom



2.7 Connection of Interface Module to Appliance

The **Interface Module** has four terminal points for the connection of the Appliance control wires TW1 & TW2. When connecting to an appliance, use only the first set (Set 1) of two terminals or the second set (Set 2). Never use a mixed combination of terminals when connecting to a single appliance. For example, a **Touch Controller** operating an Evaporative Cooler and a Gas Heater may have the two right terminals connected to the Heater (**SET 1**) and the two left terminals connected to the Evaporative Cooler (**SET 2**), refer to Diagram 11.

Diagram 11: Connection of Interface Module to Appliance



For more information regarding appliance connection please refer to the product installation manual supplied with the appliance.

Note: When there is more than one appliance connected to the **Interface Module** ensure that the TW1 & TW2 polarity is correct at both ends of the 2-wire bus cable.

Note: Do not install any wiring with the power turned on, as the fuse may blow, which would not be covered under warranty.

3.0 System Setup

3.1 Turning the System ON

Once the system is fully connected, it can now be turned ON in the following sequence:

- 1. Mains power to heater 516 Zone Module (if connected).
- 2. Mains power to Heater / Evaporative Cooler / Refrigeration appliance(s).
- 3. Mains power to Interface Module.

Press isolation switch on Interface Module (L.E.D on).

Once completed the Touch Controller will power up and you will be prompted to enter the day and time.

Note: Once you access the MENU Screen and select a configuration option, if no button is pressed for 60 seconds while in that configuration screen, the Touch Controller will exit the configuration mode and return to normal operation; this applies to all options other than SCHEDULE.

3.2 Set Day/Time

To access and modify the day and time do the following:

1. Identify the Master Controller; it has an '**M**' in the bottom right hand corner on the home screen. Press on the home screen, top right hand corner. refer Diagram 12.

Diagram 12: Home screen in the OFF state



Diagram 13: MENU Screen



 The MENU > SET DAY/TIME screen will appear, refer Diagram 14. To modify either the day or the time press the substantiation buttons adjacent to the time and day.

Diagram 14: Set the Day and Time



 When complete press Done to save and you will return to the MENU screen, refer Diagram 13 or the home screen, refer Diagram 12, when system is first started. Press to return to the home screen, Diagram 12.

When the system is first powered up the 'MENU > SET DAY/TIME' screen will appear, refer Diagram 14. If more than one Touch Controller is installed the 'MENU > SET DAY/TIME' screen will appear for all. Set the correct day and time on the assigned Touch Master Controller and then press 'Done'. For all other Touch Controllers press 'Done' as they will need to be converted to SLAVE Controllers.

Note: If multiple **Touch Controllers** are installed, only the Master Controller has the ability to set the day and time. The Master Controller can be identified by the letter "M" in the bottom right hand corner on the home screen.

3.3 Installer Setup

Interconnection of Heating and/or Cooling appliance(s) shall be complete prior to entering **INSTALLER SETUP**. If your system contains one **Touch Controller**, one heater (no zoning) and/or one evaporative cooler no network parameters need to change. To enter installer setup, enter **PIN 5240** and press '**OK**', refer Diagram 15.

Diagram 15: Touch Controller INSTALLER SETUP



When accessing the **CUSTOM SETUP** screen through the Master **Touch Controller** the following options may be available, and is dependent on connected appliances.

- 1. Reset the identification of the **Touch Controller** (only required if more than one **Touch Controller** is fitted).
- 2. Access the installer parameters (system functionality).
- **3.** Access the evaporative cooler installer parameters if an evaporative cooler exists on the system.
- 4. Access the heater installer parameters if a heater exists on the system, refer Diagram 16.

Diagram 16: Master Touch Controller CUSTOM SETUP



When accessing the **CUSTOM SETUP** screen through a Slave **Touch Controller** the following option will be available.

1. Reset the identification of the Touch Controller, refer Diagram 17.

Diagram 17: Slave Touch Controller INSTALLER SETUP



3.4 Reset Networker ID

On either the **Master Touch Controller** or **Slave Touch Controller**, pressing **Reset Networker ID**, refer Diagram 17, initiates a prompt to confirm clearing of its identification (address), refer Diagram 18. Accepting this change clears the unit identification and the Touch Controller is forced to restart.

Upon restarting the user is prompted to set the new identification number as shown in Diagram 19. The unit identification number shall be in the range from 1 to 10 inclusive, and once entered press **BACK** to save and return to **INSTALLER SETUP** Screen.



Diagram 19: Set Networker Address



3.5 Networker Parameters

The '**NETWORKER PARAMETERS'** section in the Master Touch Controller provides access to all Networkers connected to the system. This may range from n01 through to n10 if installed, refer Diagram 20.

Diagram 20: All Networkers on the system



Accessing 'n01 – Master Touch Controller

Press the 'n01 - Master Networker' button to gain access to:

- Zoning parameters for Refrigerated Cooling, Heating and Evaporative Cooling systems.
- Fan scaling parameters for Cooling and Heating systems.
- MTSP parameters for Cooling and Heating systems.

Refer to the appendix for a detailed list of the available Master Networker parameters.

Accessing 'n02 to n09 - Slave Controllers'

Press the 'n02 – Slave Networker' button through to 'n09 – Slave Networker' (if available) to gain access to the parameters for each Slave Controller.

Accessing 'n10 – Outdoor Sensor'

This is the designated address (n10) for the outdoor sensor, if connected.

3.6 Cooler Parameters

The Cooler parameters allow you to change the unit identification number for zoning applications and other parameters depending upon the model. For more information refer the product installation manual supplied with the appliance.

3.7 Heater Parameters

The Heater parameters allow you to change the unit identification number, high and low fan speeds, thermistor set point and zoning requirements. For more information refer the product installation manual supplied with the appliance.

3.8 System with no Zones

Some systems do not require 'n01' parameters to be changed, the only requirement is to install the appliance(s), turn system power ON, set the day and time on the **Touch Controller** and press the ON/OFF button to start the system. This applies to systems with no zoning and include:

- One Gas Ducted Heater
- One Gas Ducted Heater + one Evaporative Cooler
- One Gas Ducted Heater + one Add-On

Note: For Refrigerated Cooling connection, heater parameters (H01) must be programmed.

3.9 System with Zones (Inc. ZonePlus)

For systems installed with zones, the **Touch Controller** parameters need to be changed. The appliance cannot be started until all system zoning parameters have been programmed. Once the zoning parameters have been programmed the system may be run in either Manual or Schedule mode. For specific appliance installation parameters refer to the relevant appliance installation manual and appendix contained within for zoning parameters.

Refer to ZonePlus manuals for detailed information on STSP or MTSP systems or contact Technical Support.

3.10 System Operation

Instruct the home owner on system operation including:

- System design MTSP or STSP
- Zone identification
- Minimum / maximum no. of simultaneous zones for design conditions for Heating and Cooling (if fitted)
- Common Zone operation (if applicable)
- Constant Zone operation (if applicable)
- · Operating the system in manual mode
- Auto Operation programming the Comfort Schedule

3.11 Service Notification Message

When the operating hours logged for an appliance exceeds the predetermined period, the Touch Controller displays the following:



Diagram 21: System Alert

Pressing the "
"
"
icon will result in the following message being displayed for either Heater or Evap Cooler fan run hours above limit, refer Diagram 22.

Diagram 22: Fan run hour limit



The owner can book a service call or clear the spanner icon notification by pressing the "Clear" button

3.12 Outdoor Temperature Sensor (Optional)

The **Touch Controller** can display the ambient (outdoor) temperature. To enable, install a NT-1 Remote Temperature Sensor and set the JUMPER position to "AMB" (see Diagram 23). Connect the NT-1 to the 2-wire bus (TW1 & TW2).

The most accurate way of reading the ambient temperature is to install the NT-1 sensor under the eaves on the south side of the home away from potential heat sources.



4.0 Calibrating the Touch Controller

The Touch Controller leaves the factory with the touch screen calibrated ready for use.

Should the touch screen require calibration this can be achieved by doing the following:

- 1.Turn the system off if running
- 2.Remove the Touch Controller from the backing plate leaving the loom connected
- 3.Locate dip switches at the rear of the Touch Controller as highlighted in Diagram 24
- 4.With a small object slide the right dip switch up and then down back to original position
- 5. Fix the Touch Controller to the backing plate
- 6.Follow the on screen instructions to complete the calibration process, refer to Diagram 25

Diagram 24: Resetting the Touch-Screen Calibration Values



Diagram 25: Touch Controller Screen Calibration



5.0 Product and Warranty Registration

It is recommended to register all products to ensure efficient product support if and when required. Please inform the home owner that product registration can be completed either:

- on-line at rinnai.com.au
- or via the registration form in the product Owner's Manual (e.g. Heater Owner's Manual)

6.0 Instruct Home Owner on System Operation

- System design conditions
- MTSP or STSP (if fitted)
- Zone identification
- Minimum / maximum no. of simultaneous zones for design conditions for Heating and Cooling
- Common Zone operation (if applicable)
- Constant Zone operation (if applicable)
- Manual Operation
- Schedule (Auto) Operation

7.0 Troubleshooting

- The Touch Controller comes with in-built diagnostics to assist in determining the cause of a fault
- With some faults the system will attempt to automatically restart, often several times
- Critical faults, where the equipment cannot automatically restart, will require a service call
- Refer to the Troubleshooting section of the product Installer Manual for specific equipment related issues before calling for service

7.1 Power Outages

- If power is restored within 10 minutes of a power outage, the Touch Controller will resume normal operation with the mode and settings immediately before the outage.
- When powered OFF, the controller will retain its Day and Time setting for up to 5 days.

7.0 Appendix

Table 2: Master Controller Parameters

Parameter ID Number and Value (default)	Installer Parameter Description	Installer Parameter Value Settings	Please record the values you have set
n01 ID00:0	Networker Address or Number	Master = 1; Slave ≥ 2	
n01 ID01:1	Refrig Common Zone - Enable	Refrig/Heater ID No.	
n01 ID02:1	Refrig Common Zone - Temperature Sensing ID No.	Sensor No. 1 to 4	
n01 ID03:0	Refrig Zone A - Unit	Refrig/Heater ID No.	
n01 ID04:0	Refrig Zone A - Relay	Relay No. 1 to 4	
n01 ID05:1	Refrig Zone A - Temperature Sensing ID No.	Sensor No. 1 to 4	
n01 ID06:0	Refrig Zone B - Unit	Refrig/Heater ID No.	
n01 ID07:2	Refrig Zone B - Relay	Relay No. 1 to 4	
n01 ID08:1	Refrig Zone B - Temperature Sensing ID No.	Sensor No. 1 to 4	
n01 ID09:0	Refrig Zone C - Unit	Refrig/Heater ID No.	
n01 ID10:3	Refrig Zone C - Relay	Relay No. 1 to 4	
n01 ID11:1	Refrig Zone C - Temperature Sensing ID No.	Sensor No. 1 to 4	
n01 ID12:0	Refrig Zone D - Unit	Refrig/Heater ID No.	
n01 ID13:4	Refrig Zone D - Relay	Relay No. 1 to 4	
n01 ID14:1	Refrig Zone D - Temperature Sensing ID No.	Sensor No. 1 to 4	
n01 ID15:1	Heating Common Zone - Enable	Heater ID No.	
n01 ID16:1	Heating Common Zone - Temperature Sensing ID No.	Sensor No. 1 to 4	
n01 ID17:0	Heating Zone A - Unit	Heater ID No.	
n01 ID18:1	Heating Zone A - Relay	Relay No. 1 to 4	
n01 ID19:1	Heating Zone A - Temperature Sensing ID No.	Sensor No. 1 to 4	
n01 ID20:0	Heating Zone B - Unit	Heater ID No.	
n01 ID21:2	Heating Zone B - Relay	Relay No. 1 to 4	
n01 ID22:1	Heating Zone B - Temperature Sensing ID No.	Sensor No. 1 to 4	

Parameter ID Number and Value (default)	Installer Parameter Description	Installer Parameter Value Settings	Please record the values you have set
n01 ID23:0	Heating Zone C - Unit	Heater ID No.	
n01 ID24:3	Heating Zone C - Relay	Relay No. 1 to 4	
n01 ID25:1	Heating Zone C - Temperature Sensing ID No.	Sensor No. 1 to 4	
n01 ID26:0	Heating Zone D - Unit	Heater ID No.	
n01 ID27:4	Heating Zone D - Relay	Relay No. 1 to 4	
n01 ID28:1	Heating Zone D - Temperature Sensing ID No.	Sensor No. 1 to 4	
n01 ID43:0	Heating - OFF Cycle Circulation Fan Operation	0 = OFF; 1 = ON	
n01 ID92:0	Multi Set Point Control - Enable	0 = OFF; 1 = ON	
n01 ID93:1	Refrig - Cooling Zone to Force Open	0 = None; 1=A; 2=B; 3=C; 4=D	
n01 ID105:0	Heating - Enable Fan Scaling	0 = OFF; 1 = ON	
n01 ID106:1	Heating - Common Zone Fan Speed	Range = 1 to 16	
n01 ID107:1	Heating - Zone A Fan Speed	Range = 1 to 16	
n01 ID108:1	Heating - Zone B Fan Speed	Range = 1 to 16	
n01 ID109:1	Heating - Zone C Fan Speed	Range = 1 to 16	
n01 ID110:1	Heating - Zone D Fan Speed	Range = 1 to 16	
n01 ID111:0	Refrig - Enable Fan Scaling	0 = OFF; 1 = ON	
n01 ID112:1	Refrig - Common Zone Fan Speed	Range = 1 to 16	
n01 ID113:1	Refrig - Zone A Fan Speed	Range = 1 to 16	
n01 ID114:1	Refrig - Zone B Fan Speed	Range = 1 to 16	
n01 ID115:1	Refrig - Zone C Fan Speed	Range = 1 to 16	
n01 ID116:1	Refrig - Zone D Fan Speed	Range = 1 to 16	

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