



EASY ZONE TOUCH

Installer Manual

It is recommended that this manual be used in conjunction with the user manual.

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Revision History

Version 1

Original Document

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Introduction

The EASY ZONE TOUCH is a zone control system designed to complement the temperzone range of air conditioning systems. It offers 3 modes of operation, a simple zone on/off control, a more advanced mode where the selected zone temperature can be selected as the temperature that will control the temperzone air conditioner and an advanced mode where the selected zone can be temperature controlled independently from the rest of the zones. These modes are described later in this document and in the user manual.

Installation

System Design

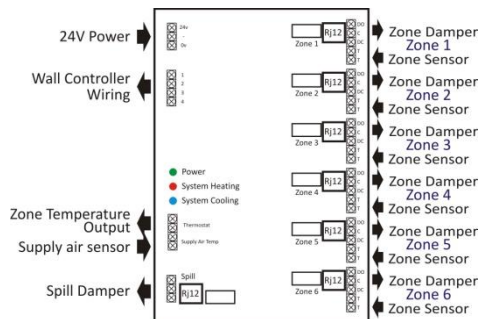
Great effort has been taken to making the EASY ZONE TOUCH zone control system intuitive, reliable and easy to install. Using a common sense approach to the installation will ensure this product is installed easily and to the customer's satisfaction. Please read and understand this instruction manual so that installation, testing and commissioning process is undertaken in an efficient and effective manner.

It is recommended that when designing the duct layout, that all zones are connected directly to the supply air, and that all branch sizes are similar in length where possible and oversized by at least 15% to carry the extra air flow that may be present when zones are closed.

Relay Card

Wiring

Wiring the EASY ZONE TOUCH is a simple and straight forward procedure. There are 6 basic connections to consider, each is detailed below.



Status LEDs

These LEDs indicate the following functions.

- Power – system power is available. Slow blink OK - rapid blinks communications error.
- Heating – Duct temperature is significantly warmer than the ambient room temperature.
- Cooling – Duct temperature is significantly cooler than the ambient room temperature.

24V Input.

Connect a suitable 24VAC power supply to this input. It is important to note that this input powers all components including all zone dampers; therefore it is important that the power supply is capable of switching all zone dampers. (200mA is needed for the EASY ZONE TOUCH plus each damper can draw up to 350mA each depending on brand of damper)

Supply Air Temp

(This sensor is supplied and must be fitted).

This input monitors the discharge air temperature of the heating & cooling system and is used to open all zones if this temperature exceeds set limits. It is also used to control the damper logic in advanced mode.

This sensor is supplied as part of the kit. If necessary it can be extended – 10m max.

This sensor should be placed as close to the heating & cooling discharge as practicably possible in order to ensure accuracy and to react to system changes promptly.

Spill Damper

This damper automatically opens when installer set number of zones are closed. It can be used to supply a common zone when there is capacity to spare or as protection for the air conditioning system against closing too many zones.

Both a RJ12 connector (for plug in dampers) and a three way terminal block (for wire in dampers) are provided for zone motor connection drive open, common and drive closed.

Zone input/output

Each of the 6 zones is fitted with a zone damper output as well as a zone sensor input. The zone sensor is required for Normal or Advanced modes.

Both a RJ12 connector (for plug in dampers) and a three way terminal block (for wire in dampers) are provided for zone motor connection drive open, common and drive closed.

Zone Temperature sensor

Each zone can be fitted with an optional temperature sensor that will measure the zone temperature and pass that value to the temperzone thermostat, therefore providing accurate temperature control for that zone or the entire dwelling if this function is enabled.

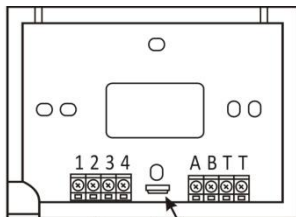
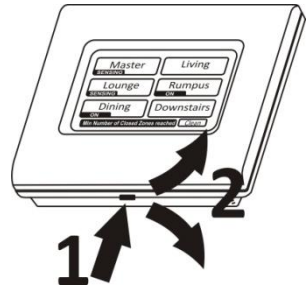
temperzone sensors are non polarised two wire devices. A recommended maximum distance of 20 meters is permitted. If longer distance is required or the sensors are run in electrical noisy environments then screened cable should be used and the drain grounded at one end only.

Note: The EASY ZONE TOUCH wall controller is fitted with an internal temperature sensor. This is automatically used for zone 1 temperature measurement. If you wish to disable this internal sensor and use a remote sensor or a sensor of a different value to match the heating & cooling equipment being controlled, simply wire a sensor into the Zone 1 sensor input on the main relay card. The INFO window in the installer option menu will indicate whether the local or remote sensor is being used.

Note, if not using temperzone sensors the displayed temperature readings may not be accurate.

Wall Controller

Open the EASY ZONE TOUCH wall controller by placing a flat blade screwdriver or coin in the slot on the bottom of the thermostat case and pushing in gently inwards and twist to release the case locking clip and then gently pry the two case half's apart at the base, taking care not to twist the case excessively and crack the LCD.



Case Locking Clip

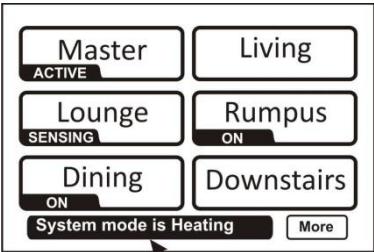
The 4 terminals marked "1 2 3 4" on the EASY ZONE TOUCH must connect to the corresponding terminals on the wall controller. 4 core screened cable should be used for this with a 0.2mm or larger diameter conductor. The screen drain should be suitably earthed.

The terminals marked "AB" are for the Modbus network or connection to other wall pads while the terminals marked "TT" are used to connect the EASY ZONE TOUCH to the TZT-100 thermostats remote temperature sensor terminals.

Installer Menu

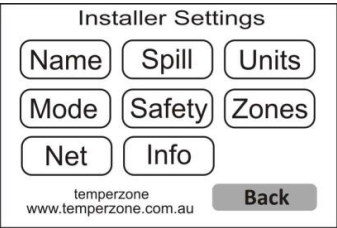
The EASY ZONE TOUCH has a concealed installer menu where system and safety settings can be adjusted to ensure the EASY ZONE TOUCH is matched perfectly to the demands of the users' requirements.

To enter the installer menu, press and hold the status bar for 10 seconds. You may get better results if you use your fingernail rather than a finger tip given the relatively thin status bar.



Status Bar

The functions and settings shown in reverse (white text on black boxes) are the currently selected items.



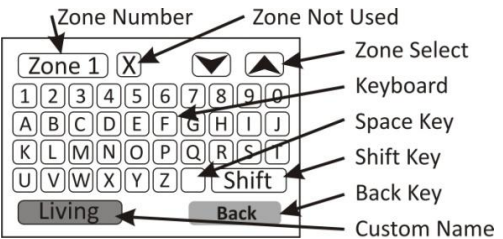
After pressing the status bar for 10 seconds, the LCD will change and show the Installer Menu.

There are 8 submenus in the installer options, these options are explained in detail below.

Press "Back" or wait 30 seconds to exit this menu at any time.

Name

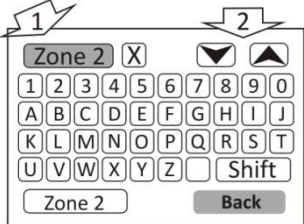
Selecting the Name option will open the zone name edit window shown right. This window permits you to apply custom names for each of the 6 zones and to disable zones not required.



There is a limit of up to 10 characters for the zone name.

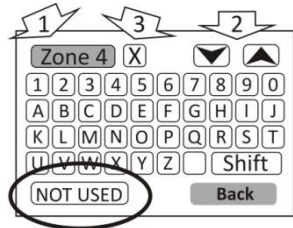
To select the zone

Tap the "Zone ..." button on the top left of the window (1) to enter the zone number select mode. The zone number will be highlight to confirm that you can now select the zone for editing. Use Zone Select buttons (the Up or Down buttons on the top right of the window(2)) to scroll through the 6 available zones.



To disable a zone

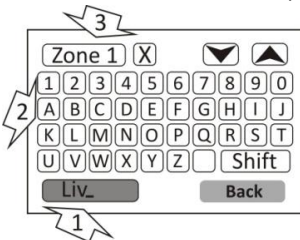
Select the zone number you wish to disable as described above and then press the Zone Not Used button (3). (The button on the top line with a bold "X") The zone name in the bottom left of the window will show "NOT USED" and this zone is now disabled.



To enter a zone name.

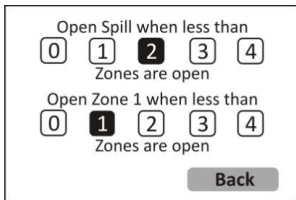
After selecting the zone number you wish to edit, tap the zone name button in the bottom left of the window to enter zone name edit mode. The Zone name will reset and the button will highlight to show this mode has been selected. It will now accept inputs from the keyboard.

Use the shift key, space key and the numbers / numeral keys to enter the desired zone name for the selected zone. You have a maximum of 10 characters including spaces.



To backspace tap the highlighted zone name button (1) on the bottom left of the window, each tap will delete the last character.

When complete tap the zone number button in the top left of the window to store the name just entered and enter zone number select mode as described previously.

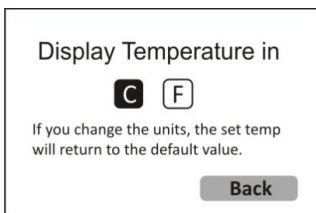


Spill

The easy Zone Touch will automatically open a spill or bi-pass damper if desired, when the user begins to manually shut down zones. This is to ensure air flow through the system at all times.

Set the threshold to automatically open the spill damper when the number of open zones falls lower than the value set in this menu.

Further, if zone 1 is closed, you can also automatically open this zone when the total number of zones is below the set value. If zone one is being used as a spill, the zone status information on the main user screen will show "Spill". Select Zero if you do not wish to use the spill damper function(s).



Units

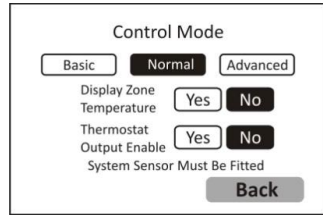
Select deg C or deg F. This will alter all temperatures to display in the selected format. Changing this value will reset any temperatures that may have previously been entered into any Active Zone temperature memory location.

Mode

The EASY ZONE TOUCH can operate in 3 modes.

Basic mode

This mode simply opens a damper when the zone is ON, and closes it again when the zone is off. It is a manual mode and does not require the use of zone temperature sensors.



This mode is perfect for those requiring a very simple to use system but where a minimum number of zones must be kept open at all times.

Normal mode

In this mode the user can select which zones are open or closed just as in basic mode described above, however the user can also select which zone temperature is “read” by the TZT-100 thermostat. So, if zone 3 is set as the “Sensing” zone, the TZT-100 thermostat will display the current zone 3 temperature and control the heating and cooling based on the zone 3 space temperature and current set temperature.

If more than one zone is set to “Sensing” then those zone temperatures are averaged and used by the TZT-100.

Advanced Mode

Advanced mode has the same capability as “Normal” mode as described above however it adds the ability for the user to limit the temperature in any zone independently of other zones.

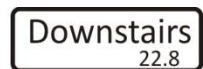
The EASY ZONE TOUCH does this by monitoring zone temperature, the zone heating and cooling set temperature limits for that zone and the supply air temperature. Based on these 3 factors the EASY ZONE TOUCH will automatically open or close the damper in that zone to maintain the zone set temperature.

In advanced mode only zones selected as “Sensing” will be pass the zone temperature to the controlling thermostat. Any zone that is “Off”, “On” or “Active” will not pass the zone temperature to the controlling thermostat.

Note, only zones fitted with temperature sensors can “Sense” the zone temperature. The user can only select On or OFF for zones not fitted with a temperature sensor.

Display Zone Temperature.

Selecting “Yes” will show the zone temperature of each zone regardless of whether the zone is Off, On, Sensing or active. Default is OFF.



Note: To ensure accurate readings, this function can only be used when temperzone Zone sensors are used.

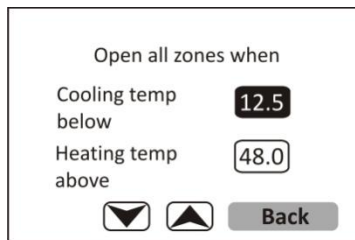
Thermostat output enabled.

If the project does not require EASY ZONE TOUCH to pass zone temperature information on to the TZT-100 thermostat select “NO” from this option. This removes the need for the user to maintain a sensing zone.

Turning the thermostat output to OFF also permit the installer to set all six zones as “Active” mode is desired. (Normally a maximum of three “Active” zones can be set)

Safety

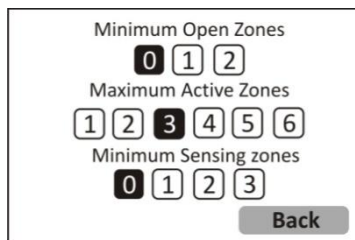
The safety system on the EASY ZONE TOUCH monitors the supplied “Duct Sensor”. Should the temperature raise above the Heat alarm or below the cooling alarm temperature the EASY ZONE TOUCH will open all zones in an attempt to improve air flow thereby hopefully bringing the coil temperature to a safer value.



The user will be informed of this situation via a status bar message.

Zones

The zone menu options will vary based on other settings within the EASY ZONE TOUCH. Any function not permitted to be edited will not be shown.



Minimum open zones.

This sets the minimum number of open zones (not including the spill) that must be kept open. If the user tries to close too many zones they will get an alert on the status bar indicating that they must maintain a minimum number of open zones at all times.

Maximum Active Zones

As an active zone can automatically open or close based on room & set temperature this zone is considered by the EASY ZONE TOUCH as a “Closed Zone” in its zone number calculations. So that the user cannot set all zones as active (as in theory all active zones can close as they all reach the zone set temperature) this menu option sets a limit on the number of active zones the user can set.

Minimum Sensing zones

The sensing zone reports the zone temperature to the controlling thermostat. In most installations where normal or advanced mode is selected it is important that at least one zone is set at "Sensing" at all times to provide valid temperatures to the controlling thermostat or A/C system. This menu option provides this protection.

Net

The EASY ZONE TOUCH is fitted with Modbus RTU communications permitting the easy zone touch to become part of a home automation system for example. This menu sets the network address and baud rate for this communications protocol.

Communication Settings

Baud Rate 9600

Address 01

Navigation arrows and Back button

It also permits the installer to set this zone wall controller as either a master or slave, used when multiple wall controllers are used with a single system.

The Modbus objects list obtained upon request from temperzone – please contact your local temperzone sales office.

It is beyond the scope of this manual to provide Modbus data and networking connections.

Custom zone names and company names can be programmed into the EASY ZONE TOUCH via this Modbus communications port.

Info

This page provides information on the current status of the EASY ZONE TOUCH and its sensors. It provides the current zone temperature (if zone sensors are fitted), the system temperature and whether the zones are open or closed.

Zone 1	22.8	On	Average temp	20.7
Zone 2	21.6	Off	System temp	47.4
Zone 3	13.9	Off	Spill	On
Zone 4	17.7	On	Firmware	1.73
Zone 5	15.3	Off		
Zone 6	33.1	On		

Sensor

Back

The average temperature shown on this page is the average of the current "Sensing" zones and only when using Smart Temp sensors. This Average value should be the same as the room temperature display on the controlling Smart Temp thermostat.

Note: the temperature sensor data is ONLY accurate when using temperzone sensors

Sensor

This will permit you to adjust / calibrate the various zone and system sensors.

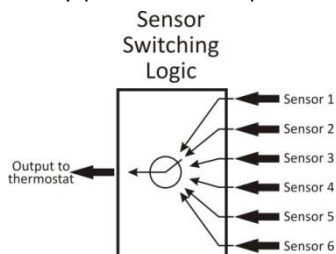
Note: this should never be needed and should only be considered if using Smart Temp sensors. If using third party sensors under no circumstances adjust these values.

Temperature Sensor switching logic

The EASY ZONE TOUCH key advantage over other add on zone management system is the ability to measure the zone temperature and faithfully provide this temperature information to the TZT-100 thermostat.

The EASY ZONE TOUCH permits the user to select which zone the temperature is monitored by selecting “Sensing” zones. If more than 1 sensing zone is selected the EASY ZONE TOUCH averages these temperatures.

The average value of all “Sensing” can be shown in the info screen in the installer menu described previously.



Wiring Examples

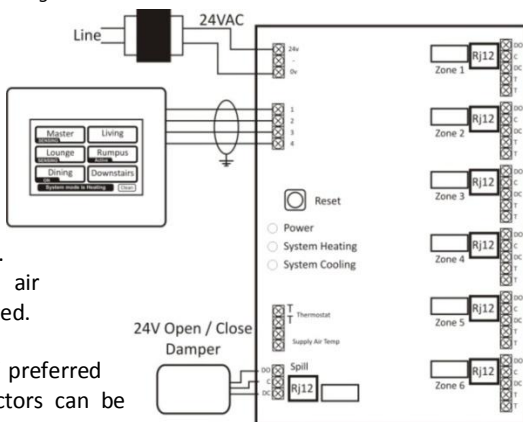


Note, If you intend to wire two or more zone dampers to the same zone output of the EASY ZONE TOUCH be aware that some brands of dampers feedback voltage whilst in motion causing the dampers to continuously move. Check with your damper supplier to ensure they are suitable for parallel wiring.

Basic Wiring

The EASY ZONE TOUCH in its most basic form will simply open and close 24V dampers on command from the user. It has no temperature monitoring function nor does it rely on feedback of equipment status. However, the supplied supply air sensor is provided and must be fitted.

Dampers can be hard wired, or if preferred dampers fitted with RJ12 connectors can be used.



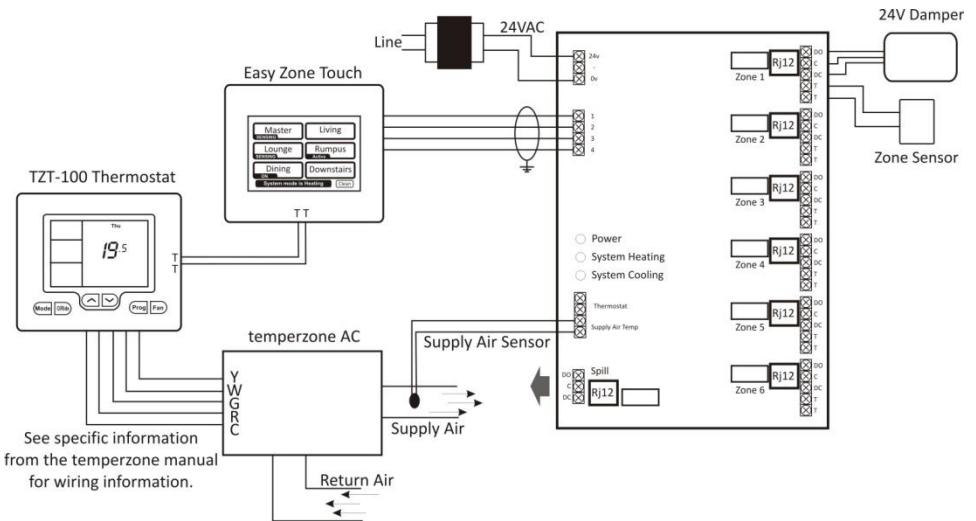
Wiring to the wall controller should be 4 core screened cable with conductor diameter of 0.2mm or greater.

Advanced Wirings

In this example all control wiring is shown including the thermostat feedback wiring from the EASY ZONE TOUCH “TT” Terminals to the temperzone TZT-100 thermostat.

The supply air discharge sensor is shown, which is required for advanced mode and to provide equipment feedback protection.

Thermostat to heating & cooling equipment wiring is shown as a guide only; you should consult your equipment and thermostat manual for specific control wiring information.



As shown in the above example, The EASY ZONE TOUCH provides an output to the TZT-100 thermostat for zone temperature control.

Error Messages

Message	Explanation
Memory chip Failure	This is a critical fault – power down reset and monitor. If the fault returns the EASY ZONE TOUCH is terminal and should be replaced.
System temperature is too low System temperature is too high	If this message is appearing often check the zone safely threshold settings (under the safety menu in the installer options). Increase the number of zones that must be open (increase minimum zone setting) or change the spill setting to ensure it will open at a larger number. If using adjustable dampers such, set the minimum closed value on all zone dampers to permit a bleed past when the zone is closed. Fit an additional barometric by-pass damper.
System Sensor Fault	The sensor monitoring the air conditioning duct temperature is missing or faulty. Replace the sensor, check for loose connections.
Communication breakdown	Check the wiring between the EASY ZONE TOUCH wall controller and relay card. Ensure the cable used is screened and the screen is properly earthed. Power down reset and monitor
Zone Sensor Fault	A zone temperature sensor is missing or faulty. Check the wiring and sensor. If long sensor runs are used (>30M) use screened single pair wire.
Zones open when they should close etc	Check wiring of the zone motor for reversed connections
All zones are open and will not respond to commands from the wall controller	Any fault detected will cause the EASY ZONE TOUCH to enter protection mode and open all zones

Notes

A large, empty rectangular box with a thin black border, occupying most of the page. It is intended for the user to write their notes.

Specifications

Wall Controller

Input Voltage	24VAC 50/60 Htz +/- 15%.
Operating Temperature	0-50C (32 to 122F).
Operating RH	0-95% (non condensing).
Storage Temperature	0-65C (32 to 150F).
Size	113 x 103 x 23mm.
Display Size	69.5 x 46.3mm.
Backlight	Blue EL (On for 30 seconds after last button press).
Display type	240 x 320 pixel FSTN touch panel.
Memory type	Non volatile – Settings do not require battery backup.
Communications	Modbus RTU 9600 baud 1 stop bit 1 start bit no parity.

Main Relay Card

Input Voltage	24VAC 50/60 Htz +/- 15%.
Operating Temperature	0-50C (32 to 122F).
Operating RH	0-95% (non condensing).
Storage Temperature	0-65C (32 to 150F).
Size	110 x 200mm.
Memory type	Non volatile – Settings do not require battery backup
Zone / Spill Relays	24V @ 2amps max
Zone Sensor input	2 to 50K (10KTypeII NTC required for advanced mode).
AC sensor input	10KTypeII NTC only (Smart Temp PN Rs-D)

Common

Approvals	FCC (Part 15) (pending), C-tick.
Warranty	3 years RTB.

Great care has been taken in the preparation of this manual. temperzone P/L takes no responsibility for errors or omissions contained in this document. It is the responsibility of the user to ensure this controller, or equipment connected to it is operating to their respective specifications and in a safe manner.

***Due to ongoing product improvement temperzone reserves the right to change the specifications of the EASY ZONE TOUCH (or its components) without notice.
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Intellectual rights apply.***