

# SMT-710 Manual Thermostat with Zone Control



Thank you for the purchase of the Smart Temp SMT-710 Zone Control Thermostat.

Please take the time to read and understand this manual so that you may take advantage of the many features this thermostat may offer

## Turning your Thermostat On and OFF.

The lower left corner of the display controls the mode selection, depending on how your installer has set your SMT-710 up you will be given the option of selecting On and Off with a single set point (with a preset differential between the heating and cooling) or selecting individual heating and cooling modes, each with individual heating and cooling set points.

If the text **Heat** or **Cool** is flashing then your SMT-710 is requesting that function from your air conditioning system.

If set for Heat and Cool mode, a maximum heating and cooling set point limit may be imposed. Text and a chirp will be given when this limit is reached.

## Controlling the Fan Speed and Mode.

The SMT-710 can control a single or multi speed fan system. This capability will be setup by your installer to match the capability of the Air Conditioning system that it is controlling.

## Fan Mode

Press and hold the fan button to select Fan On Mode -in 3 fan speed mode or tap in single fan speed mode. In this mode the fan will run continuously regardless of the heating or cooling. Press and hold (or tap) again to return to Fan Auto mode where the fan will turn on and off with the heating and cooling.

## Fan Speed

The SMT-710 can also control multi-fan speed systems where you can either manually select between Low, Medium and High fan speed or let the SMT-710 automatically select the best fan speed based on how far the room temperature is from the set temperature. Simply tap the fan button to cycle through all available speeds if this function is enabled.

## Setting your desired Temperature.

The display will show you your current room temperature along with some Up/Down buttons. When you tap either of the up down button the display will change and show you the set temperature for the currently selected mode, being the Heat set point in Heat only mode and the Cool set point in Cool only mode or the single set point in Auto or On mode.

*(Note, In single set point mode your installer will have defined a "Dead Band" of a few degree either side of the internal heat and cool set points where the heating or cooling is not needed.*

## Limit Control

Your installer many have set a temperature control limit, where the range of temperature adjustment may be restricted. Text showing the limit has been reached will be shown on the display accompanied by a few beeps.

## Zone Control

One of the strengths of the SMT-710 is its ability to manage two independent zones. These zones are identified as either Zone 1 (The location of the wall Controller) and Zone 2. If the zone is shown as "selected" then conditioned air will be sent to this area and the air conditioning will turn on and off to maintain this zones temperature.

Zone 1  
SELECTED

## Single Sensor Zone Control

If the SMT-710 does not have the optional Zone 2 temperature sensor fitted, then it will assume both Zone 1 temperature and Zone 2 temperature is the same - as measured by the wall controller in Zone 1. The air conditioning will turn on and off to maintain the current set point.

## Twin Sensor Zone Control

When the SMT-710 detects the Zone 2 sensor has been installed, it will control both Zone 1 and Zone 2 to ensure both zones temperature is maintained to the desired value. This may mean that conditioned air may automatically be sent to Zone 2 only (for example) if zone 2 needs additional heating or cooling to reach the desired set point. The Air Conditioning system will treat both zones Independently.

## Room Temperature Display - Twin sensor

The SMT-710 will display the Zone 1 temperature when ever Zone 1 only is selected or if Zone 1 and Zone 2 is selected. If Zone 2 only is selected the SMT-710 will display Zone 2 temperature.

*Note, If at anytime you wish to see the Zone 2 temperature, press and hold the Zone 2 button for 2 seconds and the display will go blank except for the Zone 2 button and the room temperature as measured in Zone 2. The display will return to normal after 4 seconds.*

OFF ON AUTO  
HEAT COOL

Fan ON Ventilation  
Low Medium High Auto



Ver 2.3

Unit 20 / 1488 Ferntree Gully Rd Knoxfield Vic Aust 3180

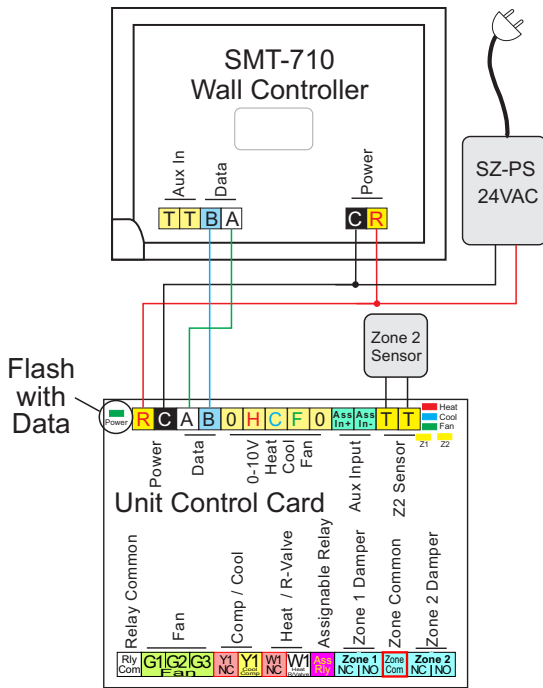
[www.smarttemp.com.au](http://www.smarttemp.com.au) [www.thermostat.com.au](http://www.thermostat.com.au)

+61 3 97630094 info@smarttemp.com.au

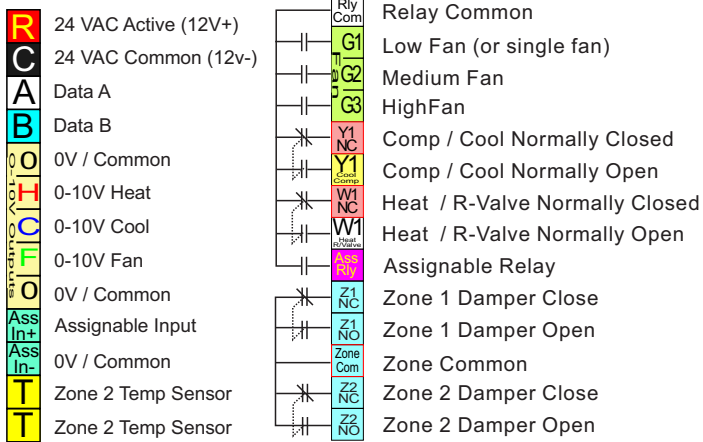
## Installation

Wiring the wall controller to the unit control card requires 4 wires, 24V Active, 24V common Data A and Data B. The wall controller and the unit control card are labelled identically, being R C A B. 4 wires need be used of 0.2mm diameter - ideally screened but not essential for short runs. An external 24VAC power supply should be used and connected to either the wall controller or Unit Control Card (12V DC can also be used, +12 to R and -12 to C).

The SZ-PS power supply is suitable.



## Terminal Designation



## Dip Switch Settings (Sw 1, 2, 3 & 5 on by Default)

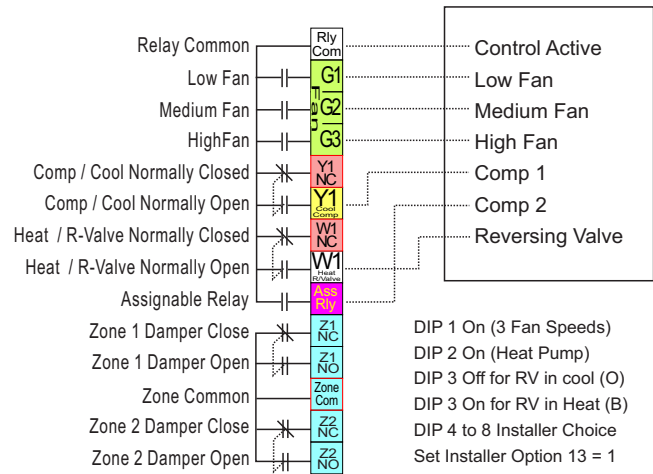
Switch	Function	Off	On
1	Fan Speeds	Single Speed	3 Speed
2	Equipment Type	Heat Cool	Heat Pump
3	HP/HC Mode	Gas Heat / O	Electric Heat / B
4	Not Used		
5	Comp Delay	Off	On - 5 Min
6	Not Used		
7	Ventilation Mode	Off	On
8	Zone Enable	Off	On

Note. Switch 3 function is based on the position of switch 2.

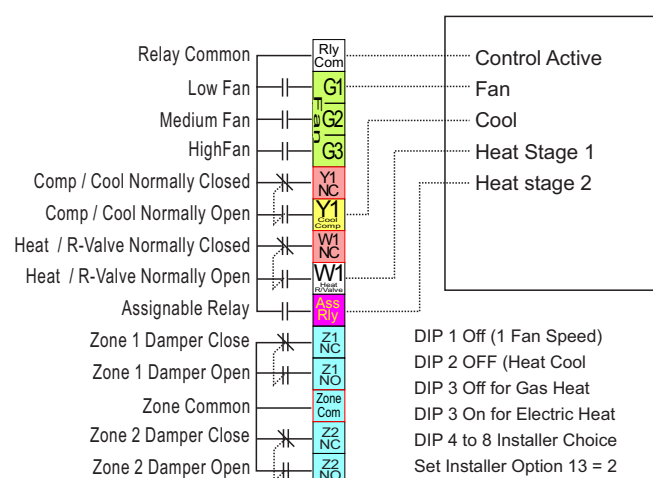
Dip 2 OFF (Heat - Cool Mode) DIP 3 controls the fan mode (Electric or Gas Heat Fan).

DIP 2 ON (Heat Pump Mode) Dip 3 controls the reversing valve logic (Energies Cool O or Heat B)

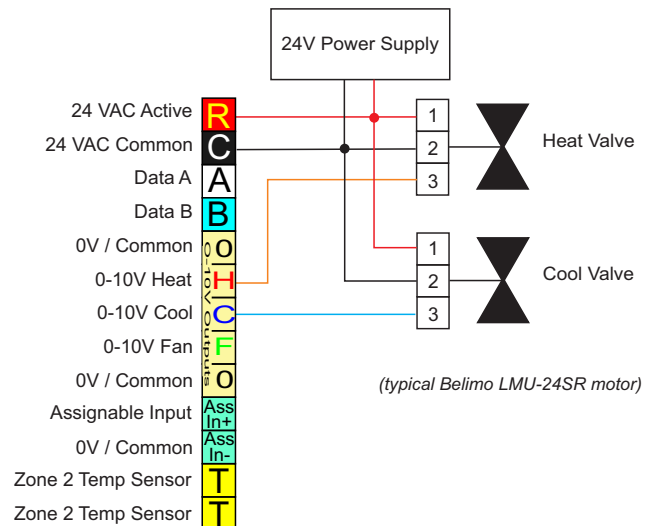
## Typical 2 Stage Heat Pump - 3 Fan Speeds



## Typical 2 Heat 1 Cool 1 Fan Speed



## Typical Heat / Cool Valve Wiring



Please contact Smart Temp or an authorised agent for additional support information if required [support@smartemp.com.au](mailto:support@smartemp.com.au)

## Installer Options Menu

The SMT-710 has a comprehensive list of options that can be adjusted by the installer to better tune the performance of the SMT-710 to the needs of the client.

To Enter the Installer Menu, with the mode OFF, Press and Hold the centre of the LCD. After some seconds it will show the digits "15" Use the up (or down) button to adjust this to "21" or the new PIN if changed from default.

Navigate forward or backwards through the installer menu with the lower left and right buttons, adjust the current value with the up / down button.

To exit the installer menu press and hold the lower right button for 3 seconds. (Do not remove power for 30 seconds to save changes.)

### Option 0 Installer entry PIN

0-99 (Default 21)

### Option 1 Buttons shown

- 0 - Both Mode and Fan button shown (Default)
- 1 - Show mode but hide fan
- 2 - Show fan but hide mode\*
- 3 - Both mode and fan buttons hidden.

### Option 2 Permitted User Modes

- 0 - Off / Auto
- 1 - Off / Auto / Heat / Cool
- 2 - Off / Heat / Cool (Default)
- 3 - Off / Heat
- 4 - Off /Cool
- 5 - Off / Auto (display current heat or cool mode)

### Option 3 Room / Set Display

- 0 - Show room and set temp (Default)
- 1 - Show set temp only

### Option 4 Display Format

- 0 - Deg C (Default)
- 1 - Deg F

### Option 5 C/F button shown on the LCD

- 0 - Off (Default)
- 1 - Show swap C/F button on LCD

### Option 6 Heat Temp High Set Limit

5 to 50 C (Default 35)

### Option 7 Cool Temp Low Set Limit

5 to 50 C (Default 15)

### Option 8 Dead Band

0 to 5.0C (Default 0.5c)

### Option 9 Heat Relay Span

0.5 to 10.0c (Default 1.0c)

### Option 10 Cool Relay Span

0.5 to 10.0c (Default 1.0c)

### Option 11 Fan Relay Span

0.5 to 10.0c (Default 1.0c)

### Option 12 Fan Purge

- 0 - Off (Default)
- 1 -Purge 1 minute
- 2 - Purge 3 minutes
- 3 - Purge 5 minutes
- 4 - Purge 10 minutes
- 5 - Purge Heat mode 1 minute
- 6 - Purge Heat mode 3 minute
- 7 - Purge Heat mode 5 minute
- 8 - Purge Heat mode 10 minute
- 9 - Purge Cool mode 1 minute
- 10 - Purge Cool mode 3 minute
- 11 - Purge Cool mode 5 minute
- 12 - Purge Cool mode 10 minute

### Option 13 Aux Relay Function

- 0 - Close on fault (Default)
- 1 - Y2 (in HP or HC mode)
- 2 - W2 (In Heat cool mode)
- 3 - Spill - Opens when all zones are closed (when option 38 = 0)

### Option 14 0-10V Heat Relay Span

0.5 to 10.0c (Default 1.0c)

### Option 15 0-10V Heat Interval PI

10 - 300 Seconds (60 Seconds default)

### Option 16 0-10V Heat Direction

- 0 - 0-10V (valve opens as more heat required - Forward Acting) (Default)
- 1 - 10-0V (valve closes as more heat required - Reverse Acting)

### Option 17 0-10V Heat Minimum Voltage

0-10v 0.1 steps (Default 0v)

### Option 18 0-10V Cool Relay Span

0.5 to 10.0c (Default 1.0c)

### Option 19 0-10V Cool Interval PI

10 - 300 Seconds (60 Seconds default)

### Option 20 0-10V Cool Direction

- 0 - 0-10V (valve opens as more heat required - Forward Acting) (Default)
- 1 - 10-0V (valve closes as more heat required - Reverse Acting)

### Option 21 0-10V Cool Minimum Voltage

0-10v 0.1 steps (Default 0v)

### Option 22 0-10Fan Span

0.5 to 10.0c (Default 3.0c)

### Option 23 0-10V Fan Interval PI

10 - 300 Seconds (60 Seconds default)

### Option 24 0-10V Fan Direction

- 0 - 0-10V (valve opens as more heat required - Forward Acting) (Default)
- 1 - 10-0V (valve closes as more heat required - Reverse Acting)

### Option 25 0-10V Fan Minimum Voltage

0-10v 0.1 steps (Default 0v)

### Option 26 0-10V Fan Maximum Voltage

0-10v 0.1 steps (Default 10v)

### Option 27 Auto Off Timer

- 0 - Auto Off Timer disabled (Default)
- 1 to 10 hours.

### Option 28 Un=Occupied Heat Set point

0 - Off (Default 15)

5-35C

### Option 29 Un=Occupied Cool Set point

0 - Off (Default 27)

5-35C

### Option 30 Un=Occupied Fan Speed / Mode (1 or 3 speed)

- 1 - Low (Auto) (Default) 1 - Auto 1 speed fan (Default)
- 2 - Medium (Auto)
- 3 - High(Auto)
- 4 - Low (On) 4 - On 1 speed fan
- 5 - Medium (On)
- 6 - High(On)

### Option 31 Back light

- 0 - On with button press (Default)
- 1 - Always high
- 2 - Low in standby & high when touched

### Option 32 TT Terminal Functions

- 0 - Remote sensor (replaces on board sensor) (Default)
- 1 - Average remote sensor with onboard sensor
- 2 - Force un-occupied
- 3 - Fault

### Option 33 Assignable Input Function

- 0 - Remote sensor (replaces on board sensor) (Default)
- 1 - Average remote sensor with onboard sensor
- 2 - Force un-occupied
- 3 - Fault
- 4 - Force Off
- 5 - Warm Start (HP mode only - delays indoor fan till 25c or 30 seconds)

### Option 34 Temperature Sensors Sensor speed of response

- 0 - Very fast
- 1 - Fast
- 2 - Normal
- 3 - Slow (Default)
- 4 - Very Slow

### Option 35 TT Temperature Calibration

+/- 10c (Default 0.0c)

### Option 36 Wall controller Temperature Calibration

+/- 10c (Default 0.0c)

### Option 37 Zone 2 Temperature Calibration

+/- 10c (Default 0.0c)

### Option 38 Zone Management (see Zone Logic - next page)

- 0 - NO default zone. Both zones can be closed
- 1 - Zone 1 default. (zone 1 will auto turn on to keep a zone open)
- 2 - Zone 2 default (zone 2 will auto turn on to keep a zone open)
- 3 - No default - just cant turn off last zone (Default)

### Option 39 Fault Input action

- 0 - Only display Fault on LCD - no action required
- 1 - Shut down HVAC - No display on LCD
- 2 - Shut down HVAC and display on LCD (Default)
- 3 - Shut down HVAC after 15 seconds - no display on LCD
- 4 - Shut down HVAC after 15 seconds - display on LCD

### Option 40 Modbus Mode

- 0 - SP7 communication (Inc temperzone & BMS )(Default)
- 1 -Intesis Module
- 2 - SMT-UI

### Option 41 Modbus Address (only if Option 40 = 0)

1 - 255 (Default 7)

### Option 42 Modbus Baud (only if Option 40 = 0)

- 0 - 4800
- 1 - 9600
- 2 - 19200 (Default )

### Option 43 Modbus Parity (only if Option 40 = 0)

- 0 - None
- 1 - Odd
- 2 - Even (Default)

### Option 44 Dec x 10 for Intesis or SMT-UI-DK Module

- 0 - Disable
- 1 - Enable

### R Factory reset

Set to value to 1 (one) and exit to initiate

Specifications subject to change without notice

## Zone Logic

The SMT-710 can control 2 zones in several ways depending on the needs of the project and whether the second zone (Zone 2 has a temperature sensor fitted).

You must enable Zone control by turning DIP 8 to the on position while the unit Control card is NOT powered.

The Zone 2 temperature sensor is automatically detected by the SMT-710 system. The Zone 2 temperature sensor is wired to the Z2 temperature sensor input on the Unit Card.

### Option 1 - Zone 2 sensor is NOT installed

Zone 1 and zone 2 is assumed to be the same temperature and the heating and cooling is controlled based on the set temperature and the temperature measured by the wall controller ( Zone 1 temperature). The zone selection switches simply open and close the various zone dampers. This sends conditioned air to whatever zone (s) are selected.

### Option 2 - Zone 2 sensor is installed

Zone 1 and Zone 2 temperature are individually measured by the SMT-710 and the Zone temperatures will be individually maintained to the temperature as set on the wall controller.

The Zone 1 and 2 damper(s) will automatically open or close and the Air Conditioning will be controlled to ensure both zone temperatures are maintained.

### Zone Limit Control

The SMT-710 can be set to ensure that at least one zone is open at all times or permit both zones to be closed if a common zone is available for example. Zone control management has several options as shown in the installer option menu, option 38.

### Temperature Display

The SMT-710 will, by default display Zone 1 temperature. If you have the zone 2 temperature sensor fitted and only zone 2 selected, then the wall controller will display the zone 2 temperature.

If at any time you wish to see zone 2 temperature press and hold the zone 2 select button for 2 seconds and the Zone 2 temperature will be displayed for 4 seconds. If the zone 2 sensor is not fitted the SMT-710 wall controller will display Dash Dash.

### Assignable Input

The SMT-710 has a universal input that can be assigned one of several functions. See Installer option 33 over.

This input will accept a VOLT FREE dry contact input a standard Smart Temp 10K NTC thermistor input. There are several options available to the assignable Input as detailed in the installer menu option number 33.

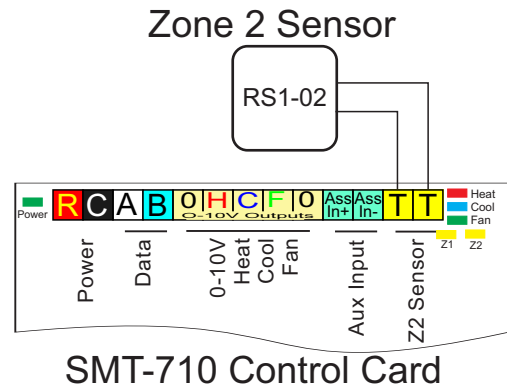
### Remote Input (Wall Controller T T Terminals)

The SMT-710 Wall Controller has a remote Aux input with options defined in the Installer menu option 32. This input will accept a VOLT FREE dry contact or a standard Smart Temp 10K NTC sensor

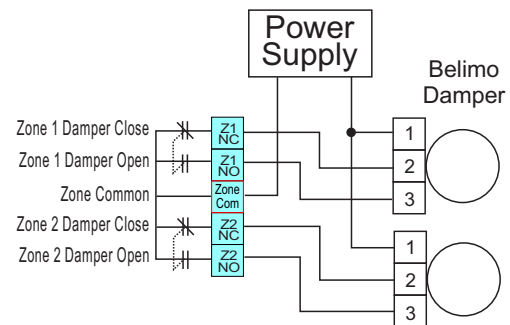
### Indicator LEDs

The SMT-710 UCC (Unit Control Card) has several LEDs that show Power is available (blinking when receiving data), whether the card is calling for heating, cooling or fan and what Zone is open. These indicator LEDs should be the first thing considered when diagnosing any faults.

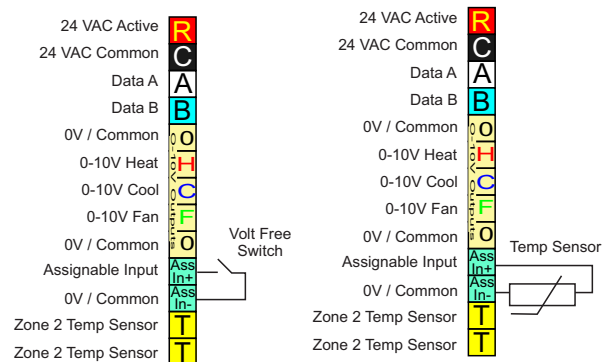
## Typical Zone Sensor Wiring



## Typical Zone Damper Wiring



## Typical Auxiliary Inputs



## Condensed Specifications

Power Requirement	12 AC or DC to 28V AC / DC
Recommended Transformer	SZ-PS 24V 48VA
Relay Rating	6A at 240V max (15A Total fused)
Temperature Sensor type	10K NTC Type II (RS-01/2)
Maximum Z2 sensor run	10M Un-screened (30M Max)
Backlight	White LED
Wall Controller Size	110 x 105 x 38 mm
Relay Box Size	145 x 112 x 66
Storage Conditions (max)	-5 to 80c @ 90% RH (Non Condensing)
Operating Conditions (Max)	0 to 45c @ 90% RH (Non Condensing)
Warranty	2 Years - RTB