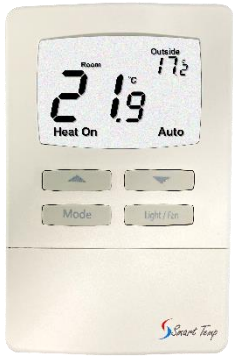


# Smart Temp SMT-80 & SMT-80RF User Manual



Thank you for your purchase of the SMT-80 digital thermostat or the SMT-80RF wireless thermostat by Smart Temp Australia P/L. Please take the time to read and understand these simple instructions so that you may benefit from the advanced features and functions integrated into this quality product.

The SMT-80 is available in 2 versions. In terms of the user experience the two versions are almost identical. The only difference being the SMT-80RF communicates to the heating and cooling system by radio frequency rather than being hardwired to it. This feature permits you to take the thermostat into any room with you\* to ensure better temperature control where you are

The Smart Temp SMT-80 is a digital, non-programmable thermostat that has many energy saving functions. It will control your heating and/or cooling system precisely and in an energy efficient manner.

## Operating the Heating and Cooling System

A backlit display shows current room temperature as well as other important information. Four buttons are provided to permit the control of the SMT-80 functions.



### Up Button

Use this button to increase the set temperature.



### Down Button

Use this button to decrease the set temperature.



### Mode Button

Each tap of the Mode button will cycle the SMT-80 through all available modes. (Heat, Cool and Off)

**Note - Not all modes may be active on your SMT-80.**

### Off – The Heating and Cooling System is OFF

“OFF” is displayed in the LCD when the SMT-80 is OFF

“OFF” will flash in the LCD if the SMT-80 has been remotely turned off by the Auto Off or a remote input. In this case you may not be able to turn the SMT-80 on using the Mode button.

### Heat Mode – Only the Heating System Will Operate

“Heat ON” will be shown when the heating is running. “Heat” will flash if the heat delay timer is running, please wait up to 5 minutes.

### Cool Mode – Only the Cooling System Will Operate

“Cool ON” will be shown when the cooling is running. “Cool” will flash if the cool delay timer is running, please wait up to 5 minutes.

### Auto Mode - Both the Heating and Cooling Systems Will Operate

Auto mode will Heat when the room is cold or cool when the room is warm automatically.



### Light/Fan Button

Selects Auto Fan or Continuous Fan and/or brings on the display backlight.

“Fan” will be shown whenever the fan is running or “Fan On” will be shown whenever the fan button was used to switch the fan on manually.

## Adjusting Your Set Temperature



Make sure Heat, Cool or Auto mode is selected. Press the [Up] or [Down] button and the display will change and show “SET”, and “Heat Set” or “Cool Set” with the current set temperature in the main part of the display. Continue to press the [Up]

or [Down] button until your desired set temperature is shown.

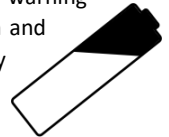
If Auto mode is selected, you are first given the opportunity to adjust the cool and then the heat set temperature separately.

**Note - Your range of adjustment may be limited by the installer. “Set Limit Reached” is shown when this is the case.**

## Low Battery Warning

Your SMT-80 controller may be powered by 2 x AA Alkaline batteries. When these batteries run low a battery symbol will be shown on the display and the backlight will be disabled. Normal heating and cooling will still function. If you ignore this first warning eventually the heating and cooling will shut down and the display will show only the flashing low battery symbol and the text “Low Batt”.

**Replace with AA ALKALINE batteries only.**



## SMT-80 RF Signal Icon



The “RF” signal indicator will remain steady when communication is established and will flash when the signal is absent. If communication is lost for extended an time, the SMT-80 will stop all heating and cooling.

\* The SMT-80 RF has a maximum range of 30M inside depending on wall construction and other factors that may limit range.

## Motorised Zone Damper Control Function (Optional)

Your SMT-80 & SMT-80RF can be set up by your installer to either control a conventional heating and/or cooling system OR to control a motorised zone damper.

In Zone damper control mode your SMT-80 or SMT-80RF compares the current zone temperature with your set temperature and the temperature of the air produced by your heating or cooling system (that is controlled by its own thermostat). If the air produced by your heating and cooling system will bring your zone to your desired temperature it will open a motorised damper and allow conditioned air into the zone. If the air produced by your heating and cooling system is not suitable to bring your zone to your desired temperature it will close the motorised damper and block the flow of air into your room.

Note - In Zone Damper Control Mode the SMT-80 or SMT-80RF is NOT controlling the main heating or cooling system.

*Hint – If your installer has set your SMT-80 or SMT-80RF to Motorised Zone Damper Control mode the decimal place in the room temperature display will blink.*

# Installer Setup Menu

## SMT-80 & SMT-80RF

The Installer options below relate to both the SMT-80 and SMT-80RF versions except where noted.

**NOTE - Changing the settings in this menu can seriously affect the safe operation and function of your heating and cooling system. If you are unsure about the functions of the settings in this menu then it is strongly recommended that you don't adjust them.**

To enter the Installer menu first press and hold the [Mode] and [Up] button (simultaneously) on the controller for 5 seconds. The heating and cooling (if running) will stop and the display will show "15". Using the [Up] button, adjust this to read "21" or the previously set PIN if changed from the factory default of "21".

Press the [Mode] button to enter the Installer menu

Pressing the [Fan/Light] button will move you forward through the menu items. Pressing the [Mode] button will step you backwards through the menu items. Use the [Up] and [Down] buttons to adjust the currently displayed menu item.

To exit the installer menu, press and hold either the [Mode] or [Fan] button for 5 seconds. No activity for 30 seconds will auto exit this menu.

The Installer menu is dynamic. Functions not applicable will not be shown in this menu. For example, if you set the SMT-80 or SMT-80RF as a heat only thermostat, permitted modes and cooling set limit items will not be shown.

### Installer Settings (Default Values Shown in **BOLD**)

#### Fn Thermostat Control Functions (**HO**)

These menu items define how the relays in the SMT-80 control the Heating and Cooling system.

**HO – Heating Only No Fan (No manual fan function)**

HF – Heating with Fan Control (Manual fan available)

HE – Heating with Electric Fan

CO – Cool Only

HC – Heat Cool with Gas Fan

HCE – Heat Cool with Electric Fan

HPo- Heat Pump – Rev Valve in Cool

HPb – Heat Pump – Rev Valve in Heat

dC – Damper Control Mode

#### nn Mode (Only Applies if Fn = Heat Cool or HP Mode) (**nn**)

This sets the modes than can be selected by the user

A – Auto Mode (Off – Heat – Cool – Auto – Off)

AO – Auto Only (Off – Auto – Off)

**nn – Manual (Off – Heat – Cool – Off)**

#### HL Heat Limit (**35°C**)

Defines the highest permitted Heat setpoint

Range - Off / 0 to 50°C

#### CL Cool Limit (**15°C**)

Defines the lowest permitted Cool setpoint

Range - Off / 0 to 50°C

#### Sp Span (**1.0**)

Sets the range difference between heating and cooling On/Off points.

Range 0.3°C to 1.5°C

#### db Deadband (**1.0**)

Defines how close the user can set the heating and cooling setpoints to each other in Auto Mode.

Range 0.0 to 3.0°C

#### CA Room Sensor Calibration (**0.0**)

Adjusts the accuracy of room temperature sensor.

Range -5.0 to +5.0

#### SS Response Speed of temperature sensor (**FSt**)

Defines how fast the room sensor responds to temperature changes.

VS Very Slow

S Slow

Nor Normal

**FSt Fast**

VF Very Fast

#### AOt Auto Off Timer (**0-Off**)

If set, the SMT-80 will automatically turn "Off" once the countdown timer has expired. (Note - "OFF" will flash on the SMT-80 LCD)

Range 0 (off) to 12 hours

#### Ct Compressor Timer (Cooling or HP Mode Only) (**On**)

(This menu item not shown when thermostat function = dC)

Set the compressor 4 min anticyclic timer.

Off

On

#### tt TT Terminals Function (**RS**)

(This menu item not shown when thermostat function = dC)

**RS – Remote Sensor – Will Disable Onboard Sensor**

AU – Average – Average Remote and Onboard Sensor

Ot – Used to Measure Outside Air Temperature

FO – Remote Off Function - Will Force SMT-80 Off

PIr – Wire a standard PIR security sensor to have automatic occupancy detection. After 30 minutes of no movement the SMT-80 will turn OFF

Note - "OFF" will flash on the SMT-80 LCD when FO or PIR function is enabled.

#### dIS Display units (**C**)

Sets Units of Display

C

F (Deg F Mode Activates 5°C Anti-Freeze Function)

#### Pin Installer Menu PIN (**21**)

Permits you change the required PIN to enter the installer menu.

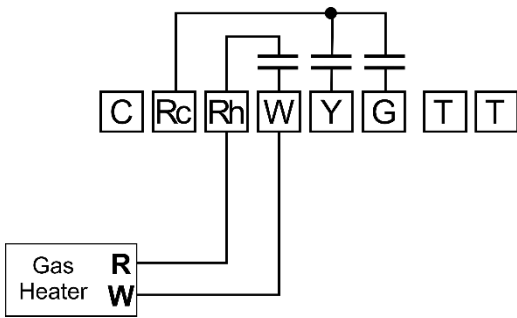
Range 0-99 (Do not forget any new pin entered)

#### RsT Factory Reset

Change 0 to 1 then exit installer menu to initiate factory reset. Caution – this will also change how the SMT-80 controls the Heating and /or Cooling system.

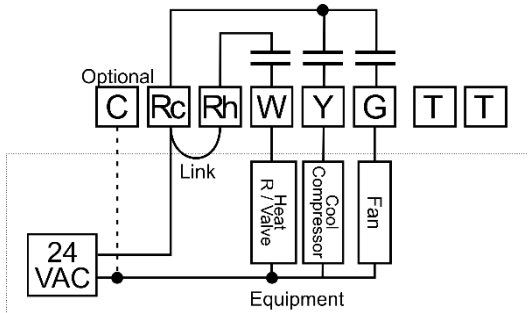
# SMT-80 Wiring Examples

## 2 Wire Gas Heater (Select HO)

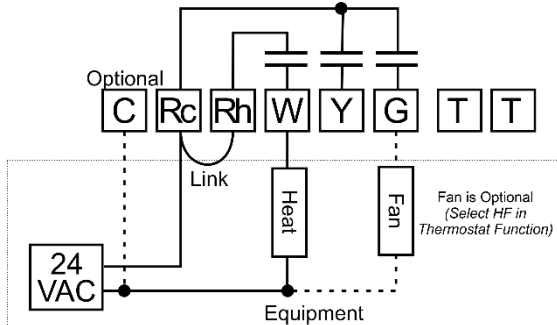


## Heat Cool Mode - Select HC or HCE

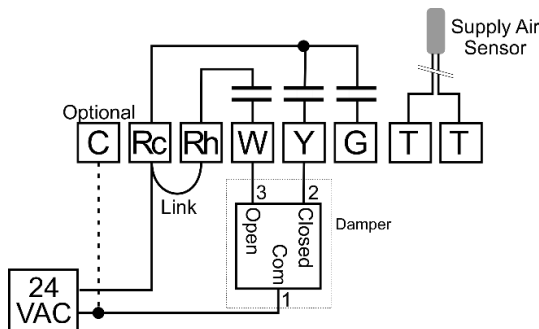
### HP Mode - Select HPO or HPB



## Heat Only – Select HO (Showing Optional Fan)

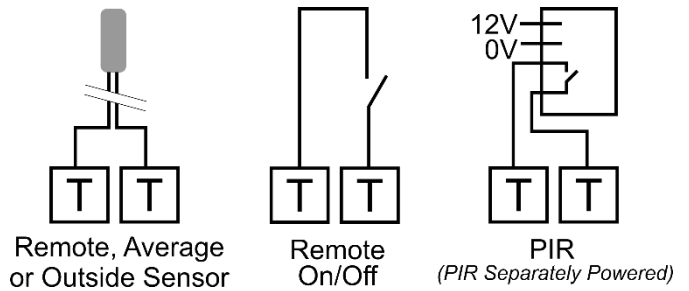


## Damper Control – A Supply Air Sensor Must be Fitted p/n RS1-D



Belimo™ terminal numbers shown in this example - 1 is 24V Common, 2 is Drive Closed, 3 is Drive Open

## TT Terminal Wiring



Remote, Average or Outside Sensor

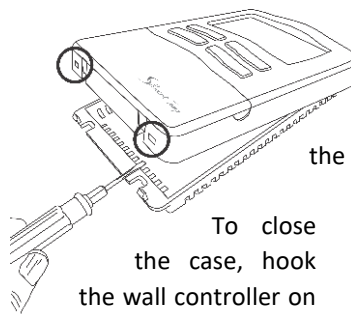
Remote On/Off

PIR (PIR Separately Powered)

## SMT-80 Terminal Identification

|      |   |
|------|---|
| C    | 24V Neutral (Optional)                      |
| Rc   | Active Cooling (Powers Y & G Terminals)     |
| Rh   | Active Heating (Powers W Terminal)          |
| W/OB | Heat (HC Mode) or Reversing Valve (HP Mode) |
| Y    | Cool (HC Mode) or Compressor (HP Mode)      |
| G    | Fan   |
| TT   | Used For Remote Sensors or Switches         |

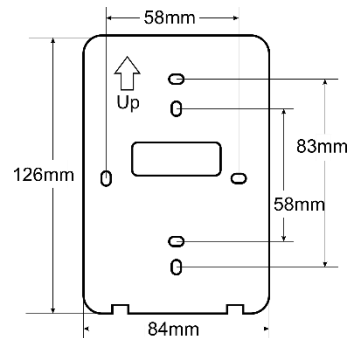
## Mounting



Place a small screwdriver into the two slots at the bottom edge of the wall controller to unclip it from the base. It hinges at the top.

To close the case, hook the wall controller on its base and swing it down until it locks in place.

Gently press to lock it in place.



Place the SMT-80 in a location not affected by drafts or direct sunlight and in an open location approximately 1.5M from the floor.

## SMT-80 Specifications

|                             |                               |
|-----------------------------|-------------------------------|
| Power .....                 | 24 VAC +/- 15% and/or Battery |
| Battery Type .....          | AA Alkaline ONLY              |
| Battery Life (Approx) ..... | 1 year                        |
| Backlight .....             | White LED                     |
| Viewing Angle .....         | +60 to -0 Degree              |
| Relay Rating .....          | 2A @24V                       |
| Accuracy .....              | +/- 1.2°C                     |
| Size .....                  | 128 x 86 x 25mm               |
| Environmental .....         | IP33                          |
| Warranty .....              | 36 Months (Return to Base)    |
| Plastic .....               | ABS /Poly Flame Retardant     |
| Certification .....         | CE (Australia)                |

# SMT-80RF Wiring Examples

The SMT-80RF is a 2-part controller that consists of a battery powered controller and a 24VAC powered receiver. The two parts communicate with each other via radio frequency (433MHz).

The battery powered controller measures the temperature of the room that it is in and transmits data to the receiver module fitted in the heating and cooling system. This permits you to move the battery powered controller from room to room should you wish.


*Note 1 – If moving the battery powered controller do not place it on any warm or cool surfaces as this will affect the comfort of the room.*

*Note 2 – The maximum distance the battery controller can be from the receiver is typically 30M indoors.*

## Pairing the Controller and Receiver

Your Controller and Receiver should be “pre-paired” when you receive them. If for any reason you need to re-pair the units, the steps are detailed below. This may be necessary when you have multiple SMT-80RF in close proximity to each other to permit you to select different transmission channels for each paired unit (as indicated in step 4 below).

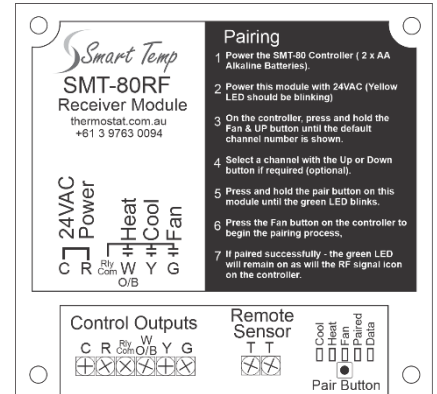
- 1 Ensure you have 2 “AA” alkaline batteries fitted to the SMT-80 Controller and it is powered on.
- 2 Ensure the SMT-80 Receiver module is powered on being hardwired with 24VAC. (The amber data link will blink a heartbeat).
- 3 Press and hold both the [Up] and [Light /Fan] buttons on the SMT-80RF Controller until the display changes and shows the currently selected channel number.
- 4 If you wish – adjust the channel with the [Up] or [Down] button. *(If you have multiple units in your home or office they should all have a different channel number)*
- 5 Press and hold the [Pair] button on the Receiver until the green pair light blinks.
- 6 Press the [Fan] button on the SMT-80 Controller to initiate the pairing process.

The SMT-80 Controller will show the RF signal confirmed icon  on the display and the green paired LED will remain ON solid when the units are paired.

When data is being passed between the Controller and the Receiver the amber “data” LED will flash.

## Receiver Module Wiring

The SMT-80RF Receiver module should be mounted in a clean, dry location and within 30M of the proposed Controller location. (Note - the range varies based on environment)



Avoid placing the Receiver module inside an earthed metal case such as a gas heater enclosure as this will significantly reduce the RF signal range.

## SMT-80RF Troubleshooting

- No LEDs on Receiver module
  - Check 24VAC power supply is in the CR terminal
- Poor Range
  - Check Receiver location
  - Ensure Receiver not mounted inside metal enclosure
  - Check SMT-80 batteries
  - Check for other strong RF signals that maybe close
- Pairing Process Fails
  - Remove batteries and power down receiver for 5 minutes and try again
- Green LED Off / RF Signal Icon Blinking
  - See Poor Range (Above)
  - Try “Re-Pairing” the SMT-80 with Receiver module
- Amber LED Rapidly Blinking
  - This is normal - data is being transmitted / received

## SMT-80RF Receiver Module Terminal Identification

|                |   |
|----------------|---|
| <b>C</b>       | 24V Neutral   |
| <b>R</b>       | 24V Active  |
| <b>Rly Com</b> | Input to all Relays (Typically Looped to “R” Above) |
| <b>W/OB</b>    | Heat (HC Mode) or Reversing Valve (HP Mode)         |
| <b>Y</b>       | Cool (HC Mode) or Compressor (HP Mode)              |
| <b>G</b>       | Fan   |
| <b>T</b>       | Used for Supply Air Sensor in Damper Control Mode   |

## SMT-80RF Receiver Module Specifications

|                     |                            |
|---------------------|----------------------------|
| Power .....         | 24 VAC +/- 15%             |
| Relay Rating .....  | 5A @240V                   |
| Accuracy .....      | +/- 1.2°C                  |
| Size .....          | 140 x 88 x 40mm            |
| Environmental ..... | IP20                       |
| Warranty .....      | 36 Months (Return to Base) |
| Plastic .....       | ABS /Poly Flame Retardant  |
| Certification ..... | CTick(Australia)           |

