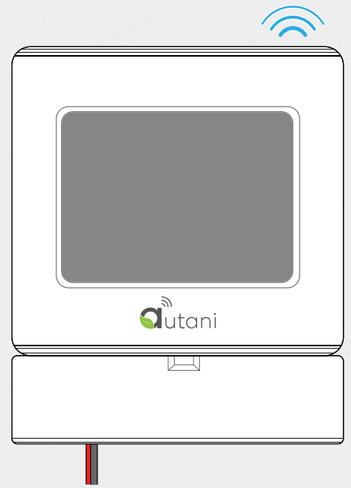
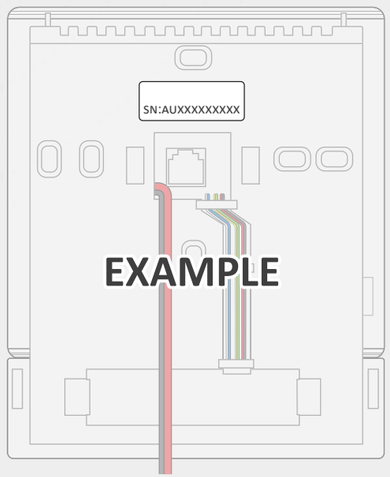


1

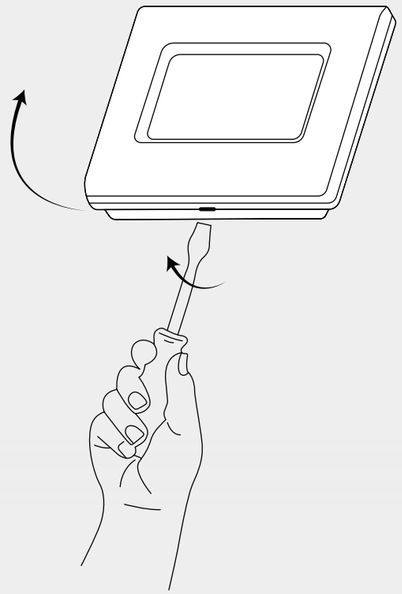
On the provided list of device serial numbers, document the location for each Thermostat.



2

Opening Wall Controller

Open the SMT-131 wall controller by placing a flat blade screwdriver or coin in the slot on the bottom of the thermostat case and gently twist to release the case locking clip. Gently pry the two case halves apart at the base taking care not to twist the case as this may crack the LCD.



3

Mounting wall Controller

The SMT-131 should be mounted in a convenient location at approximately 1.2 to 1.5 meters from the ground. It should be located in a “typical” location where it will sense the accurate room temperature and not be affected by direct sunlight or drafts.

It is highly recommended that any penetrations in the wall where wiring may pass for example be sealed to prevent drafts from entering the rear of the thermostat and effecting the room temperature sensor accuracy.

Take care to ensure excess wiring is not trapped between the cases half’s when closing - push excess wires into the wall cavity. Never press on the LCD when closing the SMT-131 as it may crack. Always press on the SMT-131 plastic case only.

4

DIP Switch Settings

Switch	Function	ON	OFF
Sw1	Indoor Fan Mode	3 Fan Speed	1 Fan Speed
Sw2	Equipment Type	Heat Pump	Heat Cool
Sw3	HP Mode (Sw2= ON) HC Mode (Sw2=OFF)	Rev Valve Heat (B) HE – Fan With Heat	Rev Valve Cool (O) HG – No Fan In Heat
Sw4	2/4 pipe mode	2 pipe mode	4 pipe Mode
Sw5	Comp Protection Delay	5 Min Anti Cycle	Immediate Comp start
Sw6	Klixon (Ricardo) Mode	On	Off
Sw7	Ventilation Mode	Permitted	Not Permitted
Sw8	Door Station (Optional)	Fitted	Door Station Not Used

NOTES: The SMT-131 reads the switch settings on power up only. If you change any DIP switch settings you must power cycle before these changes will take effect.

It is expected that only qualified people will make adjustment to these dip switch settings. Knowledge of the HVAC system under the control of the SMT-131 is essential prior to making adjustment to these DIP switch settings.

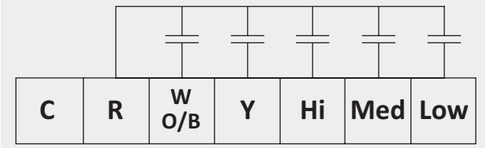
CAUTION: Incorrect adjustment of these DIP switch settings could cause HVAC equipment damage. This would NOT be covered by warranty.

5

Wiring – HVAC Control Terminal Designations

Terminal	Function
C	24V Neutral
R	24V Active - This voltage is switched back through the relays
Hi	Indoor Fan High Speed (**NOT Used** in Single fan speed mode - Sw1 = OFF)
Med	Indoor Fan Medium Speed (**NOT Used** in Single fan speed mode - Sw1 = OFF)
Low	Indoor Fan Low Speed (Used in single & three fan speed mode)
Y	Compressor or Cool-(Based on Sw2 setting)
W-O/B	Reversing Valve or Heat- (Based on Sw2 setting)
A1-Cool	0-10V Output for Cooling (Typically used to control modulating valves)
A2-Heat	0-10V Output for Heating (Typically used to control modulating valves)
A3-Fan	0-10V Modulating Output for Indoor DC Fan
Com - 0V	0V terminal - Used for 0-10V, sensor or digital inputs ground reference
A	Modbus Data A
B	Modbus Data B
SI	Remote temperature sensor input (Remote/average/Modbus data use)
DI	Digital (Switched input) for forced un-occupied or initiate doorbell function
WC	Window Contact - Forces SMT-131 OFF if window open > 5 min (Adjustable)
DS	Door Switch – Monitors room door status for occupancy detection
PIR	PIR (Movement sensor) input for occupancy detection

The SMT-131 is powered by 24VAC and requires the 24VAC active and neutral to be connected to the “R” (active) and “C” (Neutral) terminals for the SMT-131 to function. The 24VAC applied to the SMT-131 “R” terminal is switch back through the 2A relays to the equipment. Note the drawing provided here.



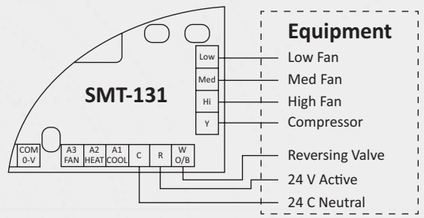
Continued.....

6A

CAUTION - Although the SMT-131 is a robust device, wiring errors can potentially damage the thermostat. Warranty does NOT cover this damage. Take care when wiring 24V near sensor inputs or the Modbus communications terminals.

NOTE : When the SMT-131 calls heating or cooling the SMT-131 will drive both the relays and the 0-10V outputs simultaneously. This way the SMT-131 can call a circulating water pump via the relays as it controls room temperature with valves if needed.

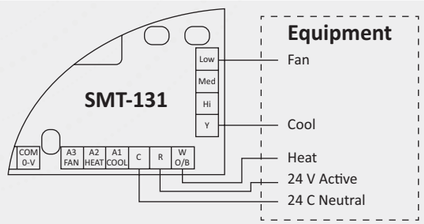
Heat Pump - 3 Fan Speed



Dip Switch Setting

SW 1	Fan	ON - 3 Speed
SW 2	Mode	ON - HP Mode
SW 3	R/Valve	ON - Heat OFF - Cool
SW 4	2/4 Pipe	ON - 4 Pipe
SW 5	Anticycle	ON - Timer On
SW 6	Not Used	Not - Applicable
SW 7	Fan Vent	Customer Preference
SW 8	Door Station	Customer Preference

Heat Cool - 1 Fan Speed

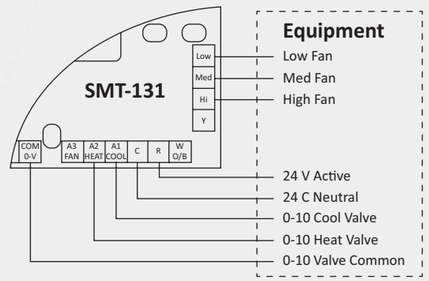


Dip Switch Setting

SW 1	Fan	OFF - 1 Speed
SW 2	Mode	OFF - HC Mode
SW 3	R/Valve	ON - HE OFF - HG
SW 4	2/4 Pipe	ON - 4 Pipe
SW 5	Anticycle	ON - Timer On
SW 6	Not Used	Not - Applicable
SW 7	Fan Vent	Customer Preference
SW 8	Door Station	Customer Preference

6B

0-10 v Heat & Cool Valve - 3 Fan Speed



Dip Switch Setting

SW 1	Fan	ON - 3 Speed
SW 2	Mode	OFF - HC Mode
SW 3	R/Valve	ON - HE
SW 4	2/4 Pipe	ON - 4 Pipe
SW 5	Anticycle	OFF - Timer OFF
SW 6	Not Used	Not - Applicable
SW 7	Fan Vent	Customer Preference
SW 8	Door Station	Customer Preference

7A

0-10v Outputs

To permit the control of modulating heating and cooling valves as well as variable speed DC fan motors or variable capacity HVAC systems the SMT-131 has been fitted with 3x0-10V outputs.

The 0-10V outputs in the SMT-131 are PI(Proportional Integral) controlled. This control method provides the most accurate and cost effective way to control heating and cooling valves by ensuring set temperate are reached as quickly and efficiently as possible while reducing temperature overshoot.

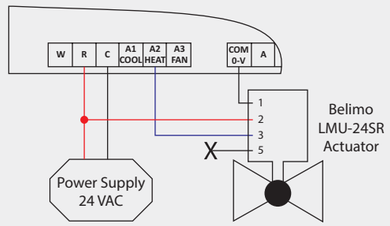
As the SMT-131 is fitted with both relays as well as 0-10V outputs to control HVAC systems there may be some slight disparity between the thermostat display and the 0-10V outputs actions. The SMT-131 displays the relay actions more than the actions of the 0-10V outputs on the LCD. In most cases these are very closely matched however as the 0-10v outputs have the capability of providing finer control than do the ON/OFF relays the heating and cooling calls may have started slightly before indicated on the thermostat display. This is true of the fan also.

7B

A1 - Cool : This output is used to control a cooling valve.

A2 - Heat : This output is used to control a heating valve.

A3 - Fan : This output is used to control a variable speed fan or a variable capacity AC system. If the fan mode is set to Auto speed the 0-10V output will vary between these two values based on calculated demand. If the user selects LOW speed, the 0-10V output will be fixed at 3.3VDC, when Medium speed is selected the 0-10V output will be fixed at 6.6VDC. High speed is set to 10VDC



The installer menu provides the following settings for the control of the three 0-10V outputs.

Span

This is the value where the output is at maximum value. It sets how aggressive the 0-10V will move for a given temperature change. Range is 0-5C

Time Interval

Time interval sets the running average calculation time. The smaller the number the faster the 0-10V output will respond to room temperature changes. Range is 10–300 seconds.

Direction

Forward action 0V=0% open and 10V=100% open; reverse action sets 0V=100% open and 10V=0% open.

Minimum Value

Rather than start the output at 0V, when the output is called it will immediately jump to this value. It will then vary the output to maximum. When approaching set point the value will drop from the minimum value to 0V in 1 step. This setting is particularly useful for fan control as it will not permit the fan to run too slowly when close to set point.

Maximum Value (Fan A3) output only

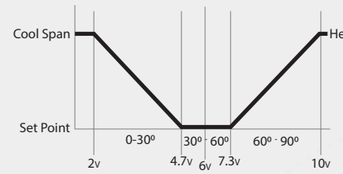
When controlling 0-10V fans sometimes it is necessary to limit the fan speed to reduce noise or to protect ducting. The fan output has a high voltage limit setting so regardless of the user selected speed (High, Medium or Low) or thermostat selected auto speed the 0-10V output will not exceed this pre-set high limit.

These settings can be found in the installer menu.

8

Belimo™ 6 Way Valve

Belimo™ manufactures an actuator that is in full cooling at 2V, off at 6V and full heating at 10V. To use this type of actuator with the Smart Temp SMT-131 you must enter the installer menu and set valve type to “Belimo™ Mode”. The heating 0-10v output only is used in this mode.



As with normal valves, the 0-10V heating and cooling span settings in the installer menu scale the heating and cooling outputs. Factory default is full heating and full cooling 1°C from set point. The heating and cooling span can be adjusted independently to a maximum of full heating and full cooling 3°C from set point. The output is linear.

NOTE: When using “Belimo™” mode, both the A1 “cool” and the A2 “Heat” 0-10 output are used. Both will provide the same output to the value. (The A3 “fan” output will remain unchanged and can be used to control a DC fan or other devices).

9

2 Pipe Mode

The SMT-131 can measure water temperature via a sensor strapped to the water pipe and wired into the SMT-131 Sensor input terminals (SI and Com 0-10 input). Based on the pipe temperature, the room temperature and the set point the SMT-131 will control either the heating or the cooling outputs to maintain guest comfort.

When 2 pipe is mode is used, the SMT-131 will occasionally open the water valve to allow water flow within the pipe so the SMT-131 can sample pipe temperature to determine / confirm operation mode.

If mode selection is permitted, the SMT-131 will only permit the appropriate mode to be selected based on the pipe temperature.

To use the SMT-131 in 2 pipe mode set DIP 2 OFF and DIP 4 to the ON position. Set Installer menu option 26 “SI & Com 0-V” to option “3”–2 Pipe Mode.

The pipe sensor needed for 2 pipe mode is the RS-1d sensor - available as an optional part from Smart Temp or an authorised distributor.

Serial Number Information and Tracking

The serial number or ID of a device is used to track device installation locations and details for the commissioning process. The identification information for each device should be tracked in a meaningful way, many devices include duplicate 'stickers' with this information. Autani provides an iOS app to assist with the process.

For help getting starting with the iOS Commissioning App please see Autani's User Guide for the iOS Commissioning App.

Once commissioning details are collected, either through the iOS Commissioning App, or by tracking identifiers on drawings/spreadsheets. Please provide this information to support@autani.com to begin the commissioning process.