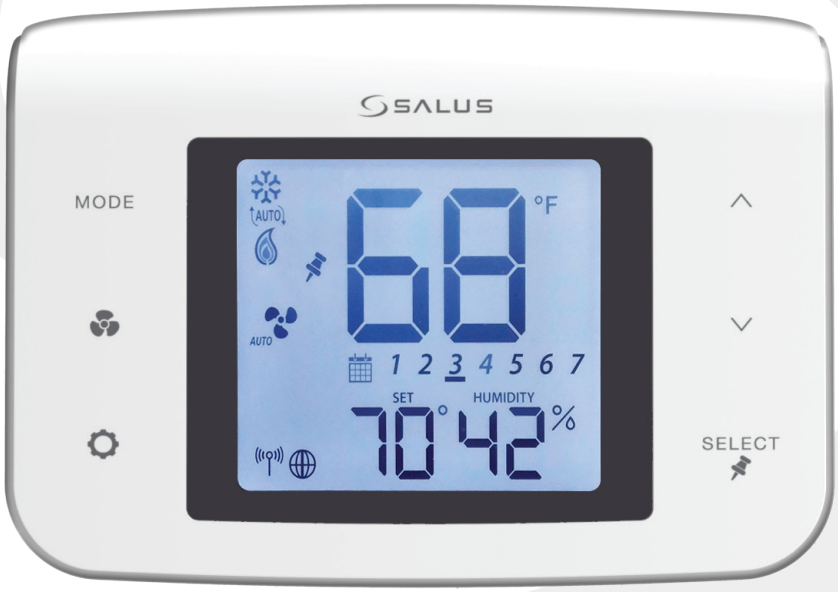
ST100ZB Line Power Fan Coil Thermostat
&
ST101ZB Low Voltage Fan Coil Thermostat

Installation & Operation Manual



As of August 16, 2019

Table of Contents

Introduction

System Overview 3
Product Safety Information 4

1.0 ST100ZB Line Power Fan Coil Thermostat

1.1 - Included Parts – ST100ZB Line Power Thermostat 5
1.2 - Tools (Required/Optional) 5
1.3 - Existing Wired Thermostat Removal 6
1.4 - ST100ZB Line Power Fan Coil Thermostat Installation 7

2.0 ST101ZB Low Voltage Fan Coil Thermostat

2.1 - Included Parts – ST101ZB Low Voltage Thermostat 10
2.2 - Tools (Required/Optional) 10
2.3 - Existing Wired Thermostat Removal 11
2.4 - ST101ZB Low Voltage Fan Coil Thermostat installation 12

3.0 SS909ZB Optional Temperature Sensor

3.1 - Included Parts – SS909ZB Remote Temperature Sensor 14
3.2 - Tools (Required/Optional) 14
3.3 - SS909ZB Temperature Sensor Installation 14

4.0 Fan Coil Thermostat Display & Keypad

4.1 - Keypad Functions 16
4.2 - Display Icons 17

5.0 Joining & Pairing

5.1 - ST100ZB/ST101ZB Fan Coil Thermostat – Preparation for Joining the Network" 18
5.2 - Joining the SG888ZB Gateway Network 18
5.3 - Optional SS909ZB Temperature Sensor Pairing 20

6.0 Thermostat Configuration

6.1 - Settings 24
6.2 - Special Functions 27

7.0 Operation

7.1 - ST100ZB/ST101ZB Fan Coil Thermostat – Preparation for Joining the Network" 29
7.2 - Joining the SG888ZB Gateway Network 30
7.3 - Optional SS909ZB Temperature Sensor Pairing 30
7.4 - Heating/Cooling Modes 30
7.5 - Fan Modes 31
7.6 - Accessory Function 32
7.7 - AWAY Mode 33

8.0 Troubleshooting

8.0 - Troubleshooting 34

9.0 Installer Notes

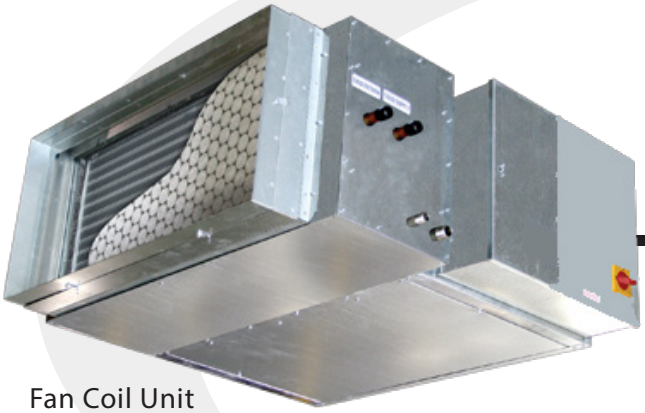
9.0 - Installer Notes 35

Appendix A - Parameter List 36

Introduction

Fan Coil Thermostat System Overview

The SALUS fan coil thermostats provide remote control of fan coil units via the SALUS Smart Home application for smart devices and PCs. Detailed instructions for the SALUS Smart Home application are available in the SG888ZB Pairing Guide.



Fan Coil Unit

ST100ZB Fan Coil Thermostat
or
ST101ZB Fan Coil Thermostat

SG888ZB
Gateway

Introduction

Product Safety Information

Please read these instructions carefully **BEFORE INSTALLING AND USING** the Fan Coil Thermostat. **DO NOT** supply line voltage (120 or 240 VAC) to a ST101ZB Low Voltage Fan Coil Thermostat.

• DO NOT cover any of the vents on the thermostat

• DO NOT place the unit in a bathroom or area of excessive moisture

• DO NOT allow the unit to get wet. This device serves as a temperature control system only in dry, closed living and office spaces.

• DO NOT use solvents or aggressive cleaning agents. A dry, soft cloth is recommended for cleaning.

The manufacturer does not accept responsibility for any damage caused by not following these instructions.

Codes & Regulations: Installation and setup of this product must be performed in strict compliance with national, state/province, and local codes. Additional code requirements for line voltage-powered devices may apply to the ST100ZB Line Power Fan Coil Thermostat. An authorized, qualified installer may be required.

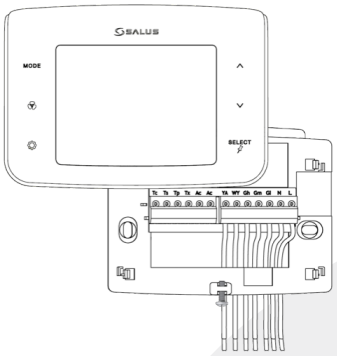
Intended Use: SALUS ST100ZB/ST101ZB Fan Coil Thermostats are intended for interior room temperature control in conjunction with fan coil heating systems only. Other uses are not recommended or supported.

Installer or Contractor: Record parameters at startup and any subsequent parameter changes in the installer notes section of this manual.

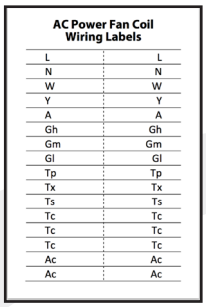
Section 1.0 ST100ZB Line Power Fan Coil Thermostat

Be sure that all parts listed are included and available before starting installation.

1.1 Included Parts – ST100ZB Line Power Thermostat



Thermostat with Wiring Mount

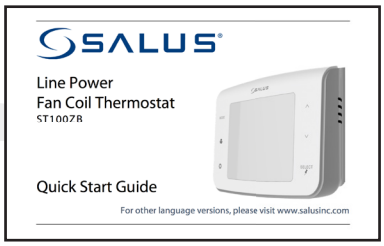


AC Power Fan Coil Wiring Labels

L	L
N	N
W	W
Y	Y
A	A
Gh	Gh
Gm	Gm
Gl	Gl
Tp	Tp
Tx	Tx
Ts	Ts
Tc	Tc
Tc	Tc
Tc	Tc
Ac	Ac
Ac	Ac

Wiring Labels

Mounting Screws



Installation/ Quick Start Guide (English & French)

1.2 Tools – Required/Optional

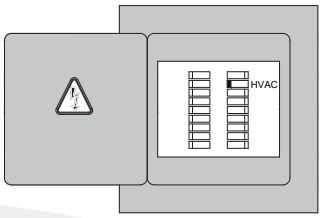
Required Tools:

- #1 Phillips or flathead screwdriver

Optional Tools:

- Smartphone or digital camera for wiring reference photos
- Small screwdriver for removing wiring from old thermostat terminals

Before beginning the installation procedure, turn off power to the fan coil system.



1.3 Remove Existing Wired Thermostat

Step 1. *If replacing an existing wired thermostat*, review and record the wiring configuration of the existing thermostat:

- Remove existing thermostat from the wall to expose the wiring terminals
- Take a photograph or note the wire colors and connections (see wiring reference table below)
- Attach wire labels to each of the wires

Terminal	Wire Color	Function	
		4 Pipe System	2 Pipe System
L	Black	120/240 VAC Line Power	120/240 VAC Line Power
N	White	120/240 VAC Neutral	120/240 VAC Neutral
Gl	Red	Fan – Low Speed	Fan – Low Speed
Gm	Blue	Fan – Medium Speed	Fan – Medium Speed
Gh	Brown	Fan – High Speed	Fan – High Speed
WY	Orange	Heating Valve Actuator	Heat/Cool Valve Actuator
YA	Yellow	Cooling Valve Actuator	Auxiliary Heat
Ac		Accessory Contact	Accessory Contact
Ac		Accessory Contact	Accessory Contact
Tp		Supply Pipe Temp. Sensor	Supply Pipe Temp. Sensor
Tx		External Temp Sensor	External Temp Sensor
Ts		Temperature Setback	Temperature Setback
Tc		Tp/Tx/Ts Common	Tp/Tx/Ts Common

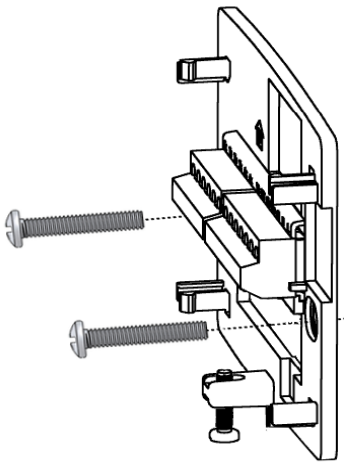
Step 2. Label each wire when disconnecting them from the thermostat terminals and remove the thermostat mounting plate (if necessary).

Paint the mounting surface, if desired, before mounting the thermostat back plate to ensure complete wall coverage.

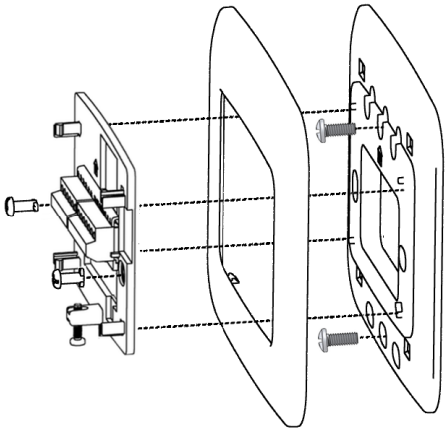
A split junction box may be required in some jurisdictions to separate line voltage supply wires from low voltage sensor leads.

1.4 ST100ZB Fan Coil Thermostat Installation

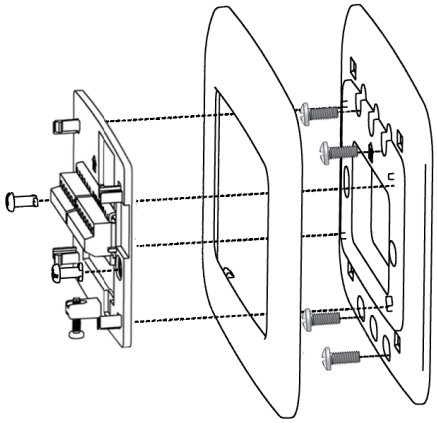
Step 1. Install the Wiring Mount in the desired location using the junction box screws provided, making sure the wires go through the center opening. An optional wall plate (sold separately) is available for mounting to other junction box configurations (see below).



Horizontal 2" x 4" Box

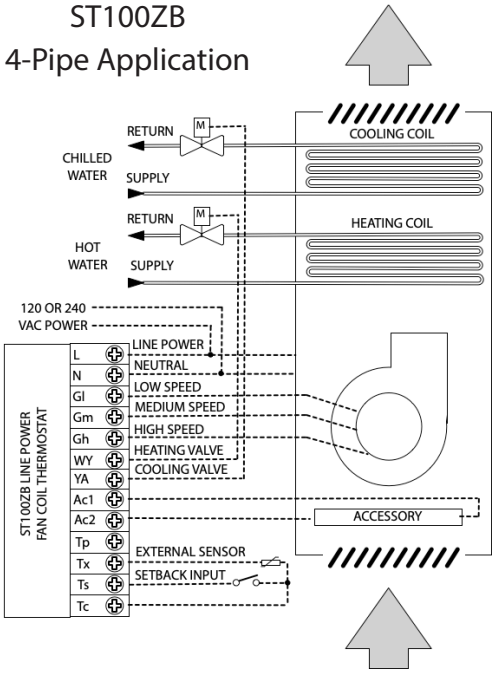


Vertical 2" x 4" Junction Box
(wall plate sold separately)

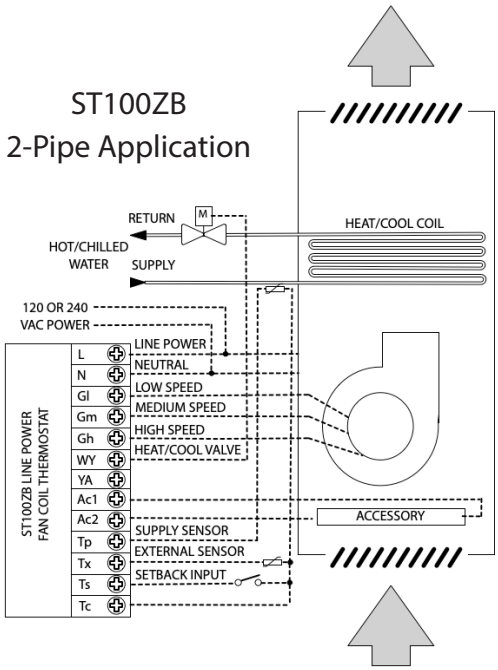


4" x 4" Junction Box
(wall plate sold separately)

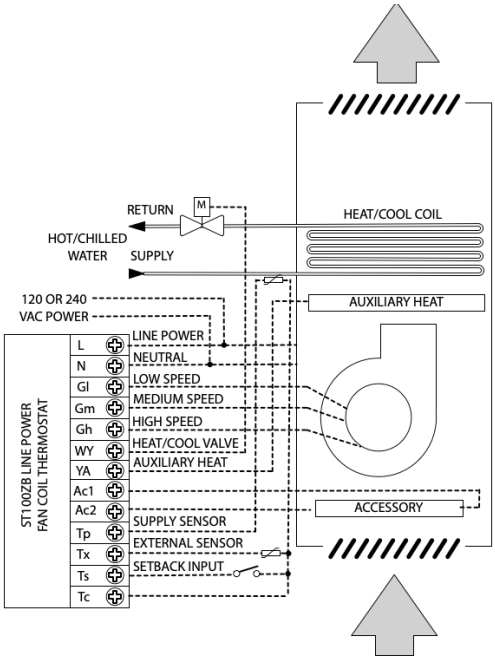
ST100ZB
4-Pipe Application



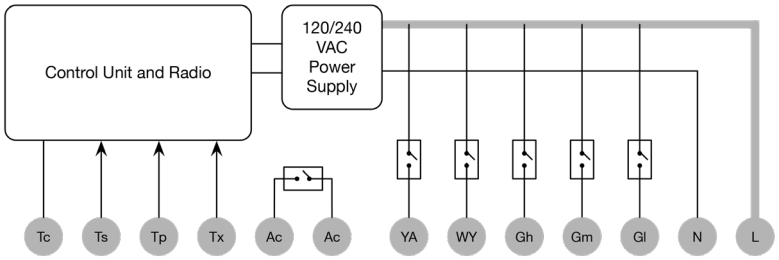
ST100ZB
2-Pipe Application



ST100ZB
2-Pipe Auxiliary
Heat Application



Internal Block Diagram

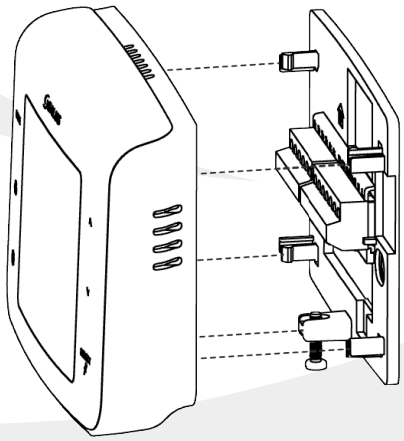


Step 2. Connect wiring to the ST100ZB Back Plate – Use the following chart to identify the desired configuration.

Configuration	L	N	Gl	Gm	Gh	WY	YA	Ac	Ac	Tp	Tx	Ts	Tc*
2-Pipe Heat Only	✓	✓	✓	✓	✓	W		o	o	o	o	o	o
2-Pipe Cool Only	✓	✓	✓	✓	✓	Y		o	o	o	o	o	o
2-Pipe Heat/Cool Manual Changeover	✓	✓	✓	✓	✓	W/Y		o	o	o	o	o	o
2-Pipe Heat/Cool Seasonal Changeover	✓	✓	✓	✓	✓	W/Y		o	o	✓	o	o	✓
2-Pipe Heat/Cool w/Auxiliary Heat	✓	✓	✓	✓	✓	W/Y	A	o	o	✓	o	o	✓
4-Pipe Heat/Cool w/Manual or Auto Changeover	✓	✓	✓	✓	✓	W	Y	o	o		o	o	o

✓=Required / o=Optional / W=Heat Valve Actuator / Y=Cool Valve Actuator / A=Auxiliary Heat

** If using more than one (Tp/Tx/Ts) terminal, it may be necessary to splice Tc.*



Step 3. Attach Thermostat to the wiring mount by aligning the connector pins.

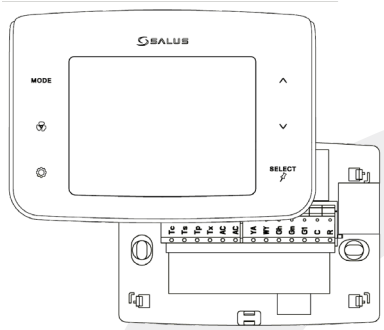
Remove any unused, pre-wired leads or add wire nut cap to isolate line voltage.

Make sure the connector pins are not bent and that the Thermostat is fully seated on the wiring mount.

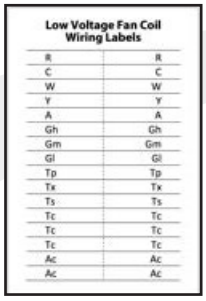
Section 2.0 ST101ZB Low Voltage Fan Coil Thermostat

Be sure that all parts listed are included and available before starting installation.

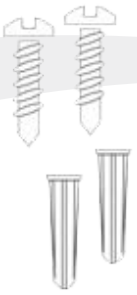
2.1 Included Parts – ST101ZB Low Voltage Thermostat



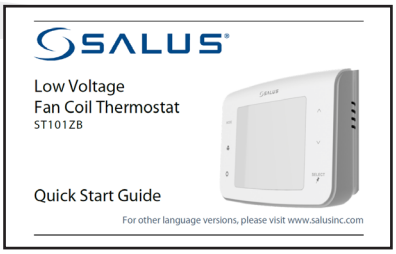
Thermostat with Wiring Mount



Wiring Labels



Screws and Anchors



Installation/ Quick Start Guide (English & French)

2.2 Tools – Required/Optional

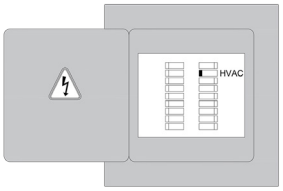
Required Tools:

- #1 Phillips or flathead screwdriver
- Drill with 3/16" bit if wall anchors are required

Optional Tools:

- Smartphone or digital camera to take photos of wiring for later reference
- Screwdriver to disconnect wires from existing thermostat
- Pencil for capturing wires

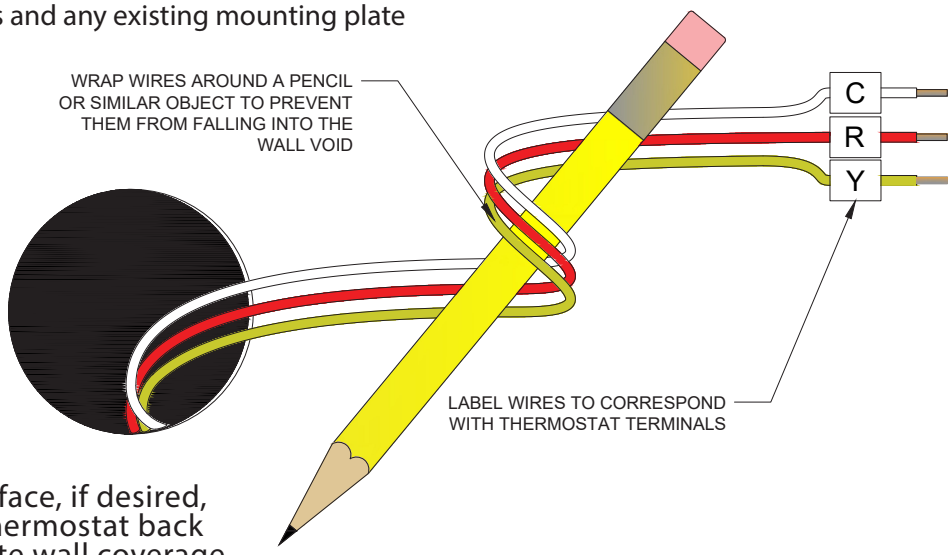
Before beginning the installation procedure, turn power off to the fan coil system.



2.3 Remove Existing Wired Thermostat

Terminal	Wire Color	Function	
		4 Pipe System	2 Pipe System
R	Black	24 VAC Input	24 VAC Line Power
C	White	24 VAC Common	24 VAC Common
Gl	Red	Fan – Low Speed	Fan – Low Speed
Gm	Blue	Fan – Medium Speed	Fan – Medium Speed
Gh	Brown	Fan – High Speed	Fan – High Speed
WY	Orange	Heating Valve Actuator	Heat/Cool Valve Actuator
YA	Yellow	Cooling Valve Actuator	Auxiliary Heat
Ac		Accessory Contact	Accessory Contact
Ac		Accessory Contact	Accessory Contact
Tp		Supply Pipe Temp. Sensor	Supply Pipe Temp. Sensor
Tx		External Temp Sensor	External Temp Sensor
Ts		Temperature Setback	Temperature Setback
Tc		Tp/Tx/Ts Common	Tp/Tx/Ts Common

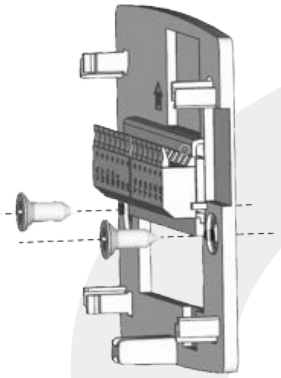
Step 1. Remove existing thermostat from the wall to expose the wiring terminals.
Step 2. Photograph the wiring connections for future reference
Step 3. Label each wire according to its terminal attachment
Step 4. Carefully remove the wires and any existing mounting plate



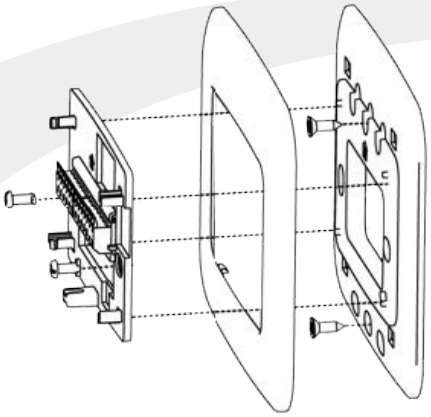
Paint the mounting surface, if desired, before mounting the thermostat back plate to ensure complete wall coverage.

2.4 ST101ZB Low Voltage Fan Coil Thermostat Installation

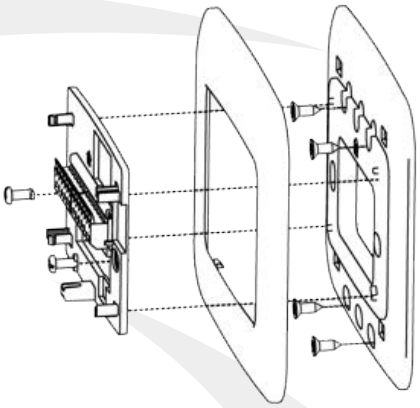
Step 1. Use the included wall screws and/or anchors to attach the wiring mount to the wall, making sure the wires go through the center opening. If alternate mounting holes are required, use a wall plate (sold separately.)



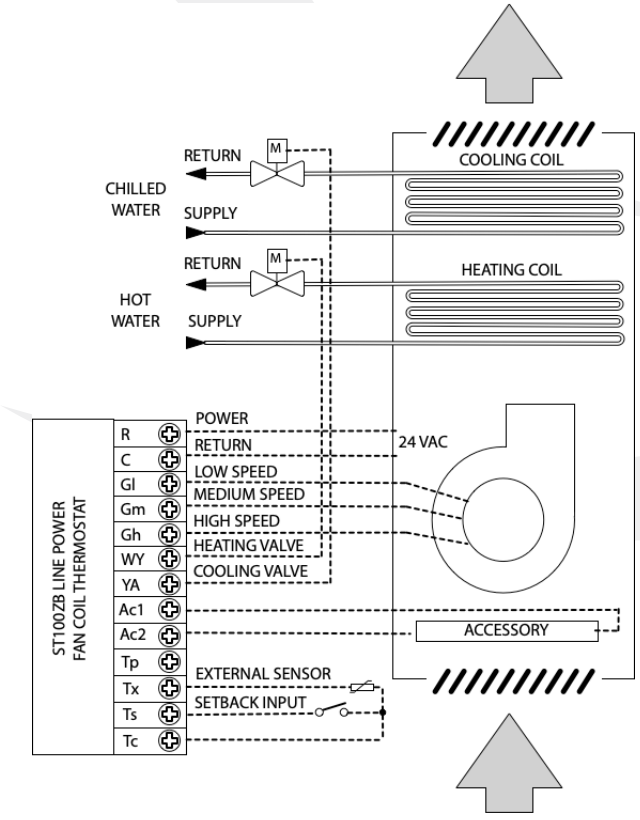
No box or horizontal single gang box



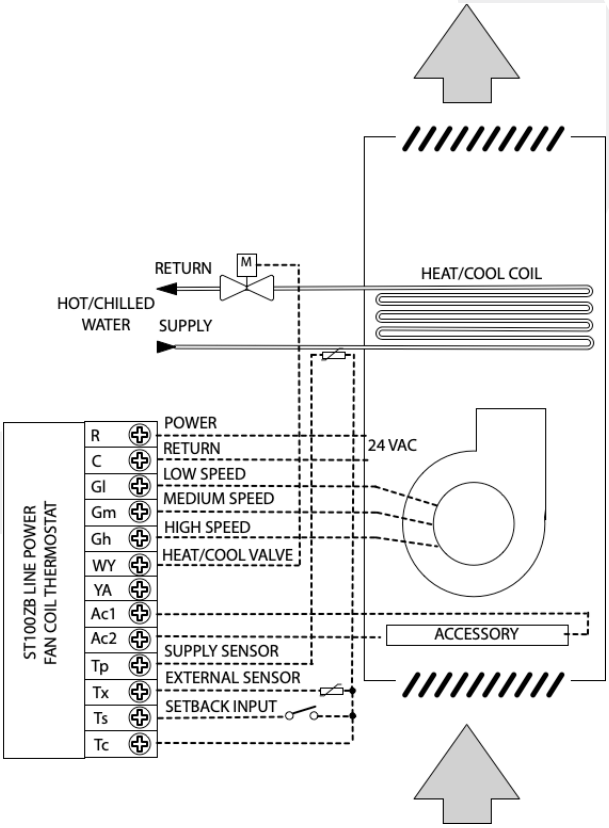
Vertical single gang box (wall plate sold separately)



2 gang (4' square) box (wall plate sold separately)

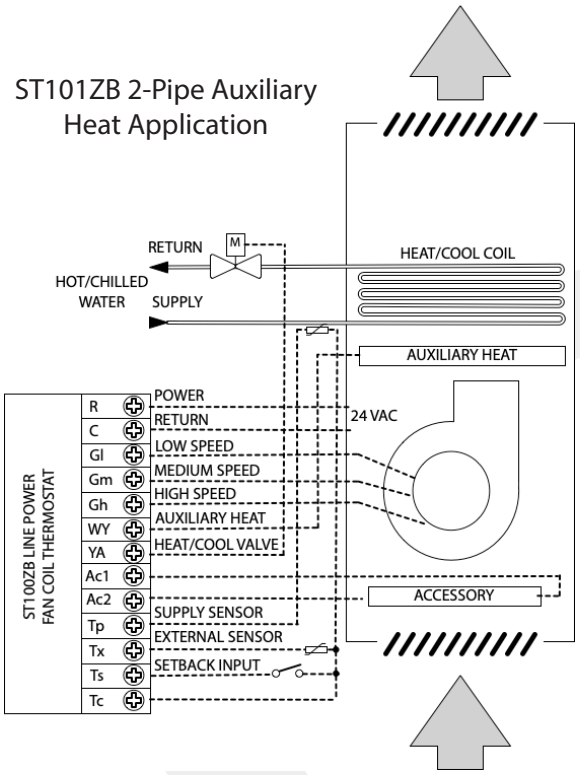


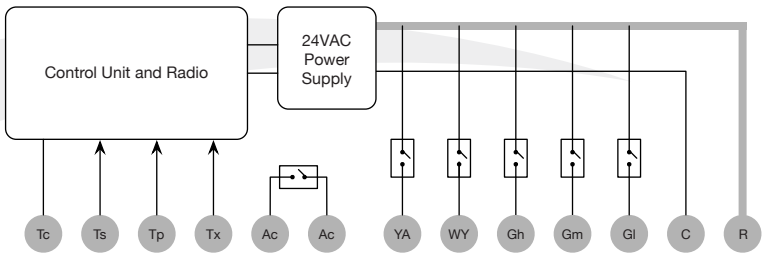
ST101ZB 4-Pipe Application



ST101ZB 2-Pipe Application

ST101ZB 2-Pipe Auxiliary Heat Application





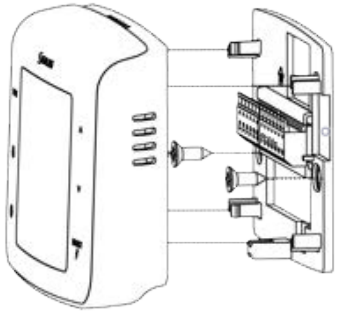
Internal Block Diagram

Step 2. Attach the wires to the matching terminals based on the fan coil configuration as follows:

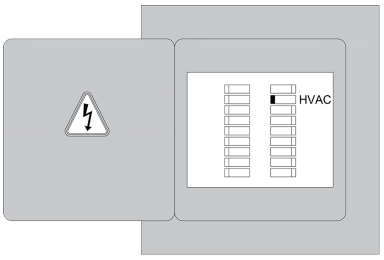
Configuration	R	C	Gl	Gm	Gh	WY	YA	Ac	Ac	Tp	Tx	Ts	Tc*
2-pipe Heat Only	✓	✓	✓	✓	✓	W		O	O	O	O	O	O
2-pipe Cool Only	✓	✓	✓	✓	✓	Y		O	O	O	O	O	O
2-pipe Heat or Cool - Manual Changeover	✓	✓	✓	✓	✓	W/Y		O	O	O	O	O	O
2-Pipe Heat or Cool – Seasonal Changeover	✓	✓	✓	✓	✓	W/Y		O	O	✓	O	O	✓
2-Pipe Heat or Cool w/ Auxiliary Heat	✓	✓	✓	✓	✓	W/Y	A	O	O	✓	O	O	✓
4-Pipe Heat/Cool Manual or Auto Changeover	✓	✓	✓	✓	✓	W	Y	O	O		O	O	O

✓=Required / o=Optional / W=Heat Valve Actuator / Y=Cool Valve Actuator / A=Auxiliary Heat

** If using more than one (Tp/Tx/Ts) terminal, it may be necessary to splice Tc.*



Step 3. Attach thermostat to the wiring mount.

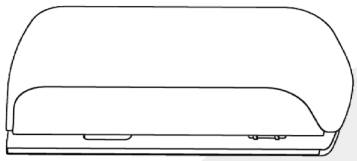


Step 4. Turn on power to the fan coil system and thermostat.

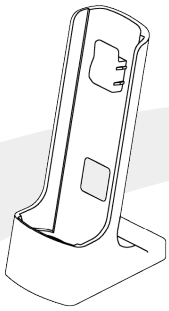
Section 3.0 SS909ZB Optional Temperature Sensor

Be sure that all parts listed are included and available before starting installation.

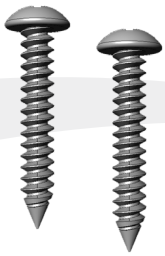
3.1 SS909ZB Temperature Sensor



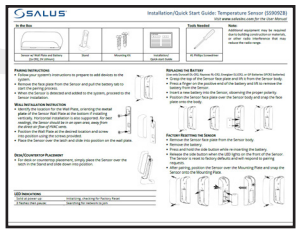
Temperature Sensor with Battery and Wall Plate



Stand



Mounting Screws



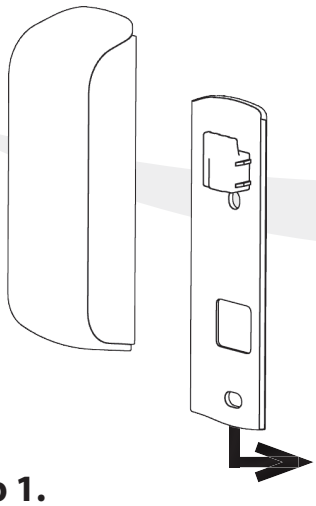
Installation Guide

3.2 Tools – Required

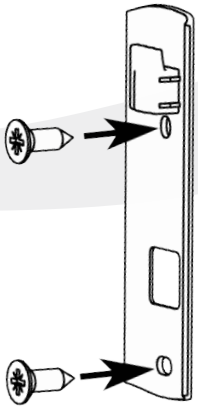
- #1 Phillips flathead screwdriver

3.3 SS909ZB Temperature Sensor Installation

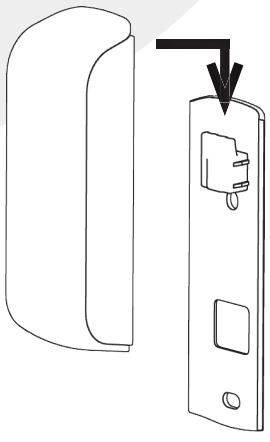
The SS909ZB Temperature Sensor should be located at a point where the temperature is to be used to control the fan coil thermostat. This temperature sensor can be permanently mounted on a wall or on the desk stand provided. If mounted on the desk stand, the SS909ZB can be moved to different locations to provide maximum comfort. For instructions on connecting the temperature sensor to a Fan Coil Thermostat, refer to Section 5.0 – Joining & Pairing.



Step 1.
Remove the Wall Plate from the back of the SS909ZB Temperature Sensor.

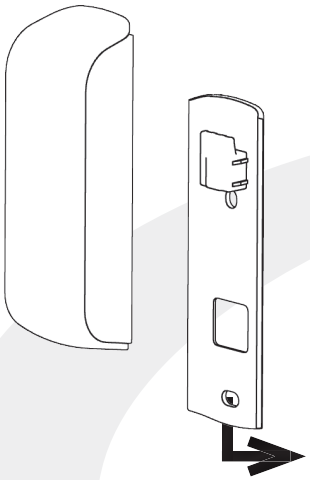


Step 2.
Attach the Wall Mount in the desired location using the screws and anchors provided.

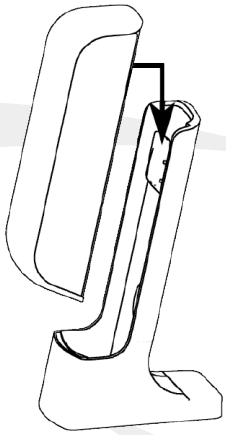


Step 3.
Slip the SS909ZB Temperature Sensor onto the Wall Mount.

3.3.2 Desktop Mounting – SS909ZB Temperature Sensor

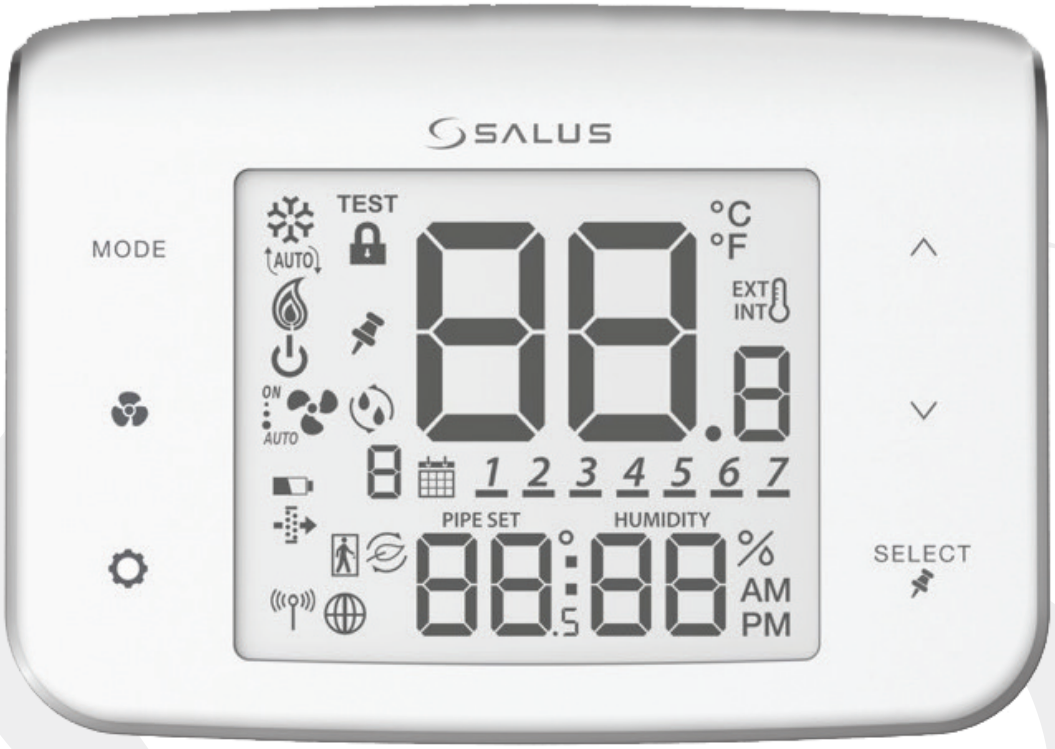


Step 1.
Remove the Wall Plate from the back of the SS909ZB Temperature Sensor.



Step 2.
Slip the SS909ZB Temperature Sensor onto the Desk Mount.

Section 4.0 Fan Coil Thermostat Display & Keypad



4.1 Keypad Functions

MODE	Heat, Cool, Auto, Off selection	^	Increase Value
	Fan On/Auto, Low Speed, Medium Speed, or High Speed	v	Decrease Value
	Enter/Exit Settings mode	**SELECT**	Confirm/Change Display Mode/Activate Permanent Hold

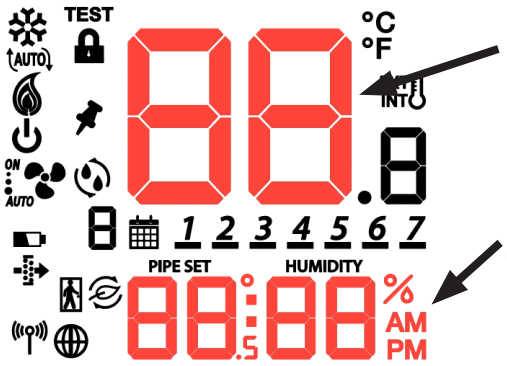
Section 4.0 Fan Coil Thermostat Display & Keypad

4.2 Display Icons

Heat/Cool/Off Modes

❄	Cooling (Animated when cooling is on)	🔥	Heating (Animated when heat is on)
AUTO	Auto Heat/Cool Changeover	⏻	Off (Will not respond to Heat/Cool demand)

Fixed Segment Display



Room Temperature Display

Multifunction Display - Setpoint/ Humidity/ Time

Fan Modes

Fixed Segment Display

ON AUTO	ON – Indicates Constant Fan Enabled 3 Dots – High Speed AUTO – Indicates Fan is in Automatic Speed Mode
AUTO	AUTO – Automatic Speed Mode; Constant Fan Disabled; Low Speed
	Fixed Low Fan Speed – Constant Fan Disabled
	Fixed Medium Fan Speed – Constant Fan Disabled
	Fixed High Fan Speed – Constant Fan Disabled

Wireless/Internet Indications

(( ))	Device connected to local network	🌐	Device connected to SALUS Smart Home Service

Test/Key Lock/Battery/Filter

TEST	Test Mode (Special Code 22)	🔒	Keys Locked Mode
▭	Battery Low (Not Used)		Change Filter (Timer expired)
💧	Accessory Output On (Humidifier, Dehumidifier, ERV or HRV)		

Internal/External Temperature Sensor

EXT	External Sensor Indication (wired or wireless)	INT	Internal Sensor Indication (Only visible in TEST Mode)

Schedule Indications

1 2 3 4 5 6 7	Day of the week (Mon = 1, Tue = 2, Wed = 3, Thu = 4, Fri = 5, Sat = 6, Sun = 7)

8	Schedule Interval (1-6) - Specifies time interval of scheduled temperature changes	📅	Schedule Indicator – When shown, the Thermostat is following a schedule
	Setback Indicator – Setback input is activated		AWAY State Indicator – Displayed when the Fan Coil Thermostat is set to AWAY, using setback temperatures

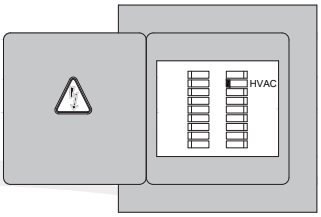
Multifunction Temperature Indication

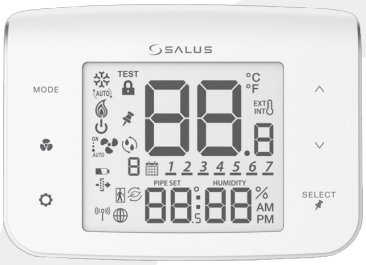
PIPE	Pipe temperature reading shown	SET	Setpoint temperature reading shown

Section 5.0 Device Joining & Pairing

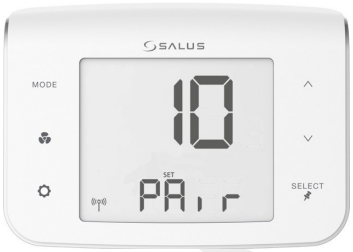
5.1 Fan Coil Thermostat – Preparation for Joining the Network

After installing the Fan Coil Thermostat and any optional SS909ZB Temperature Sensors, turn on electrical power to the fan coil system and Fan Coil Thermostat.



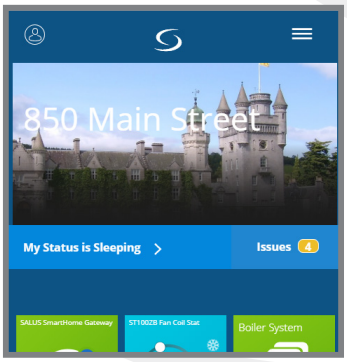


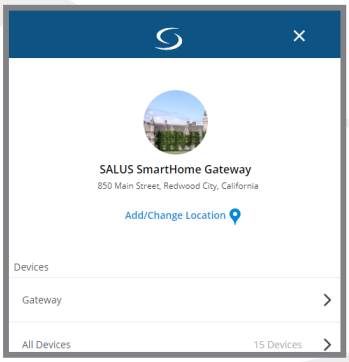
When the Fan Coil Thermostat is first powered, all segments will be briefly displayed. The display will then show the firmware version.

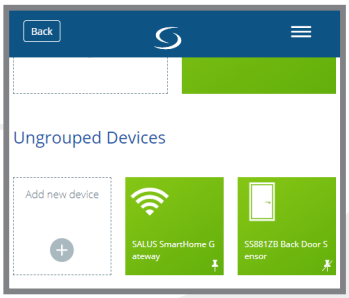


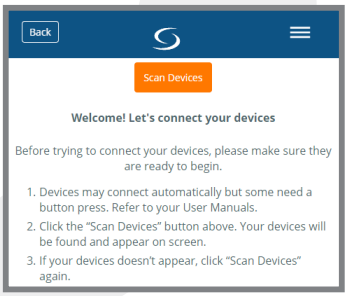
If the Fan Coil Thermostat is not connected to a network, the device will display PAir and a 10 minute countdown timer will start.

5.2 Joining the SG888ZB Gateway Network



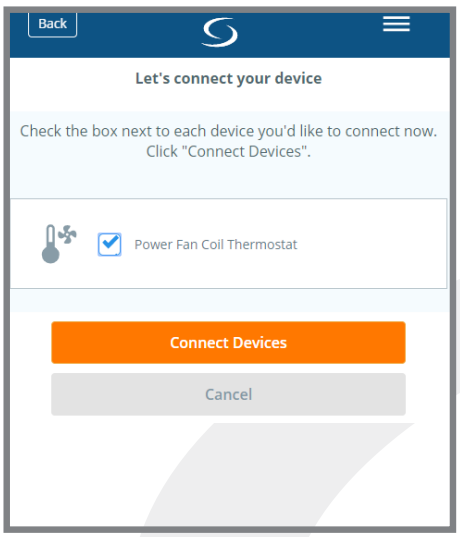




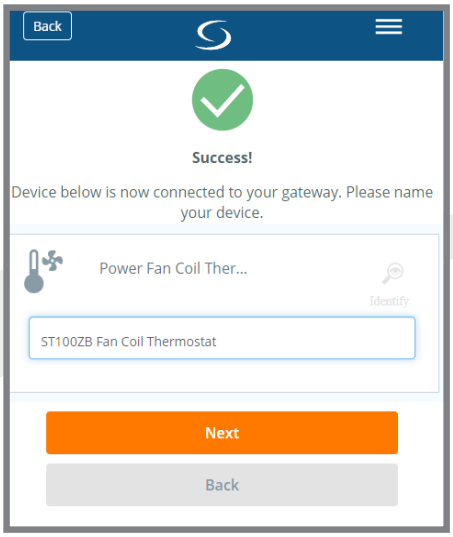


Step 1.
Open the SALUS Smart Home application, select the drop-down menu from the upper right of the screen and choose: ***All Devices → Add New Device → Scan Devices***

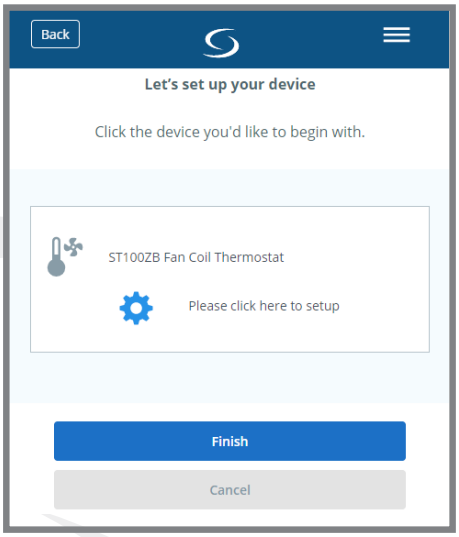
Section 5.0 Device Joining & Pairing



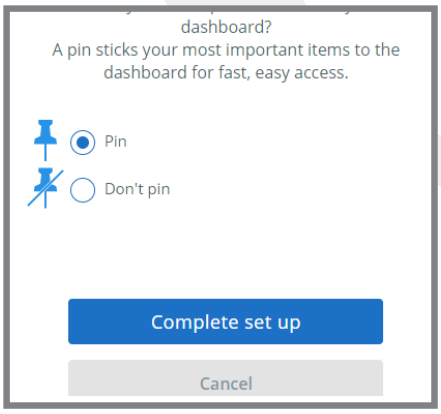
Step 2.
Check the box corresponding to the appropriate Fan Coil Thermostat and press "Connect equipment."



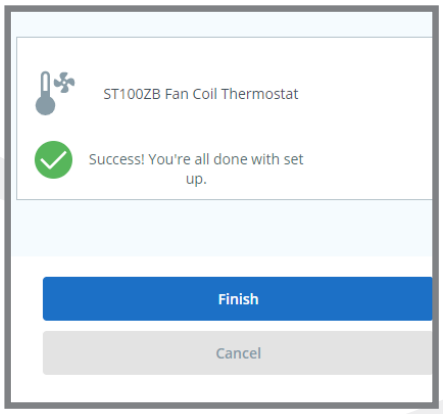
Step 3.
Enter a unique name for the device and press "Next."



Step 4.
Press the icon to enter 'setup' mode



Step 5.
Make desired changes to setup. Scroll down and choose "Complete set up".



Step 6.
Choose "Finish"

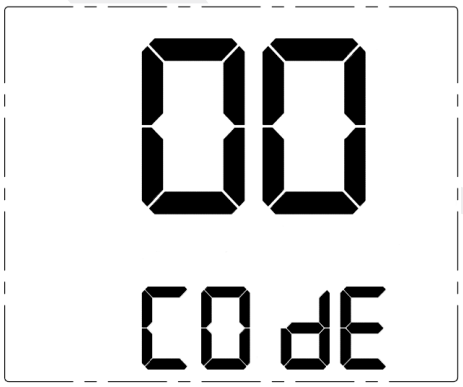
Section 5.0 Device Joining & Pairing

Once the Fan Coil Thermostat is successfully paired with a gateway, the device will briefly display the Zigbee channel.

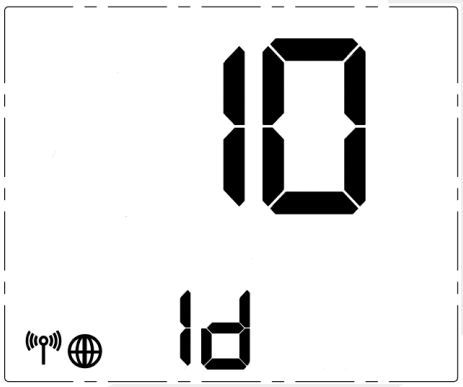
Next, the Fan Coil Thermostat enters Parameter Setup. Use the **SELECT** key to scroll through available parameters (See Appendix A) and the ^ and v to make changes.

Press the ⚙ key to enter the operation screen.

5.3 Optional SS909ZB Temperature Sensor Pairing



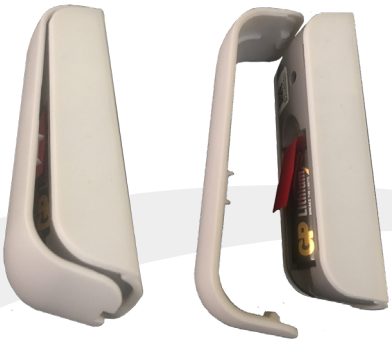
Step 1.
Press and Hold the **MODE**, ✣, and ⚙ keys simultaneously on the Fan Coil Thermostat to display the screen above for entering Special Function Codes.



Step 2.
Make sure the screen reads 00 COdE and press **SELECT** to enter the Identify Mode. A10-minute countdown timer begins.

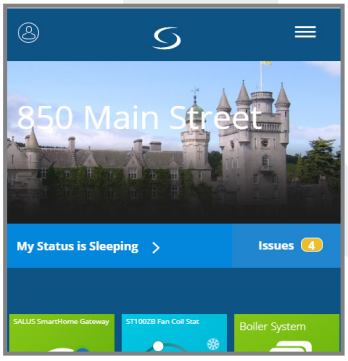
Section 5.0 Device Joining & Pairing

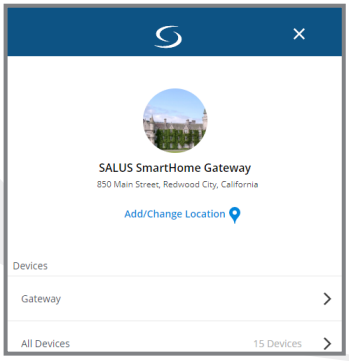
Step 3.
Remove the SS909ZB Remote Temperature Sensor from the Wall Plate or Desk Stand.

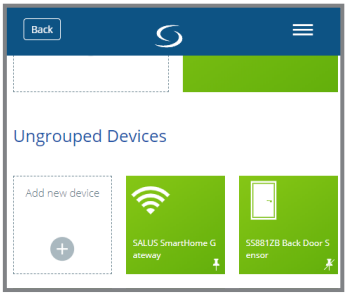


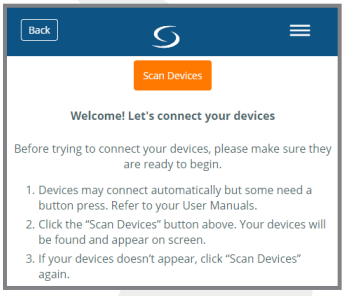
Step 4.
Use a small screwdriver to remove the face plate from the Remote Temperature Sensor and pull the battery tab.

Step 5.
When the battery tab is removed, the red LED will begin to flash.



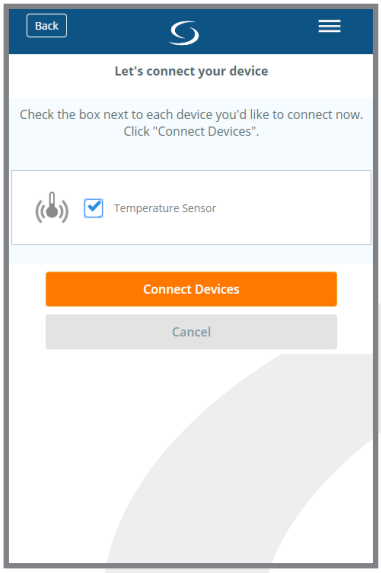




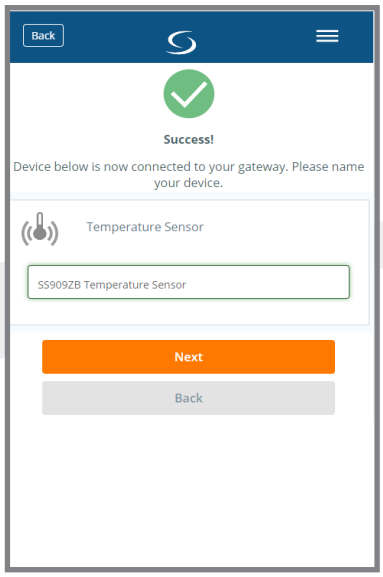


Step 6.
Open the SALUS Smart Home application, select the drop-down menu from the upper right of the screen and choose: ***All Devices ➔ Add New Device ➔Scan Devices***

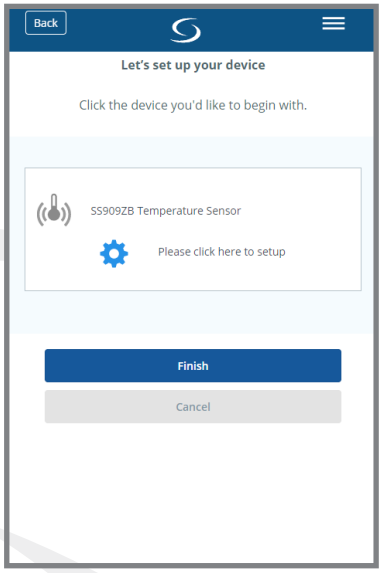
Section 5.0 Device Joining & Pairing



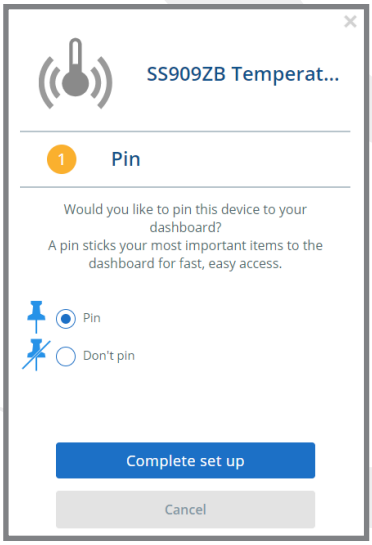
Step 7.
Check "Temperature Sensor" device checkbox and click "Connect Devices"



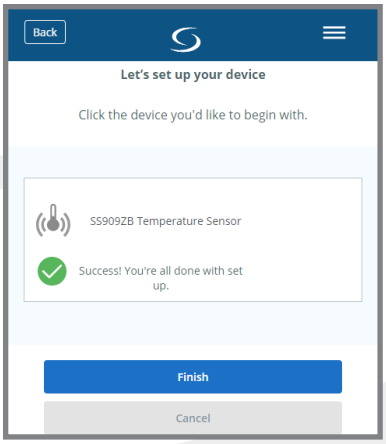
Step 8.
Enter a unique name for the device and press "Next".



Step 9.
Press "Please click here to setup".



Step 10.
Choose Pin or Don't Pin.
Press "Complete set up".



Step 11.
Press "Finish" to complete the setup.

The sensor will automatically initiate an operation to associate it with the Fan Coil Thermostat that is in Identify Mode.

Section 5.0 Device Joining & Pairing

Step 11.

If the Fan Coil Thermostat is set to EXT, Parameter P12 is set to 1 (Zigbee remote sensor) and the temperature display shows "- -" instead of a temperature value, do the following to be sure the SS909ZB Temperature Sensor is paired with the Fan Coil Thermostat.

Step 11a.

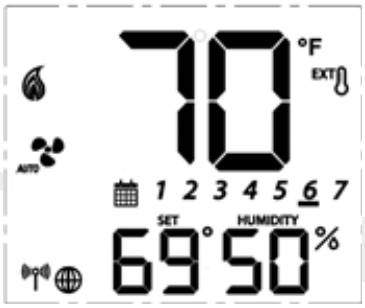
Make sure the Fan Coil Thermostat is in Identify Mode by pressing and holding the **MODE** , , and keys on the ST100ZB Thermostat to enter Special Function Codes.

Step 11b.

When 00 is displayed press **SELECT** to enter the Identify Mode on the Fan Coil Thermostat.

Step 11c.

Press and hold the pairing button on the SS909ZB Temperature Sensor for approximately 3 seconds until the LED illuminates. Immediately, release and then press the pairing button again.

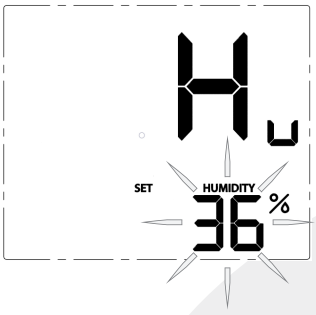


When the LED goes out, the SS909ZB Sensor will be associated with the Fan Coil Thermostat, the sensor temperature will be displayed and the EXT icon indicates an external thermostat is connected.

Section 6.0 Configuration

6.1 Settings ⚙ Button Operation

Pressing the SETTINGS ⚙ button will allow adjustment of user selectable settings.

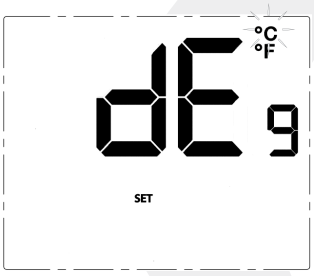


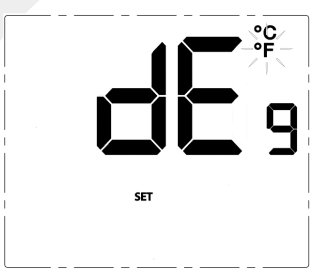
*** Humidity:** This setting allows users to adjust the relative humidity setpoint.

Range: Humidifier – 20% to 50%
Dehumidifier – 40% to 80%

The ^ and v keys adjust the flashing relative humidity setpoint. Press SELECT to choose the displayed value and move to the next setting.

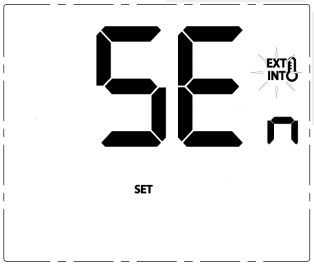
* This setting is only available if the accessory parameter (P22) is set to Humidifier (Hu) or Dehumidifier (dHu).

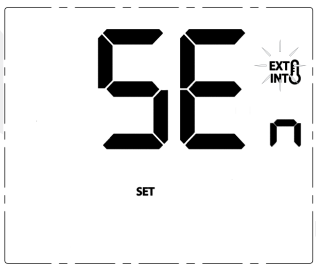




Temperature Units: Use this setting to choose between SI Metric and US Customary temperature units.

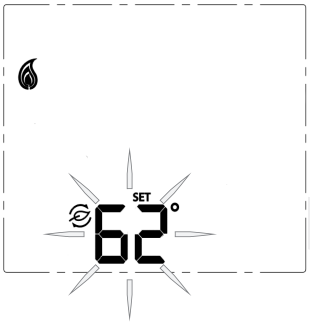
Use the ^ and v keys to toggle between °C and °F. Press SELECT to choose the flashing value and move to the next setting.

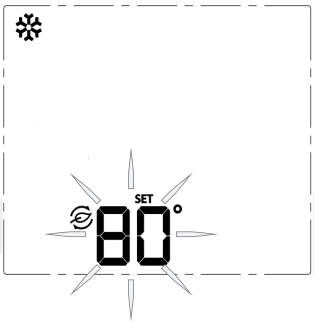




Sensor Location: Use this setting to choose between internal (INT) and external (EXT) sensor location.

Use the ^ and v keys to toggle between INT and EXT. Press SELECT to choose the flashing value and move to the next setting (If INT is chosen, INT will not be displayed on the home screen).



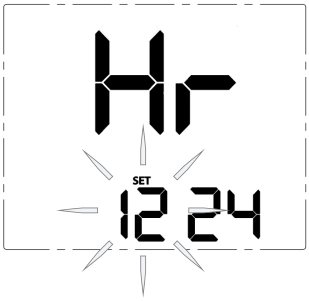


*** Setback:** Use this setting to choose a setback temperature for heating and/or cooling.

Range: Heat – 50-68°F (10-20°C)
Cooling – 73-90°F (23-32°C)

Use the ^ and v keys to change the setback temperature. Press SELECT to choose the flashing value and move to the next setting.

* This setting is only available if the setback input parameter (P16) is enabled.



Clock Format: This setting is used to change the clock format between 12 hour with am/pm and 24 hour.

Use the ^ and v keys to toggle between 12 and 24 hour clock.

Press SELECT to choose the value displayed and move on to the next setting.

Section 6.0 Configuration

Time: To set the time, use the ^ or v keys to change the flashing hour value, then press SELECT to choose the value displayed and select minutes.

With the minute value flashing, use the ^ or v keys to change the value.

Press SELECT to choose the value displayed and move to the next setting.

Note: This setting is available in standalone or local mode only.

Date: To set the date, use the ^ or v keys to change the flashing month value, then press SELECT to choose the value displayed and select date.

With the date value flashing, use the ^ or v keys to change the value.

Press SELECT to choose the value displayed and move to the next setting.

Note: This setting is available in standalone or local mode only.

Year: To set the year, use the ^ or v keys to change the flashing year value.

Press SELECT to choose the value displayed and move to the next setting.

Note: This setting is available in standalone or local mode only.

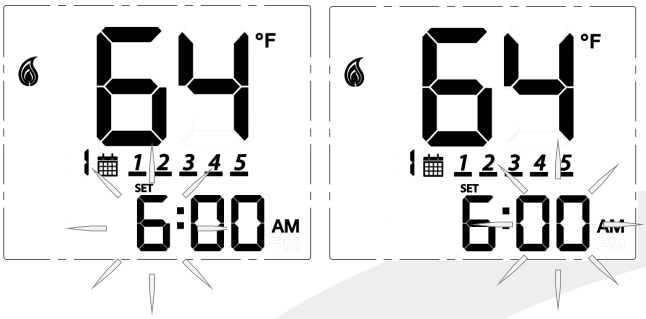
Note: Schedule parameters are only available in standalone or local mode. If the Fan Coil Thermostat is connected to the SALUS Smart Home application, the schedule must be programmed on your PC or smart device.

Schedule: While Prog is displayed, press the ^ or v keys to change the day group to be edited. See the following table that describes which days are programmed based on the display.

After selecting the day group, press SELECT to move to setting temperatures for each interval during the day.

Program Mode	Day Group Displayed	Schedule Description
Weekly	SET 1 2 3 4 5 6 7	Every day of the week
5+2 Weekdays/Weekend (Default)	SET 1 2 3 4 5	Monday through Friday
	SET 6 7	Saturday and Sunday
Daily	SET 1	Monday
	SET 2	Tuesday
	SET 3	Wednesday
	SET 4	Thursday
	SET 5	Friday
	SET 6	Saturday
	SET 7	Sunday

Schedule (Continued)

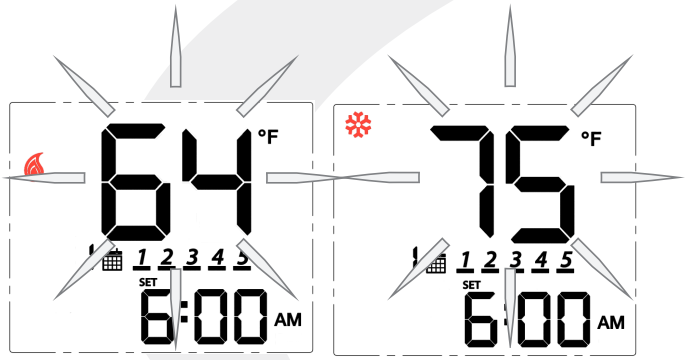


Time Interval: Use the ^ or v keys to set the start time for each time interval, displayed next to the calendar icon.

1st: Set the hour for the time interval start

2nd: Set the minutes for time interval start

Press SELECT to move on to the heating setpoint.



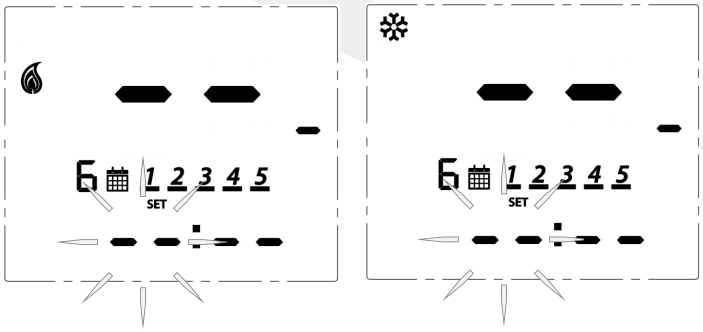
Set Point: Use the ^ or v keys to adjust the desired heating temperature set point for the time interval displayed.

Press SELECT to accept the set point and move on to the cooling temperature set point.

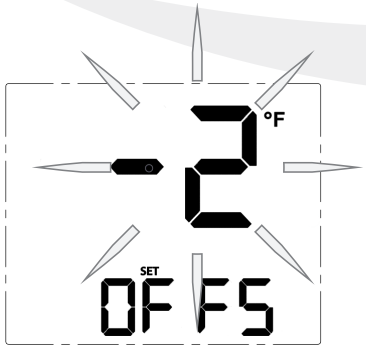
Use the ^ or v keys to adjust the desired cooling temperature set point for the time interval displayed.

Press SELECT to accept the set point and move on to the next interval.

Set points for remaining time intervals: Set the start time and heating and/or cooling temperature for the remaining interval for a total of 6 intervals.



Skipping a Time Interval: To skip a time interval, press the ^ key in the hour setting mode until each of the time and temperature digits change to a " - ". When time intervals are completed, the schedule will return to the first time interval at the scheduled time.



Temperature Offset: Change the temperature offset value to adjust the display of the sensed temperature. This will affect the sensor selected by the INT/EXT sensor setting.

Use the ^ and v keys to set the offset in 1°F (0.5°C) increments. The available range is -6 to 6°F (-3 to 3°C).

Press SELECT to accept the set point and return to the first item in the Settings Menu.

6.2 Special Function Codes

To access special functions, press and hold the **MODE,** , keys simultaneously. Use the ∧ and ∨ keys to scroll through the available codes.

Identify Mode – Press SELECT to initiate Identify Mode

A 10 minute timer begins with the screen backlight flashing. If a network is available, the icon will flash. The internet will be visible if a connection is established.

Test Mode – Press SELECT to initiate Test Mode

Key	Function	
MODE	Heat / Cool / Accessory relay select	
∧	Turn on	(WY), (YA) or (Ac) depending on MODE
∨	Turn off	
	Fan Speed Lo / Med / Hi relay control	
SELECT	Toggle HUMIDITY or Zigbee Channel	
	Exit Test Mode	

Parameter Setup Mode – Press SELECT to initiate Parameter Setup Mode

Use the ∧ and ∨ keys to change the value of the parameter that is flashing. Press SELECT to save the current parameter value and advance to the next parameter. A complete list of parameters is included in Appendix A.

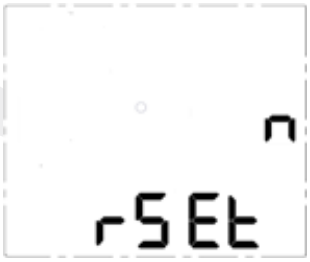
Section 6.0 Configuration

Join/Leave Network – Press SELECT to join or leave a network.

If the thermostat has not joined a network, the display will enter the pairing sequence. Follow the steps under Pairing in Section 3.

If the thermostat is paired with a network, UnPAir is displayed with "n" flashing. Press the ∨ or ∧ key to change the flashing letter to "y". Press SELECT to remove the thermostat from the network.

Factory Reset - Press SELECT to initiate a factory reset.



rSEt is displayed with a flashing "n". Use the ∨ or ∧ key to change the flashing letter to "y". Press SELECT to reset the thermostat to all of the factory default settings.

Section 7.0 Operation

7.1 Operating Modes

The Fan Coil Thermostat can be operated in Standalone Mode, Local Mode or Simple Mode depending on the network and internet connection. The chart below shows how these modes affect the display and operation of the device.

Table 7.1: Operating Modes

Operation	Standalone Mode	Local Mode	Simple Mode
Network State	Thermostat is not part of a network	Thermostat is part of a network, dis-connected from SG888ZB gateway	Thermostat is connected to a SG888ZB Gateway
RF Icon Display	None	(Flashing)	
SALUS Smart Home Icon	None	None	
Set Point Change	Device Only	Device Only	Device, SALUS Smart Home application or Web
Schedule	In Device, if enabled	In Device, if enabled	In SALUS Smart Home service
Change Fan Speed	Device Only	Device Only	Device, SALUS Smart Home application or Web
Mode Change (Heat/Cool/Auto/Off)	Device Only	Device Only	Device, SALUS Smart Home application or Web
Installation Setup	Device Only	Device Only	Device, SALUS Smart Home application or Web

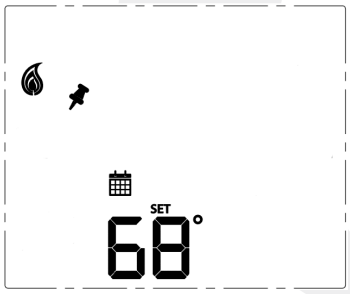
7.2 Programmable Thermostat (Standalone or Local Mode Only)

When in Standalone or Local mode, the default operation of the Fan Coil Thermostat is as a Non-Programmable Thermostat with no scheduling capability. Changing the value of Parameter P00 (See Appendix A) to 1, changes the device to Programmable, allowing users to program a wide variety of schedule options. Instructions for setting up a schedule are covered in Section 6: Configuration.

7.3 Set Point Override

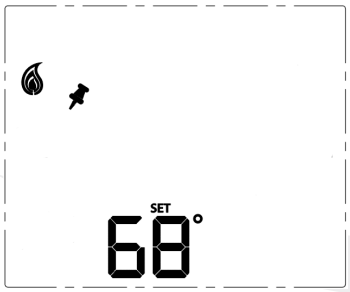
While following a temperature schedule in any mode, the Fan Coil Thermostat will display the icon. The schedule may be overridden temporarily until the next programmed time period, or permanently until the user returns the device to the programmed schedule.

7.3.1 Temporary Hold



To temporarily override the schedule, simply use the ^ or v keys to change the setpoint. When in Temporary Hold, the LCD display on the Fan Coil Thermostat will show in addition to the icon. The schedule will resume when the next scheduled time interval begins. Change the temperature to the scheduled temperature and the icon will turn off, indicating that the thermostat is following the schedule.

7.3.2 Permanent Hold



Once in Temporary Hold, press SELECT to toggle between temporary and permanent override. When in permanent override, the LCD display on the Fan Coil Thermostat the icon will turn off. The schedule will be suspended until the user returns it to the schedule changing the temperature to the scheduled temperature and pressing SELECT.

7.4 Heating/Cooling Modes

Heating/Cooling mode selection works the same for both programmable and non-programmable Fan Coil Thermostats. Parameter P02 (see appendix) determines which heating and/or cooling modes are available. Pressing the MODE key, will cycle through → → → depending on Parameter P02 (Appendix A) settings. When in mode, the Fan Coil Thermostat will maintain a temperature between the heating and cooling setpoints.

7.5 Fan Modes

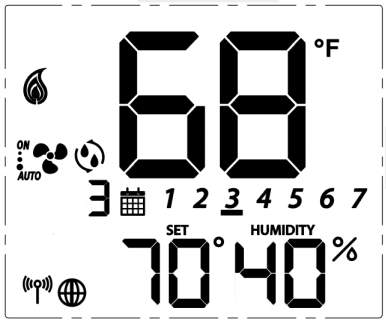
Fan Mode	Speed	Display	Output Terminal
	Fan output is only activated when a thermostat call is present (On Call Fan). When a call is present the fan runs at the selected speed.		
	High		Gh
	Medium		Gm
	Low		Gl
AUTO	Fan output is only activated when a thermostat call is present (On Call Fan). When a call is present the fan speed is determined by the TPI/Span algorithm selected in Parameter 23 (See Appendix A).		
	High		Gh
	Medium		Gm
	Low		Gl
ON *	Fan output is constant at the selected speed. The fan will remain running when a thermostat call is not present.		
	High		Gh
	Medium		Gm
	Low		Gl
ON-AUTO *	Fan output is only activated when a thermostat call is present (On Call Fan). When a call is present, the fan speed is determined by the TPI/Span algorithm selected in Parameter 23 (See Appendix A).		
	High		Gh
	Medium		Gm
	Low		Gl

* When in constant fan output, the fan coil will automatically switch to On Call Fan 2 or 4 hours after the initial call for heat or cool is satisfied (P35).

7.6 Accessory Function

Terminals Ac1 and Ac2 on the Fan Coil Thermostat provide output to an accessory such as a Humidifier, Dehumidifier, Heat Recovery Ventilator (HRV) or Energy Recovery Ventilator (ERV). The built-in humidity monitor continually samples humidity at the thermostat and will operate a humidifier or dehumidifier to maintain the specified value. The following table shows the function of the accessory output depending on which accessory is selected under parameter 22 (See Appendix A).

Parameter P22 Setting	**Operation of Ac1/Ac2 dry contacts**	
0 (No Function)	Open	
1 (Humidifier)	Closed when humidity is at or below the set point	Open when the humidity exceeds the set point
2 (Dehumidifier)	Closed when humidity is at or above the set point	Open when the humidity is less than the set point
3 (ERV/HRV)	Closed when fan relay is on	Open when fan relay is off

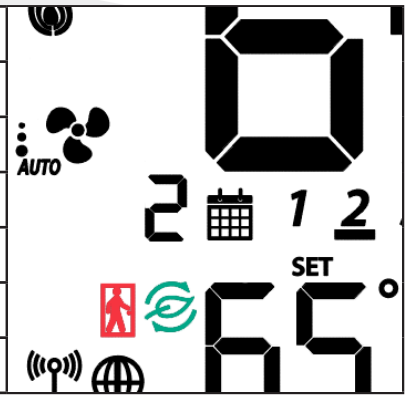


The icon is displayed when the Ac1/Ac2 dry contacts are closed.

7.7 AWAY Mode

Fan Coil Thermostat terminals Ts and Tc are used to initiate or terminate an Away state in the device. The Ts/Tc contact closure is configured by P16 as a Normally Open or Normally Closed contact, or as an input to be ignored.

P16	Ts/Tc Status	P21	
		0 (Setback Mode)	1(Off Mode)
0 (Disabled)	Ignored	Inactive	Inactive
1 (Normally Closed)	Open	Setback	Off
	Close	Inactive	Inactive
2 (Normally Open)	Open	Inactive	Inactive
	Close	Setback	Off



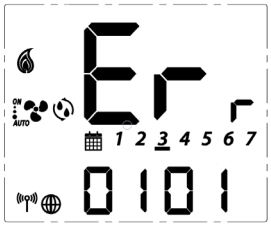
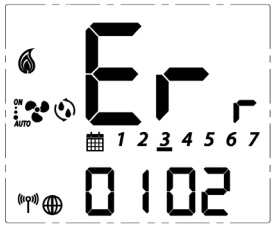
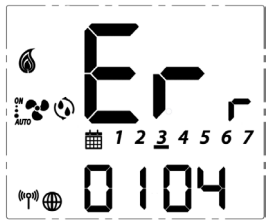
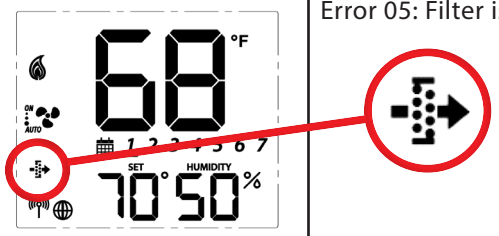
A contact state change detected between the two terminals will initiate the Away timers (P19 or P20) and once the timers expire, the device will enter or exit AWAY mode (indicated by the "person in doorway" icon). The timers are canceled if the contact input changes while the timers are active.

If Setback is selected when in AWAY mode (P21), the Setback set points (P17 and P18) will be in effect (indicated by "leaf" icon), overriding any schedules.

Section 8.0 Troubleshooting

The following error messages are displayed to identify issues when certain conditions occur.

Table 8.1: Error Messages

Error Message	Description	Corrective Action
	Error 01: Pipe supply sensor circuit is open, or pipe supply sensor is not connected. The pipe supply sensor must be used if Parameter P02 = 3 or 4 (See Parameters Appendix A).	• Check connection of pipe supply sensor to terminals • Replace sensor
	Error 02: Pipe supply sensor circuit is shorted, or pipe supply sensor damaged. The pipe supply sensor must be used if Parameter P02 = 3 or 4 (See Parameters Appendix A).	• Check connection of pipe supply sensor to terminals • Check for shorts in pipe supply sensor leads • Replace sensor
	Error 03: Room temperature sensor circuit is shorted, or room temperature sensor damaged.	• If sensor is set to External (Settings), and Parameter 12 (Appendix A) is set to external sensor, check for short circuit • If sensor is set to Internal (default), replace thermostat or use external sensor
	Error 04: Room temperature sensor circuit is open.	• If sensor is set to Internal (Default), replace thermostat or use external sensor • If sensor is set to External (Settings), and Parameter 12 (Appendix A) is set to external sensor, check wiring or assure sensor is connected. • If sensor is set to External and Parameter 12 is set to Zigbee remote, go through the "Find & Bind" sequence defined in the IOM.
	Error 05: Filter is clogged	• Change filter

For Errors 01-04 the display will alternate between the message above and the Home Screen. The total number of errors (shown 01 above) will be the first two digits displayed. If more than 1 error exists, press the ∨ and ∧ keys to review each error.

Section 9.0 Installer Notes

Appendix A - Parameter List

To change parameters, press and hold the **MODE,** , keys simultaneously.
Use the ∧ and ∨ keys to scroll to "49" and press SELECT.

P	Name	Values	Default	Description/Comment
P00	Type of thermostat	0 = Non-Programmable 1 = Programmable	0	
P01	Fan Coil Type	0 = 2 Pipe 1 = 4 pipe	1	
P02	Heat/Cool Option	**For 2 Pipe**	3	Option #3 & #4 in the 2 pipe configuration require the pipe sensor (sold separately) to be connected
		0=Heat Only		
		1=Cool Only		
		2 = Heat or Cool Manual changeover		
		3 = Heat or Cool Seasonal changeover		
		4 = Heat or Cool with Auxiliary Heat		
		For 4 Pipe:		
		2 = Heat or Cool Manual changeover		
		3 = Heat, Cool or Auto changeover		
		4 = Auto changeover only		
P03	Valve Type	0 = Normally Closed Valve 1 = Normally Open Valve	0	
P04	Max. heating setpoint	41 to 92°F (5 to 33.5°C)	92°F (33.5°C)	Not displayed if P02 = 1
				P05 < P04
				P04 ≤ P06-1.5°C
P05	Min. heating setpoint	41 to 92°F (5 to 33.5°C)	41°F (5°C)	Not displayed if P02 = 1
				P05 < P04
				P05 ≤ P07-1.5°C
P06	Max. cooling setpoint	44 to 95°F (6.5 to 35°C)	95°F (35°C)	Not displayed if P02 = 0
				P07 < P06
				P06 ≥ P04+1.5°C
P07	Min. cooling setpoint	44 to 95°F (6.5 to 35°C)	44°F (6.5°C)	Not displayed if P02=0
				P07 < P06
				P07 ≥ P05+1.5°C
P08	Protection heating setpoint	OFF or 41 to 92°F (OFF or 5 to 33.5°C)	41°F (5°C)	If not OFF, P05 < P08 < P04
				P08 < P09
P09	Protection cooling setpoint	OFF or 44 to 95°F (OFF or 6.5 to 35°C)	OFF	If not OFF, P07 < P09 < P06
				P08 < P09
P10	Offset of internal sensor	±6°F - 1°F increments (±3°C - 0.5°C increments)	0°F (0°C)	

Section A-1 Appendix A

P	Name	Values	Default	Description/Comment
P11	Offset of external sensor	±6°F - 1°F increments (±3°C - 0.5°C increments	0°F (0°C)	
P12	External sensor	0 = External sensor	0	Standalone mode: P12 = 0
		1 = Zigbee remote sensor		Set SE n to EXT with ⚙ key
P13	Pipe sensor	0 = Analog input	0	Displayed only if P01=0 and P02=3 or 4 (2-pipe with seasonal changeover or auxiliary heat), which requires the pipe sensor (sold separately) to be connected.
		1 = Normally open, default mode is Heat		
		2 = Normally open, default mode is Cool		
		3 = Normally closed, default mode is Heat		
		4 = Normally closed, default mode is Cool		
P14	Pipe sensor threshold for cooling	50 to 77°F increment 1°F (10 to 25°C increment 0.5°C)	50°F (10°C)	
P15	Pipe sensor threshold for heating	81 to 95°F increment 1°F (27 to 35°C increment 0.5°C)	86°F (30°C)	
P16	Setback input	0 = Disable	0	
		1 = Normally closed		
		2 = Normally open		
P17	Setback heating setpoint	50 to 68°F increment 1°F (10 to 20°C increment 0.5°C)	15°C (59°F)	Display only if P16=1/2
P18	Setback cooling setpoint	23 to 32°C increment 0.5°C (73 to 90°F increment 1°F)	86°F (30°C)	Display only if P16=1/2
P19	Setback Unoccupied to Occupied delay	1 to 3 seconds	1 sec	Display only if P16=1/2
P20	Setback Unoccupied to Occupied delay	2 to 30 minutes	2 mins	Display only if P16=1/2
P21	Setback mode or Off mode when unoccupied	0 = Setback mode	1	Display only if P16=1/2
		1 = Off mode		
P22	Accessory function	0 = No function	0	Normally Open
		1 = Humidifier		
		2 = Dehumidifier		
		3 = ERV/HRV		
P23	TPI or Span	0 = TPI	1	
		1 = Span control		
P24	Modulation Response Time	0 = Slow response time	1	Display only if P23=0
		1= Fast response time		
P25	TPI heat control CPH	3 ~ 12 on/off cycle per hour	6	Display only if P23=0
P26	TPI cool control CPH	3 ~ 12 on/off cycle per hour	3	Display only if P23=0
P27	CPH for Auxiliary Electrical Heater	3 ~ 12 on/off cycle per hour	6	Display only if P23=0
P28	Set span for heating using span control	.5° to 2°F increment 0.5°F (0.25° to 1°C increment 0.25°)	0.5°F (0.25°C)	Display only if P23=1, device only display 0.2/0.5/0.7/1.0°C or 0.5/1.0/1.5/2.0°F

Appendix A

P	Name	Values	Default	Description/Comment
P29	Set span for cooling using span control	0.5° to 2°F increment 0.5°F (0.25° to 1°C increment 0.25°)	0.5°F (0.25°C)	Display only if P23=1, device only display 0.2/0.5/0.7/1.0°C or 0.5/1.0/1.5/2.0°F
P30	Minimum turn off time for heating	10 to 300 seconds	10	Display if P02<>1
P31	Minimum turn off time for cooling	10 to 300 seconds	10	Display if P02<>0
P32	Call start delay	From 0 to 15 minutes	0	Delay after determining Call for Heat/Cool before valve is opened.
P33	Fan turn on delay	0 to 600 seconds	0	Delay to allow coils to reach operating temp
P34	Fan turn off delay	0 to 180 seconds	0	Delay to circulate residual heat/ cool.
P35	Delay to switch to On Call Fan after initial Heat/Cool is satisfied.	0=2 hours	0	
		1=4 hours		
P36	Key lock timing	0 = Manual	0	Note: In Auto mode, keys will lock after 5 minutes of keypad inactivity.
		1 = Auto (lock keys after 5 minutes)		
		2 = Unlock		
P37	Enable/Disable User Unlock in Simple mode and Local mode	0 = user can unlock by ^ and v	0	In Standalone Mode, user can unlock by ^ and v regardless P37 setting
		1 = user cannot unlock by ^ and v		
P38	Service filter	OFF	OFF	1 to 99 x 100 operating hrs (e.g. 99 = 9,900 oper. hrs)
		1 to 99 (99 means 9900hrs = 99*100)		
P39	Status after power outage	0 = Off mode	1	Thermostat will turn **Off** or be restored to **Last configuration.**
		1 = Last configuration		
P40	DST Daylight saving time	0: Disable	1	Used for local mode and stand-alone mode
		1: Enable		
P41	Purge Function	0: Disable	1	P01 = 0 (2-Pipe) only
		1: Enable		
P42	Purge Time	1-7	3	Minutes to purge
P43	Purge Wait	6-36	24	Hours of inactivity before purge
P44	Key lock type	1: Lock HVAC only	7	HVAC = Mode and set point Fan = fan button Settings = Settings button Combination key pressing ^ and v, or **MODE,** , will not be locked at any time.
		2: Lock Fan only		
		3: Lock HVAC and Fan		
		4: Lock Settings		
		5: Lock Settings and HVAC		
		6: Lock Settings and Fan		
		7: Lock All		