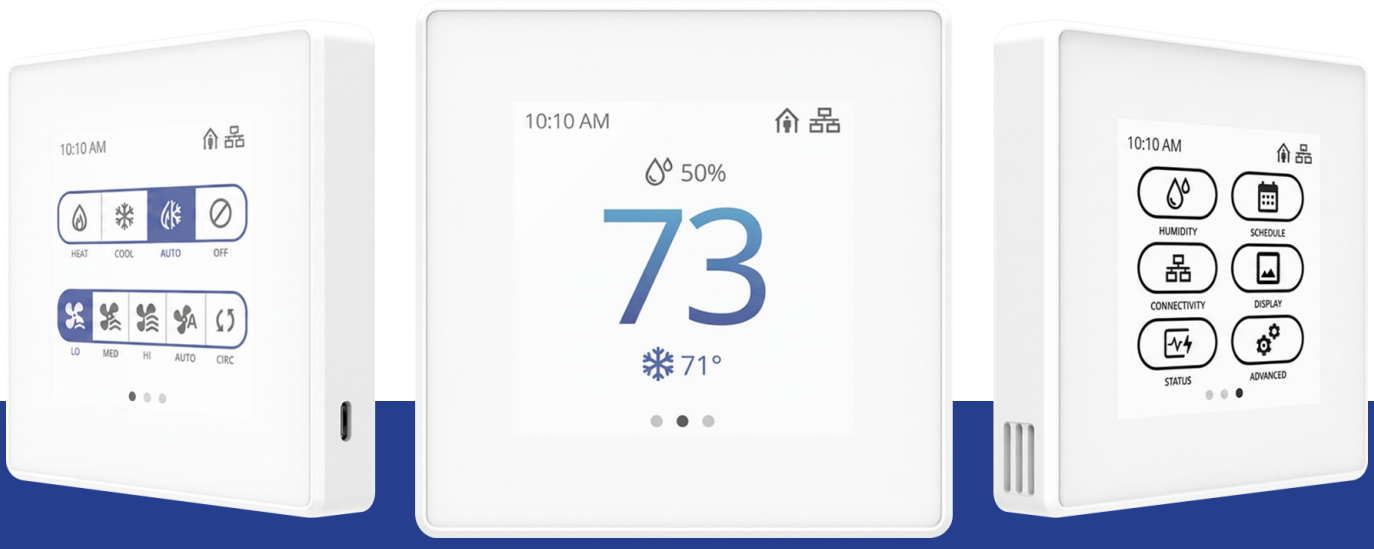
User Guide

TEC4000S Thermostat Zone Controller (Full Color LCD Touchscreen)



TEC4K-SB0-000 | TEC4K-SN0-000

AirFixture®

User Guide

TEC4000S Thermostat Zone Controller (Full Color LCD Touchscreen)

Contents

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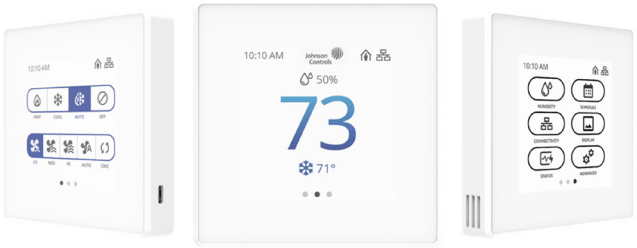
Introduction

The TEC4000S Series Thermostats are indoor wall-mounted devices for small to medium-sized commercial buildings. The thermostats feature an intuitive touch interface for advanced control of a wide range of commercial HVAC equipment. For more information, see .

The TEC4000S Series is available in two variants: standalone and networked. The networked variant supports wired communication with a BAS through the field-selectable BACnet® MS/TP protocol for seamless integration into an existing BACnet network. To streamline commissioning and maintenance, all models include a USB-C port that enables fast configuration of identical units and facilitates future firmware upgrades.

Figure 1: TEC4000S Series Thermostat



BACnet/MSTP network security

Important: The TEC4000S thermostat uses BACnet/MSTP to communicate with other building automation devices. As BACnet/MSTP does not use encryption, it is important to keep all BACnet traffic on a trusted and protected network.

To help prevent unauthorized access:

- Isolate BACnet/MSTP segments from untrusted or public networks, and the internet.
- For the highest level of protection, place all building automation and control equipment on a physically isolated network.

Applications

The TEC4000S Series Thermostats control the following equipment types:

- Pressure dependent VAV:
  - Proportional valve or floating valve
  - Optional single-staged reheat
- Fan coil units (FCU) with a single speed fan, 3-speed fan, or variable speed fan:
  - 2-pipe FCU:
    - On/Off valve, proportional valve, or floating valve
    - Optional single-staged reheat
    - Optional pipe sensor or switch input for automatic changeover

  - 4-pipe FCU:
    - Individual coil
      - Two On/Off valves, proportional valve, or floating valve
    - Single coil:
      - Two On/Off valves, proportional valve, or floating valve without changeover output
      - Single On/Off valve with changeover valve output
      - Single 6-way proportional valve
- Conventional or packaged units:
  - Up to two stages of heating
  - Up to two stages of cooling
  - Single speed fan
- Rooftop unit (RTU) heat pumps:
  - Up to two stages of compressor heating or cooling
  - Up to two stages of supplemental heating
  - Reversing valve
  - Single speed fan
- Vertical stacked heat pump (VSHP):
  - Single-stage compressor heating or cooling
  - Reversing valve
  - 3-speed fan
- Packaged terminal air conditioner (PTAC) with or without a heat pump:
  - Conventional setup without a heat pump:
    - Single On/Off of heating and compressor cooling
    - Single speed fan and 2-speed fan
  - Setup with a heat pump:
    - Single-stage compressor heating or cooling
    - Reversing valve
    - Single speed fan and 2-speed fan
- Heat only systems or conventional heating:
  - On/Off type electric heat or gas heat
  - On/Off type radiant heating or proportional radiant heating

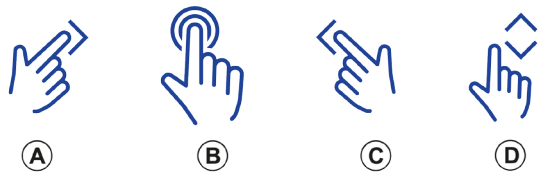
ⓘ **Note:**

1. FCU with a single speed fan, 3-speed fan or variable speed fan, conventional or packaged units, and heat pumps support dehumidification when cooling is available.
2. You can configure unit heaters with FCU 2-pipe heat only setting with changeover set to heating mode.

Interacting with the TEC4000S

Use the gestures shown in the following figure to interact with the touch screen of the TEC4000S.

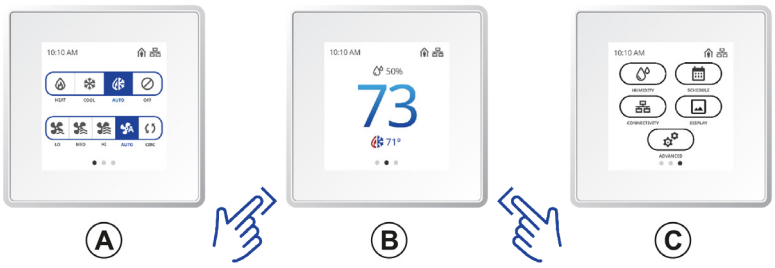
Figure 2: Touch screen gestures



Callout	Description
A	Swipe right to access the left widget
B	Tap to select an option
C	Swipe left to access the right widget
D	Scroll up or down

The TEC4000S includes three widgets that you can access from the main screen. The filled dot at the bottom of the screen indicates whether the left, right, or center widget displays. For more information, see the following figure.

Figure 3: Touch screen widgets



Callout	Widget	Description
A	Control Panel	Tap the button bar to adjust HVAC mode or fan setting. Swipe left to return to the home screen.
B	Home Screen	Swipe left or right to access the other widgets. See Figure 2.
C	Settings	Tap the relevant icon to navigate to that section. Swipe right to return to the home screen.

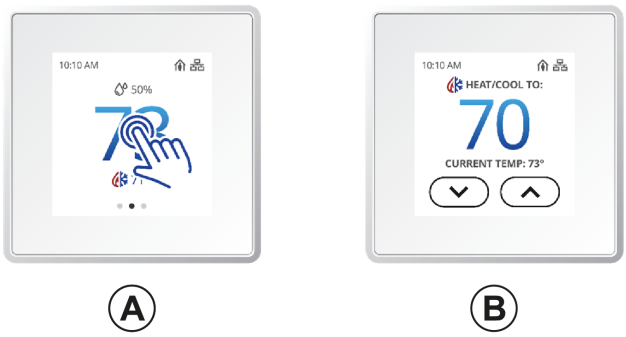
Adjusting the setpoint temperature

1. On the home screen, tap anywhere above the three dots. See callout A in Figure 4.
2. Tap the **Up** or **Down** arrow to raise or lower the setpoint temperature. See callout B in Figure 4.

> **Note:** This setting only applies in common setpoint mode, or when heating or cooling on individual setpoints. In individual setpoints and auto mode, you need to select either the heating or cooling setpoint before you can adjust the setpoints.

3. Tap anywhere outside the arrows to confirm the temperature adjustment or wait 3 s for the thermostat to automatically save the new setpoint temperature.

Figure 4: Setpoint temperature adjustment



Callout	Description
A	Home Screen
B	Setpoint adjustment

Configuring the TEC4000S Series thermostat

To configure the TEC4000S Series Thermostats, select one of the following options:

- Using the setup wizard preset selection.
- Manual Advanced setup options.
- Using the USB port to configure the installation.

Using the setup wizard

Important: After you complete the setup wizard, the default TEC Control Mode is set to **Off**. Before you proceed, navigate to the Control Panel section in the left hand widget and select the required mode for your application. Before you enable the unit, verify whether the device type of the connected equipment is proportional, incremental, or staged to ensure that the TEC configuration corresponds accurately to the equipment type. Incorrect matching between the equipment and the selected TEC control mode may cause incorrect operation, reduced performance, or even potential equipment damage. Carefully inspect and confirm all wiring connections before you enable the TEC. Correct wiring is essential for safe startup and reliable operation.

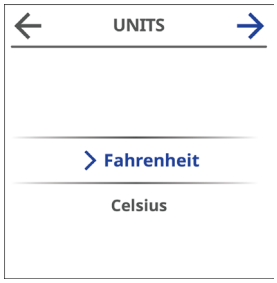
Note: To advance through the screens, tap the blue arrow in the upper-right corner of the screen to proceed to the next screen. For information about additional display configurations, see Configuring the display options.

On first bootup, the following screen displays:

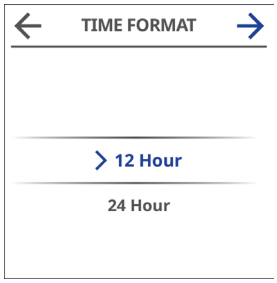
1. Select the required language and tap the blue arrow.

   Note: If you change the language, the thermostat reboots.

2. Select the preferred temperature unit and tap the blue arrow.

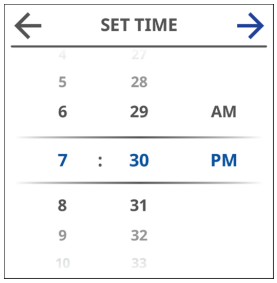


3. Select the preferred time format and tap the blue arrow.



4. Set the local time for the device and tap the blue arrow.

   Note: For networked models that support server time synchronization, the time automatically synchronizes after setup.



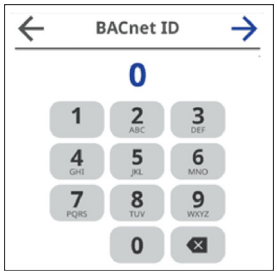
5. Set the calendar date and tap the blue arrow.

6. Set the BACnet address and tap the blue arrow.

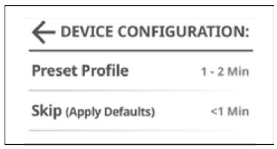
ⓘ **Note:** This screen only shows on a networked model.

7. Set the BACnet ID and tap the blue arrow.

ⓘ **Note:** This screen only shows on a networked model.



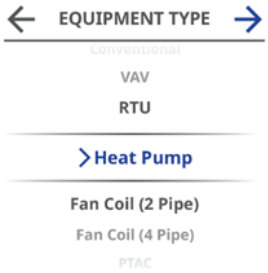
8. Set the configuration to match your HVAC equipment and, when complete, tap the blue arrow.



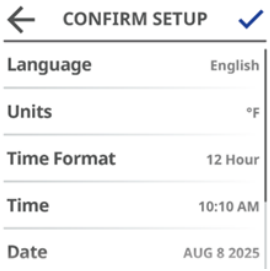
ⓘ **Note:** Select either a preset profile that matches the installed HVAC or skip this configuration step to apply the default settings. Follow Advanced setup to manually configure the thermostat later.

- For more information about available configurations, see Preset profiles.
- For more information about the default profile, see Default profile.

9. If you select the preset profile option, the Equipment Type screen displays. This screen may show different options for the selected equipment type if more than one preset exists. Select the equipment type and tap the blue arrow.



10. Based on the selections in steps 8 and 9, a summary page displays on the next screen. Tap the blue checkmark in the upper-right corner of the screen to save the settings or tap the blue arrow in the upper-left corner of the screen to return to the previous screens to change the selections.



ⓘ **Note:** When you save the settings, the control mode on the different widgets is off. If you need to change additional configurations, see Advanced setup to configure manual settings before you switch the control mode to activate heating or cooling.

Configuring the display options

See the following sections to configure the thermostat display.

Setting the display date

To set the date, select **Settings** > **Display** > **Date**. See the following table for configuration options.

Table 1: Display date configuration

Configuration item	Configuration options	Description
Set Date Format	• YYYY-MM-DD • MM-DD-YYYY • DD-MM-YYYY	Set the display date format.
Date	Day, Month, Year	Set the thermostat date in the required format.

Setting the display time

To set the time, select **Settings** > **Display** > **Time**. See the following table for configuration options.

Table 2: Display time configuration

Configuration item	Configuration options	Description
Set Time Format	• 12 Hours • 24 Hours	Set the display time format.
UTC Offset ⓘ **Note:** This is the difference in hours and minutes between local time and Coordinated Universal Time (UTC).	Range: • Min: -12:30 Hours • Max: +12:30 Hours	Set the UTC Offset for local time.
Time	00:00	Set the thermostat time in the required format.
Daylight Savings	• No • Yes	To enable daylight savings, select **Yes**. Otherwise, select **No**.

Setting the on screen display

To set the on screen display, select **Settings** > **Display** > **On Screen**. See the following table for configuration options.

Table 3: On screen display configuration

Configuration item	Configuration options	Description
Units	• Celsius • Fahrenheit	Select the preferred temperature unit.
Language	• English • Spanish • French	Select the required language. ⓘ **Note:** If you change the language, the thermostat reboots.
Brightness	• Min: 5 • Max: 100	Tap the up and down arrows to increase or decrease the brightness setting.

Table 3: On screen display configuration

Configuration item	Configuration options	Description
Backlight Timeout	• None • 15 seconds • 30 seconds • 1 minute • 2 minutes	Set the duration of the backlight timeout. The timer starts on the home screen and, if no interaction occurs with the display for the set duration, the brightness reduces to 10% when the timer stops. The timer resets if you touch the home screen.
Show Screen Saver	• No • Yes	Select **Yes** to enable the screen saver. ⓘ **Note:** The TEC display remains on and shows only the current zone temperature. If Hospitality Mode is active, the display shows the hospitality mode setpoint. Otherwise, select **No** to disable the screen saver.
Show Occ Status	• No • Yes	Select **Yes** to show the occupancy status icon in the upper-right corner of the display. Otherwise, select **No** to hide the icon.
Show Time	• No • Yes	Select **Yes** to show the time in the upper-left corner of the display. Otherwise, select **No** to hide the time.
Show Branding	• No • Yes	Select **Yes** to show the logo at the top of the display. Otherwise, select **No** to hide the logo.
Show Humidity	• No • Yes	The humidity icon on the home screen displays as %RH. Select **Yes** to show the humidity icon at the top of the display. Otherwise, select **No** to hide the icon.
Show Fault	• No • Yes	An exclamation point on the home screen indicates a fault. Select **Yes** to show the icon in the upper-right corner of the display. Otherwise, select **No** to hide the icon.

Preset profiles

See the following tables for the preset profiles of the HVAC equipment types that the TEC4000S Series supports.

ⓘ **Note:** The VSHP does not have a preset profile.

Table 4: Pressure dependent VAV preset profile

TEC4000S VAV preset	Equipment type	Damper actuator	Reheat installed
0101 (Prop, Cool, Reheat)	VAV	Proportional	Yes
0102 (Incr, Cool, Reheat)	VAV	Incremental	Yes

Table 5: 2-pipe FCU preset profile

TEC4000S 2-pipe FCU preset	Equipment type	FCU type	Heating or cooling type	Changeover mode, sensor	Supply fan type	Reheat installed	Dehumidification
0201 (On/Off, 1Speed, CO)	FCU	2-pipe	Staged	Auto - 10k NTC type 3	Single speed	No	Disabled
0202 (On/Off, 3Speed, CO)	FCU	2-pipe	Staged	Auto - 10k NTC type 3	Multi speed	No	Disabled
0203 (On/Off, VarSpeed, CO)	FCU	2-pipe	Staged	Auto - 10k NTC type 3	Variable speed	No	Disabled
0204 (Prop, 1Speed, CO)	FCU	2-pipe	Proportional	Auto - 10k NTC type 3	Single speed	No	Disabled
0205 (Prop, 3Speed, CO)	FCU	2-pipe	Proportional	Auto - 10k NTC type 3	Multi speed	No	Disabled
0206 (Prop, VarSpeed, CO)	FCU	2-pipe	Proportional	Auto - 10k NTC type 3	Variable speed	No	Disabled
0207 (Incr, 1Speed, CO)	FCU	2-pipe	Incremental	Auto - 10k NTC type 3	Single speed	No	Disabled
0208 (Incr, 3Speed, CO)	FCU	2-pipe	Incremental	Auto - 10k NTC type 3	Multi speed	No	Disabled
0209 (Incr, VarSpeed)	FCU	2-pipe	Incremental	Auto - 10k NTC type 3	Variable speed	No	Disabled
0211 (On/Off, 1Speed, Dehum, Reheat, CO)	FCU	2-pipe	Staged	Auto - 10k NTC type 3	Single speed	Yes	When occupied
0212 (On/Off, 3Speed, Dehum, Reheat, CO)	FCU	2-pipe	Staged	Auto - 10k NTC type 3	Multi speed	Yes	When occupied
0213 (On/Off, VarSpeed, Dehum, Reheat, CO)	FCU	2-pipe	Staged	Auto - 10k NTC type 3	Variable speed	Yes	When occupied
0214 (Prop, 1Speed, Dehum, Reheat, CO)	FCU	2-pipe	Proportional	Auto - 10k NTC type 3	Single speed	Yes	When occupied

Table 5: 2-pipe FCU preset profile

TEC4000S 2-pipe FCU preset	Equipment type	FCU type	Heating or cooling type	Changeover mode, sensor	Supply fan type	Reheat installed	Dehumidification
0215 (Prop, 3Speed, Dehum, Reheat, CO)	FCU	2-pipe	Proportional	Auto - 10k NTC type 3	Multi speed	Yes	When occupied
0216 (Prop, VarSpeed, Dehum, Reheat, CO)	FCU	2-pipe	Proportional	Auto - 10k NTC type 3	Variable speed	Yes	When occupied
0217 (Incr, 1Speed, Dehum, Reheat, CO)	FCU	2-pipe	Incremental	Auto - 10k NTC type 3	Single speed	Yes	When occupied
0218 (Incr, 3Speed, Dehum, Reheat, CO)	FCU	2-pipe	Incremental	Auto - 10k NTC type 3	Multi speed	Yes	When occupied
0219 (Incr, VarSpeed, Dehum, Reheat, CO)	FCU	2-pipe	Incremental	Auto - 10k NTC type 3	Variable speed	Yes	When occupied

Table 6: 4-pipe FCU, single coil preset profile

TEC4000S 4-pipe single coil FCU preset	Equipment type	FCU type	Heating type	Cooling type	Supply fan type	Dehumidification
0301 (On/Off, 1Speed, Dehum)	FCU	4-pipe single coil	Staged	Staged	Single speed	When occupied
0302 (On/Off, 3Speed, Dehum)	FCU	4-pipe single coil	Staged	Staged	Multi speed	When occupied
0303 (On/Off, VarSpeed, Dehum)	FCU	4-pipe single coil	Staged	Staged	Variable speed	When occupied
0304 (Prop, 1Speed, Dehum)	FCU	4-pipe single coil	Proportional	Proportional	Single speed	When occupied
0305 (Prop, 3Speed, Dehum)	FCU	4-pipe single coil	Proportional	Proportional	Multi speed	When occupied

Table 6: 4-pipe FCU, single coil preset profile

TEC4000S 4-pipe single coil FCU preset	Equipment type	FCU type	Heating type	Cooling type	Supply fan type	Dehumidification
0306 (Prop, VarSpeed, Dehum)	FCU	4-pipe single coil	Proportional	Proportional	Variable speed	When occupied
0307 (Incr, 1Speed, Dehum)	FCU	4-pipe single coil	Incremental	Incremental	Single speed	When occupied
0308 (Incr, 3Speed, Dehum)	FCU	4-pipe single coil	Incremental	Incremental	Multi speed	When occupied
0309 (Incr, VarSpeed, Dehum)	FCU	4-pipe single coil	Incremental	Incremental	Variable speed	When occupied

Table 7: 4-pipe FCU, individual coil preset profile

TEC4000S 4-pipe individual coil FCU preset	Equipment type	FCU type	Heating type	Cooling type	Supply fan type	Dehumidification
0601 (On/Off, 1Speed, Dehum)	FCU	4-pipe individual coil	Staged	Staged	Single speed	When occupied
0602 (On/Off, 3Speed, Dehum)	FCU	4-pipe individual coil	Staged	Staged	Multi speed	When occupied
0603 (On/Off, VarSpeed, Dehum)	FCU	4-pipe individual coil	Staged	Staged	Variable speed	When occupied
0604 (Prop, 1Speed, Dehum)	FCU	4-pipe individual coil	Proportional	Proportional	Single speed	When occupied
0605 (Prop, 3Speed, Dehum)	FCU	4-pipe individual coil	Proportional	Proportional	Multi speed	When occupied
0606 (Prop, VarSpeed, Dehum)	FCU	4-pipe individual coil	Proportional	Proportional	Variable speed	When occupied
0607 (Incr, 1Speed, Dehum)	FCU	4-pipe individual coil	Incremental	Incremental	Single speed	When occupied

Table 7: 4-pipe FCU, individual coil preset profile

TEC4000S 4-pipe individual coil FCU preset	Equipment type	FCU type	Heating type	Cooling type	Supply fan type	Dehumidification
0608 (Incr, 3Speed, Dehum)	FCU	4-pipe individual coil	Incremental	Incremental	Multi speed	When occupied
0609 (Incr, VarSpeed, Dehum)	FCU	4-pipe individual coil	Incremental	Incremental	Variable speed	When occupied

Table 8: 4-pipe FCU, 6-way valve preset profile

TEC4000S 4-pipe single coil FCU with 6-Way Valve preset	Equipment type	FCU type	Six way valve type	Voltage range	Supply fan type	Dehumidification
0501 (Prop, 1Speed, Dehum)	FCU	4-pipe single coil	Proportional	0 V to 10 V	Single speed	When occupied
0502 (Prop, 3Speed, Dehum)	FCU	4-pipe single coil	Proportional	0 V to 10 V	Multi speed	When occupied
0503 (Prop, VarSpeed, Dehum)	FCU	4-pipe single coil	Proportional	0 V to 10 V	Variable speed	When occupied

Table 9: 4-pipe FCU, changeover valve preset profile

TEC4000S 4-pipe single coil FCU with Changeover Valve preset	Equipment type	FCU type	Heating orcooling type	Changeover valve installed	Supply fan type	Dehumidification
0401 (On/ Off, 1Speed, Dehum)	FCU	4-pipe single coil	Staged	Yes	Single speed	When occupied
0402 (On/ Off, 3Speed, Dehum)	FCU	4-pipe single coil	Staged	Yes	Multi speed	When occupied
0403 (On/Off, VarSpeed, Dehum)	FCU	4-pipe single coil	Staged	Yes	Variable speed	When occupied

Table 10: Conventional or packaged units preset profile

TEC4000S RTU preset	Equipment type	Heating stages	Cooling stages	Dehumidification
0701 (1 Heat, 1 Cool, Dehum)	RTU	One stage	One stage	When occupied
0702 (2 Heat, 1 Cool, Dehum)	RTU	Two stage	One stage	When occupied
0703 (1 Heat, 2 Cool, Dehum)	RTU	One stage	Two stage	When occupied
0704 (2 Heat, 2 Cool, Dehum)	RTU	Two stage	Two stage	When occupied

Table 11: RTU heat pump (HP) preset profile

TEC4000S RTU HP preset	Equipment type	Compressor stages	Supplemental heating	Dehumidification
0801 (1 Comp, Dehum)	RTU with HP	One stage	n/a	When occupied
0802 (1 Comp, 1 Sup, Dehum)	RTU with HP	One stage	One stage	When occupied
0803 (1 Comp, 2 Sup, Dehum)	RTU with HP	One stage	Two stage	When occupied
0804 (2 Comp, Dehum)	RTU with HP	Two stage	n/a	When occupied
0805 (2 Comp, 1 Sup, Dehum)	RTU with HP	Two stage	One stage	When occupied
0806 (2 Comp, 2 Sup, Dehum)	RTU with HP	Two stage	Two stage	When occupied

Table 12: PTAC preset profile

TEC4000S PTAC preset	Equipment type	Heating stage	Cooling stage	Supply fan type
0901 (1 Heat, 1 Cool, 1 Speed Fan)	PTAC	One stage	One stage	Single speed
0902 (1 Heat, 1 Cool, 2 Speed Fan)	PTAC	One stage	One stage	Two speed

Table 13: PTHP preset profile

TEC4000S PTAC HP preset	Equipment type	Compressor stages	Supply fan type
1001 (1 Comp, 1 Speed Fan)	PTAC with HP	One stage	Single speed
1002 (1 Comp, 2 Speed Fan)	PTAC with HP	One stage	Two speed

Table 14: Heat only systems preset profile

TEC4000S Conventional heat preset	Equipment type	Conventional heating	Heating type	Frost protection
1101 (Gas Heat)	Conventional heating	Gas	Staged	Enabled
1102 (Electric Heat)	Conventional heating	Electric	Staged	Enabled
1103 (Radiant Stgd Heat)	Conventional heating	Radiant	Staged	Enabled
1104 (Radiant Prop Heat)	Conventional heating	Radiant	Proportional	Enabled

Default profile

If you skip the Preset profiles, the TEC4000S automatically configures to the following default profile settings.

Table 15: Default configuration profile

Equipment type	Heating stages	Cooling stages	Dehumidification
RTU	One stage	One stage	When occupied

Commissioning or test mode

Use test mode to command outputs directly, which disables internal logic for output control.

To configure test mode, select **Advanced** > **Test Equipment** and complete the following steps:

1. Tap **Confirm** to begin testing the equipment.
2. When you are ready to stop testing the equipment, the system requests confirmation.
3. Tap **Confirm** to stop testing the equipment or tap **Cancel** to continue testing the equipment. See the following figure.

Figure 5: Configuring test mode

ⓘ **Note:** The availability of test options depends on the equipment type and the configuration of the test mode:

- **Test Cooling**, **Test Heating**, and **Test Fan** options appear for equipment without reheat installed.
- **Test Cooling**, **Test Heating**, **Test Reheat**, and **Test Fan** options appear for equipment with reheat installed. For example, 2-Pipe FCU and VAV.

Testing the cooling

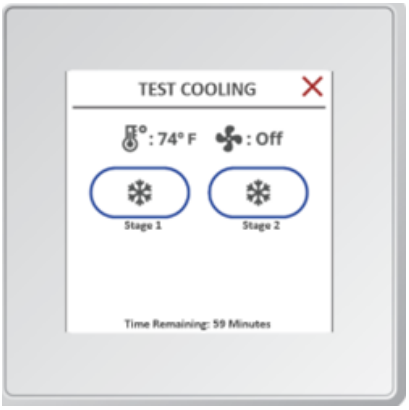
To test the cooling, select **Advanced** > **Test Equipment** > **Test Cooling**.

For staged outputs, the screen displays options for each stage:

- If there is one stage, one button displays.
- If there are two stages, two buttons display.

See the following figure.

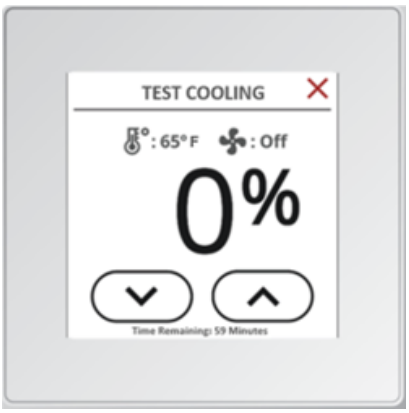
Figure 6: Test cooling for staged outputs



- Tap on the relevant button to command that particular stage. The button turns blue to indicate that the stage is **On**.

For incremental or proportional outputs, the screen display % command with **Up** and **Down** arrows to increase and decrease the test cool command. See the following figure.

Figure 7: Test cooling incremental or proportional outputs



Testing the heating

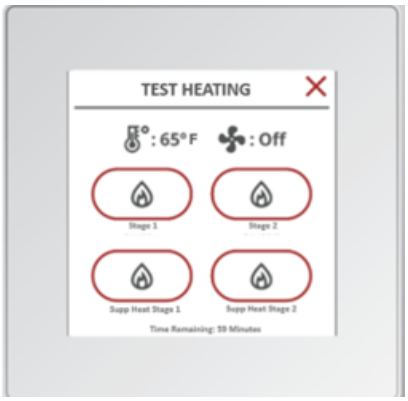
To test the heating, select **Advanced** > **Test Equipment** > **Test Heating**.

For staged outputs, the screen displays options for each stage:

- If there is one stage, one button displays.
- If there are two stages, two buttons display.

ⓘ **Note:** If you install supplemental heat, the corresponding option displays for one stage or two stages. See the following figure.

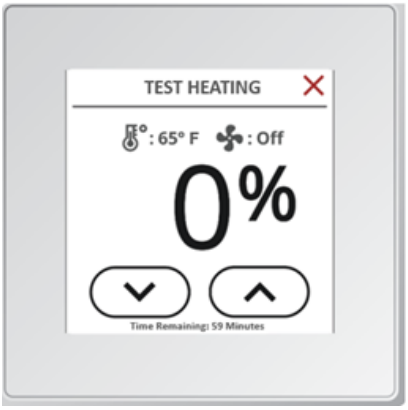
Figure 8: Test heating for staged outputs



- Tap on the relevant button to command that particular stage. The button turns red to indicate that the stage is **On**.

For incremental or proportional outputs, the screen display % command with **Up** and **Down** arrows to increase and decrease the test heat command. See the following figure.

Figure 9: Test heating incremental or proportional outputs



Testing the reheat

To test the reheat, select **Advanced** > **Test Equipment** > **Test Reheat**.

For a 2-pipe FCU and a VAV with optional reheat, the screen in the following figure displays.

Figure 10: Testing optional reheat

- Tap on **Stage 1** to command that stage. The button turns red to indicate that the stage is **On**.

Testing the supply fan

To test the supply fan, select **Advanced** > **Test Equipment** > **Test Fan**.

For a single speed fan, the screen in the following figure displays.

Figure 11: Single speed fan

Scroll through the options and select **On** if you want to turn on the fan. Otherwise, select **Off**.

For a multi speed or variable speed fan, the screen in the following figure displays.

Figure 12: Multi speed or variable speed fan

Scroll through the options and select **Low**, **Medium**, or **High** to turn on the fan at the required speed. Otherwise, select **Off**

Advanced setup

The TEC4000S Series supports the equipment types listed in Applications. Unless otherwise specified, all configuration options are located under **Advanced** > **Equipment Setup** > **Equipment**.

- To confirm a selection, tap ✓ in the upper-left corner of the display.
- To cancel a selection, tap **X** in the upper-right corner of the display.

ⓘ **Note:** If you reset the thermostat to factory settings, the default configuration settings shown in Table 70 are reinstalled in the thermostat.

See the following sections to manually configure the different equipment types and thermostat settings.

Configuring a pressure dependent VAV with or without reheat

To configure a pressure dependent VAV with our without reheat, select **Advanced** > **Equipment Setup** > **Equipment** > **Equipment Type**. See the following table for configuration options.

Table 16: Pressure dependent VAV with or without reheat

Configuration item	Configuration options	Description
Equipment Type	• VAV • Fan Coil Unit • RTU • PTAC • Vertical Heat Pump • Conventional heating	From the list of equipment types, elect **VAV**.
Actuator Type	• Proportional • Incremental	Select the actuator control type.
Actuator Stroke Time	Range: • Min: 5 seconds • Max: 300 seconds	Sets the stroke time if you select the actuator type as **Incremental**. To configure this setting, enter a value in the defined range.

You can configure additional options as follows:

- To configure VAV changeover, see the Configuring a pipe sensor or switch input for automatic changeover section.
- To configure VAV reheat, see the Configuring optional reheat section.

Configuring a Fan Coil Unit

To configure a Fan Coil Unit (FCU), select **Advanced** > **Equipment Setup** > **Equipment** > **Equipment Type**. See the following tables for configuration options.

Table 17: Configuration options for any FCU

Configuration item	Configuration options	Description
Equipment Type	• VAV • Fan Coil Unit • RTU • PTAC • Vertical Heat Pump • Conventional heating	From the list of equipment types, select **Fan Coil Unit**.
Unit Type	• 2-pipe • 4-pipe	Select the preferred configuration option.

Table 18: Configuration options for a 2-pipe FCU

Configuration item	Configuration options	Description
Htg/Clg Device type	• StagedTable 19 • ProportionalTable 21 • IncrementalTable 22	• Select **Staged** for an On/Off heating or cooling device. • Select **Proportional** for a proportional heating or cooling device. • Select **Incremental** for an incremental heating or cooling device.

Table 19: Configuration options for an FCU with staged outputs

Configuration item	Configuration options	Description
Cooling Min On Time	Range: • Min: 120 seconds • Max: 360 seconds	Determines how long a cooling stage must remain active under normal control conditions. To configure this setting, enter a value in the defined range. ⓘ **Note:** When the zone temperature (ZNT) exceeds the effective setpoint, cooling begins. If the unit reaches the setpoint before the minimum cooling on-time expires, cooling turns off to prevent over-cooling.
Cooling Min Off Time	Range: • Min: 120 seconds • Max: 360 seconds	Determines how long a cooling stage must remain inactive under normal control conditions. To configure this setting, enter a value in the defined range. ⓘ **Note:** When the ZNT exceeds the effective setpoint, cooling begins. If the unit reaches the setpoint before the minimum cooling on-time expires, cooling turns off to prevent overcooling.

Table 19: Configuration options for an FCU with staged outputs

Configuration item	Configuration options	Description
Heating Min On Time	Range: • Min: 120 seconds • Max: 360 seconds	Determines how long a heating stage must remain active under normal control conditions. To configure this setting, enter a value in the defined range. ⓘ **Note:** When the ZNT is below the effective setpoint, heating begins. If the unit reaches the setpoint before the minimum heating on-time expires, heating turns off to prevent overheating
Heating Min Off Time	Range: • Min: 120 seconds • Max: 360 seconds	Determines how long a heating stage must remain inactive under normal control conditions. To configure this setting, enter a value in the defined range. ⓘ **Note:** When the ZNT is below the effective setpoint, heating begins. If the unit reaches the setpoint before the minimum heating on-time expires, heating turns off to prevent overheating

Table 20: Configuration options for a 4-pipe FCU

Configuration item	Configuration options	Description
FCU Type	Single coil	Configure the 4-pipe FCU as either a single coil.
Changeover Valve Installed	• No • Yes	Select **Yes** or **No** to specify whether or not a changeover valve is installed.
Six Way Valve Installed	• No • Yes	Select **Yes** or **No** to specify whether or not a 6-way valve is installed.
Six Way Valve Voltage Range	• 0 V to 10 V • 2 V to 10 V	This additional option is available if you select **Yes** for 6-way valve installed. Select the required voltage range: • For 0 V to 10 V: - Cooling: 0 V to 4.5 V - Heating: 5.5 V to 10 V • 2 V to 10 V: - Cooling: 2 V to 5.6 V - Heating: 6.4 V to 10 V
FCU Type	Individual coil	Configure the 4-pipe FCU as an individual coil.

Table 20: Configuration options for a 4-pipe FCU

Configuration item	Configuration options	Description
Cooling Device Type ⓘ **Note:** The Cooling Device Type option is not available if you set either **Changeover Valve Installed** or **Six Way Valve Installed** to **Yes**. If you install a changeover valve, the device operates as a staged output, whereas if you install a six way valve, the device operates as a proportional output.	• StagedTable 19 • ProportionalTable 21 • IncrementalTable 22	• Select **Staged** for an On/Off heating or cooling device. • Select **Proportional** for a proportional cooling device. • Select **Incremental** for an incremental cooling device.
Heating Device Type ⓘ **Note:** The Heating Device Type option is not available if you set either **Changeover Valve Installed** or **Six Way Valve Installed** to **Yes**. If you install a changeover valve, the device operates as a staged output, whereas if you install a six way valve, the device operates as a proportional output.	• StagedTable 19 • ProportionalTable 21 • IncrementalTable 22	• Select **Staged** for an on-off heating device. • Select **Proportional** for a proportional heating device. • Select **Incremental** for an incremental heating device.

Table 21: Configuration options for an FCU with proportional heating or cooling device type

Configuration item	Configuration options	Description
Valve Open Voltage	Range: • Min: 0 VDC • Max: 10 VDC	This option is available when you set the Heating or Cooling device type to **Proportional** on an FCU without a 6-way valve and changeover valve or when you set the actuator type to **Proportional** on a VAV. Use this option to set the open voltage for hydronic valves. To configure this setting, enter a value in the defined range.
Valve Closed Voltage	Range: • Min: 0 VDC • Max: 10 VDC	This option is available when you set the Heating or Cooling device type to **Proportional** on an FCU without a 6-way valve and changeover valve or when you set the actuator type to **Proportional** on a VAV. Use this option to set the closed voltage for hydronic valves. To configure this setting, enter a value in the defined range.

Table 22: Configuration options for an FCU with incremental heating or cooling device type

Configuration item	Configuration options	Description
Actuator Stroke Time	Range: • Min: 5 seconds • Max: 300 seconds	Sets the actuator stroke time. To configure this setting, enter a value in the defined range.

Configuring the supply fan for all FCU

To configure the supply fan for all FCU, select **Advanced** > **Equipment Setup** > **Supply Fan** > **Supply Fan Type**. See the following table for configuration options.

Table 23: Supply fan configuration

Configuration item	Configuration options	Description
Supply Fan Type	• Single Speed • Multi Speed • Variable Speed	The FCU supports three fan types: • Select **Single Speed** if you only install one fan stage • Select **Multi Speed** if you install three fan stages. • Select **Variable Speed** if you install a variable speed fan.
Fan On Delay	Range: • Min: 0 seconds • Max: 120 seconds	Determines how long the fan takes to start after you switch the heating or cooling command to active. To configure this setting, enter a value in the defined range.
Fan Off Delay	Range: • Min: 0 seconds • Max: 120 seconds	Determines how long the fan takes to stop after you switch the heating or cooling command to inactive. To configure this setting, enter a value in the defined range.

Table 24: Additional configuration options for a multi-speed fan

Configuration item	Configuration options	Description
Fan Operation Mode	• Set Individual • Set Multiple	This option determines how the fan turns on. • Select **Set Individual** if you only want one fan speed to run at a time, either low, medium, or high, based on requirements. • Select **Set Multiple** for the fan to turn on the selected speed and all lower speeds at the same time. For example, when high speed is on, low and medium speed also run.

Configuring optional reheat

This configuration applies to both FCU and VAV equipment. To configure optional reheat, select **Advanced** > **Equipment Setup** > **Equipment** > **Reheat**. See the following table for configuration options.

Table 25: Optional reheat configuration

Configuration item	Configuration options	Description
Reheat Installed	• No • Yes	For a 2-pipe FCU or VAV, select **Yes** if reheat is present, otherwise select **No**.
Reheat Min On Time	Range: • Min: 120 seconds • Max: 360 seconds	Determines how long reheat must remain active under normal control conditions. To configure this setting, enter a value in the defined range.
Reheat Min Off Time	Range: • Min: 120 seconds • Max: 360 seconds	Determines how long reheat must remain inactive under normal control conditions. To configure this setting, enter a value in the defined range.
Reheat Min Damper Pos	Range: • Min: 0% • Max: 100%	Sets the minimum damper position for VAV when reheat is active to meet the minimum airflow requirement. To configure this setting, enter a value in the defined range.
Reheat Fan Required	• No • Yes	• For a 2-pipe FCU, select **Yes** to keep the fan running whenever the reheat device is active. Otherwise, select **No**. • For a VAV, select **Yes** to keep the damper open to **Reheat Min Damper Pos** whenever the reheat device is active. Select **No** to keep the VAV damper closed. ⓘ **Note:** For box-mounted reheat devices, select **Yes**. For base-board reheat devices, select **No**.

Configuring a pipe sensor or switch input for automatic changeover

To configure a pipe sensor or switch input for automatic changeover, select **Advanced** > **Equipment Setup** > **Changeover**. See the following table for configuration options.

Table 26: Pipe sensor or switch input for automatic changeover configuration

Configuration item	Configuration options	Description
Changeover Mode. See note.	• Auto • Heating • Cooling	• Select **Auto** to automatically switch the TEC4000S between heating or cooling mode based on supply air or water temperature. • Select **Heating** to always operate the equipment as heating only. • Select **Cooling** to always operate the equipment as cooling only.
Sensor Type	• Analog Sensor • Heating NC • Cooling NC ⓘ **Note:** NC stands for Normally Closed.	This option applies for Changeover Mode set to **Auto**. • Select **Analog Sensor** if the resistive temperature sensor connects to the UI3 input port. • Select **Heating NC** if the switch that closes above a certain temperature connects to the UI3 input port. • Select **Cooling NC** if the switch that closes below a certain temperature connects to the UI3 input port.
Temperature Sensor Type	• Nickel • Platinum • A99B • x225k_NTC • x10k_NTC • x10k_NTC_Type_3	This option applies for an **Analog Sensor** Sensor Type selection. Use this option to configure the changeover temperature sensor type.
Changeover Setpoint	Range: • Min: 40°F (4°C) • Max: 200°F (93°C)	Configures the temperature above which the TEC4000S switches from cooling mode to heating mode. The thermostat enters cooling mode below this setpoint and does not switch back to heating mode until the temperature rises more than 10°F above this setpoint. To configure this setting, enter a value in the defined range.

ⓘ **Note:**

- An FCU with a changeover sensor enables heating or cooling only when the supply water temperature is suitable to prevent energy waste and comfort issues. If the water temperature is opposite or neutral, the controller inhibits valve and fan operation. This avoids blowing warm air during cooling demand or cold air during heating demand, which protects the zone.
- Connect the changeover sensor or switch to the UI3 terminal only.

Enabling dehumidification for FCU

To enable dehumidification for all FCU, select **Advanced** > **Equipment Setup** > **Dehumidification**.

ⓘ **Note:** For 2-pipe FCU, dehumidification options are available only when you select Reheat Installed as **Yes**.

See the following table for configuration options.

Table 27: Dehumidification configuration for fan coils

Configuration item	Configuration options	Description
Dehum Enable	• Disable • When Occupied • Always	• Select **Always** if dehumidification is always required. • Select **When Occupied** if dehumidification is required only during occupied periods. • Select **Disable** if dehumidification is not required.
External Dehumidifier Installed	• No • False	Select **True** if dehumidification is required and you install an external dehumidifier. Otherwise, select **False**.
Cooling Valve Minimum Position	Range: • Min: 50% • Max: 75%	This option is available for 4-pipe Individual Coil or 2-pipe FCU with reheat and is available when you select External Dehumidifier as **No** and you select **Proportional** or **Incremental** output. To prevent the valve from overcooling during dehumidification, set the minimum position that the cooling valve can reach during dehumidification. To configure this setting, enter a value in the defined range.
Cooling Valve Starting Position	Range: • Min: 50% • Max: 100%	This option is available for 4-pipe Individual Coil or 2-pipe FCU with reheat and sets the position at which the cooling valve opens at the start of dehumidification. This option is available when you select External Dehumidifier as **No** and you select **Proportional** or **Incremental** output.To configure this setting, enter a value in the defined range.

Table 27: Dehumidification configuration for fan coils

Configuration item	Configuration options	Description
Heating Valve Starting Position	Range: • Min: 0% • Max: 100%	This option is available for 4-pipe Individual Coil and determines when the heating valve opens at the start of dehumidification to maintain the zone temperature for active dehumidification. This option is available when you select External Dehumidifier as **No** and you select **Proportional** or **Incremental** output.To configure this setting, enter a value in the defined range.
Coil Tempering Time	Range: • Min: 3 minutes • Max: 10 minutes	This option is available for a 4-pipe Single Coil and sets the duration to wait to switch between opening the cooling valve or heating valve for FCU. This option is available when you select External Dehumidifier as **No** and you select **Proportional** or **Incremental** output. To configure this setting, enter a value in the defined range.
Dehumidification Overcool Limit	Range: • Min: 1°F (-17°C) • Max: 5°F (-15°C)	This option is available for 4-pipe Single Coil and sets the overcool limit for dehumidification. Active dehumidification of the zone stops if the zone temperature drops below this limit. To configure this setting, enter a value in the defined range.
Chilled Water Supply Temperature Setpoint	Range: • Min: 39°F (4°C) • Max: 64°F (18°C)	This option is available only if no chilled water supply temperature sensor connects to the TEC4000S or no value registers at the network chilled water supply temperature setpoint. To configure this setting, enter a value in the defined range.

Configuring a conventional RTU

To configure a conventional RTU, select **Advanced** > **Equipment Setup** > **Equipment** > **Equipment Type**. See the following table for configuration options.

ⓘ **Note:** Single speed fan output is automatically assigned on terminal x for an RTU.

Table 28: Conventional RTU configuration

Configuration item	Configuration options	Description
Equipment Type	• VAV • Fan Coil Unit • RTU • PTAC • Vertical Heat Pump • Conventional heating	From the list of equipment types, select **RTU**.
Heat Pump Supported	• No • Yes	For a standard RTU configuration, select **No**.
Number of compressors	• Not Used • One Stage • Two stages	Select the required number of compressors.
Runtime equalization	• No • Yes	This option is available when you select the **Number of Compressors** as more than One Stage. Select **Yes** to enable lead lag operation, otherwise select **No**.
Number of Heating Stages	• Not Used • One Stage • Two Stages	Configure the number of required heating stages.
Cooling Min On Time	Range: • Min: 120 seconds • Max: 360 seconds	Determines how long a cooling stage must remain active under normal control conditions. To configure this setting, enter a value in the defined range. ⓘ **Note:** When the ZNT exceeds the effective setpoint, cooling begins. If the unit reaches the setpoint before the minimum cooling on-time expires, cooling turns off to prevent overcooling.
Cooling Min Off Time	Range: • Min: 120 seconds • Max: 360 seconds	Determines how long a cooling stage must remain inactive under normal control conditions. To configure this setting, enter a value in the defined range.

Table 28: Conventional RTU configuration

Configuration item	Configuration options	Description
Heating Min On Time	Range: • Min: 120 seconds • Max: 360 seconds	Determines how long a heating stage must remain active under normal control conditions. To configure this setting, enter a value in the defined range. ⓘ **Note:** When the ZNT goes below the effective setpoint, heating begins. If the unit reaches the setpoint before the minimum heating on-time expires, heating turns off to prevent overheating.
Heating Min Off Time	Range: • Min: 0 • Max: 360 seconds	Determines how long a heating stage must remain inactive under normal control conditions. To configure this setting, enter a value in the defined range.
Cooling Lockout Temp	Range: • Min: 0°F (18°C) • Max: 60°F (16°C)	This option is available for UIx Config set to **Analog** and Sensor Type set to **Outdoor Air Temperature** and sets the limit for outdoor air temperature below which cooling does not run, regardless of zone temperature. To configure this setting, enter a value in the defined range.
Heating Lockout Temp	Range: • Min: 55°F (13°C) • Max: 100°F (38°C)	This option is available for UIx Config set to **Analog** and Sensor Type set to **Outdoor Air Temperature** and sets the limit for outdoor air temperature above which heating does not run, regardless of zone temperature. To configure this setting, enter a value in the defined range. ⓘ **Note:** Frost protection overrides this lockout setting.

Configuring a heat pump or RTU heat pump

To configure a heat pump or RTU heat pump, select **Advanced** > **Equipment Setup** > **Equipment** > **Equipment Type**. See the following table for configuration options for a heat pump or an RTU with the heat pump enabled.

ⓘ **Note:** Single speed fan output is automatically assigned on terminal x for an RTU with a HP.

Table 29: Heat pump configuration

Configuration item	Configuration options	Description
Equipment Type	• VAV • Fan Coil Unit • RTU • PTAC • Vertical Heat Pump • Conventional heating	From the list of equipment types, select **RTU**.
Heat Pump Supported	• No • Yes	Select **Yes** to enable heat pump configuration.
Reversing Valve Polarity	• Energize for Cooling • Energize for Heating	Choose from the following options to configure the polarity of the reversing valve (O/B valve) in a heat pump setup: • Select **Energize for Cooling** to turn on the O/B valve during cooling and off during heating. • Select **Energize for Heating** to turn on the O/B valve during heating and off during cooling.
Number of compressors	• Not Used • One Stage • Two stages	Select the required number of compressors.
Runtime equalization	• No • Yes	Select **Yes** to enable lead lag operation. Otherwise select **No**.
Compressor Min On Time	Range: • Min: 120 seconds • Max: 360 seconds	Determines how long a compressor must remain active under normal control conditions. To configure this setting, enter a value in the defined range. ⓘ **Note:** When the ZNT exceeds the respective effective set-point, cooling or heating begins. If the unit reaches the setpoint before the minimum on-time expires, cooling or heating turns off to prevent overcooling or over heating.

Table 29: Heat pump configuration

Configuration item	Configuration options	Description
Compressor Min Off Time	Range: • Min: 120 seconds • Max: 360 seconds	Determines how long a compressor must remain inactive under normal control conditions. To configure this setting, enter a value in the defined range.
Cooling Lockout Temp	Range: • Min: 0°F (18°C) • Max: 60°F (16°C)	This option **is** available when UIx Config is set to **Analog** and Sensor Type is set to **Outdoor Air Temperature** and determines the limit for outdoor air temperature below which cooling does not run, regardless of zone temperature. To configure this setting, enter a value in the defined range.
Heating Lockout Temp	Range: • Min: 55°F (13°C) • Max: 100°F (38°C)	This option is available when UIx Config is set to **Analog** and Sensor Type is set to **Outdoor Air Temperature**and determines the limit for outdoor air temperature above which heating does not run, regardless of zone temperature. To configure this setting, enter a value in the defined range. ⓘ **Note:** Frost protection overrides this lockout setting.

Configuring supplemental heat

Supplemental heat is available only for an RTU with heat pump enabled. To configure supplemental heat, select **Advanced** > **Equipment Setup** > **Supplemental Heat**. See the following table for configuration options.

Table 30: Supplemental heat configuration

Configuration item	Configuration options	Description
Number of Supp Heating Stages	• Not used • One Stage • Two Stage	Select the number of required supplemental heat stages.
Supp Min On Time	Range: • Min: 120 seconds • Max: 360 seconds	Set how long supplemental heat must remain active under normal conditions. To configure this setting, enter a value in the defined range.
Supp Min Off Time	Range: • Min: 120 seconds • Max: 360 seconds	Set how long supplemental heat must remain inactive under normal conditions. To configure this setting, enter a value in the defined range.

Table 30: Supplemental heat configuration

Configuration item	Configuration options	Description
Supp High OA Lockout Temp	Range: • Min: -20°F (29°C) • Max: 100°F (38°C)	Set the limit for the outdoor air temperature above which supplemental heating does not run. To configure this setting, enter a value in the defined range.
Comp Low Lockout Temp	Range: • Min: -20°F (29°C) • Max: 100°F (38°C)	Set the limit for the outdoor air temperature below which compressor heating does not run. To configure this setting, enter a value in the defined range.

Configuring a heat pump unit fan

To configure a heat pump unit fan, select **Advanced** > **Equipment Setup** > **Supply Fan**. See for configuration options.

Configuring dehumidification for a conventional RTU or heat pump

To configure dehumidification, select **Advanced** > **Equipment Setup** > **Dehumidification**. See the following table for configuration options.

Table 31: Dehumidification configuration

Configuration item	Configuration options	Description
Dehum Enable	• Disable • When Occupied • Always	To enable dehumidification control: • Select **Always** if dehumidification is always required. • Select **When Occupied** if dehumidification is only needed during occupied periods. • Select **Disable** if dehumidification is not required.
External Dehumidifier Installed	• No • Yes	Select **True** if you install an external dehumidifier. Otherwise, select **False**.

Configuring a Vertical Stacked Heat Pump

To configure a Vertical Stacked Heat Pump (VSHP), select **Advanced** > **Equipment Setup** > **Equipment** > **Equipment Type**. See the following table for configuration options for a VSHP.

Table 32: VSHP configuration

Configuration item	Configuration options	Description
Equipment Type	• VAV • RTU • PTAC • Vertical Heat Pump • Conventional heating	From the list of equipment types, select **Vertical Heat Pump**.
Reversing Valve Polarity	• Energize for Cooling • Energize for Heating	Choose from the following options to configure the polarity of the reversing valve (O/B valve) in a heat pump setup: • Select **Energize for Cooling** to turn on the O/B valve during cooling and off during heating. • Select **Energize for Heating** to turn on the O/B valve during heating and off during cooling.
Compressor Min On Time	Range: • Min: 120 seconds • Max: 360 seconds	Determines how long a compressor must remain active under normal control conditions. To configure this setting, enter a value in the defined range. ⓘ **Note:** Note: When the ZNT exceeds the respective effective setpoint, cooling or heating begins. If the unit reaches the setpoint before the minimum on-time expires, cooling or heating turns off to prevent overcooling or overheating.
Compressor Min Off Time	Range: • Min: 120 seconds • Max: 360 seconds	Determines how long a compressor must remain inactive under normal control conditions. To configure this setting, enter a value in the defined range.

Table 32: VSHP configuration

Configuration item	Configuration options	Description
Cooling Lockout Temp	Range: • Min: 0°F (18°C) • Max: 60°F (16°C)	This option is available when UIx Config is set to **Analog** and Sensor Type is set to **Outdoor Air Temperature** and determines the limit for outdoor air temperature below which cooling does not run, regardless of zone temperature. To configure this setting, enter a value in the defined range.
Heating Lockout Temp	Range: • Min: 55°F (13°C) • Max: 100°F (38°C)	This option is available when UIx Config is set to **Analog** and Sensor Type is set to **Outdoor Air Temperature** and determines the limit for outdoor air temperature above which heating does not run, regardless of zone temperature. To configure this setting, enter a value in the defined range. ⓘ **Note:** Frost protection overrides this lockout setting.

ⓘ **Note:** For VSHP, the Compressor Min On/Off Time setting is required only for Vertical Heat Pump systems. For Water Sourced Vertical Heat Pumps, the Compressor Min On/Off Time setting is not required. The TEC4000S does not currently differentiate between Vertical Heat Pumps and Water Sourced Vertical Heat Pumps in the user interface. As a result, the Compressor Min On/Off Time setting is visible for both equipment types.

Configuration options:

- You can set the Compressor Min On/Off Time only when you select a Vertical Heat Pump.
- A Water Sourced Vertical Heat Pump has the default option of 180 seconds and you cannot change this setting. Select Vertical Heat Pump from the equipment type list.

Configuring a 3-speed fan

To configure a 3-speed fan, select **Advanced** > **Equipment Setup** > **Supply Fan**. See the following table for configuration options.

Table 33: 3-speed fan configuration

Configuration item	Configuration options	Description
Fan Operation Mode	• Set Individual • Set Multiple	Select **Set Multiple** for the fan to turn on the selected speed and all lower speeds at the same time. For example, when high speed is on, low and medium speed also run. For **Set Individual**, only one speed runs, either low, medium, or high, based on requirements.
Fan On Delay	Range: • Min: 0 seconds • Max: 120 seconds	Determines the delay before the fan starts. To configure this setting, enter a value in the defined range.
Fan Off Delay	Range: • Min: 0 seconds • Max: 120 seconds	Determines the delay before the fan stops. To configure this setting, enter a value in the defined range.

Configuring a conventional PTAC

To configure a conventional PTAC, select **Advanced** > **Equipment Setup** > **Equipment** > **Equipment Type**. See the following table for configuration options.

Table 34: Conventional PTAC configuration

Configuration item	Configuration options	Description
Equipment Type	• VAV • Fan Coil Unit • RTU • PTAC • Vertical Heat Pump • Conventional heating	From the list of equipment types, select **PTAC**.
Heat Pump Supported	• No • Yes	For a basic PTAC configuration without a heat pump, select **No**.
Cooling Min On Time	Range: • Min: 120 seconds • Max: 360 seconds	Determines how long a cooling stage must remain active under normal control conditions. To configure this setting, enter a value in the defined range. ⓘ **Note:** Note: When the ZNT exceeds the effective setpoint, cooling begins. If the unit reaches the setpoint before the minimum cooling on-time expires, cooling turns off to prevent overcooling.

Table 34: Conventional PTAC configuration

Configuration item	Configuration options	Description
Cooling Min Off Time	Range: • Min: 120 seconds • Max: 360 seconds	Determines how long a cooling stage must remain inactive under normal control conditions. To configure this setting, enter a value in the defined range.
Heating Min On Time	Range: • Min: 120 seconds • Max: 360 seconds	Determines how long a heating stage must remain active under normal control conditions. To configure this setting, enter a value in the defined range. ⓘ **Note:** Note: When the ZNT is below the effective setpoint, heating begins. If the unit reaches the setpoint before the minimum heating on-time expires, heating turns off to prevent overheating.
Heating Min Off Time	Range: • Min: 0 • Max: 360 seconds	Determines how long a heating stage must remain inactive under normal control conditions. To configure this setting, enter a value in the defined range.
Cooling Lockout Temp	Range: • Min: 0°F (18°C) • Max: 60°F (16°C)	This option is available when UIx Config is set to **Analog** and Sensor Type is set to **Outdoor Air Temperature** and determines the limit for outdoor air temperature below which cooling does not run, regardless of zone temperature. To configure this setting, enter a value in the defined range.
Heating Lockout Temp	Range: • Min: 55°F (13°C) • Max: 100°F (38°C)	This option is available when UIx Config is set to **Analog** and Sensor Type is set to **Outdoor Air Temperature** and determines the limit for outdoor air temperature above which heating does not run, regardless of zone temperature. To configure this setting, enter a value in the defined range. ⓘ **Note:** Frost protection over-rides this lockout setting.

Configuring a heat pump PTAC

To configure a heat pump PTAC, select **Advanced** > **Equipment Setup** > **Equipment** > **Equipment Type**. See the following table for configuration options.

Table 35: Conventional PTAC with heat pump configuration

Configuration item	Configuration options	Description
Equipment Type	• VAV • Fan Coil Unit • RTU • PTAC • Vertical Heat Pump • Conventional heating	From the list of equipment types, select **PTAC**.
Heat Pump Supported	• No • Yes	To configure the PTAC with a heat pump, select **Yes**. Otherwise, select **No**.
Reversing Valve Polarity	• Energize for Cooling • Energize for Heating	Choose from the following options to configure the polarity of the reversing valve (O/B valve) in a heat pump setup. • Select **Energize for Cooling** to turn on the O/B valve during cooling and off during heating. • Select **Energize for Heating** to turn on the O/B valve during heating and off during cooling.
Compressor Min On Time	Range: • Min: 120 seconds • Max: 360 seconds	Determines how long a compressor must remain active under normal control conditions. To configure this setting, enter a value in the defined range. ⓘ **Note:** Note: When ZNT exceeds the respective effective set-point, cooling or heating begins. If the unit reaches the setpoint before the minimum on-time expires, cooling or heating turns off to prevent overcooling or over heating.
Compressor Min Off Time	Range: • Min: 120 seconds • Max: 360 seconds	Determines how long a compressor must remain inactive under normal control conditions. To configure this setting, enter a value in the defined range.

Table 35: Conventional PTAC with heat pump configuration

Configuration item	Configuration options	Description
Cooling Lockout Temp	Range: • Min: 0°F (18°C) • Max: 60°F (16°C)	This option is available when UIx Config is set to **Analog** and Sensor Type is set to **Outdoor Air Temperature** and determines the limit for outdoor air temperature below which cooling does not run, regardless of zone temperature. To configure this setting, enter a value in the defined range.
Heating Lockout Temp	Range: • Min: 55°F (13°C) • Max: 100°F (38°C)	Determines the limit for outdoor air temperature above which heating does not run, regardless of zone temperature. To configure this setting, enter a value in the defined range. ⓘ **Note:** Frost protection overrides this lockout setting.

Configuring the supply fan for a conventional PTAC

To configure the supply fan for a conventional PTAC, select **Advanced** > **Equipment Setup** > **Supply Fan** > **Supply Fan Type**. See the following table for configuration options.

Table 36: Supply fan configuration

Configuration item	Configuration options	Description
Supply Fan Type	• Single Speed • Two Speed	The PTAC supports the following fan types: • If you install a single speed fan, select **Single Speed**. • If you install a two speed fan, select **Two Speed**.
Fan Operation Mode	• Set Individual • Set Multiple	This option is only available for the two speed fan type. Choose from the following options: • Select **Set Multiple** for the fan to turn on the selected speed and all lower speeds at the same time. For example, when high speed is on, low and medium speed also run. • Select **Set Individual** if you only want one fan speed to run at a time, either low, medium, or high, based on requirements.

Table 36: Supply fan configuration

Configuration item	Configuration options	Description
Fan On Delay	Range: • Min: 0 seconds • Max: 120 seconds	Determines how long the fan takes to start. To configure this setting, enter a value in the defined range.
Fan Off Delay	Range: • Min: 0 seconds • Max: 120 seconds	Determines how long the fan takes to stop. To configure this setting, enter a value in the defined range.

Configuring heat only systems for conventional heating

To configure heat only systems for conventional heating, select **Advanced** > **Equipment Setup** > **Equipment** > **Equipment Type**. See the following table for configuration options.

Table 37: Heat only systems for conventional heating configuration

Configuration item	Configuration options	Description
Equipment Type	• VAV • Fan Coil Unit • RTU • PTAC • Vertical Heat Pump • Conventional heating	From the list of equipment types, select **Conventional Heating**.
Heating Min On Time	Range: • Min: 120 seconds • Max: 360 seconds	This option is available only for staged heating output and determines how long heating must remain active under normal control conditions. To configure this setting, enter a value in the defined range. ⓘ **Note:** When the ZNT is below the effective setpoint, heating begins. If the unit reaches the setpoint before the minimum heating on-time expires, heating turns off to prevent overheating.
Heating Min Off Time	Range: • Min: 0 • Max: 360 seconds	This option is available only for staged heating output and determines how long heating must remain inactive under normal control conditions. To configure this setting, enter a value in the defined range.

Configuring the heating system

To configure the heating system, select **Advanced** > **Equipment Setup** > **Heating Type**. See the following table for configuration options.

Table 38: Heating system configuration

Configuration item	Configuration options	Description
Heating Type	• Gas • Electric • Radiant	Choose from the following options to configure the type of heating installed in a heat only system: • Select **Gas** if gas type heat is present. • Select **Electric** if electrical heat is present. • Select **Radiant** if radiant heat is present.

Configuring the heating device for radiant heating

To configure the heating type, select **Advanced** > **Equipment Setup** > **Heating Device Type**. See the following table for configuration options.

Table 39: Heating device type configuration

Configuration item	Configuration options	Description
Heating Device Type	• Staged • Proportional	This option is available only for **Radiant** heat type. Select **Staged** or **Proportional** for the heating device type.

Configuring frost protection

This option is available for all equipment types installed in unheated buildings. Select **Advanced** > **Equipment Setup** > **Frost Protection**. See the following table for configuration options.

Table 40: Frost protection configuration

Configuration item	Configuration options	Description
Frost Protection	• No • Yes	Select **Yes** to activate heating when the zone temperature falls below 42°F, regardless of whether you enable the main control. Otherwise, select **No**.

Configuring scheduled circulation

To configure scheduled circulation, tap on **CIRC** on the left widget. This option is available for FCU, RTU, PTAC, and VSHP equipment types.

Table 41: Scheduled circulation configuration

Configuration item	Configuration options	Description
Scheduled Circulation Mode	• Repeat Hourly • Repeat Once	Select **Repeat Hourly** to circulate the fan for a minimum duration every hour. Select **Repeat Once** to circulate the fan only once for the minimum duration.
Scheduled Circulation Only When Occupied	• Disable • Enable	Select **Enable** to schedule the fan to run for a minimum duration in an occupied zone. Otherwise, select **Disable**.
Scheduled Circulation Setpoint	For a 2-speed fan: • Low • High For a 3-speed or variable-speed fan: • Low • Med • High	This option is available only for multi-speed and variable-speed fans. Select from the listed options to set the fan speed for scheduled circulation.
Minimum Hourly Fan Runtime	• 15 Minutes • 30 Minutes • 45 Minutes • 60 Minutes	If you select the Schedule Circulation Mode as **Repeat Hourly**, use this option to set the circulation duration.
Fan Runtime Limit	Range: • 1 hour to 24 hours	If you select the Schedule Circulation Mode as **Repeat Once**, use this option to set the circulation duration.

Programmable output on BO5

To configure programmable output on BO5, select **Advanced** > **Equipment Setup** > **Aux Mode**.

ⓘ **Note:** This option is available for all equipment types only when there is no external dehumidifier installed for an FCU or RTU. BO5 remains ON in both occupied and unoccupied modes. If you do not connect an auxiliary device, do not wire anything to BO5.

Table 42: Programmable output on BO5

Configuration item	Configuration options	Description
Always On	• Unoccupied • Occupied	Select **Unoccupied** if the BO5 output port remains ON for an unoccupied zone. Select **Occupied** if the BO5 output port remains ON for an occupied zone.

ⓘ **Note:** When there is no external dehumidifier connected at the BO5 terminal of the thermostat in the case of RTU and FCU, users can use this BO to control other equipment. Users can also adjust the behavior of the BO5 terminal depending on whether the zone is occupied or unoccupied.

Configuring universal inputs or input setup

See the following sections to configure the universal inputs as analog or binary.

Configuring universal inputs as analog

To configure universal inputs as analog, select **Advanced** > **Input Setup** > **UIx Config**.

ⓘ **Note:** UIx refers to UI1 or UI2 or UI3. If you initial configure a point as Analog and later change to Binary, it does not function as a binary point and remains stuck in analog mode. For the change to take effect, you must reboot the device.

Table 43: Universal input analog configuration

Configuration item	Configuration options	Description
Point Type	• Analog • Binary • Disabled	To configure universal inputs as analog, select **Analog**. To configure universal inputs as binary, select **Binary**. If point type is not required, select **Disabled**.
Sensor Type	• Relative Humidity (RH) • Remote Zone Temperature • Carbon Dioxide • Damper Feedback • Outdoor Air Temperature • Supply Air Temperature	Configures the sensor type when the point type is set to **Analog**. The TEC4000S supports the listed analog configurations.
Temperature Sensor Type	• >0-10VDC • Nickel • Platinum • A99B • x225k_NTC • x10k_NTC • x10k_NTC_Type_3	This option applies for an **Analog Sensor** Sensor Type selection. Use this option to configure the changeover temperature sensor type.

Table 43: Universal input analog configuration

Configuration item	Configuration options	Description
Input Calibration	Range: ±200 ppm	This option is available when the point type is set to **Analog** and the sensor type is set to **Carbon Dioxide**. Use this option to configure the offset for the CO_2 sensor.
	±15% RH	This option is available when the point type is set to **Analog** and the sensor type is set to **Relative Humidity**. Use this option to configure the offset for the RH sensor.
	Range: ±15%	This option is available when the point type is set to **Analog** and the sensor type is set to **Damper Feedback**. Use this option to configure the offset for the damper position sensor.
	Range: ±5°F (±15°C)	This option is available when the point type is set to **Analog** and the sensor type is set to **Remote Zone Temperature** or **Outdoor Air Temperature** or **Supply Air Temperature**. Use this option to configure the offset for the temperature sensor.

Configuring universal inputs as binary

Select **Advanced** > **Input Setup** > **UIx Config**.

ⓘ **Note:** UIx refers to UI1 or UI2 or UI3.

Table 44: Universal input binary configuration

Configuration item	Configuration options	Description
Point Type	• Analog • Binary • Disabled	To configure universal inputs as analog, select **Analog**.To configure universal inputs as binary, select **Binary**. If point type is not required, select **Disabled**.
Sensor Type	• Disabled • Occupancy Sw • Temp Occ • Motion Sensor • Dirty Filter • Service • Fan Lock • Open Door • Open Window • Supply Fan Status • External Interrupt • Load Shed	Use this option to configure the sensor type when the point type is set to **Binary**.
Input Polarity	• Normal • Reverse	Use this option to set the polarity of the Binary Input. For **Normal**: • When the input is ON (active), the signal is high (1). • When the input is OFF (inactive), the signal is low (0). For **Reverse**: • When the input is ON (active), the signal is low (0). • When the input is OFF (inactive), the signal is high(1).

Configuring on board sensors

To configure on board sensors, select **Advanced** > **Input Setup** > **On Board Sensor**.

Table 45: On board sensor configuration

Configuration item	Configuration options	Description
Temp Sensor Calibration	Range: • ±5°F (±15°C) • 0°F (-18°C)	Sets the offset for the on board temperature sensor. To configure this setting, enter a value in the defined range.
Hum Sensor Calibration	Range: • ±15% RH • 0% RH	Sets the offset for the on board humidity sensor. To configure this setting, enter a value in the defined range.
Occupancy Sensor Enable	• No • Yes	To bypass the on board occupancy sensor, select **No**. Otherwise, select **Yes**.

Configuring sensor averaging

To configure sensor averaging, select **Advanced** > **Input Setup** > **Sensor averaging**.

ⓘ **Note:**

- If you configure multiple UIs as **Outdoor Air Temperature**, the mean value is considered effective.
- If you configure multiple UIs as **Supply Air Temperature**, the mean value is considered effective.
- If you configure multiple UIs as **Carbon Dioxide**, the mean value is considered effective.
- If you configure multiple UIs as **Damper Feedback**, the mean value is 0.

Table 46: Sensor averaging configuration

Configuration item	Configuration options	Description
Zone Temperature	• Average All • Average External Only	This option is available when you set the point type to **Analog** and the sensor type to **Remote Zone Temperature**. See Configuring universal inputs as analog. Choose from the following options: • Select **Average All** to average the on board sensor with temperature sensors connectedd on UI input port and network sensor. • Select **Average External Only** to average only the temperature sensors connected on UI input port and network sensor.
Zone Humidity	• Average All • Average External Only	This option is available when you set the point type to **Analog** and the sensor type to **Relative Humidity**. See Configuring universal inputs as analog. Choose from the following options: • Select **Average All** to average the on board sensor with temperature sensors connected on UI input port and network sensor. • Select **Average External Only** to average only the temperature sensors connected on UI input port and network sensor.

Configuring PID control

To configure PID control, select **Advanced** > **Tuning Setup** > **Basic**. For more information, refer to the *PID Controller Overview* section in the *Metasys System PID PRAC Help Guide (LIT-12011810)*.

Table 47: PID/PRAC+ automatic control tuning configuration

Configuration item	Configuration options	Description
Temp Control Setup	• Automatic PID Tuning • Deadband Override • Manual PID Tuning	This option is available for equipment with proportional or incremental devices or variable speed fans. • Select **Automatic PID Tuning** for automatic tuning control (PRAC/PMAC). • Select **Deadband Override** to specify deadband that works like Automatic PID Tuning. • Select **Manual PID Tuning** to manually tune the PID parameters.
	• Automatic PID Tuning • Deadband Override • Manual PID Tuning • On-off Control	This option is available for equipment with staged devices and staged fan with single-speed, 2-speed, or 3-speed. The default setting is **On-Off Control** and you cannot change it.
Reset PID Tuning	• No • Yes	To reset PID turning, select **Yes**. Otherwise, select **No**. If you select **Yes**, the PID auto resets to **No** in 30 s or less.
Deadband	Range: • Min: 1.4°F (-17°C) • Max: 5°F (-15°C)	To configure deadband, select a value from the defined range. ⓘ **Note:** When you select **Deadband Override Mode**, you can manually set the deadband width instead of enabling the PRAC+ to autotune it. A smaller deadband value results in a faster transition between heating and cooling, while a larger deadband value produces a slower, more gradual transition.

Configuring manual heating PID tuning

This option is available when you select **Manual PID Tuning** as **Temp Control Setup**. To configure manual heating PID tuning, select **Advanced** > **Tuning Setup** > **Heating PID setup**.

Table 48: Manual heating PID tuning configuration

Configuration item	Configuration options	Description
Heating Prop Band	Range: • Min: 5°F (-15°C) • Max: 30°F (-1°C)	To configure the initial effective proportional band, input a value in the defined range.
Heat Integral Time	Range: • Min: 300 seconds • Max: 1600 seconds	To configure the initial effective integral time, input a value in the defined range.
Heat Process Range	Range: • Min: 10°F (-12°C) • Max: 100°F (-38°C)	To configure the heat process range, input a value in the defined range.
Heat Saturation Time	Range: • Min: 60 seconds • Max: 900 seconds	To configure the heat saturation time, input a value in the defined range.
Heat Time Constant	Range: • Min: 360 seconds • Max: 1440 seconds	To configure the heat time constant, input a value in the defined range.
Heat Process Dead Time	Range: • Min: 20 seconds • Max: 120 seconds	To configure the heat process dead time, input a value in the defined range.
Heat Period	Range: • Min: 30 seconds • Max: 120 seconds	To configure the effective period, input a value in the defined range.

Configuring manual cooling PID tuning

This option is available when you select **Manual PID Tuning** as **Temp Control Setup**. To configure manual cooling PID tuning, select **Advanced** > **Tuning Setup** > **Cooling PID setup**.

Table 49: Manual Cooling PID tuning configuration

Configuration item	Configuration options	Description
Cooling Prop Band	Range: • Min: 5°F (-15°C) • Max: 30°F (-1°C)	To configure the initial effective proportional band, input a value in the defined range.
Cool Integral Time	Range: • Min: 300 seconds • Max: 1600 seconds	To configure the initial effective integral time, input a value in the defined range.
Cool Process Range	Range: • Min: 10°F (-12°C) • Max: 100°F (-38°C)	To configure the cool process range, input a value in the defined range.

Table 49: Manual Cooling PID tuning configuration

Configuration item	Configuration options	Description
Cool Saturation Time	Range: • Min: 60 seconds • Max: 900 seconds	To configure the cool saturation time, input a value in the defined range.
Cool Time Constant	Range: • Min: 360 seconds • Max: 1440 seconds	To configure the cool time constant, input a value in the defined range.
Cool Process Dead Time	Range: • Min: 20 seconds • Max: 120 seconds	To configure the cool process dead time, input a value in the defined range.
Cool Period	Range: • Min: 30 seconds • Max: 120 seconds	To configure the effective period, input a value in the defined range.

Configuring a logical output

To configure a logical output, select **Advanced** > **Output Polarity**.

Table 50: Logical output configuration

Configuration item	Configuration options	Description
M-C1 Polarity	• Normal • Reverse	This option is available when CO1 config is binary.
BO1 Polarity	• Normal • Reverse	This option is available when PAO1 config is disabled and the heating or cooling device type for an FCU is not incremental.
BO2 Polarity	• Normal • Reverse	This option is available when heat pump support is disabled.
BO3 Polarity	• Normal • Reverse	
M-C2 Polarity	• Normal • Reverse	This option is available when CO2 config is binary.
BO4 Polarity	• Normal • Reverse	This option is available when PAO2 config is disabled and the heating or cooling device type for an FCU is not incremental. For a VAV, this option is available if the actuator type is not incremental.
BO5 Polarity	• Normal • Reverse	
M-A1 Polarity	• Normal • Reverse	This option is available when CO3 config is binary.

Configuring setpoints

For temperature setpoints, see the following table.

Table 51: Temperature setpoint configuration

Configuration item	Configuration options	Description
Heat Cool Setpoint Mode	• Common Setpoint • Individual Setpoints	This option sets the setpoint modes. For Hospitality Mode, the TEC4000S operates only in **Common Setpoint**.
Max Cooling Setpoint	Range: • Min: 100°F (38°C) • Max: Min Cooling Setpoint + 1°F (-17°C)	If you use Individual Setpoint, this option sets the max range for occupied cooling setpoint.
Min Cooling Setpoint	Range: • Min: Max Cooling Setpoint - 1°F (-17°C) • Max: Min Heating Setpoint + Deadband	If you use Individual Setpoint, this option sets the min range for occupied cooling setpoint.
Max Heating Setpoint	Range: • Min: Max Cooling Setpoint - Deadband • Max: Min Heating Setpoint + 1°F (-17°C)	If you use Individual Setpoint, this option sets the max range for occupied heating setpoint.
Min Heating Setpoint	Range: • Min: Max Heating Setpoint - 1°F (-17°C) • Max: 45°F (7°C)	If you use Individual Setpoint, this option sets the min range for occupied heating setpoint.
Max Cooling Setpoint	Range: • Min: 100°F (38°C) • Max: Min Heating Setpoint + Deadband	If you use Common Setpoint, this option sets the max value for occupied common setpoint.
Min Heating Setpoint	Range: • Min: Max Cooling Setoint - Deadband • Max: 45°F (7°C)	If you use Common Setpoint, this option sets the min value for occupied common setpoint.
Deadband	Range: • Min: 2°F (-16°C) • Max: 5°F (-15°C)	This option sets the deadband between the heating and cooling setpoints. ⓘ **Note:** If you enable dehumidification, set this value to 3°F or more.

Table 51: Temperature setpoint configuration

Configuration item	Configuration options	Description
Common Setpoint	72°F (22°C)	This option sets the common setpoint. ⓘ **Note:** Note: This setpoint is important for hospitality mode. When a user adjusts the set-point for their comfort, it auto-matically reverts to the default value when they leave, to enable the next user to adjust the setpoint for their own com-fort.
Occupied Cooling	72°F (22°C)	This option sets the occupied cooling setpoint and is available when heat cool setpoint mode is set to Individual Setpoints.
Occupied Heating	68°F (20°C)	This option sets the occupied heating setpoint and is available when heat cool setpoint mode is set to Individual Setpoints.
Max Setpoint Offset	Range: • Min: 0°F (-18°C) • Max: 20°F (-7°C)	This option sets the offset for Unoccupied and Standby setpoints. To configure this setting, enter a value in the defined range.
Unoccupied Cooling Setpoint	85°F (29°C)	This option sets the unoccupied cooling setpoint.
Unoccupied Heating Set point	60°F (16°C)	This option sets the unoccupied heating setpoint.
Standby Cooling Setpoint	74°F (23°C)	This option sets the standby cooling setpoint.
Standby Heating Setpoint	66°F (19°C)	This option sets the standby heating setpoint.

Table 52: Temperature setpoint configuration

Configuration item	Configuration options	Description
Heat Cool Setpoint Mode	• Common Setpoint • Individual Setpoints	This option sets the setpoint modes. For Hospitality Mode, the TEC4000S operates only in **Common Setpoint**.
Max Cooling Setpoint	Range: • Min: 100°F (38°C) • Max: Min Cooling Setpoint + 1°F (-17°C)	If you use Individual Setpoint, this option sets the max range for occupied cooling setpoint.

Table 52: Temperature setpoint configuration

Configuration item	Configuration options	Description
Min Cooling Setpoint	Range: • Min: Max Cooling Setpoint - 1°F (-17°C) • Max: Min Heating Setpoint + Deadband	If you use Individual Setpoint, this option sets the min range for occupied cooling setpoint.
Max Heating Setpoint	Range: • Min: Max Cooling Setpoint - Deadband • Max: Min Heating Setpoint + 1°F (-17°C)	If you use Individual Setpoint, this option sets the max range for occupied heating setpoint.
Min Heating Setpoint	Range: • Min: Max Heating Setpoint - 1°F (-17°C) • Max: 45°F (7°C)	If you use Individual Setpoint, this option sets the min range for occupied heating setpoint.
Max Cooling Setpoint	Range: • Min: 100°F (38°C) • Max: Min Heating Setpoint + Deadband	If you use Common Setpoint, this option sets the max value for occupied common setpoint.
Min Heating Setpoint	Range: • Min: Max Cooling Setoint - Deadband • Max: 45°F (7°C)	If you use Common Setpoint, this option sets the min value for occupied common setpoint.
Deadband	Range: • Min: 2°F (-16°C) • Max: 5°F (-15°C)	This option sets the deadband between the heating and cooling setpoints. ⓘ **Note:** If you enable dehumidification, set this value to 3°F or more.
Common Setpoint	72°F (22°C)	This option sets the common setpoint.
Occupied Cooling	72°F (22°C)	This option sets the occupied cooling setpoint and is available when heat cool setpoint mode is set to Individual Setpoints.
Occupied Heating	68°F (20°C)	This option sets the occupied heating setpoint and is available when heat cool setpoint mode is set to Individual Setpoints.
Max Setpoint Offset	Range: • Min: 0°F (-18°C) • Max: 20°F (-7°C)	This option sets the offset for Unoccupied and Standby setpoints. To configure this setting, enter a value in the defined range.

The default settings in the following table show for any selection made for Heating Cooling Setpoint mode.

Table 53: Additional configuration options

Configuration item	Configuration options	Description
Unoccupied Cooling Setpoint	85°F (29°C)	This option sets the unoccupied cooling setpoint.
Unoccupied Heating Set point	60°F (16°C)	This option sets the unoccupied heating setpoint.
Standby Cooling Setpoint	74°F (23°C)	This option sets the standby cooling setpoint.
Standby Heating Setpoint	65°F (18°C)	This option sets the standby heating setpoint.

ⓘ **Note:**

- If the user changes the heating or cooling setpoint from the home screen then the thermostat operates on the changed setpoint until the next schedule change takes place.
- If any setpoint values are outside the min or max range, the TEC4000S recalculates the values and configures the setpoint values to the minimum or maximum limit.
- The set Deadband value is always enforced. If the Cooling Setpoint - Heating Setpoint < Deadband, the TEC4000S recalculates the values:
  - If the Heating Setpoint is changed, the TEC moves the Cooling Setpoint up.
  - If the Cooling Setpoint is changed, the TEC moves the Heating Setpoint down.
- If the user changes the heating or cooling setpoints from the home screen, then the thermostat operates on the changed setpoint until the next schedule change takes place.

To configure the humidity setpoint, select **Settings** > **Advanced** > **Equipment Setup** > **Dehumidification** and see the following table.

Table 54: Humidity setpoint configuration

Configuration item	Configuration options	Description
Dehum Setpoint	Range: • 20% RH • 80% RH	This option sets the dehumidification setpoint. To configure this setting, enter a value in the defined range. ⓘ **Note:** The dehumidification icons appears when **Dehum Enable** is not set to **Disabled**.

Configuring schedule options

To configure the schedule options, select **Settings** > **Schedule** > **Schedule Options**. See the following table for configuration options.

Table 55: Schedule options

Configuration item	Configuration options	Description
Schedule Source	For BACnet models: • On Board • External • Disabled For standalone models: • Enabled • Disabled	• Select **On Board** to configure one or more scheduled events on the thermostat. A maximum of 4 daily events are supported on board. • Select **External** to receive schedule information from a BAS. • Select **Disabled** to deactivate the option. ⓘ **Note:** For this setting, the thermostat runs as always occupied.
Occupancy Override	• No Override • Occupied • Unoccupied	Use this option to bypass all schedules and other sources of occupancy and configure the controller indefinitely into an Occupied or Unoccupied state. Select **No Override** to return to the schedule or other sources of occupancy.

Table 55: Schedule options

Configuration item	Configuration options	Description
Temp Occ Duration	Range: • 0 minutes • 300 minutes	Use this option to set the duration that the thermostat remains in a temporary occupancy period when triggered during an unoccupied period. To configure this setting, enter a value in the defined range. Set to **0 minutes** to disable temporary occupancy. ⓘ **Note:** To trigger temporary occupancy, interact with the touchscreen in unoccupied mode or activate a binary input configured for temporary occupancy.
Remain Occupied Time	Range: • 2 minutes • 240 minutes	Use this option to set the duration for the transition to **Standby** mode from **Occupied** mode during **Schedule Occupancy**. To configure this setting, enter a value in the defined range. ⓘ **Note:** The timer resets when motion is detected. The timer counts down only when no motion is detected. If the schedule is not set when the timer expires, the TEC4000S is set to unoccupied mode, and any detected motion sets it back in occupied mode.

To configure a schedule, select **Settings** > **Schedule**. See the following table for configuration options.

Table 56: Schedule configuration

Configuration item	Configuration options	Description
Set Schedule	7-day programmable events	This option is available when you configure Schedule Source as **On Board**. You can add four events, including Occupied or Standby, for each day. Gap periods are automatically set to **Unoccupied** ⓘ **Note:** If you do not define any schedule events for the thermostat, the device always runs as unoccupied. .
Add Holidays	• Fixed • Floating ⓘ **Note:** You can add up to 20 holidays with options for **Fixed** or **Floating** events.	A **Fixed** event occurs once on a specified day and lasts for the number of days selected. A **Floating** event repeats on the selected day or month. The TEC4000S uses Unoccupied setpoints for the holidays.

External or On Board scheduling

External or On Board scheduling determines whether the TEC4000S follows its own internal schedule or an external system schedule. See the following table for more information.

Table 57: External or On Board scheduling

Schedule source	LOCAL-OCC, commanded by internal schedule	NET-OCC	Occupancy schedule command
External	External schedule in control	Occupied	Occupied
		Unoccupied	Unoccupied
		Standby	Standby
		Not Set	Not Set
On Board	Occupied	Internal schedule in control	Occupied
	Unoccupied		Unoccupied
	Standby		Standby
	Not Set		Not Set

ⓘ **Note:**

- The schedule source determines the occupancy status, but the effective occupancy can change due to other factors listed in Effective occupancy determination.
- The On Board schedule is the normal weekly schedule. The schedule includes the hospitality schedule when you enable hospitality mode.
- When you select the **Schedule Source** as External, the user must write the BAS schedule values to the NET-OCC every 15 min. If the supervisory does not communicate with the TEC for more than 15 min, then the Schedule defaults to internal schedule. In this instance, you cannot disable the hospitality mode schedule as it reverts to the internal schedule.

- You can touch the TEC screen to trigger temporary occupancy or through a hardwired input switch with the Universal Input terminal configured as Temp Occ.
- You can write to NET-OCC from the network to set the occupancy schedule externally or set the occupancy schedule internally through the on board schedule.

Effective occupancy determination

ⓘ **Note:** Hospitality mode is disabled by default for effective occupancy determination.

In the following tables, the sequence of operation is listed from highest priority to lowest priority.

Table 58: Effective occupancy determination, hospitality mode disabled

Sequence of operation					Resulting status value	
Manual occupancy mode, OCCOVRD-MODE	**Occupancy BI (UI = binary, BI Config = Occupancy Sw)**	**Temporary occupancy (UI = binary, BI config = Temp Occ)**	**Occupancy schedule command**	**Motion sensor (UI = Binary, BI Config = Motion Sensor**	**Effective occupancy**	**Occupancy source**
Occupied	-	-	-	-	Occupied Override	Occ Override
Unoccupied	-	-	-	-	Unoccupied Override	
No Override	FALSE	-	-	-	Unoccupied	Occupancy BI
	TRUE	-	-	-	Occupied	
	Not Configured	TRUE	Unoccupied	-	Temp Occupancy	Temp Occ
		TRUE	Unoccupied	-	Temp Occupancy	Temp Occ BI
		FALSE	Occupied	TRUE	Occupied	Occupancy Sensor
				FALSE	Standby	
			Unoccupied	Disabled	Occupied	Occupancy Schedule
					Unoccupied	
			Standby		Standby	
			Not Set	TRUE	Occupied	Occupancy Sensor
				FALSE	Unoccupied	
				Disabled	Occupied	Occupancy Schedule

Table 59: Effective occupancy determination, hospitality mode enabled

PMS room integration available	PMS room status	Night schedule	PMS door integration available	PMS door status	Door switch installed	Door switch trigger	Motion sensor installed	Motion sensor	Effective occupancy
Yes	Sold	Occupied	-	-	-	-	-	-	Occupied
		-	Yes	Guest	-	-	No	-	Occupied
							Yes	Occupied	Occupied
								Unoccupied	Standby
				Staff	-	-	-	-	Hold previous Effective Occupancy State
			No	-	Yes	Yes	No	-	Occupied
							Yes	Occupied	Occupied
								Unoccupied	Standby
						No	No	-	Occupied
							Yes	Occupied	Occupied
								Unoccupied	Standby
					No	-	No	-	Occupied
							Yes	Occupied	Occupied
								Unoccupied	Standby
	Unsold	-	-	-	-	-	-	-	Unoccupied

Table 59: Effective occupancy determination, hospitality mode enabled

PMS room integration available	PMS room status	Night schedule	PMS door integration available	PMS door status	Door switch installed	Door switch trigger	Motion sensor installed	Motion sensor	Effective occupancy
No	-	Occupied	-	-	-	-	-	-	Occupied
		-	Yes	Guest	-	-	No	-	Occupied
							Yes	Occupied	Occupied
								Unoccupied	Standby Auto transition to Unoccupied after 2 hours
				Staff	-	-	-	-	Hold previous Effective Occupancy State
			No	-	Yes	Yes	No	-	Occupied
							Yes	Occupied	Occupied
								Unoccupied	Auto transition to Unoccupied after 2 h
						No	No	-	Occupied
							Yes	Occupied	Occupied
								Unoccupied	Standby
					No	-	No	-	Occupied
							Yes	Occupied	Occupied
								Unoccupied	Standby

Note:

- For Standby state, the thermostat automatically transitions to an Unoccupied state after 2 hours.
- If Temp Occ equals True and you do not configure the UI for Temp Occ, interacting with the touchscreen during an unoccupied schedule triggers Temporary Occupancy.
- If you do not configure Occupancy BI, the UI is not configured as Occupancy sw.
- Motion sensor refers to the On Board occupancy sensor or you configure the UI as a motion sensor.
- Not Set occurs when no events are scheduled through the local scheduler, or the schedule source is set to Schedule and the Schedule is configuring the schedule as Not Set.
- If Temp Occ is triggered from the UI, the input is ignored when the schedule is Occupied, the Manual Occupancy Override is active, or an Occupancy BI is configured.

Configuring alarms

To configure alarms, select **Advanced** > **Alarm Setup**.

Table 60: Alarm configuration

Configuration item	Configuration options	Description
Zone Temp Alarm Enabled	• Yes • No	Sets the zone temperature high and low alarms. Select **Yes** to enable the alarm. Otherwise, select **No**.
Zone Temp Low Limit	Range: • Min: 32°F (0°C) • Max: 150°F (66°C)	Sets the zone temperature low alarm limit. To configure this setting, enter a value in the defined range. ⓘ **Note:** This option is available when you set **Zone Temp Alarm Enabled** to **Yes**.
Zone Temp High Limit	Range: • Min: 32°F (0°C) • Max: 150°F (66°C)	Sets the zone temperature high alarm limit. To configure this setting, enter a value in the defined range. ⓘ **Note:** This option is available when you set **Zone Temp Alarm Enabled** to **Yes**.
Fan Alarm Action	• Shutdown • Enable	Sets the thermostat behavior for a fan alarm. Choose from the following options: • Select **Shutdown** to turn the unit off until the fan alarm reset triggers. • Select **Enable** to keep the thermostat in operation. ⓘ **Note:** This option is available when **Fan Alarm Delay** is a non zero value.
Fan Alarm Delay	Range: • Min: 0 minutes • Max: 5 minutes	Select the duration to verify the fan status. Configure the UIx input type to **Binary** and set the sensor type as **Supply Fan Status**. See Configuring universal inputs as binary. ⓘ **Note:** If the fan status is not received within the configured duration after a fan command activates, the fan alarm activates.

Table 60: Alarm configuration

Configuration item	Configuration options	Description
Supply Air Temperature Alarm Offset	Range: • Min: 0°F (-18°C) • Max: 10°F (-12°C)	Sets the alarm offset and the time duration within which the supply air temperature must change to trigger an alarm. To configure this setting, enter a value in the defined range.
Supply Air Temperature Alarm Delay	Range: • Min: 5 minutes • Max: 60 minutes	Sets the time duration for monitoring the supply air temperature for a change greater than or equal to the configured alarm offset. If the supply air temperature does not change by this amount, an alarm activates. To configure this setting, enter a value in the defined range.

Access control or lockout

To configure access control or lockout, select **Advanced** > **Security**.

ⓘ **Note:** You can also set access level from the network directly, which does not require a passcode to apply restrictions.

Table 61: Access control or lockout configuration

Configuration item	Configuration options	Description
Access level	• Full Control • Setpoint, Mode, Fan • Setpoint Only • Locked Control	Full Control is the default access level. To apply other access level options, the thermostat prompts you to set and confirm a passcode. • Select **Full Control** for all widgets and features. This displays three dots at the bottom of the home screen. • Select **Setpoint, Mode, Fan** to disable the right widget. This displays two dots at the bottom of the home screen. • Select **Setpoint Only** to disable the left and right widgets. This removes all dots from the bottom of the home screen. • Select **Locked Control** to disable the center widget.
Lockout Time	• 15 seconds • 30 seconds • 1 Minute • 2 Minutes	Sets the inactivity timeout after which the screen locks and you require a passcode entry to resume operation. To configure this setting, enter a value in the defined range.
Hospitality Mode	• Disable • Enable	To select hospitality mode, select **Enable**. Otherwise, select **Disable**.

Enabling hospitality mode

To enable hospitality mode, complete the following steps:

1. To enable hospitality mode, select **Settings** > **Advanced** > **Security** > **Hospitality mode** and select **Enable**.
2. Set a nightly schedule to prevent an accidental unoccupied state during night hours if people are present. Select **Settings** > **Schedule** and add the required duration to override the occupied state.
3. To enable the on board motion sensor, select **Settings** > **Advanced** > **Input Setup** > **On Board Sensor** > **Occupancy Sensor Enable**. If you require extra area coverage for motion detection, connect external motion sensors on the input terminals.
4. You can add a user passcode during initial setup to apply access restrictions on the user interface. This restriction safeguards device settings and ensures that only authorized users can adjust the settings. For more information, see the Access control or lockout section.

When you select hospitality mode, the following settings apply:

- The home screen widget hides room temperature and shows setpoint only.
- The control widget shows the °C or °F selector and the display brightness control.
- If you activate the On Device nightly schedule, this disables any other pre-configured schedule.
- Hospitality specific occupancy detection logic activates.
- The following points are exposed over BACnet for integration with the Property Management System:
  - **DOOR-USER (MV: 29944)** signals the thermostat that the person who uses a key card to access the door is a guest or staff member.
  - **ROOM-STATUS (MV: 29945)** signals the thermostat, whether or not the room is sold.

When you integrate the thermostat with the sold or unsold room status, the following settings apply:

- When the room status is **Unsold**, the thermostat ignores occupany and maintains unoccupied setpoints to maximize energy settings.
- If sold or unsold data integration is missing or unreliable, the thermostat defaults to **Sold** status.

Whe the room status is **Sold**, the following settings apply:

- **Occupied** mode activates and uses the occupancy sensor and a door switch status if configured. If there is no door switch, only the occupancy sensor is used.
- The occupancy detection timeout is configurable.
- If door detection integration is available and the system detects a nonguest key card, this bypasses occupancy detection until the system detects a guest key card.
  - If the system confirms occupancy, the thermostat uses the occupied setpoint.
  - If the system does not confirm occupancy, the thermostat operates within standby setpoint limits to save energy.
- If the room remains in standby for over 24 hours, the system switches to unoccupied setpoints to conserve energy.
- A configurable night schedule forces the thermostat to remain in **Occupied** mode.

Configuring communication mode

To configure communication mode, select **Settings** > **Connectivity**.

Table 62: Communication mode configuration

Configuration item	Configuration options	Description
BACnet Instance ID	Range: • Min: 0 • Max: 4194302	Use this option to configure the instance ID of the device on the BACnet MS/TP bus. BACnet MS/TP systems use the instance ID to identify the device. Input a value in the defined range that is unique to that site.
BACnet Address	Range: • Min: 4 • Max: 127	Use this option to set the inactivity timeout after which the screen locks and you require passcode entry to resume operation. To configure this setting, enter a value in the defined range.

Table 62: Communication mode configuration

Configuration item	Configuration options	Description
BACnet Encoding Type	• ISO 10646 (UCS-2) • ANSI X3.4 (US-ASCII) • Microsoft DBCS code page 932 (Japanese shift JIS) • ISO 10646 (UTF-8)	Use this option to configure the method of data encoding that the BACnet MS/TP bus uses. The default value, ISO 10646 (UTF-8), is the encoding that Metasys uses. When operating on a third-party BAS, refer to the documentation provided with the BAS for the correct encoding type.
MS/TP Baud Rate	• Auto • 1200 • 9600 • 19200 • 38400 • 76800	Use this option to configure the baud rate that the TEC communicates on the network. The default value is Auto, which enables the device to automatically detect the baud rate of the BACnet MS/TP bus and operate at that speed. An incorrect value causes the device to not communicate on the network and can potentially cause the network to fail.

System status and runtimes

See the following sections to check system status and runtimes.

Checking runtimes

To check the runtimes, select **Settings** > **Status** > **Runtime**.

Table 63: Runtime settings

Runtime	Default value	Description
Fan Accumulated Runtime	0 Hours	Displays the current fan runtime. This option is available for FCU, RTU, PTAC, and VSHP.
Cooling Runtime	0 Hours	Displays the current cooling runtime. This option is available when you select **Cool** or **Auto** in the left widget.
Heating Runtime	0 Hours	Displays the current heating runtime. This option is available when you select **Heat** or **Auto** in the left widget.
Reheating Runtime	0 Hours	Displays the current reheating runtime. This option is available for 2-pipe FCU and VAV with reheat installed.

Checking faults

To check faults, select **Settings** > **Status** > **Fault Status**.

Table 64: Fault status

Status item	Default value	Description
On Board Sensor Fault	No	Displays the On Board zone temperature and humidity sensor fault. When this alarm is **Yes**, it indicates that the onboard temperature and humidity sensors are not reliable.
Reset Sensor	No	To reset the sensor back to factory settings and clear any alarms that are no longer valid, select **Yes**.
Fan Reset	• No • Yes	To reset the airflow Fault seen in the system status set this to **Yes**. This option appears only when the System Status shows **Airflow Fault**. To monitor airflow fault, set the UI mode to **Binary** and the **Sensor Type** to **Fan Lock**.
Fan Fault	Inactive	This item is available when you set the UI point type to **Binary** and you set the Sensor Type to **Supply Fan Status**. See Configuring universal inputs as binary. When the fan status and command mismatch, this alarm shows as **Active**.
Fan Alarm Reset	No	To reset the Fan Fault, set this option to **Yes**. This option is available when Fan Alarm Delay is a non zero value.
Dirty Filter	No	This item is available when you set the UI point type to **Binary** and you set the Sensor Type to **Supply Fan Status**. See Configuring universal inputs as binary. If there is a dirty filter detected, this alarm shows as **Yes**.
Zone Temp Low Alarm	Inactive	If the zone temperature is below the **Zone Temp Low** limit, this alarm shows as **Active**. See Configuring alarms.
Zone Temp High Alarm	Inactive	If the zone temperature is above the **Zone Temp High** limit, this alarm shows as **Active**. See Configuring alarms.

Table 64: Fault status

Status item	Default value	Description
Zone Humidity High Alarm	Inactive	Sets the zone humidity high alarm. If the zone humidity is above the **Zone Humidity High Limit**, this alarm shows as **Active**. See Configuring alarms. This option is available only when you do not disable dehumidification.
Zone Humidity Low Alarm	Inactive	Sets the zone humidity low alarm. If the zone humidity is below the **Zone Humidity Low Limit**, this alarm shows as **Active**. See Configuring alarms. See Configuring alarms. This option is available only when you do not disable dehumidification.
Cooling OAT Lockout	No	If the outdoor air temperature (OAT) is below the **Cooling Lockout Temp**, this alarm shows as **Yes**. This option is available when the equipment type is RTU, PTAC, or VSHP.
Comp Low OAT Lockout	No	If the OAT is below the **Comp Low Lockout Temp**, this alarm shows as **Yes**. This fault status is for an RTU with a heat pump and, when activated, the compressor does not run for heating or cooling.
Heating OAT Lockout	No	If the OAT is above the **Heating Lockout Temp**, this alarm shows as **Yes**. This option is available when the equipment type is RTU, PTAC, or VSHP. ⓘ **Note:** Configuring frost protection overrides this lockout setting.
Supp OAT Lockout	No	If the OAT is above the **Supp High OA Lockout Temp**, this alarm shows as **Yes**. This fault status is for an RTU with heat pump and at least one stage of supplemental heat and, when activated, the supplemental heat stage does not run to reheat.

Checking system status

To check the system status, select **Settings** > **Status** > **System Status**.

Table 65: System status

Status item	States	Description
Occupancy Source	• Occupancy BI • Temp Occ BI • Temp Occ • Occ Override • Local Schedule • BAS Schedule • Occupancy Sensor	Shows current occupancy source
System status	• System Fault • Airflow Fault • Open Window • Control Off • Unreliable Temperature • Dehumidifying • Idle • Cooling • Heating • Cooling Unavailable • Heating Unavailable • Cooling Unavailable due to Changeover • Cooling Unavailable due to OA Temp • Cooling Unavailable due to Control Mode • Heating Unavailable due to Changeover • Heating Unavailable due to OA Temp • Heating Unavailable due to Control Mode • Load Shed Active • Dehumidifying Reheat • Dehumidifying Fan Only • Dehum Unavailable by Dew Point • External Interrupt Active	Shows current system status
Outdoor Air Temperature	Present value	This item is available when you set the UI point type to **Analog** and you set the Sensor Type to **Outdoor Air Temperature**. See Configuring universal inputs as analog.

Table 65: System status

Status item	States	Description
Outdoor Humidity	Present value	This status shows when NET-OAH is present.
Supply Air Temperature	Present value	This item is available when you set the UI point type to **Analog** and you set the Sensor Type to **Supply Air Temperature**. See Configuring universal inputs as analog.
Chilled Water Supply Temperature	Present value	This item is available when you enable dehumidification for an FCU and there is a reliable chilled water supply temperature.
Indoor Air Quality	Inactive	This item is available when you set the UI point type to **Analog** and you set the Sensor Type to **Carbon Dioxide**. See Configuring universal inputs as analog. ⓘ **Note:** For monitoring only.
Damper Position	Present value	This item is available when you set the UI point type to **Analog** and you set the Sensor Type to **Damper Feedback**. See Configuring universal inputs as analog. ⓘ **Note:** For monitoring only. Do not configure more than one UI as Damper Feedback.
Changeover State	• Changeover Disabled • Cooling Mode • Heating Mode • Supply Temperature Unreliable	This item is available for 2-pipe FCU and VAV equipment types.
Zone Dew Point Temperature	Present value	This item is available for 2-pipe FCU and VAV equipment types.

Checking control status

To check the system status, select **Settings** > **Status** > **Control Status**.

Table 66: Control status

Status item	States	Description
Cooling % Command	Range: • Min: 0% • Max: 100%	This item is available for an FCU when you select the device type as Proportional or Incremental and VAV.
Heating % Command	Range: • Min: 0% • Max: 100%	This item is available for an FCU when you select the device type as Proportional or Incremental and VAV.

Table 66: Control status

Status item	States	Description
Cool Stage 1	Off	This item is available for all staged devices with 1 stage of cooling.
Cool Stage 2	Off	This item is available for RTU with more than 1 stage of cooling.
Heat Stage 1	Off	This item is available for all staged devices with 1 stage of cooling.
Heat Stage 2	Off	This item is available for RTU with more than 1 stage of heating.
Reversing Valve	Inactive	This item is available for equipment with heat pump support.
Reheat	Off	This item is available for 2-pipe FCU and VAV with reheat support.
Supp Heat Stage 1	Off	This item is available for an RTU with heat pump support if you also install supplemental heat.
Supp Heat Stage 2	Off	This item is available for an RTU with heat pump support and more than one stage if you also install supplemental heat.
Fan % Command	Range: • Min: 0% • Max: 100%	This item is available when you install a variable speed fan.
Fan Mode	• Off • On • Low • Medium • High	This item is not available for VAVs and conventional heating systems. • **Off**. No fan runs. • **On**. Single speed fan. • **Low**. Multispeed fan operates in low mode. • **Medium**. Multispeed fan operates in medium mode. • **High**. Multispeed fan operates in high mode.

Checking controller information

To check the system status, select **Settings** > **Advanced** > **This Thermostat**.

Table 67: Controller information

Status item	Description
Model Name	The TEC factory model name.
Software Version	The currently installed software version..
Device Name	The TEC unit name.
Memory Usage	The % of system memory currently in use
CPU Usage	The % of processor capacity currently in use

List of BACnet objects

Object description	Object name	Object type	Object ID	Unit or range	Writable
Control Mode	SYSTEM-MODE	MV	29500	0 = Auto 1 = Cooling 2 = Heating 3 = Off	TRUE
Occupied Cooling Setpoint	CLGOCC-SP	AV	29502	°F (°C)	TRUE
Occupied Heating Setpoint	HTGOCC-SP	AV	29503	°F (°C)	TRUE
Unoccupied Cooling Setpoint	CLGUNOCC-SP	AV	29504	60°F to 100°F (15°C to 38°C)	TRUE
Unoccupied Heating Setpoint	HTGUNOCC-SP	AV	29505	45°F to 85°F (7°C to 30°C)	TRUE
Standby Cooling Setpoint	CLGSTBY-SP	AV	29506	60°F to 100°F (15°C to 38°C)	TRUE
Standby Heating Setpoint	HTGSTBY-SP	AV	29507	45°F to 85°F (7°C to 30°C)	TRUE
Dehum Setpoint	ZNH-SP	AV	29510	20% RH to 80% RH	TRUE
Network Override Outdoor Air Temperature	NET-OAT	AV	29513	-50°F to 125°F (-46°C to 52°C)	TRUE
Network Override Outdoor Air Humidity	NET-OAH	AV	29514	0% RH to 100% RH	TRUE
Network Override Supply Air Temperature	NET-SAT	AV	29515	0°F to 150°F (-18°C to 65°C)	TRUE
Network Override Zone Humidity	NET-ZNH	AV	29516	0% RH to 100% RH	TRUE
Manual Occupancy Mode	OCCOVRD-MODE	MV	29518	0 = No Override 1 = Occupied 2 = Unoccupied	TRUE
Supervisor Occupancy	NET-OCC	MV	29519	0 = Occupied 1 = Unoccupied 2 = Standby 3 = Not Set	TRUE
Changeover Mode	CGOVR-MODE	MV	29523	0 = Auto 1 = Cooling 2 = Heating	TRUE
One Speed Fan	SINGLE-SPD-FAN-MODE	MV	29524	0 = On 1 = Auto 2 = Circulate	TRUE

Object description	Object name	Object type	Object ID	Unit or range	Writable
Two Speed Fan	TWO-SPD-FAN-MODE	MV	29941	0 = Low 1 = High 2 = Auto 3 = Circulate	TRUE
Three Speed Fan	THREE-SPD-FAN-MODE	MV	29568	0 = Low 1 = Medium 2 = High 3 = Auto 4 = Circulate	TRUE
Variable Speed Fan	VAR-SPD-FAN-MODE	MV	29942	0 = Low 1 = Medium 2 = High 3 = Auto 4 = Circulate	TRUE
Changeover Setpoint	CGOVR-SP	AV	29530	40°F to 200°F (4°C to 93°C)	TRUE
Min Heating Setpoint	MINHTG-SP	AV	29559	°F (°C)	TRUE
Max Heating Setpoint	MAXHTG-SP	AV	29560	°F (°C)	TRUE
Min Cooling Setpoint	MINCLG-SP	AV	29561	°F (°C)	TRUE
Max Cooling Setpoint	MAXCLG-SP	AV	29562	°F (°C)	TRUE
Min Setpoint	MIN-SP	AV	29564	°F (°C)	TRUE
Max Setpoint	MAX-SP	AV	29565	°F (°C)	TRUE
Unit Status	UNIT-S	MV	29700	0 = System Fault 1 = Airflow Fault 2 = Open Window 3 = Control Off	FALSE
Effective Zone Temperature	EFF-ZNT	AV	29701	°F (°C)	FALSE
Zone Humidity	EFF-ZNH	AV	29702	% RH	FALSE
Supply Air Temperature	EFF-SAT	AV	29703	°F (°C)	FALSE
Operational Outdoor Air Temperature	EFF-OAT	AV	29704	°F (°C)	FALSE
Heat/Cool To	EFF-SETPOINT	AV	29705	°F (°C)	TRUE
Cool To	EFFCLG-SP	AV	29706	°F (°C)	TRUE
Heat To	EFFHTG-SP	AV	29707	°F (°C)	TRUE

Object description	Object name	Object type	Object ID	Unit or range	Writable
Occupancy Status	EFF-OCC	MV	29708	0 = Occupied 1 = Temp Occupancy 2 = Unoccupied 3 = Standby	FALSE
Fan % Command	FANSPD-%	AV	29711	0% to 100%	FALSE
Fan Status	FANSPD-S	MV	29712	0 = Off 1 = On 2 = Low 3 = Medium 4 = High	FALSE
Cool/Dehum PID Cmd	CLGPID-%	AV	29714	0% to 100%	FALSE
Heat PID Cmd	HTGPID-%	AV	29717	0% to 100%	FALSE
Reheat PID Cmd	RHPID-%	AV	29720	0% to 100%	FALSE
Supplemental % Command	SUPHTGPID-%	AV	29723	%	FALSE
Load Shed Active ⓘ **Note:** You can only configure load shed through BACnet.	LOADSHED-EN ⓘ **Note:** Write **Yes** over BACnet when energy saving is necessary due to high energy demand. In this mode, the effective cooling setpoint increases 4°F and the effective heating setpoint lowers 4°F. When you no longer require load shed, write **No** over BACnet.	MV	29728	0 = No 1 = Yes	TRUE

Object description	Object name	Object type	Object ID	Unit or range	Writable
Lockout Level	LOCK-LVL	MV	29531	0 = Full Control 1 = Setpoint, Mode and Fan Control 2 = Setpoint Control 3 = Locked Control	TRUE
Common Setpoint	COMMON-SP	AV	29567	°F (°C)	TRUE
Network Override Zone Temperature	NET-ZNT	AV	29571	-50°F to 120°F (-45°C to 49°C)	TRUE
Changeover State	CGOVR-S	MV	29572	0 = Changeover Disabled 1 = Cooling Mode 2 = Heating Mode 3 = Supply Temperature Unreliable	FALSE
Indoor Air Quality	EFF-ZN-CO2	AV	29728	ppm	FALSE
Damper Position	EFF-DPR	AV	29729	%	FALSE
Network Override Indoor Air Quality	NET-ZN-CO2	AV	29730	0ppm to 5000 ppm	TRUE
Chilled Water Supply Temperature	EFF-CHWST	AV	29734	°F (°C)	FALSE
NET-CHWST	NET-CHWST	AV	29736	0°F to 250°F (-18°C to 122°C)	TRUE
Outdoor Humidity	EFF-OAH	AV	29737	% RH	FALSE
Econ Free Cooling Available	FREE-CLG-AVAIL	MV	29739	0 = No 1 = Yes	FALSE
Zone Dew Point Temperature	ZN-DPT-TEMP	AV	29912	°F (°C)	FALSE
Fan Accumulated Runtime	FAN-ACCUMULATED-RUNTIME	AV	29921	0 hours to 250000 hours	TRUE
Cooling Runtime	CLG-RUNTIME	AV	29922	0 hours to 250000 hours	TRUE
Heating Runtime	HTG-RUNTIME	AV	29923	0 hours to 250000 hours	TRUE
Reheating Runtime	RHTG-RUNTIME	AV	29924	0 hours to 250000 hours	TRUE

Object description	Object name	Object type	Object ID	Unit or range	Writable
Fan Fault	FAN-FAULT	MV	29925	0 = Inactive 1 = Active	FALSE
Fan Runtime Alarm	FAN-RUNTIME-ALARM	MV	29926	0 = Inactive 1 = Active	FALSE
Dirty Filter Switch Installed	DIRTY-FILTER	MV	29927	0 = No 1 = Yes	FALSE
Cooling Lockout due to Low Outdoor Air Temp	CLG-OAT-LOCKOUT	MV	29928	0 = Yes 1 = No	FALSE
Low OAT Compressor Heating Lockout	COMP-LOW-OAT-LOCKOUT	MV	29929	0 = Yes 1 = No	FALSE
Heating Lockout due to High Outdoor Air Temp	HTG-OAT-LOCKOUT	MV	29930	0 = Yes 1 = No	FALSE
High OAT Supplemental Heating Lockout	SUPP-HIGH-LOCKOUT-TEMP	MV	29931	0 = Yes 1 = No	FALSE
Cool Stage 1 On	COOL-STAGE-1	MV	29932	0 = Off 1 = On	FALSE
Cool Stage 2 On	COOL-STAGE-2	MV	29933	0 = Off 1 = On	FALSE
Heat Stage 1 On	HEAT-STAGE-1	MV	29934	0 = Off 1 = On	FALSE
Heat Stage 2 On	HEAT-STAGE-2	MV	29935	0 = Off 1 = On	FALSE
Reversing Valve	REVERSING-VALVE	MV	29936	0 = Inactive 1 = Active	FALSE
Reheat Stage On	REHEAT	MV	29937	0 = Off 1 = On	FALSE
Supplemental Heat Stage 1	SUPP-HEAT-STAGE-1	MV	29938	0 = Off 1 = On	FALSE
Supplemental Heat Stage 2	SUPP-HEAT-STAGE-2	MV	29939	0 = Off 1 = On	FALSE
Hospitality Mode Enable	HOSPITALITY-MODE	MV	29940	0 = Disabled 1 = Enabled	TRUE
Door User	DOOR-USER	MV	29944	0 = Guest 1 = Staff	TRUE
Room Status	ROOM-STATUS	MV	29945	0 = Unsold 1 = Sold	TRUE

Object description	Object name	Object type	Object ID	Unit or range	Writable
Passcode	PASSCODE	AV	29522	0 to 999999	TRUE
Occupancy Input Source	OCCSOURCE-S	MV	29709	0 = Occupancy BI 1 = Temp Occ BI 2 = Temp Occ 3 = Occ Override	FALSE

Table 68: Writing interval for sensor values over network

Name	Description	Suggested writing interval
NET-OAT	Network Override Outdoor Air Temperature	15 min or when change of value occurs
NET-OAH	Network Override Outdoor Air Humidity	15 min or when change of value occurs
NET-SAT	Network Override Supply Air Temperature	2 min or when change of value occurs
NET-ZNH	Network Override Zone Humidity	15 min or when change of value occurs
NET-ZNT	Network Override Zone Temperature	2 min or when change of value occurs
NET-OCC	Network Override Zone Occupancy	15 min or when change of value occurs
NET-ZN-CO2	Network Override Zone CO_2	15 min or when change of value occurs
NET-OA-CO2	Network Override Outdoor Air CO_2	15 min or when change of value occurs
NET-DPR	Network Override Damper Feedback	15 min or when change of value occurs

Using the USB port

ⓘ **Note:**

- You must format the USB drive as FAT32 as the TEC4000S is not compatible with NTFS or exFAT format.
- USB-C drives sized 32 GB or smaller are optimal, though some larger drives may also work.
- Both USB 3.0 and 2.0 drives are compatible.
- If you enable a passcode on the thermostat, you need it to perform USB operations.

Loading the firmware

To load the firmware, select **Settings** > **Advanced** > **This Thermostat** > **Firmware Update**.

➤ **Important:**

- Do not remove the USB drive during a firmware update:
  - Removing the drive prematurely may corrupt the update and cause the TEC4000S to restart or go offline.

- The firmware update duration is approximately 8 minutes.

1. Check **Firmware Version** to show the current firmware version of the controller.
2. To update the firmware, insert the USB-C with the new `.pkg` firmware package into the USB port.
3. Select **Load Firmware from USB-C** to load the new firmware package.
4. The thermostat automatically restarts when installation of the new firmware is complete.

ⓘ **Note:** You can back up the TEC4000S configuration to the USB drive and install the settings in other models that support the same equipment and configuration to expedite the commissioning process. For more information, see the following sections.

Backing up the settings

To backup a controller configuration, insert a USB-C drive and select **Settings** > **Advanced** > **This Thermostat** > **Backup**.

Restoring the settings

To restore a controller configuration, insert a USB-C drive and select **Settings** > **Advanced** > **This Thermostat** > **Restore**.

ⓘ **Note:** The TEC4000S only supports a single restore file on the USB-C drive.

Restoring factory defaults

Select **Settings** > **Advanced** > **This Thermostat** > **Factory Reset** to apply factory defaults to the controller. For more information, see Preset profiles.

Troubleshooting

Table 69: Troubleshooting information

Fault	Probable causes	Solutions
TEC Control Mode is set to **Off** after you complete the setup wizard	Expected behaviour	Before you enable the unit, verify the device type of connected equipment, whether it is proportional, incremental, or staged. Ensure that the TEC configuration corresponds accurately to the equipment type. ⓘ **Note:** Incorrect matching between the equipment and the selected TEC control mode may cause incorrect operation, reduced performance, or even potential equipment damage.
		Carefully inspect and confirm all wiring connections before you enable the TEC. Correct wiring is essential for safe startup and reliable operation.
		Navigate to the **Unit Control Mode** section in the left widgetand select the mode based on your application requirements.
Analog sensor value displays -1111	Sensor failed or is unreliable	1. Check the sensor wiring. 2. Physically measure the actual sensor signal. 3. Check the correct UI configuration in **Advanced** > **Input Setup** > **UIx Config**. 4. Reset the sensor from **Status**> **Fault Status** > **Reset Sensor**. 5. If problems persist, order replacement units and return the affected devices under the RMA program.

Table 69: Troubleshooting information

Fault	Probable causes	Solutions
Remote Zone Temp Fail	Disconnection or failure of the external zone temperature sensor	1. Check the sensor wiring. 2. Physically measure the actual sensor signal. 3. Check the correct UI configuration in **Advanced** > **Input Setup** > **UIx Config**. 4. Reset the sensor from **Status**> **Fault Status** > **Reset Sensor**. 5. If problems persist, order replacement units and return the affected devices under the RMA program.
Supply Temp Fail	Disconnection or failure of the external supply temperature sensor	1. Check the sensor wiring. 2. Physically measure the actual sensor signal. 3. Check the correct UI configuration in **Advanced** > **Input Setup** > **UIx Config**. 4. Reset the sensor from **Status**> **Fault Status** > **Reset Sensor**. 5. If problems persist, order replacement units and return the affected devices under the RMA program.
Outdoor Temp Fail	Disconnection or failure of the external outdoor air temperature sensor	1. Check the sensor wiring. 2. Physically measure the actual sensor signal. 3. Check the correct UI configuration in **Advanced** > **Input Setup** > **UIx Config**. 4. Reset the sensor from **Status**> **Fault Status** > **Reset Sensor**. 5. If problems persist, order replacement units and return the affected devices under the RMA program.
Internal Sensor Fail	Failure of an internal sensor on the TEC	If problems persist, order replacement units and return the affected devices under the RMA program.

Table 69: Troubleshooting information

Fault	Probable causes	Solutions
OA Lockouts Disabled	• Disconnection or failure of the local outdoor air temperature sensor • Timeout of a network outdoor air temperature sensor • The TEC no longer shuts down equipment based on OA lockout setpoints	1. Check the sensor wiring. 2. Physically measure the actual sensor signal. 3. Check the correct UI configuration in **Advanced** > **Input Setup** > **UIx Config**. 4. Reset the sensor from **Status**> **Fault Status** > **Reset Sensor**. 5. If the source was BAS, enusre the BAS is online and provides the temperature reading. 6. If problems persist, order replacement units and return the affected devices under the RMA program.
Dehum Unavailable	Failure of the zone humidity sensor and dehumidification is unavailable	If problems persist, order replacement units and return the affected devices under the RMA program.
Service	Equipment connected to the UI configured for a **Service** alarm triggers the alarm	Service the equipment according to manufacturer guidelines.
Dirty Filter	Equipment connected to the UI configured for a **Dirty Filter** alarm triggers the alarm.	Replace the filter in the equipment according to manufacturer guidelines.
Calibration Corrupt	Factory calibration data is lost or not installed	If problems persist, order replacement units and return the affected devices under the RMA program.

Table 69: Troubleshooting information

Fault	Probable causes	Solutions
Changeover Fail	• The supply temperature sensor is not installed • Disconnection or failure of the supply temperature sensor • The TEC no longer detects changeover mode for cooling and heating	1. Check the sensor wiring. 2. Physically measure the actual sensor signal. 3. Check the correct UI configuration in **Advanced** > **Input Setup** > **UI3 Config**. 4. Reset the sensor from **Status**> **Fault Status** > **Reset Sensor**. 5. If the source was BAS, enusre the BAS is online and provides the temperature reading. 6. If problems persist, order replacement units and return the affected devices under the RMA program.
Zone Temp Unreliable	All sources of zone temperature are unreliable, including the onboard sensor	1. Check the sensor wiring. 2. Physically measure the actual sensor signal. 3. Check the correct UI configuration in **Advanced** > **Input Setup** > **UIx Config**. 4. Reset the sensor from **Status**> **Fault Status** > **Reset Sensor**. 5. If problems persist, order replacement units and return the affected devices under the RMA program.
Open Window	The switch connected to the UI configured for **Open Window** senses that the window is open and control shuts down	1. Check the sensor wiring. 2. Physically measure the actual sensor signal. 3. Check the correct UI configuration in **Advanced** > **Input Setup** > **UIx Config**. 4. Reset the sensor from **Status**> **Fault Status** > **Reset Sensor**. 5. If problems persist, order replacement units and return the affected devices under the RMA program.

Table 69: Troubleshooting information

Fault	Probable causes	Solutions
Fan Lock	The switch connected to the UI configured for **Fan Lock** did not sense airflow within 10 seconds of starting the fan, and control shuts down due to an airflow fault	1. Inspect the equipment to ensure that the fan functions. 2. Check the sensor functionality with an ohmmeter and verify the wiring to the TEC. 3. After you ensure that the UI receives an On signal, set **Status** > **Fault Reset** > **Fan Reset**to **True**. 4. If problems persist, order replacement units and return the affected devices under the RMA program.
Humidity Unreliable	Failure of a previously reliable zone humidity reading	• If the humidity source was the on board sensor, order replacement units and return affected devices under the RMA program. • If the humidity source was BAS, ensure that the BAS is online and provides the humidity reading. If BAS mapping was removed intentionally, reset the sensors through the device menu.
USB Malfunction	A USB drive malfunctions and draws more than the maximum allowed current.	1. Reinsert the USB and try to use it again. 2. Try a new USB drive. 3. If problems persist, order replacement units and return the affected devices under the RMA program.
Zone Temperature Too Cold	The unit does not perform correctly	1. Check the heating on the unit. 2. If problems persist, order replacement units and return the affected devices under the RMA program.
Zone Temperature Too Hot	The unit does not perform correctly	1. Check the cooling on the unit. 2. If problems persist, order replacement units and return the affected devices under the RMA program.

Table 69: Troubleshooting information

Fault	Probable causes	Solutions
Supply Fan Fault	The fan status does not match the fan command	1. Check the supply fan on the unit. 2. If problems persist, order replacement units and return the affected devices under the RMA program.
Heating Ineffective	The supply air temperature does not rise when the unit calls for heating	1. Check the unit. 2. If problems persist, order replacement units and return the affected devices under the RMA program.
Touchscreen Unavailable	The touchscreen components fail to initialize.	1. Restart the thermostat. 2. If problems persist, order replacement units and return the affected devices under the RMA program.
Cooling Ineffective	The supply air temperature does not fall when the unit calls for cooling.	1. Check the unit. 2. If problems persist, order replacement units and return the affected devices under the RMA program.

Default configuration settings

The following table shows the default configuration settings that are pre-configured in the TEC4000S. If you reset the thermostat to factory settings, these default settings are reinstalled.

Table 70: Default configuration settings

Configuration item	Equipment type	Default setting
Set Date Format	All equipment types	Day, Month DD, YYYY
Set Time Format	All equipment types	12 Hours
UTC Offset	All equipment types	0:00 Hours
Daylight Savings	All equipment types	No
Units	All equipment types	Fahrenheit
Brightness	All equipment types	70
Backlight Timeout	All equipment types	30 seconds
Show Occ Status	All equipment types	Yes
Show Time	All equipment types	Yes
Show Branding	All equipment types	No
Show Humidity	All equipment types	Yes
Show Fault	All equipment types	Yes

Table 70: Default configuration settings

Configuration item	Equipment type	Default setting
Equipment Type	Conventional or packaged units (RTU)	RTU
Actuator Type	VAV	Incremental
Actuator Stroke Time	VAV Incremental FCU	90 seconds
Unit Type	FCU	4-pipe FCU
Htg/Clg Device Type	2-pipe FCU	Staged
FCU Type	4-pipe FCU	Individual coil
Changeover Valve Installed	4-pipe FCU	No
Six Way Valve Installed	4-pipe FCU	No
Six Way Valve Voltage Range	4-pipe FCU	0 V to 10 V
Cooling Device Type	4-pipe FCU	Staged
Heating Device Type	4-pipe FCU Heat only	Staged
Valve Open Voltage	Proportional FCU	10 V
Valve Closed Voltage	Proportional FCU	0 V
Cooling Min On Time	FCU with staged cooling device RTU PTAC	180 seconds
Cooling Min Off Time	FCU with staged cooling device RTU PTAC	180 seconds
Heating Min On Time	FCU with staged heating device RTU PTAC Staged heat only	180 seconds
Heating Min Off Time	FCU with staged heating device RTU PTAC Staged heat only	180 seconds
Supply Fan Type	FCU	Single
Fan On Delay	FCU PTAC	0 seconds
Fan Off Delay	FCU PTAC	30 seconds
Fan Operation Mode	FCU VSHP PTAC	Set Individual

Table 70: Default configuration settings

Configuration item	Equipment type	Default setting
Reheat Installed	VAV 2-pipe FCU	No
Reheat Min On Time	VAV 2-pipe FCU	180 seconds
Reheat Min Off Time	VAV FCU	180 seconds
Reheat Min Damper Pos	VAV 2-pipe FCU	20%
Reheat Fan Required	VAV 2-pipe FCU	No
Changeover Mode	2-pipe FCU VAV	Auto
Sensor Type	2-pipe FCU VAV	Analog Sensor
Temperature Sensor Type	2-pipe FCU VAV	10k NTC Type 3
Changeover Setpoint	2-pipe FCU VAV	55°F (13°C)
Dehum Enable	FCU RTU	When Occupied
External Dehumidifier Installed	FCU RTU	No
Cooling Valve Minimum Position	2-pipe FCU with reheat 4-pipe Individual Coil FCU	75%
Cooling Valve Starting Position	2-pipe FCU with reheat 4-pipe Individual Cool FCU	100%
Heating Valve Starting Position	4-pipe Individual Coil FCU	50%
Coil Tempering Time	4-pipe Single Coil FCU	5 minutes
Dehumidification Overcool Limit	4-pipe Single Coil FCU	2°F (-17°C)
Chilled Water Supply Temperature Setpoint	FCU	44°F (7°C)
Always On	All equipment types	Unoccupied
Heat Pump Supported	RTU PTAC	No
Number of Compressors	RTU	One Stage
Runtime Equalization	RTU	No
Number of Heating Stages	RTU	One Stage
Cooling Lockout Temp	RTU VSHP PTAC	45°F (7°C)
Heating Lockout Temp	RTU VSHP PTAC	80°F (27°C)

Table 70: Default configuration settings

Configuration item		Equipment type	Default setting
Reversing Valve Polarity		RTU with HP VSHP	Energize for Heating
Compressor Min On Time		RTU with HP VSHP PTAC with HP	180 seconds
Compressor Min Off Time		RTU with HP VSHP PTAC with HP	180 seconds
Number of Supp Heating Stages		RTU with HP	One Stage
Supp Min On Time		RTU with HP	180 seconds
Supp Min Off Time		RTU with HP	180 seconds
Supp High OA Lockout Temp		RTU with HP	50°F (10°C)
Comp Low Lockout Temp		RTU with HP	32°F (0°C)
Heating Type		Heat only	Electric
Frost Protection		All equipment types	No
Scheduled Circulation Mode		FCU RTU VSHP PTAC	Repeat Hourly
Scheduled Circulation Only When Occupied		FCU RTU VSHP PTAC	Disable
Scheduled Circulation Setpoint		FCU RTU VSHP PTAC	Low
Minimum Hourly Fan Runtime		FCU RTU VSHP PTAC	30 Minutes
Fan Runtime Limit		FCU RTU VSHP PTAC	1 Hour
Point Type		All equipment types	Disabled
Sensor Type	Analog input	All equipment types	Remote Zone Temperature
	Binary input	All equipment	Disabled
Temperature Sensor Type		All equipment types	>0-10VDC

Table 70: Default configuration settings

Configuration item	Equipment type	Default setting
Input Calibration	All equipment types	CO_2 sensor: 0 ppm RH sensor: 0% RH Damper Feedback sensor: 0% Temperature Sensor: 0°F (-18°C)
Input Polarity	All equipment types	Normal
Temp Sensor Calibration	All equipment types	0°F (-18°C)
Hum Sensor Calibration	All equipment types	0% RH
Occupancy Sensor Enable	All equipment types	No
Zone Temperature	All equipment types	Average All
Zone Humidity	All equipment types	Average All
Temp Control Setup	Equipment with proportional or incremental devices or variable speed fans.	Automatic PID Tuning
Reset PID Tuning	All equipment types	No
Deadband	All equipment types	2°F (-17°C)
Heating Prop Band	All equipment types	5°F (-15°C)
Heat Integral Time	All equipment types	300 seconds
Heat Process Range	All equipment types	10°F (-12°C)
Heat Saturation Time	All equipment types	300 seconds
Heat Time Constant	All equipment types	360 seconds
Heat Process Dead Time	All equipment types	20 seconds
Heat Period	All equipment types	60 seconds
Cooling Prop Band	All equipment types	5°F (-15°C)
Cool Integral Time	All equipment types	300 seconds
Cool Process Range	All equipment types	10°F (-12°C)
Cool Saturation Time	All equipment types	300 seconds
Cool Time Constant	All equipment types	360 seconds
Cool Process Dead Time	All equipment types	20 seconds
Cool Period	All equipment types	60 seconds
Logical output configuration	All equipment types	Normal
Load Shed Active	All equipment types	No. Configured only through BACnet.
Heat Cool Setpoint Mode	All equipment types	Common Setpoint
Max Cooling Setpoint	All equipment types	85°F (29°C)
Min Cooling Setpoint	All equipment types	70°F (21°C)
Max Heating Setpoint	All equipment types	74°F (23°C)
Min Heating Setpoint	All equipment types	45°F (7°C)
Max Cooling Setpoint	All equipment types	85°F (29°C)

Table 70: Default configuration settings

Configuration item		Equipment type	Default setting
Min Heating Setpoint		All equipment types	50°F (10°C)
Deadband		All equipment types	2°F (-17°C)
Common Setpoint		All equipment types	72°F (22°C)
Occupied Cooling		All equipment types	72°F (22°C)
Occupied Heating		All equipment types	68°F (20°C)
Max Setpoint Offset		All equipment types	5°F (-15°C)
Unoccupied Cooling Setpoint		All equipment types	85°F (29°C)
Unoccupied Heating Setpoint		All equipment types	60°F (16°C)
Standby Cooling Setpoint		All equipment types	74°F (23°C)
Standby Heating Setpoint		All equipment types	66°F (19°C)
Dehum Setpoint		All equipment types	50% RH
Temp Occ Duration		All equipment types	15 minutes
Manual Occupancy		All equipment types	No Override
Schedule Source		All equipment types	Disabled
Remain Occupied Time		All equipment types	15 minutes
Add Holidays		All equipment types	Fixed
Test Cooling	Stage 1	Staged equipment with 1 stage of cooling.	Off
	Stage 2	Staged equipment with two stages of cooling.	Off
Test Heating	Stage 1	Staged equipment with one stage of heating.	Off
	Stage 2	Staged equipment with two stages of heating	Off
	Supp Heat Stage 1	RTU with one or more stages of supplemental heating.	Off
	Supp Heat Stage 2	RTU with two stages of supplemental heating.	Off
Test Reheat	Stage 1	VAV and 2-pipe FCU	Off
Test Fan		Equipment with different fan types.	Off
Zone Temp Alarm Enabled		All equipment types	No
Zone Temp Low Limit		All equipment types	55°F (13°C)
Zone Temp High Limit		All equipment types	90°F (32°C)
Fan Alarm Action		All equipment types	Enable
Fan Alarm Delay		All equipment types	0 seconds
Supply Air Temperature Alarm Offset		All equipment types	5°F (-15°C)
Supply Air Temperature Alarm Delay		All equipment types	5 minutes
Access Level		All equipment types	Full Control
Lockout Time		All equipment types	15 seconds

Table 70: Default configuration settings

Configuration item	Equipment type	Default setting
Hospitality Mode	All equipment types	Disabled
BACnet Instance ID	All equipment types	5004
BACnet Address	All equipment types	4
BACnet Encoding Type	All equipment types	ISO 10646 (UCS - 2)
MS/TP Baud Rate	All equipment types	Auto

Technical specifications

Table 71: TEC4000S Series technical specifications

Specification		Description
Dimensions (HxWxD)		4.5" x 4.5" x 0.8" (115mm x 115mm x 20mm)
Shipping Weight		0.77 lbs. (0.35 kg)
Power Requirements		19VAC – 30VAC, 50/60Hz, 4VA @ 24VAC Nominal, Class 2 or Safety Extra Low Voltage (SELV)
USB Port	**Format**	FAT32 Formatted 32GB USB-C 2.0+, 32GB USB-A (USB-A – USB-C Adapter)
	Power Rating	120mA – 250mA Current Draw Supported
Binary Output Rating	**On/Off or Floating Control**	19VAC – 30VAC, 1.0A Maximum, 15mA Minimum, 3.0A In-Rush, Class 2 or SELV (Max 100VA Through Device)
Analog Output Rating	**0–10VDC**	0–10VDC with 5mA Drive Current Resolution ±0.05V / Accuracy ±0.1V
Binary Inputs		Dry Contact Across Terminal COM to Terminals UI1, UI2, UI3
Analog Inputs		0–10VDC, Nickel, Platinum, A99B, 2.25k ohm NTC, 10K ohm NTC Type 3 Across Terminal COM to Terminals UI1, UI2, UI3
Electrical / HVAC Wire Size		18AWG (0.75mm^2) – 22AWG (0.34mm^2) Recommended
MS/TP Network Wire Size		22AWG (0.34mm^2) Recommended
Temperature Ranges	**Heating Control**	40.0°F – 90.0°F (4.5°C – 32.0°C)
	Cooling Control	54.0°F – 100.0°F (12.0°C – 38.0°C)
Accuracy	**Temperature**	±0.9°F @ 70.0°F (±0.5°C @ 21.0°C) Typical Calibrated
	Humidity	±5% RH From 20% – 80% RH @ 50°F – 90°F (10°C – 32°C)
Minimum Deadband		2°F (1°C) Between Heating / Cooling
Occupancy Sensor Motion Detection		Minimum 94 Angular Degrees to Distance of 15' (4.6m)
Ingress Protection		IP30
Ambient Conditions	**Operating**	32°F – 122°F (0°C – 50°C); 95% RH Maximum, Noncondensing
	Storage	-22°F – 122°F (-30°C – 50°C); 95% RH Maximum, Noncondensing
Compliance	**BACnet International**	BACnet Testing Laboratories™ (BTL) 135-2024 Listed BACnet Advanced Application Controller (B-AAC)
	United States	UL Listed, FIle E27734, CCN XAPX, Under UL60730
		Networked Models: FCC Comliant to CFR 47, Part 15, Subpart B, Class B
		Occupancy Sensor Radar: FCC ID: OEJ-TEC4KL60GRS
	Canada	UL Listed, File E27734, CCN XAPX7, Under E60730
		Networked Models: Industry Canada, ICES-003
		Occupancy Sensor Radar: IC ID: 279A-TEC4KL60GRS
	Europe	CE Mark - This product is in compliance with the essential requirements and other relevant provisions of the RED Directive and the RoHS Directive.
		REACH
	Australia / New Zealand	RCM Mark, Australia / NZ Emissions Compliant