



# Programming Guide

## IntelliPak™ with Symbio™ 800

### 20 to 150 Tons with TD7 Display



#### ⚠ SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.



## Warnings, Cautions, and Notices

Safety advisories appear throughout this manual as required. Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

The three types of advisories are defined as follows:



**WARNING**

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



**CAUTION**

Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It could also be used to alert against unsafe practices.

**NOTICE**

Indicates a situation that could result in equipment or property-damage only accidents.

### Important Environmental Concerns

Scientific research has shown that certain man-made chemicals can affect the earth's naturally occurring stratospheric ozone layer when released to the atmosphere. In particular, several of the identified chemicals that may affect the ozone layer are refrigerants that contain Chlorine, Fluorine and Carbon (CFCs) and those containing Hydrogen, Chlorine, Fluorine and Carbon (HCFCs). Not all refrigerants containing these compounds have the same potential impact to the environment. Trane advocates the responsible handling of all refrigerants-including industry replacements for CFCs and HCFCs such as saturated or unsaturated HFCs and HCFCs.

### Important Responsible Refrigerant Practices

Trane believes that responsible refrigerant practices are important to the environment, our customers, and the air conditioning industry. All technicians who handle refrigerants must be certified according to local rules. For the USA, the Federal Clean Air Act (Section 608) sets forth the requirements for handling, reclaiming, recovering and recycling of certain refrigerants and the equipment that is used in these service procedures. In addition, some states or municipalities may have additional requirements that must also be adhered to for responsible management of refrigerants. Know the applicable laws and follow them.

#### **⚠ WARNING**

##### **Proper Field Wiring and Grounding Required!**

**Failure to follow code could result in death or serious injury.**

**All field wiring MUST be performed by qualified personnel. Improperly installed and grounded field wiring poses FIRE and ELECTROCUTION hazards. To avoid these hazards, you MUST follow requirements for field wiring installation and grounding as described in NEC and your local/state/national electrical codes.**

## **⚠ WARNING**

### **Personal Protective Equipment (PPE) Required!**

Failure to wear proper PPE for the job being undertaken could result in death or serious injury. Technicians, in order to protect themselves from potential electrical, mechanical, and chemical hazards, **MUST** follow precautions in this manual and on the tags, stickers, and labels, as well as the instructions below:

- Before installing/servicing this unit, technicians **MUST** put on all PPE required for the work being undertaken (Examples; cut resistant gloves/sleeves, butyl gloves, safety glasses, hard hat/bump cap, fall protection, electrical PPE and arc flash clothing). **ALWAYS** refer to appropriate Safety Data Sheets (SDS) and OSHA guidelines for proper PPE.
- When working with or around hazardous chemicals, **ALWAYS** refer to the appropriate SDS and OSHA/GHS (Global Harmonized System of Classification and Labelling of Chemicals) guidelines for information on allowable personal exposure levels, proper respiratory protection and handling instructions.
- If there is a risk of energized electrical contact, arc, or flash, technicians **MUST** put on all PPE in accordance with OSHA, NFPA 70E, or other country-specific requirements for arc flash protection, **PRIOR** to servicing the unit. **NEVER PERFORM ANY SWITCHING, DISCONNECTING, OR VOLTAGE TESTING WITHOUT PROPER ELECTRICAL PPE AND ARC FLASH CLOTHING. ENSURE ELECTRICAL METERS AND EQUIPMENT ARE PROPERLY RATED FOR INTENDED VOLTAGE.**

## **⚠ WARNING**

### **Follow EHS Policies!**

Failure to follow instructions below could result in death or serious injury.

- All Trane personnel must follow the company's Environmental, Health and Safety (EHS) policies when performing work such as hot work, electrical, fall protection, lockout/tagout, refrigerant handling, etc. Where local regulations are more stringent than these policies, those regulations supersede these policies.
- Non-Trane personnel should always follow local regulations.

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## Agency Listings and Compliance

The European Union (EU) Declaration of Conformity is available from your local Trane® office.

## Revision History

- Updates to the Alarms section.
- Additional diagnostics added to the Troubleshooting section.



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## Overview

The purpose of this guide is to assist you in installing, programming, and operating the equipment with the TD7 display and the Symbio™ UI. This guide describes how to access the screens and the types of information that appear on the screens.

The TD7 display is mounted to the unit and allows you to view data, make operational changes, and manually control the equipment.

Symbio™ UI is a built in service tool that allows users to set up, operate, and troubleshoot the equipment.

## Hardware

The TD7 display is a durable factory-mounted touch screen display that is designed to operate in both indoor or outdoor environments.

### Communication

An factory provided Ethernet cable provides communication between the TD7 display and the unit controller.

### Screen Characteristics

The 7-inch WVGA 800 x 480 resolution touch-sensitive color screen is backlit, which enables viewing in poor light conditions including outdoor usage (with the exception of direct sunlight).

## Touchscreen Guidelines

The touch screen registers the downward pressure of a touch. Light, quick, yet deliberate touches are most effective. Touching with more pressure has no effect.

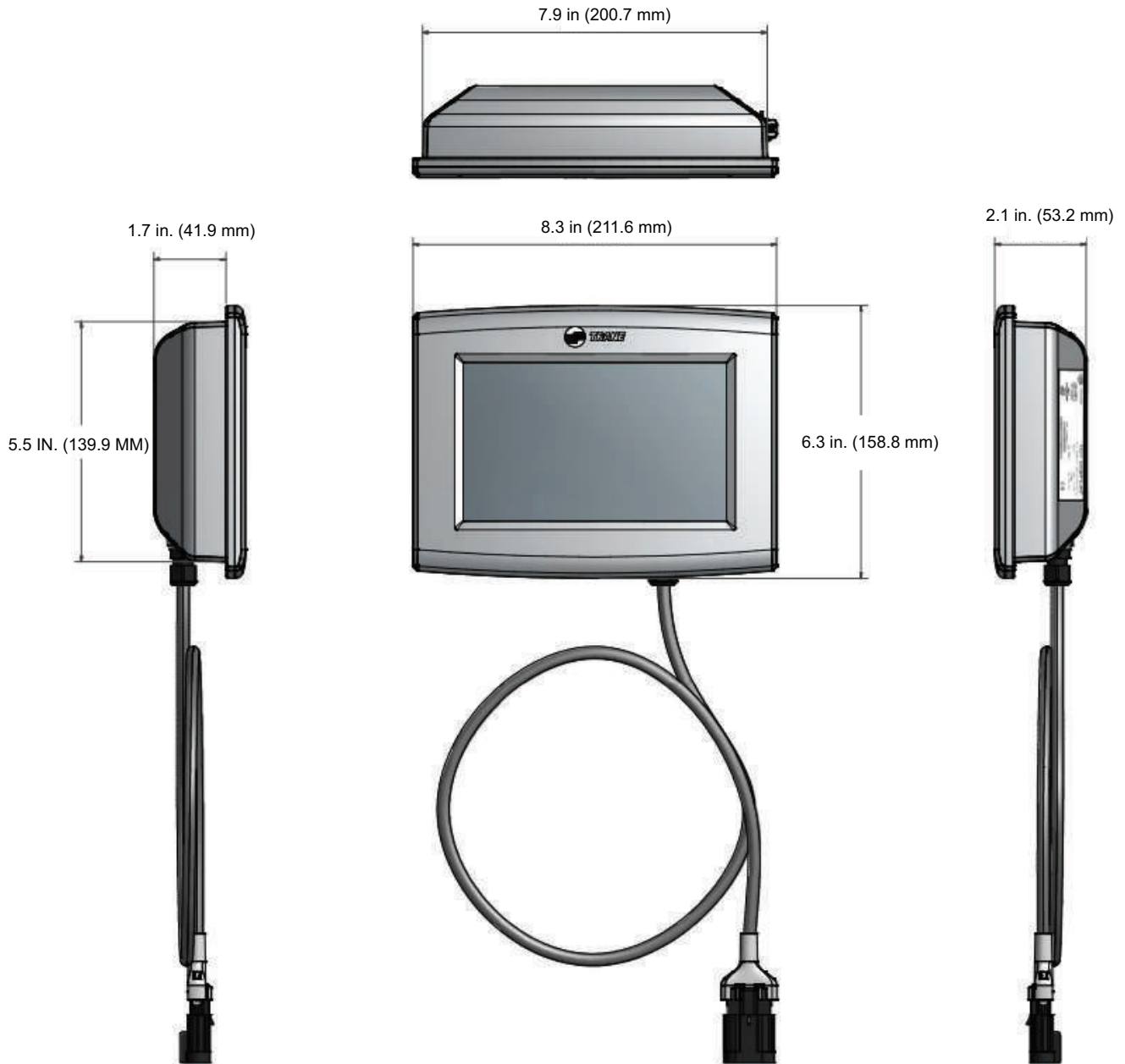
#### Recommended tools to use:

- Finger
- Thumb
- Pencil eraser

#### Do not use:

- A screwdriver
- A pen
- A pencil point
- Any other sharp or pointed object that might scratch the screen surface

## Dimensions



**Note:** The power cable is permanently attached to the TD7 display. The power connector provides strain relief and protection from the elements.



## Specifications and Agency Compliance

Specification	
Input power	24 Vac +/- 15%, 21 VA, 50 or 60 Hz
Storage temperature	-67°F to 203°F (-55°C to 95°C) Humidity: Between 5% and 100% (non-condensing)
Operating temperature	Temperature: -40°F to 158°F (-40°C to 70°C) Humidity: Between 5% and 100% (non-condensing)
Mounting weight	Mounting surface must support 1.625 lb (0.737 kg) Mounting Type: VESA (75 mm x 75 mm)
Environmental rating (enclosure)	IP56 (dust and strong water protected) with use of an optional Sealed Ethernet Cable
Agency Compliance	
<ul style="list-style-type: none"> <li>• UL916 PAZX, Open Energy Management Equipment</li> <li>• UL94-5V, Flammability</li> <li>• FCC CFR Title 47, Part 15.109: Class A Limit, (30 MHz—4 GHz)</li> <li>• CE EMC Directive 2004/108/EC</li> <li>• CE EMC Directive 2004/108/EC</li> </ul>	



# TD7 Display

## Supported Languages

The TD7 display supports built-in languages:

- English
- French (Canadian)
- Spanish (Latin American)

## Security

### Log In

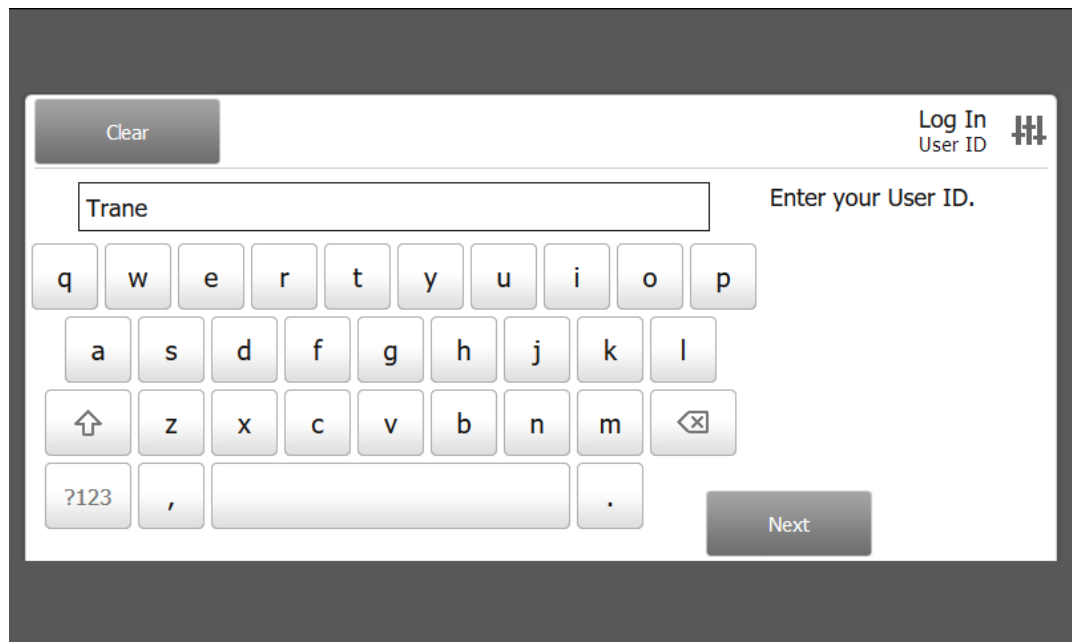
By default, security for the display connection is disabled and the Log In screen is hidden. When security is enabled for the display connection, the display will show the Log In screen. A valid User ID and Password is required to access the status and settings on the display.

Both the User ID and Password screen display the virtual keyboard shown in . The User IDs, Passwords, and password complexity are configured by the Symbio™ UI and can't be configured using the display.

### User ID Screen

To Log In enter a valid User ID. Press Next button to complete the User ID entry and navigate to the Password screen. Press the Clear to erase the User ID.

Figure 1. User ID screen



### Password Screen

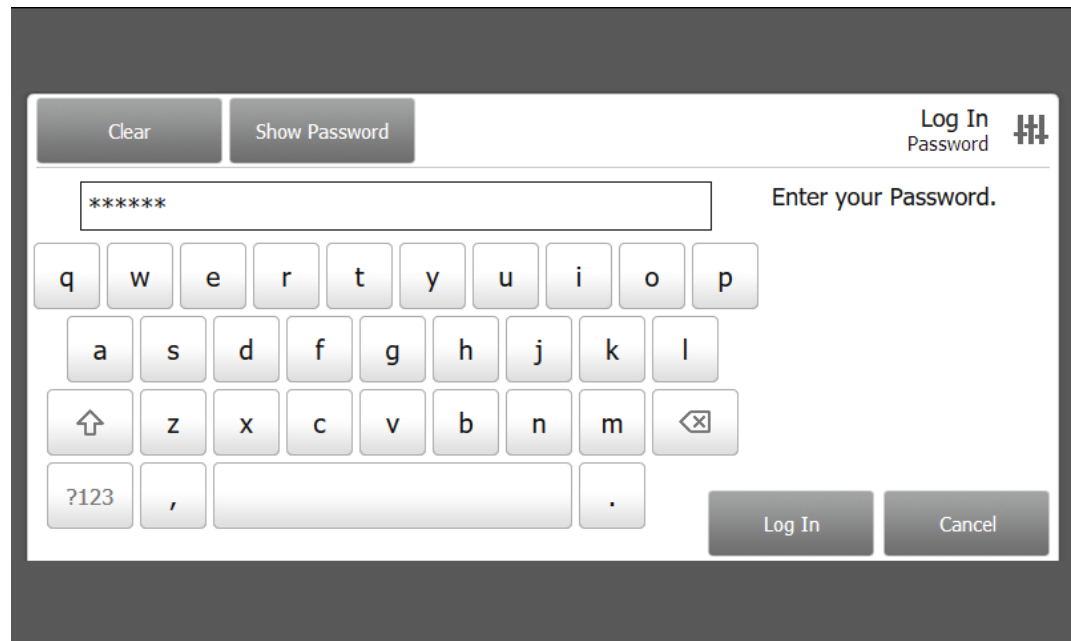
Enter a valid User ID and Password to unlock the display. Press Log In to complete the Password entry.

- Press Show Password to make the characters entered visible.
- Press Hide Password to display characters as an asterisks (\*).
- Press Cancel to return to the User ID screen.
- Press Clear to erase the Password.

Entering a valid combination of User ID and Password the display will navigate to the home page.

Entering an invalid combination of User ID and password causes the display to show the error message “The User ID and/or Password is not valid.” and the display will remain on the Password Screen.

**Figure 2. Log In Password screen**

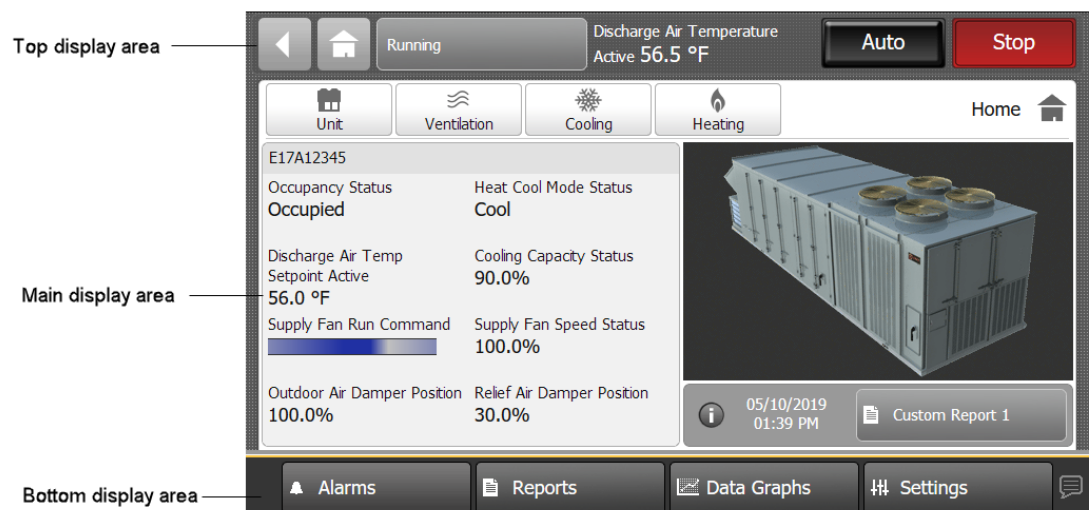


## Screen Overview

There are three distinct areas on the TD7 screens:

- Top display area
- Main display area
- Bottom display area

**Figure 3. TD7 display area**



## Top Display Area

Figure 4. TD7 menu bar

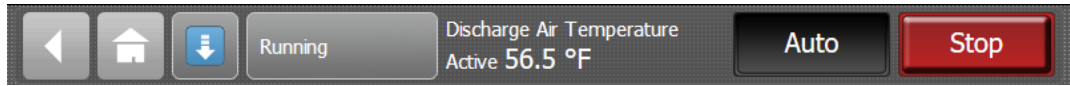



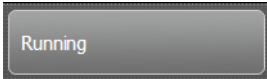
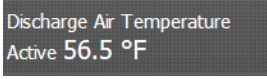


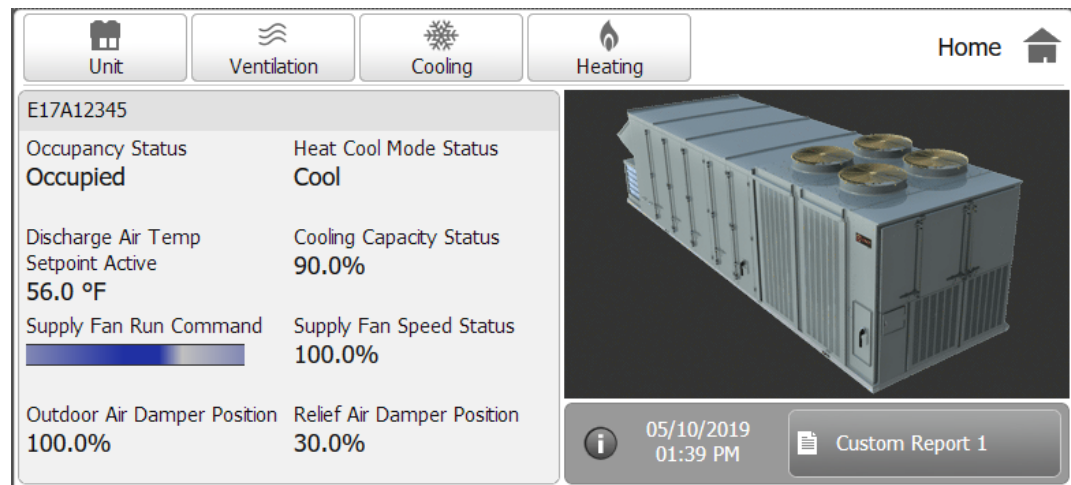
Table 1. Menu bar buttons

	<p>The Back button, when touched, returns to the previous screen visited.</p>
	<p>The Home button, when touched, navigates to the home page.</p>
	<p>The Manual Override button, when shown, indicates at least one manual override is active. Touch this icon to navigate to the Manual Control Settings page.</p>
	<p>The Operating Modes button navigates to the Operating Modes screen.</p>
	<p>The Space Temperature Active or Discharge Air Temperature Active, depending on configuration is displayed in the header Data Area.</p>


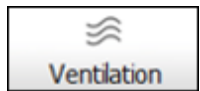
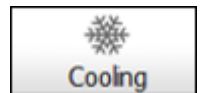


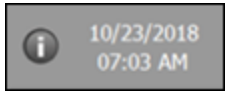
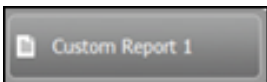
## Main Display Area (Home Screen)

The Home screen is an overview of the unit and its operation. High-level status information is presented so that a user can quickly understand the mode of operation of the unit and navigate quickly to other areas of the display for more detail.

**Figure 5. TD7 Main display area of home screen**






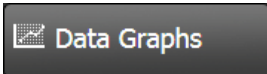


**Table 2. Main display area buttons**

	Touch this button to view the status of unit features.
	Touch this button to view the status of ventilation components.
	Touch this button to view the status of ventilation components.
	Touch this button to view the status of heating components.
	Touch the information icon to view hardware part numbers and software version numbers.
	Touch this button to access the adjust the date and time.
	Touch this button to access Custom Report 1.

## Bottom Display Area

The bottom display area contains functional buttons that provide a link to the appropriate screen.

**Table 3. Bottom display area buttons**

	Screen brightness settings. Set the brightness to 30%, 60%, 90% display back light brightness.
	Touch this button to open the Alarms screen. When an alarm is present, this button will flash.
	Touch this button to navigate to the Reports screen.
	Touch this button to open the Data Graphs screen.
	Touch this button to open the Settings screen, which contains options for manual controls, Feature settings, Binding, Unit Settings, and display settings.
	Language selection: Touch this icon to select a language that will be displayed on all screens.

## Alarms

Equipment level alarms appear on the TD7 display immediately upon detection. Touch the Alarms button in the bottom display area to view the Alarms screen.

### Alarm Screens

When an alarm is present, the Alarm button at the bottom of the TD7 screen will flash. Press this alarm button to display all active alarms. Some alarms will clear automatically and will be removed from this screen. Other alarms require you to press the Reset Alarms button to manually clear the alarm. When the Reset Alarms button is pressed, if the failure condition causing the problem has been removed, the alarm will clear. Otherwise, the alarm will persist.

Pressing the Historic Alarms button displays a list of up to 100 of the past alarms that are no longer active.

The Active Alarms and Historic Alarms screens can be sorted by Target, Severity, Date and Time, or Description by pressing the category in the top row of the alarm list. The sort order can be toggled between ascending and descending order. By default the Alarms are sorted by Date and Time in descending order. The sorted category is highlighted light blue in color and an arrow indicates the direction of the sort.

**Figure 6. Active Alarms screen**

Stopped Discharge Air Temperature Active 74.0 °F Auto Stop

Reset Alarms Active Alarms 3 Active Alarms

!	Target	Severity	Date and Time	Description
!	Unit	Immediate Shutdown	10/23/2018 10:36 AM	Return Air Iso Damper Failed to Open
i	Unit	Warning	10/23/2018 10:36 AM	Relief Air Damper Failed Closed
!	Circuit 1	Normal Shutdown	10/23/2018 10:31 AM	Comm Loss: Reheat Pumpout Solenoid

Active Alarms Historic Alarms Page 1 of 2

Alarms Reports Data Graphs Settings

**Figure 7. Historic Alarms screen**

Stopped Discharge Air Temperature Active 56.5 °F Auto Stop







Historic Alarms 2 Alarms

!	Target	Severity	Date and Time	Description
i	Unit	Warning	12/20/2018 08:10 AM	Invalid Timed Override Request Active
i	Circuit 2	Warning	12/20/2018 08:10 AM	Comm Loss: VFD Condenser Fan - 1

Active Alarms Historic Alarms

Alarms Reports Data Graphs Settings

**Table 4. TD7 alarms**

Active Alarm	Historic Alarm	Severity
		Immediate shutdown
		Normal shutdown
		Warning

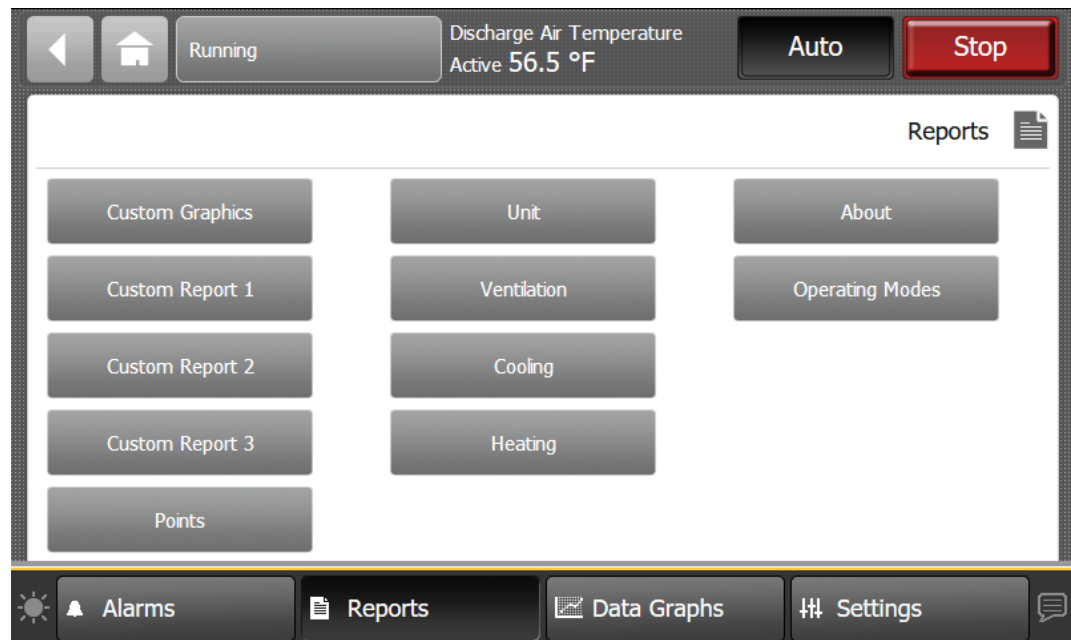
## Reports

You can use the TD7 display to view a variety of reports and create and edit custom reports.

Touch the **Reports** button in the bottom display area to view the Reports screen.. The Reports screen contains the following buttons:

- Custom Graphics
- Custom Report 1
- Custom Report 2
- Custom Report 3
- Points
- Unit
- Ventilation
- Cooling
- Heating
- About
- Operating Modes

**Figure 8. Reports screen**





## Custom Graphics

The TD7 Display supports a maximum of 12 custom graphics. Custom graphics are created and loaded using Tracer® Graphics Editor (TGE). See the TGE online help for more information.

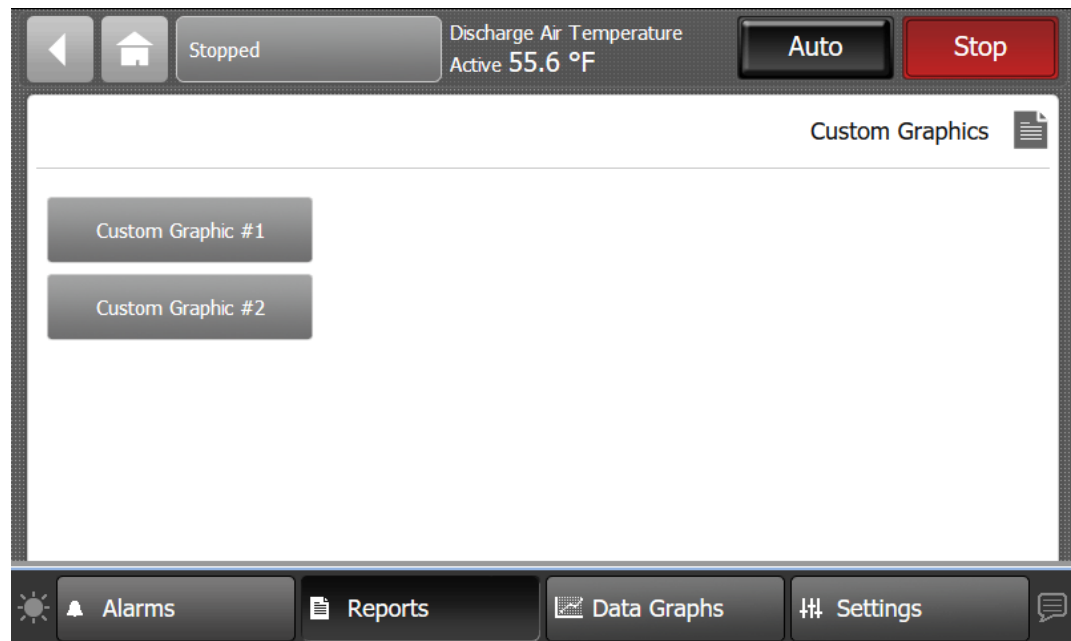
Graphics in TD7 allow you to:

- Display the value of any point on the controller
- Display animation items such as fans and dampers
- Perform overrides
- Link to the Alarms page
- Link to the User Points Report and Custom Reports
- Link to another Custom Graphic

## Accessing a Graphic

1. Navigate to the Reports screen, then touch Custom Graphics. The Custom Graphics screen with up to 12 Custom Graphic buttons is shown below. Each button on the screen represents a custom graphic. Custom graphics are published to the Symbio™ 800 Controller using Tracer® Graphics Editor (TGE) in Tracer® TU.
2. Touch the preferred graphic.

**Figure 9. Custom Graphics screen (example)**



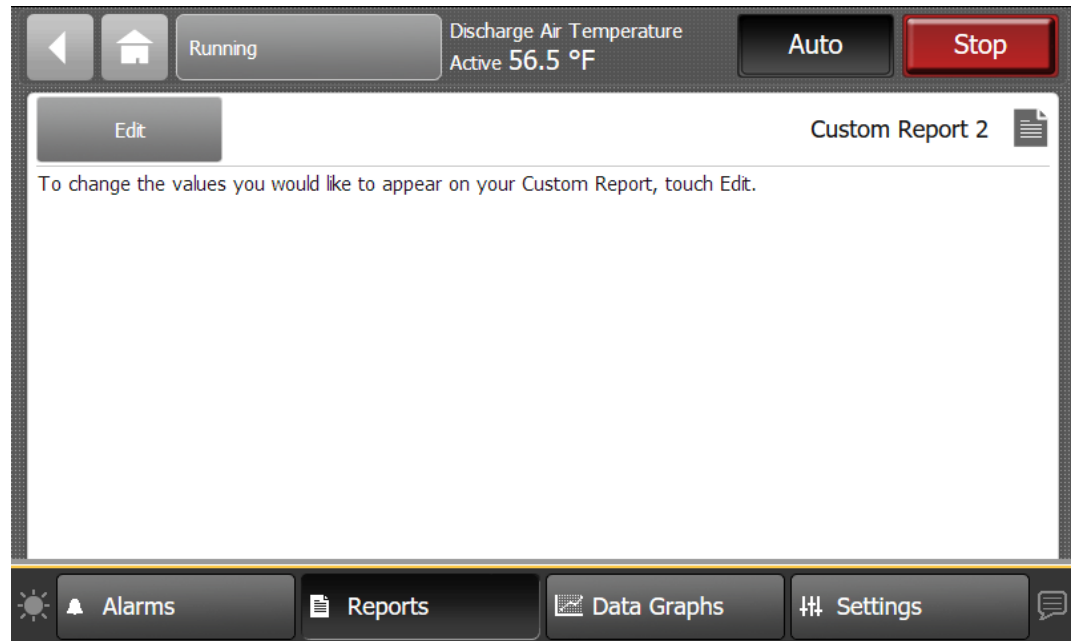
## Custom Reports

You can create up to three custom reports using the TD7 display. Available reports are labeled Custom Report 1, 2, or 3.

### Creating a Custom Report

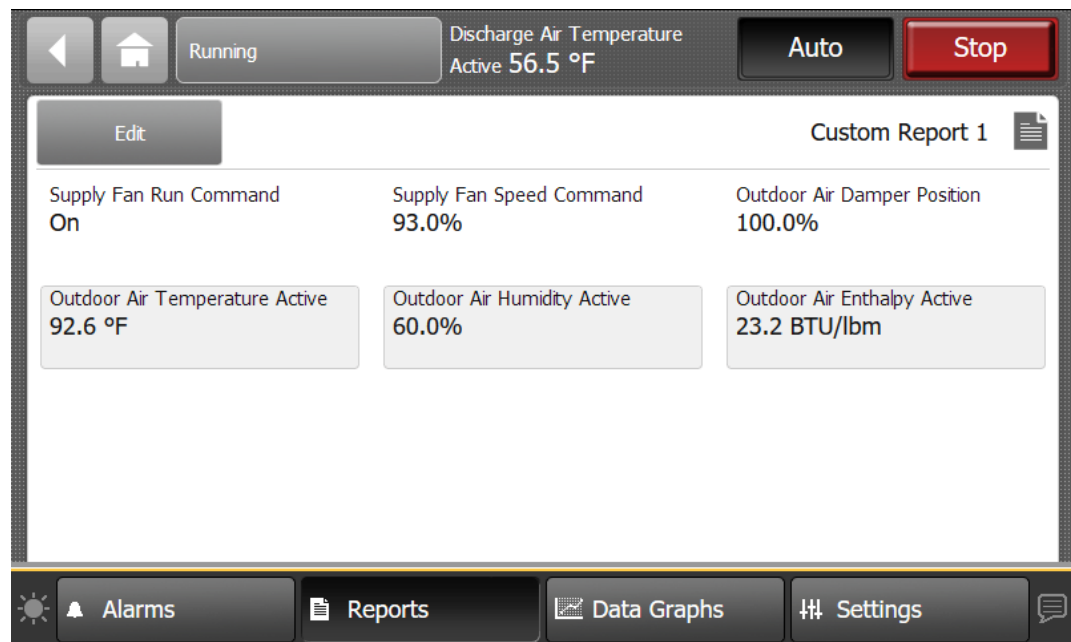
1. Navigate to the Reports screen, then touch one of the three custom report buttons. The Custom Report (1, 2, or 3) screen appears.
2. Touch the **Edit** button. The Edit Custom Report screen appears.

**Figure 10. Creating a Custom Report**



3. Use the up and down arrow buttons to select a data category. Add items by touching the item that is highlighted blue, then touch the **Add** button.
4. Continue adding values to your report. When you are finished, touch the **Save** button. The Custom Report screen, populated with your selected values, appears
5. To view the items in the selected list, touch a value in this list and use the up and down arrows to the right of the list. To change the location of an item in the list, select the item and then use the up and down arrows above the table to move the items.

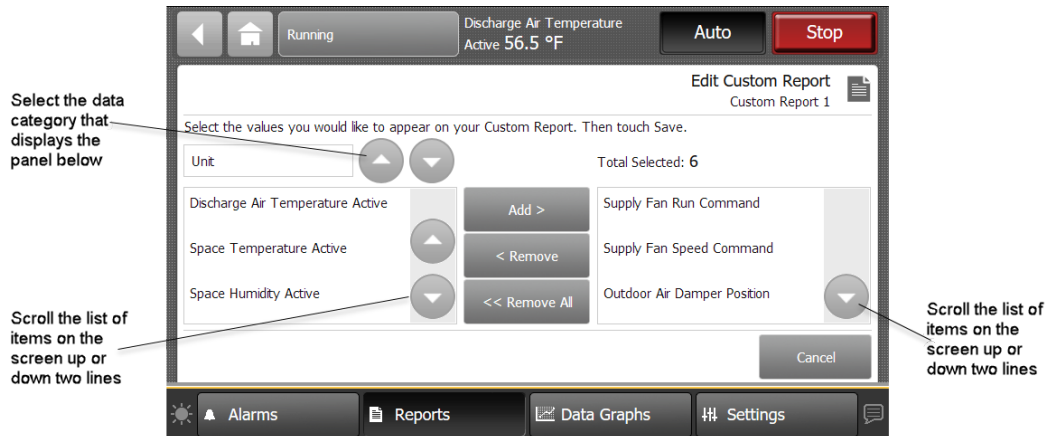
**Figure 11. New Custom Report screen**



## Editing a Custom Report

1. Touch **Reports** to view the Reports screen.
2. Touch the report that you want to edit. Follow steps 2 through 5 in “Creating a Custom Report,” p. 17 to complete your edits.

**Figure 12. Editing a Custom Report**



## Changing the Order of Items in a Custom Report

Items in a custom report can be rearranged according to personal preference by using the editing tools as described in Editing a Custom Report.

For example, you created the custom report shown in Figure 10, p. 18, but would prefer to move item “Supply Fan Speed Command” to the top left portion of the report.

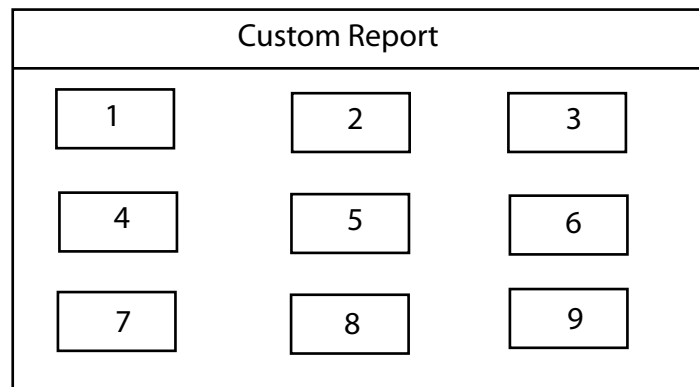
### To change the order for the example described above:

1. Touch the **Edit** button on the Custom Report screen.
2. Use the arrow buttons to locate the item to be reordered. When located, touch the item which will then be highlighted blue.
3. Use the arrow buttons to move the highlighted item to the top of the list (number 1 position).
4. Touch **Save**. You will be returned to the Custom Report screen, where the reordering changes now appear.

**Note:** On the TD7 display, report items are ordered from left to right with the first item appearing at the top left portion of the screen. Up to nine items can appear on each Custom Report screen with a maximum of 4 screens and 36 items per report.

The model in depicts a custom report screen with the first nine items displayed on the screen. Use this model to accurately reorder items in your custom reports.

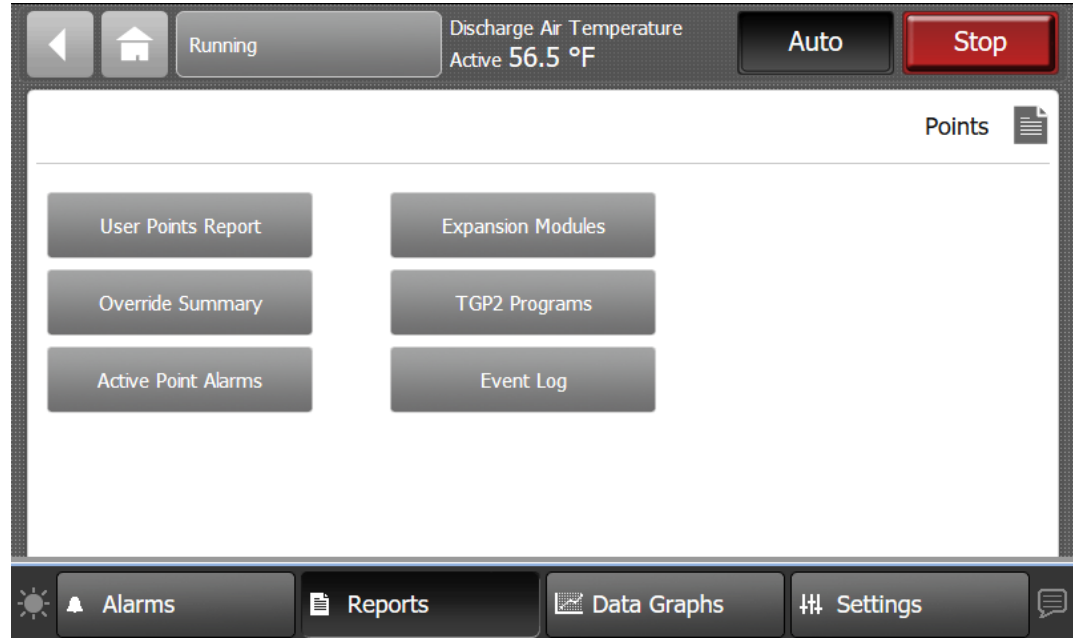
**Figure 13. Custom Report (order of items)**



## Points

Touch the Points button to view the Points report screen, which contains access to screens for viewing and manipulating a subset of the BACnet® Point interface.

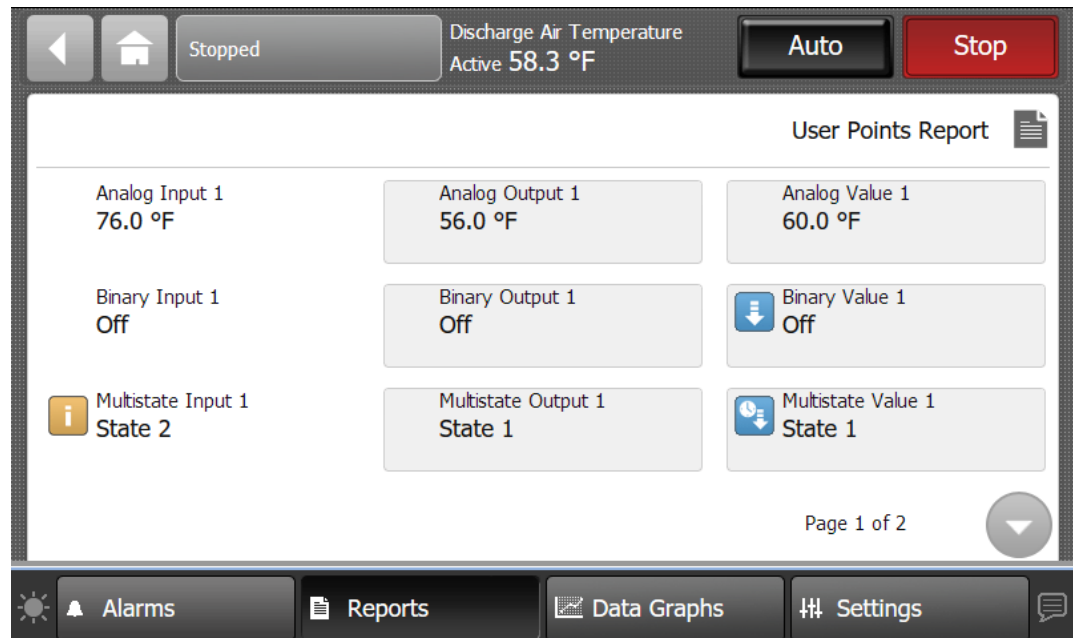
**Figure 14. Points reports screen**



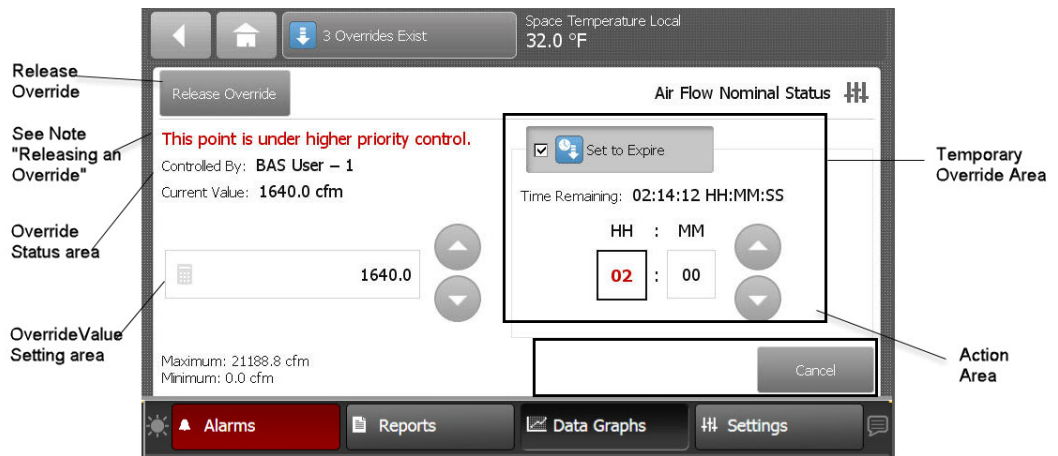
## User Points Report

Touch the **User Points Report** button to view the User Points Report screen, which contains user created points for the unit controller. Use the up and down arrows located at the right most bottom of the screen to page up or down.

**Figure 15. User Points Report screen**



**Figure 16. Point Override screen components**



### Override Status Area

This area shows who is controlling the point, followed by the active priority level and the current value of the point. If security is enabled, the name of the user that performed the override will be shown in the Controlled By field. If security is disabled, "Front Panel" is displayed for all overrides performed by the TD7.

### Override Value Setting Area

This area contains buttons that when pressed, change the override status. The button that is active has a shaded appearance in color. The exception is analog points, which require manually entering a value.

### Temporary Override Area

This area allows you to set up a temporary override.

### Action Area

This area allows you to apply, save, or cancel edits made to the point override.

### Releasing an Override

Touch the Release Override button to release the current override. This action returns you to the Override Summary screen.

**Note:** *If a point is under a higher priority control, you can still proceed with releasing the override. However, it will not take effect until the higher priority level is removed in Tracer® TU, Tracer® SC +, or Tracer® Ensemble™.*

### Analog Overrides

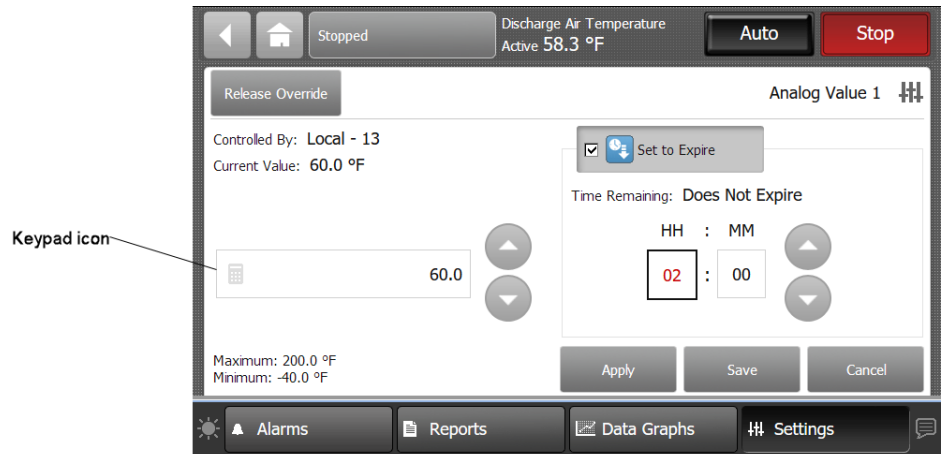
The Analog Override screen contains up and down arrows in the Override setting area, as well as a keypad icon that when touched, opens the Analog Keypad.

Use the up and down arrow buttons to select a value. Touch the **Apply** or **Save** button to retain your changes. To manually enter a value, touch the keypad icon.

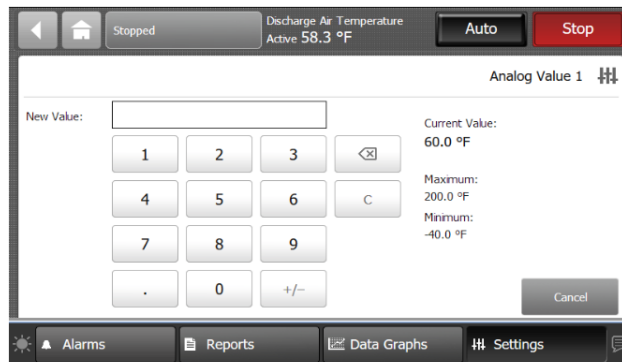
To display the Analog Keypad screen:

1. Touch the keypad icon to open the Analog Keypad screen.
2. Enter a value by tapping the numerals on the keypad.
3. Touch **Enter** to save and return to the Override screen.

**Figure 17. Display the Analog Keypad screen**



Analog Keypad screen

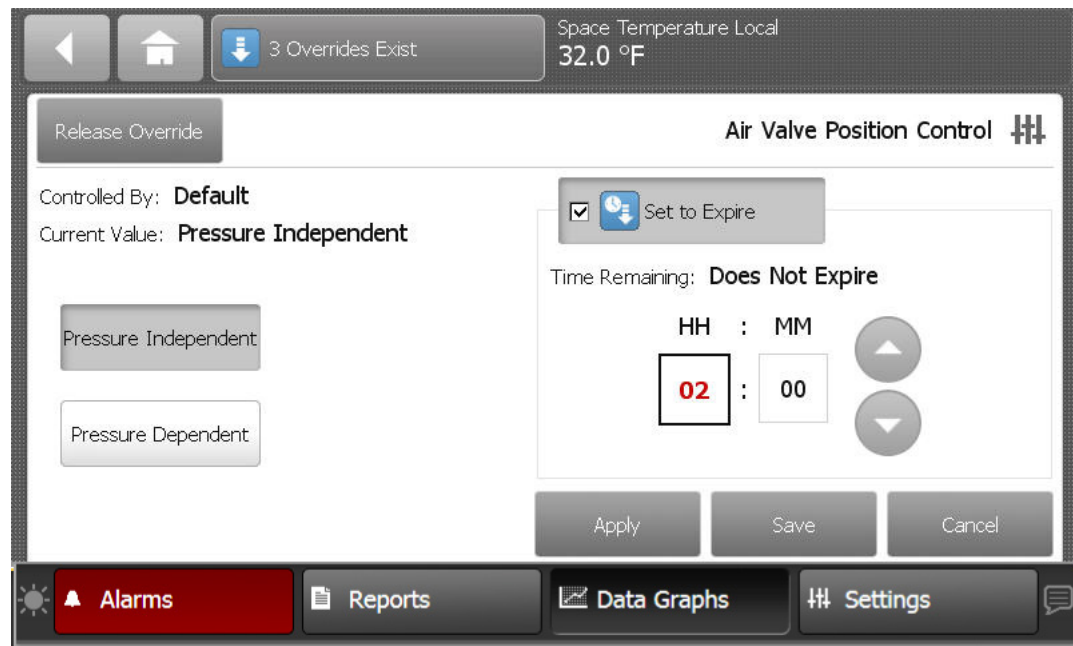


## Binary Overrides

The Binary Override screen provides buttons with point state text that is used to set the current value. Multistate overrides with four or fewer states have similar screen functions as the binary override screen.

Touch a button in the override setting area to select a state. Touch the **Apply** or **Save** button to retain your changes.

**Figure 18. Binary Override screen**

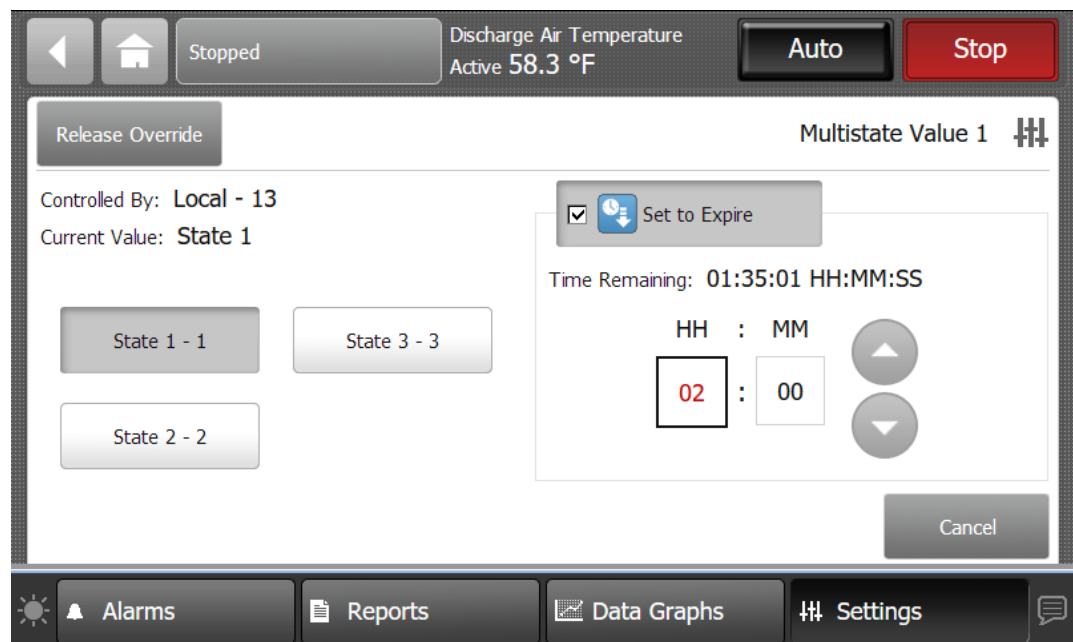


### Multistate Overrides

Multistate override screens that contain five or more items will contain up and down arrow buttons in the Override setting area.

Use the up and down arrow buttons to select a state. Touch the **Apply** or **Save** button to retain your changes.

**Figure 19. Multistate Override screen (five or more states)**



## Setting Up a Temporary Override

You can set up a temporary override by using the buttons in the Temporary Override area. The default duration for temporary overrides is 2 hours 0 minutes. The maximum duration for a temporary override is 99 hours 59 minutes. If more time is needed, consider setting up a permanent override.

1. Touch the **Set to Expire** button.

A check mark appears in the check box, the override icon becomes blue, and the Time Remaining area appears.

2. Touch either the hours (**HH**) or minutes (**MM**) button, then use the up and down arrows to set the override.

The HH and MM buttons, when pressed change by one increment. Press down on the buttons to accelerate. A second touch of the (HH) or (MM) buttons will open the Analog keypad screen.

3. Touch the **Apply** or **Save** button to set the temporary override.

## Override Summary

The TD7 has a built in override summary report. Touch the Override Summary button on the Points screen.

The Override Summary screen contains all active overrides. Columns are sortable and automatically default to Time Remaining.

The override icon (⬇️) indicates that a point override is in effect indefinitely. The temporary override icon (⌚) indicates that an override will expire after a specified duration.

To release all overrides in the list, touch the **Release All Overrides** button (only points that are controlled at the TD7 user's priority level will be released). Touch anywhere in a point row to navigate to the corresponding Point Override screen.

**Figure 20. Override Summary screen**

Point Name	Value	Controlled By	Time Remaining
Binary Value 1	Off	Tracer TU Service Tool - 8	Does Not Expire
Multistate Value 1	State 1	Local - 13	01:56:17 HH:MM:SS

## Active Points Alarms and Event Log

### Active Point Alarms

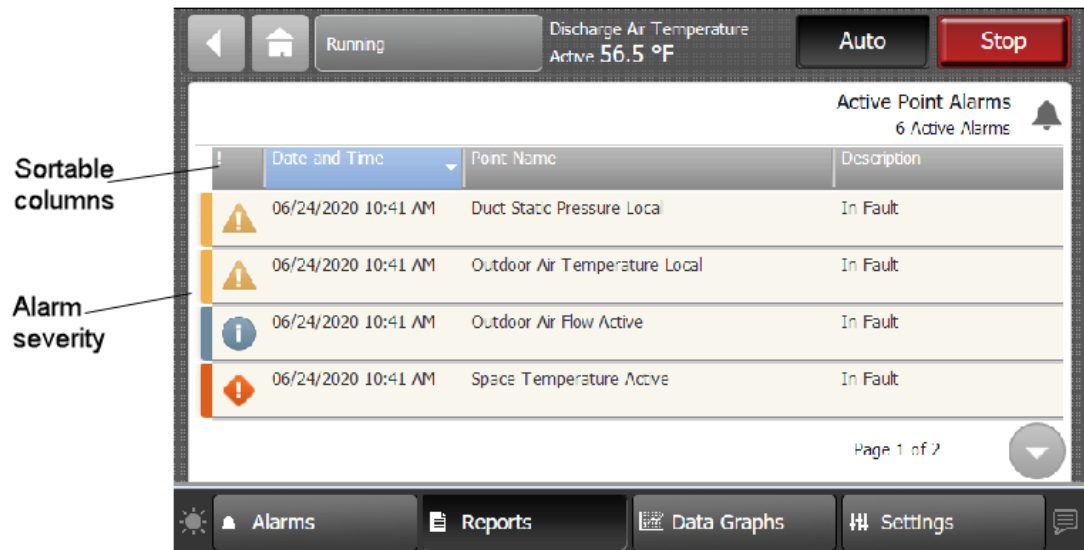
Active Point Alarms appear on the TD7 display immediately upon detection. Touch the Active Point Alarms to view the Active Point Alarms.



The figure below shows the Active Point Alarms screen and commonly used functions. When the point alarm clears and the point returns to normal, the alarm will automatically be removed from the list. The number of active point alarms is displayed in the top right portion of the screen.

For the point alarms to appear on the TD7 display, the point must have an alarm notification class selected other than None when it was set up in Symbio™ UI or Tracer® TU. Additionally, the point must have entered the appropriate notification (In Alarm, When Failed, Return to Normal, or the notification class set to a value other than None).

**Figure 21. Active Point Alarms screen**



## Event Log

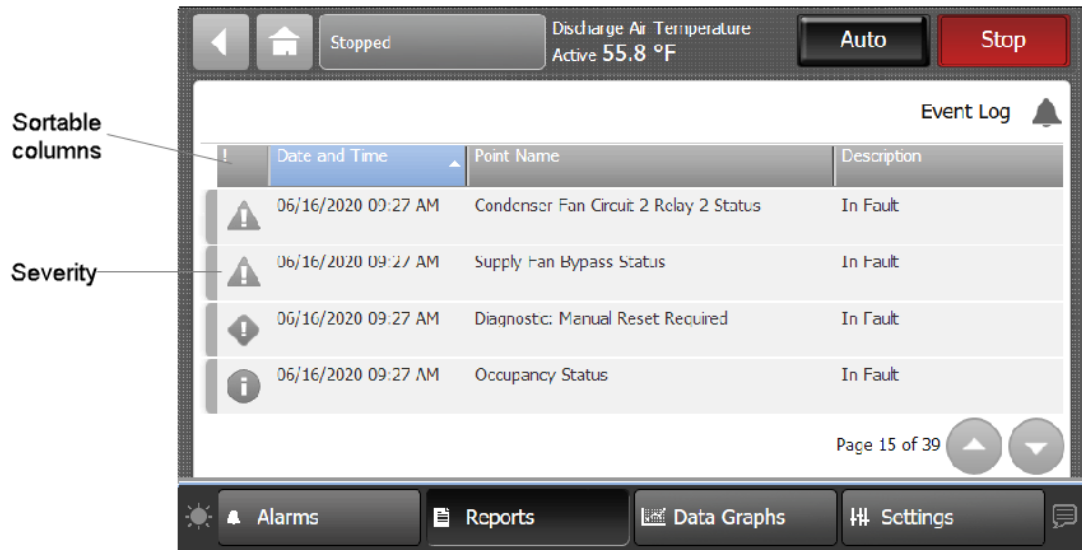
Touch the Event Log to view the Event Log.

Point Alarm icons appear in the left-most column of the Active Point alarms and Event Log screens. They are identifiable by their shape and color.

The figure below shows the Event Log screen and commonly used functions.

For the events to appear on the TD7 display, the point must have an alarm notification class selected other than None when it was set up in Symbio™ UI or Tracer® TU. Additionally, the point must have entered the appropriate notification (In Alarm, When Failed, Return to Normal, or the notification class set to a value other than None).

**Figure 22. Event Log screen**



**Point Alarm and Even Log Icons**

Point Alarm icons appear in the left-most column of the Active Point alarms and Event Log screens. They are identifiable by their shape and color.

**Table 5. TD7 alarms**

Active Alarm	Historic Alarm	Severity
		Critical
		Service Required
		Warning
		Information
		None

**Sorting Point Alarms and Event Log Events**

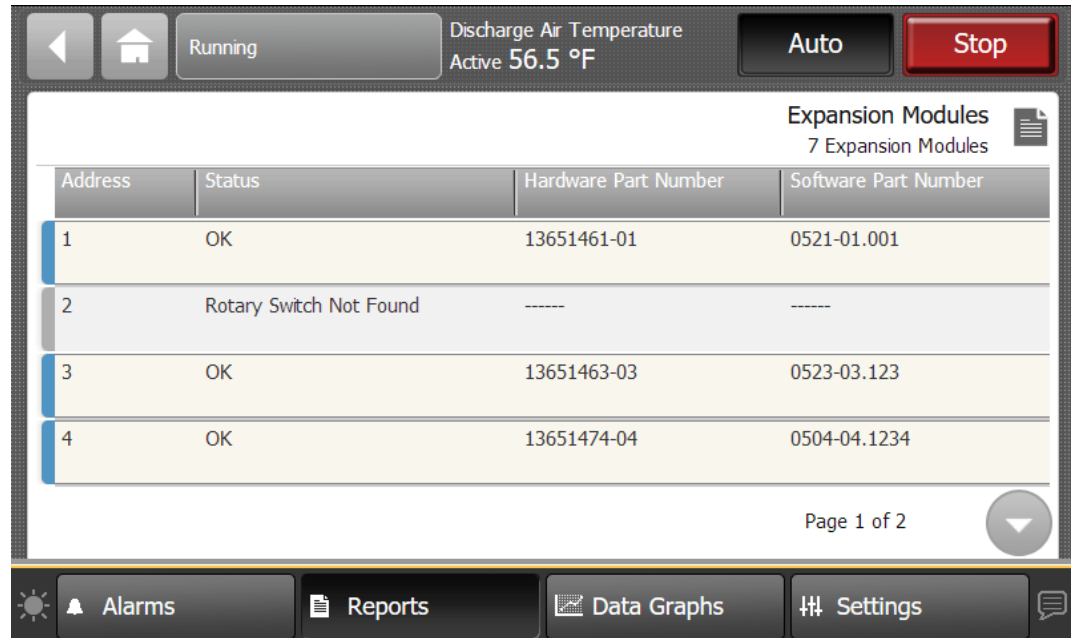
To sort point alarms or events in the event log by a category other than date and time, touch one of the other column headings in the table. The column heading responds by changing to blue, and the alarms table re-sorts according to the blue column heading. By touching the blue column heading again, the column will change the sort direction.

- Severity (!): Active alarms are at the top followed by the most severe.
- Date and Time (the default sort): Most recent alarms are at the top.
- Point Name: Alphabetical sort based on the point name.
- Description: Alarms are sorted alphabetically by description.

## Expansion Modules

Touch the **Expansion Module** button to view the Expansion Modules screen. If expansion modules have been installed, they will appear in Expansion Modules screen.

**Figure 23. Expansion Modules screen**



Address	Status	Hardware Part Number	Software Part Number
1	OK	13651461-01	0521-01.001
2	Rotary Switch Not Found	-----	-----
3	OK	13651463-03	0523-03.123
4	OK	13651474-04	0504-04.1234

Expansion Modules  
7 Expansion Modules

Page 1 of 2

Expansion module screen columns:

**Address** — This is the rotary address of the defined or discovered expansion module.

**Status** — Under normal conditions, OK will display in this column. If not refer to “*Tracer® XM30, XM32, XM70, and XM90 Expansion Modules IOM, BAS SVX46-EN.*”

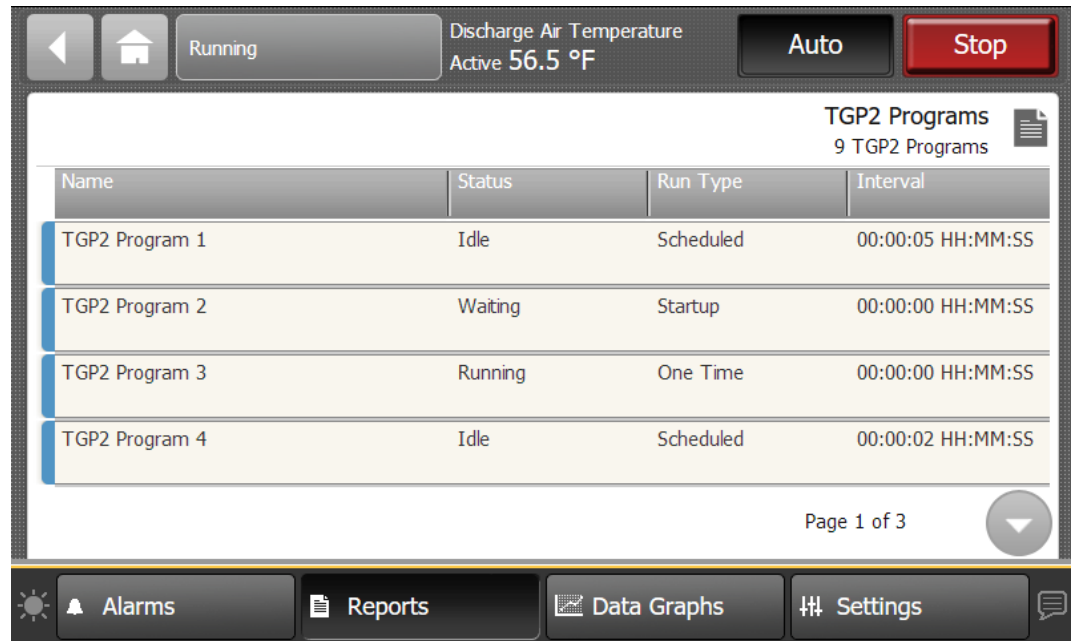
**Hardware part number** — This is the part number for the expansion module.

**Software part number** — This is the version number of the software running in the expansion module.

## TGP2 Programs

Touch the **TGP2 Programs** button to view the TGP2 Programs screen. All TGP2 programs that have been installed on the controller appear here. The program name, status, run type, and interval for each program is provided. Interval is the scheduled run interval for the program and is displayed in HH:MM:SS. If the run type is Startup or Event, the interval field will display all zeros.

**Figure 24. TGP2 Programs screen**



## Unit

Touch the Unit button to view Unit status information in the table below.

The data presented in this table is unit configuration dependent.

**Table 6. Unit status**

Occupancy Status
Timed Override Timer Active
Timed Override Bypass Timer
Cooling Capacity Status
Heating Capacity Primary Status
Heat Cool Mode Status
Supply Fan Run Command
Supply Fan Speed Status
Supply Fan Speed Command
Supply Fan Speed Cmd Enable Active
Supply Fan Speed Cmd External Active
Discharge Air Temperature Active
Outdoor Air Damper Position
Duct Static Pressure Active
Occupancy Input Active
Occupancy Request Active
Relief Fan Speed Status
Return Fan Speed Status
Return Plenum Static Pressure

**Table 6. Unit status (continued)**

Relief Air Damper Position
Space Static Pressure Active
Space Temperature Active
Space Humidity Active
Space Dew Point
Dehumidification Control Status
Mixed Air Temperature Estimated
Evap Leaving Air Temperature Estimated
Outdoor Air Temperature Active
Outdoor Air Humidity Active
Outdoor Air Enthalpy Active
Outdoor Air Dew Point
Return Air Temperature
Return Air Humidity
Return Air Enthalpy
Condensate Drain Overflow
VAV Box Relay Status
Alarm Relay Status
Shutdown Alarm Status Output
Limit Status Output
Changeover Input
Equipment Stop
Emergency Stop
Manual Overrides Time Remaining

## Ventilation

Touch the Ventilation button to view Ventilation status information in the table below. The data presented in this table is unit configuration dependent.

**Table 7. Ventilation status**

Supply Fan Run Command
Supply Fan Speed Status
Supply Fan Speed Command
Supply Fan Speed Cmd Enable Active
Supply Fan Speed Cmd External Active
Duct Static Pressure Active
Duct Static Pressure Setpoint Active
Supply Fan Proving
Supply Fan Configuration Status

**Table 7. Ventilation status (continued)**

Supply Fan Bypass Relay
Outdoor Air Damper Command
Outdoor Air Damper Position
Economizer Min Position Setpoint Active
Outdoor Air Damper Cmd Enable Active
Outdoor Air Damper Cmd External Active
Relief Fan Run Command
Relief Fan Speed Status
Relief Fan Speed Command
Relief Fan Proving
Relief Fan Bypass Relay
Relief Fan Bypass Proving
Relief Fan Speed Cmd Enable Active
Relief Fan Speed Cmd External Active
Return Fan Run Command
Return Fan Speed Status
Return Fan Speed Command
Return Fan Speed Cmd Enable Active
Return Fan Speed Cmd External Active
Return Plenum Static Pressure
Return Plenum Static Pressure Target
Return Fan Proving
Return Fan Bypass Relay
Relief Air Damper Command
Relief Air Damper Position
Space Static Pressure Active
Space Static Pressure Setpoint Active
Outdoor Air Flow Active
Outdoor Air Min Flow Setpoint Status
Outdoor Air Flow 1
Outdoor Air Flow 2
Energy Wheel Run Command
Energy Wheel Leaving Air Temperature
Energy Wheel Proving
Outdoor Air Bypass Damper Command
Outdoor Air Bypass Damper Position
Energy Wheel Filter Differential Press
Relief Air Bypass Damper Command

**Table 7. Ventilation status (continued)**

Relief Air Bypass Damper Position
Energy Wheel Preheat Command
Isolation Damper Command
Discharge Air Iso Damper Command Pct
Return Air Iso Damper Command Pct
Space CO2 Concentration Active
Minimum Ventilation Status
Pre Evap Filter Differential Pressure
Final Filter Differential Pressure
VOM A Input
VOM B Input
VOM C Input
VOM D Input
VOM E Input
VOM Relay Status

## Cooling

Touch the Cooling button to view Cooling, Circuit 1 and Circuit 2 level status information in the table below.

The data presented in this table is unit configuration dependent.

**Table 8. Cooling, Circuit 1 and Circuit 2 level status(Continued)**

Cooling	Cooling - Circuit 1	Cooling - Circuit 2
Cooling Capacity Status	Compressor 1A Status	Compressor 2A Status
Space Temp Cooling Setpoint Status	Compressor 1B Status	Compressor 2B Status
Cooling Capacity Cmd Enable Active	Compressor 1C Status	Compressor 2C Status
Cooling Capacity Cmd External Active	Stage 2 Enable Cprsr 1B	Suction Pressure Ckt2
Discharge Air Temperature Active	Compressor VFD RPM Cprsr1A	Suction Saturated Temperature Ckt2
Discharge Air Cooling Setpoint Status	Suction Pressure Ckt1	Suction Temperature Evap2A
Space Temperature Active	Suction Saturated Temperature Ckt1	Discharge Pressure Ckt2
Occupied Cooling Setpoint Active	Suction Temperature Evap1A	Discharge Saturated Temperature Ckt2
Unoccupied Cooling Setpoint	Discharge Pressure Ckt1	Suction Temperature Evap2B
Outdoor Air Damper Position	Discharge Saturated Temperature Ckt1	Condenser Air Flow Ckt2
Economizing	Suction Temperature Evap1B	EXV Status Percent Evap2A XXX.X%
Economizer Airside Enable Active	Condenser Air Flow Ckt1	EXV Status Percent Evap2B
Economizer Decision Method	EXV Status Percent Evap1A XXX.X%	Condenser Fan Relay 1 Ckt2
Econ Enable Min Outdoor Air Temp Setpt	EXV Status Percent Evap1B	Condenser Fan Relay 2 Ckt2
Outdoor Air Temperature Active	Condenser Fan Relay 1 Ckt1	Condenser Fan Relay 3 Ckt2
Outdoor Air Humidity Active	Condenser Fan Relay 2 Ckt1	Condenser Fan Relay 4 Ckt2

**Table 8. Cooling, Circuit 1 and Circuit 2 level status(Continued) (continued)**

Cooling	Cooling - Circuit 1	Cooling - Circuit 2
Outdoor Air Enthalpy Active	Condenser Fan Relay 3 Ckt1	Condenser Fan VFD Run Command Ckt2
Return Air Temperature	Condenser Fan Relay 4 Ckt1	Condenser Fan VFD Percent Freq Cmd Ckt2
Return Air Humidity	Condenser Fan VFD Run Command Ckt1	Starts Cprsr2A
Return Air Enthalpy	Condenser Fan VFD Percent Freq Cmd Ckt1	Starts Cprsr2B
Mixed Air Temperature EvapA	Hot Gas Bypass Valve Status Percent Ckt1	Starts Cprsr2C
Mixed Air Temperature EvapB	Starts Cprsr1A	Running Time Cprsr2A
Mixed Air Temperature Estimated	Starts Cprsr1B	Running Time Cprsr2B
Evap Leaving Air Temperature EvapA	Starts Cprsr1C	Running Time Cprsr2C
Evap Leaving Air Temperature EvapB	Running Time Cprsr1A	
Evap Leaving Air Temperature Estimated	Running Time Cprsr1B	
Occupied Standby Cooling Setpoint Active	Running Time Cprsr1C	
Dehumidification Control Status	Cond Reheat Valve Pos Pct Ckt1	
Discharge Air Cooling Setpoint Active	Cond Cooling Valve Pos Pct Ckt1	
	Reheat Pumpout Relay Enable	

## Heating

Touch the Heating button to view Heating status information in the table below.

The data presented in this table is unit configuration dependent.

**Table 9. Heat status**

Heating Capacity Primary Status
Space Temp Heating Setpoint Status
Heating Capacity Cmd Enable Active
Heating Capacity Cmd External Active
Discharge Air Temperature Active
Discharge Air Heating Setpoint Status
Space Temperature Active
Occupied Heating Setpoint Active
Unoccupied Heating Setpoint
Morning Warmup Setpoint
Daytime Warmup Setpoint
Occupied Standby Heating Setpoint Active
Staged Electric Heat Relay 1
Staged Electric Heat Relay 2
Staged Electric Heat Relay 3

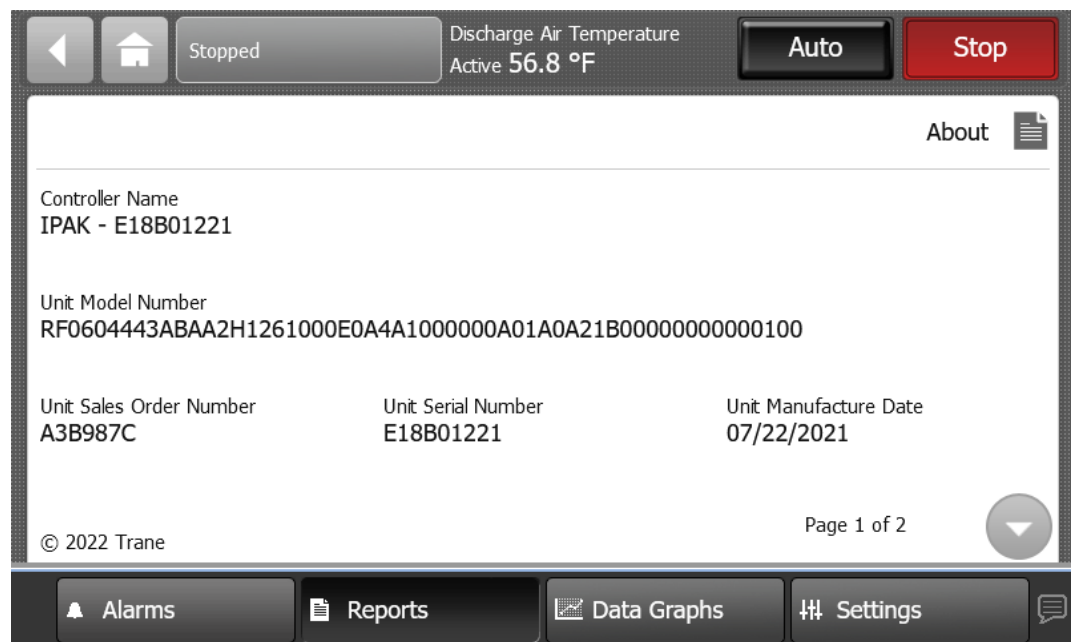


**Table 9. Heat status (continued)**

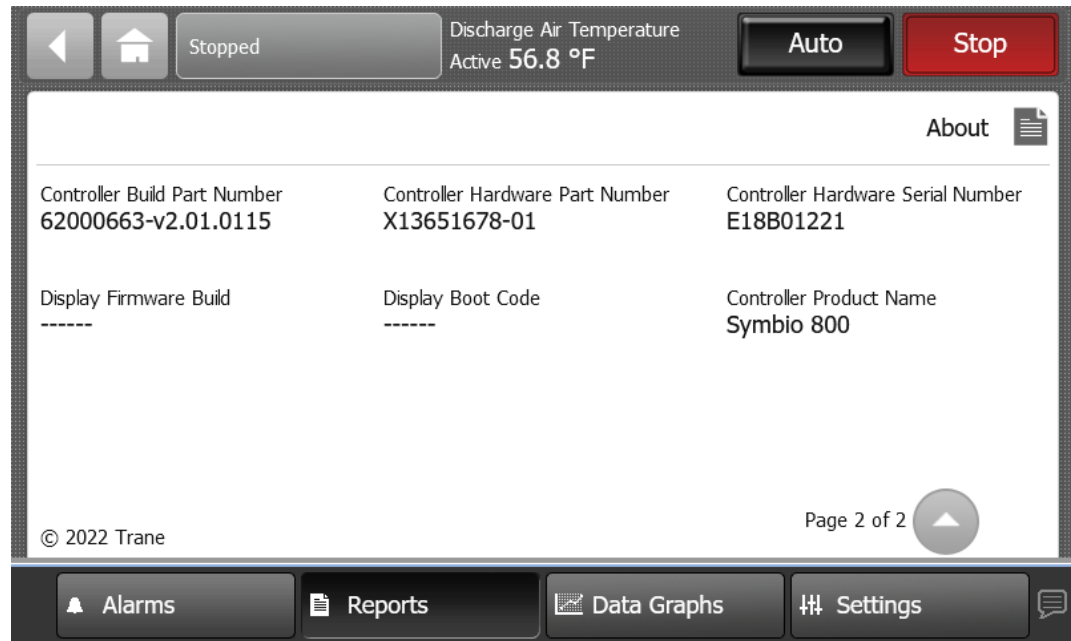
Staged Electric Heat Relay 4
Electric Heat Modulating Percent
Gas Heat Enable
Gas Heat Stage 2 Enable
Gas Heat Running Status Manf 1 Burner 1
Gas Heat Running Status Manf 1 Burner 2
Gas Heat Running Status Manf 1 Burner 3
Gas Heat Running Status Manf 2 Burner 1
Gas Heat Running Status Manf 2 Burner 2
Discharge Heat Freezestat Status
Discharge Air Heating Setpoint Active

## About

Touch the **About** button to view the About screen. View information about the unit controller and the TD7 display to which it is connected. Touch the arrow button to scroll to the next screen.

**Figure 25. About screen**


**Figure 26. About screen**



**Controller Name** — This is the name that was assigned to the Symbio™ 800. By default, the controller name is the controller serial number.

**Unit Model Number** — This is the model number of the IntelliPak™/equipment on which the Symbio™ 800 controller is installed. This value is typically entered in the factory, but can be entered in the controller.

**Unit Sales Order Number** — This is the order number for the equipment that the Symbio™ 800 controller is controlling. This number is typically entered at the factory, but can be entered in the controller.

**Unit Serial Number** — This number applies to the piece of equipment that the Symbio™ 800 controller is controlling. This number is typically entered at the factory, but can be entered in the controller.

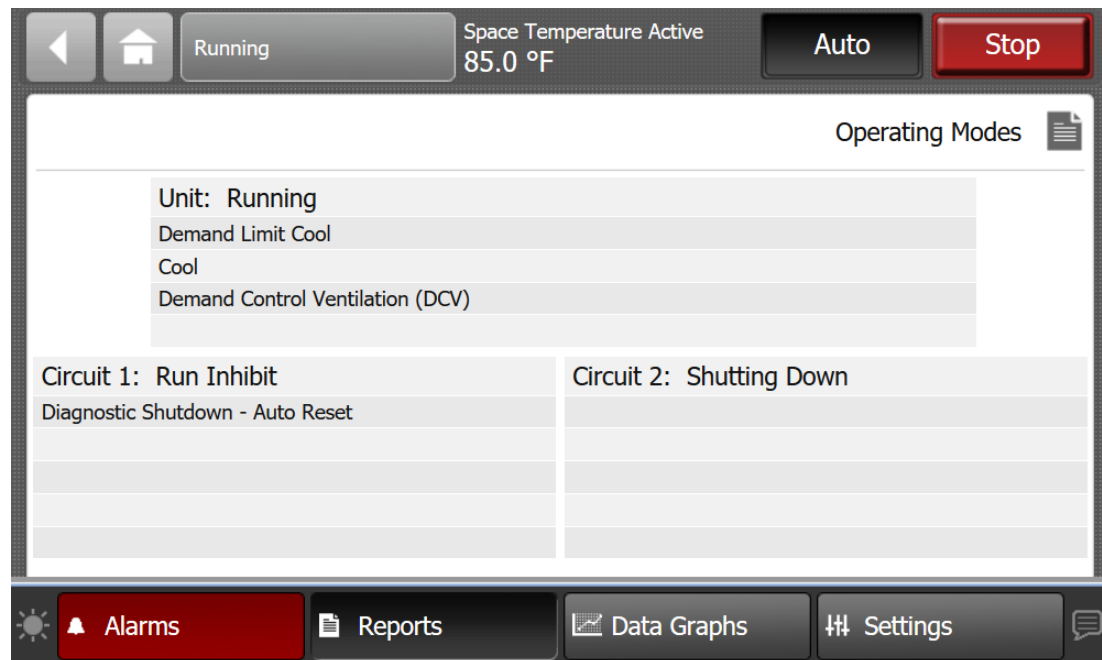
**Controller Product Name** — The controller product name will always be Symbio™ 800.

**Controller Hardware Part Number** — This is the part number for the Symbio™ 800 controller.

## Operating Modes

The Operating Modes screen provides Unit and Circuit level mode information valuable to understanding the equipment operating state. Each Unit and Circuit mode provide sub-mode information with details to understand active controls and limits that are affecting operation.

**Figure 27. Operating Modes screen**



### Unit Operating Modes

The following tables show each top level mode and list the possible sub modes for each, associated with unit and refrigeration circuit operation.

**Table 10. Unit operation - top level mode-stopped**

Unit	
Top Level Mode	Description
Stopped	The unit is not running. All components are turned Off and are Closed. The unit will be allowed to run when all sources inhibiting unit operation have been removed. (for example, clearing alarms, timers satisfied, releasing to Auto mode operation)
Stopped Sub Modes	Description
Diagnostic Shutdown - Auto Reset	The unit is stopped by a Unit Level diagnostic that may be reset automatically depending on conditions and the specific diagnostic's reset criteria.
Diagnostic Shutdown - Manual Reset	The unit is stopped by a Unit Level diagnostic that requires manual intervention to reset.
Equipment Stop	Contact has opened on the Equipment Stop input.
Immediate Stop	Unit is stopped by pressing the Stop button at the TD7 Display, then pressing the Immediate Stop button on the following screen.
Local Stop	Unit is stopped by pressing the Stop button at the TD7 Display. This stop has highest priority and cannot be remotely overridden. Note: TU with a direct USB connection to the Symbio™ 800 has unit level privileges and can also place the controller in Stop or Auto.
Power Up Delay Inhibit (XX:XX Min:Sec)	The unit has experienced a power cycle, or has just terminated all active Ventilation Override Mode or Emergency Override Mode events. When the Power-Up Start Delay timer expires the unit will enter Stop mode as defined in this table. Note: If the unit is configured with Rapid Restart and the last Top Level Mode was Stopped, Rapid Restart will be pending and the unit will enter the active Rapid Restart event once Auto mode has been entered.

**Table 11. Unit operation - top level mode - run inhibit**

Unit	
Top Level Mode	Description
Run Inhibit	The unit is currently being inhibited from starting (and running), but may be allowed to start if the unit inhibit or the unit level diagnostic conditions are manually or automatically cleared.
Run Inhibit Sub Modes	Description
Diagnostic Shutdown - Auto Reset	While the unit is in Auto mode, the entire unit has been stopped by a unit level diagnostic that may be reset automatically depending on conditions and the specific diagnostic's reset criteria.
Off	The unit has been placed into Heat Cool Mode = Off.
Power Up Delay Inhibit (XX:XX Min:Sec)	The unit has experienced a power cycle, or has just terminated all active Ventilation Override Mode or Emergency Override Mode events. When the Power-Up Start Delay timer expires the unit will enter Auto mode as defined in this table. Note: If the unit is configured with Rapid Restart and the last Top Level Mode was Auto, with no other inhibits pending, the Rapid Restart event will become active immediately.

**Table 12. Unit operation - top level mode - auto**

Unit	
Top Level Mode	Description
Auto	The unit supply fan is on providing minimum ventilation, but there is no call for heating or cooling capacity control.
Auto Sub Modes	Description
Heat Air Modulation Failure Manf 1	The Air Pressure is not modulating down at minimum inducer drive. Modulating Gas Heat only.
Heat Air Pressure Reading Low Manf 1	Pressure switch failed to open or insufficient air/blocked vent. Includes air switch failure to open during pre-purge switch check. All burners on all manifolds are unavailable. Will allow another retry in 10 - 30 seconds after the error condition is created, and the error condition is cleared. Modulating Gas Heat only.
Heat Air Pressure Reading High Manf 1	Includes air switch failure to close during pre-purge switch check. All burners are unavailable. Will allow another retry in 10 - 30 seconds after the error condition is created, and the error condition is cleared. Modulating Gas Heat only.
Heat Air Sensor Out Of Tolerance Manf 1	The Air Pressure sensor zero reading appears to be out-of-tolerance. Modulating Gas Heat only.
Heat Derate - Insuff Comb Air Manf 1	Blocked vent with actuator position derated by >20% from FRI setting. Modulating Gas Heat only.
Heat Failed Ignite Delay Manf X Burner Y	The number of failed burner ignition attempts exceeds a certain threshold. Burner is temporarily unavailable. Any subsequent burners on that manifold are also temporarily unavailable. Any prior burners that exist on that manifold may continue running. Will allow another retry 60 minutes after the error condition is created, and the error condition is cleared. Possible causes: Insufficient gas line pressure. Faulty gas valve. No spark from spark igniter. Improper flame rod connection. Improper placement of spark igniter/flame rod.
Heat Ignite Attempt Fail Manf 1 Burner 1	Ignition attempt was unsuccessful. Control board will attempt to reignite if number of re-ignition attempts has not been exceeded. Modulating Gas Heat only.
Heat Lost Flame Delay Manf X Burner Y	The number of lost flame conditions exceeds a certain threshold. Burner is temporarily unavailable. Any subsequent burners on that manifold are also temporarily unavailable. Any prior burners that exist on that manifold may continue running. Will allow another retry 60 minutes after the error condition is created, and the error condition is cleared. Staged Gas Heat only. Possible causes: Dirty/faulty flame rod. Improper burner component installation. Low gas pressure.
Heat Lost Flame Manf 1 Burner 1	Ignition was successful but then flame disappeared. Control board will attempt to reignite. Modulating Gas Heat only.

**Table 12. Unit operation - top level mode - auto (continued)**

Heat Primary Limit Open Manf X	Primary limit is open. Could be due to the Roll out switch or an over-temp condition on the Tstat. All burners on all manifolds are unavailable until all elements on the primary limit are closed. Modulating Gas Heat: Mode will clear 10 - 30 seconds after the error condition is created, and the error condition is cleared. Staged Gas Heat: Mode will clear 10 minutes after the error condition is created, and the error condition is cleared. Possible causes: Air flow filters. Duct sizing. Faulty blower.
Heat Primary Limit Open Manf 1	Primary limit condition has occurred on a gas heat control board, which is a MODBUS secondary to another gas heat control board. Mode will clear 10 minutes after the error condition is created, and the error condition is cleared.
Heat Turn Down Limited Manf 1	Flame loss at low fire results in an auto-adjustment that limits the burner turn down during the rest of the current call for heat (due to Lost Flame Auto-Adaptation). Modulating Gas Heat only.
Idle	VVZT, CVZT Units: Occupied/Bypass/Standby, Heat Cool Mode = Heat or Cool, supply fan mode is cycling, capacity is 0%, and supply fan is off. VVDA, CVDA Units: Auto operation has been requested but the fan is off due to internal fan-off delays, or the fan has started, but airflow has not yet proven.

**Table 13. Unit operation — top level mode — running**

Unit	
Top Level Mode	Description
Running	The unit's supply fan is proven and running. Capacity control can be active or inactive.
Running Sub Modes	Description
Cool	DX or economizer cooling is active, Heat Cool Mode Status = Cool
Cool - Dehumidification	Heat Cool Mode Status = Cool and Dehumidification Control Status > 0%.
Cool – Economizing	Cooling Capacity Status = 0% Heat Cool Mode Status = Cool, Economizer System Status = True, Outdoor Air Damper > minimum position setpoint or OA flow position setpoint.
Cool - Economizing + DX	Cooling Capacity Status > 0% Heat Cool Mode Status = Cool, Economizer System Status = True, Outdoor Air Damper > minimum position setpoint or flow position setpoint.
Cool - Tempering	VVDA/CVDA units Heat Cool Mode Status = Cool and Supply Air Tempering Status = True
Daytime Warm up	VVDA/CVDA units Daytime Warmup is active. Daytime Warmup Active = True; Heat Cool Mode Status = Heat or Max Heat; Heat Cool Mode Request = Cool
Demand Control Ventilation (DCV)	Supply fan proven On, Feature Installed/Enabled, CO2 < Design CO2 Setpoint, Not actively in an Economizing mode.
Demand Limit	Demand Limit Request BAS is set to true and the unit is actively holding or unloading heating or cooling staging to meet Demand Limit requirements
Emergency Override Mode X	Emergency Override Mode is active. Where X = Pressurize, Depressurize, Purge, Shutdown, or Fire
Energy Recovery Cooling	Energy wheel and dampers are performing cooling operation.
Energy Recovery Frost Avoidance	Energy recovery is modulating bypass dampers to maintain leaving wheel temperature to the frost avoidance setpoint.
Energy Recovery Heating	Energy wheel and dampers are performing heating operation.
Energy Recovery Preheat	Wheel is active and has turned on the preheat relay.
Energy Recovery Tempering	Wheel is active and is modulating dampers during supply air tempering..
Energy Wheel Inhibited By Frost Conditions	Energy wheel operation has been terminated for 60 minutes due to Leaving Wheel Temperature remaining below the Frost Threshold Stpt.

**Table 13. Unit operation — top level mode — running (continued)**

External Relief Fan Control	External control of the relief fan is active.
External Supply Fan Control	External control of the supply fan is active.
Fan Only	Only a sub mode when commanded via Heat Cool Mode Request = Fan Only. Heat Cool Mode Status = Fan Only
Heat	Heat Cool Mode Request = Heat Morning Warmup Active = False
Supply Fan Limited By Low Return Press	Supply fan speed will be held, or reduced, to maintain proper return pressure for relief damper control.
Return Fan Limited By Low Space Press	Return fan speed will be held, or reduced, to prevent critical low space pressure conditions.
Relief Damper Limited By Low Return Press	Relief damper position will be held, or reduced, when return pressure is too low to insure proper relief control.
Max Heat	Heat Cool Mode Request = Max Heat
Morning Warm Up	Morning Warm Up is active. Morning Warmup Active = True
Night Purge	Night Purge mode is active. Heat Cool Mode Request = Night Purge and Occupancy Status = Occupied
Pre Cool	Pre Cool Active = True
Ventilation Override Mode X	Ventilation Override Mode is active. Where X = A, B, C, D, or E

## Circuit Operating Modes

The tables below show each **Circuit - Top Level Mode** and lists the Sub Modes possible.

**Table 14. Circuit operation-top level mode - stopped**

Circuit	
Top Level Mode	Description
Stopped	The circuit is not running, and cannot run without intervention.
Stopped Sub Modes	Description
Diagnostic Shutdown – Manual Reset	The circuit has been shutdown on a latching diagnostic.
Front Panel Circuit Lockout	The circuit is manually locked out by Manual Override Control at the Front Panel. Unlike other Manual Overrides these locks are not terminated when the Manual Overrides Time expires, and are persisted through power cycles. They can only be cleared at the Front Panel.

**Table 15. Circuit operation-top level mode - run inhibit**

Circuit	
Top Level Mode	Description
Run Inhibit	The given circuit is currently being inhibited from starting (and running), but may be allowed to start if the inhibiting or diagnostic condition is cleared.
Run Inhibit Sub Modes	Description
Diagnostic Shutdown – Auto Reset	The circuit has been shutdown on a diagnostic that may clear automatically.
No Compressors Available	All compressors on the circuit are currently locked out and unable to start.
Start Inhibited by Low Ambient Temp	The Active Outdoor Air Temperature has fallen below the Low Ambient Lockout Setpoint.
Start Inhibited by Low Suction Pressure	The suction pressure dropped below a pressure threshold. See the IOM for more details.
Running Inhibited by Frost Protection	Compressors on the circuit are inhibited to remove frost on the coil.

**Table 16. Circuit operation-top level mode - auto**

Circuit	
Top Level Mode	Description
Auto	The circuit is not currently running but can be expected to start at any moment given that the proper conditions are satisfied.
Auto Sub Modes	Description
Calibrating EXV	The EXVs are performing a calibration cycle. A calibration is performed whenever the unit controller is power cycled, or when the unit controller is running, the circuit is off, and it has been at least EXV Recalibration Time since the last EXV Calibration was executed.

**Table 17. Circuit operation-top level mode - waiting to start**

Circuit	
Top Level Mode	Description
Waiting to Start	The circuit is going through the necessary steps to allow the lead circuit to start.
Waiting to Start Sub Modes	Description
Prepositioning EXV	The circuit will wait for the time it takes the EXV to get to its commanded pre-position prior to starting the compressor. This is typically a relatively short delay and no countdown timer is necessary (less than 15 seconds) <b>Note:</b> This does not occur during EXV pre-position but is not necessarily required as the time is short and the top level mode is adequate to explain that the startup sequence is in process

**Table 18. Circuit operation-top level mode - running**

Circuit	
Top Level Mode	Description
Running	The compressor on the given circuit is currently running.
Running Sub Modes	Description
Comfort Purge	A Comfort Purge cycle is entered when compressors have been running on the reheat circuit but no reheat is commanded. Therefore, reheat has been inactive and the reheat modulating valve has been closed.
Dehumidification Purge	A Dehumidification Purge cycle is entered when compressors have been running on the reheat circuit, "standalone" dehumidification control is active and reheat has been active with the modulating valve having been opened.

**Table 19. Circuit operation-top level mode - running-limit**

Circuit	
Top Level Mode	Description
Running – Limit	The circuit is currently running however the operation of the unit/compressors is being actively limited by the controls. Further information is provided by the sub-mode.* See the section below regarding criteria for annunciation of limit modes
Running – Limit Sub Modes	Description
Coil Purge	A 3 minute Coil Purge is in process to reclaim any logged oil from the condenser or reheat coils.
Compressor Involute Pressure Limit	If compressors on the circuit are energized and the compressor involute pressure differential limit is in the hold region or unload region.
Compressor Startup Speed Limit	This applies to the variable speed compressor and enforces a maximum speed limit for a fixed time period following startup. During normal operation, the speed range limits are determined based on unit type, efficiency, capacity stage and other limit controls. The maximum speed limit following every startup is treated as a special case to help provide the best possible oil quality.

**Table 19. Circuit operation-top level mode - running-limit (continued)**

Discharge Pressure Limit	The circuit capacity is prevented from loading or has unloaded due to high discharge pressure.
Frost Protection Limit	This is a circuit level protection and is active whenever one or more compressors on a circuit are running. Each circuit will compare its Saturated Suction Temperature to various criteria. Depending on the severity of the coil frost potential this protection will limit loading or unload the circuit capacity in an attempt to minimize the frost.
High Discharge Pressure Limit	This circuit-level feature prevents a circuit shutdown when the discharge pressure approaches the high-pressure cutout switch setting by decreasing compressor capacity. Limit control action modifies the normal capacity modulation and staging commands to decrease capacity by reducing compressor modulation or staging off compressors on circuits with high discharge pressure.
High Discharge Sat Temp Capacity Limit	This circuit-level feature applies when the discharge saturated temperature approaches the compressor operating map limit for high discharge saturated temperature. Limit control action modifies the normal capacity modulation to decrease capacity by reducing compressor speed. The objective is to maximum the capacity within the compressor operating map design limit.
High Discharge Sat Temp Speed Limit	This circuit-level feature applies when the discharge saturated temperature approaches the compressor operating map limits. Limit control action modifies the allowable compressor speed range. The objective is to maximize the allowable speed range.
High Suction Saturated Temp Inhibit 1A	Protection for when the suction saturated temperature nears the operating map design limit. Mode displayed if the limit control integral trips and the inhibit command becomes active.
High Suction Saturated Temp Limit 1A	Protection for when the suction saturated temperature nears the operating map design limit. Mode displayed if the suction saturated temperature is in the unload region and the variable speed compressor is running.
Low Compressor Suction Pressure Limit	This function shall prevent the addition of circuit capacity any time the circuit is running and Compressor Suction Refrigerant Pressure CktX is less than $(1.4 * \text{Low Compressor Suction Pressure Cutout Normal CktX})$ .
Low Suction Saturated Temp Speed Limit	This circuit-level feature applies when the suction saturated temperature approaches the compressor operating map limits. Limit control action modifies the allowable compressor speed range so the unit operates within the map limits.

**Table 20. Circuit operation-top level mode - shutting down**

Circuit	
Top Level Mode	Description
Shutting Down	The circuit is preparing to de-energize the compressor.
Preparing Shutdown Sub Modes	Description
Diagnostic Shutdown – Manual Reset	The circuit has been shutdown on a latching diagnostic.
Front Panel Circuit Lockout	The circuit is manually locked out by the circuit lockout setting – the nonvolatile lockout setting is accessible through either the TD7 Display or TU.
Starting is Inhibited by Low Ambient Temperature	The Outdoor Air Temperature Active has fallen below the Low Ambient Lockout Setpoint.

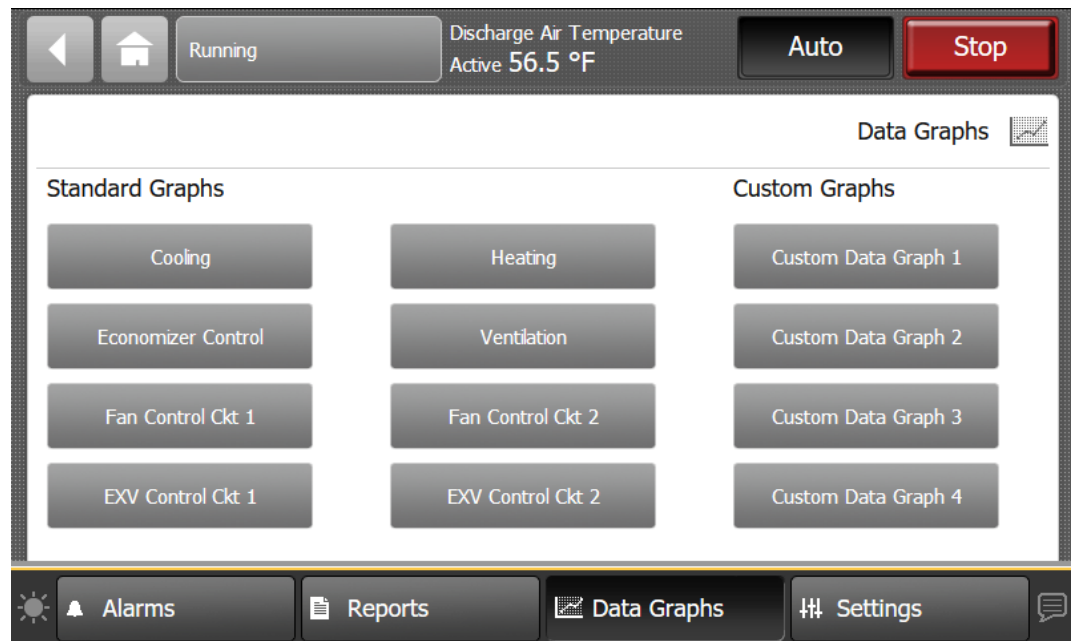
## Data Graphs

Data graphs allow users to view trend logs from the controller in graphical format on the TD7 Display. Up to eight standard data graphs can be viewed. Custom graphs are user defined and can be edited by changing the scale on the left and right Y-axis and choosing the line color.

Touch the **Data Graphs** button in the bottom display area to view the Data Graphs screen. The Data Graphs screen contains eight buttons that allow you to view one of eight standard graphs. Some standard graphs may not exist for your unit.



**Figure 28. Data Graphs screen**



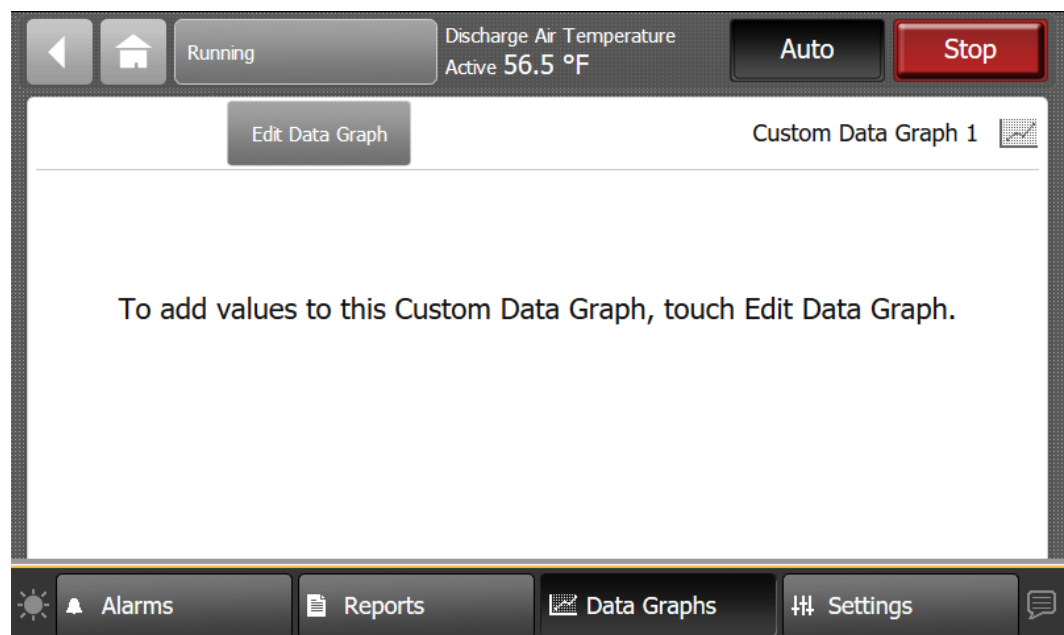
### Viewing Standard Graphs

These graphs are predefined and not editable. Some graphs may not be displayed if the function is not supported by the unit configuration, for example: Heating.

### Creating a Custom Data Graph

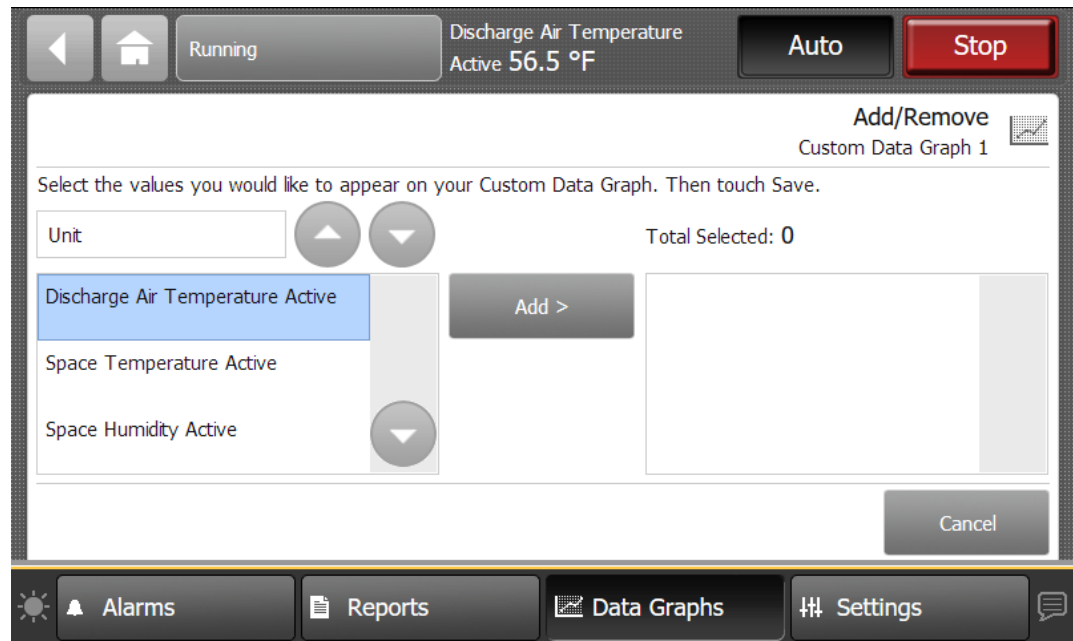
1. Navigate to the Data Graphs screen, then touch one of the four Custom Data Graph buttons in the right column. The Custom Data Graph screen appears.
2. Touch the **Edit Data Graph** button.  
The Edit Data Graph screen appears.

**Figure 29. Edit Data Graph screen**



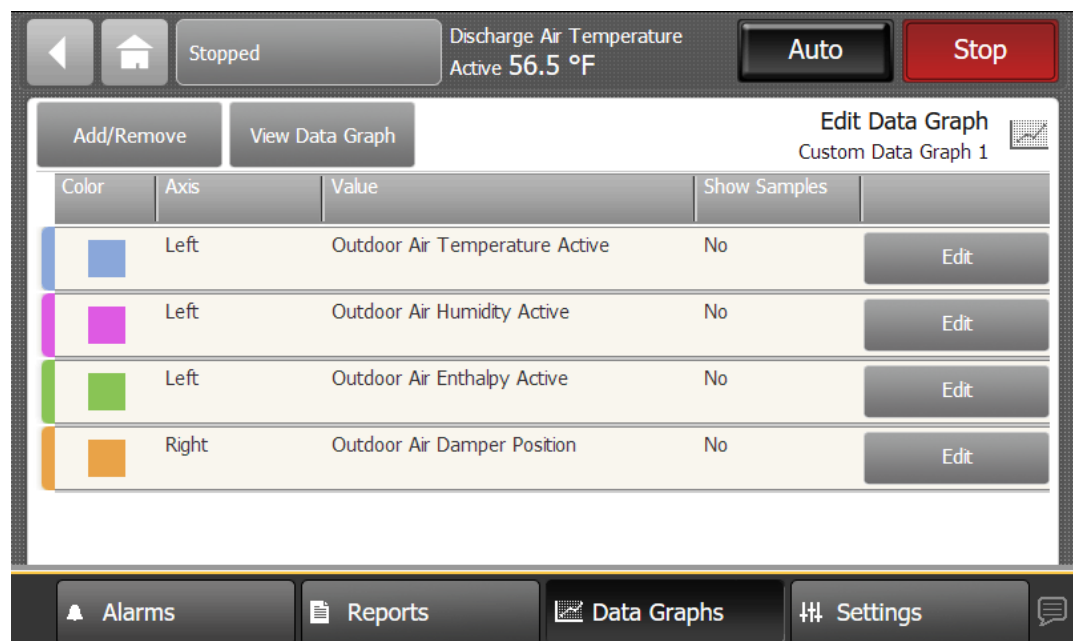
3. Touch the **Add/Remove** button to add values to the custom data graph.  
The Add/Remove screen appears.
4. Use the arrow buttons to select a datalog type: analog, binary, or multistate, which then populates the box directly below.
5. Select the values, then touch the **Add** button (up to four selections are allowed).
6. Touch the **Save** button. The Edit Data Graph screen appears, which reflects the selected values.

**Figure 30. Adding data to the Custom Graph**



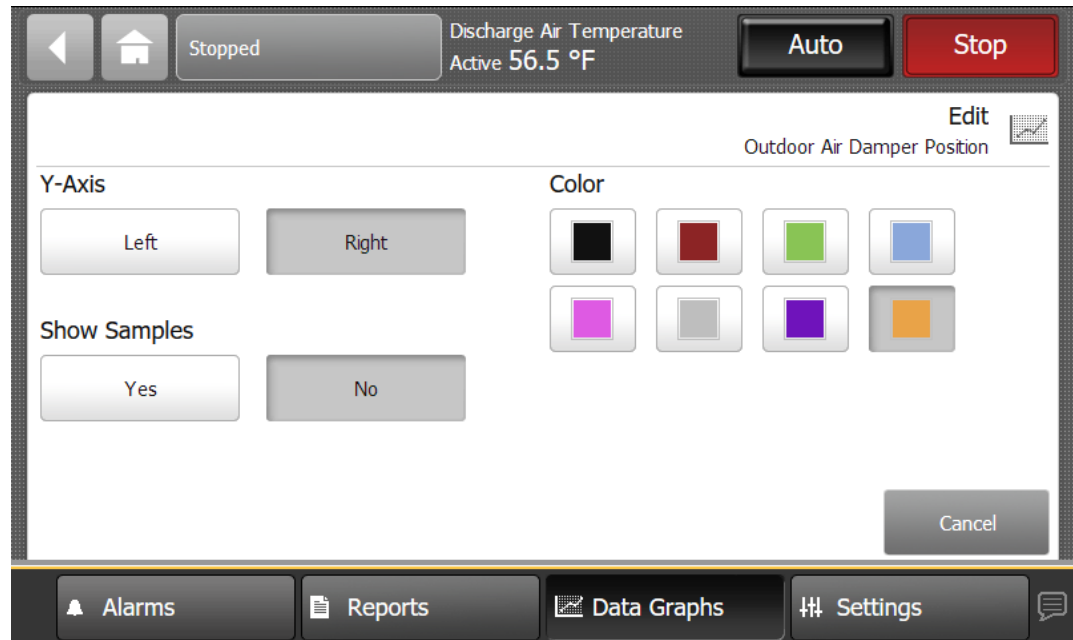
7. Use the Edit Data Graph screen to modify the data graph. Touch the **Edit** button that corresponds with the value that you want to change. Only one value can be edited at a time.

**Figure 31. Edit Data Graph screen (after values have been added)**



- From the Edit screen you can choose which Y-axis to display the value, a color, and whether or not to show data samples. Touch the **Save** button when finished. Repeat the process with remaining values.

**Figure 32. Customizing the data graph**

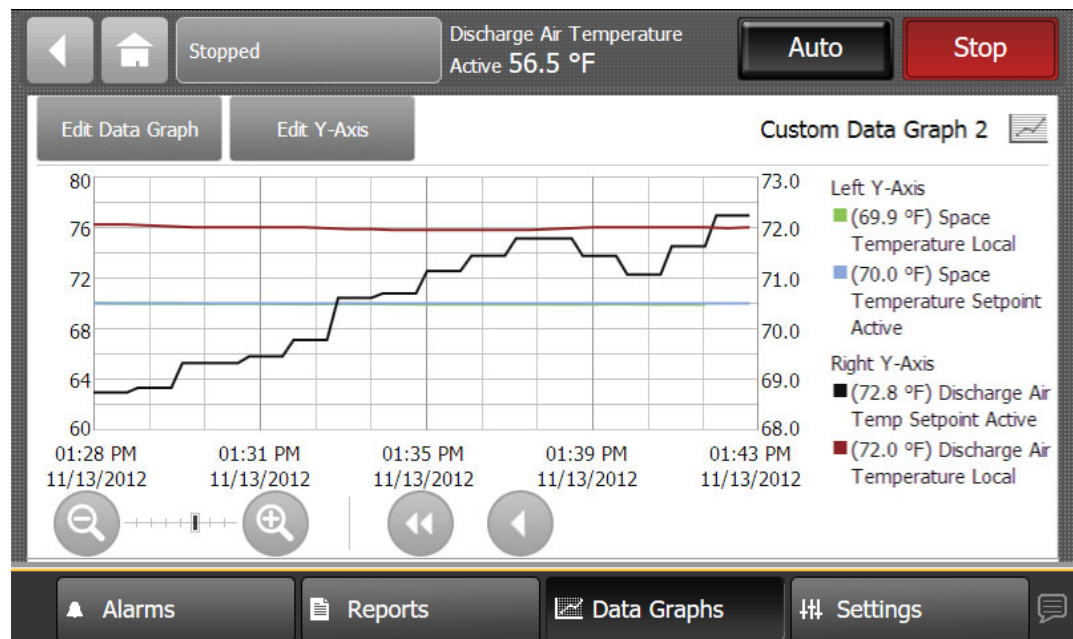


- Touch the **View Data Graph** button to display the new graph.

**Note:** Depending on the sampling rate, the custom data graph may be empty for several hours.

You can make changes to the way data is presented on the graph at anytime. Touch the zoom-in icon and zoom-out icon to either increase or decrease the viewable time frame. This action also enables back and forward arrows that allow you to view data at various times of the day.

**Figure 33. Viewing the data graph**

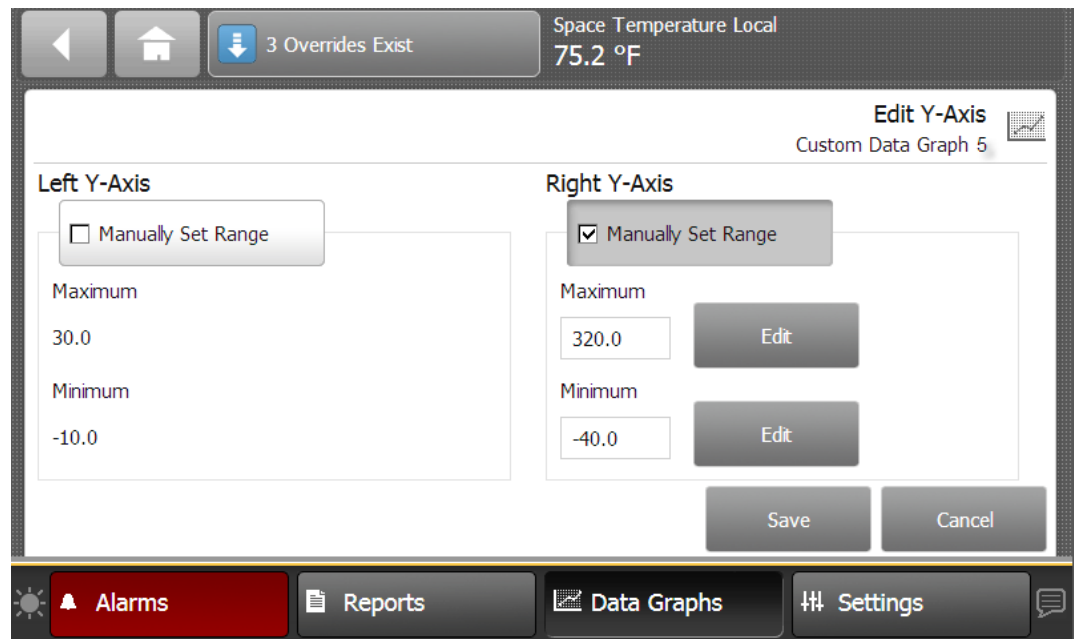


## Editing the Y-Axis

The default values on the right and left Y-axes can be changed according to your specifications.

1. Touch the **Edit Y-Axis** button located on the top portion of the Custom Data Graph screen.  
The Edit Y-Axis screen appears.
2. Touch the **Manually Select Range** box for either the left or right Y-axis.
3. Touch the **edit** button next to one of the two value ranges.  
The Keypad screen appears.
4. Select a new value and then touch **Enter** to save.
5. Repeat steps 2 through 4 until all preferred changes have been made.

**Figure 34. Editing the Y-Axis**



## Settings

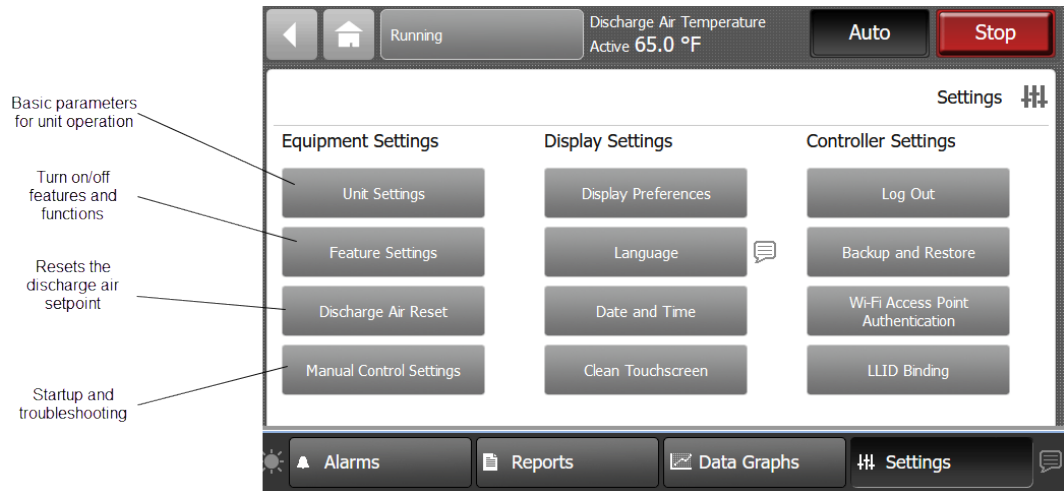
The Settings screen provides options for display settings, language, overrides and security. Touch the **Settings** button in the bottom display area to view the Settings screen.

The data presented in the following tables is unit configuration dependent.

Three categories for settings appear on the screen:

- Equipment Settings
- Display Settings
- Controller Settings

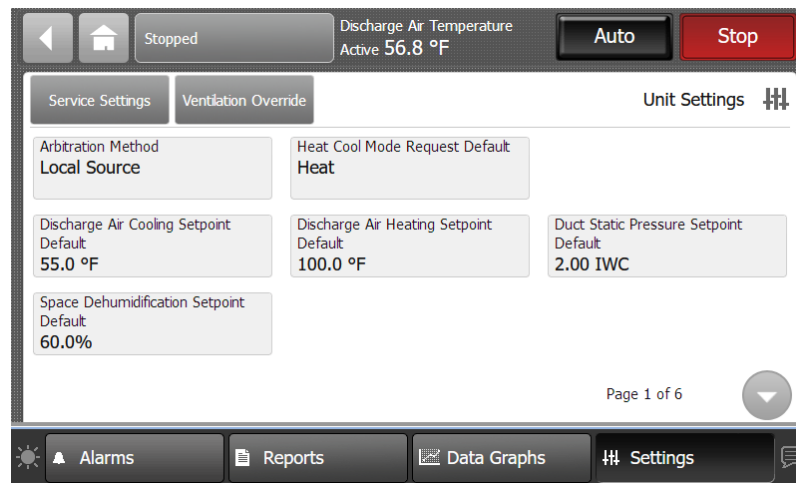
**Figure 35. Settings screen**



## Unit Settings

Unit Settings are the basic parameters for unit operation and provide the default values for setpoints and unit operating modes.

**Figure 36. Unit Settings**



**Table 21. Unit settings value**

Value	Default (range)	Description
Arbitration Method Local Source	Full Source (Full Source, Local Source, Default Source)	Selects if the control will operate with all input sources (Full), Local inputs only (removes BMS inputs), or Default settings (removes BMS and local inputs).
Supply Fan Configuration Cmd Default	Continuous (Cycling, Continuous)	Supply fan configuration
Heat Cool Mode Request Default (Single zone units)	Auto (Heat, Cool, Off, Auto)	Default Heat Cool Mode Input for Single Zone VAV and Constant Volume Zone Temperature units
Heat Cool Mode Request Default (Multi zone units)	Heat (Heat, Cool, Off)	Default Heat Cool Mode Input for Multi Zone VAV and Constant Volume Discharge Air Temperature units
Discharge Air Cooling Setpoint Default	55.0 °F (40.0 - 75.0)	Discharge air cooling setpoint

**Table 21. Unit settings value (continued)**

Value	Default (range)	Description
Discharge Air Heating Setpoint Default	100.0 °F (50.0 - 120.0)	Discharge air heating setpoint
Duct Static Pressure Setpoint Default	2.00 IWC (0.05 - 5.10)	Duct static pressure setpoint default
Occupied Cooling Setpoint Default	74.0 °F (40.0 - 115.0)	Space temperature occupied cooling setpoint
Occupied Heating Setpoint Default	71.0 °F (40.0 - 115.0)	Space temperature occupied heating setpoint
Space Dehumidification Setpoint Default	60.0% (40.0 - 65.0)	Space dehumidification enable setpoint in occupied modes
Space Dew Point Setpoint Default	60.0 °F (40.0 - 70.0)	The default dew point temperature setpoint used for dehumidification control in occupied mode
Unoccupied Cooling Setpoint	85.0 °F (40.0 - 115.0)	Space temperature unoccupied cooling setpoint
Unoccupied Heating Setpoint	60.0 °F (40.0 - 115.0)	Space temperature unoccupied heating setpoint
Space Dehumid Unocc Setpoint Default	60.0% (40.0 - 65.0)	Space dehumidification enable setpoint in unoccupied mode
Space Dew Point Unocc Setpoint Default	60.0 °F (40.0 - 75.0)	The default dew point temperature setpoint used for dehumidification control in unoccupied mode
Pre Cool Setpoint	74.0 °F (40.0 - 83.0)	Defines the space temperature above which pre-cool will be exercised, when enabled
Morning Warmup Setpoint	72.0 °F (50.0 - 90.0)	Defines the space temperature below which morning warmup will be exercised, when enabled
Daytime Warmup Setpoint	72.0 °F (50.0 - 90.0)	Space temperature below which daytime warmup will be enabled
Occupied Standby Cooling Setpt Default	78.0 °F (40.0 - 115.0)	Space temperature occupied standby cooling setpoint
Occupied Standby Heating Setpt Default	67.0 °F (40.0 - 115.0)	Space temperature occupied standby heating setpoint
Occupancy Input Default	Occupied (Occupied, Unoccupied)	Occupancy input default value
Economizer Min Position Setpoint Default	25.0% (0.0 - 100.0)	Economizer damper minimum position setpoint
Reference Enthalpy Setpoint	25.0 BTU/lbm (19.0 - 36.0)	Related to the economizer enable decision, this default value determines the outdoor air enthalpy below which economizing is enabled.
Econ Enable Min Outdoor Air Temp Setpt	75 °F (50.0 - 140.0)	Related to the economizer enable decision, this default value determines the outdoor air temperature below which economizing is enabled.
Outdoor Air Damper Min Position Setpoint	25.0% (0.0-25.0)	0-25% Motorized Outdoor Air Damper adjustment setpoint for minimum ventilation.
Economizer Dry Bulb Enable Offset	5.0 °F (2.0 - 10.0)	Related to the economizer enable decision, this value is used to prevent cycling of the economizing decision
Econ Dry Bulb Disable Return Air Offset	0.0 °F (0.0 - 10.0)	Related to the economizer enable decision, this is the offset applied to the return air temperature to determine when to disable economizing

**Table 21. Unit settings value (continued)**

Value	Default (range)	Description
Outdoor Air Min Flow Setpoint Default	2119 cfm (0 - 60000.0)	Default requested minimum outdoor air flow setpoint
Relief Enable Position Setpoint	25.0% (0 - 100)	Default setpoint to enable relief/exhaust fan operation, based on outdoor air damper position.
Space Static Pressure Setpoint Default	0.08 IWC (-0.2 - 3.0)	Space static pressure setpoint default value
Design Min OA Damper Pos Setpoint Min Fan	25.0% (21.0 - 100.0)*	Outdoor air flow compensation setpoint that specifies the outdoor air damper position when supply fan is at minimum speed.
Design Min OA Damper Pos Setpoint Mid Fan	20.0% (16.0 - 24.0)*	Outdoor air flow compensation setpoint that specifies the outdoor air damper position when supply fan is at mid-point of speed range.
Design Min OA Damper Pos Setpoint Max Fan	15.0% (0.0 - 19.0)*	Outdoor air flow compensation setpoint that specifies the outdoor air damper position when supply fan is at maximum speed.
DCV Min Outdoor Air Dmpr Pos at Min Fan	15.0% (15.0 - 100) *	Outdoor air flow compensation with DCV, damper position setpoint when supply fan at minimum speed and space CO2 at DCV setpoint (low limit)
DCV Min Outdoor Air Dmpr Pos at Max Fan	5.0% (0 - 5.0)*	Outdoor air flow compensation with DCV, damper position setpoint when supply fan at maximum speed and space CO2 at DCV setpoint (low limit)
Design Min Outdoor Air Flow Setpoint	6000.0 cfm (2998.0 - 60000.0)*	Outdoor air flow control (Traq) with DCV, air flow setpoint when space at Design CO2 Setpoint (high limit)
DCV Min Outdoor Air Flow Setpoint	2000.0 cfm (0 - 5002.0)*	Outdoor air flow control (Traq) with DCV, air flow setpoint when space at DCV CO2 Setpoint (low limit)
Design CO2 Setpoint	1000.0 ppm (500.0 - 2000.0)	Space design CO2 high limit setpoint
Design Min OA Damper Position Setpoint	15.0% (15.0 - 100.0)	Outdoor air minimum position control with DCV, damper position setpoint when space at design CO2 setpoint (high limit)
DCV Min Outdoor Air Damper Pos Setpt	5.0% (0 - 5.0)	Outdoor air minimum position control with DCV, damper position setpoint when space at DCV CO2 setpoint (low limit)
DCV CO2 Setpoint	400.0 ppm (50.0 - 900.0)	Space Demand Control Ventilation CO2 low limit setpoint
Demand Limit Setpoint Default	100.0% (0 - 100.0)	Demand limit setpoint default value. This value is normally provided by the BMS to demand limit the unit.
Cooling Capacity Enable Default	100.0% (0 - 100.0)	Cooling capacity enable default value. This value is normally provided by the BMS to demand limit the cooling capacity.
Heat Primary Enable Default	100.0% (0 - 100.0)	Heat primarily capacity enable default value. This value is normally provided by the BMS to demand limit the heating capacity.
Evap Leaving Air Temp Setpoint Default	50.0 °F (40.0 - 55.0)	Dehumidification modes of operation, evaporator leaving air temperature setpoint.

**Table 21. Unit settings value (continued)**

Value	Default (range)	Description
Manual Overrides Timer Setpoint	1 Hr (1 - 78)	Sets the amount of time Manual Overrides are allowed to be active. Timer resets when an override is applied.
Discharge Air Temp Min Cool Limit Default	50.0 °F (40.0 - 80.0)	The minimum allowed discharge air temperature for single zone discharge air control
Discharge Air Temp Max Cool Limit Default	80.0 °F (40.0 - 80.0)	The maximum allowed discharge air temperature for single zone discharge air control
Discharge Air Temp Min Heat Limit Default	55.0 °F (40.0 - 140.0)	The minimum allowed discharge air temperature for single zone discharge air control
Discharge Air Temp Max Heat Limit Default	120.0 °F (40.0 - 140.0)	The maximum allowed discharge air temperature for single zone discharge air control
Energy Wheel Frost Threshold	27.0 °F (0.0 - 60.0)	Setting to activate energy wheel frost avoidance plus preheater (if installed) when Leaving Wheel Temperature drops below this value.

**Note:** Ranges are dynamically calculated based on the other setpoint ranges.

## Service Settings

Provides access to low level parameters required for all unit functionality.

**Table 22. Service settings**

Value	Factory Default (Range)	Description
Power-Up Start Delay	0 Sec (0-300)	Used to delay unit operation after a power cycle or after the termination of all VOM/EOM events.
VAV Box Stroke Time	6 Min (1-10)	Used to manage unit airflow with VAV system delays.
Duct Static Press High Limit Setpoint	4.00 IWC (1.20-5.70)	Inhibits supply fan if duct pressure exceeds this setpoint.
Low Ambient Lockout Setpoint	Configuration Dependent	Inhibits compressor operation if outdoor air temperature drops below this value.
Design Air Flow	Configuration Dependent	Contact Trane Technical Support.
Local Atmospheric Pressure	14.7 PSIA (10-16)	This entry should reflect the average pressure expected at the unit's geographical elevation.
Relief Fan Maximum Speed Setpoint	200 RPM (100-5000)	This speed entry should reflect the maximum design relief airflow for the given application.
Supply Fan Bypass Mode Enabled	Off (Off, On)	Used to place the unit's supply fan VFD (s) into bypass mode.
Supply/Return Fan Bypass Mode Enabled	Off (Off, Supply, Supply/Return)	Used to place the unit's supply and return fan VFDs into bypass mode.
Supply Fan VFD Bypass Flow Proving Setpt	1.0 IWC (0.3-2.0)	Setpoint to prove the supply fan is running and providing air flow
Supply Fan Bypass High Limit Protection	Enable (Disable, Enable)	Contact Trane Technical Support.
Relief Fan Bypass Mode Enabled	Off (Off, On)	Used to place the unit's relief fan VFD(s) into bypass mode.



**Table 22. Service settings (continued)**

Value	Factory Default (Range)	Description
Return Fan VFD Bypass Flow Proving Setpt	1.0 IWC (0.3-2.0)	Setpoint to prove the return fan is running and providing air flow
Occupied Bypass Time	120 Min (0-240)	The amount of time that will expire before a unit will return to unoccupied mode after entering bypass.
Occupied Offset	1.5 °F (1-30)	This entry establishes a deadband between occupied space heating and space cooling setpoints.
Occupied Standby Offset	7.5 °F (1-30)	This entry establishes a deadband between occupied standby space heating and space cooling setpoints.
Cooling Design Delta Temp	20 °F (5.0-40.0)	Contact Trane Technical Support.
Temp Control Softload Time Cooling	120 Sec (0-1800)	Contact Trane Technical Support.
Duct Static Pressure Softload Time	30 Sec (0-1800)	Contact Trane Technical Support.
Occupied Dehumidification Offset	10.0% (5.0-15.0)	Occupied dehumidification terminates when space humidity falls below occ. dehumid setpoint minus this value.
Space Dew Point Offset	5.0 °F (2.0-10.0)	The offset from space dew point to prevent cycling in and out of dehumidification in occupied
Outdoor Air Dew Point Threshold	60.0 °F (50.0-70.0)	The outdoor air dew point where dehumidification control is allowed in occupied
Unoccupied Dehumidification Offset	10.0% (5.0-15.0)	The offset from space dew point to prevent cycling in and out of dehumidification in unoccupied
Space Dew Point Unocc Offset	5.0 °F (2.0-10.0)	The outdoor air dew point where dehumidification control is allowed in unoccupied
Purge Reheat Coil Interval Setting	120 Min (60-480)	Contact Trane Technical Support.
Temp Control Softloading Time Heating	120 Sec (0-1800)	Contact Trane Technical Support.
Occ Space Cool Air Flow Cmd Compensation	0.0% (-20.0-100.0)	Contact Trane Technical Support.
Suction Superheat Setpoint	12.6 °F (9.0-27.0)	Contact Trane Technical Support.
Suction Superheat Tracking Time	20.0 Sec (0.0-200.0)	Contact Trane Technical Support.
Suction Temp Filter Base Time Constant	0.0 Sec (0.0-20.0)	Contact Trane Technical Support.
EXV Control Compressor Press Ratio Min	1.500 (1.200-1.700)	Contact Trane Technical Support.
EXV Control Pre-Position Hold Time	4.0 Sec (0.0-60.0)	Contact Trane Technical Support.
EXV Control Pre-Position Setpoint	90.0 % (50.0-300.0)	Contact Trane Technical Support.
EXV Differential Pressure Estimate Min	40.00 PSID (29.01-72.52)	Contact Trane Technical Support.
EXV Feedforward Evap Approach Temp Base	9.0 °F (0.0-27.0)	Contact Trane Technical Support.
EXV Integral Boost Threshold	138.0 °F (104.0-176.0)	Contact Trane Technical Support.
Ref Loss Suction Discharge Percent Ckt1	2.0% (0.0-10.0)	Contact Trane Technical Support.
Reference Loss Condenser Percent Ckt1	5.0% (0.0-10.0)	Contact Trane Technical Support.

**Table 22. Service settings (continued)**

Value	Factory Default (Range)	Description
Reference Loss Distributor Percent Ckt1	15.0% (0.0-25.0)	Contact Trane Technical Support.
Reference Loss Evaporator Percent Ckt1	1.0% (0.0-10.0)	Contact Trane Technical Support.
Reference Loss Subcooler Percent Ckt1	3.0% (0.0-10.0)	Contact Trane Technical Support.
Ref Loss Suction Discharge Percent Ckt2	2.0% (0.0-10.0)	Contact Trane Technical Support.
Reference Loss Condenser Percent Ckt2	5.0% (0.0-10.0)	Contact Trane Technical Support.
Reference Loss Distributor Percent Ckt2	15.0% (0.0-25.0)	Contact Trane Technical Support.
Reference Loss Evaporator Percent Ckt2	1.0% (0.0-10.0)	Contact Trane Technical Support.
Reference Loss Subcooler Percent Ckt2	3.0% (0.0-10.0)	Contact Trane Technical Support.
Condenser Reheat Softload Time	120 Sec (0-1800)	Contact Trane Technical Support.
Condenser Reheat Staging Deadband	20.000 (10.000-100.000)	Contact Trane Technical Support.
Cond Fan Control Reheat Diff Press Setpt	250.00 PSID (85.00-300.00)	Contact Trane Technical Support.
Cond Fan Control Cool Diff Press Setpt	90.00 PSID (85.00-150.00)	Contact Trane Technical Support.
Cond Fan Control Cool Diff Press Offset	15.00 PSID (5.00-25.00)	Contact Trane Technical Support.
Cond Fan Control Cool Press Ratio Setpt	1.55 (1.500-2.500)	Contact Trane Technical Support.
Condenser Fan Air Coil Correction	11.880 (0.000-100.000)	Contact Trane Technical Support.
Cond Fan Control Efficiency Check Point	105.0 °F (95.0-115.0)	Contact Trane Technical Support.
Purge Condenser Coil Interval Setting	90 Min (60-120)	Contact Trane Technical Support.
Rapid Restart Complete Temp Setting	74.0 °F (65.0-85.0)	Contact Trane Technical Support.
Rapid Restart Termination Time	180 Sec (120-600)	Contact Trane Technical Support.
Rapid Restart DX Interstage Time	30 Sec (15-50)	Allows adjustment to the compressor interstage time providing an accelerated or delayed staging.
Rapid Restart Critical Temp Setpoint	90°F (75-95)	Used to determine the compressor stage target during an active Rapid Restart event.
Rapid Restart Minimum Percent Capacity	25.0% (20.0-100)	Used to set the minimum compressor stage regardless of Critical Temp Setpoint target needs.
Rapid Restart Control Band Setting	20.0°F (5.0-40.0)	Contact Trane Technical Support.
Rapid Restart Mixed Air Temp Low Limit	42.0°F (40.0-55.0)	Contact Trane Technical Support.
Isolation Damper Pos Fan Start Setpoint	35.0% (10.0-70.0)	The minimum damper opening that will allow the supply fan to start
Isolation Damper Pos Proving Setpoint	90.0% (70.0-90.0)	The damper position expected to be for full open operation
External Heat Supply Fan Speed Setpoint	100.0% (0.0-100.0)	Sets the minimum supply fan speed for single zone heating. Higher speeds are allowed.
Electrical Service Type Command	Wye (Delta,Wye)	Used to identify the applied 3-phase power connection to the unit for power meter applications.
Electrical Service Type Command Meter 2	Wye (Delta,Wye)	Used to identify the applied 3-phase power connection to the unit for power meter applications.

**Table 22. Service settings (continued)**

Value	Factory Default (Range)	Description
Max Duct Static Press Calibration Limit	200 (150-575)	Contact Trane Technical Support.
Max Space Static Press Calibration Limit	100 (50-200)	Contact Trane Technical Support.
Max Air Flow Press Calibration Limit	200 (150-575)	Contact Trane Technical Support.
Oil Management Staging Limit Setpoint	110.0 °F (100.0-160.0)	Staging value for 2 stage compressors where the second stage is energized
Compressor VFD Optimal Start Time	120 Sec (120-360)	Contact Trane Technical Support.
Energy Wheel Filter Diff Press Setpoint	4.00 IWC (0.50-6.00)	Adjust setting lower to be notified sooner and higher to be notified later.
Pre Evap Filter Diff Press Setpoint	4.00 IWC (0.50-6.00)	Adjust setting lower to be notified sooner and higher to be notified later.
Final Filter Diff Press Setpoint	4.00 IWC (0.50-6.00)	Adjust setting lower to be notified sooner and higher to be notified later.
Min Voltage Setpoint External	2.0 V (0.0-4.0)	Contact Trane Technical Support.
Max Voltage Setpoint External	10.0 V (5.0-10.0)	Contact Trane Technical Support.
Min Current Setpoint External	4.0 (0.0-10.0)	Contact Trane Technical Support.
Max Current Setpoint External	20.0 (11.0-20.0)	Contact Trane Technical Support.
Outdoor Air Damper Min Voltage	2.0 V (0.0-9.9)	Minimum voltage setting for the applied damper actuator equating to fully closed.
Outdoor Air Damper Max Voltage	10.0 V (2.1-10.0)	Maximum voltage setting for the applied damper actuator equating to fully open.
Outdoor Air Damper Direct/Reverse Acting	Direct (Direct, Reverse)	Sets damper position stroke direction.
Outdoor Air Damper Stroke Time	30 Sec (1-255)	The time it takes for the actuator to stroke from Pmin to Pmax.
Relief Air Damper Min Voltage	2.0 V (0.0-9.9)	Minimum voltage setting for the applied damper actuator equating to fully closed.
Relief Air Damper Max Voltage	10.0 V (2.1-10.0)	Maximum voltage setting for the applied damper actuator equating to fully open.
Relief Air Damper Direct/Reverse Acting	Direct (Direct, Reverse)	Sets damper position stroke direction.
Relief Air Damper Stroke Time	30 Sec (1-255)	The time it takes for the actuator position (P) to stroke from Pmin to Pmax.
Return Air Damper Min Voltage	2.0 V (0.0-9.9)	Minimum voltage setting for the applied damper actuator equating to fully closed.
Return Air Damper Max Voltage	10.0 V (2.1-10.0)	Maximum voltage setting for the applied damper actuator equating to fully open.
Return Air Damper Direct/Reverse Acting	Direct (Direct, Reverse)	Sets damper position stroke direction.
Return Air Damper Stroke Time	30 Sec (1-255)	The time it takes for the actuator to stroke from Pmin to Pmax.
Outdoor Air Bypass Damper Min Voltage	2.0 V (0.0-9.9)	Minimum voltage setting for the applied damper actuator equating to fully closed.
Outdoor Air Bypass Damper Max Voltage	10.0 V (2.1-10.0)	Maximum voltage setting for the applied damper actuator equating to fully open.
Outdoor Air Bypass Damper Direct/Reverse	Direct (Direct, Reverse)	Sets damper position stroke direction.
Outdoor Air Bypass Damper Stroke Time	30 Sec (1-255)	The time it takes for the actuator to stroke from Pmin to Pmax.

**Table 22. Service settings (continued)**

Value	Factory Default (Range)	Description
Relief Air Bypass Damper Min Voltage	2.0 V (0.0-9.9)	Minimum voltage setting for the applied damper actuator equating to fully closed.
Relief Air Bypass Damper Max Voltage	10.0 V (2.1-10.0)	Maximum voltage setting for the applied damper actuator equating to fully open.
Relief Air Bypass Damper Direct/Reverse	Direct (Direct, Reverse)	Sets damper position stroke direction.
Relief Air Bypass Damper Stroke Time	30 Sec (1-255)	The time it takes for the actuator to stroke from Pmin to Pmax.
Discharge Air Iso Damper Min Voltage	2.0 V (0.0-9.9)	Minimum voltage setting for the applied damper actuator equating to fully closed.
Discharge Air Iso Damper Max Voltage	10.0 V (2.1-10.0)	Maximum voltage setting for the applied damper actuator equating to fully open.
Discharge Air Iso Damper Direct/Reverse	Direct (Direct, Reverse)	Sets damper position stroke direction.
Discharge Air Iso Damper Stroke Time	30 Sec (1-255)	The time it takes for the actuator position (P) to stroke from Pmin to Pmax.
Return Air Iso Damper Min Voltage	2.0 V (0.0-9.9)	Minimum voltage setting for the applied damper actuator equating to fully closed.
Return Air Iso Damper Max Voltage	10.0 V (2.1-10.0)	Maximum voltage setting for the applied damper actuator equating to fully open.
Return Air Iso Damper Direct/Reverse	Direct (Direct, Reverse)	Sets damper position stroke direction.
Return Air Iso Damper Stroke Time	30 Sec (1-255)	The time it takes for the actuator position (P) to stroke from Pmin to Pmax.
Condenser Reheat Valve Min Pos Setpoint	15.0% (10.0-35.0)	Contact Trane Technical Support.
Condenser Reheat Valve Max Pos Setpoint	85.0% (40-100.0)	Contact Trane Technical Support.
Condenser Cooling Valve Min Pos Setpoint	15.0% (10.0-35.0)	Contact Trane Technical Support.
Condenser Cooling Valve Max Pos Setpoint	85.0% (40-100.0)	Contact Trane Technical Support.
Hydronic Heat Valve Min Voltage	2.0 V (0.0-3.0)	Minimum voltage setting applied to the valve equating to minimum heat.
Hydronic Heat Valve Max Voltage	10.0 V (5.0-10.0)	Maximum voltage setting applied to the valve equating to maximum heat.
Hydronic Heat Valve Direct/Reverse	Direct (Direct, Reverse)	Sets valve position direction.
Hydronic Heat Standby Freeze Avoid Pos	0.0% (0.0-100.0)	The open position that the valve will be driven to prevent freezing. A setting of 0% disables the feature.
Ext Control Staging Prop Gain Cooling	0.8 (0.1-100.0)	Contact Trane Technical Support.
Ext Control Staging Integral Time Cool	60.0 Sec (0.1-3600.0)	Contact Trane Technical Support.
Ext Control Staging Deadband Cooling	8.0 (2.0-25.0)	Contact Trane Technical Support.
Ext Control Modulating Deadband Cooling	1.0 (0.0-100.0)	Contact Trane Technical Support.
Ext Control Modulating Scale Factor Cool	0.11 (0.01-2.00)	Contact Trane Technical Support.
Ext Control Softload Time Cooling	120 Sec (0-1800)	Contact Trane Technical Support.

**Table 22. Service settings (continued)**

Value	Factory Default (Range)	Description
Ext Control Staging Prop Gain Heating	0.8 (0.1-100.0)	Contact Trane Technical Support.
Ext Control Staging Integral Time Heat	60.0 Sec (0.1-3600.0)	Contact Trane Technical Support.
Ext Control Staging Deadband Heating	2.0 (2.0-25.0)	Contact Trane Technical Support.
Ext Control Modulating Deadband Heating	1.0 (0.0-100.0)	Contact Trane Technical Support.
Ext Control Modulating Scale Factor Heat	0.16 (0.01-2.00)	Contact Trane Technical Support.
Ext Control Softload Time Heating	120 Sec (0-1800)	Contact Trane Technical Support.
Duct Static Pressure Control Prop Gain	13.2 (0.1-1000.0)	Contact Trane Technical Support.
Duct Static Pressure Control Integral Time	5 Sec (0-3600)	Contact Trane Technical Support.
Duct Static Pressure Deadband	0.50 IWC (0.00-4.01)	DB. Control deadband around the static pressure setpoint. Control band is Stp +1/2DB to Stp-1/2DB.
Space Static Pressure Control Prop Gain	24.0 (0.5-500.0)	Contact Trane Technical Support.
Space Static Pressure Integral Time	2.0 Sec (0.1-1000.0)	Contact Trane Technical Support.
Space Static Pressure Control Deadband	0.04 IWC (0.02-0.40)	DB. Control deadband around the static pressure setpoint. Control band is Stp +1/2DB to Stp-1/2DB.
Space Static Press Control Feed Forward	80.0% (0.0-100.0)	Contact Trane Technical Support.
Outdoor Air Flow Calibration Gain 1	1.000 (0.250-1.750)	Used to allow modification to airflow calculation based on local methods of determining airflow.
Outdoor Air Flow Calibration Offset 1	0.0 cfm (-2500.0-2500.0)	Used to allow modification to airflow calculation based on local methods of determining airflow.
Outdoor Air Flow Calibration Gain 2	1.000 (0.250-1.750)	Used to allow modification to airflow calculation based on local methods of determining airflow.
Outdoor Air Flow Calibration Offset 2	0.0 cfm (-2500.0-2500.0)	Used to allow modification to airflow calculation based on local methods of determining airflow.
Traq Flow Control Proportional Gain	0.750 (0.050-10.000)	Contact Trane Technical Support.
Traq Flow Control Integral Time	35 Sec (2-300)	Contact Trane Technical Support.
Minimum Outdoor Air Flow Deadband	5.0% (1.0-25.0)	Control deadband (DB) around the minimum airflow setpoint. Control band is Stp+1/2DB to Stp-1/2DB.
Econ Discharge Air Control Prop Gain	3.600 (0.100-100.000)	Contact Trane Technical Support.
Econ Discharge Air Control Integral Time	75 Sec (1-3600)	Contact Trane Technical Support.
Cprsr Cooling Disch Air Mod Prop Gain	3.600 (0.100-100.000)	Contact Trane Technical Support.
Cprsr Cooling Disch Air Mod Integral Time	100 Sec (1-3600)	Contact Trane Technical Support.
Cprsr Disch Sat Temp Limit Filter Time	5 Sec (1-300)	Contact Trane Technical Support.
Cprsr Disch Sat Temp Limit Threshold	147 °F (131.0-147.0)	Contact Trane Technical Support.
Space Temp Cooling Proportional Gain	4.000 (0.100-10.000)	Contact Trane Technical Support.

**Table 22. Service settings (continued)**

Value	Factory Default (Range)	Description
Space Temp Cooling Integral Time	1200 Sec 990-3600)	Contact Trane Technical Support.
Space Temp Heating Proportional Gain	4.000 (0.100-10.000)	Contact Trane Technical Support.
Space Temperature Heating Integral Time	1200 Sec (90-3600)	Contact Trane Technical Support.
Heating Min Discharge Air Flow Setpoint	100.0% (50.0-100.0)	Contact Trane Technical Support.
Temp Control Staging Prop Gain Cooling	6.000 (0.100-100.000)	Contact Trane Technical Support.
Temp Control Staging Integral Time Cool	50.0 Sec (0.1-3600.0)	Contact Trane Technical Support.
Temp Control Staging Deadband Cooling	70.0% (10.0-100.0)	Contact Trane Technical Support.
Occupied Space Temp Reheat Prop Gain	4.000 (0.100-10.000)	Contact Trane Technical Support.
Occupied Space Temp Reheat Integral Time	1200.0 Sec (90.0-3600)	Contact Trane Technical Support.
Occupied Space Dehumid Proportional Gain	3.000 (0.000-10.000)	Contact Trane Technical Support.
Occupied Space Dehumidification Bias	55 °F (40.0-74.0)	Contact Trane Technical Support.
Temp Control Staging Prop Gain Heating	2.000 (0.100-100.000)	Contact Trane Technical Support.
Temp Control Staging Integral Time Heat	50.0 Sec (0.1-3600.0)	Contact Trane Technical Support.
Temp Control Staging Deadband Heating	1.0 °F (0.0-36.0)	Contact Trane Technical Support.
Heating Modulating Prop Gain	1.800 (0.100-100.000)	Contact Trane Technical Support.
Heating Modulating Integral Time	100 Sec (1-3600)	Contact Trane Technical Support.
Temperature Control Modulating Deadband	2.0 °F (0.0-180.0)	Contact Trane Technical Support.
Condenser Fan Control Feedforward Gain	1.000 (0.000-1.000)	Contact Trane Technical Support.
Condenser Fan Control Integral Gain	1.000 (0.000-1.000)	Contact Trane Technical Support.
Condenser Fan Damping Coefficient	10.000 (0.000-100.000)	Contact Trane Technical Support.
Condenser Reheat Staging Prop Gain	6.000 (0.100-100.000)	Contact Trane Technical Support.
Condenser Reheat Staging Int Time	50.0 Sec (0.1-3600.0)	Contact Trane Technical Support.
Condenser Fan Staging Deadband	4.5 °F (1.8-9.0)	Contact Trane Technical Support.
Condenser Reheat Modulation Prop Gain	3.600 (0.100-100.000)	Contact Trane Technical Support.
Condenser Reheat Mod Integral Time	90.0 Sec (0.1-3600.0)	Contact Trane Technical Support.
Suction Superheat Proportional Gain	0.018 (0.000-0.200)	Contact Trane Technical Support.
Suction Superheat Integral Time	80.0 Sec (0.0-200.0)	Contact Trane Technical Support.
Suction Superheat Derivative Time	30.0 Sec (0.0-60.0)	Contact Trane Technical Support.
Suction Pressure Proportional Gain	2.000 (0.000-10.000)	Contact Trane Technical Support.
Suction Pressure Integral Time	20.0 Sec (0.0-200.0)	Contact Trane Technical Support.
Suction Pressure Tracking Time	10.0 Sec (0.0-200.0)	Contact Trane Technical Support.
Evap Coil Frost Limit Prop Gain	3.600 (0.100-20.000)	Contact Trane Technical Support.
Evap Coil Frost Limit Integral Time	60 Sec (1-600)	Contact Trane Technical Support.
Evap Coil Frost Delta	8.0 °F (3.0-20.0)	Contact Trane Technical Support.

**Table 22. Service settings (continued)**

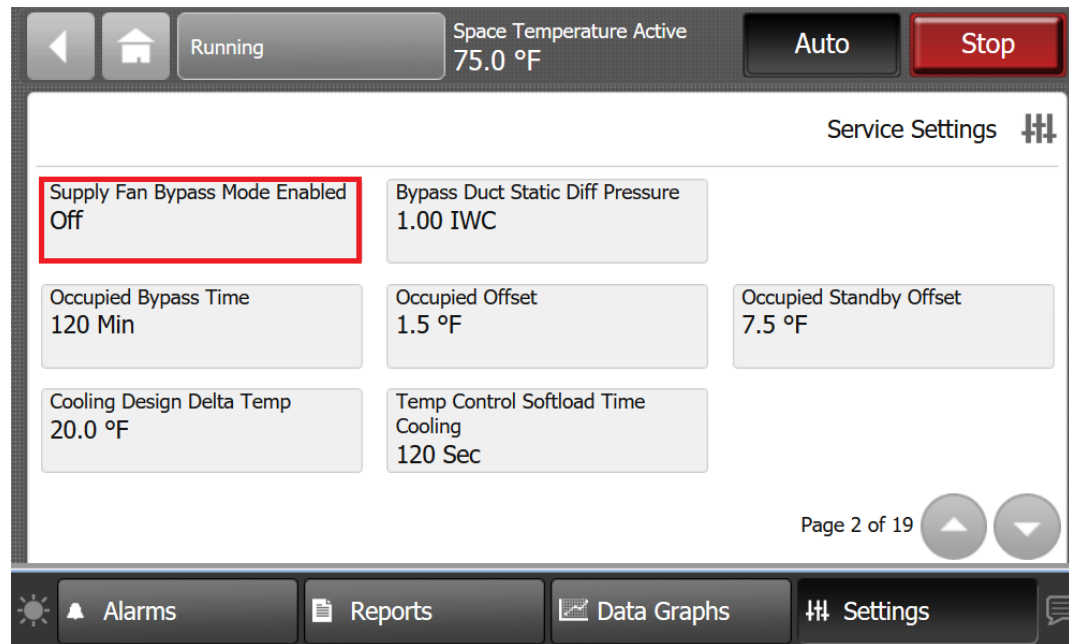
Value	Factory Default (Range)	Description
Evap Coil Frost Threshold	28.0 °F (25.0-35.0)	Contact Trane Technical Support.
Superheat High Limit	55.0 °F (50.0-65.0)	Contact Trane Technical Support.
Cprsr Disch Sat Temp Limit Prop Gain	2.0 (0.1-20.0)	Contact Trane Technical Support.
Cprsr Disch Sat Temp Limit Integral Time	60.0 Sec (1.0-600.0)	Contact Trane Technical Support.
Cprsr Disch Sat Temp Lmt Activation Band	5 °F (3.0-18.0)	Contact Trane Technical Support.
Cprsr Discharge Press Limit Unload Setpt	97.0% (85.0-105.0)	Contact Trane Technical Support.
Cprsr Discharge Press Limit Hold Setpt	85.0% (75.0-90.0)	Contact Trane Technical Support.
Cprsr Speed Range Limit Slew Rate	60 (10-120)	Contact Trane Technical Support.
CIPD Mod Limit Proportional Gain	0.500 (0.100-2.000)	Contact Trane Technical Support.
CIPD Mod Limit Integral Time	30 Sec (1-600)	Contact Trane Technical Support.
Hot Gas Bypass Pressure Ratio Prop Band	0.500 (0.100-1.000)	Contact Trane Technical Support.
Hot Gas Bypass Proportional Band	7.0 °F (1.0-20.0)	Contact Trane Technical Support.
Compressor Current Limit Prop Gain	2.000 (0.100-20.000)	Contact Trane Technical Support.
Compressor Current Limit Integral Time	60 Sec (1-600)	Contact Trane Technical Support.
Compressor Current Limit Activation Band	5.0% (2.0-10.0)	Contact Trane Technical Support.
Relief Air Damper Limit Activation Setpt	90.0%(0.0-100.0)	Contact Trane Technical Support.
Relief Air Damper Limit Reset Setpt	20.0% (0.0-100.0)	Contact Trane Technical Support.
Return Fan Minimum Capacity Limit Enable	Off (Off, On)	Contact Trane Technical Support.
Space Static Pressure Low Limit Setpoint	0.00 IWC (0.00-1.00)	Contact Trane Technical Support.
Return Plenum Static Pressure Deadband	0.10 IWC (0.00-0.50)	Contact Trane Technical Support.
Return Plenum Static Press Integral Time	3.3 Sec (0.1-3600.0)	Contact Trane Technical Support.
Return Plenum Static Pressure Prop Gain	20.0 (0.1-1000.0)	Contact Trane Technical Support.
Return Plenum Static Pressure Min Setpt	0.10 IWC (0.00-0.50)	Contact Trane Technical Support.
Return Plenum Static Pressure Max Setpt	0.80 IWC (0.0-2.5)	Contact Trane Technical Support.
Return Plenum Static Press Softload Time	15 Sec (1-300)	Contact Trane Technical Support.
Energy Wheel Heating Prop Gain	1.8 (0.1-100.0)	Contact Trane Technical Support.
Energy Wheel Heating Integral Time	75 Sec (1-3600)	Contact Trane Technical Support.
Mixed Air Low Limit Proportional Gain	3.6 (0.1-100.0)	Contact Trane Technical Support.
Mixed Air Low Limit Integral Time	45 Sec (1-3600)	Contact Trane Technical Support.

## Fan VFD Bypass

### Supply Fan VFD Bypass

Supply Fan VFD Bypass (if configured) allows fan operation when the VFD is not available (Supply Fan Bypass mode operation is available whether a VFD is functional or not). This is accomplished by interacting with the **Supply Fan Bypass Mode Enabled** button on the TD7 Display located under **Settings – Unit Settings – Service Settings** screen. Refer to [Figure 37, p. 56](#). Whenever this bypass option is installed, the unit will include all of the necessary components and wiring to bypass the VFD assembly(s) and allow the supply fan(s) to operate in full airflow modes. Supply fan airflow proving/unproving is important to insure the inertia of the fan has reduced enough to avoid potential fan direction reversal due to component miss-wiring. Please see the Intellipak™ IOM for details concerning airflow proving.

**Figure 37. Supply fan bypass mode enable button**



### Entering a Supply Fan VFD Bypass Event

- At all times when the unit is not in an active Supply Fan VFD Bypass Mode, the Supply Fan Bypass Relay will be commanded OFF (de-energized).
- The user will not be allowed to place the unit into an active Supply Fan VFD Bypass Mode at the TD7 Display until all of the following has occurred:
  - The user has requested Unit Stop Mode at the display.
  - All components have been commanded OFF or CLOSED.
  - The supply fan proving logic indicates a no-flow condition has existed for 40 continuous seconds.
- When the user places the unit into an active Supply Fan VFD Bypass Mode at the TD7 Display, all of the following will be enforced:
  - For Multi Zone VAV units the VAV Box Relay will be commanded ON (energized) to indicate full airflow mode to the system, and the VAV Box Stroke Time will count down (active Ventilation Override Modes that have VAV Box Relay set to OFF have higher priority and the relay will be commanded OFF).
  - Although the user can request Unit Auto Mode from the display it will be pending, and the unit will keep all components OFF or CLOSED until the VAV Box Stroke Time has timed out.
  - On non-Multi Zone VAV units, once the unit has entered active Supply Fan Bypass Mode the supply fan(s) will be allowed to run once the user has requested Unit Auto Mode at the display.



- When the unit enters active supply fan operation, and supply fan proving is satisfied, the unit will run in constant volume supply fan mode.
- During active bypass mode the unit's supply fan logic will turn the Supply Fan Bypass Relay On and Off to run or stop the fan(s).

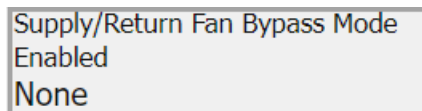
### Exiting a Supply Fan VFD Bypass Event

- The user will not be allowed to remove the unit from an active Supply Fan VFD Bypass Mode at the TD7 Display until all of the following has occurred:
  - The user has requested Unit Stop Mode at the display.
  - All components have been commanded OFF or CLOSED.
  - The supply fan proving logic indicates a no-flow condition has existed for 40 continuous seconds.
- When the user removes the unit from active Supply Fan VFD Bypass Mode at the display, all of the following will be enforced:
  - The Supply Fan Bypass Relay will remain OFF.
  - For Multi Zone – VAV units the VAV Box Relay will be commanded OFF (de-energized) to indicate normal airflow mode to the system, and the VAV Box Stroke Time will count down.
  - Once the above conditions have been satisfied the user will be allowed to request Unit Auto Mode at the display.
- At all times when the unit is not in an active Supply Fan VFD Bypass Mode, the Supply Fan Bypass Relay will be commanded OFF (de-energized).

### Return Fan VFD Bypass (if configured)

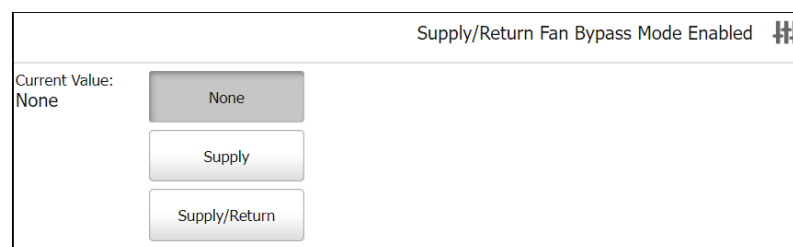
- Return Fan VFD Bypass Mode operation is similar to the description above for Supply Fan VFD Bypass. The TD7 button to enter bypass operation will change to the following.

**Figure 38. TD7 button**



- There are special requirements when placing either of these fans into bypass mode to ensure the proper airflow exist in the return, mixed, and discharge air sections of the unit. The allowable selections for Supply and Return Fan VFD are per the following:
  - A selection of Supply is allowed to place the supply fan into bypass mode regardless of return fan operation. In this case, the return fan will operate under normal control. The supply fan will drive to full speed and the return fan will respond to maintain proper airflow.
  - Anytime the return fan must be placed into bypass mode a selection of Supply/Return must be chosen. In this case, both the supply and return fan will operate in bypass mode at the same time to insure proper airflow. Both fans will drive to 100% speed.

**Figure 39. Supply/Return fan bypass mode enabled**

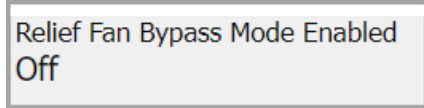


### Relief Fan VFD Bypass (if configured)

Unlike Return Fan VFD Bypass Mode operation, Relief Fan VFD Bypass operation has no special requirements concerning Supply Fan operation. Both the relief and supply fan bypass modes can

operate independent from each other. Relief Fan VFD Bypass Mode operation is identical to the discussion above for Supply Fan VFD Bypass. The TD7 button for relief bypass operation is the following:

**Figure 40. TD7 button**



### Ventilation Override (if configured)

Allows modification and locking of Ventilation Override Modes.

**Table 23. Ventilation override modes**

Value	Settings (Factory Default)	Description
VOM A Supply Fan	Off (Off, On)	Factory Default Settings - Unit Off
VOM A Supply Fan Speed	Min (Min, Max, Auto)	
VOM A Relief Fan/Dampers	Off/Closed (Off/Closed, On/ Open)	All components are commanded off and closed.
VOM A Return Fan/Relief Dampers	Off/Closed (Off/Closed, On/ Open)	
VOM A Return Fan Speed	Min (Min, Max, Auto)	
VOM A Outdoor Air Damper	Closed (Closed, Open)	
VOM A VAV Box Relay	Deenergized (Deenergized, Energized)	
VOM A Ventilation Override Relay	Deenergized (Deenergized, Energized)	
VOM A Lock	Not Locked (Not Locked, Locked)	VOM A has highest priority, will override B, C, D, and E.
VOM B Supply Fan	On (Off, On)	Factory Default Settings - Pressurize
VOM B Supply Fan Speed	Max (Min, Max, Auto)	
VOM B Relief Fan/Dampers	Off/Closed (Off/Closed, On/ Open)	Over pressurizes the space to prevent air infiltration from
VOM B Return Fan/Relief Dampers	Off/Closed (Off/Closed, On/ Open)	outside the space.
VOM B Return Fan Speed	Min (Min, Max, Auto)	
VOM B Outdoor Air Damper	Open (Closed, Open)	
VOM B VAV Box Relay	Energized (Deenergized, Energized)	
VOM B Ventilation Override Relay	Energized (Deenergized, Energized)	
VOM B Lock	Not Locked (Not Locked, Locked)	VOM B has higher priority than C, D, and E.
VOM C Supply Fan	Off (Off, On)	Factory Default Settings - Relief
VOM C Supply Fan Speed	Min (Min, Max, Auto)	
VOM C Relief Fan/Dampers	On/Open (Off/Closed, On/ Open)	Performs an exhaust function to remove air from the space.
VOM C Return Fan/Relief Dampers	On/Open (Off/Closed, On/ Open)	

**Table 23. Ventilation override modes (continued)**

Value	Settings (Factory Default)	Description
VOM C Return Fan Speed	Max (Min, Max, Auto)	
VOM C Outdoor Air Damper	Closed (Closed, Open)	
VOM C VAV Box Relay	Deenergized (Deenergized, Energized)	
VOM C Ventilation Override Relay	Energized (Deenergized, Energized)	
VOM C Lock	Not Locked (Not Locked, Locked)	VOM C has higher priority than D, and E.
VOM D Supply Fan	On (Off, On)	Factory Default Settings - Purge
VOM D Supply Fan Speed	Max (Min, Max, Auto)	
VOM D Relief Fan/Dampers	On/Open (Off/Closed, On/ Open)	Exchanges the air in the space with fresh air.
VOM D Return Fan/Relief Dampers	On/Open (Off/Closed, On/ Open)	
VOM D Return Fan Speed	Max (Min, Max, Auto)	
VOM D Outdoor Air Damper	Open (Closed, Open)	
VOM D VAV Box Relay	Energized (Deenergized, Energized)	
VOM D Ventilation Override Relay	Energized (Deenergized, Energized)	
VOM D Lock	Not Locked (Not Locked, Locked)	VOM D has higher priority than E.
VOM E Supply Fan	On (Off, On)	Factory Default Settings - Purge w/ Discharge Air Pressure Control
VOM E Supply Fan Speed	Auto (Min, Max, Auto)	
VOM E Relief Fan/Dampers	On/Open (Off/Closed, On/ Open)	Exchanges the air in the space with fresh air while performing duct
VOM E Return Fan/Relief Dampers	On/Open (Off/Closed, On/ Open)	static pressure control within a multizone application.
VOM E Return Fan Speed	Auto (Min, Max, Auto)	
VOM E Outdoor Air Damper	Open (Closed, Open)	
VOM E VAV Box Relay	Energized (Deenergized, Energized)	
VOM E Ventilation Override Relay	Energized (Deenergized, Energized)	
VOM E Lock	Not Locked (Not Locked, Locked)	VOM E has lowest priority.

### Arbitration Method

Allows selection of the active source of setpoints and settings:

- **Full Source** – Result of arbitration from external controls (For example: Tracer® SC+, TGP2, 3<sup>rd</sup> party system control).
- **Local Source** – Isolates unit setpoints, settings, and sensors to local wired or wireless sources. Removes Full Sources.
- **Default Source** – Isolates unit to TD7 Display setpoints and settings, and local sensors. Removes Local Source and Full Sources.

## Feature Settings

Features Settings allows you to enable or disable features and functions.

**Table 24. Feature settings value**

Value	Range (default)	Description
Economizer Airside Enable Default	Auto (Disable, Enable, Auto)	Auto, the controller uses sensor values and setpoints to enable and disable economizer operation. Enable, economizer operate as first stage of cooling. Disable, disables economizer operation.
Economizer Control Fallback	Reference Enthalpy (Dry Bulb, Reference Enthalpy, Comparative Enthalpy)	When Economizer with Comparative Enthalpy is configured, control will fall back to Reference Enthalpy in the event of a failure.
Balanced Compressor Staging	Disable (Disable, Enable)	Disabled by default.
Traq Enable	Enable (Disable, Enable)	Enabled when unit is configured for Traq.
Outdoor Air Flow Compensation Enable	Enable (Disable, Enable)	Enabled when variable speed fan configured.
Demand Control Ventilation Enable	Enable (Disable, Enable)	Enabled when configured.
Pre Cool Enable Command	Enable (Disable, Enable)	Enabled by default.
Morning Warmup Enable Command	Enable (Disable, Enable)	Enabled when heat configured.
Daytime Warmup Enable Command	Enable (Disable, Enable)	Enabled when heat configured.
Dehumidification Enable Command	Enable (Disable, Enable)	Enabled when reheat is configured.
Occupied Dehumidification Enable	Enable (Disable, Enable)	Enabled when reheat is configured.
Unoccupied Dehumidification Enable	Enable (Disable, Enable)	Enabled when reheat is configured.
Unoccupied Cooling Mechanical Enable	Enable (Disable, Enable)	Enabled by default.
Unoccupied Cooling Economizing Enable	Enable (Disable, Enable)	Enabled by default.
Unoccupied Heating Enable	Enable (Disable, Enable)	Enabled when heat configured.
Loss of Charge Detection	Enable (Disable, Enable)	Enabled by default.
Hot Gas Bypass	Enable (Disable, Enable)	When configured.
Condenser Reheat Enable	Enable (Disable, Enable)	When hot gas reheat is configured.
Supply Air Tempering Enable	Disable (Disable, Enable)	When Rapid Restart is configured.
Rapid Restart Enable	Enable (Disable, Enable)	When Rapid Restart is configured.
Rapid Restart Economizer Enable	Enable (Disable, Enable)	When Rapid Restart is configured.
Occupancy Input Wireless Enable	Enable (Disable, Enable)	Enabled by default when wireless is installed.
Timed Override Request Wireless Enable	Enable (Disable, Enable)	Enabled by default when wireless is installed.
System Mode Wireless Enable	Enable (Disable, Enable)	Enabled by default when wireless is installed.
Space Temp Cooling Setpoint Wireless Enable	Enable (Disable, Enable)	Enabled by default when wireless is installed.

**Table 24. Feature settings value (continued)**

Value	Range (default)	Description
Space Temp Heating Setpoint Wireless Enable	Enable (Disable, Enable)	Enabled by default when wireless is installed.
Supply Fan Config Cmd Wireless Enable	Enable (Disable, Enable)	Enabled by default when wireless is installed.
Space Temperature Wireless Enable	Enable (Disable, Enable)	Enabled by default when wireless is installed.
Space Humidity Wireless Enable	Enable (Disable, Enable)	Enabled by default when wireless is installed.
Space CO2 Concentration Wireless Enable	Disable (Disable, Enable)	Disabled by default when wireless is installed.
Superheat High Limit Lockout Enable	Enable (Disable, Enable)	Enabled by default.
Energy Wheel Enable	Enable (Disable, Enable)	When Energy Wheel is configured
Relief Air Tracking Enable	Enable (Disable, Enable)	When unit control type is not Integrated, and relief/return fan type is Relief-High
Return Plenum Pressure Control Enable	Enable (Disable, Enable)	When unit control type is not Integrated, and relief/return fan type is Return-High

## Discharge Air Reset

This button allows edits to Discharge Air Cooling Reset and Discharge Air Heating Rest functions. Settings are provided in table below.

**Table 25. Discharge air reset value(Continued)**

Value	Range (default)	Description
Discharge Air Cooling Reset	None (None, Outdoor Air, Zone)	Selects the type of Discharge Air Cooling Reset to be performed by controller. None, disables the function.
Outdoor Air Cooling Reset Start	90.0°F (71.0 - 95.0)	Starting outdoor air temperature at which discharge air cooling setpoint will begin reset.
Outdoor Air Cooling Reset End	70.0°F (0 - 89.0)	Ending outdoor air temperature at which discharge air cooling setpoint will reset.
Outdoor Air Cooling Reset Amount Max.	5.0°F (0 - 20.0)	The amount the discharge air cooling setpoint will increase over the specified range.
Zone Cooling Reset Start Temp.	72.0°F (70.0 - 90.0)	Starting space temperature at which discharge air cooling setpoint will begin reset.
Zone Cooling Reset End Temp.	69.0°F (50.0 - 71.0)	Ending space temperature at which discharge air cooling setpoint will reset.
Zone Cooling Reset Amount Max	5.0°F (0 - 20.0)	The amount the discharge air cooling setpoint will increase over the specified range.
Discharge Air Heating Reset	None (None, Outdoor Air, Zone)	Selects the type of Discharge Air Heating Reset to be performed by controller. None, disables the function.
Outdoor Air Heating Reset Start	32.0°F (0 - 59.0)	Starting outdoor air temperature at which discharge air Heating setpoint will begin reset.
Outdoor Air Heating Reset End	60.0°F (33.0 - 95.0)	Ending outdoor air temperature at which discharge air Heating setpoint will reset.
Outdoor Air Heating Reset Amount Max.	5.0 °F (0 - 20.0)	The amount the discharge air Heating setpoint will decrease over the specified range.
Zone Heating Reset Start Temp.	69.0°F (50.0 - 71.0)	Starting space temperature at which discharge air Heating setpoint will begin reset.

**Table 25. Discharge air reset value(Continued) (continued)**

Value	Range (default)	Description
Zone Heating Reset End Temp.	72.0°F (70.0 - 90.0)	Ending space temperature at which discharge air Heating setpoint will reset.
Zone Heating Reset Amount Max.	5.0°F (0 - 20.0)	The amount the discharge air Heating setpoint will decrease over the specified range.

### Manual Control Settings

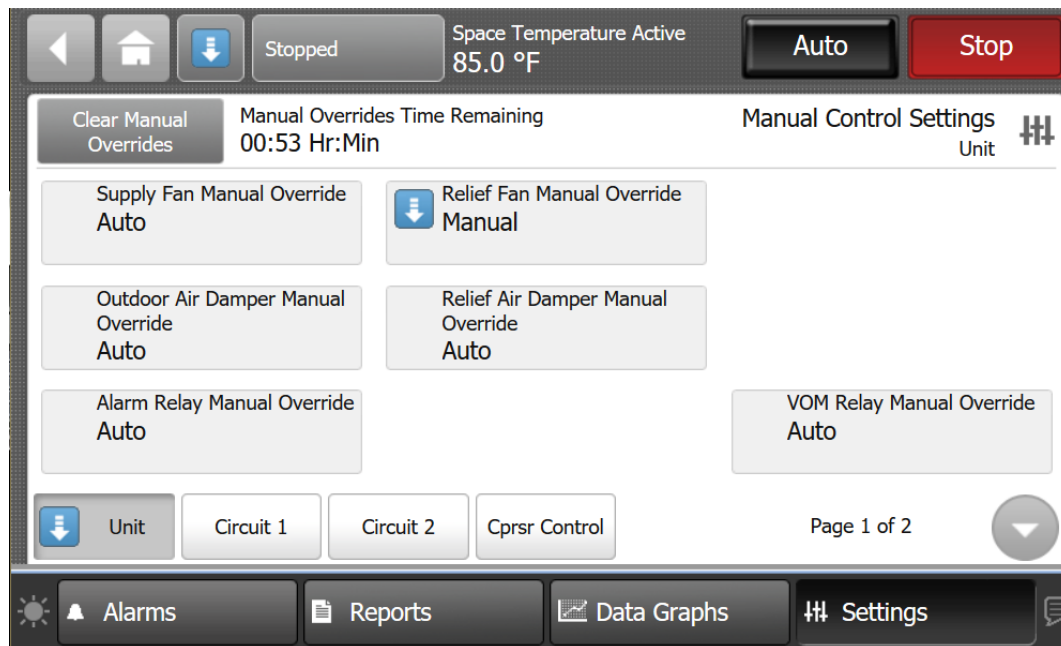
Manual control settings are temporary overrides that are used to setup and test equipment and features. Most components are placed into manual override only after the unit has been placed into **Stop** mode from the TD7 display. In stop mode certain components (supply fans, relief fans/dampers, outside air damper, etc.) are manually controlled while the rest of the unit is prevented from running. Pressing the **Auto** button allows normal ventilation and capacity control to run simultaneously with the manually overridden components. Heating and cooling capacity manual overrides must also be setup during stop mode but will only be started after the unit is placed into auto operation. This ensures all normal protections and ventilation requirements are being met.

Referring to the image below, when a component is placed into manual override, a blue box with a white arrow indicator is shown at the top of the TD7 display. To determine which components are in manual override control, either press the indicator button from any TD7 screen, or navigate to the **Settings - Manual Control Settings** screen. Overridden components will display the same indicator.

The **Manual Overrides Time Remaining** indicates the remaining duration of the current set of manual override events. The duration time is adjustable between 1 and 78 hours (default is 1 hr), and is located at the display's screen **Settings - Unit Settings** menu button **Manual Overrides Timer Setpoint**. Each time a component is placed into manual override the override timer restarts. When the override timer times out, all existing manual overrides are terminated and the unit returns to the last mode of operation

**Note:** *Circuit and Compressor Lockouts will not be terminated when the Manual Overrides Timer times out.*






















**Figure 41. Manual Control Settings screen**



The following tables list all the possible components that can be placed into manual control after selecting the **Unit**, **Circuit**, or **Compressor Control** button located at the bottom of the **Manual Control Settings** screen shown above.










Immediately following these tables there is an example of placing a component into manual override which is representative of the process for interacting with any of the components from this list.

**Table 26. Complete list of manual override selections – unit button**

Page 1					
	Supply Fan Manual Override Auto / Manual		Relief Fan Manual Override Auto / Manual		Return Fan Manual Override Auto / Manual
	Outdoor Air Damper Manual Override Auto / Manual		Relief Air Damper Manual Override Auto / Manual		
	Energy Consumption Reset XXXX kWh		Reheat Pumpout Relay Manual Override Auto / Manual		Reheat Pumpout Relay Manual Override Auto / Off / Manual
Page 2					
	Alarm Relay Manual Override Auto / Off / On		VAV Box Relay Manual Override Auto / Off / On		VOM Relay Manual Override Auto / Off / On
	Gas Heat Modulating <sup>(a)</sup> Manual Override Auto / Manual		Gas Heat Staged Manual <sup>(a)</sup> Override Auto / Manual		Discharge Air Iso Damper Manual Override Auto / Manual
	Electric Heat Modulating <sup>(a)</sup> Manual Override Auto / Manual		Electric Heat Staged <sup>(a)</sup> Manual Override Auto / Manual		Return Air Iso Damper Manual Override Auto / Manual
Page 3					
	Hydronic Heat Manual <sup>(a)</sup> Override Auto / Manual		Energy Wheel Manual Override Auto / On / Off		Energy Wheel Preheat Manual Override Auto / On / Off
	Outdoor Air Bypass Damper Manual Ovr Auto / Manual		Relief Air Bypass Damper Manual Override Auto / Manual		

<sup>(a)</sup> Manual Override Control of Heating outputs are setup in Stop mode, and will be turned On only in Auto mode.


**Table 27. Complete list of manual override selections – circuit 1 or circuit 2 button**

Page 1					
	Front Panel Lockout Cktx <sup>(a)</sup> Not Locked Out / Locked Out		Cond Air Flow Manual Override Cktx Auto / Manual		
	Front Panel Compressor Lockout CprsrxA <sup>(a)</sup> Not Locked Out / Locked Out		Front Panel Compressor Lockout CprsrxB <sup>(a)</sup> Not Locked Out / Locked Out		Front Panel Compressor Lockout CprsrxC <sup>(a)</sup> Not Locked Out / Locked Out
	EXV Control Override <sup>(b)</sup> EvapxB Auto / Manual		EXV Control Override <sup>(b)</sup> EvapxB Auto / Manual		
Page 2					
	Condenser Reheat Manual Override Cktx Auto / Manual		Hot Gas Byp Valve Manual Override Cktx Auto / Manual		







<sup>(a)</sup> Circuit and Compressor Lockouts will not be terminated when the Manual Overrides Timer times out.

<sup>(b)</sup> EXV Control Overrides can be placed into active override during normal unit operation.

**Table 28. Complete list of manual override selections – cprsr control button**

Page 1					
	Compressor Control Manual <sup>(a)</sup> Override Auto / Manual				

**Table 28. Complete list of manual override selections – cprsr control button (continued)**

	Manual Enable Cprsr1A <sup>(b)</sup> Off / On		Manual Enable Cprsr1B <sup>(b)</sup> Off / On		Manual Enable Cprsr1C <sup>(b)</sup> Off / On
	Manual Enable Cprsr2A Off / On		Manual Enable Cprsr2B <sup>(b)</sup> Off / On		Manual Enable Cprsr2C <sup>(b)</sup> Off / On

<sup>(a)</sup> Compressor Control Manual Override must be set to Manual before compressors are placed in manual override.

<sup>(b)</sup> Manual Override Control of Compressors are setup in Stop mode, and will only be turned On in Auto mode.

**Beginning a Manual Override Event**

**Note:** Please consider the following when applying manual overrides to the Supply and Relief fans. The **Fan Speed Command** value entered on these screens has a range of 0 to 100%. This commanded value range equates to Minimum Speed through Maximum Speed (Hz or RPM) of the selected fan when the **Current Value** is **Manual**, and the fan is operating. The Speed Status shown is in percent where 0% equates to fan Off, (min%) equates to fan operating at minimum speed, and 100% equates to fan operating at maximum speed. See the table below for example fan motor commands and status.

**Table 29. Fan manual override command and status - example**

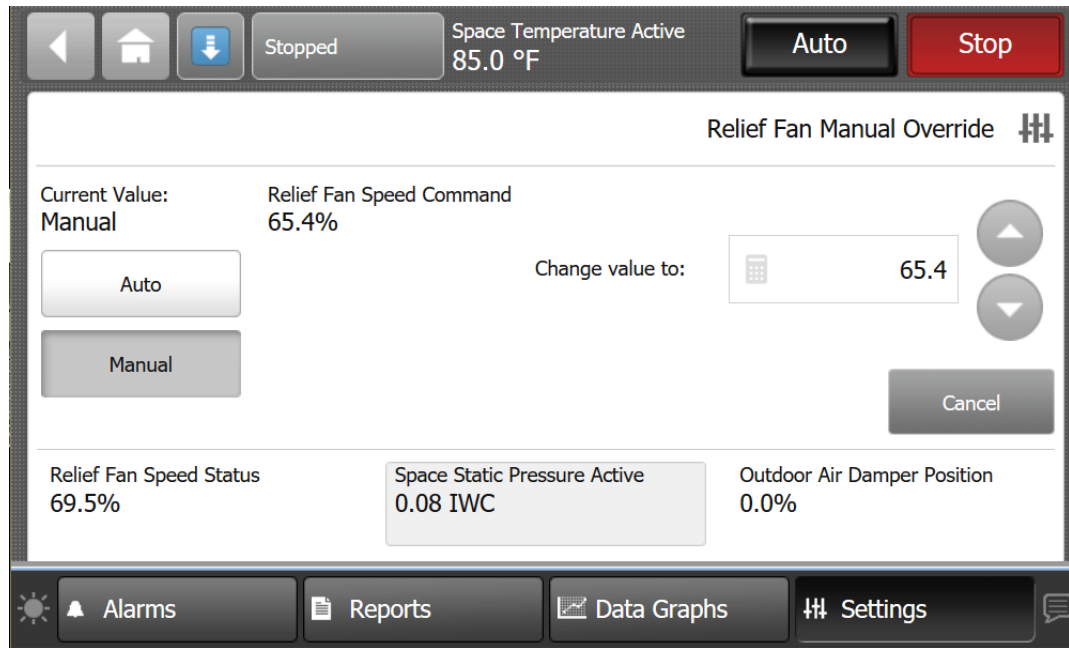
Fan Motor Speed Parameter	Min Speed Setup	Max Speed Setup	Fan Speed Command	Fan Minimum Speed (min%)	Fan Maximum Speed	Fan Speed Status
Hz	23 Hz <sup>(a)</sup>	60 Hz <sup>(a)</sup>	0%	38.30%	100%	38.30%
RPM	120 RPM <sup>(b)</sup>	1010 RPM <sup>(c)</sup>	65.40%	11.90%	100%	69.50%

<sup>(a)</sup> The Supply fan(s) motor's minimum and maximum speed setup, in Hz, are entered via the VFD's keypad.

<sup>(b)</sup> The Relief fan EBM motor's minimum speed setup, in RPM, is set to 10% of motor nameplate speed and is not adjustable.

<sup>(c)</sup> The Relief Fan motor's maximum speed setup is set to the RPM value entered at the TD7 display's **Settings – Unit Settings – Service Settings** menu button for **Relief Fan Maximum Speed Setpoint**.

**Figure 42. Relief Fan Manual Override screen - example**



To begin a manual override event:

1. If necessary, press the **Stop** button on the TD7 display.
2. Press the **Settings** button.
3. Press the **Manual Control Settings** button.



4. Select the appropriate **Unit**, **Circuit**, or **Compressor Control** button.
5. Select the component to be overridden, then press the **Manual** button if shown.
6. Make the appropriate change to the component by turning it On/Off or changing its Speed/Position then press the **Enter** button.
7. Once returned to the **Manual Override** screen, press **Apply** or **Save** button to activate the manual override entry.

**Note:** The **Current Value** displayed should change from **Auto** to **Manual** when the **Save** or **Apply** button is pressed. If it reverts back to, or continues to display, **Auto** the manual override event did not activate. Make sure the unit has first been placed into **Stop** mode at the TD7 display. Some active entries may not start immediately due to protection delays or may not start at all if a unit protection feature is active.

#### Terminating a Manual Override Event

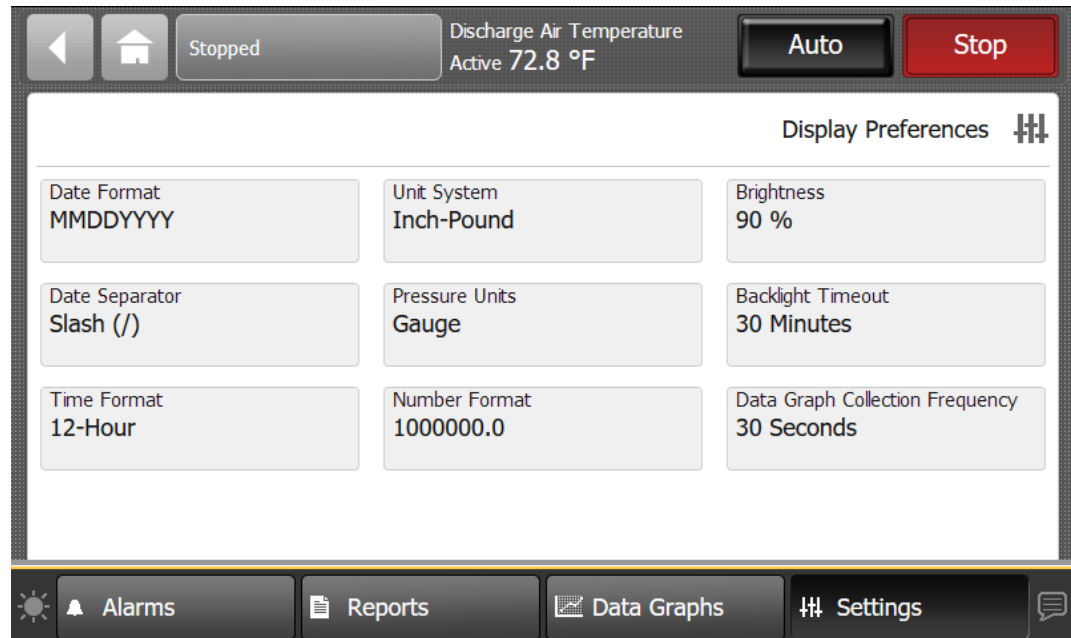
To terminate an active manual override event, do one of the following:

- Allow the **Manual Override Timer** to time out.
- Navigate to the **Manual Control Settings** screen and press the **Clear Manual Overrides** button.
- Select an individual component that is in manual override and press the **Auto** button. Then press **Apply**.
- For manual override events that are active during **Auto** unit operation, press the **Stop** button at the TD7 display.

### Display Preference

Touch the **Display Preferences** button to open the associated screen. On this screen, all available options to display information on the TD7 screens are available. There are two pages on this screen, accessed by using the arrow button at the bottom of the screen.

**Figure 43. Display Preferences screen**



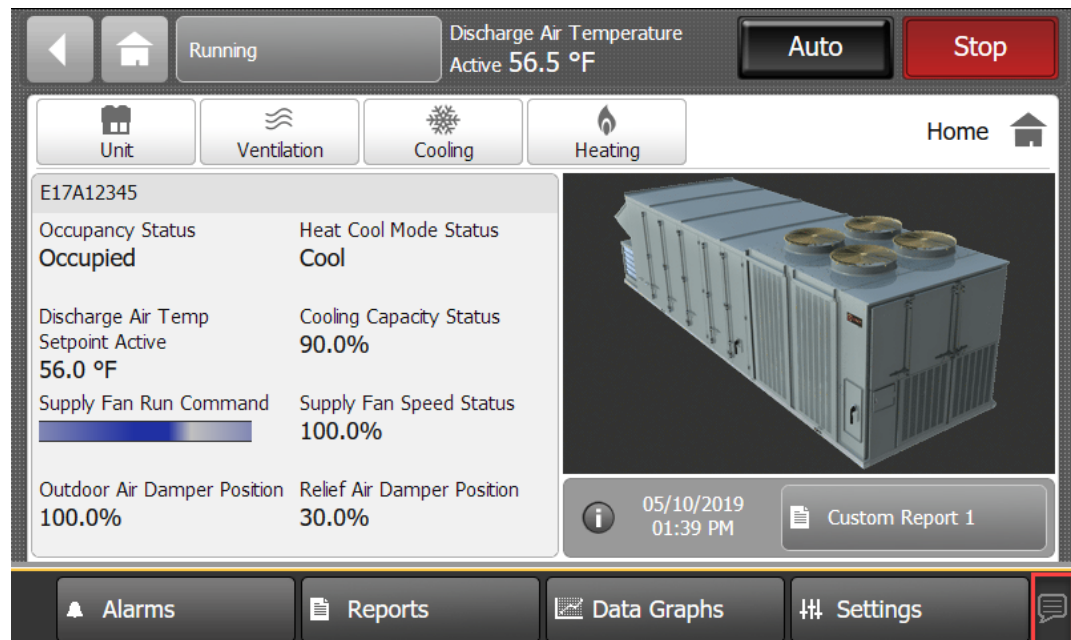
- **Date format** — Touch the **Date Format** button to open the associated screen. Three options are available to display the current date: MMDDYYYY, DDMMYYYY, and YYYYMMDD.
- **Date Separator** — Touch the **Data Separator** button to open the associated screen. Five options are available to display separators in the data format: None, Slash (/), Hyphen (-), Period (.), Underscore (\_).

- **Time Format** — Touch the **Time Format** button to open the associated screen. Two options are available: 12-Hour format and 24-Hour format (also referred to as “military time”).
- **Unit System** — Touch the **Unit System** button to open the associated screen. Two options are available: SI (system international) or Inch-Pound.
- **Pressure Units** — Touch the **Pressure Units** button to open the associated screen.
- **Number Format** — Touch the **Number Format** button to open the associated screen. Two options are available: period format (1000.0) or comma format (1000,0).
- **Brightness** — Use the keypad to enter a new brightness number.
- **Backlight Timeout** — Touch the **Backlight Timeout** button to open the associated screen. This value is measured in minutes, with 30 being the maximum limit. Use the keypad to enter a backlight timeout value. This value is the amount of time that the display will remain lit without activity. When the backlight times out, users will be automatically logged off due to inactivity.
- **Data Graph Collection Frequency** — Use the keypad to enter the frequency of data samples for the TD7 Data Graphs feature. The duration shown is maximum length of time the TD7 will be able graph.

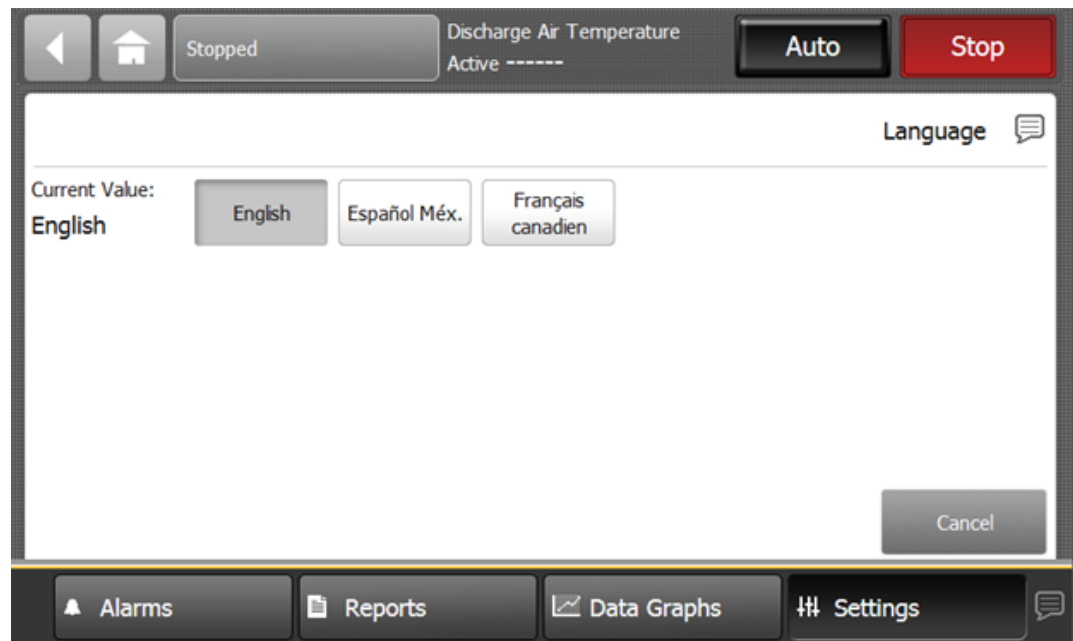
## Language

Touch the **Language** button, or the language icon located at the bottom right of each screen, to open the open the Language screen. Three languages are available and represented on the selection buttons. Select the language that you want displayed on each TD7 screen and then touch **Save**.

**Figure 44. Home page screen**



**Figure 45. Language screen**



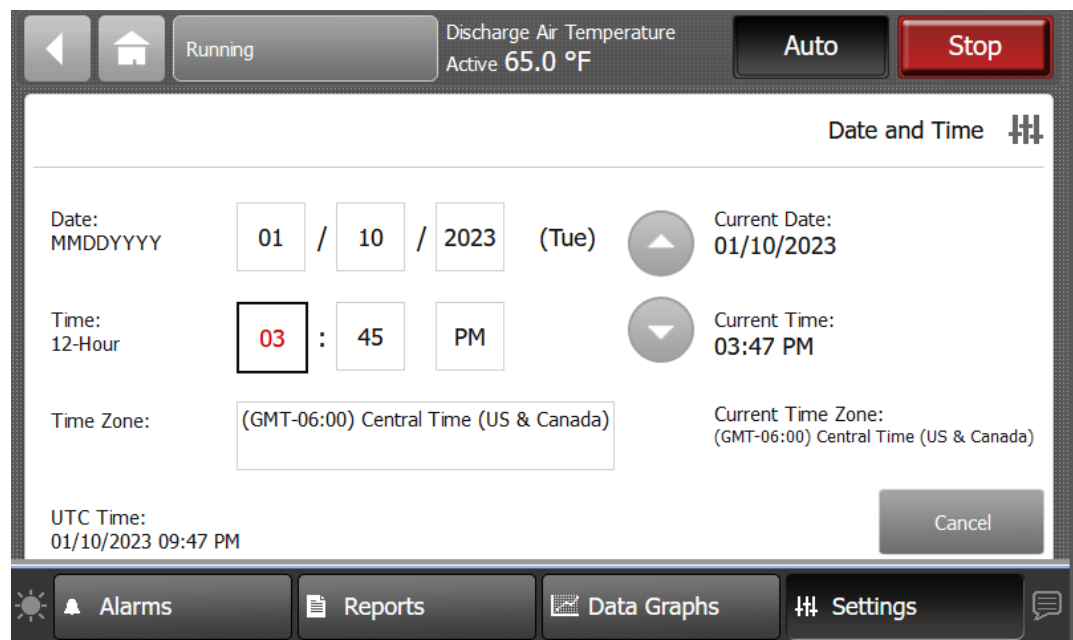
### Date and Time

Touch the **Date and Time** button to open the associated screen. To enter a new date or time, touch the digit you want to change. When enabled for editing, the digit will appear red with a black border. when finished, touch **Apply** or **Save**.

Or,

tap the digit twice which opens the keypad screen where you can make date and time entries. When finished, touch **Enter**; you will be returned to the Date and Time screen. Touch **Apply** or **Save**.

**Figure 46. Date and Time screen**



### Clean Touchscreen

Touch the **Clean Touchscreen** button to safely clean the TD7 touchscreen using any brand of common household glass cleaner. When this button is touched, the screen background color becomes black, allowing dirt and fingerprints to become more visible. It also displays a countdown timer (five to zero seconds). Touch the screen anytime within the 5-second countdown to begin cleaning the screen (each touch resets the 5-second countdown).

### Log Out

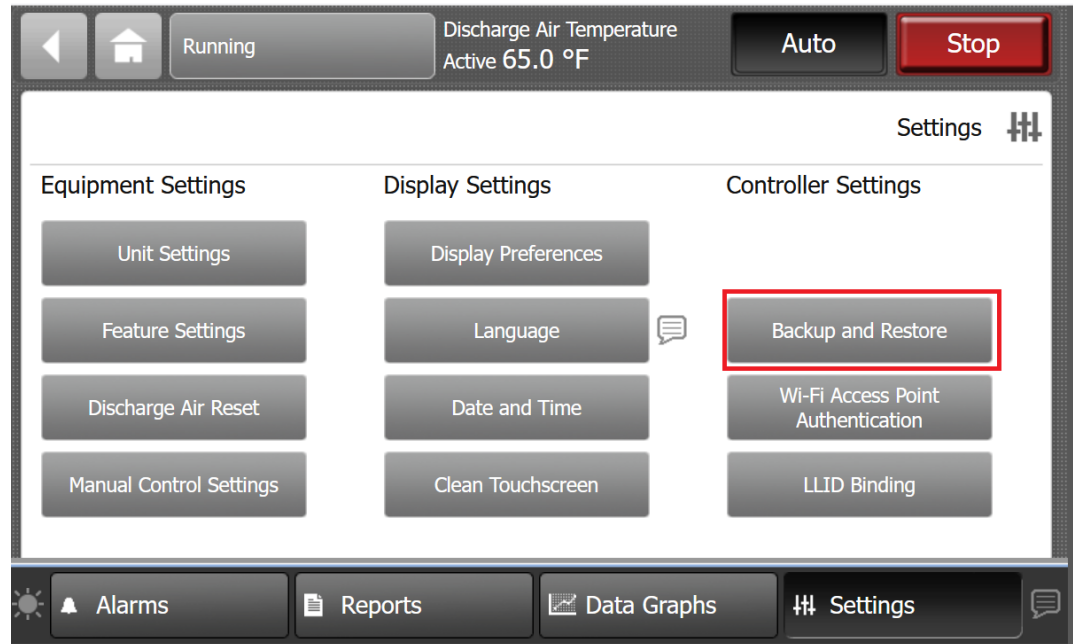
This button logs out the currently logged in user. Users are automatically logged out after 30 minutes of inactivity.

The button is only displayed when Security is enabled via Symbio™ UI.

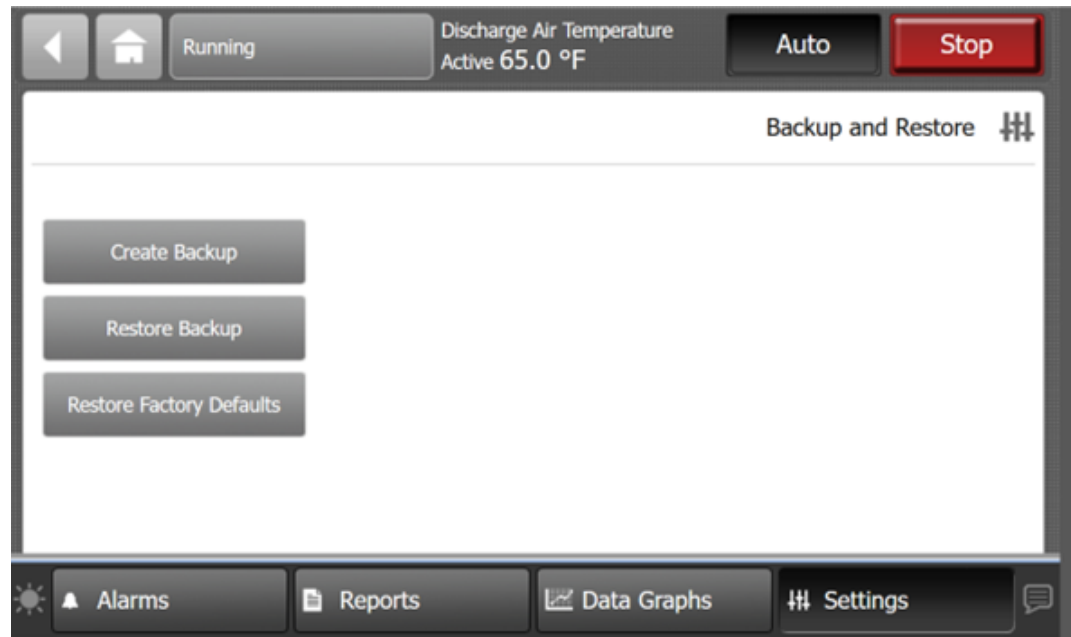
### Backup and Restore

The Backup and Restore feature allows the user to create a backup, restore a backup, or restore factory defaults via the user interface.

**Figure 47. Backup and restore**



**Figure 48. Create backup**



### **Create Backup**

To create a backup, touch the **Create Backup** button. If the backup is created successfully, a pop-up indicates the backup completed successfully. If the backup was not successful, a pop-up alerts the user of the failure condition.

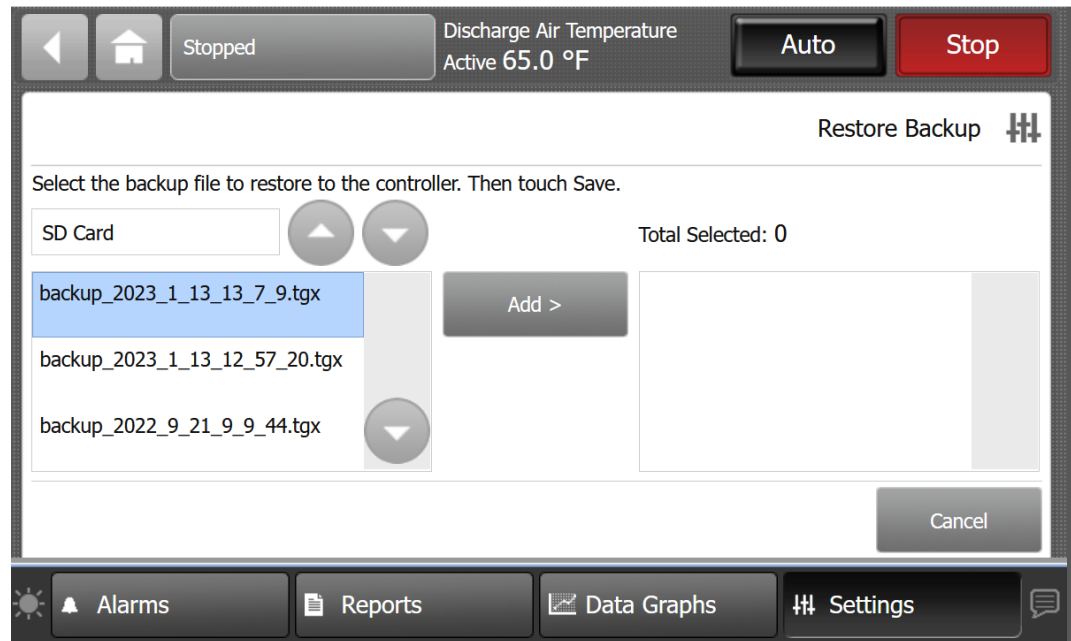
### **Restore Backup**

**Note:** *The unit must be in Local Stop before restoring a backup.*

To restore a backup:

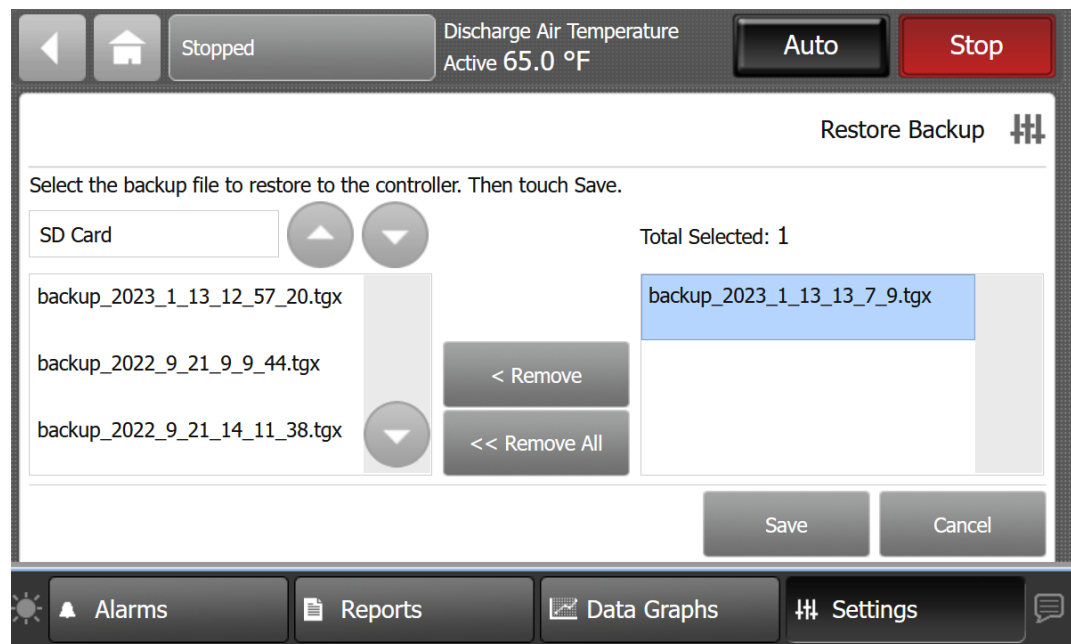
1. Touch the **Restore Backup** button.
2. Select the backup file to be restored. Highlight the file from the list of files and touch **Add**.

**Figure 49. Select backup file**



3. Touch **Save**.

**Figure 50. Save restored file**

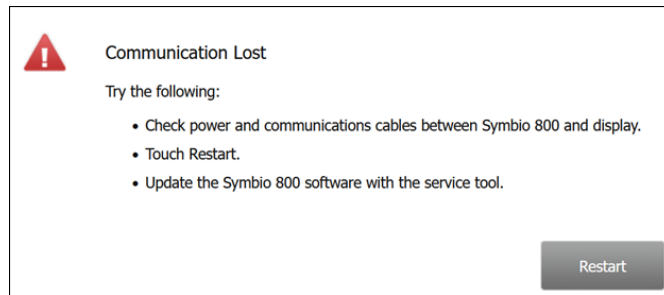


Restoring a backup will write configuration and settings to the values in the backup file. Touch the **Restore** button from the pop-up to start the restore backup process. Once restored, the Symbio 800 and user interface will restart.

The file name in the example “backup\_2023\_1\_13\_12\_57\_20” equates to backup\_year\_month\_day\_time\_minute\_second. So, the back was made on January 13, 2023 at 1:57:20 p.m.

A Communication Lost pop-up will occur as shown below.

**Figure 51. Communication Lost screen**



Touch the **Restart** button to restart the user interface and restore communication.

### Restore Factory Defaults

**Note:** *The unit must be in Local Stop before restoring factory defaults.*

Restoring factory defaults writes configuration and settings to the original factory values. To restore settings to factory defaults:

1. Touch the **Restore Factory Defaults** button.
2. Touch the **Restore** button from the pop up to start the restore backup process.
3. Once restored, the Symbio 800 and user interface will restart.

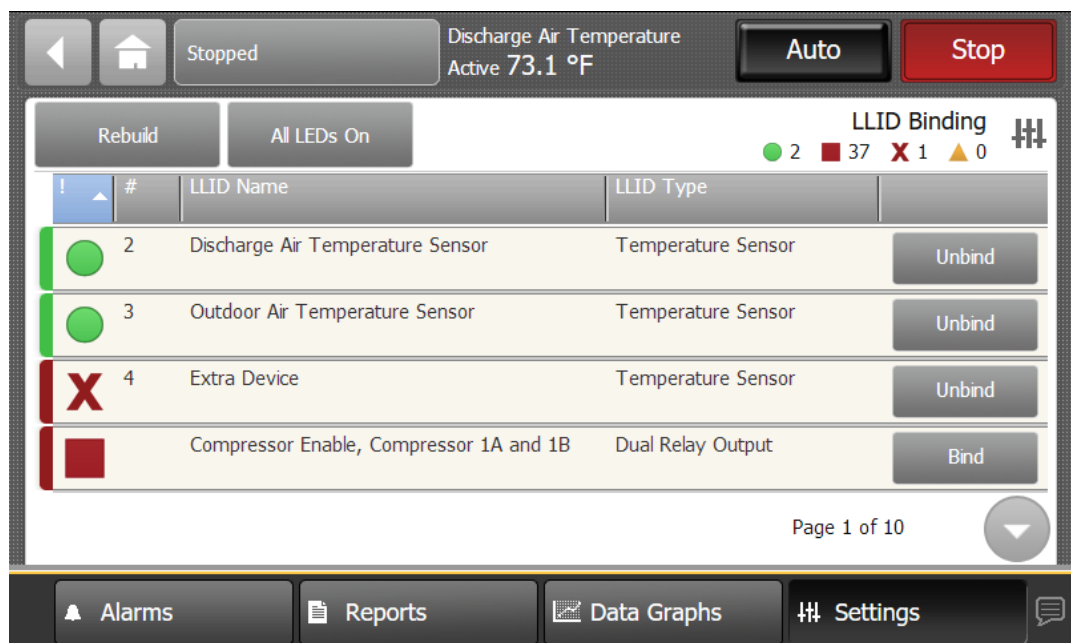
### Wi-Fi Access Point Authentication

This button allows the user to temporarily disable Wi-Fi authentication and connect to the Symbio™ 800 controller without providing a user id and password.

### LLID Binding

This button provides access to the machine bus network to bind and unbind devices as needed based on configuration. This feature should only be used by experienced service technicians.

**Figure 52. LLID Binding**





## Tracer® TU

Tracer® TU Service Tool Version 10.2 or higher is only required for custom programming (TGP2) and modifications done in the field.

**Note:** *Tracer® TU is not needed for normal operation. If you need to perform configuration changes, add new features, or customize the operation of the equipment, contact your local Trane office.*



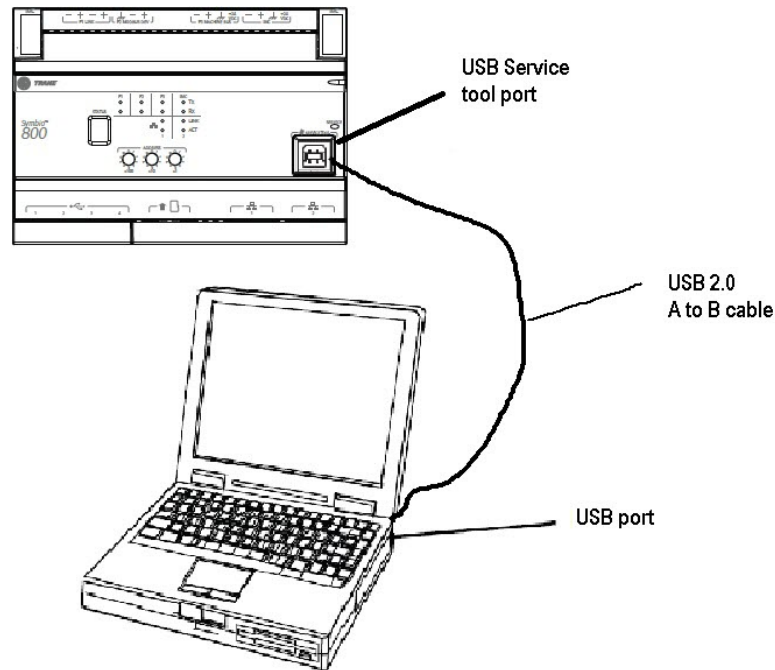


# Symbio™ UI

Use Symbio™ UI to perform firmware updates, setup communication protocols, backup and restore, scheduling, and create users or custom trend views.

1. Connect a laptop to the USB service tool port using a USB 2.0 A to B cable.
2. Open a web browser and connect to <http://198.80.18.1> to access Symbio™ UI.

**Figure 53. Symbio UI connection**

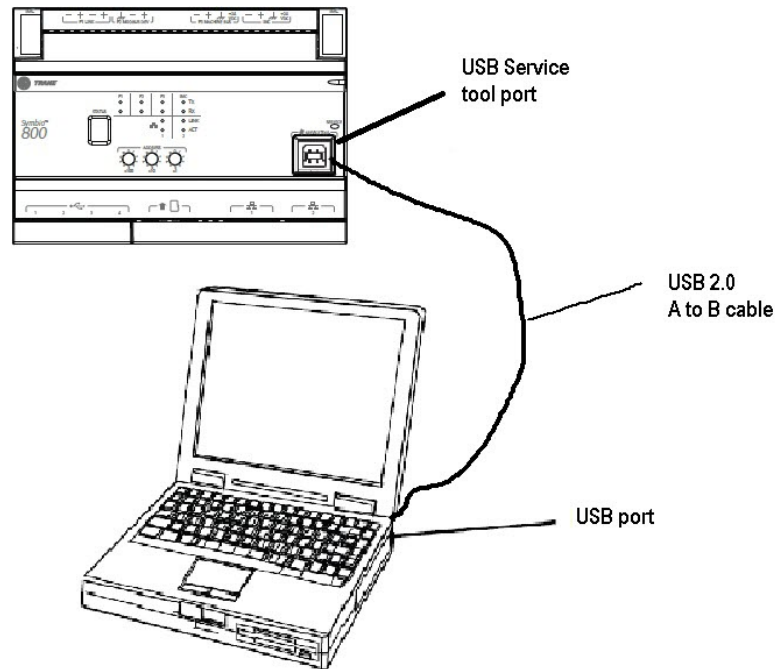


## Connecting to the Symbio UI

Use Symbio™ UI to perform firmware updates, setup communication protocols, backup and restore, scheduling, and create users or custom trend views.

1. Connect a laptop to the USB service tool port using a USB 2.0 A to B cable.
2. Open a web browser and connect to <http://198.80.18.1> to access Symbio™ UI.

Figure 54. Symbio UI connection



## Supported Browsers

Microsoft Windows 10:

- Internet Explorer 11 (no support)
- Microsoft Edge (most recent version)
- Mozilla Firefox (most recent version)
- Google Chrome (most recent version)

Apple Mac OS (latest version -1)

- Mozilla Firefox (most recent version)
- Google Chrome (most recent version)
- Safari (most recent version)

## Admin

An Admin button is provided on the top, global navigation bar for editing and creating Users, Roles, and setting Password Requirements.

### Creating a New User

**Note:** For more detailed instructions on creating a new user, click the help icon in the global navigation bar within Symbio™ UI.

To create a new user:

1. From the global navigation bar, select Admin > **Users**.
2. Click the **Create User** button.
3. Enter the user's personal information, and click **Next**.
4. On the Preferences page, determine how certain attributes on the Symbio™ 800 user interface will display. Click **Next**.
5. On the Data Display Units Preference page, determine the unit type in which data will be displayed. Click **Next**.

6. On the Data Display Units Preference page, determine the preferred display units. Click **Next**.
7. On the summary page, review your selections. Click **Finish** to save the new user.

## Assigning Roles to Users

1. From the global navigation bar, select Admin > **Users**.
2. Click the role name to open and review details about the role.
3. To assign a role to a user(s), click the box to the left of the user name, then click **Actions... > Change Role**.
4. Using the pull down menu select a new role for the user, then click **Change Role**.

## Creating a New Role

1. From the global navigation bar, select Admin > **Roles**.
2. Click the role name to review details about existing roles. Click the **Create Role** button to create a new role.
3. Enter role information including Role Name, Description, Base Role, and Maximum Override Priority, and click **Next**.
  - a. **Base Role** selection is the starting point for creating a new role.
4. For the **Equipment Permission**, specify the Permission Granted for working with Points. Points are the interface used for BACnet®, MODBUS®, and LonTalk® communication. Click **Next**.
5. **Application Permissions** page provides the ability to customize the new role. When finished, click **Next**.
6. **Function Access** page allow selections the performing Backup, Installation and service, Restore, Audit log. When finished, click **Next**.
7. Use the **Summary** page to review full details of the new role. Click **Previous** to go back and edit selections for new role. Click **Finish** when ready to save the new role. Click **Cancel** to discard role and settings.

## Setting Password Requirements

To set password requirements:

1. From the global navigation bar, select Admin > **Security**.
2. Set password requirements:
  - **Password Requires Mixed Case** — Must contain at least one lower case or upper case letter.
  - **Password Requires Number** — Must contain at least one number.
  - **Password Requires Symbol** — Must contain at least one symbol such as %, \$, #, @.
  - **Password May Not Contain User Information** — Cannot contain the user ID name.
  - **Password Minimum Length** — The minimum number of required characters is 6. Use the spinner box to select a number.
  - **Number of Previous Passwords Blocked From Reuse** — Users are prohibited from creating a new password by reusing their most previous password. This can be extended beyond the most previous for heightened security. The valid range is 1 to 75. Use the spinner box to select a number.
  - **Enforce Password Expiration** — Select this check box to require users to create a new password when their current passwords expire.
  - **Days Until Expiration** — Use the spinner box to select the maximum number of days that passwords are valid until a new one must be created. Valid range is 7 to 365.

## Security Enable / Disable

To enable security for the display to show User ID and Password:

1. Log In to Symbio™ UI.
2. Select **Installation** from the Applications Tool Bar.

3. Select **Identification and Communications** from the task list under Configure Basic Settings For This Symbio 800.
4. Select the **Network Connectivity and SSL** tab.
5. Select **Edit**.
6. If plugged into the Symbio 800 via USB, check **USB Authentication** and **Local Display Authentication**.

**Note:** Prior to deleting a user, deselect *USB Authentication* and *Local Display Authentication*, then delete the desired user. Deselecting the authentication boxes will also remove the log in and password requirement from the TD7.

## Summary

In the Symbio™ UI, select **Applications > Summary**.

From the Summary screen, you can view the four categories of alarms along with the number of unacknowledged alarms for each.

- Advisory
- Critical
- Information
- Service Required

When Schedules are created they will be shown as well.

Click on the **Alarm Category** or **Schedule Name** to expand it for more information.

**Figure 55. Summary**

The screenshot shows the Symbio UI interface. At the top, there is a navigation bar with the TRANE logo, user ID E18801227, and various icons for Favorites, Home, Alarms (9), and Admin. A left sidebar menu is open to 'Applications', with 'Summary' selected. The main content area is titled 'Summary' and is divided into two sections: 'Alarms' and 'Schedules'.

**Alarms Section:** A table with columns 'Category' and 'Unacknowledged'. The categories and their counts are:

Category	Unacknowledged
Advisory	0
Critical	0
Information	0
Service Required	9

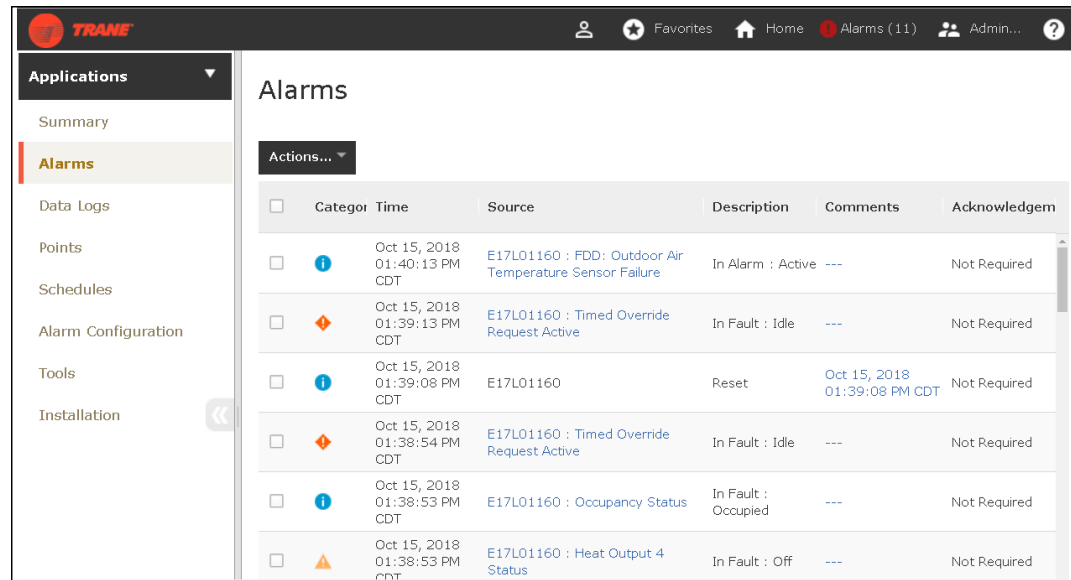
**Schedules Section:** A table with columns: Name, Type, Current Control Value, Last Controlled Time, Next Control Value, and Next Control Time.

Name	Type	Current Control Value	Last Controlled Time	Next Control Value	Next Control Time
Building Temporary	Multistate	1 : Occupied	Today 10:17:05 AM CDT	2 : Unoccupied	Tomorrow 12:00:00 AM CDT
Schedule 2	Multistate	2 : Heat	Today 10:17:05 AM CDT	7 : Off	Tomorrow 12:00:00 AM CDT

## Alarms

These alarms represent the BACnet® point alarms. BACnet® Alarms correlate closely to the “Active Point Alarms” within Reports from the TD7 display.

**Figure 56. Symbio UI™ Alarms screen**








For the alarms to appear in this list, the point must have an alarm notification class selected. Additionally, the point must have entered the appropriate notification (In Alarm, When Failed, Return to Normal, or the notification class set to a value other than None).

## Alarm Icons

Alarm icons appear in the left-most column of the alarms screen. They are identifiable by their shape and color.

**Table 30. TD7 alarms**

Active Alarm	Notification Class
	Critical
	Service Required
	Warning
	Information
	None

**Note:** Notifications classes are configured in point alarm settings section in Tracer® TU.

## Sorting Alarms

To sort alarms by a category other than date and time, touch one of the other column headings in the table. The column heading responds by changing to blue, and the alarms table re-sorts according to the blue column heading. By touching the blue column heading again, the column will change the sort direction.

- Severity (!): Active alarms are at the top, followed by the most severe, followed by the most recent.
- Date and Time (the default sort): Most recent alarms are at the top.

- Point Name: Alphabetical sort based on the point name.
- Description: Alarms are sorted alphabetically by description.

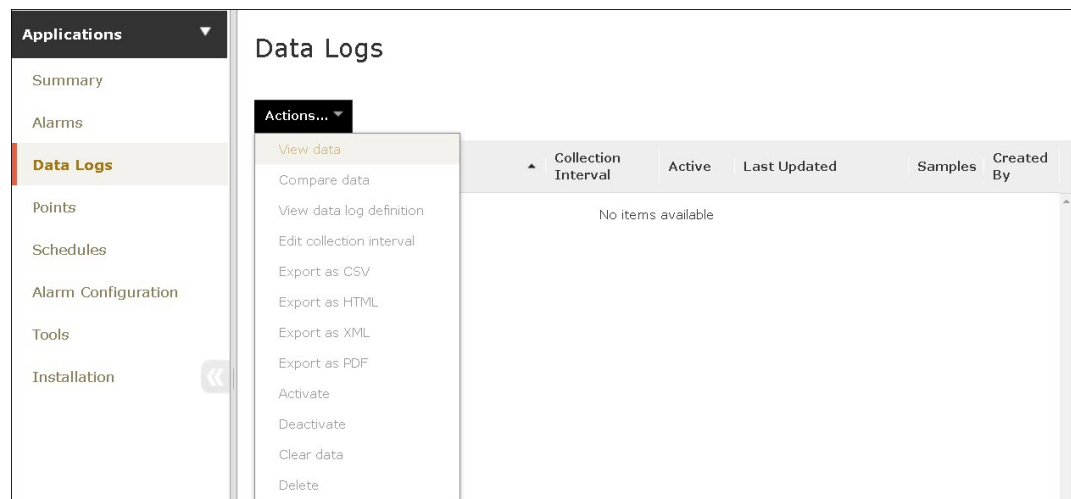
## Data Logs

Data Logging, also referred to as trending, records in real-time the value of a data point in the system and the time at which the value was recorded.

By default, Symbio™ 800 automatically generates system-created data logs (for equipment and standard applications) on a 15-minute interval and then stores that data for seven days. Data storage is a continuous window where only the most recent seven days of data are stored. Data older than seven days is discarded to make room for the newest data.

A list of data logs can be accessed by clicking **Data Logs** from the left navigation menu. From this page you can take action on a data log, such as comparing or exporting, by selecting one or more data logs and then clicking the **Actions** button.

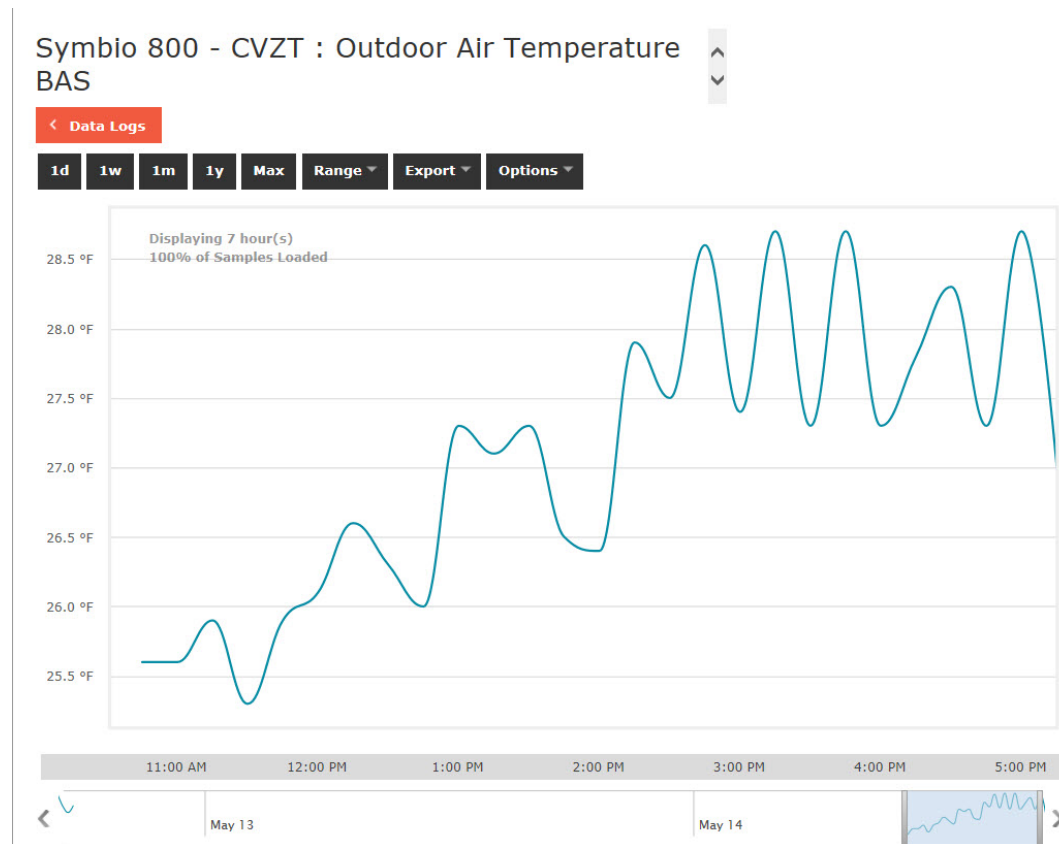
**Figure 57. Symbio UI Data Logs**



### Viewing Data Logs

To view Data logs graphically, select up to six data logs from the Data logs page and then select **View data** from the **Actions** button. The chart capability supports a time comparison mode that allows you to compare trend data at different points in time (day-to-day, month-to-month, year-to-year). A maximum of six data logs are supported (up to two data logs when time comparison mode is enabled). A maximum of two types of dimensionality are supported on the left and right y axis. Samples are plotted on a date/ time scale on the x axis. Samples in fault (due to communication loss) are not plotted and will result in an interpolation gap within the plotted line. If all samples are in fault, no line will be displayed.

**Figure 58. Symbio UI Data Log**



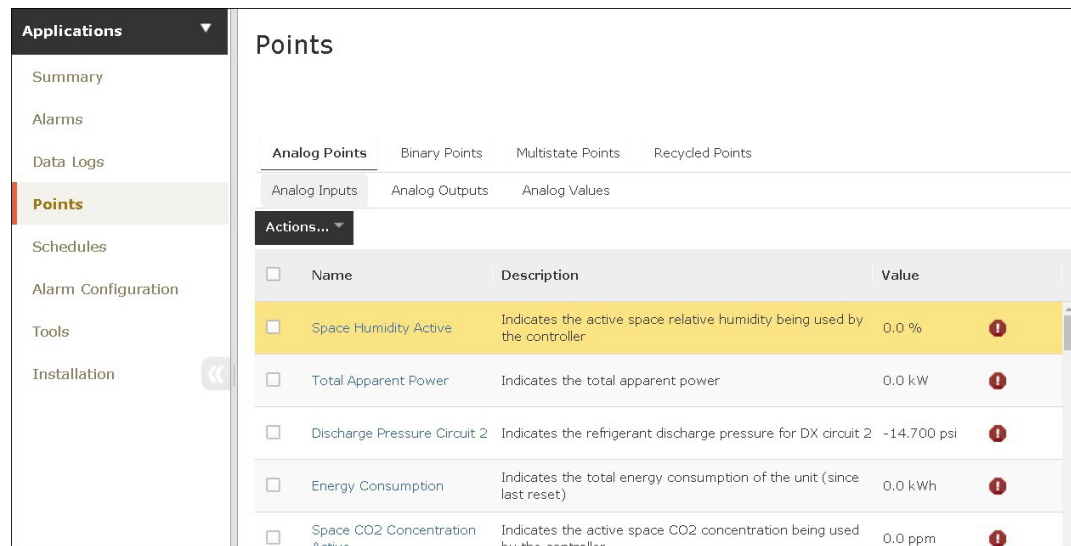
## Points

Points are how the controller communicates data and integrates into systems via standard protocols such as BACnet®, Modbus®, and LonTalk. Click left navigation pane **Points** to view all point types supported by the controller for the equipment it is configured. Points can be sorted by Name, Description or Value. Users with permissions can view details, configure, delete and recycle points from the controllers communication interface.

Viewing and editing point information:

1. Click left navigation pane **Points**.
2. Navigate by clicking **Analog Points**, **Binary Points** or **Multistate Points**.
3. Click on the point name to view and edit point details.

**Figure 59. Symbio™ UI Points**



## Deleting Points

Deleting points is convenient for removing unwanted data from the controller communication interface. The point is not permanently deleted; rather the point is simply moved to **Recycled Points**.

All point overrides, priority array owners, and status are reset to factory settings.

To delete a point:

1. Click **Points** in left navigation pane.
2. Navigate to Analog, Binary, or Multistate points and select the point(s) using check box left of name.
3. Select **Actions** pull-down menu, then **Delete > Yes – Delete** to confirm the action. **No – Cancel** to cancel action.

## Recycled Points

Points that have been deleted from the controller interface are moved to Recycled Points. In this location the points can be restored to the controller interface and used once again to communicate data via BACnet®, Modbus®, or LonTalk.

To view recycled points and restore points:

## Creating a Data Log

1. Click **Points** in left navigation pane.
2. Navigate to Analog, Binary, or Multistate points and select the point(s) using check box left of name.
3. Select **Actions** pull-down menu, then **Log Data** and complete the settings.
4. Select Data Log Type and edit settings for the type.
  - **Data collection start on a schedule**, click **Next** to setup schedule information.
  - **Data collection starts on a trigger**, click **Next** to setup trigger information.
  - **Data collection starts now**, set buffering and data collection frequency, click **Finish** when complete.

## Points Override

Point overrides are used to allow control of values, such as setpoints used for the operation of the equipment. These can be time based or persist until they are released.

From the Point Override screen you can perform overrides, set them to expire in a user-defined interval, or release a point that is currently overridden. All Point Override screens, (analog, binary, or multistate), are comprised of the same basic components.



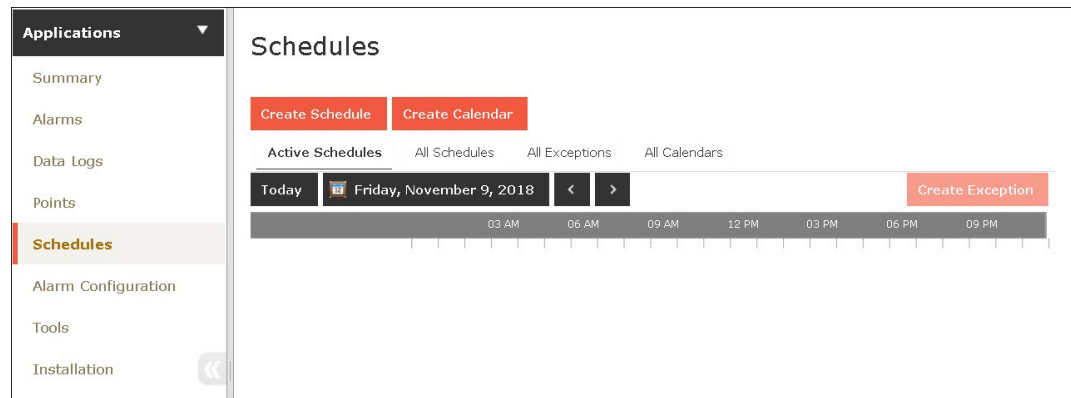
## Schedules

Scheduling is based on the BACnet® schedule object implementation. Scheduling is one of a facility's most important energy-saving strategies. It ensures that equipment runs only when needed. Scheduling facilitates the following tasks:

- Creating, editing, and deleting schedules
- Creating, editing, and deleting calendars and exception schedules
- Viewing all effective schedules in a facility

The Schedules page contains four tabs: Active Schedules, All Schedules, All Exceptions, and All Calendars.

**Figure 60. Symbio™ UI Schedules**



### Exceptions and Calendars

Exceptions are temporary modifications to a schedule. Exceptions contain one set of dates or one repeating pattern of dates. If a schedule has an exception applied, a red box outline will appear.

#### Calendars

For multiple dates and repeating patterns a calendar can be created, which is then applied to the exception.

Calendars are used to group dates, which can then have exceptions applied to these dates on a schedule. For example, a school might create a calendar to group the days that require extended operating hours for after-school meetings.

#### Release Function

The release function is a predetermined time in which the present schedule or the event releases control over to the next event based on priority. Conceptually, a scheduled release is very similar to a timed override. For example, after the daily schedule ends at 12:00 am (midnight), the schedule releases control over to the next event.

### Creating a Schedule

Symbio™ UI leads you through the process of creating a schedule for your Symbio 800. If you need help completing the steps, click the help icon located on each page. You can create a schedule to control the following points and applications based on time and date:

- Binary outputs and values
- Analog outputs and values
- Multistate outputs and values

Points and applications are referred to as members when they are assigned to a schedule. Members can be assigned to only one schedule during the same effective period. Members must be the correct type; that is, a binary point cannot be included in an analog schedule.

To create a schedule:

1. Click the **create schedule** button. The **Create Schedule—Schedule Information** page appears.

2. Enter a name for the schedule, and select the schedule type and effective dates.
3. Click **next** to continue. The **Create Schedule—Select Members** page appears.
4. From the **selection tree**, select members (spaces and areas) for the schedule, then click **Add** to move to **selected items**.
5. Click **next** to continue. The **Create Schedule – Schedule Times** page appears.
6. Select a schedule default. Each day is independent of the others and always begins with the **schedule default** value. The schedule default value is applied to each day of the week and is the value that the schedule defaults to at 12:00 a.m. for any given day.
7. Add events to the schedule: click **add event**, which opens the event dialog box.
8. Enter a time for when the event will start and select a value.
9. Select the days of the week to which the event will be applied.
10. Click **Add**. The event appears in the schedule viewer. (To edit or delete an event, click on the event in the schedule viewer.)
11. Click **next** to continue. The **Create Schedule – Summary** page appears.
12. Review the schedule. Click **finish** to save the new scheduled as summarized.

## Alarm Configuration

In Symbio™ UI left navigation pane, select **Alarm Configuration**. From the Alarm Configuration screen, you can view and edit alarm categories, alarm message templates, notification classes, routing alarm email, and audible alarm notification.

**Figure 61. Symbio™ UI Alarm Configuration screen**

Menu	Description
<a href="#">Alarm Categories</a>	View and edit the categories used in the alarms and events list and e-mail routing rules. Assign alarm priorities to categories.
<a href="#">Alarm Message Templates</a>	View, Edit and Assign Alarm Message Templates
<a href="#">Notification Classes</a>	View and edit the list of notification classes used to send alarms for points in this Symbio 800. For each notification class, select the transitions to be sent, the priority for each transition, and edit the list of recipients for the notification class.
<a href="#">Routing Alarm E-mail</a>	Select the users who will receive alarm/event notification e-mails. For each user, select the categories of events to send and the time periods during which to send notifications.
<a href="#">Audible Alarm Notification</a>	Enable or disable audible notifications for alarms that require acknowledgement, and select the sound to be played

## Tools

To effectively manage Symbio 800, a selection of task-based tools are available. The following tools described in this section are accessible from the Tools page:

- Audit Logs
- Backup and Restore
- BACnet® Information
- Firmware Update
- Programs
- Resource Usage
- System Logs

**Figure 62. Tools menu**

Applications	Tools	
▼	Tool	Description
Summary	Audit Logs	View detailed information about user activity on the Symbio 800.
Alarms	Backup and Restore	Start backup activities for the Symbio 800, or restore the Symbio 800 from an existing backup file.
Data Logs	BACnet Information	View detailed information about BACnet on the Symbio 800.
Points	Firmware Upgrade	To upload the new Firmware file into the Symbio 800.
Schedules	Programs	View status of programs that are currently running on the Symbio 800.
Alarm Configuration	Resource Usage	View usage of system resources.
<b>Tools</b>	System Logs	View and export system logs for the Symbio 800.
Installation		

## Audit Logs

Audit logs display user activity on the controller. The audit logs can be exported to a file by clicking the Export button. Note, the Audit Logs page requires time to upload and display user activity data.

## Backup and Restore

From the left navigation menu click **Tools > Backup and Restore**. Backup and Restore is a process that involves creating an exact duplicate of a Symbio 800, exporting (saving) the duplicate copy, and then restoring that copy at a later time. Use the Restore tool to restore the Symbio 800 configuration file that was produced by the backup tool.

It is important to back up Symbio 800 controllers in the event that a system failure occurs. Backups should also be performed prior to upgrading software, adding devices, or adding new applications.

Follow best practices when implementing a backup and restore procedure plan for your system. Backups do not include license files or device firmware.

**Important:** *The micro SD card installed at the factory contains an as-built backup. Additionally, the SD card can store approximately 10 more backups on a First-in First-out basis.*

## BACnet® Information

Information about the BACnet configuration is shown on this page. This information is typically used by Trane Technical Support.

## Firmware Upgrade

Firmware Upgrade allows the user to update the controller from a file located on their PC.

## Programs

Tracer® Graphical Programming (TGP2) programs are created and downloaded to Symbio 800 by using the Tracer TU service tool. To view the status of programs after they have been downloaded to Symbio 800, select **Tools > Programs** from the left navigation menu. The **Programs** list page shows the how often programs in Symbio 800 run and the most recent run time.

Custom TGP2 routines for installed equipment can now be viewed in real-time. Data points in the routine will reflect present value and gets updated for every 15 seconds, regardless of the program run interval.

**Note:** *See the Tracer TU Service Tool Getting Started Guide (BAS-SVU046).*

## Resource Usage

Resource Usage displays system usage such as applications, memory, micro SD card, communication link, and points. This is primarily used by Trane Technical support.

**Figure 63. Symbio UI Resource Usage**

Name	Value
<b>Device Information</b>	
Serial Number	E17L01160
Hardware Type	Symbio 800
Software Version	v1.00.0007 (release)
Rotary Switch Setting	1
Application Start Time	Tue Nov 06 2018 08:53:35 GMT-0600 (Central Standard Time)
Current Time	Fri Nov 09 2018 07:56:58 GMT-0600 (Central Standard Time)
<b>Memory and Flash Usage</b>	

## System Logs

System logs are an advanced informational files that may be requested by Trane Technical Support. From the left navigation menu click **Tools > System Logs**.

## Installation

These settings are for regional specifications, system units, communications, and licensing. These settings were configured during initial configuration at the factory. Some of these settings can be edited.

**Figure 64. Basic Settings**

**Symbio 800 Function**

Symbio 800 Name	E18L01166
IP Address	
Host Name	Symbio-E18L01166
This Symbio 800 Functions As	Standalone Symbio 800

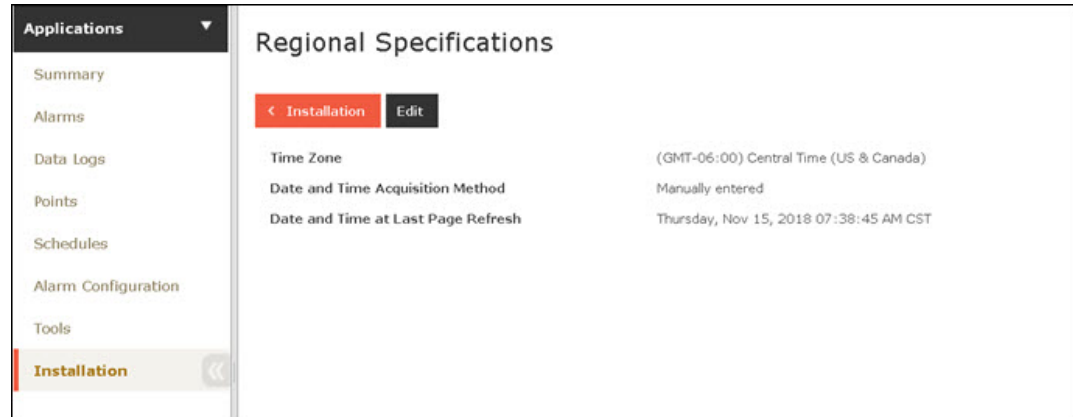
**1. Configure Basic Settings For This Symbio 800**

Task	Description
<a href="#">Regional Specifications</a>	Change the time zone, date, and time.
<a href="#">Symbio 800 System Units</a>	View the Symbio 800 system units.
<a href="#">Identification and Communications</a>	Change and specify equipment name, location name, BACnet addressing, IP addressing and Network Connectivity settings for the Symbio 800.
<a href="#">USB Ports and microSD</a>	View USB Ports and microSD status and safely unmount devices.
<a href="#">Licensing</a>	License the Symbio 800.

## Regional Specifications

This link contains time zone, and date and time selections that were made during initial configuration.

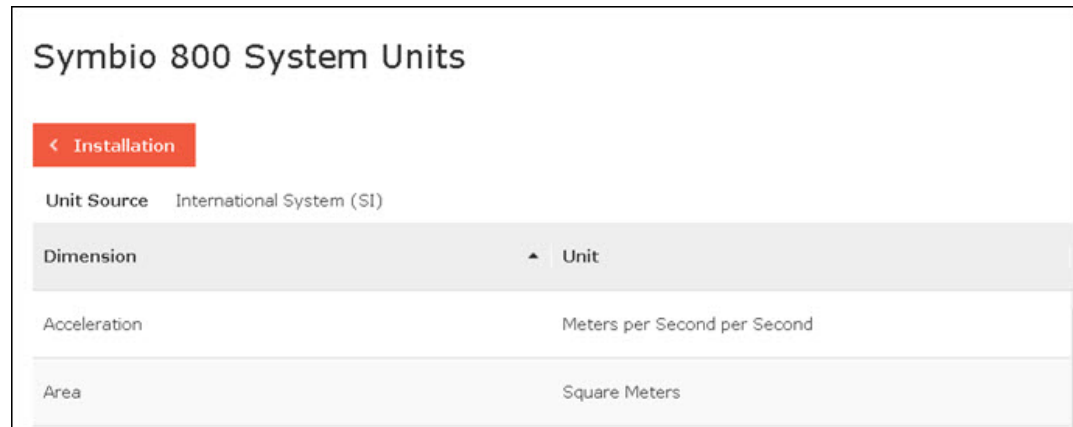
**Figure 65. Regional Specifications**



## Symbio™ 800 System Units

This link enables you to view the system units that were selected for the Symbio 800 during initial installation. They cannot be edited.

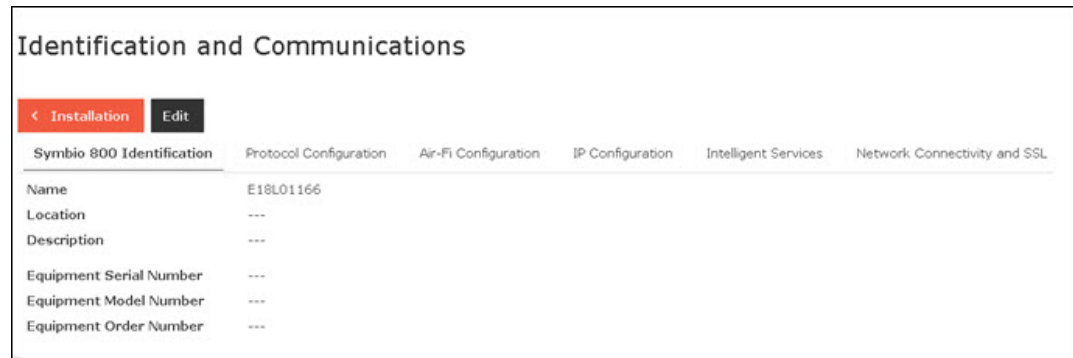
**Figure 66. Symbio 800 System Units**



## Identification and Communications

The Identification and Communications page allows you to view and edit configurations for the equipment name, location name, Protocol, IP and network address settings, Air-Fi® configuration, Trane Intelligent Services, and network connectivity. For IT concerns, see BAS-PRB017-EN.

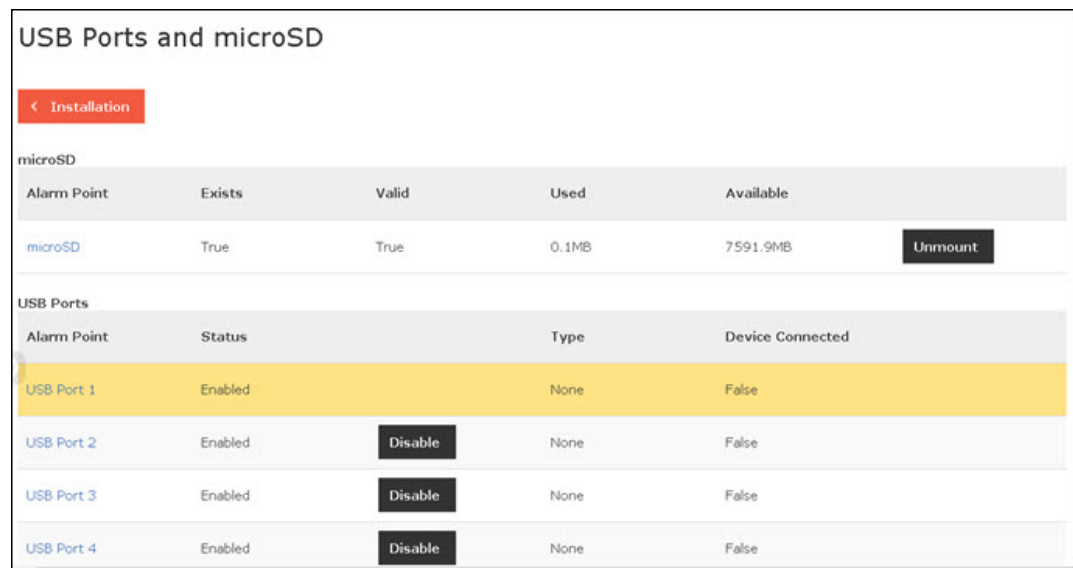
**Figure 67. Identification and Communications**



## USB Ports and microSD

On this page, you can view the USB ports and microSD for your Symbio 800. In addition, you can enable and disable individual USB ports and safely unmount mass storage devices from the USB ports and microSD.

**Figure 68. USB Ports and microSD**



## Licensing

This link opens the Product License page, which allows you to browse for and install a Symbio 800 license.

**Figure 69. Product License**

### Product License

[< Installation](#)

**Current License Information**

Current License File	Base License
Features Supported	Trending, Scheduling, Reporting, Alarming
Hardware Serial Number	E18L01166
Software Maintenance Plan Expiration Date	1/19/2038

**New License**

License File

Browse...

Upload License File

## Defaults for User Preferences

The Defaults page shows the formats in which the system displays data. This page is divided into two sections: Regional Preferences and Data Display Units.

**Figure 70. Defaults for User Preferences**

### Defaults For User Preferences

[< Installation](#)

[Edit](#)

**Regional Preferences**

Date Format	Month, Day, Year
Time Format	AM/PM
Number Format	9,999,999.99
Start Day Of Week	Sunday
Preferred Language for E-mail	English

**Data Display Units Preferences**

Unit Source	Inch-Pound (IP)
Dimension	▲ Unit
Acceleration	Feet per Second per Second
Area	Square Feet

## Application Defaults

For setting the alarm capacity for Symbio 800 and hardware alarms priority. Valid range is from 100 to 500 events. Default hardware alarms priority is 250: Information.

**Figure 71. Application Defaults**



## SMTP Settings

Use to set up your Simple Mail Transfer Protocol (SMTP) so that events can be routed to users by e-mail.

**Figure 72. SMTP Settings**



## Priority Levels

Priority levels establish a strategy used by the system to avoid conflicting control by giving precedence to applications with a higher level of priority. Priority levels are configured from installation. They are numbered 1 through 16, with 1 being the highest and 16 lowest.

**Figure 73. Priority Levels**

Priority Levels

< Installation

Actions... ▾

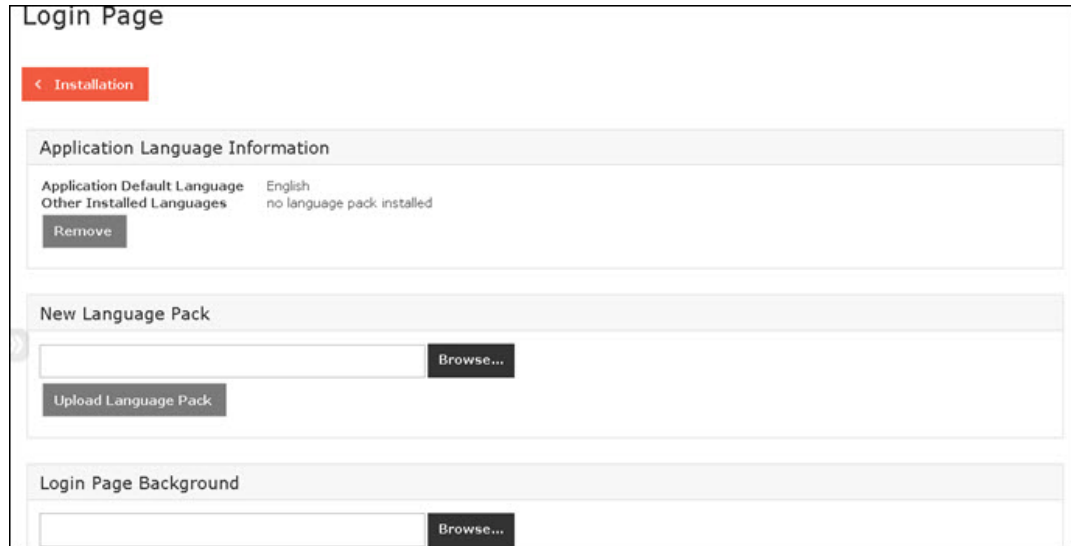
Control Class	Priority Level Name	Assigned Applications
1	Life Safety - Manual	Emergency overrides for users
2	Life Safety - Auto	Emergency override
3	Miscellaneous	---
4	Miscellaneous	---
5	Critical Equipment	Factory Safety TGP2
6	Minimum On/Off	Minimum On/Off



## Login Page

On the Login page you can upload language packs and personalize your login page by adding background images.

**Figure 74. Login Page**



The screenshot shows a web interface titled "Login Page" with a navigation breadcrumb "[Installation](#)". The interface is divided into three main sections:

- Application Language Information:** This section displays the current settings: "Application Default Language" is set to "English" and "Other Installed Languages" is "no language pack installed". A "Remove" button is located below this information.
- New Language Pack:** This section contains a file input field with a "Browse..." button next to it. Below the input field is an "Upload Language Pack" button.
- Login Page Background:** This section contains a file input field with a "Browse..." button next to it.



# Troubleshooting

This section describes the possible error messages and other issues that you may encounter while using the TD7 display.

Column	Description
Diagnostics	The actual text displayed on the Front Panel under Active Alarms and Historic Alarms.
Target	The system or component directly affected by the diagnostic. Either none, partial or total unit functionality is impaired.
Severity	Warnings may or may not affect unit operation. Normal Shutdown will provide an orderly termination of component control. Immediate Shutdown overrides all normal timers and component control and all outputs are turned off. Components may have different responses based on the unit's mode of operation (ex. Diagnostics during VOM).
Persistence	Latching diagnostics are not automatically cleared and require manual entry at the user interface and may require troubleshooting. Non-latching diagnostics are typically cleared by normal unit operation.
Condition / Response	This describes the conditions the system or component was experiencing at the time the alarm is generated. The response indicates what the unit, system or component will do during the alarm event.
Reset Level	Local requires manual entry at the Front Panel to clear a diagnostic. Remote can be cleared from other user interfaces or from the Front Panel as well.

## Identifying and Diagnosing Issues

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
Airflow Assembly Failure X where X is "1" or "2"	Unit	Warning	Non-Latching	<p>The unit is configured with Traq and the OA Damper &gt; 50% and the Outdoor Airflow Local <math>\leq 0.02 * \text{Design Air Flow}</math> for 10 consecutive seconds the diagnostic will be generated.</p> <p>The diagnostic will be cleared when Outdoor Airflow <math>&gt; 0.02 * \text{Design Air Flow}</math> for 20 consecutive seconds.</p> <p>Possible causes: Tubing failure, wiring, and calibration solenoid failure. Approximately 0.25vdc at 0.0 iwc. Increasing voltage with increasing pressure.</p> <p>Traq air flow control is inhibited and the unit will fall back to alternate minimum ventilation control.</p>	Local
Airflow Press X Measurement Failure where X is "1" or "2"	Unit	Warning	Non-Latching	<p>Diagnostic triggers if the null voltage delta reported from the sensor while performing zero calibration is greater than the "Max Air Flow Press Calibration Limit"</p> <p>Ventilation behavior: This diagnostic inhibits Traq air flow control and the unit will fall back to alternate minimum ventilation control.</p>	Remote
Air Handler Phase Monitor	Unit	Warning	Non-Latching	<p>If the three phased wiring is detected out of sequence by the phase monitor, the on-board relay will open causing the binary input to open. The unit will communicate the phase monitor diagnostic. The unit will continue to operate. The phase monitor will also open its on board relay when there is a loss of a phase or a 20% voltage imbalance between phases.</p>	Remote
Comm Loss: Air Handler Phase Monitor	Unit	Warning	Non-Latching	<p>Continual loss of communication between the MP and the Functional ID has occurred for a 30 second period.</p>	Remote
Comm Loss: Alarm Relay	Unit	Warning	Non-Latching	<p>Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period.</p> <p>No unit response.</p>	Remote
Comm Loss: Alarm Shutdown Relay	Unit	Warning	Non-Latching	<p>Continual loss of communication between the MP and the Functional ID has occurred for a 30 second period.</p>	Remote
Comm Loss: Changeover Wired	Unit	Warning	Non-Latching	<p>Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period.</p> <p>Source of changeover falls back to Front Panel default.</p>	Remote

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
Comm Loss: Compressor Proving CprsrXY where X is "1" or "2" where Y is "A", "B" or "C"	Circuit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period.  Circuit X operation is terminated immediately.	Remote
Comm Loss: Compressor Relay Compressor XY where X is "1" or "2" where Y is "A", "B" or "C"	Circuit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period.  Circuit X operation is terminated immediately.	Remote
Comm Loss: Condensate Overflow	Unit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period.  Unit operation is terminated immediately.  <b>Note:</b> VOM/EOM Behavior - During these modes this diagnostic changes behavior to a Warning diagnostic. The diagnostic will be generated but the VOM/EOM mode will be honored.	Remote
Comm Loss: Condenser Cooling Valve CktX where X = "1" or "2"	Circuit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period.  Circuit X operation is terminated immediately.	Remote
Comm Loss: Condenser Fan Relay X CktY where X is "1", "2", "3" or "4" where Y is "1" or "2"	Circuit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period.  Circuit X operation is terminated immediately.	Remote
Comm Loss: Condenser Phase Monitor	Unit	Immediate Shutdown	Latching	Continual loss of communication between the MP and the Functional ID has occurred for a 30 second period.	Local
Comm Loss: Condenser Reheat Valve CktX where X = "1" or "2"	Circuit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period.  Circuit X operation is terminated immediately.	Remote
Comm Loss: Cooling Capacity Cmd Input	Unit	Normal Shutdown	Non-Latching	Continual loss of communication between the MP and the Functional ID has occurred for a 30 second period.	Remote
Comm Loss: Cooling Capacity Enable Input	Unit	Normal Shutdown	Non-Latching	Continual loss of communication between the MP and the Functional ID has occurred for a 30 second period.	Remote
Comm Loss: Cooling Capacity Feedback	Unit	Warning	Non-Latching	Continual loss of communication between the MP and the Functional ID has occurred for a 30 second period.	Remote
Comm Loss: Diagnostic Reset Input	Unit	Warning	Non-Latching	Continual loss of communication between the MP and the Functional ID has occurred for a 30 second period.	Remote
Comm Loss: Discharge Air Iso Damper	Unit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period.	Remote
Comm Loss: Discharge Air Iso Damper Input	Unit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period.	Remote
Comm Loss: Discharge Air Temperature	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period.  If no other source for Discharge Air Temperature all heating, cooling, and economizer capacity control is terminated.	Remote
Comm Loss: Discharge Pressure CktX where X is "1" or "2"	Circuit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period.  Circuit X operation is terminated immediately.	Remote



## Troubleshooting

Diagnosics	Target	Severity	Persistence	Condition / Response	Reset Level
Comm Loss: Duct Static Pressure Local	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Supply fan set to minimum speed. Will continue duct static pressure control once communications is re- established.	Remote
Comm Loss: Emergency Stop	Unit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Unit operation is terminated immediately.	Local
Comm Loss: Energy Wheel Leaving Temp	Energy Wheel	Warning	Non-Latching	Continual loss of communication between the MP and the Energy Wheel Leaving Temp input has occurred for a 30 second period. [This drives a 'fall back' response for Energy Wheel.]	Remote
Comm Loss: Energy Wheel Relay	Energy Wheel	Immediate Shutdown	Non-Latching	Continual loss of communication between the MP and the Energy Wheel Leaving Temp input has occurred for a 30 second period. [Energy Wheel is disabled.]	Remote
Comm Loss: Energy Recovery Preheat	Energy Wheel	Warning	Non-Latching	Continual loss of communication between the MP and the Energy Wheel Leaving Temp input has occurred for a 30 second period. [Energy Wheel disables Preheat and operates without Preheat.]	Remote
Comm Loss: Energy Wheel Filter Pressure	Energy Wheel	Warning	Non-Latching	Continual loss of communication between the MP and the Energy Wheel Leaving Temp input has occurred for a 30 second period. [No action.]	Remote
Comm Loss: Evaporator Leaving Air Temperature [Single Evap]	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period.	Remote
Comm Loss: Evaporator Leaving Air Temperature EvapX [Split Evap] where X = "A" or "B"				Failed sensor with the other sensor available: The good sensor will be used for reheat calculations. Failed sensor with the other sensor not-available: The DX cooling continues to run but reheat for dehumidification is stopped.	
Comm Loss: External AutoStop	Unit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Unit operation is terminated immediately.	Remote
Comm Loss: EXV 1 CktX where X = "1" or "2"	Circuit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the EXV has occurred for a 30 second period, or EXV Steps Maximum Position has not been received. If EXV Steps Maximum Position has not been received, the controller will periodically request EXV Steps Maximum Position, since it is only transmitted upon request. Circuit X is inhibited.	Remote
Comm Loss: Final Filter Pressure Sensor	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. No unit response.	Remote
Comm Loss: Freezestat Input	Unit	Immediate Shutdown	Latching	Continual loss of communication between the MP and the Functional ID has occurred for a 30 second period. Valve Commanded to 100%	Remote
Comm Loss: Gas Heat Enable Relay	Heat	Normal Shutdown	Latching	Ipak I & Ipak II only. Continual loss of communication between the MP and the Gas Heat Enable Relay has occurred for a 30 second period.	Remote
Comm Loss: Gas Heat Stage 2 Relay	Heat	Normal Shutdown	Latching	Ipak I & Ipak II only. Continual loss of communication between the MP and the Gas Heat Enable Relay has occurred for a 30 second period.	Remote
Comm Loss: Heat Control Board Manf X where X = "1" or "2"	Heat	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the MODBUS® Server (heat control board) has occurred for a 30 second period. All burners on the manifold are locked out.	Remote

Diagnosics	Target	Severity	Persistence	Condition / Response	Reset Level
Comm Loss: Heat Ctrl Board Manf 1	Heat	Warning	Non-Latching	Staged Gas Heat control boards only. No serial communication with the 1285's own MODBUS® server control board the manifold. Any subsequent burners on that manifold are also locked out. Any prior burners that exist on that manifold are allowed to continue running.	Remote
Comm Loss: Heating Capacity Cmd Input	Unit	Normal Shutdown	Non-Latching	Continual loss of communication between the MP and the Functional ID has occurred for a 30 second period	Remote
Comm Loss: Heating Capacity Enable Input	Unit	Normal Shutdown	Non-Latching	Continual loss of communication between the MP and the Functional ID has occurred for a 30 second period	Remote
Comm Loss: Heating Capacity Feedback	Unit	Warning	Non-Latching	Continual loss of communication between the MP and the Functional ID has occurred for a 30 second period	Remote
Comm Loss: Heater Comm Interface	Heat	Normal Shutdown	Latching	Ipak I & Ipak II only. Continual loss of communication between the MP and the Gas Heat Comm Interface board has occurred for a 30 second period.	Remote
Comm Loss: Heat Fail - Auto	Heat	Normal Shutdown	Latching	Continual loss of communication between the MP and the Functional ID has occurred for a 30 second period	Remote
Comm Loss: Heat Fail - Manual	Heat	Normal Shutdown	Latching	Continual loss of communication between the MP and the Functional ID has occurred for a 30 second period	Remote
Comm Loss: Heater Reset Relay	Heat	Normal Shutdown	Latching	Ipak I & Ipak II only. Continual loss of communication between the MP and the Gas Heat Comm Interface board has occurred for a 30 second period.	Remote
Comm Loss: Hot Gas Bypass Valve Ckt1	Circuit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period, OR Hot Gas Bypass Valve Steps Maximum Position has not been received. If Hot Gas Bypass Valve Steps Maximum Position has not been received, the controller will periodically request Hot Gas Bypass Valve Steps Maximum Position, since it is only transmitted upon request.	Remote
Comm Loss: Limit Relay	Unit	Warning	Non-Latching	Continual loss of communication between the MP and the Functional ID has occurred for a 30 second period	Remote
Comm Loss: Local BAS Interface	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Use last valid BAS setpoints. Diagnostic is cleared when successful communication is established with the LonTalk® LLID (LCIC) or BACnet® LLID (BCIC).	Remote
Comm Loss: Mixed Air Temperature [Single Evap] Comm Loss: Mixed Air Temperature EvapX [Spilt Evap] X = "A" or "B"	DX Cooling	Normal Shutdown	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Units with Single Evap: Rapid Restart economizer cooling is not allowed. Units with Split Evap: These units average the two sensors to create an estimated Mixed Air Temperature. Temp X failed with the other sensor available: Rapid Restart economizer cooling is allowed. Temp X failed with the other sensor not-available: Rapid Restart economizer cooling is not allowed.	Remote
Comm Loss: Modulating Heat Output	Heat	Normal Shutdown	Latching	Continual loss of communication between the MP and the Functional ID has occurred for a 30 second period	Remote
Comm Loss: Outdoor Air Damper Feedback	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Outdoor air damper is commanded closed and economizer operation is disabled.	Remote
Comm Loss: OA Damper Position Cmd Input	Unit	Normal Shutdown	Non-Latching	Continual loss of communication between the MP and the Functional ID has occurred for a 30 second period	Remote

## Troubleshooting

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
Comm Loss: OA Damper Pos Enable Input	Unit	Normal Shutdown	Non-Latching	Continual loss of communication between the MP and the Functional ID has occurred for a 30 second period	Remote
Comm Loss: OA Damper Position Feedback	Unit	Normal Shutdown	Non-Latching	Continual loss of communication between the MP and the Functional ID has occurred for a 30 second period	Remote
Comm Loss: Outdoor Air Humidity	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 - 35 second period. This drives a 'fall back' response to Economizer enthalpy decision.	Remote
Comm Loss: Occupancy Input	Unit	Warning	Non-Latching	Continual loss of communication between the MP and the Functional ID has occurred for a 30 second period	Local
Comm Loss: Outdoor Air Temperature	DX Cooling	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Economizing is disabled. All DX operation is inhibited.	Remote
Comm Loss: Outdoor Airflow Pressure	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Traq air flow control is inhibited and the unit will fall back to alternate minimum ventilation control.	Remote
Comm Loss: Power Meter	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the MODBUS® Server (power meter) has occurred for a 30 second period. No unit response.	Remote
Comm Loss: Power Meter 2	Unit	Warning	Non-Latching	Continual loss of communication between the MP and the Functional ID has occurred for a 30 second period	Remote
Comm Loss: Pre Filter Pressure Sensor	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. No unit response.	Remote
Comm Loss: Relief Air Damper	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Unit will command the damper closed and disable Statitrac control.	Unit
Comm Loss: Relief Air Damper Feedback	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Unit will command the damper closed and disable Statitrac control.	Unit
Comm Loss: Return Air Damper	Unit	Immediate Shutdown	Latching	Continual loss of communication between the MP and the Return Air Damper has occurred for a 30 second period. Only IPAK 2 with ERW and/or Low Leak Damper.	Local
Comm Loss: Return Air Damper Input	Unit	Immediate Shutdown	Latching	Continual loss of communication between the MP and the Functional ID has occurred for a 30 second period	Remote
Comm Loss: Relief/Return Enable Input	Unit	Normal Shutdown	Non-Latching	Continual loss of communication between the MP and the Functional ID has occurred for a 30 second period	Remote
Comm Loss: Relief/Return Fan Speed Input	Unit	Normal Shutdown	Non-Latching	Continual loss of communication between the MP and the Functional ID has occurred for a 30 second period	Remote
Comm Loss: Relief/Return Speed Feedback	Unit	Warning	Non-Latching	Continual loss of communication between the MP and the Functional ID has occurred for a 30 second period	Remote
Comm Loss: Return Air Humidity	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 - 35 second period. This drives a 'fall back' response to economizer enthalpy decision.	Remote
Comm Loss: Return Air Iso Damper	Unit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period.	Remote
Comm Loss: Return Air Temperature	Unit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio 800™ and the LLID/Hex IO has occurred for a 30 - 35 second period. This drives a 'fall back' response to economizer enthalpy decision, and possibly Rapid Restart control.	Remote

Diagnosics	Target	Severity	Persistence	Condition / Response	Reset Level
Comm Loss: Return Air Temperature	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 - 35 second period.  This drives a 'fall back' response to economizer enthalpy decision, and possibly Rapid Restart control.	Remote
Comm Loss: Return Fan VFD Bypass	Unit	Warning	Latching	lpak 1 and lpak 2 units. Continual loss of communication between the MP and the bypass relay LLID has occurred for a 30 second period. (Relief damper is closed, relief fan commanded off and the Economizing will be disable and the outside air damper will be driven to the active minimum position.)	
Comm Loss: Return Plenum Static Pressure	Unit	Warning	Non-Latching	Continual loss of communication between the MP and the Return Air Isolation Damper has occurred for a 30 second period.  For all units: <ul style="list-style-type: none"> <li>• The return fan speed is set to minimum speed.</li> <li>• The supply fan remains in-control.</li> <li>• DX Cooling is allowed</li> <li>• Economizing is disabled</li> <li>• All electric and gas heating are disabled</li> </ul> Failure during active Manual Override, VOM or EOM operation: The active mode will be honored. The return fan speed, if On, will be reduced to minimum and electric and gas heating will be disabled.  * Failure during Return Fan Bypass operation: <ul style="list-style-type: none"> <li>• Immediate Shutdown</li> <li>• The return fan will be commanded Off and all other components turned Off or Closed.</li> </ul>	
Comm Loss: Space CO2	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period.  Demand Control Ventilation (DCV) is disabled.	Remote
Comm Loss: Space Humidity	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 - 35 second period.  Dehumidification and humidification will be disabled.	Remote
Comm Loss: Space Pressure	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period.  Statitrac control is disabled. Relief damper and fan control falls back to outside air damper tracking.	Remote
Comm Loss: Space Temp Cooling Stpt Wired	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period.  Space Temp Cooling Stpt Active should fall back to Space Temp Cooling Stpt Default.	Remote
Comm Loss: Space Temp Heating Stpt Wired	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period.  Space Temp Heating Stpt Active should fall back to Space Temp Heating Stpt Default.	Remote
Comm Loss: Space Temperature	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period.  Multi-zone: If Space Temperature Active is invalid, all functions requiring space temperature will be inhibited. Single-zone: Unit operation is inhibited.	Remote
Comm Loss: Staged Electric Heat Relay X where X is "1", "2", "3" or "4"	Unit	Normal Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period.  All heating will be inhibited. The unit will provide supply fan operation for ventilation.	Remote
Comm Loss: Suction Pressure CktX where X is "1" or "2"	Circuit	Immediate Shutdown	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period.  Circuit X operation is inhibited.	Remote

## Troubleshooting

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
Comm Loss: Suction Temperature 1 CktX where X is "1" or "2"	Circuit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Circuit X operation is inhibited.	Remote
Comm Loss: Suction Temperature 2 CktX where X is "1" or "2" [Split Evap Only]	Circuit	Immediate	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Circuit X operation is inhibited.	Remote
Comm Loss: Supply Fan Bypass Proving Pressure	Unit	Warning	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Unit operation is inhibited.	Remote
Comm Loss: Supply Fan Enable Input	Unit	Normal Shutdown	Non-Latching	Continual loss of communication between the MP and the Functional ID has occurred for a 30 second period.	Remote
Comm Loss: Supply Fan Speed Feedback	Unit	Warning	Non-Latching	Continual loss of communication between the MP and the Functional ID has occurred for a 30 second period.	Remote
Comm Loss: Supply Fan Speed Cmd Input	Unit	Normal Shutdown	Non-Latching	Continual loss of communication between the MP and the Functional ID has occurred for a 30 second period.	Remote
Comm Loss: Supply Fan VFD Bypass	Unit	Warning	Latching	Continual loss of communication between the Symbio™ 800 and the VFD has occurred for a 30 second period. Unit operation is inhibited.	Remote
Comm Loss: System Mode Wired	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. System Mode Active will fall back to front panel default.	Remote
Comm Loss: VAV Box Relay	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Unit no response.	Remote
Comm Loss: Ventilation Override Input	Unit	Normal Shutdown	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 - 35 second period. The unit will enter "Run Inhibit" mode and terminate all operation.	Remote
Comm Loss: VFD Compressor Cprsr1A	Cprsr	Normal	Latching	Continual loss of communication between the Symbio™ 800 and the VFD has occurred for a 30 second period. Additional compressors on this circuit are available for DX operation.	Remote
Comm Loss: VFD Condenser Fan - X where X is "1" or "2"	Circuit	Warning	Latching	Continual loss of communication between the Symbio™ 800 and the VFD has occurred for a 30 second period. Condenser fan control will revert to fixed-speed fan algorithm using remaining fans.	Remote
Comm Loss: VFD Relief	Unit	Immediate Shutdown	Latching	Ipak 1 and Ipak 2 units. Continual loss of communication between the MP and the VFD has occurred for a 30 second period. (Relief damper is closed, relief fan commanded off and the Economizing will be disable and the outside air damper will be driven to the active minimum position.)	Remote
Comm Loss: VFD Relief Fan - X where X is "1", "2", or "3"	Unit	Normal	Latching	Ipak units. Continual loss of communication between the MP and the VFD has occurred for a 30 second period.	Remote
Comm Loss: VFD Return Fan	Unit	Immediate Shutdown	Latching	Continual loss of communication between the MP and the VFD has occurred for a 30 second period.	Remote



Diagnosics	Target	Severity	Persistence	Condition / Response	Reset Level
Comm Loss: VFD Supply Fan - X where X is "1" or "2"	Unit	Normal	Latching	Continual loss of communication between the Symbio™ 800 and the VFD has occurred for a 30 second period. Failure of fan X with the other fan available: Generate "Supply Fan X Proving Failure" diagnostic and lockout heat operation. Failure of fan X with the other fan not-available: Generate "Supply Fan X Proving Failure" and shutdown the unit.	Remote
Compressor Contactor Failure CprsrXY where X is "1" or "2" where Y is "A", "B" or "C"	Circuit	Immediate	Latching	When the fixed speed compressor XY was commanded Off its proving input failed to prove Off for 6 continuous seconds. Circuit X compressors will be commanded Off. Condenser fan operation and EXV valve control will continue in case the compressor is physically On.	
Compressor Failed to Start CprsrXY where X is "1" or "2" where Y is "A", "B" or "C"	Circuit	Normal Shutdown	Latching	When the fixed speed compressor XY was commanded On its proving input failed to prove On. Circuit X operation will be inhibited.	Local
Compressor Unexpected ProvingXY where X is "1" or "2" where Y is "A", "B" or "C"	Circuit	Immediate	Non-Latching	When the fixed speed compressor XY has been OFF, and its proving input has proven OFF, its proving input unexpectedly proves On for 6 continuous seconds. It is assumed that a compressor has started un-commanded, the diagnostic will be generated and the circuit will be shutdown. Circuit X operation will be inhibited.	Local
Condensate Overflow	Unit	Immediate	Non-Latching	A High condensate level was detected.  This diagnostic will be generated, and the unit will shut down, if a high condensate level is detected for the first two times within a 72 hour period. The diagnostic will reset and the unit will be allowed to start if the condensate level drops below the trip point.  This diagnostic indicates a problem with the mechanical float valve or the water drain piping. However it is assumed that this is a temporary problem and does not require service. If a third high condensate level is detected within 72 a period a Condensate Overflow Lockout diagnostic is generated.  <b>Note:</b> VOM/EOM Behavior - During these modes this diagnostic changes behavior to a warning diagnostic and the active mode will be honored.	Remote
Condensate Overflow Lockout	Unit	Immediate	Latching	A High condensate level was detected.  The lockout Will be generated if a high condensate level is detected a third time within a 72 hour period.  This is indicating a recurring problem with the mechanical float valve or the water drain and may require service.  <b>Note:</b> VOM/EOM Behavior - During these modes this diagnostic is not generated and the active mode will be honored.	Remote
Condenser Phase Monitor	DX Cooling	Immediate Shutdown	Latching	If the three phased wiring is detected out of sequence by the phase monitor, the on-board relay will open causing the binary input to open. The unit will shut down mechanical cooling. The phase monitor will also open its on board relay when there is a loss of a phase or a 20% voltage imbalance between phases.	Local
Cooling Capacity Cmd Input	Unit	Normal Shutdown	Non-Latching	Measure Voltage/Current is outside allowed range:	Remote
Discharge Air High Temperature Detected	Unit	Immediate Shutdown	Latching	$0.10 * (Max - Min) = X$	Local
Discharge Air Iso Damper Closed	Unit	Immediate Shutdown	Latching	$Min - X < Input < Max + X$	Remote
Discharge Air Iso Damper Failed to Open	Unit	Immediate Shutdown	Latching	When commanded to open, the Discharge Air Isolation Damper position (voltage) has remained below the Isolation Damper Position Prove Setpt for 5 continuous minutes.	Remote
Discharge Air Iso Damper Failed to Close	Unit	Warning	Non-Latching	When commanded to close, the Discharge Air Isolation Damper position (voltage) has remained more than 10% open for 5 continuous minutes.	Remote
Discharge Air Iso Damper Input	Unit	Immediate Shutdown	Latching	The Discharge Air Isolation Damper Voltage Input has failed out of range. This voltage is an indication of actual damper position.	Remote



## Troubleshooting

Diagnosics	Target	Severity	Persistence	Condition / Response	Reset Level
Discharge Air Static Pressure Limit Auto	Unit	Immediate	Non-Latching	<p>The supply air static pressure exceeded the Duct Static Pressure High Limit Setpoint for at least one second continuously.</p> <p>The unit will shut down but will be allowed to restart once the pressure falls below the high limit setpoint.</p> <p><b>Note:</b> VOM/EOM Behavior - During these modes this diagnostic changes behavior to a warning diagnostic and the active mode will be honored. If the mode has the supply fan On its speed will be reduced to minimum.</p>	Remote
Discharge Air Static Pressure Limit Manual	Unit	Immediate	Latching	<p>The supply air pressure has exceeded the Duct Static Pressure High Limit Setpoint for the 3rd consecutive time without the supply fan running for 3 continuous minutes. (If the fan runs for 3 continuous minutes the counter will be reset.)</p> <p>The unit will shut down but will not be allowed to restart even if the pressure falls below the high limit setpoint.</p> <p><b>Note:</b> VOM/EOM Behavior - During these modes this diagnostic changes behavior to a warning diagnostic and the active mode will be honored. If the mode has the supply fan On its speed will be reduced to minimum.</p>	Remote
Discharge Air Temperature Sensor Failure	Unit	Warning	Non-Latching	<p>The Supply Air Temperature sensor has failed.</p> <p>If no other source for Discharge Air Temperature all heating, cooling, and economizer capacity control is terminated.</p>	Remote
Discharge Pressure Sensor CktX where X is "1" or "2"	Circuit	Immediate Shutdown	Latching	<p>The discharge pressure sensor for circuit X has failed out of range.</p> <p>Circuit X operation will be inhibited.</p>	Remote
Duct Static Pressure Active is Invalid	Unit	Warning	Non-Latching	<p>There is no valid source for Discharge Pressure Sensor Active. All sources are unavailable.</p> <p>VVDA units only.</p> <p>See 'Duct Static Pressure Local is Invalid' below for VVDA units.</p>	Remote
Duct Static Pressure Local is Invalid	Unit	Warning	Latching	<p>There is no valid source for Discharge Pressure Sensor Local. Both the local wireless and wired sensors are unavailable.</p> <p>For all units:</p> <ul style="list-style-type: none"> <li>• The supply fan speed is overridden to minimum speed.</li> <li>• DX Cooling is allowed</li> <li>• All heating is disabled</li> </ul> <p>For CVDA, CVZT and VVZT units:</p> <ul style="list-style-type: none"> <li>• The supply fan operation is normal</li> <li>• High Duct Static Limit Protection, High Duct Static Limit Trip, and Full Airflow Limit Control is disabled.</li> </ul>	Remote
Duct Static Pressure Measurement Failure	Unit	Immediate Shutdown	Latching	<p>Diagnostic triggers if the null voltage delta reported from the sensor while performing zero calibration is greater than the "Max Duct Static Press Calibration Limit"</p>	Remote
Emergency Override Mode Pressurize	Unit	Warning	Non-Latching	<p>The unit is following Emergency Override Pressurize.</p>	Local
Emergency Override Mode Depressurize	Unit	Warning	Non-Latching	<p>The unit is following Emergency Override Depressurize.</p>	Local
Emergency Override Mode Purge	Unit	Warning	Non-Latching	<p>The unit is following Emergency Override Purge.</p>	Local
Emergency Override Mode Shutdown	Unit	Warning	Non-Latching	<p>The unit is following Emergency Override Shutdown.</p>	Local
Emergency Override Mode Fire	Unit	Warning	Non-Latching	<p>The unit is following Emergency Override Fire.</p>	Local
Emergency Stop	Unit	Immediate Shutdown	Latching	<p>Emergency stop feedback input has Opened. Time to trip from input opening to unit stop shall be 0.1 to 1.0 seconds.</p> <p>Unit operation is inhibited.</p>	Local

Diagnosics	Target	Severity	Persistence	Condition / Response	Reset Level
Energy Recovery Preheat	Energy Wheel	Immediate Shutdown	Latching	Energy Recovery Frost Inhibit mode occurs three times in a 24 hour period [Energy Wheel is disabled.]	Local
Energy Wheel Filter Pressure Sensor	Energy Wheel	Warning	Non-Latching	Hex IO module fault code for Pbits or Flowbits 21-bit signed result (0x0F_ FFFF) Note: The Hex IO cannot detect when the ground wire for the sensor goes open circuit.  No unit response.	Remote
Energy Wheel Filter Diff Press Setpoint Exceeded	Energy Wheel	Warning	Latching	When feedback value is greater than the setpoint.	Remote
Energy Wheel Leaving Temperature Sensor	Energy Wheel	Warning	Non-Latching	The Energy Wheel Leaving Temperature sensor has failed out of range. [This drives a 'fall back' response for Energy Wheel. Heating disabled, Cooling continues]	Remote
Energy Wheel Proving Failure	Energy Wheel	Immediate Shutdown	Latching	The energy wheel must be operational for 5 minutes to stabilize airflow temperatures before this diagnostic will be allowed. Once this condition has been met, this diagnostic will be generated when both of the following conditions have existed for 5 continuous minutes: • The absolute difference between Outdoor Air Temperature and Return Air Temperature is $\geq 13F$ . • The absolute difference between Return Air Temperature and Energy Wheel Leaving Temperature is $\leq 3F$ . Energy Wheel output is deenergized and both bypass dampers are opened. An active preheat event will be terminated.	Remote
Evap Lvg Air Temp Sensor [Single Evaporator] Evaporator Leaving Air Temperature EvapX [Split Evaporator] where X is "A" or "B"	Unit	Warning	Latching	The Evaporator Leaving Air Temperature sensor on the circuit has failed out of range.  The DX cooling continues to run but reheat for dehumidification is stopped.	Remote
Excessive Outdoor Air	Unit	Warning	Non- Latching	The unit is in any mode that is not active economizer cooling. The OAD position has been greater than the minimum ventilation command by 10% for 5 continuous minutes.	Remote
Final Filter Diff Press Setpoint Exceeded	Unit	Warning	Latching	When feedback value is greater than the setpoint.	Remote
Final Filter Pressure Sensor	Unit	Warning	Non-Latching	The filter pressure sensor has failed. No unit response.	Remote
Freeze Avoidance	Unit	Warning	Non-Latching	Fan off modes: [Estop    Emerg Ovrd    VOM]	Remote
Heat Control Board Failure Manf X Server where X is "1" or "2"	Heat	Warning	Non-Latching	Staged Gas Heat control boards only.  A control board failure condition has condition has occurred on the 1285's own MODBUS® server control board on the first manifold.  Does not lock out any burners associated with the first heat control board on the manifold.	Remote



## Troubleshooting

Diagnosics	Target	Severity	Persistence	Condition / Response	Reset Level
Heat Gas Valve Failure Manf X Burner Y where X is "1" or "2" where Y is "1", "2" or "3"	Heat	Warning	Non-Latching	<p>Possible causes: Faulty wiring. Faulty control.</p> <p>Mod Gas control boards: The Valve Actuator did not reach a Park or Full On position. All burners on the manifold are unavailable until the condition is corrected. Will allow another retry 10-30 seconds after the error condition is created, and the error condition is cleared.</p> <p>Staged Gas Control Boards: The gas valve state is lo when it must be hi, or hi when it must be lo.</p> <p>All burners on the manifold are unavailable until the condition is corrected. Will allow another retry 10 minutes after the error condition is created, and the error condition is cleared.</p>	Remote
Heat Gas Valve Short Manf X Burner Y where X is "1" or "2" where Y is "1", "2" or "3"	Heat	Warning	Non-Latching	<p>The burner gas valve is shorted to 24VAC.</p> <p>All burners on the manifold are unavailable until the condition is corrected. Will allow another retry 10 minutes after the error condition is created, and the error condition is cleared.</p> <p>Staged Gas Heat control boards only. Possible causes: Control needs to be replaced. Faulty wiring.</p>	Remote
Heat Inducer High Press Manf X where X is "1" or "2"	Heat	Warning	Non-Latching	<p>A 'Heat Inducer High Press Manf X' condition has occurred on the 1285's own MODBUS® server control board on the first manifold.</p> <p>Staged Gas Heat control boards only.</p> <p>Does not lock out any burners associated with the first heat control board on the manifold.</p>	Remote
Heat Inducer Low Press Manf X where X is "1" or "2"	Heat	Warning	Non-Latching	<p>A 'Heat Inducer Low Press Manf X' condition has occurred on the 1285's own MODBUS® server control board on the first manifold.</p> <p>Staged Gas Heat control boards only.</p> <p>Does not lock out any burners associated with the first heat control board on the manifold.</p>	Remote
Heat Invalid ID Chip Manf 1	Heat	Warning	Non-Latching	<p>An invalid id chip condition has condition has occurred on the 1285's own MODBUS® server control board on the first manifold.</p> <p>Does not lock out any burners associated with the first heat control board on the manifold.</p> <p>Staged Gas Heat control boards only.</p> <p><b>Note:</b> If the incorrect ID chip is inserted into the board simply based off of the current configuration, the first heat control board will display this as a comm loss coming from its server board.</p>	Remote
Heat Open Fuse Manf X where X is "1" or "2"	Heat	Warning	Non-Latching	<p>An open fuse condition has condition has occurred on the 1285's own MODBUS® server control board on the first manifold.</p> <p>Staged Gas Heat control boards only.</p> <p>Does not lock out any burners associated with the first heat control board on the manifold.</p>	Remote
Heat Primary Limit Open Manf 1 Subordiante	Heat	Warning	Non-Latching	<p>A primary limit condition has condition has occurred for an extended duration on the 1285's own MODBUS® server control board on the first manifold.</p> <p>Staged Gas Heat control boards only.</p> <p>Does not lock out any burners associated with the first heat control board on the manifold.</p>	Remote
Heat Supply Air Flow Proving Lockout Manuf X where X is "1" or "2"	Heat	Warning	Non- Latching	<p>The Air Flow Proving circuit is open, while a Firing Rate Demand is requested. This could be open on the board connector.</p> <p>Modulating Gas Heat control boards only.</p> <p>All burners on the manifold are unavailable. Will allow another retry in between 30 seconds to 5 minutes.</p>	Remote

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
Heating Capacity Cmd Input	Unit	Normal Shutdown	Non-Latching	Measure Voltage/Current is outside allowed range: $0.10 * (Max - Min) = X$ $Min - X < Input < Max + X$	Remote
High Compressor Press Diff Lockout CktX where X is "1" or "2"	Circuit	Immediate Shutdown	Latching	Compressor involute pressure differential exceeded allowable limits. Circuit X is inhibited.	Remote
High Compressor Press Differential CktX where X is "1" or "2"	Circuit	Immediate Shutdown	Non-Latching	Compressor involute pressure differential exceeded allowable limits. Circuit X is inhibited.	Remote
Invalid Active Discharge Air Temperature	Unit	Warning	Non-Latching	No Valid Input from BAS or Unit. The mechanical cooling, heating and economizer control will be disabled; however, the supply fan will continue to run.	Remote
Invalid Active Occupancy Input	Unit	Warning	Non-Latching	The input to the Hex IO module has failed. The unit will fall back to the "Occupancy Input Default" setting on the front panel.	Remote
Invalid Active Outdoor Airflow	Unit	Warning	Non-Latching	No Valid Input from BAS or Unit. Disables Traq airflow control.	Remote
Invalid Active Space CO2	Unit	Warning	Non-Latching	No Valid Input from BAS or Unit. Disables Traq airflow control.	Remote
Invalid Active Space Pressure	Unit	Warning	Non-Latching	No Valid Input from BAS or Unit. Statitrac control will be terminated and the Relief Fan Speed and Relief Damper command will fall back to OA Damper Tracking.	Remote
Loss of Charge Detected CktX where X is "1" or "2"	Circuit	Warning	Latching	Loss of Charge is detected on circuit X, severe enough to warn a technician, but not severe enough to shut down the circuit. No unit response.	Local
Loss of Charge Lockout CktX where X is "1" or "2"	Circuit	Immediate Shutdown	Latching	Loss of Charge is detected on circuit X severe enough to shut down the circuit. Circuit X is inhibited.	Local
Low Air Temperature Freezestat - Manual	Unit	Immediate Shutdown	Latching	Freezestat input is closed and (OA Temp $\leq$ 50f    OA Temp Invalid) Command Valve to 100%	Remote
Low Air Temperature Freezestat - Auto	Unit	Warning	Non-Latching	Freezestat input is closed and OA Temp > 50F	Remote
Low Suction Pressure CktX where X is "1" or "2"	Circuit	Immediate Shutdown	Latching	The suction pressure on circuit X dropped below a calculated pressure threshold. Contact Trane Technical Support for further information. Circuit X is inhibited.	Local
Multiple circuit units will display: Mixed Air Temperature Sensor EvapX where X is "A" or "B" Single circuit units will display: Mixed Air Temperature Sensor EvapA	DX Cooling	Normal Shutdown	Latching	Mixed Air Temperature sensor has failed out of range. Failure of sensor X with the other sensor available: Generate "Mixed Air Temperature Sensor EvapX" diagnostic and continue DX operation. Failure of sensor X with the other sensor not- available: Generate "Mixed Air Temperature Sensor EvapX" diagnostic and inhibit DX operation.	Remote
Morning Warmup Mode Exceeded 120 Minutes	Unit	Warning	Non-Latching	The unit has been operating in "Morning Warmup" for 120 minutes. This is an occupied mode that stops ventilation. If Morning Warmup command is removed after the diagnostic has been activated it will be cleared.	Remote
MP: Invalid Configuration	N/A	N/A	Latching	The Symbio™ 800 controller has an invalid configuration based on the current software installed. The Symbio™ 800 controller is invalid, contact service support.	Remote

## Troubleshooting

Diagnosics	Target	Severity	Persistence	Condition / Response	Reset Level
MP: Reset Has Occurred	Platform	Warning	Non-Latching	The Symbio™ 800 controller has successfully recovered from a reset and built its application. A reset may have been due to a power up, installing new software or configuration. This diagnostic is immediately and automatically cleared and thus can only be seen in the Historic Diagnostic List in Tracer® TU. Normal operation after re-boot. Access Historic Alarms page on the Front Panel for date and time stamp.	Remote
Outdoor Air Bypass Damper Input	Energy Wheel	Warning	Non-Latching	The Outdoor Air Bypass Damper Input has failed out of range. This voltage is an indication of actual damper position.	Remote
Outdoor Air Bypass Dmpr Failed Closed	Energy Wheel	Warning	Non-Latching	The outdoor air bypass damper position has been lower than the damper command by 10% for 5 continuous minutes.	Remote
Outdoor Air Bypass Dmpr Failed Open	Energy Wheel	Warning	Non-Latching	The outdoor air bypass damper position has been greater than the damper command by 10% for 5 continuous minutes.	Remote
Outdoor Air Damper Closed	Unit	Immediate Shutdown	Latching	Units configured for 100% OA with no return air	Local
Outdoor Air Damper Input	Unit			The Outdoor Air Damper Voltage Input has failed out of range. This voltage is an indication of actual damper position.	
		Warning	Non-Latching	Units not configured for ERW or Ultra Low Leak Dampers (Title 24) [Economizer cooling is terminated and the Outdoor Air Damper is commanded closed.]	Remote
		Immediate Shutdown	Latching	Units configured for ERW or Ultra Low Leak Dampers (Title 24), or Units configured for 100% OA with no return air. [Diagnostic will inhibit manual control of supply fan]	Local
Outdoor Air Damper Not Modulating	Unit	Warning	Non-Latching	The unit is in any mode that is not active economizer cooling and the OAD position has been lower than the minimum ventilation command by 10% for 5 continuous minutes. No unit response.	Remote
Outdoor Air Damper Position Cmd Input	Unit	Normal Shutdown	Non-Latching	Measure Voltage/Current is outside allowed range: $0.10 * (Max - Min) = X$ $Min - X < Input < Max + X$	Remote
Outdoor Air Enthalpy Active is Invalid	Unit	Warning	Non-Latching	Loss of outdoor air enthalpy implies either Outdoor Air Temperature or Outdoor Air Humidity is invalid. This drives a 'fall back' response to Dry Bulb Economizer decisions if Outdoor Air Temperature is available, otherwise Economizer cooling is disabled.	Remote
Outdoor Air Humidity Sensor	Unit	Warning	Non-Latching	The Outdoor Air Humidity sensor has failed out of range. No action is taken for this sensor failure only the Outdoor Air Humidity Sensor Active has special action.	Remote
Outdoor Air Humidity Sensor Active	Unit	Warning	Non-Latching	The Active Outdoor Air Humidity sensor has failed out of range. This drives a 'fall back' response to Dry Bulb Economizer decisions if Outdoor Air Temperature is available, otherwise Economizer cooling is disabled.	
Outdoor Air Temperature Sensor	DX Cooling	Warning	Non-Latching	The Outdoor Temperature sensor has failed out of range. No action is taken for this sensor failure only the Outdoor Air Temp Active is Invalid has special action.	Remote
Outdoor Air Temp Active is Invalid	DX Cooling	Normal Shutdown	Non-Latching	All sources for Outdoor Air Temperature are invalid. Economizer cooling is terminated.	Remote
Outdoor Airflow Pressure Sensor	Unit	Warning	Latching	The Outdoor Airflow Pressure sensor has failed out of range. Traq function is disabled. Ventilation falls back to Outdoor Airflow Compensation or Minimum Ventilation Setpoint.	Remote
Pre Evap Filter Diff Press Setpoint Exceeded	Unit	Warning	Latching	When feedback value is greater than the setpoint.	Remote
Pre Evaporator Filter Pressure Sensor	Unit	Warning	Non-Latching	The Pre Evaporator Filter Pressure sensor has failed out of range. Note: The Hex IO cannot detect when the ground wire for the sensor goes open circuit. No unit response.	Remote

Diagnosics	Target	Severity	Persistence	Condition / Response	Reset Level
Precool Mode Exceeded 120 Minutes	Unit	Warning	Non-Latching	The unit has been operating in "Pre Cool" for 120 minutes. This is an occupied mode that stops ventilation. If Pre Cool command is removed after the diagnostic has been activated it will be cleared.	Remote
Relief Air Bypass Damper Input	Energy Wheel	Warning	Non-Latching	The Relief Air Bypass Damper Input has failed out of range. This voltage is an indication of actual damper position.	Remote
Relief Air Bypass Dmpr Failed Closed	Energy Wheel	Warning	Non-Latching	The relief air bypass damper position has been lower than the damper command by 10% for 5 continuous minutes.	Remote
Relief Air Bypass Dmpr Failed Open	Energy Wheel	Warning	Non-Latching	The relief air bypass damper position has been greater than the damper command by 10% for 5 continuous minutes. [Energy Wheel Preheat is disabled.]	Remote
Relief Air Damper Failed Closed	Unit	Warning	Non-Latching	The relief air damper position has been lower than the damper command by 10% for 5 continuous minutes. The relief fan remains on but its speed is limited to the value of the relief damper voltage input.	Remote
Relief Air Damper Failed Open	Unit	Warning	Non-Latching	The relief air damper position has been greater than the damper command by 10% for 5 continuous minutes. The relief fan remains on but its speed follows the lower commanded value, or if the command increases the speed is limited to no greater than the value of the relief damper voltage input.	Remote
Relief Air Damper Input	Unit	Warning	Non-Latching	The Relief Air Damper Input has failed out of range. This voltage is an indication of actual damper position. Relief damper is closed and the relief fan is commanded off. Economizer cooling is terminated.	Remote
Relief Fan X Proving Failure where X is "1", "2" or "3"	Unit	Warning	Non-Latching	Relief Fan X is expected to be running, this diagnostic will be generated when a No Flow condition exists for 40 continuous seconds. Failure of fan X with other relief fans available: Generate "Relief Fan X Proving Failure" diagnostic and take no other action. Failure of fan X with other relief fans not-available: The relief damper will be closed, the relief fan will be commanded off, economizing will be disabled and the outside air damper will be driven to the active minimum position.	Remote
Relief Fan Bypass Enabled	Unit	Warning	Non-Latching	lpak 1 and lpak 2 units. This diagnostic is generated to notify BAS integrators as to the presence of Relief Fan VFD Bypass mode	Local
Relief Fan Bypass Interrupt Failure	Unit	Immediate Shutdown	Latching	lpak 1 and lpak 2 units. Any time the Relief Fan is not running in Bypass Mode, this diagnostic will be generated when a Flow condition exists for 40 continuous seconds. [Relief damper tracks Outdoor damper.]	Local
Relief Fan Bypass Proving Failure	Unit	Warning	Latching		
Relief/Return Fan Speed Cmd Input	Unit	Normal Shutdown	Non-Latching	Measure Voltage/Current is outside allowed range $0.10 * (\text{Max} - \text{Min}) = X$ $\text{Min} - X < \text{Input} < \text{Max} + X$	Remote
Return Air Damper Failed Closed	Unit	Immediate Shutdown	Latching	Units configured for ERW or Ultra Low Leak Dampers (Title 24) The unit is active with the supply fan off and the Return Air Damper position has been greater than the command by 10% for 5 continuous minutes. Or The RAD position is > 70% while the OAD position is < 30%. (In this case the damper command is at a value < to the OAD position.)	Local

## Troubleshooting

Diagnosics	Target	Severity	Persistence	Condition / Response	Reset Level
Return Air Damper Failed Open	Unit	Immediate Shutdown	Latching	Units configured for ERW or Ultra Low Leak Dampers (Title 24) The unit is active with the supply fan off and the Return Air Damper position has been greater than the command by 10% for 5 continuous minutes. Or The RAD position is > 70% while the OAD position is < 30%. (In this case the damper command is at a value < to the OAD position.)	
Return Air Damper Input	Unit	Immediate Shutdown	Latching	Units configured for ERW or Ultra Low Leak Dampers (Title 24). The Return Air Damper Voltage Input has failed out of range. This voltage is an indication of actual damper position.	Local
Return Air High Temperature Detected	Unit	Immediate Shutdown	Latching	If the Return air temperature exceeds 135F then an Immediate Stop will be generated. This is intended to shut the unit down the unit if high duct temperatures exist.  This Diagnostic is only available if the Return Air Temperature is operating normally.	Local
Return Air Humidity Sensor	Unit	Warning	Non-Latching	The Return Air Humidity sensor has failed out of range.  This drives a 'fall back' response to Economizer enthalpy decision.	Remote
Return Air Iso Damper Input	Unit	Immediate Shutdown	Latching	The Return Air Isolation Damper Voltage Input has failed out of range. This voltage is an indication of actual damper position.	Remote
Return Air Iso Damper Closed	Unit	Immediate Shutdown	Latching	During unit operation with supply fan on, the Return Air Isolation Damper position (voltage) indicates the damper is below the Isolation Damper Position Prove Setpt – 10%.	Remote
Return Air Iso Damper Failed to Open	Unit	Immediate Shutdown	Latching	When commanded to open, the Return Air Isolation Damper position (voltage) has remained below the Isolation Damper Position Prove Setpt for 5 continuous minutes.	Remote
Return Air Iso Damper Failed to Close	Unit	Warning	Non-Latching	When commanded to close, the Return Air Isolation Damper position (voltage) has remained more than 10% open for 5 continuous minutes.	Remote
Return Air Temperature Sensor	Unit	Warning	Non-Latching	The Return Air Temperature sensor has failed out of range.  Rapid Restart. Affects DX capacity operation and target capacity, see spec for details.  Rapid Restart. Economizer capacity terminates on rapid start time (rather than return air temperature), see spec for details.  This drives a 'fall back' response to Economizer enthalpy decision.	Remote
Return Fan Bypass Enabled	Unit	Warning	Non-Latching	This diagnostic is generated to notify BAS integrators as to the presence of Return Fan VFD Bypass mode.	Remote
Return Fan Bypass Interrupt Failure	Unit	Immediate Shutdown	Latching	Any time the Return Fan is not running in Bypass Mode, this diagnostic will be generated when a Flow condition exists for 40 continuous seconds.	Remote
Return Fan Bypass Proving Failure	Unit	Immediate Shutdown	Latching	Any time the Return Fan is expected to be running in Bypass Mode, this diagnostic will be generated when a No Flow condition exists for 40 continuous seconds.	Remote
Return Fan Proving Failure	Unit	Immediate Shutdown	Latching	Any time the Return Fan is expected to be running in Non Bypass Mode, this diagnostic will be generated when a No Flow condition exists for 40 continuous seconds.	Remote
Return Plenum Pressure Assembly Failure	Unit	Immediate Shutdown	Latching	The supply fan is On and the return pressure has not changed by more than +/- 0.03 IWC, from the pressure sampled at supply fan start, for a period of 3 minutes. or The supply fan is On and the return pressure reports a value <-0.7iwc. with the return fan speed at 100% for 20 seconds or The supply fan is Off and the return pressure, reports a value <-0.7iwc. for 20 seconds  Failure during active Manual Override, VOM or EOM operation: The active mode will be honored. The return fan speed, if On, will be reduced to minimum and electric and gas heating will be disabled.	Local



Diagnosics	Target	Severity	Persistence	Condition / Response	Reset Level
Return Plenum Static Press Limit Auto	Unit	Warning	Non-Latching	<p>The return plenum static pressure has exceeded 3.5iwc for more than 1 second for the 1st and 2nd occurrence.</p> <p>The shutdown counter will reset to zero if:</p> <ul style="list-style-type: none"> <li>• The return fan runs for 3 continuous minutes.</li> <li>• Unit transitions from Stop to Auto mode.</li> <li>• Unit transitions into or out of Occupied mode.</li> </ul> <p>Unit is operating in Manual Override, VOM or EOM: The active mode will be honored. The return fan speed, if On, will be reduced to minimum and electric and gas heating will be disabled.</p> <p>*Unit is operating in Normal Mode: The unit will shut down but will be allowed to restart once the pressure falls below 3.5iwc.</p>	Remote
Return Plenum Static Press Limit Manual	Unit	Warning	Non-Latching	<p>The return plenum static pressure has exceeded 3.5iwc for more than 1 second for the 3rd consecutive time without the return fan running for 3 continuous minutes. (If the fan runs for 3 continuous minutes the counter will be reset.)</p> <p>Unit is operating in Manual Override, VOM or EOM: The active mode will be honored. The return fan speed, if On, will be reduced to minimum and electric and gas heating will be disabled.</p> <p>*Unit is operating in Normal Mode: Unit is shutdown.</p>	Remote
Return Plenum Static Pressure Sensor	Unit	Warning	Non-Latching	<p>The Return Pressure Sensor is out of range. For all units.</p> <ul style="list-style-type: none"> <li>• The return fan is overridden to minimum speed.</li> <li>• The supply fan remains in control</li> <li>• DX Cooling is allowed</li> <li>• Economizing is disabled</li> <li>• All Electric and Gas Heat is disabled</li> </ul> <p>*Changes to Immediate Shutdown if the unit is operating in bypass mode.</p>	Remote
Return Static Press Measurement Failure	Unit	Immediate Shutdown	Latching	<p>Diagnostic triggers if the null voltage delta reported from the sensor while performing zero calibration is greater than the "Max Duct Static Press Calibration Limit"</p>	Remote
Software High Pressure Detection CktX where X is "1" or "2"	Circuit	Warning	Non-Latching	<p>The discharge pressure, as measured discharge pressure sensor, has exceeded 630 PSIA.</p> <p>This warning is generated to give additional information that could be used to determine why all compressors on the circuit shut down due to an Unexpected Compressor Shutdown diagnostic or why a Compressor Failed to Start diagnostic is generated.</p> <p>Even if the pressure has dropped below 630 PSIA the historic diagnostics will still indicate that a high pressure was detected.</p>	Local
Space CO2 Sensor	Unit	Warning	Non-Latching	<p>Space CO2 sensor has failed out of range.</p> <p>DCV control will be inhibited.</p>	Remote
Space Humidity Sensor	Unit	Warning	Non-Latching	<p>The Space Humidity sensor has failed out of range.</p> <p>No action is taken for this sensor failure only the Outdoor Air Humidity Sensor Active has special action.</p>	Remote
Space Humidity Sensor Active	Unit	Warning	Non-Latching	<p>The Space Humidity sensor value not available. Dehumidification and humidification will be disabled.</p> <p>This drives a 'fall back' response to Economizer Enthalpy decision.</p>	Remote
Space Pressure Sensor	Unit	Warning	Latching	<p>Space Pressure sensor has failed out of range.</p> <p>Statitrac control will be terminated and the Relief Fan Speed and Relief Damper command will fall back to OA Damper Tracking.</p>	Remote
Space Static Press Measurement Failure	Unit	Warning	Non-Latching	<p>Diagnostic triggers if the null voltage delta reported from the sensor while performing zero calibration is greater than the "Max Space Static Press Calibration Limit"</p> <p>Statitrac control will be terminated and the Relief Fan Speed and Relief Damper command will fall back to OA Damper Tracking.</p>	Remote



## Troubleshooting

Diagnosics	Target	Severity	Persistence	Condition / Response	Reset Level
Space Temp Cooling Setpoint Wired	Unit	Warning	Non-Latching	The input to the Hex IO module has failed. The unit will fall back to the "Space Temp Cooling Setpoint Default" setting on the front panel.	Remote
Space Temp Heating Setpoint Wired	Unit	Warning	Non-Latching	The input to the Hex IO module has failed. The unit will fall back to the "Space Temp Heating Setpoint Default" setting on the front panel.	Remote
Space Temperature Invalid Active	Unit	VVZT/CVZT: Normal Shutdown VVDA/CVDA: Warning	Non-Latching	VVZT/CVZT: Unit Shutdown VVDA/CVDA: Unit continues to operate and disables the following functions: • All Unoccupied modes (heat, cool, DH), • Daytime Warmup, • Morning Warmup • Pre Cool	
Space Temperature Sensor	Unit	Warning	Non-Latching	The Space Temperature sensor input is out of range. Multi-zone: If Space Temperature Active is invalid, all functions requiring space temperature will be inhibited. Single-zone: Unit operation will be inhibited.	Remote
Starts/Hours Modified - CprsrXY where X is "1" or "2" where Y is "A", "B" or "C"	Cprsr	Warning	Non-Latching	The circuit X compressor Y cumulative value of starts and or hours have been modified by a write override from TU. No unit response.	Remote
Suction Pressure Sensor CktX where X is "1" or "2"	Circuit	Immediate Shutdown	Latching	Circuit X Suction Pressure sensor has failed out of range. Circuit X operation is terminated.	Remote
Suction Temperature 1 CktX where X is "1" or "2"	Circuit	Immediate Shutdown	Latching	The Suction Temperature sensor has failed out of range for circuit X. Circuit X operation is terminated.	Remote
Suction Temperature 2 CktX where X is "1" or "2"	Circuit	Immediate Shutdown	Latching	The Suction Temperature 2 sensor has failed out of range for circuit X. Circuit X operation is terminated.	Remote
Superheat High Limit Lockout CktX where X is "1" or "2"	Circuit	Immediate Shutdown	Latching	High superheat is detected and severe enough to shut down the circuit. Circuit X operation is inhibited.	Local
Supply Fan Bypass Enabled	Unit	Warning	Non-Latching	This diagnostic is generated to notify system control integrators that the unit is operating in Supply Fan VFD Bypass mode.	Local
Supply Fan Bypass Interrupt Failure	Unit	Immediate Shutdown	Latching	Any time the Supply Fans are not being commanded On in Bypass Mode and a Flow Proving condition from the Discharge Air Pressure sensor exists for 40 continuous seconds. Unit operation is inhibited.	Local
Supply Fan Bypass Proving Failure	Unit	Immediate Shutdown	Latching	Any time the Supply Fans are being commanded On in Bypass Mode and a No-Flow Proving condition from the Discharge Air Pressure sensor exists for 40 continuous seconds.	Remote

Diagnosics	Target	Severity	Persistence	Condition / Response	Reset Level
Supply Fan X Proving Failure where X is "1" or "2"	Unit	Warning	Latching	Any time Supply Fan X is being commanded On in Bypass Mode and a No-Flow Proving indication from the fans VFD exists for 40 continuous seconds.  Failure of fan X with other fan available: Generate "Supply Fan X Proving Failure" diagnostic and lockout all heating operation.  Failure of fan X with other fan not-available: Generate "Supply Fan X Proving Failure" and inhibit unit operation.	Remote
Supply Fan Speed Cmd Input	Unit	Normal Shutdown	Non-Latching	Measure Voltage/Current is outside allowed range: $0.10 * (Max - Min) = X$ $Min - X < Input < Max + X$  Ex. Min = 2, Max = 10 $X = 0.8 = .1*(10-2)$ Valid Range = 1.2 – 10.8	Remote
Unexpected Compressor Shutdown CprsrXY where X is "1" or "2" where Y is "A", "B" or "C"	Circuit	Immediate Shutdown	Latching	The fixed speed compressor Y proving input on circuit X has opened while the compressor is operating.  Sources for this condition are High Pressure Cutout switch opening, a fault from the compressor protection module, contactor failure or wiring.  Circuit X operation is inhibited.	Local
Unit Economizing When It Should Not	Unit	Warning	Non-Latching	The unit is in active economizer cooling. The economizer (OAD) command has been lower than the economizer position by 10% for 5 continuous minutes.  No unit response.	Remote
Unit Not Economizing When It Should	Unit	Warning	Non-Latching	The unit is in active economizer cooling. The economizer (OAD) command has been greater than the economizer position by 10% for 5 continuous minutes.  No unit response.	Remote
Ventilation Override Mode A	Unit	Warning	Non-Latching	The unit is actively in a VOM A event with outputs commanded per the settings entered at the Front Panel.  (Default setting: Unit Off)	Local
Ventilation Override Mode B	Unit	Warning	Non-Latching	The unit is actively in a VOM B event with outputs commanded per the settings entered at the Front Panel.  (Default setting: Pressurize)	Local
Ventilation Override Mode C	Unit	Warning	Non-Latching	The unit is actively in a VOM C event with outputs commanded per the settings entered at the Front Panel.  (Default setting: Relief)	Local
Ventilation Override Mode D	Unit	Warning	Non-Latching	The unit is actively in a VOM D event with outputs commanded per the settings entered at the Front Panel.  (Default setting: Purge)	Local
Ventilation Override Mode E	Unit	Warning	Non-Latching	The unit is actively in a VOM E event with outputs commanded per the settings entered at the Front Panel.  (Default setting: Purge w/ Duct Static Pressure Cntl)	Local
VFD Compressor Ground Fault– Cprsr1A	Circuit	Immediate Shutdown	Latching*	An earth ground fault has resulted in a discharge from the output phases to ground, either in the cable between the adjustable frequency drive and the motor or in the motor itself. Further compressor operation is not recommended until measurements to ground can be taken from the motor leads and the ground fault removed.  * The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.  This drive alarm may be Trip Locked at the TR200 drive. If the drive determines that the condition could cause damage to the drive, the drive protects itself by generating a Trip Lock that can only be cleared by cycling power.	Local

## Troubleshooting

Diagnosics	Target	Severity	Persistence	Condition / Response	Reset Level
VFD Compressor High Pressure Trip – Cprsr1A	Circuit	Immediate Shutdown	Latching*	<p>The drive safe stop input was activated. This trip is the result of a high pressure cutout. The high pressure switch must reset once the pressure has dropped and a manual reset must be commanded at the user interface before the circuit will be allowed to restart. This diagnostic may require a power cycle to reset the TR200 drive (Safe Stop) alarm.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p> <p>This diagnostic may require a power cycle to reset the TR200 drive (Safe Stop) alarm.</p>	Local
VFD Compressor In Hand Mode – Cprsr1A	Unit	Warning	Non-Latching	<p>The drive has been put into hand mode at the drive interface. This will cause issues for normal sequences and operation</p>	Local
VFD Compressor Short Circuit– Cprsr1A	Circuit	Immediate Shutdown	Latching*	<p>A short circuit in the motor windings or the motor terminals was detected. Compressor operation is not recommended until the short circuit is removed.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p> <p>This drive alarm may be Trip Locked at the TR200 drive. If the drive determines that the condition could cause damage to the drive, the drive protects itself by generating a Trip Lock that can only be cleared by cycling power.</p>	Local
VFD Condenser Fan Ground Fault - CktX where X is "1" or "2"	Circuit	Warning	Latching*	<p>The condenser fan VFD on circuitX indicates an earth ground fault has resulted in a discharge from the output phases to ground, either in the cable between the adjustable frequency drive and the motor or in the motor itself. Condenser fan control will revert to fixed-speed fan algorithm using remaining fans.</p> <p>Further operation of the failed fan is not recommended until measurements to ground can be taken from the motor leads and the ground fault removed.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p> <p>This drive alarm may be Trip Locked at the TR170 drive. If the drive determines that the condition could cause damage to the drive, the drive protects itself by generating a Trip Lock that can only be cleared by cycling power.</p>	Local
VFD Condenser Fan In Hand Mode – CktX where X is "1" or "2"	Unit	Warning	Non-Latching	<p>The condenser fan VFD on circuitX has been put into hand mode at the drive interface.</p> <p>Should be for testing only as this will cause issues for normal sequences and operation.</p>	Local

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
VFD Condenser Fan Motor Current Overload – CktX where X is “1” or “2”	Circuit	Warning	Latching*	<p>The condenser fan VFD on circuitX indicates a peak current of approximately 200% of rated current was exceeded for 1.5 seconds.</p> <p>The remaining condenser fans on circuitX will revert to fixed-speed fan algorithm control.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p> <p>This drive alarm may be Trip Locked at the TR170 drive. If the drive determines that the condition could cause damage to the drive, the drive protects itself by generating a Trip Lock that can only be cleared by cycling power.</p>	Local
VFD Condenser Fan Short Circuit - CktX where X is “1” or “2”	Circuit	Warning	Latching*	<p>The condenser fan VFD on circuitX indicates a short circuit in the motor windings or the motor terminals was detected.</p> <p>The remaining condenser fans on circuitX will revert to fixed-speed fan algorithm control.</p> <p>Note: Further operation of the failed fan is not recommended until the short circuit is removed.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p> <p>This drive alarm may be Trip Locked at the TR170 drive. If the drive determines that the condition could cause damage to the drive, the drive protects itself by generating a Trip Lock that can only be cleared by cycling power.</p>	Local
VFD Cprsr Current Overload – Cprsr1A	Circuit	Immediate Shutdown	Latching*	<p>The inverter peak current of approximately 200% of rated current was exceeded for 1.5 seconds.</p> <p>This is a drive enforced lockout.</p> <p>Note: There is Drive behavior that results from a Drive Overcurrent where the drive continues to operate at reduced RPM</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p> <p>This drive alarm may be Trip Locked at the TR200 drive. If the drive determines that the condition could cause damage to the drive, the drive protects itself by generating a Trip Lock that can only be cleared by cycling power.</p>	Local
VFD Fault Compressor – Cprsr1A	Circuit	Immediate Shutdown	Non- Latching	<p>VFD Fault. Numerous vfd faults can cause this general fault/vfd alarm. When the vfd trips on a general alarm, the alarm may be latching or non- latching depending on the vfd settings.</p> <p>This Symbio™ 800 diagnostic is auto-reset and will persist until the vfd clears the general alarm.</p>	Local
VFD Fault Compressor – Cprsr1A	Circuit	Immediate Shutdown	Latching	<p>A VFD Fault has occurred four times before the compressor starts and runs for its minimum on-time.</p> <p>Numerous vfd faults can cause this general fault/vfd alarm.</p> <p>A volatile fault count variable stores the count status. The count is cleared for any of the following three conditions:</p> <ul style="list-style-type: none"> <li>• Variable speed compressor starts and runs for its minimum on-time.</li> <li>• Diagnostic manual reset.</li> <li>• Controller power cycle.</li> </ul>	Local

## Troubleshooting

Diagnosics	Target	Severity	Persistence	Condition / Response	Reset Level
VFD Fault Condenser Fan - CktX where X is "1" or "2"	Circuit	Warning	Latching*	<p>The condenser fan VFD on circuitX indicates a general VFD Fault.</p> <p>Numerous drive faults can cause this general fault. Reference the TR170 Installation and Operating manual for a list of fault codes and descriptions.</p> <p>Condenser fan control will revert to fixed-speed fan algorithm using remaining fans.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p>	Local
VFD Fault Relief Fan – X where X is "1", "2" or "3"	Unit	Warning	Latching*	<p>Relief fan X indicates a general Fault.</p> <p>Numerous drive faults can cause this general fault. Reference the EBM-PAPST Installation and Operating manual for a list of fault codes and descriptions. (Clears on Reset)</p> <p>Failure of fan X with other fans available: No action.</p> <p>Failure of fan X with other fans not-available: Relief damper is closed, relief fan commanded off and the Economizing will be disable and the outside air damper will be driven to the active minimum position.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p>	Local
VFD Fault Return Fan	Unit	Immediate Shutdown	Latching*	<p>Numerous drive faults can cause this general fault. Reference the TR150 Installation and Operating manual for a list of fault codes and descriptions.</p> <p>*The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio 800 controller by setting its persistence to Non-Latching.</p>	Local
VFD Fault Supply Fan – X where X is "1" or "2"	Unit	Warning	Latching*	<p>Supply fan X VFD indicates a general Fault.</p> <p>Numerous drive faults can cause this general fault. Reference the TR150 Installation and Operating manual for a list of fault codes and descriptions.</p> <p>Failure of fan X with the other fan available: Generate a "Supply Fan X Proving Failure" on the failed fan, allow the working fan to continue and lock- out all heating operation.</p> <p>Failure of fan X with the other fan not-available: Generate a "Supply Fan X Proving Failure" on the failed fan and shutdown the unit.</p> <p>*The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p>	

Diagnosics	Target	Severity	Persistence	Condition / Response	Reset Level
VFD Relief Fan Locked Motor – X where X is "1", "2" or "3"	Unit	Warning	Latching*	<p>Relief fan X indicates something has blocked the rotor from turning. Ice is a common one in some applications. (Motor Auto Reset)</p> <p>Failure of fan X with other fans available: No action.</p> <p>Failure of fan X with the other fans not-available: Relief damper is closed, relief fan commanded off and the Economizing will be disable and the outside air damper will be driven to the active minimum position.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p>	Local
VFD Relief Fan Motor Overheated – X where X is "1", "2" or "3"	Unit	Warning	Latching*	<p>Relief fan X indicates motor thermocouples have reached a too-high temperature. Typically caused by excessively high ambient temp. (Motor Manual Reset)</p> <p>Failure of fan X with other fans available: No action.</p> <p>Failure of fan X with the other fans not-available: Relief damper is closed, relief fan commanded off and the Economizing will be disable and the outside air damper will be driven to the active minimum position.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p>	Local
VFD Relief Fan Power Mod Overheated – X where X is "1", "2" or "3"	Unit	Warning	Latching*	<p>Relief fan X indicates rectifier thermocouple has reached a too-high temperature. Typically caused by excessively high ambient temp. (Motor Manual Reset)</p> <p>Failure of fan X with other fans available: No action.</p> <p>Failure of fan X with the other fans not-available: Relief damper is closed, relief fan commanded off and the Economizing will be disable and the outside air damper will be driven to the active minimum position.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p>	Local
VFD Relief Fan Speed Parameter Failure – X where X is "1", "2" or "3"	Unit	Warning	Latching*	<p>Relief fan X indicates its Maximum Speed parameter does not match the Maximum Permissible Speed parameter. (EC-Clone Required)</p> <p>Failure of fan X with other fans available: No action.</p> <p>Failure of fan X with the other fans not-available: Relief damper is closed, relief fan commanded off and the Economizing will be disable and the outside air damper will be driven to the active minimum position.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p>	Local

## Troubleshooting

Diagnosics	Target	Severity	Persistence	Condition / Response	Reset Level
VFD Return Fan Ground Fault	Unit	Immediate Shutdown	Latching	<p>An earth ground fault has resulted in a discharge from the output phases to ground, either in the cable between the adjustable frequency drive and the motor or in the motor itself. Further fan operation is not recommended until measurements to ground can be taken from the motor leads and the ground fault removed.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio 800 controller by setting its persistence to Non-Latching.</p> <p>This drive alarm may be Trip Locked at the TR150 drive. If the drive determines that the condition could cause damage to the drive, the drive protects itself by generating a Trip Lock that can only be cleared by cycling power.</p>	Local
VFD Return Fan In Hand Mode	Unit	Warning	Non-Latching	The drive has been put into hand mode at the drive interface. This will cause issues for normal startup and running.	Local
VFD Return Fan Motor Current Overload	Unit	Immediate Shutdown	Latching*	<p>VFD indicates peak current of approximately 200% of rated current was exceeded for 1.5 seconds. This is a drive enforced lockout. Generate the diagnostic on the failed fan and shutdown the unit.</p> <p>*The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio 800 controller by setting its persistence to Non-Latching.</p> <p>This drive alarm may be Trip Locked at the TR150 drive. If the drive determines that the condition could cause damage the drive protects itself by generating a Trip Lock that can only be cleared by cycling power.</p>	Local
VFD Supply Fan Ground Fault – X where X is “1” or “2”	Unit	Warning	Latching*	<p>Supply fan X VFD indicates an earth ground fault has resulted in a discharge from the output phases to ground, either in the cable between the adjustable frequency drive and the motor or in the motor itself. Further fan operation is not recommended until measurements to ground can be taken from the motor leads and the ground fault removed.</p> <p>Failure of fan X with the other fan available: Generate a “Supply Fan X Proving Failure” diagnostic on the failed fan, allow the working fan to continue and lock-out all heating operation.</p> <p>Failure of fan X with the other fan not-available: Generate a “Supply Fan X Proving Failure” diagnostic on the failed fan and shutdown the unit.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p> <p>This drive alarm may be Trip Locked at the TR150 drive. If the drive determines that the condition could cause damage to the drive, the drive protects itself by generating a Trip Lock that can only be cleared by cycling power.</p>	Local
VFD Supply Fan In Hand Mode – X where X is “1” or “2”	Unit	Warning	Non-Latching	<p>Supply fan X VFD has been put into hand mode at the drive interface.</p> <p>This should be for testing only as this will cause issues for normal startup and running</p>	Local



Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
VFD Supply Fan Motor Current Overload – X where X is “1” or “2”	Unit	Warning	Latching*	<p>Supply fan X VFD indicates peak current of approximately 200% of rated current was exceeded for 1.5 seconds.</p> <p>This is a drive enforced lockout.</p> <p>Failure of fan X with the other fan available: Generate a “Supply Fan X Proving Failure” diagnostic on the failed fan, allow the working fan to continue and lock-out all heating operation.</p> <p>Failure of fan X with the other fan not-available: Generate a “Supply Fan X Proving Failure” diagnostic on the failed fan and shutdown the unit.</p> <p>*The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p> <p>This drive alarm may be Trip Locked at the TR150 drive. If the drive determines that the condition could cause damage the drive protects itself by generating a Trip Lock that can only be cleared by cycling power.</p>	Local
VFD Supply Fan Short Circuit – X where X is “1” or “2”	Unit	Warning	Latching*	<p>Supply fan X VFD indicates a short circuit in the motor windings or the motor terminals was detected. Fan operation is not recommended until the short circuit is removed.</p> <p>Failure of fan X with the other fan available: Generate a “Supply Fan X Proving Failure” diagnostic on the failed fan, allow the working fan to continue and lock-out all heating operation.</p> <p>Failure of fan X with the other fan not-available: Generate a “Supply Fan X Proving Failure” diagnostic on the failed fan and shutdown the unit.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p> <p>This drive alarm may be Trip Locked at the TR150 drive. If the drive determines that the condition could cause damage to the drive, the drive protects itself by generating a Trip Lock that can only be cleared by cycling power.</p>	Local
VFD Torque Limit Exceeded– Cprsr1A	Circuit	Immediate Shutdown	Latching*	<p>Supply fan X VFD indicates motor torque is higher than expected.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p> <p>The behavior for this diagnostic is set to non-latching in the drive and will be cleared when the condition is no longer active.</p>	Local
Airflow Assembly Failure	Unit	Warning	Non-Latching	<p>The unit is configured with Traq and the OA Damper &gt; 50% and the Outdoor Airflow Local <math>\leq 0.02 \times</math> Design Air Flow for 10 consecutive seconds the diagnostic will be generated.</p> <p>The diagnostic will be cleared when Outdoor Airflow <math>&gt; 0.02 \times</math> Design Air Flow for 20 consecutive seconds.</p> <p>Possible causes: Tubing failure, wiring, and calibration solenoid failure. Approximately 0.25vdc at 0.0 iwc. Increasing voltage with increasing pressure.</p> <p>Traq air flow control is inhibited and the unit will fall back to alternate minimum ventilation control.</p>	Local
Comm Loss: Alarm Relay	Unit	Warning	Non-Latching	<p>Continual loss of communication between the Symbio™ 800 and the LLIID/Hex IO has occurred for a 30 second period.</p> <p>No unit response.</p>	Remote



## Troubleshooting

Diagnosics	Target	Severity	Persistence	Condition / Response	Reset Level
Comm Loss: Changeover Wired	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Source of changeover falls back to Front Panel default.	Remote
Comm Loss: Compressor Proving CprsrXY where X is "1" or "2" where Y is "A", "B" or "C"	Circuit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Circuit X operation is terminated immediately.	Remote
Comm Loss: Compressor Relay Compressor XY where X is "1" or "2" where Y is "A", "B" or "C"	Circuit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Circuit X operation is terminated immediately.	Remote
Comm Loss: Condensate Overflow	Unit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Unit operation is terminated immediately. <b>Note:</b> VOM/EOM Behavior - During these modes this diagnostic changes behavior to a Warning diagnostic. The diagnostic will be generated but the VOM/EOM mode will be honored.	Remote
Comm Loss: Condenser Cooling Valve CktX where X = "1" or "2"	Circuit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Circuit X operation is terminated immediately.	Remote
Comm Loss: Condenser Fan Relay X CktY where X is "1", "2", "3" or "4" where Y is "1" or "2"	Circuit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Circuit X operation is terminated immediately.	Remote
Comm Loss: Condenser Reheat Valve CktX where X = "1" or "2"	Circuit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Circuit X operation is terminated immediately.	Remote
Comm Loss: Discharge Air Temperature	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. If no other source for Discharge Air Temperature all heating, cooling, and economizer capacity control is terminated.	Remote
Comm Loss: Discharge Pressure CktX where X is "1" or "2"	Circuit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Circuit X operation is terminated immediately.	Remote
Comm Loss: Duct Static Pressure Local	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Supply fan set to minimum speed. Will continue duct static pressure control once communications is re- established.	Remote
Comm Loss: Emergency Stop	Unit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Unit operation is terminated immediately.	Local
Comm Loss: Evaporator Leaving Air Temperature [Single Evap]  Comm Loss: Evaporator Leaving Air Temperature EvapX [Split Evap] where X = "A" or "B"	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Failed sensor with the other sensor available: The good sensor will be used for reheat calculations. Failed sensor with the other sensor not-available: The DX cooling continues to run but reheat for dehumidification is stopped.	Remote

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
Comm Loss: Equipment Stop	Unit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period.  Unit operation is terminated immediately. Circuit X is inhibited.	Remote
Comm Loss: EXV 1 CktX where X = "1" or "2"	Circuit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the EXV has occurred for a 30 second period, or EXV Steps Maximum Position has not been received.  If EXV Steps Maximum Position has not been received, the controller will periodically request EXV Steps Maximum Position, since it is only transmitted upon request.	Remote
Comm Loss: Final Filter Pressure Sensor	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period.  No unit response.	Remote
Comm Loss: Heat Control Board Manf X where X = "1" or "2"	Heat	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the MODBUS® Server (heat control board) has occurred for a 30 second period.  All burners on the manifold are locked out.	Remote
Comm Loss: Heat Ctrl Board Manf 1 Server	Heat	Warning	Non-Latching	Staged Gas Heat control boards only.  No serial communication with the 1285's own MODBUS® server control board the manifold.  Any subsequent burners on that manifold are also locked out. Any prior burners that exist on that manifold are allowed to continue running.	Remote
Comm Loss: Hot Gas Bypass Valve Ckt1	Circuit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period, OR Hot Gas Bypass Valve Steps Maximum Position has not been received.  If Hot Gas Bypass Valve Steps Maximum Position has not been received, the controller will periodically request Hot Gas Bypass Valve Steps Maximum Position, since it is only transmitted upon request.	Remote
Comm Loss: Local BAS Interface	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Use last valid BAS setpoints.  Diagnostic is cleared when successful communication is established with the LonTalk® LLID (LCIC) or BACnet® LLID (BCIC).	Remote
Comm Loss: Mixed Air Temperature [Single Evap]  Comm Loss: Mixed Air Temperature EvapX [Spilt Evap] X = "A" or "B"	DX Cooling	Normal Shutdown	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period.  Units with Single Evap: Rapid Restart economizer cooling is not allowed.  Units with Split Evap: These units average the two sensors to create an estimated Mixed Air Temperature.  Temp X failed with the other sensor available: Rapid Restart economizer cooling is allowed.  Temp X failed with the other sensor not-available: Rapid Restart economizer cooling is not allowed.	Remote
Comm Loss: Outdoor Air Damper Feedback	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period.  Outdoor air damper is commanded closed and economizer operation is disabled.	Remote
Comm Loss: Outdoor Air Humidity	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 - 35 second period.  This drives a 'fall back' response to Economizer enthalpy decision.	Remote



## Troubleshooting

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
Comm Loss: Outdoor Air Temperature	DX Cooling	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Economizing is disabled. All DX operation is inhibited.	Remote
Comm Loss: Outdoor Airflow Pressure	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Traq air flow control is inhibited and the unit will fall back to alternate minimum ventilation control.	Remote
Comm Loss: Power Meter	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the MODBUS® Server (power meter) has occurred for a 30 second period. No unit response.	Remote
Comm Loss: Pre Filter Pressure Sensor	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. No unit response.	Remote
Comm Loss: Relief Air Damper	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Unit will command the damper closed and disable Statitrac control.	Unit
Comm Loss: Relief Air Damper Feedback	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Unit will command the damper closed and disable Statitrac control.	Unit
Comm Loss: Return Air Humidity	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 - 35 second period. This drives a 'fall back' response to economizer enthalpy decision.	Remote
Comm Loss: Return Air Temperature	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 - 35 second period. This drives a 'fall back' response to economizer enthalpy decision, and possibly Rapid Restart control.	Remote
Comm Loss: Space CO2	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Demand Control Ventilation (DCV) is disabled.	Remote
Comm Loss: Space Humidity	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 - 35 second period. Dehumidification and humidification will be disabled.	Remote
Comm Loss: Space Pressure	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Statitrac control is disabled. Relief damper and fan control falls back to outside air damper tracking.	Remote
Comm Loss: Space Temp Cooling Stpt Wired	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Space Temp Cooling Stpt Active should fall back to Space Temp Cooling Stpt Default.	Remote
Comm Loss: Space Temp Heating Stpt Wired	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Space Temp Heating Stpt Active should fall back to Space Temp Heating Stpt Default.	Remote
Comm Loss: Space Temperature	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Multi-zone: If Space Temperature Active is invalid, all functions requiring space temperature will be inhibited. Single-zone: Unit operation is inhibited.	Remote

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
Comm Loss: Staged Electric Heat Relay X where X is "1", "2", "3" or "4"	Unit	Normal Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. All heating will be inhibited. The unit will provide supply fan operation for ventilation.	Remote
Comm Loss: Suction Pressure CktX where X is "1" or "2"	Circuit	Immediate Shutdown	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Circuit X operation is inhibited.	Remote
Comm Loss: Suction Temperature 1 CktX where X is "1" or "2"	Circuit	Immediate Shutdown	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Circuit X operation is inhibited.	Remote
Comm Loss: Suction Temperature 2 CktX where X is "1" or "2" [Split Evap Only]	Circuit	Immediate	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Circuit X operation is inhibited.	Remote
Comm Loss: Supply Fan Bypass Proving Pressure	Unit	Warning	Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Unit operation is inhibited.	Remote
Comm Loss: System Mode Wired	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. System Mode Active will fall back to front panel default.	Remote
Comm Loss: VAV Box Relay	Unit	Warning	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 second period. Unit no response.	Remote
Comm Loss: Ventilation Override Input	Unit	Normal Shutdown	Non-Latching	Continual loss of communication between the Symbio™ 800 and the LLID/Hex IO has occurred for a 30 - 35 second period. The unit will enter "Run Inhibit" mode and terminate all operation.	Remote
Comm Loss: VFD Compressor Cprsr1A	Cprsr	Normal	Latching	Continual loss of communication between the Symbio™ 800 and the VFD has occurred for a 30 second period. Additional compressors on this circuit are available for DX operation.	Remote
Comm Loss: VFD Condenser Fan - X where X is "1" or "2"	Circuit	Warning	Latching	Continual loss of communication between the Symbio™ 800 and the VFD has occurred for a 30 second period. Condenser fan control will revert to fixed-speed fan algorithm using remaining fans.	Remote
Comm Loss: VFD Supply Fan - X where X is "1" or "2"	Unit	Normal	Latching	Continual loss of communication between the Symbio™ 800 and the VFD has occurred for a 30 second period. Failure of fan X with the other fan available: Generate "Supply Fan X Proving Failure" diagnostic and lockout heat operation. Failure of fan X with the other fan not-available: Generate "Supply Fan X Proving Failure" and shutdown the unit.	Remote
Compressor Contactor Failure CprsrXY where X is "1" or "2" where Y is "A", "B" or "C"	Circuit	Immediate	Latching	When the fixed speed compressor XY was commanded Off its proving input failed to prove Off for 6 continuous seconds. Circuit X compressors will be commanded Off. Condenser fan operation and EXV valve control will continue in case the compressor is physically On.	
Compressor Failed to Start CprsrXY where X is "1" or "2" where Y is "A", "B" or "C"	Circuit	Normal Shutdown	Latching	When the fixed speed compressor XY was commanded On its proving input failed to prove On. Circuit X operation will be inhibited.	Local



## Troubleshooting

Diagnosics	Target	Severity	Persistence	Condition / Response	Reset Level
Compressor Unexpected ProvingXY where X is "1" or "2" where Y is "A", "B" or "C"	Circuit	Immediate	Non-Latching	When the fixed speed compressor XY has been OFF, and its proving input has proven OFF, its proving input unexpectedly proves On for 6 continuous seconds.  It is assumed that a compressor has started un-commanded, the diagnostic will be generated and the circuit will be shutdown.  Circuit X operation will be inhibited.	Local
Condensate Overflow	Unit	Immediate	Non-Latching	A High condensate level was detected.  This diagnostic will be generated, and the unit will shut down, if a high condensate level is detected for the first two times within a 72 hour period. The diagnostic will reset and the unit will be allowed to start if the condensate level drops below the trip point.  This diagnostic indicates a problem with the mechanical float valve or the water drain piping. However it is assumed that this is a temporary problem and does not require service. If a third high condensate level is detected within 72 a period a Condensate Overflow Lockout diagnostic is generated.  <b>Note:</b> VOM/EOM Behavior - During these modes this diagnostic changes behavior to a warning diagnostic and the active mode will be honored.	Remote
Condensate Overflow Lockout	Unit	Immediate	Latching	A High condensate level was detected.  The lockout Will be generated if a high condensate level is detected a third time within a 72 hour period.  This is indicating a recurring problem with the mechanical float valve or the water drain and may require service.  <b>Note:</b> VOM/EOM Behavior - During these modes this diagnostic is not generated and the active mode will be honored.	Remote
Discharge Air High Temperature Detected	Unit	Immediate Shutdown	Latching	If the Discharge Air Temperature exceeds 200F then an Immediate Stop will be generated.  This must be from the Local Discharge Air Temperature sensor (not an arbitrated value). Check unit airflow, supply fan operation, sensor reading.  Unit operation is inhibited.	Local
Discharge Air Static Pressure Limit Auto	Unit	Immediate	Non-Latching	The supply air static pressure exceeded the Duct Static Pressure High Limit Setpoint for at least one second continuously.  The unit will shut down but will be allowed to restart once the pressure falls below the high limit setpoint.  <b>Note:</b> VOM/EOM Behavior - During these modes this diagnostic changes behavior to a warning diagnostic and the active mode will be honored. If the mode has the supply fan On its speed will be reduced to minimum.	Remote
Discharge Air Static Pressure Limit Manual	Unit	Immediate	Latching	The supply air pressure has exceeded the Duct Static Pressure High Limit Setpoint for the 3rd consecutive time without the supply fan running for 3 continuous minutes. (If the fan runs for 3 continuous minutes the counter will be reset.)  The unit will shut down but will not be allowed to restart even if the pressure falls below the high limit setpoint.  <b>Note:</b> VOM/EOM Behavior - During these modes this diagnostic changes behavior to a warning diagnostic and the active mode will be honored. If the mode has the supply fan On its speed will be reduced to minimum.	Remote
Discharge Air Temperature Sensor Failure	Unit	Warning	Non-Latching	The Supply Air Temperature sensor has failed.  If no other source for Discharge Air Temperature all heating, cooling, and economizer capacity control is terminated.	Remote

Diagnosics	Target	Severity	Persistence	Condition / Response	Reset Level
Discharge Pressure Sensor CktX where X is "1" or "2"	Circuit	Immediate Shutdown	Latching	The discharge pressure sensor for circuit X has failed out of range. Circuit X operation will be inhibited.	Remote
Duct Static Pressure Active is Invalid	Unit	Warning	Non-Latching	There is no valid source for Discharge Pressure Sensor Active. All sources are unavailable. VVDA units only. See 'Duct Static Pressure Local is Invalid' below for VVDA units.	Remote
Duct Static Pressure Local is Invalid	Unit	Warning	Latching	There is no valid source for Discharge Pressure Sensor Local. Both the local wireless and wired sensors are unavailable. For all units.  For VVDA units: • The supply fan speed is overridden to minimum speed. • DX Cooling is allowed • All heating is disabled  For CVDA, CVZT and VVZT units: • The supply fan operation is normal • High Duct Static Limit Protection, High Duct Static Limit Trip, and Full Airflow Limit Control is disabled.	Remote
Emergency Override Mode Pressurize	Unit	Warning	Non-Latching	The unit is following Emergency Override Pressurize.	Local
Emergency Override Mode Depressurize	Unit	Warning	Non-Latching	The unit is following Emergency Override Depressurize.	Local
Emergency Override Mode Purge	Unit	Warning	Non-Latching	The unit is following Emergency Override Purge.	Local
Emergency Override Mode Shutdown	Unit	Warning	Non-Latching	The unit is following Emergency Override Shutdown.	Local
Emergency Override Mode Fire	Unit	Warning	Non-Latching	The unit is following Emergency Override Fire.	Local
Emergency Stop	Unit	Immediate Shutdown	Latching	Emergency stop feedback input has Opened. Time to trip from input opening to unit stop shall be 0.1 to 1.0 seconds. Unit operation is inhibited.	Local
Evap Lvg Air Temp Sensor [Single Evaporator] Evaporator Leaving Air Temperature EvapX [Split Evaporator] where X is "A" or "B"	Unit	Warning	Latching	The Evaporator Leaving Air Temperature sensor on the circuit has failed out of range. The DX cooling continues to run but reheat for dehumidification is stopped.	Remote
Excessive Outdoor Air	Unit	Warning	Non-Latching	The unit is in any mode that is not active economizer cooling. The OAD position has been greater than the minimum ventilation command by 10% for 5 continuous minutes.	Remote
Final Filter Pressure Sensor	Unit	Warning	Non-Latching	The filter pressure sensor has failed. No unit response.	Remote
Heat Control Board Failure Manf X Server where X is "1" or "2"	Heat	Warning	Non-Latching	Staged Gas Heat control boards only. A control board failure condition has occurred on the 1285's own MODBUS® server control board on the first manifold.  Does not lock out any burners associated with the first heat control board on the manifold.	Remote



## Troubleshooting

Diagnosics	Target	Severity	Persistence	Condition / Response	Reset Level
Heat Gas Valve Failure Manf X Burner Y where X is "1" or "2" where Y is "1", "2" or "3"	Heat	Warning	Non-Latching	<p>Possible causes: Faulty wiring. Faulty control.</p> <p>Mod Gas control boards: The Valve Actuator did not reach a Park or Full On position. All burners on the manifold are unavailable until the condition is corrected. Will allow another retry 10-30 seconds after the error condition is created, and the error condition is cleared.</p> <p>Staged Gas Control Boards: The gas valve state is lo when it must be hi, or hi when it must be lo.</p> <p>All burners on the manifold are unavailable until the condition is corrected. Will allow another retry 10 minutes after the error condition is created, and the error condition is cleared.</p>	Remote
Heat Gas Valve Short Manf X Burner Y where X is "1" or "2" where Y is "1", "2" or "3"	Heat	Warning	Non-Latching	<p>The burner gas valve is shorted to 24VAC.</p> <p>All burners on the manifold are unavailable until the condition is corrected. Will allow another retry 10 minutes after the error condition is created, and the error condition is cleared.</p> <p>Staged Gas Heat control boards only. Possible causes: Control needs to be replaced. Faulty wiring.</p>	Remote
Heat Inducer High Press Manf X Server where X is "1" or "2"	Heat	Warning	Non-Latching	<p>A 'Heat Inducer High Press Manf X' condition has occurred on the 1285's own MODBUS<sup>®</sup> server control board on the first manifold.</p> <p>Staged Gas Heat control boards only.</p> <p>Does not lock out any burners associated with the first heat control board on the manifold.</p>	Remote
Heat Inducer Low Press Manf X Server where X is "1" or "2"	Heat	Warning	Non-Latching	<p>A 'Heat Inducer Low Press Manf X' condition has occurred on the 1285's own MODBUS<sup>®</sup> server control board on the first manifold.</p> <p>Staged Gas Heat control boards only.</p> <p>Does not lock out any burners associated with the first heat control board on the manifold.</p>	Remote
Heat Invalid ID Chip Manf 1 Server	Heat	Warning	Non-Latching	<p>An invalid id chip condition has condition has occurred on the 1285's own MODBUS<sup>®</sup> server control board on the first manifold.</p> <p>Does not lock out any burners associated with the first heat control board on the manifold.</p> <p>Staged Gas Heat control boards only.</p> <p><b>Note:</b> If the incorrect ID chip is inserted into the board simply based off of the current configuration, the first heat control board will display this as a comm loss coming from its server board.</p>	Remote
Heat Open Fuse Manf X Server where X is "1" or "2"	Heat	Warning	Non-Latching	<p>An open fuse condition has condition has occurred on the 1285's own MODBUS<sup>®</sup> server control board on the first manifold.</p> <p>Staged Gas Heat control boards only.</p> <p>Does not lock out any burners associated with the first heat control board on the manifold.</p>	Remote
Heat Primary Limit Open Manf 1 Server	Heat	Warning	Non-Latching	<p>A primary limit condition has condition has occurred for an extended duration on the 1285's own MODBUS<sup>®</sup> server control board on the first manifold.</p> <p>Staged Gas Heat control boards only.</p> <p>Does not lock out any burners associated with the first heat control board on the manifold.</p>	Remote



Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
Heat Supply Air Flow Proving Lockout Manuf X where X is "1" or "2"	Heat	Warning	Non-Latching	The Air Flow Proving circuit is open, while a Firing Rate Demand is requested. This could be open on the board connector. Modulating Gas Heat control boards only. All burners on the manifold are unavailable. Will allow another retry in between 30 seconds to 5 minutes.	Remote
High Compressor Press Diff Lockout CktX where X is "1" or "2"	Circuit	Immediate Shutdown	Latching	Compressor involute pressure differential exceeded allowable limits. Circuit X is inhibited.	Remote
High Compressor Press Differential CktX where X is "1" or "2"	Circuit	Immediate Shutdown	Non-Latching	Compressor involute pressure differential exceeded allowable limits. Circuit X is inhibited.	Remote
Invalid Active Discharge Air Temperature	Unit	Warning	Non-Latching	No Valid Input from BAS or Unit. The mechanical cooling, heating and economizer control will be disabled; however, the supply fan will continue to run.	Remote
Invalid Active Occupancy Input	Unit	Warning	Non-Latching	The input to the Hex IO module has failed. The unit will fall back to the "Occupancy Input Default" setting on the front panel.	Remote
Invalid Active Outdoor Airflow	Unit	Warning	Non-Latching	No Valid Input from BAS or Unit. Disables Traq airflow control.	Remote
Invalid Active Space CO2	Unit	Warning	Non-Latching	No Valid Input from BAS or Unit. Disables Traq airflow control.	Remote
Invalid Active Space Pressure	Unit	Warning	Non-Latching	No Valid Input from BAS or Unit. Statitrac control will be terminated and the Relief Fan Speed and Relief Damper command will fall back to OA Damper Tracking.	Remote
Loss of Charge Detected CktX where X is "1" or "2"	Circuit	Warning	Latching	Loss of Charge is detected on circuit X, severe enough to warn a technician, but not severe enough to shut down the circuit. No unit response.	Local
Loss of Charge Lockout CktX where X is "1" or "2"	Circuit	Immediate Shutdown	Latching	Loss of Charge is detected on circuit X severe enough to shut down the circuit. Circuit X is inhibited.	Local
Low Suction Pressure CktX where X is "1" or "2"	Circuit	Immediate Shutdown	Latching	The suction pressure on circuit X dropped below a calculated pressure threshold. Contact Trane Technical Support for further information. Circuit X is inhibited.	Local
Multiple circuit units will display: Mixed Air Temperature Sensor EvapX where X is "A" or "B" Single circuit units will display: Mixed Air Temperature Sensor EvapA	DX Cooling	Normal Shutdown	Latching	Mixed Air Temperature sensor has failed out of range. Failure of sensor X with the other sensor available: Generate "Mixed Air Temperature Sensor EvapX" diagnostic and continue DX operation. Failure of sensor X with the other sensor not- available: Generate "Mixed Air Temperature Sensor EvapX" diagnostic and inhibit DX operation.	Remote
Morning Warmup Mode Exceeded 120 Minutes	Unit	Warning	Non-Latching	The unit has been operating in "Morning Warmup" for 120 minutes. This is an occupied mode that stops ventilation. If Morning Warmup command is removed after the diagnostic has been activated it will be cleared.	Remote
MP: Invalid Configuration	N/A	N/A	Latching	The Symbio™ 800 controller has an invalid configuration based on the current software installed. The Symbio™ 800 controller is invalid, contact service support.	Remote



## Troubleshooting

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
MP: Reset Has Occurred	Platform	Warning	Non-Latching	The Symbio™ 800 controller has successfully recovered from a reset and built its application. A reset may have been due to a power up, installing new software or configuration. This diagnostic is immediately and automatically cleared and thus can only be seen in the Historic Diagnostic List in Tracer® TU. Normal operation after re-boot. Access Historic Alarms page on the Front Panel for date and time stamp.	Remote
Outdoor Air Damper Input	Unit	Warning	Non-Latching	The Outdoor Air Damper Input has failed out of range. This voltage is an indication of actual damper position. Economizer cooling is terminated and the Outdoor Air Damper is commanded closed.	Remote
Outdoor Air Damper Not Modulating	Unit	Warning	Non-Latching	The unit is in any mode that is not active economizer cooling and the OAD position has been lower than the minimum ventilation command by 10% for 5 continuous minutes. No unit response.	Remote
Outdoor Air Enthalpy Active is Invalid	Unit	Warning	Non-Latching	Loss of outdoor air enthalpy implies either Outdoor Air Temperature or Outdoor Air Humidity is invalid. This drives a 'fall back' response to Dry Bulb Economizer decisions if Outdoor Air Temperature is available, otherwise Economizer cooling is disabled.	Remote
Outdoor Air Humidity Sensor	Unit	Warning	Non-Latching	The Outdoor Air Humidity sensor has failed out of range. No action is taken for this sensor failure only the Outdoor Air Humidity Sensor Active has special action.	Remote
Outdoor Air Humidity Sensor Active	Unit	Warning	Non-Latching	The Active Outdoor Air Humidity sensor has failed out of range. This drives a 'fall back' response to Dry Bulb Economizer decisions if Outdoor Air Temperature is available, otherwise Economizer cooling is disabled.	
Outdoor Air Temperature Sensor	DX Cooling	Warning	Non-Latching	The Outdoor Temperature sensor has failed out of range. No action is taken for this sensor failure only the Outdoor Air Temp Active is Invalid has special action.	Remote
Outdoor Air Temp Active is Invalid	DX Cooling	Normal Shutdown	Non-Latching	All sources for Outdoor Air Temperature are invalid. Economizer cooling is terminated.	Remote
Outdoor Airflow Pressure Sensor	Unit	Warning	Latching	The Outdoor Airflow Pressure sensor has failed out of range. Traq function is disabled. Ventilation falls back to Outdoor Airflow Compensation or Minimum Ventilation Setpoint.	Remote
Pre Evaporator Filter Pressure Sensor	Unit	Warning	Non-Latching	The Pre Evaporator Filter Pressure sensor has failed out of range. Note: The Hex IO cannot detect when the ground wire for the sensor goes open circuit. No unit response.	Remote
Precool Mode Exceeded 120 Minutes	Unit	Warning	Non-Latching	The unit has been operating in "Pre Cool" for 120 minutes. This is an occupied mode that stops ventilation. If Pre Cool command is removed after the diagnostic has been activated it will be cleared.	Remote
Relief Air Damper Failed Closed	Unit	Warning	Non-Latching	The relief air damper position has been lower than the damper command by 10% for 5 continuous minutes. The relief fan remains on but its speed is limited to the value of the relief damper voltage input.	Remote
Relief Air Damper Failed Open	Unit	Warning	Non-Latching	The relief air damper position has been greater than the damper command by 10% for 5 continuous minutes. The relief fan remains on but its speed follows the lower commanded value, or if the command increases the speed is limited to no greater than the value of the relief damper voltage input.	Remote

Diagnosics	Target	Severity	Persistence	Condition / Response	Reset Level
Relief Air Damper Input	Unit	Warning	Non-Latching	The Relief Air Damper Input has failed out of range. This voltage is an indication of actual damper position. Relief damper is closed and the relief fan is commanded off. Economizer cooling is terminated.	Remote
Relief Fan X Proving Failure where X is "1", "2" or "3"	Unit	Warning	Non-Latching	Relief Fan X is expected to be running, this diagnostic will be generated when a No Flow condition exists for 40 continuous seconds. Failure of fan X with other relief fans available: Generate "Relief Fan X Proving Failure" diagnostic and take no other action. Failure of fan X with other relief fans not-available: The relief damper will be closed, the relief fan will be commanded off, economizing will be disabled and the outside air damper will be driven to the active minimum position.	Remote
Return Air High Temperature Detected	Unit	Immediate Shutdown	Latching	If the Return air temperature exceeds 135F then an Immediate Stop will be generated. This is intended to shut the unit down the unit if high duct temperatures exist. This Diagnostic is only available if the Return Air Temperature is operating normally.	Local
Return Air Humidity Sensor	Unit	Warning	Non-Latching	The Return Air Humidity sensor has failed out of range. This drives a 'fall back' response to Economizer enthalpy decision.	Remote
Return Air Temperature Sensor	Unit	Warning	Non-Latching	The Return Air Temperature sensor has failed out of range. Rapid Restart. Affects DX capacity operation and target capacity, see spec for details. Rapid Restart. Economizer capacity terminates on rapid start time (rather than return air temperature), see spec for details. This drives a 'fall back' response to Economizer enthalpy decision.	Remote
Software High Pressure Detection CktX where X is "1" or "2"	Circuit	Warning	Non-Latching	The discharge pressure, as measured discharge pressure sensor, has exceeded 630 PSIA. This warning is generated to give additional information that could be used to determine why all compressors on the circuit shut down due to an Unexpected Compressor Shutdown diagnostic or why a Compressor Failed to Start diagnostic is generated. Even if the pressure has dropped below 630 PSIA the historic diagnostics will still indicate that a high pressure was detected.	Local
Space CO2 Sensor	Unit	Warning	Non-Latching	Space CO2 sensor has failed out of range. DCV control will be inhibited.	Remote
Space Humidity Sensor	Unit	Warning	Non-Latching	The Space Humidity sensor has failed out of range. No action is taken for this sensor failure only the Outdoor Air Humidity Sensor Active has special action.	Remote
Space Humidity Sensor Active	Unit	Warning	Non-Latching	The Space Humidity sensor value not available. Dehumidification and humidification will be disabled. This drives a 'fall back' response to Economizer Enthalpy decision.	Remote
Space Pressure Sensor	Unit	Warning	Latching	Space Pressure sensor has failed out of range. Statitrac control will be terminated and the Relief Fan Speed and Relief Damper command will fall back to OA Damper Tracking.	Remote
Space Temp Cooling Setpoint Wired	Unit	Warning	Non-Latching	The input to the Hex IO module has failed. The unit will fall back to the "Space Temp Cooling Setpoint Default" setting on the front panel.	Remote

## Troubleshooting

Diagnosics	Target	Severity	Persistence	Condition / Response	Reset Level
Space Temp Heating Setpoint Wired	Unit	Warning	Non-Latching	The input to the Hex IO module has failed. The unit will fall back to the "Space Temp Heating Setpoint Default" setting on the front panel.	Remote
Space Temperature Invalid Active	Unit	VVZT/CVZT: Normal Shutdown VVDA/CVDA: Warning	Non-Latching	VVZT/CVZT: Unit Shutdown VVDA/CVDA: Unit continues to operate and disables the following functions: • All Unoccupied modes (heat, cool, DH), • Daytime Warmup, • Morning Warmup • Pre Cool	
Space Temperature Sensor	Unit	Warning	Non-Latching	The Space Temperature sensor input is out of range. Multi-zone: If Space Temperature Active is invalid, all functions requiring space temperature will be inhibited. Single-zone: Unit operation will be inhibited.	Remote
Starts/Hours Modified - CprsrXY where X is "1" or "2" where Y is "A", "B" or "C"	Cprsr	Warning	Non-Latching	The circuit X compressor Y cumulative value of starts and or hours have been modified by a write override from TU. No unit response.	Remote
Suction Pressure Sensor CktX where X is "1" or "2"	Circuit	Immediate Shutdown	Latching	Circuit X Suction Pressure sensor has failed out of range. Circuit X operation is terminated.	Remote
Suction Temperature 1 CktX where X is "1" or "2"	Circuit	Immediate Shutdown	Latching	The Suction Temperature sensor has failed out of range for circuit X. Circuit X operation is terminated.	Remote
Suction Temperature 2 CktX where X is "1" or "2"	Circuit	Immediate Shutdown	Latching	The Suction Temperature 2 sensor has failed out of range for circuit X. Circuit X operation is terminated.	Remote
Superheat High Limit Lockout CktX where X is "1" or "2"	Circuit	Immediate Shutdown	Latching	High superheat is detected and severe enough to shut down the circuit. Circuit X operation is inhibited.	Local
Supply Fan Bypass Enabled	Unit	Warning	Non-Latching	This diagnostic is generated to notify system control integrators that the unit is operating in Supply Fan VFD Bypass mode.	Local
Supply Fan Bypass Interrupt Failure	Unit	Immediate Shutdown	Latching	Any time the Supply Fans are not being commanded On in Bypass Mode and a Flow Proving condition from the Discharge Air Pressure sensor exists for 40 continuous seconds. Unit operation is inhibited.	Local
Supply Fan Bypass Proving Failure	Unit	Immediate Shutdown	Latching	Any time the Supply Fans are being commanded On in Bypass Mode and a No-Flow Proving condition from the Discharge Air Pressure sensor exists for 40 continuous seconds. Unit operation is inhibited.	Remote
Supply Fan X Proving Failure where X is "1" or "2"	Unit	Warning	Latching	Any time Supply Fan X is being commanded On in Bypass Mode and a No-Flow Proving indication from the fans VFD exists for 40 continuous seconds. Failure of fan X with other fan available: Generate "Supply Fan X Proving Failure" diagnostic and lockout all heating operation. Failure of fan X with other fan not-available: Generate "Supply Fan X Proving Failure" and inhibit unit operation.	Remote
Unexpected Compressor Shutdown CprsrXY where X is "1" or "2" where Y is "A", "B" or "C"	Circuit	Immediate Shutdown	Latching	The fixed speed compressor Y proving input on circuit X has opened while the compressor is operating. Sources for this condition are High Pressure Cutout switch opening, a fault from the compressor protection module, contactor failure or wiring. Circuit X operation is inhibited.	Local

Diagnosics	Target	Severity	Persistence	Condition / Response	Reset Level
Unit Economizing When It Should Not	Unit	Warning	Non- Latching	The unit is in active economizer cooling. The economizer (OAD) command has been lower than the economizer position by 10% for 5 continuous minutes. No unit response.	Remote
Unit Not Economizing When It Should	Unit	Warning	Non- Latching	The unit is in active economizer cooling. The economizer (OAD) command has been greater than the economizer position by 10% for 5 continuous minutes. No unit response.	Remote
Ventilation Override Mode A	Unit	Warning	Non-Latching	The unit is actively in a VOM A event with outputs commanded per the settings entered at the Front Panel. (Default setting: Unit Off)	Local
Ventilation Override Mode B	Unit	Warning	Non-Latching	The unit is actively in a VOM B event with outputs commanded per the settings entered at the Front Panel. (Default setting: Pressurize)	Local
Ventilation Override Mode C	Unit	Warning	Non-Latching	The unit is actively in a VOM C event with outputs commanded per the settings entered at the Front Panel. (Default setting: Relief)	Local
Ventilation Override Mode D	Unit	Warning	Non-Latching	The unit is actively in a VOM D event with outputs commanded per the settings entered at the Front Panel. (Default setting: Purge)	Local
Ventilation Override Mode E	Unit	Warning	Non-Latching	The unit is actively in a VOM E event with outputs commanded per the settings entered at the Front Panel. (Default setting: Purge w/ Duct Static Pressure Cntl)	Local
VFD Compressor Ground Fault– Cprsr1A	Circuit	Immediate Shutdown	Latching*	An earth ground fault has resulted in a discharge from the output phases to ground, either in the cable between the adjustable frequency drive and the motor or in the motor itself. Further compressor operation is not recommended until measurements to ground can be taken from the motor leads and the ground fault removed.  * The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.  This drive alarm may be Trip Locked at the TR200 drive. If the drive determines that the condition could cause damage to the drive, the drive protects itself by generating a Trip Lock that can only be cleared by cycling power.	Local
VFD Compressor High Pressure Trip – Cprsr1A	Circuit	Immediate Shutdown	Latching*	The drive safe stop input was activated. This trip is the result of a high pressure cutout. The high pressure switch must reset once the pressure has dropped and a manual reset must be commanded at the user interface before the circuit will be allowed to restart. This diagnostic may require a power cycle to reset the TR200 drive (Safe Stop) alarm.  * The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.  This diagnostic may require a power cycle to reset the TR200 drive (Safe Stop) alarm.	Local
VFD Compressor In Hand Mode – Cprsr1A	Unit	Warning	Non-Latching	The drive has been put into hand mode at the drive interface. This will cause issues for normal sequences and operation	Local

## Troubleshooting

Diagnosics	Target	Severity	Persistence	Condition / Response	Reset Level
VFD Compressor Short Circuit– Cprsr1A	Circuit	Immediate Shutdown	Latching*	<p>A short circuit in the motor windings or the motor terminals was detected. Compressor operation is not recommended until the short circuit is removed.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p> <p>This drive alarm may be Trip Locked at the TR200 drive. If the drive determines that the condition could cause damage to the drive, the drive protects itself by generating a Trip Lock that can only be cleared by cycling power.</p>	Local
VFD Condenser Fan Ground Fault - CktX where X is "1" or "2"	Circuit	Warning	Latching*	<p>The condenser fan VFD on circuitX indicates an earth ground fault has resulted in a discharge from the output phases to ground, either in the cable between the adjustable frequency drive and the motor or in the motor itself.</p> <p>Condenser fan control will revert to fixed-speed fan algorithm using remaining fans.</p> <p>Further operation of the failed fan is not recommended until measurements to ground can be taken from the motor leads and the ground fault removed.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p> <p>This drive alarm may be Trip Locked at the TR170 drive. If the drive determines that the condition could cause damage to the drive, the drive protects itself by generating a Trip Lock that can only be cleared by cycling power.</p>	Local
VFD Condenser Fan In Hand Mode – CktX where X is "1" or "2"	Unit	Warning	Non-Latching	<p>The condenser fan VFD on circuitX has been put into hand mode at the drive interface.</p> <p>Should be for testing only as this will cause issues for normal sequences and operation.</p>	Local
VFD Condenser Fan Motor Current Overload – CktX where X is "1" or "2"	Circuit	Warning	Latching*	<p>The condenser fan VFD on circuitX indicates a peak current of approximately 200% of rated current was exceeded for 1.5 seconds.</p> <p>The remaining condenser fans on circuitX will revert to fixed-speed fan algorithm control.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p> <p>This drive alarm may be Trip Locked at the TR170 drive. If the drive determines that the condition could cause damage to the drive, the drive protects itself by generating a Trip Lock that can only be cleared by cycling power.</p>	Local

Diagnosics	Target	Severity	Persistence	Condition / Response	Reset Level
VFD Condenser Fan Short Circuit - CktX where X is "1" or "2"	Circuit	Warning	Latching*	<p>The condenser fan VFD on circuitX indicates a short circuit in the motor windings or the motor terminals was detected.</p> <p>The remaining condenser fans on circuitX will revert to fixed-speed fan algorithm control.</p> <p>Note: Further operation of the failed fan is not recommended until the short circuit is removed.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p> <p>This drive alarm may be Trip Locked at the TR170 drive. If the drive determines that the condition could cause damage to the drive, the drive protects itself by generating a Trip Lock that can only be cleared by cycling power.</p>	Local
VFD Cprsr Current Overload – Cprsr1A	Circuit	Immediate Shutdown	Latching*	<p>The inverter peak current of approximately 200% of rated current was exceeded for 1.5 seconds.</p> <p>This is a drive enforced lockout.</p> <p>Note: There is Drive behavior that results from a Drive Overcurrent where the drive continues to operate at reduced RPM</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p> <p>This drive alarm may be Trip Locked at the TR200 drive. If the drive determines that the condition could cause damage to the drive, the drive protects itself by generating a Trip Lock that can only be cleared by cycling power.</p>	Local
VFD Fault Compressor – Cprsr1A	Circuit	Immediate Shutdown	Non- Latching	<p>VFD Fault. Numerous vfd faults can cause this general fault/vfd alarm. When the vfd trips on a general alarm, the alarm may be latching or non- latching depending on the vfd settings.</p> <p>This Symbio™ 800 diagnostic is auto-reset and will persist until the vfd clears the general alarm.</p>	Local
VFD Fault Compressor – Cprsr1A	Circuit	Immediate Shutdown	Latching	<p>A VFD Fault has occurred four times before the compressor starts and runs for its minimum on-time.</p> <p>Numerous vfd faults can cause this general fault/vfd alarm.</p> <p>A volatile fault count variable stores the count status. The count is cleared for any of the following three conditions:</p> <ul style="list-style-type: none"> <li>• Variable speed compressor starts and runs for its minimum on-time.</li> <li>• Diagnostic manual reset.</li> <li>• Controller power cycle.</li> </ul>	Local
VFD Fault Condenser Fan - CktX where X is "1" or "2"	Circuit	Warning	Latching*	<p>The condenser fan VFD on circuitX indicates a general VFD Fault.</p> <p>Numerous drive faults can cause this general fault. Reference the TR170 Installation and Operating manual for a list of fault codes and descriptions.</p> <p>Condenser fan control will revert to fixed-speed fan algorithm using remaining fans.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p>	Local



## Troubleshooting

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
VFD Fault Relief Fan – X where X is “1”, “2” or “3”	Unit	Warning	Latching*	<p>Relief fan X indicates a general Fault.</p> <p>Numerous drive faults can cause this general fault. Reference the EBM-PAPST Installation and Operating manual for a list of fault codes and descriptions. (Clears on Reset)</p> <p>Failure of fan X with other fans available: No action.</p> <p>Failure of fan X with other fans not-available: Relief damper is closed, relief fan commanded off and the Economizing will be disable and the outside air damper will be driven to the active minimum position.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p>	Local
VFD Fault Supply Fan – X where X is “1” or “2”	Unit	Warning	Latching*	<p>Supply fan X VFD indicates a general Fault.</p> <p>Numerous drive faults can cause this general fault. Reference the TR150 Installation and Operating manual for a list of fault codes and descriptions.</p> <p>Failure of fan X with the other fan available: Generate a “Supply Fan X Proving Failure” on the failed fan, allow the working fan to continue and lock- out all heating operation.</p> <p>Failure of fan X with the other fan not-available: Generate a “Supply Fan X Proving Failure” on the failed fan and shutdown the unit.</p> <p>*The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p>	
VFD Relief Fan Locked Motor – X where X is “1”, “2” or “3”	Unit	Warning	Latching*	<p>Relief fan X indicates something has blocked the rotor from turning. Ice is a common one in some applications. (Motor Auto Reset)</p> <p>Failure of fan X with other fans available: No action.</p> <p>Failure of fan X with the other fans not-available: Relief damper is closed, relief fan commanded off and the Economizing will be disable and the outside air damper will be driven to the active minimum position.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p>	Local
VFD Relief Fan Motor Overheated – X where X is “1”, “2” or “3”	Unit	Warning	Latching*	<p>Relief fan X indicates motor thermocouples have reached a too-high temperature. Typically caused by excessively high ambient temp. (Motor Manual Reset)</p> <p>Failure of fan X with other fans available: No action.</p> <p>Failure of fan X with the other fans not-available: Relief damper is closed, relief fan commanded off and the Economizing will be disable and the outside air damper will be driven to the active minimum position.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p>	Local



Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
VFD Relief Fan Power Mod Overheated – X where X is “1”, “2” or “3”	Unit	Warning	Latching*	<p>Relief fan X indicates rectifier thermocouple has reached a too-high temperature. Typically caused by excessively high ambient temp. (Motor Manual Reset)</p> <p>Failure of fan X with other fans available: No action.</p> <p>Failure of fan X with the other fans not-available: Relief damper is closed, relief fan commanded off and the Economizing will be disable and the outside air damper will be driven to the active minimum position.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p>	Local
VFD Relief Fan Speed Parameter Failure – X where X is “1”, “2” or “3”	Unit	Warning	Latching*	<p>Relief fan X indicates its Maximum Speed parameter does not match the Maximum Permissible Speed parameter. (EC-Clone Required)</p> <p>Failure of fan X with other fans available: No action.</p> <p>Failure of fan X with the other fans not-available: Relief damper is closed, relief fan commanded off and the Economizing will be disable and the outside air damper will be driven to the active minimum position.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p>	Local
VFD Supply Fan Ground Fault – X where X is “1” or “2”	Unit	Warning	Latching*	<p>Supply fan X VFD indicates an earth ground fault has resulted in a discharge from the output phases to ground, either in the cable between the adjustable frequency drive and the motor or in the motor itself. Further fan operation is not recommended until measurements to ground can be taken from the motor leads and the ground fault removed.</p> <p>Failure of fan X with the other fan available:</p> <p>Generate a “Supply Fan X Proving Failure” diagnostic on the failed fan, allow the working fan to continue and lock-out all heating operation.</p> <p>Failure of fan X with the other fan not-available: Generate a “Supply Fan X Proving Failure” diagnostic on the failed fan and shutdown the unit.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p> <p>This drive alarm may be Trip Locked at the TR150 drive. If the drive determines that the condition could cause damage to the drive, the drive protects itself by generating a Trip Lock that can only be cleared by cycling power.</p>	Local
VFD Supply Fan In Hand Mode – X where X is “1” or “2”	Unit	Warning	Non-Latching	<p>Supply fan X VFD has been put into hand mode at the drive interface.</p> <p>This should be for testing only as this will cause issues for normal startup and running</p>	Local

## Troubleshooting

Diagnosics	Target	Severity	Persistence	Condition / Response	Reset Level
VFD Supply Fan Motor Current Overload – X where X is “1” or “2”	Unit	Warning	Latching*	<p>Supply fan X VFD indicates peak current of approximately 200% of rated current was exceeded for 1.5 seconds.</p> <p>This is a drive enforced lockout.</p> <p>Failure of fan X with the other fan available: Generate a “Supply Fan X Proving Failure” diagnostic on the failed fan, allow the working fan to continue and lock-out all heating operation.</p> <p>Failure of fan X with the other fan not-available: Generate a “Supply Fan X Proving Failure” diagnostic on the failed fan and shutdown the unit.</p> <p>*The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p> <p>This drive alarm may be Trip Locked at the TR150 drive. If the drive determines that the condition could cause damage the drive protects itself by generating a Trip Lock that can only be cleared by cycling power.</p>	Local
VFD Supply Fan Short Circuit – X where X is “1” or “2”	Unit	Warning	Latching*	<p>Supply fan X VFD indicates a short circuit in the motor windings or the motor terminals was detected. Fan operation is not recommended until the short circuit is removed.</p> <p>Failure of fan X with the other fan available: Generate a “Supply Fan X Proving Failure” diagnostic on the failed fan, allow the working fan to continue and lock-out all heating operation.</p> <p>Failure of fan X with the other fan not-available: Generate a “Supply Fan X Proving Failure” diagnostic on the failed fan and shutdown the unit.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p> <p>This drive alarm may be Trip Locked at the TR150 drive. If the drive determines that the condition could cause damage to the drive, the drive protects itself by generating a Trip Lock that can only be cleared by cycling power.</p>	Local
VFD Torque Limit Exceeded– Cprs1A	Circuit	Immediate Shutdown	Latching*	<p>Supply fan X VFD indicates motor torque is higher than expected.</p> <p>* The Latching behavior for this diagnostic is latched in the drive. When the drive diagnostics are reset this diagnostic will be cleared in the Symbio™ 800 controller by setting its persistence to Non-Latching.</p> <p>The behavior for this diagnostic is set to non-latching in the drive and will be cleared when the condition is no longer active.</p>	Local

## Time Loss from Power Outage

If the time is lost following a power outage, the Symbio™ 800 battery likely needs to be replaced. The Symbio 800 may retain the time even with a dead battery for power cycles less than several seconds.

**Note:** *The Symbio 800 coin cell tray should never be taken out unless the Symbio 800 is powered on or the Symbio 800 needs to be powered on shortly after replacing the battery. Failure to do this may shorten the battery life.*

## TD7 Automatic Rediscover and Automatic Hardware Reboot

When performing one or more of the following actions listed below, a message will appear on the screen that the TD7 is updating data

Automatic rediscovery (Updating data):

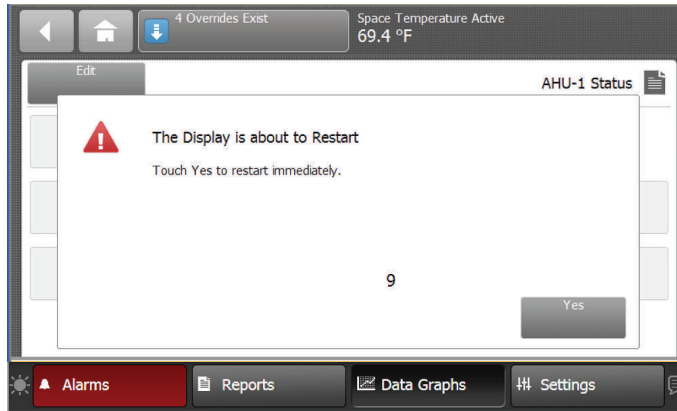
- Add a new point
- Remove a point
- Rename a point

- Modify Display Preferences or Language (from TU)
- Modify Custom Report or Header Data Point (from TU)

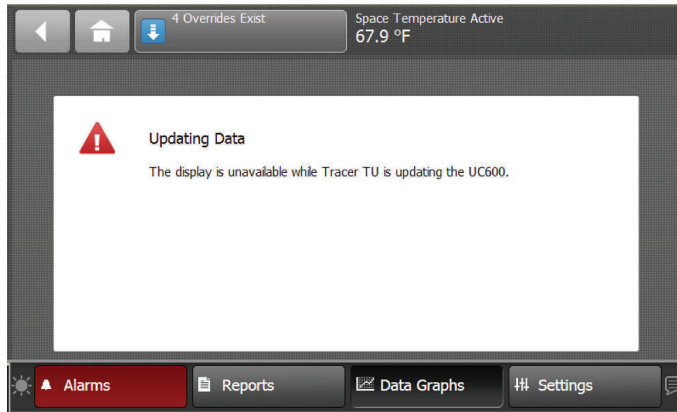
Automatic restart of TD7:

This will occur when modifying security settings: when a first and last user is added and deleted (enables, disables security), or when the restarts.

**Figure 75. Automatic rediscover and automatic restart messages**



**Automatic rediscover:**  
 This message appears when data is being updated.



**Automatic restart:**  
 This message appears whenever a user is added or deleted.

Trane - by Trane Technologies (NYSE: TT), a global innovator - creates comfortable, energy efficient indoor environments for commercial and residential applications. For more information, please visit [trane.com](http://trane.com) or [tranetechnologies.com](http://tranetechnologies.com).

Trane has a policy of continuous product and product data improvements and reserves the right to change design and specifications without notice. We are committed to using environmentally conscious print practices.

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