Programming Guide

IntelliPak™ with Symbio™ 800

20 to 75 Tons with the 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.

April 2021

RT-SVP011E-EN

Introduction

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

⚠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 Labeling 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.**

Copyright

Trademarks

All trademarks referenced in this document are the trademarks of their respective owners.

Agency Listings and Compliance

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

Revision History

- Updated the Alarm Screens, User Points Report, Equipment settings sections in the TD7 Display chapter.

- Added Unit, Ventilation, Cooling, Heating, Operating Modes sections in the TD7 Display chapter.
- Updated the Backup and Restore section in the Symbio™ 800 User Interface chapter.
- Updated the Identifying and Diagnosing Issues table in the Troubleshooting chapter.
- Major edits throughout the entire document.

Table of Contents

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.

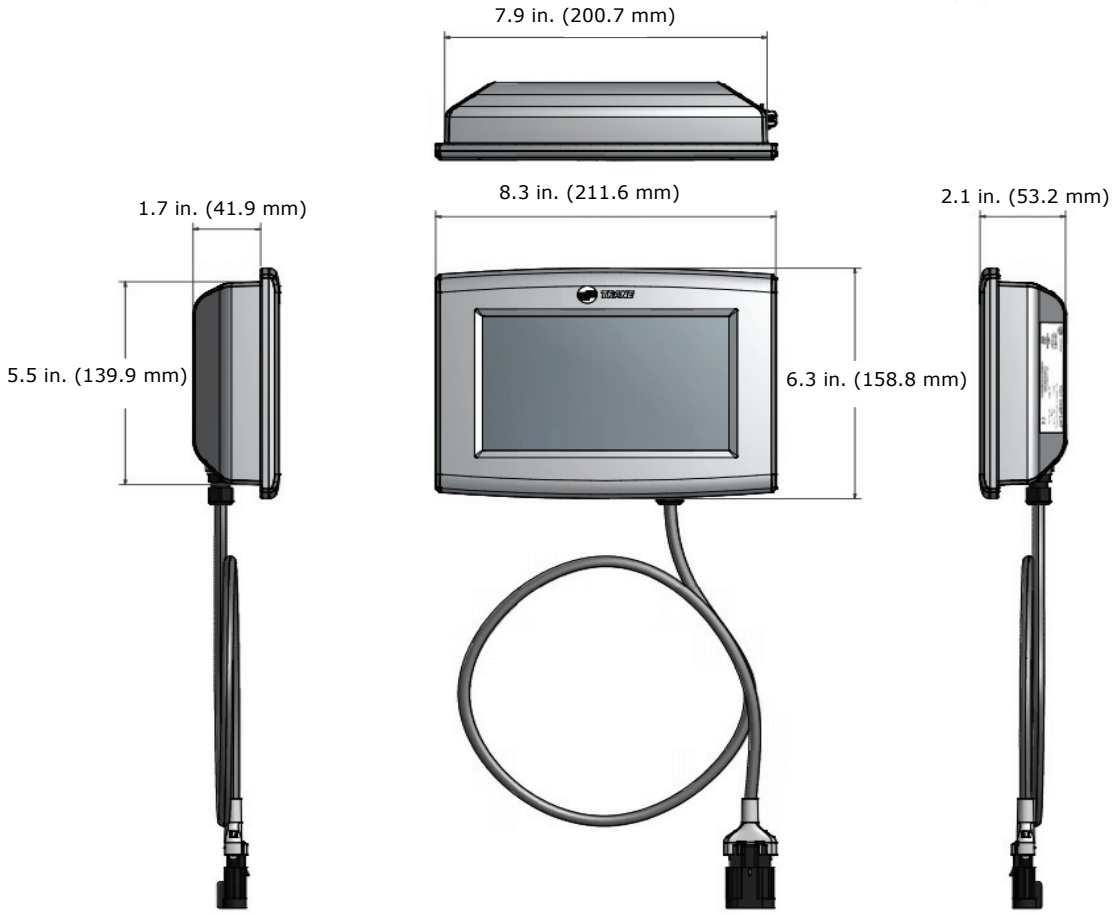
Recommended tools to use:

- 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	
• UL916 PAZX, Open Energy Management Equipment • UL94-5V, Flammability • FCC CFR Title 47, Part 15.109: Class A Limit, (30 MHz—4 GHz) • CE EMC Directive 2004/108/EC • CE EMC Directive 2004/108/EC	

TD7 Display

Supported Languages

The TD7 display supports built-in languages:

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

Security

Log In

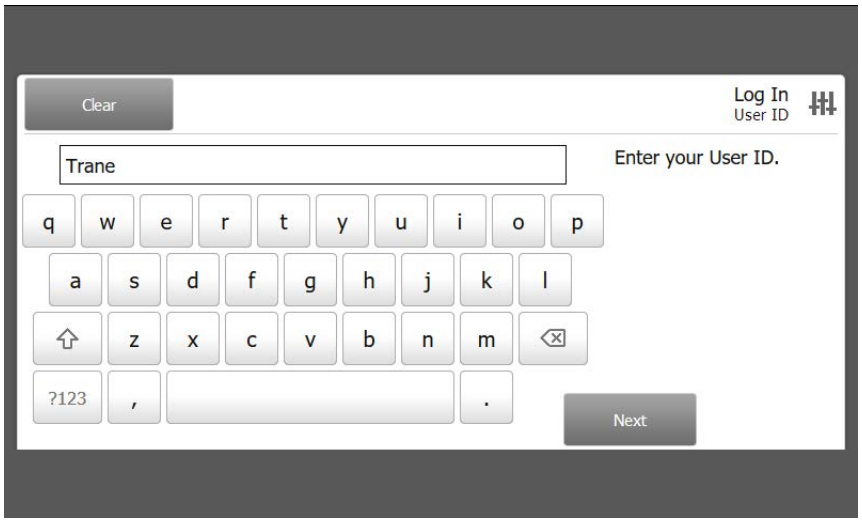
By default, security for the display connection is disabled and the Log In screen is hidden. When security is enabled for the display connection, the display will show the Log In screen. A valid User ID and Password is required to access the status and settings on the display.

Both the User ID and Password screen display the virtual keyboard shown in Figure 1. The User IDs, Passwords, and password complexity are configured by the Symbio™ UI and can't be configured using the display.

Log In - 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



Log In - Password Screen

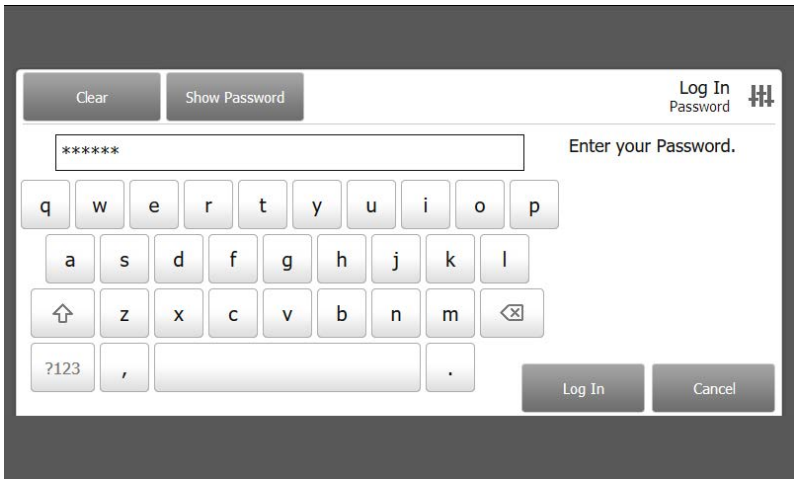
Enter a valid User ID and Password to unlock the display. Press Log In to complete the Password entry.

- 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

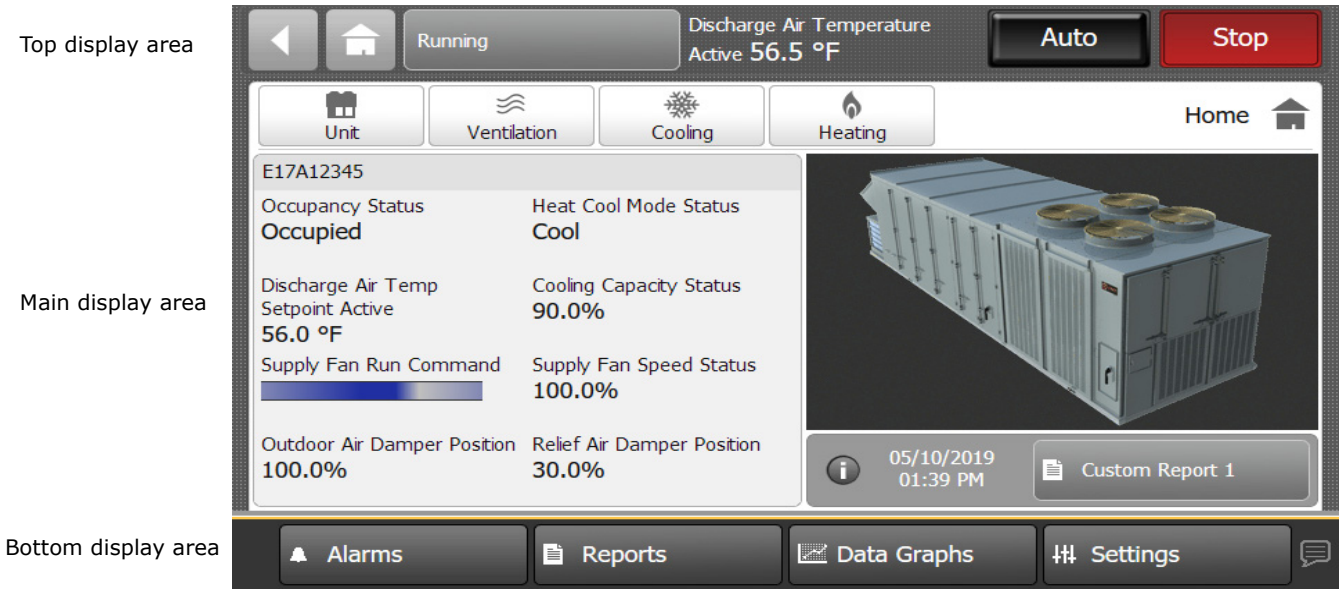


Screen Overview

There are three distinct areas on the TD7 screens:

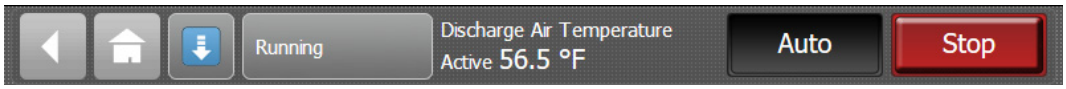
- Top display area
- Main display area
- Bottom display area

Figure 3. TD7 display screen



Top Display Area

Figure 4. TD7 menu bar

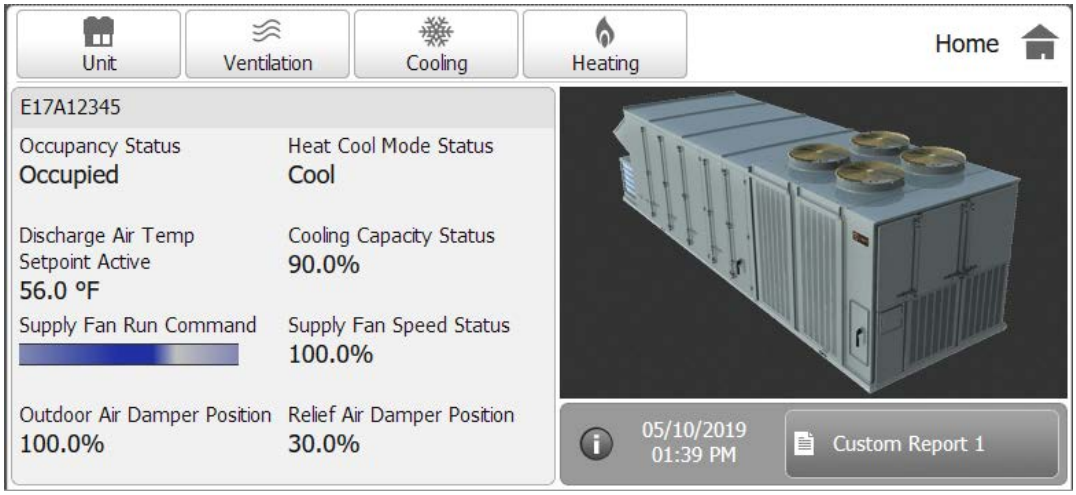


	The Back button, when touched, returns to the previous screen visited.
	The Home button, when touched, navigates to the home page.
	The Manual Override button, when shown, indicates at least one manual override is active. Touch this icon to navigate to the Manual Control Settings page.
	The Operating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

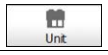
Main Display Area (Home Screen)

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



Main display are 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 the cooling 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.

	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

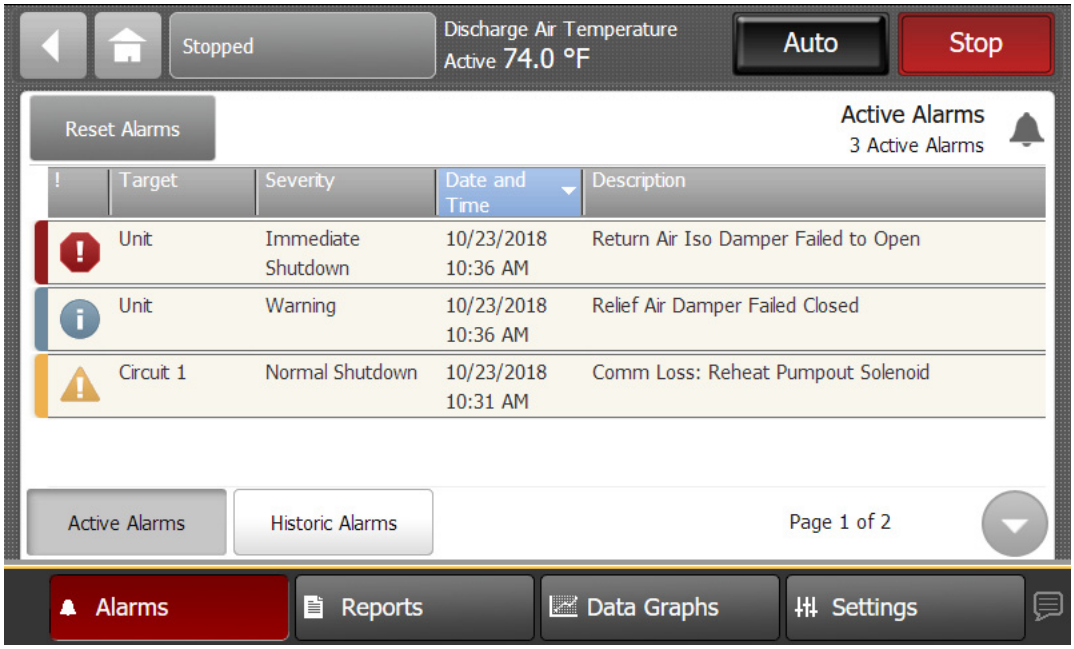


Figure 7. Historic Alarms

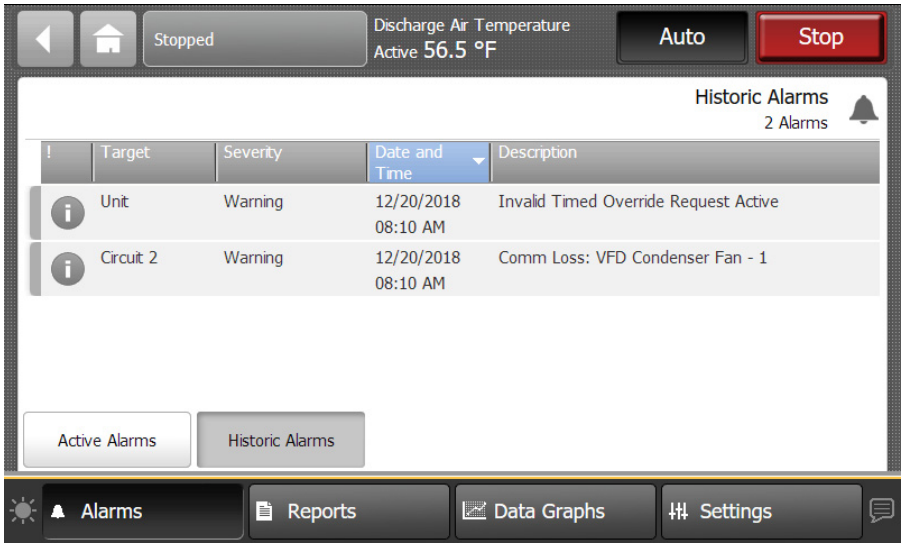


Figure 8. Alarms images

Active Alarm	Historic Alarm	Severity
		Immediate Shutdown
		Normal Shutdown
		Warning

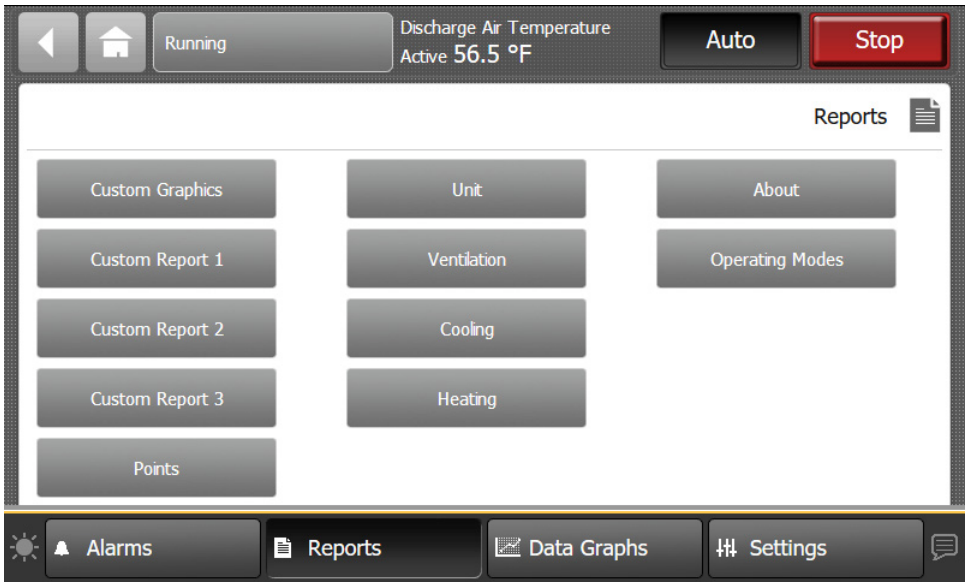
Reports

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, see Figure 9. 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 9. 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.

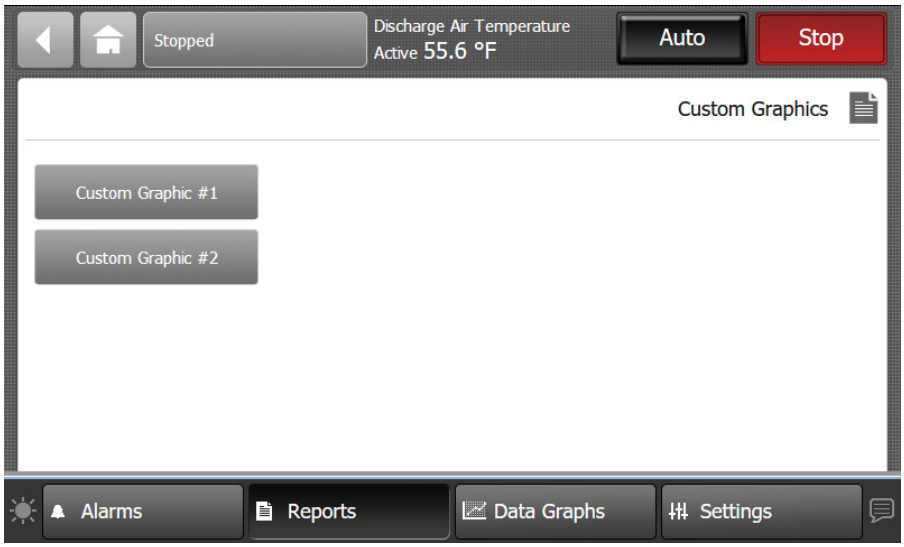
Graphics inTD7 allow you to:

- 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 Figure 10. 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 10. 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.

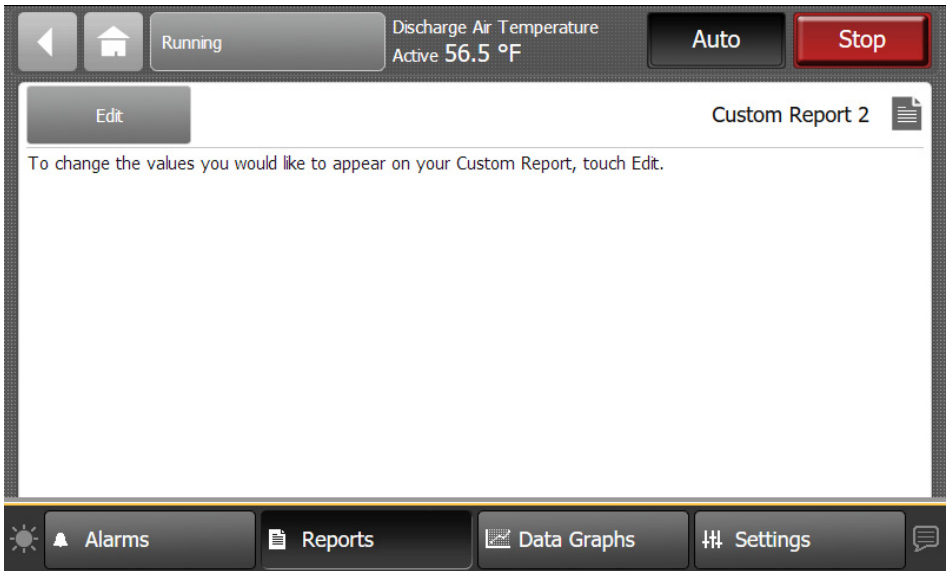
Creating a Custom Report

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 11).

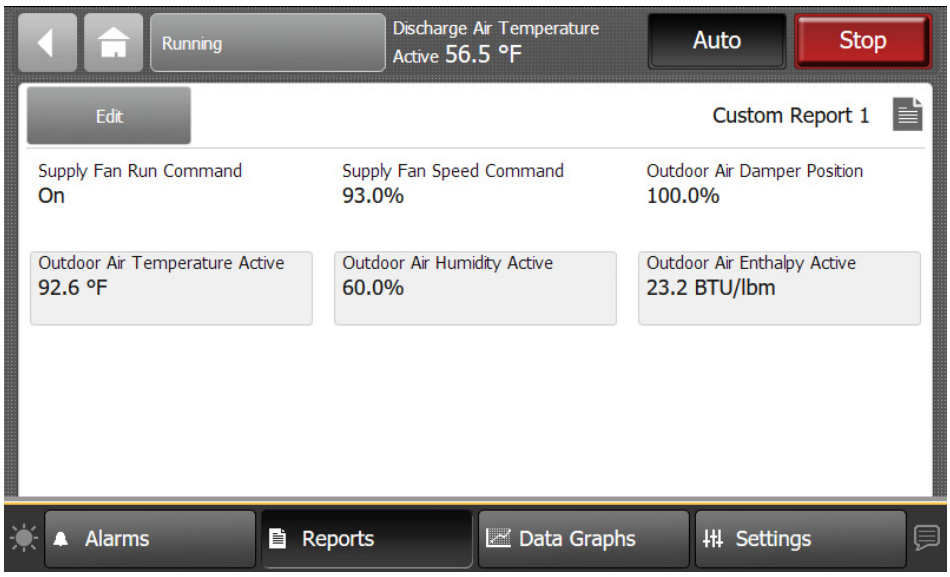
Figure 11. Creating a Custom Report



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 (Figure 13).
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 (Figure 12).

   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 12. New Custom Report screen



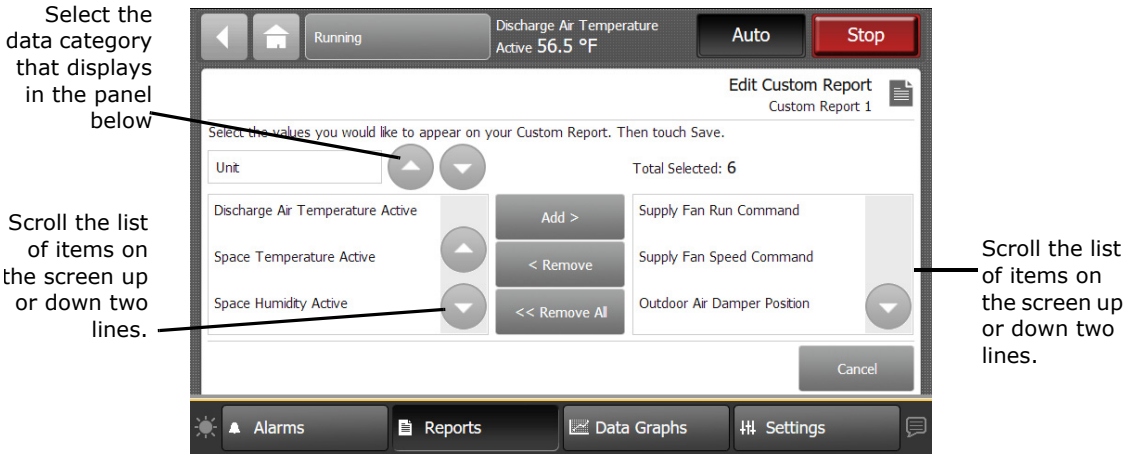
Editing a Custom Report

1. Touch **Reports** to view the Reports screen.

2. Touch the report that you want to edit.

   Follow steps 2 through 4 in "Creating a Custom Report," p. 17. to complete your edits.

Figure 13. 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 12, p. 18, but would prefer to move item "Supply Fan Speed Command" to the top left portion of the report.

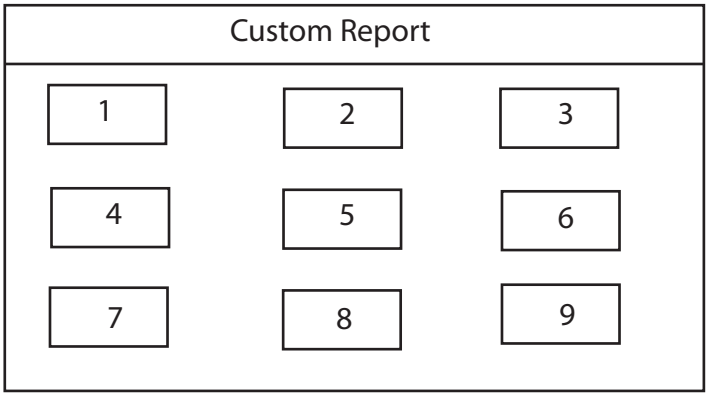
To change the order for the example described above:

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 (see Figure 13).
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 Figure 14 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.

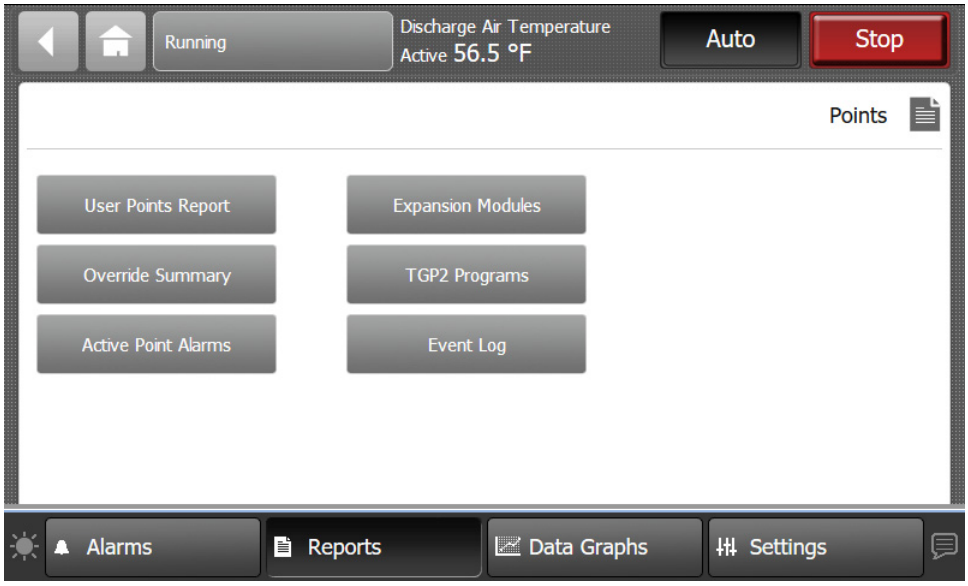
Figure 14. Custom Report (order of items)



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 15. 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 16. User Points Report screen

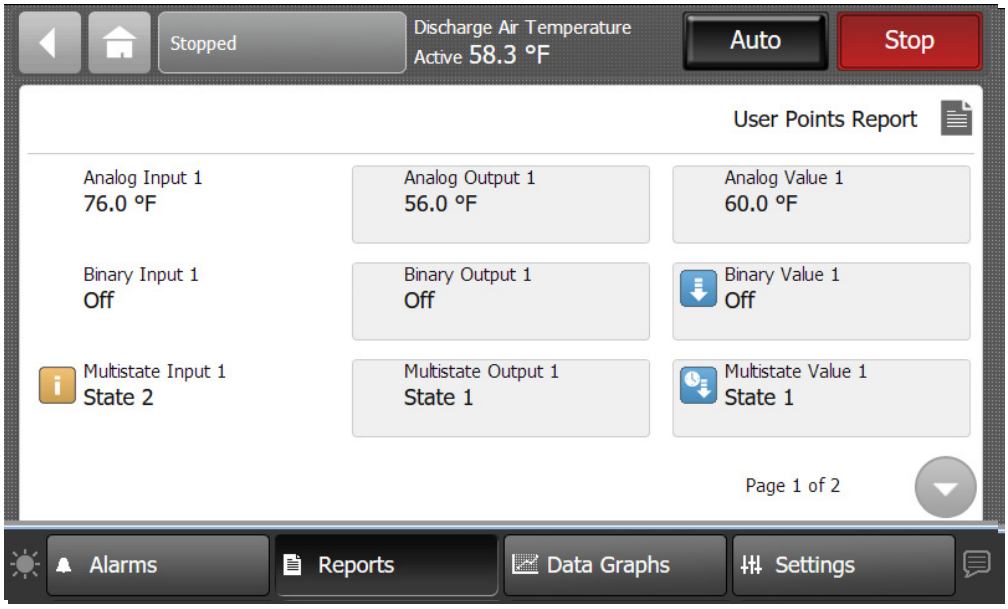
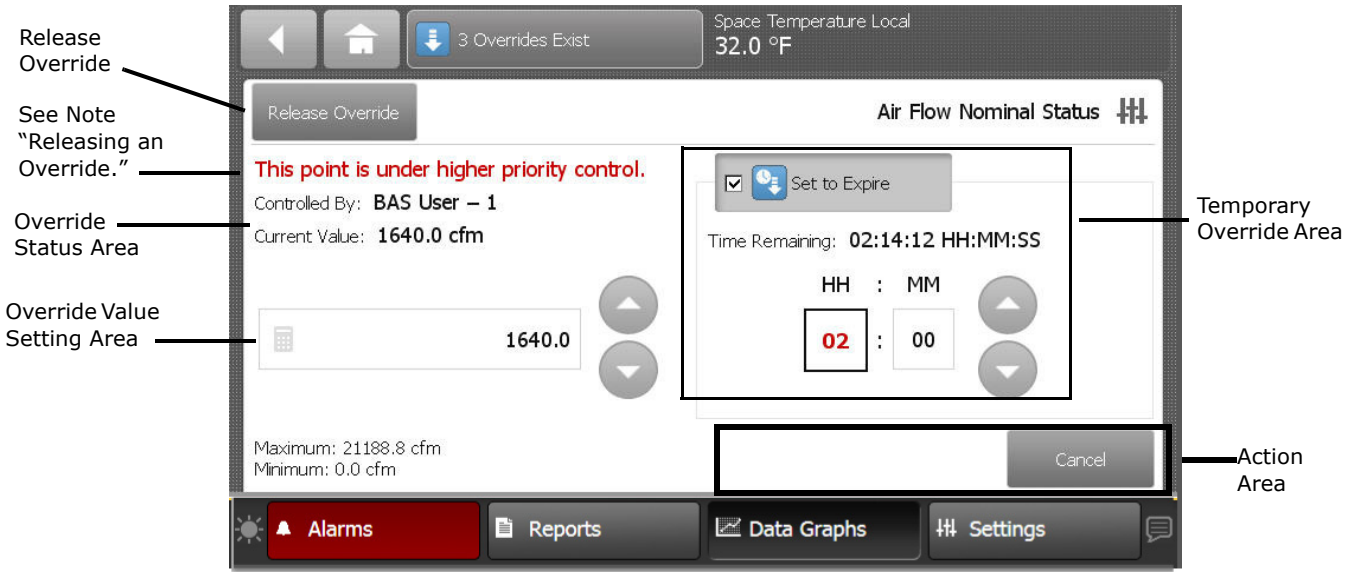


Figure 17. Point Override screen components



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

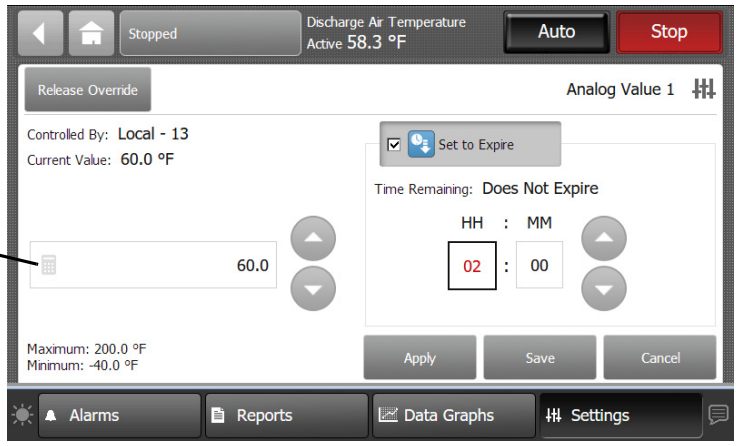
The Analog Override screen contains up and down arrows in the Override setting area, as well as a keypad icon that when touched, opens the Analog Keypad.

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.

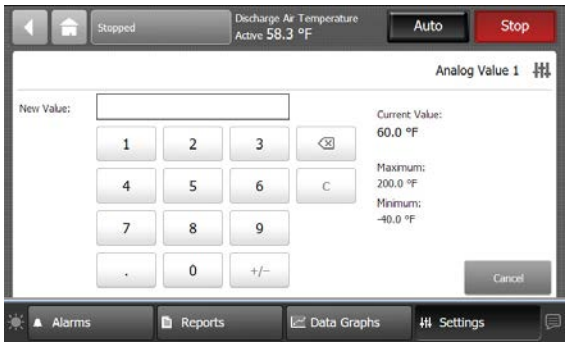
Figure 18. Displaying the analog keypad screen

Touch the keypad icon to open the Analog keypad screen.

Enter a value by tapping the numerals on the keypad. Touch **Enter** to save and return to the Override screen.



Analog Keypad Screen

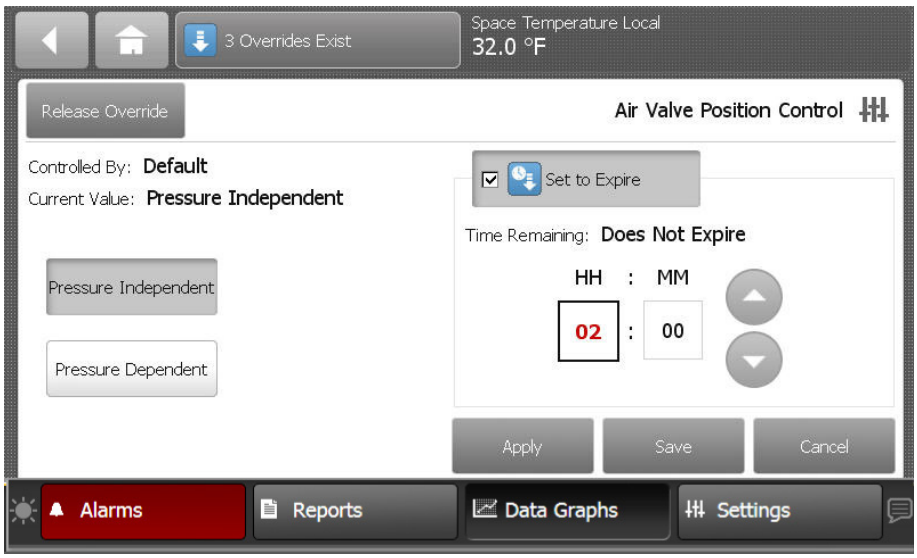


Binary Overrides

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 19. Binary Override screen

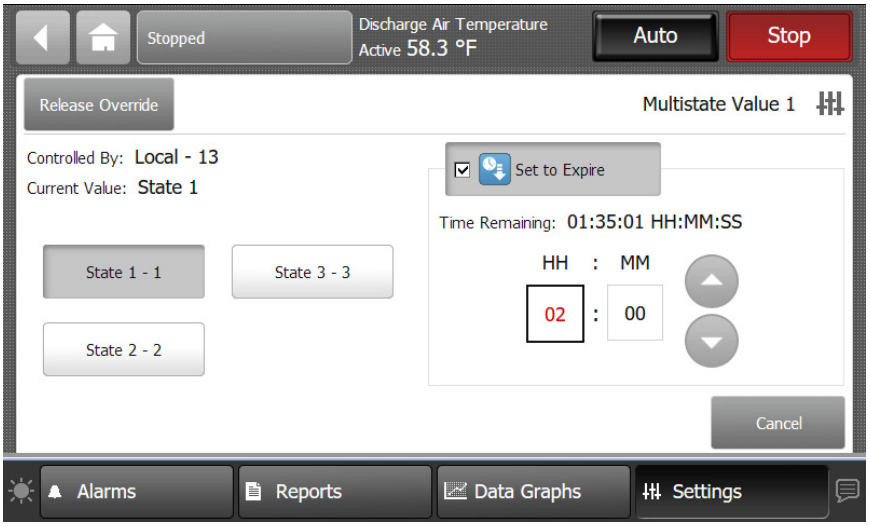


Multistate Overrides

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 20. 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.

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

Override Summary

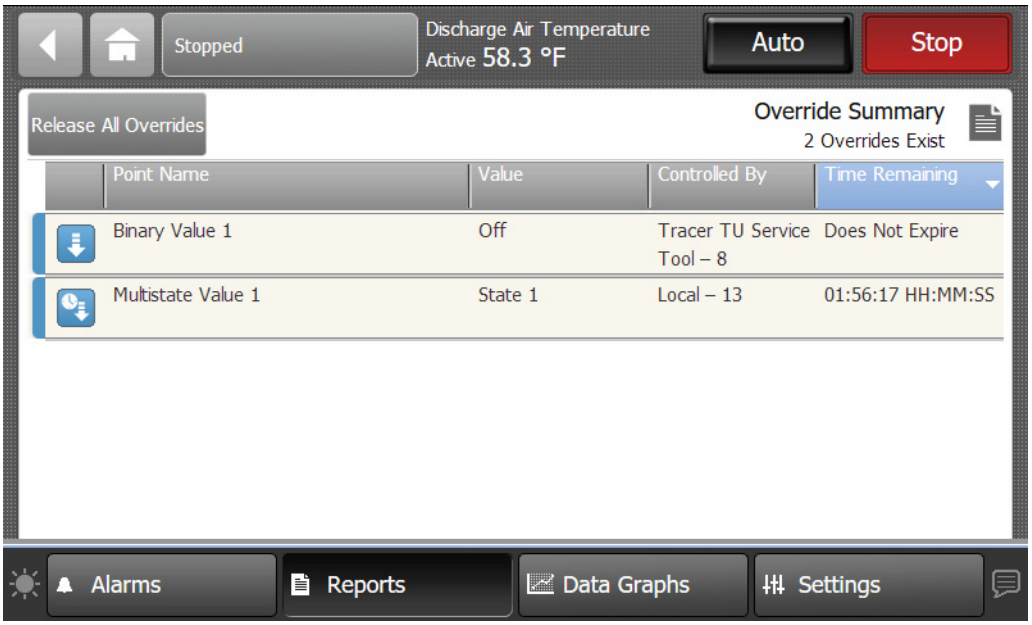
The TD7 has a built in override summary report. Touch the Override Summary button on the Points screen.

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 21. Override Summary screen



Active Points Alarms and Event Log

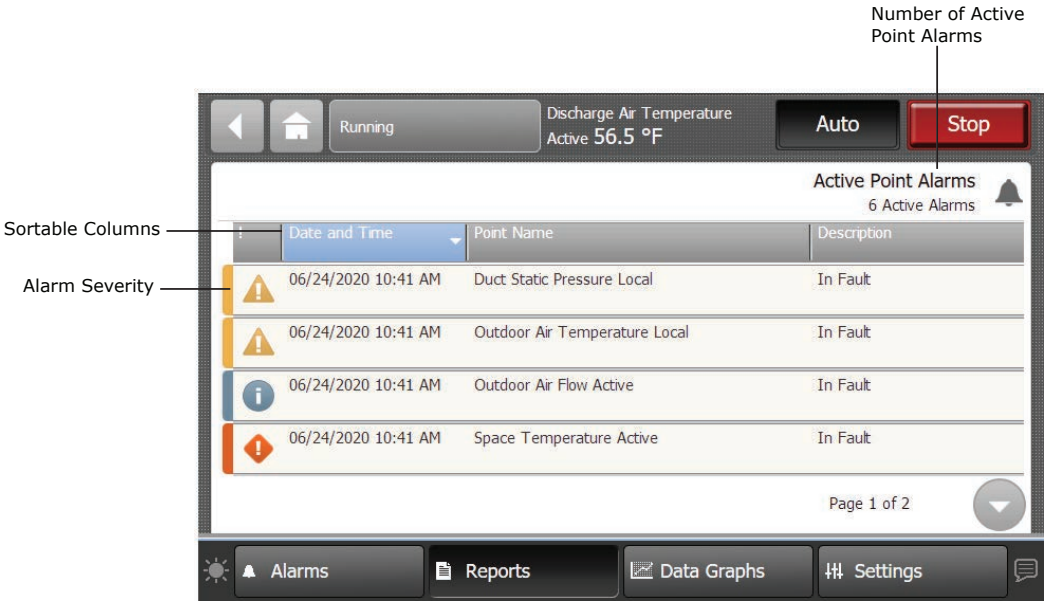
Active Point Alarms

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

Figure 22 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 22. Active Point Alarms screen



Event Log

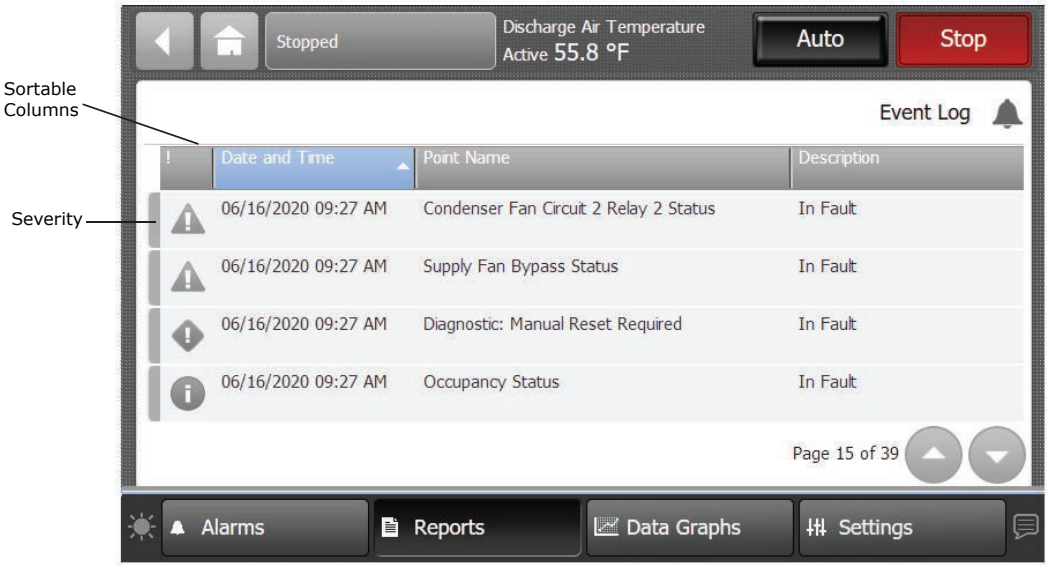
Touch the Event Log to view the Event Log.

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.

Figure 23 shows the Event Log screen and commonly used functions.

For the events to appear on theTD7 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 23. Event Log screen



Point Alarm and Event 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.

Active Alarm	Event Log	Notification Class / Severity
		Critical
		Service Required
		Warning
		Information
		None

Sorting Point Alarms and Event Log Events

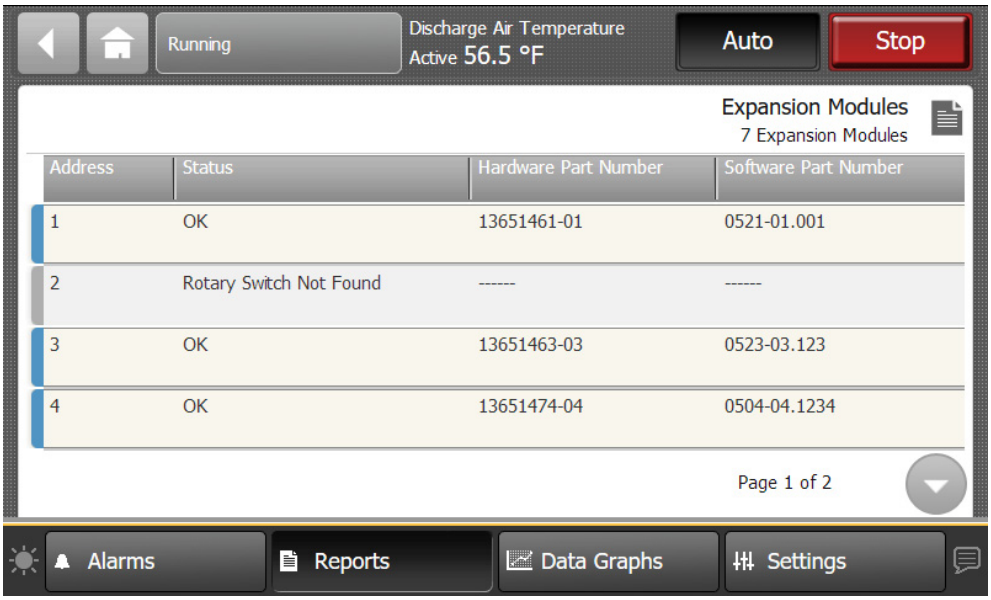
To sort point alarms or events in the event log by a category other than date and time, touch one of the other column headings in the table. The column heading responds by changing to blue, and the alarms table re-sorts according to the blue column heading. By touching the blue column heading again, 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 24).

Figure 24. Expansion Modules screen



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*.

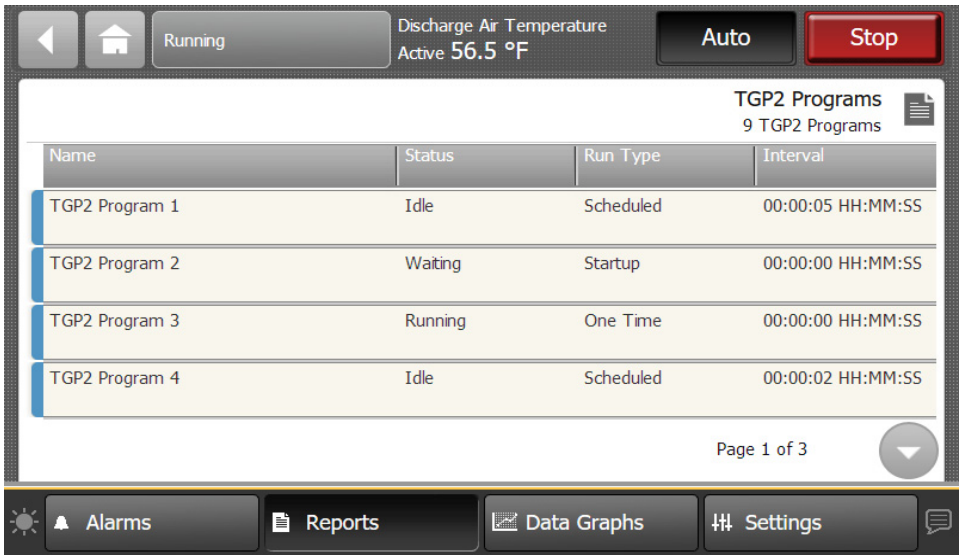
Hardware part number — This is the part number for the expansion module.

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 25. 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 1. Unit status

Unit
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
Discharge Air Temperature Active
Outdoor Air Damper Position
Duct Static Pressure Active
Occupancy Input Active
Occupancy Request Active
Occupancy Changeover
Relief Fan Speed Status
Return Plenum Pressure
Relief Air Damper Position
Space Static Pressure Active

Table 1. Unit status (continued)

Unit
Space Temperature Active
Space Humidity Active
Dehumidification Control Status
Evap Leaving Air Temperature Estimated
Mixed Air Temperature Estimated
Outdoor Air Temperature Active
Outdoor Air Humidity Active
Outdoor Air Enthalpy Active
Return Air Temperature
Return Air Humidity
Return Air Enthalpy
Condensate Drain Overflow
VAV Box Relay Status
Alarm Relay Status
Changeover Input
External Auto 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 2. Ventilation status

Ventilation
Supply Fan Run Command
Supply Fan Speed Status
Supply Fan Speed Command
Duct Static Pressure Active
Duct Static Pressure Setpoint Active
Supply Fan Proving
Supply Fan Configuration Status
Supply Fan Bypass Relay
Supply Fan Piezo Pressure
Supply Fan Piezo Air Flow
Outdoor Air Damper Command
Outdoor Air Damper Position
Economizer Min Position Setpoint Active
Relief Fan Run Command
Relief Fan Speed Status
Relief Fan Speed Command

Table 2. Ventilation status (continued)

Ventilation
Relief Fan Proving
Return Fan Run Command
Return Fan Speed Status
Return Fan Speed Command
Return Fan Proving
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
Discharge Air Iso Damper Command
Return Air Iso Damper Command
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 3. Cooling, Circuit 1 and Circuit 2 level status

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
Discharge Air Temperature Active	Compressor 1C Status	Compressor 2C Status
Discharge Air Cooling Setpoint Status	Compressor VFD RPM Cprsr1A	Suction Pressure Ckt2
Space Temperature Active	Suction Pressure Ckt1	Suction Saturated Temperature Ckt2
Occupied Cooling Setpoint Active	Suction Saturated Temperature Ckt1	Suction Temperature Evap2A
Unoccupied Cooling Setpoint	Suction Temperature Evap1A	Discharge Pressure Ckt2

Table 3. Cooling, Circuit 1 and Circuit 2 level status (continued)

Cooling	Cooling - Circuit 1	Cooling - Circuit 2
Outdoor Air Damper Position	Discharge Pressure Ckt1	Discharge Saturated Temperature Ckt2
Economizing	Discharge Saturated Temperature Ckt1	Suction Temperature Evap2B
Economizer Airside Enable Active	Suction Temperature Evap1B	Condenser Air Flow Ckt2
Economizer Decision Method	Condenser Air Flow Ckt1	EXV Status Percent Evap2A XXX.X%
Econ Enable Min Outdoor Air Temp Setpoint	EXV Status Percent Evap1A XXX.X%	EXV Status Percent Evap2B
Outdoor Air Temperature Active	EXV Status Percent Evap1B	Condenser Fan Relay 1 Ckt2
Outdoor Air Humidity Active	Condenser Fan Relay 1 Ckt1	Condenser Fan Relay 2 Ckt2
Outdoor Air Enthalpy Active	Condenser Fan Relay 2 Ckt1	Condenser Fan Relay 3 Ckt2
Return Air Temperature	Condenser Fan Relay 3 Ckt1	Condenser Fan VFD Run Command Ckt2
Return Air Humidity	Condenser Fan VFD Run Command Ckt1	Condenser Fan VFD Percent Freq Cmd Ckt2
Return Air Enthalpy	Condenser Fan VFD Percent Freq Cmd Ckt1	Hot Gas Bypass Valve Status Percent Ckt2
Mixed Air Temperature EvapA	Hot Gas Bypass Valve Status Percent Ckt1	Starts Cprsr2A
Mixed Air Temperature EvapB	Starts Cprsr1A	Starts Cprsr2B
Mixed Air Temperature Estimated	Starts Cprsr1B	Starts Cprsr2C
Evap Leaving Air Temperature EvapA	Starts Cprsr1C	Running Time Cprsr2A
Evap Leaving Air Temperature EvapB	Running Time Cprsr1A	Running Time Cprsr2B
Evap Leaving Air Temperature Estimated	Running Time Cprsr1B	Running Time Cprsr2C
Occupied Standby Cooling Setpoint Active	Running Time Cprsr1C	Cond Reheat Valve Pos Pct Ckt2
Dehumidification Control Status	Cond Reheat Valve Pos Pct Ckt1	Cond Cooling Valve Pos Pct Ckt2
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 4. Heating status

Heating
Heating Capacity Primary Status
Space Temp Heating Setpoint Status
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

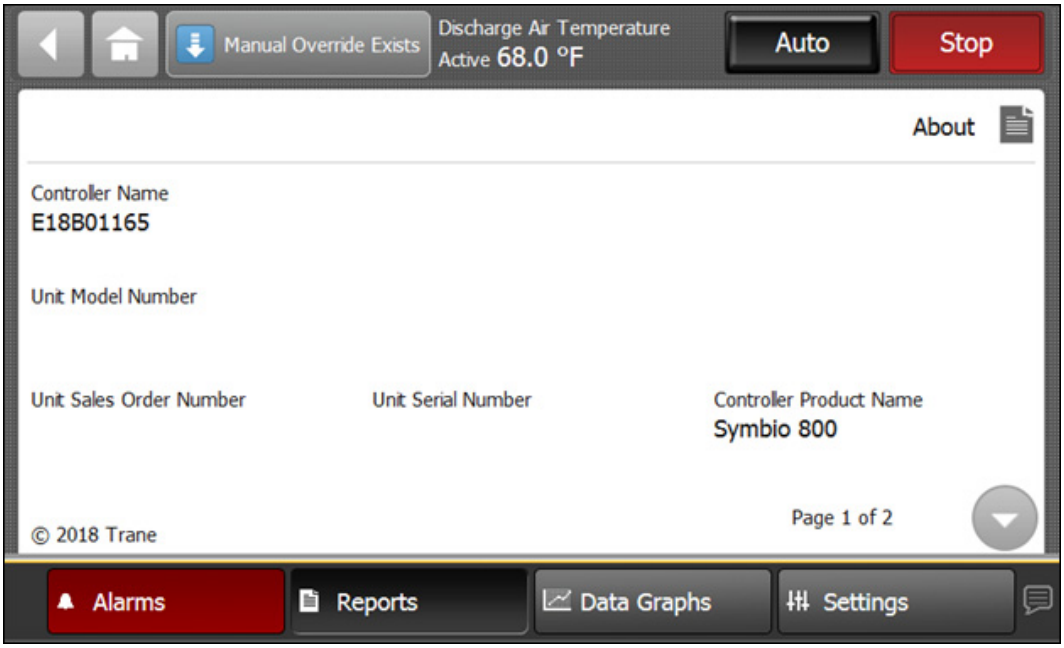
Table 4. Heating status (continued)

Heating
Occupied Standby Heating Setpoint Active
Staged Electric Heat Relay 1
Staged Electric Heat Relay 2
Staged Electric Heat Relay 3
Staged Electric Heat Relay 4
Electric Heat Modulating Percent
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 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 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.

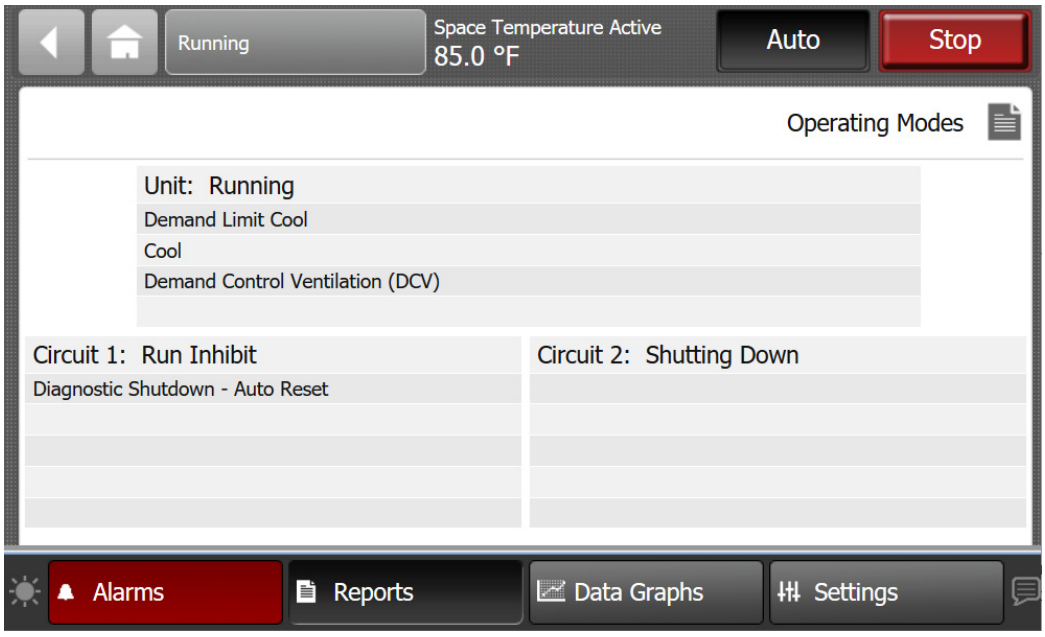
Controller Hardware Part Number

This is the part number for the Symbio™ 800 controller.

Operating Modes

Referring to Figure 27, p. 33 below, 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



The following unit and refrigeration circuit tables show each top level mode and list the possible sub modes.

Table 5. Unit operation - top level mode-stopped

Unit	Description
Top Level Mode	
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. (Ex. Clearing Alarms, Timers satisfied, Releasing to Auto mode operation, etc.)

Table 5. Unit operation - top level mode-stopped (continued)

Unit	Description
Top Level Mode	
Stopped Sub Modes	
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.
External Auto Stop	Contact has opened on the External Auto 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 6. Unit operation - top level mode - run inhibit

Unit	Description
Top Level Mode	
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	
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 7. Unit operation - top level mode - auto

Unit	Description
Top Level Mode	
Auto	The unit supply fan is on providing minimum ventilation, but there is no call for heating or cooling capacity control.
Auto Sub Modes	
Heat Air Modulation Failure Manf 1	The Air Pressure is not modulating down at minimum inducer drive. Modulating Gas Heat only.

Table 7. Unit operation - top level mode - auto (continued)

Unit	Description
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.
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 Server	Primary limit condition has occurred on a gas heat control board, which is a MODBUS® server to another gas heat control board. Mode will clear 10 minutes after the error condition is created, and the error condition is cleared.

Table 7. Unit operation - top level mode - auto (continued)

Unit	Description
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 8. Unit operation - top level mode - running

Unit	Description
Top Level Mode	
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
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
Max Heat	Heat Cool Mode Request = Max Heat

Table 8. Unit operation - top level mode - running (continued)

Unit	Description
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

Note: All Running Sub Modes are actual operating states of the control and algorithms.

Circuit Operating Modes

The tables below show each circuit - top level mode and lists the sub modes possible

Table 9. Circuit operation-top level mode - stopped

Circuit	Description
Top Level Mode	
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 10. Circuit operation-top level mode - run inhibit

Circuit	Description
Top Level Mode	
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	
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 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 11. Circuit operation-top level mode - auto

Circuit	Description
Top Level Mode	
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	
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 12. Circuit operation-top level mode - waiting to start

Circuit	Description
Top Level Mode	
Waiting to Start	The circuit is going through the necessary steps to allow the lead circuit to start.
Waiting to Start Sub Modes	
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). Note: 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 13. Circuit operation-top level mode - running

Circuit	Description
Top Level Mode	
Running	The compressor on the given circuit is currently running.
Running Sub Modes	
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 14. Circuit operation-top level mode - running-limit

Circuit	Description
Top Level Mode	
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	
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.
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.

Table 14. Circuit operation-top level mode - running-limit (continued)

Circuit	Description
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 * 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 15. Circuit operation-top level mode - shutting down

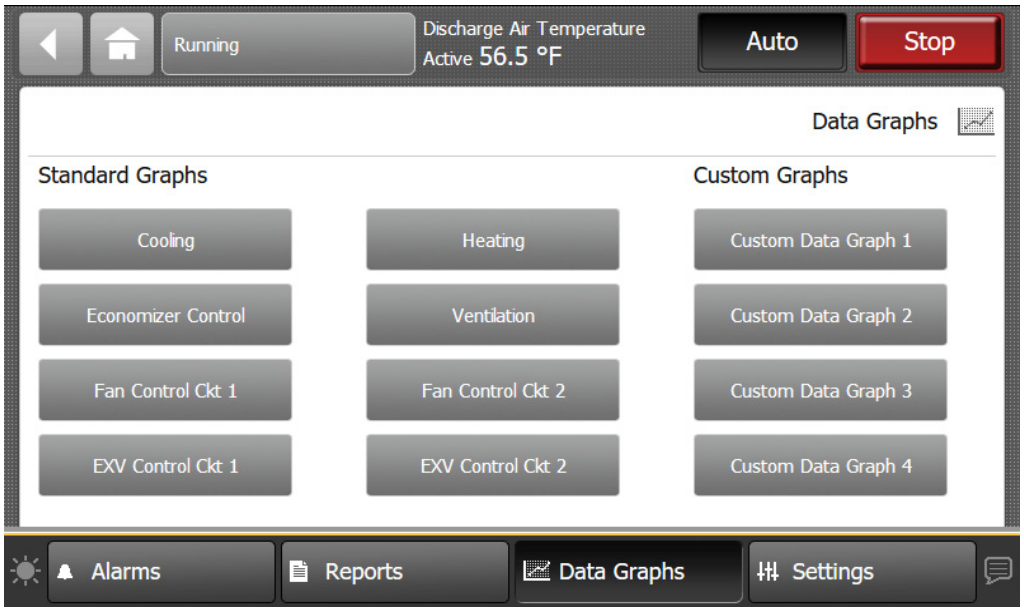
Circuit	Description
Top Level Mode	
Shutting Down	The circuit is preparing to de-energize the compressor.
Preparing Shutdown Sub Modes	
Diagnostic Shutdown – Manual Reset	The circuit has been shutdown on a latching diagnostic.
Front Panel Circuit Lockout	The circuit is manually locked out by the circuit 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 (Figure 28). 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

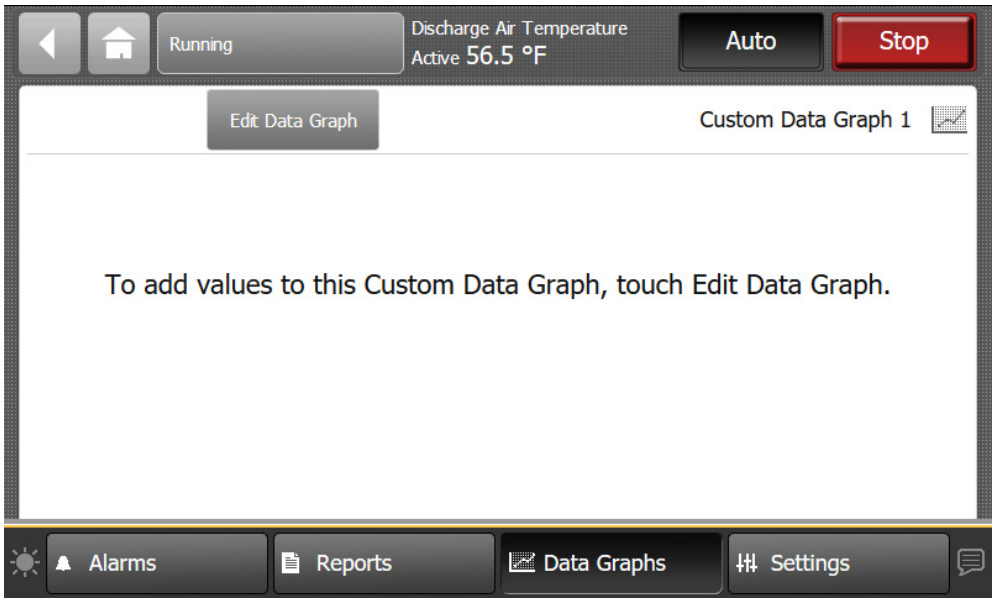
These graphs are predefined and not editable. Some graphs may not be displayed if the function is not supported by the unit configuration, for example: Heating.

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, p. 41).

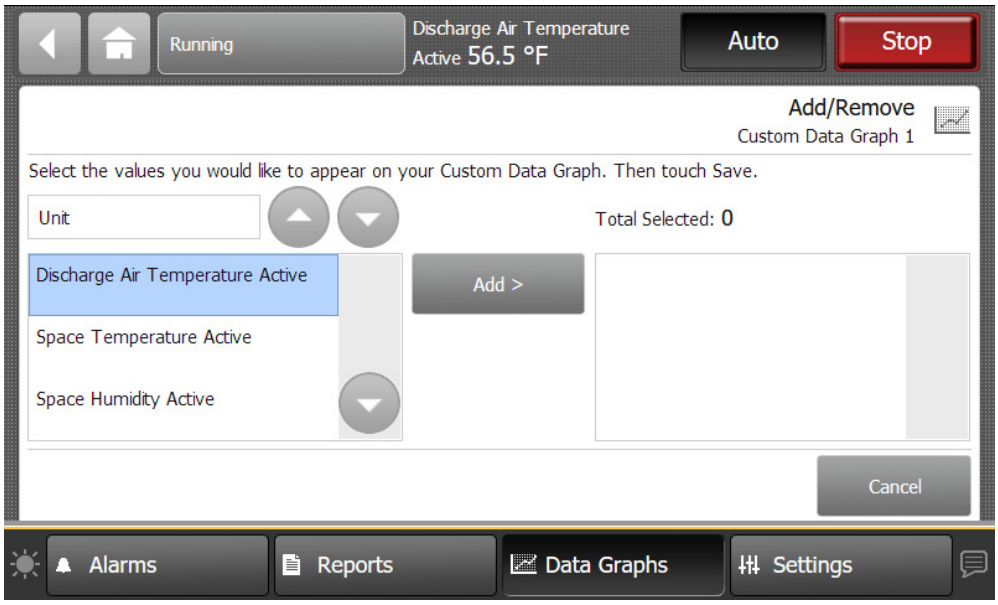
Figure 29. Edit Data Graph screen



3. Touch the **Add/Remove** button to add values to the custom data graph.

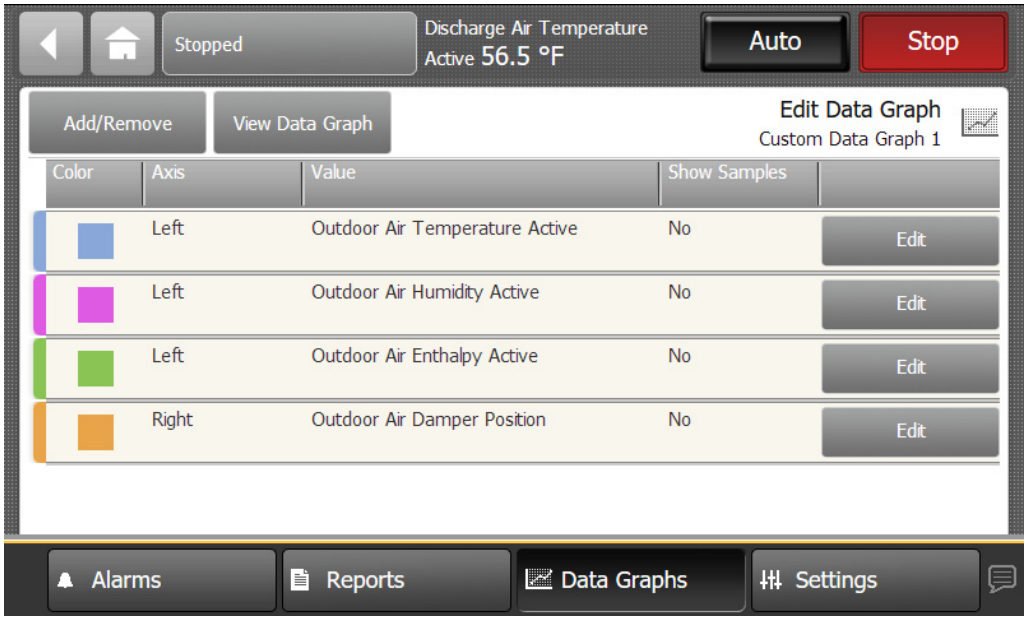
   The Add/Remove screen appears.
4. Use the arrow buttons to select a datalog type: analog, binary, or multistate, which then populates the box directly below.
5. Select the values, then touch the **Add** button (up to four selections are allowed).
6. Touch the **Save** button. The Edit Data Graph screen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

Figure 30. Adding data to the Custom Graph



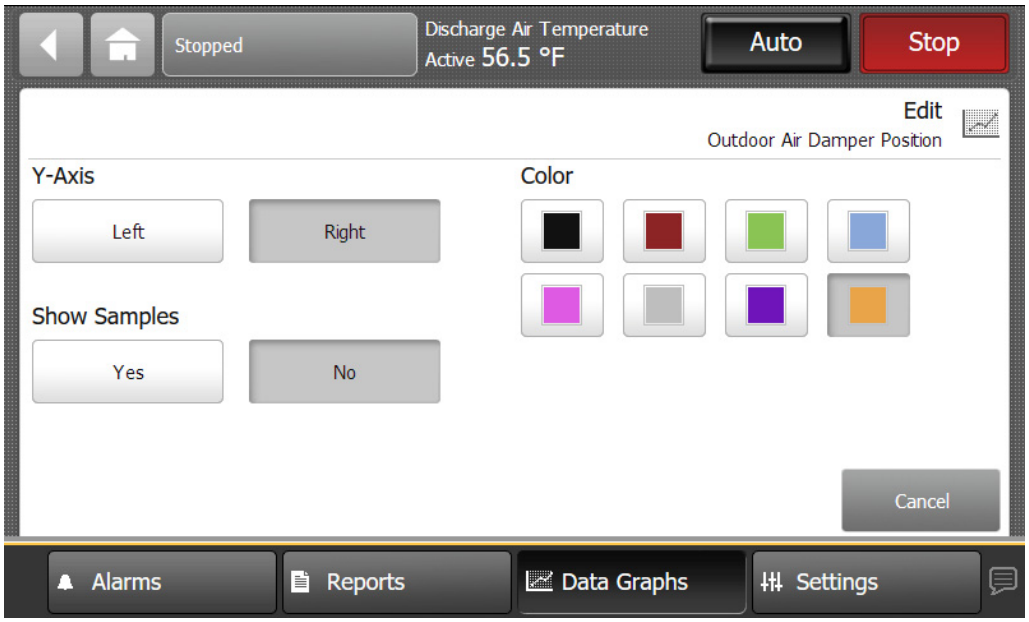
7. Use the Edit Data Graph screen to modify the data graph. Touch the **Edit** button that corresponds with the value that you want to change. Only one value can be edited at a time.

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



8. 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

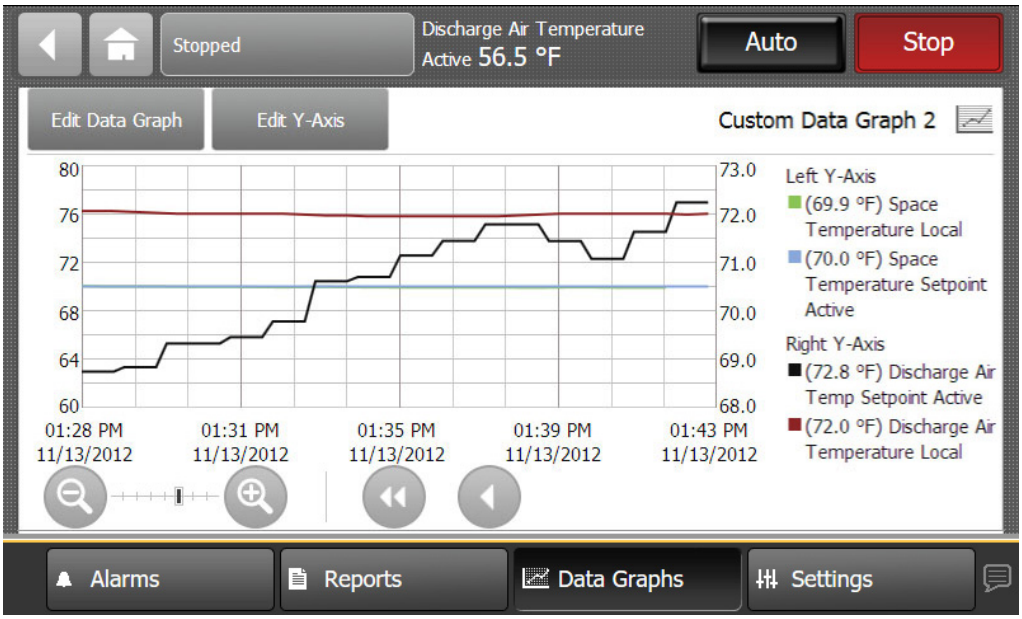


9. Touch the **View Data Graph** button to display the new graph (Figure 33).

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

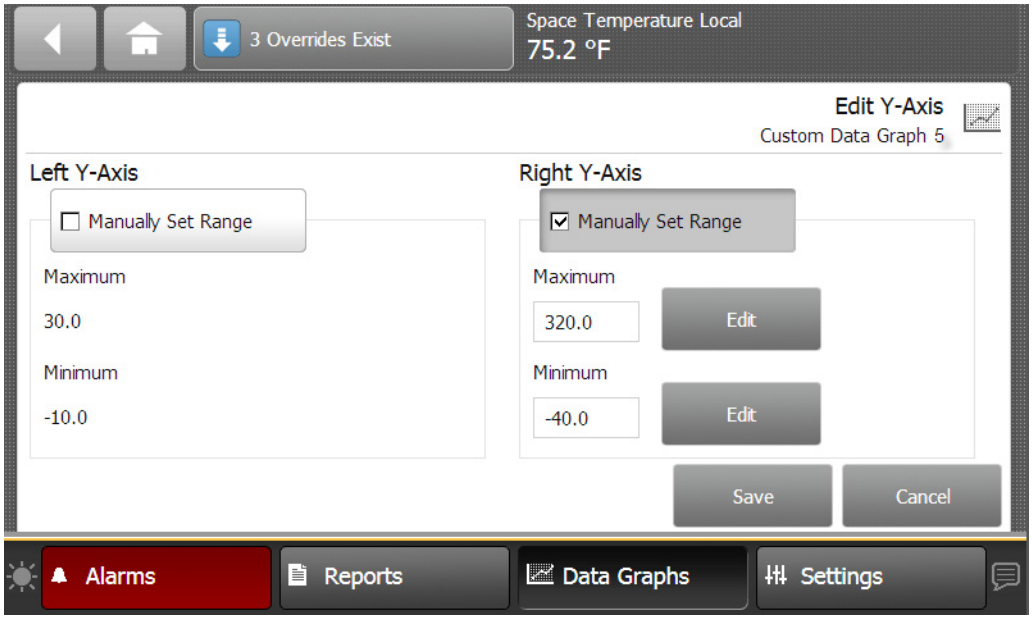


Editing the Y-Axis

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

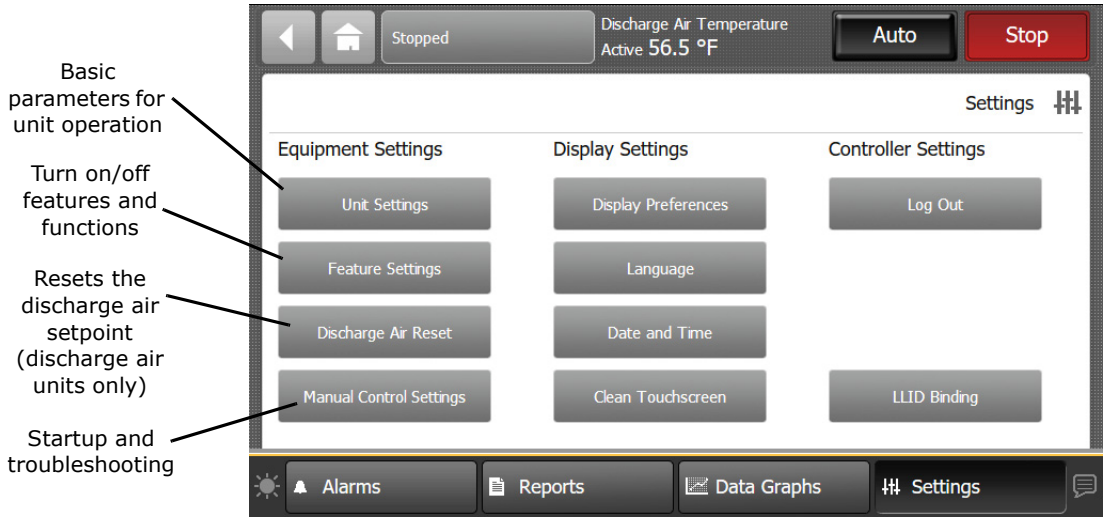
The Settings screen provides options for display settings, language, overrides and security. Touch the **Settings** button in the bottom display area to view the Settings screen.

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.

Table 16. Unit settings value

Value	Default (range)	Description
Arbitration Method	Full Source (Full Source, Local Source, Default Source)	Full source-Result of arbitration from external controls (For example: Tracer® SC+, TGP2, 3rd 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.
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.
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.
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 dehumidification Unoccupied Setpoint Default	60.0% (40.0 - 65.0)	Space dehumidification enable setpoint 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 Setpoint Default	78.0°F (40.0 - 115.0)	Space temperature occupied standby cooling setpoint.
Occupied Standby Heating Setpoint 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.

Table 16. Unit settings value (continued)

Value	Default (range)	Description
Econ Enable Min. Outdoor Air Temp Setpoint	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 Min. Flow Setpoint Default	2199 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 (-0.2 – 3.0)	Space static pressure setpoint default value.
Design Min. OA Damper Position Setpoint Min Fan	25.0 (21.0 – 100.0)[(a)]	Outdoor air flow compensation setpoint that specifies the outdoor air damper position when supply fan is at minimum speed.
Design Min. OA Damper Position Setpoint Mid Fan	20.0 (16.0 – 24.0)[(a)]	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 Position Setpoint Max Fan	15.0 (0.0 – 19.0)[(a)]	Outdoor air flow compensation setpoint that specifies the outdoor air damper position when supply fan is at maximum speed.
DCV Min. Outdoor Air Damper Position at Min Fan	15.0 (15.0 – 100)[(a)]	Outdoor air flow compensation with DCV, damper position setpoint when supply fan at minimum speed and space CO_2 at DCV setpoint (low limit).
DCV Min. Outdoor Air Damper Position at Max Fan	5.0 (0 – 5.0)[(a)]	Outdoor air flow compensation with DCV, damper position setpoint when supply fan at maximum speed and space CO_2 at DCV setpoint (low limit).
Design Min. Outdoor Air Flow Setpoint	6000.0 (2998.0 – 60000.0)[(a)]	Outdoor air flow control (Traq) with DCV, air flow setpoint when space at Design CO_2 Setpoint (high limit).
DCV Min. Outdoor Air Flow Setpoint	2000.0 (0 – 5002.0)[(a)]	Outdoor air flow control (Traq) with DCV, air flow setpoint when space at DCV CO_2 Setpoint (low limit).
Design CO_2 Setpoint	1000.0 ppm (500.0 - 2000.0)	Space design CO_2 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 CO_2 setpoint (high limit).
DCV Min. Outdoor Air Damper Position Setpoint	5.0% (0 - 5.0)	Outdoor air minimum position control with DCV, damper position setpoint when space at DCV CO_2 setpoint (low limit).
DCV CO_2 Setpoint	400.0 ppm (50.0 - 900.0)	Space Demand Control Ventilation CO_2 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 primary 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.
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.

(a) Ranges are dynamically calculated based on the other setpoint ranges.

Service Settings

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

Table 17. 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.
Duct Static Press High Limit Protection	Enable (Disable, Enable)	Disable this protection during active supply fan bypass mode. Always enabled in non-bypass mode.
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.
Bypass Duct Static Diff. Pressure	0.3 IWC (0.3-2.0)	Contact Trane Technical Support.
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 occupied dehumid setpoint minus this value.
Unoccupied Dehumidification Offset	10.0% (5.0-15.0)	Unoccupied dehumidification terminates when space humidity falls below unoccupied dehumid setpoint minus this value.
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.
Occupied 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.

Table 17. Service settings (continued)

Value	Factory Default (Range)	Description
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.
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.
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 Setpoint	250.00 PSID (85.00-300.00)	Contact Trane Technical Support.
Cond Fan Control Cool Diff Press Setpoint	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 Setpoint	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.

Table 17. Service settings (continued)

Value	Factory Default (Range)	Description
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.
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.
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 (P) stroke direction. Does Pmin → Pmax equate to Vmin → Vmax, or Vmax → Vmin.
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 (P) stroke direction. Does Pmin → Pmax equate to Vmin → Vmax, or Vmax → Vmin.
Relief Air 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. Position Setpoint	15.0% (10.0-35.0)	Contact Trane Technical Support.
Condenser Reheat Valve Max. Position Setpoint	85.0% (40-100.0)	Contact Trane Technical Support.
Condenser Cooling Valve Min. Position Setpoint	15.0% (10.0-35.0)	Contact Trane Technical Support.
Condenser Cooling Valve Max. Position Setpoint	85.0% (40-100.0)	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.

Table 17. Service settings (continued)

Value	Factory Default (Range)	Description
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.
Compressor Cooling Discharge Air Mode Proportional Gain	3.600 (0.100-100.000)	Contact Trane Technical Support.
Compressor Cooling Discharge Air Mode Integral Time	100 Sec (1-3600)	Contact Trane Technical Support.
Compressor Discharge Sat Temp. Limit Filter Time	5 Sec (1-300)	Contact Trane Technical Support.
Compressor Discharge 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.
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 Dehumidification 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 Proportional Gain Heating	2.000 (0.100-100.000)	Contact Trane Technical Support.

Table 17. Service settings (continued)

Value	Factory Default (Range)	Description
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 Proportional 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 Mode 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 Proportional 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.
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.
Compressor Discharge Sat Temp. Limit Proportional Gain	2.0 (0.1-20.0)	Contact Trane Technical Support.
Compressor Discharge Sat Temp. Limit Integral Time	60.0 Sec (1.0-600.0)	Contact Trane Technical Support.
Compressor Discharge Sat Temp. Limit Activation Band	5 °F (3.0-18.0)	Contact Trane Technical Support.
Compressor Discharge Pressure Limit Unload Setpoint	97.0% (85.0-105.0)	Contact Trane Technical Support.
Compressor Discharge Press Limit Hold Setpoint	85.0% (75.0-90.0)	Contact Trane Technical Support.
Compressor 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 Proportional 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.

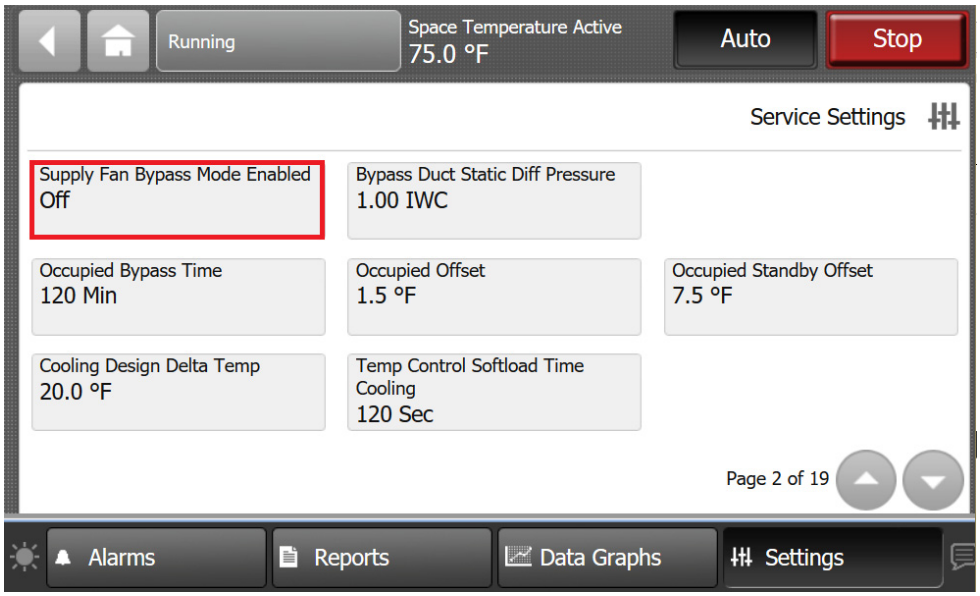
Table 17. Service settings (continued)

Value	Factory Default (Range)	Description
Compressor Current Limit Compressor 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.
Discharge Air Temp. Min. Cool Limit Default	50 °F (40.0-80.0)	Minimum limit for the internal discharge cooling setpoint calculation single zone cooling.
Discharge Air Temp. Max. Cool Limit Default	80.0 °F (50.0-80.0)	Maximum limit for the internal discharge cooling setpoint calculation single zone cooling.
Discharge Air Temp. Min. Heat Limit Default	50 °F (40.0-120.0)	Minimum limit for the internal discharge heating setpoint calculation single zone heating.
Discharge Air Temp. Max. Heat Limit Default	120 °F (50.0-140.0)	Maximum limit for the internal discharge heating setpoint calculation single zone heating.

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 36, p. 52. 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/un-proving 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 36. 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).

Ventilation Override (if configured)

Allows modification and locking of Ventilation Override Modes.

Table 18. 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 Outdoor Air Damper	Closed (Closed, Open)	
VOM A VAV Box Relay	De-energized (De-energized, Energized)	
VOM A Ventilation Override Relay	De-energized (De-energized, 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 Outdoor Air Damper	Open (Closed, Open)	outside the space.
VOM B VAV Box Relay	Energized (De-energized, Energized)	
VOM B Ventilation Override Relay	Energized (De-energized, 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 Outdoor Air Damper	Closed (Closed, Open)	
VOM C VAV Box Relay	De-energized (De-energized, Energized)	
VOM C Ventilation Override Relay	Energized (De-energized, 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 Outdoor Air Damper	Open (Closed, Open)	
VOM D VAV Box Relay	Energized (De-energized, Energized)	
VOM D Ventilation Override Relay	Energized (De-energized, 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 Outdoor Air Damper	Open (Closed, Open)	static pressure control within a multizone application.
VOM E VAV Box Relay	Energized (De-energized, Energized)	
VOM E Ventilation Override Relay	Energized (De-energized, 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, 3rd 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 19. 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.
Dehumdification 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.

Table 19. Feature settings value (continued)

Value	Range (default)	Description
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.
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 Static Pressure Wireless Enable	Enable (Disable, Enable)	Enabled by default when wireless is installed.
Space CO_2 Concentration Wireless Enable	Disable (Disable, Enable)	Disabled by default when wireless is installed.
Superheat High Limit Lockout Enable	Enable (Disable, Enable)	Enabled by default.

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 20. Discharge air reset value

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.
Zone Heating Reset End Temp.	72.0°F (70.0 - 90.0)	Ending space temperature at which discharge air Heating setpoint will reset.

Table 20. Discharge air reset value (continued)

Value	Range (default)	Description
Zone Heating Reset Amount Max.	5.0°F (0 - 20.0)	The amount the discharge air Heating setpoint will decrease over the specified range.

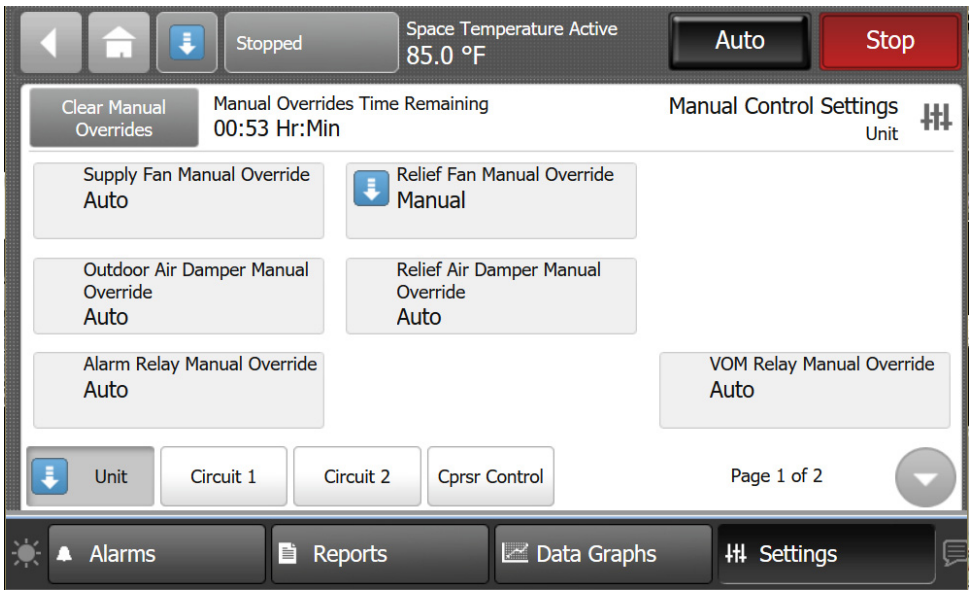
Manual Control Settings

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 Figure 37, p. 57. 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 (Circuit and Compressor Lockouts will not be terminated when the Manual Overrides Timer times out).

Figure 37. 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 21. 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		
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[a] Manual Override Auto / Manual		Gas Heat Staged Manual[a] Override Auto / Manual		
	Electric Heat Modulating[a] Manual Override Auto / Manual		Electric Heat Staged[a] Manual Override Auto / Manual		

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

Table 22. Complete list of manual override selections – circuit 1 or circuit 2 button

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

(a) Circuit and Compressor Lockouts will not be terminated when the Manual Overrides Timer times out.
(b) EXV Control Overrides can be placed into active override during normal unit operation.

Table 23. Complete list of manual override selections – cprsr control button

	Compressor Control Manual Override[a] Auto / Manual				
	Manual Enable Cprsr1A[b] Off / On		Manual Enable Cprsr1B[b] Off / On		Manual Enable Cprsr1C[b] Off / On
	Manual Enable Cprsr2A[b] Off / On		Manual Enable Cprsr2B[b] Off / On		

(a) Compressor Control Manual Override must be set to Manual before compressors are placed in manual override.
(b) Manual Override Control of Compressors are setup in Stop mode, and will only be turned On in Auto mode.

Beginning a Manual Override Event

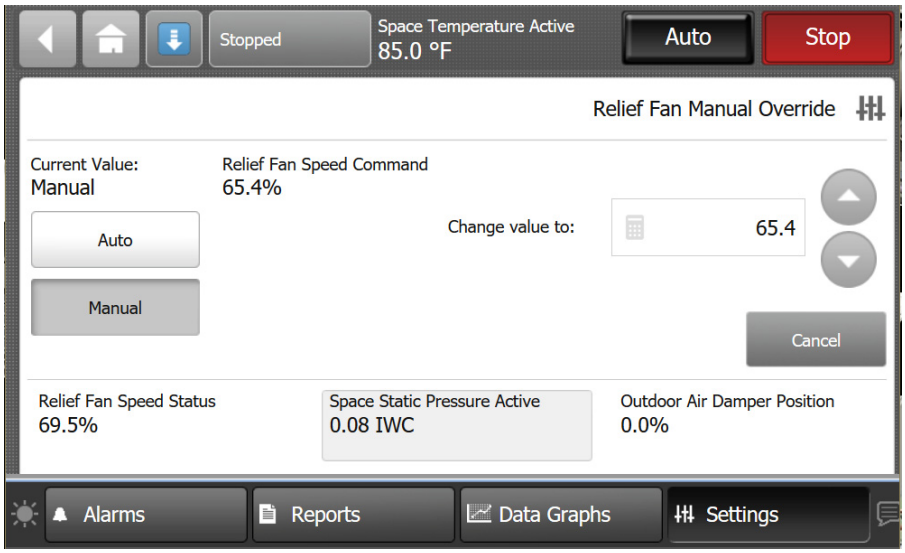
Note: *Please consider the following when applying manual overrides to the Supply and Relief fans. The* ***Fan Speed Command*** *value entered on these screens has a range of 0 to 100%. This commanded value range equates to Minimum Speed (min%) thru Maximum Speed (Hz or RPM) of the selected fan when 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 Table 24, p. 60 and Figure 38, p. 60. below for example fan motor commands and status.*

Table 24. 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[a]	60 Hz[a]	0%	38.30%	100%	38.30%
RPM	120 RPM[b]	1010 RPM[c]	65.40%	11.90%	100%	69.50%

(a) The Supply fan(s) motor's minimum and maximum speed setup, in Hz, are entered via the VFD's keypad.
(b) The Relief fan EBM motor's minimum speed setup, in RPM, is set to 10% of motor nameplate speed and is not adjustable.
(c) 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 38. 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:

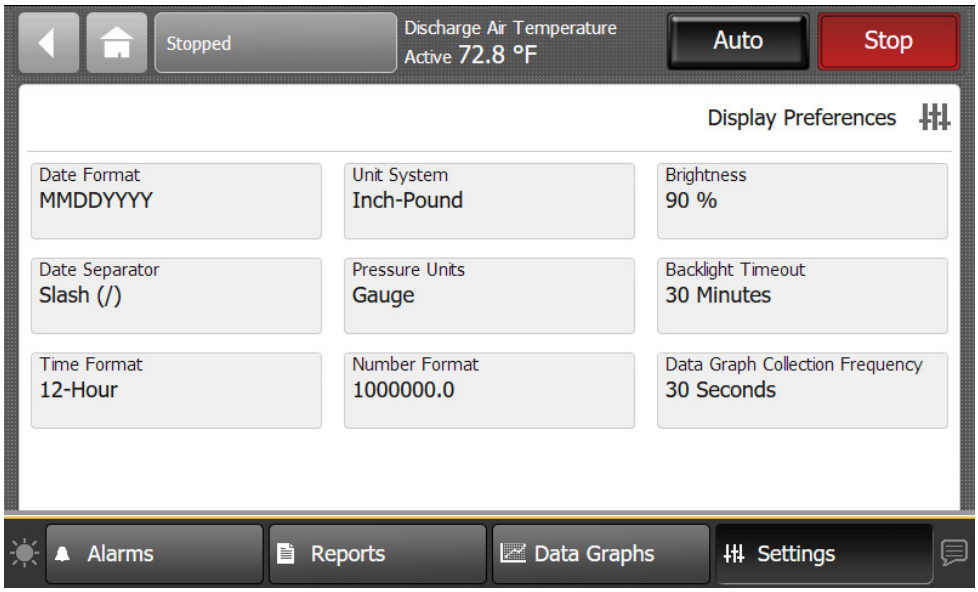
1. Allow the **Manual Override Timer** to time out.

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

Display Preferences

Touch the **Display Preferences** button to open the associated screen (Figure 39). 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 39. 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.

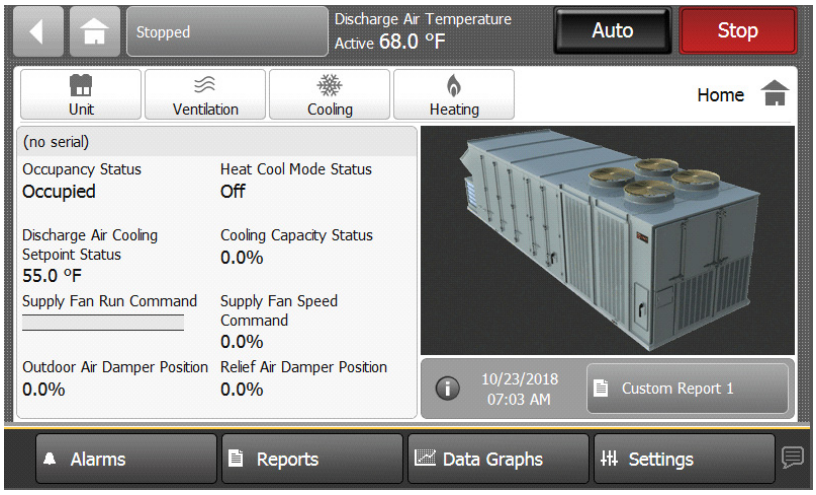
Backlight Timeout

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.

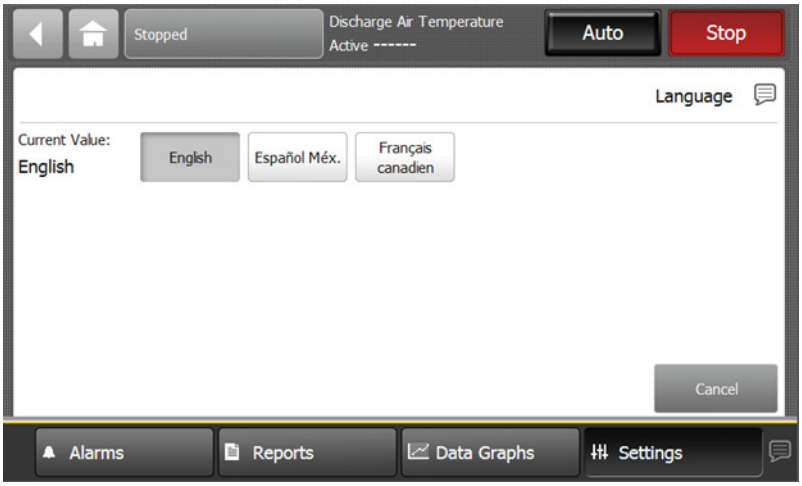
Figure 40. Home page screen



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 41. Language screen



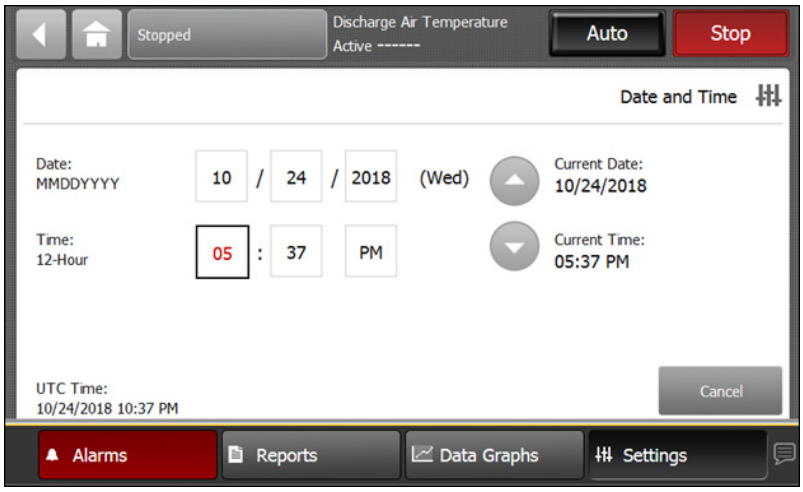
Date and Time

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 42. 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

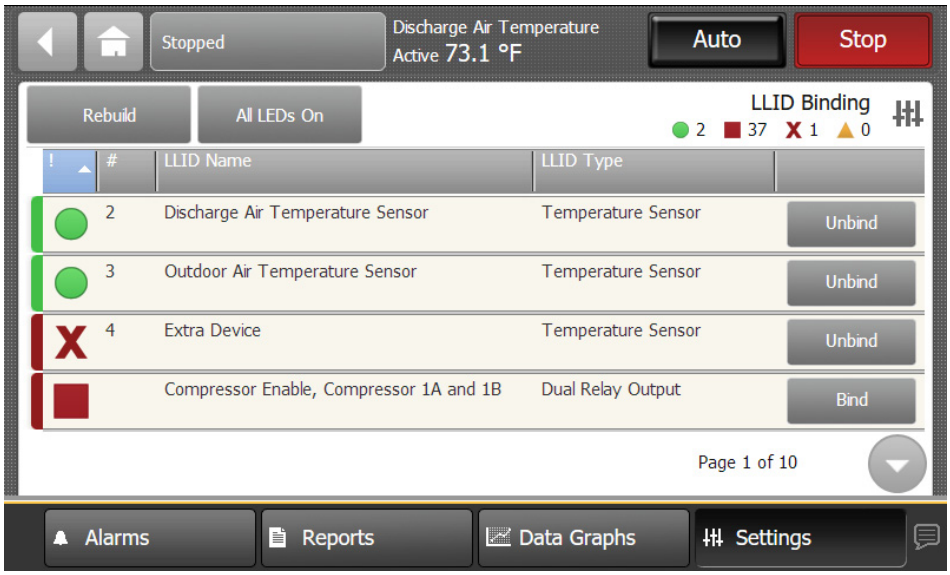
This button logs out the currently logged in user. Users are automatically logged out after 30 minutes of inactivity.

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

LLID Binding

This category contains the LLID Binding.

Figure 43. 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.

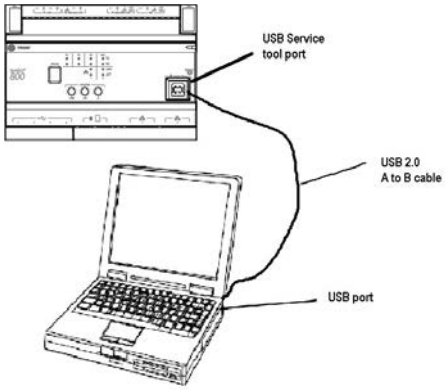
Note: *Tracer® TU is not needed for normal operation. If you need to perform configuration changes, add new features, or customize the operation of the equipment, contact your local Trane office.*

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 44. 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 AdRT-SVP011E-ENmin 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.
- **NumberofPreviousPasswordsBlockedFromReuse**—Usersareprohibitedfromcreating 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.

Summary

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

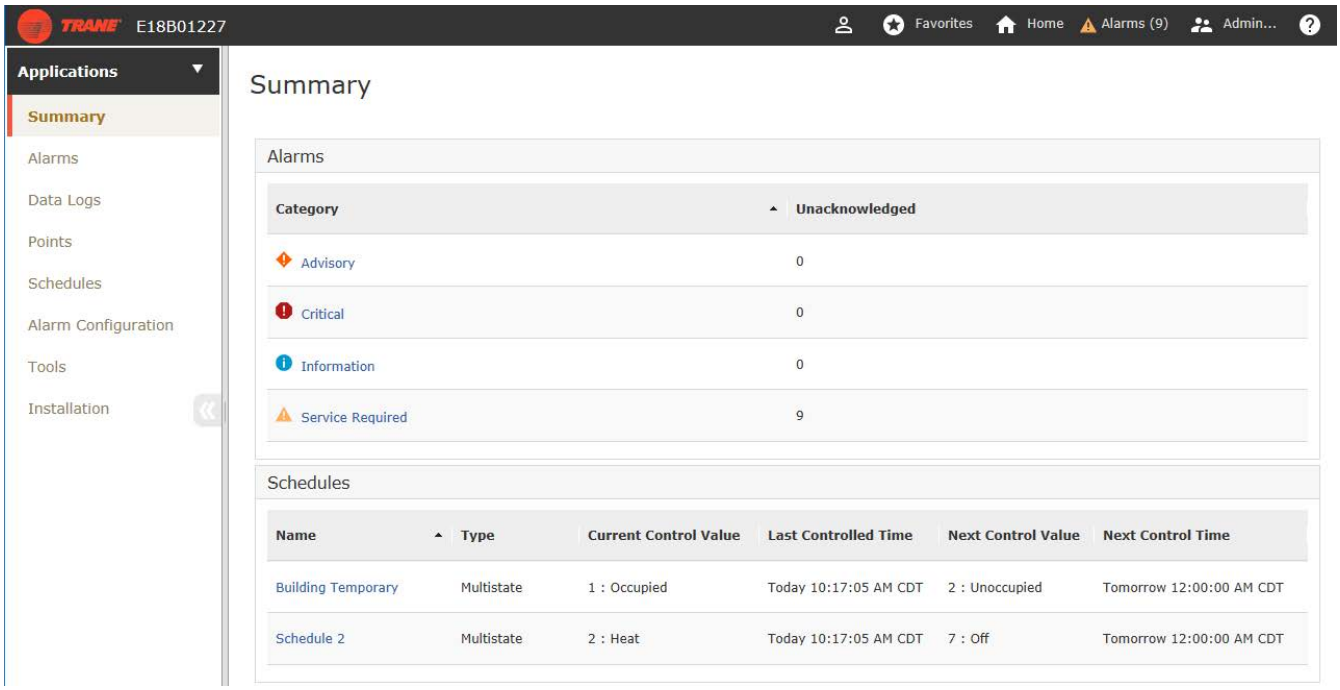
From the Summary screen, you can view the four categories of alarms along with the number of unacknowledged alarms for each.

- 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.

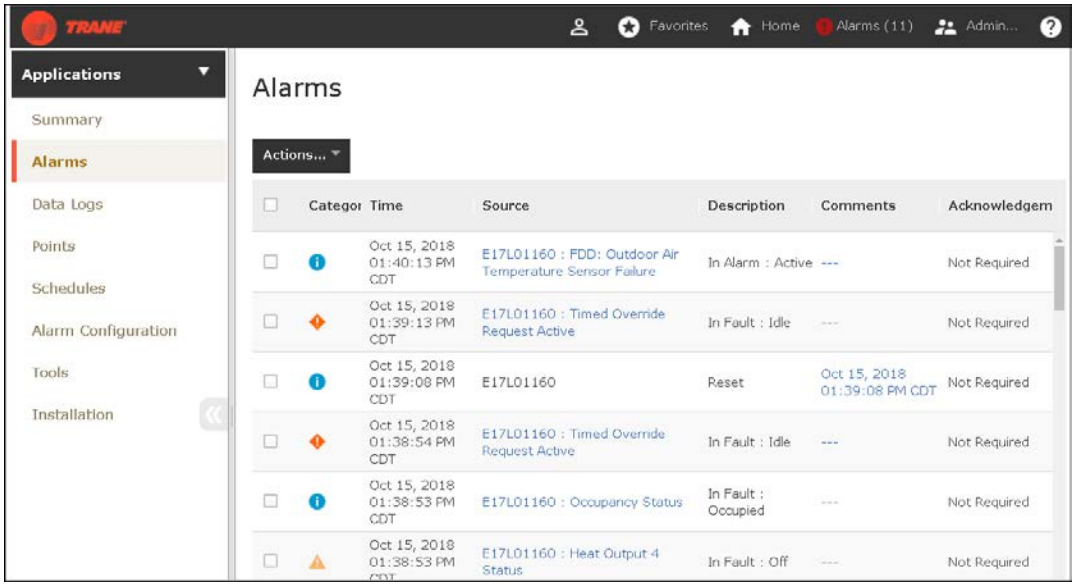
Figure 45. Summary



Alarms

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

Figure 46. 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.

Active Alarm Icons	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.

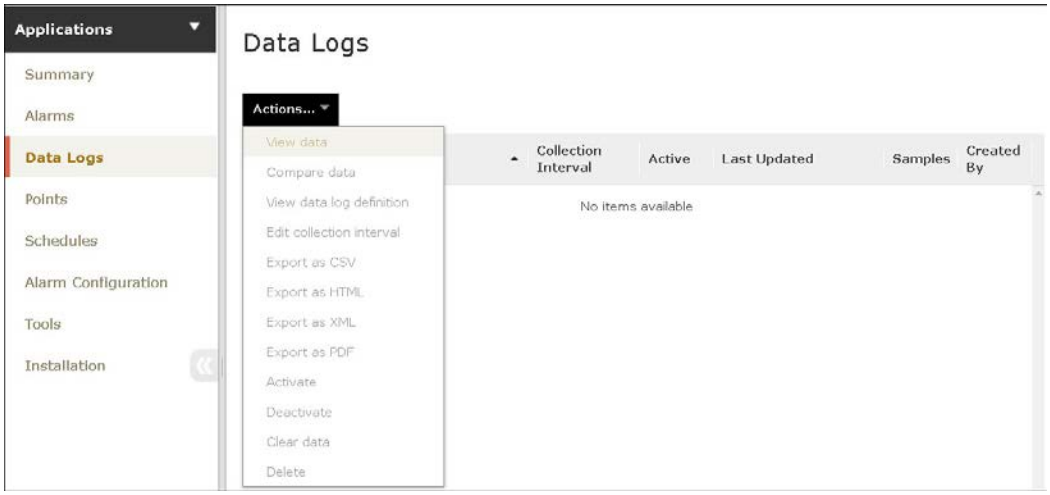
Data Logs

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.

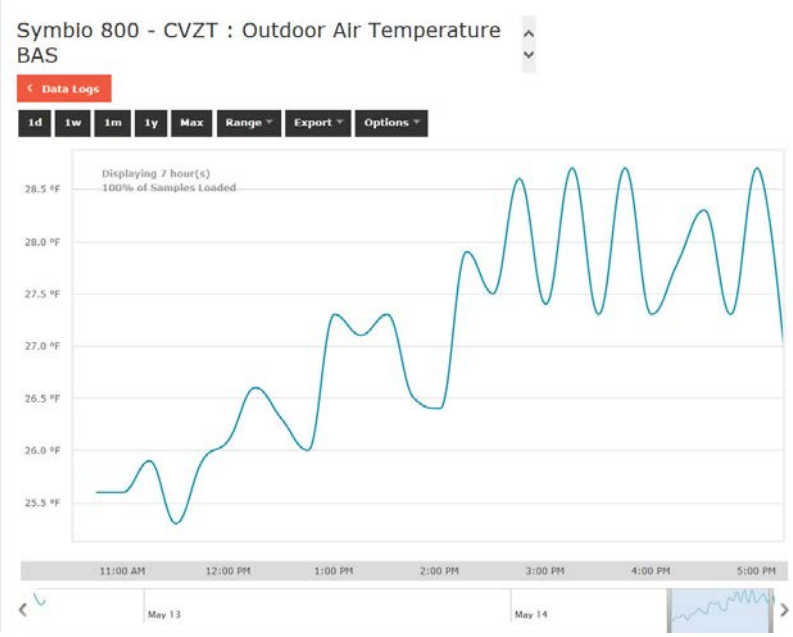
Figure 47. Symbio™ UI Data Logs



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 48. Symbio™ UI Data Log



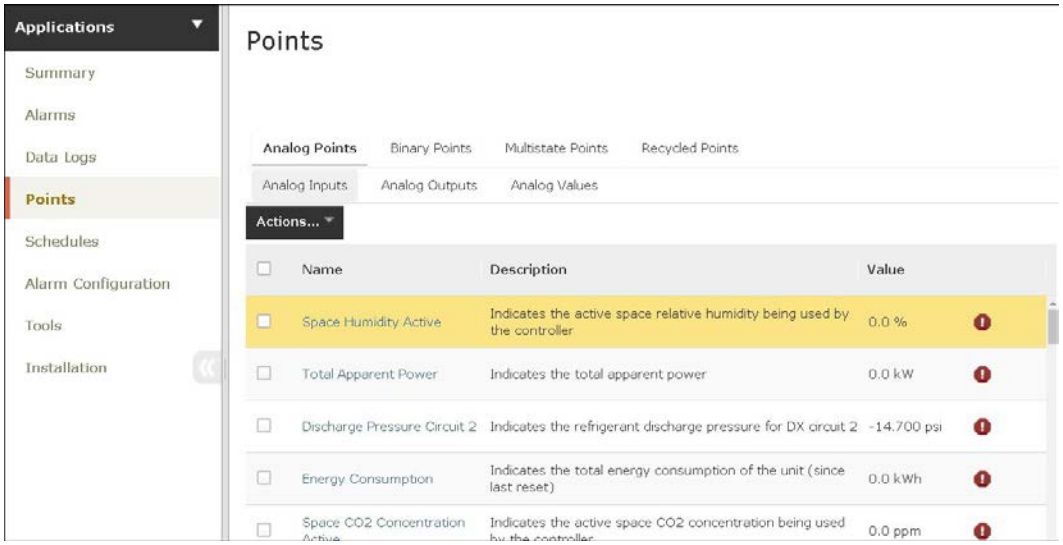
Points

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 49. 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:

1. Click **Points** in left navigation pane.
2. Click **Recycled Points** to view all deleted points.
3. To resort a point, click the box left of the point name, then click **Restore**.

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.
   a. **Data collection start on a schedule**, click **Next** to setup schedule information.

b. **Data collection starts on a trigger**, click **Next** to setup trigger information**.**

c. **Data collection starts now,** set buffering and data collection frequency, click **Finish** when complete.

Points Overrides

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.

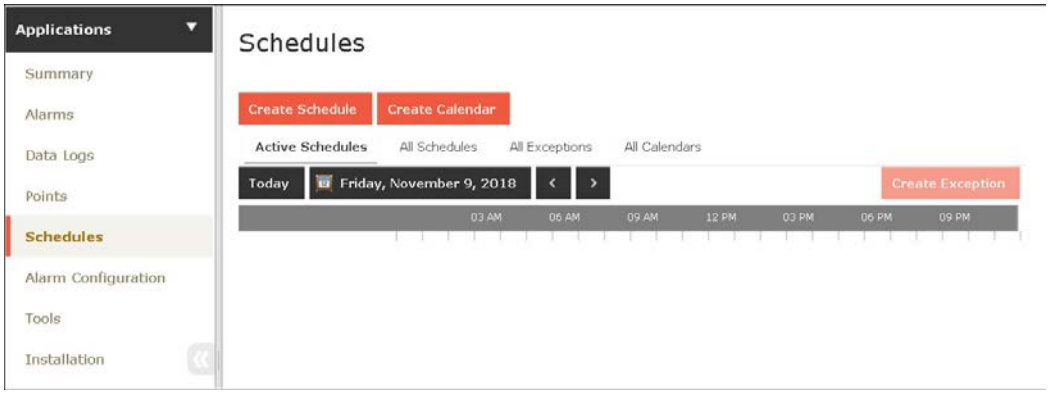
Schedules

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 50. 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.

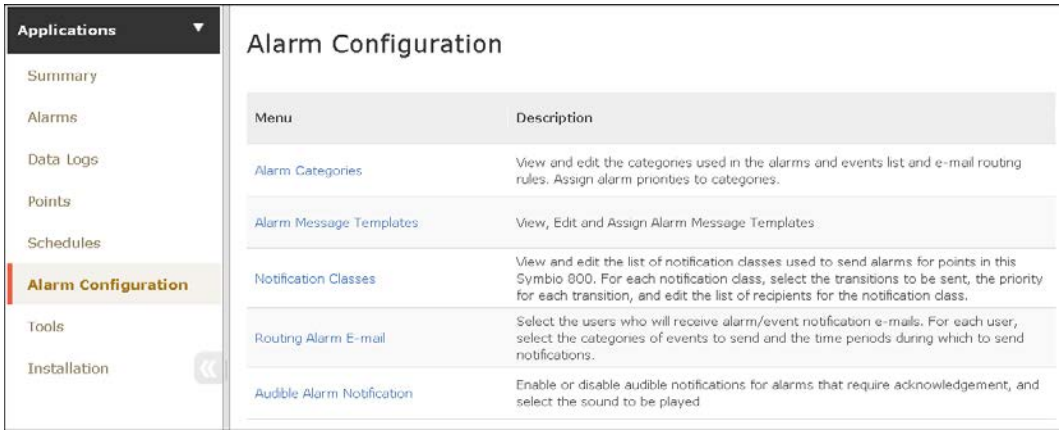
To create a schedule:

1. Click the **createschedule** button. The **CreateSchedule—ScheduleInformation** 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 51. Symbio™ UI Alarm Configuration screen

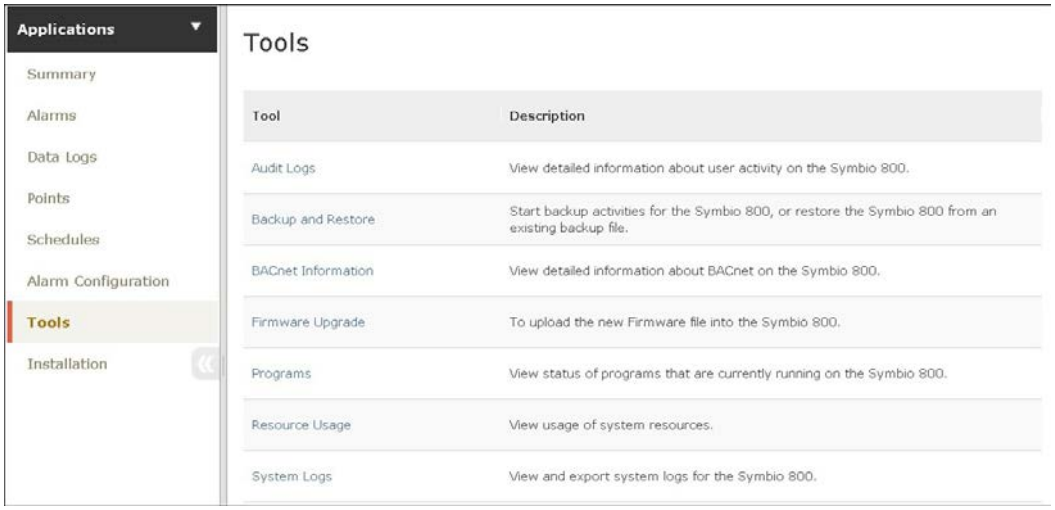


Tools

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 52. Tools menu



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.

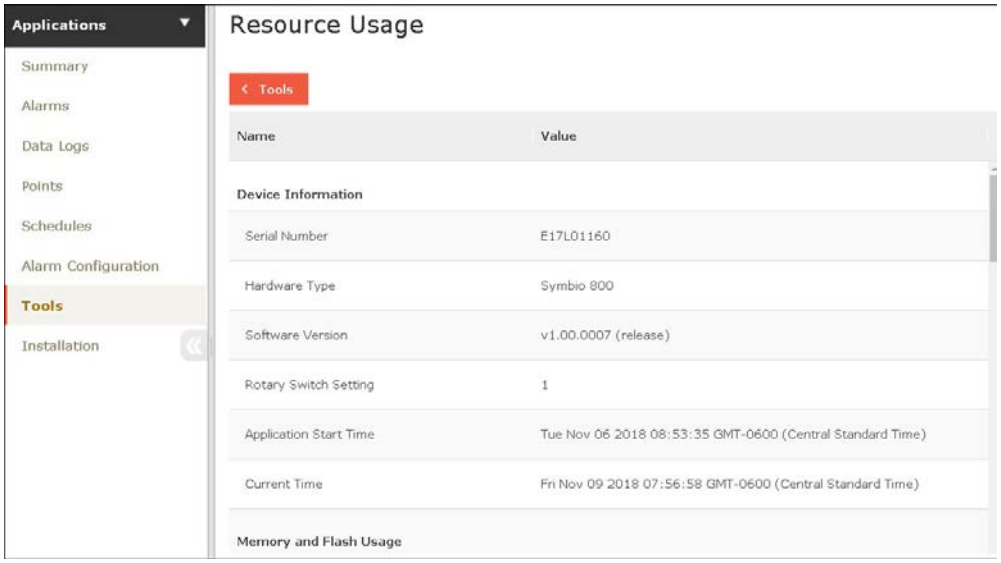
Custom TGP2 routines for installed equipment can now be viewed in real-time. Data points in the routine will reflect present value and gets updated for every 15 seconds, regardless of the program run interval.

Note: *See the Tracer® TU Service Tool Getting Started Guide (TTU-SVN01).*

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 53. Symbio™ UI Resource Usage



System Logs

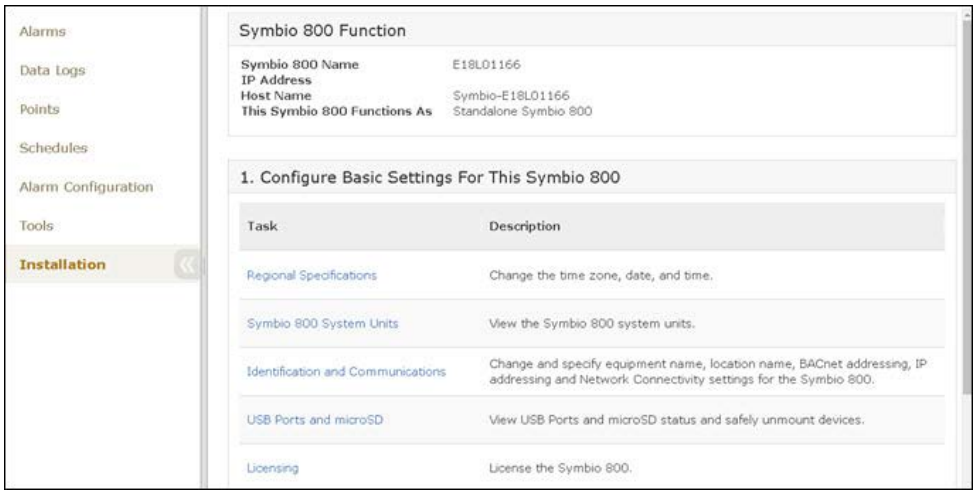
System logs are an advanced informational files that may be requested by Trane Technical Support.

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.

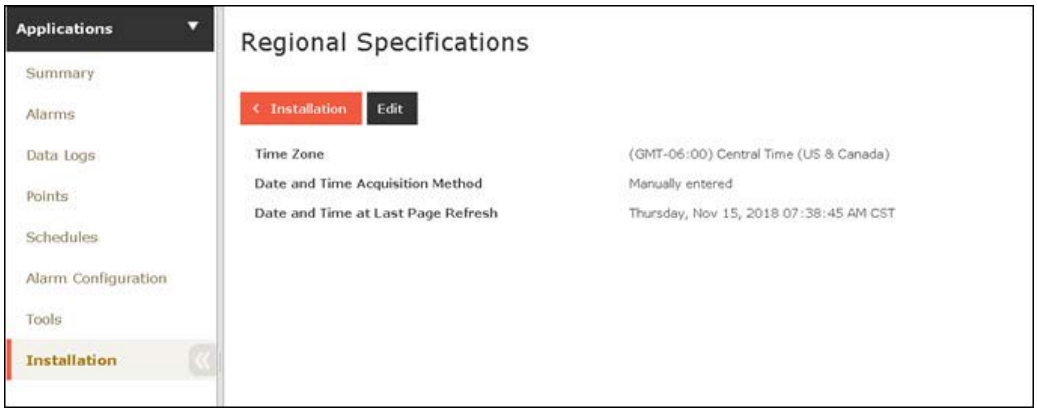
Figure 54. Basic Settings



Regional Specifications

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

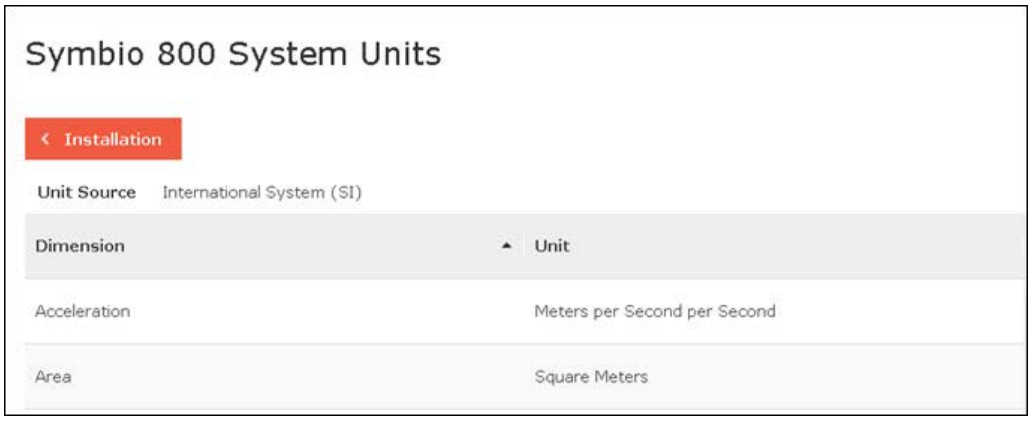
Figure 55. Regional Specifications



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 56. Symbio™ 800 System Units



Identification and Communications

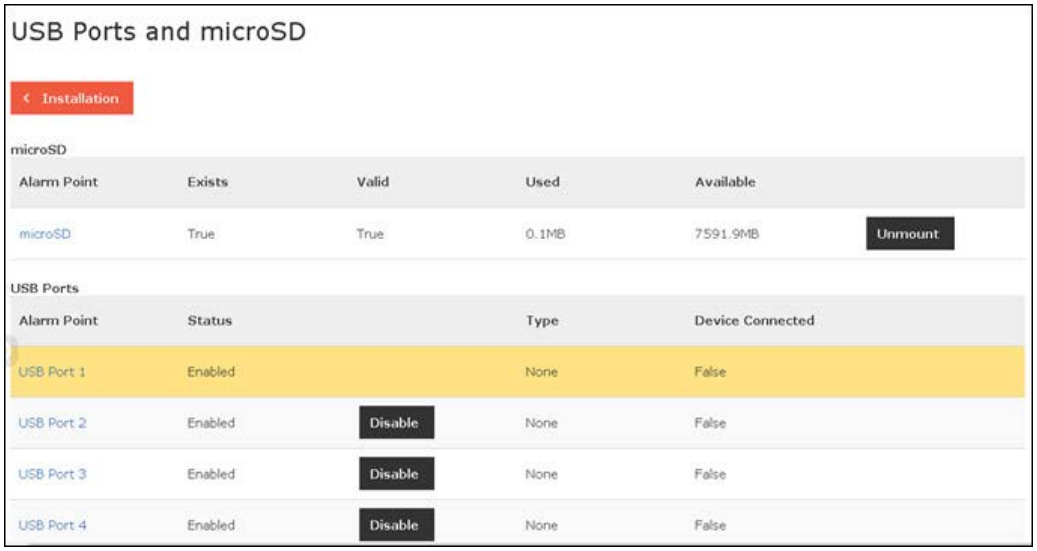
The Identification and Communications page allows you to view and edit configurations for the equipment name, location name, Protocol, IP and network address settings, Air-Fi® configuration, Trane Intelligent Services, and network connectivity. For IT concerns, see BAS-PRB017*-EN.

Figure 57. 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.

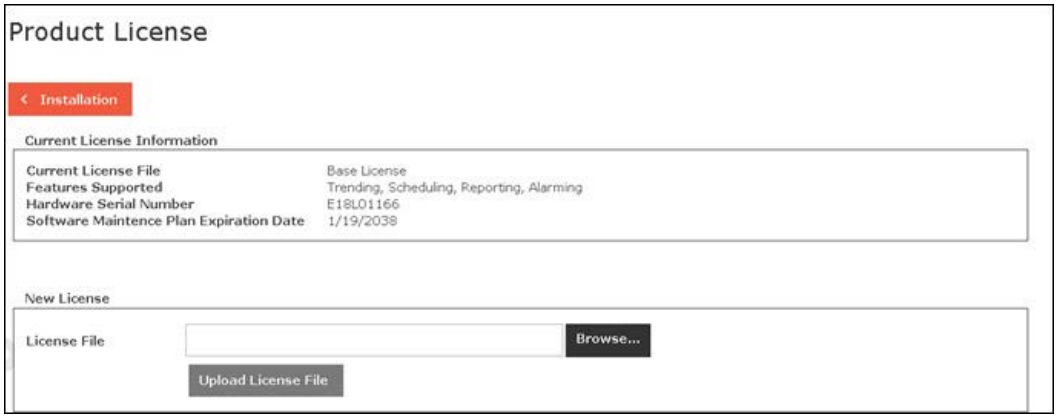
Figure 58. USB Ports and microSD



Licensing

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

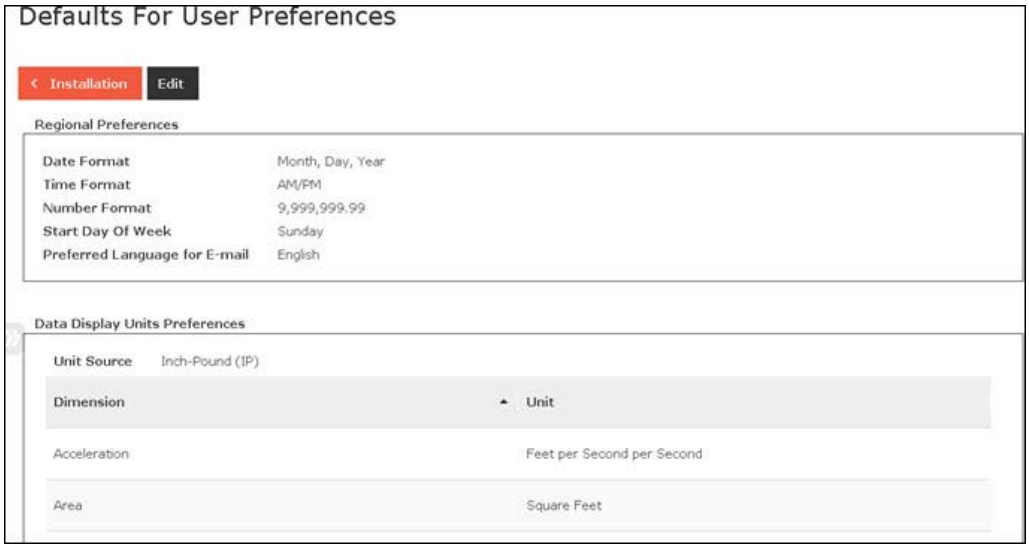
Figure 59. Product License



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 60. Defaults for User Preferences



Application Defaults

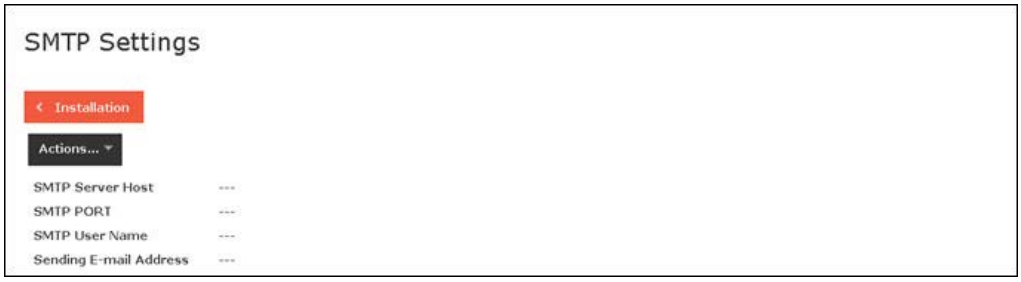
For setting the alarm capacity for Symbio™ 800 and hardware alarms priority. Valid range is from 100 to 500 events. Default hardware alarms priority is 250: Information.

Figure 61. 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.

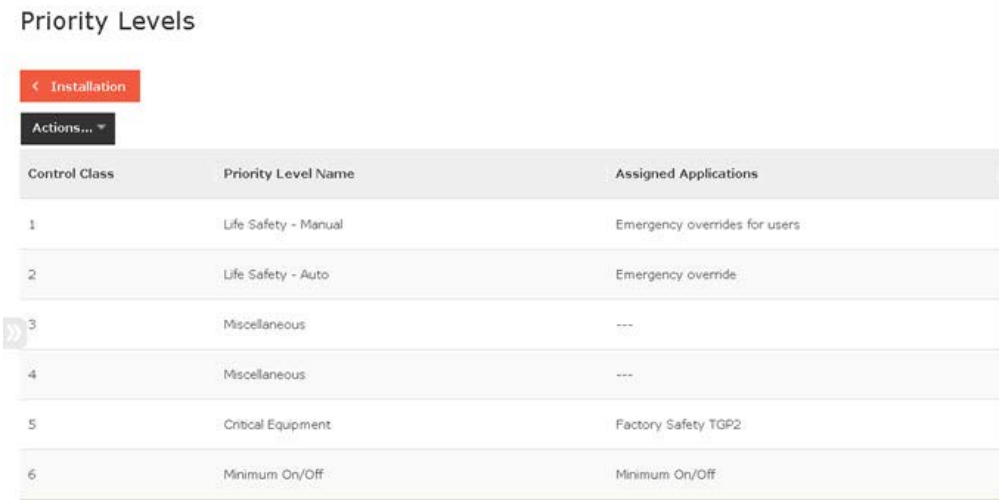
Figure 62. SMTP Settings



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.

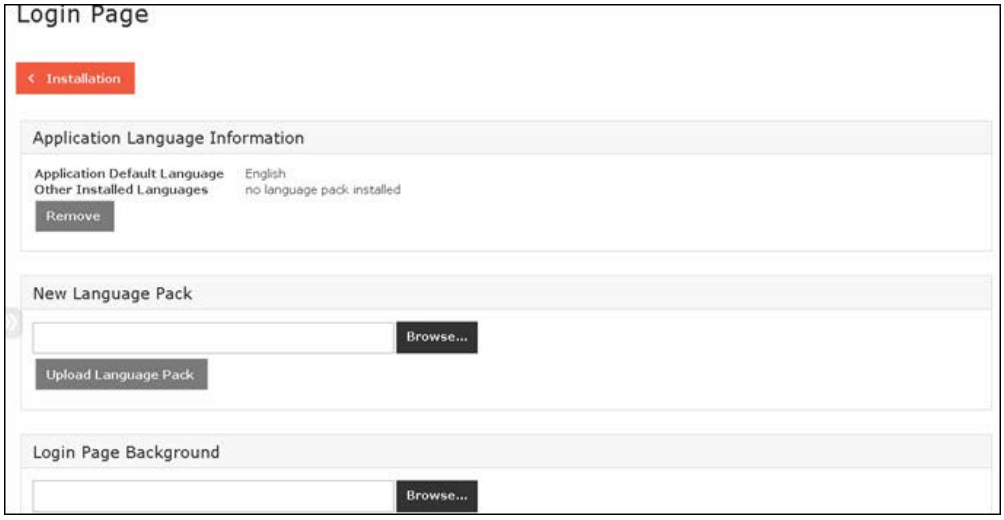
Figure 63. Priority Levels



Login Page

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

Figure 64. Login Page



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	Unit	Warning	Non-Latching	The unit is configured with Traq and the OA Damper > 50% and the Outdoor Airflow Local <= 0.02 * Design Air Flow for 10 consecutive seconds the diagnostic will be generated. The diagnostic will be cleared when Outdoor Airflow > 0.02 * Design Air Flow for 20 consecutive seconds. Possible causes: Tubing failure, wiring, and calibration solenoid failure. Approximately 0.25vdc at 0.0 iwc. Increasing voltage with increasing pressure. Traq air flow control is inhibited and the unit will fall back to alternate minimum ventilation control.	Local
Comm Loss: Alarm 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. No unit response.	Remote
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

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
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. **Note:** 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: External Auto 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

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
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
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

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
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
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

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
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 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 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

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
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. **Note:** 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. **Note:** 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

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
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. **Note:** 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. **Note:** 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
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

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
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 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
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	Possible causes: Faulty wiring. Faulty control. 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. Staged Gas Control Boards: The gas valve state is lo when it must be hi, or hi when it must be lo. 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.	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	The burner gas valve is shorted to 24VAC. 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. Staged Gas Heat control boards only. Possible causes: Control needs to be replaced. Faulty wiring.	Remote

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
Heat Inducer High Press Manf X Server where X is "1" or "2"	Heat	Warning	Non-Latching	A 'Heat Inducer High Press Manf X' condition has occurred on the 1285's own MODBUS® server control board on the first manifold. Staged Gas Heat control boards only. Does not lock out any burners associated with the first heat control board on the manifold.	Remote
Heat Inducer Low Press Manf X Server where X is "1" or "2"	Heat	Warning	Non-Latching	A 'Heat Inducer Low Press Manf X' condition has occurred on the 1285's own MODBUS® server control board on the first manifold. Staged Gas Heat control boards only. Does not lock out any burners associated with the first heat control board on the manifold.	Remote
Heat Invalid ID Chip Manf 1 Server	Heat	Warning	Non-Latching	An invalid id chip 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. Staged Gas Heat control boards only. **Note:** 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.	Remote
Heat Open Fuse Manf X Server where X is "1" or "2"	Heat	Warning	Non-Latching	An open fuse condition has condition has occurred on the 1285's own MODBUS® server control board on the first manifold. Staged Gas Heat control boards only. Does not lock out any burners associated with the first heat control board on the manifold.	Remote
Heat Primary Limit Open Manf 1 Server	Heat	Warning	Non-Latching	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. Staged Gas Heat control boards only. Does not lock out any burners associated with the first heat control board on the manifold.	Remote
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

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
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

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

Diagnostics	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 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
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

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
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
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

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
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.	Remote
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
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

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
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

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
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
VFD Compressor Short Circuit– Cprsr1A	Circuit	Immediate Shutdown	Latching*	A short circuit in the motor windings or the motor terminals was detected. Compressor operation is not recommended until the short circuit is 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 Condenser Fan Ground Fault - CktX where X is "1" or "2"	Circuit	Warning	Latching*	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. 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. * 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 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.	Local
VFD Condenser Fan In Hand Mode – CktX where X is "1" or "2"	Unit	Warning	Non-Latching	The condenser fan VFD on circuitX has been put into hand mode at the drive interface. Should be for testing only as this will cause issues for normal sequences and operation.	Local
VFD Condenser Fan Motor Current Overload – CktX where X is "1" or "2"	Circuit	Warning	Latching*	The condenser fan VFD on circuitX indicates a peak current of approximately 200% of rated current was exceeded for 1.5 seconds. The remaining condenser fans on circuitX will revert to fixed-speed fan algorithm control. * 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 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.	Local

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
VFD Condenser Fan Short Circuit - CktX where X is "1" or "2"	Circuit	Warning	Latching*	The condenser fan VFD on circuitX indicates a short circuit in the motor windings or the motor terminals was detected. The remaining condenser fans on circuitX will revert to fixed-speed fan algorithm control. Note: Further operation of the failed fan is not recommended until the short circuit is 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 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.	Local
VFD Cprsr Current Overload – Cprsr1A	Circuit	Immediate Shutdown	Latching*	The inverter peak current of approximately 200% of rated current was exceeded for 1.5 seconds. This is a drive enforced lockout. Note: There is Drive behavior that results from a Drive Overcurrent where the drive continues to operate at reduced RPM * 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 Fault Compressor – Cprsr1A	Circuit	Immediate Shutdown	Non- Latching	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. This Symbio™ 800 diagnostic is auto-reset and will persist until the vfd clears the general alarm.	Local
VFD Fault Compressor – Cprsr1A	Circuit	Immediate Shutdown	Latching	A VFD Fault has occurred four times before the compressor starts and runs for its minimum on-time. Numerous vfd faults can cause this general fault/vfd alarm. A volatile fault count variable stores the count status. The count is cleared for any of the following three conditions: • Variable speed compressor starts and runs for its minimum on-time. • Diagnostic manual reset. • Controller power cycle.	Local

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
VFD Fault Condenser Fan - CktX where X is "1" or "2"	Circuit	Warning	Latching*	The condenser fan VFD on circuitX indicates a general VFD Fault. Numerous drive faults can cause this general fault. Reference the TR170 Installation and Operating manual for a list of fault codes and descriptions. Condenser fan control will revert to fixed-speed fan algorithm using remaining fans. * 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.	Local
VFD Fault Relief Fan – X where X is "1", "2" or "3"	Unit	Warning	Latching*	Relief fan X indicates a general Fault. 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) Failure of fan X with other fans available: No action. 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. * 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.	Local
VFD Fault Supply Fan – X where X is "1" or "2"	Unit	Warning	Latching*	Supply fan X VFD indicates a general Fault. Numerous drive faults can cause this general fault. Reference the TR150 Installation and Operating manual for a list of fault codes and descriptions. 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. 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. *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.	

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
VFD Relief Fan Locked Motor – X where X is "1", "2" or "3"	Unit	Warning	Latching*	Relief fan X indicates something has blocked the rotor from turning. Ice is a common one in some applications. (Motor Auto Reset) Failure of fan X with other fans available: No action. 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. * 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.	Local
VFD Relief Fan Motor Overheated – X where X is "1", "2" or "3"	Unit	Warning	Latching*	Relief fan X indicates motor thermocouples have reached a too-high temperature. Typically caused by excessively high ambient temp. (Motor Manual Reset) Failure of fan X with other fans available: No action. 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. * 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.	Local
VFD Relief Fan Power Mod Overheated – X where X is "1", "2" or "3"	Unit	Warning	Latching*	Relief fan X indicates rectifier thermocouple has reached a too-high temperature. Typically caused by excessively high ambient temp. (Motor Manual Reset) Failure of fan X with other fans available: No action. 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. * 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.	Local

Diagnostics	Target	Severity	Persistence	Condition / Response	Reset Level
VFD Relief Fan Speed Parameter Failure – X where X is "1", "2" or "3"	Unit	Warning	Latching*	Relief fan X indicates its Maximum Speed parameter does not match the Maximum Permissible Speed parameter. (EC-Clone Required) Failure of fan X with other fans available: No action. 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. * 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.	Local
VFD Supply Fan Ground Fault – X where X is "1" or "2"	Unit	Warning	Latching*	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. 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. 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. * 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 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.	Local
VFD Supply Fan In Hand Mode – X where X is "1" or "2"	Unit	Warning	Non-Latching	Supply fan X VFD has been put into hand mode at the drive interface. This should be for testing only as this will cause issues for normal startup and running	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*	Supply fan X VFD indicates peak current of approximately 200% of rated current was exceeded for 1.5 seconds. This is a drive enforced lockout. 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. 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. *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. 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.	Local
VFD Supply Fan Short Circuit – X where X is "1" or "2"	Unit	Warning	Latching*	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. 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. 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. * 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 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.	Local
VFD Torque Limit Exceeded– Cprsr1A	Circuit	Immediate Shutdown	Latching*	Supply fan X VFD indicates motor torque is higher than expected. * 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. The behavior for this diagnostic is set to non-latching in the drive and will be cleared when the condition is no longer active.	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 (Figure 65, p. 104).

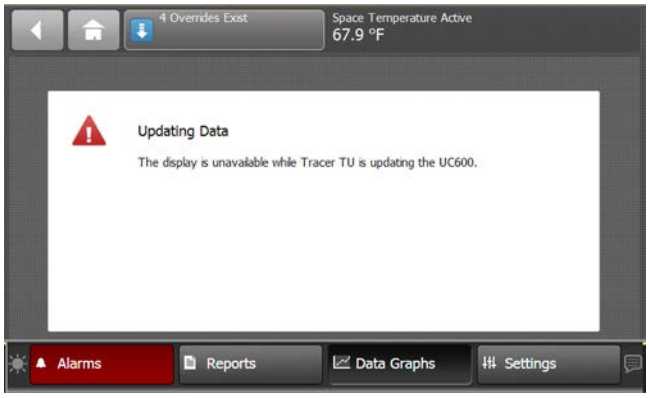
Automatic rediscovery (Updating data):

- 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)

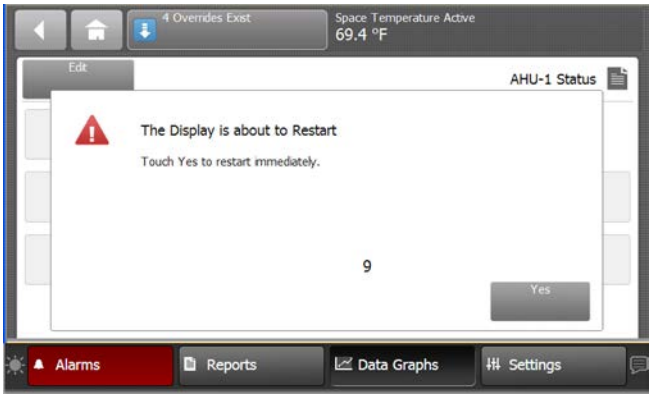
Automatic restart of TD7:

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 65. 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 climate innovator - creates comfortable, energy efficient indoor environments for commercial and residential applications. For more information, please visit trane.com or tranetechnologies.com.

RT-SVP011E-EN 22 Apr 2021
Supersedes RT-SVP011D-EN (Aug 2020)