Installation, Operation, and Maintenance

Tracer™ TD-5 Display

For ReliaTel™ Controller

⚠ 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 2020 **RT-SVX49C-EN**

Introduction

Read this manual thoroughly before operating or servicing this unit.

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 such as HCFCs and HFCs.

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. 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.

⚠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.**

Copyright

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Revision History

RT-SVX49C-EN (3 Dec 2015)

- Added, removed and updated various minor controls images and verbiage.

Table of Contents

Introduction for TD-5 Installation Guide

The purpose of this guide is to assist you in installing, programming, and operating the Tracer™ TD-5 display, which operates with the ReliaTel™ Controller. This guide describes how to access the screens and the types of information that appear on the screens.

The Tracer™ TD-5 display allows you to view data and make operational changes on the following types of applications:

- Voyager™
- Precedent™

Hardware

The Tracer™ TD-5 is a durable touchscreen display that is designed to operate in both indoor and outdoor environments. The TD-5 display utilizes a standard 75mm VESA mounting pattern for installation. Alternatively, it can be installed with a user-supplied VESA mount.

Power

The Tracer™ TD-5 display is powered by 24 VAC or 24 VDC and requires 21 VA power, which it receives through a power cable. The display is typically connected to J10 of the RTRM Module, but it can also be powered from an alternate power source.

Communication

RS-485 communication is provided to the TD-5 through the RTRM J10 connector.

Screen characteristics

The 5-inch WVGA 800 x 480 resolution touch-sensitive color screen is LED backlit, which enables viewing in poor light conditions including outdoor usage (with the exception of direct sunlight).

NOTICE

TD-5 Damage!

TD-5 does NOT have a UV-resistant touchscreen and must be mounted out of direct sunlight. Failure to follow instructions could result in TD-5 damage.

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.

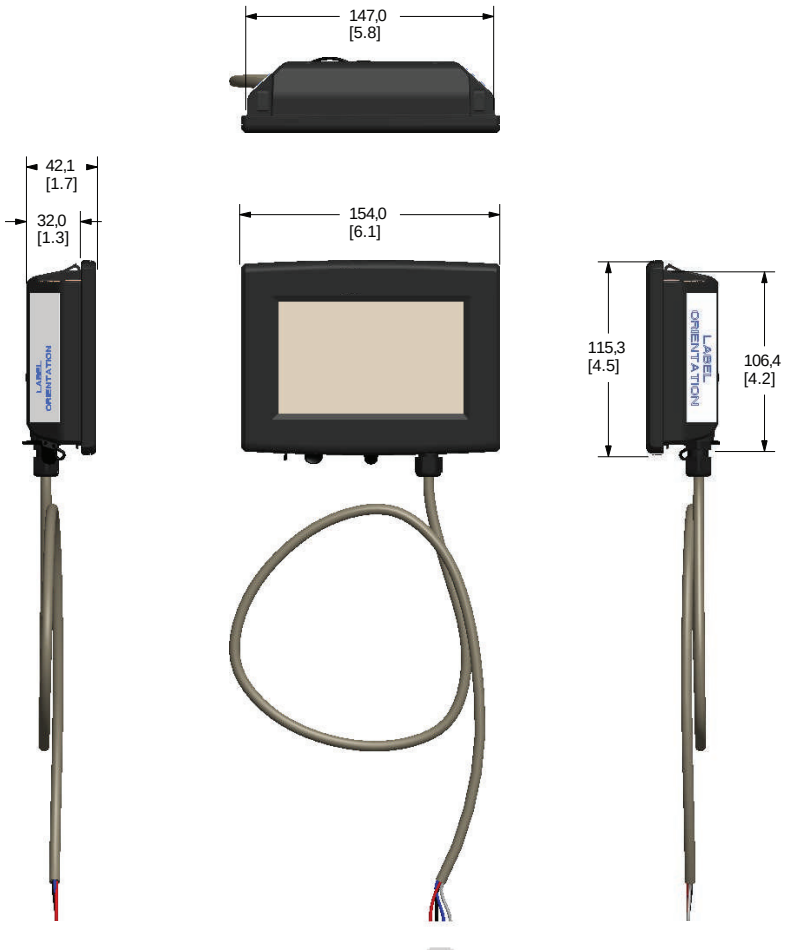
Recommended tools to use:

- 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 TD-5 display. The power connector provides strain relief and*

Specifications and Agency Compliance

Specification	
Input power:	24 VAC ± 15%, 21 VA, 50/60Hz; 24VDC +/- 10%, 400mA.
Storage temperature:	–67°F to 203°F (–55°C to 95°C) Humidity: Between 5% to 100% (non-condensing)
Operating temperature:	Temperature: –40°F to 158°F (–40°C to 70°C) Humidity: Between 5% to 100% (non-condensing)
Mounting weight:	Mounting surface must support 0.93 lb (422 grams) Mounting Type: VESA (75 mm x 75 mm)
Environmental rating (enclosure):	IP55 (dust and strong water protection) (PN: X19070632020)
Display color	TFT LCD, 800 nits brightness, 16-bit color
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	

Supported Languages

The TD-5 display supports 26 built-in languages. For help on how to select a specific language for the display, see "Language," p. 36.

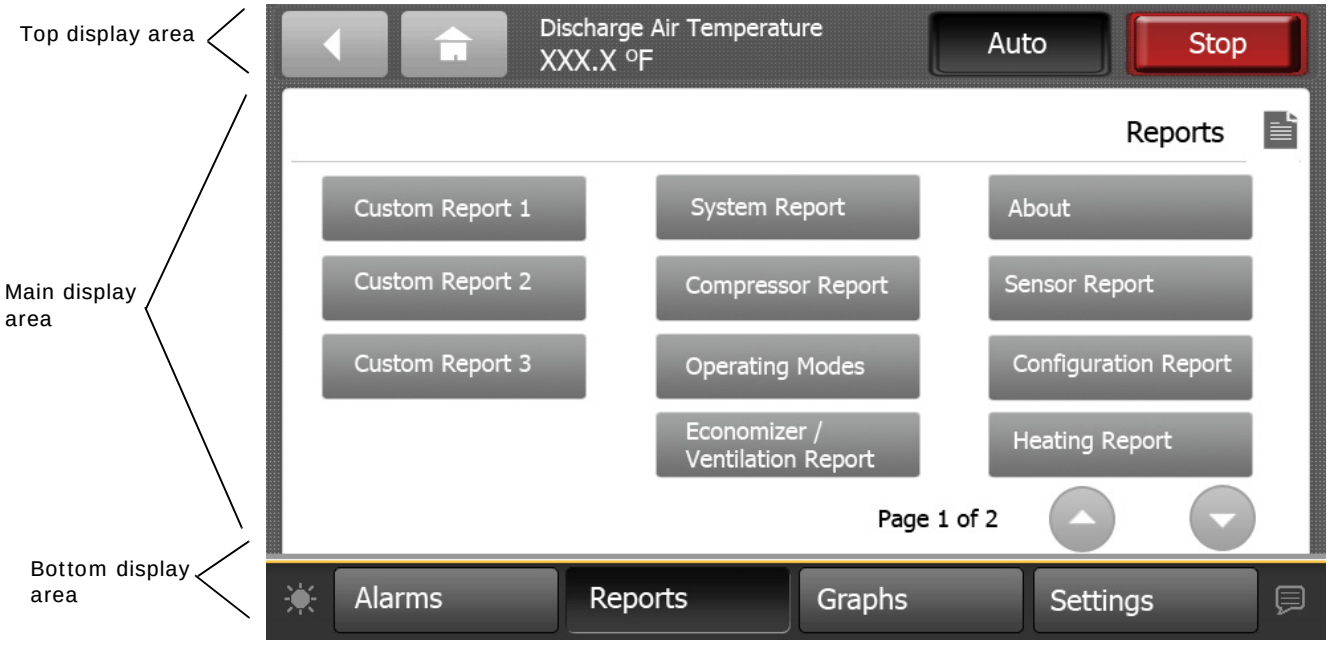
Arabic
Chinese (Simplified)
Chinese (Traditional)
Czech
Dutch
English
French
French Canadian
German
Greek
Hebrew
Hungarian
Indonesian
Italian
Japanese
Korean
Norwegian
Polish
Portuguese (Brazil)
Portuguese (Portugal)
Romanian
Russian
Spanish (Mexico)
Spanish (Spain)
Swedish
Thai

Screen Overview

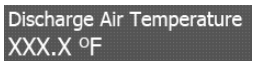
There are three distinct areas on the TD-5 screens:

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

Figure 1. Tracer™ TD-5 display screen



Top Display Area

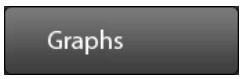
	The Back button, when touched, returns to the previous screen visited.
	The Home button, when touched, navigates to the Home Page. Home can be configured. See "Display Preferences," p. 32.
	The Header Data Point is a user-defined data point that will appear at the top portion of each display screen. This value can be the present value of any point in the TD-5. See "Header Data Point," p. 33.
	Touch the Auto button to allow the unit to start.
	Touch the Stop button to stop the unit from running and prevent it from starting.

Main Display Area

This area serves as the main task area in which you can view custom graphics, create reports, view and take action on alarms, and view or change display settings.

Bottom Display Area

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

	Screen brightness settings: Touch this icon to change the display's brightness.
	Touch this button to open the Alarms screen. When an alarm is present, this button will flash red.
	Touch this button to navigate to the Reports screen.
	Touch this button to open the Data Graphs screen to view Graphs.
	Touch this button to open the Settings screen, which contains options for controls and display settings.
	Language selection: Touch this icon to select a language that will be displayed on all screens.

Installing the Tracer™ TD-5 Display

This section describes installation procedures when mounting the Tracer™ TD-5 display near the RTRM module or remotely mounted up to 328 ft (100 m) by using a field-supplied 75 mm VESA mounting bracket. Read and observe all warning and caution statements before you begin the installation procedure.

⚠WARNING

Hazardous Voltage!

Failure to disconnect power before servicing could result in death or serious injury. Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized.

Packaged Contents

- One (1) Tracer™ TD-5 display with permanently attached 2.6 ft (0.8 m) power cable with male connector
- Four (4) M-4 screws
- Four (4) spacer washers

Additional Mounting Parts

- TD-5 Display Low Profile Mounting Bracket (VESA 75mm) (PN: X05010511010)

Installing the TD-5 Display onto a VESA Mounting Bracket

The Tracer™ TD-5 can be mounted near the RTRM module in the control panel, or remotely mounted up to 328 ft (100 m) by using a field-suppled 75 mm VESA mount.

Remote mounting requires the following additional field-supplied components:

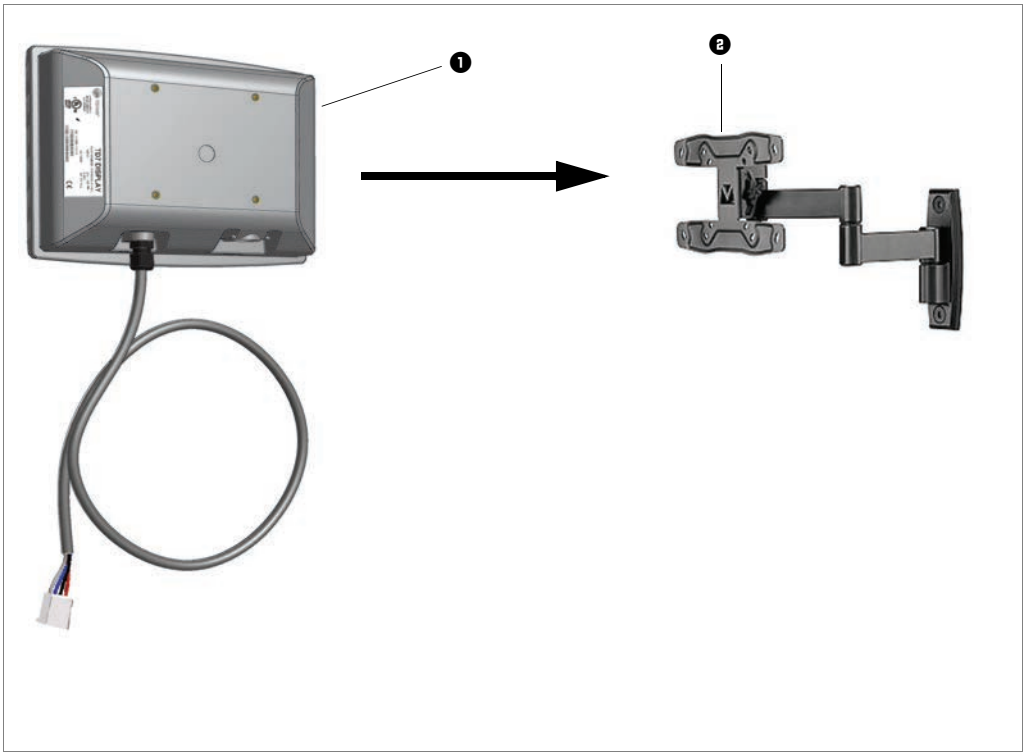
- A power source that will supply 24 VAC to the display
- Power cables

Many commercial 75mm VESA mounting brackets are available, which range from a simple wall mount to tilt-and-swivel mounts such as the one shown in Figure 2, p. 10, or the TD-5 Display Low Profile Mounting Bracket (VESA 75mm) (PN: X05010511010).

To install onto a VESA mounting bracket:

1. Disconnect power at the circuit breaker and perform lockout/tagout procedures.
2. Mount the VESA mounting bracket according to manufacturer's instructions.
3. Position the TD-5 display ❶ onto the VESA mounting bracket ❷ and align the four mounting holes with the bracket while inserting and hand-tightening the four M-4 screws. (Some brands of VESA mounting brackets may require the use of the four spacer washers to allow the M-4 screws to tighten properly.)
4. Securely tighten the M-4 screws using a Phillips screwdriver.

Figure 2. Example VESA mounting



Powering up the TD-5 Display for the First Time

After completing the installation instructions in "Installing the Tracer™ TD-5 Display," p. 9, The TD-5 display can be powered up.

The RTRM will be providing power for the TD5 in most cases. If the RTRM is not providing the power connection for TD5 it doesn't matter which one is powered first.

Upon successful power up, the TD-5 Display will default to the configured home screen. The System Report is the factory default.

On every power cycle, a touchscreen calibration screen is presented briefly. If no touches are registered, the calibration process does not start, and the TD5 continues to the home screen. Refer to the touchscreen calibration section for more details.

The initial calibration screen is useful in case a calibration problem occurs that makes the touchscreen unusable for pressing buttons.

Alarms

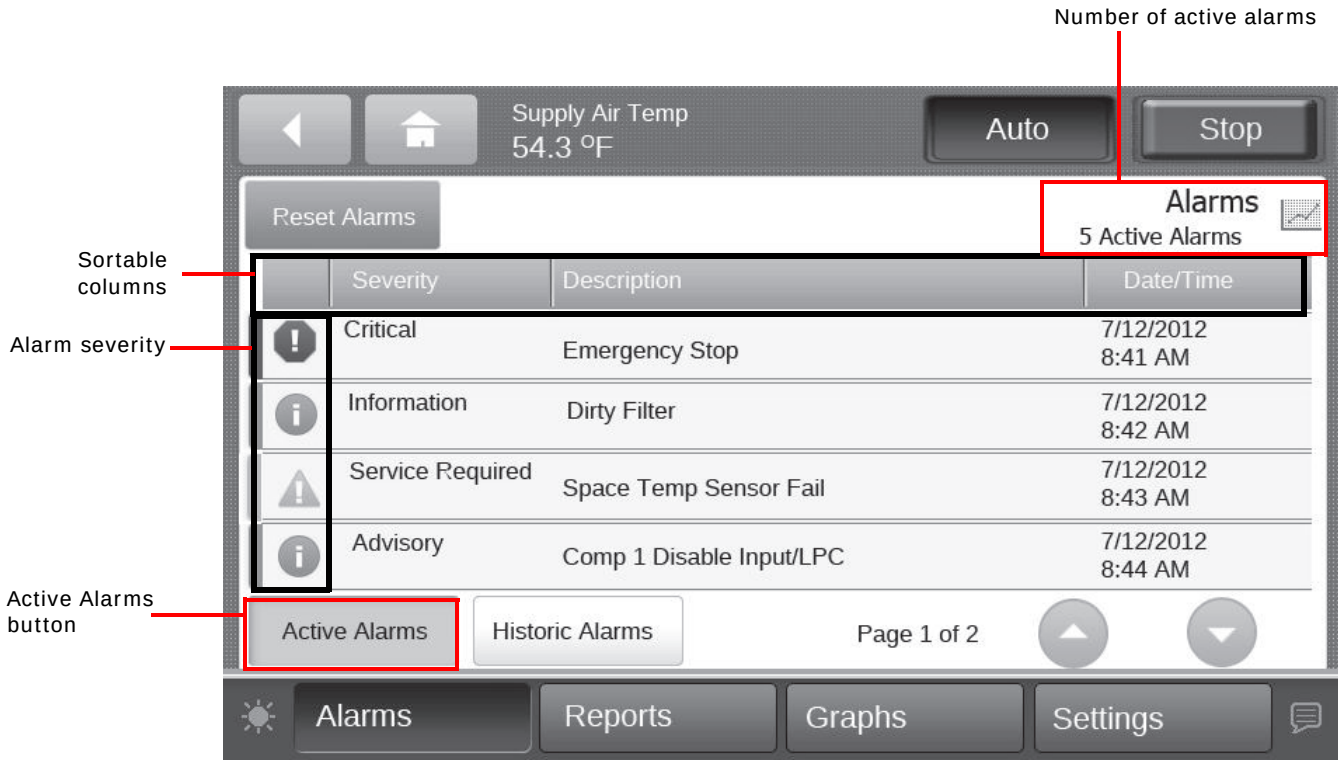
Alarms appear on the Tracer™ TD-5 display immediately upon detection. Touch the Alarms button in the bottom display area to view the Alarms screen.

Active Alarms

Figure 3, p. 11 shows the Active Alarms screen and commonly used functions. Configuration is not required in order for points in alarm to appear in the Active Alarms screen. The number of active alarms is displayed in the top right portion of the screen. When an active alarm is present, the alarm button at the bottom of the screen will flash.

The Alarms screen defaults to Active Alarms. The **Active Alarms** button has a shaded appearance which indicates that you are viewing active alarms.

Figure 3. Active alarms screen



Historic Alarms

On the Alarms screen, touch the **Historic Alarms** button to view all alarms, commonly referred to as the event log (see Figure 4, p. 12).

Figure 4. Historic alarms screen

Viewing Active and Historic Alarms

- **Active alarms:** These are alarms that require attention. All alarms that are currently active appear when you view this category. Some active alarms will clear automatically when the condition causing the alarm is removed. Others will latch and only clear if the condition causing the alarm is removed and the Reset Alarms is pressed.
- **Historic alarms**: These are alarms are no longer active. The alarm conditions have been corrected.

Alarm Severity

A color-code icon representing the severity of each alarm is shown under the severity (!) column. For a description of the five alarm icons, see Table 1, p. 13.

Sortable Alarms

You can sort active alarms by touching one of the column headers. Choose to sort by severity, date and time, or description.

Alarm Icons

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

Table 1. Alarm icons

Active Alarm Icons	Notification Class
	Critical
	Service Required
	Advisory
	Information

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: Alarms are sorted by there notification class shown in the table above in either descending or ascending order.
- Date and Time (the default sort): Alarms are sorted by timestamp in either descending or ascending order.
- Description: Alarms are sorted alphabetically by description in either descending or ascending order.

Table 2. List of alarms

Space Temp Sensor Failure	Outdoor Temp Sensor Fail
Compressor 1 HPC Lockout	Compressor 1 LPC Lockout
Comp 1 Disable Input/LPC	Compressor 2 HPC Lockout
Compressor 2 LPC Lockout	Comp 2 Disable Input/LPC
Smoke Detector	Heat Failure
Dirty Filter	Supply Fan Failure
Emergency Stop	Frostat™ Trip
Mixed Air Temp Sensor Fail	OA Humidity Sensor Failure
Return Air Temp Sensor Fail	Return Air RH Sensor Failure
Coil Temp Sensor #1 Fail	Demand Defrost Fault A
Demand Defrost Fault B	Demand Defrost Fault C
Demand Defrost Fault D	Defrost Default Mode
Local Cool Setpoint Fail	Local Heat Setpoint Fail
Vent Override – Purge	Vent Override – Exhaust
Vent Override – Pressurize	Drain Pan Overflow
Freezestat Tripped	Supply Air Temp Sensor Fail

Table 2. List of alarms (continued)

CO_2 Sensor Failure	CO_2 Setpoint Failure
Space Humidity Sensor Fail	Dehumid Setpoint Failure
Airflow Sensor Fail	Min OA Flow Setpoint Fail
Space Pressure Setpoint Fail	Space Pressure Sensor Fail
Heating High Temp Limit Open	Flame Rollout Switch Open
Inducer Proving Switch Fail	No Flame Sensed on heat call
Flame Sensed w/Gas Valve Off	Gas Heat Module Failure
Economizer Actuator Fault	Morning Warmup Setpoint Fail
SA Reset Amount Failure	SA Temp Cool Setpoint Fail
SA Temp Heat Setpoint Fail	SA Reset Setpoint Failure
SA Press Setpoint Fail	SA Pressure Deadband Fail
Supply Air Press Sensor Fail	SA High Press Limit
SA Pressure PWM Fault	Comp 1 Disable Input/HPC
Comp 2 Disable Input/HPC	CO2 Low Limit Setpoint Fault
Exh/Ret Fan Proving Failure	RTOM Comm Fail
RTEM Comm Fail	RTAM Comm Fail
RTVM Comm Fail	VSM Comm Fail
SA Reheat Setpoint Failure	RTDM Comm Fail
Space Press Deadband Fail	Mod Dehumid Config
Ent Evap Temp Sensor Fail	Coil Temp Sensor #2 Fail
SA Temp Heat Setpoint Fail	Demand Defrost Fault A Ckt 2
Demand Defrost Fault B Ckt 2	Demand Defrost Fault C Ckt 2
Defrost Default Mode Ckt 2	Demand Defrost Fault A Ckt 1
Demand Defrost Fault B Ckt 1	Demand Defrost Fault C Ckt 1
Defrost Default Mode Ckt 1	Exhaust Fan Setpoint Fail
IGN1 Communications Timed out	IGN2 Communications Timed out
DCV Min Position Setpoint Fail (@ Full Fan Speed)	Design Min Position Setpoint Fail (@ Full Fan Speed)
Enthalpy Setpoint Fail	Design Min Position at Minimum Fan Speed Fail
DCV Min Position at Minimum Fan Speed Fail	Design Min Position at Midpoint Fan Speed Fail
DA Cool Setpoint Fail	PWM Max Fan Spd Setpt Fail
Compressor 3 HPC Lockout	Compressor 3 LPC Lockout
Comp 3 Disable Input/LPC	Comp 3 Disable Input/HPC
BAS Interface Comm Fail	Unit Not Economizing When It Should Be
Unit Economizing When It Should Not Be	Outdoor Air Damper Not Modulating
Excessive Outdoor Air	Mixed Air Low Limit Cycle Active
VSPD Compressor Drive Fault	VSPD Compressor Drive Lockout

Reports

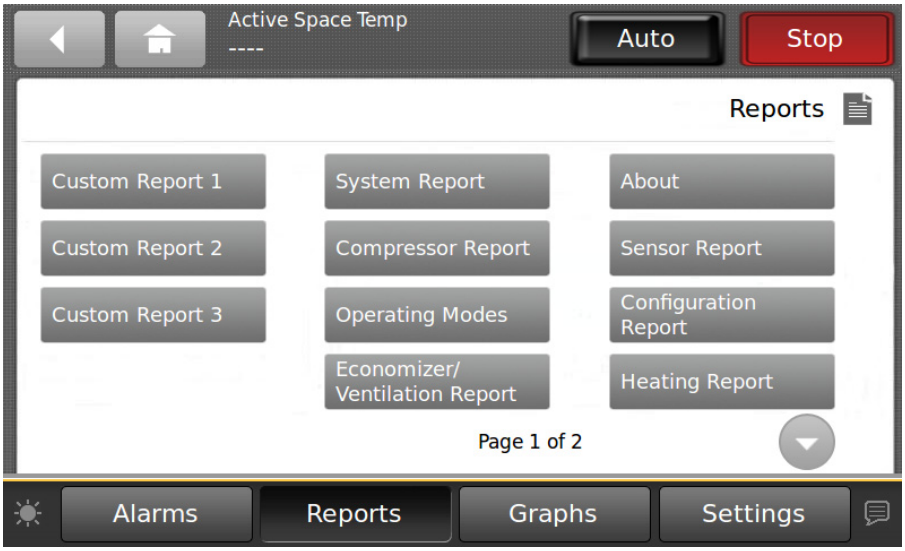
You can use the Tracer™ TD-5 Display to view a variety of reports and create and edit custom reports.

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

Table 3. Representation of screen below

Custom Report 1	System Report	About
Custom Report 2	Compressor Report	Sensor Report
Custom Report 3	Operating Modes	Configuration Report
	Economizer/ Ventilation Report	Heating Report
Binary Input Report	Binary Output Report	

Figure 5. Reports screen



Custom Reports

You can create up to three custom reports using the Tracer™ TD-5 Display

Creating a Custom Report

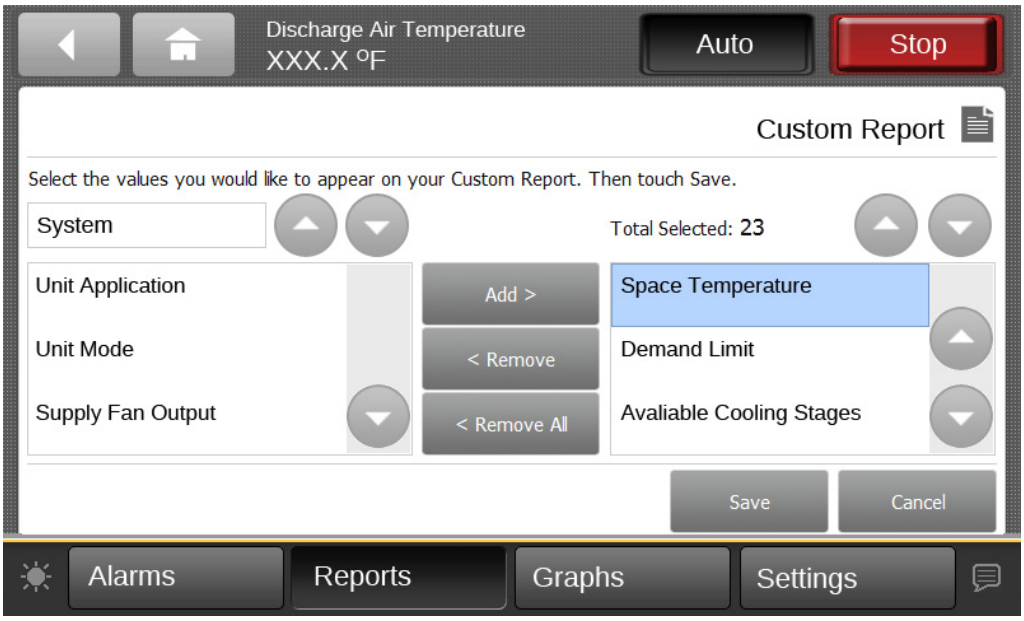
1. Navigate to the Reports screen, then touch one of the three custom report buttons.

   The Custom Report (1, 2, or 3) screen appears.

2. Touch the **Edit** button.

   The Edit Custom Report screen appears (Figure 6, p. 15).

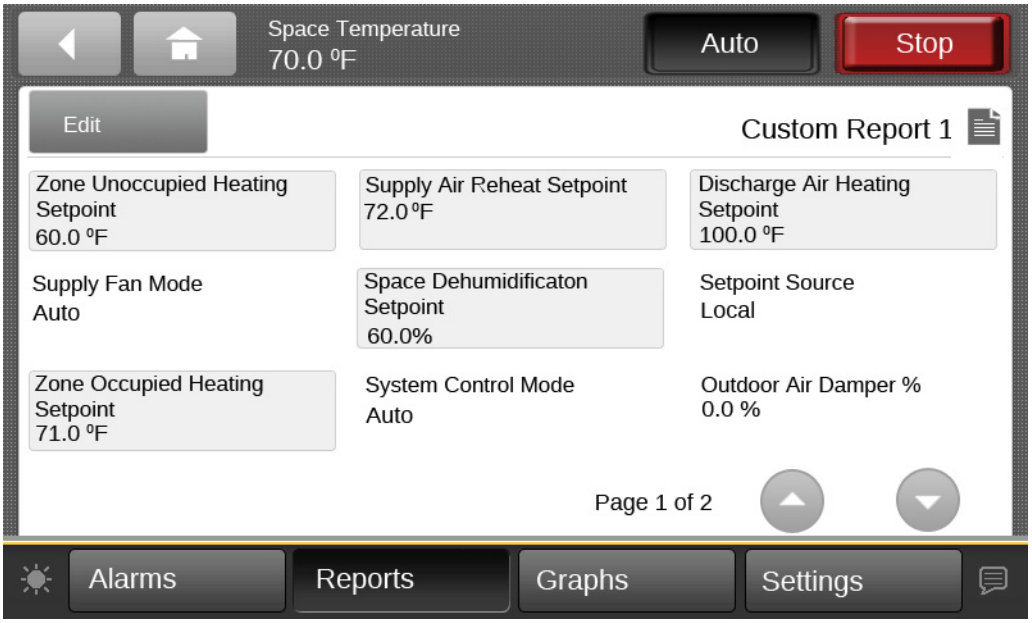
Figure 6. Creating a custom report



3. Use the up and down arrow buttons to select a point. Add items by touching the item that is highlighted blue, then touch the **Add** button.
4. Continue adding values to your report. When you are finished, touch the **Save** button.
   The Custom Report screen, populated with your selected values, appears (Figure 7, p. 16).

   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 7. New custom report screen

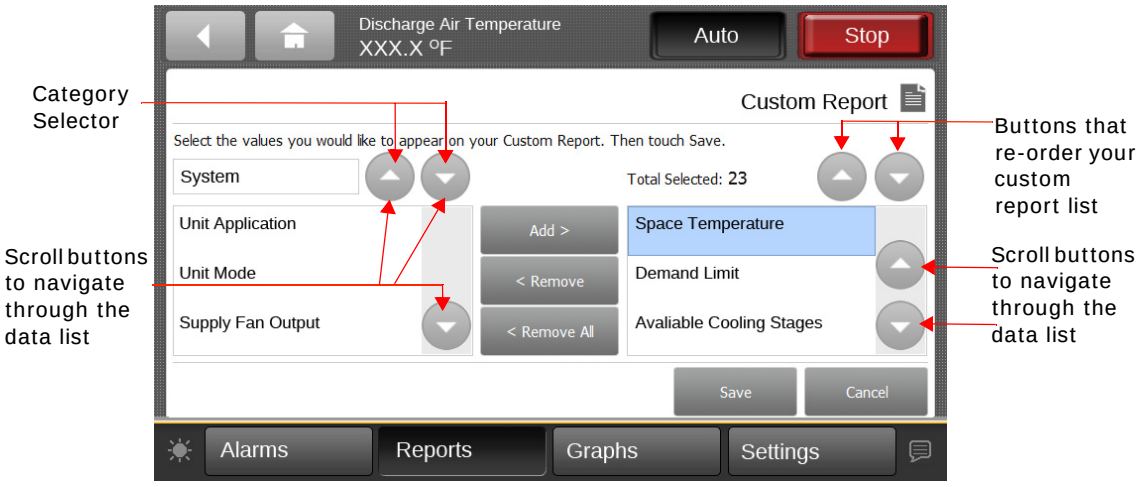


Editing a Custom Report

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. 14. to complete your edits.

Figure 8. 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 7, p. 16, but would prefer to move item "Diagnostic: Space Static Pressure Failure" to the top left portion of the report.

To change the order for the example described above:

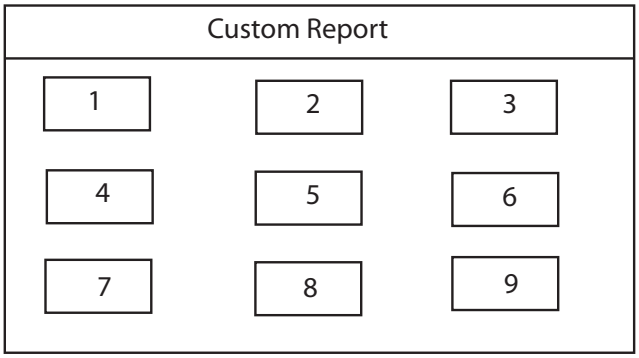
1. Touch the **Edit** button on the Custom Report screen.

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 8, p. 16).
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 TD-5 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. Up to nine items can appear on each Custom Report page. Each Custom Report can have up to seven pages for a total of 63 unique items.*

The model in Figure 9, p. 17 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.

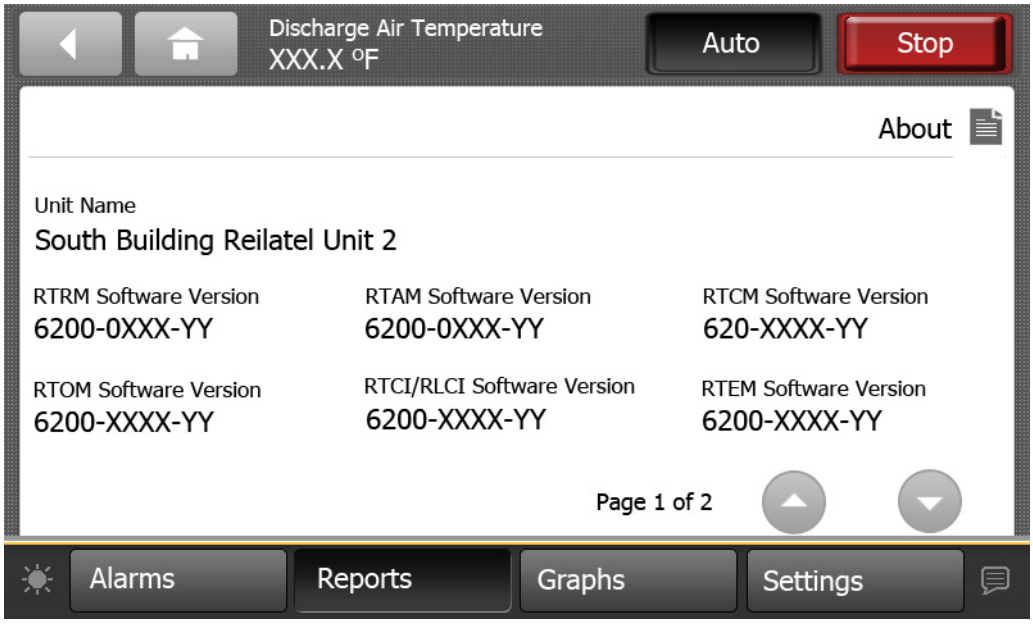
Figure 9. Custom report (order of items)



About

Touch the **About** button to view the About screen. View information about the unit controller and the TD-5 display to which it is connected. Touch the arrow button to scroll to the next screen.

Figure 10. About screen



Data Area

Unit Name. This is the name that was entered.

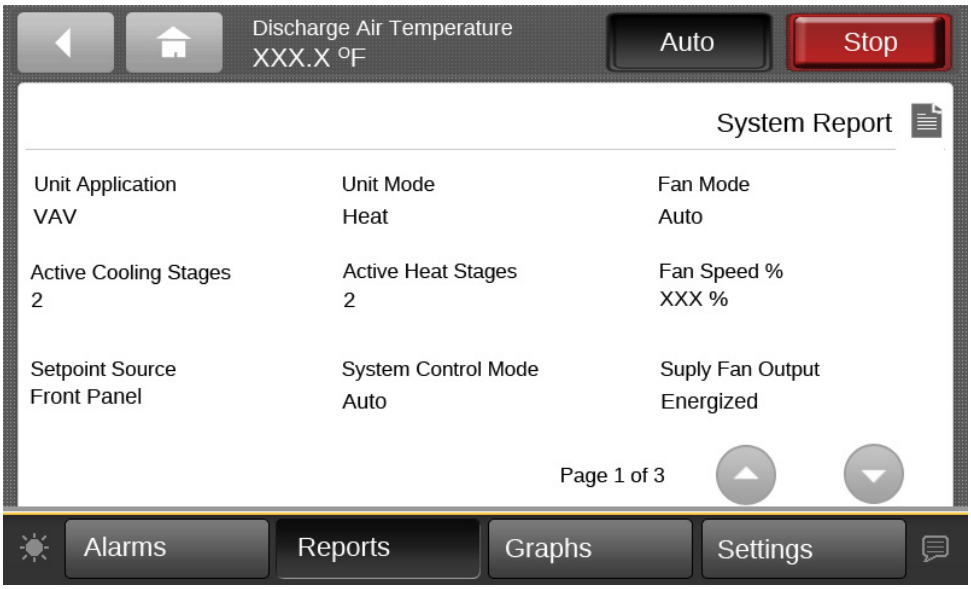
The following data are displayed on the About screen.

Unit Name ReliaTel™		
RTRM Software Version 6200-0123-1.00	RTVM Software Version 6200-0124-01.00	VSM Software Version 6200-0628-01.00
RTOM Software Version 6200-0124-01.00	RTAM Software Version 6200-0126-01.00	RTEM Software Version 6200-0134-01.00
RTDM Software Version 6200-0531-01.00	BAS Interface Software Version BAS-01.00	
Display User Interface Software Version 6200-0635-01.00	Display Firmware Version 6200-0631-01.00	Display Boot Code Version 6200-0629-01.00
Display Kernal 6200-0630-01.00		

System Report

Touch the **System Report** button to view the System Report screen. Touch the arrow buttons to move between screens.

Figure 11. System report screen



Data Area

The following data appears in the System Report screen.

Unit Application VAV,CV,SZVAV	Active Unit Mode Heat, Cool, Off, Emergency Heat	Setpoint Source Remote, Local
Supply Fan Output Off, On	Supply Fan Speed % XXX %	Supply Fan Mode On, Auto
Occupancy Occupied, Unoccupied	Active Cooling Stages X	Active Heating Stages X
Active Space Temp XXX.X F/C	Active Space Temp Setpoint XXX.X F/C	Outdoor Air Damper % XXX % Open
Supply Air Temp XXX.X F/C	Active Supply Air Temp Setpoint XXX.X F/C	System Control Mode Manual, Auto
Economizing Enabled, Disabled	Ventilation Control Fixed/DCV (*DCV = Demand Control Ventilation)	
Variable Speed Compressor Volts XXX V	Variable Speed Compressor Capacity% XXX.X%	Fresh Air Measurement Installed, Not Installed
Heating Type None, Electric, Gas, Hydronic	Cooling Stages Configured X	Available Heating Stages X
Supply Fan Starts XXXXX	Supply Fan Running Time HHHHH:MM	
Space Pressure X.XX iwc/mm(H_20)	Supply Air Pressure X.XX iwc/mm(H_20)	Local Space Temp X XX.X °F/C
Emergency Stop Input Auto, Emergency Stop	RTOM Low Fan Speed Output Off, On	Alarm Indicator Output Off, On
VAV Box Output Off, On	Thermostat Y1 Input Open, Closed	Thermostat W1/O Input Open, Closed
Thermostat G Input Open, Closed	Thermostat W2 Input Open, Closed	Thermostat Y2 Input Open, Closed
Thermostat X2 Input Open, Closed	Supply Fan Proving Input Open, Closed	Condensate Drain Overflow Input Open, Closed

Frostat™ Input Open, Closed	Clogged Filter Input Open, Closed	Smoke Detector Input Open, Closed
Reheat Humidistat Input Open, Closed	Changeover Switch Input Cooling, Heating	

Economizer/Ventilation Report

Touch the **Economizer/Ventilation Report** button to view the Economizer/Ventilation Report screen. Touch the arrow buttons to move between screens.

Data Area

The following data appears in the Economizer/Ventilation Report screen.

Outdoor Air Damper % XXX% Open	Economizing Enabled, Disabled	Mixed Air Temp XXX.X F/C
Ventilation Control Fixed, DCV	Economizing Enable Type Dry Bulb, Reference Enthalpy, Comparative Enthalpy	Outdoor Air Temp XXX.X F/C
Active Min OA Damper Position Target XXX%	Manual Enthalpy Override Enabled, Disabled	Return Air Temp XXX.X F/C
Active Upper CO2 Limit Setpoint XXXX PPM	Active Lower CO_2 Limit Setpoint XXXX PPM	Space CO_2 XXXX PPM
Econ Dry Bulb Enable Setpoint XXX.X F/C	Econ Reference Enthalpy Setpoint XXX.X BTU/lb	Local Enthalpy Setpoint A, B, C, D, E
Return Air Humidity XXX%	Outdoor Air Humidity XXX%	
Design Min OA Damper Pos Setpoint 100% Fan XXX%	Design Min OA Damper Pos Setpoint Mid Fan XXX%	Design Min OA Damper Pos Setpoint Min Fan XXX%
DCV Min OA Damper Pos Setpoint 100% Fan XXX%	DCV Min OA Damper Pos Setpoint Min Fan XXX%	Power Exhaust Fan Output De-energized, Energized
DCV Min OA Flow Setpoint XXXXX CFM / LPM		Outdoor Air Flow Adjustment Setpoint XX.X
Outdoor Air Flow XXXXX CFM/LPM	Active Min Outdoor Air Flow Target XXXXX CFM/LPM	Min Outdoor Air Flow Deadband XXXXX CFM/LPM
Exhaust Fan Starts XXXXXX	Exhaust Fan Running Time HHHHH:MM	Exhaust Damper Position% Open XXX%
		Outdoor Fan A Output
Space Pressure XX.XX IWC /cmWC	Active Space Pressure Setpoint XX.XX IWC /cmWC	Space Pressure Deadband XX.XX IWC/cmWC
Ventilation Override Pressurize Input Open, Closed	Ventilation Override Purge Input Open, Closed	Ventilation Override Exhaust Input Open, Closed
Power Exhaust Fan Output De-energized, Energized	Exhaust Fan Proving Input Open, Closed	

Compressor Report

Touch the **Compressor Report** button to view the Compressor Report screen. Touch the arrow buttons to move between screens.

Data Area

The following data appears in the Compressor Report screen.

Table 4. Compressor report - data area

Active Cooling Stages X	Cooling Stages Configured X	Number of Compressors Installed X
Outdoor Fan A Output Energized, De-energized	Outdoor Fan B Output Energized, De-energized	Variable Speed Outdoor Fan % XXX.X %
Dehumidification Status Inactive, Active Reheat, Active Enhanced	Variable Speed Compressor Volts XX.X V	Variable Speed Compressor Capacity % XXX.X %
Compressor 1 Disable Input Enabled, Disabled	Compressor 2 Disable Input Enabled, Disabled	Compressor 3 Disable Input Enabled, Disabled
Compressor 1 Proving Input Open, Closed	Compressor 2 Proving Input Open, Closed	Compressor 3 Proving Input Open, Closed

Table 4. Compressor report - data area (continued)

Reheat Entering Evap Temp XXX.X F/C	Reheat Valve Position% XXX%	Reheat LPC Input Enabled, Disabled
Supply Air Temp XXX.X F/C	Active Space Temp XXX.X%	Active Space Cooling Setpoint XXX.X F/C
Defrost Status Ckt 1 Inactive, Defrosting	Defrost Status Ckt 2 Inactive, Defrosting	Active Supply Air Temp Cooling Setpoint XXX.X F/C
SOV 1 Output Heating, Cooling	SOV 2 Output Heating, Cooling	
Outdoor Coil Temp Ckt 1 XXX.X F/C	Outdoor Coil Temp Ckt 2 XXX.X F/C	
Compressor 1 Starts XXXXX	Compressor 2 Starts XXXXX	Compressor 3 Starts XXXXX
Compressor 1 Running Time HHHHHH:MM	Compressor 2 Running Time HHHHHH:MM	Compressor 3 Running Time HHHHHH:MM
Number of Compressors Installed X	Variable Speed Compressor Not Installed, Installed	Reheat Pumpout Relay On/Off
Outdoor Fan A Starts XXXXXX	Outdoor Fan B Starts XXXXXX	Variable Speed Outdoor Fan Starts XXXXXX
Outdoor Fan A Running Time HHHHHH:MM	Outdoor Fan B Running Time HHHHHH:MM	Variable Speed Outdoor Fan Running Time HHHHHH:MM

Heating Report

Touch the **Heating Report** button to view the Heating Report screen. Touch the arrow buttons to move between screens.

Data Area

The following data appears in the Heating Report screen.

Table 5. Heating report - data area

Heating Type None, Electric, Gas, Hydronic *Config definition needed here for Dual Bank Mod staged heat.	Heating Configuration Staged /Modulating	
Available Heating Stages X	Active Heating Stages X	Active Space Temp XXX.X °F/C
Modulating Heat Output% XXX%	Gas Heating Status	Supply Air Temp XXX.X °F/C
Defrost Status Ckt 1 Inactive, Defrosting	Defrost Status Ckt 2 Inactive, Defrosting	Active Space Heating Setpoint XXX.X °F/C
Outdoor Coil Temp Ckt 1 XXX.X °F/C	Outdoor Coil Temp Ckt 2 XXX.X °F/C	Active Supply Air Temp Heating Setpoint XXX.X °F/C
Heating Stage 1 Output Active, Inactive	Heating Stage 2 Output Active, Inactive	Freezestat Input Open, Closed
Outdoor Air Temp XXX.X °F/C		Freeze Avoidance ACtive, Inactive
IGN Pressure Switch Input Open, Closed	IGN Temp Limit Input Open, Closed	IGN Flame Rollout Input Open, Closed
IGN Inducer High Output Off, On	IGN Inducer Low Output Off, On	

Configuration Report

Touch the **Configuration Report** button to view the Configuration Report screen. Touch the arrow buttons to move between screens.

Data Area

The following data appears in the Configuration Report screen.

Table 6. Configuration report - data area

Unit Application CV, VAV, SZVAV	Refrigeration Type Cooling Only, Heat Pump	Product Type Voyager™ 3, Commercial, Precedent™/ Voyager™ 2/Odyssey™, Precedent 17 Plus
Dehumidification None, Hot Gas Reheat, Enhanced	Supply Fan Control Type 1-Speed, 2-Speed, 3-Speed, IGV, Variable Speed, 4-Speed	Economizer Installed, Not Installed
Dehumidification Type Staged, Modulating	Heating Type None, Electric, Gas, Hydronic	CV Control Type Zone, Thermostat
Cooling Stages Configured X	Cooling Steps Input 3 Step, 2 Step	Number of Compressors Installed X
Number of Refrigeration Circuits X	Heating Stages Configured X	Variable Speed Compressor Installed, Not Installed
Economizer Enable Type Drybulb, Reference Enthalpy, Comparative Enthalpy	Supply Fan Motor Type Fixed, VFD, ECM, ERM	Supply Fan Motor Control 0 to 10VDC, PWM
Heat Pump Type Single, Independent	Windmill Prevention Disable, Enable	Gas IGN Module #1 Staged, Modulating
True Supply Air Reporting Disable, Enable	Supply Air Tempering Input Disable, Enable	Gas IGN Module #2 Installed, Not Installed
Manual Enthalpy Override Disable, Enable	Lead Lag Configuration Input Disable, Enable	Outdoor Air Flow Compensation Disable, Enable
Outdoor Fan Cycling Input Lower, Normal	Programmable Zone Sensor Installed, Not Installed	Cabinet Type Horizontal, Downflow
Outdoor Air Flow Compensation Disable, Enable	Evaporator Defrost Control Disable, Enable	RTRM Fan Proving Input Closed, Open
Exhaust Air Control - StatiTrac™ Installed, Not Installed		

Sensor Report

Touch the **Sensor Report** button to view the Sensor Report screen. Touch the arrow buttons to move between screens.

Data Area

The following data appears in the Sensor Report screen.

Table 7. Sensor report - data area

Active Space Temp XXX.X °F/C	Local Space Temp XXX.X °F/C	Supply Air Temp XXX.X °F/C
Outdoor Air Temp XXX.X °F/C	Mixed Air Temp XXX.X °F/C	
Return Air Temp XXX.X °F/C	Outdoor Air Humidity XXX.X%	Return Air Humidity XXX.X%
Space CO_2 XXXX PPM	Outdoor Air Flow XXXXX CFM/LPM	Space Humidity XXX%
Outdoor Coil Temp Ckt 1 XXX.X °F/C	Outdoor Coil Temp Ckt 2 XXX.X °F/C	
Space Pressure X.XX in(H_2O)/mm(H_20)	Reheat Entering Evap Temp XXX.X °F/C	Supply Air Pressure X.XX in(H_2O)/mm(H_20)

Binary Input Report

The Binary Input report provides general Reliatel Unit operating information. Touch the **Binary Input Report** button to view the Binary Input Report screen.

Data Area

The following data appear in the Configuration Report screen.

Table 8. Binary input report - data area

RTRM	Emergency Stop Input Auto, Emergency Stop	Occupancy Occupied, Unoccupied	RTRM Fan Proving Input Closed, Open
RTRM	Thermostat Y1 Input Open, Closed	Thermostat W1/O Input Open, Closed	Thermostat G Input Open, Closed
RTRM	Thermostat W2 Input Open, Closed	Thermostat Y2 Input Open, Closed	Thermostat X2 Input Open, Closed
RTRM	Compressor 1 Disable Input Enabled, Disabled	Compressor 1 Proving Input Open, Closed	
RTRM	Compressor 2 Disable Input Enabled, Disabled	Compressor 2 Proving Input Open, Closed	
RTOM	Supply Fan Proving Input Open, Closed	Condensate Drain Overflow Input Open, Closed	
RTOM	Ventilation Override Pressurize Input Open, Closed	Ventilation Override Purge Input Open, Closed	Ventilation Override Exhaust Input Open, Closed
RTOM	Frostat™ Input Open, Closed	Clogged Filter Input Open, Closed	
RTOM	Freezestat Input Open, Closed	Smoke Detector Input Open, Closed	
RTOM	Reheat Humidistat Input Open, Closed	Changeover Switch Input Cooling, Heating	
VSM	Compressor 3 Disable Input Enabled, Disabled	Compressor 3 Proving Input Open, Closed	
RTVM	Exhaust Fan Proving Input Open, Closed	Reheat LPC Input Enabled, Disabled	
IGN	IGN Pressure Switch Input Open, Closed	IGN Temp Limit Input Open, Closed	IGN Flame Rollout Input Open, Closed

Binary Output Report

The Binary Input report provides general Reliatel Unit operating information. Touch the **Binary Input Report** button to view the Binary Input Report screen.

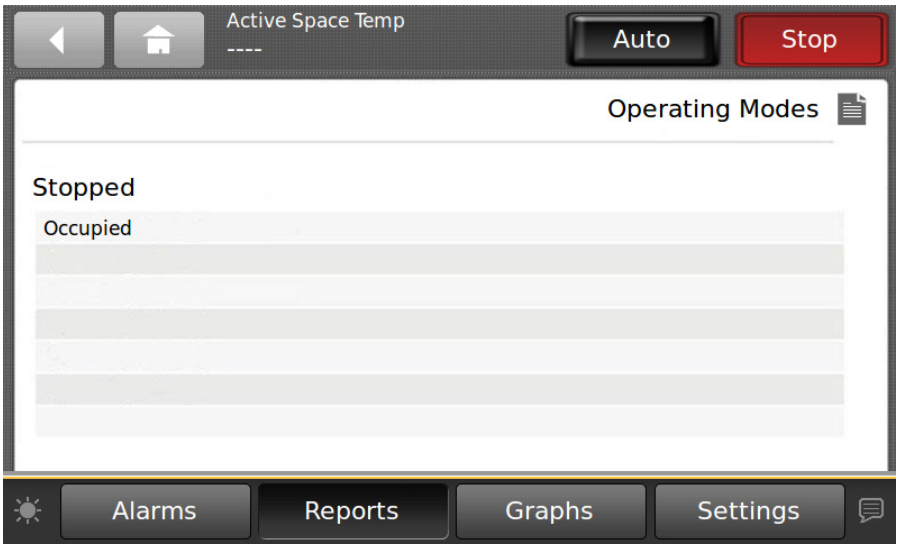
Data Area

The following data appears in the Configuration Report screen.

Table 9. Binary output report - data area

RTRM	Supply Fan Output Off, On	Compressor 1 Output Off, On	Compressor 2 Output Off, On
RTRM	Heat Stage 1 Output Active, Inactive	SOV 1 Output Active, Inactive	Outdoor Fan A Output Energized, De-energized
RTRM	Heat Stage 2 Output Active, Inactive	SOV 2 Output Active, Inactive	Outdoor Fan B Output Energized, De-Energized
RTOM/RTAM/RTVM/ RTEM/RTDM	RTOM Low Fan Speed Output Off, On	Alarm Indicator Output Off, On	VAV Box Output Off, On
RTOM/RTAM/RTVM/ RTEM/RTDM	Power Exhaust Fan Output De-energized, Energized	Reheat Pumpout Relay Off, On	
IGN	IGN Inducer High Output Off, On	IGN Inducer Low Output Off, On	

Figure 12. Operating modes report details screen



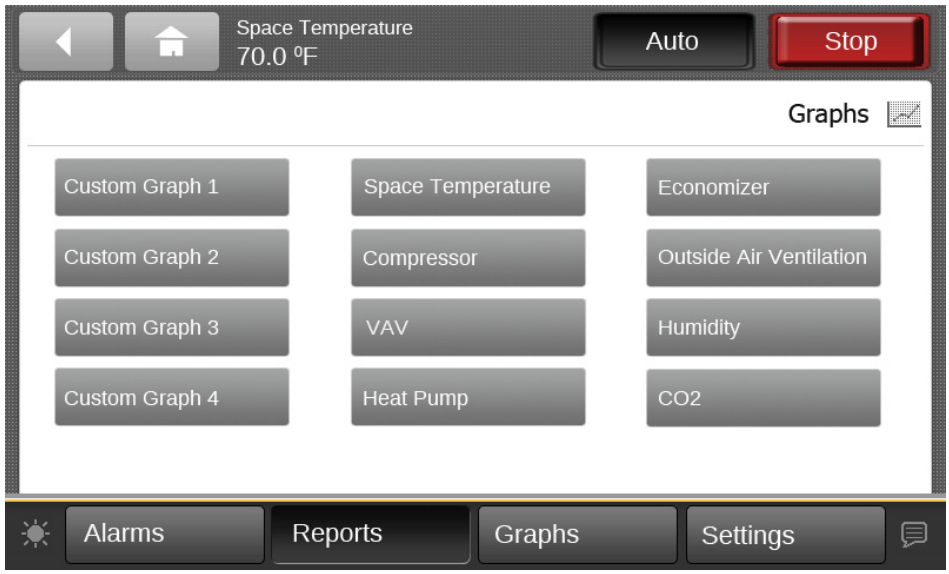
Note: *Operating Modes: The operating Mode page shall show the user the general operation of the unit, and what modes it is operating in.*

Graphs

Graphs allow users to view data in graphical format on the Display. Four custom graphs and eight standard graphs are available. Graphs can be created with a maximum of four lines per graph. 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 **Graphs** button in the bottom display area to view the Graphs screen (Figure 13, p. 25). The Graphs screen contains twelve buttons that allow you to view and edit a particular graph. There are four custom graphs and 8 standard graphs.

Figure 13. Graphs screen



Creating a Custom Graph

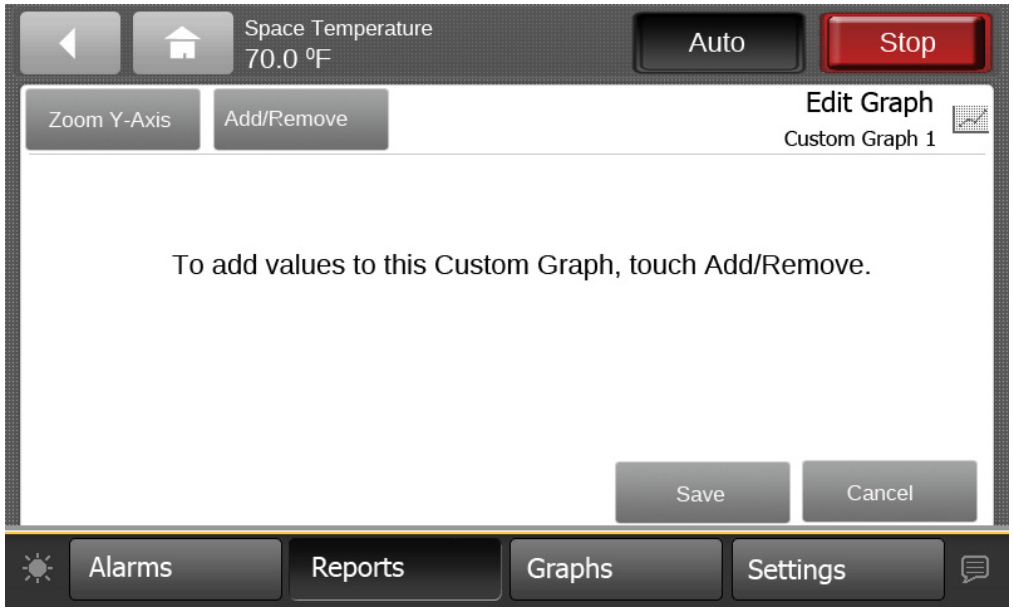
1. Navigate to the Graphs screen, then touch an available data graph button.

   The Custom Graph screen appears.

2. Touch the **Edit Graph** button.

   The Edit Graph screen appears (Figure 14, p. 25).

Figure 14. Edit graph screen



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

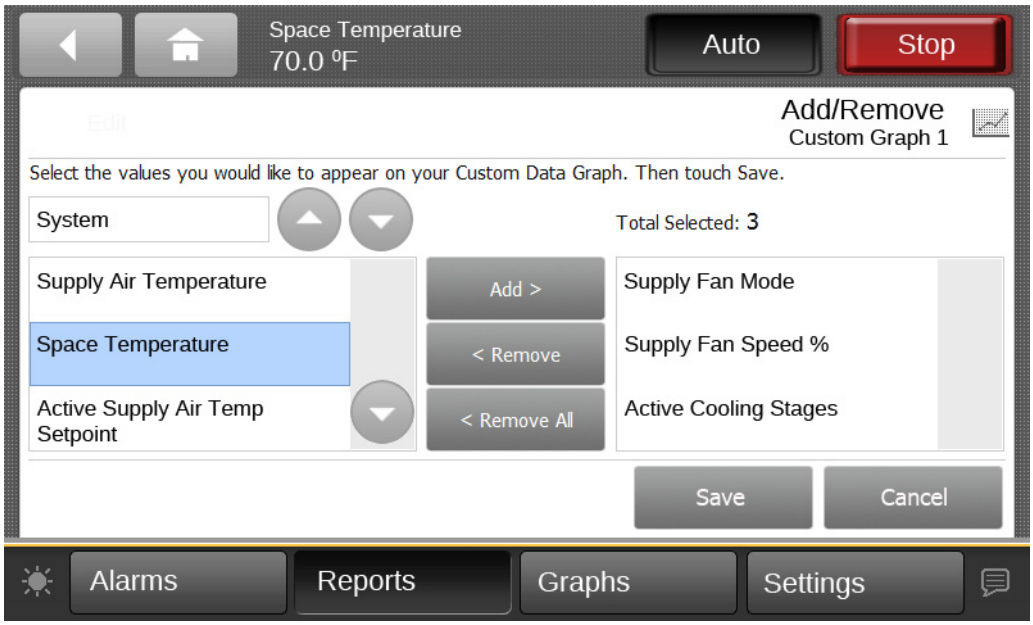
   The Add/Remove screen appears.

4. Use the arrow buttons to select a value.

5. Select the values, then touch the **Add** button (up to four selections are allowed).

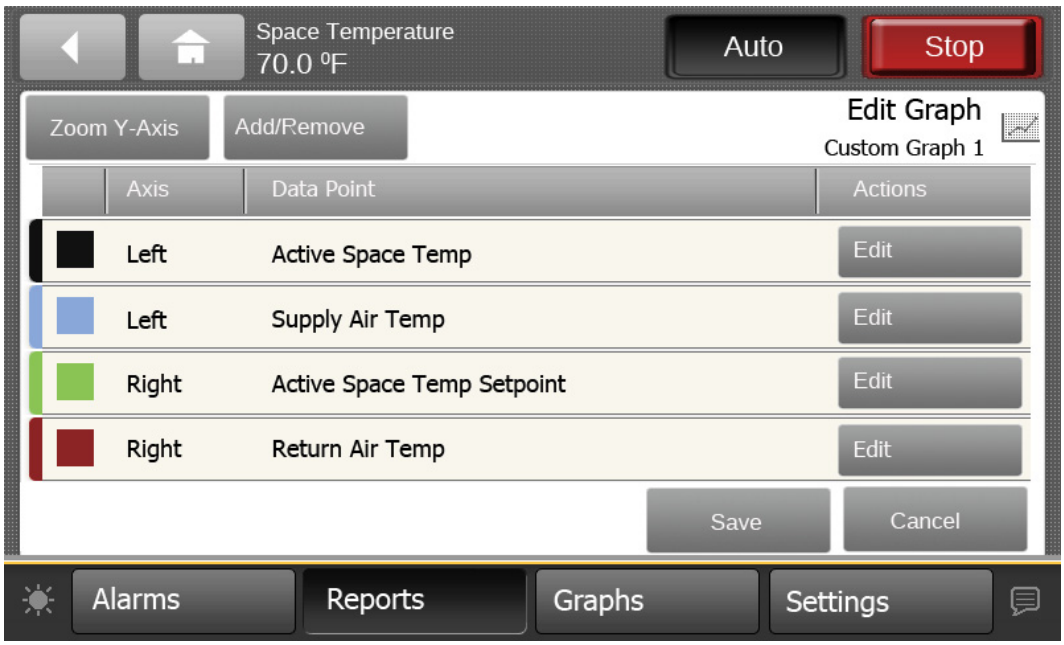
6. Touch the **Save** button. The Edit Graph screen appears, which reflects the selected values.

Figure 15. Adding data logs to the custom graph



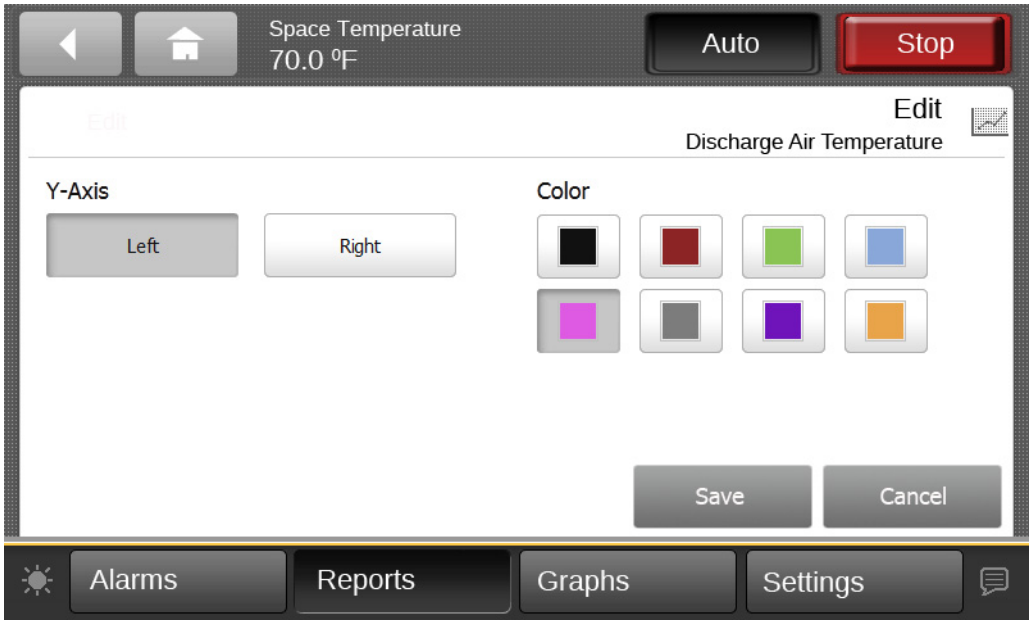
7. Use the Edit Graph screen to modify the graph. Touch the **Edit** button that corresponds with the value that you want to change. Only one value can be edited at a time.

Figure 16. Edit 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 17. Customizing the graph

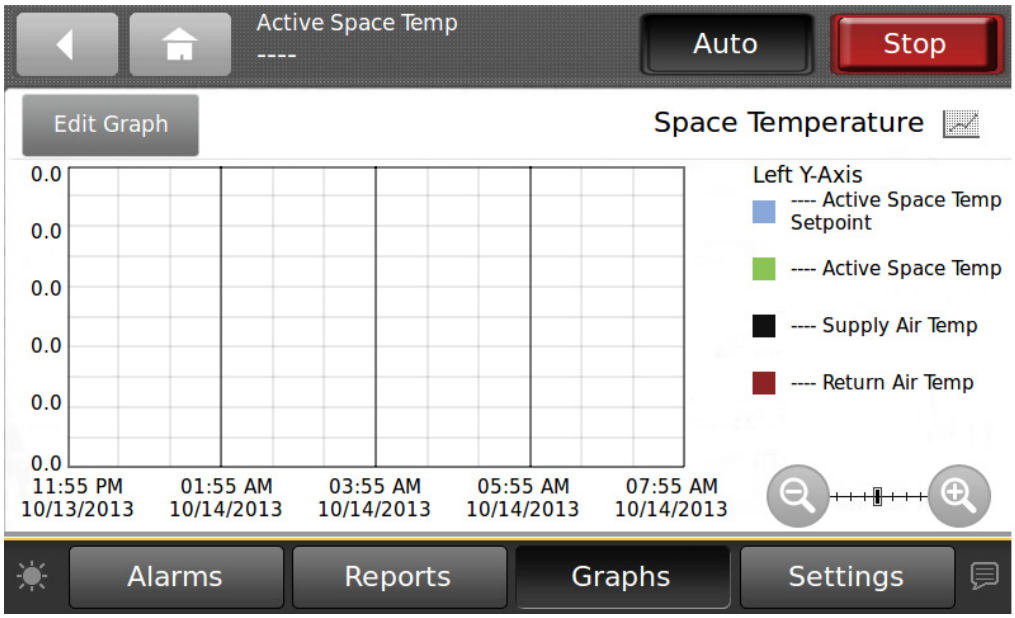


9. Touch the **Save** button to display the new graph (Figure 18, p. 27).

Note: *Depending on the sampling rate, the custom 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 18. Viewing the graph



Editing the Y-Axis

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

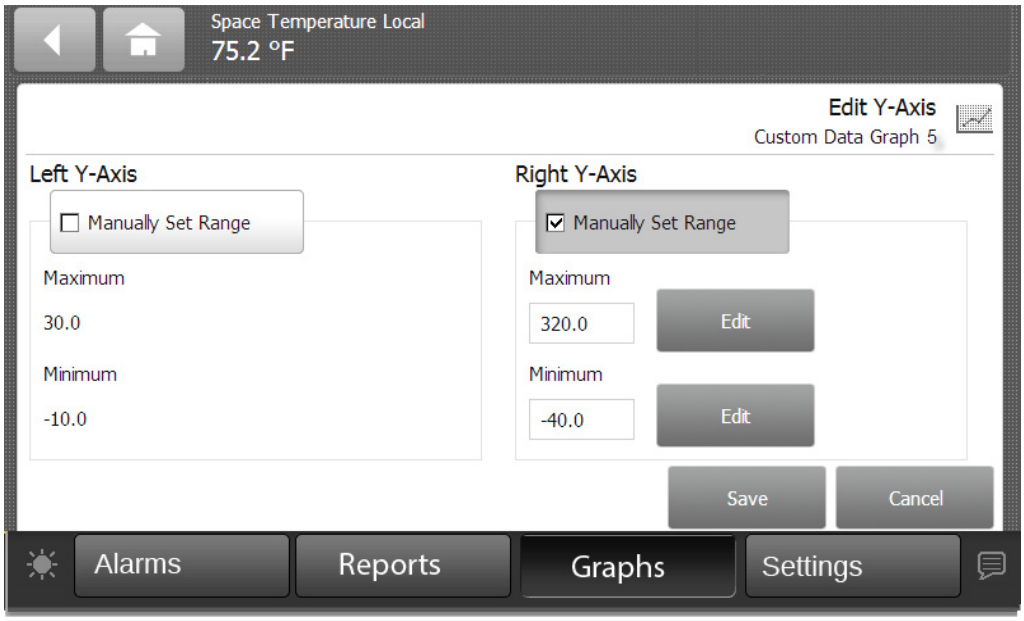
10. Touch the **Edit Y-Axis** button located on the top portion of the Custom Data Graph screen.

The Edit Y-Axis screen appears (Figure 19, p. 28).

11. Touch the **Manually Select Range** box for either the left or right Y-axis.
12. Touch the **edit** button next to one of the two value ranges.

    The Keypad screen appears.
13. Select a new value and then touch **Enter** to save.
14. Repeat steps 2 through 4 until all preferred changes have been made.

Figure 19. Editing theY-Axis



Standard Graphs

There shall be 8 standard graphs.The standard graphs are below:

Table 10. Standard graphs

Space Temperature	Economizer
Compressor	Outside Air Ventilation
VAV	Humidity
Heat Pump	CO_2

Space Temperature:

The table below describes the data in the System Status graph:

Data Point	Line Color	Axis
Active Space Temp Setpoint	Blue	Left
Active Space Temp	Green	Left
Supply Air Temp	Black	Left
Return Air Temperature	Red	Left

Compressor Graph:

The table below describes the data in the graph:

Data Point	Line Color	Axis
Active Supply Air Temp Setpoint	Pink	Left
Variable Compressor Speed %	Green	Left
Supply Air Temp	Black	Left

Active Cooling Stages	Blue	Right

VAV System:

The table below describes the data in the System Status graph:

Data Point	Line Color	Axis
Active Supply Air Temp Setpoint	Pink	Left
Active Space Temp	Green	Left
Supply Air Temp	Black	Left
Return Air Temp	Red	Left

Economizer Graph:

The table below describes the data in the graph:

Data Point	Line Color	Axis
Outdoor Air Temp	Purple	Left
Mixed Air Temp	Grey	Left
Active Min OA Damper Position Target	Pink	Right
Outdoor Air Damper %	Yellow	Right

Outside Air Ventilation:

The table below describes the data in the graph:

Data Point	Line Color	Axis
Min Outdoor Air Flow Target	Black	Left
Outdoor Air Flow	Pink	Left
Outdoor Air Damper %	Yellow	Right
Outdoor Air Temp	Purple	Right

CO_2 Graph:

The table below describes the data in the graph:

Data Point	Line Color	Axis
Active Upper CO_2 Limit Setpoint	Red	Left
Active Lower CO_2 Limit Setpoint	Black	Left
Space CO_2	Green	Left
Outdoor Air Damper %	Yellow	Right

Humidity Graph:

The table below describes the data in the graph:

Data Point	Line Color	Axis
Space Dehumidification Setpoint	Yellow	Left
Outdoor Air Humidity	Red	Left
Return Air Humidity	Black	Left
Space Humidity	Green	Left

Heat Pump Graph:

The table below describes the data in the graph:

Data Point	Line Color	Axis
Outdoor Coil Temp Ckt 1	Green	Left
Outdoor Coil Temp Ckt 2	Blue	Left
Outdoor Air Temp	Purple	Left
Discharge Air Temperature	Grey	Left

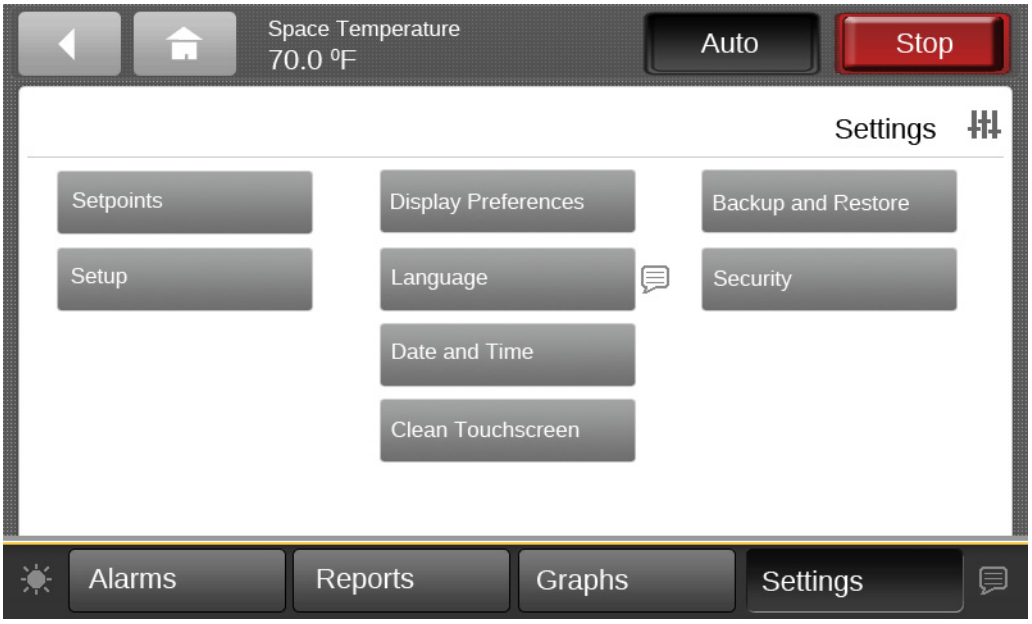
Settings

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.

Three categories for settings appear on the screen:

- Control Settings
- Display Settings
- Security Settings

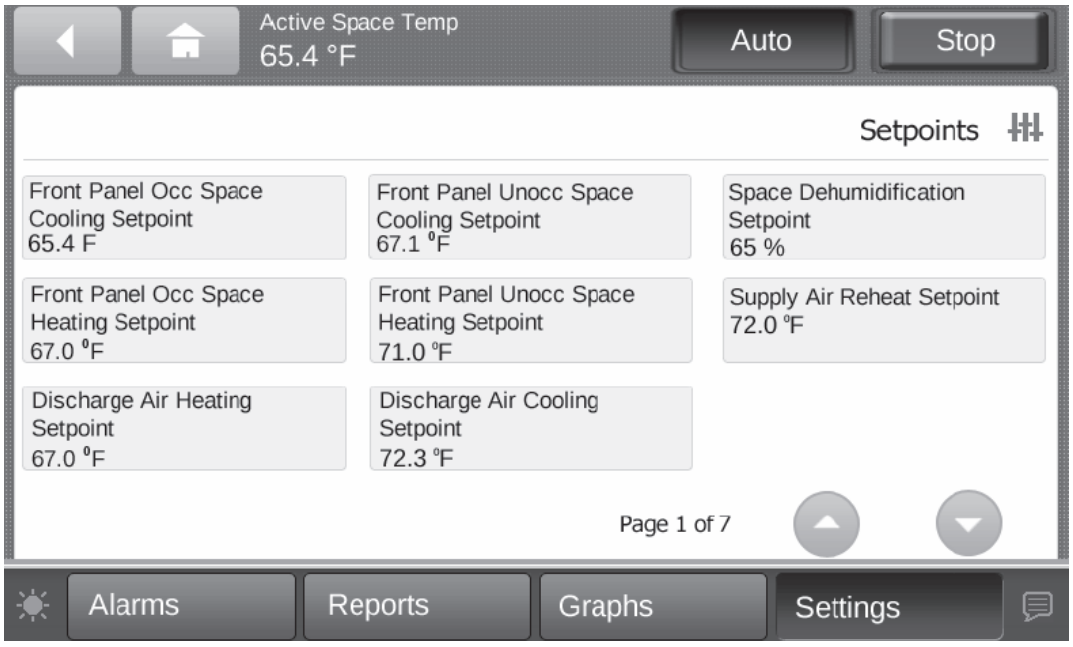
Figure 20. Settings screen



Setpoints

Touch the **Setpoints** button to view the Setpoints screen. Touch the arrow buttons to move between screens.

Figure 21. Setpoints screen



Data Area

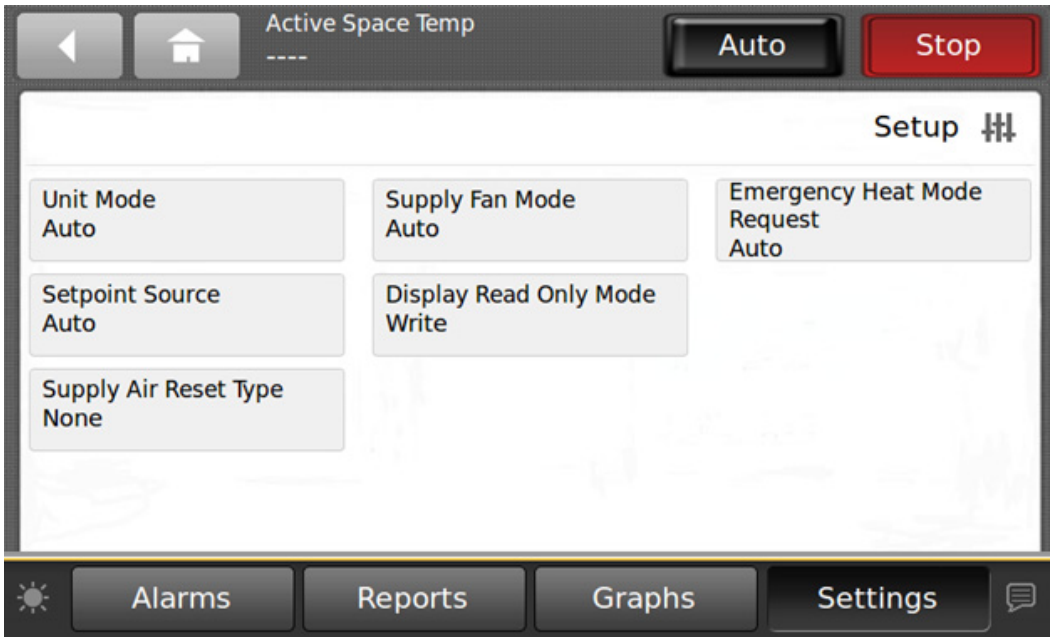
The following data appears in the Setpoints screen.

Front Panel Occupied Space Cooling Setpoint XXX.X °F/C	Front Panel Unoccupied Space Cooling Setpoint XXX.X °F/C	Space Dehumidification Setpoint XX%
Front Panel Occupied Space Heating Setpoint XXX.X °F/C	Front Panel Unoccupied Space Heating Setpoint XXX.X °F/C	Supply Air Reheat Setpoint XXX.X °F/C
Discharge Air Heating Setpoint XXX.X °F/C	Discharge Air Cooling Setpoint XXX.X °F/C	
Duct Static Pressure Setpoint XXX.X °F/C	Duct Static Pressure Deadband X.XX iwc	Morning Warm up Setpoint XXX.X °F/C
Supply Air Cooling Setpoint XXX.X °F/C	Supply Air Heating Setpoint XXX.X °F/C	Daytime Warm-Up Initiate Setpoint XXX.X °F/C
Space Pressure Setpoint X.XX iwc	Space Pressure Deadband XXX.X °F/C	Daytime Warm up Terminate Setpoint XXX.X °F/C
CO_2 Upper Limit Setpoint XXXX PPM	CO_2 Lower Limit Setpoint XXXX PPM	Outdoor Air Flow Adjustment Setpoint X.XX
Supply Air Reset Setpoint XXX.X °F/C	Supply Air Reset Amount XXX.X °F/C	Supply Fan Adjustment Setpoint XX%
Econ Reference Enthalpy Setpoint XX.X BTU/lb	Econ Dry Bulb Enable Setpoint XXX.X °F/C	Exhaust Fan Enable Setpoint XX%
Design Min OA flow Setpoint XXXXX cfm	DCV Min OA Flow Setpoint XXXX cfm	Min OA Flow Deadband XXXXX cfm
Design Min OA Damper Pos Setpoint 100% Fan XX%	Design Min OA Damper Pos Setpoint Mid Fan XX%	Design Min OA Damper Pos Setpoint Min Fan XX%
DCV Min OA Damper Pos Setpoint 100% Fan XX%	DCV Min OA Damper Pos Setpoint Min Fan XX%	
Front Panel Dehumid Override Cool Setpoint XXX.X °F/C	Front Panel Dehumid OVerride Heat Setpoint XXX.X °F/C	
Compressor 1 Starts XXXXXX	Compressor 2 Starts XXXXXX	Compressor 3 Starts XXXXXX
Compressor 1 Starts Running Time HHHHHH:MM	Compressor 2 Starts Running Time HHHHHH:MM	Compressor 3 Starts Running Time HHHHHH:MM
Outdoor Fan A Starts XXXXXX	Outdoor Fan B Starts XXXXXX	Variable Speed Outdoor Fan Starts XXXXXX
Outdoor Fan A Running Time HHHHHH:MM	Outdoor Fan B Running Time HHHHHH:MM	Variable Speed Outdoor Fan Running Time HHHHHH:MM
Supply Fan Starts XXXXX	Supply Fan Running Time HHHHH:MM	
Exhaust Fan Starts XXXXXX	Exhaust Fan Running Time HHHHH:MM	

Setup

Touch the **Setup** button to view the Setpoints screen.
Touch the arrow buttons to move between screens.

Figure 22. Setup screen



This Setup screen shows a list of the setup items in button format. The available setup items are listed below:

Unit Mode Heat, Cool, Auto	Supply Fan Mode On, Auto	Emergency Heat Mode Request Auto, Emergency Heat
System Control Mode Local, Remote	Display Read Only Mode Read, Write	
Supply Air Reset Type Heat, Cool, Auto		

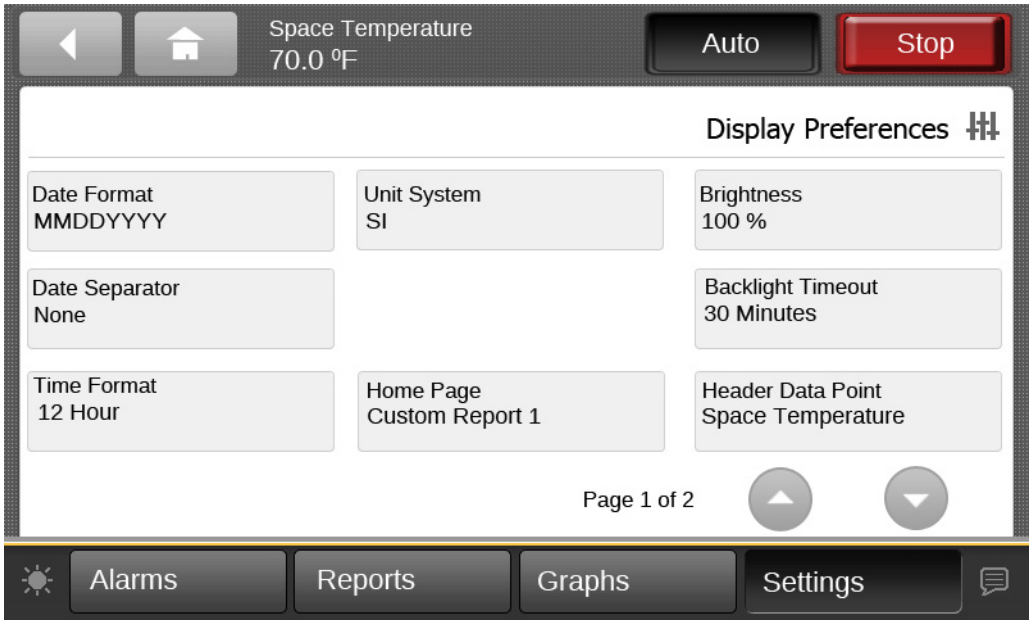
Display Settings Screen

The selections in this category contain settings that affect the way in which information is displayed on all of the TD-5 display screens. From each screen, the current settings can be viewed. To change a setting, touch the preferred value.

Display Preferences

Touch the **Display Preferences** button to open the associated screen (Figure 23, p. 33). On this screen, all available options to display information on the TD-5 screens are available. There are two pages on this screen, accessed by using the arrow button at the bottom of the screen.

Figure 23. 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 **Date Separator** button to open the associated screen. Three options are available to display separators in the date format: None, Hyphen (-), or Slash (/).

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 IP (Inch-Pound).

Brightness

Touch the **Brightness** button, or the brightness icon ( )located at the bottom left of each screen, to open the associated screen. Screen brightness is measured in percentage. Use the keypad to enter a new brightness number.

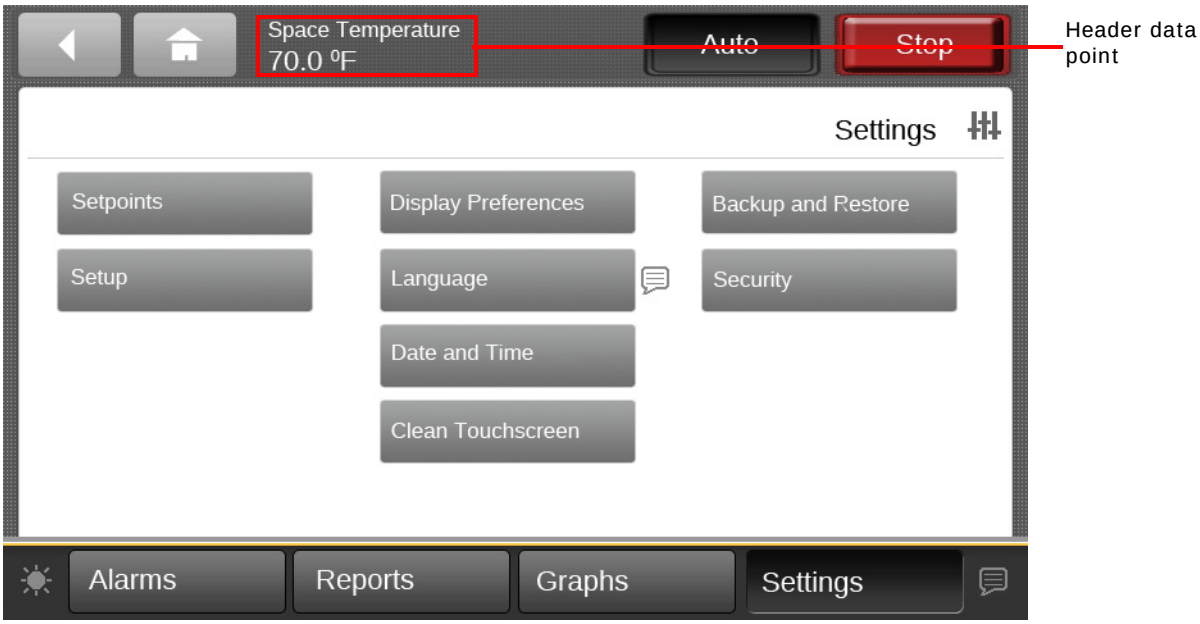
Backlight Time-out

Touch the **Backlight Time-out** 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 time-out 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.

Header Data Point

Use the arrow button on the Display Preferences screen to advance to page 2. Touch the **Header Data Point** button to open the associated screen. The Header Data Point appears in the top right display area on all screens. Use the arrow buttons to scroll through the points. Click **Add** to move the highlighted point to the right side of the screen(Figure 24, p. 34). Click **Save**.

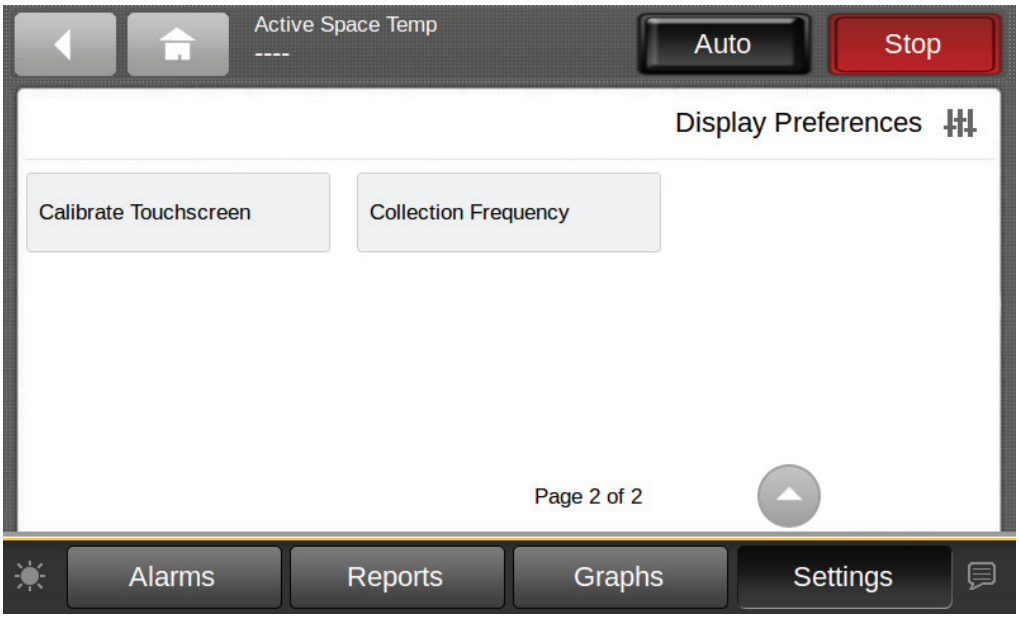
Figure 24. Setting the header data point



Touchscreen Calibration

- Touch the "Calibrate Touchscreen" button to calibrate the touchscreen only if there if there is a problem with the TD5 recognizing button touches (See Figure 25, p. 35).
- Note that after every reboot or power cycle, a touchscreen calibration screen is presented briefly right before the home screen appears. The initial calibration screen is useful in case a calibration problem occurs that makes the touchscreen unusable for touching buttons.
- To calibrate the touchscreen, carefully touch each of the 5 targets presented. It is important that the targets are touched accurately, or this will cause problems touching buttons after calibration. It is recommended (but not required) to use a pencil eraser to do this since it's easier to control the exact location of the touch.
  - Do not use anything hard to press on the touchscreen since this can damage it.
  - If the calibration touches are reasonably accurate, the TD5 will accept the calibration and reboot. If not, it will run through the process again. The TD5 will exit calibration mode if the user doesn't press the screen in a reasonable amount of time to begin the calibration.

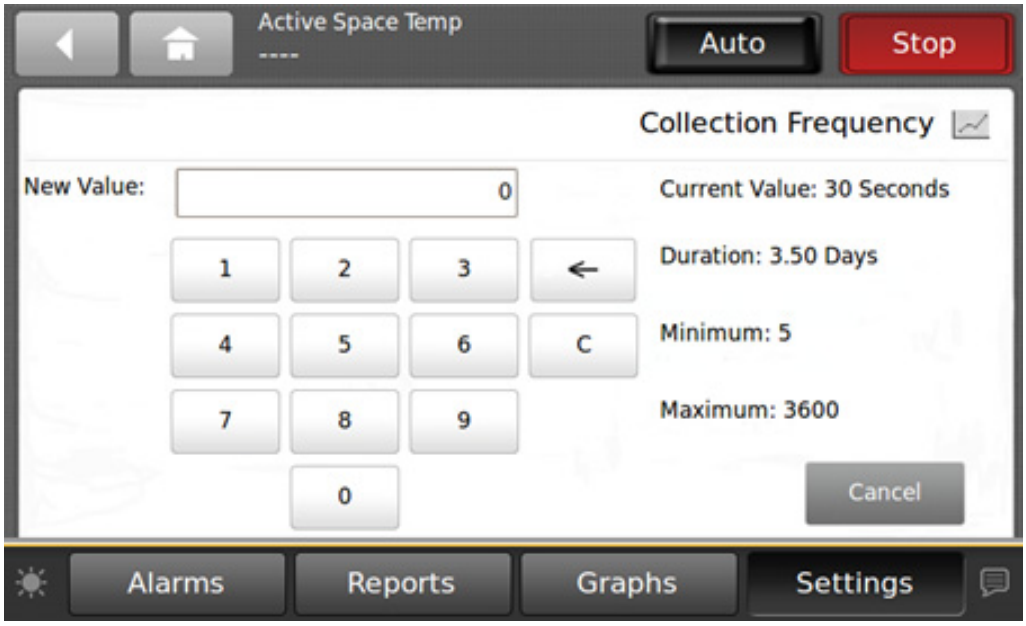
Figure 25. Touchscreen Calibration



Collection Frequency

Collection frequency sets the time interval that the Graph Data is saved, and displayed on the graph. The faster the sample rate, the lower the duration. The default of 30 seconds shall provide 3.5 days of data collection.

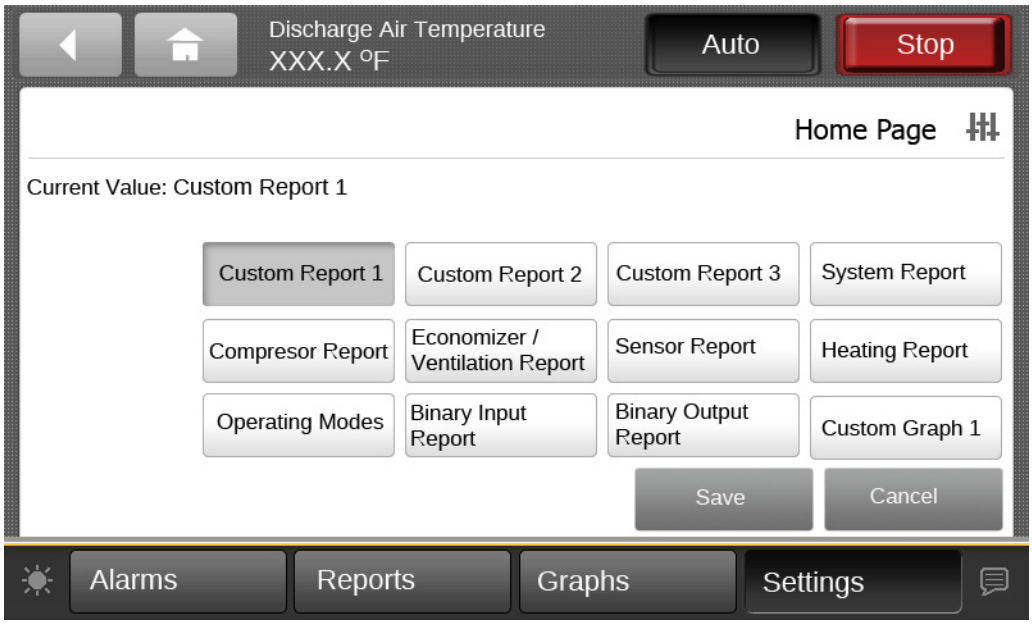
Figure 26. Collection frequency



Home Page

Use the arrow button on the Display Preferences screen to advance to page 2. Touch the **Home Page** button to open the associated screen. This function allows you to choose what will display when the home button is touched.

Figure 27. Home page screen



Language

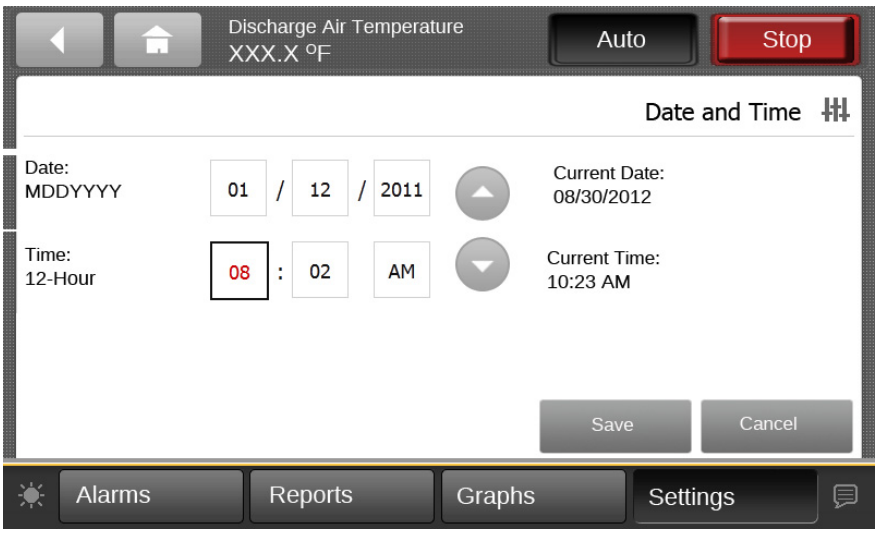
Touch the **Language button**, or the language icon ( ) located at the bottom right of each screen, to open the open the Language screen. Twenty-six languages are available and represented on the selection buttons. Select a language that you want displayed on each TD-5 screen and then touch **Save**. See "Language," p. 36.

Figure 28. 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 appeared with a black border. when finished, touch **Apply** or **Save**. Or,

Figure 29. Date and time screen



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**.

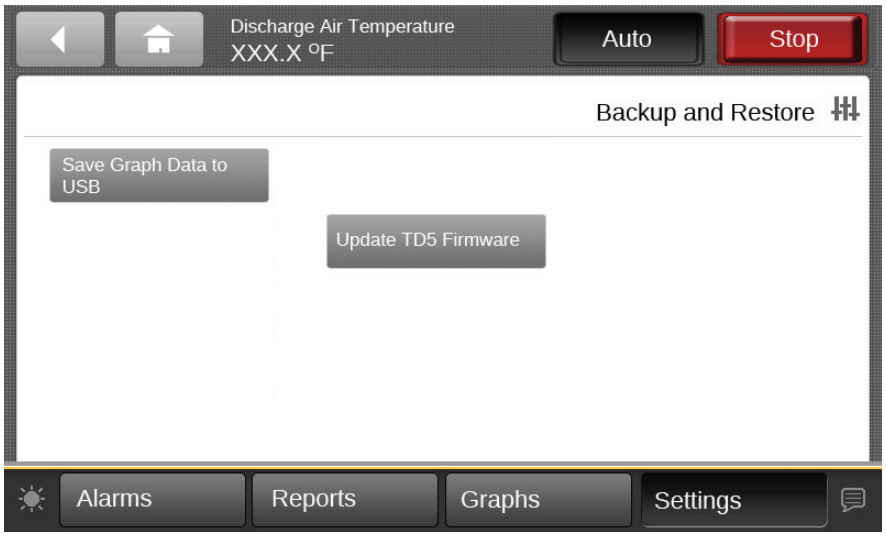
Clean Touchscreen

Touch the **Clean Touchscreen** button to safely clean the TD-5 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).

Backup and Restore

Graph data can be saved to a USB. Click on the Save Graph Data to USB button. Display firmware can be updated by touching the Update TD Firmware button.

Figure 30. Backup and restore screen



Troubleshooting

This section describes the possible error messages and other issues that you may encounter while using the Tracer™ TD-5 display.

Important: *There are no serviceable parts within the TD-5 display enclosure. Opening the enclosure will void the product warranty.*

Identifying and Diagnosing Issues

Problem	Possible Cause	Possible Solution
Blank display (TD-5 does not respond to touch).	No power.	Verify that the TD-5 is connected to a power source, and that the power source is in working condition.
After powering up, the TD-5 displays a message that it is not communicating.	Controller not powered up.	Replace cable if necessary. Power up the controller if necessary.
No data available in custom report.	Data has not yet been defined for the report.	Add data to report. See "Creating a Custom Report," p. 14.
Blank display	TD-5 has gone into a low power mode and shut off backlight.	Touch the TD-5 screen to wake up the display.
Button presses don't work properly.	Touchscreen calibration issue.	Run through a touchscreen calibration by cycling power to the module. See Touchscreen Calibration sections for more information.

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