Manual No: **577013-940** ● Revision: **B**

TLS-4XX Setup and Operation

Screens Manual

VEEDER-ROOT

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Contact TLS Systems Technical Support for additional troubleshooting information at 800-323-1799.

DAMAGE CLAIMS / LOST EQUIPMENT

Thoroughly examine all components and units as soon as they are received. If any cartons are damaged or missing, write a complete and detailed description of the damage or shortage on the face of the freight bill. The carrier's agent must verify the inspection and sign the description. Refuse only the damaged product, not the entire shipment.

Veeder-Root must be notified of any damages and/or shortages within 30 days of receipt of the shipment, as stated in our Terms and Conditions.

VEEDER-ROOT'S PREFERRED CARRIER

1. Contact Veeder-Root Customer Service at 800-873-3313 with the specific part numbers and quantities that were missing or received damaged.
2. Fax signed Bill of Lading (BOL) to Veeder-Root Customer Service at 800-234-5350.
3. Veeder-Root will file the claim with the carrier and replace the damaged/missing product at no charge to the customer. Customer Service will work with production facility to have the replacement product shipped as soon as possible.

CUSTOMER'S PREFERRED CARRIER

1. It is the customer's responsibility to file a claim with their carrier.
2. Customer may submit a replacement purchase order. Customer is responsible for all charges and freight associated with replacement order. Customer Service will work with production facility to have the replacement product shipped as soon as possible.
3. If "lost" equipment is delivered at a later date and is not needed, Veeder-Root will allow a Return to Stock without a restocking fee.
4. Veeder-Root will NOT be responsible for any compensation when a customer chooses their own carrier.

RETURN SHIPPING

For the parts return procedure, please follow the appropriate instructions in the "General Returned Goods Policy" pages in the "Policies and Literature" section of the Veeder-Root **North American Environmental Products** price list. Veeder-Root will not accept any return product without a Return Goods Authorization (RGA) number clearly printed on the outside of the package.

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Introduction

This manual details currently available setup, operation and diagnostic screens for the TLS-4XX Console. Depending on your console type and its installed features, you may only see (and be able to program) some of the screens and/or fields. Skip over the material in this document that does not apply to your particular installation. You cannot perform these setup procedures until the console, probes, and sensors have been installed and configured.

IMPORTANT! READ ALL SECTIONS OF THE INTRODUCTION BEFORE ATTEMPTING ANY SETUP PROCEDURES.

Contractor Certification Requirements

Veeder-Root requires the following minimum training certifications for contractors who will install and setup the equipment discussed in this manual:

Installer Certification:
Contractors holding valid Installer Certification are approved to perform wiring and conduit routing, equipment mounting, probe and sensor installation, tank and line preparation, and line leak detector installation.

TLS-350 Technician Certification
Contractors holding valid TLS-350 Technician Certifications are approved to perform installation checkout, startup, programming and operations training, troubleshooting and servicing for all Veeder-Root TLS-300 or TLS-350 Series Tank Monitoring Systems, including Line Leak Detection and associated accessories.

TLS-450 Technician Certification
Contractors holding valid TLS-450 Technician Certifications are approved to perform installation checkout, startup, programming and operations training, troubleshooting and servicing for all Veeder-Root TLS-450 Series Tank Monitoring Systems, including Line Leak Detection and associated accessories.

In-Station Diagnostics (ISD) Technician Certification
Contractors holding valid ISD Technician Certifications are approved to perform installation checkout, startup, programming and operations training, troubleshooting and servicing for all Veeder-Root In-Station Diagnostics hardware, including ISD-PMC and Carbon Canister Vapor Polisher.

Warranty Registrations may only be submitted by selected Distributors.

Related Manuals

- TLS-4XX Site Prep Manual (P/N 577013-879)
- TLS-4XX Quick Help Guide (P/N 577013-969)
- Electronic Line Leak Detectors Application Guide (P/N 577013-465)

Safety Precautions

Safety and Alert Symbols are used throughout the help files to alert you to important system and safety information. The table below explains symbols you may see when reading the setup and operation instructions for this equipment.

Symbol	Definition
	ELECTRICITY **High voltage exists in, and is supplied to, the device. A potential shock hazard exists.**
	EXPLOSIVE **Fuels and their vapors are extremely explosive if ignited.**
	FLAMMABLE **Fuels and their vapors are extremely flammable.**
	TURN POWER OFF **Live power to a device creates a potential shock hazard. Turn Off power to the device and associated accessories when servicing the unit.**
	WARNING **Heed the adjacent instructions to avoid equipment damage or personal injury.**
	READ ALL RELATED MANUALS **Knowledge of all related procedures before you begin work is important. Read and understand all manuals thoroughly. If you do not understand a procedure, ask someone who does.**

Safety Warnings

⚠ WARNING!

This system operates near highly combustible fuel storage tanks. Leaking tanks can create serious environmental and health hazards.

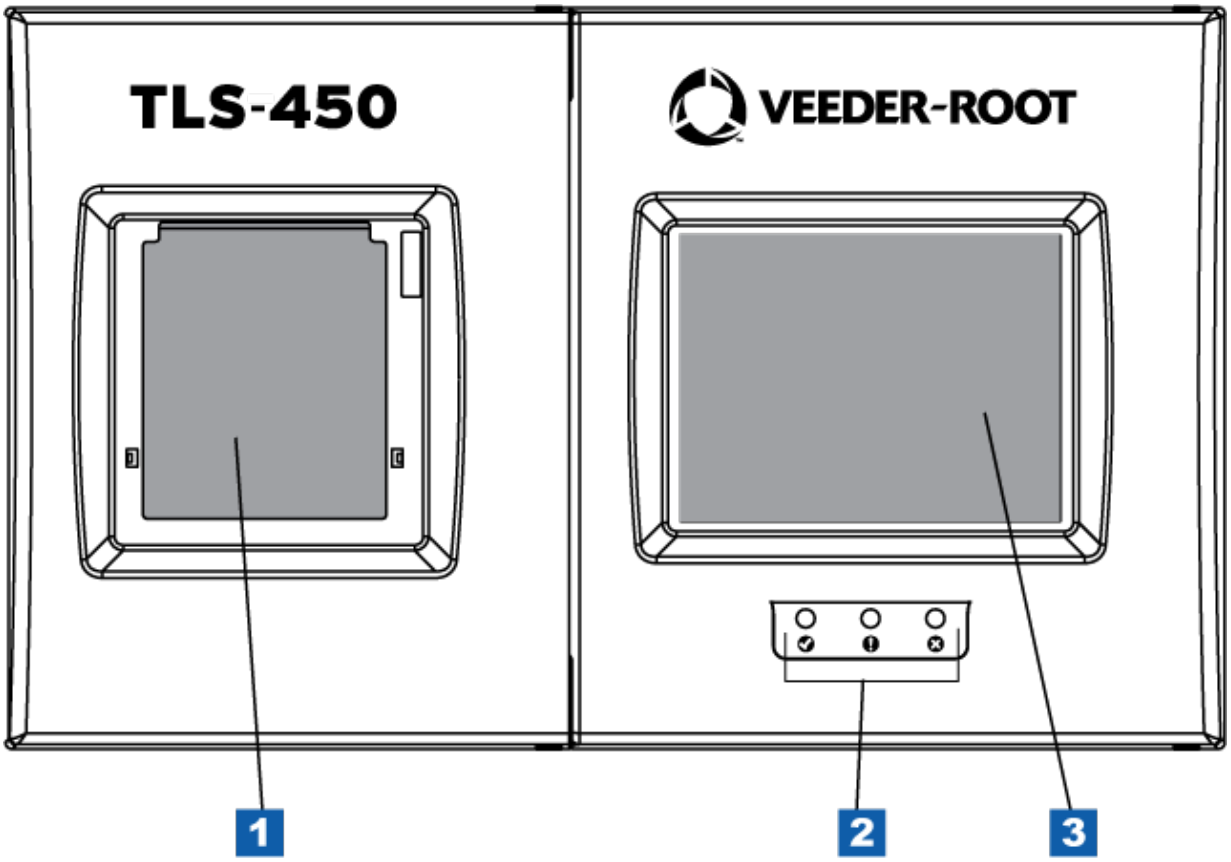
If you have not been trained in proper service procedures and hazards involved, refer all service to a qualified Veeder-Root Service Representative.

Attempting to service tank monitors and equipment without proper training can cause damage to property, environment, resulting in personal injury or death.

Improper programming and operation may result in equipment self-test failures and submersible pump shutdowns. It is the owner's responsibility to:
1. Ensure that this equipment is properly programmed.
2. Promptly investigate any alarm conditions.
3. Operate this equipment in accordance with the instructions in this document.

Front Panel Layout

The TLS-450 Console front panel components are shown below:



Item 1 - Printer

The optional integral printer is installed in the left hand door of the console. The printer uses only V-R thermal roll paper (P/N 514100-456) and it must be installed correctly so the thermal sensitive side faces the print head. A red stripe will appear on the paper when it is time to change the roll.

Item 2 - System Visual Status LEDs

The check symbol is beneath a green LED. When the green LED is lit, there are no alarms active (normal)

The exclamation symbol is beneath a yellow LED. When the yellow LED is lit, there is at least one warning (minor) active.

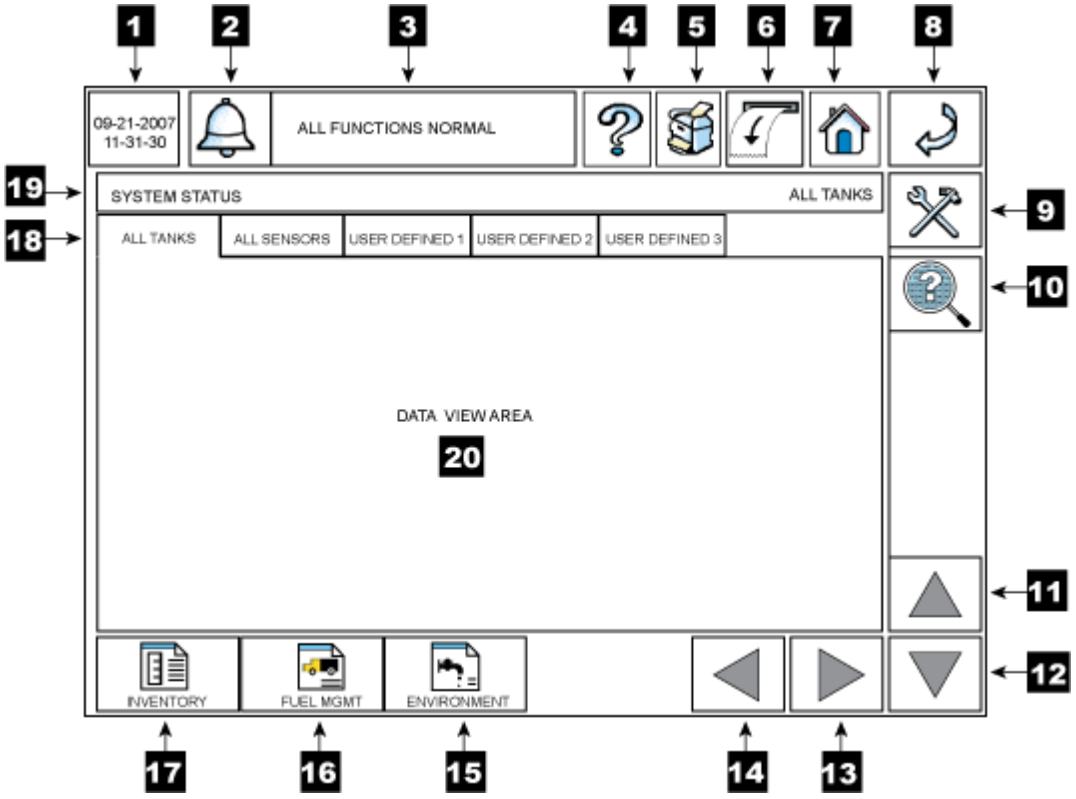
The X symbol is beneath a red LED. When the red LED is lit, there is at least one alarm (major) active.

Item 3 - Touch Screen

The TLS-450 graphical user interface is a touch sensitive screen providing quick access to operational reports, setup parameters, diagnostic information for all configured devices (tanks, sensors, etc.) and Online Help.

Navigating the Touch Screens

After power up, the TLS-450 displays the System Status - All Tanks (Home) screen (see figure below) which contains system information and access to setup, reports, and diagnostics screens as defined in the legend below the figure.



Area/Touch Button	Action/Description
1	Date and Time area displays System Time and Date. Format for time and date is configurable in the system setup area. This area is dynamic and will redraw to update the date and time display twice per second.
2	Alarm Report button - When an alarm occurs, this button will flash and the console beeper will activate. Touch this button once to display the Active Alarms Report screen. Once the Active Alarms Report screen displays, review the alarm list and then touch this button a second time to acknowledge the alarm(s), turn off the flashing System Status box and silence the beeper.

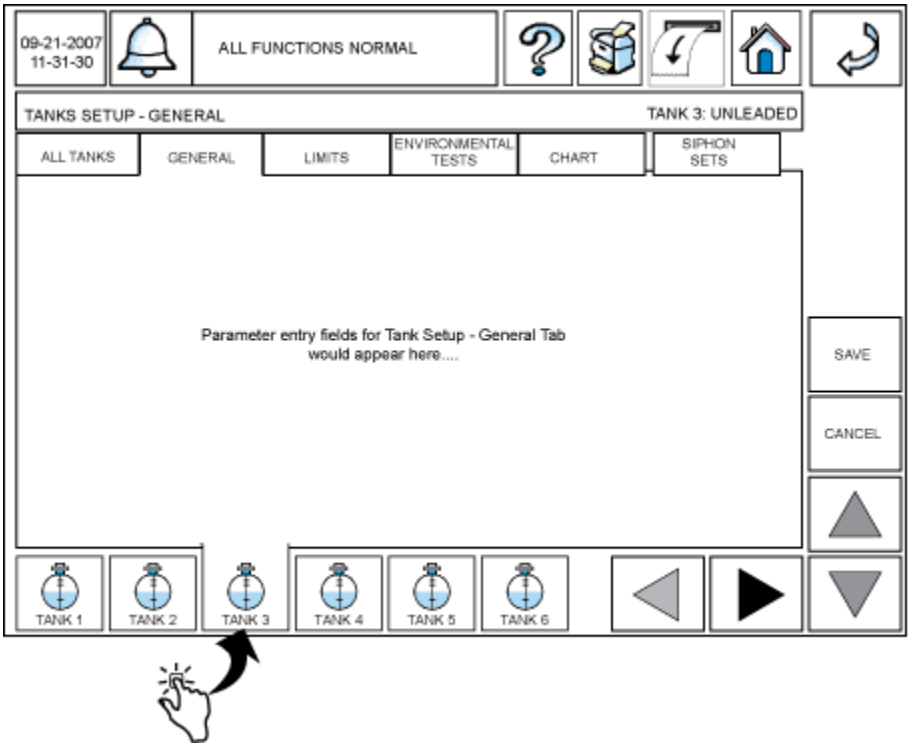
Area/Touch Button	Action/Description
	Touch the Alarm Report button at any time to access all alarm reports: - Active Alarms Report - Alarm History Report - All Alarms - Alarm History Report - Priority Alarms - Alarm History Report - Non-Priority Alarms
3	System Status Box - The System Status box displays system alarm, warning and notice messages. If there are no active or inactive alarms, the system status message "All Functions Normal" is displayed. When an alarm occurs, the System Status box will flash and display the alarm, warning or notice message. Once the alarms have been acknowledged, the System Status box will no longer flash. The alarm message will continue to display in the System Status box until the cause of the alarm has been corrected. When more than one alarm is active, the alarm labels will continuously scroll in the System Status box until they have been corrected.
4	Help button - Touching the Help button displays the console's online help topic for the screen being viewed. Touch the Table of Contents button in the upper left corner of the help screen to open the online help table of contents in which you can navigate to any online help topic.
5	Print button - Touching the Print button will print the contents of the data view area to the optional integral printer. Nothing will print if the view is empty or printing is not relevant to that screen. If the system has no printer this button will be disabled.
6	Line-Feed button - Touching the Line Feed button will advance the printer paper about one inch (25mm).
7	Home button - Touching the Home button returns you to the System Status - All Tanks screen shown in the figure above.
8	Back button - Touching the Back button displays the previously viewed screen.
9	Setup button - Touching the Setup button displays the main System Setup Screen.
10	Diagnostic button - Touching the Diagnostic button displays the main Diagnostic Screen.
11	Scroll Up button - Touch the Scroll Up button to scroll upward through the contents of the Data View area in batches that will fit in the data view area of the display. It will be Enabled/Disabled based on Records or Data available for display.

Area/Touch Button	Action/Description
12	Scroll Down button - Touch the Scroll Down scroll button to scroll downward through the contents of the Data View area in Batches that will fit in the data view area of the display. It will be Enabled/Disabled based on Records or Data available for display.
13	Scroll Right button - When the number of data report columns or bottom row device buttons is greater than can be shown at once, touch this button to scroll right to access off-screen data/devices. This button will be disabled unless necessary.
14	Scroll Left button - When the number of data report columns or bottom row device buttons is greater than can be shown at once, touch this button to scroll left to access off-screen data/devices. This button will be disabled unless necessary.
15	Environmental Report button - Touching this button accesses the following Environmental Reports: - Combined Tank Test Report - Static Leak Test Report - Line Leak Test Report - Sensor Status Report - Sensor History Report
16	Delivery Report button - Touching this button displays the Delivery Report.
17	Inventory Report button - Touching this button accesses the following Inventory Reports: - Current Inventory Report - Inventory History Report - Shift Inventory Report
18	Tab Screen buttons - Touching any of the Tab Screen buttons displays the related screen: - All Tanks current status screen - All Sensors current status screen - User Defined 1, 2, 3 (user configured) status screens
19	Title Bar - The title bar area will always be present and will provide text to help identify the current screen in the Data View area. Information related to the name of the screen, selected tab screen name, and specific device or object being displayed will be present. The right side of the title bar contains additional title information. Often this is the name or label of a selected item.
20	Data View area - The Data View area displays the requested report, setup fields, etc.

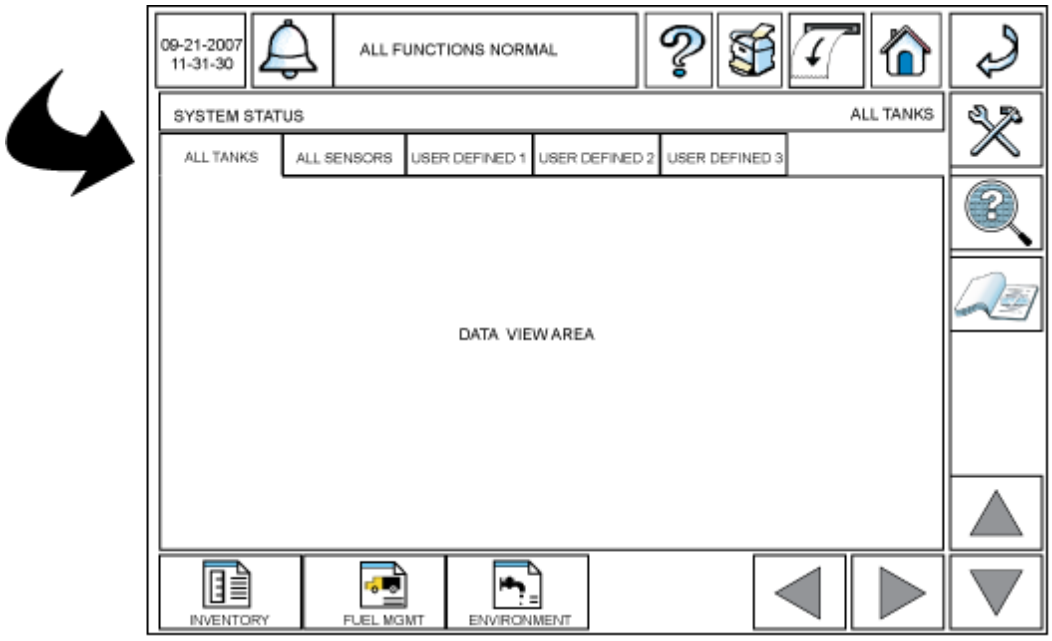
Setup, Operation, Diagnostic Touch Screen Layout

The top button row of all console screens is shown below. The Date/time box on the left and the touch buttons to the right are present across all screens.

When you are viewing Setup or Diagnostic screens, the buttons below the data view area will represent the configured or active (communicating) devices (see example below for Tank Setup). You touch a device's button and then access setup parameters or diagnostic information for that device (Tank 3 is selected in the example below).



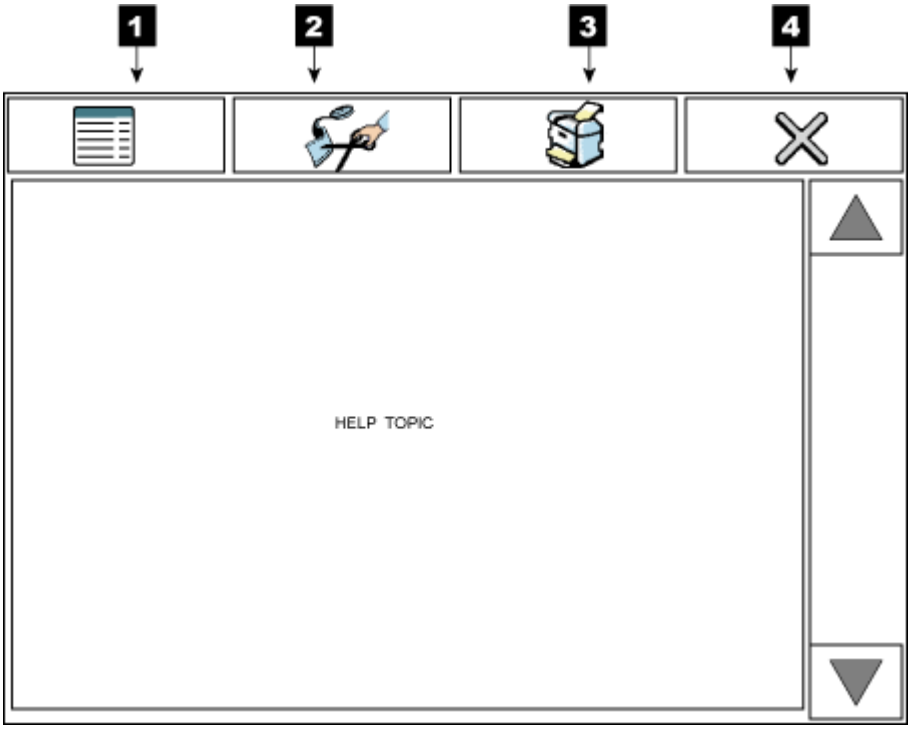
The data area displays the information associated with any selected setup, report or diagnostic screen. Tabs at the top of the data area (All Tanks, All Sensors, User Defined 1, etc. in the diagram below), if present, provide access to related data screens when touched.



Online Help Touch screen Layout

Touching the help (?) button at the top of any Setup, Report (Operation) or Diagnostic screen displays the online help topic for that screen.

The help screen layout is shown below:



Item 1 - Online Help Table of Contents button

Touch this button to display the online help table of contents. When in the table of contents you can scroll through it and select any topic for display.

Item 2 - Edit Help button

If this feature is enabled, you can touch this button to view/add your own text to the default text for any selected help topic. Custom entered text will display at the top of the topic's default text. If this feature is disabled, the Edit Help button will not be visible.

Item 3 - Print button

Touch this button to print the selected help topic on the optional console printer.

Item 4 - Close Help button

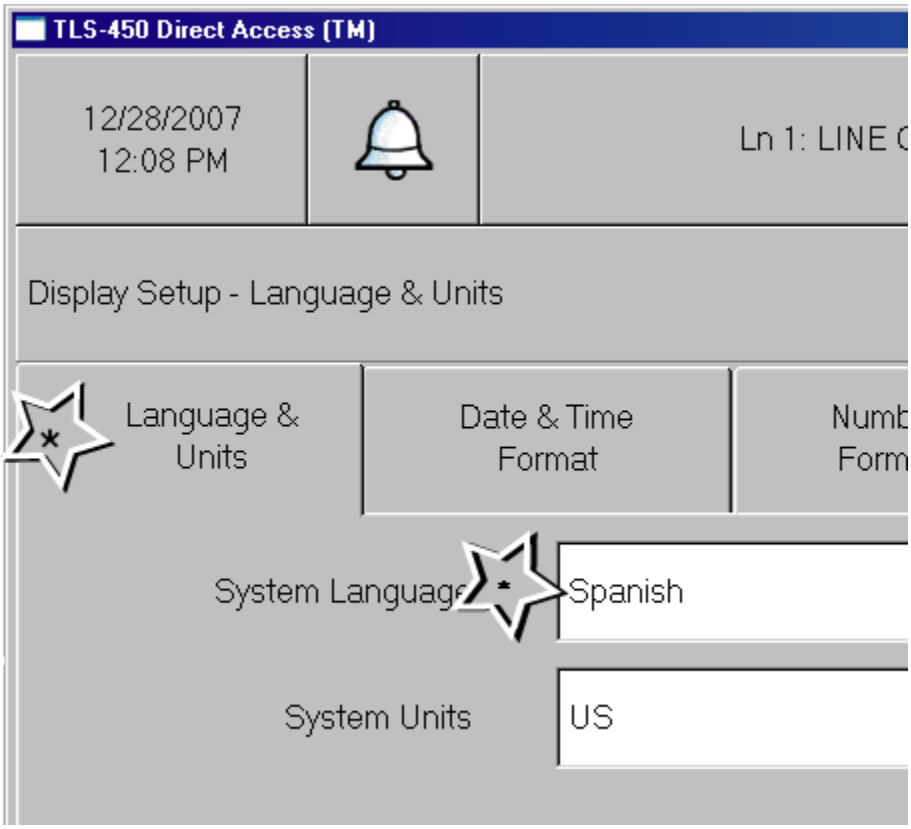
Touch this button to close the online help screen and return to the previously viewed console screen.

Entering Data

You enter setup parameters, confirm/cancel setup field entries, select reports, etc., using any one of a variety of touch buttons, drop-down lists and specialty dialog boxes that are easy to understand and use.

Changing/Editing Values in a Field

When you make an entry or change to a field on a screen, an asterisk (*) is displayed on the currently viewed tab and beside the edited field (see star highlights in example below):



Touch the Check button ✓ to accept your entry/change or touch the Cancel button ✗ to undo your entry/change.

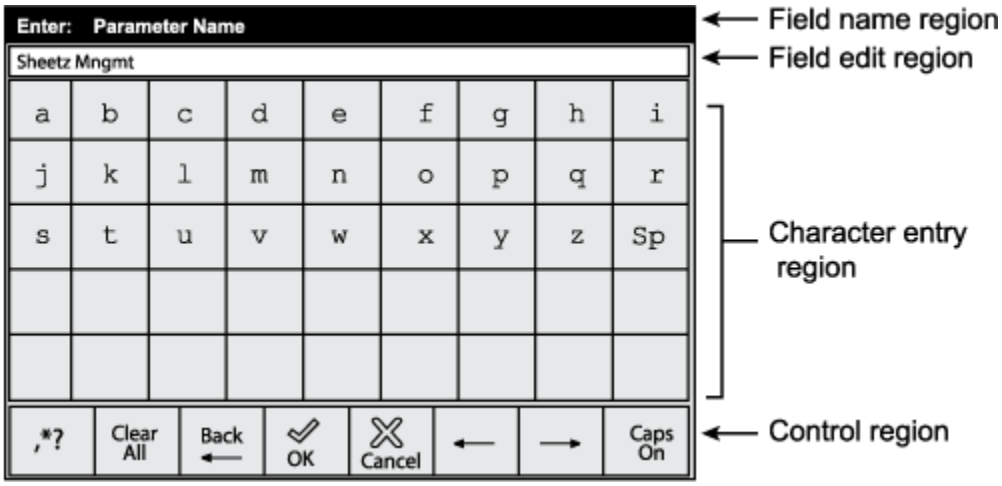
If you try and leave the screen after editing a field, but before saving your change, a Save dialog box will display, forcing you to either save or cancel your edit before leaving the screen.

Specialty Dialog Keypads

The Specialty Dialogs section of the online help describes the function of all buttons on each of the following keypads - there are some multi-function buttons in these keypads which you should understand before using them:

Alpha Entry Keypad

The Alpha Keypad dialog lets you enter letters of the alphabet for labels, names, etc.\



- **Field Name Region**

  This is the title area that displays the name of the field value being entered.

- **Field Edit Region**
  This is the view area to show the value as it is being entered (entries are left justified).

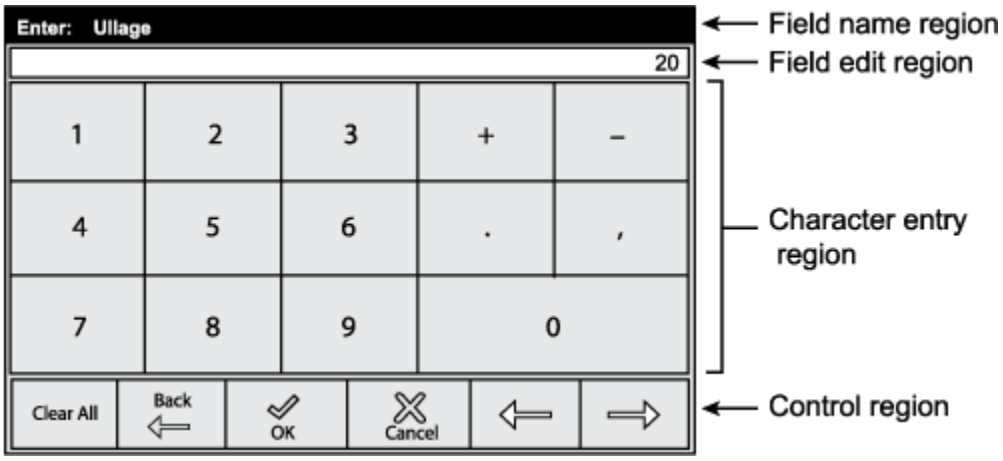
- **Character Entry Region**
  This region has Buttons that enter characters in the Field Edit Line.

- **Control Region**
  The region has the following buttons, from left to right:

  - **,*?** - touch this button to toggle between the Enhanced Numeric and Alpha keypad interfaces. It is enabled when the field is an Alphanumeric Entry. It is disabled if the field is an Alpha only entry.
  - **Clear All** - touch this button to clear the entire entry.
  - **Back** - touch this button to remove a character to the left of the cursor.
  - **OK** - touch this button to apply the selection.
  - **Cancel** - touch this button to discard any selections that have been made.
  - ← touch this button to move the cursor to the left.
  - → touch this button to move the cursor to the right.
  - **Caps On** - touch this button to turn on or off caps.

Numeric Entry Keypad

The Numeric Keypad dialog will display when you are required to enter integer and decimal entries:



- **Field Name Region**

  This is the title area that displays the name of the field value being entered.

- **Field Edit Region**
  This is the view area to show the value as it is being entered (entries are right justified).

- **Character Entry Region**
  This region has Buttons that enter characters in the Field Edit Line.

- **Control Region**
  The region has the following buttons, from left to right:

  - **Clear All** - touch this button to clear the entire entry.

  - **Back** - touch this button to remove a character to the left of the cursor.

  - **OK** - touch this button to apply the selection.

  - **Cancel** - touch this button to discard any selections that have been made.

  - ← touch this button to move the cursor to the left.

  - → touch this button to move the cursor to the right.

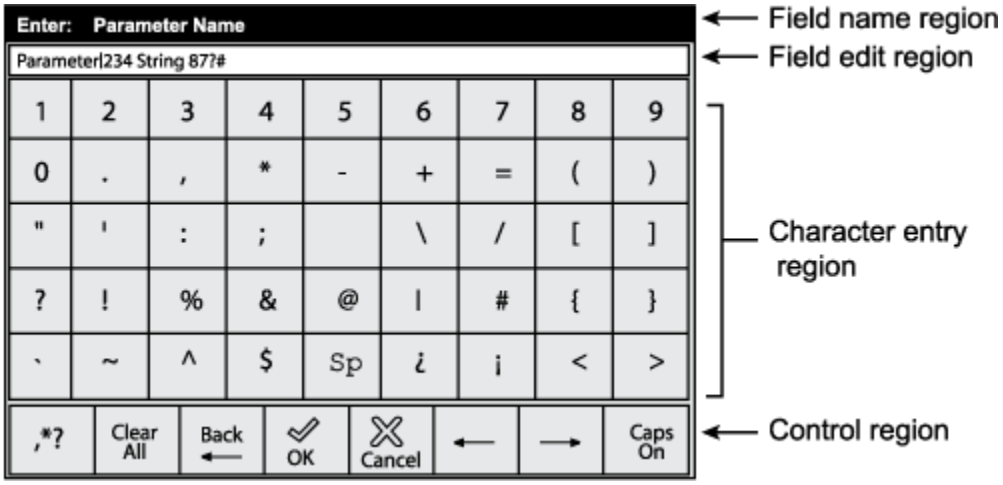
Notes:

- Touching '**+**' and '**-**' buttons will toggle the sign of the number between positive and negative. The negative sign character will be shown to the left of the numeric entry. The positive sign will not be shown. It will be disabled if range for value does not include negative numbers.
- Touching the '**,**' button will insert a comma for entries that use thousands separators. This button will be enabled or disabled based on the thousands separator setting in number format section of Display Setup.

Enhanced Numeric Entry Keypad

The Enhanced Numeric Keypad dialog provides characters that contain numeric and punctuation characters used by the alpha numeric fields for the currently

selected language. This dialog is used to enter alpha numeric fields and special alpha numeric fields like phone numbers, IP addresses, etc.



- **Field Name Region**

  This is the title area that displays the name of the field value being entered.

- **Field Edit Region**
  This is the view area to show the value as it is being entered (entries are left justified). The text will be left justified for both alphanumeric and enhanced numeric entries and right justified for both numeric and hexadecimal entries.

- **Character Entry Region**
  This region has Buttons that enter characters in the Field Edit Line. The 'Sp' button enters a Space Character.

- **Control Region**
  The region has the following buttons, from left to right:

  - **,*?** - touch this button to toggle between the Enhanced Numeric and Alpha keypad interfaces. It is enabled when the field is an Alphanumeric Entry. It is disabled if the field is an Alpha only entry.

  - **Clear All** - touch this button to clear the entire entry.

  - **Back** - touch this button to remove a character to the left of the cursor.

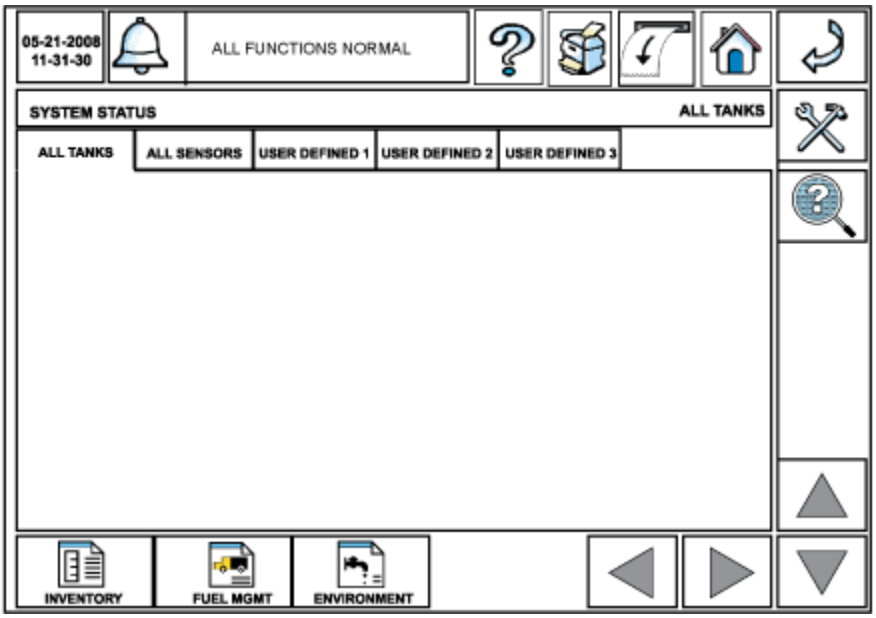
- **OK** - touch this button to apply the selection.
- **Cancel** - touch this button to discard any selections that have been made.
- ← touch this button to move the cursor to the left.
- → touch this button to move the cursor to the right.
- **Caps On** - touch this button to turn on or off caps.

NOTE: The '¿' and '¡' symbols and other language specific punctuation characters will only show up for languages that need them.

Initial Console Setup Sequence

Install all modules and Comm devices in the console. Install and connect all devices to the console. Connect necessary cabling to the Comm devices. Connect power wiring to the console.

Switch the dedicated circuit breaker on at the power panel to apply power to the console. The System Status - All Tanks screen (home screen) will display (see example below):



Touch the Setup button to access the System Setup screen and perform the initial console setup following the sequence below:

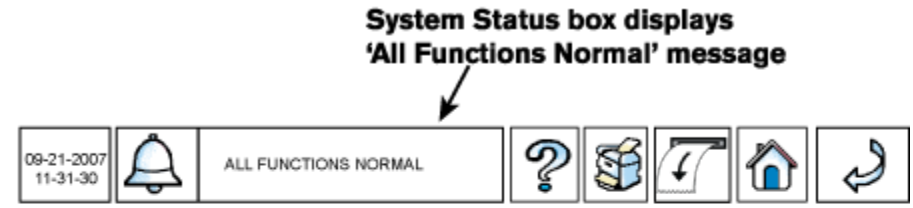
1. Date and Time Setup
2. Headers Setup
3. Display Setup
4. Devices (probes, sensors, relays) Setup
5. Communication Setup
6. Tanks Setup (in order of the Tab Screens left to right)
7. Tank Test Setup
8. Pumps and line Setup (in order of the Tab Screens left to right)
9. Automatic Events Setup - do after above setups - make sure communications is setup first - do address book first
10. Custom Alarms Setup
11. Custom Help Setup
12. Security Setup

Understanding Alarms

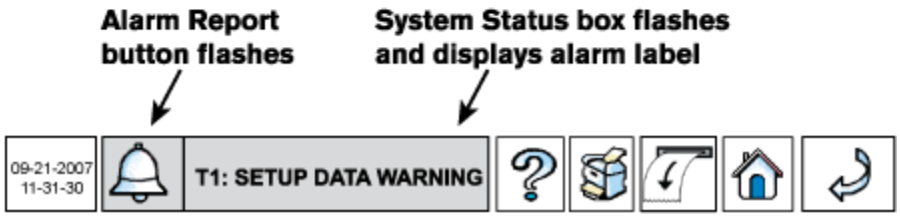
What Happens When An Alarm Is Posted?

When the console posts an alarm, the console beeper sounds, the front panel LED associated with the alarm type lights, the Alarm Report button/System Status box both flash and the System Status box displays the alarm label (see example below):

NORMAL CONDITION



ALARM CONDITION



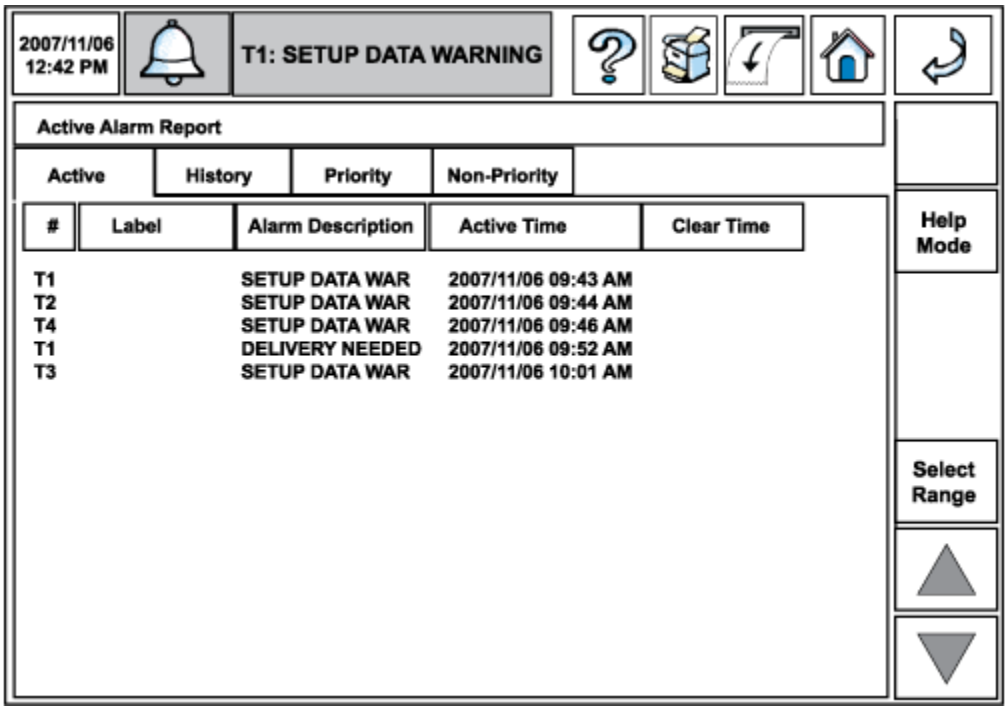
The Alarm Report button and System Status box will continue to flash until you acknowledge the alarm(s). The warning and alarm label(s) will continue to display (scroll) in the System Status box until you correct the cause of the problem.

If your system has a printer, and it has been programmed to do so, reports will be printed of programmed alarm events and notifications. Reference the Automatic Events Add Tasks - Print topic.

NOTE: Each of the alarm notification annunciators discussed above can be turned off in Custom Alarm Setup, but the factory default setting is all enabled.

How Do I Silence the Console Beeper and Acknowledge the Alarm?

Touch the flashing Alarm Report button to display the Active Alarm Report (see example below):

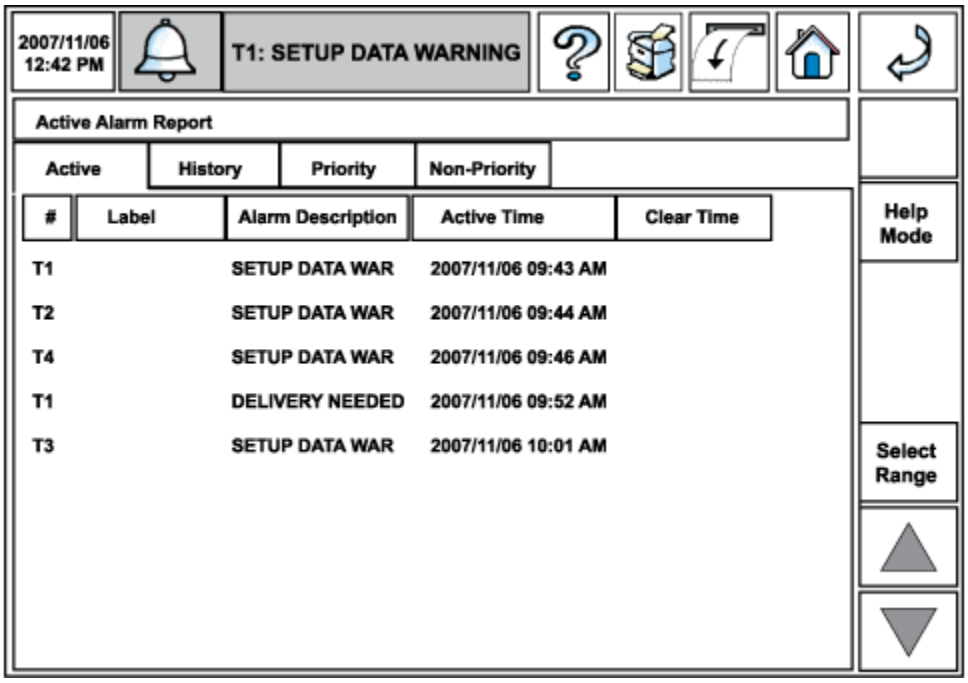


The Active Alarm Report screen shows all active and unacknowledged alarms and warnings. Once you have examined this list, touch the Alarm Report button a second time to acknowledge the unacknowledged alarms and silence the console beeper (the Alarm Report button and System Status box will also stop flashing when you acknowledge alarms). Acknowledging alarms does not clear them, that requires fixing the cause of the alarm.

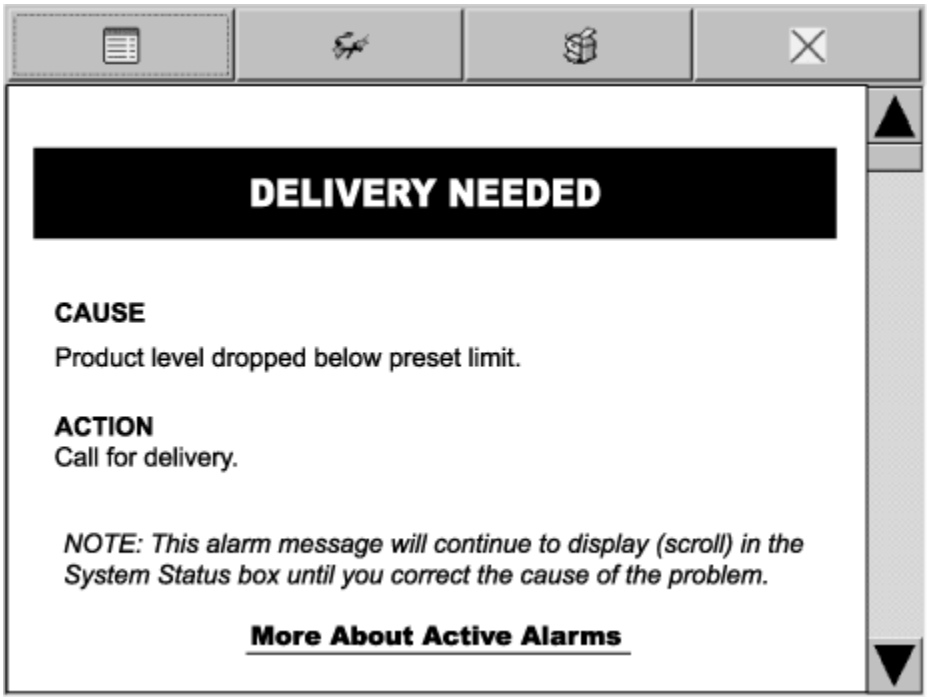
How Do I Learn More About an Alarm and What To Do About It?

You can access all alarm reports (Active, History, Priority and Non-Priority) at any time by touching the Alarm Report button. The Active Alarm Report is the first screen to display. To learn more about any of the alarms on the Active Alarm Report screen, touch the Help Mode button on the upper right of the data view area and the report's

rows of alarms become more separated in the Alarm Help Mode screen (see example below):



Next touch anywhere in the desired alarm's row to display an Alarm Help screen in which its cause and a suggested corrective action are shown (see Delivery Needed alarm example below):



You can touch the More About Active Alarms link at the bottom of the Alarm Help screen to display a screen that contains, in addition to a quick alarm response overview, the warning shown below:

⚠ WARNING!

This system operates near highly combustible fuel storage tanks. Leaking tanks can create serious environmental and health hazards.

If you have not been trained in proper service procedures and hazards involved, refer all service to a qualified Veeder-Root Service Representative.

Attempting to service tank monitors and equipment without proper training can cause damage to property, environment, resulting in personal injury or death.

Touch the Cancel button at the top of the Alarm Help screen to return to the Alarm Help Mode screen. Touch the Previous button in the Alarm Help Mode screen to exit the Active Alarm Report.

Changing Printer Paper

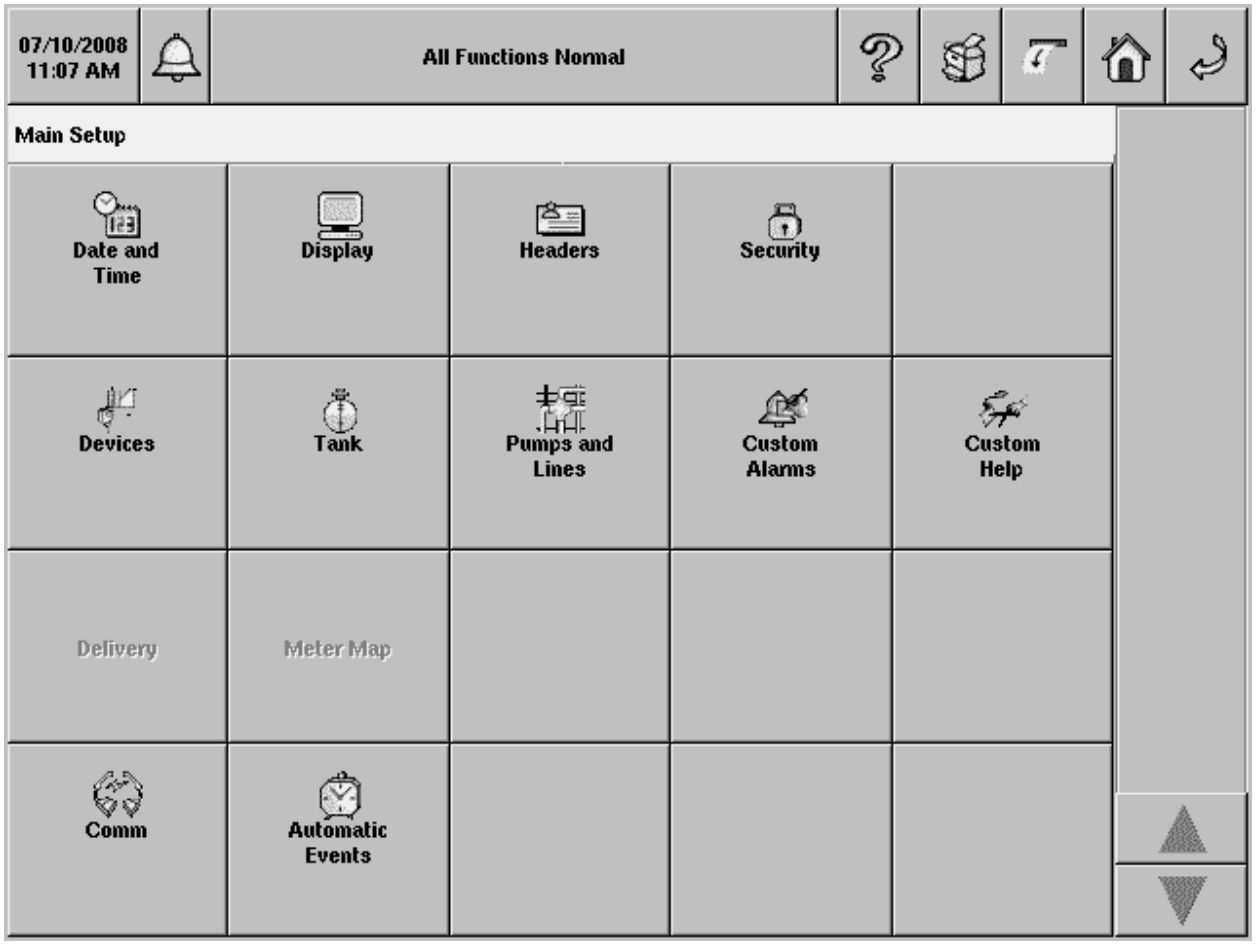
The optional integral printer is installed in the left hand door of the console. The printer uses only V-R thermal roll paper (P/N 514100-456) and it must be installed correctly so the thermal sensitive side faces the print head. A red stripe will appear on the paper when it is time to change the roll.

To add/replace a paper roll:

1. Lower the front panel paper cover (it rotates down and into the door).
2. Flip the lever to the right of the small paper feed roller down to disengage it.
3. Remove the paper from the printer by clasping both sides of the paper where it goes under the small paper feed roller and gently pulling out and down.
4. Remove and discard the old roll of paper.
5. Unfasten the end of a fresh roll of paper and insert the roll into the paper tray with the end of the paper tail facing you from the bottom of the roll.
6. Pull the tail out, up and over the new roll and push the tail under the small paper feed roller until it exits above the small feed roller. Pull the tail out from the small paper feed roller a few inches, and after checking the paper for proper alignment, flip the lever up to engage the roller.
7. Feed the end of the paper through the slot in the cover as you close the paper cover.

Setup Screens

Main Setup Screen



The Main Setup menu screen contains touch button navigators to all device setups in the console. If a button is dimmed, it is a disabled feature that is unavailable. Available system setups are discussed below.

NOTE: the term ' tab screen' as used herein, refers to the labeled tab visible at the top of a data area of a screen, which when touched, opens the related screen.

Date and Time Setup

The Date and Time Setup lets you enter date and time settings for the console.

Date and Time Setup tab screens include:

- Daylight Savings
- Date & Time Set
- Report Times (Shift/Inventory Close) setup

Display setup

The Display Setup lets you select settings that affect the way information is displayed in reports and the screens.

Display Setup tab screens include:

- Language & Units
- Date & Time Format
- Number Format
- System Status Setup
  This setup lets you determine which tank and device status tab screens will be accessible from the main or home screen. The tab screens available include: All Tanks, All Sensors, and up to 3 User Defined tab screens.

Headers Setup

This section contains the 4 Header Station Information fields. It also contains the options of adding a fax sender's name and fax number to the header info set, and whether to include the header info set on all printouts.

Security Setup

The Security Setup lets you enable Front Panel Security and require a password for access to the Log-in mode (for setup and diagnostic access). Once the Front Panel Security selection has been enabled, you must enter the correct password or remain in the Log-Out mode and only be allowed to view system status screens and print out end-user reports.

Devices Setup

The Devices Setup lets you configure and setup all sensing devices, inputs from external inputs or control through relays monitored by the console. Devices can be

connected directly to USM modules and I/O modules installed in the console or connected via communication links to hardware outside of the console. Most devices also have properties that are unique based on their device type. The setup of these parameters is done via a setup tab screen available for each device type and/or device group.

Devices Setup tab screens include:

- Modules
- Probes
- Relays
- External Inputs
- Liquid Sensor
- Type A Sensor (2-Wire CL)
- Type B Sensor (3-Wire CL)
- MAG Sensor
- Ground Water Sensor
- Vapor Sensor
- Line Pressure Sensor

Tank Setup

The Tank Setup lets you enter setup parameters for all tanks monitored by the console.

Tank Setup tab screens include:

- All Tanks - Settings that apply across all tanks in system
- General - Enabled and Product information
- Limits - Limits and set points for alarms, warnings, etc.
- Environmental Tests - Leak Test setup and manual initiation
- Chart - Tank Chart setup
- Siphon Sets - Siphon Manifold Set assignments

Pumps and Lines Setup

The Pumps and Lines Setup lets you enter setup parameters for all pumps, all lines or Pressurized Line Leak Detection (PLLD) monitored by the console.

Pumps and Lines Setup tab screens include:

- Pumps - Settings for individual pumps
- All Lines - Settings that apply across all lines in system
- Lines - Settings for individual lines
- All PLLD - Settings that apply across all PLLDs in system
- PLLD - Settings for individual PLLDs

Custom Alarms Setup

The Custom Alarms Setup allows you to change the alarm description label for ease of understanding and to enable/disable the alarm's activation of the console beeper, front panel LEDs and/or system status display.

Custom Alarms Setup tab screens include:

- Enable - enable and disable the option of using the custom alarm labels set for printouts and for system status display.
- View - lets you view all existing custom alarms
- Setup - lets you enter custom alarm labels for selected system alarms.

Custom Help Setup

The Custom Help Setup allows you to create custom help for any online topic and for selected alarms.

Custom Help Setup tab screens include:

- Enable - allows you to add custom help text to console online help topics and to select whether on not to display the custom help text and allow access to the custom help edit feature.
- Alarms - lets you create custom text that is assigned to a selected alarm and that will display when that alarm occurs and the user requests cause/action information about the alarm.

Automatic Events Setup

The Automatic Events Setup lets you assign tasks to be performed, the means by which the task will be performed, the important transactions/activities/alarms/warnings (events) that will cause the task to be performed and the entity affected by the action.

Automatic Events can be setup for two categories:

1. Time based
2. Event based (Alarms and Notifications)

Automatic Events Setup tab screens include:

- Device Tasks - Use this screen to set up and define the Device-Related Automatic tasks to be performed.

- Print Tasks - Use this screen to set up and define the Printer-Related Automatic tasks to be performed.

- Auto Connect Tasks - Use this screen to set up and define the Auto-Connect and Related Automatic tasks to be performed.

- Address Book - Use this screen to set up and define a List of Addressees (Contacts List) if the action is intended for either Data Transmission or to alert an external device that something of importance has happened at the Console so that it can be polled by that device (Outbound Connection in Computer mode, for example).

- All Tasks - Use this screen to view a report-like description of all Automatic Tasks (Device, Print and Auto Connect) you have set up.

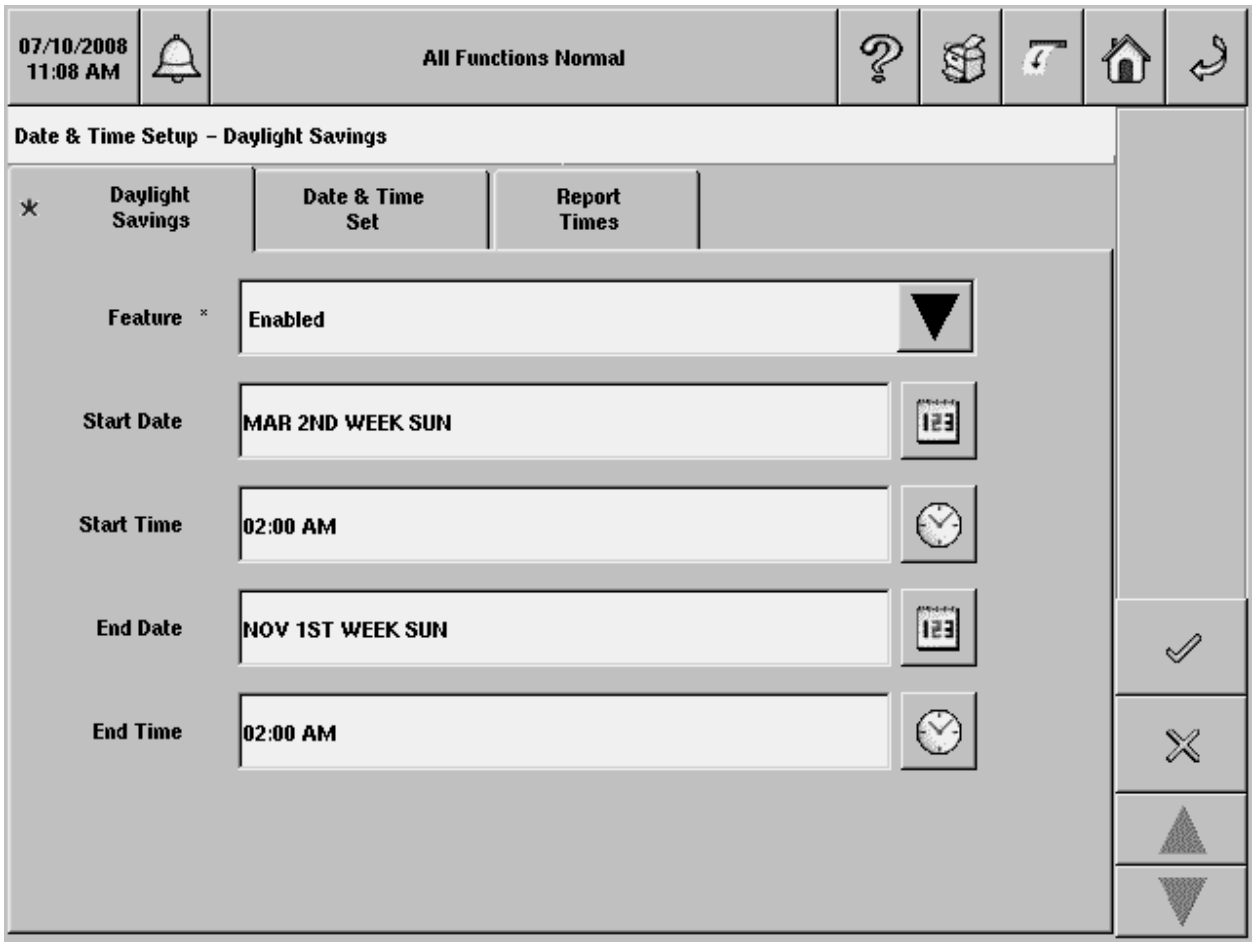
- Task Log - you may need to follow up on automatic tasks. This screen contains a History (Log) listing the results of assigned tasks.

Comm Setup

The Comm Setup lets you configure installed communication devices.

Comm Devices include:
- RS-232
- RS-485
- Internal Modem
- Satellite - H-JBox
- Satellite - S-SAT
- Ethernet
- USB

Date & Time Setup - Daylight Savings



This section contains the Daylight Savings time setup for the console.

Most of the United States begins Daylight Saving Time at 2:00 a.m. on the second Sunday in March and reverts to Standard Time on the first Sunday in November. In the U.S., each time zone switches at a different time.

In the European Union, Summer Time begins and ends at 1:00 a.m. Universal Time (Greenwich Mean Time). It begins the last Sunday in March and ends the last Sunday in October. In the EU, all time zones change at the same moment.

Feature

This field lets you enable or disable daylight savings time.
Allowable Selection: Enabled/Disabled
Default: Disabled

Start Date

Allowable Selections: See below
Default: MAR SECOND WEEK SUN

Select Month

Allowable Selections: January - December
Default: MAR

Select Week Number

Allowable Selections: First, Second, Third, Fourth, Last
Default: SECOND

Select Day of Week

Allowable Selections: Sunday - Saturday
Default: SUN

Start Time

Allowable Selections: See below
Default: 02:00 AM

Hours

Allowable Selections: 0 to 23 (or 1 to 12 if 12 Hr Format)

Minutes

Allowable Selections: 0 to 59

AM/PM (if 12 Hr Format)

Allowable Selections: AM, PM

End Date

Allowable Selections: See below
Default: NOV FIRST WEEK SUN

Select Month

Allowable Selections: January - December
Default: NOV

Select Week Number

Allowable Selections: First, Second, Third, Fourth, Last
Default: FIRST

Select Day of Week

Allowable Selections: Sunday - Saturday
Default: SUN

End Time

Allowable Selections: See below
Default: 02:00 AM

Hours

Allowable Selections: 0 to 23 (or 1 to 12 if 12 Hr Format)

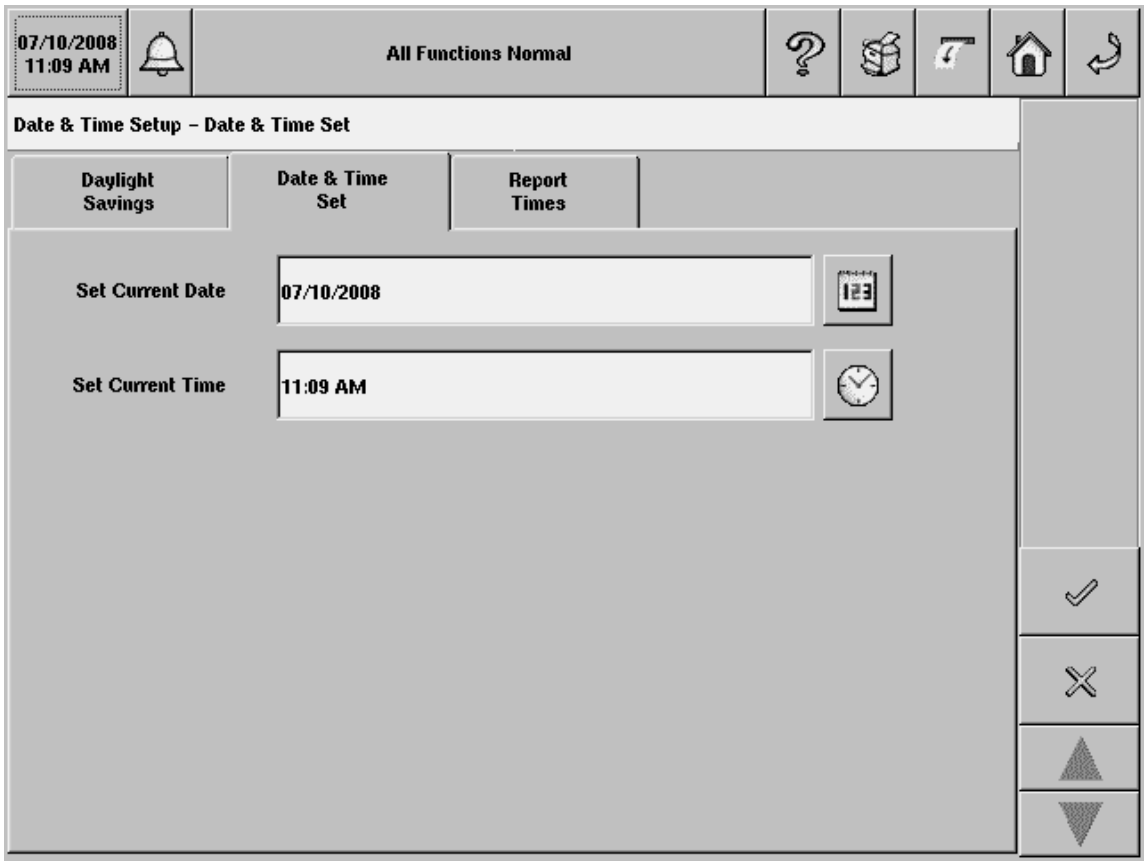
Minutes

Allowable Selections: 0 to 59

AM/PM (if 12 Hr Format)

Allowable Selections: AM, PM

Date & Time Setup - Date & Time Set



This screen lets you enter the current Date and Time for the console.

Set Current Date

Enter the current date.

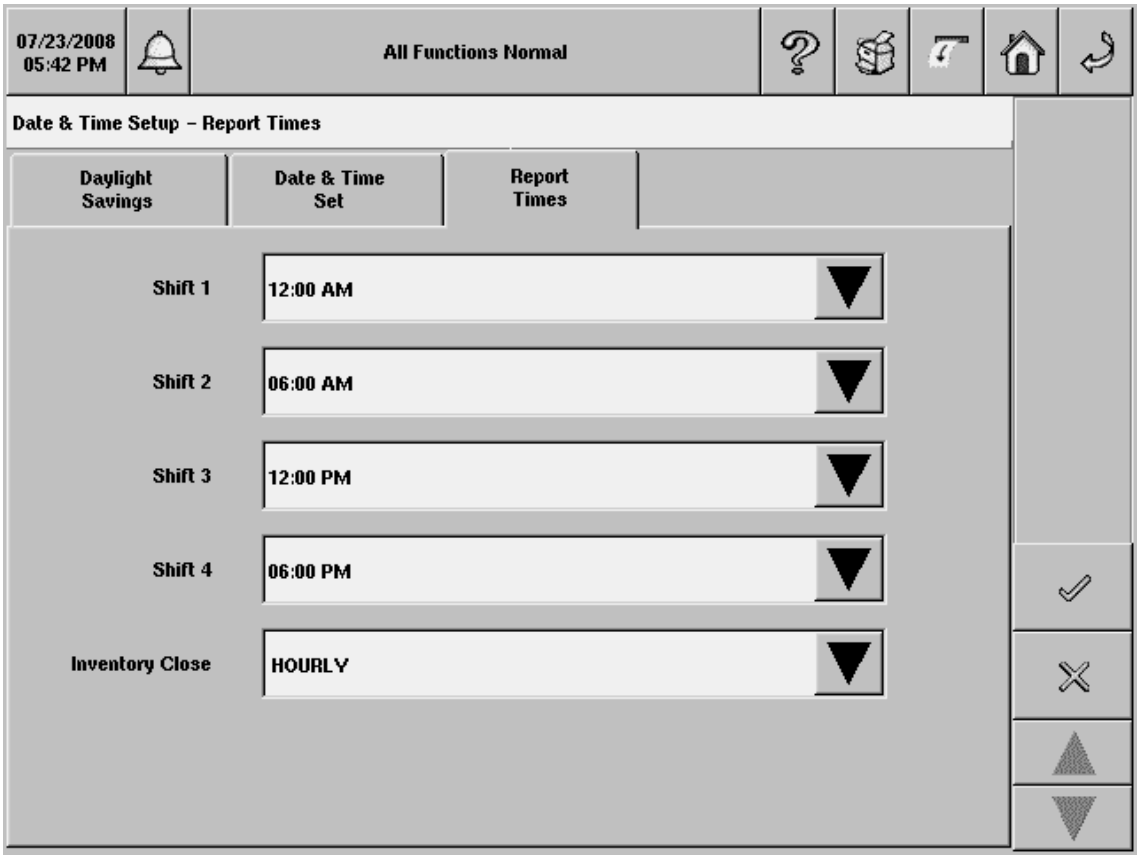
Allowable selections: Month: 1 - 12, Day: 1 - 31, Year: 1970 - 2038
Default: Today's date

Set Current Time

Enter the current time.

Allowable Range: Hour: 0 - 23 (or 1 - 12 if 12 Hr Format), Minute: 0 - 59, AM, PM (if 12 Hr Format)
Default: Today's time

Date & Time Setup - Report Times



This screen lets you enable and set the time for up to four Inventory shift reports and the Inventory Close (History) report. Close times for BIR Reports (optional) and the Close Day of the Week used for the Variance Analysis feature (optional) is also configured here.

Shift 1

Allowable Selections: Disabled, Set Time
Default: Disabled

Set Time

Hours

Allowable Selections: 0 to 23 (or 1 to 12, if 12 Hr Format)

Minutes

Allowable Selections: 0 to 59

AM/PM (If 12 Hr Format)

Allowable Selections: AM, PM

Shift 2

Allowable Selections: Disabled, Set Time
Default: Disabled

Set Time

Hours

Allowable Selections: 0 to 23 (or 1 to 12, if 12 Hr Format)

Minutes

Allowable Selections: 0 to 59

AM/PM (If 12 Hr Format)

Allowable Selections: AM, PM

Shift 3

Allowable Selections: Disabled, Set Time
Default: Disabled

Set Time

Hours

Allowable Selections: 0 to 23 (or 1 to 12, if 12 Hr Format)

Minutes

Allowable Selections: 0 to 59

AM/PM (If 12 Hr Format)

Allowable Selections: AM, PM

Shift 4

Allowable Selections: Disabled, Set Time
Default: Disabled

Set Time

Hours

Allowable Selections: 0 to 23 (or 1 to 12, if 12 Hr Format)

Minutes

Allowable Selections: 0 to 59

AM/PM (If 12 Hr Format)

Allowable Selections: AM, PM

Inventory Close

Allowable Selections: Disabled, Hourly, Daily, Shift Close
Default: Disabled

Hourly

This selection requires further inputs and will be entered using the 'Select Inventory Hourly Close Time' dialog box. The Inventory Close will occur at the number of minutes passed the current hour, or of the next hour if the time has already passed. Subsequent inventory closes will occur according to the repeat interval selected.

Minutes Past Hour

Allowable Selections: 00 to 59
Default: 00

Repeat Interval

Allowable Selections: 1 to 24 hours
Default: 1 hour

Daily

Hours

Allowable Selections: 0 to 23 (or 1 to 12, if 12 Hr Format)

Minutes

Allowable Selections: 0 to 59

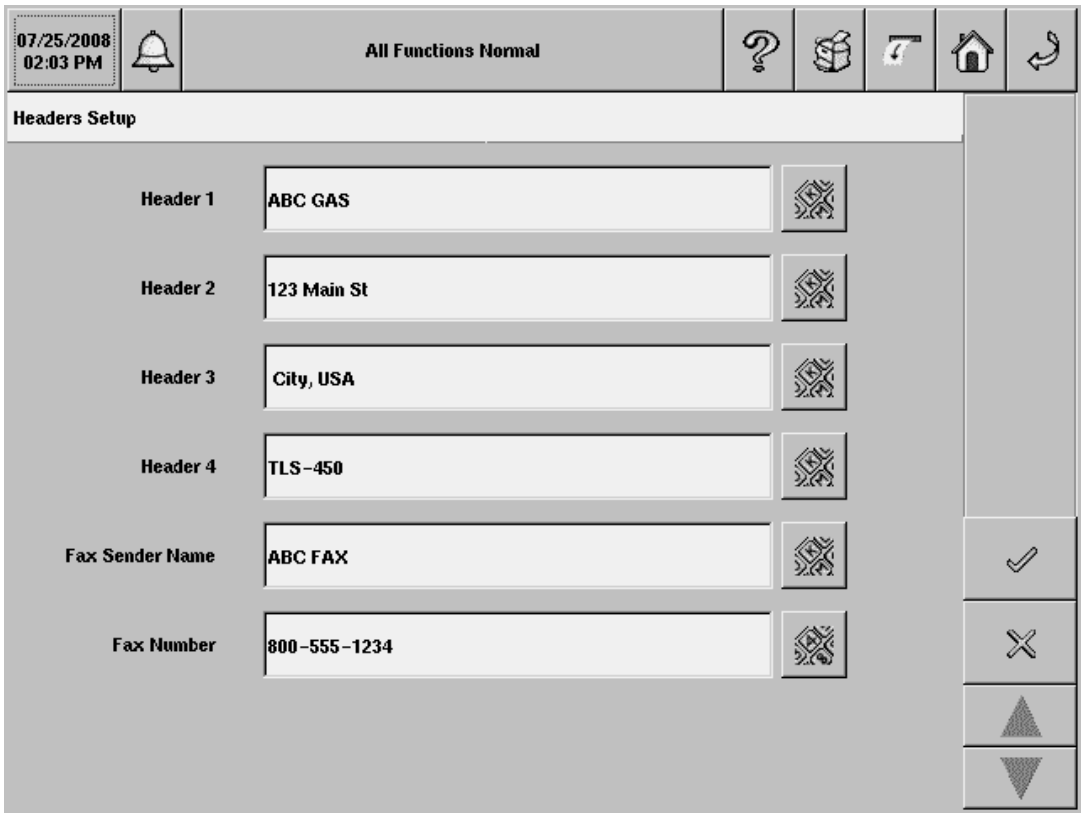
AM/PM (If 12 Hr Format)

Allowable Selections: AM, PM

Shift Close

This selection schedules Inventory Close times for same times as shift close times (i.e., up to 4 close times).

Headers Setup



This section contains the four report Header Station Information fields. It also contains the options of adding a fax sender's name and fax number to the header info set. Use the header to identify site location, phone number, etc.

Header 1

Allowable selections: Alphanumeric Text Field Length - 20 Characters
Default: Empty

Header 2

Allowable selections: Alphanumeric Text Field Length - 20 Characters
Default: Empty

Header 3

Allowable selections: Alphanumeric Text Field Length - 20 Characters
Default: Empty

Header 4

Allowable selections: Alphanumeric Text Field Length - 20 Characters
Default: Empty

Fax Sender Name

Enter the header info to be sent at the top of faxes transmitted by the console.

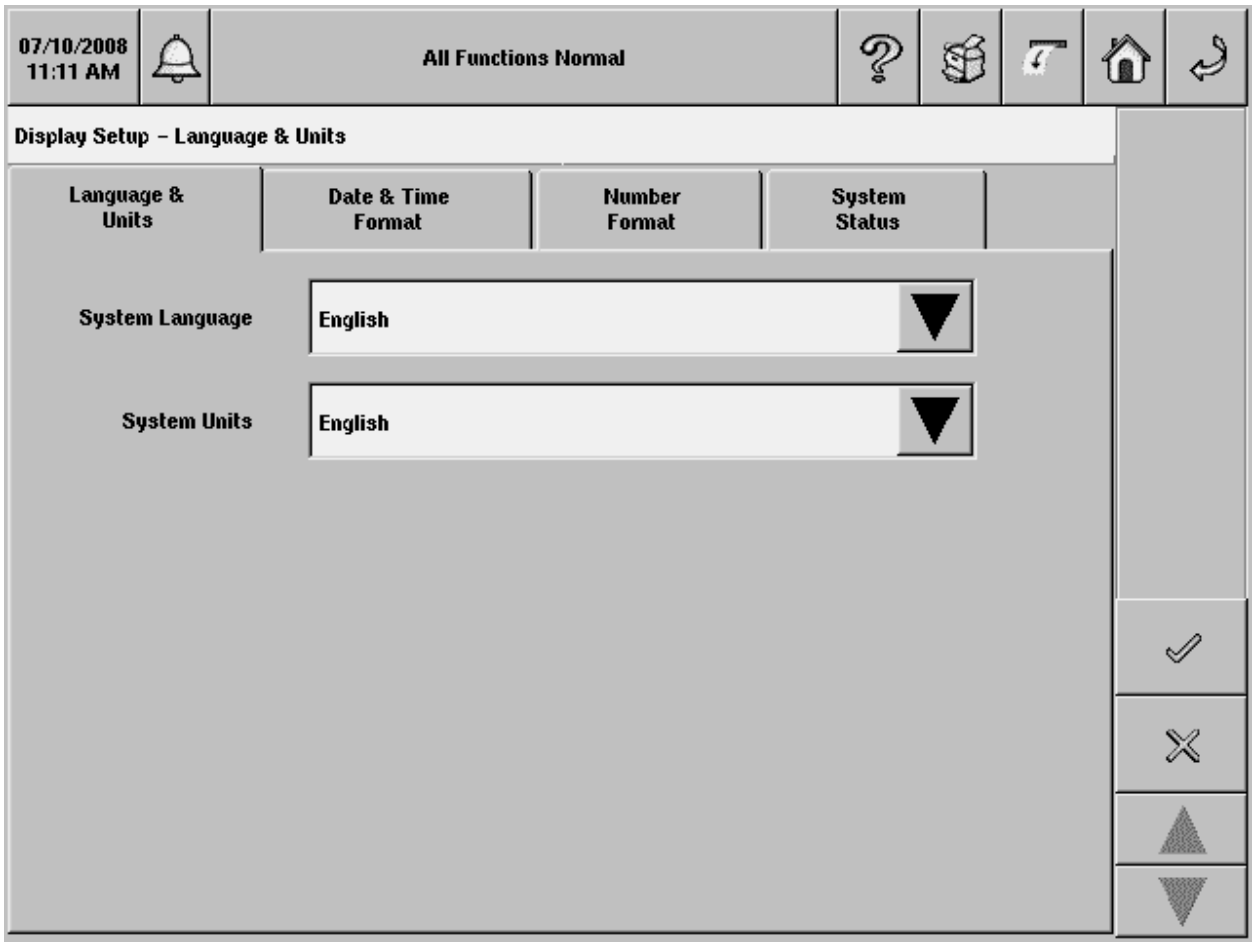
Allowable selections: Alphanumeric Text Field Length - 30 Characters
Default: Empty

Fax (Sender) Number

Enter the phone number the console will dial from when transmitting faxes.

Allowable selections: Numeric Field Length - 40 Digits
Default: Empty

Display Setup - Language and Units



The Display Setup - Language and Units screen lets you select the language and units to be used in all screens and print outs.

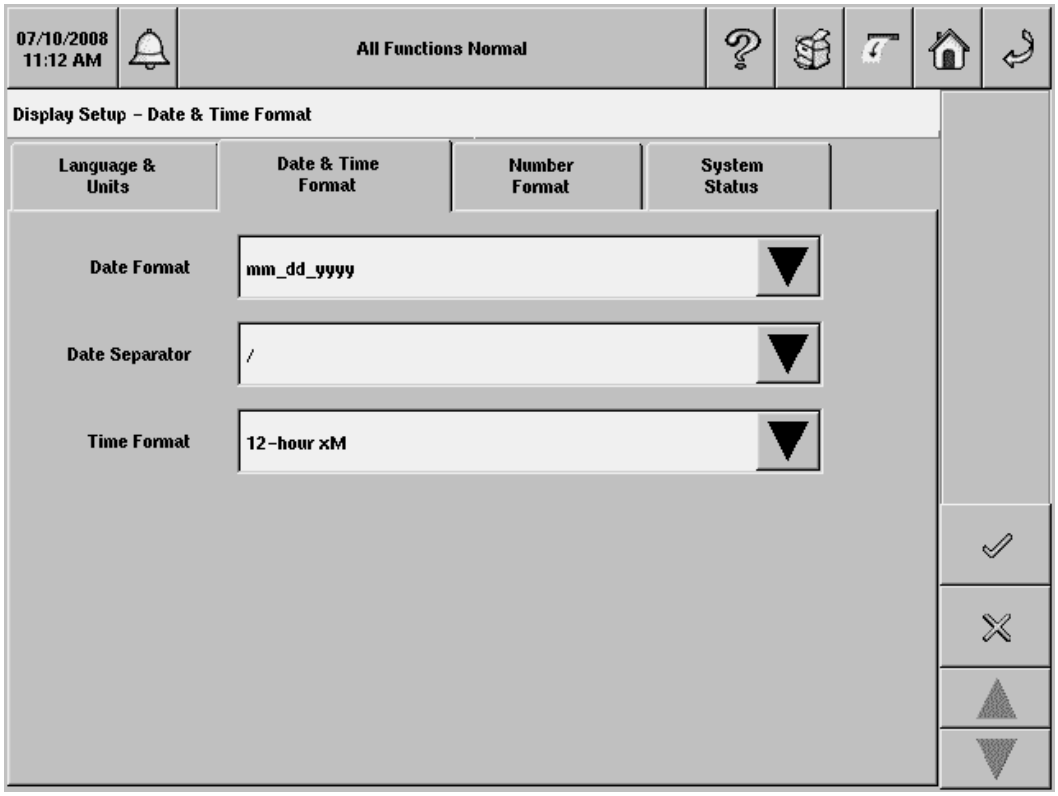
System Language

Allowable selections: English, Chinese, French, or Spanish
Default: English

System Units

Allowable selections: U.S., or Metric
Default: U.S.

Display Setup - Date & Time Format



The Display Setup - Date & Time Format screen lets you select the date format to be used in all screens and print outs.

Date Format

Allowable selections: YYYY_MM_DD, DD_MM_YYYY, MM_DD_YYYY, MON_DD_YYYY
Default: MM_DD_YYYY

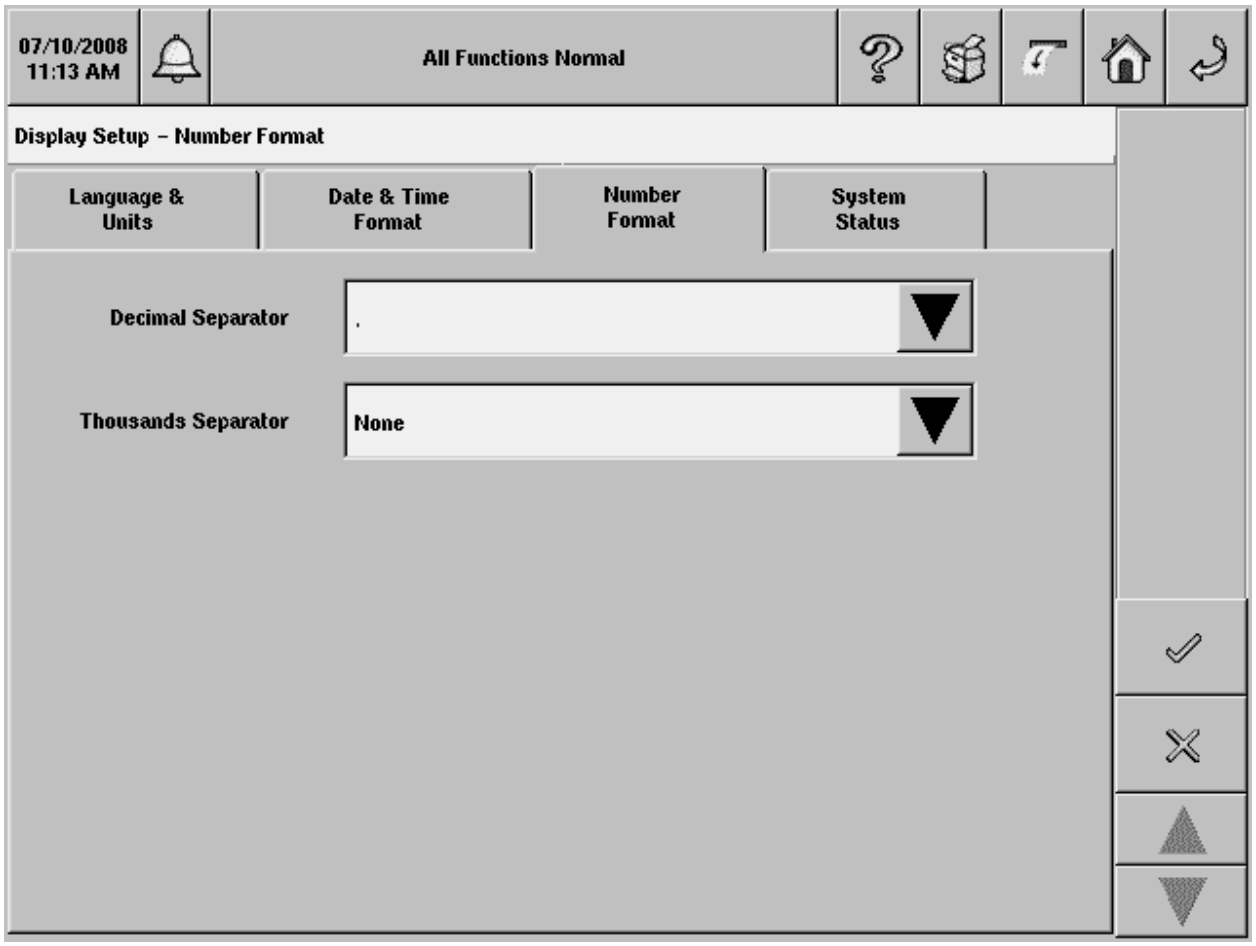
Date Separator

Allowable selections: "/", "-", "."
Default: "/"

Time Format

Allowable selections: 12-hour xM (x = A or P), 24-hour
Default: 12-hour xM

Display Setup - Number Format



The Display Setup - Number Format screen lets you select the numerical separators to be used in all screens and print outs.

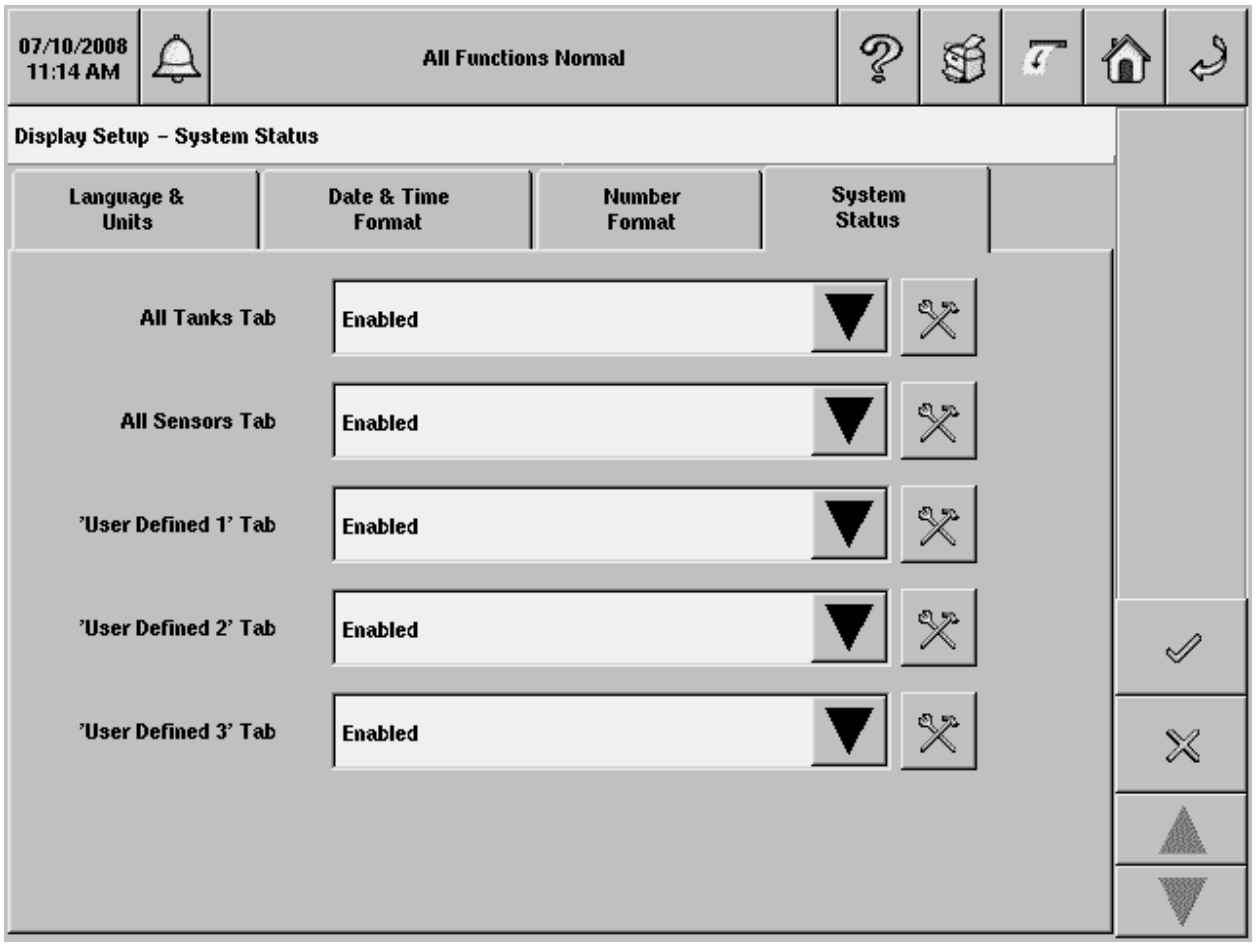
Decimal Separator

Allowable selections: "," or "."
Default: "."

Thousands Separator

Allowable selections: ",", ".", "sp" (space), or None
Default: None

Display Setup - System Status



The setup for the System Status Screen enables the view of various status tabs on the home (main) screen. Available tab screens include: All Tanks, All Sensors, and up to 3 User Defined tabs in which you can assign a combination of tanks and sensors as desired.

A field to enable the display of each tab screen is present. Next to each of these tab fields is an advanced setup button. This button will launch a screen with additional choices related to the tab that has been enabled.

All Tanks Tab

Selecting Enable in the All Tanks Tab field and then touching the Advanced Setup button to the right of the field opens the Display - All Tanks Tab Advanced Setup screen. In this screen you select informational text and/or icons to display in the tank

graphics displayed on the home screen (System Status 'All Tanks') and on any System Status 'User Defined' screens, if assigned.

Allowable selections: Enabled, Disabled
Default: Enabled

All Sensors Tab

Selecting Enable in the All Sensors Tab field and then touching the Advanced Setup button to the right of the field opens the Display Setup - All Sensors Tab Advanced Setup screen. In this screen you select informational text to display in the sensor graphic displayed on the home screen (System Status 'All Sensors') and on any System Status 'User Defined' screens, if assigned. The number of Sensor tabs visible will be dependent upon the types of sensors installed.

Allowable selections: Enabled, Disabled
Default: Enabled

'User Defined 1' Tab

Selecting Enable in the User Defined 1 Tab field and then touching the Advanced Setup button to the right of the field opens the Display Setup - User Defined 1 Tab Advanced Setup screen. In this screen, you can create your own tab label as well as populate the display with your choice of tanks and sensors.

Allowable selections: Enabled, Disabled
Default: Enabled

'User Defined 2' Tab

Selecting Enable in the User Defined 2 Tab field and then touching the Advanced Setup button to the right of the field opens the Display Setup - User Defined 2 Tab Advanced Setup screen. In this screen, you can create your own tab label as well as populate the display with your choice of tanks and sensors.

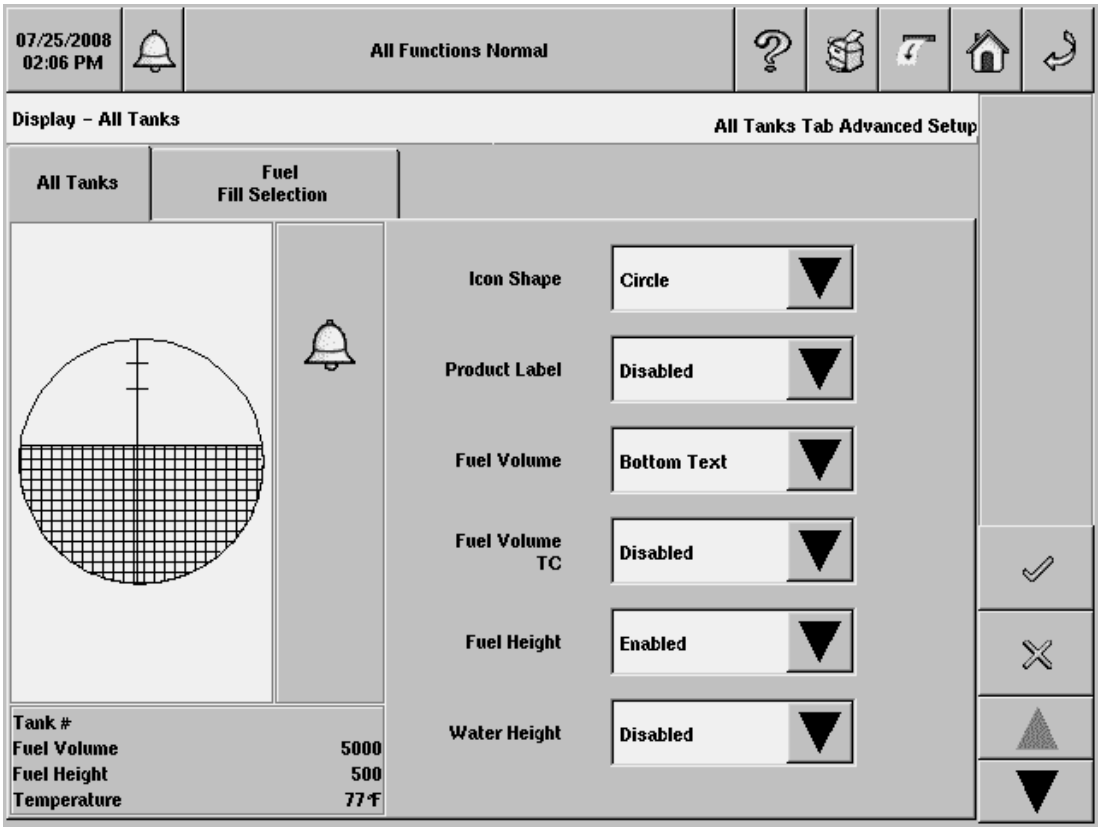
Allowable selections: Enabled, Disabled
Default: Enabled

'User Defined 3' Tab

Selecting Enable in the User Defined 3 Tab field and then touching the Advanced Setup button to the right of the field opens the Display Setup - User Defined 3 Tab Advanced Setup screen. In this screen, you can create your own tab label as well as populate the display with your choice of tanks and sensors.

Allowable selections: Enabled, Disabled
Default: Enabled

Display - All Tanks - All Tanks Tab Advanced Setup



The Display - All Tanks Tab Advanced Setup screen lets you configure informational text and/or icons (e.g., bell for alarm conditions) that will graphically represent the status of each tank. Selections made in this screen will apply to all tanks and will comprise the tank status graphic displayed on the home screen (System Status "All Tanks") and on any System Status "User Defined" status screens, if assigned.

To assist you in deciding about your choices, the changes to the tank status graphic display as you make your selections.

Icon Shape

Allowable selections: Circle or Rectangle
Default: Circle

Product Label

Allowable selections: Enabled, Disabled

Default: Disabled

Fuel Volume

Allowable selections: Disabled, Bottom Text, Text Overlay On Tank Picture
Default: Bottom Text

Fuel Volume TC

Allowable selections: Enabled, Disabled
Default: Disabled

Fuel Height

Allowable selections: Enabled, Disabled
Default: Disabled

Ullage 100%

Allowable selections: Enabled, Disabled
Default: Disabled

Ullage xx%

Ullage xx% can always be selected but will only be displayed in the tank status graphic display if you enabled 'User defined ullage' in the Tank Setup - All Tanks Screen.

Allowable selections: Enabled, Disabled
Default: Disabled

Water Height

Note: This selection requires water measuring probes.

Allowable selections: Enabled, Disabled
Default: Disabled

Temperature

Allowable selections: Disabled, Bottom Text, On Tank
Default: Bottom Text

Alarm Condition Icon

Allowable selections: Enabled, Disabled

Default: Enabled

Delivery Indicator

Allowable selections: Enabled, Disabled
Default: Disabled

Water Volume (on icon)

Note: This selection requires water measuring probes.

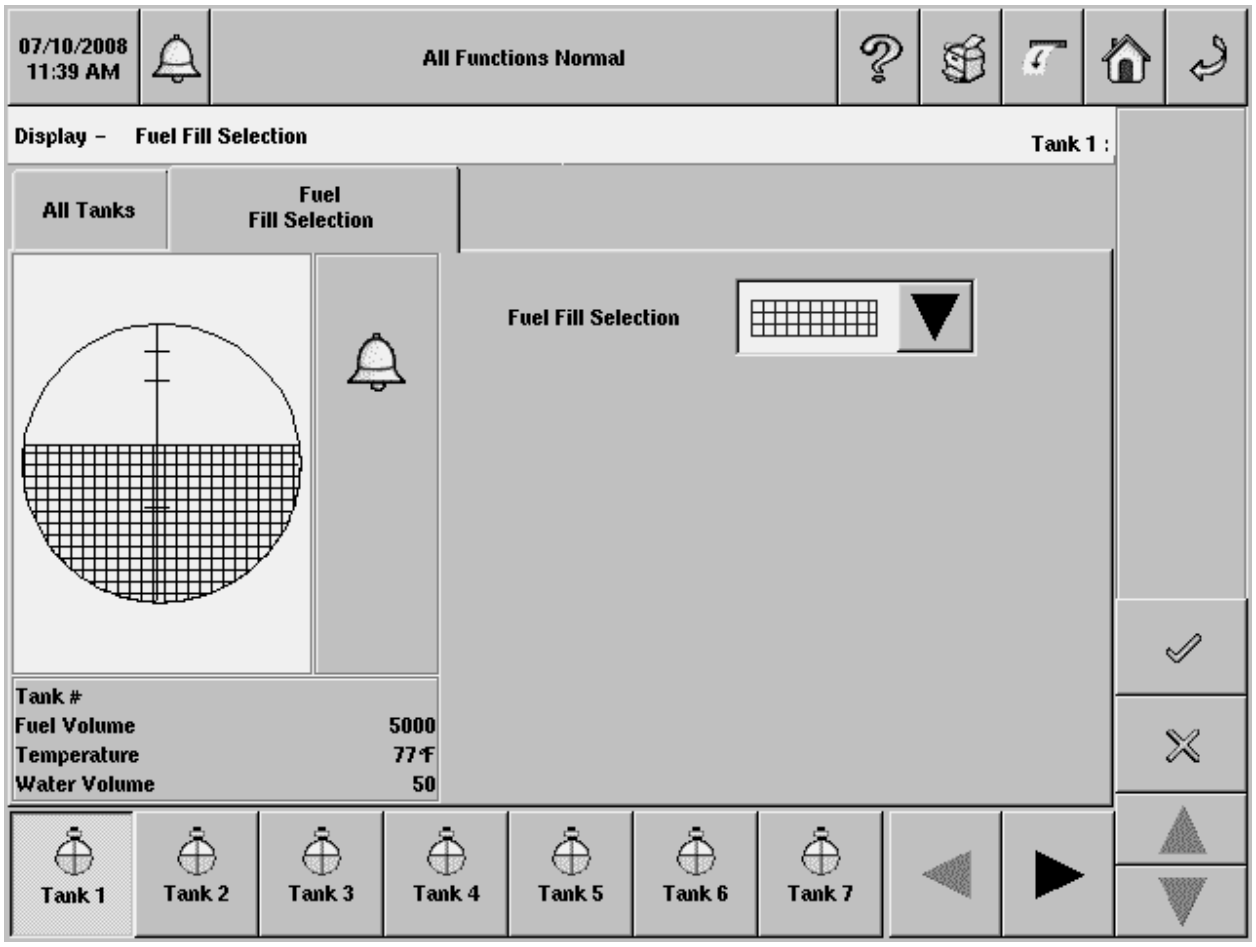
Allowable selections: Disabled, Bottom Text, On Tank
Default: Bottom Text

Tank Ribbon Label

This selection determines what label will appear on the tank buttons along the bottom of the screen. The system assigns the actual label or number from Tank/Device setup entries.

Allowable selections: Product Label or Tank Number
Default: Tank Number

Display - All Tanks - Fuel Fill Selection



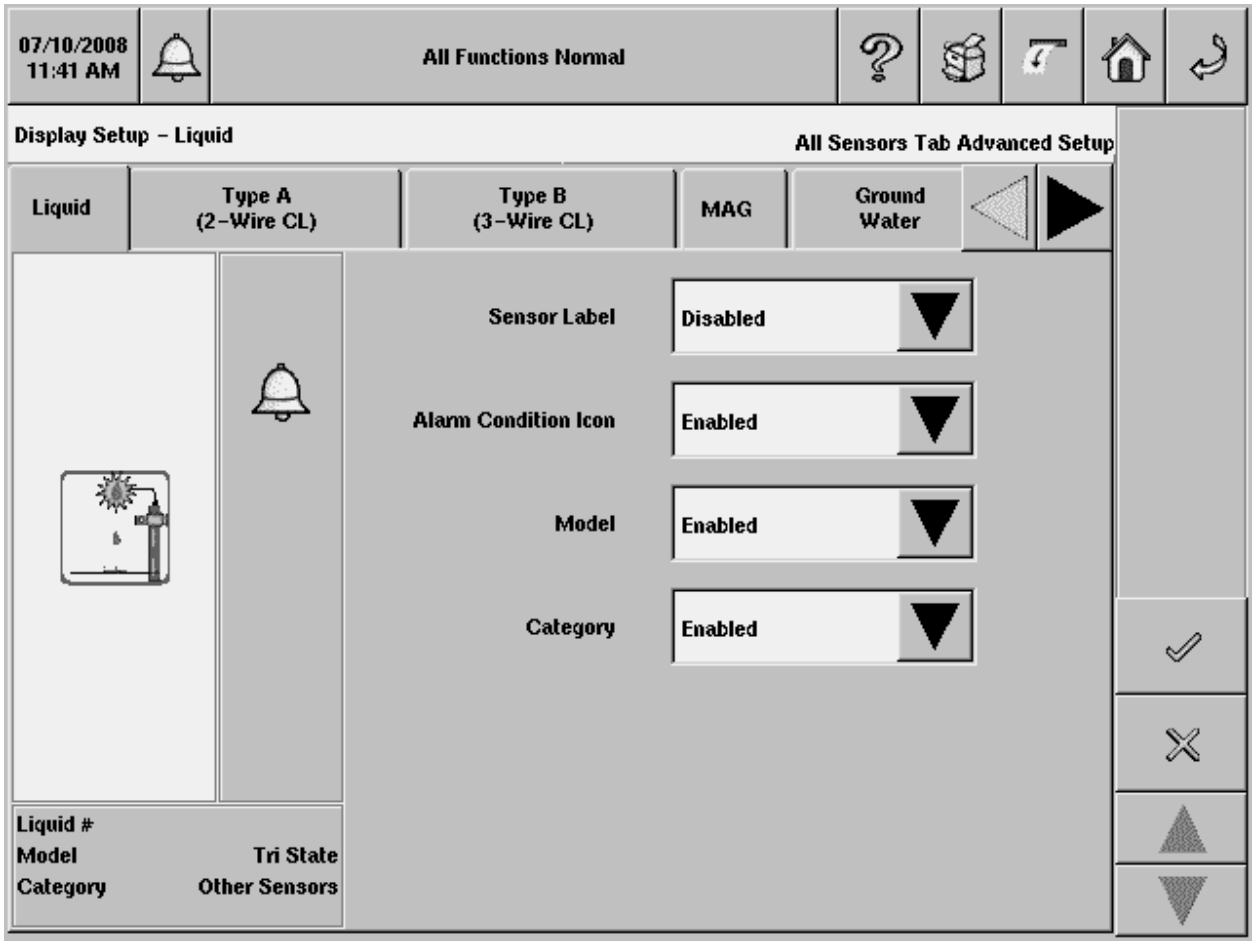
The Display - All Tanks - Fuel Fill Selection screen lets you select the pattern of the fuel in the tank status graphic.

Fuel Fill Selection

This selection lets you configure the fuel patterns to display as fuel levels in a selected tank. Touch any tank button on the bottom of the screen, then select the desired fuel pattern for that tank. As patterns are chosen, the fuel fill area in the tank graphic will change to show the effect.

Allowable selections: Various patterns
Default: Fine screen

Display Setup - All Sensors Tab Advanced Setup



This screen (liquid sensor shown in the above example) lets you configure informational text and/or icons (e.g., bell for alarm conditions) that will represent the status of each sensor type. Selections made in each sensor tab screen will apply to all sensors of that type and will comprise the content of that sensor's status graphic displayed on the home screen (System Status 'All Sensors') and on any of the System Status 'User Defined' screens, if assigned. To assist you in deciding about your choices, the changes to the sensor status graphic are displayed as you make your selections.

Liquid Sensors

Sensor Label

Allowable selections: Enabled, Disabled
Default: Disabled

Alarm Condition Icon

Allowable selections: Enabled, Disabled
Default: Disabled

Model

Allowable selections: Enabled, Disabled
Default: Disabled

Category

Allowable selections: Enabled, Disabled
Default: Disabled

Type A (2-wire CL) Sensors

Sensor Label

Allowable selections: Enabled, Disabled
Default: Disabled

Alarm Condition Icon

Allowable selections: Enabled, Disabled
Default: Disabled

Model

Allowable selections: Enabled, Disabled
Default: Disabled

Category

Allowable selections: Enabled, Disabled
Default: Disabled

Type B (3-wire CL) Sensors

Sensor Label

Allowable selections: Enabled, Disabled
Default: Disabled

Alarm Condition Icon

Allowable selections: Enabled, Disabled
Default: Disabled

Model

Allowable selections: Enabled, Disabled
Default: Disabled

Category

Allowable selections: Enabled, Disabled
Default: Disabled

Mag Sensors

Sensor Label

Allowable selections: Enabled, Disabled
Default: Disabled

Alarm Condition Icon

Allowable selections: Enabled, Disabled
Default: Disabled

Fuel Height

Allowable selections: Enabled, Disabled
Default: Disabled

Water Height

Allowable selections: Enabled, Disabled
Default: Disabled

Temperature

Allowable selections: Enabled, Disabled
Default: Disabled

Ground Water Sensors

Sensor Label

Allowable selections: Enabled, Disabled
Default: Disabled

Alarm Condition Icon

Allowable selections: Enabled, Disabled
Default: Disabled

Category

Allowable selections: Enabled, Disabled
Default: Disabled

Vapor Sensors

Sensor Label

Allowable selections: Enabled, Disabled
Default: Disabled

Alarm Condition Icon

Allowable selections: Enabled, Disabled
Default: Disabled

Category

Allowable selections: Enabled, Disabled
Default: Disabled

Line Pressure Sensors

Sensor Label

Allowable selections: Enabled, Disabled
Default: Disabled

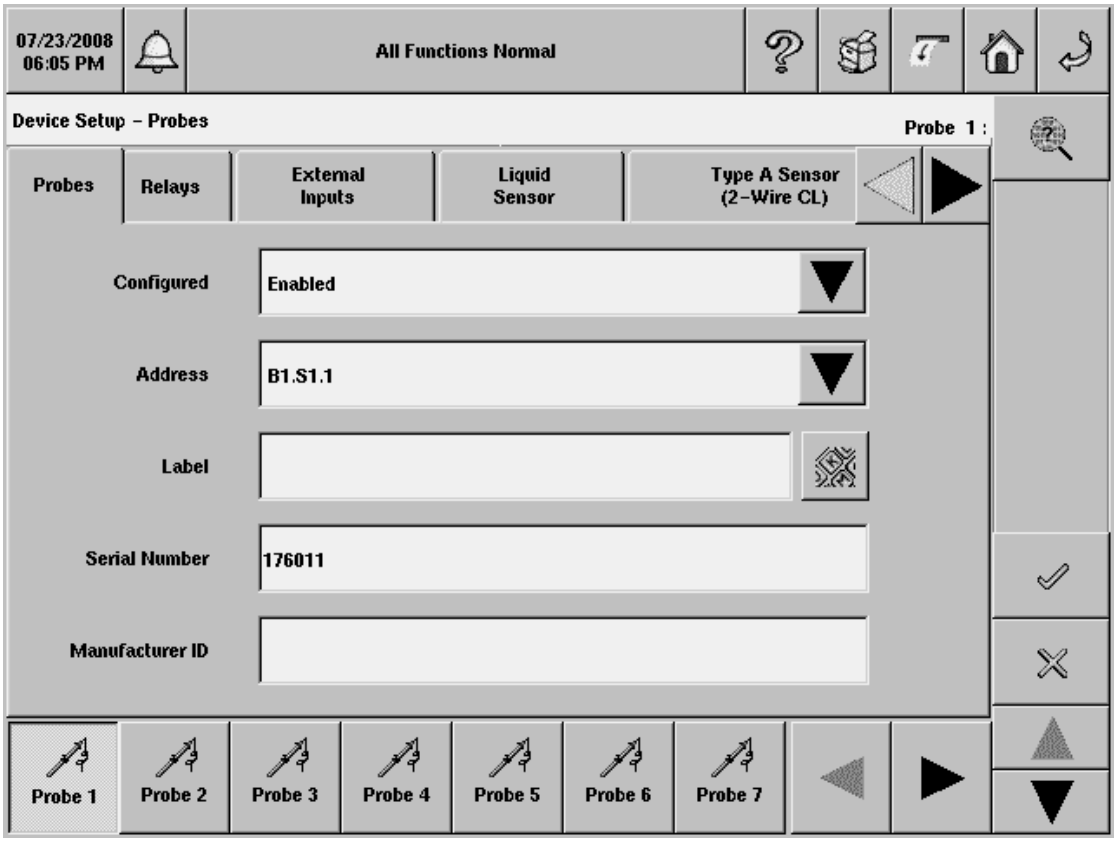
Alarm Condition Icon

Allowable selections: Enabled, Disabled
Default: Disabled

Pressure

Allowable selections: Enabled, Disabled
Default: Disabled

Device Setup - Probes



This screen allows you to setup probes connected to the console. Only the probes and quantity enabled for your console will be configurable. You access each of your site's probe setups by touching the desired button at the bottom of the screen.

This device's setup continues onto an additional page. Click on the down arrow to continue its setup.

Configured

Note:

1. Do not enable probe until its address is assigned!
2. Once enabled, do not disable probe if it is assigned to a tank. You must first unassign the probe from the tank before the probe can be disabled.

Allowable selections: Enabled, Disabled
Default: Disabled

Address

Allowable selections: Choose from drop-down list of available probes, Not Assigned
Default: Not Assigned

Label

Allowable selections: Up to 20 alphanumeric characters
Default: Blank

Serial Number

Read only

Probe Type

Read only

Float Type

Enter the installed Mag probe float size. The console automatically recognizes which Mag probe type you have installed and will display only the applicable float size options. Only select "Custom" if the literature that was shipped with the float specifically states that you must choose this float size selection. The custom float literature will list the required values to enter.

Allowable selections: Standard Mag Probe: 4 in. (101mm), 2 in. (50mm) and Custom. Low-Level Mag Probe: 4 in. (101mm), 3 in. (76mm), 2 in. (50mm), 1 in. (25mm) and Custom
Default: 2 in.(50mm), 3 in.(76mm) or 4 in. (101mm) depending on probe type

Note: If the Custom float size is selected, fuel offset, invalid fuel, water offset, and water minimum parameter fields below are enabled for edit.

Fuel Offset (Custom Float Type)

Allowable selections: -8 in. to 8 in. (-203.2 to 203.2mm)
Default: Default varies according to Probe type and Float type. Refer to tables below for US values. Metric values are calculated using the formula; mm = 25.4 * in.

Water Offset (Custom Float Type)

Allowable selections: -8 in. to 8 in. (-203.2 to 203.2mm)
Default: Default varies according to Probe type and Float type. Refer to tables below for US values. Metric values are calculated using the formula; mm = 25.4 * in.

Water Min. (Custom Float Type)

Allowable selections: 0 to 10 in. (0 to 254mm)
Default: Default varies according to Probe type and Float type. Refer to tables below for US values. Metric values are calculated using the formula; mm = 25.4 * in.

Invalid Fuel (Custom Float Type)

Note: The invalid fuel level assumes no water is present. If water is present, the invalid fuel level is increased by the water level reading.

Allowable selections: 0 to 10 in. (0 to 254mm)
Default: Default varies according to Probe type and Float type. Refer to tables below for US values. Metric values are calculated using the formula; mm = 25.4 * in.

1" & 2" CUSTOM FLOAT DEFAULTS

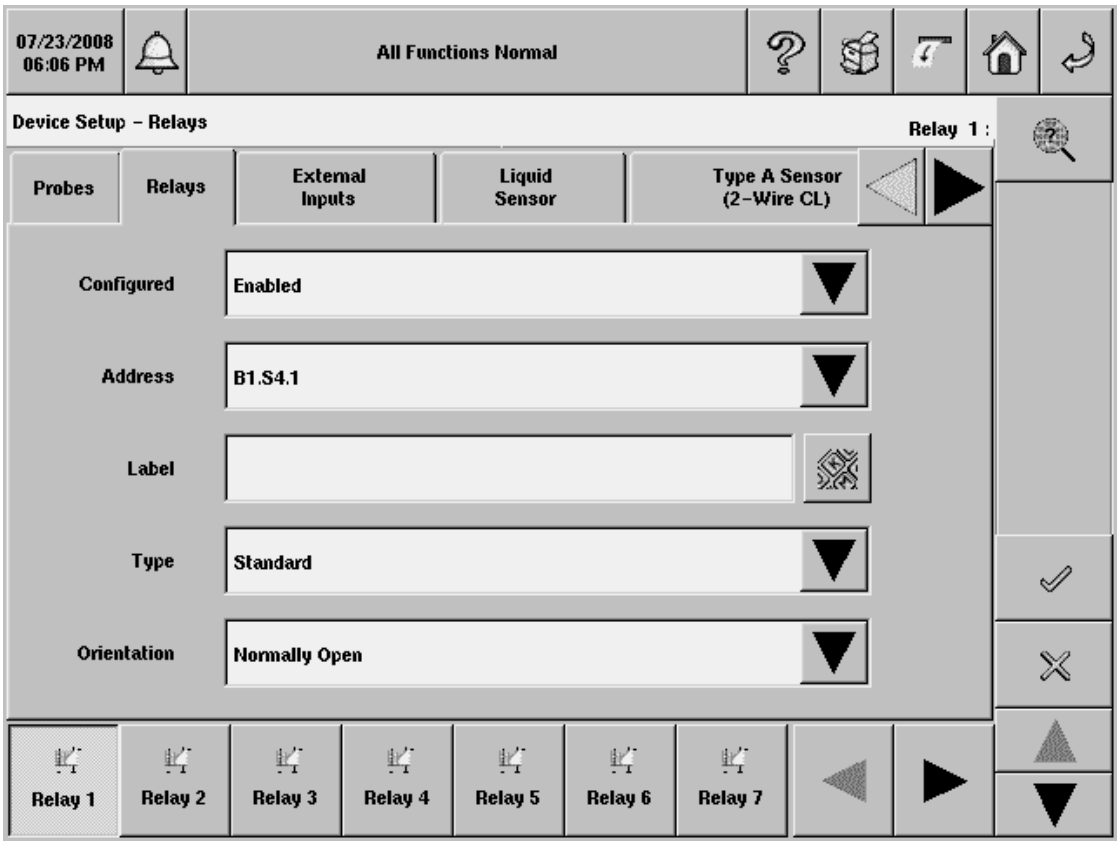
Circuit Code	Name Type	2" Floats				1" Floats			
		Water Offset	Fuel Offset	Invalid Fuel	Water Min.	Water Offset	Fuel Offset	Invalid Fuel	Water Min.
C000	MAG1	-3.160	2.520	9.500	0.750	-	-	-	-
C001	MAG2	-3.160	2.520	9.500	0.750	-	-	-	-
D000	MAG3	-3.160	2.520	9.500	0.750	-	-	-	-
D001	MAG4	-	2.520	7.000	-	-	-	-	-

Circuit Code	Name Type	2" Floats				1" Floats			
		Water Offset	Fuel Offset	Invalid Fuel	Water Min.	Water Offset	Fuel Offset	Invalid Fuel	Water Min.
D002	MAG5	-	2.520	7.000	-	-	-	-	-
D003	MAG6	-	2.520	7.000	-	-	-	-	-
D004	MAG7	-1.940	0.060	3.230	0.867	-	-	-	-
D005	MAG8	-1.940	0.060	3.230	0.867	-	-	-	-
D006	MAG9	-1.940	0.060	3.230	0.867	-1.420	-0.360	5.500	1.500
D007	MAG10	-	0.060	3.000	-	-	-	-	-
D008	MAG11	-	0.060	3.000	-	-	-	-	-
D009	MAG12	-	0.060	3.000	-	-	-0.360	2.500	-
D021	GLB8	-1.940	0.060	3.230	0.867	-	-	-	-
D022	GLB9	-1.940	0.060	3.230	0.867	-	-	-	-
D023	GLB10	-	0.060	3.000	-	-	-	-	-
D024	GLB11	-	0.060	3.000	-	-	-	-	-

3" & 4" CUSTOM FLOAT DEFAULTS

Circuit Code	Name Type	4" Floats				3" Floats			
		Water Offset	Fuel Offset	Invalid Fuel	Water Min.	Water Offset	Fuel Offset	Invalid Fuel	Water Min.
C000	MAG1	-3.160	0.270	8.000	0.750	-	-	-	-
C001	MAG2	-3.160	0.270	8.000	0.750	-	-	-	-
D000	MAG3	-3.160	0.270	8.000	0.750	-	-	-	-
D001	MAG4	-	0.270	5.000	-	-	-	-	-
D002	MAG5	-	0.270	5.000	-	-	-	-	-
D003	MAG6	-	0.270	5.000	-	-	-	-	-
D004	MAG7	-2.170	-0.880	3.040	0.630	-2.170	-0.880	3.040	0.630
D005	MAG8	-2.170	-0.880	3.040	0.630	-2.170	-0.880	3.040	0.630
D006	MAG9	-2.170	-0.880	3.040	0.630	-2.170	-0.880	3.040	0.630
D007	MAG10	-	-1.820	0.985	-	-	-1.820	0.985	-
D008	MAG11	-	-1.820	0.985	-	-	-1.820	0.985	-
D009	MAG12	-	-1.820	0.985	-	-	-1.820	0.985	-
D021	GLB8	-2.170	-0.880	3.040	0.630	-2.170	-0.880	3.040	0.630
D022	GLB9	-2.170	-0.880	3.040	0.630	-2.170	-0.880	3.040	0.630
D023	GLB10	-	-1.820	0.985	-	-	-1.820	0.985	-
D024	GLB11	-	-1.820	0.985	-	-	-1.820	0.985	-

Device Setup - Relays



This screen allows you to setup monitored relays. You must enter data individually for each relay. Alarm assignment to a relay is done in the Automatic Events Setup - Device Tasks screen.

Configured

Allowable selections: Enabled, Disabled
Default: Disabled

Address

Allowable selections: Choose from drop-down list of available external inputs, Not Assigned
Default: Not Assigned

Label

Allowable selections: Up to 20 alphanumeric characters
Default: Blank

Type

Enter the type of relay that is connected to the selected relay location:

- STANDARD - The On/Off state is determined by assigned alarms/warnings.
- PUMP CONTROL OUTPUT - Relay state is controlled by TLS Pump/Line controller.
- MOMENTARY - The On/Off state is determined by assigned alarms/warnings. However, relay returns to the inactive state after the Alarm button is touched to acknowledge the alarm.
- PUMP COMM CONTROL - Select this relay type only when a set of line manifolded pumps are using Red Jacket IQ Controllers, and you want to run PLLD precision line leak tests. After selecting this relay type, when one IQ controlled pump of a manifolded set is turned On for line leak testing, the relay will activate, blocking communication with the second IQ controlled pump (giving the console total control of the pumps) until the precision test is complete.

Allowable selections:
- Standard
- Pump Control Output
- Momentary
- Pump Comm Control

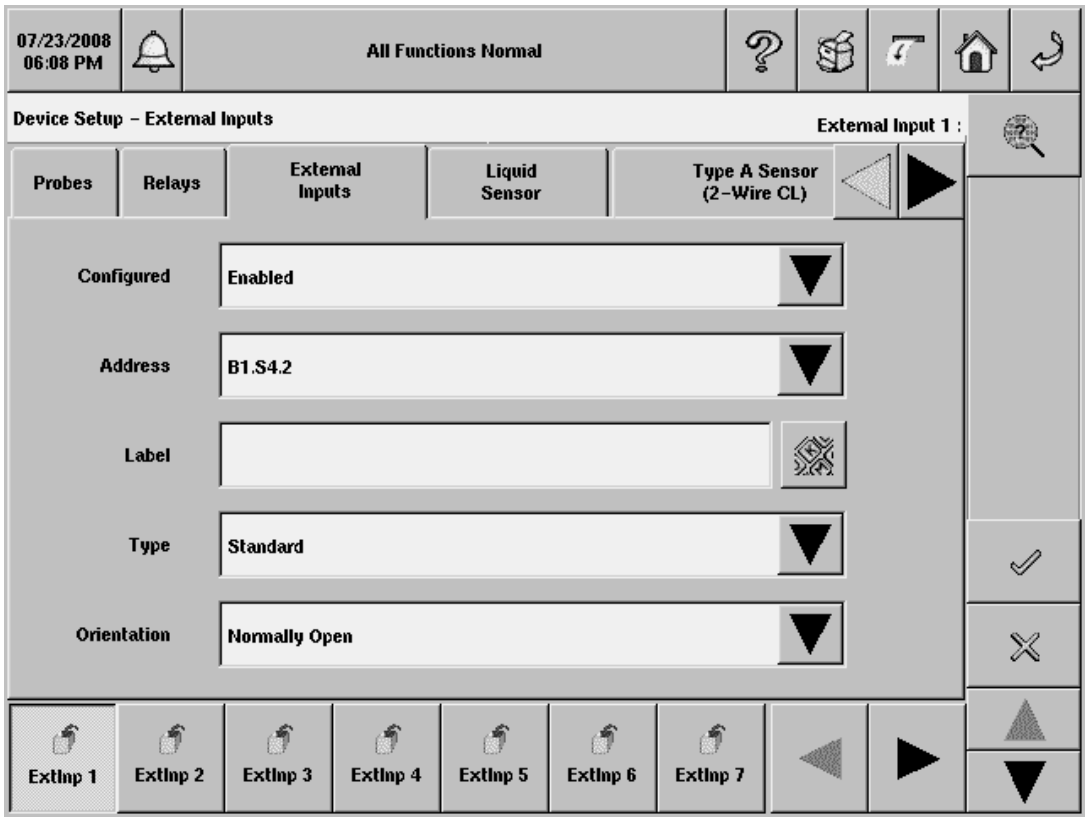
Default: Standard

Orientation

You must identify the input switch orientation as either normally open or normally closed so the console properly recognizes an ON or OFF condition.

Allowable selections: Normally Open, Normally Closed
Default: Normally Closed

Device Setup - External Inputs



This screen allows you to setup external input devices that have been connected to the console.

This device's setup continues onto an additional page. Click on the down arrow to continue its setup.

Configured

Allowable selections: Enabled, Disabled
Default: Disabled

Address

Allowable selections: Choose from drop-down list of available external inputs, Not Assigned
Default: Not Assigned

Label

Allowable selections: Up to 20 alphanumeric characters
Default: Blank

Type

Enter the type of input - Standard, Generator, Pump Sense, or Standard ACK - that is connected to the selected input location:

- STANDARD - Select this input type to generate the External Input alarm when it's active.
- GENERATOR - Select this input type for applications where you monitor fuel tank(s) supplying an emergency generator and you receive generator ON and OFF signals from the generator. The system runs a continuous leak test in the generator's tank(s) until the generator turns On. When the generator shuts Off, the system returns to its Leak Test mode. GENERATOR ON and GENERATOR OFF messages are printed whenever the generator turns on and off. This selection also generates the External Input alarm.
- PUMP SENSE - Select this input type when the input is used to indicate the On/Off state of the pump. This selection also indicates the 'state of hook signal'.
- STANDARD ACK - - Select this type when using an eternal input (e.g., remote pushbutton) as an ALARM/TEST key. This selection also generates the External Input alarm.

Allowable selections:
- Standard
- Generator
- Pump Sense
- Standard ACK

Default: Standard

Orientation

You must identify the input switch orientation as either normally open or normally closed so the console properly recognizes an ON or OFF condition.

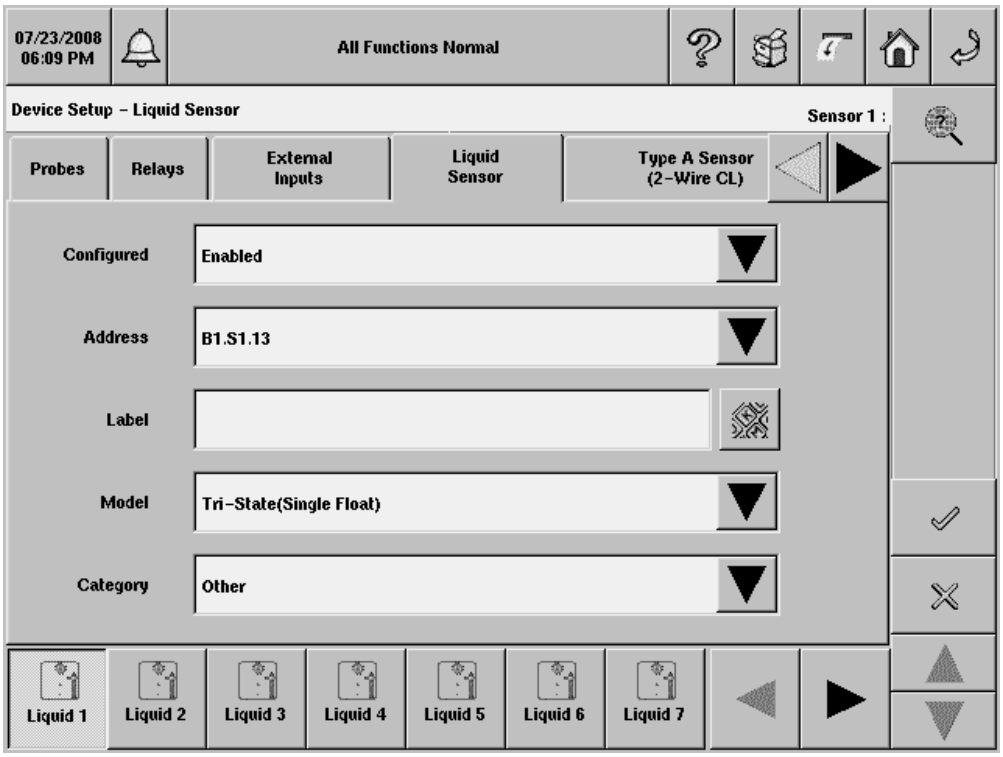
Allowable selections: Normally Open, Normally Closed
Default: Normally Closed

Tanks (Generator External Input Type Only)

You must identify which tanks supply fuel to the generator, so that the console will conduct a continuous leak test in these tanks while the generator is off. If all tanks connected to the system supply fuel to the generator wired to this input, select All Tanks. If only one or some of the tanks connected to the system supply fuel to this generator, enter the individual tank numbers.

Allowable selections: All tanks, or select a tank(s)
Default: Blank

Device Setup - Liquid Sensor



This screen allows you to setup Liquid Sensors connected to the console. You access each of your site's liquid sensor setups by touching the desired button at the bottom of the screen.

Configured

Allowable selections: Enabled, Disabled
Default: Disabled

Address

Allowable selections: Choose from drop-down list of available liquid sensors, Not Assigned
Default: Not Assigned

Label

Allowable selections: Up to 20 alphanumeric characters
Default: Blank

Model

Select the sensor's model from the drop down list.

Allowable selections:
- Tri-State (Single Float)
- Normally Closed
- Dual Point Hydrostatic
- Dual Float Discriminating
- Dual Float High Vapor
- Interceptor Sensor
- DW Sump 2-1 Sensor

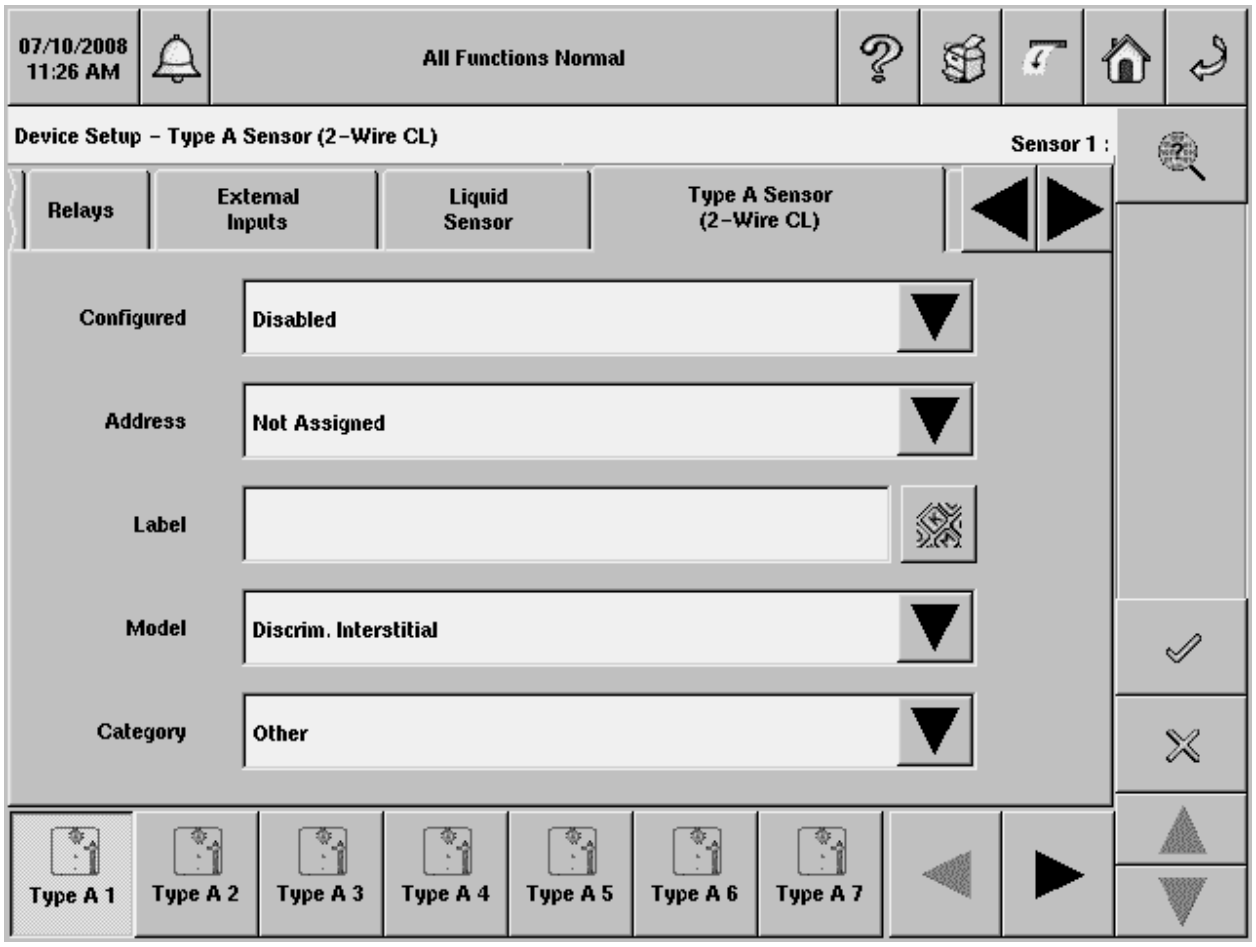
Default: Tri-State (Single Float)

Category

Select the sensor's category (location) from the drop down list.

Allowable selections: Other Sensors, Annular Space, Dispenser Pan, Monitor Well, STP Sump, Containment Sump
Default: Other Sensors

Device Setup - Type A Sensor



This screen allows you to setup Type A (2-wire) sensors connected to the console. You access each of your site's Type A sensor setups by touching the desired button at the bottom of the screen.

Configured

Allowable selections: Enabled, Disabled
Default: Disabled

Address

Allowable selections: Choose from drop-down list of available Type A sensors, Not Assigned
Default: Not Assigned

Label

Allowable selections: Up to 20 alphanumeric characters
Default: Blank

Model

Select the sensor's model from the drop down list.

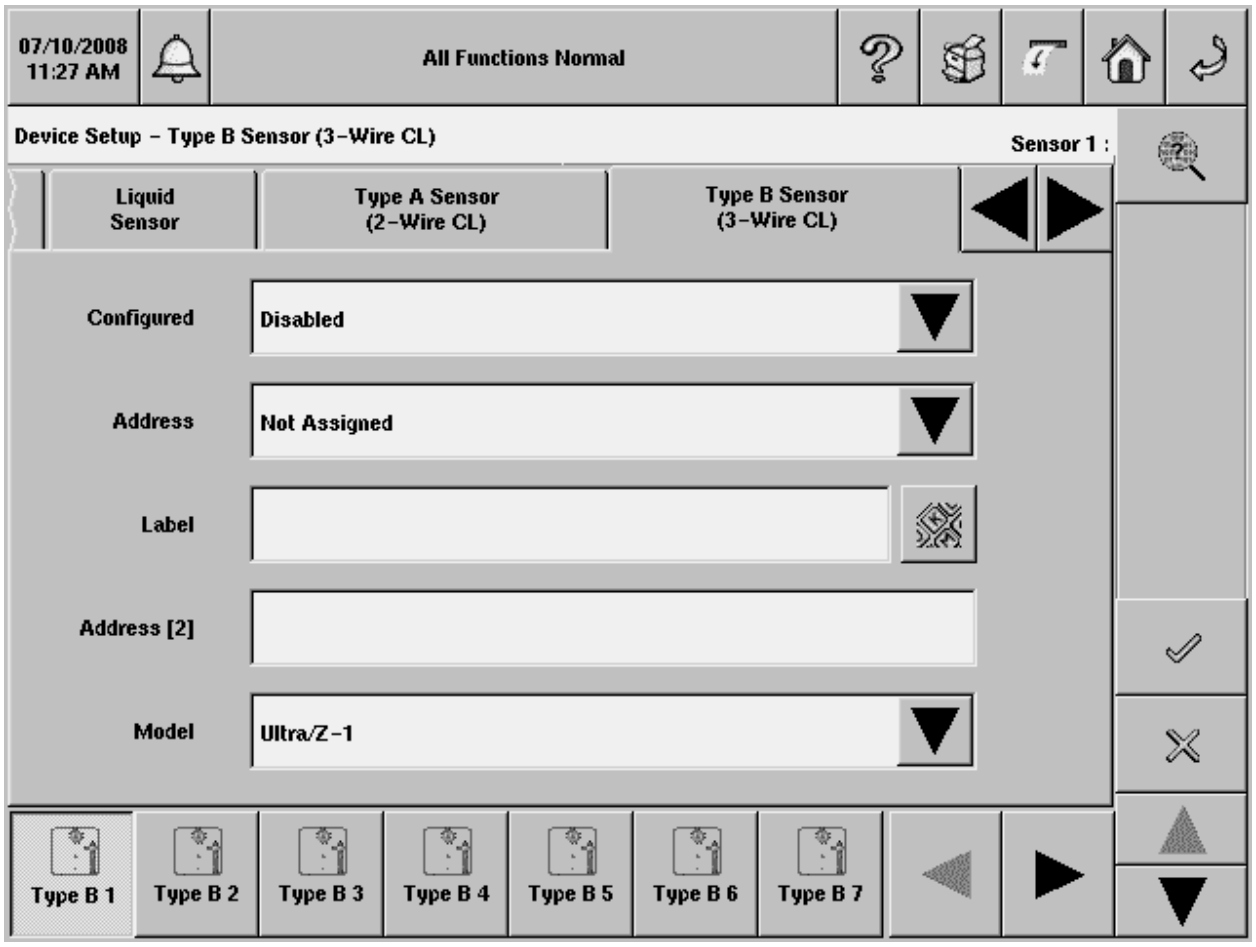
Allowable selections: Discrim. Interstitial, Ultra 2
Default: Discriminating Interstitial

Category

Select the sensor's category (location) from the drop down list.

Allowable selections: Other Sensors, Annular Space, Dispenser Pan, Monitor Well, STP Sump, Containment Sump
Default: Other Sensors

Device Setup - Type B Sensor



This screen allows you to setup Type B (3-wire) sensors connected to the console. You access each of your site's Type B sensor setups by touching the desired button at the bottom of the screen.

This device's setup continues onto an additional page. Click on the down arrow to continue its setup.

Configured

Allowable selections: Enabled, Disabled
Default: Disabled

Address

Allowable selections: Choose from drop-down list of available Type B sensors, Not Assigned
Default: Not Assigned

Label

Allowable selections: Up to 20 alphanumeric characters
Default: Blank

Address [2]

Allowable selections: Read-only - next sequential address

Model

Select the sensor's model from the drop down list.

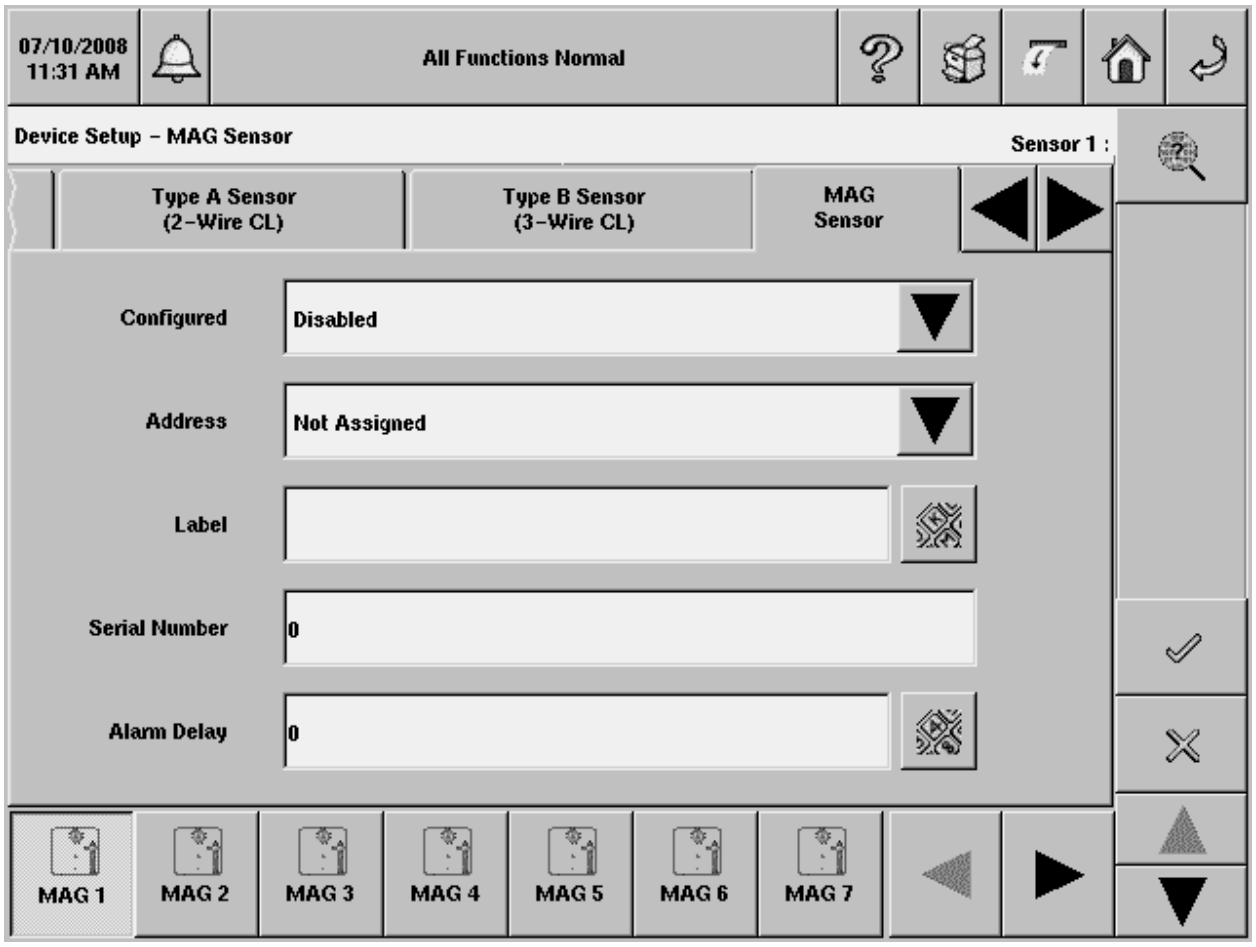
Allowable selections: Ultra/Z-1 (4Site Pan/Sump - Standard), Ultra/Z-1 HV (4Site Pan/Sump - High Vapor)
Default: Ultra/Z-1

Category

Select the sensor's category (location) from the drop down list.

Allowable selections: Other Sensors, Annular Space, Dispenser Pan, Monitor Well, STP Sump, Containment Sump
Default: Other Sensors

Device Setup - Mag Sensor



This screen allows you to setup Mag Sensors connected to the console. The Mag Sensor defines the fields that are available for editing, the ranges for each field, and the default value. The Mag Sensor cannot be setup until its device address has been assigned.

This device's setup continues onto an additional page. Click on the down arrow to continue its setup.

If your console has the internal printer, touch the Print button to printout the Mag Sensor Setup. On the printout, look at the factory preset Alarm Delay and Alarm Threshold settings for the Mag Sensor (see Mag Sensor setup printout example below):

```
MAG SENSOR ALM DELAY

SENSOR   LABEL       DELAY
     1  (label)      48

MAG SENSOR ALARM THRESHOLD

MS 1:(label)
ID VALUE         THRESHOLD  ALARM        PROGRAMMBLE  UPGRADE
 1 FUEL HT   >       1.6  FUEL ALARM     NO           NO
 3 WATER HT  >       3.0  WATER ALARM    NO           NO
 4 WATER HT  >       1.7  WATER WARNING  NO           YES
```

Printout example notes:

1. The '<' (drop below) or '>' (rise above) symbols in the printout example indicate the point (threshold) at which the Alarm/Warning will be triggered.
2. The Programmable column indicates if the Alarm/Warning threshold is or is not programmable.
3. The Upgrade column indicates if the Alarm/Warning's Alarm Delay feature (see field below) is activated.
4. The Water Warning has an programmable Alarm Delay that was set to 48 hours.

Configured

Allowable selections: Enabled, Disabled
Default: Disabled

Address

Allowable selections: Choose from drop-down list of available Mag sensors, Not Assigned
Default: Not Assigned

Label

Allowable selections: Up to 20 alphanumeric characters
Default: Blank

Serial Number

This is a read-only entry of the selected Mag Sensor's serial number.

Alarm Delay

This display appears if the alarm upgrade delay has been factory set to programmable. This is the time in hours following the triggering of uncleared warnings, before they are upgraded to alarms. Also, this upgrade only applies to Mag Sensor warnings that have been factory set to upgrade.

Allowable selections: 0-9999 Hours
Default: Assigned by sensor

Water Warning

This display appears only if the Water Warning has been factory set to programmable. This is the height in inches (or mm if metric units selected) at which the Water Warning will activate.

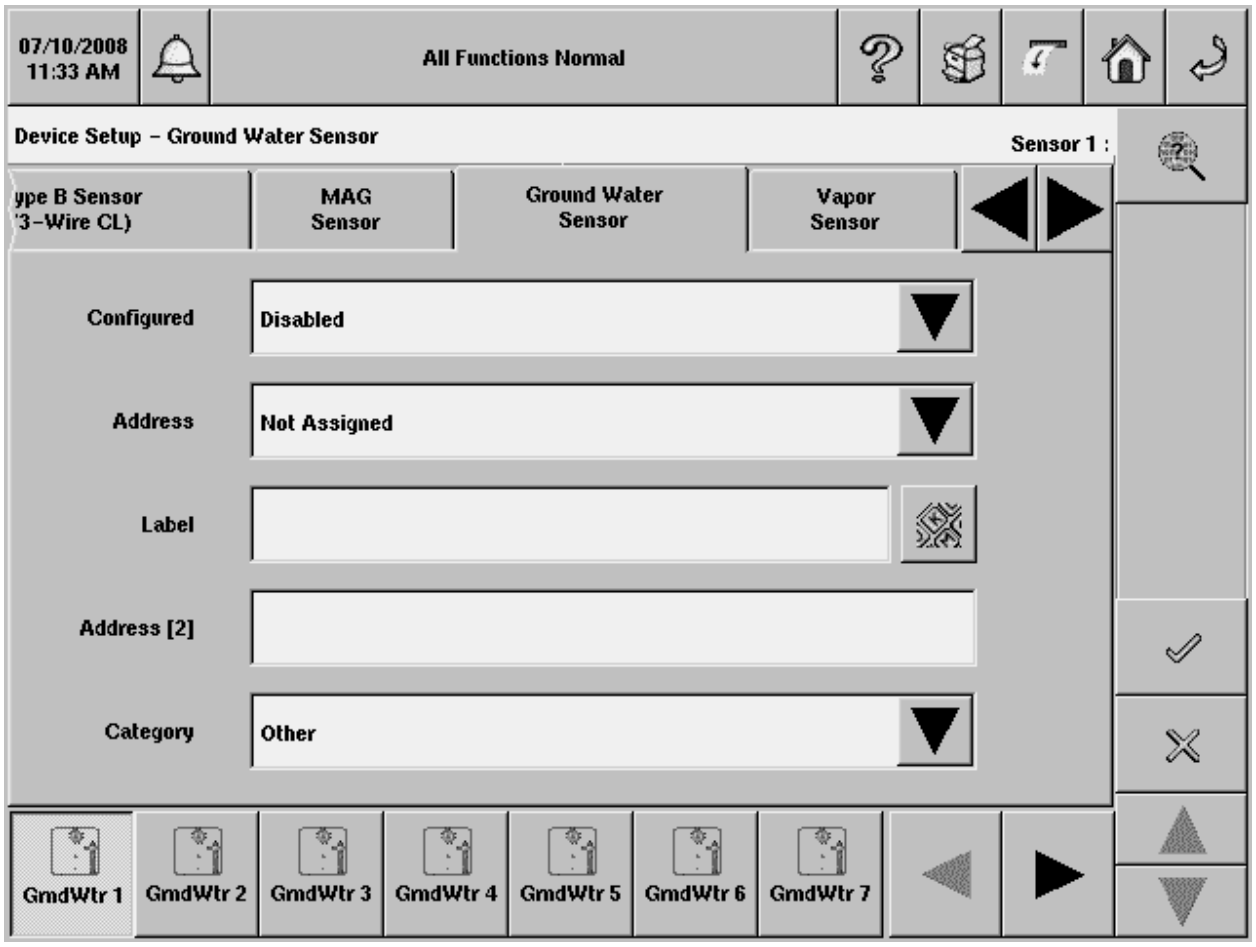
Allowable selections: 1.7 - 22 in. (44 - 558mm)
Default: 0

Water Alarm

This display appears only if the Water Alarm has been factory set to programmable. This is the height in inches (or mm if metric units selected) at which the Water Alarm will activate. Refer to your Smart Sensor Setup printout's Min/Max Thresholds for the permissible range within which to select this value.

Allowable selections: 1.7 - 22 in. (44 - 558mm)
Default: 0

Device Setup - Groundwater Sensor



This screen allows you to setup Groundwater sensors connected to the console. You access each of your site's Groundwater sensor setups by touching the desired button at the bottom of the screen.

Configured

Allowable selections: Enabled, Disabled
Default: Disabled

Address

Allowable selections: Choose from drop-down list of available Groundwater sensors, Not Assigned
Default: Not Assigned

Label

Allowable selections: Up to 20 alphanumeric characters
Default: Blank

Address [2]

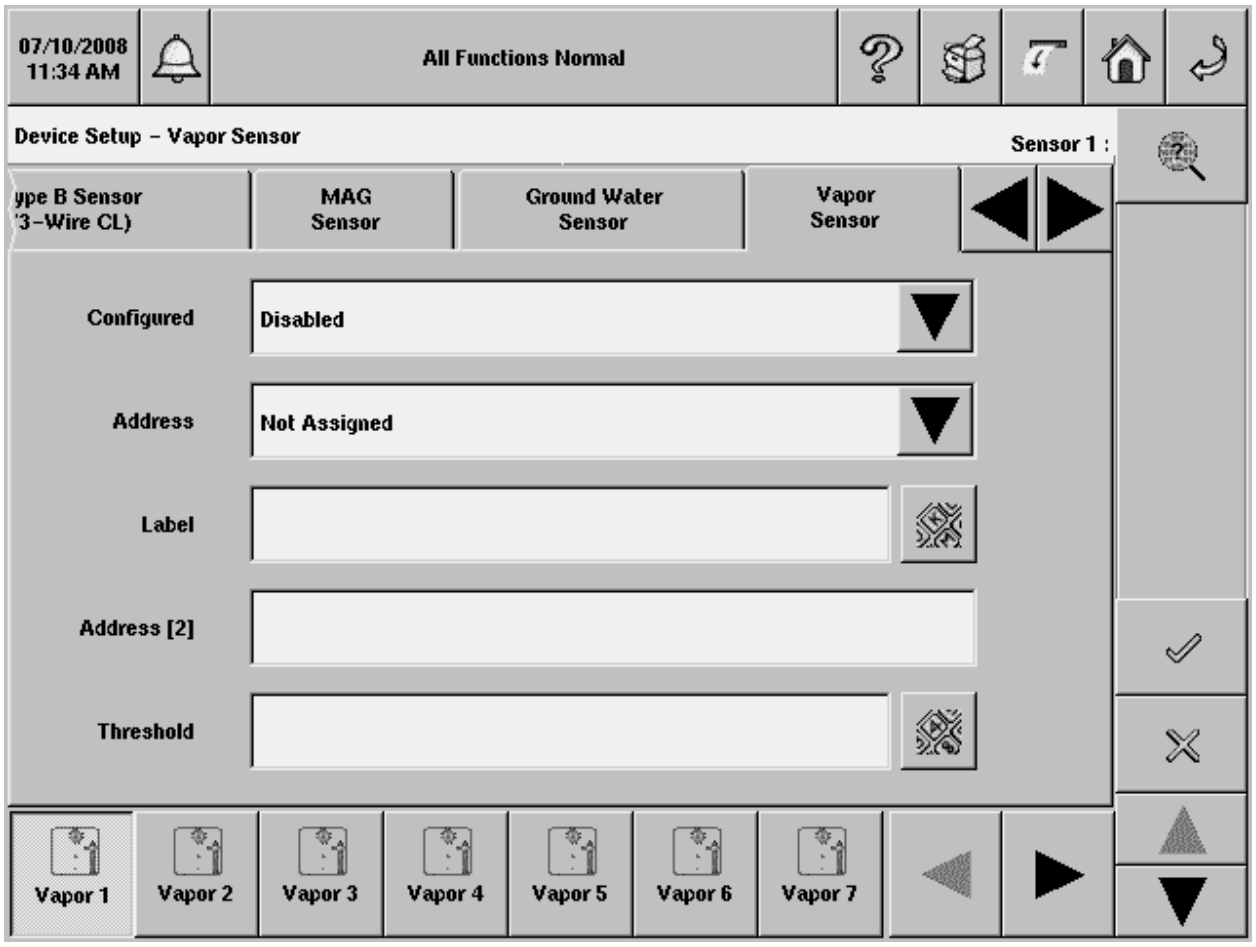
Allowable selections: Read-only - next sequential address

Category

Select the sensor's category (location) from the drop down list.

Allowable selections: Other Sensors, Annular Space, Dispenser Pan, Monitor Well, STP Sump, Containment Sump
Default: Other Sensors

Device Setup - Vapor Sensor



This screen allows you to setup Vapor sensors connected to the console. You access each of your site's Vapor sensor setups by touching the desired button at the bottom of the screen.

This device's setup continues onto an additional page. Click on the down arrow to continue its setup.

Configured

Allowable selections: Enabled, Disabled
Default: Disabled

Address

Allowable selections: Choose from drop-down list of available Vapor sensors, Not Assigned
Default: Not Assigned

Label

Allowable selections: Up to 20 alphanumeric characters
Default: Blank

Address [2]

Allowable selections: Read-only - next sequential address

Threshold

The Threshold field lets you enter vapor levels to identify a leak or serious spillover and to trigger the vapor alarm. Thresholds are in ohms and must be calculated for each vapor sensor according to the procedure described below. Thresholds may be set to account for existing vapor levels as long as these vapors do not exceed the limits explained below.

BEFORE YOU BEGIN

IMPORTANT! A vapor sensor must be operated only in wells where preliminary testing has determined that the soil is not already contaminated beyond acceptable limits (as defined by applicable regulations) or that contaminated soil has been remediated and is now clean. A vapor sensor should not be operated in wells where preliminary testing indicates that the initial vapor sensor resistance exceeds 25k ohms. Vapor sensors must have been installed in their wells at least 24 hours prior to calculating and entering vapor alarm thresholds.

⚠ WARNING!

This system contains electrical voltages that can be lethal.

Electrical shock resulting in serious injury or death could result if incorrect service procedures are used.
When you perform the following procedure:
1.Read all instructions carefully
2.Turn Off power to the console.

DETERMINING THRESHOLD

1. Turn Off all AC power to the console.
2. Open the right-hand door of the console and determine the USM module to which the vapor sensor is connected. The vapor sensor has a 3-wire cable with black "+", green "-" and white "+" colored wires. Every 3-wire sensor should connect to adjacent terminals on the USM module.
3. Find the module connections of the Vapor Sensor which is to be measured for a vapor threshold value.
4. Measure the resistance across the "+" (black wire) and "-" (green wire) terminals using an ohmmeter.
5. Multiply the measured resistance by 4 to determine the vapor threshold value that you should enter.
6. Enter the calculated vapor threshold value.

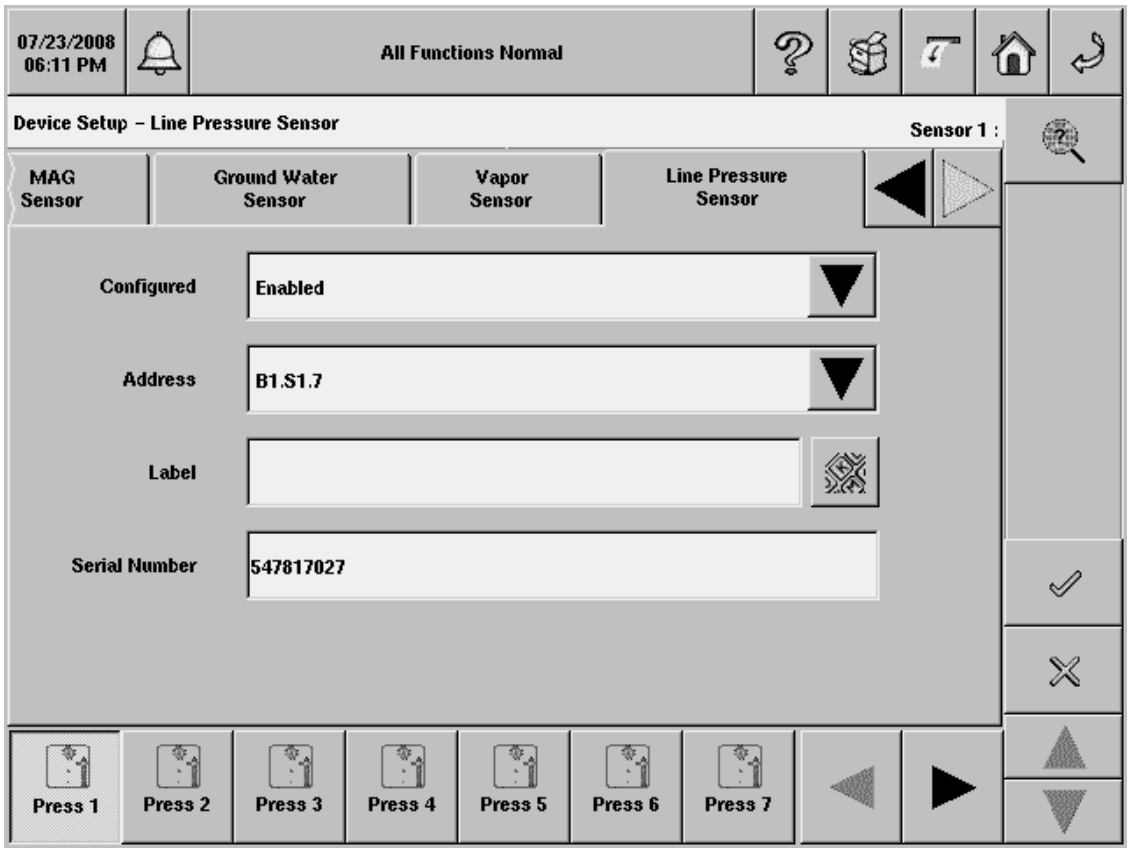
Allowable selections: 1000 - 100,000 ohms
Default: 0

Category

Select the sensor's category (location) from the drop down list.

Allowable selections: Other Sensors, Annular Space, Dispenser Pan, Monitor Well, STP Sump, Containment Sump
Default: Other Sensors

Device Setup - Line Pressure Sensor



This screen allows you to setup Pressurized Line Leak Detection (PLLD) pressure sensors that have been connected to the console.

Configured

Allowable selections: Enabled, Disabled
Default: Disabled

Address

Allowable selections: Choose from drop-down list of available Line Pressure sensors, Not Assigned
Default: Not Assigned

Label

Allowable selections: Up to 20 alphanumeric characters
Default: Blank

Serial Number

This is a read-only value.

Comm Setup - General

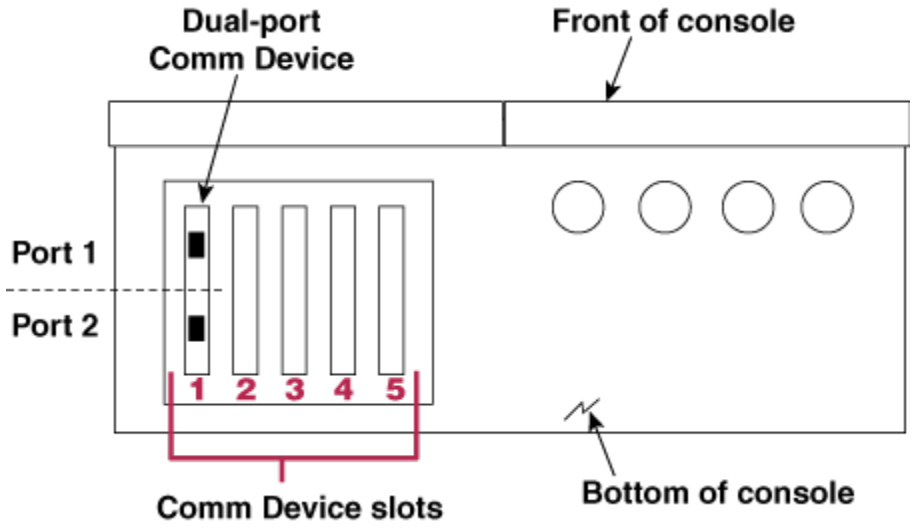
The Comm Devices area of Main Setup provides an interface to configure communication devices. The features ordered with your console will determine which communication devices are available. The selection of setup fields presented to the user for a particular Comm Device will depend on the type of communication device detected.

Cards that are pre-installed are auto-detected on boot of the operating system and pre-configured during startup of the TLS application. Once the application is running, you will see that the system has recognized the cards, configured the Comm screen fields (Slot, Port, and Device) setup, and initialized some settings with default values. Certain fields will be read-only and inaccessible to for changes. Other fields will be editable and the configuration can be changed. Each type of Comm Device will have a set of Tabs to organize its own specific setup parameters. For example, for an RS-232 Comm Device, the General tab will contain configuration and communication setup information, the Format tab will have date, time and unit information and the Advanced tab will have setup information for the advanced user.

The auto-detection feature can only detect the following Device Types; RS-232, RS-485, Internal Modem, Ethernet and USB. The mechanism cannot separately detect S-Sat or H-JBox Comm Devices. S-SAT and H-J Box Comm devices will be detected by the system as an RS-232 or Internal Modem device and you will have to select the specific device from a dropdown list in the TLS application.

Console Comm Device Permissible Slots and Configurable Ports

To identify Comm Device ports, refer to the figure below:



Refer to the table below to identify permissible slots and configurable ports for Comm Devices:

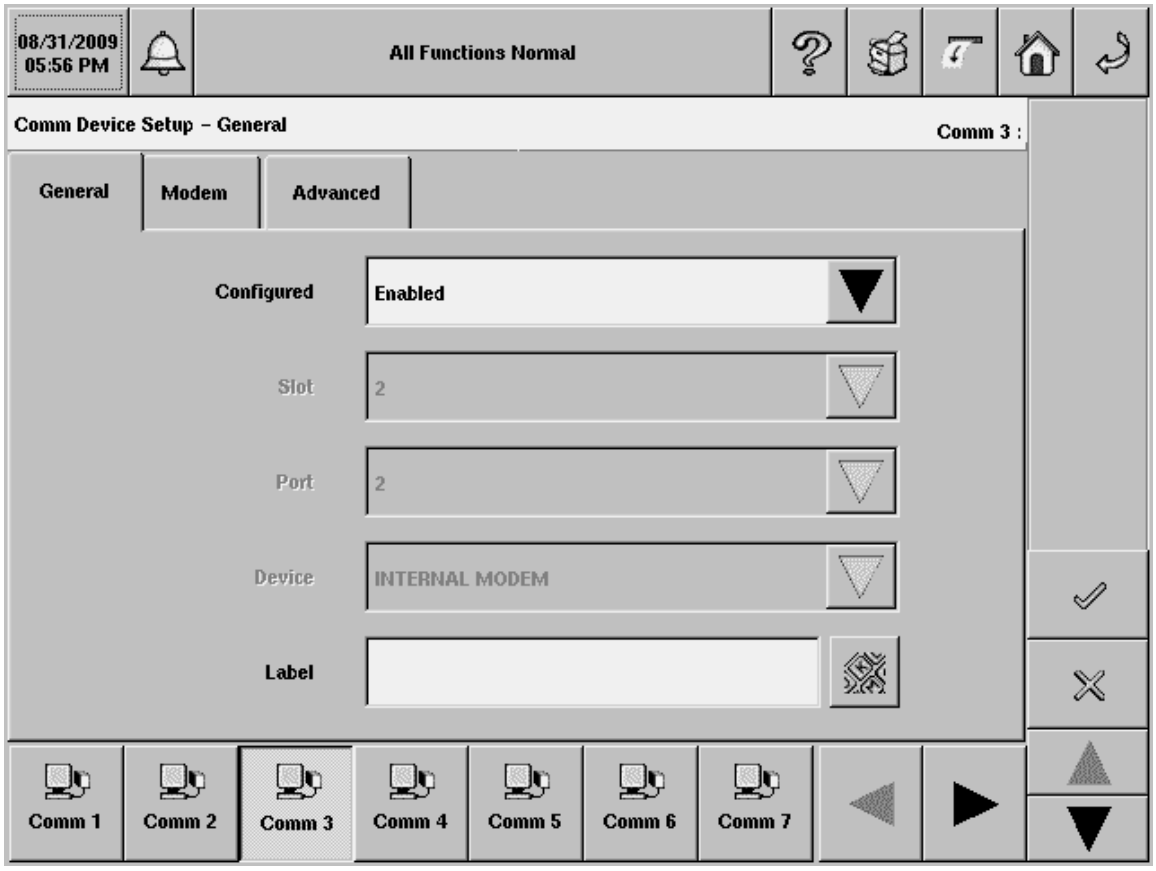
Comm Device	Comm Type	Slot 1		Slot 2		Slot 3		Slot 4		Slot 5	
		Port 1	Port 2	Port 1	Port 2	Port 1	Port 2	Port 1	Port 2	Port 1	Port 2
RS-232	Serial	C	C	C	C	NC	C	NC	NC	NC	NC
RS-485	Serial	C	C	C	C	NC	C	NC	NC	NC	NC
Internal Modem	Serial	NC	C	NC	C	NC	C	NC	NC	NC	NC
Ethernet	TCPIP	---	---	---	---	---	---	NC	C	NC	C
Satellite H-JBox	Serial	C	C	C	C	NC	C	NC	NC	NC	NC
Satellite S-SAT	Serial	C	C	C	C	NC	C	NC	NC	NC	NC
USB	USB	---	---	---	---	---	---	---	---	C	NC

C = Configurable, NC = Non-Configurable

NOTES:

- Slot 1 (Ports 1 and 2), Slot 2 (Ports 1 and 2), and Slot 3 (Port 2) support Comm Device Types that need Full Handshaking for serial communications.
- Slot 3 Port 1 is not available.
- Slot 4 Port 1 does not support Comm Device Types that need Full Handshaking for serial communications. Slot 4 Port 2 is only available for Ethernet Comm Devices.

- Slot 5 Port 1 is only available for USB. Slot 5 Port 2 is only available for Ethernet Comm Devices.



The General tab screen holds dropdowns to choose and enable the Comm Device and set up Communication properties.

RS-232/RS-485, Internal Modem, Satellite Hughes H-JBox and Satellite S-Sat Comm Devices

Configured

Allowable selections: Enabled, Disabled
Default: Disabled

Slot

Allowable selections: List, None
Default: None

Port

Some Comm Devices can have more than one port. If there is more than one port, you must select a port before selecting the valid Comm Device. If the Comm Device is auto-detected, this field is disabled.

Allowable selections: List, None
Default: None

Device

The Auto detection mechanism may further restrict the Comm Device Type choices available to choose from in case a Device is already available in the slot.

If there is no Device in the slot, then all supported options for that specific slot will be available. Setting the Device to "None" will also set all the common fields and button icons along the bottom of screen to their default values thereby marking the entry as removed from the configured list of Comm Devices (a Save is always needed for the changes to take effect. A message warning will be shown to the user prior to the save).

Allowable selections: List, None
Default: None

Label

Enter a unique label for the Comm Device.

Allowable selections: Up to 20 alphanumeric characters
Default: Comm Device Identifier and number

Baud Rate

(RS-232/RS-485, Modem Comm Devices)
Allowable selections: 300,600, 1200, 2400, 4800, 9600, 19200, 38400, 57600 and 115200
Default: RS-232 = 9600, RS-485 = 9600, Modem = 9600

(H-JBOX, S-SAT Comm Devices)
Allowable selections: 300,600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, and 115200
Default: 9600

Data Bits

(RS-232/RS-485, Modem Comm Devices)
Allowable selections: 8 or 7
Default: 7

(H-JBOX, S-SAT Comm Devices)
Allowable selections: 8 or 7
Default: 8

Parity

(RS-232/RS-485, Modem Comm Devices)
Allowable selections: None, Odd, Even
Default: Odd

(H-JBOX, S-SAT Comm Devices)
Allowable selections: None, Odd, Even
Default: None

Stop Bits

(RS-232/RS-485, Modem Comm Devices)
Allowable selections: 1 or 2
Default: 1

(H-JBOX, S-SAT Comm Devices)
Allowable selections: 1 or 2
Default: 1

Satellite Connection String (Satellite H-JBox Comm Devices Only)

Allowable selections: Alphanumeric, maximum 30 Characters
Default: Empty

DTR state (Satellite S-SAT Comm Devices Only)

Allowable selections: Normally High, Normally Low
Default: Normally High

Ethernet Comm Devices

Setup changes for an Ethernet Comm Device may not be initially noticeable as these may take some time to take effect. If you remain on the screen long enough, the values will automatically be refreshed on the screen once the change has been completed. There will be no notice that the system is still working on the changes or that the request for changes has failed.

Default Gateway

Default - These rules only apply in a multi-Ethernet Comm Device configuration

- The first Ethernet Comm Device that is configured (Enabled) will automatically be the Default Gateway (Yes). Subsequent Ethenet Comm Devices that are configured will not be Default Gateways (No).
- If an Ethernet Comm Device is the Default Gateway (Yes) and is subsequently de-configured (Disabled) or gets Physically Removed from the system, the system will no longer have a Default Gateway and Gateway-Dependent communication will be compromised. To regain Gateway-Dependent communication, another Ethernet Comm Device will need to be explicitly be set up as the Default Gateway (Yes).

Setup - These rules only apply in a multi-Ethernet Comm Device configuration

- When an Ethernet Comm Device's IP Assignment is 'Dynamic', the Ethernet Comm Device will automatically be the Default Gateway (Yes). Once an Ethernet Comm Device is set up as 'Dynamic', the Default Gateway field of the Ethernet Comm Device will automatically be set to 'Yes', the Default Gateway field of the rest of the Ethernet Comm Devices will automatically be set to 'No', and the field will be read-only for all Devices. To set another Ethernet Comm Device as the Default Gateway (Yes), the user will have to first set the Ethernet Comm Device with the 'Dynamic' IP Assignment to 'Static' and then set the other Ethernet Comm Device as the Default Gateway (Yes).

- When all Ethernet Comm Device's IP Assignment fields are 'Static' only one of them can be configured as the Default Gateway (Yes). That is, if one of the Ethernet Comm Devices becomes the Default Gateway (Yes), any other one that was the Default will automatically be set to 'No'. Also, if an Ethernet Comm Device that was the Default Gateway is set to 'No' then the lowest numbered Ethernet Comm Device will automatically be configured as the Default Gateway (set to Yes).

Allowable selections: Yes, No
Default: Static

Host Name

A blank Host Name is not allowed.

Setup - These rules only apply in a multi-Ethernet Comm Device configuration. The Host Name of the Ethernet Comm Device that is the Default Gateway (Yes) will be used and can be changed.

Allowable selections: 1 to 100 characters
Default: tls450

MAC Address

This value is read only.

Format - The MAC Address will use the format of six groups of two hexadecimal digits separated by colons (:), e.g. 01:23:45:67:89:ab

IP Assignment

In a multi-Ethernet Comm Device configuration, only one Ethernet Comm Device can be set up as 'Dynamic'. Once an Ethernet Comm Device is set up as 'Dynamic', the rest of the Ethernet Comm Devices will remain 'Static' and cannot be changed to 'Dynamic' from their own screens. To set another Ethernet Comm Device to 'Dynamic', the user will have to set the Ethernet Comm Device currently designated 'Dynamic' to 'Static' before making the change.

Allowable selection: Dynamic, Static
Default: Static

NOTES:
The terms Dynamic and Static are defined as they relate to an IP Assignment.

- Dynamic - When the IP Assignment is Dynamic, an Ethernet Comm Device can have a different IP address every time it connects to the network. This address is usually administered by a Network service such as DHCP (Dynamic Host Configuration Protocol).

- Static - When the IP Assignment is Static, an Ethernet Comm Device will have a permanent IP address every time it connects to the network. This address is entered by the console user.

IP Address

Format - The format of this field will use the IPv4 dot-decimal notation, e.g. 192.0.2.235

Allowable selections: Numeric XXX.XXX.XXX.XXX (0 to 255 each field)
Default: 0.0.0.0

Subnet Mask

Format - The format of this field will use the IPv4 dot-decimal notation, e.g. 192.0.2.235

Allowable selections: Numeric XXX.XXX.XXX.XXX (0 to 255 each field)
Default: 255.255.255.0

Gateway IP

Format - The format of this field will use the IPv4 dot-decimal notation, e.g. 192.0.2.235

Allowable selections: Numeric XXX.XXX.XXX.XXX (0 to 255 each field)
Default: 0.0.0.0

Primary DNS Server

Format - The format of this field will use the IPv4 dot-decimal notation, e.g. 192.0.2.235

Allowable selections: Numeric XXX.XXX.XXX.XXX (0 to 255 each field)
Default: 0.0.0.0

Secondary DNS Server

Format - The format of this field will use the IPv4 dot-decimal notation, e.g. 192.0.2.235

Allowable selections: Numeric XXX.XXX.XXX.XXX (0 to 255 each field)
Default: 0.0.0.0

Serial Command Port

In a multi-Ethernet Comm Device configuration, any changes this Field for one Ethernet Comm Device will not affect the same Field of the other Ethernet Comm Devices.

Allowable selections: Numeric 1 to 65535
Default: 10001

NOTE: For an Ethernet Comm Device, if you set up two or more of the Serial Command, SSH, HTTP or HTTPS Ports with the same number, communications may be compromised. No warning messages will be provided.

SSH Port

In a multi-Ethernet Comm Device configuration, a change to this Field for one Ethernet Comm Device will be reflected in the same Field of the other Ethernet Comm Devices (will be made the same).

Allowable selections: Numeric 1 to 65535
Default: 22

NOTE: For an Ethernet Comm Device, if you set up two or more of the Serial Command, SSH, HTTP or HTTPS Ports with the same number, communications may be compromised. No warning messages will be provided.

HTTP Port

In a multi-Ethernet Comm Device configuration, a change to this Field for one Ethernet Comm Device will be reflected in the same Field of the other Ethernet Comm Devices (will be made the same).

Allowable selections: Numeric 1 to 65535
Default: 80

NOTE: For an Ethernet Comm Device, if you set up two or more of the Serial Command, SSH, HTTP or HTTPS Ports with the same number, communications may be compromised. No warning messages will be provided.

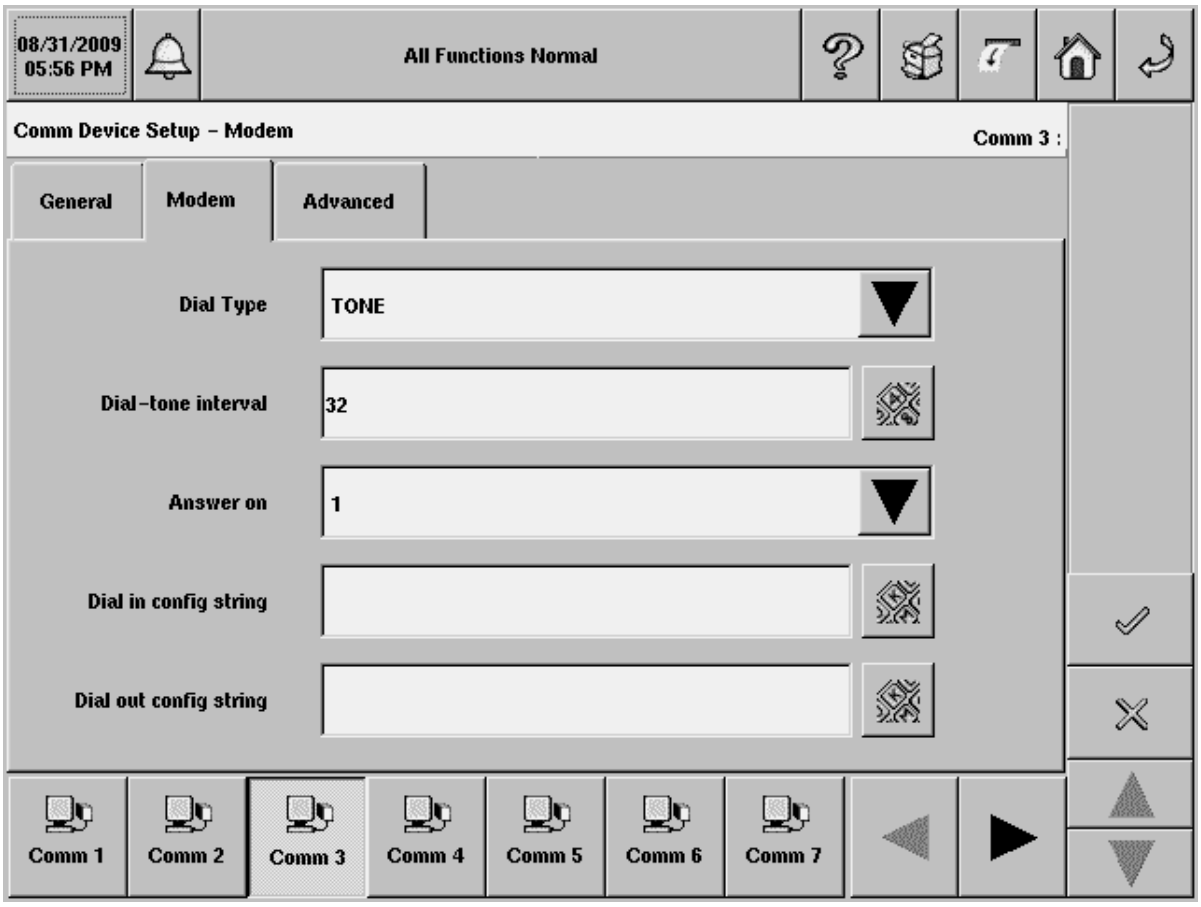
HTTPS port

In a multi-Ethernet Comm Device configuration, a change to this Field for one Ethernet Comm Device will be reflected in the same Field of the other Ethernet Comm Devices (will be made the same).

Allowable selections: Numeric 1 to 65535
Default: 443

NOTE: For an Ethernet Comm Device, if you set up two or more of the Serial Command, SSH, HTTP or HTTPS Ports with the same number, communications may be compromised. No warning messages will be provided.

Comm Setup - Modem



This screen lets you enter modem-specific parameters for the Comm Device.

Dial Type

Allowable selections: Tone, Pulse
Default: Tone

Dial-Tone Interval

Select a no dial tone alarm wait interval.
Allowable selections: 0001 to 9999 hours
Default: 32

Answer On

Enter number of rings
Allowable selections: 0 to 9
Default: 1

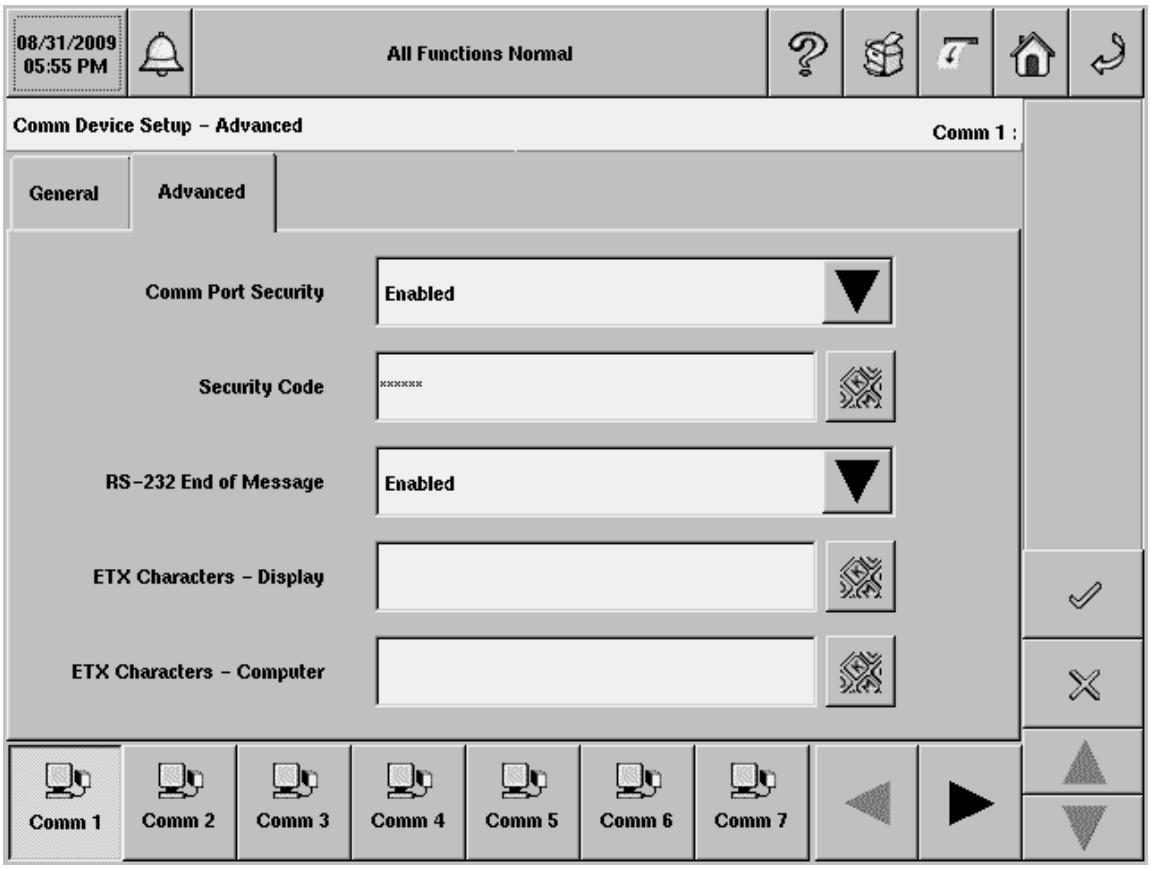
Dial In Configurable String

Allowable selection: Up to 100 alphanumeric character string
Default: Empty

Dial Out Configurable String

Allowable selection: Up to 100 alphanumeric character string
Default: Empty

Comm Setup - Advanced



This tab contains highly-sensitive properties for Comm Device types and are meant for the advanced user.

Comm Port Security

Allowable selections: Enabled, Disabled
Default: Disabled

Security Code

A Case-sensitive code (Alpha and Enhanced Numeric (also punctuation characters), no spaces allowed and no control characters. Each character will be represented by an asterisk in the field.

Allowable selections: A six-character alpha-numeric string
Default: Empty

RS-232 End of Message

When this field is disabled, the 2 following fields (ETX Characters - Display and ETX Characters - Computer) will be disabled. When this field is set to 'Enabled', both fields will become enabled and the keypad will be accessible. You will be allowed to enter 1 or 2 ASCII characters for both the RS-232 Display and Computer Formats.

Allowable selections: Disabled, Enabled
Default: Disabled

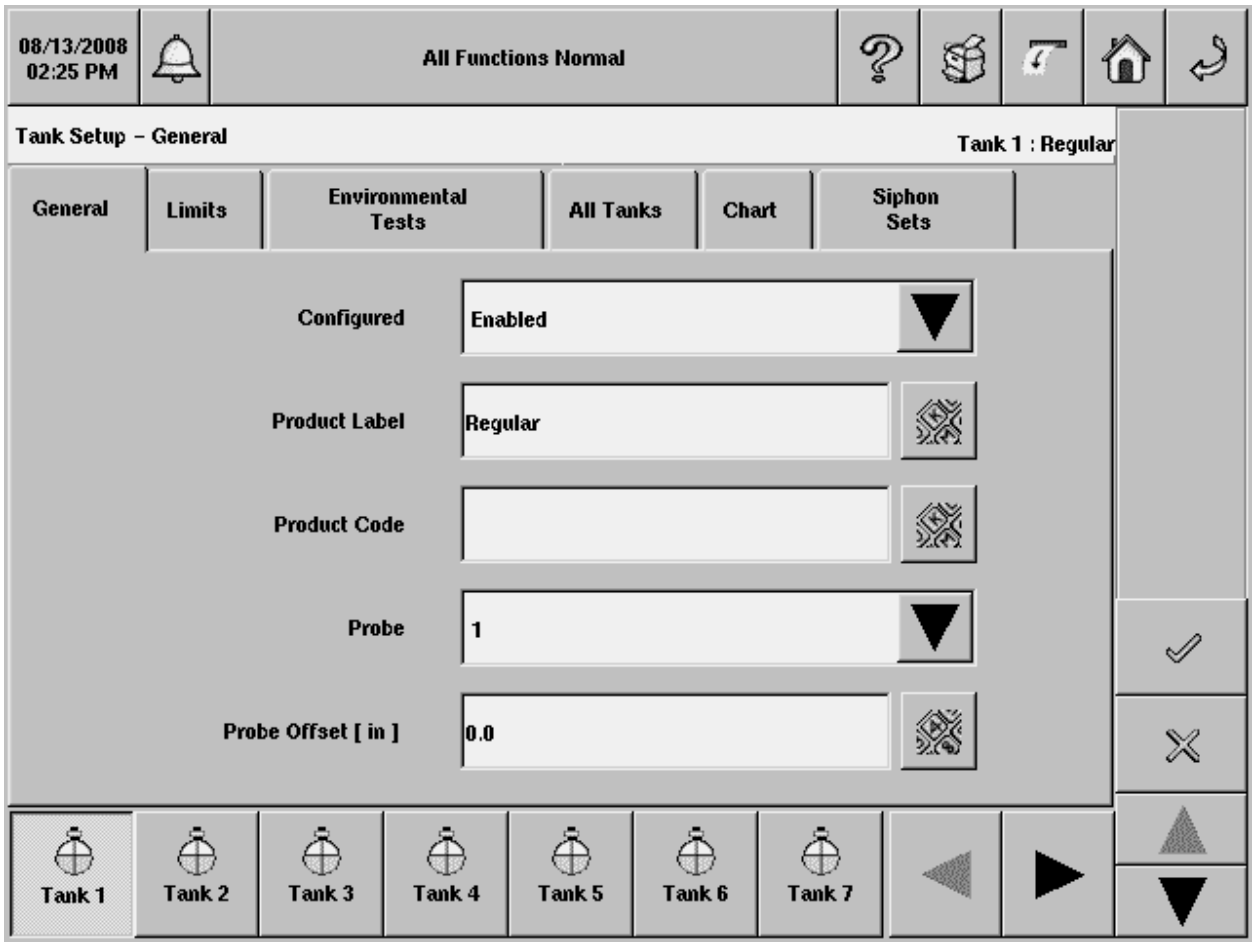
ETX Characters - Display

Allowable selections: 1 or 2 alpha-numeric characters (ASCII value 0 to 255)
Default: Blank

ETX Characters - Computer

Allowable selections: 1 or 2 alpha-numeric characters (ASCII value 0 to 255)
Default: Blank

Tank Setup - General



The Tank Setup - General screen lets you enter parameters for individual tanks.

Configured

To configure a tank the following must be true:

1. A probe must be assigned to the tank
2. The probe must have a valid address
3. The tank must have a viable chart as follows;

   - All charts must include diameter and full volume,

   - A 4 point chart must have the diameter and 3 valid tank chart volumes,

- A 20 point chart must have the diameter and 19 valid tank chart volumes

Allowable selections: Enabled or Disabled
Default: Disabled

Product Label

This value is a description field for the tank. Usually it is based on the name of the product in the tank. It should be unique for each tank. It is not the description value associated with the product code assigned to the tank. The system will not require that a label be assigned to configure the tank, but a data setup warning will occur if one is not assigned.

Allowable entry: 20 characters maximum - should be unique across tanks.
Default: Blank

Product Code

Enter the alphanumeric code used by a point-of-sale terminal or other external device to identify the product for inventory control purposes.

Allowable entry: 1 character (all ASCII characters in the set 20h to 7Eh)
Default: A single character based on tank number , e.g., 1 to 9 for tank numbers 1 to 9 or A to W for tank numbers 10 to 32.

Probe

Select the identifier of the probe installed in this tank from the drop down list. A probe assignment to a tank is one to one (i.e. Probe 1 assigned to Tank 1, Probe 2 assigned to Tank 2, etc.).

Allowable entry: Select this probe's identifier from the dropdown list.
Default: 'Not Assigned'

Full Volume (Capacity)

Enter the full volume of the tank (at 100% height).

Allowable entry: 0 to 264,172 gallons (0 to 999, 999 litres)
Default: 0

Diameter

Enter the inside diameter of the selected tank (for a linear tank, enter the inside tank height in place of the tank's inside diameter). You can find this dimension on the Tank Chart.

Allowable entry: 0 to 390.0 inches (0 to 9906.0mm)
Default: 0

Probe Offset

This offset is intended for installations in which the probe is not resting on the bottom of the tank. The value you enter (the distance off bottom) is continually added to the product height, but only to the water height when the water float exceeds a minimum level.

Allowable selections: -144 to +144 in. (-3657.6 to +3657.6 mm)
Default: 0

Tank Tilt

Enter the tank tilt (if any) as calculated following instructions in the TLS-4XX Site Prep manual. If the probe is installed in the center of the tank, enter 0.00 U.S. units or 0.00 Metric.

Allowable entry: -20.00 to +20.00 inches (-508.0 to +508.0mm)
Default: 0.00

Thermal Coefficient

To ensure proper leak test performance, you must enter the Coefficient of Thermal Expansion for the fuel in the tank. The system requires this values to establish proper temperature compensation factors during a leak test and for use in calculating temperature compensated volume. If you know your product's thermal coefficient enter that value. Otherwise, refer to the list below of typical thermal coefficients for various fuels and liquids:

Product	Thermal Coefficient (U.S. Units)	Thermal Coefficient (Metric Units)
Alcohol	0.00063	0.00114
Aviation Gas	0.00075	0.00135
Diesel (fuel oil #2) [Derv]	0.00045	0.00081
Biodiesel (B20) [Derv]	0.00045	0.00081
Biodiesel (B100) [Derv]	0.00044	0.00079

Product	Thermal Coefficient (U.S. Units)	Thermal Coefficient (Metric Units)
Ethylene Glycol	0.00037	0.00067
Fuel Oil #4	0.00047	0.00085
Gasohol	0.00069	0.00125
Gear Oil, 90W	0.00047	0.00085
Hydraulic Oil	0.00047	0.00085
Jet Fuel	0.00047	0.00085
Kerosene (fuel oil #1) [Paraffin]	0.00050	0.00090
Liquefied Petroleum Gas (LPG)	0.00160	0.00288
Leaded	0.00070	0.00126
Motor Oil	0.00047	0.00085
Premium [4 Star]	0.00070	0.00126
Regular Unleaded	0.00070	0.00126
Super Unleaded	0.00070	0.00126
Low benzene unleaded petrol	0.00070	0.00126
Transmission Fluid	0.00047	0.00085
Turbine Oil	0.00047	0.00085
Water	0.00012	0.00022
Washer Fluid	0.00047	0.00085
Used Oil	0.00044	0.00079

Allowable entry: 0.0 to 0.0016 gal/gal/ °F (0.0 to 0.00288 L/L/ °C)
Default: 0.0 (A value of 0.0 in this field means that TC volume is uncompensated volume, which is not compensated for temperature.)

Fuel Density (Optional Feature)

Fuel Density can be entered in one of three forms: API number, Relative Density, or Actual Fuel Density. The TLS determines which of these three forms has been entered based on range of input values.

Allowable entry: 0.0 to 2000.0000
Default: 0.0

Accept Dispenser Information (Optional Feature)

Allowable entry: Enabled, Disabled
Default: Enabled

Pump Threshold (%)

This feature is for line manifolded tanks and is only enabled when you have the Dispense Mode set to Manifolded:Sequential (See Setup/Pumps and Lines/Lines). When the tank's volume drops below the entered Pump Threshold percentage, pumping will switch over immediately to the next available tank in the line manifolded set. Pumping will continue from the current tank for another 10 seconds to avoid a disruption in dispensing during the switch over.

Allowable entry: 0.00 to 50.00% (of the tank's full volume)
Default: 10.00%

Delivery Delay

Enter the number of minutes to delay to determine when a delivery is complete.

Allowable entry: 1 to 99 minutes
Default: 1

Gross Test Fail

The Gross Test Fail feature allows you to disable or enable an alarm that triggers when a 3.0 gph (11.3lph) leak test fails.

Allowable selections: Enabled or Disabled
Default: Enabled

Periodic Test Fail

The Periodic Test Fail feature allows you to disable or enable an alarm that triggers if a 0.2 gph (0.76lph) leak test fails.

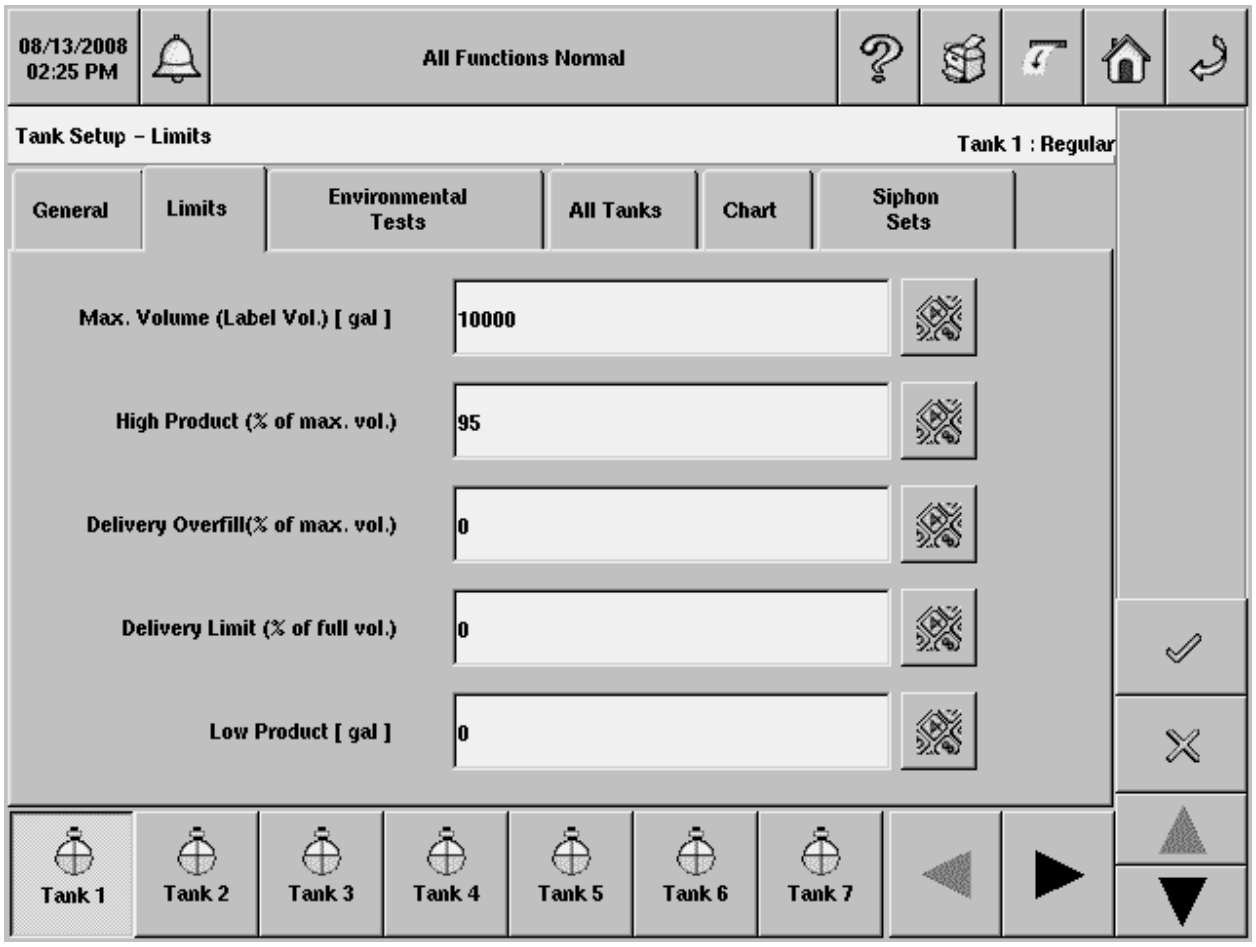
Allowable selections: Enabled or Disabled
Default: Enabled

Annual Test Fail

The Annual Test Fail feature allows you to disable or enable an alarm that triggers when an 0.1 gph (0.38lph) leak test fails.

Allowable selections: Enabled or Disabled
Default: Disabled

Tank Setup - Limits



Tank Setup Limits is a tab screen for entering tank capacity and various tank alarm set points. Values entered apply to the selected tank.

Maximum Volume (Label Volume)

Maximum or Label Volume alarm warns when the level of fluid in the tank exceeds the volume you enter here. Set this value at a level higher than the High Product limit (See Figure 1).

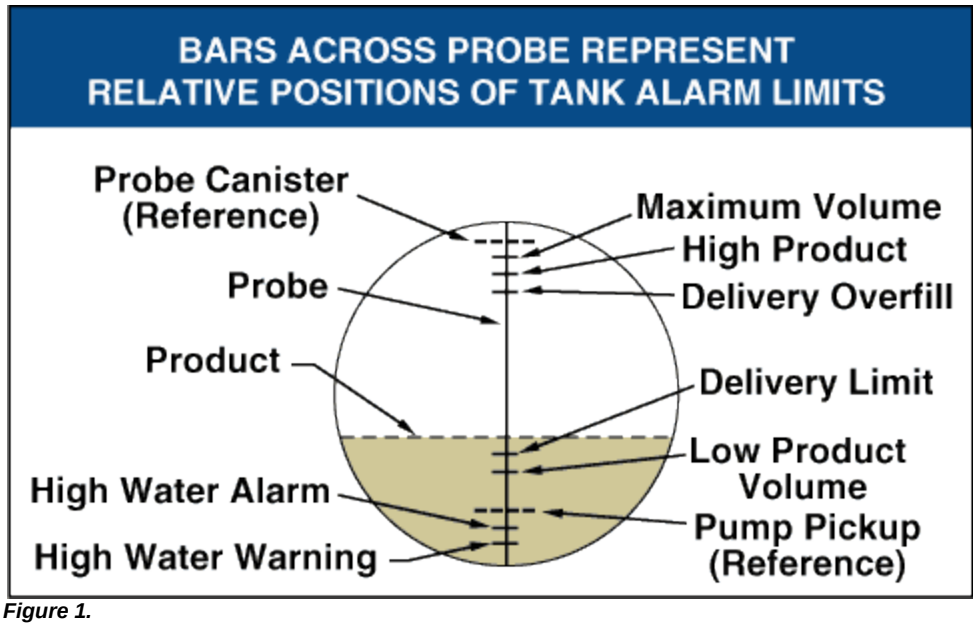


Figure 1.

Allowable entry: 0 to 264,172 gallons (0 to 999,999 litres)
Default: Full volume (capacity)

High Product (% of Maximum Volume)

High Product warns when the volume of fluid in the tank exceeds the value you enter here. The High Product alarm occurs whenever this volume is exceeded, whether or not a delivery is in progress. In U.S. installations this is especially useful in applications such as in used-oil holding tanks, where the rate of fill can be too gradual for the system to recognize the increase as a delivery and possibly fail to activate the Delivery Overfill Limit alarm. Set this limit at a percentage that is between the Delivery Overfill Limit percentage and 95% (of the tank's capacity) (See Figure 1).

In international installations, this is especially useful to warn of an impending overfill. It can trigger the same alarm indications as Overfill Limit. Set this limit to 98% if the maximum (label) volume is greater than 25,000 litres and to 96% if the maximum volume is less than 25,000 litres.

Allowable entry: 0 to 100% (of the tank's full volume)
Default: 0%

Delivery Overfill (% of Maximum Volume)

Delivery Overfill warns of a potential overfill only during a bulk delivery. When the volume reaches this value, the system can activate an on-site overfill alarm and trigger a printout showing the tank number, date, time, and product. Set this percentage no

greater than 90% of the tank's capacity. In international installations set this percentage to no greater than 99% of maximum (label) volume (See Figure 1).

Allowable entry: 0 to 100%
Default: 0%

Delivery Limit (% of Full Volume)

Delivery Limit warns when the volume of product in the tank drops to a level at which the operator will call for a delivery - i.e., minimum operating capacity. Set this percentage at a volume higher than that of the Low Product Volume (See Figure 1).

Allowable entry: 0 to 100%
Default: 0%

Low Product Volume

Low Product Volume warns when the volume in the tank drops to the level you enter here (See Figure 1).

In international installations, assuming no water in the tank, this limit should be set no lower than: the tank volume at 250mm for Mag probe type 8473, or the tank volume at 125mm for Mag probe type 8493 (these are the minimum volumes that can be measured by each probe type).

Allowable entry: 0 to 264,172 gallons (0 to 999,999 litres)
Default: 0

High Water Warning

High Water Warning identifies a high water level in the bottom of the tank and acts as a pre-warning to the High Water Alarm. Set this value at a lower level than High Water Alarm (See Figure 1).

NOTE: This message does not appear for tanks in which high alcohol probes are installed.

Allowable entry: 0.75 to 5.0 inches (19.05 to 127.0mm)
Default: 0 (off)

High Water Alarm

When water in the tank rises to the High Water Alarm value, the system triggers an alarm. Set this value at a level lower than the pickup for the submersible pump or suction line (See Figure 1).

Note: This message does not appear for tanks in which high alcohol probes are installed.

Allowable entry: 0.75 to 5.0 inches (19.05 to 127.0mm)
Default: 0 (off)

Leak Alarm Limit

During a leak test, Leak Alarm Limit warns when the cumulative temperature compensated product loss from a tank reaches the entered value. The Leak Alarm Limit is intended to identify and warn of large losses of product during a leak test.

To prevent false reports and alarms from being triggered, do not set the limit value to identify losses of 0.2 gph (0.76 lph) or less during the test period. The Leak Alarm Limit should be set to identify losses of 1 gph (4 lph) or greater. Consider both the leak rate you wish to identify and the length of the test when determining a value for Leak Alarm Limit. A value of 8 gallons (32 litres) will warn of a 1 gph (4 lph) leak in 8 hours or a 2 gph (8 lph) leak in 4 hours.

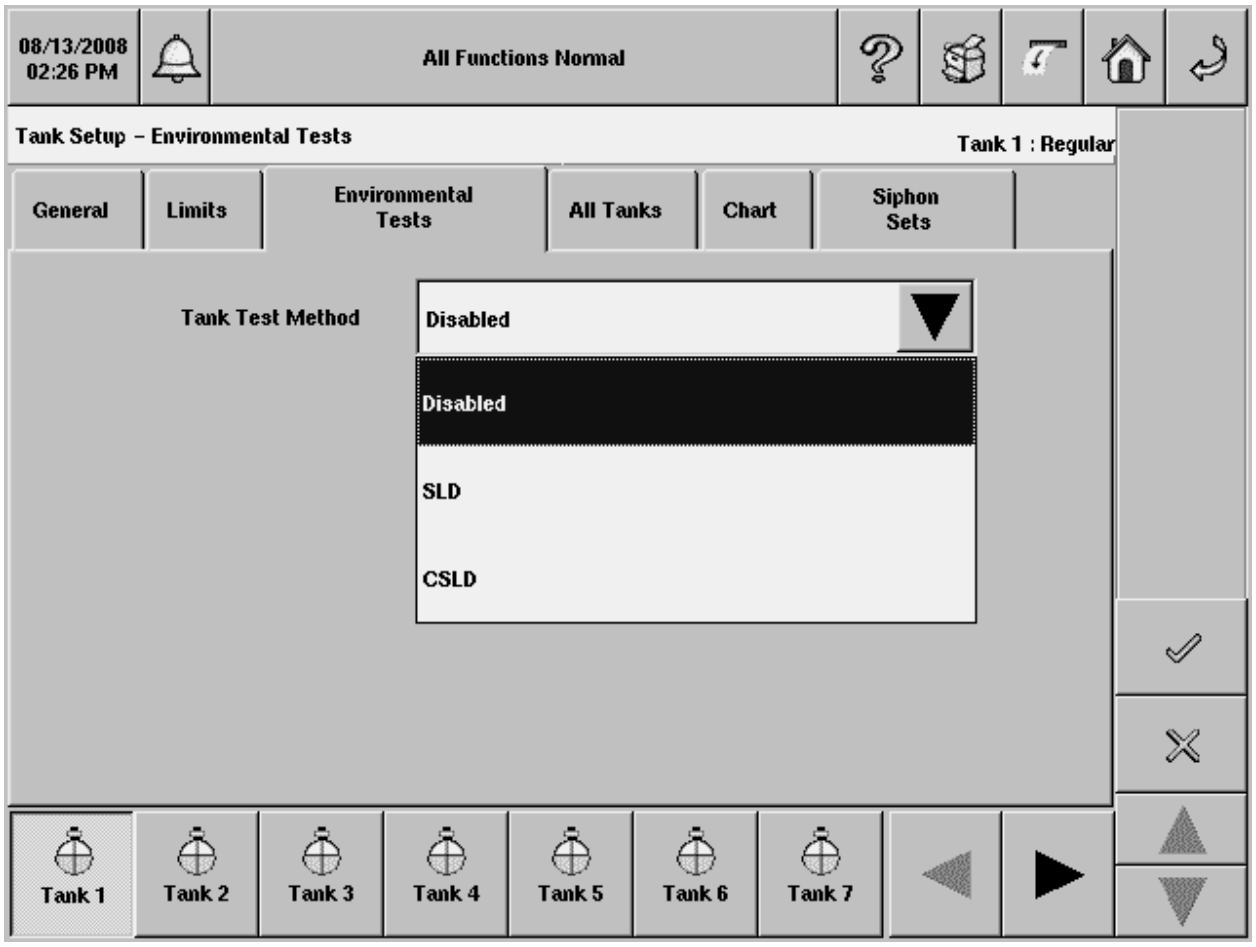
Allowable entry: 1 to 99 gallons (4 to 374 litres) Note: the system automatically interprets the limit you enter as a negative. It is not necessary to enter the minus (-) sign.
Default: 99 gallons (374 litres)

Sudden Loss Limit

Sudden Loss Limit (theft alarm limit loss) immediately warns of a sudden loss of fuel during a leak test. It is not based on temperature compensated volume; it is intended to identify losses larger than the Leak Alarm Limit (See above). Typically, you should set this limit at 25 gallons (100 litres), or higher.

Allowable entry: 0 to 264,172 gallons (0 to 999,999 litres)
Default: 99 gallons (374 litres)

Tank Setup - Environmental Tests



This screen provides a choice of disabling a tank test (default), or enabling SLD or CSLD tests for a selected tank. Once a Tank Test Method has been chosen, the corresponding setup parameters for either SLD or CSLD will be displayed in the data view area.

Choosing a test enables this test and provides the settings by which the test will be conducted. However, enabling a test is not the same as starting the test, which may be started at a later point.

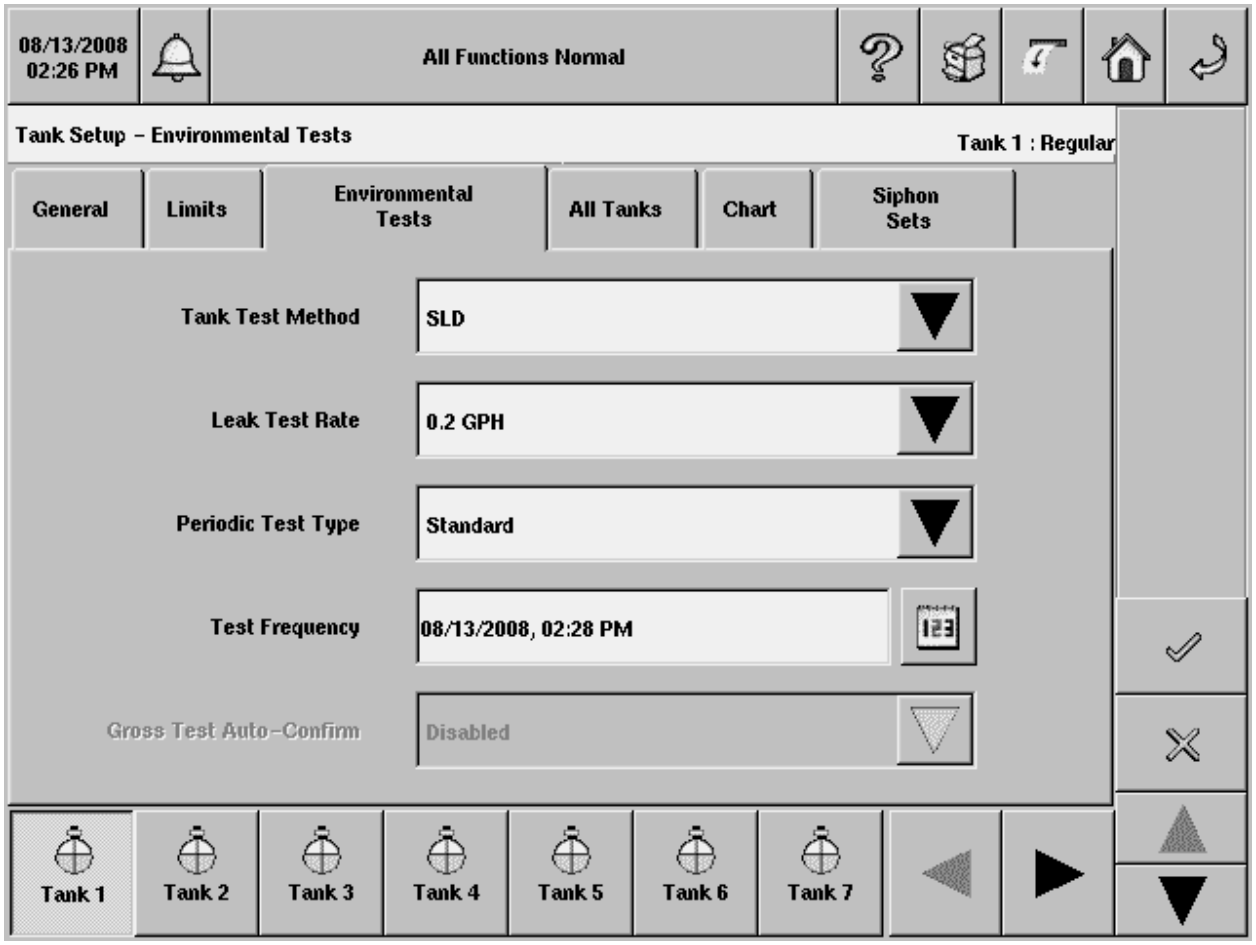
Tank Test Method

SLD (Static Leak Detection) tests - A single test that runs on demand, at a programmed time, or by pump sense signal. Results are stored for leak test reports.

CSLD (Continuous Statistical Leak Detection) tests - leak tests are run continuously during idle tank times and results are stored for leak test reports.

Allowable selections: Disabled, SLD, CSLD
Default: Disabled

- - - If Tank Test Method Selected is SLD - - -



Leak Test Rate

Allowable selections: 0.2 gph (0.76 lph), 0.1 gph (0.38 lph)
Default: 0.2 gph (0.76 lph)

Periodic Test Type

Two periodic SLD test types are available:

1. 'Standard' - performs a 2-hour periodic leak test.

2. 'Quick' - performs a 0.2 gph (0.76 lph) test in one hour. This selection requires a wait period of 5 hours after a delivery before starting the SLD test.

Allowable selections: Standard, Quick
Default: Standard

Test Frequency

Touch the Calendar button to select the desired frequency for SLD tests as described below:

Field	Range, Min, Max	Default	Visible If:
Period	On Date, Annually by Date, Annually by Day of Month, Monthly by Day of Week, Monthly by Day of Month, Weekly, Daily	On Date	Always
	Auto		Tank's pump mode is set to 'Pump Sense'
Set Date	Month: 1-12, Day: 1-31, Year: 1970 - 2038	Current Date	If Period choice is On Date:
Month	January - December	January	If Period choice is Annually by Day of Week, Annually by Day of Month
Weekday	Sunday - Saturday	Sunday	If Period choice is Annually by Day of Week, Monthly by Day of Week, Weekly

Field	Range, Min, Max	Default	Visible If:
Occurrence	1st, 2nd, 3rd, 4th, Last	1st	If Period choice is Annually by Day of Week, Monthly by Day of Week
Day of Month	1 - 31	1	If Period choice is Annually by Day of Month, Monthly by Day of Month
Time of Day	Time in Hours and Minutes, 12 Hr. sensitive	Current time + 2 minutes	If Period choice is If Period choice is On Date, Annually by Day of Week, Annually by Day of Month, Monthly by Day of Week, Monthly by Day of Month, Weekly, Daily

Gross Test Auto-Confirm

Available when SLD Test Frequency Period is set to Auto. When enabled, this feature may reduce false alarms. Requires two failed tests before test fails.

Allowable selections: Enabled, Disabled
Default: Disabled

Duration

Allowable selections: 2 - 24 Hours
Default: 2

Leak Min. Periodic (%of full volume)

This value tells the system the minimum tank volume required to record a passed periodic test. The value reflects federal, state, and local requirements.
Allowable selections: 0 - 100%
Default: 0

Leak Min. Annual (%of full volume)

This value tells the system the minimum tank volume required to record a passed annual test. The value reflects federal, state, and local requirements.
Allowable selections: 0 - 100%
Default: 0

Early Stop

When enabled this feature will prevent an In-Tank Leak Test from starting under the following conditions:

1. Fuel level is less than Leak Min. Periodic (0.2 gph test rate) or Leak Min. Annual (0.1 gph test rate).
2. It is less than 8 hours from a delivery if Standard test or 5 hours from delivery for Quick test.
3. The product temperature is less than 0°F (-17.6°C) or more than +100°F (+37.4°C).
4. The fuel level is too low.

Allowable selections: Enabled, Disabled
Default: Disabled

Tank Test Notify

When "On" this feature triggers a warning allowing the operator to set a relay to shutdown the submersible pump.

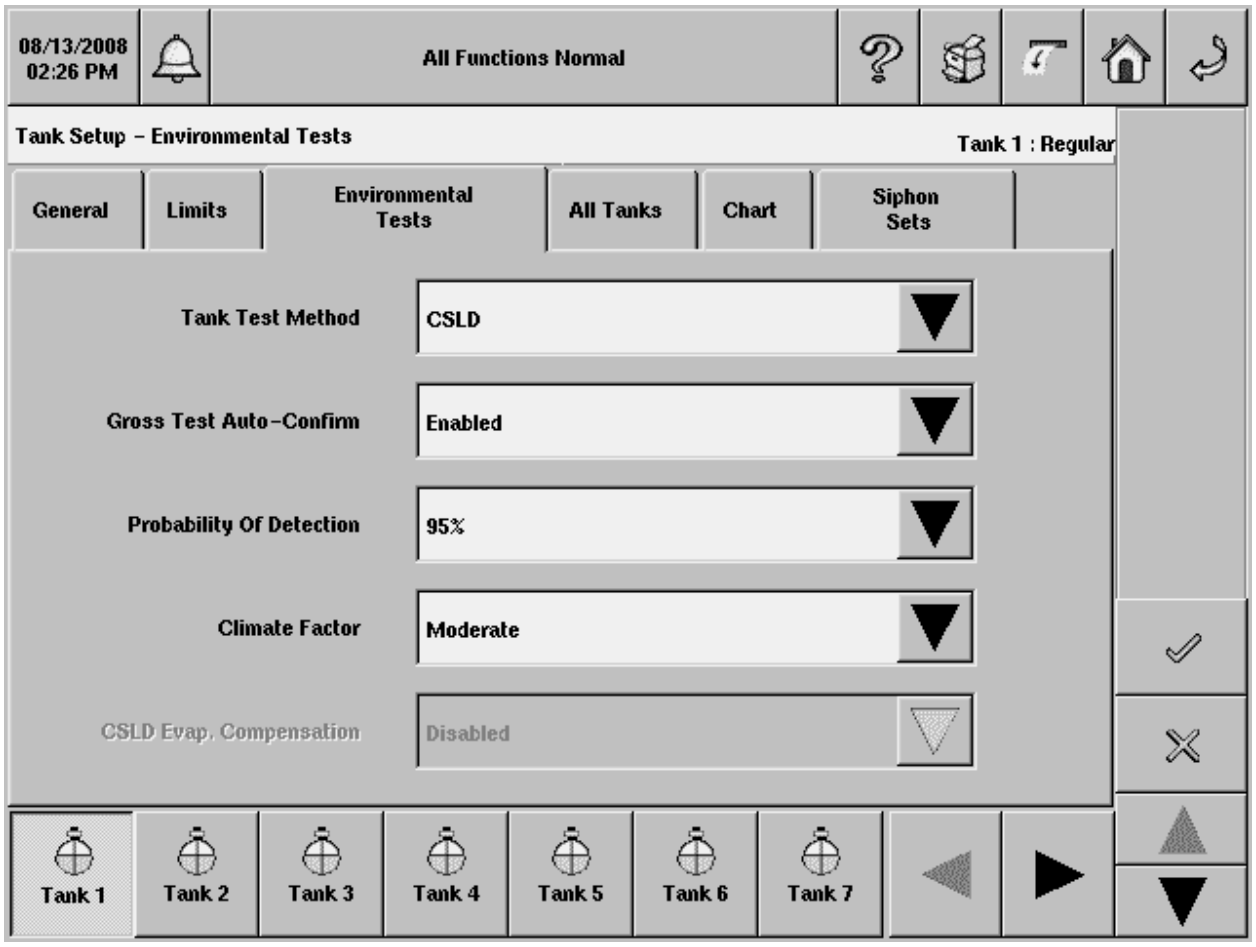
Allowable selections: On, Off
Default: Off

Tank Test Siphon Break

When "On" this feature allows the operator to perform in-tank leak tests on siphon manifolded tanks (a siphon break valve must be installed for this selection).

Allowable selections: On, Off
Default:Off

- - - If Tank Test Method Selected is CSLD - - -



Gross Test Auto-Confirm

When enabled, this feature may reduce false alarms. Requires two failed tests before test fails.

Allowable selections: Enabled, Disabled
Default: Disabled

Probability of Detection

You can set the Probability of Detection to 95% or 99%. If "Custom" appears in this field, a special value has been entered remotely. Do not change the selection from Custom.

Allowable selections: 95%, 99% or Custom
Default: 95%

Climate Factor

If Climate Factor is set to Moderate, the two fields "Stage II Vapor Recovery" and "Tank CSLD Evap. Compensation" will be disabled.

Extreme should only be used on individual tanks which have exhibited evidence of consistent, extreme vapor loss due to fuel evaporation, and which interferes with normal CSLD leak detection monitoring causing false leak alarms.

Allowable selections: Moderate, Extreme
Default: Moderate

Tank CSLD Evap. Compensation

Evaporation Compensation should only be enabled on individual tanks which have exhibited evidence of consistent, extreme vapor loss due to fuel evaporation, which interferes with normal CSLD leak detection monitoring by causing false leak alarms.

Note: This selection field will be enabled only if Climate Factor is set to Extreme.

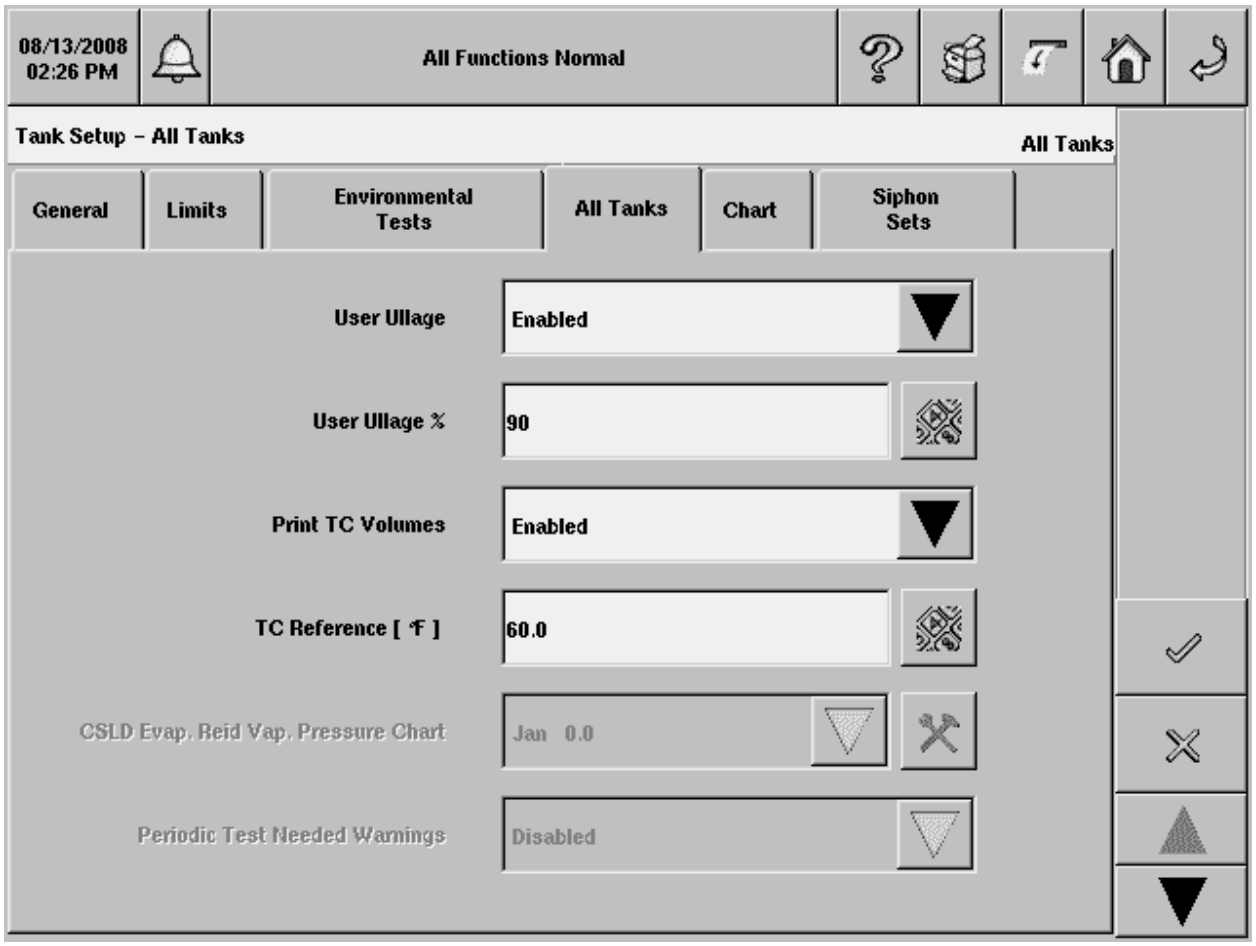
Allowable selections: Enabled, Disabled
Default: Disabled

Tank Stage II Vapor Recovery

This selection will be enabled only if Climate Factor is set to Extreme and Tank CSLD Evap. Compensation is enabled.

Allowable selections: Enabled, Disabled
Default: Disabled

Tank Setup - All Tanks



This screen contains parameters that apply to all tanks in the system.

User Ullage

Ullage is the volume (space) in the tank as product is dispensed. This field lets you enable display of the User Ullage volume as well as enable the User Ullage% field. When this field is disabled, User Ullage will not be displayed by the GUI.

Allowable Selection: Enabled/Disabled
Default: Disabled

User Ullage%

Select the percent of ullage volume to display.

Allowable Selection: 90 - 100%
Default: 90%

Print TC Volumes

Print TC (Temperature compensated) Volumes only applies to end-user reports (Inventory, Delivery, etc.).

Allowable Selection: Enabled/Disabled
Default: Disabled

TC Reference

This field lets you enter the temperature compensation (TC) Reference temperature for all volume calculations. This temperature is determined by your location. In the U.S., the reference temperature used to calculate TC volume is normally 60°F. In other countries, this value may differ. Canada, for example, uses 15°C.

NOTES:

1. All leak calculations are based on the reference temperature you enter.

2. If BIR is being used and the meters reporting the sales are temperature compensated, the value you enter must match the meters' reference temperature value. Also, in BIR setup, Temperature Compensation must be set to Enabled.

Allowable Selection: -40 to 120°F or -40 to 48.8°C (depending on System Units selection)
Default: 60°F or 15.5°C

Periodic Test Needed Warning

The console monitors the amount of time since the last passed 0.2 gph (0.76 lph) tank test. By enabling the Periodic Test Warning, you can have the system provide a warning when a tank test has not been passed, or conducted, in a specified number of days (0 to 30), and activate an alarm if a test has not been passed after a warning, or a specified number of days.

Allowable Selection: Enabled/Disabled
Default: Disabled

Days Before Periodic Warning

Allowable Selection: 0 - 30
Default: 25 days

Days Before Periodic Alarm

Allowable Selection: 0 - 30
Default: 30 days

Annual Test Needed Warning

The console monitors the amount of time since the last passed 0.1 gph (0.38 lph) tank test. By enabling Annual Test Warning, you can have the system provide a warning when a 0.1 gph (0.38 lph) tank test has not been passed or conducted in a specified number of days (0 - 365) and activate an alarm if a test has not been passed after a warning, or a specified number of days.

Allowable Selection: Enabled/Disabled
Default: Disabled

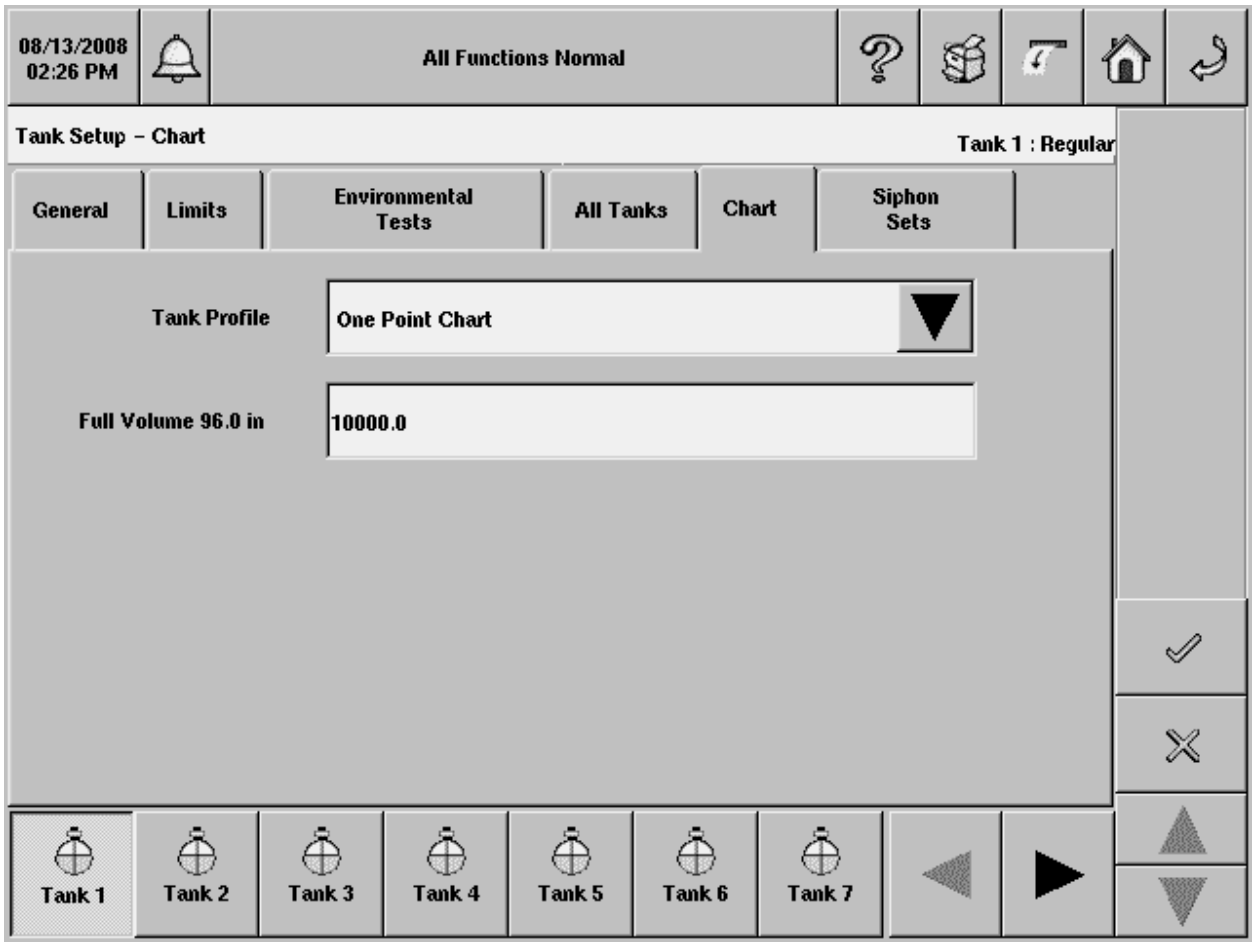
Days Before Annual Warning

Allowable Selection: 0 - 365
Default: 355 days

Days Before Annual Alarm

Allowable Selection: 0 - 365
Default: 365 days

Tank Setup - Chart



This screen allows you to manually setup a tank chart using one of four tank profiles: 1 point, 4 point, 20 point or linear. You must enter the diameter and full volume before selecting a tank chart (See Tank Setup - General Tab).

Tank Profile

Linear tank profiles and 1 point profiles are a single point chart which uses the tank's diameter/full volume as the height/volume pair.

Note: For the currently selected Tank, if either Full Volume or Tank Diameter has been set to 0, this field will be disabled.

Allowable selections: 1 point chart, 4 point chart, 20 point chart, or linear chart
Default: 1 point chart

Full Volume (at full height) inches or mm

This value is read only and displays the total capacity and the diameter (full height) of the tank (See Tank Setup - General Tab).

Display range: Volume = 0 to 264,172 gals (0 to 999,999 litres), Diameter = 0 to 390.0 in (0 to 9906.00 mm)

Enter volumes at read only heights

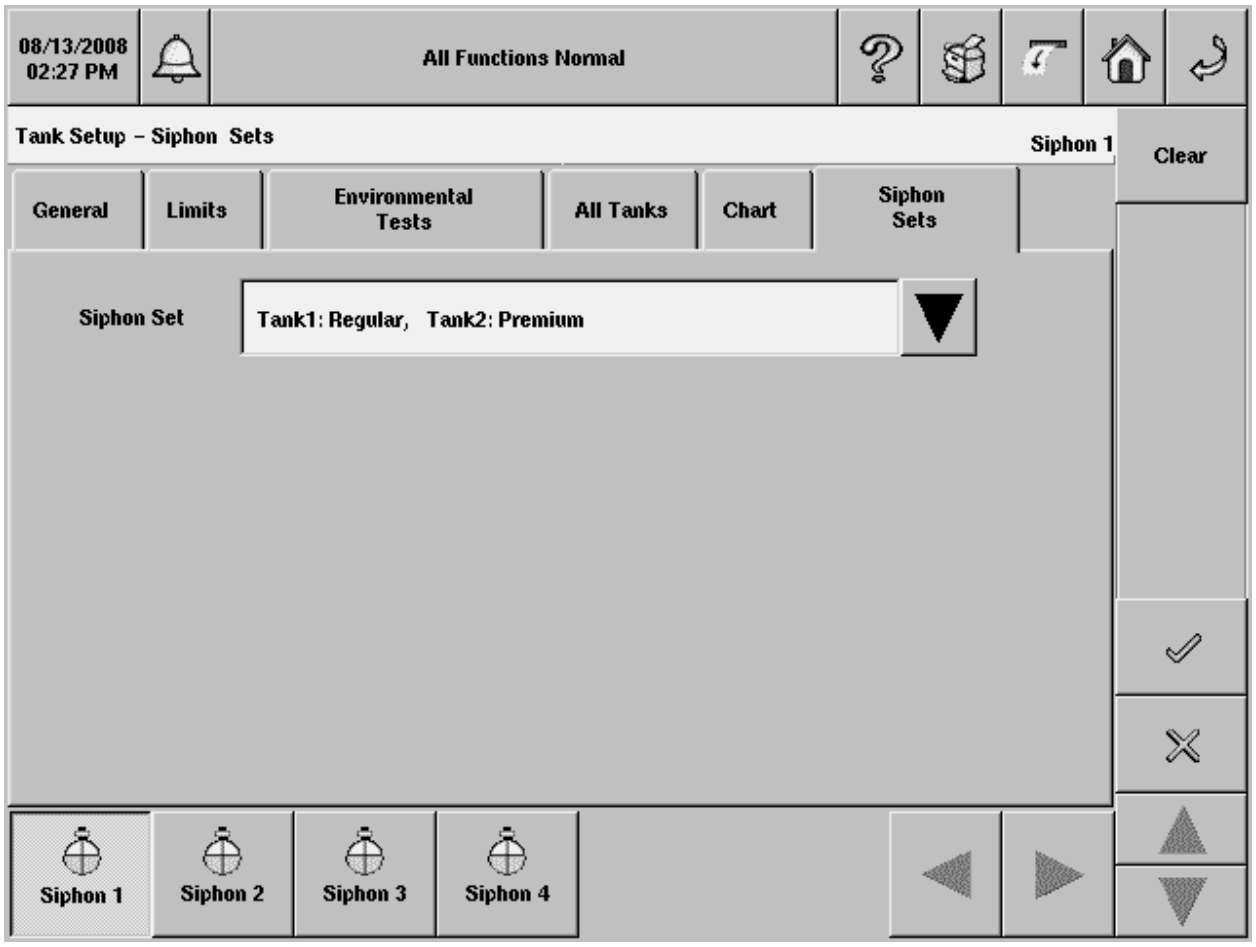
Height values for the points within the chart are automatically displayed and are read only These height values are automatically calculated by dividing the tank's entered diameter into 'n' equal portions, where 'n' is the number of points you selected for the chart.

Enter the volume (at height) for each of the displayed height/volume pairs as calculated from the manufacturer's tank chart. The volume entered at any height should not exceed the volume at a greater height.

Note: For the currently selected Tank, if either Full Volume or Tank Diameter has been set to 0, this field will be disabled.

Allowable selections: 0 to Full Volume gallons (0 to Full Volume litres)

Tank Setup - Siphon Sets



The Siphon Set tab is used to view and edit information about siphon manifolded sets in the system. Each set is composed of a list of tanks that are siphon manifolded together (See Figure 1 below).

The maximum number of Siphon Sets that can be configured is the maximum number of tanks divided by 2, rounded down. To configure tanks, touch the desired button at the bottom of the screen and make the appropriate entries.

Individual Siphon Set Buttons (bottom of screen)

Touching the individual buttons for Siphon Sets at the bottom of the screen will show parameter entry fields for siphon setup.

A multi-select list of tanks will be provided for picking the tanks to include in the siphon set. The list will contain tanks that are both configured and non-configured. Those tanks include those that have not been assigned to any siphon sets plus those that are assigned to the current set, if any. The tanks that are assigned to the current set will be selected (highlighted). The tanks that are not configured will be prefixed with a '!' symbol to distinguish them from the rest.

This multi-select list will be labeled as Siphon Sets. Initially when a siphon is selected by touching the bottom button, this multi-select list will either contain a comma separated list of tanks for the siphon (e.g., Tank 5: Midgrade, Tank 7: Midgrade), or will be blank if no tanks are present for the siphon. There will be only one parameter entry field labeled "Siphon Set" present initially when a new siphon is selected.

When a new siphon set is created or an existing siphon set is changed either by adding a new tank to the siphon, or removing an already existing tank, the siphon set members selected will be displayed in read only fields below the Siphon Set field (first tank) on the screen .

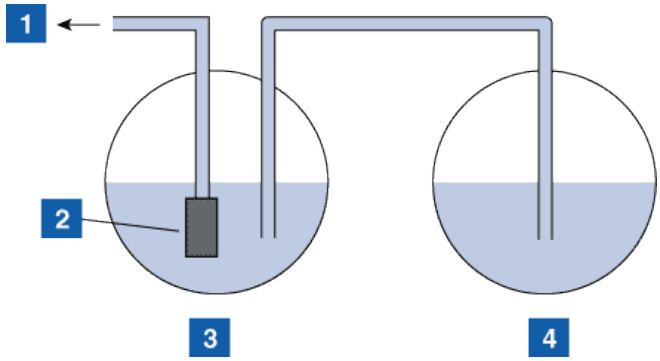
To delete tanks from the set either deselect each of them from the multi-select list or use the "Clear" button at the right of the screen.

Any operation of creating a new siphon set, changing an existing siphon set or clearing a siphon set should be followed by touching the Save button. Otherwise all changes made to the siphon set will be lost when exiting the screen.

Siphon Set

This field will contain the multi-select drop list for tanks to add to the siphon set in ascending order by Tank Device number. If multi-selection alters the contents of the selected Tanks then the screen will be re-drawn to show all fields appropriately sorted based on the Tank they contain, e.g., Second (with assigned tank), Third (with assigned tank), etc.

Example of Siphon Manifolded Tanks



Legend: 1 = line to dispensers, 2 = STP, 3 = Primary tank, 4 = Second tank

Pumps and Lines Setup - Overview

The steps below outline basic PLLD setup for standard line leak detection configurations.

1. Configure Relays in Device Setup section
    a. Set 'Label'
    b. Select desired address from 'Address' drop-down
    c. Set 'Type' to 'Pump Control Output'
    d. Set 'Orientation' to desired option
    e. Set 'Configured' to 'Enabled'\

2. Configure External Inputs in Device Setup section
    a. Set Label
    b. Select desired address from 'Address' drop-down
    c. Set 'Type' to 'Pump Sense'
    d. Set 'Orientation' to desired option
    e. Set 'Configured' to 'Enabled'

3. Configure Line Pressure Sensors in Device Setup section
    a. Set Label
    b. Select desired address from 'Address' drop-down
    c. Set 'Configured' to 'Enabled'

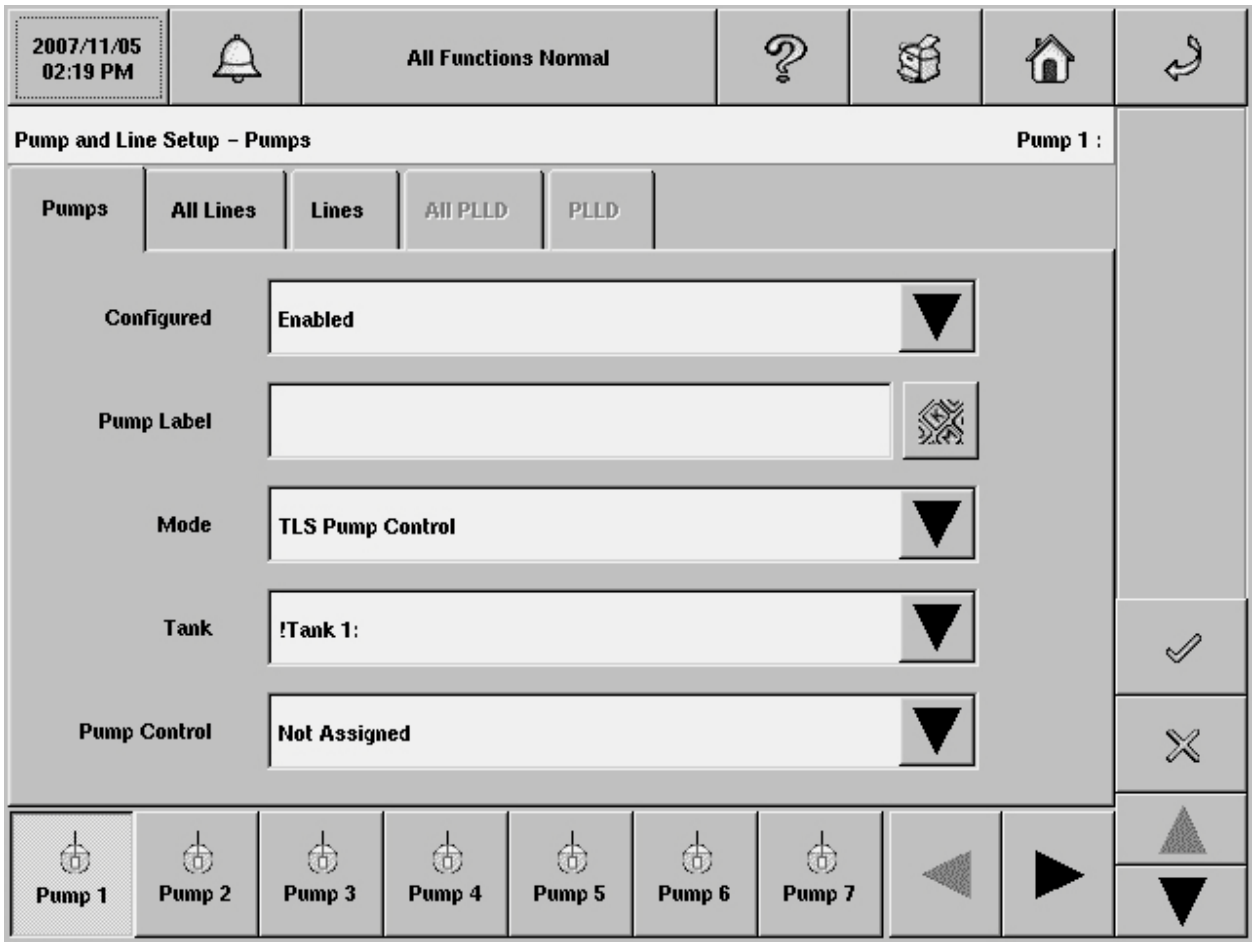
4. Configure Pumps in Pumps and Lines Setup section
    a. Set 'Pump Label'
    b. Set 'Mode' to 'TLS Pump Control'
    c. Select desired tank from 'Tank' drop-down
    d. Select desired relay from 'Pump Control' drop-down
    e. Select desired external input from 'Pump Sense' drop-down
    f. Set 'Configured' to 'Enabled'

5. Configure Lines in Pumps and Lines Setup section
    a. Set 'Line Label'
    b. Set 'Leak Monitoring' to 'PLLD'
    c. Select desired pressure sensor from 'Pressure Sensor' drop-down
    d. Set 'Manifolded' according to hardware configuration
    e. Select desired pump(s) from 'Pumps' drop-down
    f. Set 'Configured' to 'Enabled'

6. Configure PLLD in Pumps and Lines Setup section
    a. Select desired pump from 'Controlling Pump' drop-down if more than one pump is configured for a single line.
    b. Set 'Pipe Type' according to hardware configuration.
    c. Set 'Line Length', ';Diameter Length', 'Line Diameter', and 'Bulk Modulus' fields according to hardware configuration.
    d. Set '0.2 gph (0.76 lph) Line Leak Test' field to desired 0.2 gph (0.76 lph) test schedule.
    e. Set '0.1 gph (0.38 lph) Line Leak Test' field to desired 0.1 gph (0.38 lph) test schedule.
    f. Set 'Shutdown Rate' to desired leak rate.

7. Set remaining PLLD settings as needed.

Pumps and Lines Setup - Pumps



This tab screen allows you to configure the site's pumps that will be monitored by the console.

Configured

This selection sets up the console to monitor the selected pump. The maximum number of pumps that can be configured is equal to the maximum number of tanks as defined by your console's installed features.

Allowable selections: Enabled, Disabled
Default: Disabled

Pump Label

Enter a unique label or name for the selected pump.

Allowable selections: Up to 20 alphanumeric characters - must be unique for each pump
Default: Blank

Mode

Select how the selected pump is to be controlled:

- **TLS Pump Control** - Pump is controlled or actuated locally by the console. Pump control and pump sense assignments are required for the pump's setup. Pump sense is used as a pump request signal to ask the console to turn on/off the pump. This signal doubles as a tank active signal to the console.

- **Pump Sense** - This input is used to identify a tank active condition. A pump sense input assignment is required for this mode selection. There is no pump control assignment for this mode selection.

- **External Pump Control** - This mode is used to identify tanks that are line manifolded together. Control of the pump is done externally to the console. There are no pump control or pump sense input assignments for this pump mode selection.

Allowable selections: TLS Pump Control, Pump Sense or External Pump Control
Default: TLS Pump Control

Tank

Select the tank in which the selected pump is installed.

Note: There may be both configured and non-configured items on this drop-down list. Non-configured items will be prefixed by a "!".

Allowable selections: Not assigned, or a selection from a list of available tanks.
Default: Not Assigned

Pump Control

This feature includes a list of pump controlling devices that respond to dispense requests. The list of pump controlling devices will include relays that have been configured as pump controlling devices that actuate the selected pump. Select from the list of relays for pump control that were assigned in Device Setup - Relays.

Pump control relay assignments are usually unique for each pump. A warning dialog will display if the pump control selected is already assigned to another pump - this alert

is not an alarm or error since some sites use a single pump control output for more than one pump.

This field is enabled for edit only when the Mode entry is "TLS Pump Control".

Note: There may be both configured and non-configured items on this drop-down list. Non-configured items will be prefixed by a "!".

Allowable selections: Not assigned, or a selection from a list of available pump controlling devices.
Default: Not Assigned

Pump Sense

In this field you select how the console will determine when the pump is on or off. Inputs for pump sense are selected from a list of defined or configured pump sense external inputs that were assigned in Device Setup - External Inputs. Selecting a pump sense input enables pump sense for the selected pump. More than one pump may use the same pump sense input. This feature is only enabled if Mode entry is "TLS Pump Control" or "Pump Sense".

Note: There may be both configured and non-configured items on this drop-down list. Non-configured items will be prefixed by a "!".

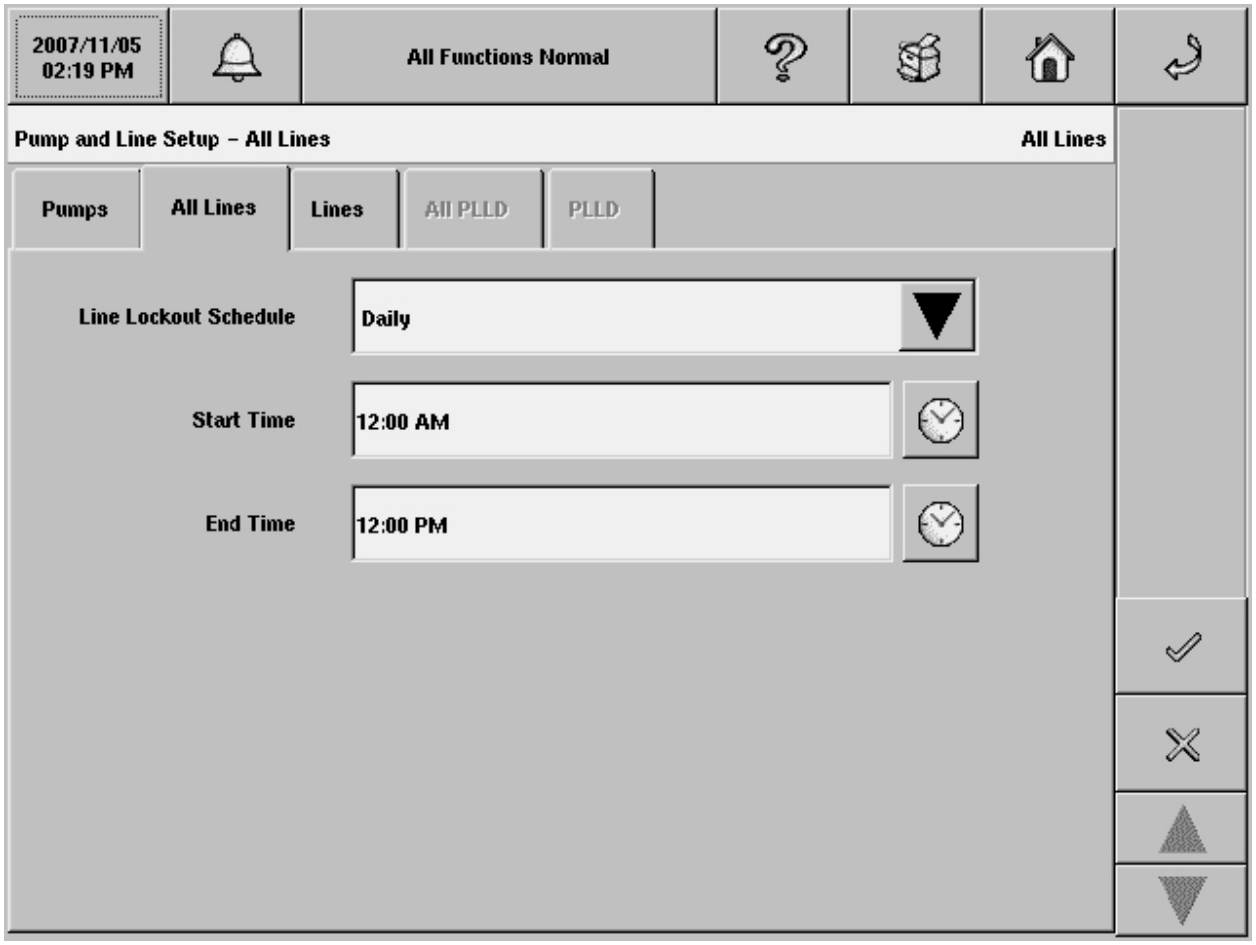
Allowable selections: Not assigned, or a selection from a list of available pump sense external inputs.
Default: Not Assigned

Line

This is a read-only field displaying either the line identifier of the selected pump, or "Not Assigned", if such is the case.

Note: Non-configured items will be prefixed by a "!".

Pumps and Lines Setup - All Lines



The line leak detection system cannot test a line when AC power to the submersible pump is shut off. Since the line leak system automatically attempts to conduct a test whenever it receives a signal that the dispenser is off, it is necessary to lock out line tests when the station or fueling site is shut down and submersible pump power is off. In some areas, regulations prohibit leaving power to submersibles switched on during hours when the site is unattended. The Line Lockout Schedule provides a flexible means of locking out line leak tests in accordance with business hours.

The Lockout schedule identifies the hours not to run line leak tests for the station.

Allowable selections: Disabled, Daily, Individual (see explanations below)
Default: Disabled

Line Lockout Schedule - Daily

Daily schedule allows you to enter a Lockout Start Time and Stop Time. The lockout period will begin and end at the times you enter every day of the week. Note: By using a Daily schedule and entering the same Start and Stop Times, you can lock out the line leak test function 24 hours per day.

Start Time

Allowable selections: HH:MM am/pm
Default:12 pm

Stop Time

Allowable selections: HH:MM am/pm
Default:12 pm

Line Lockout Schedule - Individual

Individual schedule allows you to enter up to seven separate lockout schedules. You program each lockout period with an Event Start day and time, and an Event End day and time. For example, lockouts 1 through 5 could be programmed to lock out the line leak test each day from Monday through Friday to accommodate hours when the station is closed. Lockout 6 could be programmed to lock out the test from Friday night to Monday morning if the site is closed for the weekend.

If lockout schedules are programmed incorrectly, the line leak tests may not run. Make sure you have programmed the settings correctly.

Event Start

Allowable selections: Disabled, Monday - Sunday
Default: Disabled

Start Time
If a start date is selected, a start time is selectable.

Allowable selections: HH:MM am/pm
Default:12 pm

End

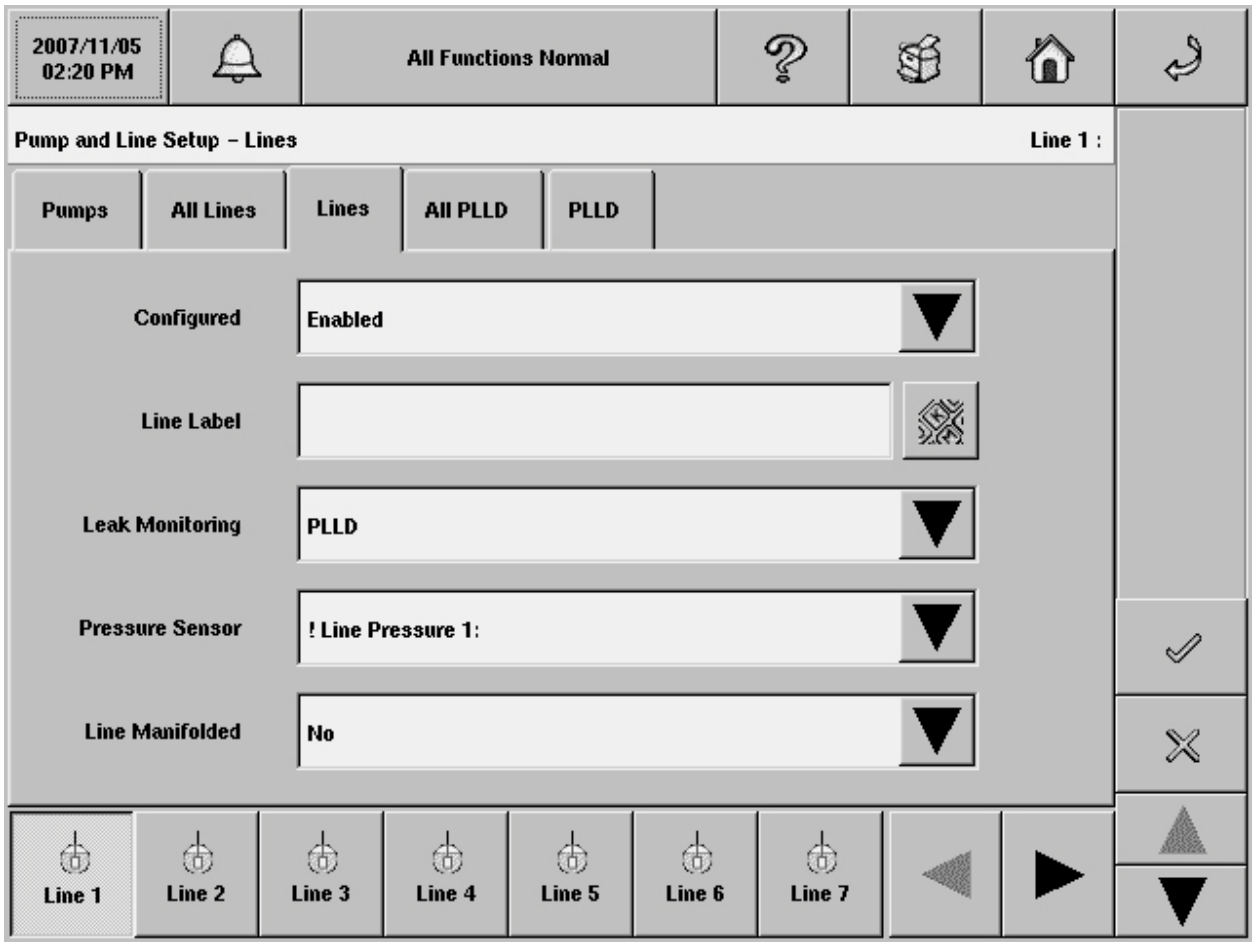
Allowable selections: Disabled, Monday - Sunday
Default: Disabled

End Time
If an end date is selected, an end time is selectable.

Allowable selections: HH:MM am/pm
Default:12 pm

Repeat the above procedure for additional Individual Lockout Schedule Event Start/End selections (up to 5).

Pumps and Lines Setup - Lines



A line consists of one or more pumps in the site. Lines are collections of pumps that are treated as a group or set. Each line or line set is given a name or label that can be used by the console to refer to the pumps in the line. The maximum number of lines that can be configured is equal to the Maximum Number of Tanks your console was programmed to monitor when purchased.

A line is considered manifolded if it contains more than one pump. Pumps are added to a line using a drop down list of available pumps. The number of fields that follow will depend on the number of pumps selected from the list.

Configured

Allowable selections: Enabled, Disabled
Default: Disabled

Line Label

Allowable selections: 20 alphanumeric characters (must be unique for each line), Blank
Default: Blank

Leak Monitoring

Allowable selections: None, PLLD
Default: None

Pressure Sensor

Allowable selections: Choose from drop-down list of available sensors (you should pick the pressure sensor assigned to this line), Not Assigned
Default: Not Assigned

Manifolded

Allowable selections: Yes, No
Default: No

Dispense Mode

This field is disabled for edit unless the Manifolded field is set to "Yes". For non-manifolded lines, the dispense mode is set to Standard by default. If the mode selected in pump setup was TLS Pump Control then all options are available and the default is Standard. Otherwise for other modes selected in pump setup, the only option for dispense mode is Standard.

Options for dispense mode are:

Standard

Typically this means that only one pump feeds the line. However if the selected pump mode is External Pump Control this is not the case since the console is not controlling the actuator/control for the pump.

Alternate

If there is more than one tank with a pump on the line, the console will actuate the pump to run the tank with the greatest inventory volume.

Sequential

If there is more than one tank with a pump on the line, tanks are pumped low one at a time until volume drops below pump threshold percentage. At that point pumping will commence on the next available tank in the line set.

All

All pumps on the line are run.

Pumps

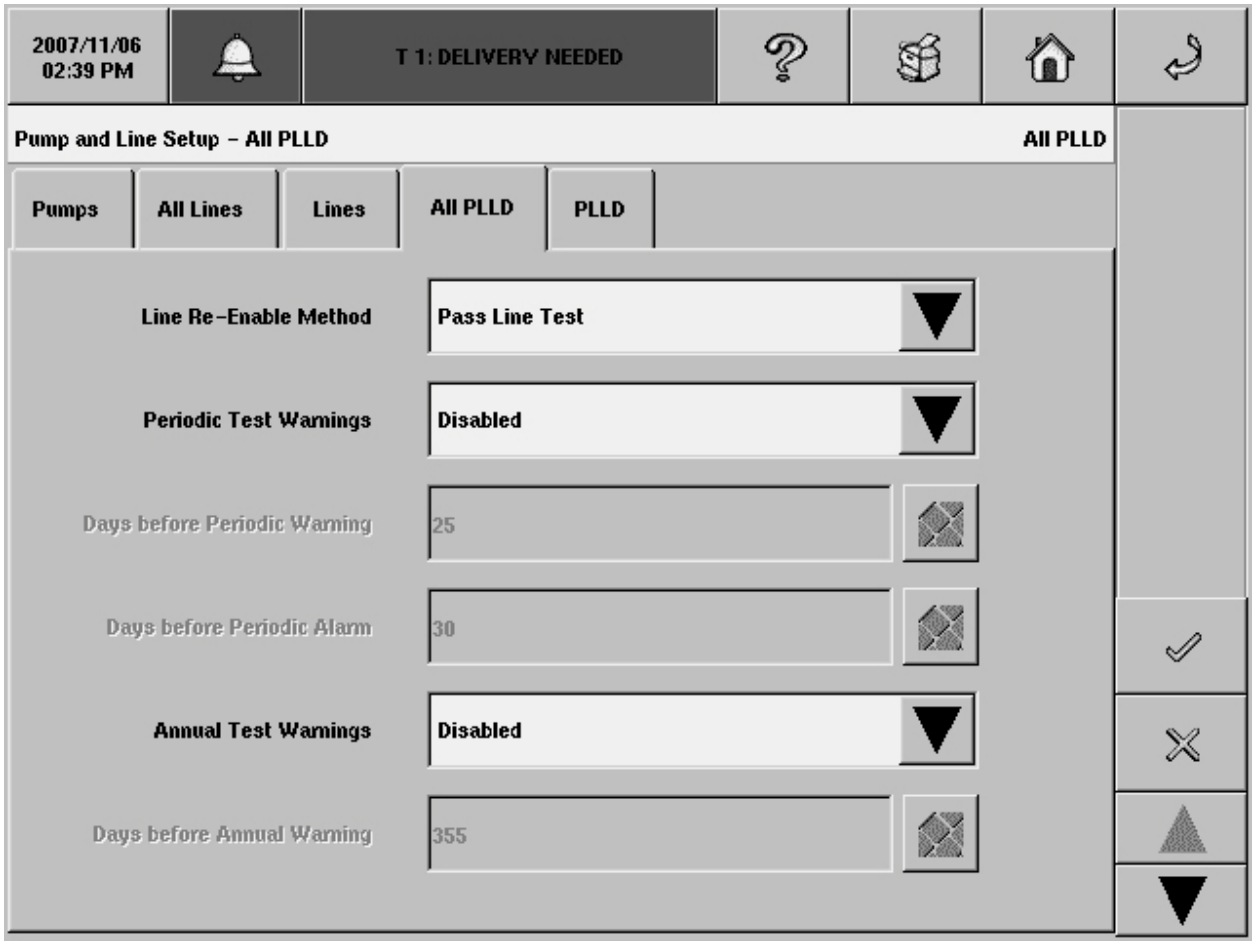
A multi-select list of pumps will be provided for picking the pumps you can assign to the selected line. The multi-select drop down list for this field will contain pumps defined in the console that are both configured and non-configured and include those that have been assigned to the selected line plus those that have not been assigned to any line . The pumps that are assigned to the current line will be highlighted. The pumps that are not configured will be prefixed with a "!" symbol to distinguish them from the rest. After all pumps have been selected for the set, they will be displayed in the Pumps field separated by a colon (:).

Pumps selected for a line should have the same pump mode setting or an error message box will be shown describing why the selected pump cannot be added to the list.

The maximum number of pumps that can be added to a single line is 8.

Allowable selections: Choose from drop-down list of available pumps, Not Assigned
Default: Not Assigned

Pumps and Lines Setup - All PLLD



This tab screen lets you setup test parameters for all Pressurized Line Leak Detectors (requires PLLD option).

Line Re-Enable Method

Allowable selections: Pass line test, Alarm acknowledge
Default: Pass line test

Periodic Test Needed Warning

Periodic Test Needed Warning, when enabled, informs you that a line will soon be out of compliance because a Periodic test has not completed within the required time. The Periodic Test Warning lets you take action (shut down the line) to see that a Periodic test is completed.

Allowable selections: Disabled, Enabled
Default: Disabled

Days Before Periodic Warning

Allowable selections: 0 - 30 days
Default: 25 days

Days Before Periodic Alarm

Allowable selections: 0 - 30 days
Default: 30 days

Annual Test Needed Warning

Annual Test Needed Warning, when enabled, informs you that a line will soon be out of compliance because an Annual test has not completed within the required time. The Annual Test Warning lets you take action (shut down the line) to see that an Annual test is completed.

Allowable selections: Disabled, Enabled
Default: Disabled

Days Before Annual Warning

Allowable selections: 0 - 365 days
Default: 355 days

Days Before Annual Alarm

Allowable selections: 0 - 365 days
Default: 365 days

Precision Test Delay (hours)

Entering a non-zero value in this field enables the time to wait or extend between a passed periodic and annual test and running the next line test(s). Note: In previous TLS consoles this was referred to as Precision Test Duration.

Allowable selections: 12 to 744 hours

Default selection: 12 hours

Note: when CSLD is enabled for the tank assigned to the line, a minimum value of 60 hours is used internally when the precision test delay value is less than 60.

0.1 gph (0.38 lph) Line Test Auto Confirm

Enabling this feature causes the console to evaluate several 0.1 gph (0.38 lph) line tests before a result is posted. Enabling Auto Confirm reduces the risks of false test results, however it extends the time that it may take to post 0.1 gph (0.38 lph) line test results.

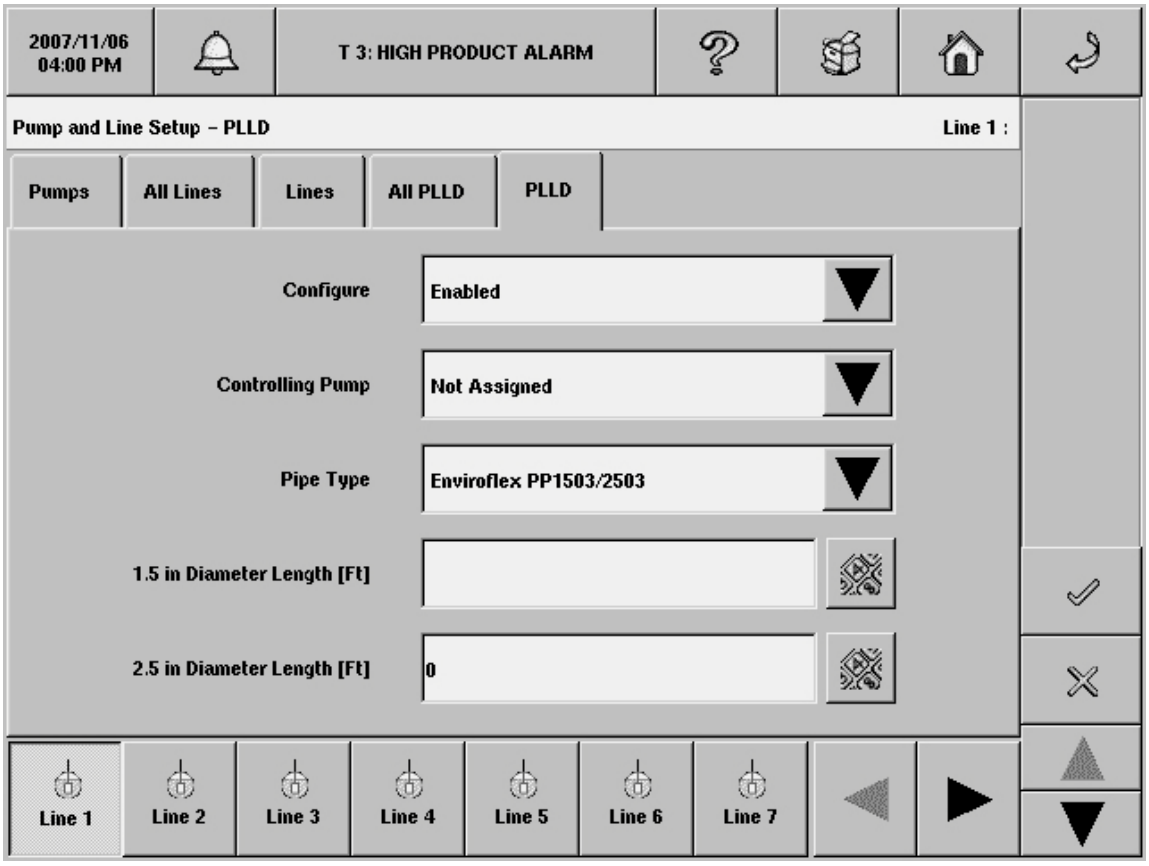
Allowable selections: Disabled, Enabled
Default: Enabled

0.2 gph (0.76 lph) Line Test Auto Confirm

Enabling this feature causes the console to evaluate several 0.2 gph (0.76 lph) line tests before a result is posted. Enabling Auto Confirm reduces the risks of false test results, however it extends the time that it may take to post 0.2 gph (0.76 lph) line test results.

Allowable selections: Disabled, Enabled
Default: Enabled

Pumps and Lines Setup - PLLD



In this screen you setup parameters for individual lines having Pressurized Line Leak Detection or PLLD. It will only be visible for consoles having the PLLD option. Also, if Leak Monitoring is not enabled (in Lines Setup) for at least one line then none of the PLLD screens will be editable.

The maximum number of Lines that can be configured for Leak Detection is equal to the Maximum Number of Tanks as determined by your console. However, only those Lines for which the Leak Monitoring is enabled (in Lines Setup) will be shown on the lines buttons at the bottom of the screen.

Automatic dialing or sending of PLLD alarms is setup in Automatic Events setup. Shutdown for PLLD alarms is also done as part of the Automatic Events setup. This includes the 'no line', 'single line', and 'all line' shutdown for PLLD.

Configure

Allowable selections: Disabled, Enabled
Default: Enabled

Controlling Pump

Allowable selections: Select pump from a drop-down Assigned Pumps list.
Default: First on the list of Assigned Pumps for a Line or 'Not Assigned' if list is empty.

Pipe Type

Note: If the you select "user defined" pipe type, advanced fields for setting up the 1st and 2nd line diameters, line lengths, and bulk modulus will be displayed.

Allowable selections: See Table 1 below:

TABLE 1.

Pipe Type	Line Length, 1.5 Dia. Line Length, 2.0 Dia. Line Length, and 1st Line Length Fields	2.5 Dia. Line Length, 3.0 Dia. Line Length, and 2nd Line Length Fields
2/3 IN. FIBERGLASS	10 - 500ft (3 - 152m)	10 - 220ft (3 - 67m)
2 IN. STEEL	30 - 500ft (10 - 152m)	N/A
1.5 IN. ENVIRN GLEXII	10 - 500ft (3 - 152m)	N/A
OMNIFLEX CP1501	30 - 500ft (10 - 152m)	N/A
OPW PISCES SP15	10 - 500ft (3 - 152m)	N/A
OPW PISCES CP15	10 - 500ft (3 - 152m)	N/A
WFG COFLX2000 RIBBED	10 - 500ft (3 - 152m)	N/A
ENVIROFLEX PP1503/2503	40 - 500ft (12 - 152m)	40 - 350ft (12 - 106m)
OMNIFLEX CP1503	30 - 500ft (10 - 152m)	N/A
1.5/2 IN. ENVIRN GFLXD	30 - 500ft (10 - 152m)	30 - 350ft (10 - 106m)
APT P175SC	20 - 1100ft (6 - 335m)	N/A
OPW PISCES CP15DW	30 - 500ft (10 - 152m)	N/A
OPW PISCES CP20	30 - 500ft (10 - 152m)	N/A
OPW PISCES SP20	20 - 1100ft (6 - 335m)	N/A
USER DEFINED	20 - 1100ft (6 - 335m)	20 - 1100ft (6 - 335m)
PETROTECHNIK UPP EXTRA 63MM	20 - 1100ft (6 - 335m)	N/A

Default: Environflex PP1503/2503

Line Length

This field entry is the length of the piping between the tank and the dispensers. It includes the length between the check valve and where it connects into the product line. Line lengths are integer values. Values are in foot or meter increments depending on system units.

Allowable selections: See Table 1 above
Default is 0 and will cause a data setup warning.

1.5 in Diameter Length

Allowable selections: See Table 1 above
Default is 0 and will cause a data setup warning.

2.5 in Diameter Length

Allowable selections: See Table 1 above
Default is 0 and will cause a data setup warning.

2.0 in Diameter Length

Allowable selections: See Table 1 above
Default is 0 and will cause a data setup warning.

3.0 in Diameter Length

Allowable selections: See Table 1 above
Default is 0 and will cause a data setup warning.

1st Line Length

Allowable selections: See Table 1 above
Default is 0 and will cause a data setup warning.

1st Line Diameter

Allowable selections: 0 to 3.00 in (0 to 76.20mm)
Default is 0 and user can set this field back to default. It will cause a data setup warning if associated line length is non-zero and Line Diameter is still default.

Configure

Allowable selections: Disabled, Enabled
Default: Enabled

1st Line Bulk Modulus

Allowable selections: 1000 to 200,000 psi (6892 to 1,378,359kPa)
Default is 0 and user can set this field back to default. It will cause a data setup warning if associated line length is non-zero and Bulk Modulus is still default.

2nd Line Length

Allowable selections: See Table 1 above
Default: 0

2nd Line Diameter

Allowable selections: 0 to 3.00 in (0 to 76.20mm)
Default is 0 and user can set this field back to default. It will cause a data setup warning if associated line length is non-zero and Line Diameter is still default.

2nd Line Bulk Modulus

Allowable selections: 1000 to 200,000 psi (6892 to 1,378,359kPa)
Default is 0 and user can set this field back to default. It will cause a data setup warning if associated line length is non-zero and Bulk Modulus is still default.

Thermal Coefficient

If the controlling pump assigned to the line has a tank assignment, then use the thermal coefficient from that tank (see Tank Setup - General tab screen). In this case the field is read only. If there is not a tank assignment, the field is enabled for edit. If the tank assignment is removed, the system will use the default.

Allowable selections: 0.0 to 0.0016 gal/gal/°F (0.0 to 0.00288L/L/°C)
Default: 0.00070

0.2 gph (0.76lph) Line Leak Test

This feature allows the user to choose the scheduling frequency of the 0.2 gph (0.76lph) periodic tests.

Allowable selections:

- **Disabled** - No manual or automatic 0.2 gph (0.76lph) testing is allowed.
- **Repetitive** - After a dispense, a 3.0 gph (11.3lph) test is run, followed by a 0.2 gph (0.76lph) test. The test blockout period (selected in Precision Test Duration setup) is then observed. Following the test blockout period, the test sequence repeats after the next dispense. This selection also enables manual 0.2 gph (0.76lph) testing.
- **Monthly** - At the beginning of every month until a test has passed. This selection also enables manual 0.2 gph (0.76lph) testing.
- **Manual** - 0.2 gph (0.76lph) tests run only when manually started.

Default: Disabled

0.1 gph (0.38lph) Line Leak Test

This feature allows the user to choose the scheduling frequency of the 0.1 gph (0.38lph) precision tests.

Allowable selections:

- **Disabled** - No manual or automatic 0.1 gph (0.3 lph) testing is allowed.
- **Repetitive** - After a dispense, a 3.0 gph (11.3lph) test is run, a 0.2 gph (0.76lph) test is run, followed by the 0.1 gph (0.38lph) test. The test blockout period

(selected in Precision Test Delay setup) is then observed. Following the test blockout period, the test sequence repeats after the next dispense. This selection also enables manual 0.1 gph (0.38lph) testing. (Note: The Repetitive option is not available if the 0.1 (0.38lph) On Demand PLLD software feature is installed.)

- **Auto** - 6 months after the last passed 0.1 gph (0.38lph) test. Also enables manual 0.1 gph (0.38lph) testing.

- **Manual** - 0.1 gph (0.38lph) tests run only when manually started.

Default: Disabled

Passive 0.1 gph (0.38lph) Line Leak Test

Allowable selections: Yes, No
Default: No

Shutdown Rate

Allowable selections: Line Leak tests in system: 3.0 gph (11.3lph), 0.2 gph (0.76lph), 0.1gph (0.38lph), or None
Default: 3.0 gph (11.3lph)

Low Pressure Shutoff

Allowable selections: Disabled, Enabled
Default: Disabled

Low Pressure Shutoff Value

Allowable selections: 0 to 25 psi (0 to 172kPa)
Default: 0

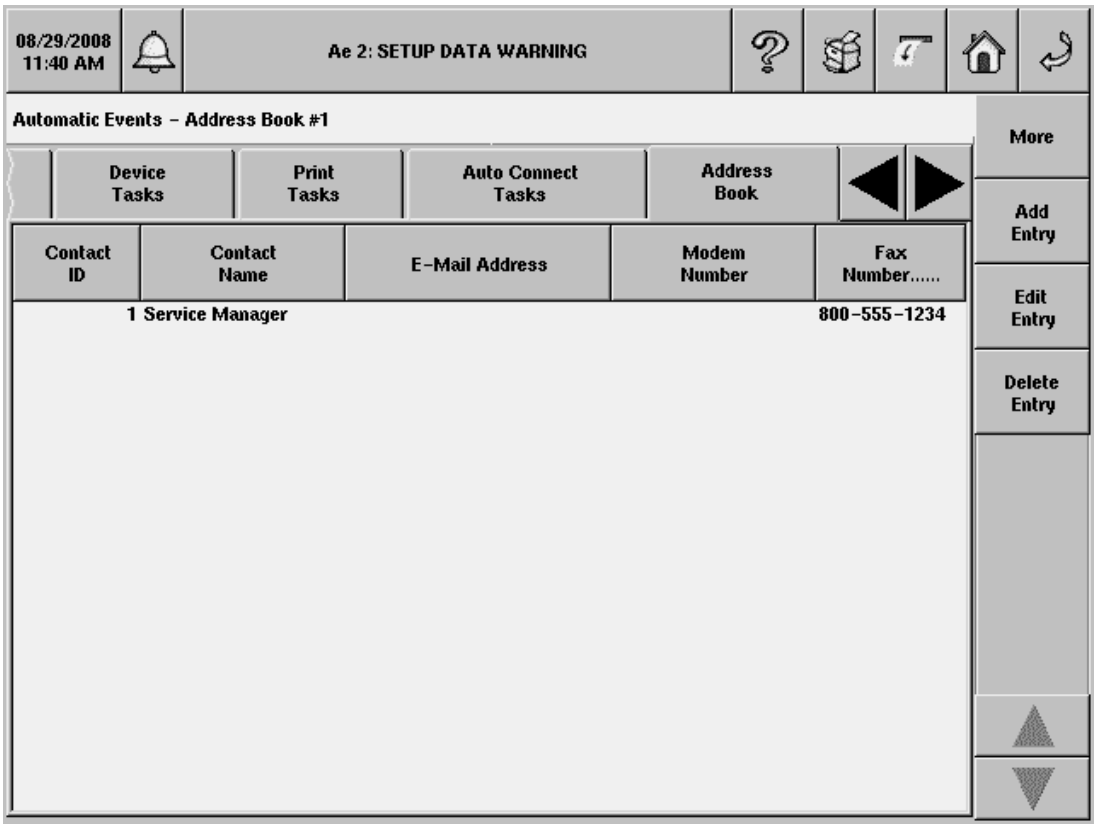
Continuous Handle Timeout

Allowable selections: 1 to 16 hours
Default: 16 hours

Fuel Out Limit

Allowable selections: 0.00 to 15.00 in (0.00 to 381.00mm)
Default: 10.00 in (254mm)

Automatic Events Setup - Address Book



The Automatic Events Setup - Address Book screen contains a record of your list of contact names and their outbound connectivity details.

Report Column Descriptions

Contact ID

This column shows the assigned numeric identifier for each contact you have set up (1 - 25).

Contact

This column lists the name of the contact entry (30 characters max.).

Modem Number

This column lists the computer modem phone number of the Contact Entry. If a Contact needs a Modem Computer transmission, then this column contains the Remote Modem Number, otherwise the field is empty.

Fax Number

This column lists the Fax modem phone number of the Contact Entry. If a Contact needs a Fax transmission, then this column contains the Fax number, otherwise the field is empty.

Remote Host Address and Port

This column lists the remote host TCP/IP address and port of the Contact Entry . If a Contact needs a TCP/IP computer transmission, then this column contains the remote host TCP/IP address and port, otherwise the field is empty.

Satellite/Connect

This column lists the Satellite Connect string of the Contact Entry. If a Contact needs a Satellite transmission, then this column contains the Satellite Connect String, otherwise the field is empty.

EMail Address

This column lists the E-Mail Address of the Contact Entry. If a Contact needs E-Mail messaging capabilities then this column contains the E-Mail address, otherwise the field is empty.

Control Buttons (on right of screen)

Add Entry

Touch this button to add a new contact (the maximum number of Contacts that can be entered is 25) After the maximum number of allowed Contacts is reached, touching the Add Entry button will display an error message indicating that a contact must be deleted before another can be added.

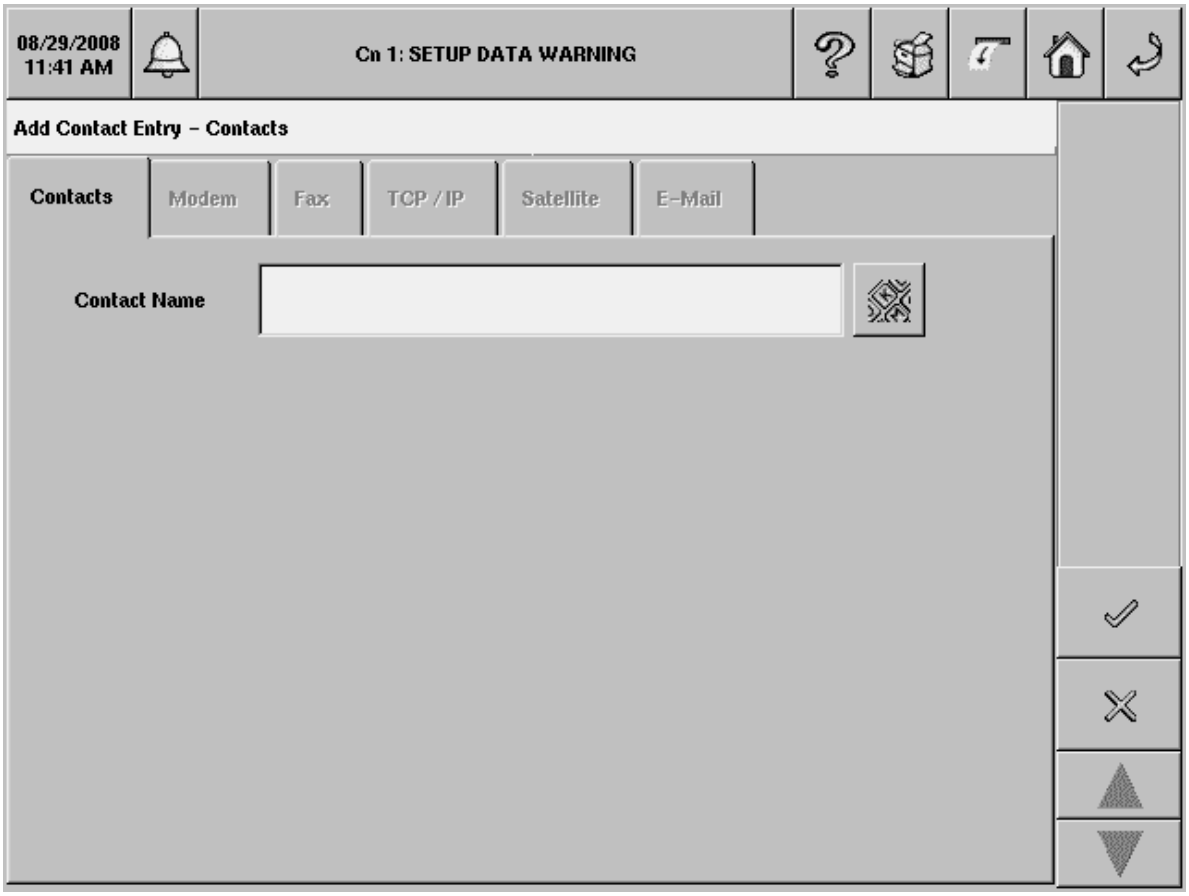
Edit Entry

You select a Contact entry and then touch this button to edit the contact's information.

Delete Entry

You select the entire Contact entry and then touch this button to delete the Contact.

Add/Edit Contact Entry - Contacts



The Add/Edit Contact Entry screen lets you add a contact to the address book or edit an entry if you selected a contact in the address book.

Contact Name

Add a new contact or edit the displayed contact.

Allowable selection: Up to 30 alphanumeric characters.
Default selection: empty

Control Buttons (lower right of screen)

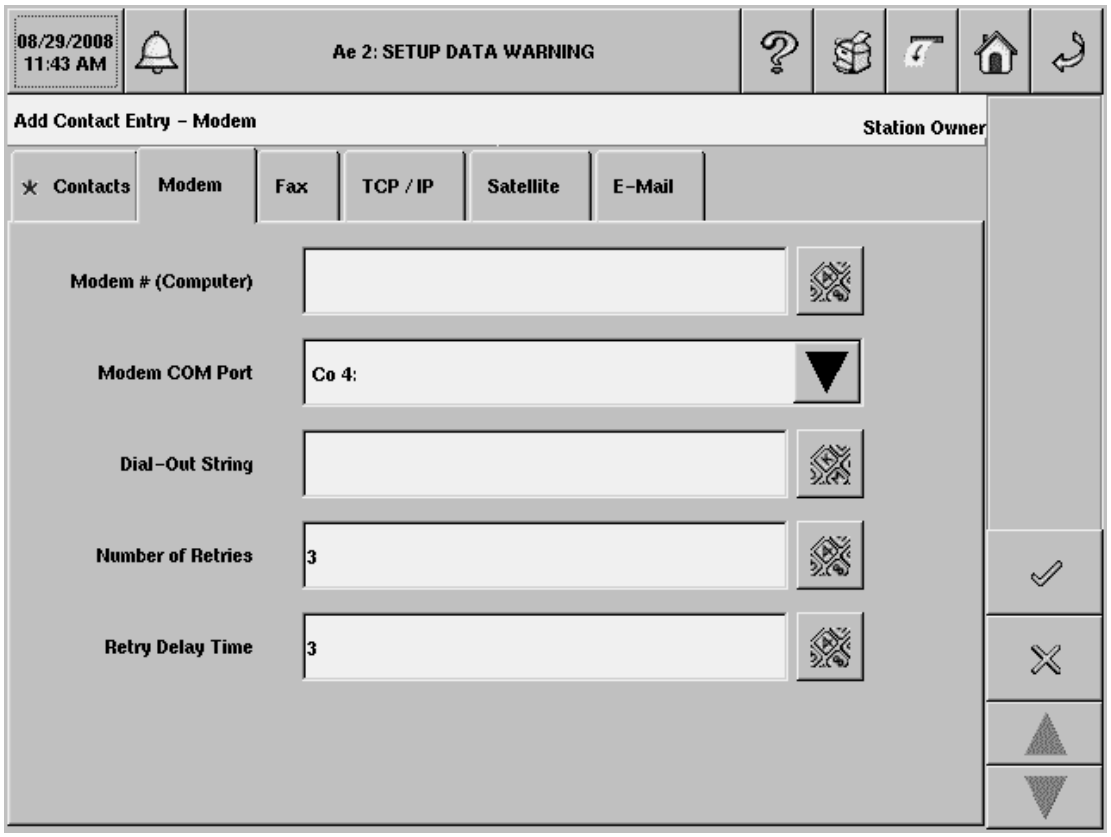
If editing a contact, touch this button to save the current record entries to the database. It will not clear the screen.

If Adding a contact, touch this button to save the new entry's record to the database ready for a new add.

If editing a contact, touch this button to cancel all non-saved entries and revert back to original values.

If adding a contact, touch this button to clear the field, without saving, ready for a new add.

Add/Edit Contact Entry - Modem



The Add Contact Entry - Modem screen lets you add/edit communication parameters for modem outbound connectivity for the current contact.

This connection method is available if a modem is installed in the console.

Modem # (Computer)

Enter the phone number of the outbound computer's modem.

Allowable selection: Modem numeric string, maximum 40 characters
Default selection: empty

Modem COM Port

This field allows the Modem assignment to the current contact. The setup of a modem will be done in the Comm Devices Setup area. Select the console modem used to attempt the connection.

Allowable selections: Available Modem Comm Devices
Default selection: First modem on list (if available, otherwise, empty)

Dial-Out String

Enter the alternate dial-out string that overrides the one given in Comm Devices Setup for that specific modem.

Allowable selections: Alphanumeric string, maximum 50 characters
Default selection: Empty

Number of Retries

Allowable selection: Numeric, 3 to 99
Default: 3

Retry Delay Time

Allowable selection: Numeric, 1 to 99 minutes
Default: 3

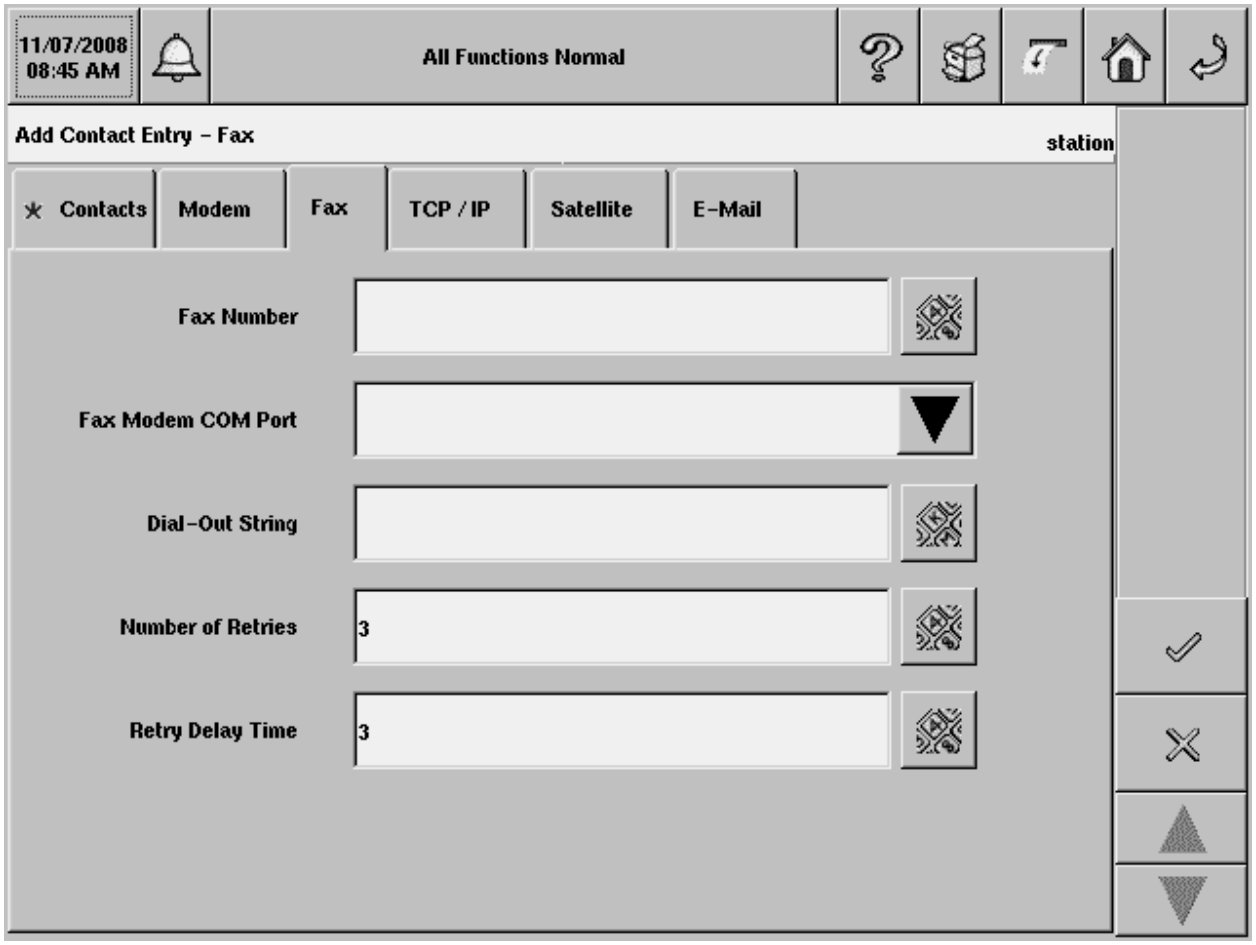
If Editing a contact's modem information, touch this button to save the current record entries to the database. It will not clear the screen.

If Adding a contact's modem information, touch this button to save the new entry's record to the database and clear the screen, ready for a new add.

If Editing a contact's modem information, touch this button to cancel all non-saved entries and revert back to original values.

If Adding a contact's modem information, touch this button to clear the field, without saving, ready for a new add.

Add/Edit Contact Entry - Fax



The Add Contact Entry - Fax screen lets you add/edit communication parameters for fax outbound connectivity for the current contact.

This connection method is available if a fax modem card is installed in the console.

Fax Number

Enter the phone number of the contact's fax machine.

Allowable selection: 40 character maximum
Default selection: Empty

Fax Modem COM Port

Select the fax modem comm device assignment for the contact.

Allowable selection: First fax modem on dropdown list (if available, otherwise, Empty)

Dial-Out String

Allowable selection:AlphaNumeric, maximum 50 characters
Default selection: Empty

Number of Retries

Allowable selection: Numeric, 3 to 99
Default: 3

Retry Delay Time

Allowable selection: Numeric, 1 to 99 minutes
Default: 3

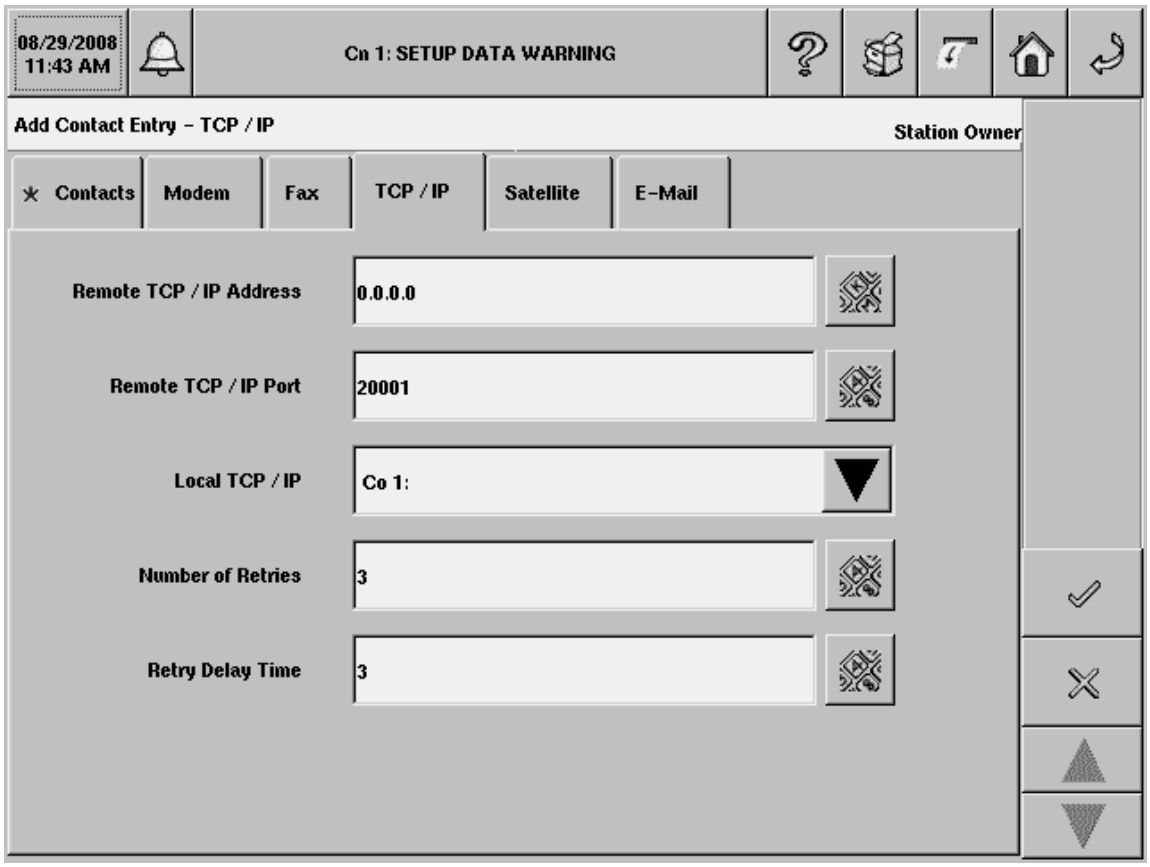
If editing a contact's fax information, touch this button to save the current record entries to the database. It will not clear the screen.

If adding a contact's fax information, touch this button to save the new entry's record to the database and clear the screen, ready for a new add.

If editing a contact's fax information, touch this button to cancel all non-saved entries and revert back to original values.

If adding a contact's fax information, touch this button to clear the field, without saving, ready for a new add.

Add/Edit Contact Entry - TCP/IP



The Add Contact Entry - TCP/IP screen lets you add/edit communication parameters for TCP/IP outbound connectivity for the current contact.

This connection method is available if an Ethernet Comm Device is installed in the console.

Remote TCP/IP Address

Enter the remote host's TCP/IP address.

Allowable selection: IP Address Formatted XXX.XXX.XXX.XXX, where XXX is 0 to 255, OR also a server address such as 'myServer.bigg.com'.
Default selection: 0.0.0.0

Remote TCP/IP Port

Enter the remote host's TCP/IP port.

Allowable selection: 0 to 65535
Default selection: 20001

Local TCP/IP

Enter the local TCP/IP assignment for the current contact.

Allowable selections: Available Ethernet Comm Devices.
Default selection: First Ethernet Comm Device on List (if available, otherwise, Empty)

Num of Retries

Allowable selection: Numeric, 3 to 99
Default: 3

Retry Delay Time

Allowable selection: Numeric, 1 to 99 minutes
Default: 3

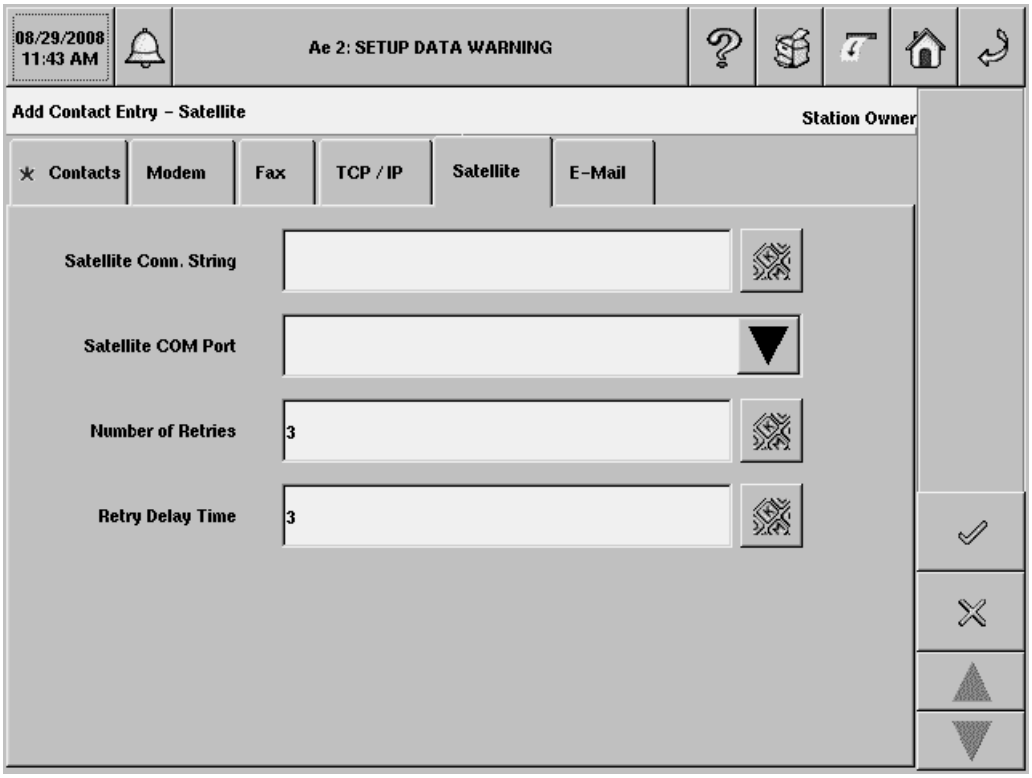
If editing a contact's TCP/IP information, touch this button to save the current record entries to the database. It will not clear the screen.

If adding a contact's TCP/IP information, touch this button to save the new entry's record to the database and clear the screen, ready for a new add.

If editing a contact's TCP/IP information, touch this button to cancel all non-saved entries and revert back to original values.

If adding a contact's TCP/IP information, touch this button to clear the field, without saving, ready for a new add.

Add/Edit Contact Entry - Satellite



The Add Contact Entry - Satellite screen lets you add/edit communication parameters for satellite outbound connectivity for the current contact.

This connection method is available if a satellite Comm Device is installed in the console.

Satellite Conn. String

Enter the current contact's Satellite connection string.

Allowable selection: Alpha-Numeric, maximum 30 characters
Default selection: Empty

Satellite COM Port

Select the Satellite assignment for the current contact.

Allowable selection: Available Satellite Comm Devices
Default selection: First Satellite on list (if available, otherwise, empty)

Number of Retries

Allowable selection: Numeric, 3 to 99
Default: 3

Retry Delay Time

Allowable selection: Numeric, 1 to 99 minutes
Default: 3

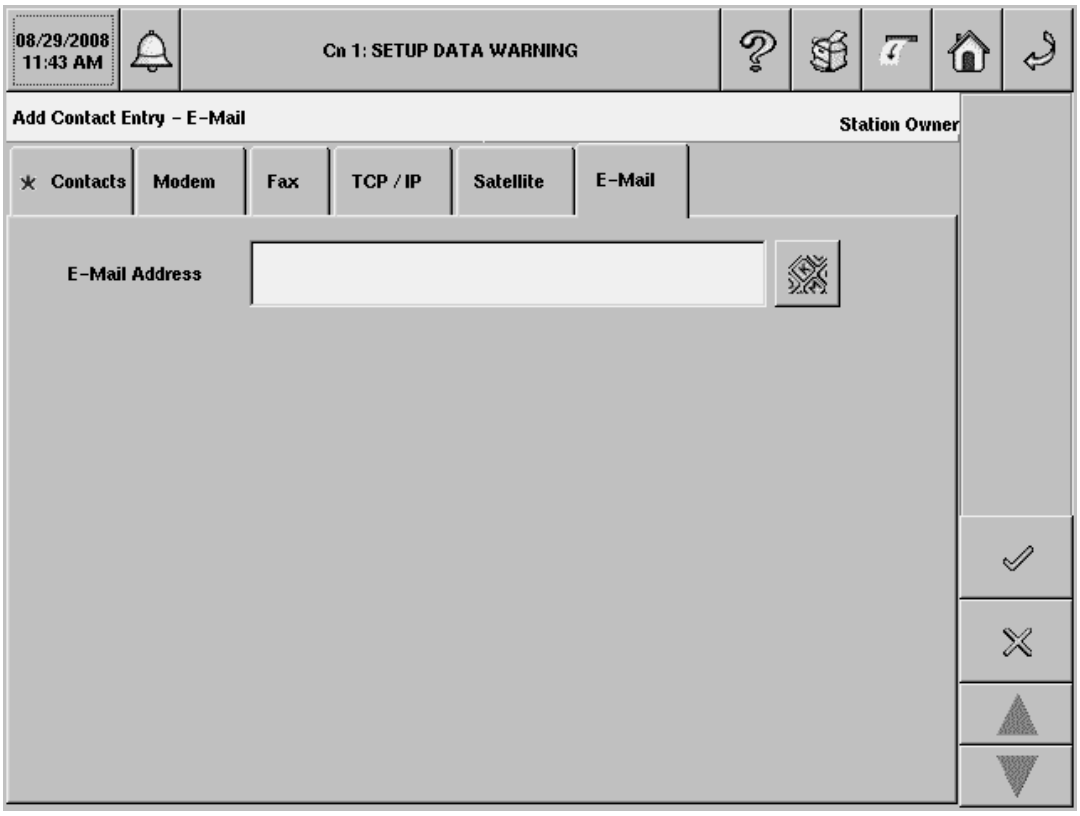
If editing a contact's Satellite information, touch this button to save the current record entries to the database. It will not clear the screen.

If adding a contact's Satellite information, touch this button to save the new entry's record to the database and clear the screen, ready for a new add.

If editing a contact's Satellite information, touch this button to cancel all non-saved entries and revert back to original values.

If adding a contact's Satellite information, touch this button to clear the field, without saving, ready for a new add.

Add/Edit Contact Entry - Email



The Add Contact Entry - Email screen lets you add/edit communication parameters for e-mail outbound connectivity for the current contact.

This connection method is available if an e-mail feature is installed in the console.

E-Mail Address

Enter the current contact's electronic mail (e-mail) address.

Allowable selection: AlphaNumeric, maximum 50 characters
Default selection: Empty

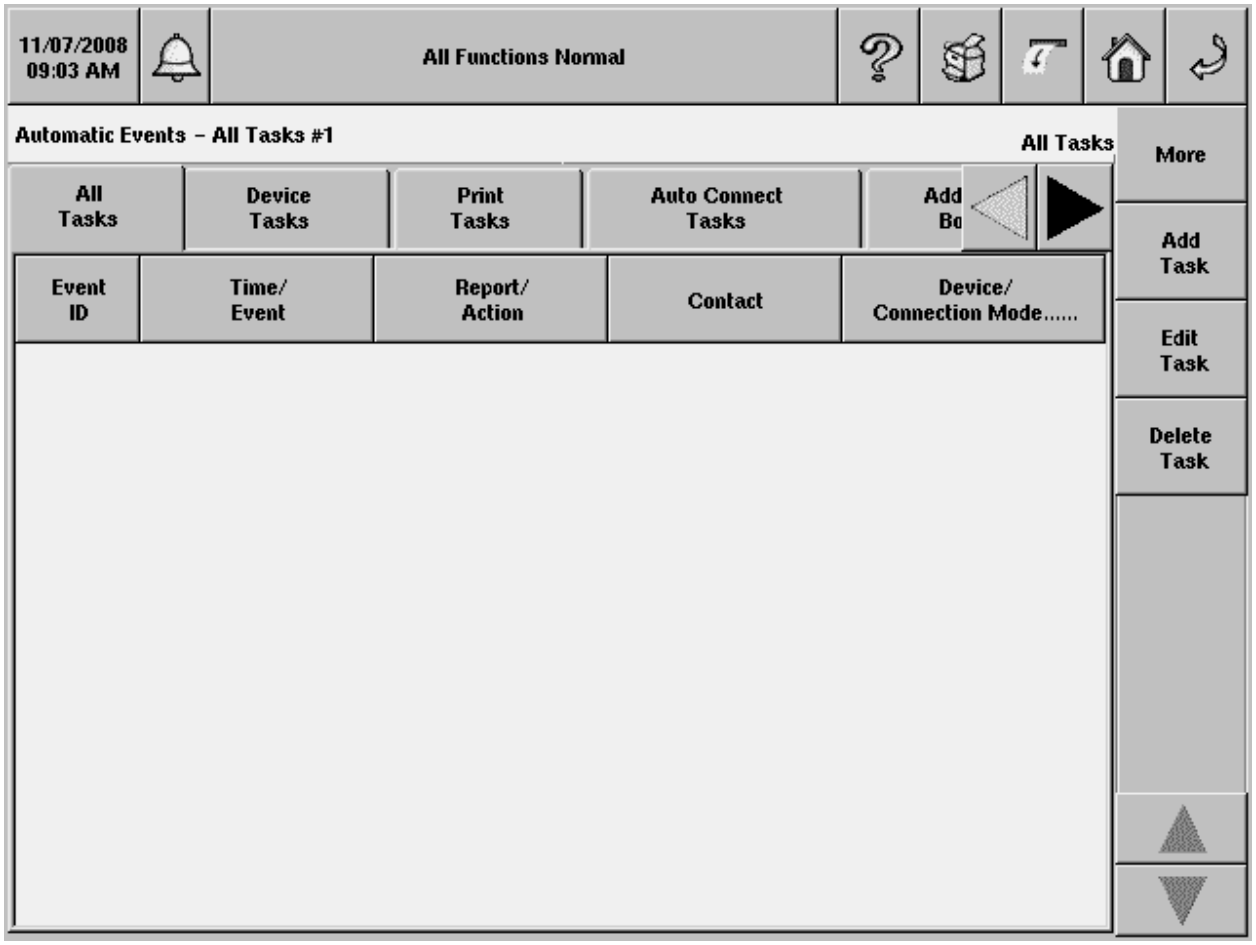
If editing a contact's fax information, touch this button to save the current record entries to the database. It will not clear the screen.

If adding a contact's fax information, touch this button to save the new entry's record to the database and clear the screen, ready for a new add.

If editing a contact's fax information, touch this button to cancel all non-saved entries and revert back to original values.

If adding a contact's fax information, touch this button to clear the field, without saving, ready for a new add.

Automatic Events Setup - All Tasks



The Automatic Events Setup - All Tasks screen shows a report-like description of all Automatic Tasks (Device, Print and Auto Connect) you have set up.

Individual Tasks can involve many combinations of Reports or Actions, Times, Events, Contacts and Connection Modes. Any record containing more selections than can fit in the column's width will have an ellipsis inside a parenthesis '(...)' towards the edge of the column. If you want to find out more details on such a record you will have to touch the 'Edit Task' button to view the devices/actions assigned to that task.

Each row (task) in the All Tasks list is selectable. The control buttons on the right of the screen let you add a new task, edit a selected task in the report, delete a selected task in the report or modify (filter) the contents of the report.

Report Column Descriptions

Event ID

This column shows the assigned numeric identifier for each event you have set up (1 - 30).

Time/Event

This column lists the Time or Event that triggers the device-related task (e.g., Daily at 3:00 PM).

Report/Action

This column describes the Action to be performed (e.g., Outbound Connection).

Contact

This column describes the organization/person to be contacted (e.g., ABC Mgmt.).

Device/Connection Mode

This column lists the Device Label that is involved in performing the function. When a Contact is involved in the Automatic Action, it represents the Device used and Format of the Data to be transmitted (e.g., Computer - TCP/IP).

Control Buttons (on right of screen)

Add Task

Touch this button to add a new task.

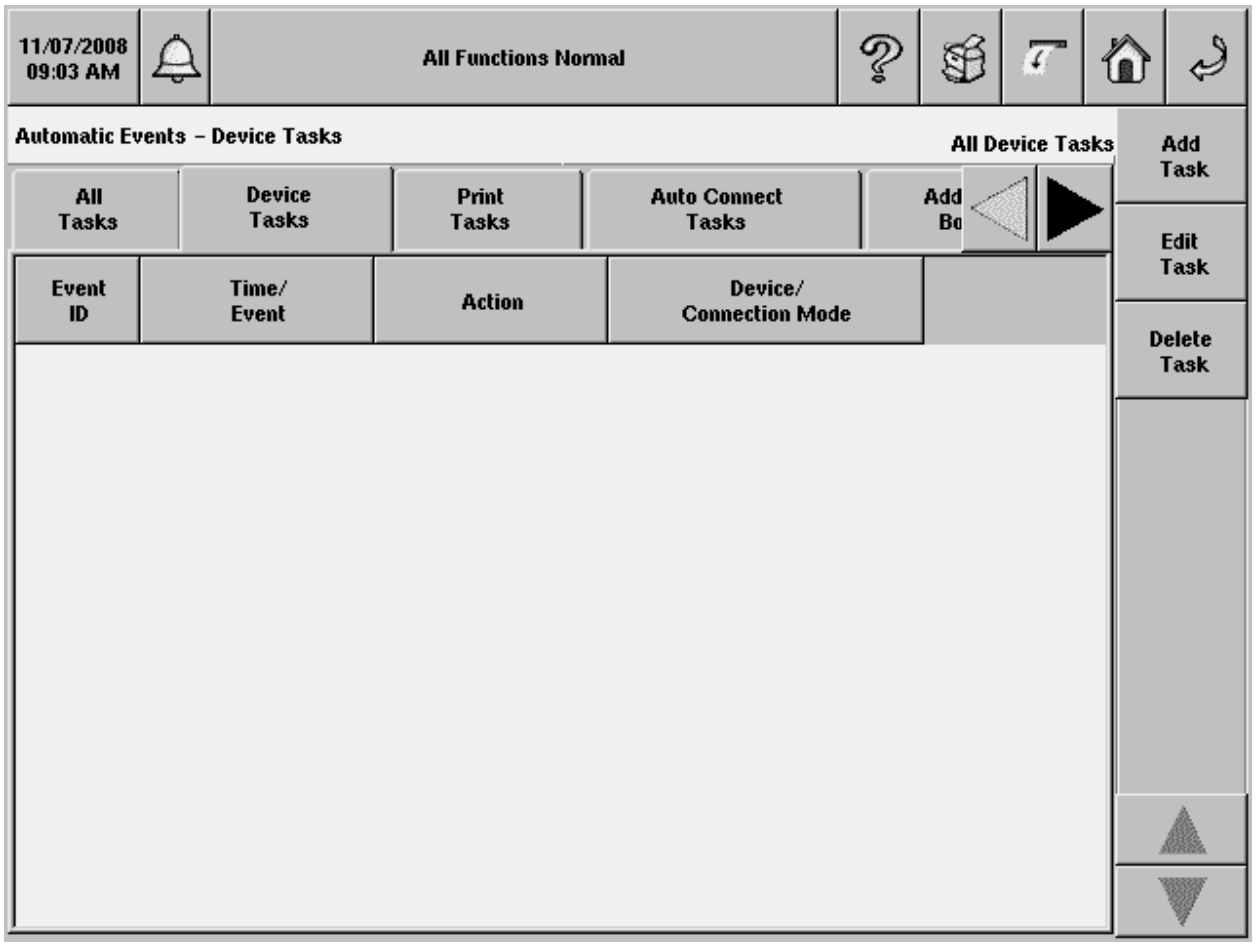
Edit Task

You select a Task Record entry and then touch this button to edit the task.

Delete Task

You select a Task Record entry and then touch this button to delete the task.

Automatic Events Setup - Device Tasks



The Automatic Events Setup - Device Tasks screen shows a report-like description of Automatic Events you have set up. The control buttons on the right of the screen let you add a new Device task, edit a selected Device task in the report, delete a selected Device task in the report or modify (filter) the contents of the report.

Individual Tasks can involve many combinations of Reports or Actions, Times, Events, Contacts and Connection Modes. Any record containing more selections than can fit in the column's width will have an ellipsis inside a parenthesis '(...)' towards the edge of the column. If you want to find out more details on such a record you will have to touch the 'Edit Task' button to view the devices/actions assigned to that task.

Report Column Descriptions

Event ID

This column shows the assigned numeric identifier for each event you have set up (1 - 30).

Time Event

This column lists the Time or Event that triggers the device-related task (e.g., Sudden Loss Alarm: T1: REGULAR).

Action

This column describes the Action to be performed (e.g., Relay Off).

Device/Connection Mode

This column lists the Label of the Device (e.g., Relay 1) that is involved in performing the function.

Control Buttons (on right of screen)

Add Task

Touch this button to add a new Device task.

Edit Task

You select a Task Record entry and then touch this button to edit the task.

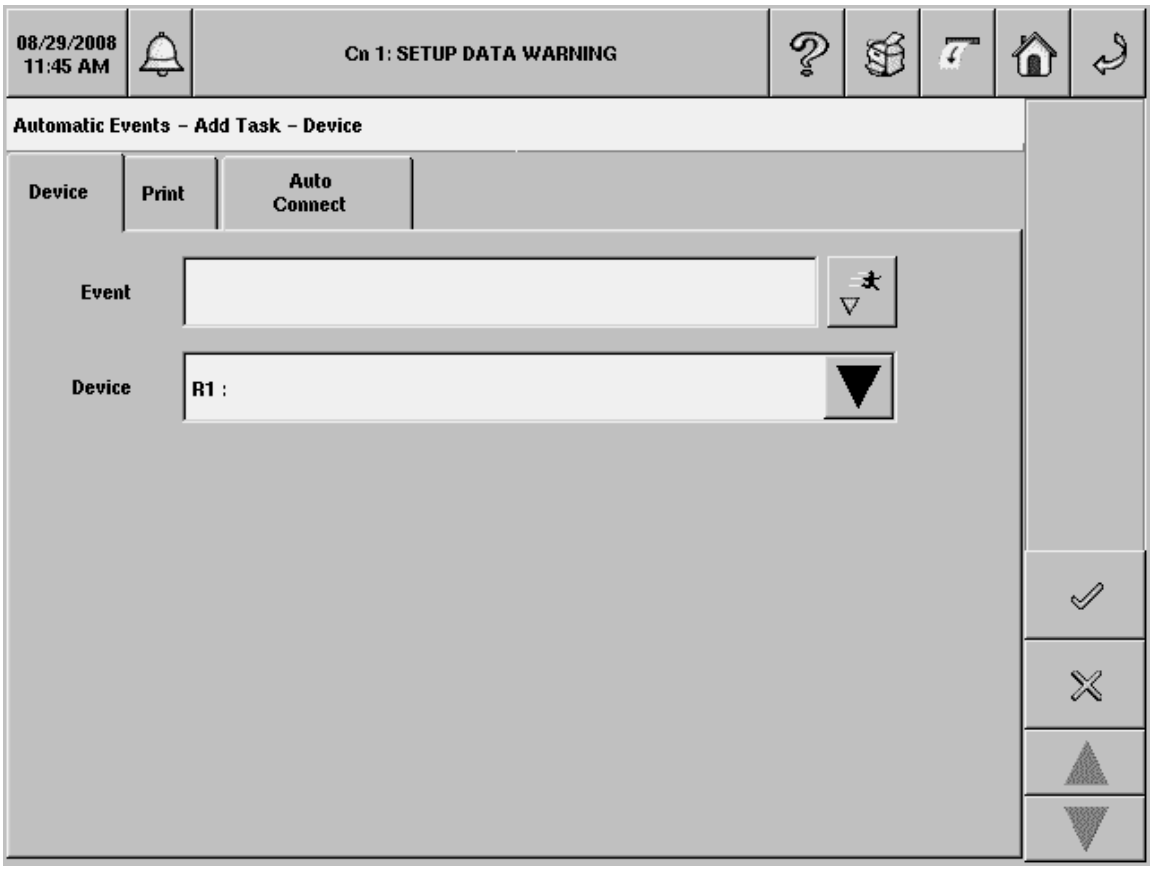
Delete Task

You select a Task Record entry and then touch this button to delete the task.

View Data

The View Data button will only be present only if data does not fit horizontally within a column (e.g., the Time/Event column in the above screen example). Touching this button will display a scroll bar which you then touch to scroll through the column's contents.

Automatic Events - Add Task - Device



The Automatic Events - Add Tasks - Device screen for Add or Edit a Task displays selections to control a Device Automatically.

Event (Field)

Devices have NO controllable action. The action is determined by their setup. That is, if a relay is 'normally open' and the event happens the relay will change to closed. When the event clears, the relay will go back to open (its normal state as per setup).

Touch this button to the select the event(s) from the drop-down list that will trigger the new task:

- Alarms
- External Inputs

Note:Notifications cannot be assigned for 'Device' action tasks.

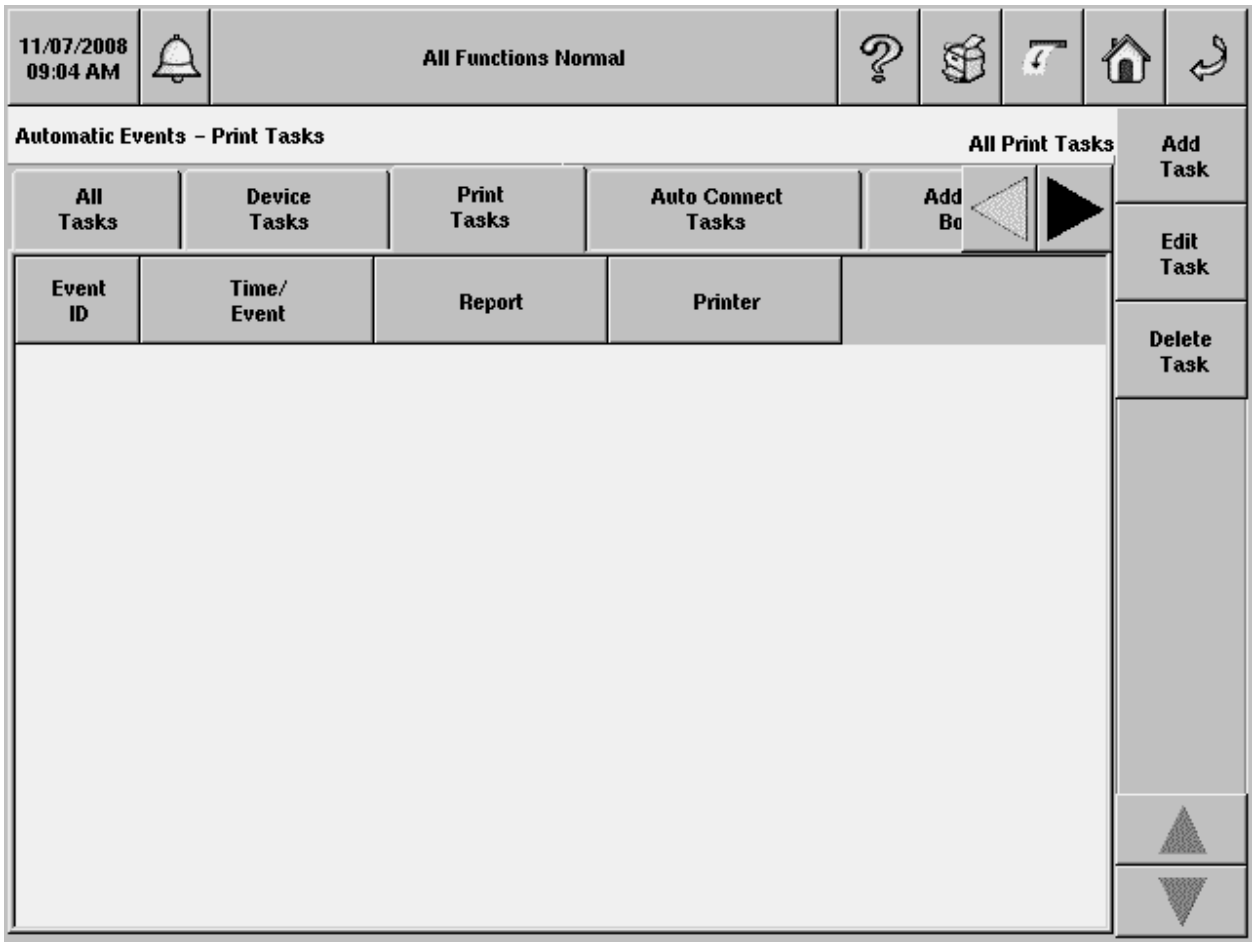
Default: Field is empty.

Device (Field)

Select the specific device from the drop-down list of available relays, pumps, lines. Only 1 device can be selected per event.

Default: First device in the list.

Automatic Events Setup - Print Tasks



The Automatic Events Setup - Print Tasks screen shows a report-like description of printer related automatic activities you have set up. The control buttons on the right of the screen let you add a new Print task, edit a selected Print task in the report, delete a selected Print task in the report or modify (filter) the contents of the report.

Individual Tasks can involve many combinations of Reports or Actions, Times, Events, Contacts and Connection Modes. Any record containing more selections than can fit in the column's width will have an ellipsis inside a parenthesis '(...)' towards the edge of the column. If you want to find out more details on such a record you will have to touch the 'Edit Task' button to view the devices/actions assigned to that task.

Report Column Descriptions

Event ID

This column shows the assigned numeric identifier for each event you have set up (1 - 30).

Time Event

This column lists the Time or Event that triggers the automatic printer-related task (e.g., Delivery End: T 1).

Report

This column describes the Name of Report to be printed (e.g., Delivery Report).

Printer

This column lists the Printer Device Label that is involved in printing (e.g., Front Desk Printer).

Control Buttons (on right of screen)

Add Task

Touch this button to add a new print task.

Edit Task

You select a Task Record entry and then touch this button to edit the task.

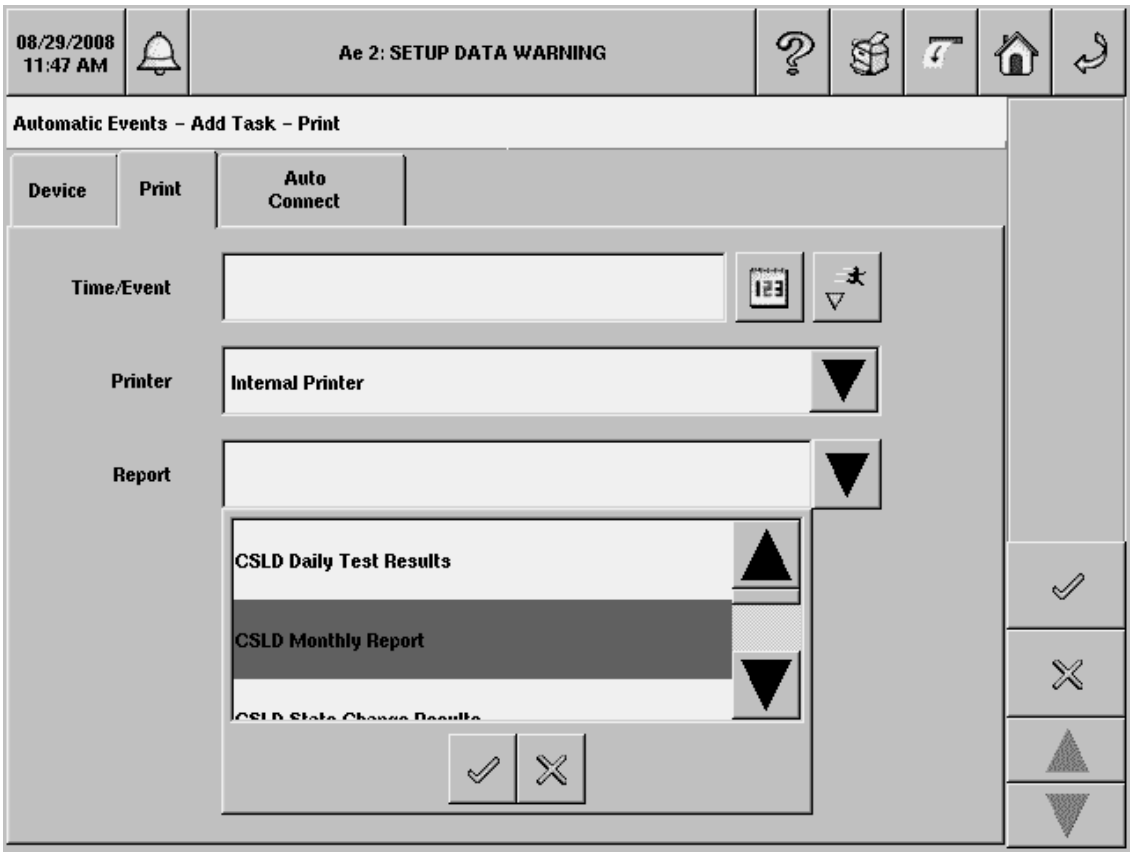
Delete Task

You select a Task Record entry and then touch this button to delete the task.

View Data

The View Data button will only be present only if data does not fit horizontally within a column (e.g., the Time/Event column in the above screen example). Touching this button will display a scroll bar which you then touch to scroll through the column's contents.

Automatic Events Add Tasks - Print



The Automatic Events Add Tasks - Print screen for Add or Edit a Task displays selections to Print Automatically.

Time (Field)

This dialog provides drop-down lists to select a time frequency for the new print task.

Period

Allowable selections: Annually by Day of Week, Annually by Day of Month, Monthly by Day of Week, Monthly by Day of Month, Weekly, Daily
Default selection: Weekly

Month

Allowable selections: January - December
Default selection: January

Week Number

Allowable selections: 1 - 6, Last Week
Default selection: 1

Day of Week

Allowable selections: Sunday - Saturday
Default selection: Sunday

Day of Month

Allowable selections: 1 - 31
Default selection: 1

Time of Day

Allowable selections: Time in Hours and Minutes, 24 Hr sensitive
Default selection: 12:00 AM

Default: Field is empty.

Event (Field)

Touch this button to the select the event(s) from the drop-down lists that will trigger the new task:

- Alarms
- Notifications
- External Inputs

Default: Field is empty.

Printer (Field)

Select a Printer from the dropdown list of available printers.

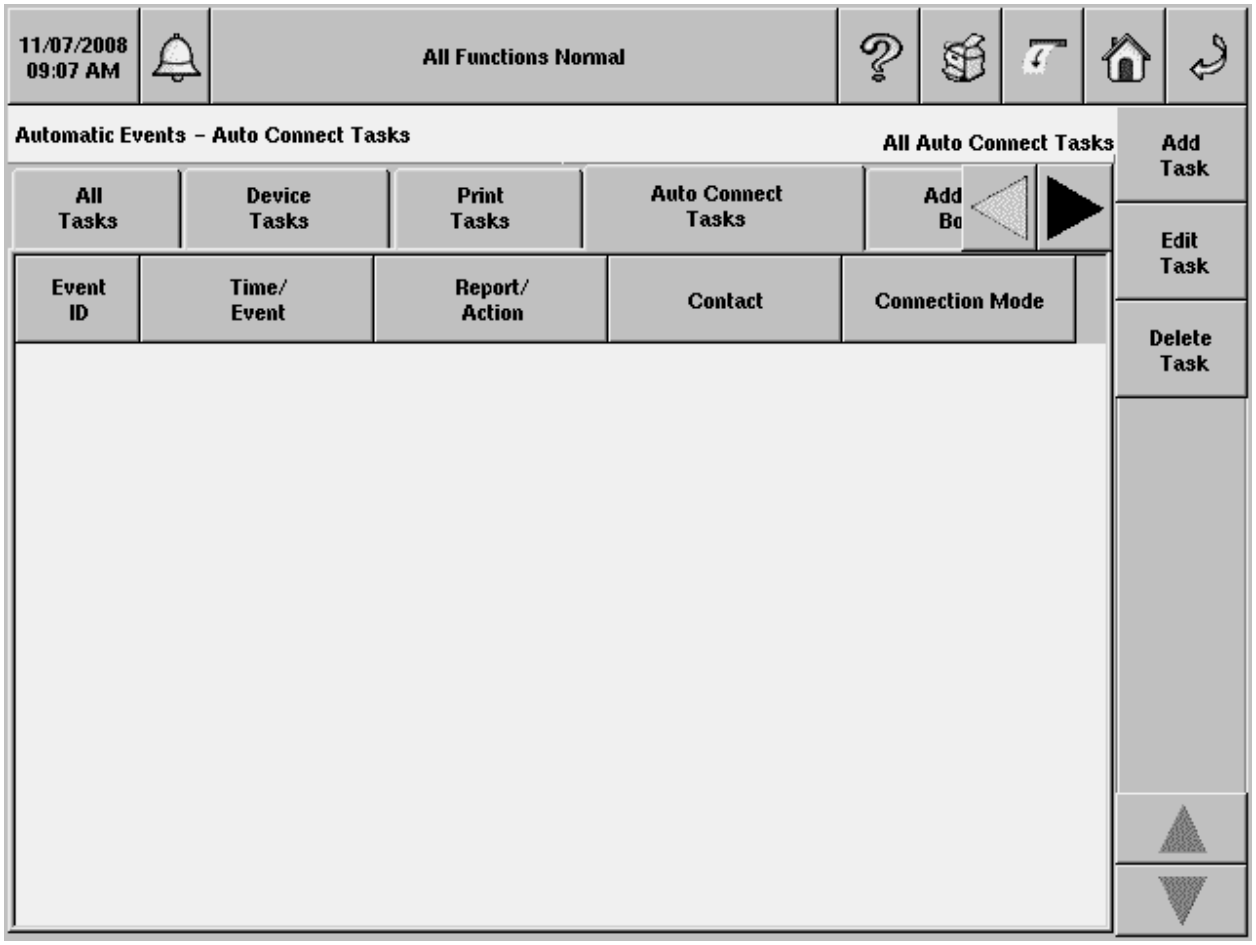
Default: Internal printer.

Report (Field)

Select Report(s) to be printed from multi-select dropdown box.

Default: Field is empty.

Automatic Events Setup - Auto Connect Tasks



The Automatic Events Setup - Auto Connect Tasks screen shows a report-like description of Auto-Connect-Related automatic activities you have set up. The control buttons on the right of the screen let you add a new task, edit a selected task in the report, delete a selected task in the report or modify (filter) the contents of the report.

Individual Tasks can involve many combinations of Reports or Actions, Times, Events, Contacts and Connection Modes. Any record containing more selections than can fit in the column's width will have an ellipsis inside a parenthesis '(...)' towards the edge of the column. If you want to find out more details on such a record you will have to touch the 'Edit Task' button to view the devices/actions assigned to that task.

NOTE: The number of auto-connect tasks is limited to 30. After the maximum number of allowed auto connect tasks is reached, pressing the Add Task button will display an error message indicating that a task must be deleted before another can be added.

Report Column Descriptions

Event ID

This column shows the assigned numeric identifier for each event you have set up (1 - 30).

Time/Event

This column lists the timed or event action that triggers the automatic event to be executed (e.g., Weekly on Monday at 6:00 AM).

Report/Action

This column describes the name of report transmitted or action to be performed (e.g., Inventory Report).

Contact

This column lists the contact name (for auto connect or report data) (e.g., Mr. Bigg).

Connection Mode

This column lists the device used and format of the data to be transmitted (Co 1: Modem 1 Label).

Control Buttons (on right of screen)

Add Task

Touch this button to add a new task.

Edit Task

You select a Task Record entry and then touch this button to edit the task.

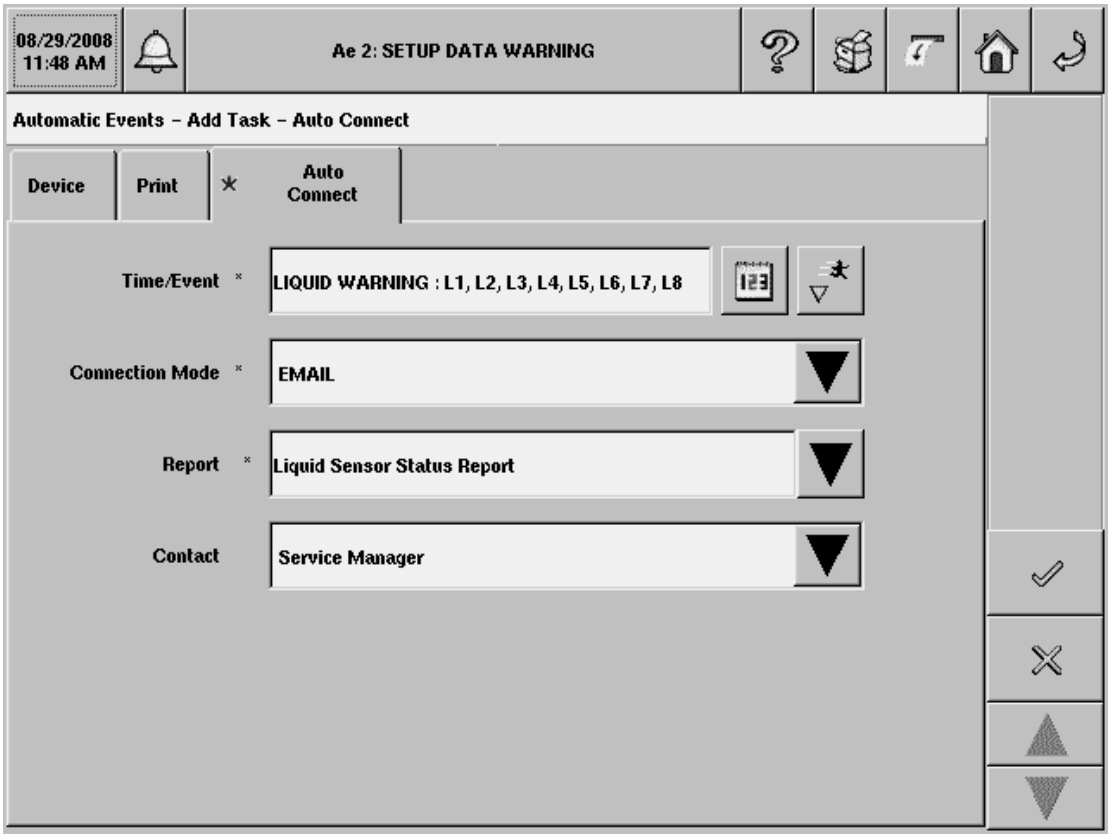
Delete Task

You select a Task Record entry and then touch this button to delete the task.

View Data

The View Data button will only be present only if data does not fit horizontally within a column. Touching this button will display a scroll bar which you then touch to scroll through the column's contents.

Automatic Events Add Tasks - Auto Connect



The Automatic Events Add Tasks - Auto Connect screen lets you add a task to auto connect in computer mode or non-computer mode. Make selections from the entry fields below as required.

If the maximum number of allowed Auto Connect Tasks is reached on a save, all fields within the Auto Connect Tab will be shown as disabled. The number of auto connect tasks is limited to 30. After the maximum number of allowed auto connect tasks is reached, pressing the Add Task button will display an error message indicating that a task must be deleted before another can be added.

Time (Field)

Touch this button to select a time frequency for the new task.

Period

Allowable selections: Annually by Day of Week, Annually by Day of Month, Monthly by Day of Week, Monthly by Day of Month, Weekly, Daily
Default selection: Weekly

Month

Allowable selections: January - December
Default selection: January

Week-Day

Allowable selections: Sunday - Saturday
Default selection: Sunday

Occurrence

Allowable selections: 1st, 2nd, 3rd,4th, Last
Default selection: 1st

Day of Month

Allowable selections: 1 - 31
Default selection: 1

Time of Day

Allowable selections: Time in Hours and Minutes, 24 hour sensitive
Default selection: 12:00 AM

Event (Field)

Touch this button to the select the event(s) from the dropdown lists that will trigger the new task:

- Alarms
- Notifications (Notifications can not be assigned for 'Device' action tasks)
- External Inputs

Connection Mode (Field)

Select an auto-connect method.

Possible selections: Computer-mode auto-connect methods: Modem, TCP/IP or Satellite. Non-computer-mode auto-connect methods: FAX or E-Mail.
Default: Modem

Report (Field) - Non-Computer Mode Only

Select the report(s) to be issued .

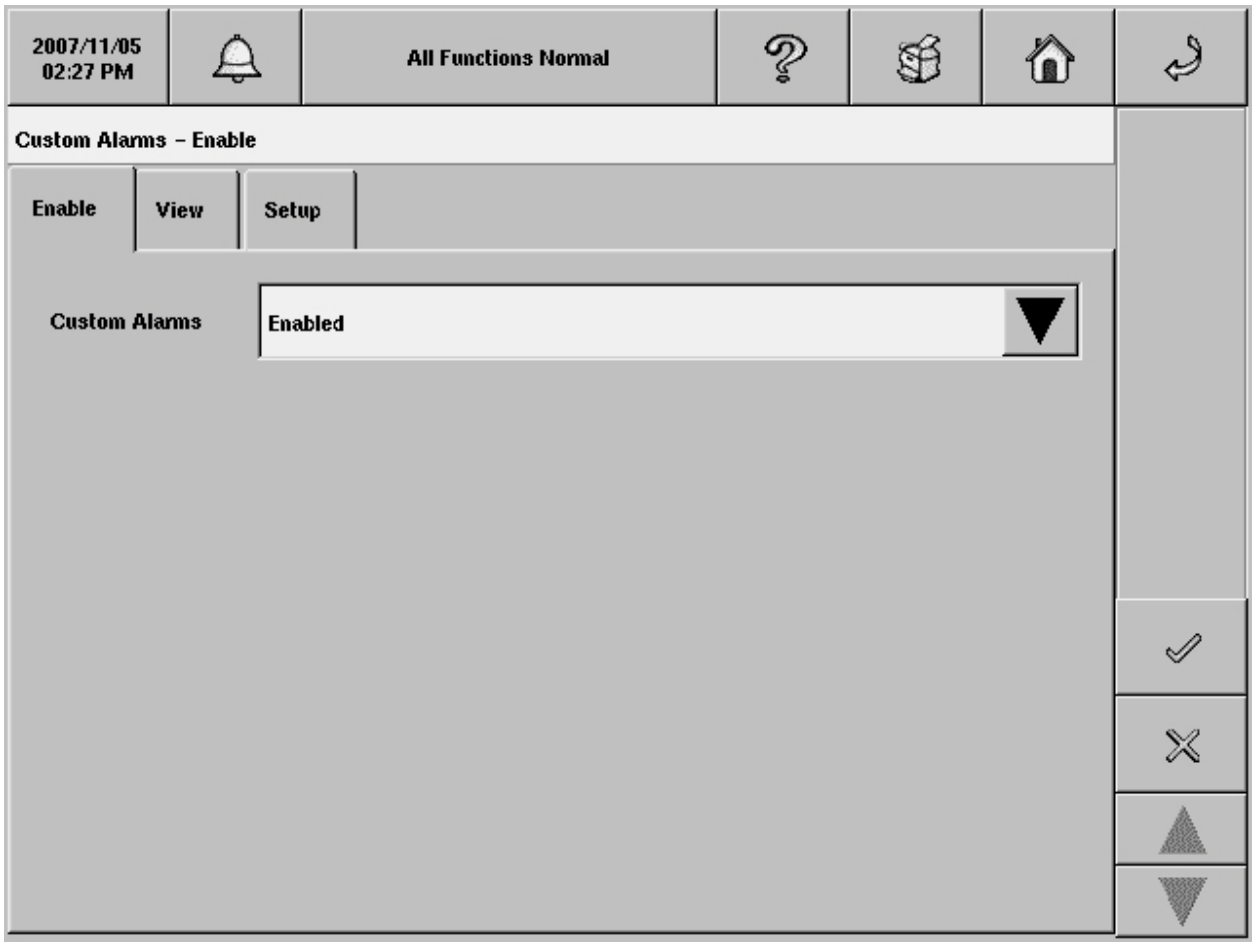
Possible selections: Any report in the dropdown box
Default: Empty

Contact (Field)

Select a specific contact. Contact Selections will depend on whether they support the selected auto-connect method.

Possible selection: Specific contact from the Address Book
Default: First Address Book Entry

Custom Alarms Setup - Enable



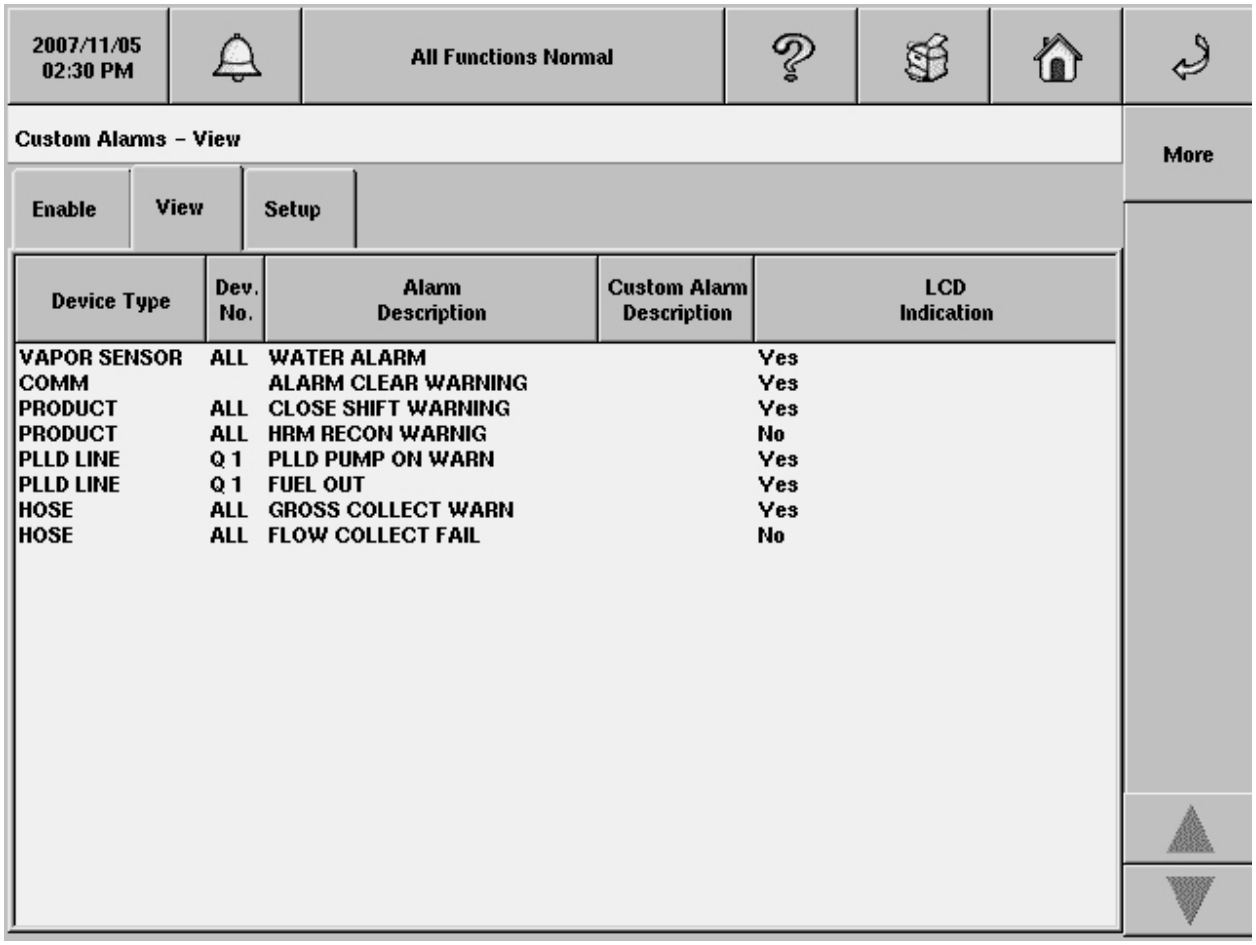
The Custom Alarms Setup - Enable screen gives you the option of entering custom alarm labels that will accompany the system's alarm labels in printouts and in the system status display.

Custom Alarms

Lets you create custom alarm labels or important information that will display along with the console's standard alarm labels.

Allowable selections: Enabled/Disabled
Default selection: Disabled

Custom Alarms Setup - View



The Custom Alarms Setup - View screen lets you view a report listing all of the alarms that have either custom alarm labels and/or modified indication flags i.e., LCD flag, LED flag and Beeper flag.

Report Column Descriptions

Device Type

Lists the device type.

Device Number

Lists the device number. The Device Number displays 'ALL' if the alarm label is set for all devices for that particular device. If the custom alarm label is set for all devices and also for any particular device, an asterisk follows the all (ALL*).

Alarm Description

Lists the system standard alarm label for the device.

Custom Alarm Description

Lists the custom alarm label (if any).

LCD Indication

Lists if a LCD flag is enabled/disabled following an alarm by this device.

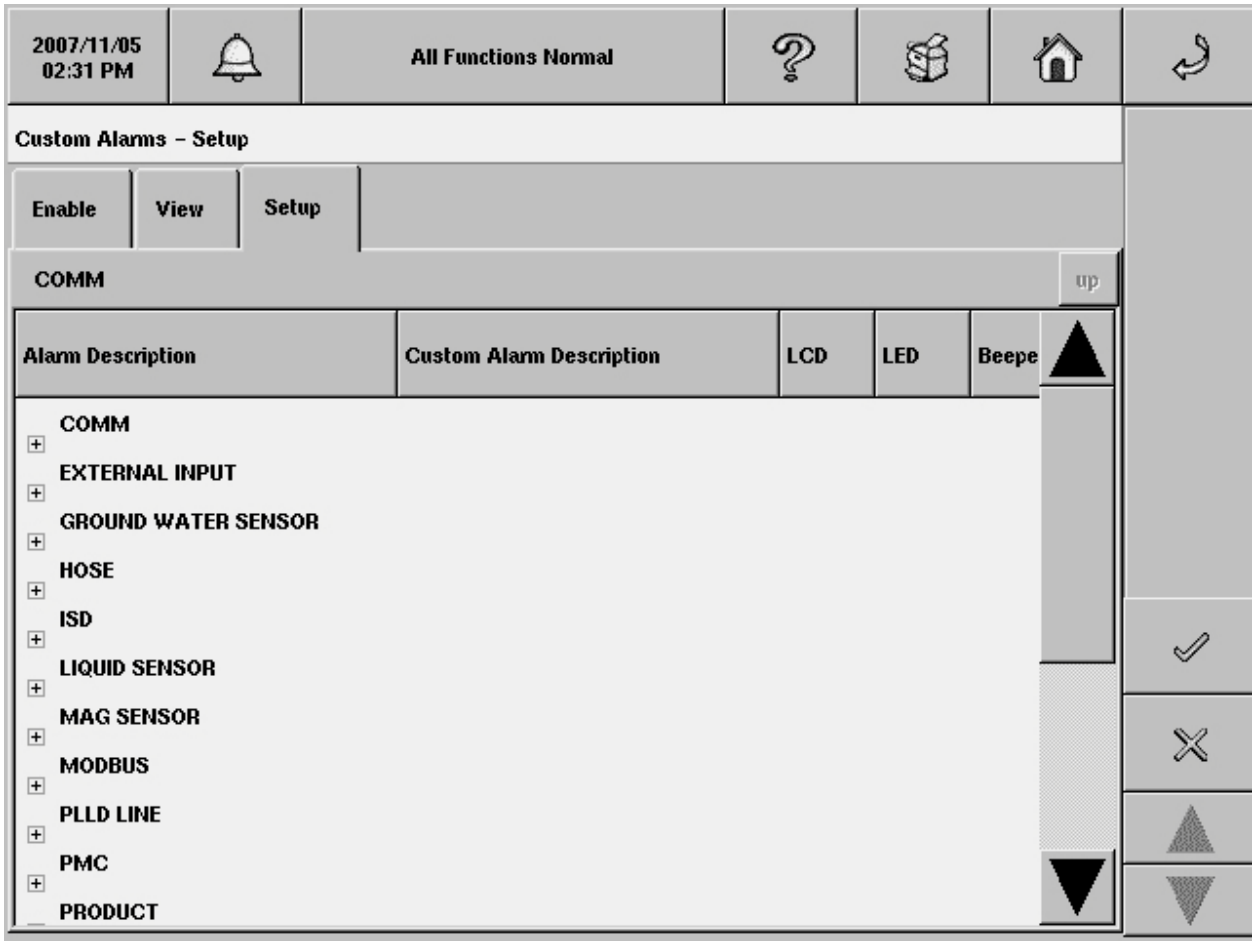
LED Indication

Lists if the front panel LED flag is enabled/disabled following an alarm by this device.

BEEP Indication

Lists if the console's beeper is enabled/disabled following an alarm by this device.

Custom Alarms - Setup



The Custom Alarms Setup screen can be used to enter a custom alarm label and also select the alarm indicators for the alarm.

The data view area contains the list of alarm categories. Touching a category displays all of the standard alarm labels within that alarm category.

To enter a custom alarm label, select an alarm category and then select the alarm you want to re-label. This opens the Customization of Alarms dialog box with the following fields:

LCD Indication

The alarm will display in the system status area when this alarm occurs.

Allowable selections: Enabled/ Disabled
Default selection: Enabled

LED Indication

A front panel LED will activate when this alarm occurs.

Allowable selections: Enabled/ Disabled
Default selection: Enabled

BEEP Indication

The console beeper will activate when this alarm occurs.

Allowable selections: Enabled/ Disabled
Default selection: Enabled

Alarm Description

The standard alarm label is listed for this alarm.

Custom Alarm Label

Enter your custom alarm label that will be displayed along with the standard alarm label when this alarm occurs.

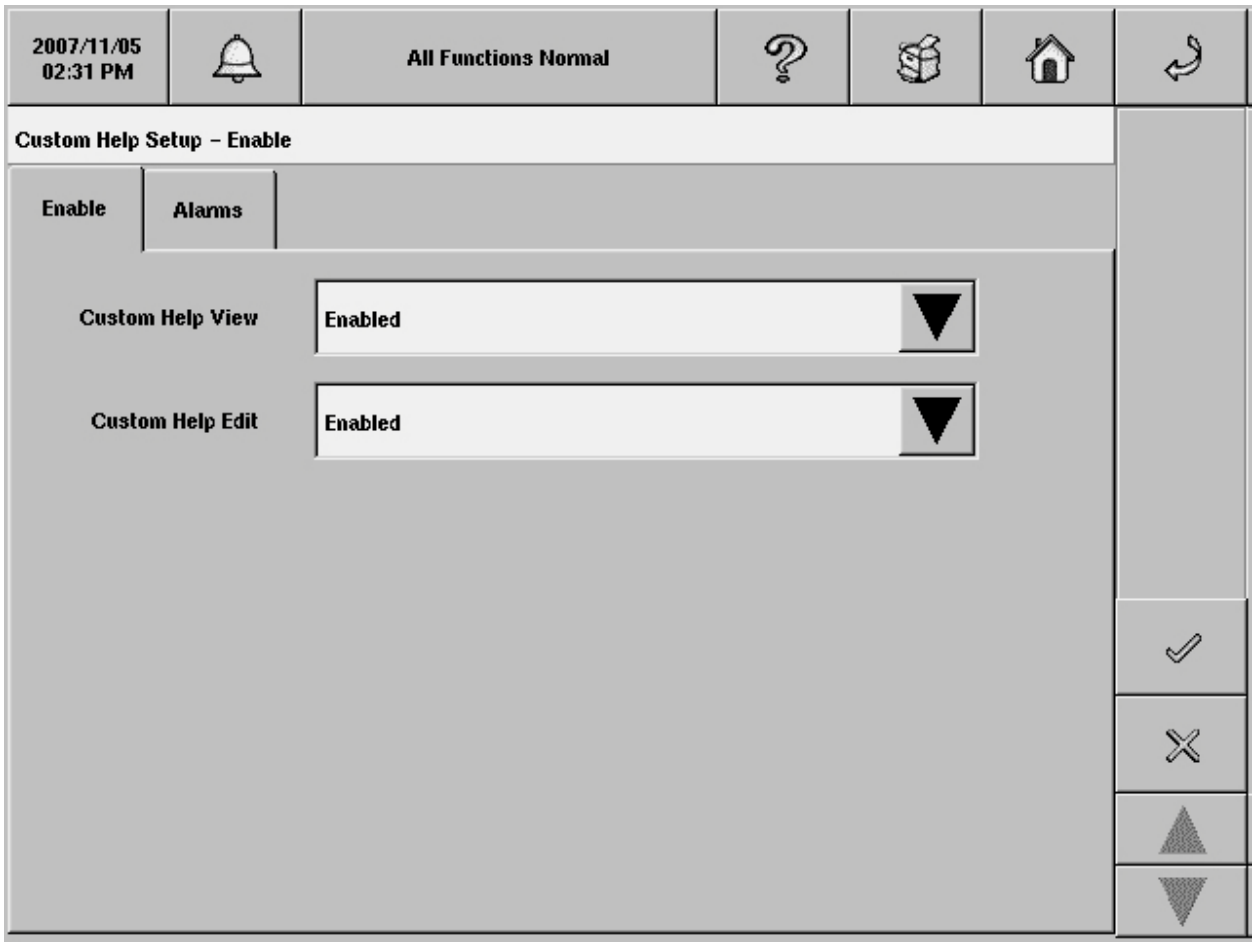
Allowable selection: 1 to 20 alphanumeric characters
Default selection: Blank

Control Button (on right of screen)

Clear All

The Clear All button appears only when an alarm category is selected (e.g., Tank). Touching the Clear All button clears all the Custom Alarm Labels and resets the indication flags to default for the particular device (e.g., Tank 1).

Custom Help Setup - Enable



The Custom Help Setup Enable screen allows you to add custom help text to console online help topics and to select whether on not to display the custom help text and allow access to the custom help edit feature.

Custom Help View

This field selects whether or not the custom help you create for online help topic(s), displays when the online help topic(s) is selected.

Allowable selections: Enabled, Disabled
Default selection: Disabled

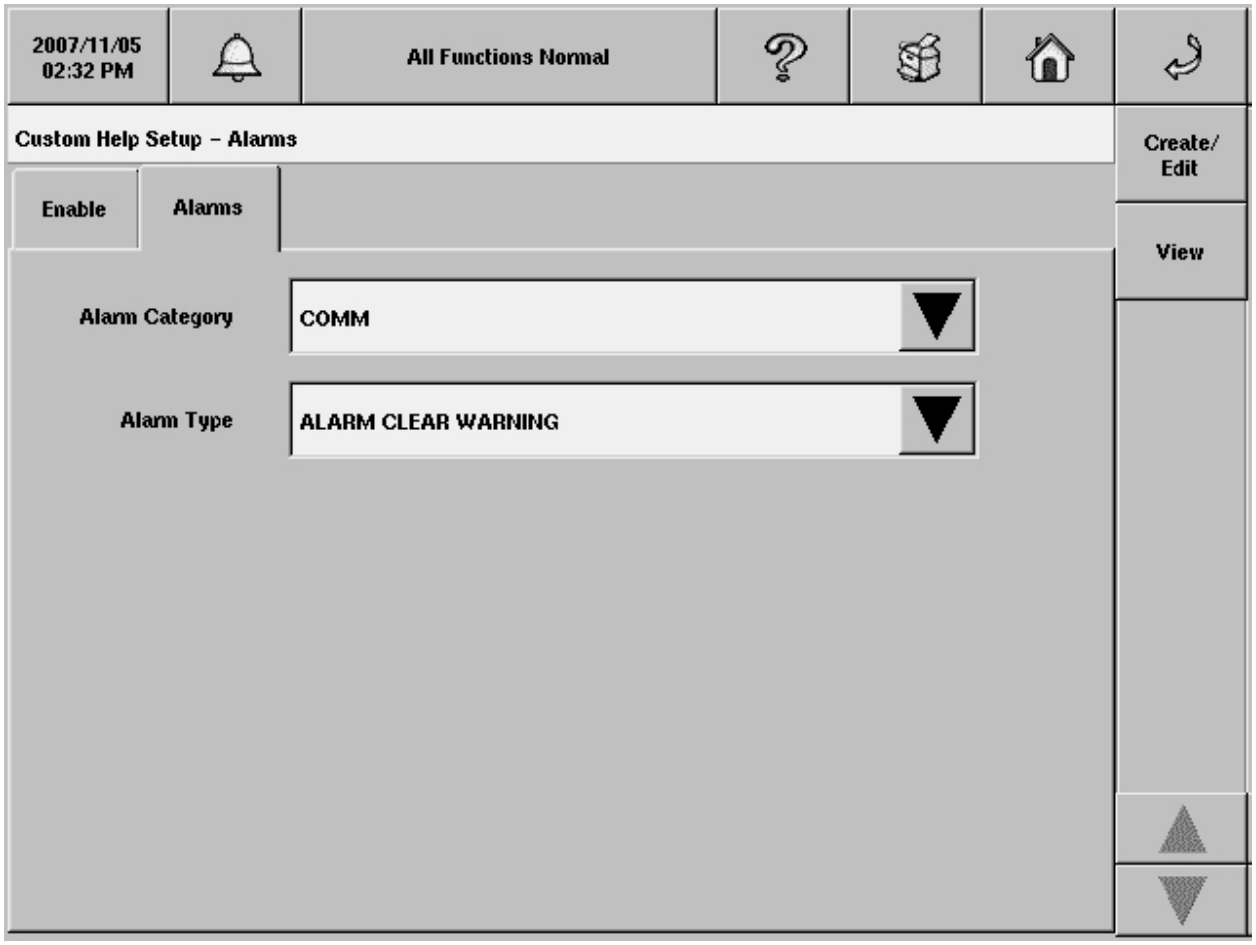
Custom Help Edit

This field lets you enable the online help Create/Edit feature when an online help topic is viewed. When enabled, the user can create/edit custom help for any online help topic. When disabled, the Create/Edit button is removed from the top of the online help screen.

Note: Custom Help is displayed at the beginning of the system online help topic, it does not replace the system online help topic.

Allowable selections: Enabled, Disabled
Default selection: Disabled

Custom Help Setup - Alarms



The Custom Help Setup - Alarm screen lets you create custom text that is assigned to a selected alarm and that will display when that alarm occurs and the user requests cause/action information about the alarm.

Alarm Category

Select the desired alarm category using the drop-down box.

Alarm Type

Select the desired alarm type for the selected category using the drop-down box.

Control Buttons (on right of screen)

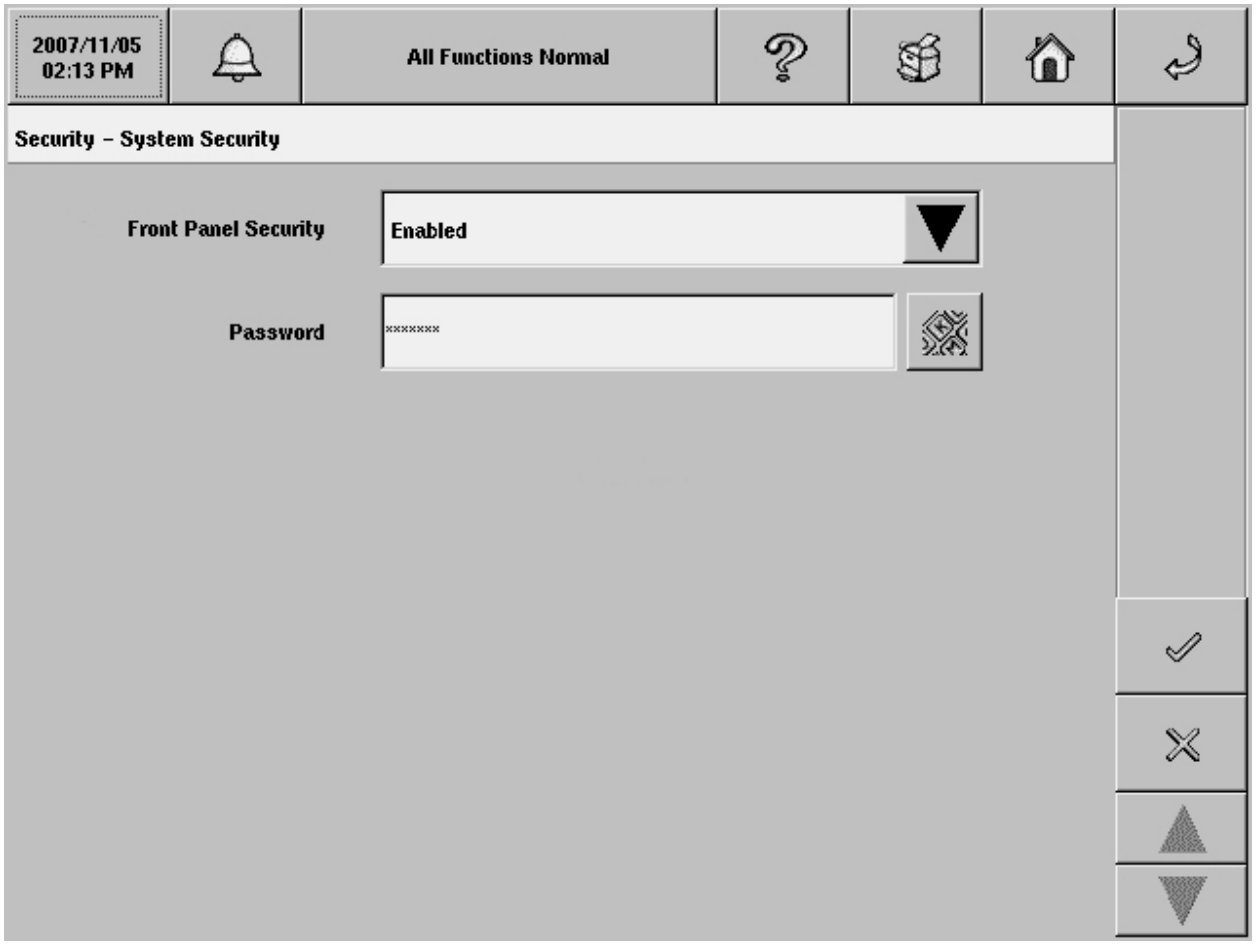
Create/Edit

Touch this button to open an editor and enter the custom information you want to display with this alarm's default information.

View

Touch this button to view existing custom information (if any) for this alarm. Clicking on the Help link in the Information screen, displays the default information for that alarm.

System Security Setup



This screen establishes front panel control for the console. By enabling this security feature, Log-In /Log-Out modes are established which prevent unauthorized tampering of console setups.

Log-In Mode

Requires the Front Panel Security selection be enabled and a correct password entered by the user. In this mode you can edit console setup parameters, access diagnostic menus, view system status screens and print out end-user reports. While you remain logged in, a log out button will be visible in the lower right side of the System Status screen. Once you are logged in, timeout rules will apply as discussed below.

Log-Out Modes

With the Front Panel Security selection enabled, you must enter the correct password or remain in the Log-Out mode and only be allowed to view system status screens and print out end-user reports.

Once logged in, there are two ways of logging out:

Manually

You can log out of the console via the 'logout' button found on the System Status screen's right side above the up/down arrows. This button will only appear when system security is enabled and you are logged in. When this button is touched a Log-out dialog will display the message "Are you sure you want to Logout?"

OK - logs the current user out and returns to the System Status screen in log-out mode.
CANCEL - returns to the System Status screen without logging out.

Automatically

There will be a maximum length of time you will be allowed to stay logged in without activity. User activity is defined as GUI screen interaction using touch, for an LCD display, or, GUI screen interaction using keystrokes, and mouse-clicks in the case of a PC interface, all while you are still logged in. Any touch, mouse-click or key hits on the GUI screen resets the timeout timer.

When the timeout occurs, you will be logged out and the console will return to the System Status window in log-out mode. No warning will be given before the session timeout. If the timeout occurs before you have saved changes on any parameter entry screen, these changes will be lost. No prompt will be given to save changes before you are logged out.

The default timeout for the Basic Security option is 15 minutes. This timeout is set internally and of a fixed duration.

Front Panel Security

Security to the Console from the Front Panel will be enforced on Diagnostics and Setup. A Login action is always required to access those areas of the system.

Allowable selections: Enabled, Disabled
Default: Disabled

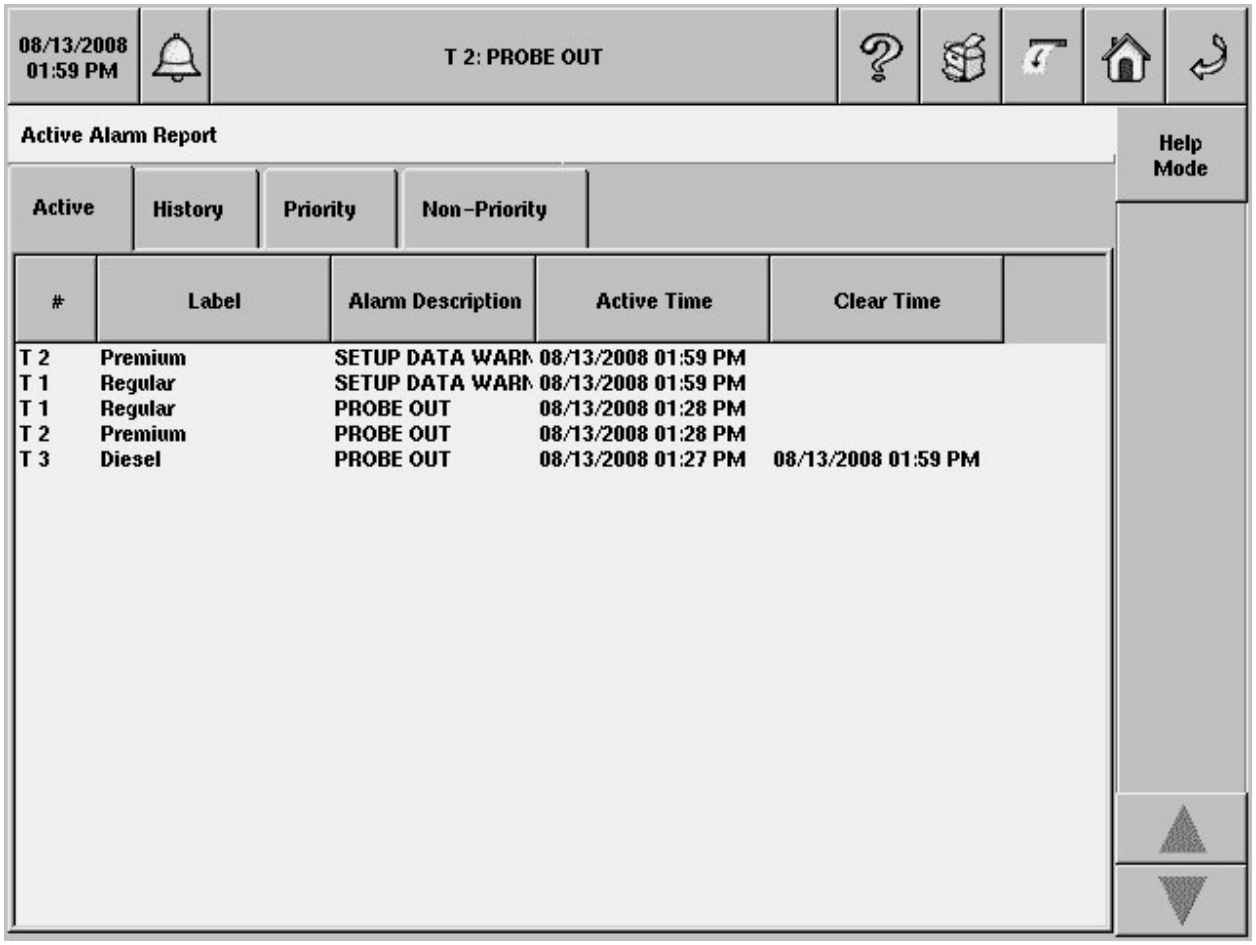
Password

A case-sensitive password (alpha and enhanced numeric - also punctuation characters), no spaces allowed, no control characters. Each character will be represented by a star '*' on the field.

Allowable selections: 3 to 10 alphanumeric characters, also 0 characters (to use default internal password)
Default: Empty

Alarm Reports

Active Alarm Report



The Active Alarm Report screen is the primary alarm report and shows all active and unacknowledged TLS alarms and warnings. You access this screen by touching the Alarm Access button at the top of the console screen. You can also access this screen by touching the alarm bell icon in a device's graphical display Status Detail and Status screens.

Once in this screen, touching the Alarm Access button again will acknowledge all unacknowledged alarms and turn off the console beeper (if it is turned on).

All most recent Active Alarm Records will be shown at all times up to a maximum of 100.

Report Column Descriptions

#

This column lists the device code followed by device iteration number, e.g., T1. This column will be blank for system alarms that are not device specific.

Label

This column lists the label of the device that is in alarm. If it is a general system alarm, this column will be blank.

Alarm Description

This column lists the name of the alarm. If custom alarms are enabled, the custom alarm label will be displayed.

Active Time

This column lists the date/time the alarm was posted.

Clear Time

This column will be blank in most cases, however, there may be cases where alarms that have cleared will appear in the Active Alarm List if the alarm has not yet been acknowledged.

Active Alarm Report Screen Refresh Rate

The active alarm data will be updated upon change of state.

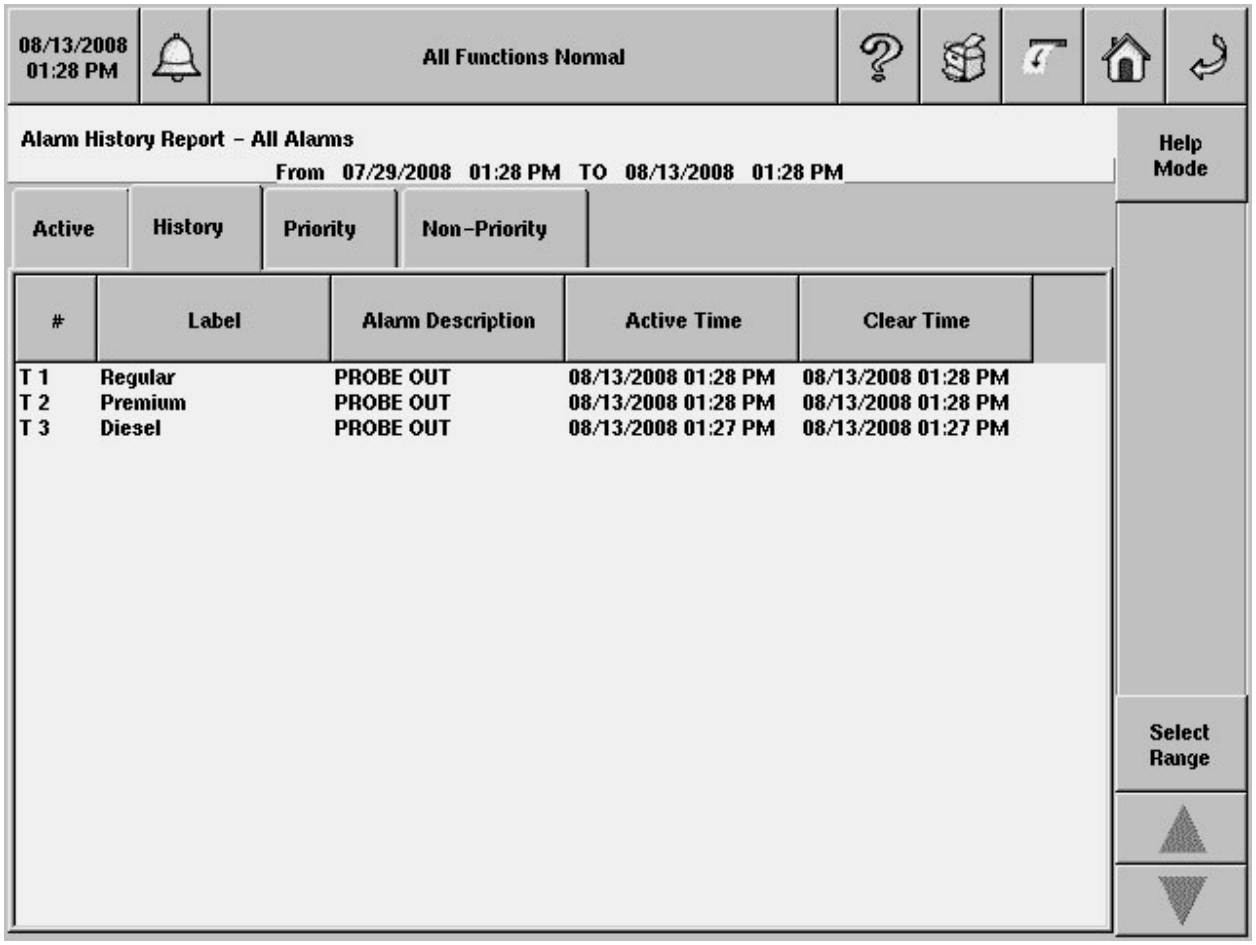
Control Button (on right of screen)

Help Mode

Touching this button changes the report from a single- to a double-spaced row format. Touch an alarm and a dialog displays the cause of the selected alarm and the console's standard alarm corrective action. If custom alarm help has been enabled, and custom information entered for this alarm, the custom information will be displayed with a link to the console's standard alarm cause/action text.

The Help Mode feature is disabled by default.

Alarm History Report



The Alarm History Report screen displays alarms for all devices, regardless of priority level and state. TLS alarm events are added to the history when an alarm becomes active, is acknowledged or is cleared. The default view is the 100 most recent alarm events.

Report Column Descriptions

#

This column lists the device code followed by device iteration number, e.g., T1. This column will be blank for system alarms that are not device specific.

Label

This column lists the label of the device that is in alarm. If it is a general system alarm, this column will be blank.

Alarm Description

This column lists the name of the alarm. If custom alarms are enabled, the custom alarm label will be displayed.

Active Time

This column lists the date/time the alarm was posted.

Clear Time

This column lists the date/time the alarm was cleared.

Control Buttons (on right of screen)

Help Mode

Touching this button changes the report from a single- to a double-spaced row format. Touch an alarm and a dialog displays the cause of the selected alarm and the console's standard alarm corrective action. If custom alarm help has been enabled, and custom information entered for this alarm, the custom information will be displayed with a link to the console's standard alarm cause/action text.

The Help Mode feature is disabled by default.

Select Range

Touch this button to modify (filter) the contents of the report.

Period

Default selection: Date Range

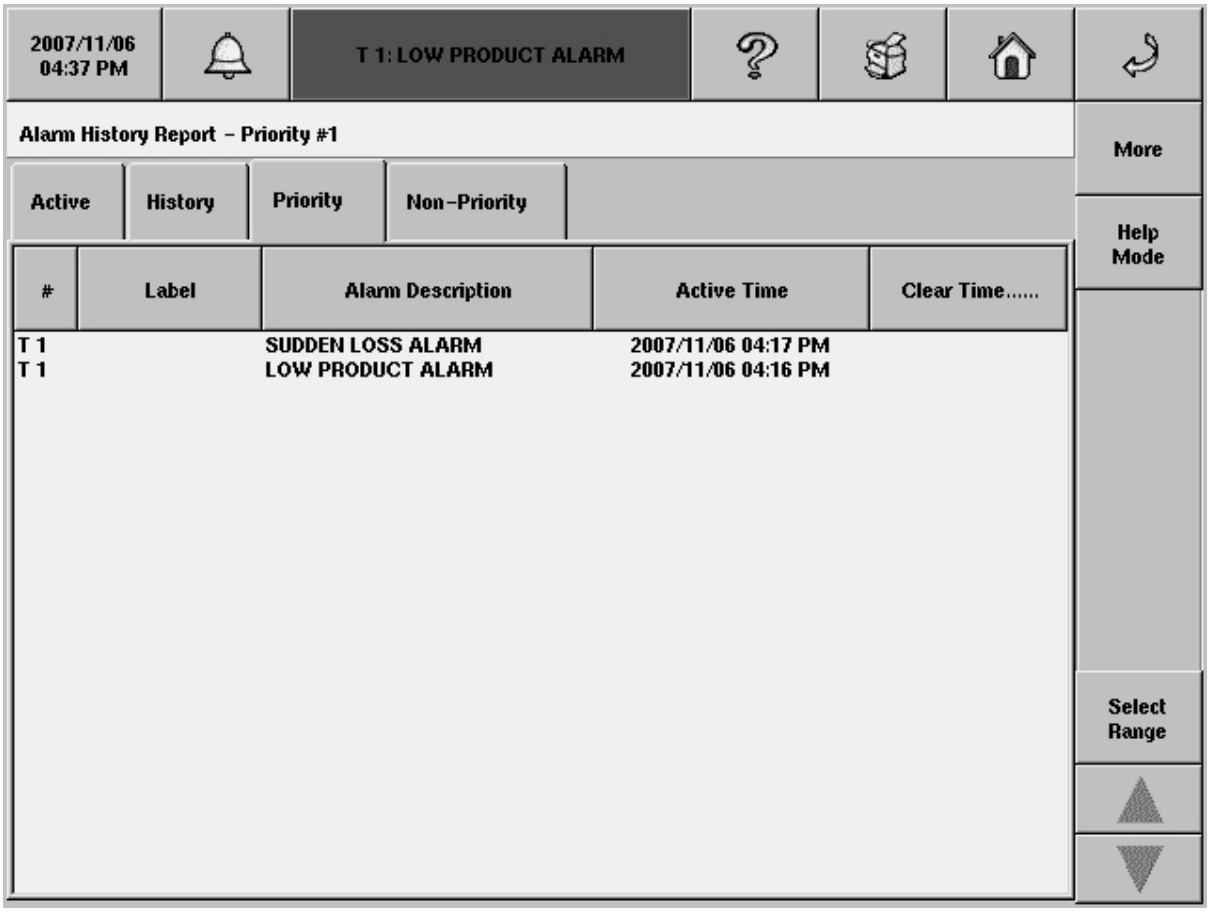
From

Default Selection: A date 15 days back from today, Time now

To

Default Selection: Today's date, Time now

Priority Alarm History Report



The Priority Alarm History Report screen displays priority alarms. TLS alarm events are added to the history when an alarm becomes active, is acknowledged or is cleared. The default view is the 100 most recent alarm events.

Report Column Descriptions

#

This column lists the device code followed by device iteration number, e.g., T1. This column will be blank for system alarms that are not device specific.

Label

This column lists the label of the device that is in alarm. If it is a general system alarm, this column will be blank. The "Label" field can also be "empty" when the user has NOT assigned any label to the "device".

Alarm Description

This column lists the name of the alarm. If custom alarms are enabled, the custom alarm label will be displayed.

Active Time

This column lists the date/time the alarm was posted.

Clear Date/Time

This column lists date/time the alarm was cleared.

Control Buttons (on right of screen)

Help Mode

Touching this button changes the report from a single- to a double-spaced row format. Touch an alarm and a dialog displays the cause of the selected alarm and the console's standard alarm corrective action. If custom alarm help has been enabled, and custom information entered for this alarm, the custom information will be displayed with a link to the console's standard alarm cause/action text.

The Help Mode feature is disabled by default.

Select Range

Touch this button to modify (filter) the contents of the report.

Period

Default selection: Date Range

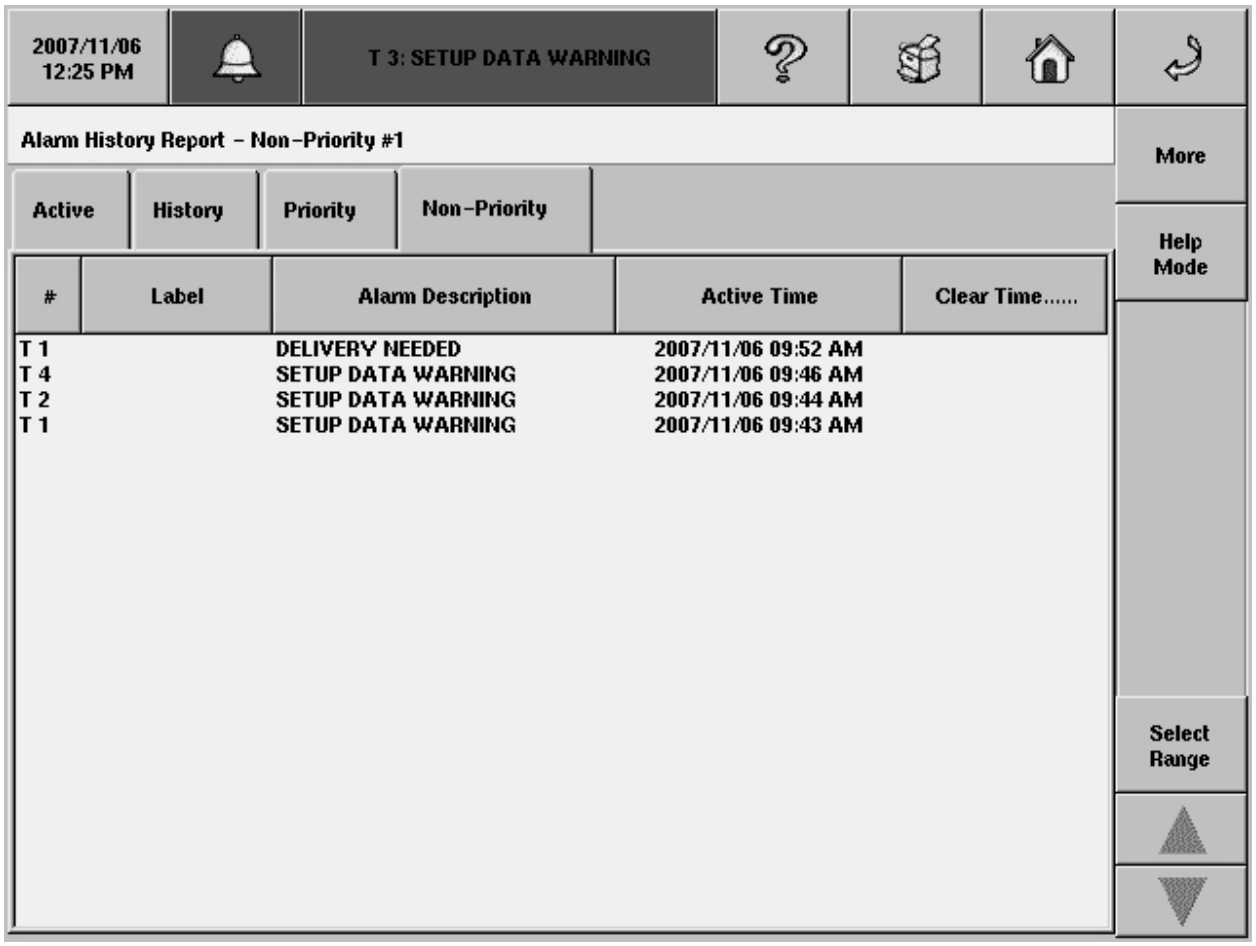
From

Default Selection: A date 15 days back from today, Time now

To

Default Selection: Today's date, Time now

Non-Priority Alarm History Report



The Non-Priority Alarm History report displays non-priority alarms. TLS alarm events are added to the history when an alarm becomes active, is acknowledged or is cleared. The default view is the 100 most recent alarm/warning events.

Report Column Descriptions

#

This column lists the device code followed by device iteration number, e.g., T1. This column will be blank for system alarms that are not device specific.

Label

This column lists the label of the device that is in alarm. If it is a general system alarm, this column will be blank.

Alarm Description

This column lists the name of the alarm. If custom alarms are enabled, the custom alarm label will be displayed.

Active Time

This column lists the date/time the alarm was posted.

Clear Date/Time

This column lists the date/time the alarm was cleared.

Control Buttons (on right of screen)

Help Mode

Touching this button changes the report from a single- to a double-spaced row format. Touch an alarm and a dialog displays the cause of the selected alarm and the console's standard alarm corrective action. If custom alarm help has been enabled, and custom information entered for this alarm, the custom information will be displayed with a link to the console's standard alarm cause/action text.

The Help Mode feature is disabled by default.

Select Range

Touch this button to modify (filter) the contents of the report.

Period

Default selection: Date Range

From

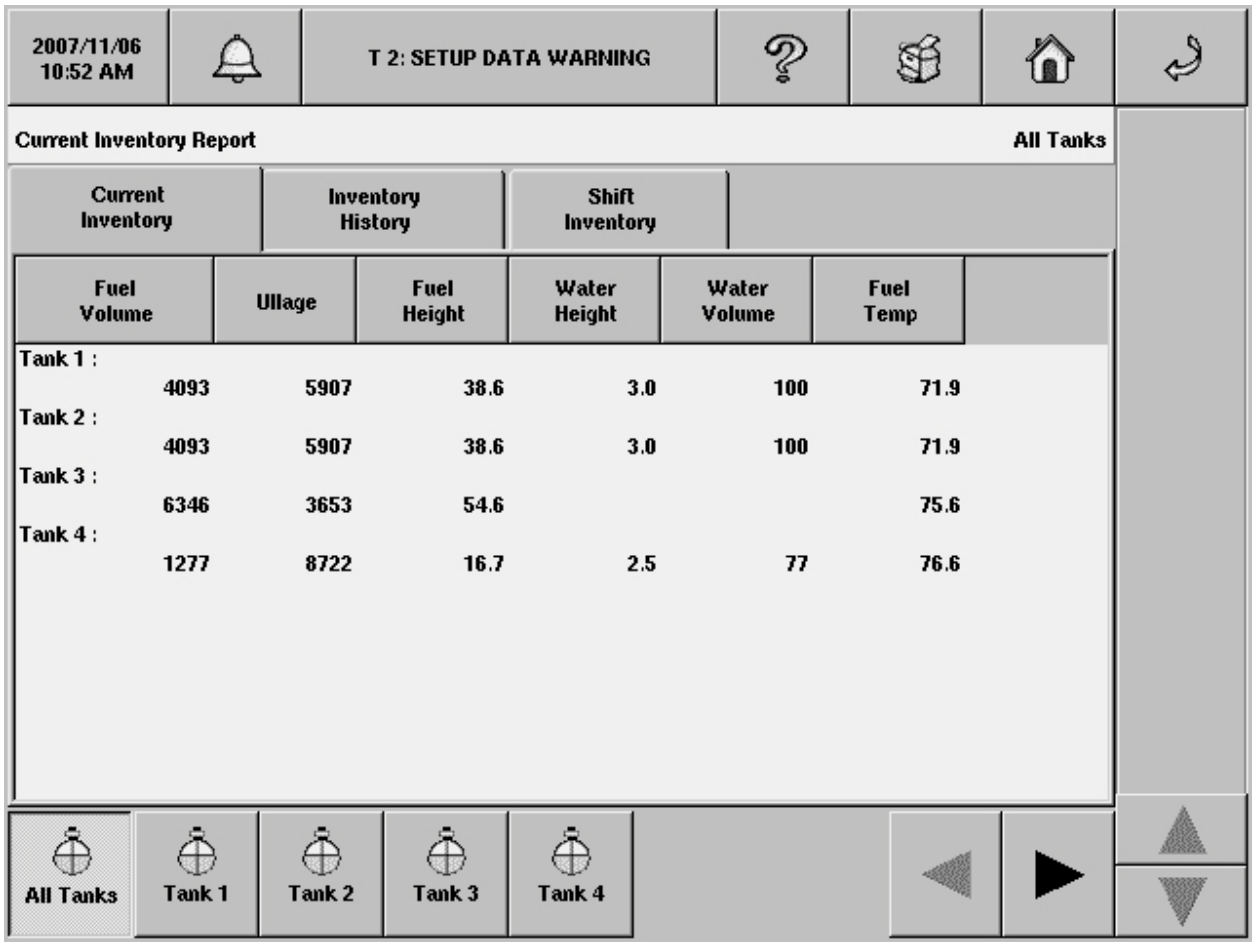
Default Selection: A date 15 days back from today, Time now.

To

Default Selection: Today's date, Time now.

Inventory Reports

Inventory Reports - Current Inventory



The Inventory Reports - Current Inventory screen lists inventory data for all currently active and configured tanks.

Note: References to probes are for probes that assigned to the tank. If the tank has no assigned probe, and probe data is not available, the related field(s) will be blank. For fields that are dependent on the capabilities of the probe, the column headings will print, but the field will be blank, e.g., Water Height. In the All Tanks view, where it is possible that a site is configured with probes with different capabilities, some tanks will report temperature and/or water and some may not.

Report Column Descriptions

Fuel Volume

Allowable range: 0 to 264,172 gal (0 to 999,999L)

Fuel TC Volume

The Fuel TC Volume column will not be displayed unless the Print TC Volume feature is enabled in System Setup and the probe measures temperature.

Allowable range: 0 to 264,172 gal (0 to 999,999L)

Ullage 100%

Allowable range: 0 to 264,172 gal (0 to 999,999L)

Ullage xx%

The User defined ullage is only displayed if defined in 'All Tank' setup.
Allowable range: 0 to 264,172 gal (0 to 999,999L)

Fuel Height

Allowable range: 0 to 390.0 in. (0 to 9906.0mm)

Water Height

This column will be blank if the probe does not measure water.
Allowable range: 0 to 390.0 in. (0 to 9906.0mm)

Water Volume

This column will be blank if the probe does not measure water.
Allowable range: 0 to 264,172 gal (0 to 999,999L)

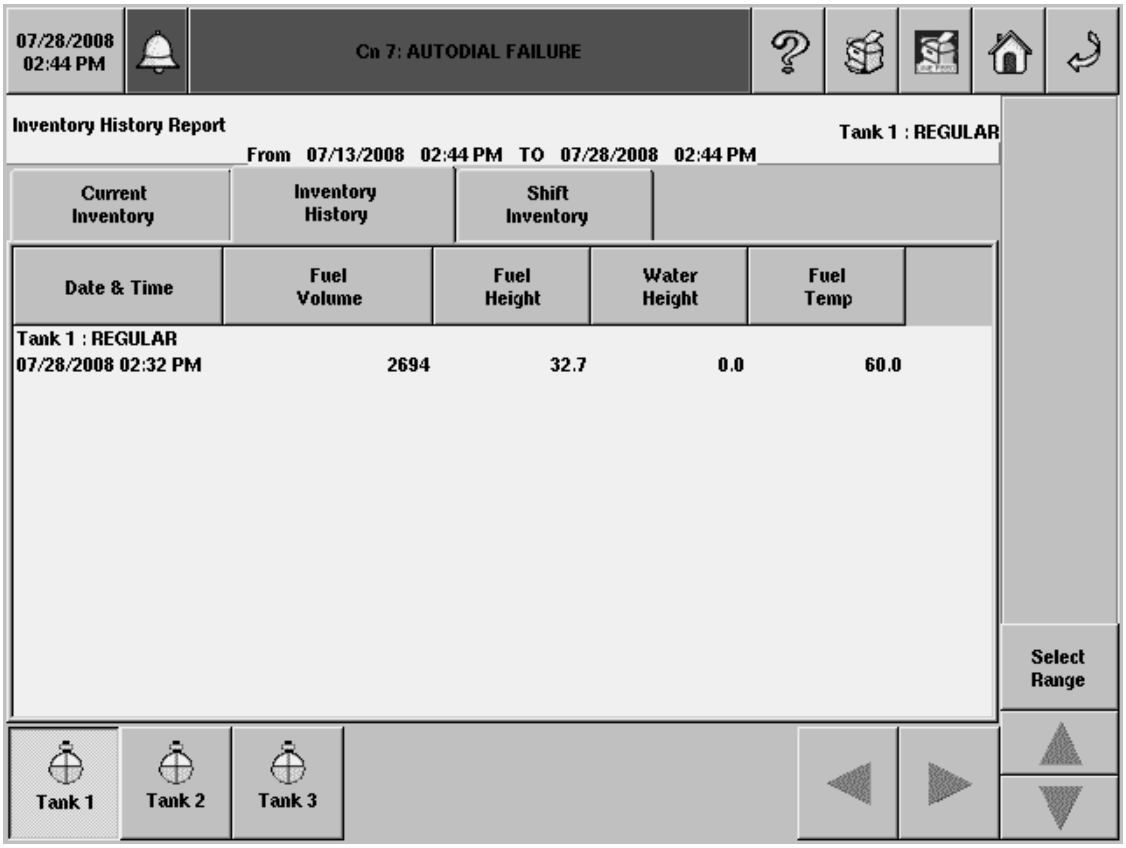
Fuel Temp.

This column will be blank if the probe does not measure temperature.
Allowable range: -40.0 to 140.0°F (-40.0 to 60.0°C)

Current Inventory Report Screen Refresh Rate

The current inventory data will be refreshed every 30 seconds.

Inventory Reports - Inventory History



The Inventory Reports - Inventory History screen displays the inventory history. The default view is the most recent 10 inventory history records for All Tanks.

The Inventory History report close times are configured in system setup, Date & Time - Report Times. Possible configurations are daily, at shift close (if enabled), at day close (if enabled through Variance Analysis), or hourly configurations (at specific time of day, with interval set from every 1 to 24 hours).

Report Column Descriptions

Date and Time

Date and time entry was recorded.
Allowable range: 01/01/2005 - 12/31/2038 00:00 - 23:59

Fuel Volume

Allowable range: 0 to 264,172 gal (0 to 999,999L)

Fuel TC Volume

The Fuel TC Volume column will not be displayed unless the Print TC Volume feature is enabled in System Setup and probe measures temperature.
Allowable range: 0 to 264,172 gal (0 to 999,999L)

Fuel Height

Allowable range: 0 to 390.0 in. (0 to 9906.0mm)

Water Height

This column will be blank if the probe does not measure water.
Allowable range: 0 to 390.0 in. (0 to 9906.0mm)

Fuel Temp.

This column will be blank if the probe does not measure temperature.
Allowable range: -40.0 to 140.0°F (-40.0 to 60.0°C)

Control Button (on right of screen)

Select Range

Touch this button to modify (filter) the contents of the report.

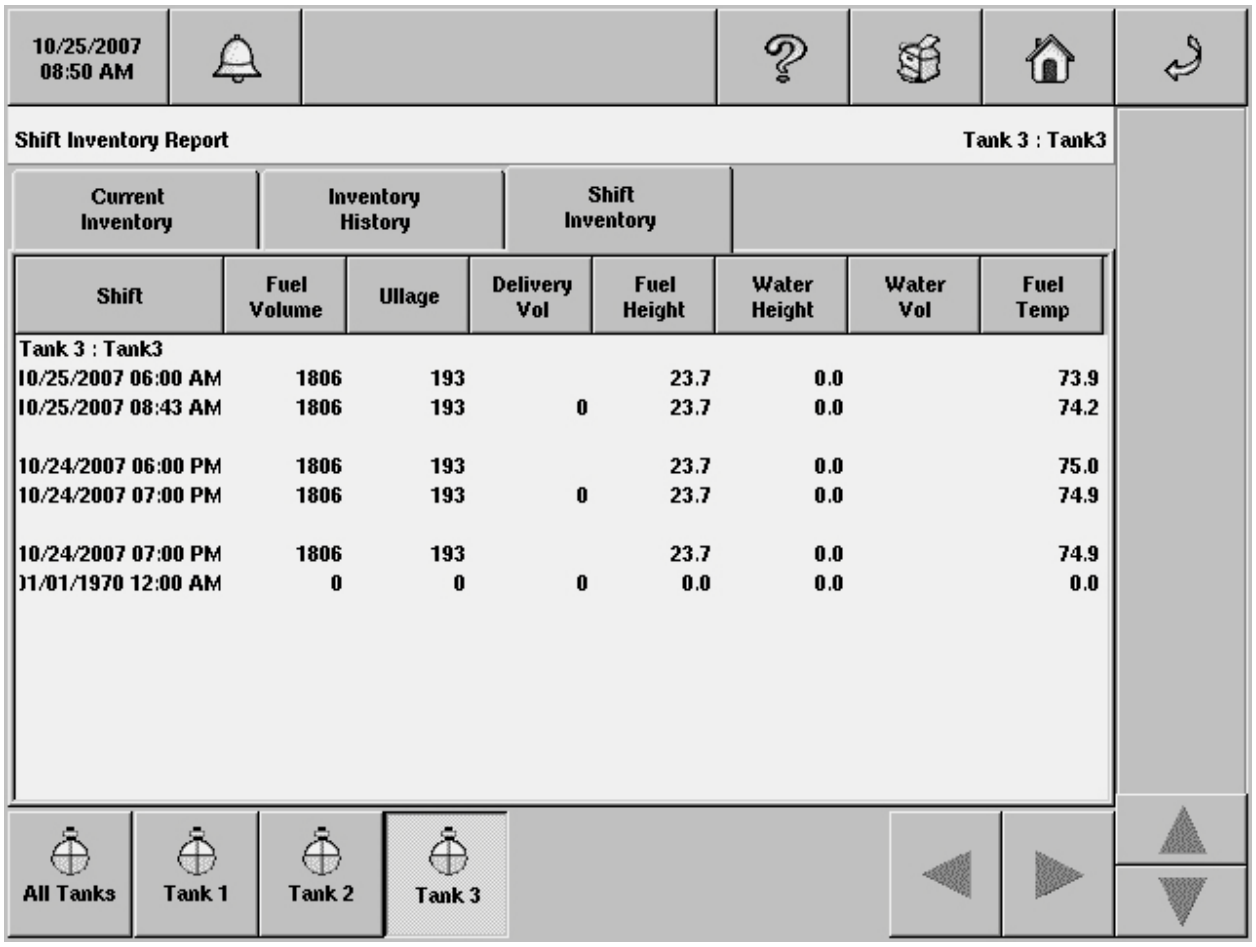
Period

Default selection: All Records

Tank

Default Selection: Current Tank

Inventory Reports - Shift Inventory



The Inventory Report - Shift Inventory screen displays the data for all enabled shifts. Up to four completed shifts can be displayed. Only data for shifts that have closed as well as current shift will be displayed. Each shift record is displayed on two lines. The first line displays data for the start of the shift. The second line displays data at the shift close (for a closed shift), or at a time when Shift Report is selected (for the current shift). The Shift inventory data will be refreshed every 30 seconds.

Report Column Descriptions

Shift

Top line of record - Shift Start Date and Time.
Second line of record - Shift Stop/Current Date and Time.

Allowable range: 01/01/2005 - 12/31/2038 00:00 - 23:59

Fuel Volume

Top line of record - Shift Start Fuel Volume
Second line of record - Shift Stop/Current Fuel Volume

Allowable range: 0 to 264,172 gal (0 to 999,999L)

Fuel TC Volume

The Fuel TC Volume column will not be displayed unless the Print TC Volume feature is enabled in System Setup and the probe measures temperature.

Top line of record - Shift Start Fuel TC Volume
Second line of record - Shift Stop/Current Fuel TC Volume

Allowable range: 0 to 264,172 gal (0 to 999,999L)

Ullage 100%

Top line of record - Shift Start Ullage 100%
Second line of record - Shift Stop/Current Ullage 100%

Allowable range: 0 to 264,172 gal (0 to 999,999L)

Ullage xx%

The User defined ullage is only displayed if defined in 'All Tank' setup.

Top line of record - Shift Start Ullage xx%
Second line of record - Shift Stop/Current Ullage xx%

Allowable range: 0 to 264,172 gal (0 to 999,999L)

Delivery Volume

A Delivery Volume entry only appears if a delivery was made during the shift.

Allowable range: 0 to 264,172 gal (0 to 999,999L).

Fuel Height

Top line of record - Shift Start Fuel Height
Second line of record - Shift Stop/Current Fuel Height

Allowable range: 0 to 390.0 in. (0 to 9906.0mm)

Water Height

This column will be blank if the probe does not measure water.

Top line of record - Shift Start Water Height
Second line of record - Shift Stop/Current Water Height

Allowable range: 0 to 390.0 in. (0 to 9906.0mm)

Water Volume

This column will be blank if the probe does not measure water.

Top line of record - Shift Start Water Volume
Second line of record - Shift Stop/Current Water Volume

Allowable range: 0 to 264,172 gal (0 to 999,999L)

Fuel Temp.

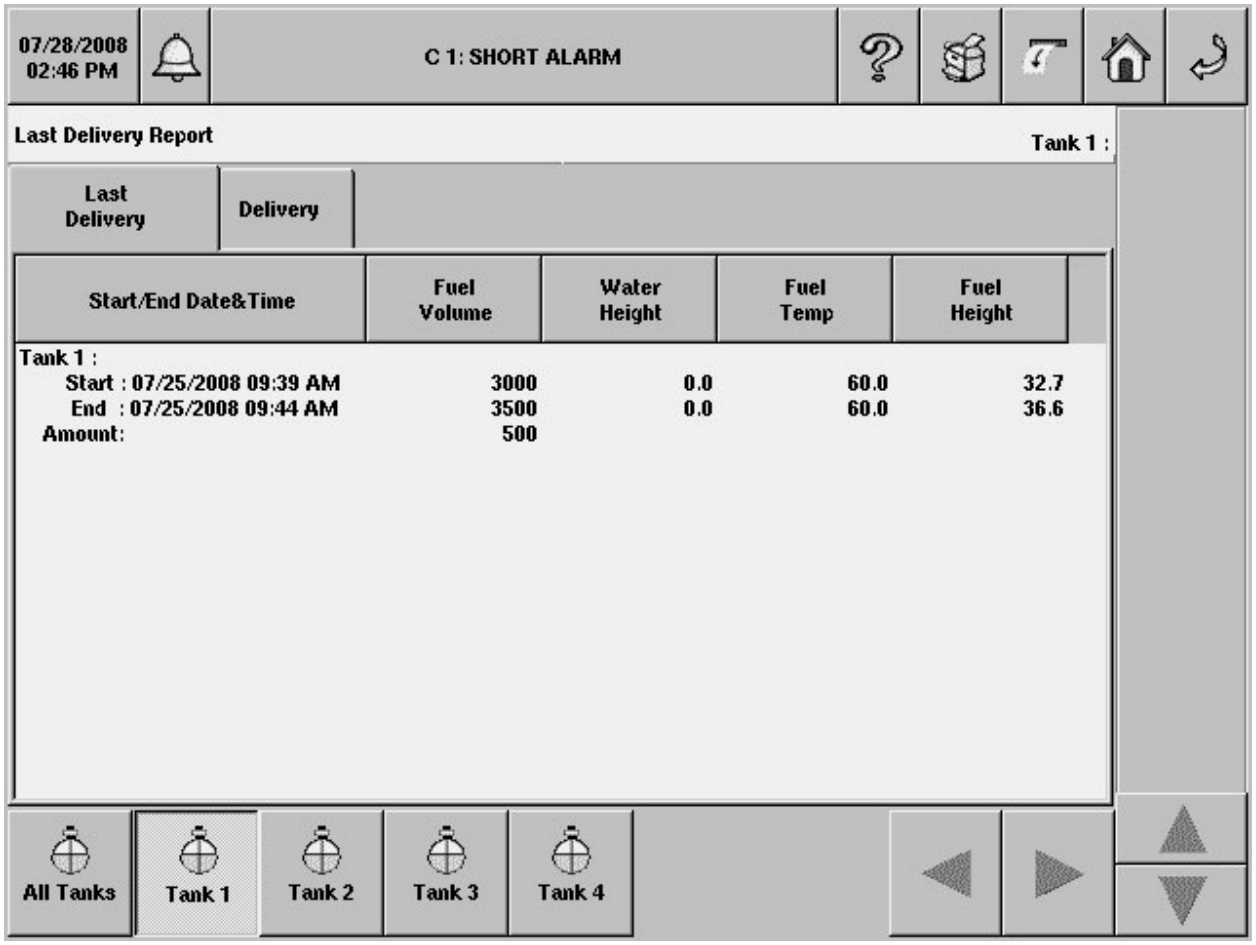
This column will be blank if the probe does not measure temperature.

Top line of record - Shift Start Fuel Temperature
Second line of record - Shift Stop/Current Fuel Temperature

Allowable range: -40.0 to 140.0°F (-40.0 to 60.0°C)

Fuel Management Reports

Last Delivery Report



The Last Delivery Report screen serves as the default screen for the Fuel Management Reports. The purpose of the Last Delivery Report is to show the most recent increase in a tank's inventory.

The delivery record contains three lines:

- Start:
  This line contains date/tank data recorded at the start of the delivery.

- End:
  This line contains date/tank data recorded at the end of the delivery.

- Amount (delivered):
  This line contains the difference between the start of delivery volume and end of delivery volume (standard volume and TC volume if applicable)
  Allowable range: 0 to 264,172 gal (0 to 999,999L).

  For Manifolded Tanks the delivery sum of all tanks in the Manifolded set will be included (TC volume sum for the manifolded tanks will also appear if applicable).

Report Column Descriptions

Start/End Date & Time

Top line of record - Delivery Start Date and Time.
Second line of record - Delivery Stop Date and Time.

Allowable range: 01/01/2005 to 12/31/2038 (MMDDYYYYY) 00:00 to 23:59 (HH:MM)

Fuel Volume

Top line of record - Delivery Start Volume
Second line of record - Delivery Stop Volume
Third line of record - Delivered Volume (stop volume - start volume)

Allowable range: 0 to 264,172 gal (0 to 999,999L)

Fuel TC Volume

The Fuel TC Volume column will not be displayed unless the Print TC Volume feature is enabled in System Setup and the probe measures temperature.

Top line of record - Delivery Start TC Volume
Second line of record - Delivery Stop TC Volume
Third line of record - Delivered TC Volume (stop TC volume - start TC volume)

Allowable range: 0 to 264,172 gal (0 to 999,999L)

Water Height

This column will be blank if the probe does not measure water.

Top line of record - Delivery Start Water Height
Second line of record - Delivery Stop Water Height

Allowable range: 0 to 390.0 in. (0 to 9906.0mm)

Fuel Temp.

This column will be blank if the probe does not measure temperature.

Top line of record - Delivery Start Fuel Temp.
Second line of record - Delivery Stop Fuel Temp.

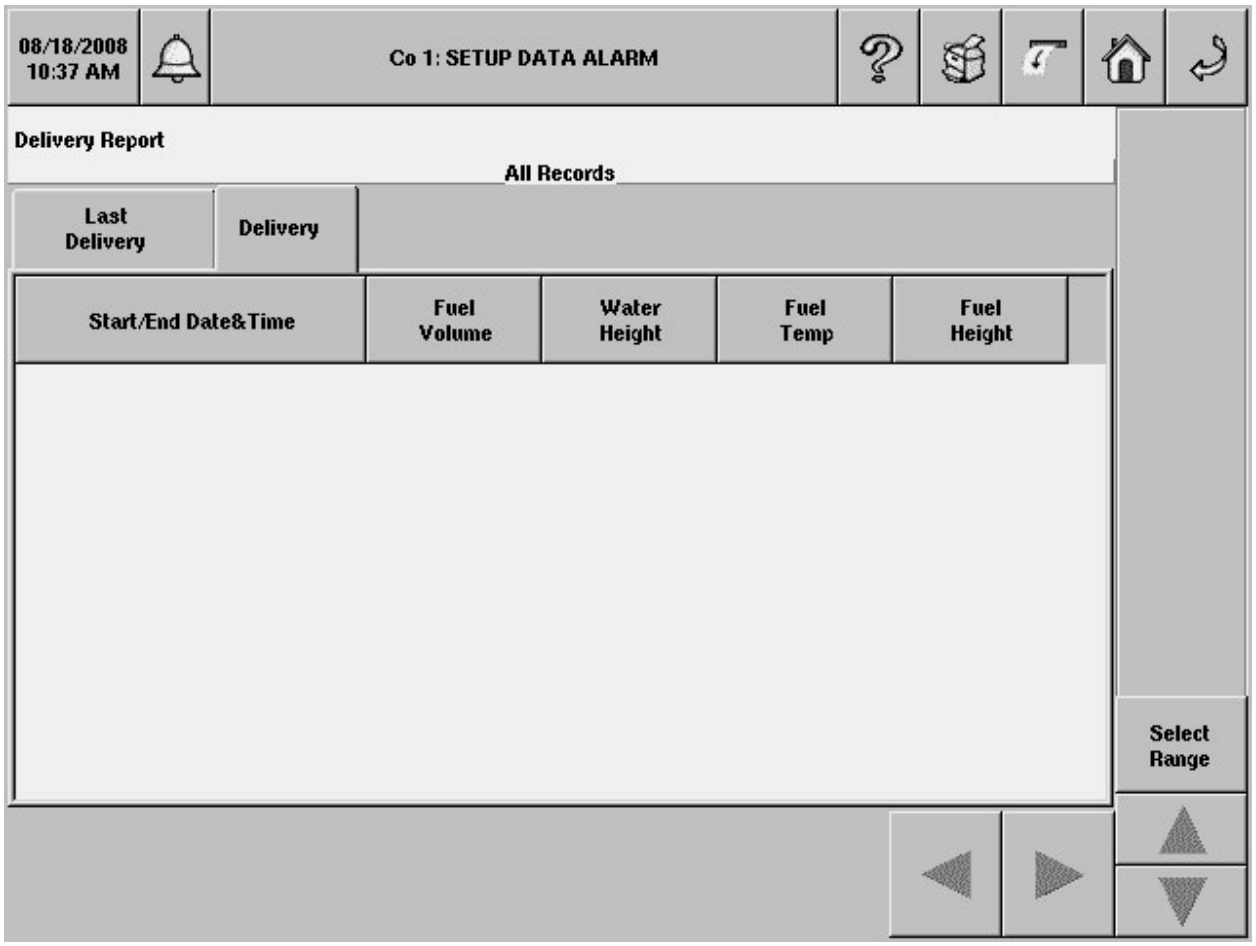
Allowable range: -40.0 to 140.0°F (-40.0 to 60.0°C)

Fuel Height

Top line of record - Delivery Start Fuel Height
Second line of record - Delivery Stop Fuel Height

Allowable range: 0 to 390.0 in. (0 to 9906.0mm)

Delivery History Report



The Delivery History Report screen shows the last 10 deliveries for the selected tank.

Each delivery record contains three lines:

- Start:
  This line contains date/tank data recorded at the start of the delivery.

- End:
  This line contains date/tank data recorded at the end of the delivery.

- Amount (delivered):
  This line contains the difference between the start of delivery volume and end of delivery volume (standard volume and TC volume if applicable)
  Allowable range: 0 to 264,172 gal (0 to 999,999L)

Report Column Descriptions

Start/End Date & Time

Top line of record - Delivery Start Date and Time.
Second line of record - Delivery Stop Date and Time.

Allowable range: 01/01/2005 - 12/31/2038 00:00 - 23:59

Fuel Volume

Top line of record - Delivery Start Fuel Volume
Second line of record - Delivery Stop Fuel Volume
Third line of record - Delivered Volume (stop volume - start volume)

Allowable range: 0 to 264,172 gal (0 to 999,999L)

Fuel TC Volume

The Fuel TC Volume column will not be displayed unless the Print TC Volume feature is enabled in System Setup and the probe measures temperature.

Top line of record - Delivery Start Fuel TC Volume
Second line of record - Delivery Stop Fuel TC Volume
Third line of record - Delivered TC Volume (stop TC volume - start TC volume)

Allowable range: 0 to 264,172 gal (0 to 999,999L)

Water Height

This column will be blank if the probe does not measure water.

Top line of record - Delivery Start Water Height
Second line of record - Delivery Stop Water Height

Allowable range: 0 to 390.0 in. (0 to 9906.0mm)

Fuel Temp.

This column will be blank if the probe does not measure temperature.

Top line of record - Delivery Start Fuel Temp.
Second line of record - Delivery Stop Fuel Temp.

Allowable range: -40.0 to 140.0°F (-40.0 to 60.0°C)

Fuel Height

Top line of record - Delivery Start Fuel Height
Second line of record - Delivery Stop Fuel Height

Allowable range: 0 to 390.0 in. (0 to 9906.0mm)

Control Button (on right of screen)

Select Range

Touch this button to modify (filter) the contents of the report.

Period

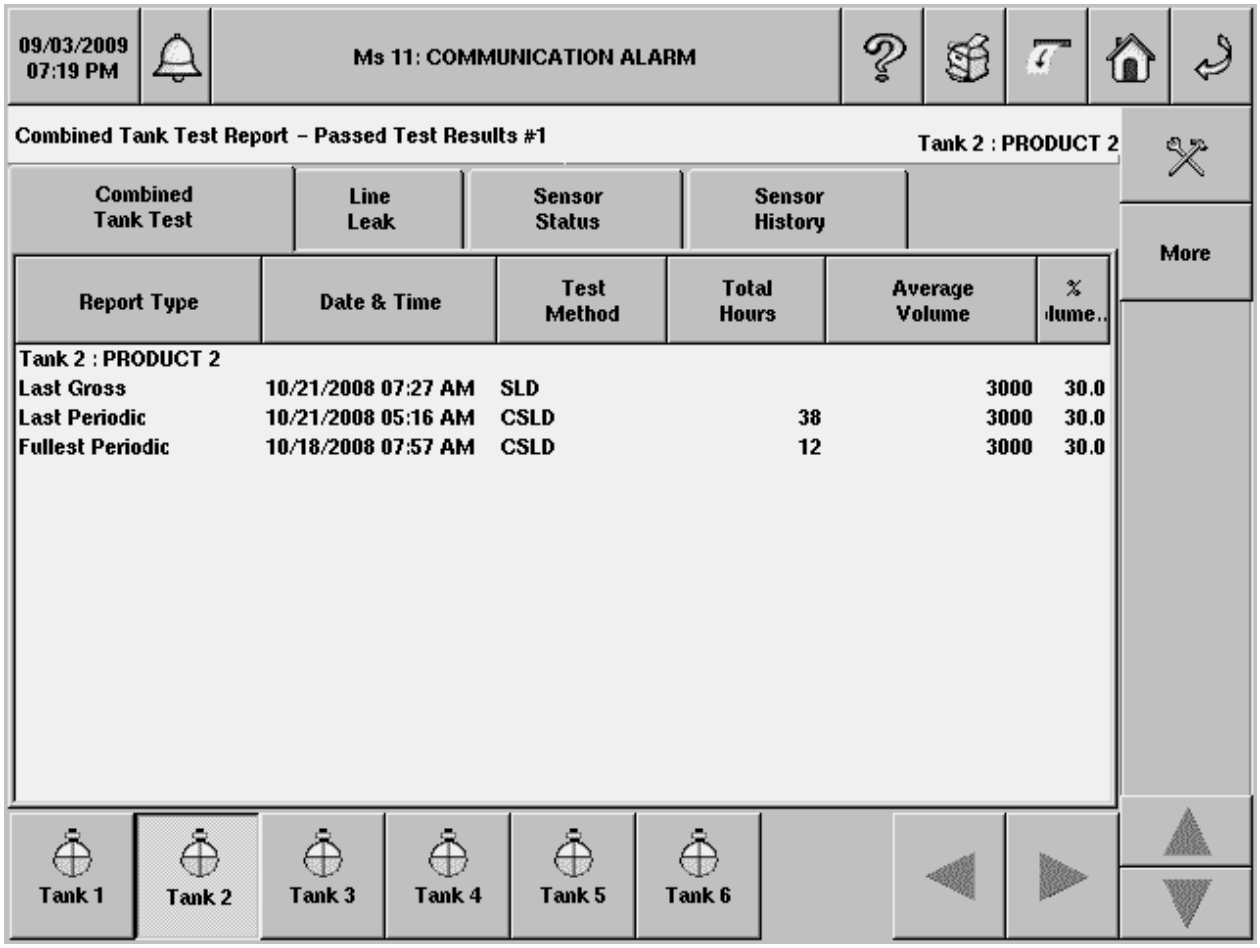
Default selection: All Records

Tank

Default Selection: Current Tank

Environmental Reports

Combined Tank Test



The Environmental Reports - Combined Tank Test screen displays both Static Leak Detect (SLD) and Continuous Statistical Leak Detection (CLSD) test results on one report. This is a historic report and displays only results with a status of Passed. There are several categories of results that may be captured in this report:

- Last Gross Test Passed
- Last Periodic Test Passed
- Last Annual Test Passed
- Fullest Periodic Test Passed Each Month
- Fullest Annual Test Passed For Current Year

Report Column Descriptions

Test Type

Possible messages:
- Fullest Annual
- Fullest Periodic
- Last Annual
- Last Gross
- Last Periodic

Date & Time

Date and time of test.

Test Method

Possible messages:
- SLD
- CSLD

Total Hours

The Total Hours field will always be blank for a gross test. Gross tests run for 30 minutes maximum; the duration is not configurable or reported.

Possible length of test: 0 to 24

Average Volume

Allowable range: 0 to 264,172 gal (0 to 999,999L)

% Volume

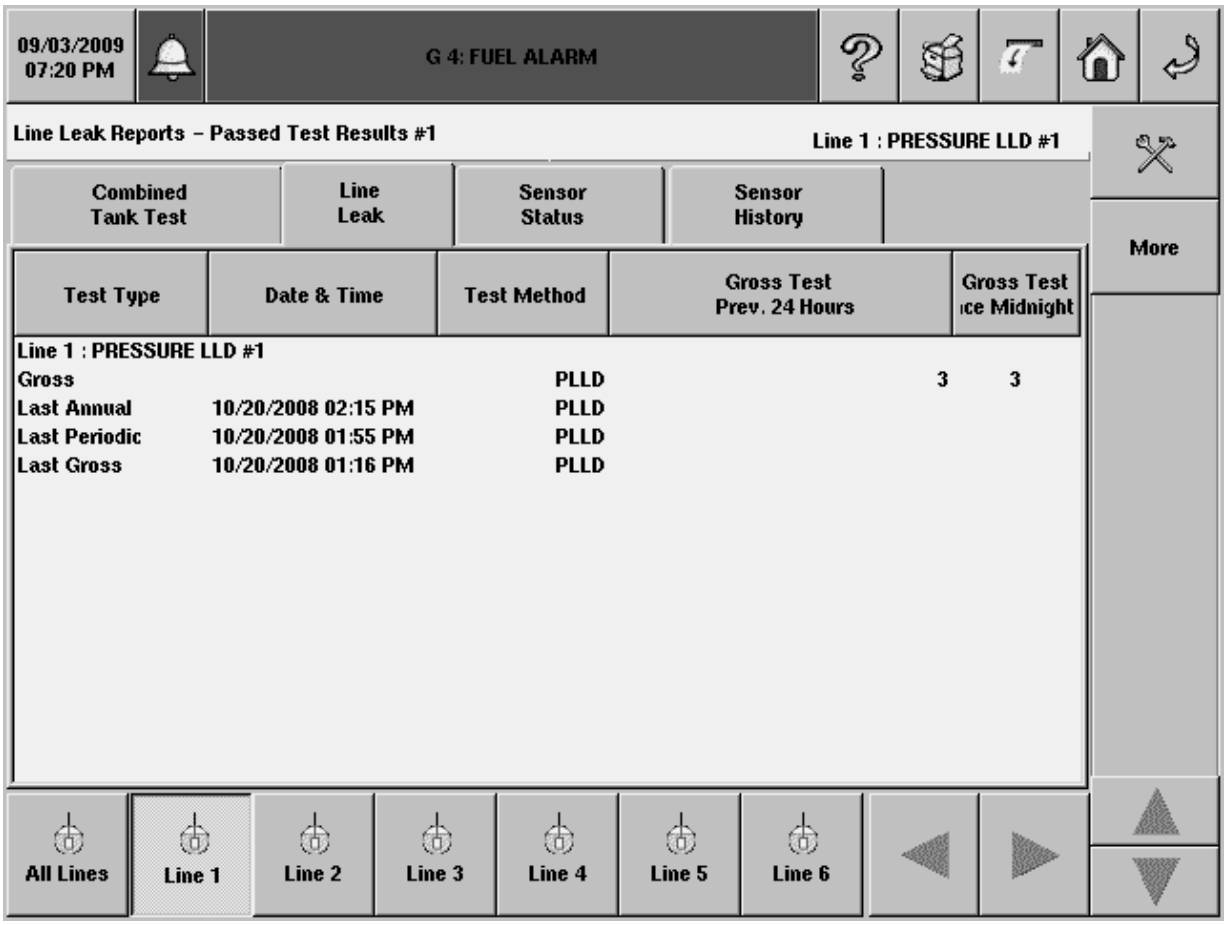
Allowable range: 0.0 to 100.0%

Control Buttons (on right of screen)

Tank Test Setup

Touch this button open the Tank Setup - Environmental/Leak Test screen

Line Leak Report Passed Test Results



The Line Leak Reports - Passed Test Results displays information about most-recent and historical line leak tests. This report area is visible only if your console has the PLLD option.

Report Column Descriptions

Test Type

- First Annual (First 0.1 gph [0.38 lph] test passed for a given month)
- First Periodic (First 0.2 gph [0.76 lph] test passed for a given month)
- Last Annual (Last 0.1 gph test passed)
- Last Gross (Last 3.0 gph [11.3 lph] test passed)
- Last Periodic (Last 0.2 gph test passed)

There will only be one entry of Gross test history for each line.

Date and Time

This column lists the date and time of the test.

Test Method

This column lists the method of the line leak test, for example, Pressure Line Leak Detection (PLLD)

Gross Test Prev. 24 Hours

This column lists the number of gross tests passed in the previous 24 hours. This column is for Gross tests only and may be blank. There will be only one entry of Gross test history per line.

Allowable entries: 0 to 672

Gross Test Since Midnight

This column lists the number of gross tests passed since midnight. This column is for Gross tests only and may be blank. There will be only one entry of Gross test history per line.

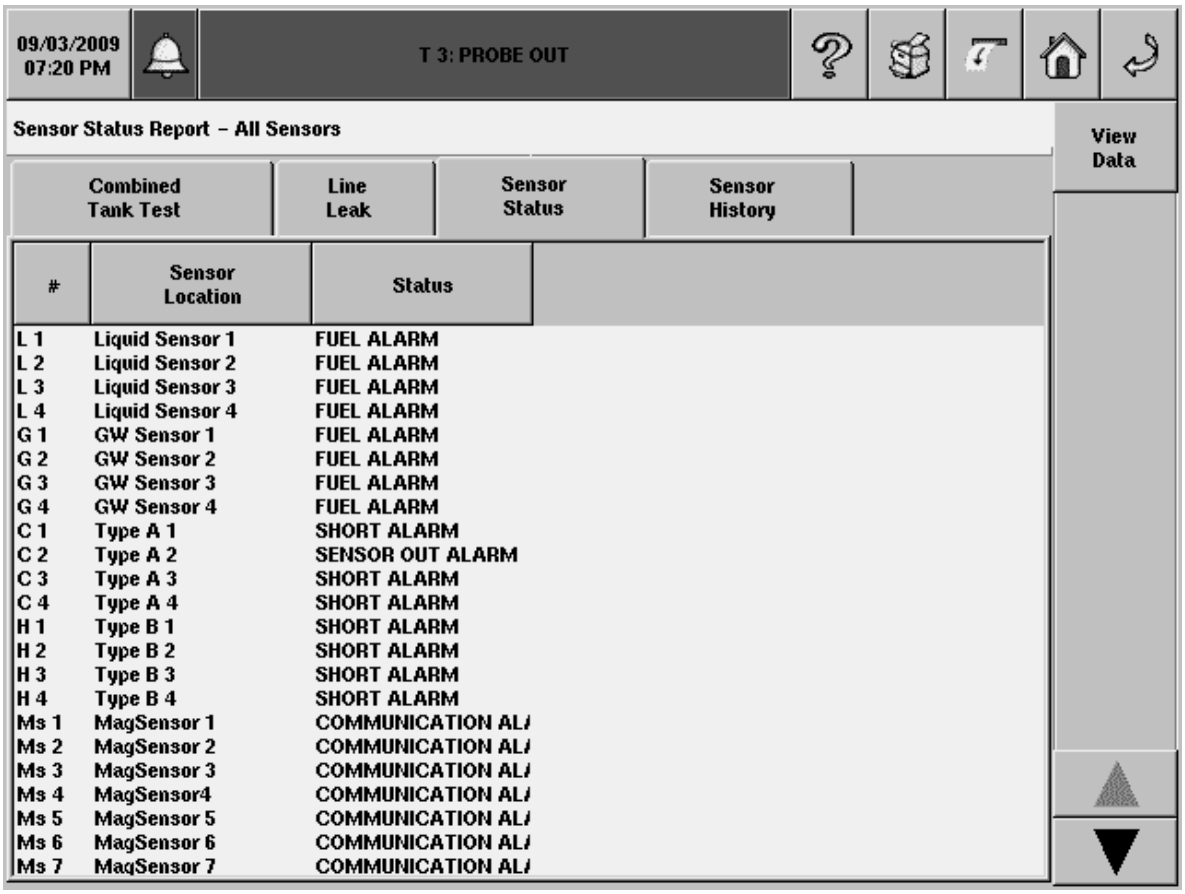
Allowable entries: 0 to 672

Control Button (on right of screen)

Setup

Touch this button open the Pump and Lines Setup - Lines screen.

Environmental Reports - Sensor Status



The Sensor Status Report - All Sensors screen displays a report with the current status of the following standalone sensors:

- Liquid
- Type A (2-Wire CL)
- Type B (3-Wire CL)
- Mag
- Ground Water
- Vapor

If a sensor is not in alarm, it will display the sensor as 'normal'. If there are any active sensor alarms they will be displayed on this screen. At most there will be only 1 line per sensor either showing the sensor in alarm or in a normal condition. Since this report displays all sensor types, there is no bottom sensor ribbon used on this report. No select range is required as this a current status report and no report filter will be used because the user can sort by sensor type.

Report Column Descriptions

#

This column lists the device code followed by device iteration number, e.g., L1.

Sensor Location

This column lists the location of the sensor, e.g., Regular STP Pump.

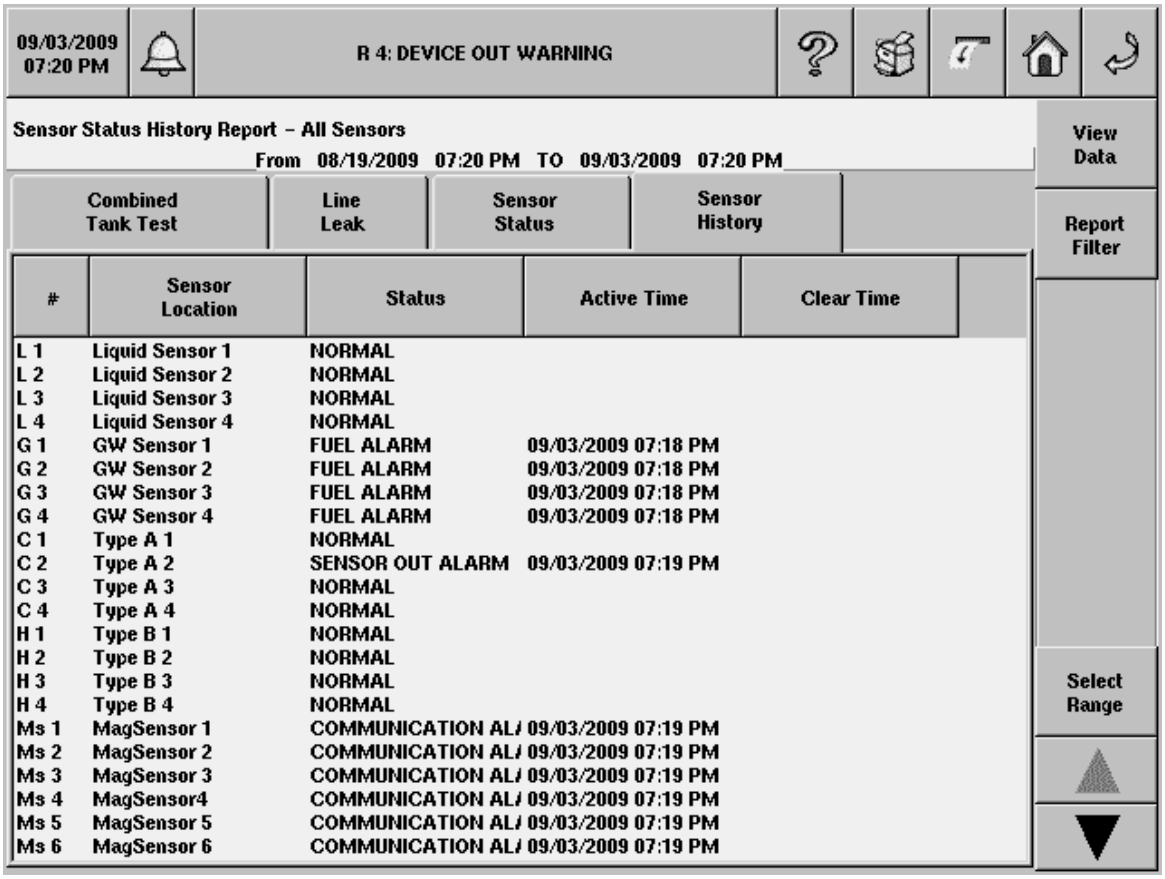
Status

This column lists the sensor status, as applicable.

Possible messages (depending on sensor type):

- Normal
- Fuel Alarm
- Out Alarm
- Short Alarm
- Water Alarm
- Water Out Alarm
- High Liquid Alarm
- Low Liquid Alarm
- Liquid Warning
- Setup Data Warning
- Communication Alarm
- Fault Alarm
- Fuel Warning
- Fuel Alarm
- Water Warning
- Water Alarm
- High Liquid Warning
- High Liquid Alarm
- Low Liquid Warning
- Low Liquid Alarm
- Temperature Warning
- Relay Active
- Install Alarm

Environmental Reports - Sensor Status History



The Sensor Status History report displays the status of all sensors over a selected time period.

There can be multiple records (or rows) displayed for each sensor, depending on the number of alarm events during the selected time period. There will always be at least one record per configured and selected sensor. If a Sensor has no Alarms during the selected time period then there will be one record with no Active Time showing a "Normal" status for that sensor.

Screen Title Bar

The top row will show the tab selected. In the example below : Sensor Status History Report - All Sensors
The second row will show the selected data time range of the report. In the example below: From *Date/Time* To *Date/ Time.*

Report Column Descriptions

#

This column lists the device code followed by device iteration number, e.g., C1.

Sensor Location

This column lists the location of the sensor.

Status

This column lists the sensor status, as applicable.

Possible messages include:

- Normal
- Fuel Alarm
- Out Alarm
- Short Alarm
- Water Alarm
- Water Out Alarm
- High Liquid Alarm
- Low Liquid Alarm
- Liquid Warning
- Setup Data Warning
- Communication Alarm
- Fault Alarm
- Fuel Warning
- Fuel Alarm
- Water Warning
- Water Alarm
- High Liquid Warning
- High Liquid Alarm
- Low Liquid Warning
- Low Liquid Alarm
- Temperature Warning
- Relay Active
- Install Alarm

Active Time

Active time is the alarm post time. This column entry is blank if the device is in a "normal" status.

Clear Time

Clear time is the alarm post time. This column entry is blank if the device is in a "normal" status

Control Buttons (on right of screen)

Report Filter

Touch this button to select an individual Sensor Status Report from your available list of sensor types (selections dependent on installed sensors):

- All Sensors
- Liquid
- Type A (2-Wire CL)
- Type B (3-Wire CL)
- MAG
- Ground Water
- Vapor

Select Range

Touch this button to open a dialog box and select a specific time span for the report.

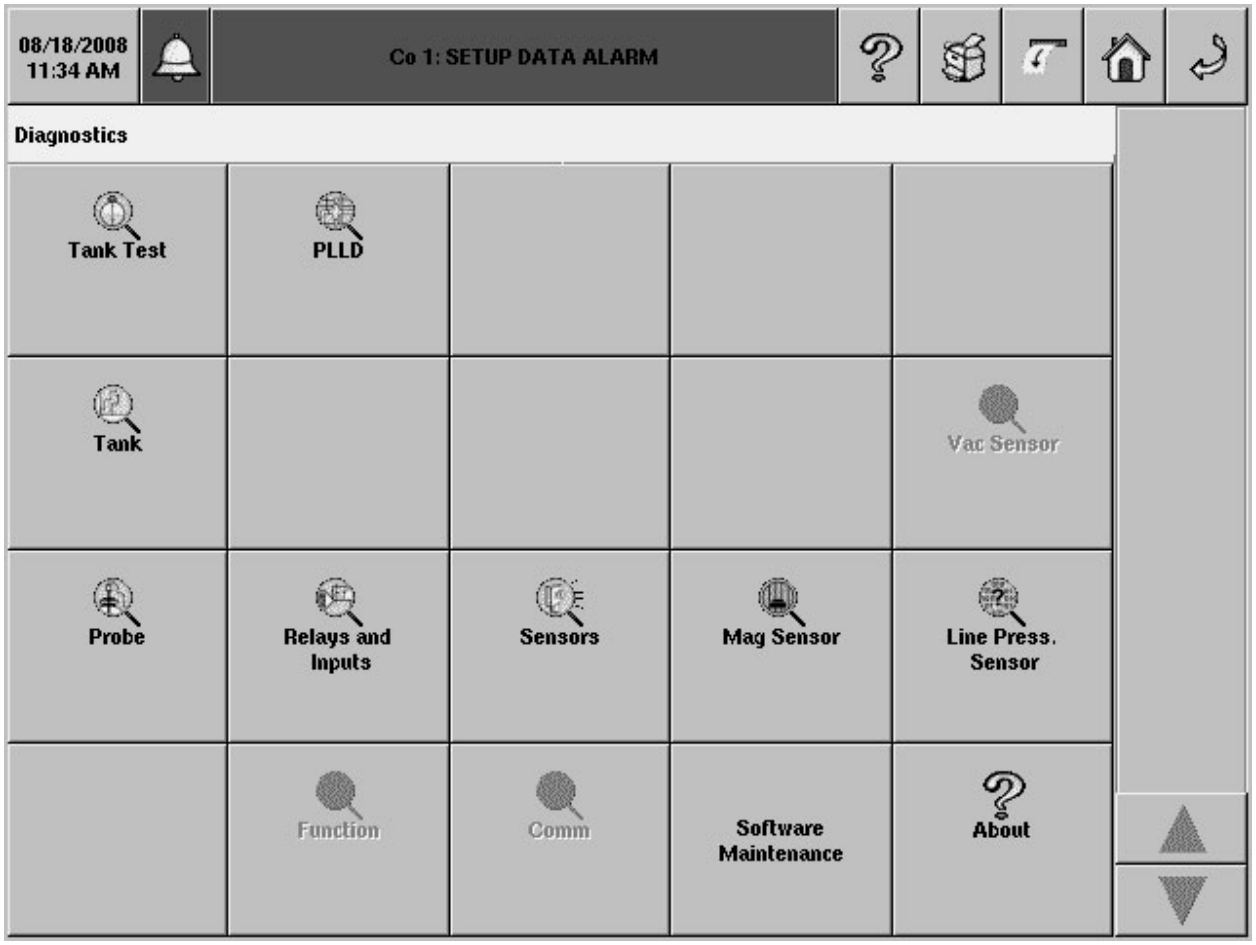
Option selections: Week, Month, Year, Date Range (Date From and Date To only), All Records
Period range: Previous, Previous n selections.
Number of Period option selections: Weeks (1 to 156), Months (1 to 36), Years (1 to 3)

Default selections: Previous year

For more information on selecting report ranges, refer to Range Selection Dialogs help topic under Specialty Dialogs in the Online Help Table of Contents.

Diagnostic Screens

Diagnostics Main Screen



The Diagnostic main screen gives you access (depending on installed features) to the site's current and historical tank and line test results. Also from Diagnostic screens, you can manually run tank tests, PLLD line tests and view technical data from monitored devices. Detailed functions of diagnostic screens, which are used primarily by trained service personnel to analyze console/device performance, are not discussed in this manual.

Tank Test

The Tank Test diagnostics contain information on all environmental tank tests. Each report has quick access to the appropriate tank test setup screen. Manual tank leak tests are run from this diagnostic.
CSLD and/or SLD tabs will be displayed only if these features are supported and at least one tank has the respective feature enabled. Current or active reports will not be visible for tanks that are not configured or inactive. Historic reports will be available for tanks even if they are not configured or if they are inactive.

Available Tank Test Diagnostic Reports:

- CSLD Test Status Report (current CSLD test status)
- CSLD Rate Table Report (CSLD rate table)
- CSLD Monthly Report (CSLD state changes)
- SLD Last Test Report (most recently completed SLD tests)
- SLD In-Progress Reports (SLD active tests)
- SLD History Report (all SLD test results)

Tank

Tank diagnostics contains information related to tank inventory volumes, tank chart, and Accuchart.

Available Tank Diagnostic Reports:

- 30 Second Samples Report (30 second inventory samples)
- Tank Chart Report (tank chart report)

PLLD

The PLLD Diagnostics provide access to the PLLD Manual Test interface and all PLLD diagnostic reports. Each report has quick access to the PLLD setup screen.

Current or active reports will not be visible for PLLD Lines that are not configured or inactive. Historic reports will be available for PLLD lines even if they are not configured or if they are inactive, as long as they have data to display.

Available PLLD Reports and Diagnostic screens

- PLLD Status Report (general status and diagnostic information about PLLD)
- PLLD Manual Test (start or stop PLLD tests manually for one or all lines)
- 3.0 gph (11.3 lph) Tests Report (3.0 gph diagnostics test results)
- Mid-Range Tests Report (mid-range Diagnostics Test Results)
- No-Vent Aborts Report (No-Vent Test Aborts Information)
- 0.2 gph (0.76 lph) Auto-Confirm Report (0.2 gph auto-confirm data)
- 0.2 gph (0.76 lph) Tests Report (0.2 gph diagnostics test results)
- 0.1 gph (0.38 lph) Auto-Confirm Report (0.1 gph auto-confirm data)
- 0.1 gph (0.38 lph) Tests Report (0.1 gph diagnostics test results)
- Pressure Offset (pressure offset history interface for a pressure offset test)

Probe

The Probe diagnostics contain information/diagnostics about probes.

Available Probe Diagnostic Reports

- General Report (general information about each probe)
- Reference Distance Report (Original and Current Reference distances for each probe)
- Last sample Report (last sample information for each probe)
- Mag Options Report (options supported by mag probes)
- Communication Report (communication health and status parameters for each probe)

Relays and Inputs

The Relays and Inputs diagnostics contain information on relays and external inputs.

Available Relay and External Inputs Diagnostic Reports

- Relays (diagnostic information about each relay)
- External Inputs (diagnostic information about each external input)

Sensors

The Sensor diagnostics contain reports on the activity and condition of Liquid, Vapor, Groundwater, 2-wire CL and 3-wire CL sensors.

Available Sensor Diagnostic Reports

- Liquid (Diagnostic information about each Liquid Sensor)
- Vapor (Diagnostic information about each Vapor Sensor)
- Groundwater (Diagnostic information about each Groundwater Sensor)
- 2-Wire CL (diagnostic information about each 2-wire CL sensor)
- 3-Wire CL (diagnostic information about each 3-wire CL sensor)

Mag Sensors

Mag Sensor diagnostics contain reports on the activity and condition of Mag Sensors.

Available Mag Sensor Diagnostic Reports

- General (general diagnostic information)
- Comm (communication diagnostic information)
- Constants (constants diagnostic information)
- Channel (channel data)

Line Pressure Sensors

Line Pressure Sensor diagnostics contain reports on the activity and condition of Line Pressure Sensors.

Available Line Pressure Sensor Diagnostic Reports

- General (general diagnostic information)
- Comm (communication diagnostic information)

- Constants (constants diagnostic information)
- Channel (channel data)

Software Maintenance

The Software Maintenance diagnostics allows you to upload software updates from a V-R Recovery thumb drive that is plugged into an available console USB port, activate the uploaded features into the system and perform system backup and recovery operations.

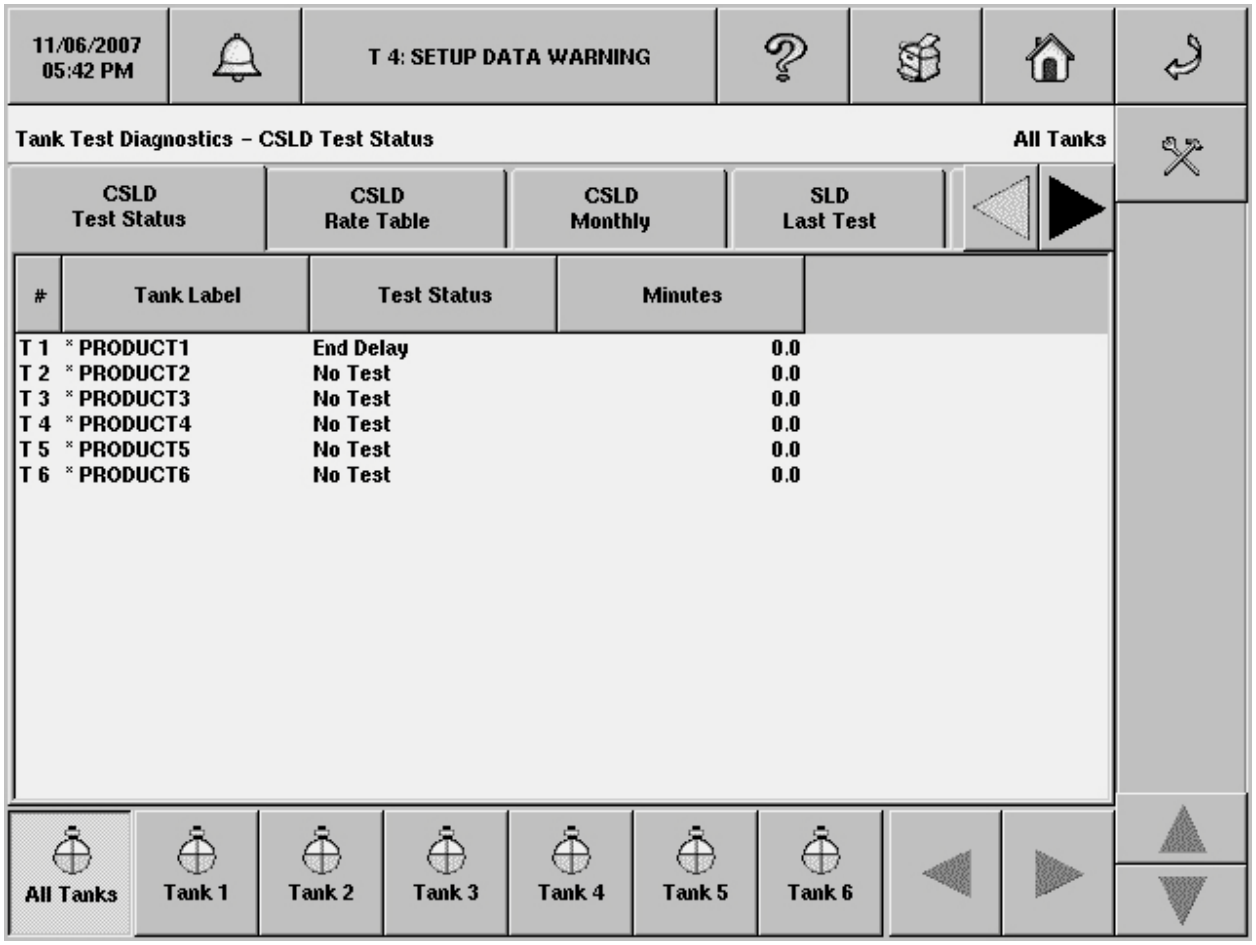
Available Software Maintenance Screens

- File Manager - controls system software recovery and backup operations
- USB Download - controls the downloading of software features from the V-R Recovery Thumb drive
- Activation - controls the activation of downloaded software features

About

The About - System screen displays your console's software version and information on installed features.

Tank Test Diagnostics - CSLD Test Status



The purpose of this screen is to display the CSLD current test status. The default view is all tanks. This report gives up-to-the-minute results; there is no history.

Siphon manifolded tanks are treated as one tank in CSLD. The tanks in the manifolded set share the same results.

Tanks that are not configured, do not have CSLD enabled, or are configured with a probe that does not support leak detection will not be accessible from this screen or included in this report.

Report Column Descriptions

Status

Possible messages that will display in the Status column:

- No Test
- Test Pre-start
- Test in progress
- Test complete
- Test abort
- Test pre-delay
- Test end delay

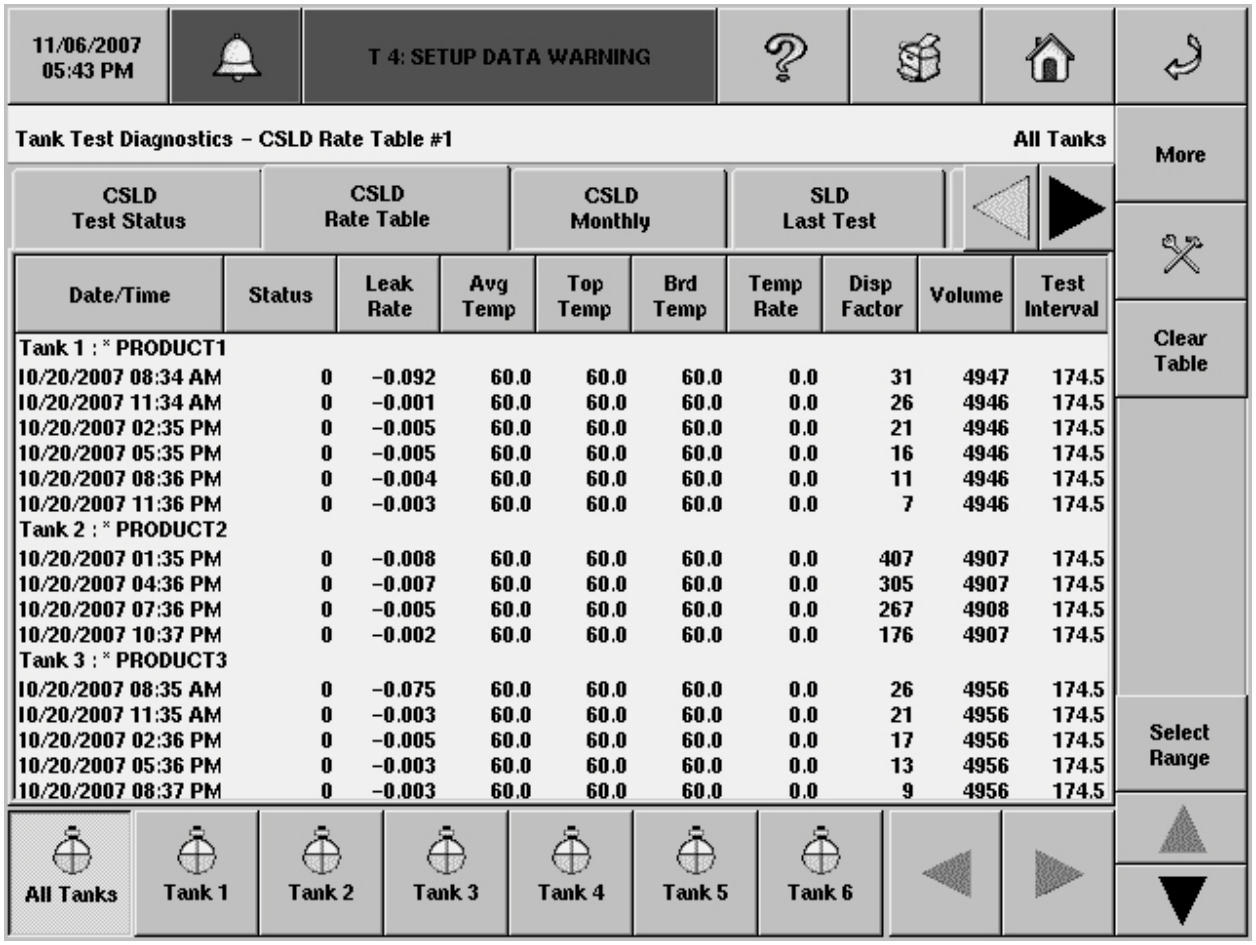
Minutes

Value range: 0.0 to 180.0 minutes

CSLD Test Status Refresh Rate

The CSLD Test Status data will be refreshed every 30 seconds.

Tank Test Diagnostics - CSLD Rate Table



Date/Time	Status	Leak Rate	Avg Temp	Top Temp	Brd Temp	Temp Rate	Disp Factor	Volume	Test Interval
Tank 1 : * PRODUCT1									
10/20/2007 08:34 AM	0	-0.092	60.0	60.0	60.0	0.0	31	4947	174.5
10/20/2007 11:34 AM	0	-0.001	60.0	60.0	60.0	0.0	26	4946	174.5
10/20/2007 02:35 PM	0	-0.005	60.0	60.0	60.0	0.0	21	4946	174.5
10/20/2007 05:35 PM	0	-0.005	60.0	60.0	60.0	0.0	16	4946	174.5
10/20/2007 08:36 PM	0	-0.004	60.0	60.0	60.0	0.0	11	4946	174.5
10/20/2007 11:36 PM	0	-0.003	60.0	60.0	60.0	0.0	7	4946	174.5
Tank 2 : * PRODUCT2									
10/20/2007 01:35 PM	0	-0.008	60.0	60.0	60.0	0.0	407	4907	174.5
10/20/2007 04:36 PM	0	-0.007	60.0	60.0	60.0	0.0	305	4907	174.5
10/20/2007 07:36 PM	0	-0.005	60.0	60.0	60.0	0.0	267	4908	174.5
10/20/2007 10:37 PM	0	-0.002	60.0	60.0	60.0	0.0	176	4907	174.5
Tank 3 : * PRODUCT3									
10/20/2007 08:35 AM	0	-0.075	60.0	60.0	60.0	0.0	26	4956	174.5
10/20/2007 11:35 AM	0	-0.003	60.0	60.0	60.0	0.0	21	4956	174.5
10/20/2007 02:36 PM	0	-0.005	60.0	60.0	60.0	0.0	17	4956	174.5
10/20/2007 05:36 PM	0	-0.003	60.0	60.0	60.0	0.0	13	4956	174.5
10/20/2007 08:37 PM	0	-0.003	60.0	60.0	60.0	0.0	9	4956	174.5

The CSLD Rate Table diagnostic report lists detailed data for the last 30 days of CSLD leak tests. A maximum of 80 of the most recent tests are stored in the rate table. The default view is 30 days of data for all tanks.

Siphon manifolded tanks are treated as one tank in CSLD. The tanks in the manifolded set share the same table and results. Deleting the table for any tank within the set will in effect delete the table of all the members in the set.

You will only be able to access tanks that have CSLD enabled or have CSLD history.

Report Column Descriptions

Date/Time

Value range: Date and Time

Status

0 = Test valid
1 = Test rejected - duration too short
2 = Test rejected - start time too close to a delivery
3 = Test rejected - excessive dispensing prior to test
4 = Test rejected - excessive temperature change during test
6 = Test rejected -leak rate outlier

Leak Rate

Value range: -26.417 to 26.417 gal/hour (-99.999 to 99.999 L/hour)

Avg Temp

Value range: -40.0 to 140.0°F (-40.0 to 60.0°C)

Top Temp

Value range: -40.0 to 140.0°F (-40.0 to 60.0°C)

Brd Temp

Value range: -40.0 to 140.0°F (-40.0 to 60.0°C)

Temp Rate

Note: The Temp rate field does not use the offset factor 32 for conversion of °C to °F

Value range: -40.0 to 99.9°F/hour (-22.2 to 55.5°C/hour)

Disp Factor

Value range: 0 to 264,172 gal (0 to 999,999L)

Volume

Value range: 0 to 264,172gal (0 to 999,999L)

Test Interval

Value range: 0 to 672.0 hours (28 days maximum)

Last Dlvy

Value range: 0 to 9999.9 hours

Ullage

Value range: 0 to 264,172gal (0 to 999,999L)

Evap Rate

Value range: 0 to 2.6 gal/Hour (0 to 9.9L/Hour)

Control Buttons (right of screen)

CSLD Test Setup

Touch this button open the Tank Setup - CSLD Test Setup screen

Clear Table

You should manually clear the CSLD Rate Table if data, known to be inaccurate, had been stored in the table and the source of the inaccurate data was subsequently removed (e.g., after making tank plumbing repairs).

IMPORTANT! DO NOT CLEAR THE CSLD RATE TABLE UNLESS IT IS ABSOLUTELY NECESSARY. DATA CLEARED FROM THIS TABLE CAN NOT BE RECOVERED!

Touch the Clear Table button to clear the 30 day CSLD rate table. You will be prompted to confirm this action. The warning "Are you sure you want to clear the CSLD rate table?" is displayed, with OK and Cancel buttons. If the OK button is selected, the dialog is closed, the CSLD rate table is cleared, and the report is refreshed to reflect the change. If the Cancel button is selected, the dialog is closed and the report view is unchanged. If the Clear Table button is selected when the current tank selection is "All Tanks", the following error message is displayed: "This operation is valid for a single tank only".

Select Range

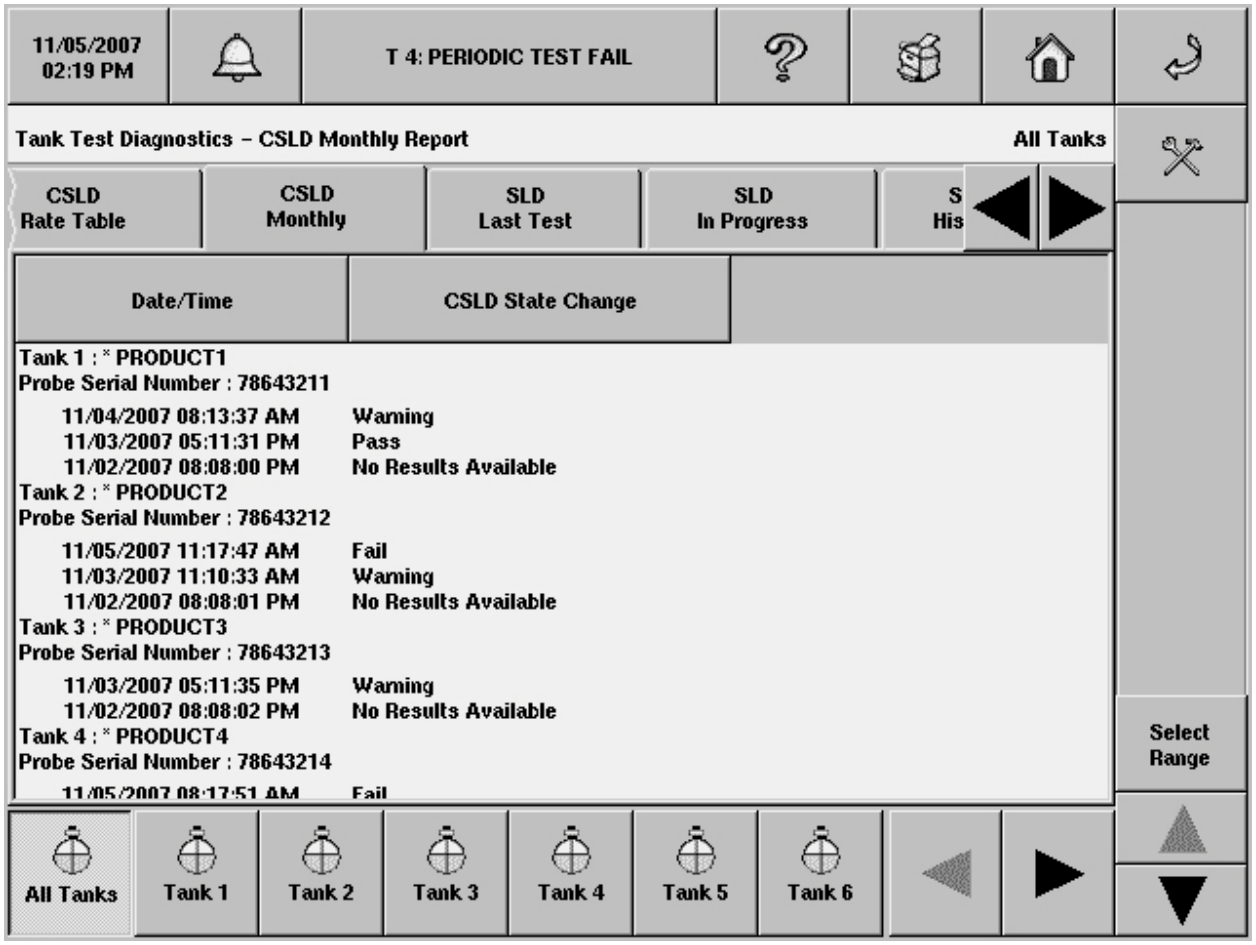
Touch this button to setup the report's contents:

Select Option List
Select data for report: All Records, Day, Week, Month, Year, Date Range

Period Option List
Select period: Previous, Previous n selections

Select Tank(s)
Select tank(s) to report: "All Tanks" or "Current Tank"

Tank Test Diagnostics - CSLD Monthly



The CSLD Monthly Diagnostics report displays the 0.2 gph (0.76 lph) CSLD tests for the current or previous month with state changes for each test. The default view is all tanks for the current month.

Siphon manifolded tanks are treated as one tank in CSLD. The tanks in the manifolded set share the same table and results. Deleting the table for any tank within the set will in effect delete the table of all the members in the set. All tank probe serial numbers will be listed in the report for siphon manifolded tanks.

You will only be able to access tanks that have CSLD enabled or have CSLD history.

Report Column Descriptions

Date/Time

Value range: Date and Time

CSLD State Change

Possible results that will display in this column:

- Pass
- Fail
- Warning
- No results available
- Invalid
- Increase
- No idle data
- Active

CSLD Monthly Report Refresh Rate

The CSLD Monthly Report data will be updated on change of state.

Control Buttons (on right of screen)

Select Range

Touch this button to setup the report's contents:

Select Option List
Select data for report: All Records, Day, Week, Month, Year, Date Range

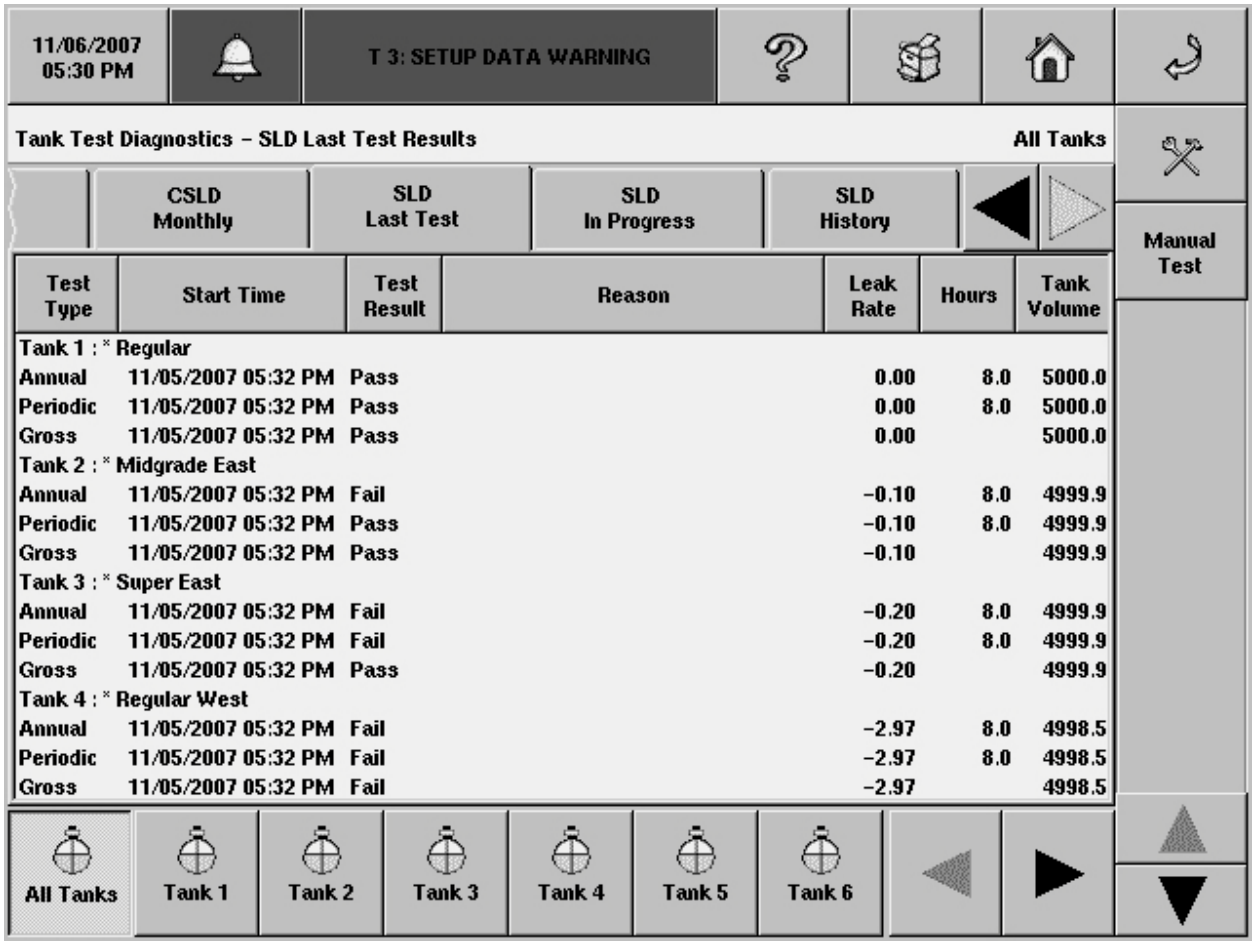
Period Option List
Select period: Previous, Previous n selections

Select Tank(s)
Select tank(s) to report: "All Tanks" or "Current Tank"

CSLD Test Setup

Touch this button open the Tank Setup - CSLD Test Setup screen.

Tank Test Diagnostics - SLD Last Test



The SLD Last Test screen is a report showing the most recently completed SLD test results for all tanks or a specific tank. NOTE: Tanks must have the SLD Environmental Test Method enabled.

Report Column Descriptions

The SLD Last Test report columns contain the following information depending on test results:

Test Type

Annual, Gross, or Periodic

Start Time

Date and time test started

Test Result

Pass, Fail, or Invalid

Reason

The possible messages that will display in this column are:

- Head Temp Chg (probe head temperature changed too much)
- Insuf Smpl on First Per (insufficient TLS samples In first period)
- Insuf Smpl on Last Per (insufficient TLS samples In last period)
- Invalid Fuel Level (insufficient separation between fuel and water floats)
- Percent Vol Too Low (tank volume too low)
- Product Level Increase (leak rate is excessively positive)
- Recent Delivery (test started too soon after delivery)
- SLD Float size too small (fuel float diameter too small)
- SLD Low Level Err (fuel Level too low to temperature compensate)
- SLD Probe Incapable of Test (probe doesn't support test)
- Temp Chg (average fuel temperature changed too much)
- Temp out of Range (one or more in-fuel thermistors out of range)
- Test too Short (test too short)
- Zone Temp Chg (one or more in-fuel thermistors changed too much)

Leak Rate

Value range: -26.42 to 26.42 gal (-99.99 to 99.99 L)

Hours

Value range: 0.0 to 24.0 (blank for gross test)

Tank Volume

Value range: 0.0 to 264,172.0 gal (0.0 to 999,999.0 L)

Control Buttons (right of screen)

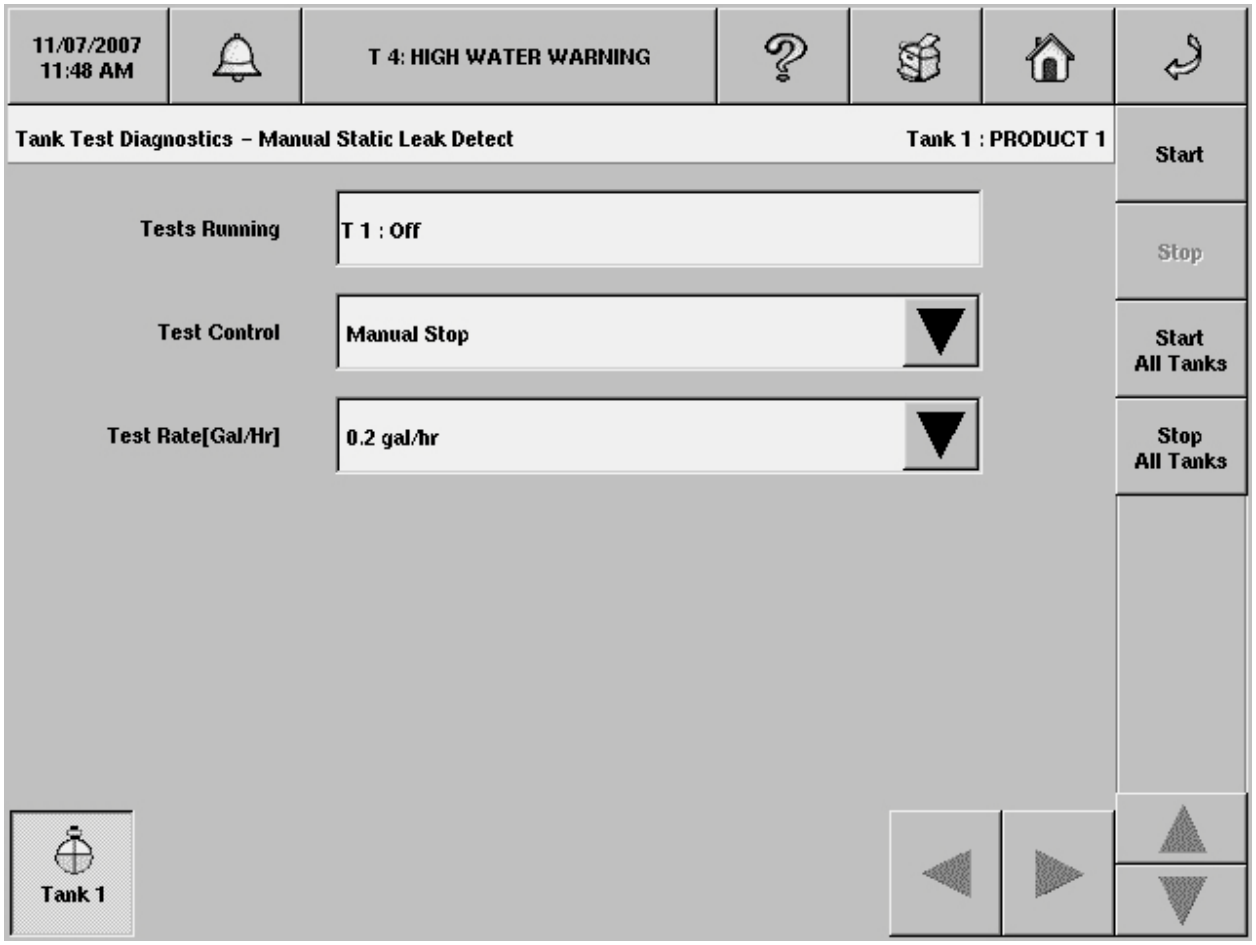
Setup

Touch this button to open the Tank Setup - SLD Test Setup screen

Manual Test

Touch this button to access the Manual Static Leak Detect screen to start a SLD test.

Manual Static Leak Detect screen



This screen displays when you touch the Manual Test button from any of the Tank Test Diagnostic SLD screens. You select all parameters necessary to start an SLD test using this dialog. This dialog allows you to start or stop an SLD test for All Tanks or a single tank.

Notes:

1. The Test Control, Test Rate, and Test Duration fields will be disabled when an SLD Test is active.
2. Tank tests will unavailable for tanks that do not have SLD enabled, have an un-configured probe, or are configured with a probe that does not support leak detection.

Test Running

Tests Running is a read-only field. The field will display the Tanks (i.e. T1, T2, T3, T4) that are currently under an SLD test. If a test starts or stops due to automatic Scheduling, the Tests Running field will update to reflect the current status. The Tests Running field will update immediately when a test is stopped or a test completes.

Test Control

Allowable selections: Timed duration, Manual Stop
Default: Timed duration

Test Rate

Allowable selections: 0.1 gal/hr (0.38 ltr/hr), 0.2 gal/hr (0.76 ltr/hr)
Default: 0.2 gal/hr

Test Duration

The Test Duration field will be present only when the Test Control is set to Timed Duration.

Allowable selections: 2 - 24 hours
Default: 2 hours

Test Control Buttons (on right of screen)

Start

Touch this button to start a manual test of a selected tank. This button is disabled if tests are running for the currently selected tank, or if Start All Tanks is selected to start tests for all tanks.

Stop

Touch this button to stop a manual test of a selected tank. This button is disabled if test are not running for the currently selected tank, or if Stop All Tanks is selected to stop tests for all tanks.

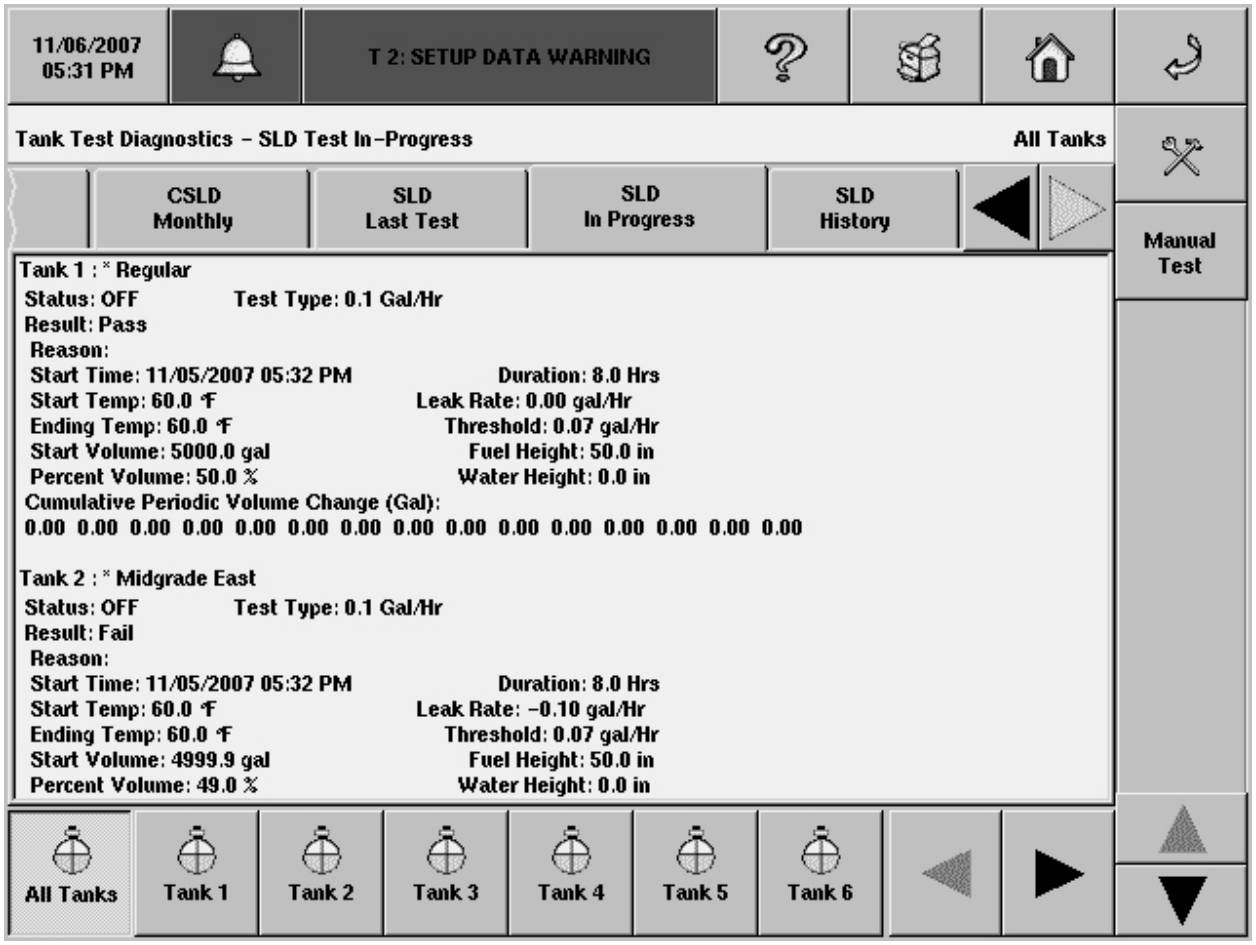
Start All Tanks

Touch this button to start an SLD test for all tanks using the field selections for an individual tank.

Stop All Tanks

Touch this button to stop all SLD tests that are running.

Tank Test Diagnostics - SLD In-Progress



The SLD In-Progress report will display any SLD tests that are currently active, or in-progress. This screen will be refreshed every 30 seconds.

The Status field will indicate if a SLD test is not active for the currently selected tank(s). All field values are displayed after the first period of the test (15 minutes for gross tests or 30 minutes for precision tests).

Tanks must have SLD enabled and be configured with a probe that supports leak detection to be visible in this report.

Report Column Descriptions

Status

If there is no active SLD test, Off will be displayed in the data view for the selected tank. The status field shows Off if the test is completed (shows result of last test), else if test is active, the status field shows On.

Value range: Status of tanks under test, e.g., T 1: ON, T 2: OFF

Test Type

Value range: 0.1 gal/hr Test (0.38 L/hr Test), 0.2 gal/hr. Test (0.76 L/hr Test)

Result

Possible messages:

- Invalid
- Pass
- Fail (may be blank)

Reason

More than one reason may be displayed in a comma separated list. The reasons may change as the test progresses.

The possible messages that will display in this column are:

- Head Temp Chg (probe head temperature changed too much)
- Insuf Smpl on First Per (insufficient TLS samples In first period)
- Insuf Smpl on Last Per (insufficient TLS samples In last period)
- Invalid Fuel Level (insufficient separation between fuel and water floats)
- Percent Vol Too Low (tank volume too low)
- Product Level Increase (leak rate is excessively positive)
- Recent Delivery (test started too soon after delivery)
- SLD Float size too small (fuel float diameter too small)
- SLD Low Level Err (fuel Level too low to temperature compensate)
- SLD Probe Incapable of Test (probe doesn't support test)
- Temp Chg (average fuel temperature changed too much)
- Temp out of Range (one or more in-fuel thermistors out of range)
- Test too Short (test too short)
- Zone Temp Chg (one or more in-fuel thermistors changed too much)

Start Time

Value range: Date/Time

Duration

Value range: 0 - 24 hours (blank for gross test)

Start Temp

Value range: -40.0 to 140.0°F (-40.0 to 60.0°C)

Leak Rate

Value range: -26.417 to 26.417 gal (-99.999 to 99.999L)

End Temp

Value range: -40.0 to 140.0°F (-40.0 to 60.0°C)

Threshold

Value range: 0.00 to 9.99 gal (0.00 to 37.82L)

Start Volume

Value range: 0 to 264,172 gal (0 to 999,999L)

Fuel Height

Value range: 0 to 390.0 in. (0 to 9906.0mm)

Percent Volume

Value range: 0.0 to 100.0

Water Height

Value range: 0 to 390.0 in. (0 to 9906.0mm)

Cumulative Periodic Volume Change

There is one Cumulative Periodic Volume Change field for each completed one half hour of test duration, up to 47 fields maximum. The fields will be displayed in rows of ten fields maximum.

Value range: -26.41 to 26.41 gal (-99.99 to 99.99L)

SLD Test In-Progress Report Refresh Rate

The SLD Test In-Progress Report data will be refreshed every 30 seconds.

Test Control Buttons (on right of screen)

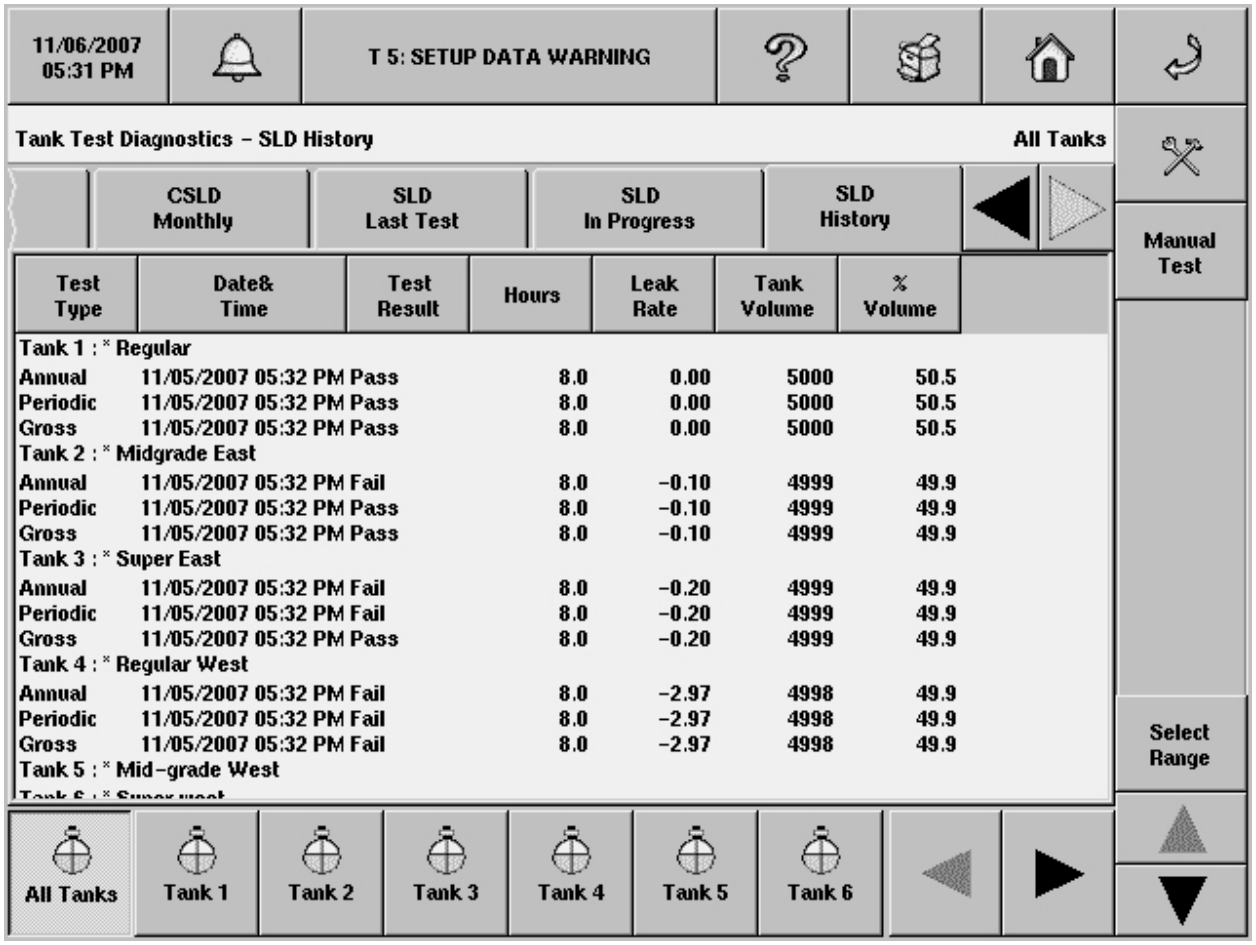
Setup

Touch this button to open the Tank Setup - SLD Test Setup screen.

Manual Test

Touch this button to open the Manual Static Leak Detect screen to start or stop a SLD test.

Tank Test Diagnostics - SLD History



Test Type	Date& Time	Test Result	Hours	Leak Rate	Tank Volume	% Volume
Tank 1 : * Regular						
Annual	11/05/2007 05:32 PM	Pass	8.0	0.00	5000	50.5
Periodic	11/05/2007 05:32 PM	Pass	8.0	0.00	5000	50.5
Gross	11/05/2007 05:32 PM	Pass	8.0	0.00	5000	50.5
Tank 2 : * Midgrade East						
Annual	11/05/2007 05:32 PM	Fail	8.0	-0.10	4999	49.9
Periodic	11/05/2007 05:32 PM	Pass	8.0	-0.10	4999	49.9
Gross	11/05/2007 05:32 PM	Pass	8.0	-0.10	4999	49.9
Tank 3 : * Super East						
Annual	11/05/2007 05:32 PM	Fail	8.0	-0.20	4999	49.9
Periodic	11/05/2007 05:32 PM	Fail	8.0	-0.20	4999	49.9
Gross	11/05/2007 05:32 PM	Pass	8.0	-0.20	4999	49.9
Tank 4 : * Regular West						
Annual	11/05/2007 05:32 PM	Fail	8.0	-2.97	4998	49.9
Periodic	11/05/2007 05:32 PM	Fail	8.0	-2.97	4998	49.9
Gross	11/05/2007 05:32 PM	Fail	8.0	-2.97	4998	49.9
Tank 5 : * Mid-grade West						

The SLD history screen displays the recent 10 (Pass or Fail) records of gross test and all Pass and Fail records of precision tests. Invalid results are not displayed in this screen.

Tanks must have SLD enabled and be configured with a probe that supports leak detection to be visible in this report.

Report Column Descriptions

Test Type

Value range: Annual, Gross, Periodic

Date & Time

Value range: Date/Time

Test Result

Value range: Pass, Fail

Hours

Value range: 0.0 to 24.0 (blank for Gross test)

Leak Rate

Value range: -26.42 to 26.42 gal/hour (-99.99 to 99.99L/hour)

Tank Volume

Value range: 0 to 264,172gal (0 to 999,999L)

%Volume

Value range: 0.0 to 100.0

SLD History Report Refresh Rate

The SLD History Report data will be refreshed every 30 seconds.

Control Buttons (right of screen)

Setup

Touch this button to open the Tank Setup - SLD Test Setup screen

Manual Test

Touch this button to access the Manual Static Leak Detect screen in which you can start a SLD test.

Select Range

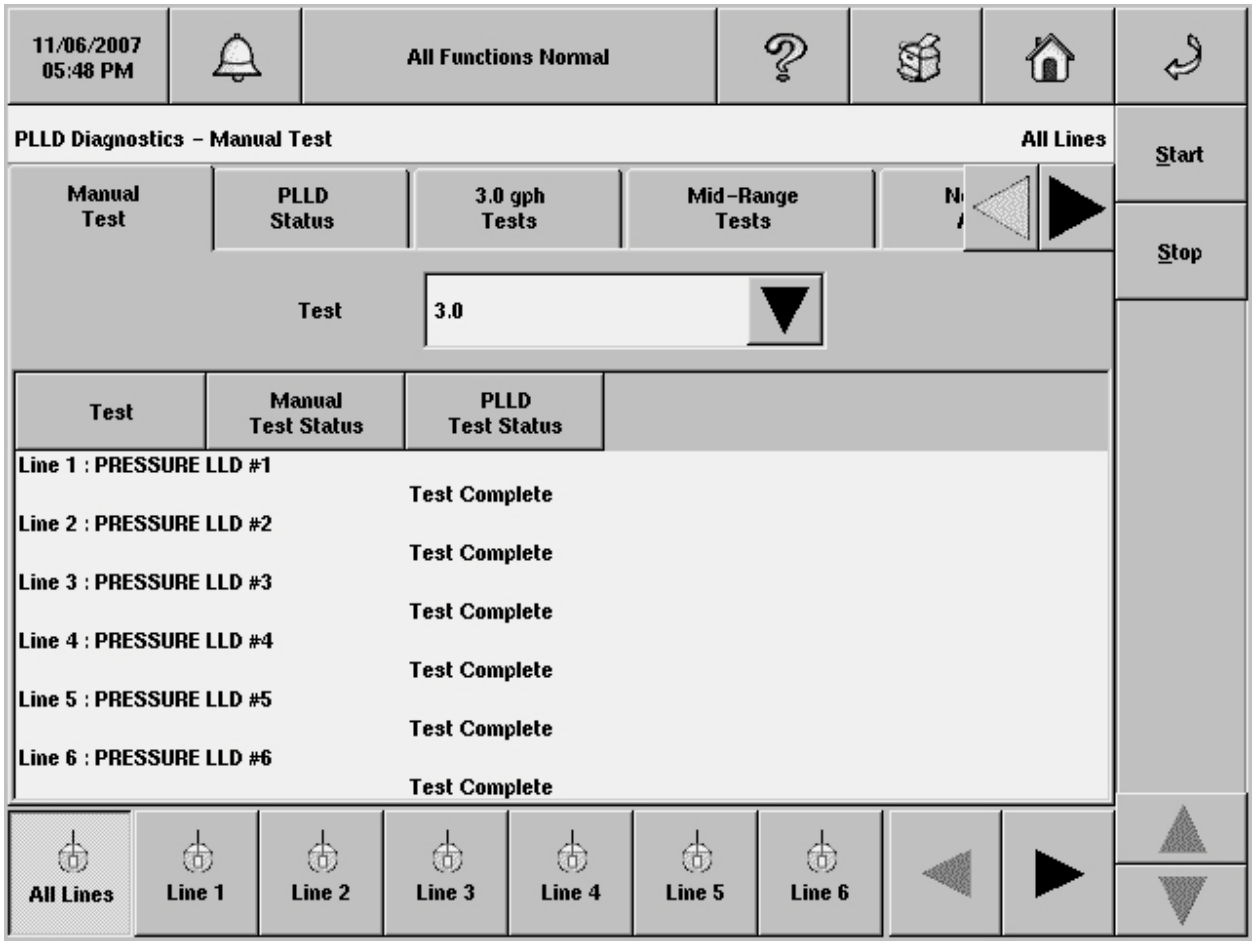
Touch this button to setup the report's contents:

Select Option List
Select data for report: All Records, Day, Week, Month, Year, Date Range

Period Option List
Select period: Previous, Previous n selections

Select Tank(s)
Select tank(s) to report: 'All Tanks' or 'Current Tank'

PLLD Diagnostics - Manual Test



The PLLD Diagnostics Manual Test screen lets you select all parameters necessary to start or stop PLLD tests (3.0 gph (11.3 lph), 0.2 gph (0.76 lph) or 0.1 gph (0.38 lph)) for individual lines or all lines at once.

Test Notes

1. Tests always run in the order: 3.0 (11.3), 0.2 (0.76), and 0.1 (0.38).

2. Approximate test times, assuming no dispense (which would restart the test(s) after the dispense) and no thermals, are 3.0 (11.3) - several minutes, 0.2 (0.76) - 30 minutes, and 0.1 (0.38) - 45 minutes.

3. A 3.0 (11.3) test runs that test only.

4. A 0.2 (0.76) test is automatically preceded by a 3.0 (11.3) test. Selecting a 0.2 (0.76) test bypasses the '0.2 (0.76) Line Test Auto-Confirm' PLLD setup selection (if enabled).

5. A 0.1 (0.38) test is automatically preceded by 3.0 (11.3) and 0.2 (0.76) tests. Selecting a 0.1 (0.38) test bypasses the '0.2 (0.76) Line Test Auto-Confirm' and '0.1 (0.38) Line Test Auto-Confirm' PLLD setup selections (if enabled).

Report Column Descriptions

Test

Value range: 0.1 (0.38), 0.2 (0.76), 3.0 (11.3)

Test Status

Possible messages include:
- Queued (a test is pending)
- In-progress (a test is in progress)

PLLD Test Status

Possible messages include:
- Disable Alarm (one of the PLLD pump disable alarms is active)
- Dispensing (product is being dispensed)
- Line Lockout (console is in a line lockout period)
- Pressure Check (checking for high pressure after a 3.0 gph (11.3 lph) test)
- Running Pump (the pump is running at the beginning of a test)
- Test Aborted (the test has aborted)
- Test Complete (the test has finished running)
- Test Delay (test is scheduled to run but it is in a delay state [usually after a line dispense])
- Test Pending (test is scheduled to run)
- 0.1 (0.38) (a 0.1 [0.38] test is in progress)
- 0.2 (0.76) (a 0.2 [0.76] test is in progress)
- 3.0 (11.3) (a 3.0 [11.3] test is in progress)

PLLD Manual Test - Refresh Rate

The PLLD Manual Test screen is updated for every 30 seconds for change of test or line state.

Test Control Buttons (on right of screen)

Start

Touch this button to start a manual test of all lines (or an Individual Line) for the selected Test - see notes below.

1. When a test is started for a line, the Test Type will become 'Manual' and the selected test will show up in the Test column. The Test Status and Line Status will show the corresponding statuses as the test runs until it is complete or it is aborted. The 0.2 (0.76) and 0.1 (0.38) tests can be started if they have been enabled in PLLD Setup. The 3.0 (11.3) test is always available when the PLLD feature has been enabled for a line.

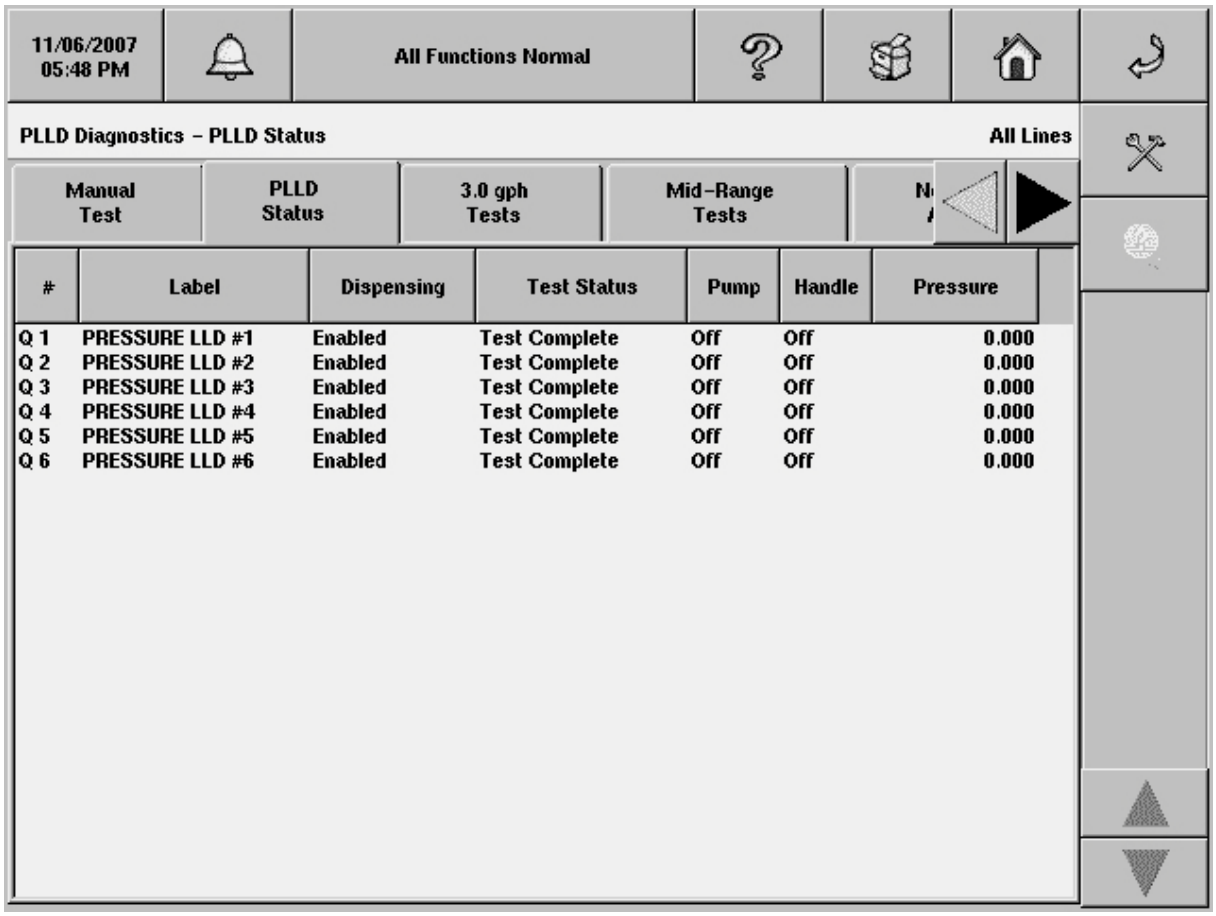
2. When the Start Button is pressed for the selected test, any tests that are currently in progress (Manual or Automatic) will be re-started (from the very beginning as Manual).

Stop

Touch this button to stop a manual test of all lines (or an Individual Line) - see note below:

1. When a test is stopped for a line, the Test Type will become blank and the Test will become blank. The Test and PLLD Test Statuses will show the status of the test and line as the test stops.

PLLD Diagnostics - PLLD Status



The PLLD Diagnostics screen displays a report with PLLD status information on all lines with PLLD.

Report Column Descriptions

(PLLD line identifier)

Value range: Device code followed by 1 to 32 (e.g., Q1)

Label (PLLD line label)

Value range: Label (assigned in setup)

Dispensing (flag)

Value range: Enabled, Disabled

Test Status

Possible messages include:

- Disable Alarm
- Dispensing
- Line Lockout (console is in a line lockout period)
- Pressure Check (checking for high pressure after a 3.0 gph [11.3 lph] test)
- Running Pump
- Test Aborted
- Test Complete
- Test Delay
- Test Pending
- Testing at 0.1 (0.38)
- Testing at 0.2 (0.76)
- Testing at 3.0 (11.3)

Pump (state)

Value range: On, Off

Handle (state)

Value range: On, Off

Pressure (measured on line)

Value range: -14.000 to 99.999 psi (-96.485 to 689.173kPa)

PLLD Status - Refresh Rate

The PLLD Status screen will be refreshed every 4 seconds.

Control Buttons (right of screen)

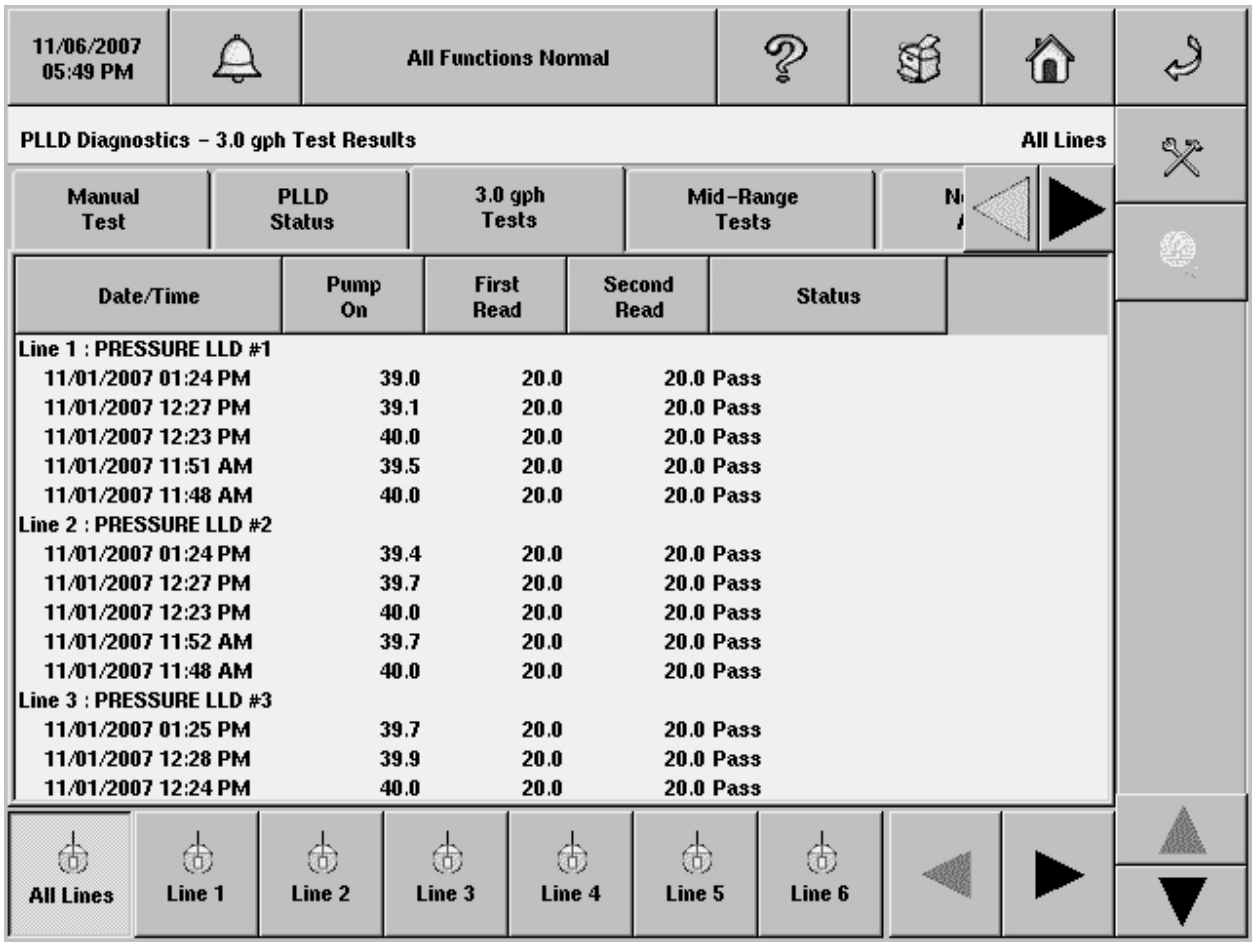
Setup

Touch this button to open the PLLD Setup 'Pump and Line Setup - PLLD' screen.

Diagnostics (line pressure sensor)

Touch this button to open the LPR Diagnostics - Communication screen.

PLLD Diagnostics - 3.0 gph (11.3lph) Test Results



The PLLD Diagnostics - 3.0 gph (11.3 lph) Tests screen displays a report with the last five 3.0 gph (11.3 lph) test results (including passed and failed tests) for all lines with PLLD.

Report Column Descriptions

Date/Time

Value range: The Date and Time of the test.

Pump On

The pressure reading when turning On the pump.

Value range: -14.0 to 99.9 psi (-96.5 to 689.2kPa)

First Read

The first pressure reading of the 3.0 (11.3) test.

Value range: -14.0 to 99.9 psi (-96.5 to 689.2kPa)

Second Read

The second pressure reading of the 3.0 (11.3) test.

Value range: -14.0 to 99.9 psi (-96.5 to 689.2kPa)

Status

Possible messages:

- Pass
- Fail
- High Pressure

Control Buttons (right of screen)

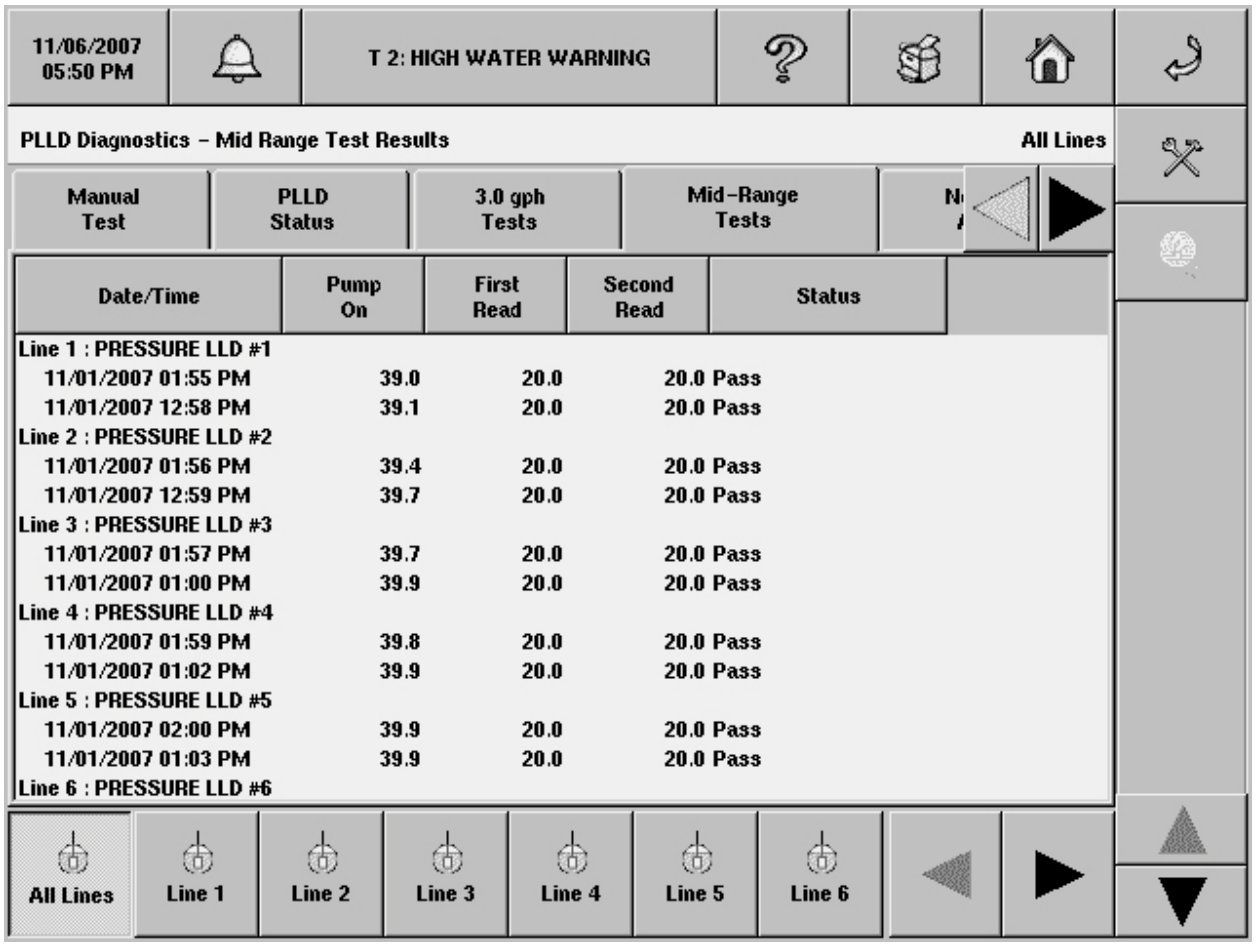
Setup

Touch this button to open the PLLD Setup 'Pump and Line Setup - PLLD' screen.

Diagnostics (line pressure sensor)

Touch this button to open the LPR Sensor Diagnostics - Communication screen.

PLLD Diagnostics - Mid-Range Test Results



The PLLD Diagnostics - Mid-Range Tests screen displays a report with the last five mid-range test results (including passed and failed tests) for all lines with PLLD.

Report Column Descriptions

Date/Time

Value range: The Date and Time of the test.

Pump On

The pressure reading when turning On the pump.

Value range: -14.0 to 99.9 psi (-96.5 to 689.2kPa)

First Read

The first pressure reading of the Mid-Range test.

Value range: -14.0 to 99.9 psi (-96.5 to 689.2kPa)

Second Read

The second pressure reading of the Mid-Range test.

Value range: -14.0 to 99.9 psi (-96.5 to 689.2kPa)

Status

Possible messages:

- Pass
- Fail

Control Buttons (right of screen)

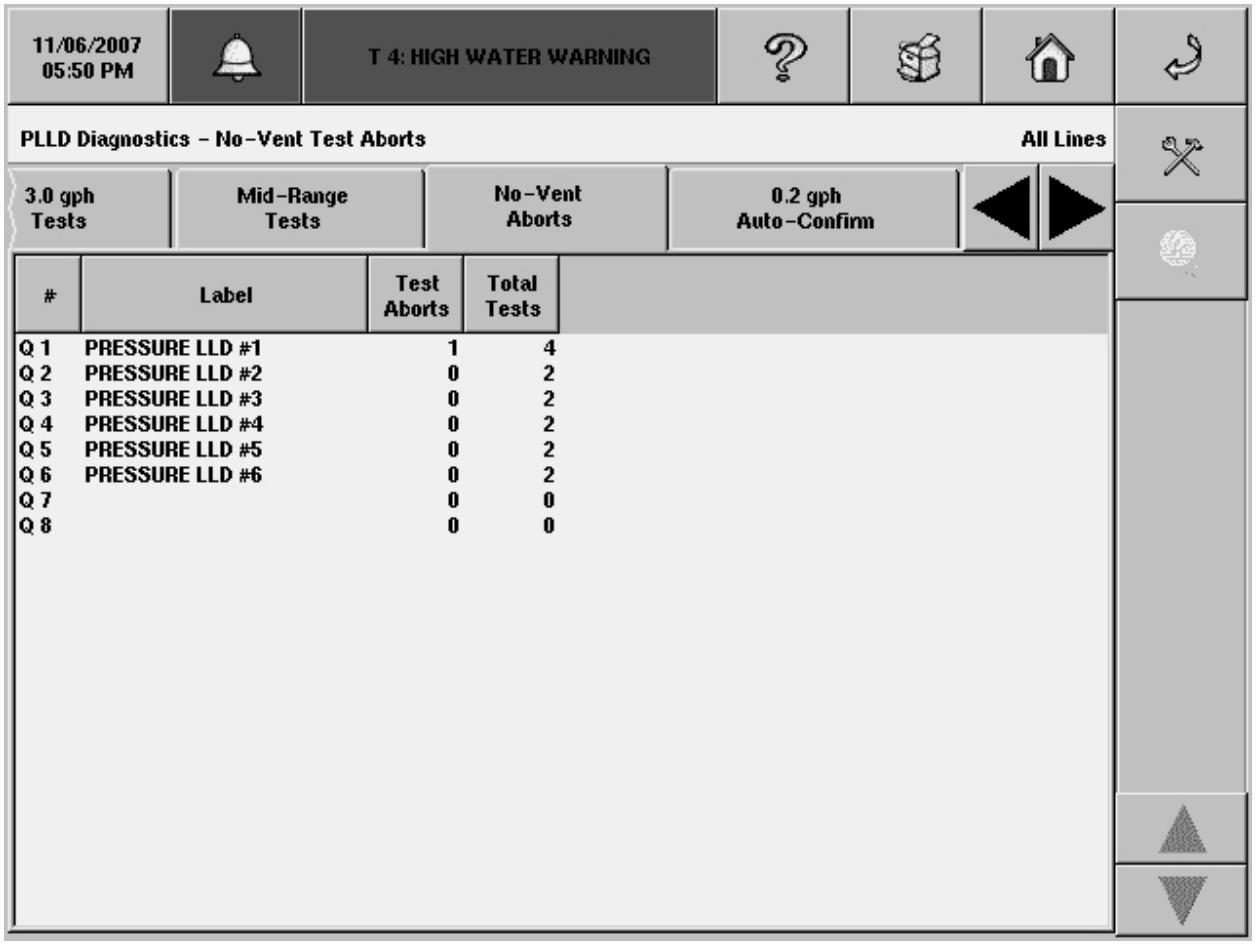
Setup

Touch this button to open the PLLD Setup 'Pump and Line Setup - PLLD' screen.

Diagnostics (line pressure sensor)

Touch this button to open the LPR Sensor Diagnostics - Communications screen.

PLLD Diagnostics - No-Vent Aborts



The No-Vent Test Aborts Tab of the PLLD Diagnostics interface displays a report with No-Vent Test Aborts information about all lines with PLLD in the system.

This screen will only be available if the 0.2 gph (0.76 lph) or 0.1 gph (0.39 lph) line leak test features are available.

Report Column Descriptions

(PLLD line identifier)

Value range: Device code followed by 1 to 32 (e.g., Q1)

Label (PLLD line label)

Value range: Label (assigned in setup)

Test Aborts

Number of Tests that were aborted because of a 'No-Vent' failure.

Value range: 0 - 99

Total Tests

Number of total tests run.

Value range: 0- 99

Control Buttons (right of screen)

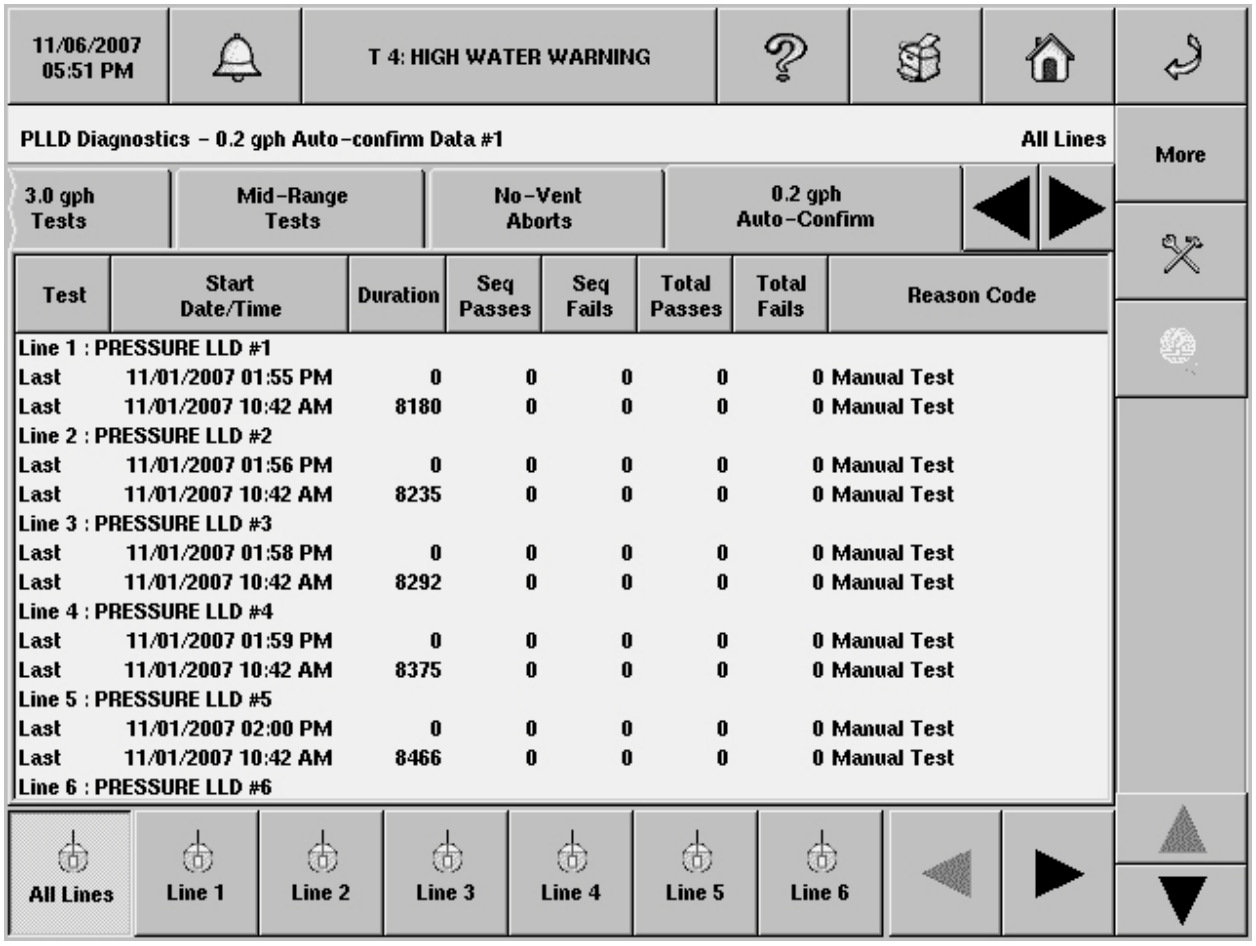
Setup

Touch this button to open the PLLD Setup 'Pump and Line Setup - PLLD' screen.

Diagnostics (line pressure sensor)

Touch this button to open the LPR Sensor Diagnostics - Communication screen.

PLLD Diagnostics - 0.2 gph (0.76 lph) Auto-Confirm



The PLLD Diagnostics 0.2 gph (0.76 lph) Auto-Confirm screen displays a report with 0.2 gph (0.76 lph) Auto-Confirm Data for all lines with PLLD in the system.

PLLD Auto-Confirm is a filter for PLLD precision tests that operates by evaluating a series of tests. As tests are completed they are added to the filter. The collected tests are then evaluated, and if a conclusion is drawn, the result is posted as a Pass or a Fail.

This screen will only be available if the 0.2 Line Leak Test feature is available.

Report Column Descriptions

Test

The Current or Last test. For any line, the 'Current' record is always shown first.

Value range: Current, Last

Start Date/Time

The Start Date and Time of the test.

Value range: Date and Time

Duration

Test Duration in days.

Value range: 1 to 999 (days)

Seq. Passes

The number of Sequential Test Passes.

Value range: 0 to 6

Seq. Fails

The number of Sequential Test Fails.

Value range: 0 to 6

Total Passes

The number of Total Test Passes

Value range: 0 to 6

Total Fails

The number of Total Test Fails

Value range: 0 to 6

Reason Code

The reason for the Pass or the Fail, if applicable. The maximum number of tests an Auto-Confirm filter will collect is 6. There are several criteria which will cause the filter to produce a result.

Possible messages:

- **Idle, Working** - When the filter is actively collecting tests it is *Working* and the result is None. At the conclusion of the sequence the filter becomes *Idle* (result None) and it remains in this state until new tests are added. Precision tests do not run continuously.

- **Max Count** - If the tests are noisy (i.e. pass, fail, pass, fail...) the filter will collect tests until the Max Count has been reached and draw a conclusion (Pass or Fail) based on the data collected.

- **Time Out** - There is also a requirement where a test result must be produced by a certain time. If the filter has not drawn a conclusion by this time, it is forced to do it (Pass or Fail) and the reason code is called Time Out.

- **Manual Test** - When a manual test is initiated, the result is drawn immediately (Pass or Fail). In that case the filter will disregard collected results and act on the result of the manual test immediately.

- **Mid Test Fail** - The Mid Test is part of the 0.2 test. It indicates a larger leak and is not filtered. A Mid-Test failure will force the filter to draw a Failing conclusion immediately, and the result is called Mid Test Fail (result Fail).

- **Sequential** - If two sequential passes (or two sequential fails) enter the filter the result is a Pass (or a Fail) - Reason: Sequential.

- **No Ann** (0.1 gph [0.38 lph]) **Test Auto-Confirm** - This is the odd situation where the filter has been enabled for the 0.2 (0.76) test but not the 0.1 (0.38) test. To run a 0.1 (0.38) test the 0.2 (0.76) test must run first. If the 0.2 (0.76) test fails, since the 0.1 (0.38) is not filtered and that is the desired test, then the filter will Fail immediately, and the result is called No 0.1 (0.38) Auto-Confirm.

Result

The results of the test.

Possible messages:

- None
- Pass
- Fail

- Retest
- Abort
- Filtered

Control Buttons (right of screen)

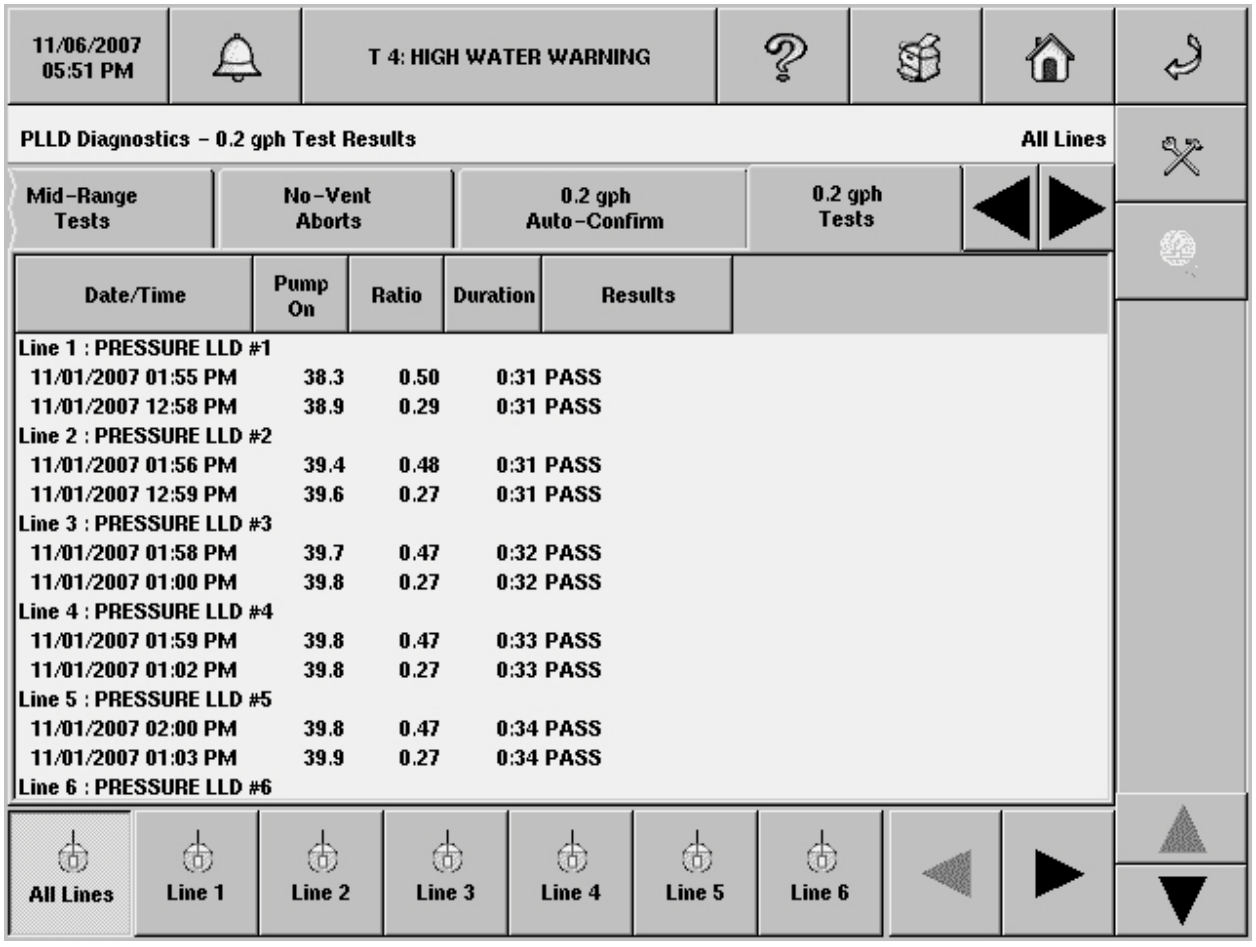
Setup

Touch this button to open the PLLD Setup 'Pump and Line Setup - PLLD' screen.

Diagnostics (line pressure sensor)

Touch this button to open the LPR Sensor Diagnostics - Communication screen.

PLLD Diagnostics - 0.2 gph (0.76 lph) Test Results



The PLLD Diagnostics 0.2 gph (0.76 lph) Tests screen displays a report with the last five 0.2 gph (0.76 lph) test results (including passed and failed tests) for all lines with PLLD.

This screen will only be available if the 0.2 Line Leak Test feature is available.

Report Column Descriptions

Date/Time

The Date and Time of the test.

Value range: Date and Time

Pump On

The pressure reading when turning On the Pump.

Value range: -14.0 to 99.9 psi (-96.5 to 689.2kPa)

Ratio

Pump On Ratio = Ramp/Fail threshold (>1.0 = Fail and <1.0 = Pass) and is used to indicate how close the test is to fail the threshold. Large variations in ratio indicate an intermittent problem such as the valve not always seating properly.

Value range: 0.00 to 99.99

Duration

Test Duration in hours and fraction of an hour in minutes. Long durations indicate there was a lot of thermal activity during the test.

Value range: HH:MM (where HH = 0 to 99, MM = 0 to 59)

Results

The results of the test.

Possible messages:

- Pass
- Fail

Control Buttons (right of screen)

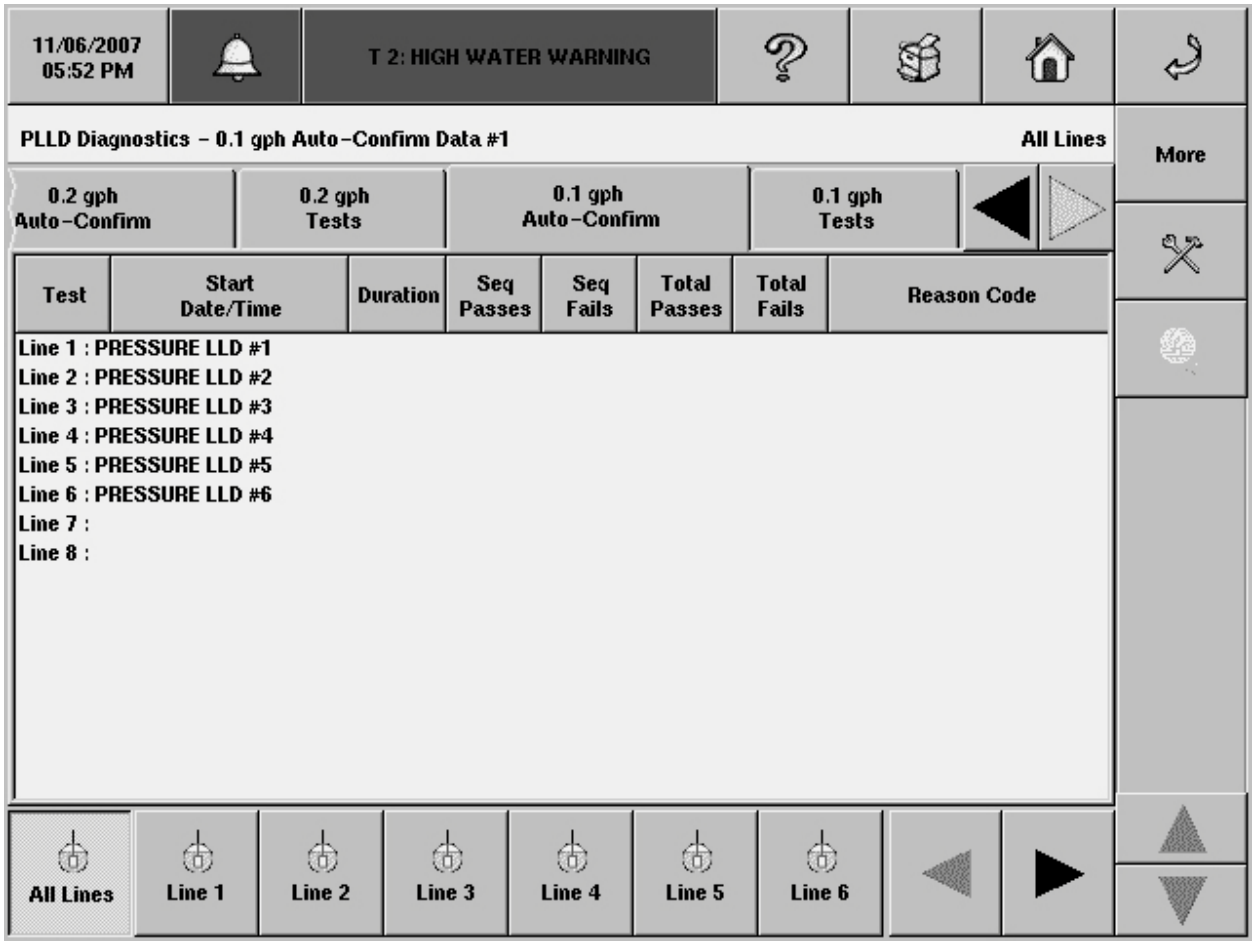
Setup

Touch this button to open the PLLD Setup 'Pump and Line Setup - PLLD' screen.

Diagnostics (line pressure sensor)

Touch this button to open the LPR Sensor Diagnostics - Communications screen.

PLLD Diagnostics - 0.1 gph (0.38lph) Auto-Confirm



The PLLD Diagnostics 0.1 gph (0.38 lph) Auto-Confirm screen displays a report with 0.1 gph (0.38 lph) Auto-Confirm Data for all lines with PLLD in the system.

PLLD Auto-Confirm is a filter for PLLD precision tests that operates by evaluating a series of tests. As tests are completed they are added to the filter. The collected tests are then evaluated, and if a conclusion is drawn, the result is posted as a Pass or a Fail.

This screen will only be available if the 0.1 Line Leak Test feature is available.

Report Column Descriptions

Test

The Current or Last test. For any line, the 'Current' record is always shown first.

Value range: Current, Last

Start Date/Time

The Start Date and Time of the test.

Value range: Date and Time

Duration

Test Duration in days.

Value range: 1 to 999 (days)

Seq. Passes

The number of Sequential Test Passes.

Value range: 0 to 6

Seq. Fails

The number of Sequential Test Fails.

Value range: 0 to 6

Total Passes

The number of Total Test Passes

Value range: 0 to 6

Total Fails

The number of Total Test Fails

Value range: 0 to 6

Reason Code

The reason for the Pass or the Fail, if applicable. The maximum number of tests an Auto-Confirm filter will collect is 6. There are several criteria which will cause the filter to produce a result.

Possible messages:

- **Idle, Working** - When the filter is actively collecting tests it is *Working* and the result is None. At the conclusion of the sequence the filter becomes *Idle* (result None) and it remains in this state until new tests are added. Precision tests do not run continuously.

- **Max Count** - If the tests are noisy (i.e. pass, fail, pass, fail...) the filter will collect tests until the Max Count has been reached and draw a conclusion (Pass or Fail) based on the data collected.

- **Time Out** - There is also a requirement where a test result must be produced by a certain time. If the filter has not drawn a conclusion by this time, it is forced to do it (Pass or Fail) and the reason code is called Time Out.

- **Manual Test** - When a manual test is initiated, the result is drawn immediately (Pass or Fail). In that case the filter will disregard collected results and act on the result of the manual test immediately.

- Mid Test Fail - The Mid Test is part of the 0.1 test. It indicates a larger leak and is not filtered. A Mid-Test failure will force the filter to draw a Failing conclusion immediately, and the result is called Mid Test Fail (result Fail).

- **Sequential** - If two sequential passes (or two sequential fails) enter the filter the result is a Pass (or a Fail) - Reason: Sequential.

- **No Ann** (0.1 gph [0.38 lph]) **Test Auto-Confirm** - This is the odd situation where the filter has been enabled for the 0.2 (0.76) test but not the 0.1 (0.38) test. To run a 0.1 (0.38) test the 0.2 (0.76) test must run first. If the 0.2 (0.76) test fails, since the 0.1 (0.38) is not filtered and that is the desired test, then the filter will Fail immediately, and the result is called No 0.1 (0.38) Auto-Confirm.

Result

The results of the test.

Possible messages:

- None
- Pass
- Fail

- Retest
- Abort
- Filtered

Control Buttons (right of screen)

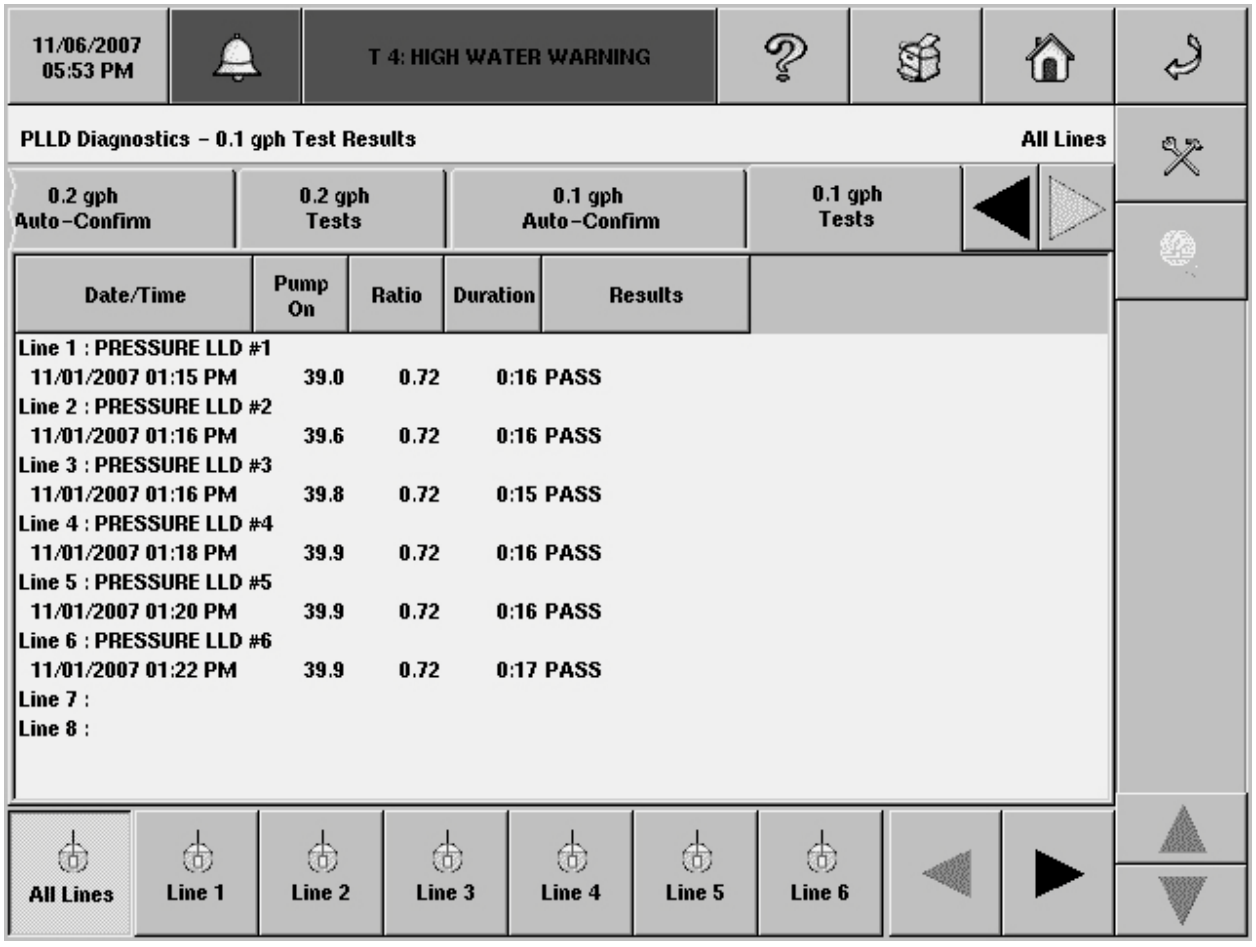
Setup

Touch this button to open the PLLD Setup 'Pump and Line Setup - PLLD' screen.

Diagnostics (line pressure sensor)

Touch this button to open the LPR Sensor Diagnostics - Communication screen.

PLLD Diagnostics - 0.1 gph (0.38lph) Test Results



The PLLD Diagnostics 0.1 gph (0.38 lph) Tests screen displays a report with the last five 0.1 gph (0.38 lph) test results (including passed and failed tests) for all lines with PLLD.

This screen will only be available if the 0.1 Line Leak Test feature is available.

Report Column Descriptions

Date/Time

The Date and Time of the test.

Value range: Date and Time

Pump On

The pressure reading when turning On the Pump.

Value range: -14.0 to 99.9 psi (-96.5 to 689.2kPa)

Ratio

Pump On Ratio = Ramp/Fail threshold (>1.0 = Fail and <1.0 = Pass) and is used to indicate how close the test is to fail the threshold. Large variations in ratio indicate an intermittent problem such as the valve not always seating properly.

Value range: 0.00 to 99.99

Duration

Test Duration in hours and fraction of an hour in minutes. Long durations indicate there was a lot of thermal activity during the test.

Value range: HH:MM (where HH = 0 to 99, MM = 0 to 59)

Results

The results of the test.

Possible messages:

- Pass
- Fail

Control Buttons (right of screen)

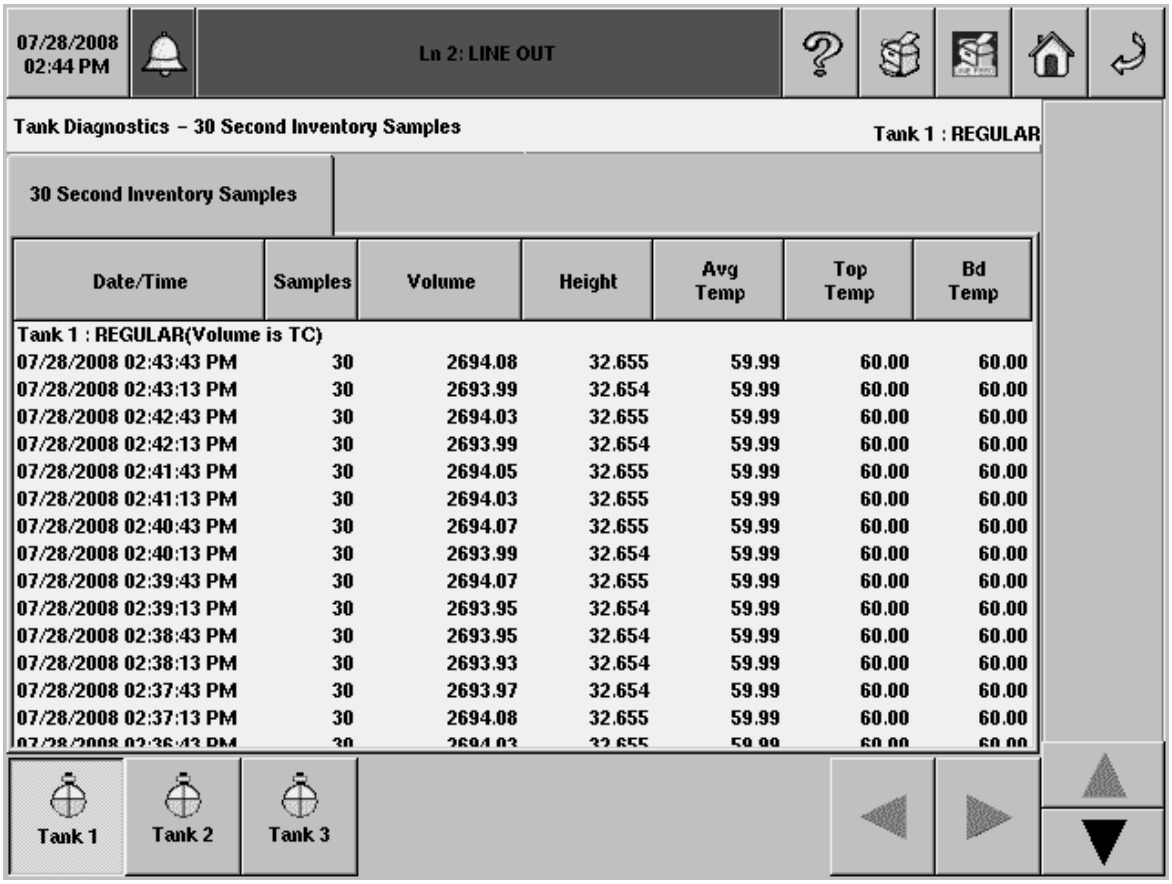
Setup

Touch this button to open the PLLD Setup 'Pump and Line Setup - PLLD' screen.

Diagnostics (line pressure sensor)

Touch this button to open the LPR Sensor Diagnostics - Communication screen.

Tank Diagnostics - 30 Second Inventory Samples



The Tank Diagnostics 30 Second Samples report is a Moving Average Table. It is used to diagnose problems with several console features, such as CSLD, ISD, etc. This report shows the last 46 inventory samples.

For the All Tanks view, if some probes measure temperature and others do not, The Avg Temp, Top Temp, and Bd Temp columns will still be visible, but the field will be left blank if the temperature is not available.

Report Column Descriptions

Date/Time

Value range: Date and Time

Samples

Value range: 1-99

Volume

The volume field is temperature compensated volume if the probe has temperature measurement capability. If the probe cannot measure temperature or the TLS does not support temperature compensation, the standard volume will be displayed.

Value range: 0.00 to 264,172.00 gal (0.00 to 999,999.99L)

Height

Value range: 0 to 390.000 in. (0 to 9906.000mm)

Avg. Temp

Value range: -40.00 to 140.00°F (-40.00 to 60.00°C)

Top Temp

Value range: -40.00 to 140.00°F (-40.00 to 60.00°C)

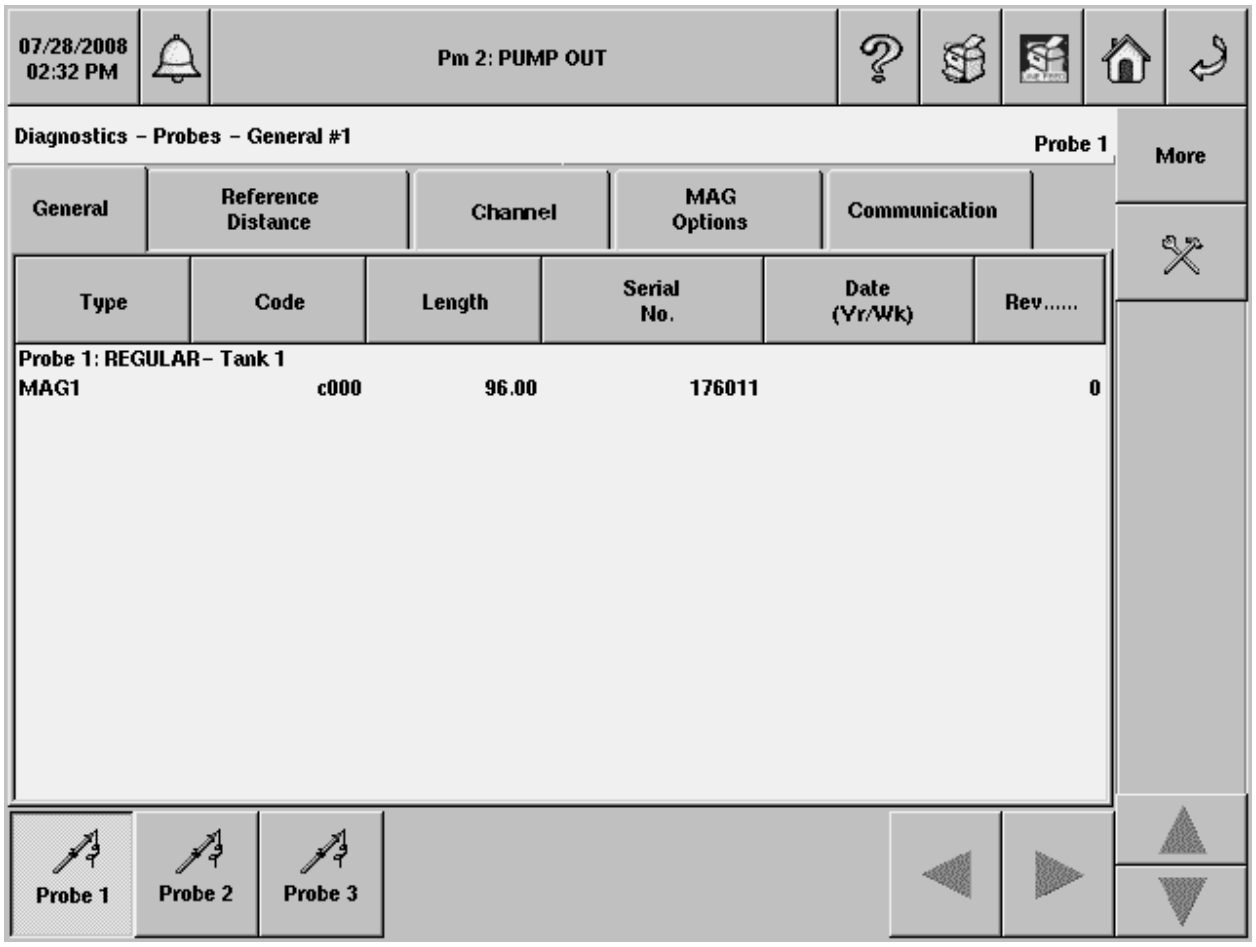
Bd Temp

Value range: -40.00 to 140.00°F (-40.00 to 60.00°C)

30 Second Inventory Samples Refresh Rate

The 30 Second Inventory Samples screen will be refreshed every 30 seconds.

Probe Diagnostics - General



The Probe Diagnostics - General screen displays a report with general information about each probe.

Report Column Descriptions

Type

Probe Type Description

Value: probe type (e.g., Mag 1)

Code

Circuit Code (Hex number)
Value range: 0000-FFFF

Length

Probe Length

Value range: 0.00 to 390.99 in. (0.00 to 9906.00mm)

Serial No.

Probe Serial Number

Value range: 0 to 7 characters

Date (Yr/Wk)

Build Date by Year / Week

Value range: YY/0 - 52

Rev

Revision Number

Value range: 00 to 99

Gradient

Probe Gradient

Value range: 0.000 to 999.999

Probe Diagnostics - General Screen Refresh Rate

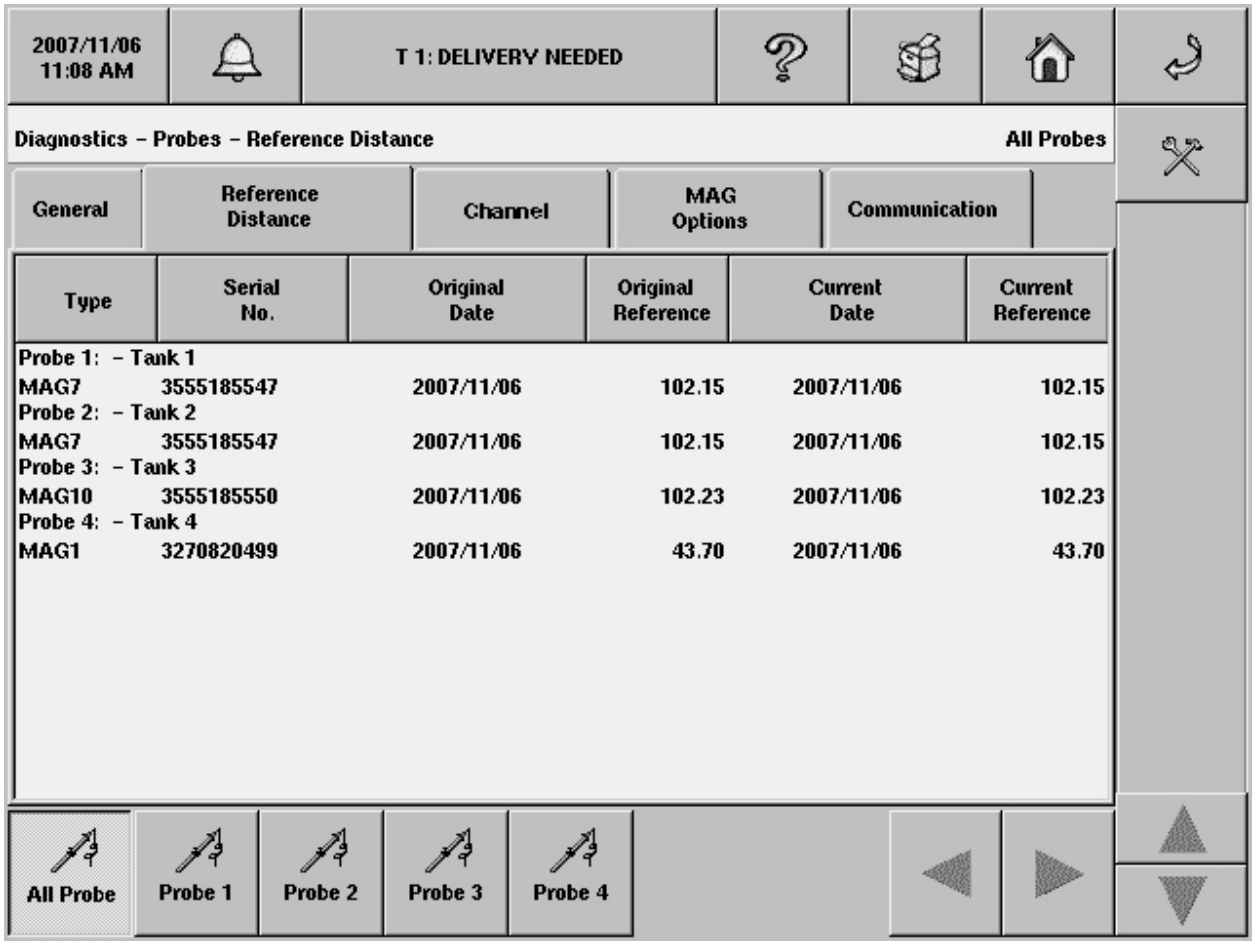
The General Probe Diagnostics data will be refreshed every 30 seconds.

Control Button (right of screen)

Probe Setup

Touch this button open the Device Setup - Probes screen.

Probe Diagnostics - Reference Distance



The Probe Diagnostics - Reference Distance screen displays a report with Original and Current Reference distances for each probe.

Report Column Descriptions

Type

Probe Type Description

Value: probe type (e.g., Mag 1)

Serial No.

Probe Serial Number

Value range: 0 to 7 characters

Original Date

Original Reference Distance Reading Date

Value range: Year, month, and day

Original Reference

Original Reference Distance Reading

Value: 0.00 to 390.00 in. (0.00 to 9906.00mm)

Current Date

Current Reference Distance Reading Date

Value: Year, month, and day

Current Reference

Current Reference Distance Reading

Value: 0.00 to 390.00 in. (0.00 to 9906.00mm)

Probe Diagnostics - Reference Distance Screen Refresh Rate

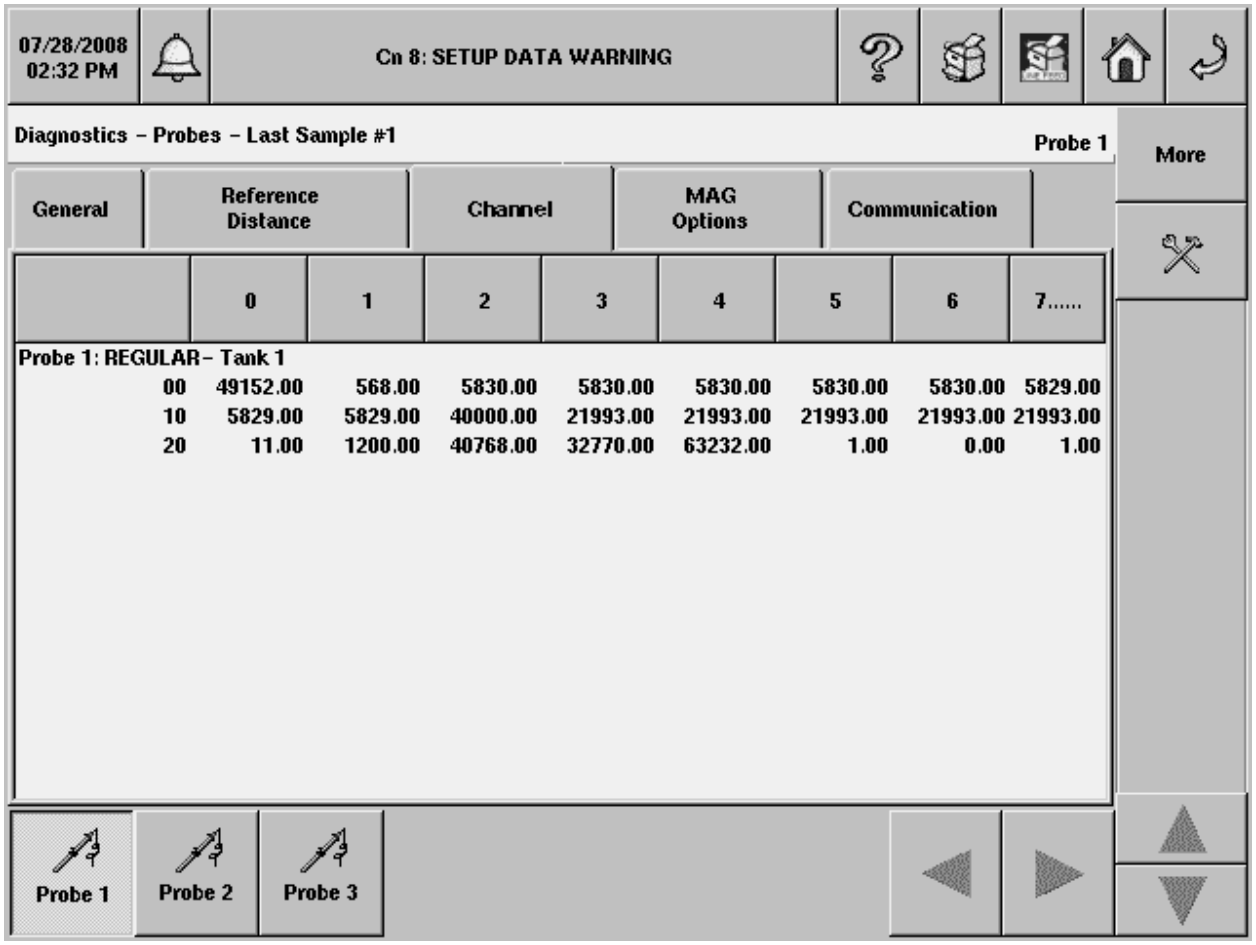
The Probe Reference Distance data will be refreshed every 30 seconds.

Control Button (right of screen)

Probe Setup

Touch this button open the Device Setup - Probes screen

Probe Diagnostics - Channel



The Probe Diagnostics - Channel screen displays a report with Channel data information for each probe.

Report Description

Each probe's channel data is preceded by the following header information:

- Probe label (e.g., 1) and type (e.g., Mag 1)
- Probe serial number (up to 7 digits)
- Date and time (time channel data was received)
- Channel Data - Label for the Channel Section

Channel data (Hex number) is read from the report as shown in the example below:

Row	Col. 0	Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8	Col. 9
00	**B610**	05EB	29FC	**0235**	2C32	29FD	E240	0001	0008	C941
10	0001	61A7	0000	0000	0000	0000	**00A1**	80C4	0081	80C4

In the example above, the last sample for Channel 0 is **B610**, for Channel 3 it is **0235,** and for channel 16 it is **00A1**.

Probe Diagnostics Channel Refresh Rate

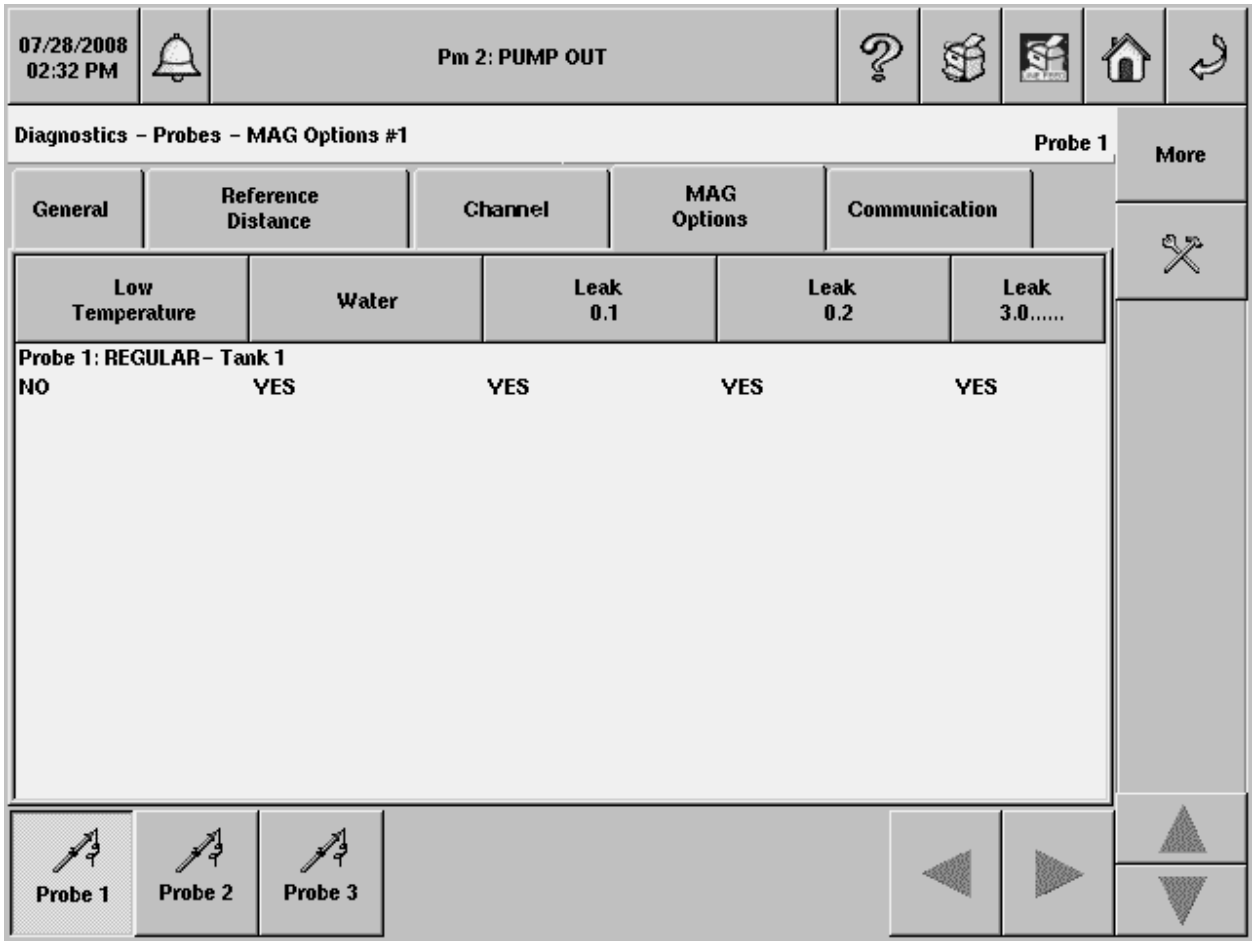
The Probe Diagnostics Channel data will be refreshed every 5 seconds.

Control Button (right of screen)

Probe Setup

Touch this button open the Device Setup - Probes screen.

Probe Diagnostics - Mag Options



The Probe Diagnostics - Mag Options screen displays a report with options supported by Mag Probes.

Report Column Descriptions

Low Temp

Indicates whether or not the probe supports the low temperature option.

Possible messages:

- Yes
- No

Water

Indicates whether or not the probe supports the water option.

Possible messages:
- Yes
- No

Leak 0.1(0.38)

Indicates whether or not the probe supports the leak 0.1 (gph [0.38 lph]) option.

Possible messages:
- Yes
- No

Leak 0.2 (0.76)

Indicates whether or not the probe supports the leak 0.2 (gph [0.76 lph]) option.

Possible messages:
- Yes
- No

Leak 3.0 (11.3)

Indicates whether or not the probe supports the leak 3.0 (gph [11.3 lph]) option.

Possible messages:
- Yes
- No

Probe Diagnostics - Mag Options Screen Refresh Rate

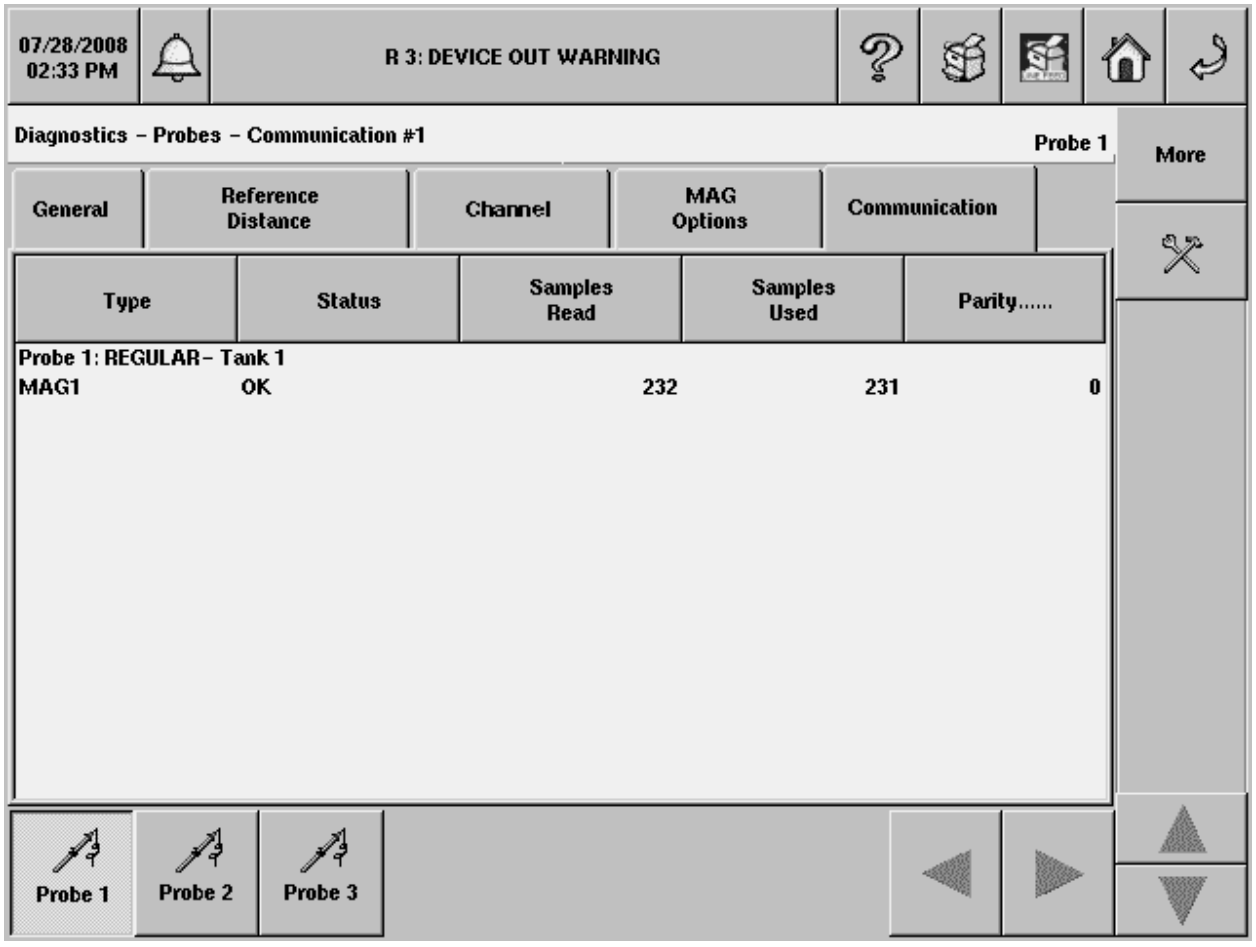
The Mag Options data will be refreshed every 30 seconds.

Control Button (right of screen)

Probe Setup

Touch this button open the Device Setup - Probes screen.

Probe Diagnostics - Communication



The Probe Diagnostics - Communication screen displays a report with communication health and status parameters for each probe.

Report Column Descriptions

Type

Probe type.

Value: probe type (e.g., Mag 1)

Status

Probe Status.

Possible messages:
- OK
- OUT

Samples Read

Number of samples read.
Value range: 0 to 4294967295

Samples Used

Number of samples used.
Value range: 0 to 4294967295

Parity

Number of parity errors.
Value range: 0 to 999999

Partial

Number of partial errors.
Value range: 0 to 999999

Comm Errors

Number of comm errors.
Value range: 0 to 999999

Probe Diagnostics - Communication Refresh Rate

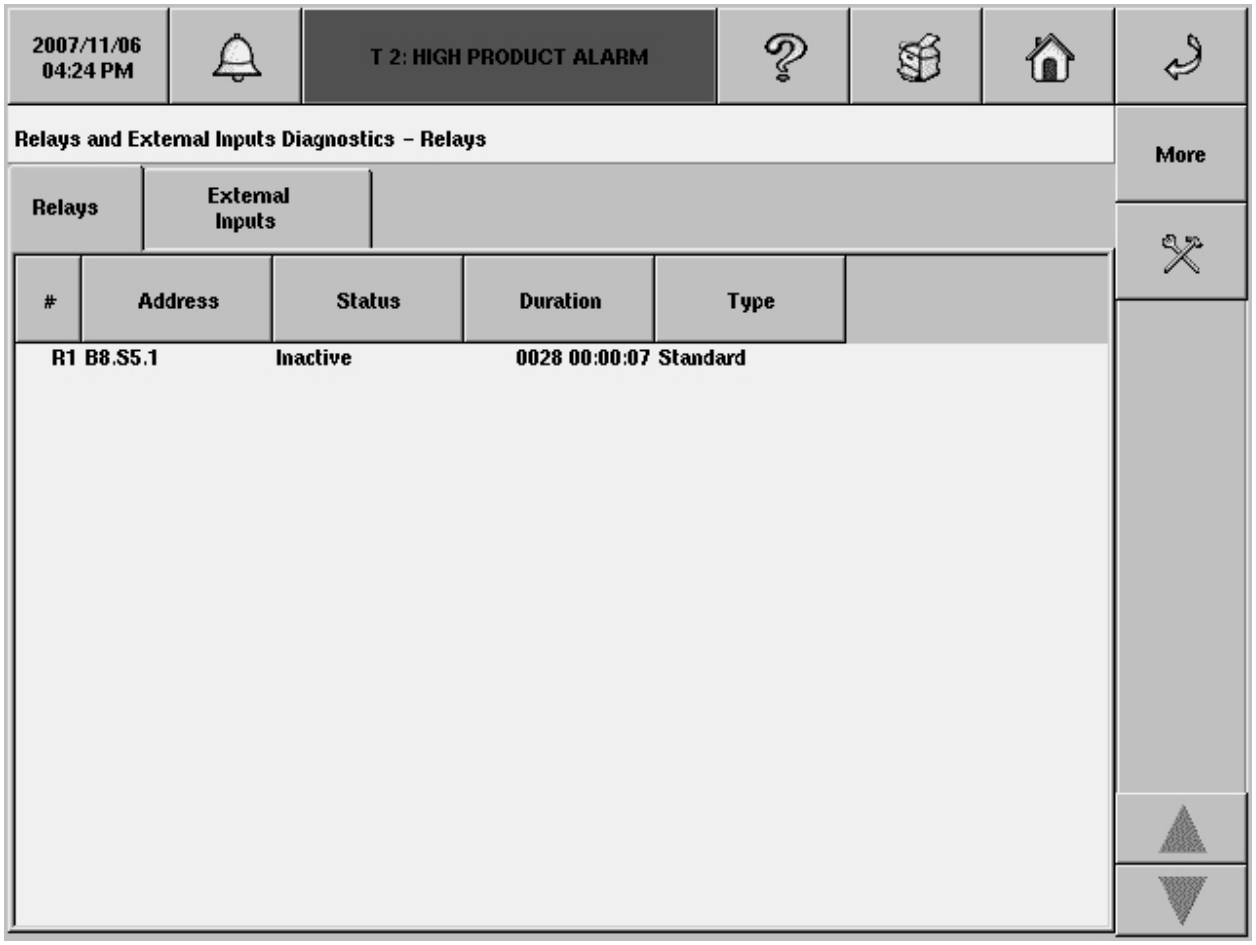
The communication data will be refreshed every 5 seconds.

Control Button (right of screen)

Probe Setup

Touch this button open the Device Setup - Probes screen.

Relays and External Inputs Diagnostics - Relays



The Relays and External Inputs Diagnostics - Relays screen displays a report with diagnostic information about each relay.

Report Column Descriptions

(Relay identifier)

Relay Identifier

Value: Device code followed by 1 to 32 (e.g., R1)

Address

Relay Device Address

Value: Box/slot/connection (e.g., B0.S5.2)

Status

Relay State

Possible messages: Active, Inactive

Duration

Time the Relay has been in the current state.

Value range: 0000 to 9999 days plus hh:mm:ss (e.g., 00001 03:05:48)

Type

The Relay type.
Possible messages:

- STANDARD - The On/Off state is determined by assigned alarms/warnings.
- PUMP CONTROL OUTPUT - Relay state is controlled by TLS Pump/Line controller.
- MOMENTARY - The On/Off state is determined by assigned alarms/warnings. However, relay returns to the inactive state after the Alarm button is touched to acknowledge the alarm.
- PUMP COMM CONTROL - Select this relay type only when a set of line manifolded pumps are using Red Jacket IQ Controllers, and you want to run PLLD precision line leak tests. After selecting this relay type, when one IQ controlled pump of a manifolded set is turned On for line leak testing, the relay will activate, blocking communication with the second IQ controlled pump (giving the console total control of the pumps) until the precision test is complete.

Relay Diagnostic Screen Refresh Rate

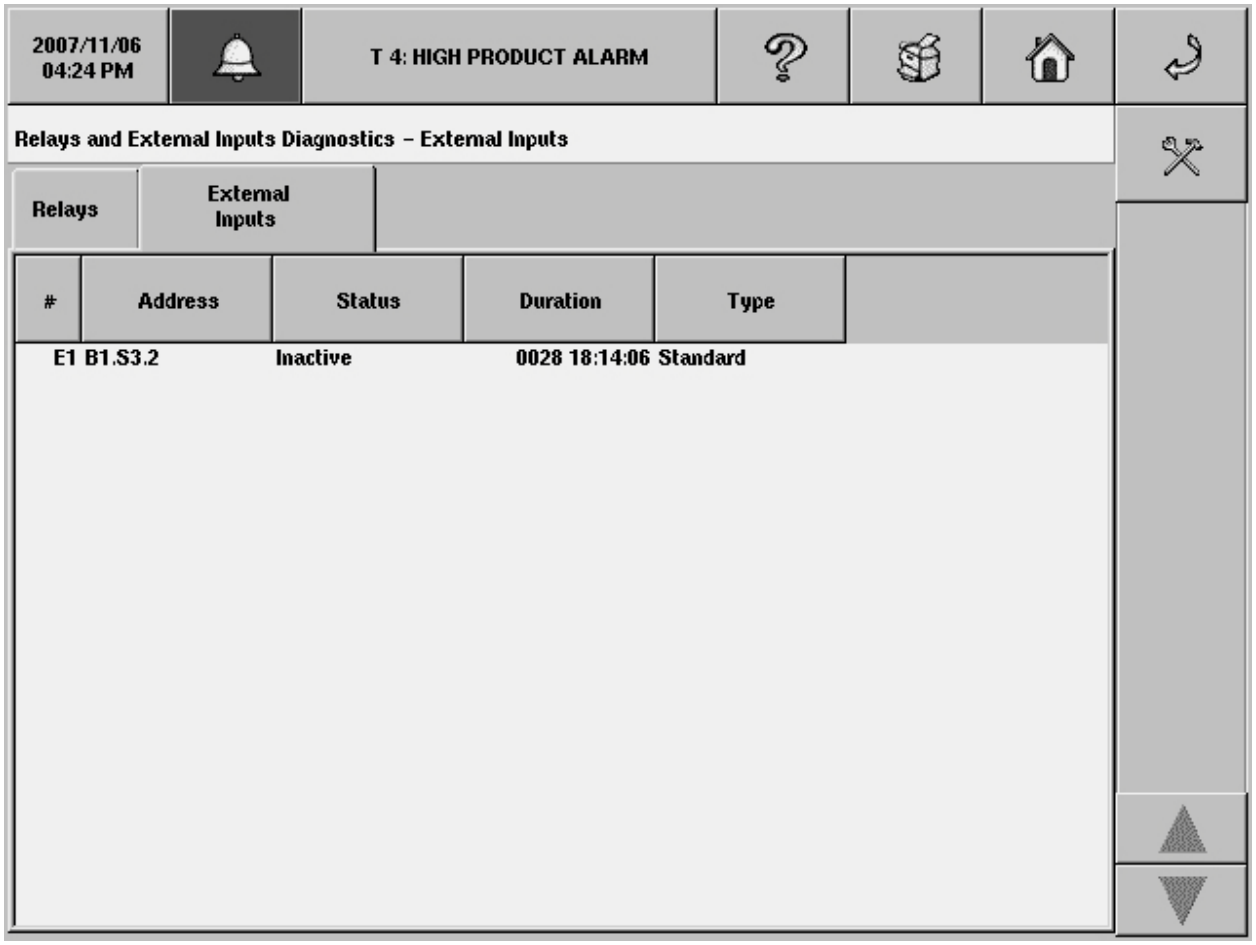
The Relay data will be updated on change of state.

Control Buttons (right of screen)

Setup

Touch this button to open the "Device Setup - Relay" screen.

Relays and External Inputs Diagnostics - External Inputs



The Relays and External Inputs Diagnostics - External Inputs screen displays a report with diagnostic information about each external input.

Report Column Descriptions

(External input identifier)

External Input Identifier

Value: Device code followed by 1 to 32 (e.g., I1)

Address

External Input Device Address

Value: Box/slot/connection (e.g., B0.S5.2)

Status

External Input State

Possible messages: Active, Inactive

Duration

Time the External Input has been in the current state.

Value range: 0000 to 9999 days plus hh:mm:ss (e.g., 00001 03:05:48)

Type

The External Input type.

Possible messages:
- Standard
- Generator
- Pump Sense
- Standard ACK

External Input Diagnostic Screen Refresh Rate

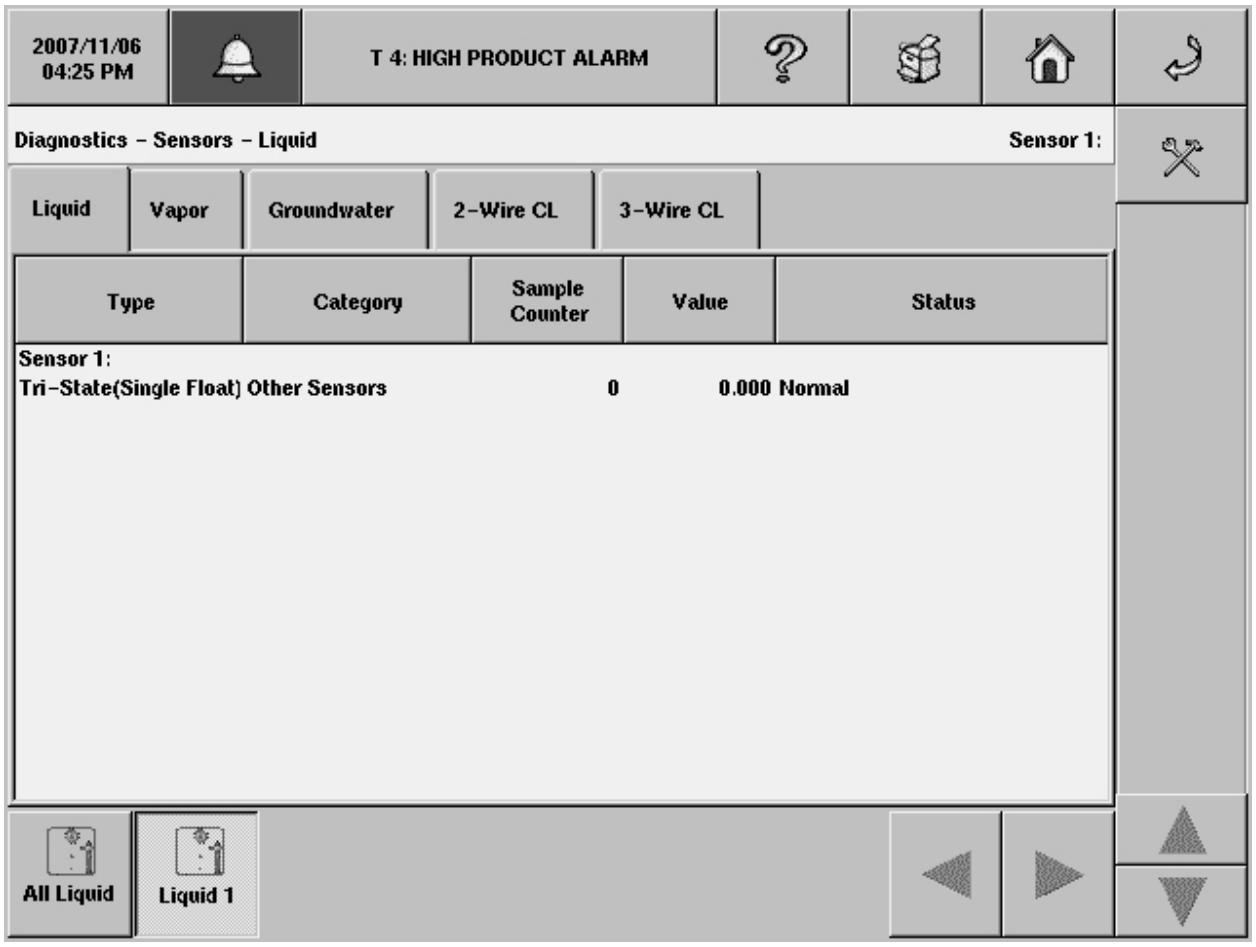
The External Input data will be updated on change of state.

Control Buttons (right of screen)

Setup

Touch this button to open the "Device Setup - External Inputs" screen.

Sensor Diagnostics - Liquid



The Sensor Diagnostics - Liquid screen displays a report with information about each Liquid Sensor.

Report Column Descriptions

Type

Sensor Type Description

Possible messages:

- Tri-State (Single Float)
- Normally Closed
- Dual Point Hydrostatic
- Dual Float Discriminating

- Dual Float High Vapor
- Interceptor Sensor

Category

Sensor Category Description

Possible messages:
- Other Sensors
- Annular
- Dispenser Pan
- Monitoring Well
- STP Sump
- Containment Sump

Sample Counter

Sensor Sample Counter value

Value range: 0 to 99

Value

Resistance value

Value range: 0 to 1000000000

Status

Sensor Status

Possible messages:
- Normal
- Unknown
- Setup Data Warning
- Fuel Alarm
- Out Alarm
- Short Alarm
- Water Alarm
- Water Out Alarm
- High Liquid Alarm
- Low Liquid Alarm
- Liquid Warning

Sensor Diagnostics Liquid Sensor Refresh Rate

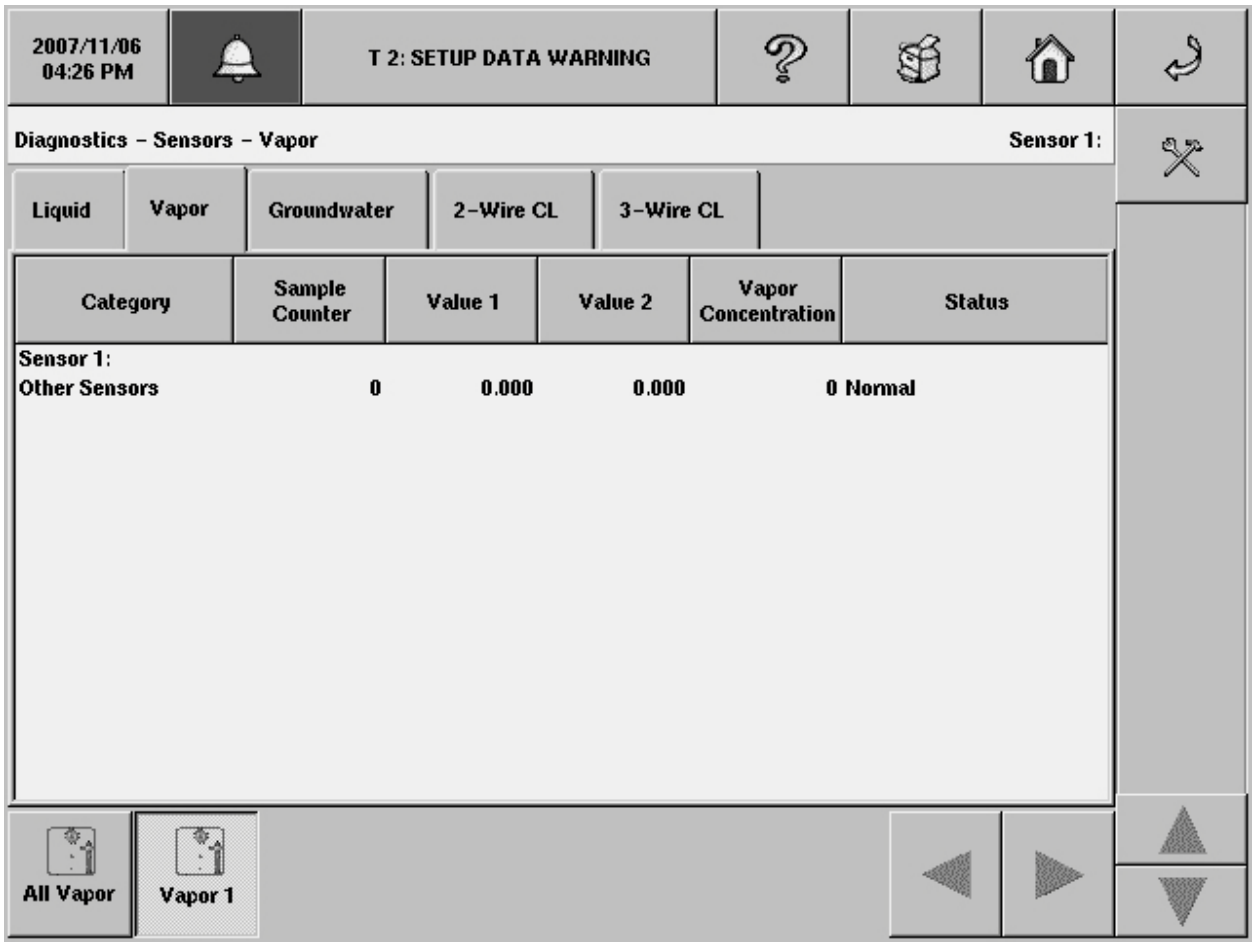
The Liquid Sensor Diagnostics data will be refreshed every 5 seconds.

Control Buttons (right of screen)

Sensor Setup

Touch this button open the Device Setup - Sensor screen

Sensor Diagnostics - Vapor



The Sensor Diagnostics - Vapor screen displays a report with information about each Vapor Sensor.

Report Column Descriptions

Category

Sensor Category Description

Possible messages:

- Other Sensors
- Annular
- Dispenser Pan
- Monitoring Well

- STP Sump
- Containment Sump

Sample Counter

Sensor Sample Counter value

Value range: 0 to 99

Value 1

Resistance value 1

Value range: 0 to 1000000000

Value 2

Resistance value 2

Value range: 0 to 1000000000

Vapor Concentration

The Vapor Concentration value in Parts Per Million

Value range: 0 to 999999999

Status

Sensor Status

Possible messages:
- Normal
- Unknown
- Setup Data Warning
- Fuel Alarm
- Out Alarm
- Short Alarm
- Water Alarm
- Water Out Alarm
- High Liquid Alarm
- Low Liquid Alarm
- Liquid Warning

Sensor Diagnostics Vapor Sensor Refresh Rate

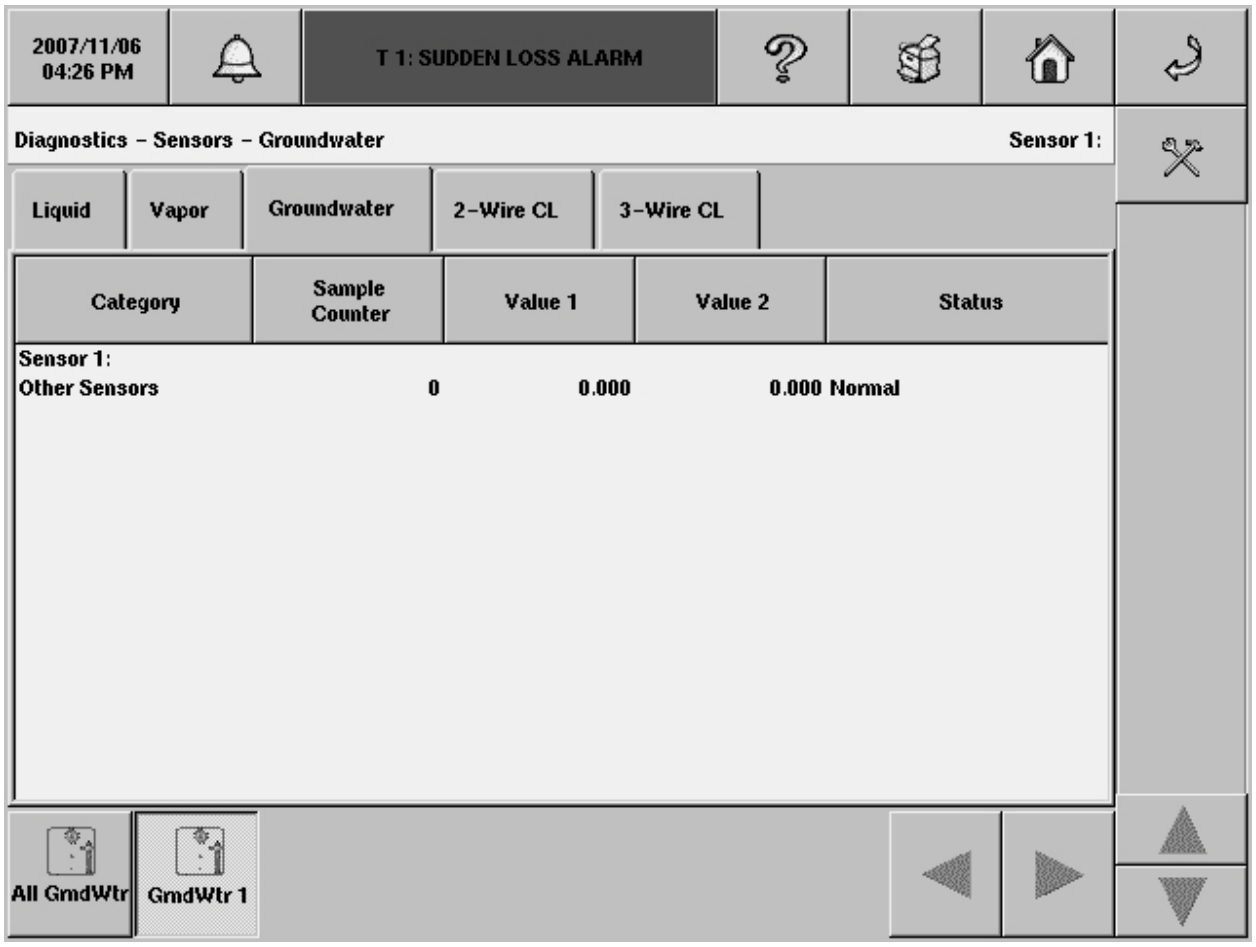
The Vapor Sensor Diagnostics data will be refreshed every 5 seconds.

Control Buttons (right of screen)

Sensor Setup

Touch this button open the Device Setup - Sensor screen

Sensor Diagnostics - Groundwater



The Sensor Diagnostics - Groundwater screen displays a report with information about each Groundwater Sensor.

Report Column Descriptions

Category

Sensor Category Description

Possible messages:

- Other Sensors
- Annular
- Dispenser Pan
- Monitoring Well

- STP Sump
- Containment Sump

Sample Counter

Sensor Sample Counter value
Value range: 0 to 99

Value 1

Resistance value 1
Value range: 0 to 1000000000

Value 2

Resistance value 2
Value range: 0 to 1000000000

Status

Sensor Status
Possible messages:

- Normal
- Unknown
- Setup Data Warning
- Fuel Alarm
- Out Alarm
- Short Alarm
- Water Alarm
- Water Out Alarm
- High Liquid Alarm
- Low Liquid Alarm
- Liquid Warning

Sensor Diagnostics Groundwater Sensor Refresh Rate

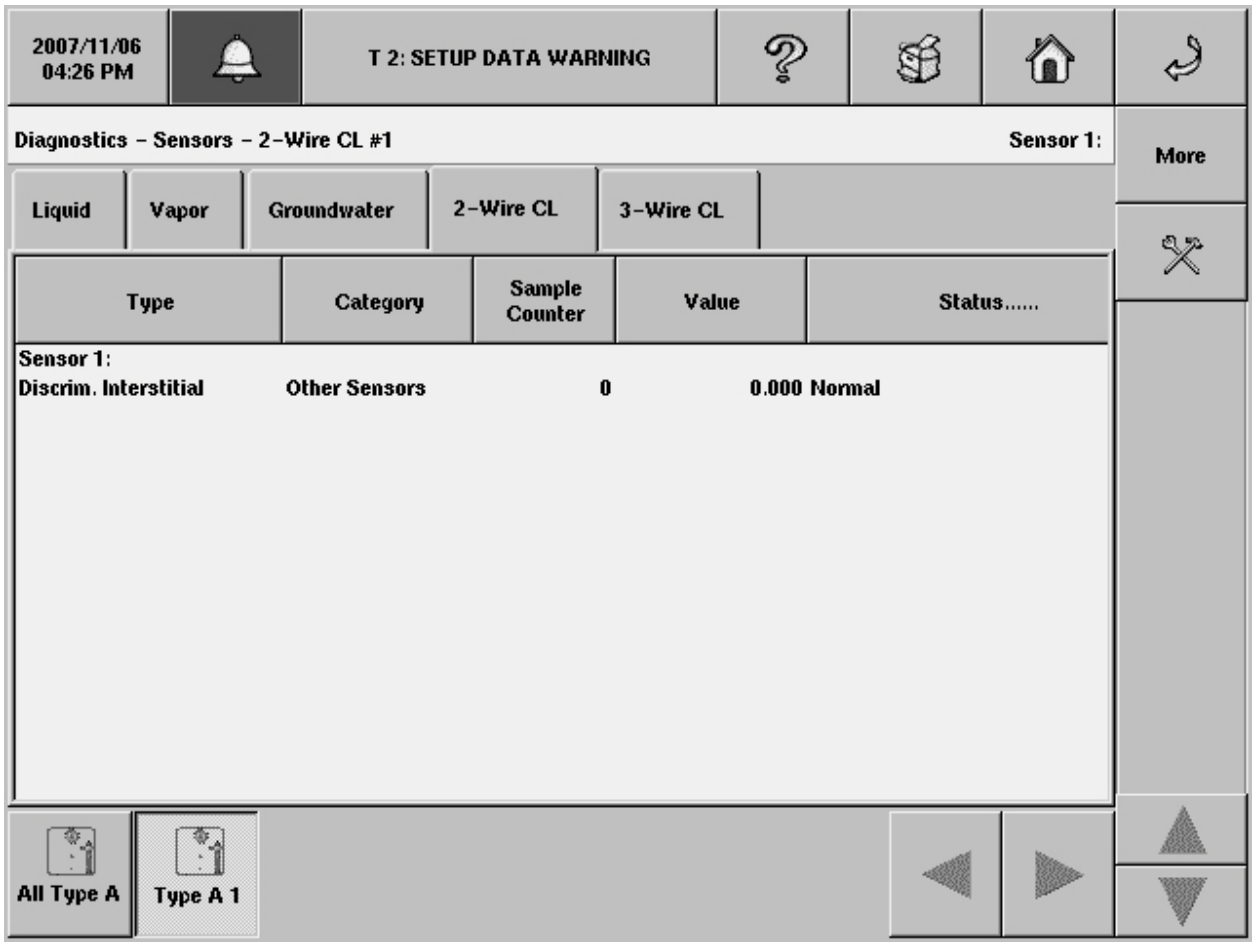
The Groundwater Sensor Diagnostics data will be refreshed every 5 seconds.

Control Buttons (right of screen)

Sensor Setup

Touch this button open the Device Setup - Sensor screen

Sensor Diagnostics - 2-Wire CL



The Sensor Diagnostics 2-Wire CL screen displays a report with information about each 2-Wire CL Sensor.

Report Column Descriptions

Type

Sensor Type Description

Possible messages:

- ULTRA 2
- Discriminating Interstitial

Category

Sensor Category Description

Possible messages:
- Other Sensors
- Annular
- Dispenser Pan
- Monitoring Well
- STP Sump
- Containment Sump

Sample Counter

Sensor Sample Counter value

Value range: 0 to 99

Value

Resistance or current value

Value range: 0 to 1000000000 (Resistance Value) or 0.0 to 50.0 (Current Value in microamps)

Status

Sensor Status

Possible messages:
- Normal
- Unknown
- Setup Data Warning
- Fuel Alarm
- Out Alarm
- Short Alarm
- Water Alarm
- Water Out Alarm
- High Liquid Alarm
- Low Liquid Alarm
- Liquid Warning

Sensor Diagnostics 2-Wire CL Sensor Refresh Rate

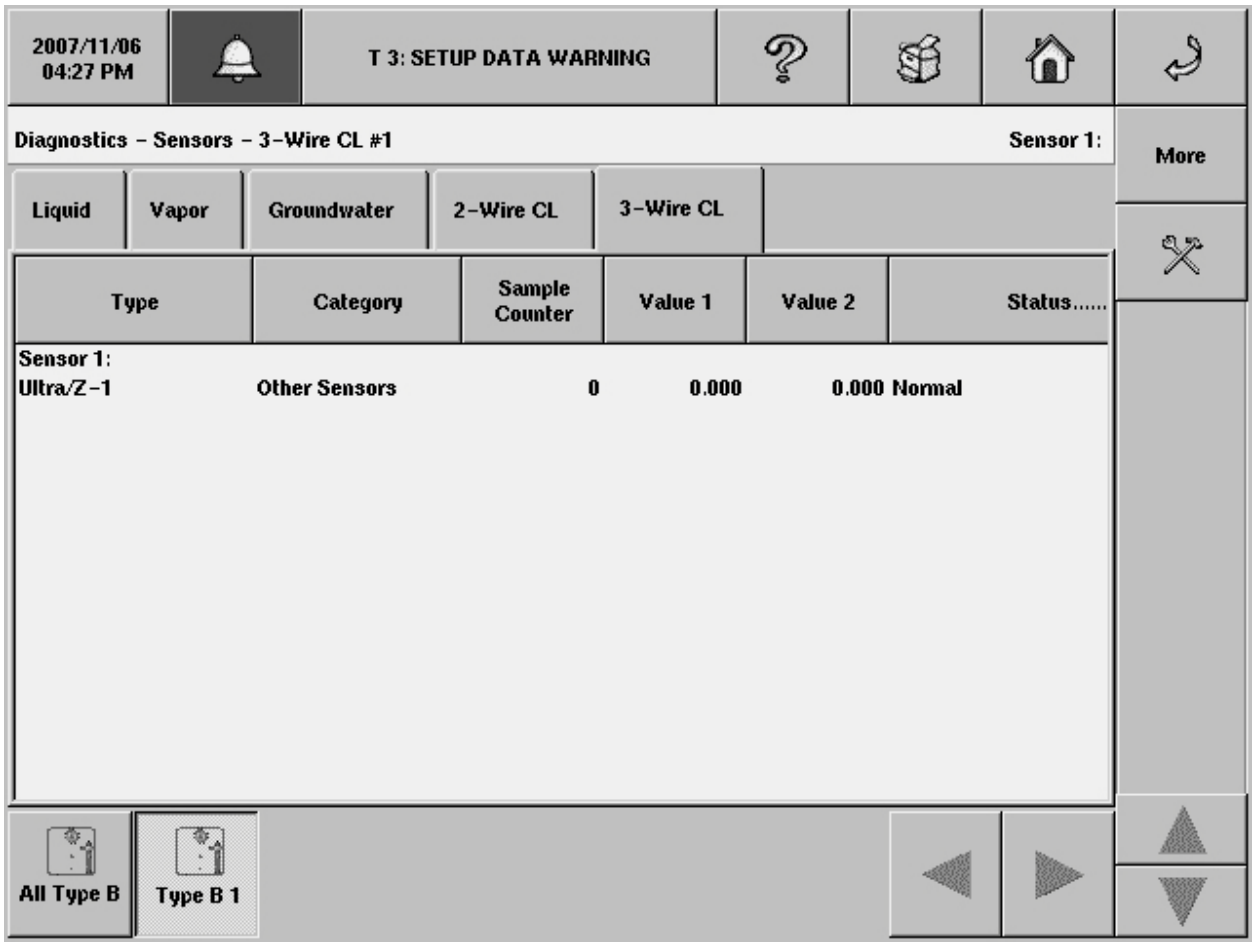
The 2-Wire CL Sensor Diagnostics data will be refreshed every 5 seconds.

Control Buttons (right of screen)

Sensor Setup

Touch this button open the Device Setup - Sensor screen

Sensor Diagnostics - 3-Wire CL



The Sensor Diagnostics 3-Wire CL screen displays a report with information about each 3-Wire CL Sensor.

Report Column Descriptions

Type

Sensor Type Description

Possible messages:

- Ultra/Z-1 (4Site Pan/Sump:Standard)
- Ultra/Z-1 HV (4Site Pan/Sump:Hi Vapor)

Category

Sensor Category Description

Possible messages:
- Other Sensors
- Annular
- Dispenser Pan
- Monitoring Well
- STP Sump
- Containment Sump

Sample Counter

Sensor Sample Counter value

Value range: 0 to 99

Value 1

Resistance or current value

Value range: 0 to 1000000000 (Resistance Value) or 0.0 to 50.0 (Current Value in microamps)

Value 2

Resistance value

Value range: 0 to 1000000000

Status

Sensor Status

Possible messages:
- Normal
- Unknown
- Setup Data Warning
- Fuel Alarm
- Out Alarm
- Short Alarm

- Water Alarm
- Water Out Alarm
- High Liquid Alarm
- Low Liquid Alarm
- Liquid Warning

Sensor Diagnostics 3-Wire CL Sensor Refresh Rate

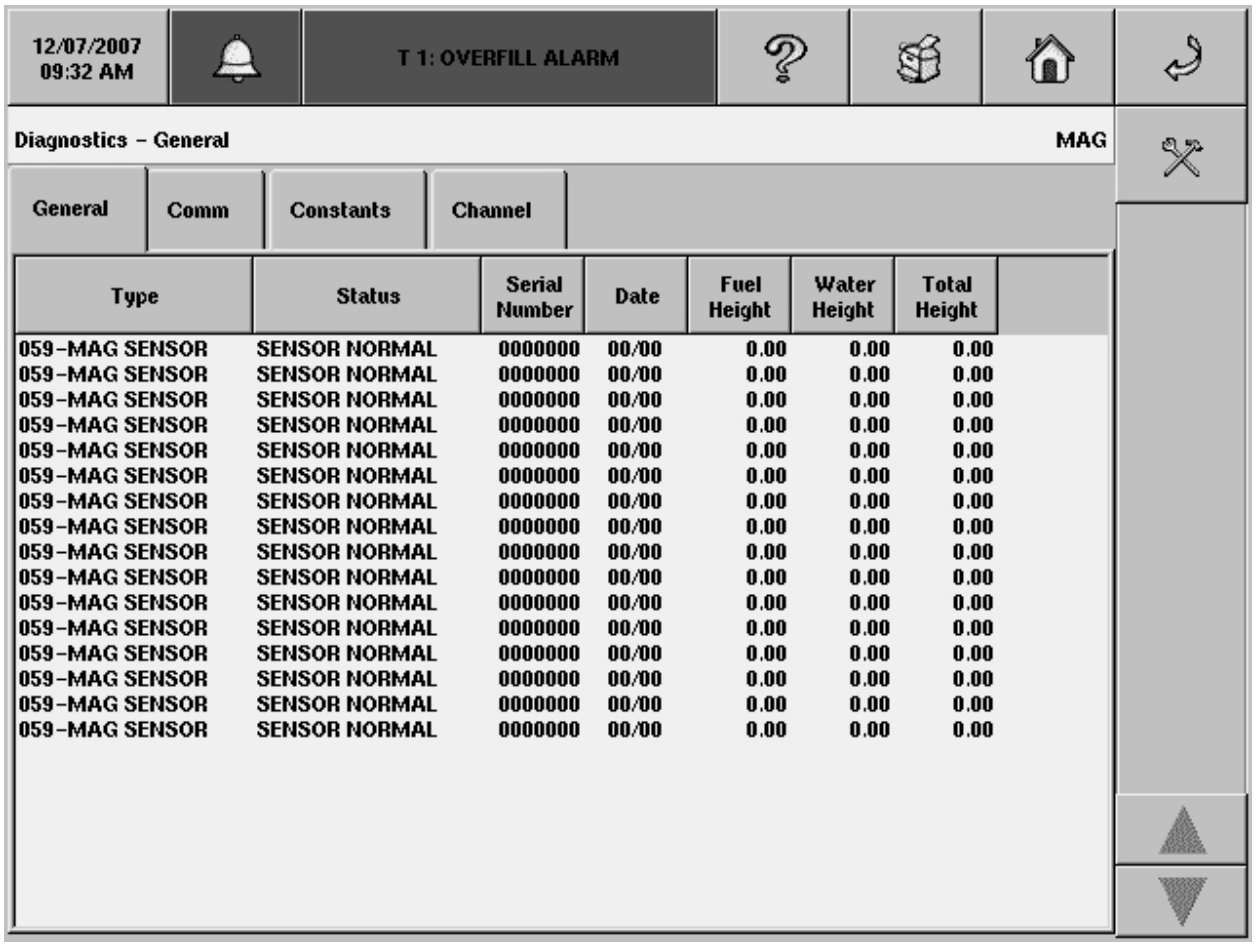
The 3-Wire CL Sensor Diagnostics data will be refreshed every 5 seconds.

Control Buttons (right of screen)

Sensor Setup

Touch this button open the Device Setup - Sensor screen

Mag Sensor Diagnostics - General



Type	Status	Serial Number	Date	Fuel Height	Water Height	Total Height
059-MAG SENSOR	SENSOR NORMAL	0000000	00/00	0.00	0.00	0.00
059-MAG SENSOR	SENSOR NORMAL	0000000	00/00	0.00	0.00	0.00
059-MAG SENSOR	SENSOR NORMAL	0000000	00/00	0.00	0.00	0.00
059-MAG SENSOR	SENSOR NORMAL	0000000	00/00	0.00	0.00	0.00
059-MAG SENSOR	SENSOR NORMAL	0000000	00/00	0.00	0.00	0.00
059-MAG SENSOR	SENSOR NORMAL	0000000	00/00	0.00	0.00	0.00
059-MAG SENSOR	SENSOR NORMAL	0000000	00/00	0.00	0.00	0.00
059-MAG SENSOR	SENSOR NORMAL	0000000	00/00	0.00	0.00	0.00
059-MAG SENSOR	SENSOR NORMAL	0000000	00/00	0.00	0.00	0.00
059-MAG SENSOR	SENSOR NORMAL	0000000	00/00	0.00	0.00	0.00
059-MAG SENSOR	SENSOR NORMAL	0000000	00/00	0.00	0.00	0.00
059-MAG SENSOR	SENSOR NORMAL	0000000	00/00	0.00	0.00	0.00
059-MAG SENSOR	SENSOR NORMAL	0000000	00/00	0.00	0.00	0.00
059-MAG SENSOR	SENSOR NORMAL	0000000	00/00	0.00	0.00	0.00
059-MAG SENSOR	SENSOR NORMAL	0000000	00/00	0.00	0.00	0.00

The Mag Sensor Diagnostics - General screen displays a report with general diagnostic information about all Mag Sensors.

Report Column Descriptions

Type

Sensor Type Description

Possible messages:

- 059-MAG Sensor

Status

Sensor Status. Multiple alarms will be shown in the same cell on separate lines.

Possible messages:

- Normal
- Communication Alarm
- Fault Alarm
- Install Alarm

Serial Number

Sensor Serial Number

Value: XXXXXXX

Date

Sensor Date Code

Value: Year/week (YY/WW)

Fuel Height

Fuel Height detected by the Mag Sensor

Value range: 0.00 to 48.00 in. (0.00 to 1219.20mm)

Water Height

Water Height detected by the Mag Sensor

Value range: 0.00 to 48.00 in. (0.00 to 1219.20mm)

Total Height

Absolute liquid height as measured by the Mag Sensor

Value range: 0.00 to 48.00 in. (0.00 to 1219.20mm)

Fluid Temp

Temperature of the fluid in which the Mag Sensor is submerged

Value range: -40.0 to 140.0°F (-40.0 to 60.0°C)

Brd Temp

Temperature of the Mag Sensor's printed circuit board

Value range: -40.0 to 140.0°F (-40.0 to 60.0°C)

Control Buttons (right of screen)

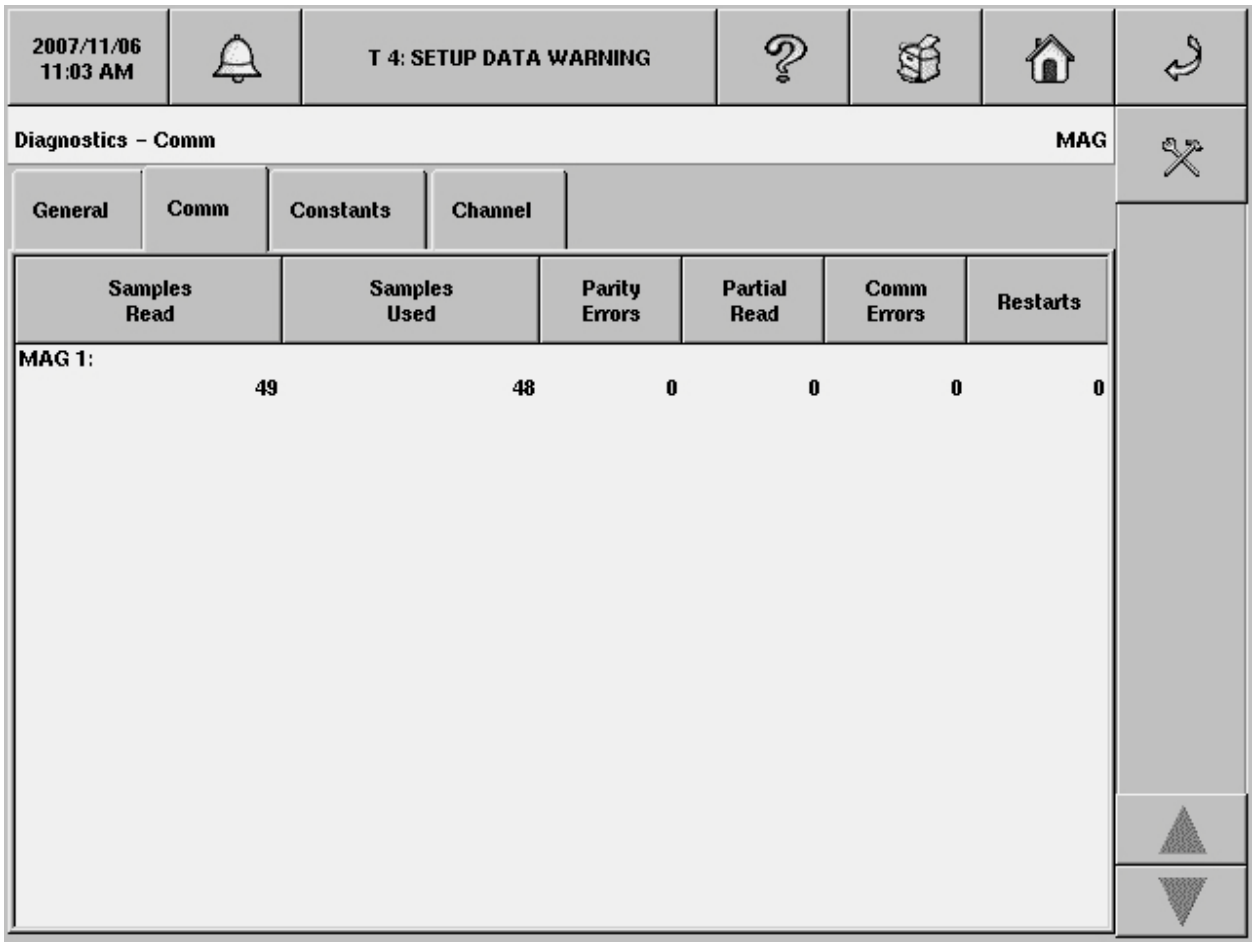
Setup

Touch this button open the Device Setup - Mag Sensor screen.

Mag Sensor Diagnostics - General Screen Refresh Rate

The Mag Sensor Diagnostics - General data will be refreshed every 8 seconds.

Mag Sensor Diagnostics - Comm



The Mag Sensor Diagnostics - Comm screen displays a report with communication diagnostic information about all Mag Sensors.

Report Column Descriptions

Samples Read

Number of Samples Read

Value range: 0 to 4294967295

Samples Used

Number of Samples Used

Value range: 0 to 4294967295

Parity Errors

Number of Parity Errors

Value range: 0 to 999999

Partial Read

Number of Partial Errors

Value range: 0 to 999999

Comm Errors

Number of Comm Errors

Value range: 0 to 999999

Restarts

Number of Restarts

Value range: 0 to 999999

Control Buttons (right of screen)

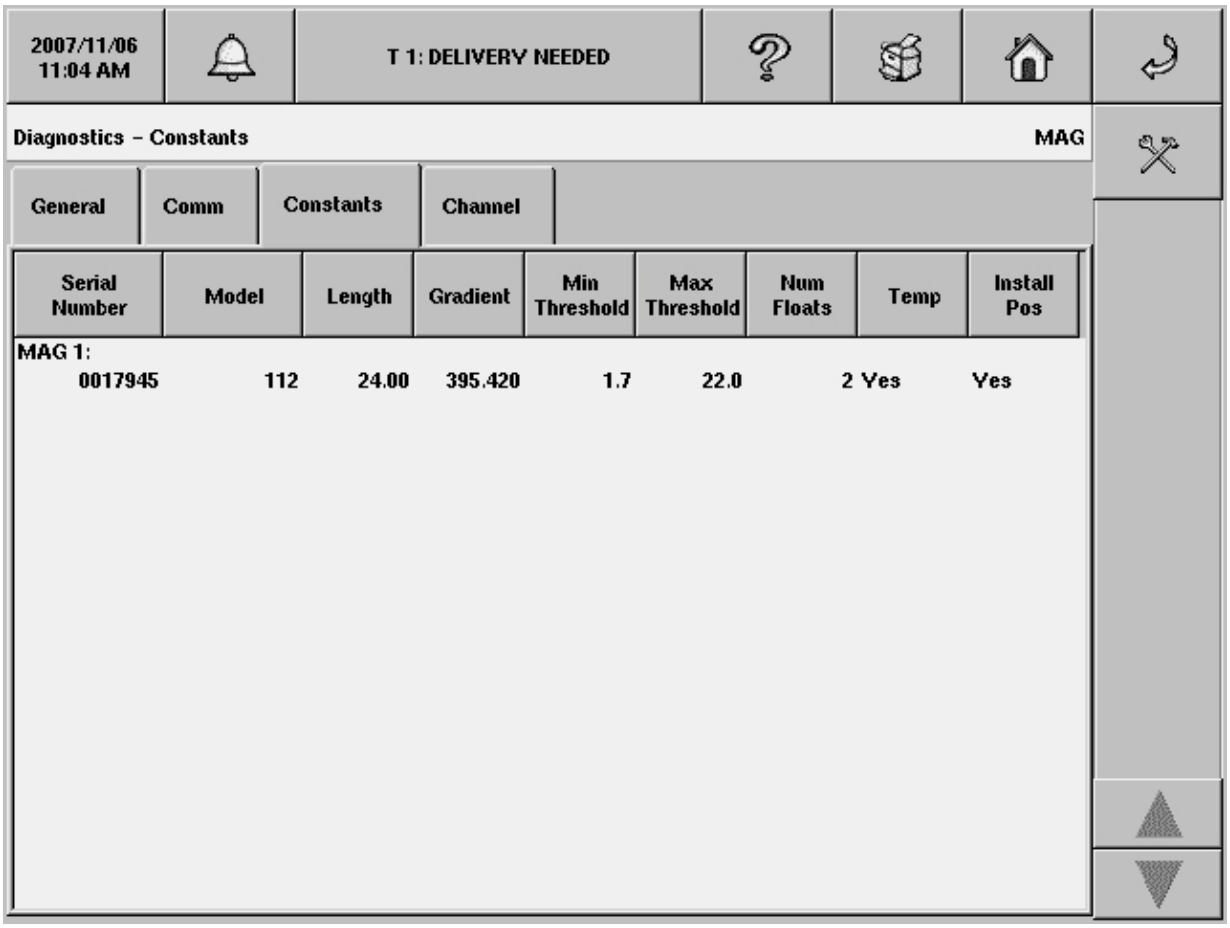
Setup

Touch this button open the Device Setup - Mag Sensor screen.

Mag Sensor Diagnostics - Comm Screen Refresh Rate

The Mag Sensor Diagnostics - Comm data will be refreshed every 8 seconds.

Mag Sensor Diagnostics - Constants



The Mag Sensor Diagnostics - Constants screen displays a report with constants diagnostic information about all Mag Sensors.

Report Column Descriptions

Serial Number

Mag Sensor Serial Number

Value: XXXXXXX

Model

Mag Sensor Model Number

Value range: 0 to 65535

Length

Mag Sensor Length

Value range: 0.00 to 144.00 in. (0.00 to 3657.60mm)

Gradient

Mag Sensor Gradient - counts per inch (no conversion here)

Value range: 100.000 to 400.000

Min. Threshold

Mag Sensor Minimum Threshold

Value range: 0.1 to 144.0 in. (2.5 to 3657.6mm)

Max. Threshold

Mag Sensor Maximum Threshold

Value range: 0.1 to 144.0 in. (2.5 to 3657.6mm)

Num. Floats

Mag Sensor Number of Floats

Possible messages:

- 1
- 2

Temp.

Mag Sensor Temperature Enabled Flag

Possible messages:

- Yes
- No

Install Pos.

Mag Sensor Install Position Enabled Flag

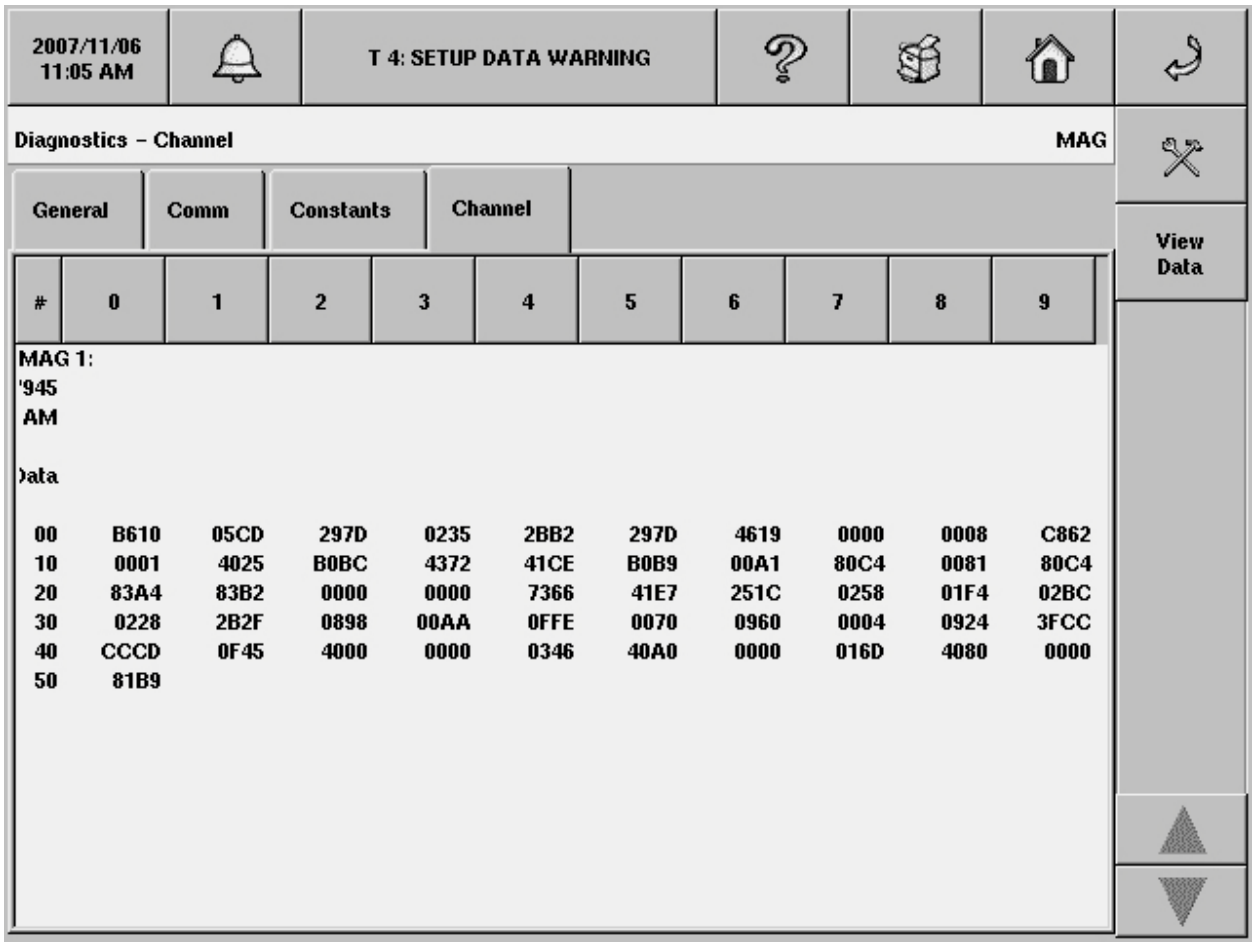
Possible messages:
- Yes
- No

Control Buttons (right of screen)

Setup

Touch this button open the Device Setup - Mag Sensor screen.

Mag Sensor Diagnostics - Channel



The Mag Sensor Diagnostics - Channel screen displays a report with channel diagnostic information about all Mag Sensors.

Report Description

Each Mag Sensor's channel data is preceded by the following information:

- Mag Sensor number (e.g., 1) and label (e.g., Mag Sensor 1)
- Mag Sensor serial number (up to 7 digits)
- Date and time (time channel data was received)

Channel data (Hex number) is read from the report as shown in the example below:

Row	Col. 0	Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8	Col. 9
00	**B610**	05EB	29FC	**0235**	2C32	29FD	E240	0001	0008	C941
10	0001	61A7	0000	0000	0000	0000	**00A1**	80C4	0081	80C4

In the example above, the last sample for Channel 0 is **B610**, for Channel 3 it is **0235,** and for channel 16 it is **00A1**.

Control Buttons (right of screen)

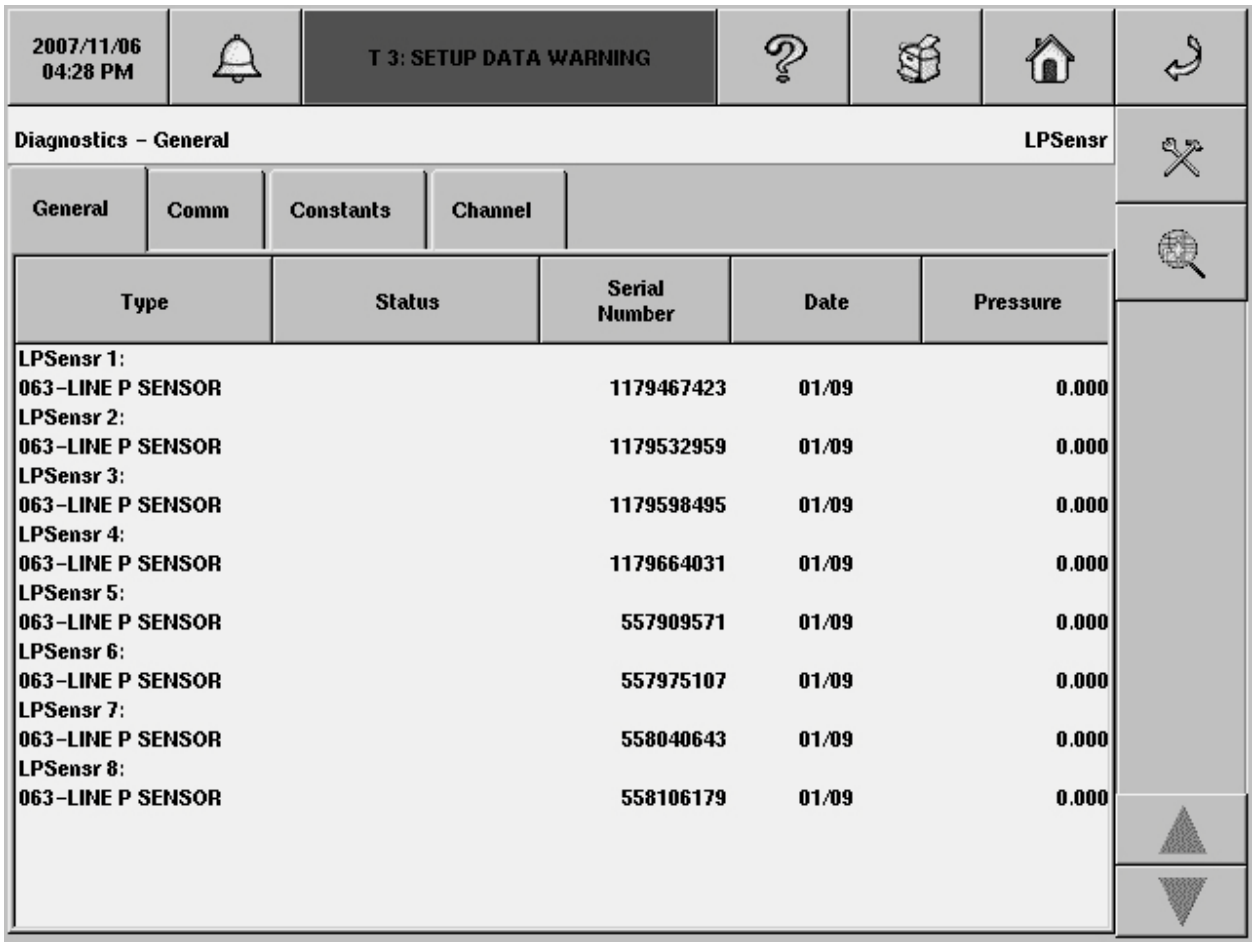
Setup

Touch this button open the Device Setup - Mag Sensor screen.

Mag Sensor Diagnostics - Channel Screen Refresh Rate

The Mag Sensor Diagnostics - Channel data will be refreshed every 8 seconds.

LPR Sensor Diagnostics - General



The LPR Sensor Diagnostics - General screen displays a report with general diagnostic information about all Line Pressure Sensors in the system. This screen is reached by selecting the Line Pressure Sensor icon in the diagnostic main screen.

Report Column Descriptions

Type

Sensor Type

Value: 063 -Line P Sensor

Status

Sensor Status

Possible messages:
- Normal
- Inactive

Serial Number

Sensor Serial Number

Value: XXXXXXXXXX

Date

Build Date by Year / Week

Value: Year/week (YY/WW)

Pressure

Pressure detected by the Line Pressure Sensor

Value range: -14.000 to 99.999 psi (-96.485 to 689.173kPa)

Diagnostics - LPR Sensor - General screen refresh rate

The LPR Sensor Diagnostics - General data will be refreshed every second.

Control Buttons (right of screen)

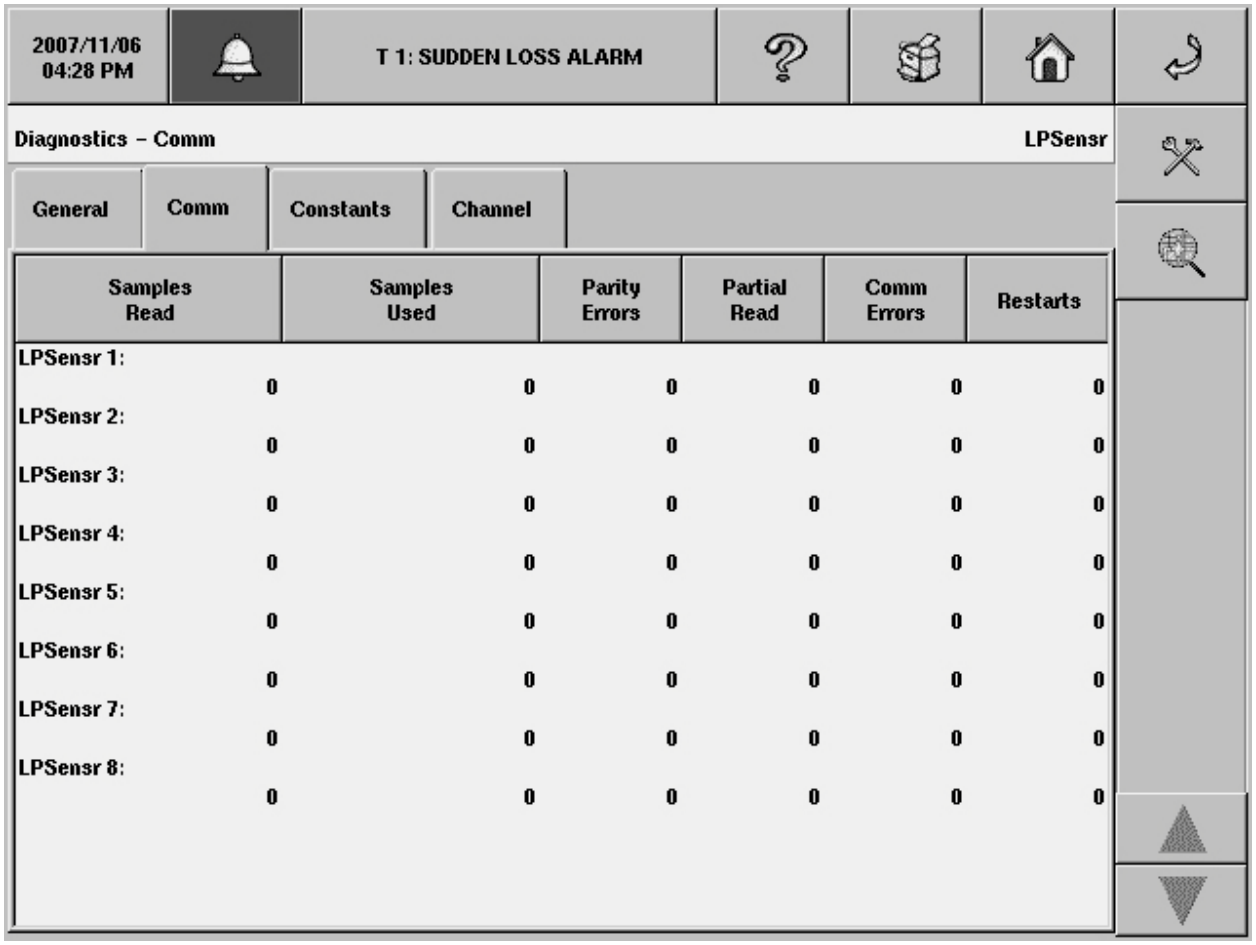
Setup

Touch this button open the Device Setup - Line Pressure Sensor screen.

Diagnostic

Touch this button to open the PLLD Diagnostics screens.

LPR Sensor Diagnostics - Comm



The LPR Sensor Diagnostics - Communication screen displays a report with communication diagnostic information for all Line Pressure Sensors.

Report Column Descriptions

Samples Read

Number of Samples Read

Value range: 0 to 4294967295

Samples Used

Number of Samples Used

Value range: 0 to 4294967295

Parity Errors

Number of Parity Errors

Value range: 0 to 999999

Partial Read

Number of Partial Errors

Value range: 0 to 999999

Comm Errors

Number of Comm Errors

Value range: 0 to 999999

Restarts

Number of Restarts

Value range: 0 to 999999

Diagnostics - LPR Sensor - Comm screen refresh rate

The LPR Sensor Diagnostics - Communication data will be refreshed every 8 seconds.

Control Buttons (right of screen)

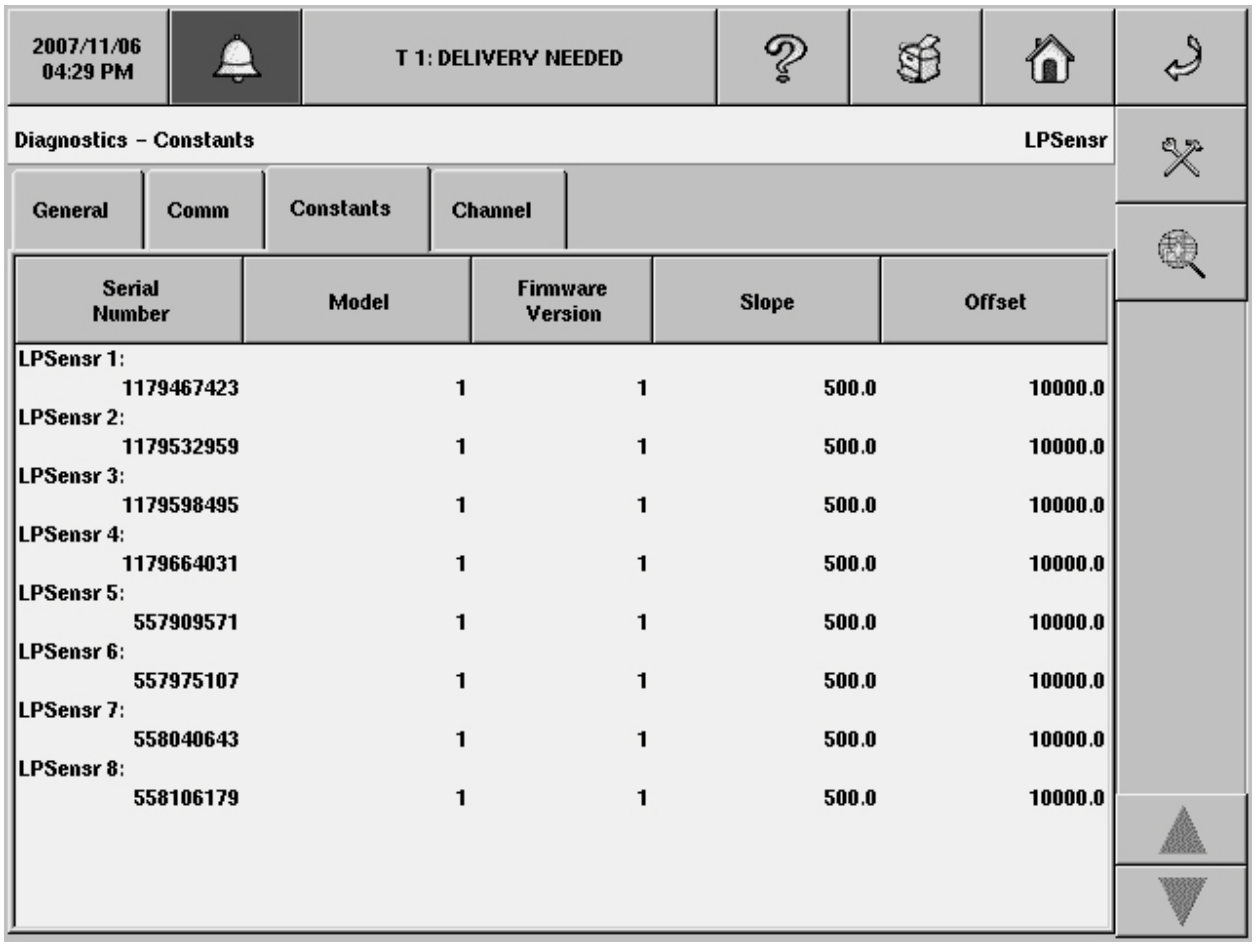
Setup

Touch this button open the Device Setup - Line Pressure Sensor screen.

Diagnostic

Touch this button to open the PLLD Diagnostics screens.

LPR Sensor Diagnostics - Constants



The LPR Sensor Diagnostics - Constants screen displays a report with constants diagnostic information about all Line Pressure Sensors in the system.

Report Column Descriptions

Serial Number

Line Pressure Sensor Serial Number

Value: XXXXXXXXXX

Model

Line Pressure Sensor Model Number

Value range: 0 to 65535

Firmware Version

Line Pressure Sensor Software Version

Value range: 0 to 99

Slope

Line Pressure Sensor Slope

Value range: 0 to 65535

Offset

Line Pressure Sensor Offset

Value range: 0 to 65535

Control Buttons (right of screen)

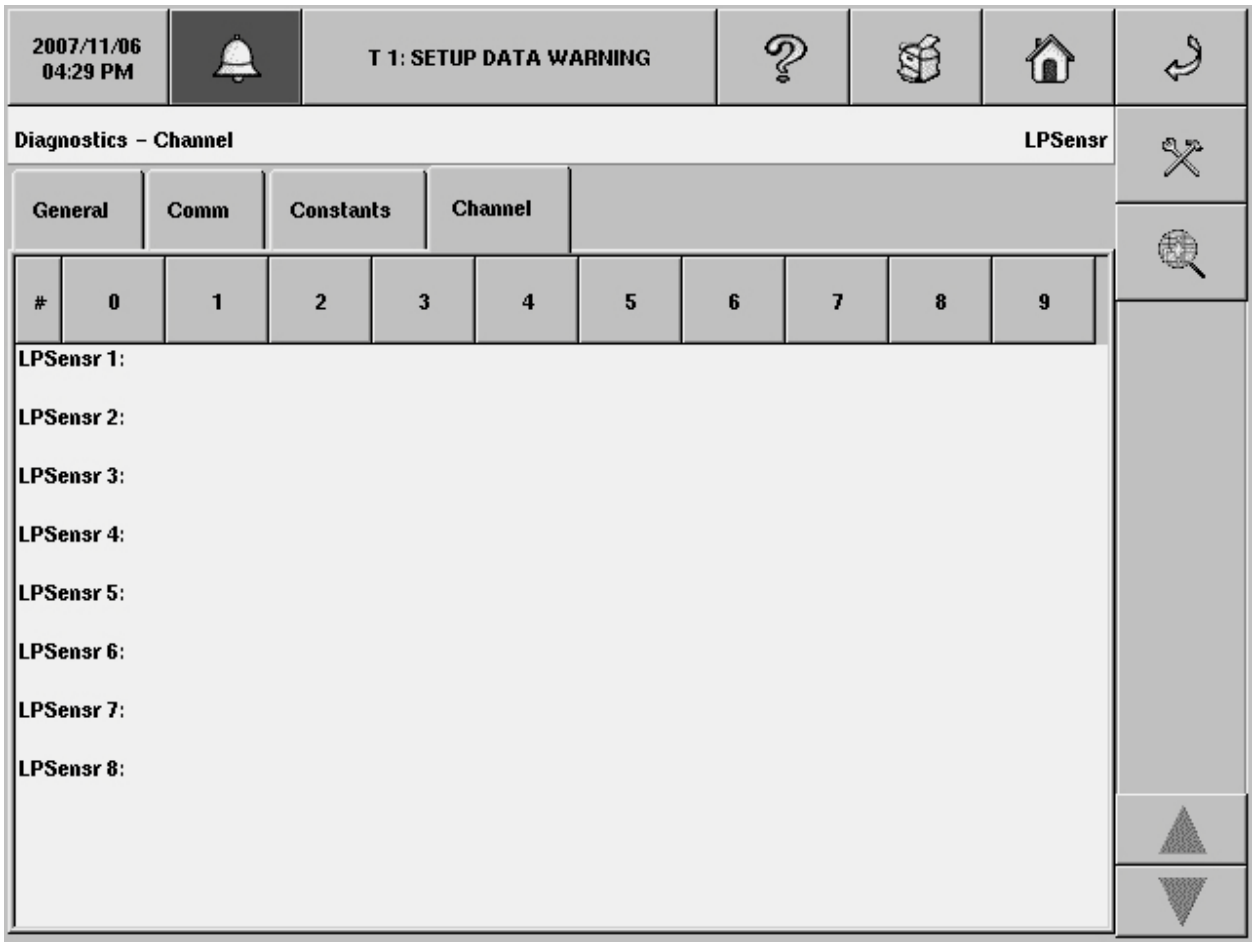
Setup

Touch this button open the Device Setup - Line Pressure Sensor screen.

Diagnostic

Touch this button to open the PLLD Diagnostics screens.

LPR Sensor Diagnostics - Channel



The LPR Sensor Diagnostics - Channel screen displays a report with channel diagnostic information about all Line Pressure Sensors.

Report Description

Each Line Pressure Sensor's channel data is preceded by the following information:

Sensor number:Label (e.g., Sensor 1:your label)

Serial number (XXXXXXXXXX)

Date and time (time channel data was received)

Channel data is read from the report as shown in the example below:

Row	Col. 0	Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8	Col. 9
00	**B610**	05EB	29FC	**0235**	2C32	29FD	E240	0001	0008	C941
10	0001	61A7	0000	0000	0000	0000	**00A1**	80C4	0081	80C4

In the example above, the last sample for Channel 0 is **B610**, for Channel 3 it is **0235,** and for channel 16 it is **00A1**.

Data Type: Hexidecimal
Value range: 0000 to FFFF

Diagnostics - Line Pressure Sensor - Channel screen refresh rate

The Line Pressure Sensor Diagnostics - Channel data will be refreshed every 8 seconds.

Control Buttons (right of screen)

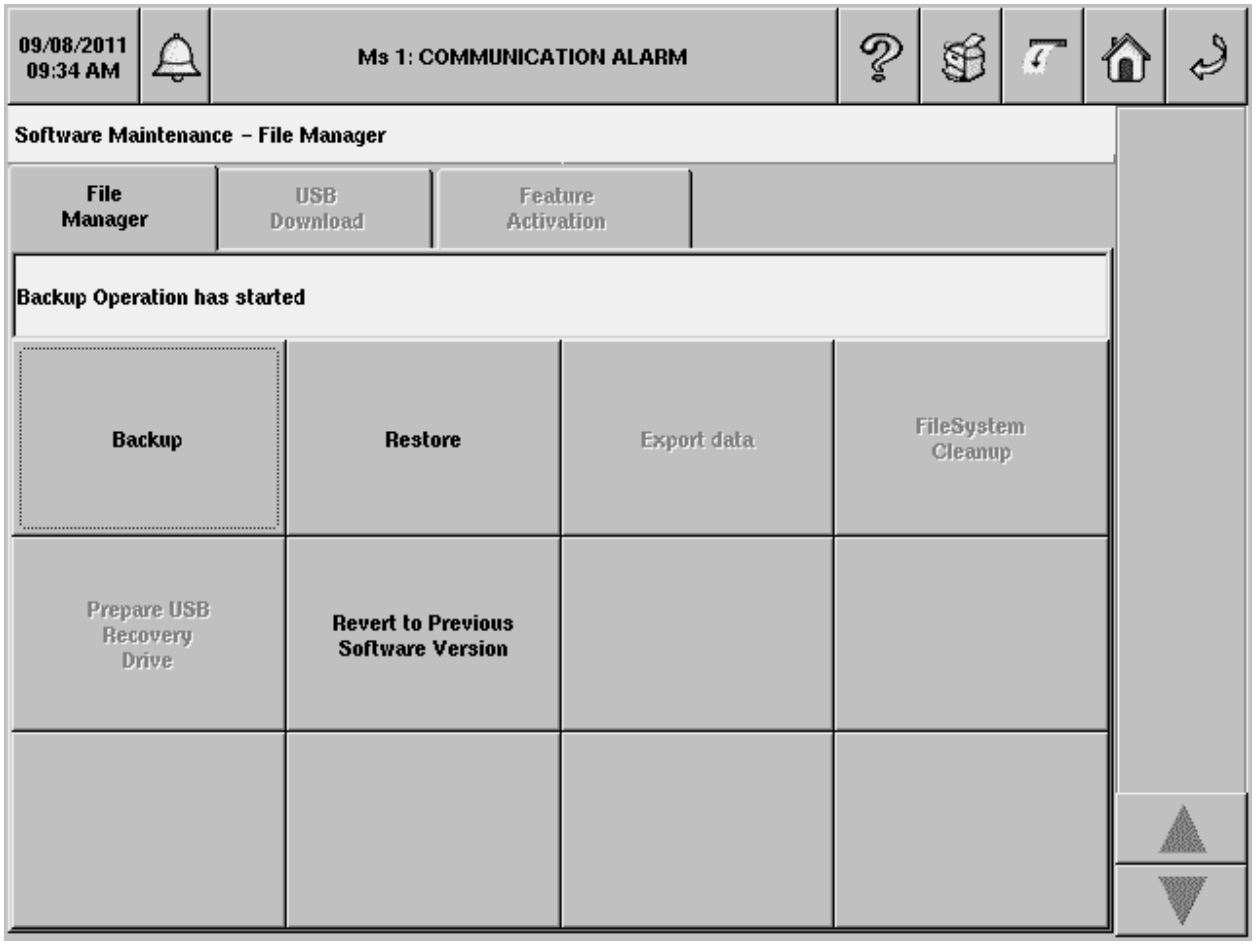
Setup

Touch this button open the Device Setup - Line Pressure Sensor screen.

Diagnostic

Touch this button to open the PLLD Diagnostics screens.

Software Maintenance - File Manager



The File Manager tab screen is used to control console system software/feature/data file backup, restore or revert operations. A validated V-R USB Recovery Thumb Drive is required for backup and recover operations. For ultimate protection against possible loss of data and to protect against system crashes, run the Backup operation daily.

NOTE: It is very important that you keep the V-R Code/Feature and Recovery USB thumb drives in a secure location.

File Manager Screen Fields and Buttons

Status Bar

Displays the current operation in progress. Possible messages include:

- Idle
- Discovering Backup Device

- Backup Operation has started
- Restore in Progress

Backup Button

At regular intervals (ideally once a day), insert your V-R Recovery USB Thumb Drive in the console's USB port and touch this button to launch a non-disruptive backup operation of all system setup and data files.

Restore Button

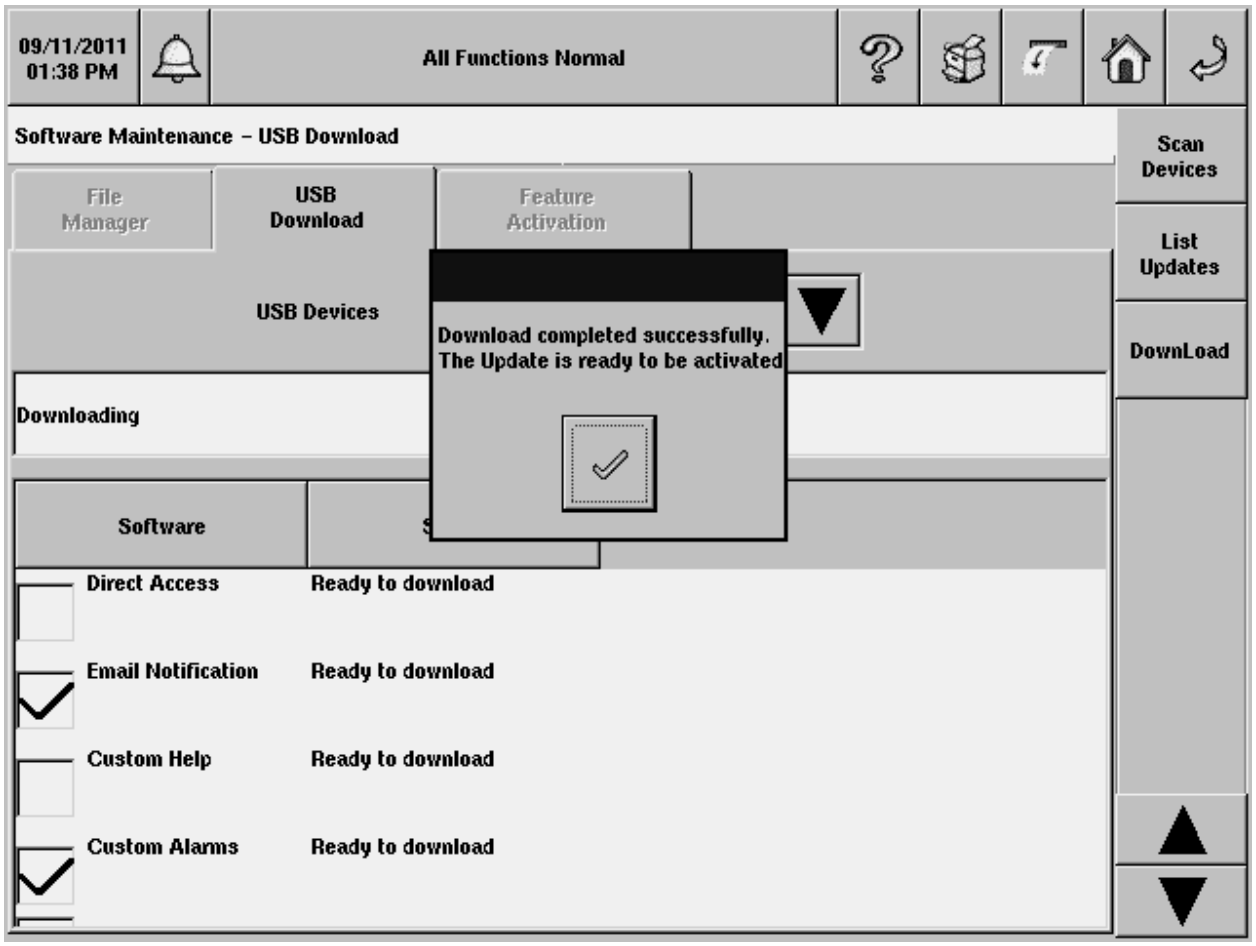
After replacing a console CF card, or after a system crash, insert your V-R Recovery USB Thumb Drive in a console USB port and touch this button to launch a restore operation that reloads your console's system software, setup and data files from your recovery thumb drive onto the CF card. The Restore operation requires a 'quiet' station as it will cause an interruption in service for about a minute.

Revert To Previous Software Version Button

A copy of the previous (older) system software and databases is stored on your console's CF card. If the current (newer) version of system software/features does not perform properly, the Revert-To operation gives you the ability to revert to the previous software version stored in the CF card. The Revert-To operation requires a 'quiet' station as it will cause an interruption in service for about a minute. No USB devices are required for this operation.

After touching this button, a dialog box will alert you that this operation will cause an interruption in service. If you reply with 'OK', the File Manager will then check to ensure a previous version of the applications exists, perform the Revert-To operation, notify you of its successful completion and restart the console. If the Revert-To operation cannot be performed, a dialog box will display an error message.

Software Maintenance - USB Downloads



The USB tab screen is used to control USB downloads from a validated V-R Code/Features USB thumb drive or a V-R Recovery USB thumb drive that is plugged into a USB port in the console.

The console will determine what USB storage device(s) is connected. This device will be displayed in a drop down box to allow you to select the proper drive. A 'Scan Devices' button will allow you to rediscover the USB thumb drive if the correct drive was not found. Only V-R thumb drives with valid software packages will be usable. The screen's status bar is updated to 'Scanning Devices'.

Once the device is selected, touch the 'List Updates' button to provide a list in the Software Column of the features/software upgrades that are available on the recognized USB drive. When the list is acquired, a check will be made to see which updates have already been installed. An additional check will be made to see if a compatibility problem exists for any update. If a version compatibility problem exists, a dialog box will be displayed instructing you to contact customer service to obtain the proper version.

Touch the box beside one or more of the desired selection(s) in the Software column that you want to download. Touch the Download button and the screen's status bar will read 'Downloading'. If pending updates are already on the CF card and were never activated, you will be asked if you want to delete the pending updates, or to abort the operation. When the download is complete, the screen will display a dialog box notifying you of the results of the download and the status bar will return to Idle.

NOTE: Keep the V-R Code/Feature and Recovery USB thumb drives in a secure location.

USB Screen Fields and Buttons

USB Devices

Pull down list of detected USB thumb drives.

Status Bar

Displays the current operation in progress. Possible messages include:

- Idle
- Scanning Devices
- Reading Update List
- Downloading

Software

Touch the boxes beside each of the desired items in this column. If you change your mind about a selection, touch the box again to remove the check.

Status

This column lists the current status of each feature in the Software column with one of the following messages:

- Downloaded
- Ready to Download
- Incompatible

Control Buttons (Right Side of Screen)

Scan Devices

Touch to re-discover USB devices.

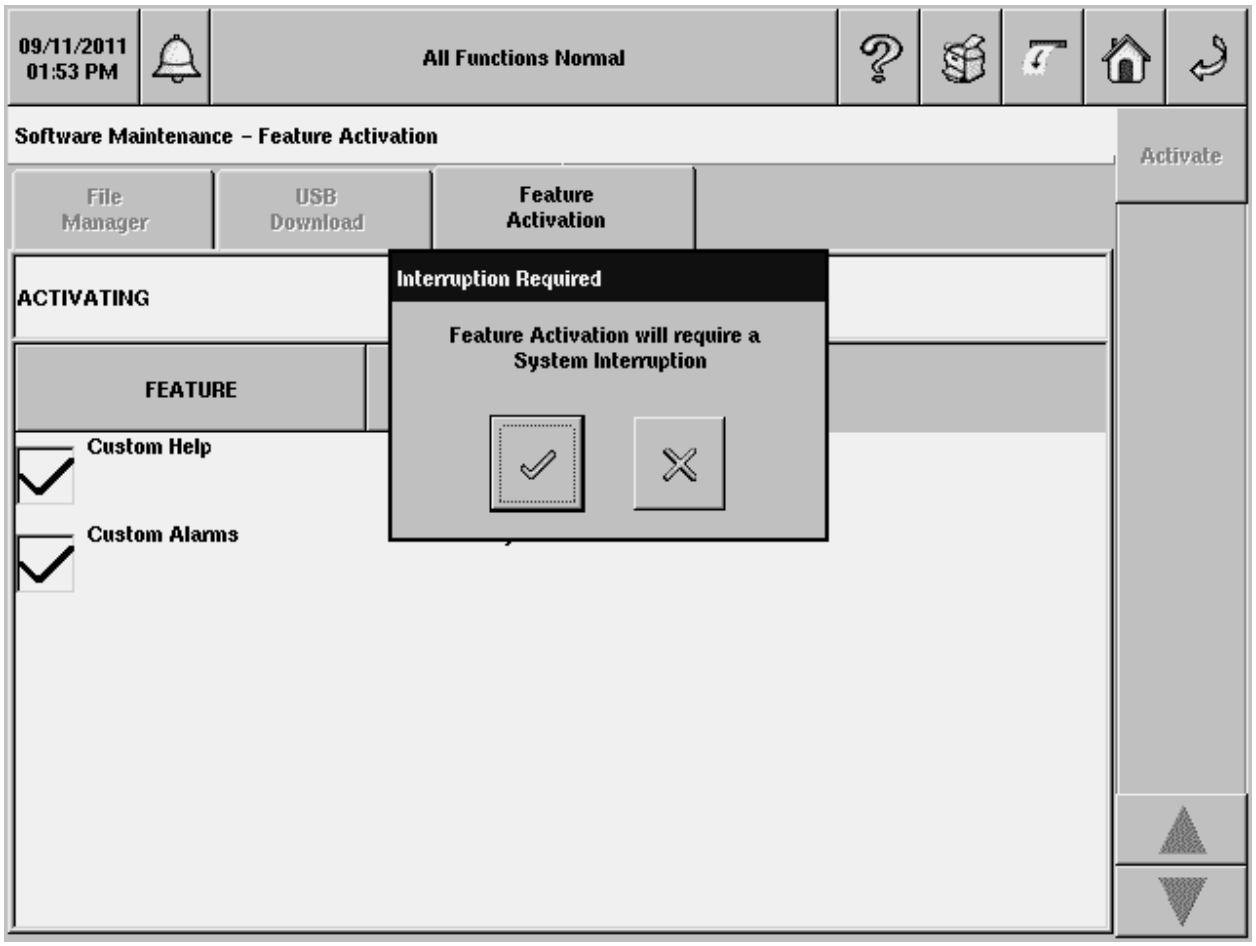
List Updates

Touch to query the thumb drive for available updates.

Download

Touch to download the selected (checked) software. This button is inactive until the thumb drive's contents are validated.

Software Maintenance - Feature Activation



The Activation tab screen is use to control the activation of features placed on the console's CF (compact flash) card following a download. During the activation process, several dialog boxes will be displayed to inform you of key events.

During Feature Activation there must be no dispensing. However, the activation process only takes a few minutes. Following activation, the console converts the setup databases. If new features are activated, setup will be required for the new features.

Activation Screen Fields and Buttons

Status Bar

Displays the current operation in progress. Possible messages include:

- Idle
- Activation in Progress

Feature

This column contains a list of features which are available to be activated. Multiple features may be activated concurrently. Touch the boxes beside each of the desired items in this column. If you change your mind about a selection, touch the box again to remove the check.

Status

The current status of each feature is also displayed with one of the following messages:

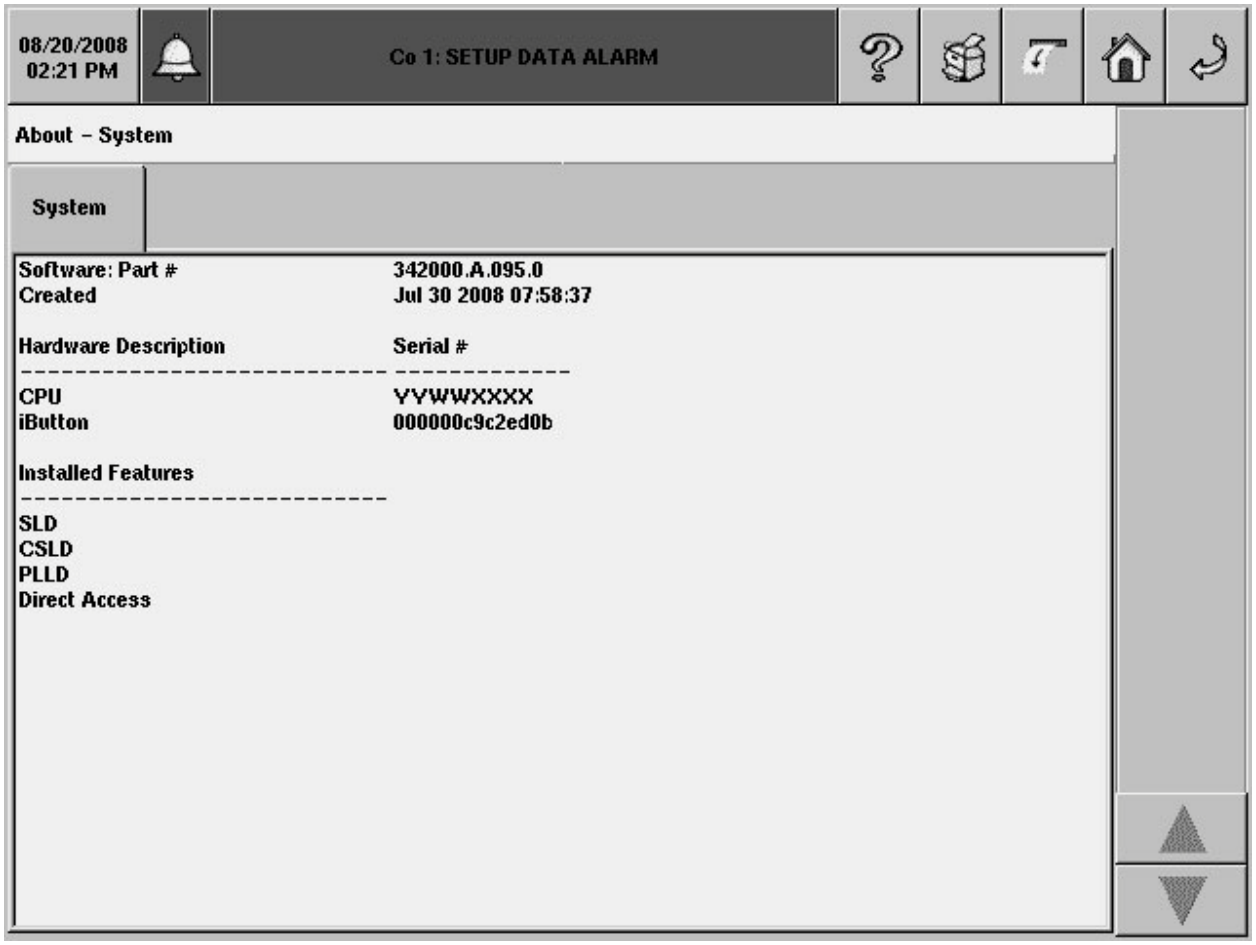
- Ready to Activate
- Activation in Progress

Control Buttons (Right Side of Screen)

Activate

Touch to activate a selected (checked) feature. This button is inactive until at least one entry has been selected.

About - System Screen



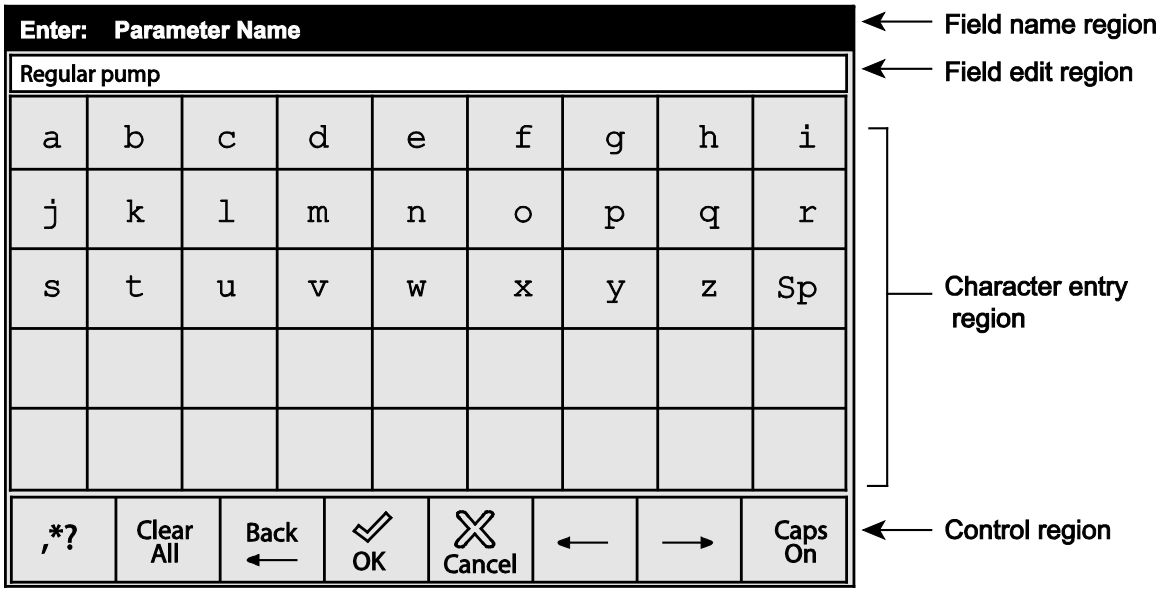
The About - System tab screen displays important information about your console's software version and installed features. If you should be experiencing problems with the console, please have the information on this screen available with you before calling.

The Veeder-Root Technical Support number is (800) 323-1799.

Specialty Dialog Screens

Alpha Keypad Dialog

The Alpha Keypad Dialog lets you enter letters of the alphabet for labels, names, etc.\



- **Field Name Region**

  This is the title area that displays the name of the field value being entered.

- **Field Edit Region**
  This is the view area to show the value as it is being entered (entries are left justified).

- **Character Entry Region**
  This region has Buttons that enter characters in the Field Edit Line.

- **Control Region**
  The region has the following buttons, from left to right:

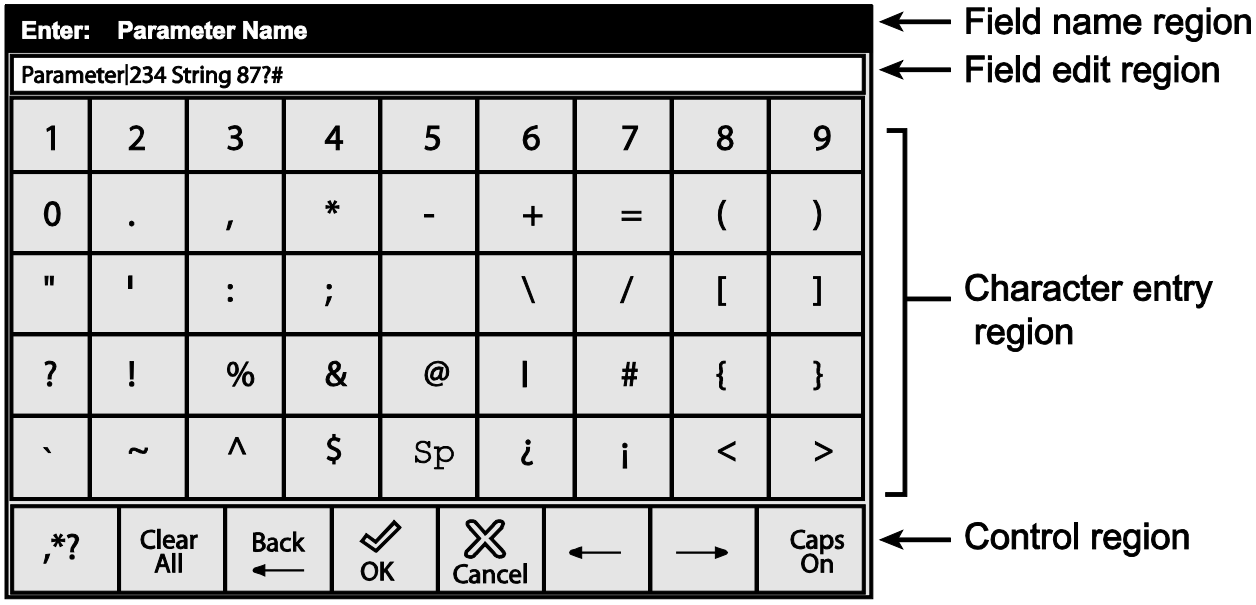
  - ,*? - touch this button to toggle between the Enhanced Numeric and Alpha keypad interfaces. It is enabled when the field is an Alphanumeric Entry.

It is disabled if the field is an Alpha only entry.

- Clear All - touch this button to clear the entire entry.
- Back - touch this button to remove a character to the left of the cursor.
- OK - touch this button to apply the selection.
- Cancel - touch this button to discard any selections that have been made.
- ← - touch this button to move the cursor to the left.
- → - touch this button to move the cursor to the right.
- Caps On - touch this button to turn on or off caps.

Enhanced Numeric Keypad Dialog

The Enhanced Numeric Keypad Dialog provides characters that contain numeric and punctuation characters used by the alpha numeric fields for the currently selected language. This dialog is used to enter alpha numeric fields and special alpha numeric fields like phone numbers, IP addresses, etc.



- **Field Name Region**

  This is the title area that displays the name of the field value being entered.

- **Field Edit Region**
  This is the view area to show the value as it is being entered (entries are left justified). The text will be left justified for both alphanumeric and enhanced numeric entries and right justified for both numeric and hexadecimal entries.

- **Character Entry Region**
  This region has Buttons that enter characters in the Field Edit Line. The 'Sp' button enters a Space Character.

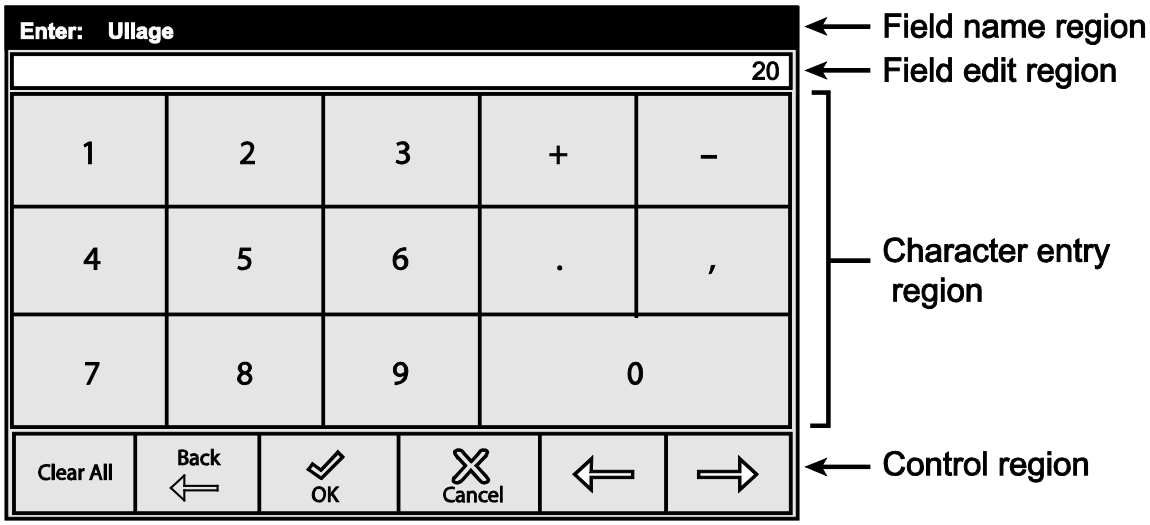
- **Control Region**
  The region has the following buttons, from left to right:

- **,*?** - touch this button to toggle between the Enhanced Numeric and Alpha keypad interfaces. It is enabled when the field is an Alphanumeric Entry. It is disabled if the field is an Alpha only entry.
- **Clear All** - touch this button to clear the entire entry.
- **Back** - touch this button to remove a character to the left of the cursor.
- **OK** - touch this button to apply the selection.
- **Cancel** - touch this button to discard any selections that have been made.
- ← - touch this button to move the cursor to the left.
- → - touch this button to move the cursor to the right.
- **Caps On** - touch this button to turn on or off caps.

NOTE: The '¿' and '¡' symbols and other language specific punctuation characters will only show up for languages that need them.

Numeric Keypad Dialog

The Numeric Keypad dialog will display when you are required to enter integer and decimal entries:



- **Field Name Region**

  This is the title area that displays the name of the field value being entered.

- **Field Edit Region**
  This is the view area to show the value as it is being entered (entries are right justified).

- **Character Entry Region**
  This region has Buttons that enter characters in the Field Edit Line.

- **Control Region**
  The region has the following buttons, from left to right:

  - **Clear All** - touch this button to clear the entire entry.

  - **Back** - touch this button to remove a character to the left of the cursor.

  - **OK** - touch this button to apply the selection.

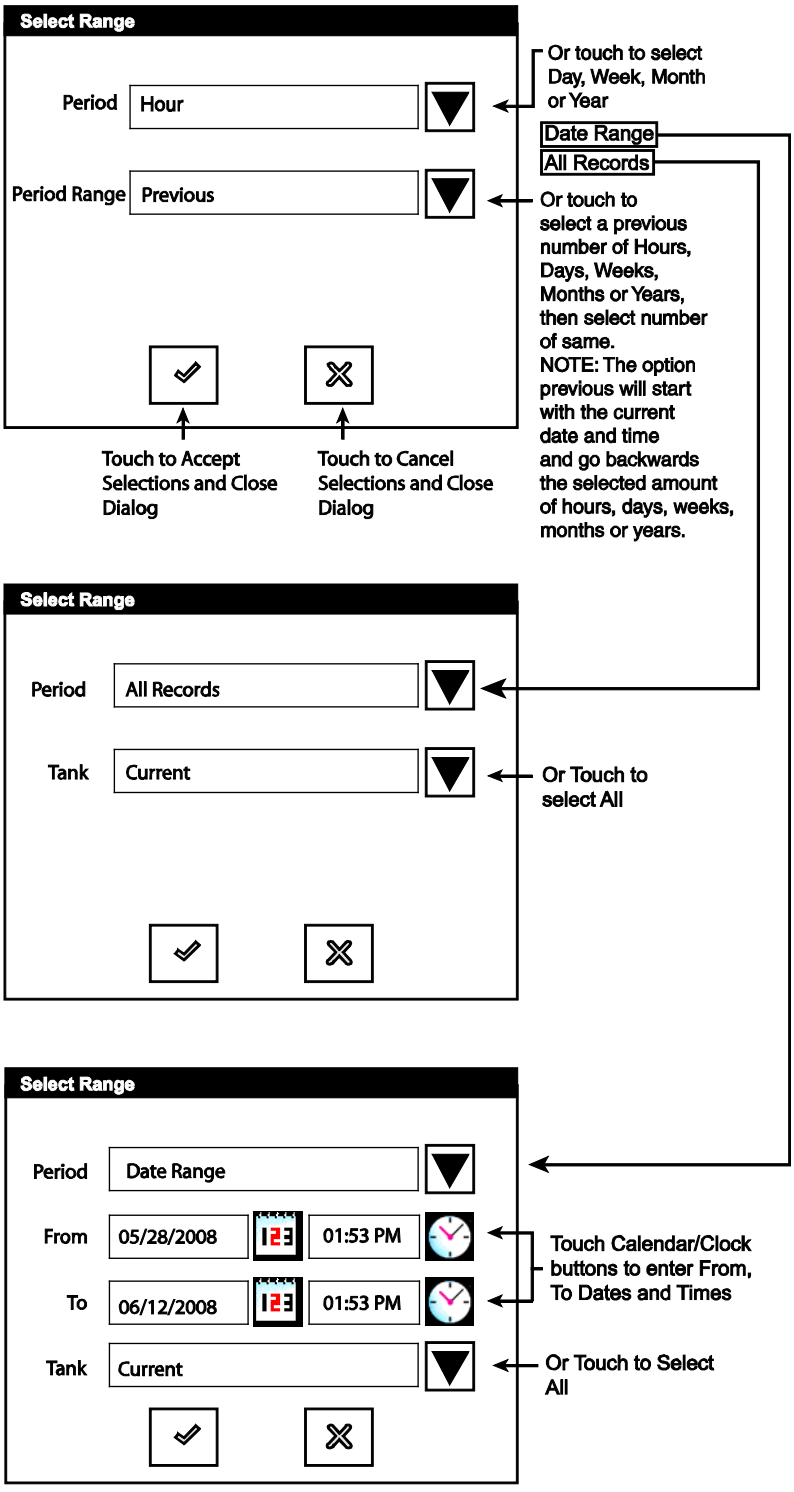
- **Cancel** - touch this button to discard any selections that have been made.
- ← touch this button to move the cursor to the left.
- → touch this button to move the cursor to the right.

Notes:

- Touching '**+**' and '**-**' buttons will toggle the sign of the number between positive and negative. The negative sign character will be shown to the left of the numeric entry. The positive sign will not be shown. It will be disabled if range for value does not include negative numbers.
- Touching the '**,**' button will insert a comma for entries that use thousands separators. This button will be enabled or disabled based on the thousands separator setting in number format section of Display Setup.

Report Range Selection Dialogs

The dialog boxes used to define a report's content are shown below.



System Periodic Maintenance Checklist

Veeder-Root environmental monitoring consoles installed in accordance with installation manual requirements are designed to detect and report conditions that inhibit proper operation. Veeder-Root consoles self-diagnose essential components, and if a component failure is detected, will not complete and report tank and line tests. The console will issue an audible and visual alarm when a failed or disconnected sensor is detected (NOTE! The audible alarm may have been disabled in Custom Alarm Setup).

⚠ WARNING!

This system operates near highly combustible fuel storage tanks. Leaking tanks can create serious environmental and health hazards.

If you have not been trained in proper service procedures and hazards involved, refer all service to a qualified Veeder-Root Service Representative.

Attempting to service tank monitors and equipment without proper training can cause damage to property, environment, resulting in personal injury or death.

The Periodic Maintenance Checklist below, if followed, may extend the life of the system, but is not required for proper operation.

Maintenance Operation	When to Perform	What To Do
Console	Yearly	**A. Owner or Station Attendant** 1. During or immediately after running a 3.0 gph (11.3 lph) self-test, visually inspect the flexible fuel lines for leakage. 2. Check flexible fuel control lines for any chafing or excessive corrosion. **B. Service Contractor** 1. Verify epoxy kits have been installed on field wiring.
Console	Yearly	1. Check printer for paper if equipped. 2. Print out or check system inventory and verify to actual inventory. 3. Verify in-tank tests are being performed as required by printing 4. reports. 5. Press Alarm/Test button to verify power, warning and alarm indicators light and audible alarm sounds. 6. Verify line leak tests are being performed (if line leak installed).

Maintenance Operation	When to Perform	What To Do
Mag Probes	Yearly	**A. Owner or Station Attendant** 1. Inspect probe cables for any cracking or swelling. **B. Service Contractor** 1. Replace probe cables (ref. item A.1). 2. Verify epoxy kits have been installed on field wiring. 3. Mag probes only - Inspect floats and probe shaft for any residue build up. Clean with mineral spirits as necessary. NOTE: Mag Probes used in products such as waste oil should be checked more frequently than yearly since products of this type can leave deposits on the probe shaft and float assemblies that may restrict the probe's measurement capability.
PLLD	Yearly	**A. Owner or Station Attendant** 1. Check submersible pump head for leakage at PLLD transducer port and functional element with pump On. 2. Check PLLD transducer cable for any cracking or damage. **B. Service Contractor** 1. Verify epoxy kits have been installed on field wiring. 2. Replace PLLD transducer if cable is cracked or damaged (ref. item A.2).

Maintenance Operation	When to Perform	What To Do
Dispenser Pan, Containment Sump, and Piping Sump Sensor (float type)	Yearly	**A. Owner or Station Attendant** 1. Inspect sensors to verify float moves freely. 2. Turn sensor upside down to verify the monitor liquid alarm is activated. 3. Inspect sensor cable for any cracking or damage. **B. Service Contractor** 1. Verify epoxy kits have been installed on field wiring. 2. Replace Dispenser Pan/Containment Sump sensor cables if cracked or damaged. Replace Piping Sump sensor if cable is cracked or damaged (ref. item A.3).
Dispenser Pan Sensor (Solid-State)	Yearly	**A. Owner or Station Attendant** 1. Inspect sensor cable for any cracking or damage. 2. Verify sensor is firmly secured in an upright position on the bottom of the pan. **B. Service Contractor** 1. Verify epoxy kits have been installed on field wiring. 2. Replace sensor cable if cracked or damaged (ref. item A.1).

Maintenance Operation	When to Perform	What To Do
Containment Sump Sensor (Solid-State)	Yearly	**A. Owner or Station Attendant** 1. Inspect sensor cable for any cracking or damage. 2. Verify sensor is firmly secured in an upright position on the bottom of the containment sump. **B. Service Contractor** 1. Verify epoxy kits have been installed on field wiring. 2. Replace sensor cable if cracked or damaged (ref. item A.1).
Vapor Sensor	Yearly	**A. Owner or Station Attendant** 1. Inspect sensor cable for any cracking or damage. **B. Service Contractor** 1. Verify epoxy kits have been installed on field wiring. 2. Replace sensor cable if cracked or damaged (ref. item A.1).
Groundwater Sensor	Yearly	**A. Owner or Station Attendant** 1. Inspect sensor cable for any cracking or damage. 2. Lift sensor above water level in the well and verify the system activates a 'WATER OUT' alarm. **B. Service Contractor** 1. Verify epoxy kits have been installed on field wiring. 2. Replace sensor if cable is cracked or damaged (ref. item A.1). 3. If the sensor does not alarm (ref. item A.2), replace the sensor.

Maintenance Operation	When to Perform	What To Do
Hydrostatic Sensor	Yearly	**A. Owner or Station Attendant** 1. Inspect sensor cable for any cracking or damage. **B. Service Contractor** 1. Remove sensor from brine reservoir and verify floats move freely. With sensor in its upright position, the system should activate a 'FUEL ALARM'. Turn the sensor upside down to be sure the system activates a 'WATER ALARM'. If the sensor does not alarm in both conditions, replace the sensor. 2. Verify epoxy kits have been installed on field wiring. 3. Replace sensor if cable is cracked or damaged (ref. item A.1).
Mag Sensor	Yearly	**A. Owner or Station Attendant** 1. Inspect sensor cable for any cracking or damage. 2. Check that sensor is resting firmly on bottom of monitored pan/sump. **B. Service Contractor** 1. Replace Mag Sensor cable if cracked or damaged (ref. item A.1). 2. Verify epoxy kits have been installed on field wiring.

References

Table of Acronyms

Veeder-Root Acronyms	
BIR	Business Inventory Reconciliation
BOL	Bill of Lading
CDIM	Current Loop Dispenser Interface Module
CRLD	Continuous Reconciliation Leak Detect (Tank and Line)
CSLD	Continuous Statistical Leak Detection (Tank)
CSTP	Contained Submersible Turbine Pump
CVLD	Continuous Vapor Leak Detect (ISD)
DCD	Driver Controlled Delivery
DIM	Dispenser Interface Module
EDIM	Electronic DIM
EVR	Enhanced Vapor Recovery (ISD)
HRM	Hourly Reconciliation Monitoring
I/O	Input/Output
iButton	An object that has bit encoded data that controls available features
ILS	Interstitial Level Sensor
ISD	In-Station Diagnostics
LVDIM	Low Voltage Dispenser Interface Module
MAG	MAGnetostrictive technology
MDIM	Mechanical DIM
PLLD	Pressure Line Leak Detection
PMC	Pressure Management Control (ISD)
QPLD	Quiet Period Leak Detect
RJ	Red Jacket (pumps, controls)
SLD	Static Leak Test (Tank)
TLC	Tanker Load Control
TLS	Tank Level Sensor
USM	Universal Sensor Module
Industry Acronyms	
ASC	Authorized Service Contractor

AST	Aboveground Storage Tank
ATG	Automatic Tank Gauge
AWG	American Wire Gauge
BOS	Back office system
C	Closed (relay)
CITLDS	Continuous In-Tank Leak Detection System
CPU	Central Processing Unit
ECS	Environmental Compliance Systems
EPA	Environmental Protection Agency
IPS	Iron Pipe Size
MOC	Major Oil Company
NEC	National Electric Code
NFPA	National Fire Protection Association
NC	Normally Closed (relay)
NO	Normally Open (relay)
NPT	National Pipe Thread
PMC	Primary Maintenance Contractor
POS	Point of Sale
PRS	Product Requirement Specification
SCLD	Secondary Containment Leak Detection
STP	Submersible Turbine Pump
USB	Universal Serial Bus
Regulatory Acronyms	
ATEX	Europe
BASEEFA	UK
C of C	Certificate of Compliance
CAPCO	The California Air Pollution Control Officers Association
CARB	California Air Resources Board
CEN	Committee European for Normalization (Standardization)
CSA	Canadian Standard Association
D of C	Declaration of Conformance
Lcaa approval	France
LOM approval	Spain
NEPSI	China
NWML	European Weights and Measures
PTB	Germany

SAA	Australia
SEV	Switzerland
TUV	Austria
UL	Underwriters Laboratory

Table of Alert Symbols

Safety and Alert Symbols are used throughout the help files to alert you to important system and safety information. The table below explains symbols you may see when reading the online help setup and operation instructions for this equipment.

Symbol	Definition
	ELECTRICITY High voltage exists in, and is supplied to, the device. A potential shock hazard exists.
	EXPLOSIVE Fuels and their vapors are extremely explosive if ignited.
	FLAMMABLE Fuels and their vapors are extremely flammable.
	TURN POWER OFF Live power to a device creates a potential shock hazard. Turn Off power to the device and associated accessories when servicing the unit.
	WARNING Heed the adjacent instructions to avoid equipment damage or personal injury.
	AUDIBLE ALARM Touch the flashing System Status box to acknowledge the alarm and turn off the beeper!
	READ ALL RELATED MANUALS Knowledge of all related procedures before you begin work is important. Read and understand all manuals thoroughly. If you do not understand a procedure, ask someone who does.

Table of Device Identifiers

Device Type	Short Device Identifier	Long Device Identifier	Full Device Identifier
Air Flow Meter	Af	AfMeter	Air Flow Meter
Atmospheric Sensor	At	AtmSns	Atmospheric Sensor
Automatic Event	Ae	AutoEvt	----------
Contact	Cn	Contact	----------
Comm Device	Co	Comm	Comm Device
Dispenser	d	Disp	Dispenser
EDIM,CDIM,LDIM	E	DIM	EDIM,CDIM,LDIM
External Input	I	ExtInp	External Input
Fueling Position	Fp	FPos	Fueling Position
Ground Water Sensor	G	GrndWtr	Ground Water Sensor
Hose	h	Hose	Hose
Hydrocarbon Sensor	Hy	HydcSns	Hydrocarbon Sensor
Line	Ln	Line	Line
Line Pressure Sensor (PLLD)	Pl	LPSensr	Line P Sensor
Liquid Sensor	L	Liquid	Liquid Sensor
Mag Sensor	MS	MAG	Mag Sensor
Meter	m	Meter	Meter
MDIM	M	MDIM	MDIM
Module	Mo	Module	Module
PLLD Line	Q	Line	PLLD Line
Probe	Pb	Probe	Probe
Product	F	Product	Product
Pump	Pm	Pump	Pump
Pump Sense Input	S	PumpSns	Pump Sense Input
Relay	R	Relay	Relay
Siphon Set	Si	Siphon	Siphon Set
Tank	T	Tank	Tank
Type A (2-Wire CL) Sensor	C	Type A	Type A Sensor
Type B (3-Wire CL) Sensor	H	Type B	Type B Sensor
Vacuum Sensor	Vs	VacSns	Vacuum Sensor
Ullage Pressure Sensor	Pv	UVPSns	Ullage Press Sensor

Vapor Sensor	V	Vapor	Vapor Sensor

Table of Module Device Identifiers

Module Type	Short Device Identifier	Long Device Identifier	Full Device Identifier
Universal Sensor Module	UM	USM	Universal Sens Module
Relay/External Input Module	IO	IOM	Relay/External Input Module

Table of Standard Abbreviations

Word	English Abbreviation
Alarm	Alrm
Average	Avg
Board	brd
Dispense	Disp
Delivery	dlvy or dlv
Evaporation	Evap
Factor	Fact
Height	ht
Interval	Intvl
Minutes	min or MM
Maximum	Max
Product	Prod
Seconds	sec or SS
Status	St
Standard	Stan
Test	tst
Temperature	Temp
Temperature Compensation	TC
Tank	Tnk
Volume	Vol
Warning	Warn
Water	Wtr
Year	YY or YYYY

Table of Unit Abbreviations

Unit	Abbreviation
Gallon	gal
Litre	L
Inch	in
Centimeter	cm
Millimeter	mm
Degrees Fahrenheit	°F
Degrees Celcius	°C
Pounds per Square Inch	psi
Pascal	Pa
Kilo-Pascal	kPa
Foot	ft
Meter	m
Pound	lb
Kilogram	kg
Year	yr or Y (Date format)
Month	mo (Date format)
Day	d or D (Date format)
Hour	h or H (Time format)
Minute	min or MM (Time format)
Second	s or S (Time format)
Percent	%
Gallons	gph
Litres per hour	lph

Table of Unit Conversions

Unit	Metric to U.S. Conversion	U.S. to Metric Conversion
Capacity	gal = L/3.785	L = gal * 3.7850001 L
Distance	in = mm/25.4, in = cm/2.54	mm = in * 25.4, cm = in * 2.54
Temperature	°F = ([9/5] * °C) + 32	°C = (5/9) * (°F - 32)
Temperature Change	delta°F = (9/5) * °C	delta°C = (5/9) * delta°F
Pressure	psi = kPa * 0.1451	kPa = psi/0.1451
Distance	ft = m/0.3048	m = ft * 0.3048
Density	lb/gal = kg/m³/119.913955	kg/m³ = lb/gal * 119.913955
Mass	lb = kg/0.4539237	kg = lb * 0.4539237
Capacity/Distance	gal/in = L/cm/(3.785/25.4)	L/cm = gal/in * (3.7850001/25.4)
Thermal Coefficient	gal/gal/°F = (5/9)L/L/°C	L/L/°C = (9/5)gal/gal/°F

1 U.S. gallon = 0.8327 Imperial gallons. 1 Imperial gallon = (1/0.8327) U.S. gallons

Table of Mag Probe Features

Circuit Code	Probe Name	Name Type	Leak Detect	Water Detect
C000	Std, 0.10 GPH, 2-float	MAG1	0.10 GPH	Yes
C001	Std, 0.20 GPH, 2-float	MAG2	0.20 GPH	Yes
D000	Std, Inv only, 2-float	MAG3	None	Yes
D001	Alt, 0.10 GPH, 1-float	MAG4	0.10 GPH	No
D002	Alt, 0.20 GPH, 1-float	MAG5	0.20 GPH	No
D003	Alt, Inv only, 1-float	MAG6	None	No
D004	LRP, 0.10 GPH, 2-float	MAG7	0.10 GPH	Yes
D005	LRP, 0.20 GPH, 2-float	MAG8	0.20 GPH	Yes
D006	LRP, Inv only, 2-float	MAG9	None	Yes
D007	LRP, 0.10 GPH, 1-float	MAG10	0.10 GPH	No
D008	LRP, 0.20 GPH, 1-float	MAG11	0.20 GPH	No
D009	LRP, Inv only, 1-float	MAG12	None	No
D021	GLB, Inv only, 2-float	GLB8	None	Yes
D022	GLB, Inv only, 2-float	GLB9	None	Yes
D023	GLB, Inv only, 1-float	GLB10	None	No
D024	GLB, Inv only, 1-float	GLB11	None	No

Appendix A - Web Access

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Web Access Overview

Introduction

Veeder-Root's Web Access software lets you monitor the TLS-450 console remotely on your PC anywhere you have internet access. Once connected to the console, you can view many current and historical reports including tank inventory, tank delivery, sensor status, alarm status and compliance in the language and units selected in console setup. Web Access software does not provide access to console setup or diagnostics screens.

All report screens support scrolling and are printable. Screens that have dynamic data will refresh automatically. The refresh rate is dependent on the data viewed.

System Requirements:

a. Java Applet enabled in your browser.
   For help enabling the applet go to
   http://www.java.com/en/download/help/enable_browser.xml
b. JVM version 1.4 or newer installed.
   To download the latest JVM version go to
   http://java.sun.com/j2se/1.4.2/download.html

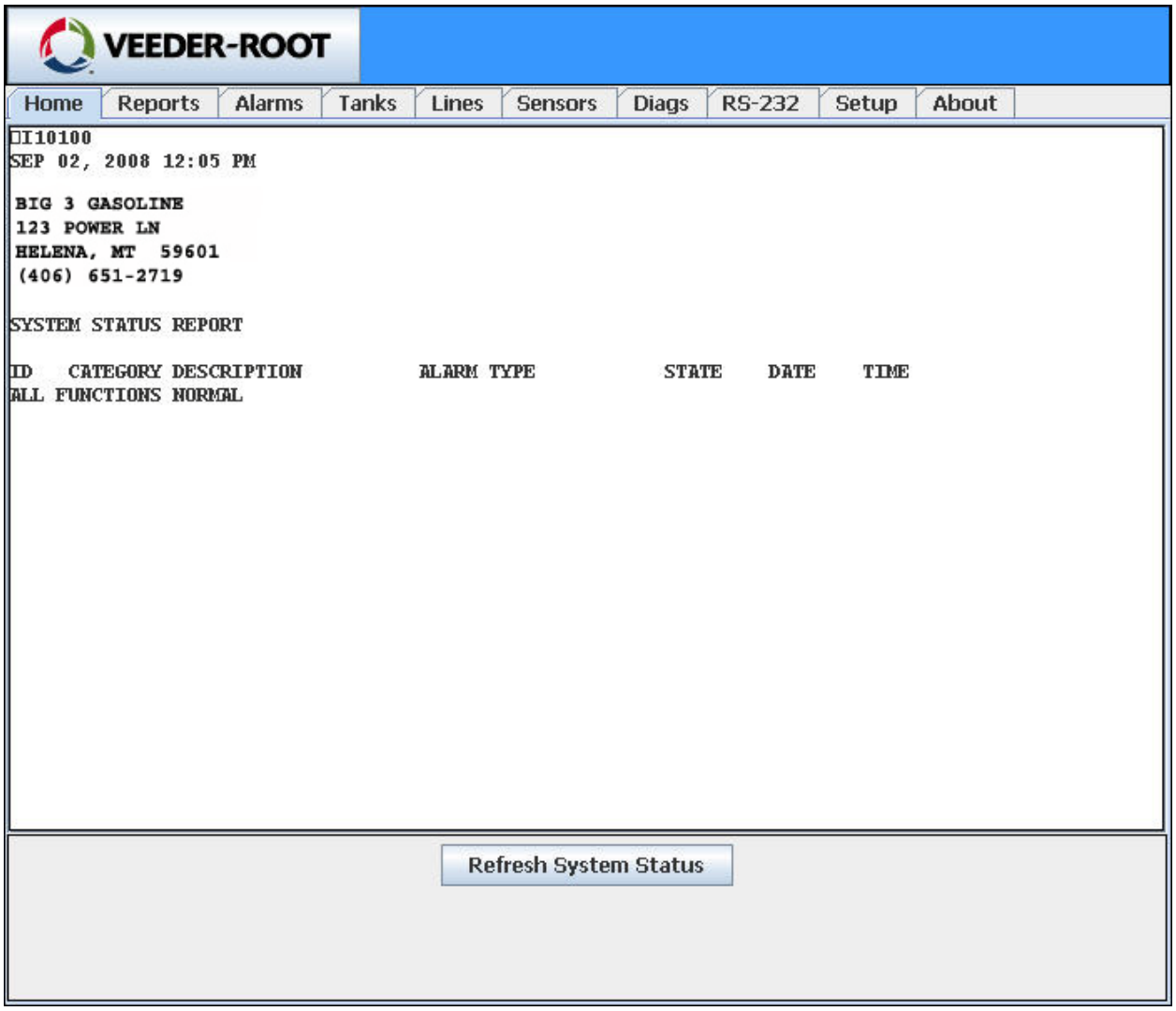
Connecting to the TLS-450 Console

You need the IP address of the console which can be found in Communcations Setup. On the console's Home screen, touch the Setup button, touch the Comm button, touch the down arrow to see the next page of the General Tab Screen and you will see the IP address (of the console) in the IP Address field.

Open Internet Explorer on your PC and enter the IP address of the console followed by /tls.html (lowercase) in the URL bar of the browser as shown below:

http://xxxx.xxxx.xxxx.xxxx/tls.html
(where xxxx.xxxx.xxxx.xxxx = console IP address).

The TLS-450 Web Access home page will display the system status report (see example below):



TLS-450 Web Pages

Click on any of the tabs in the menu bar at the top of the home screen to display the desired page. Viewable pages are as follows (report content is dependent on installed hardware and console features):

- **Reports**
  - Inventory (current)
  - Delivery (Last delivery record per tank)
  - Shift

- **Alarms**
  - Active Alarms (all active alarms in chronological order)
  - Priority Alarms
  - Non-Priority Alarms

- **Tanks**
  - Tank Status (current alarm status per tank)
  - Alarm History
  - Leak Test Results (last gross, periodic, annual test results per tank)
  - Leak Test History

- **Lines**
  - Line Status (current PLLD status per line)
  - Alarm History
  - O.2 Test Results
  - 0.2 Test (Results) History
  - 0.1 Test Results
  - 0.1 Test (Results) History

- **Sensors**
  - Liquid Sensor
    - Status
    - Alarm History
  - Vapor Sensor
    - Status
    - Alarm History
  - Groundwater Sensor
    - Status
    - Alarm History
  - 2 Wire CL Sensor
    - Status
    - Alarm History
  - 3 Wire CL Sensor
    - Status
    - Alarm History
  - Mag Sensor
    - Status
    - Alarm History

- **Diags**
  This page lists hardware/software features about the TLS-450.

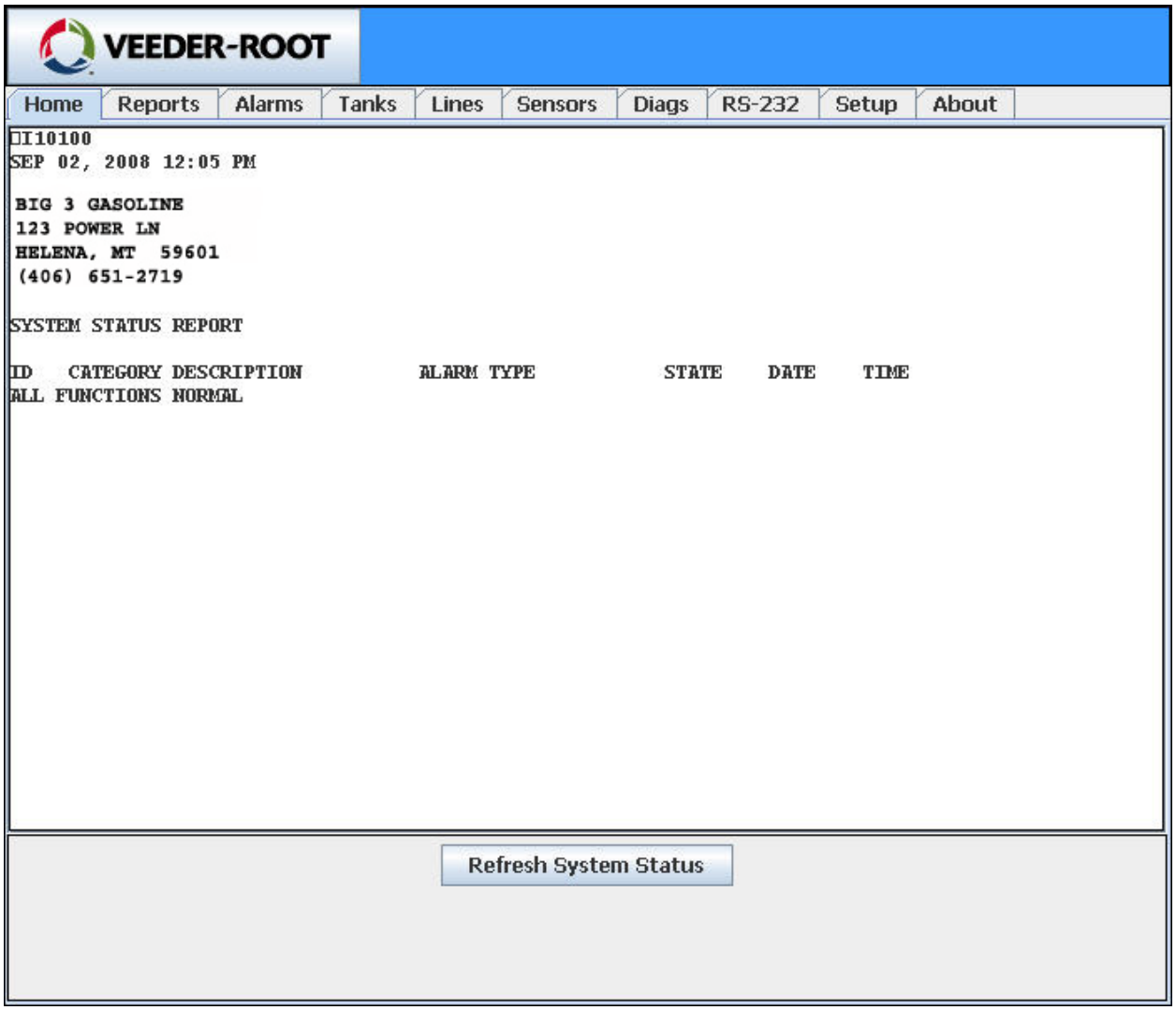
- **RS-232**
  This page lets you communicate with the TLS-450 using RS-232 commands.

- **Setup**
  This page lets you enter an access password and set page data refresh rates.

- **About**
  This page displays your installed TLS-450 Web Access software version.

Web Access Home Page

The TLS-450 Web Home page is shown below:

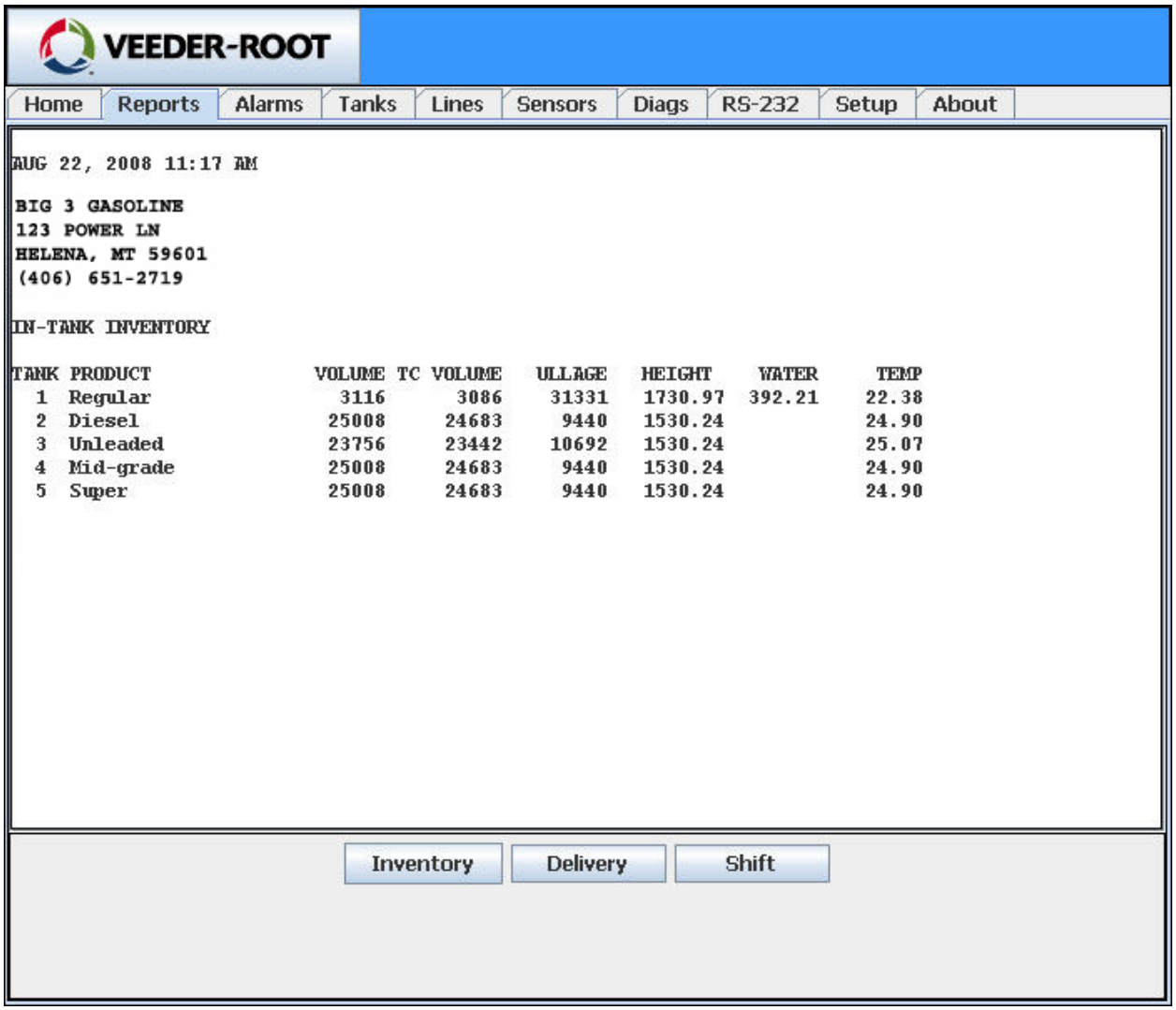


Refresh System Status Button

Click on this button to refresh the report's contents (applies if new data is available).

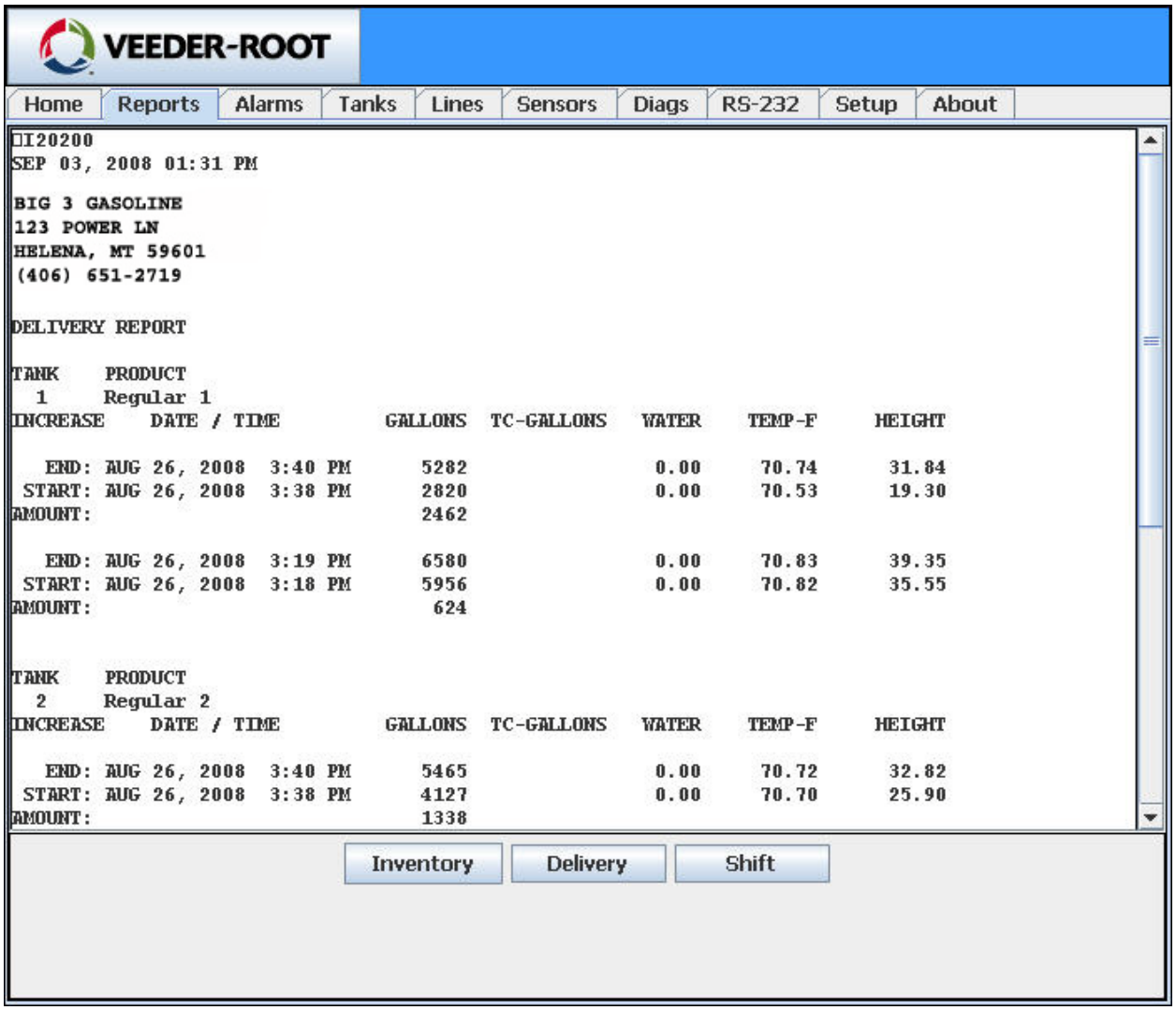
Web Access Reports - Inventory Page

The TLS-450 Web Access Reports - Inventory page example is shown below:



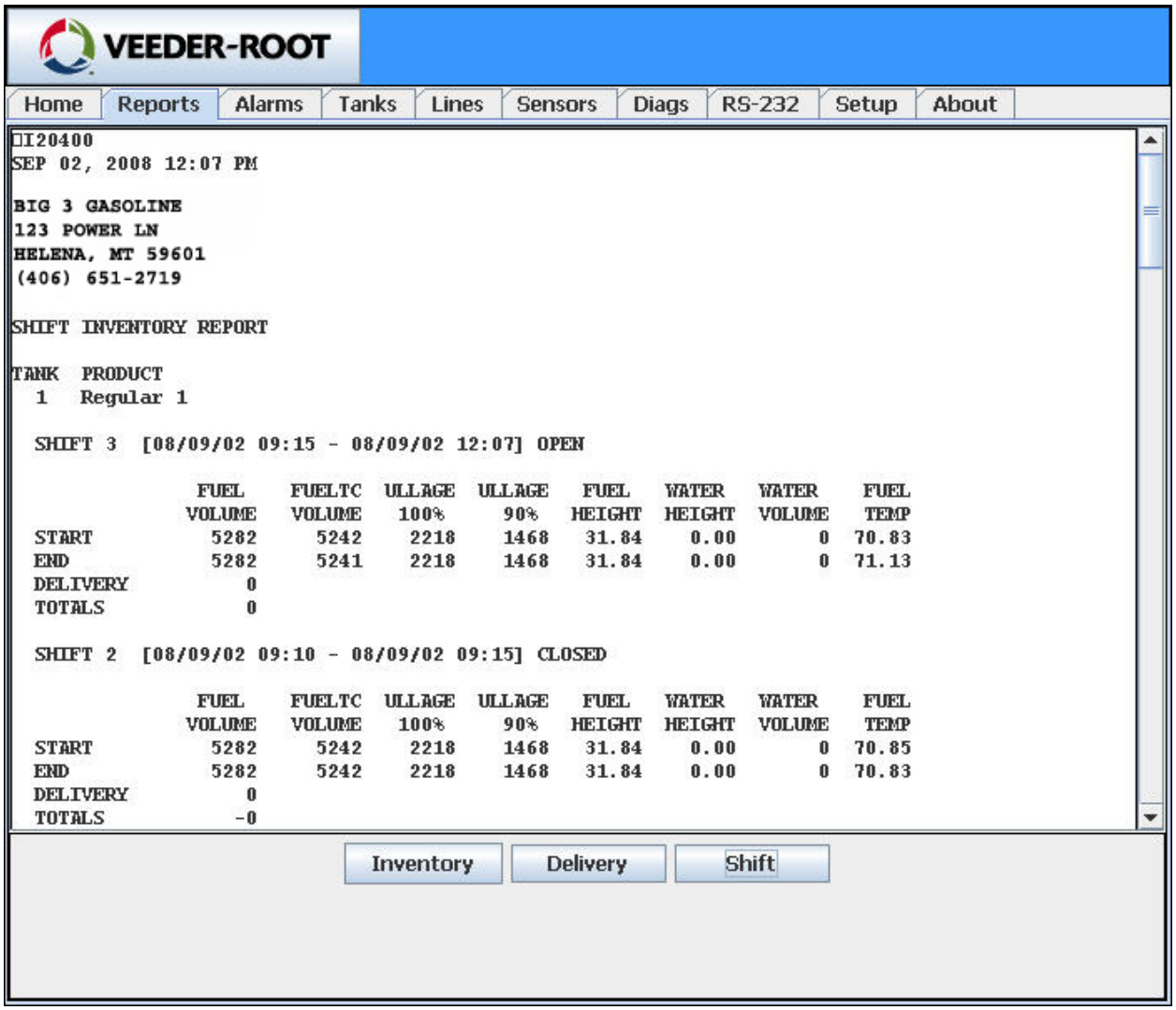
Web Access Reports - Delivery Page

The TLS-450 Web Access Reports - Delivery page example is shown below:



Web Access Reports - Shift Page

The TLS-450 Web Access Reports - Shift page example is shown below:

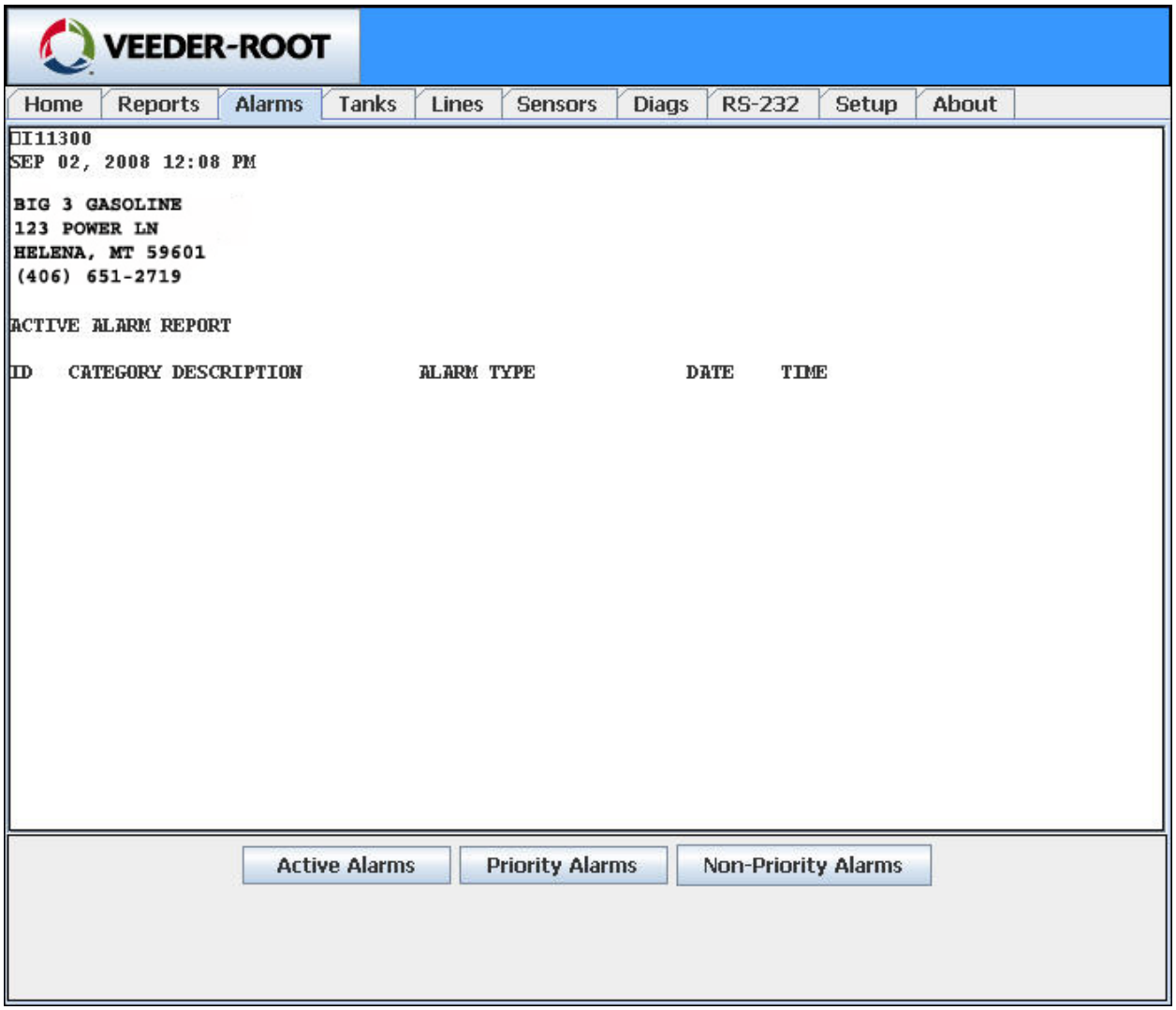


Refer to the Inventory Reports - Shift Inventory topic in this manual for more information on this page.

A Delivery Volume entry only appears if a delivery was made during the shift. A Totals Volume entry only appears if a delivery was made during the shift (Totals = start volume - end volume + delivery volume). The Totals row will only show zero if there are no deliveries AND the start volume = end volume [i.e. no fuel was dispensed]).

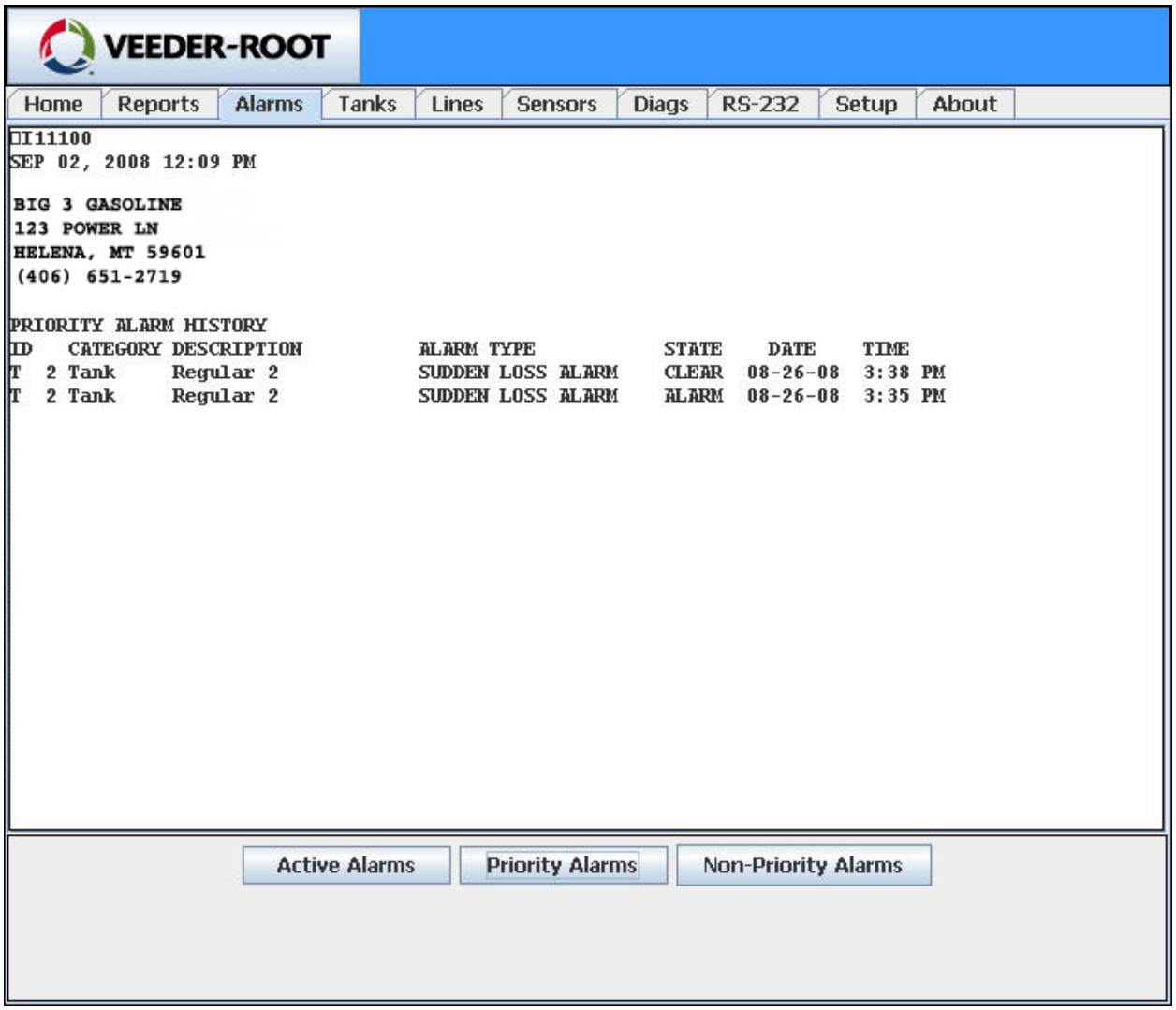
Web Access Active Alarms Page

The TLS-450 Web Access Active Alarms page is shown below:



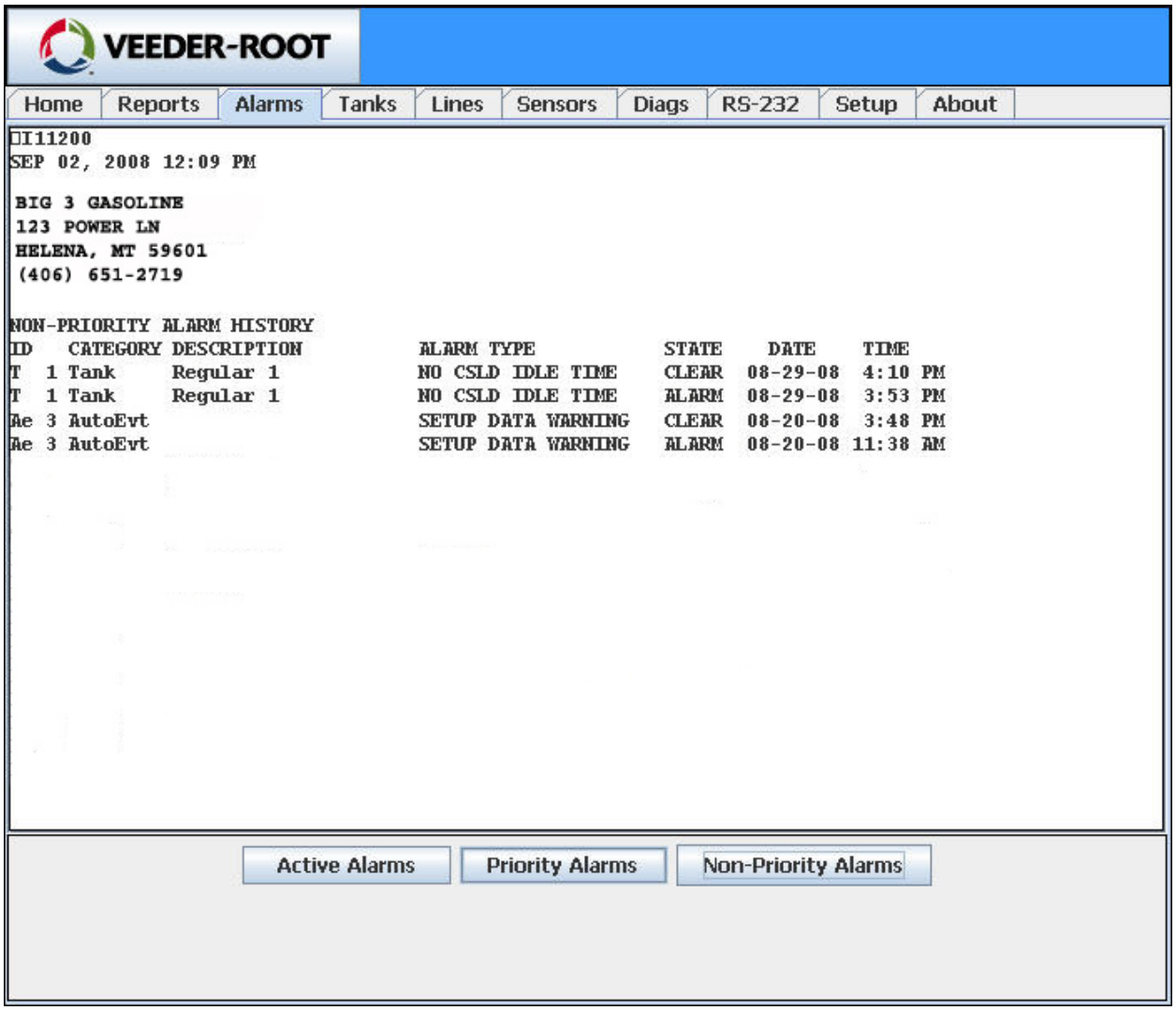
Web Access Priority Alarms Page

The TLS-450 Web Access Priority Alarms page example is shown below:



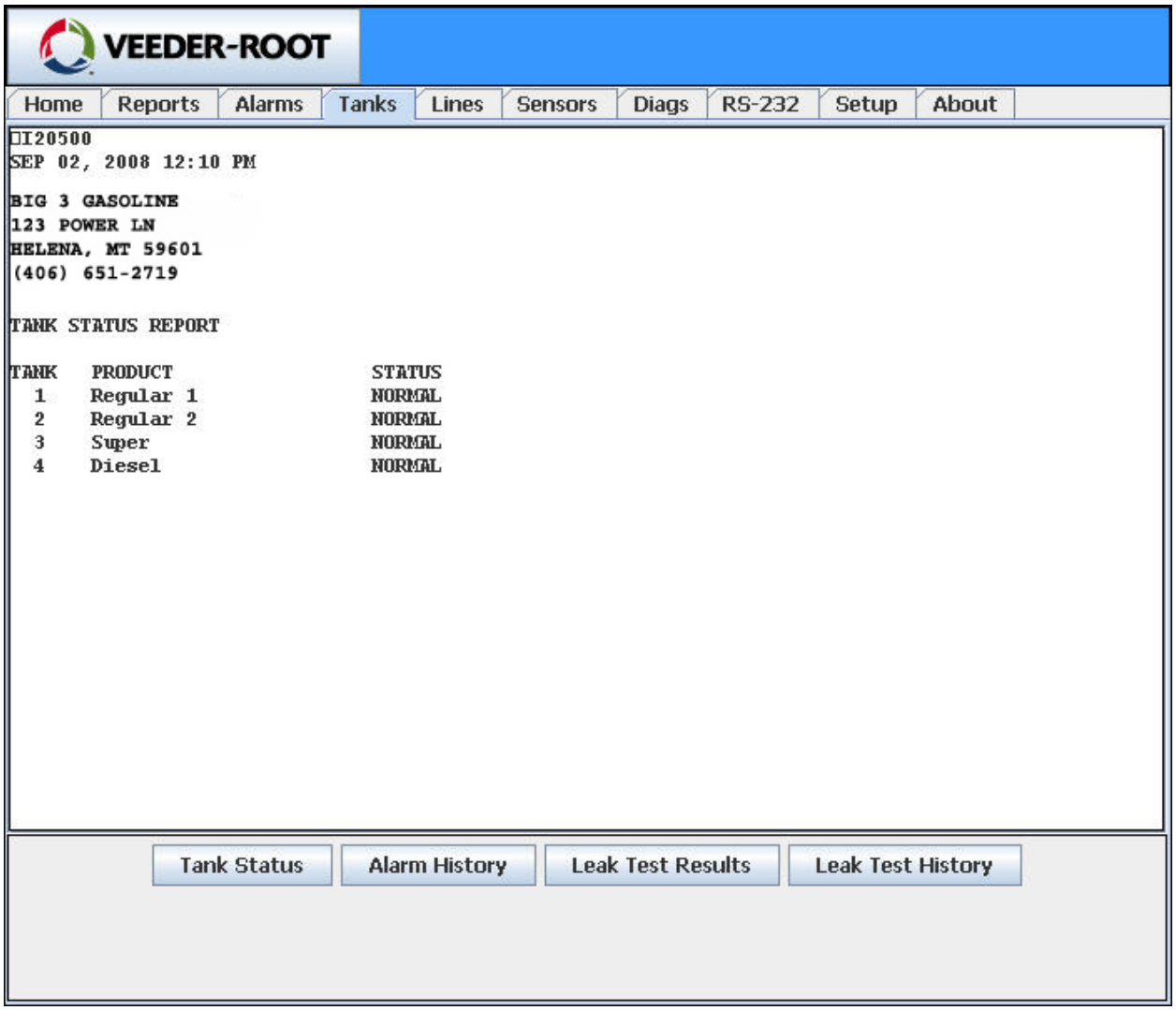
Web Access Non-Priority Alarms Page

The TLS-450 Web Access Non-Priority Alarms page example is shown below:



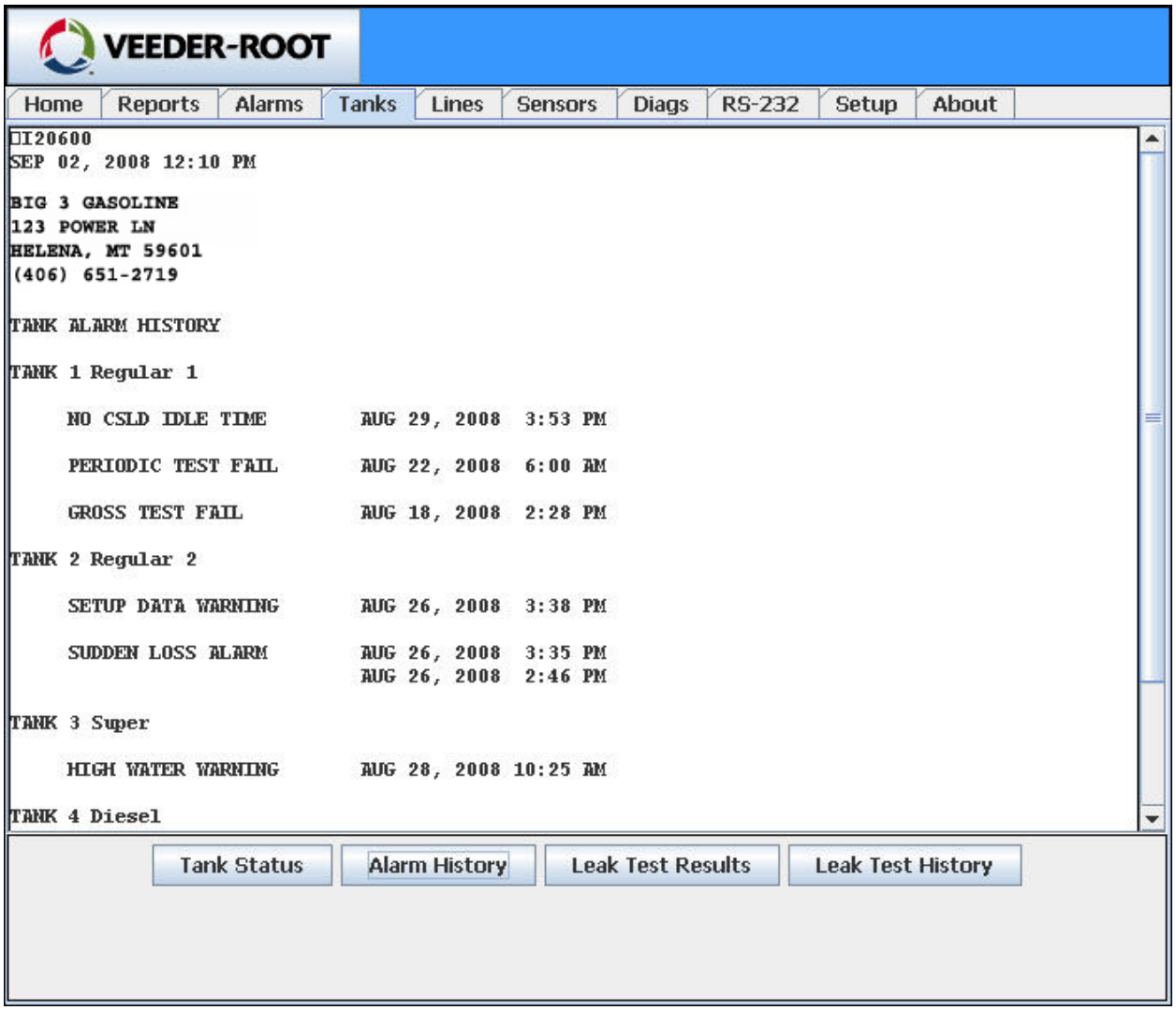
Web Access Tanks - Status Page

The TLS-450 Web Access Tanks - Status page example is shown below:



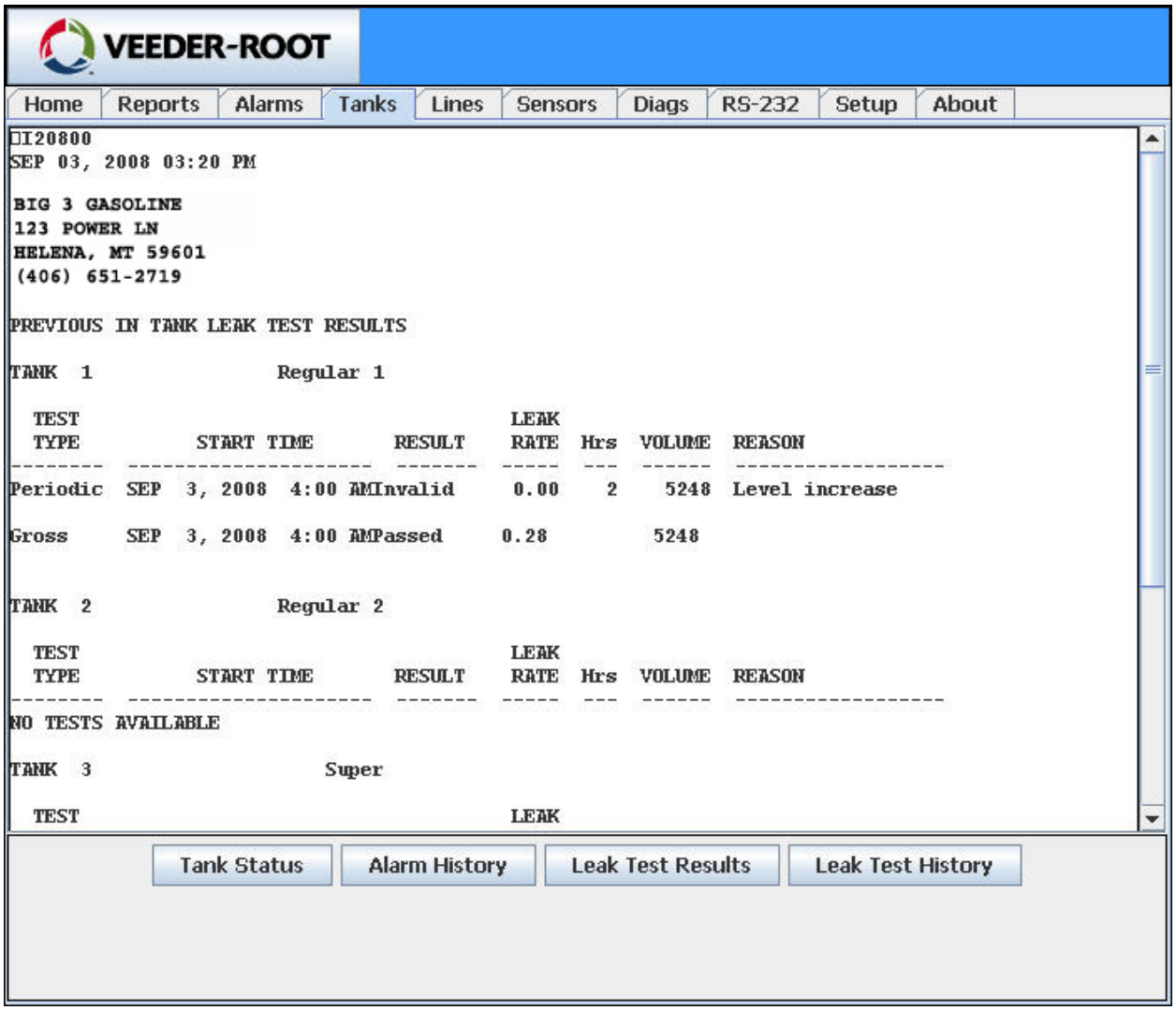
Web Access Tanks - Alarm History Page

The TLS-450 Web Access Tanks - Alarm History page example is shown below:



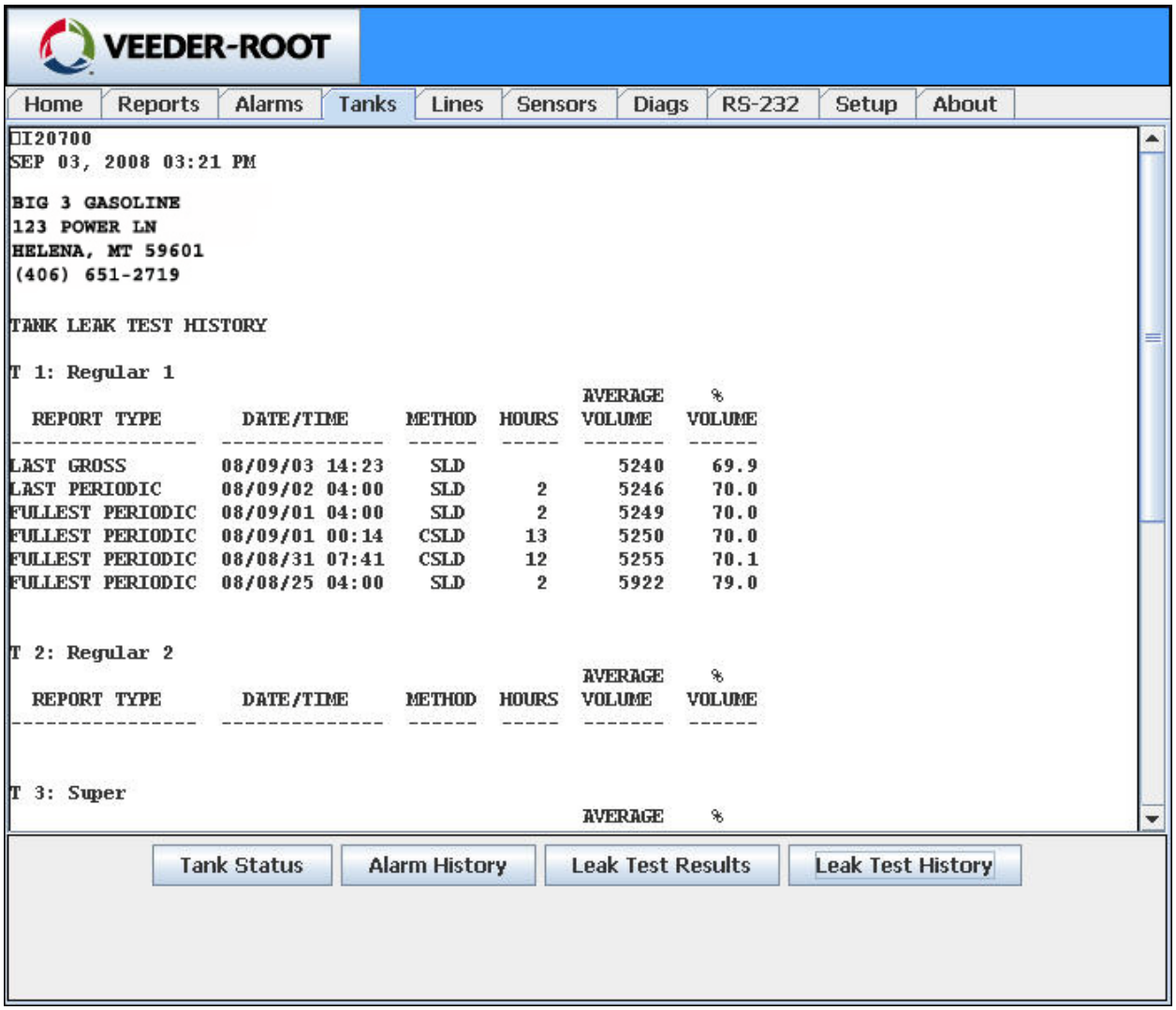
Web Access Tanks - Leak Test Results Page

The TLS-450 Web Access Tanks - Leak Test Results page example is shown below:



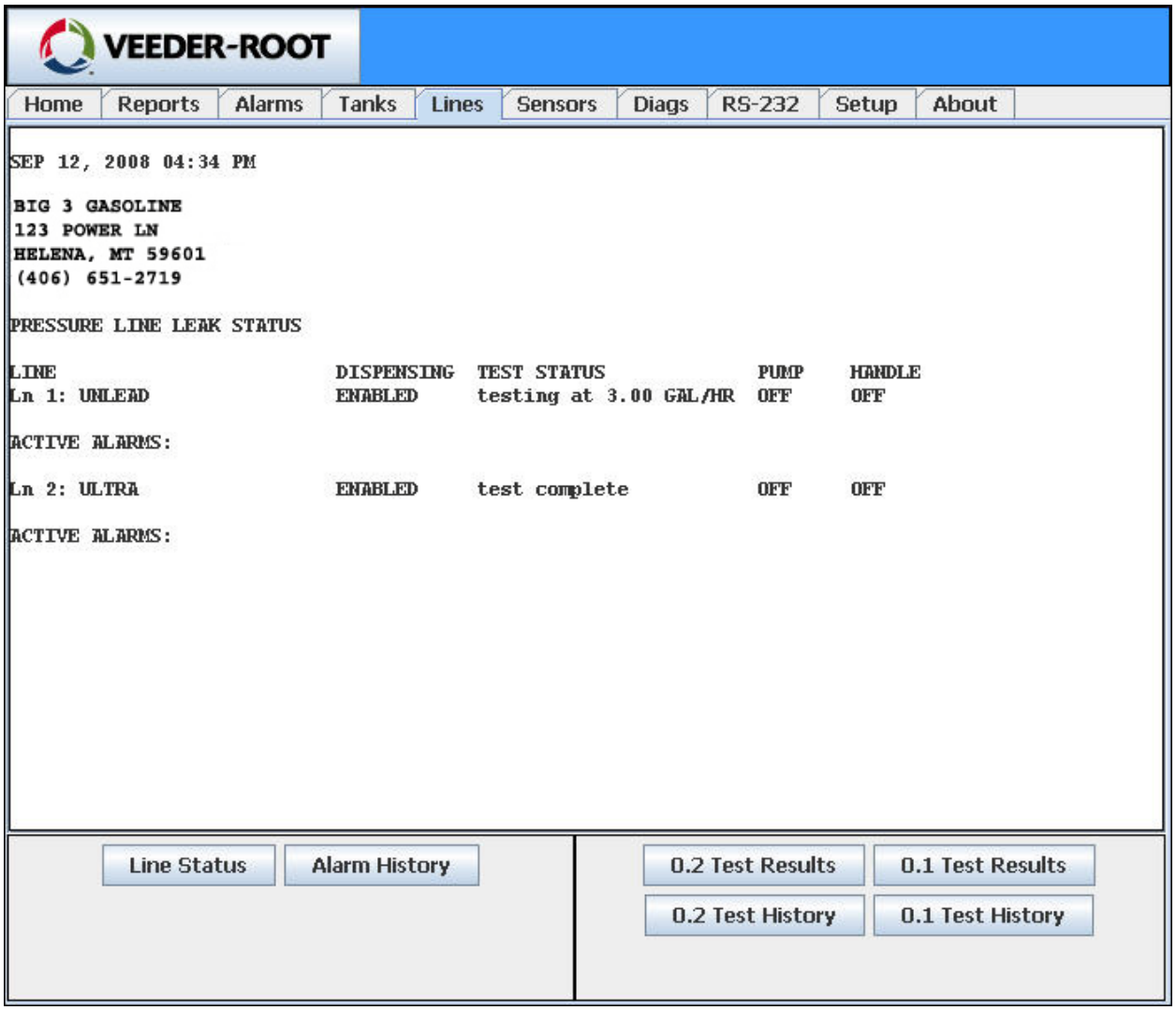
Web Access Tanks - Leak Test History Page

The TLS-450 Web Access Tanks - Leak Test History page example is shown below:



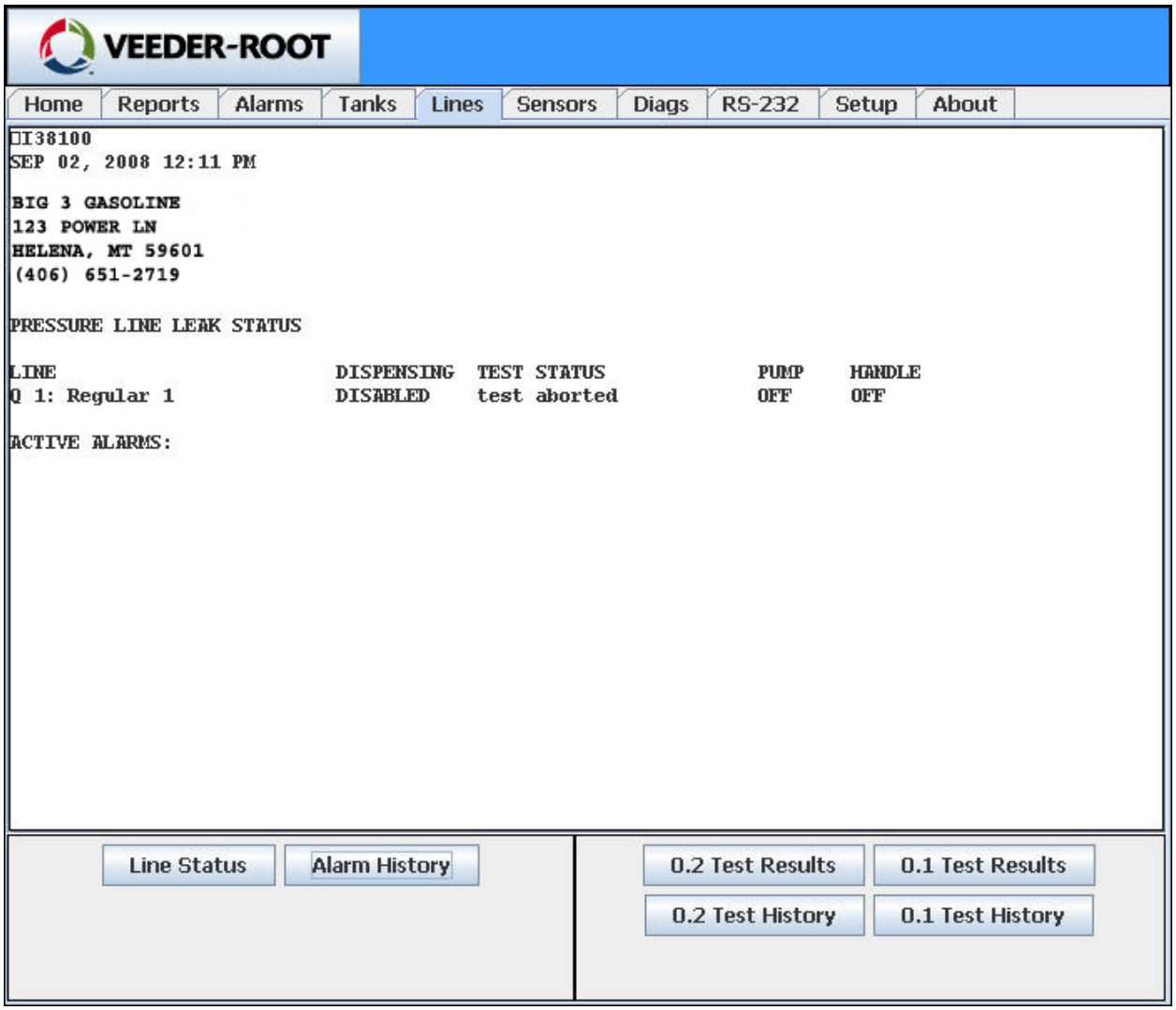
Web Access Lines - Line Status

The TLS-450 Web Access Lines - Line Status page example is shown below:



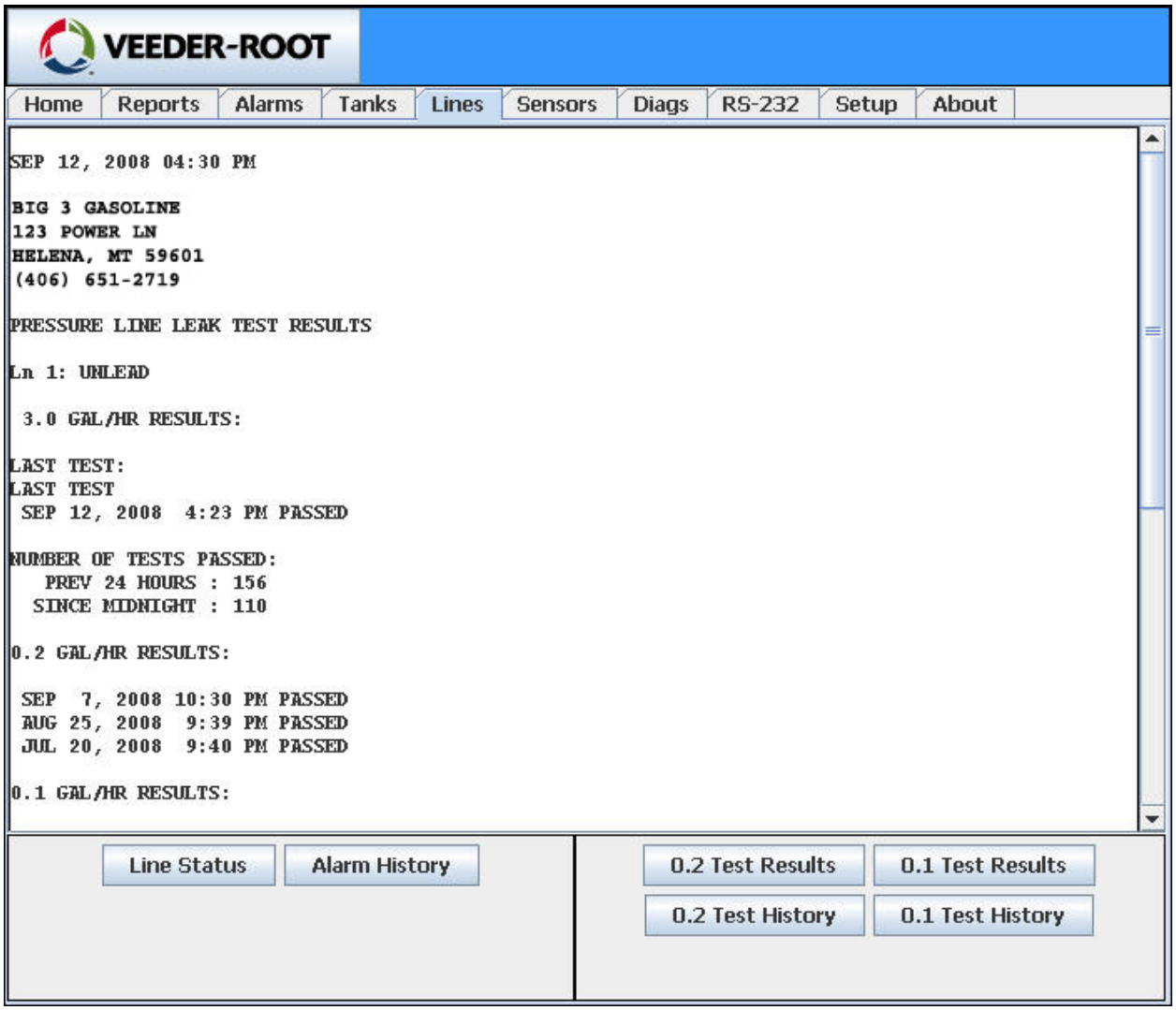
Web Access Lines - Alarm History Page

The TLS-450 Web Access Lines - Alarm History page example is shown below:



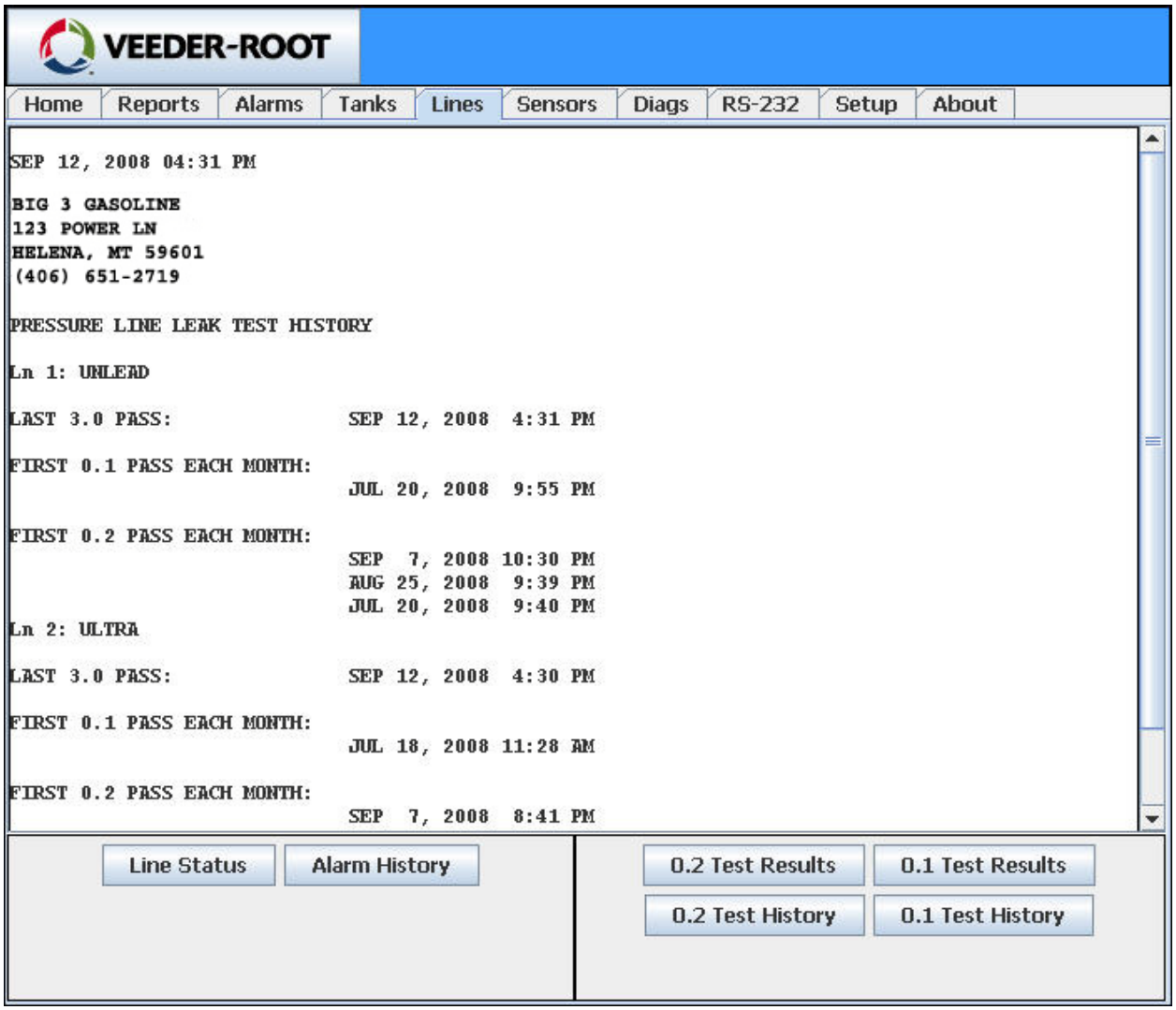
Web Access Lines - 0.2 Test Results Page

The TLS-450 Web Access Lines - 0.2 Test Results page example is shown below:



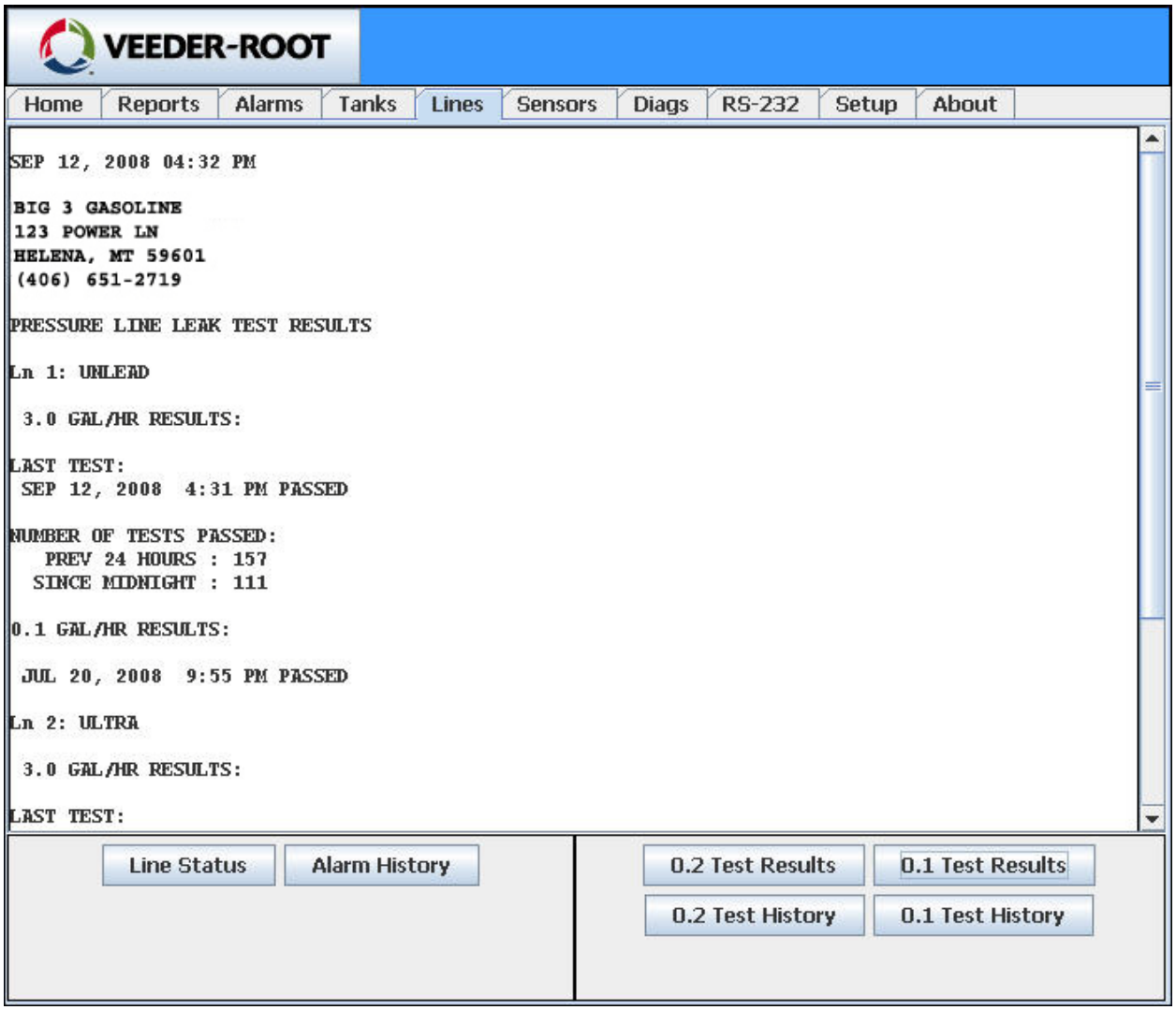
Web Access Lines - 0.2 Test History Page

The TLS-450 Web Access Lines - 0.2 Test History page example is shown below:



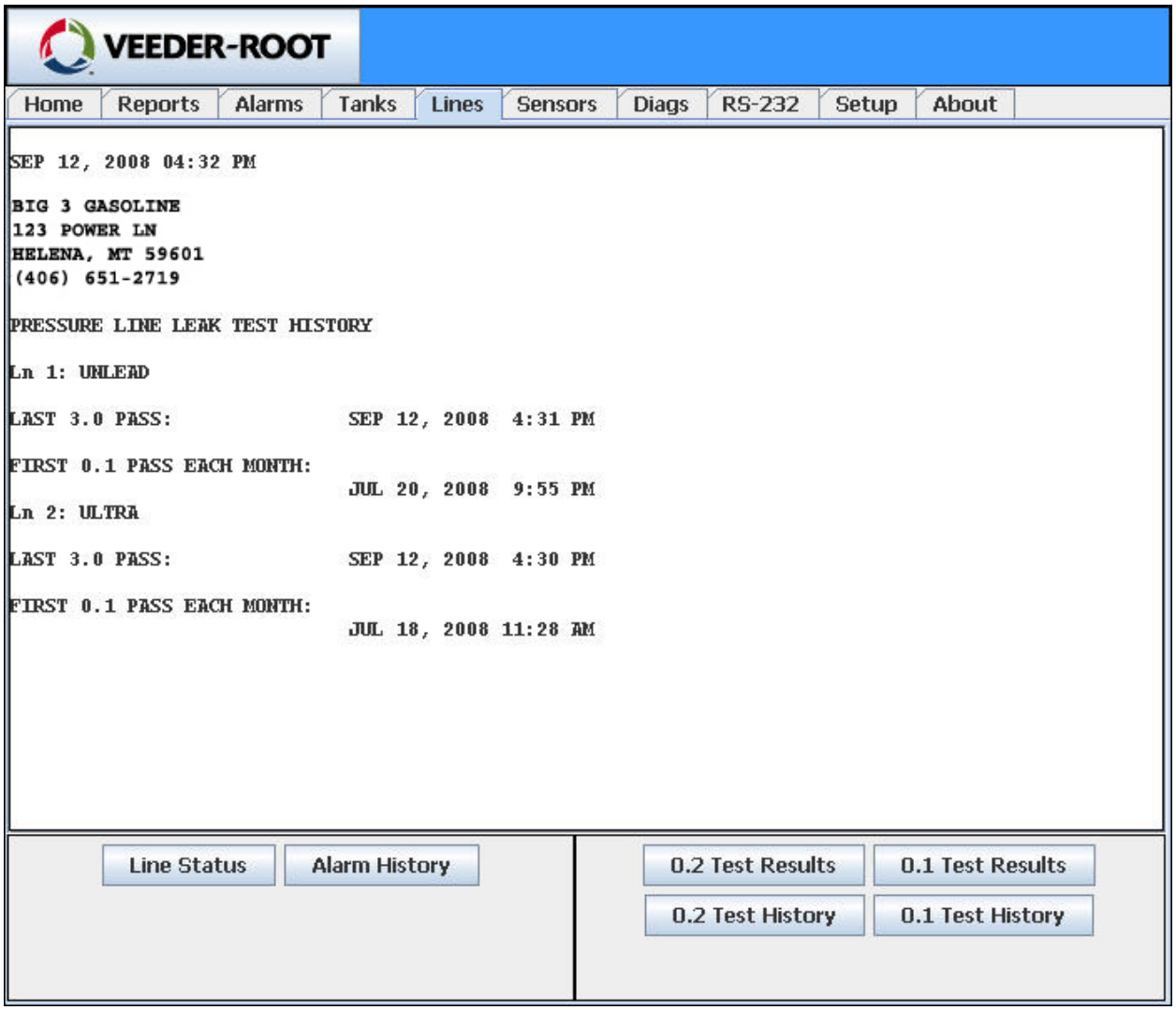
Web Access Lines - 0.1 Test Results Page

The TLS-450 Web Access Lines - 0.1 Test Results page example is shown below:



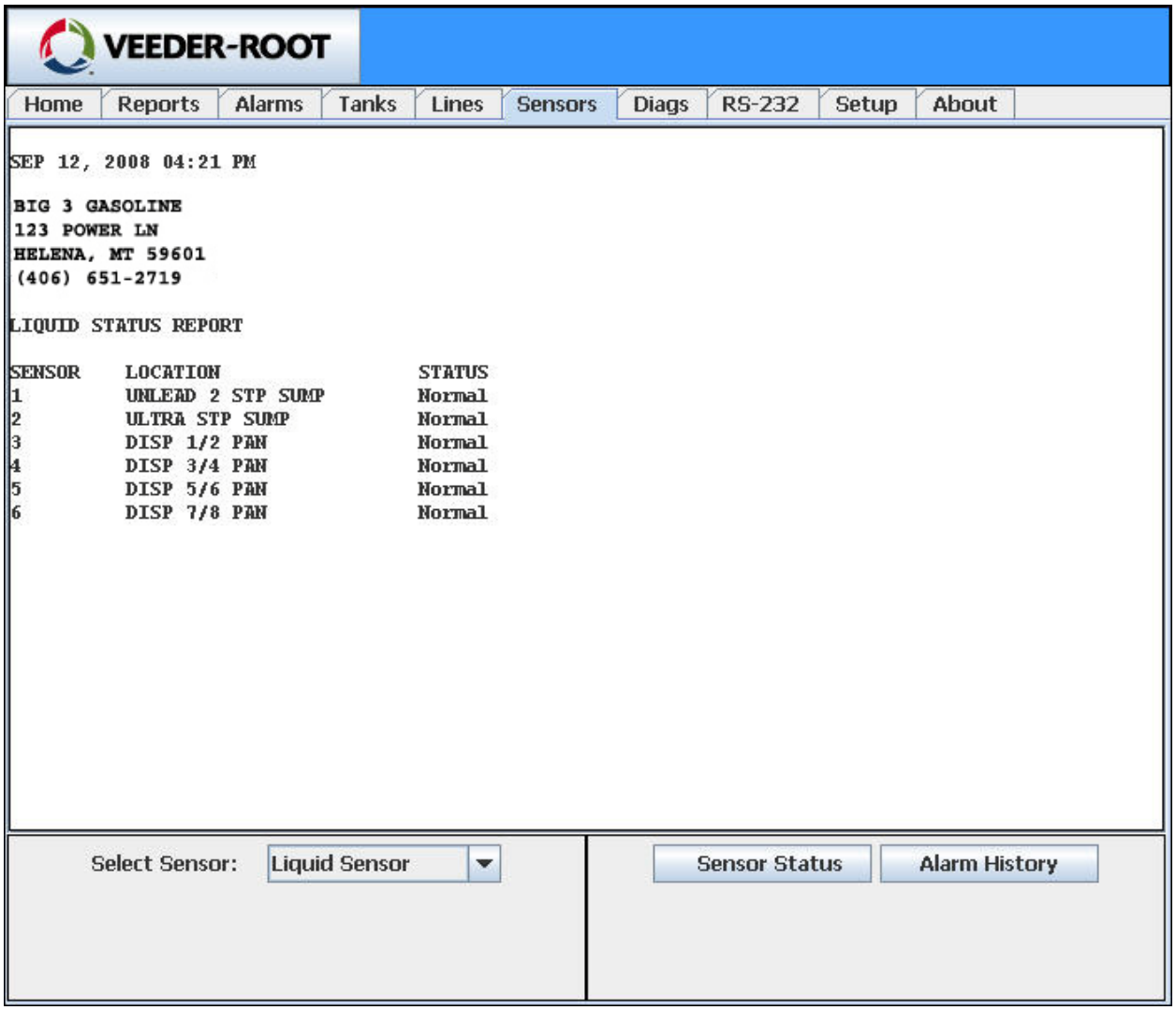
Web Access Lines - 0.1 Test History Page

The TLS-450 Web Access Lines - 0.1 Test History page example is shown below:



Web Access Sensors - Sensor Status Page

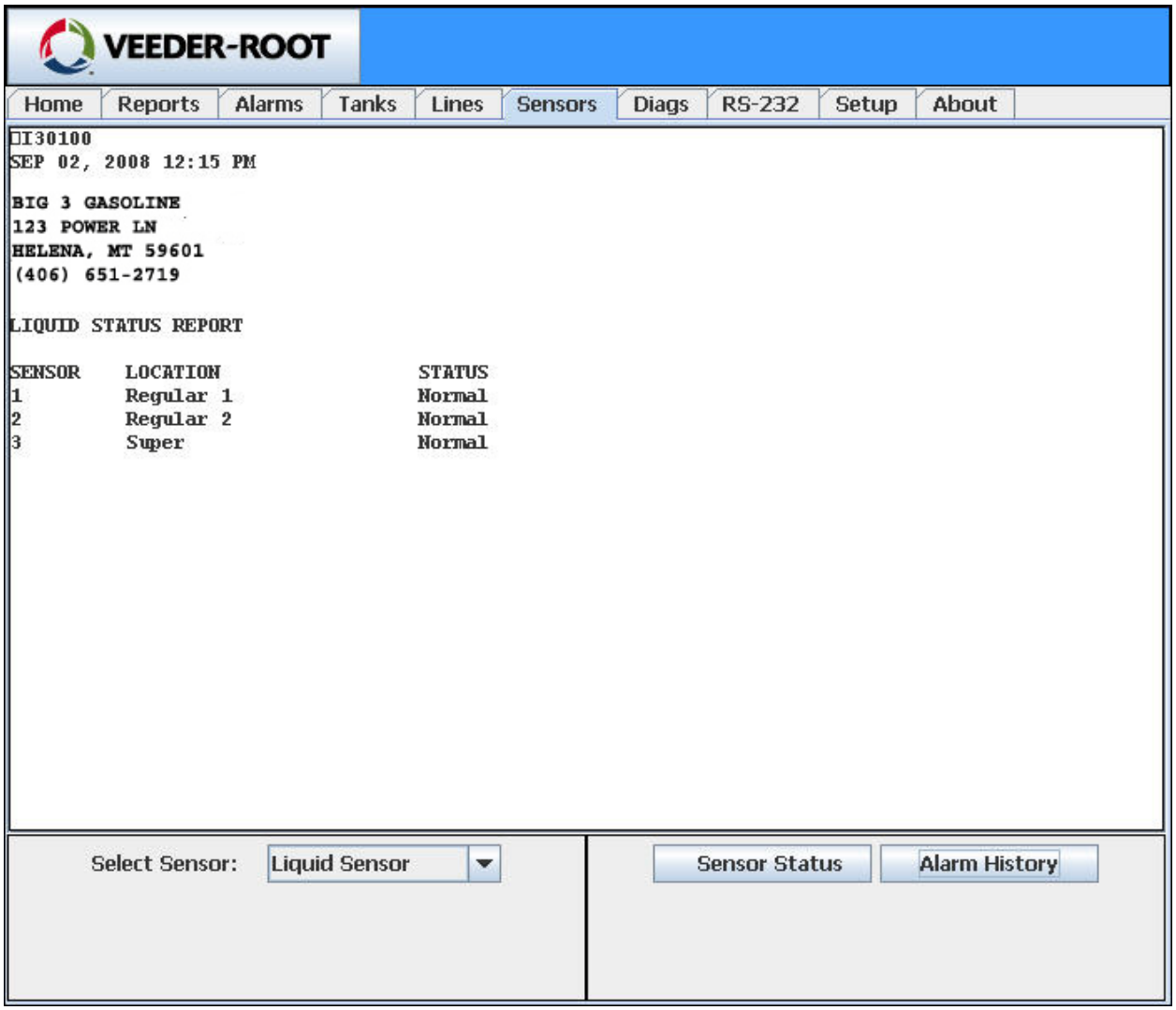
The TLS-450 Web Access Sensors - Sensor Status page example is shown below:



The Status page for liquid sensors is shown. Click on the arrow beside the select sensor field to open a dropdown list of available sensors. Select one to display a similar Status page for the selected sensor. Click the Alarm History button to display the Alarm History page for the selected sensor.

Web Access Sensors - Alarm History Page

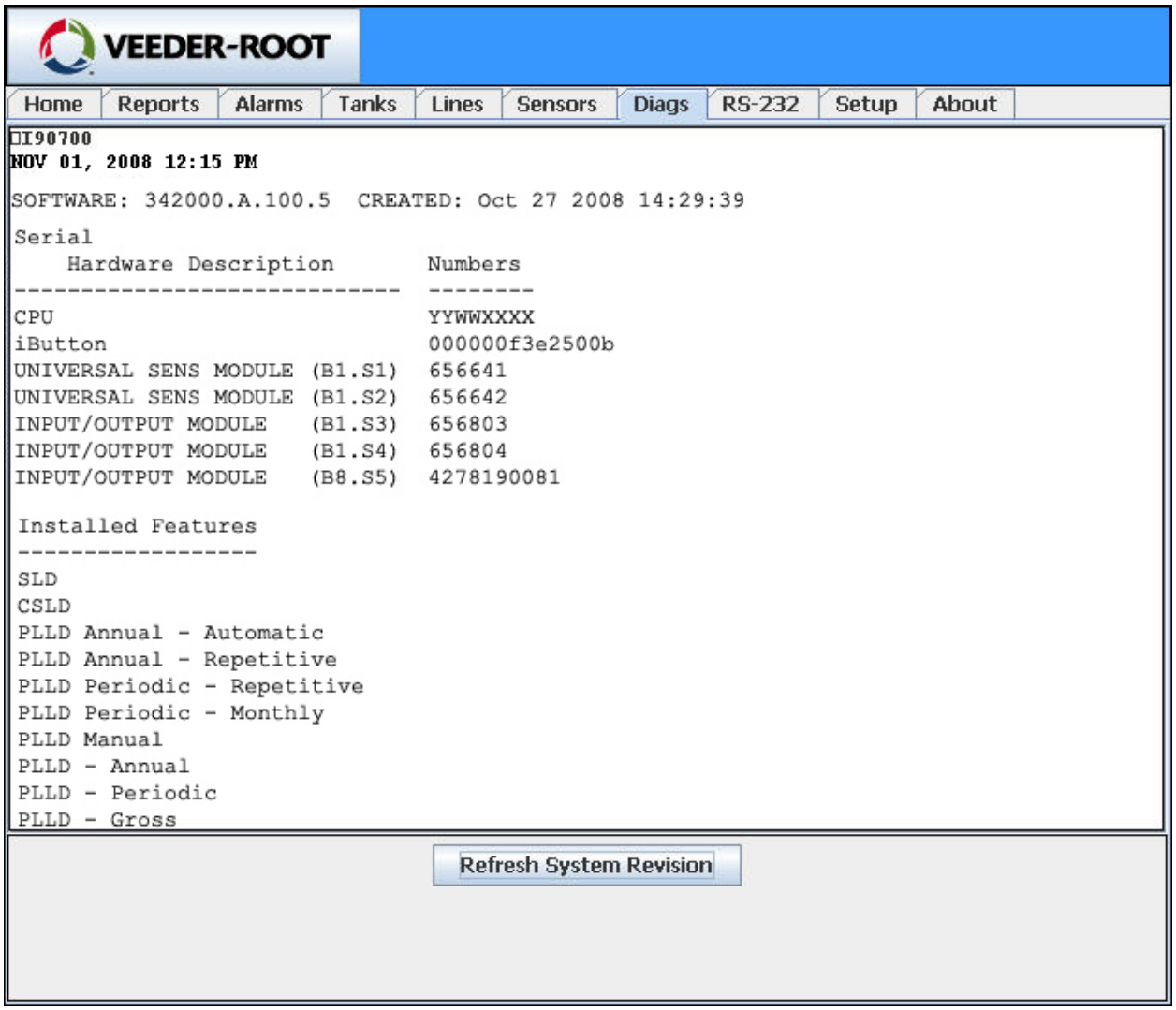
The TLS-450 Web Access Sensors - Alarm History page example is shown below:



The Alarm History page for liquid sensors is shown. Click on the arrow beside the select sensor field to open a dropdown list of available sensors. Select one to display a similar Alarm History page for the selected sensor. Click the Sensor Status button to display the Status page for the selected sensor.

Web Access Diags Page

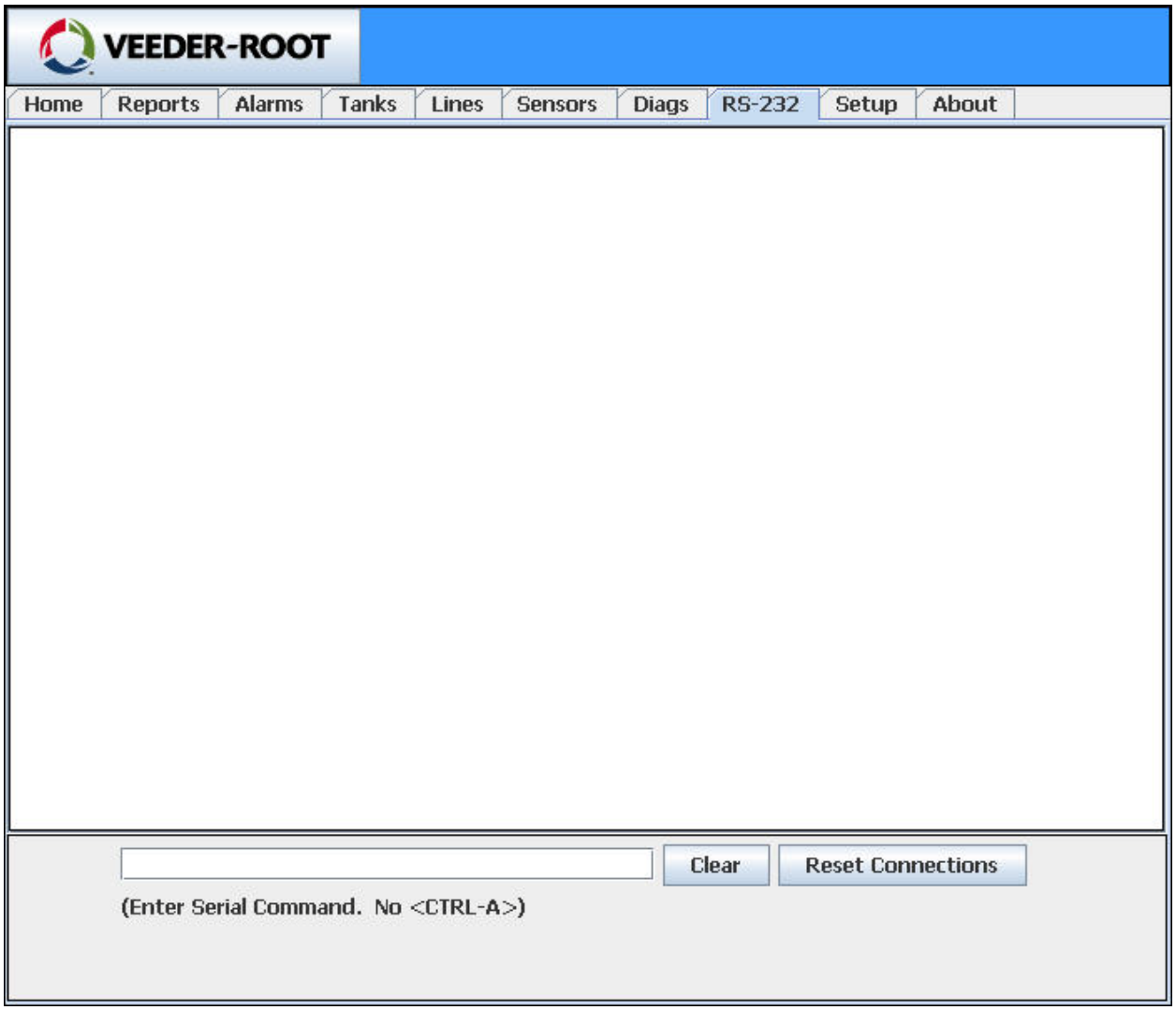
The TLS-450 Web Access Diags page example is shown below:



This page displays information about software/features installed in this TLS-450 console.

Web Access RS-232 Page

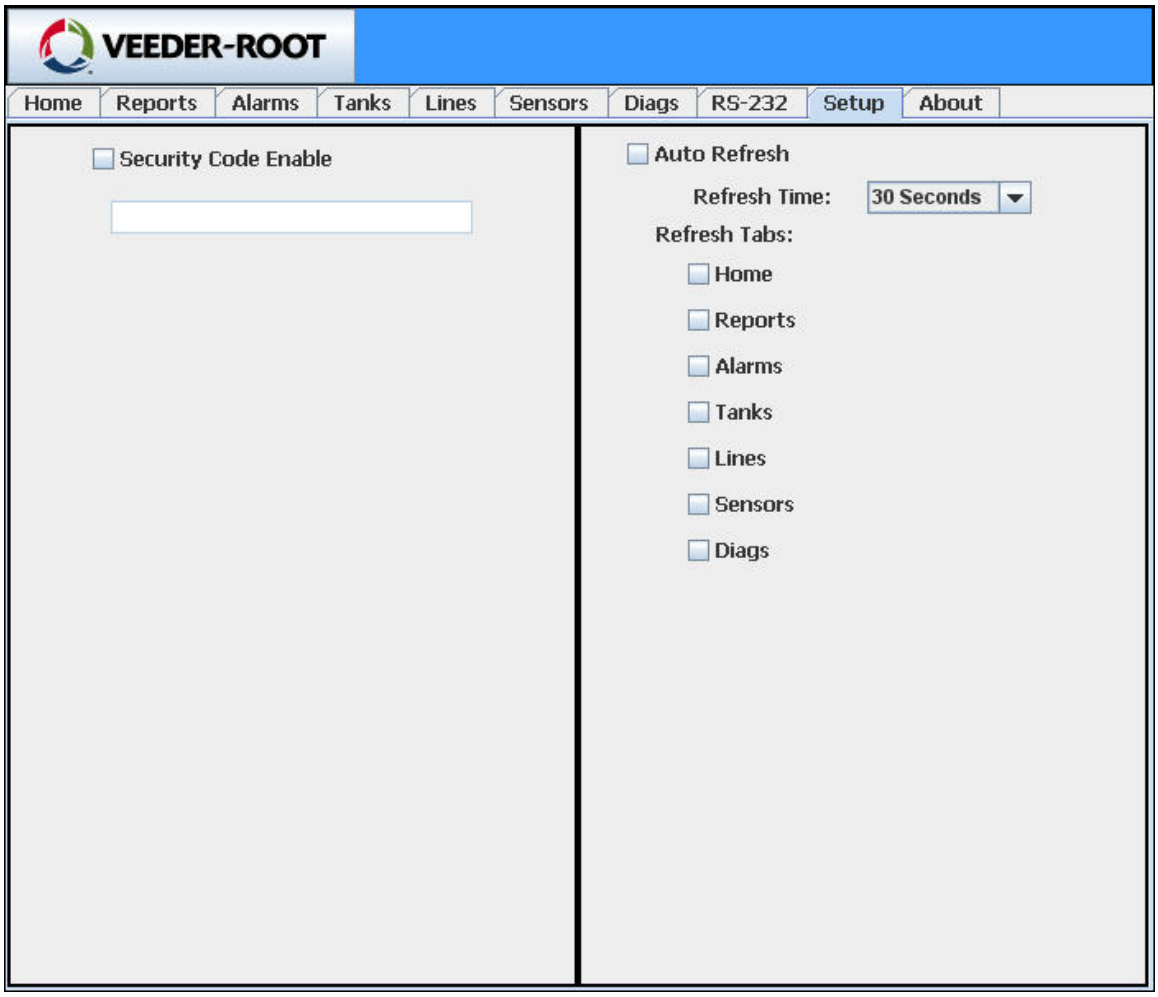
The TLS-450 Web Access RS-232 page example is shown below:



This page lets you access query the TLS-450 using Veeder-Root RS-232 published commands. Type in the serial command `Ixxxxx`, e.g., `I20200` (delivery report), in the field below the terminal window, click Enter and the TLS-450 will display the Delivery Report in the terminal window . Click the Clear button to clear the terminal window. Click the Reset Connections button and re-enter the command if the requested report does not display.

Web Access Setup Page

The TLS-450 Web Access Setup page example is shown below:



Web Access Security Password

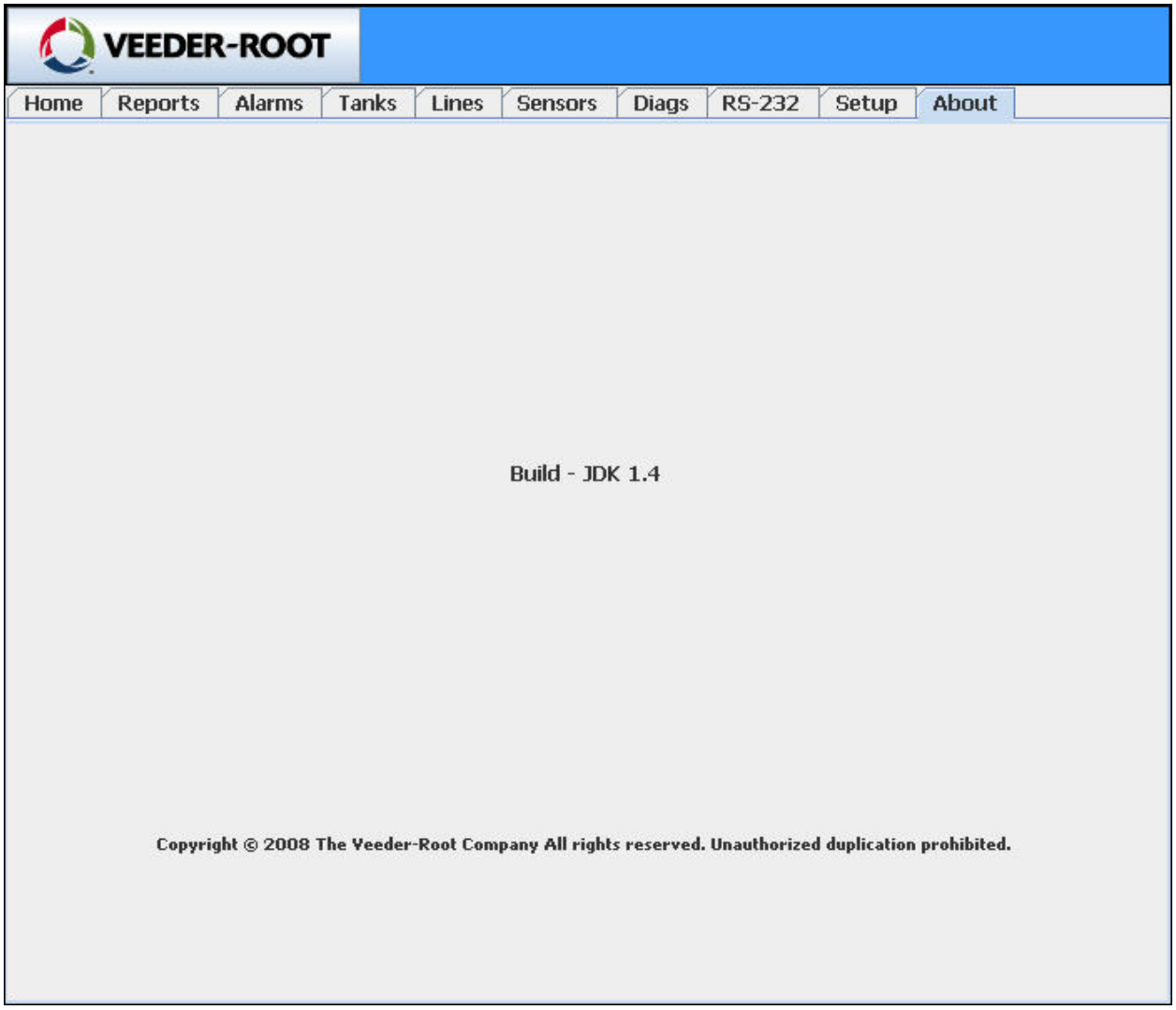
To enable a security code to restrict access to the TLS-450 via Web Access, click the Security Code Enable box in this page and enter up to a six alph-numeric password in the field below.

Auto Refresh Page Data

To automatically refresh page data, click the box next to Auto Refresh. Click the arrow beside the Refresh Time field and select a page refresh time of from 10 to 60 seconds. Click the boxes beside any of the Refresh Tabs to apply the Auto Refresh setting to that page's data.

Web Access About Page

The TLS-450 Web Access About page example is shown below:



This page displays the version of Veeder-Root's Web Access software installed in the TLS-450 console.

VEEDER-ROOT

For technical support, sales or other assistance, please visit:
www.veeder.com