TLS-450 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.

Contents

INTRODUCTION

This manual details currently available setup, operation and diagnostic screens for the TLS-450 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 (Level 1) Certification: Certification: Contractors holding valid Installer Certification are approved to perform wiring and conduit routing; equipment mounting; probe, sensor and carbon canister vapor polisher installation; wireless equipment installation; tank and line preparation; and line leak detector installation.

ATG Technician (Level 2/3 or 4) Certification: Contractors holding valid ATG Technician Certifications are approved to perform installation checkout, startup, programming and operations training, system tests, troubleshooting and servicing for all Veeder-Root Series Tank Monitoring Systems, including Line Leak Detection. In addition, Contractors with the following sub-certification designations are approved to perform installation checkout, startup, programming, system tests, troubleshooting, service techniques and operations training on the designated system.
- Wireless 2
- Tall Tank

Warranty Registrations:
Warranty Registrations may only be submitted by selected Distributors.

Related Manuals

- TLS-450 Site Prep Manual (P/N 577013-879)
- TLS-450 Setup, Operation Screens Manual (P/N 577013-940)
- TLS-450 Quick Help Guide (P/N 577013-969)
- Electronic Line Leak Detectors Application Guide (P/N 577013-465)
- TLS Consoles Point-of-Sale (POS) Application Guide (P/N 577013-401)

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:
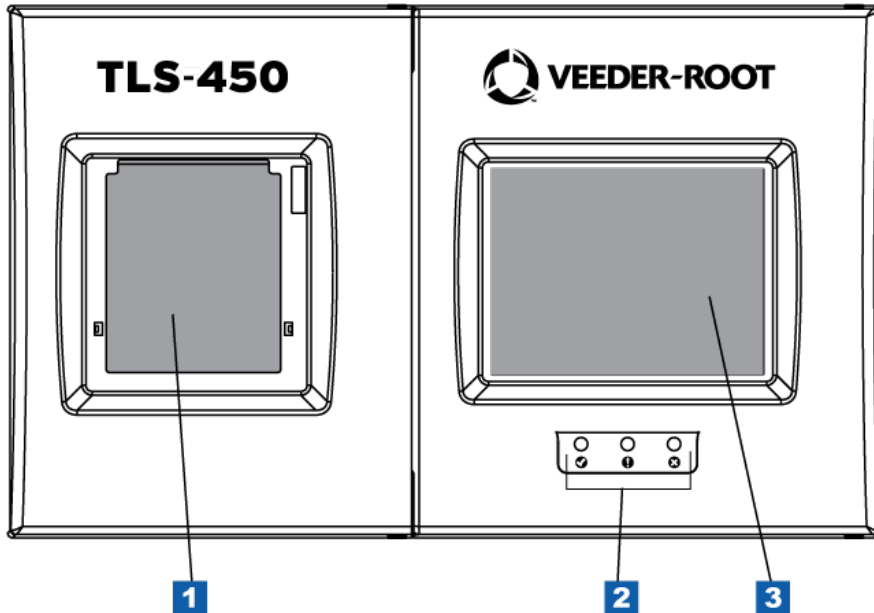
Item 1 - Integral Printer

The integral printer is mounted 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, then touch this button a second time to acknowledge the alarm(s), turn off the flashing System Status box and silence the beeper.
	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

Area/Touch Button	Action/Description
	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 printer designated as the default printer in Printer Setup. 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	Shift Close button - Touching the Shift Close button displays the Shift Close dialog box in which you can choose to close the current shift for one or all tanks.
12	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.
13	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.
14	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.
15	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.
16	BIR Report button - Touching this button accesses the following Reconciliation Reports: - Reconciliation Report - Book Variance Report - Reconciliation Test Report
17	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

Area/Touch Button	Action/Description
18	Delivery Report button - Touching this button accesses the following Delivery Reports: - Manual Delivery Report - Adjusted Delivery Report - Ticketed Delivery Report
19	Inventory Report button - Touching this button accesses the following Inventory Reports: - Current Inventory Report - Inventory History Report - Shift Inventory Report - Shift Inventory History Report
20	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
21	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.
22	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).
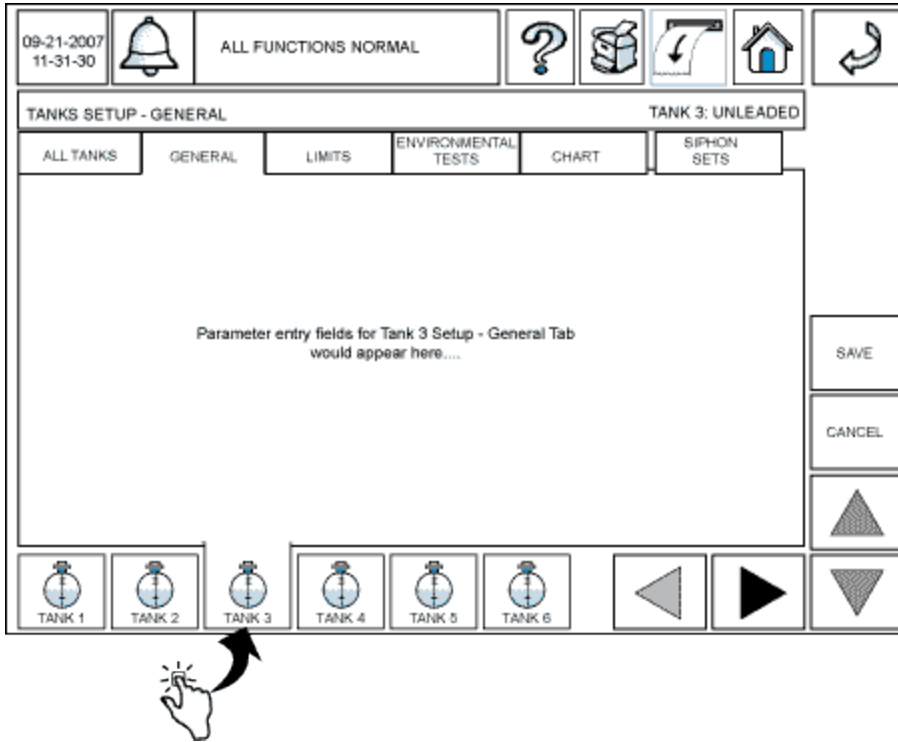
The data area displays the information associated with any selected setup, report or diagnostic screen. Tabs at the top of the data area (All Tanks, All Sensors, User Defined 1, etc. in the diagram below), if present, provide access to related data screens when touched.

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:
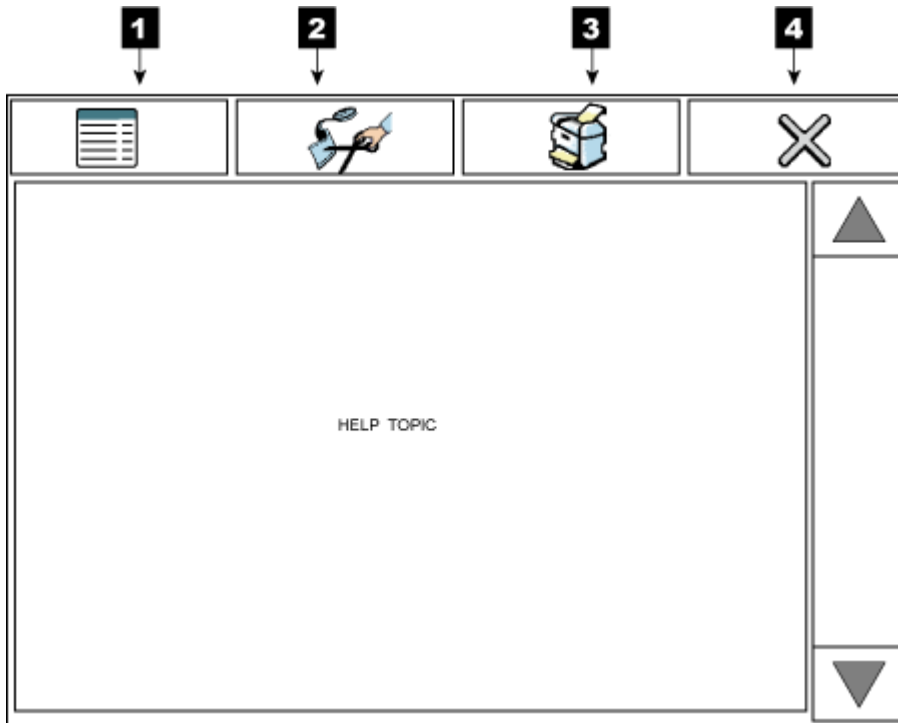
Item 1 - Online Help Table of Contents button

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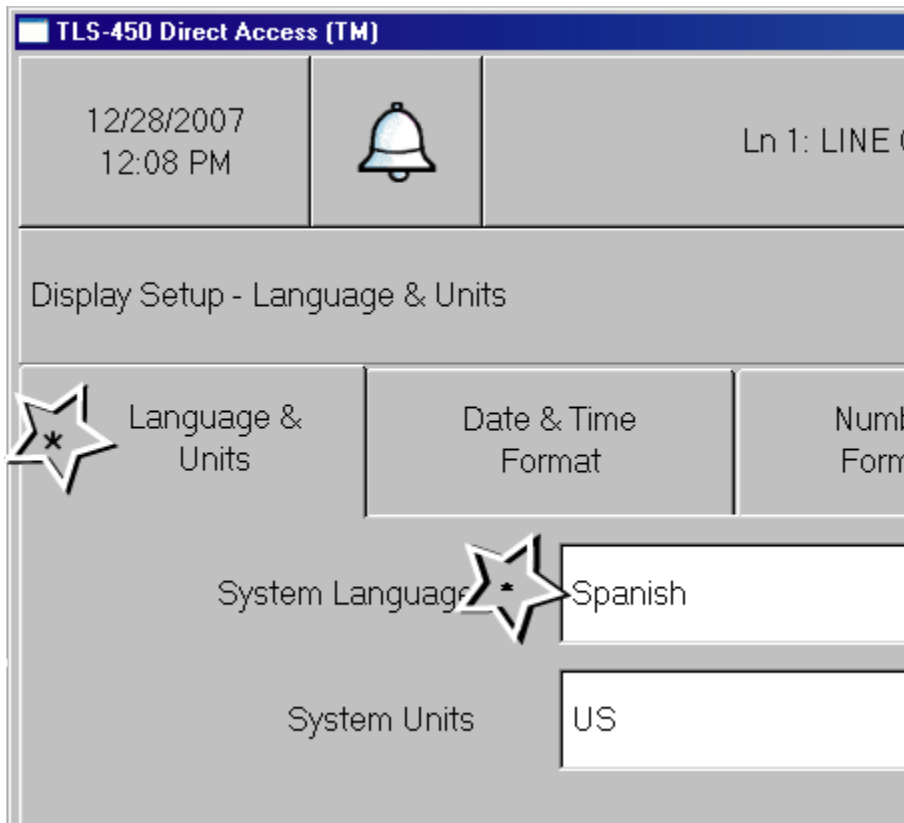
Touch the Check button ✓ to accept your entry/change or touch the Cancel button ✗ to undo your entry/change.

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:

  o **,*?** - 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.

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

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

  o **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 the '**+**' 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:

  o **,*?** - 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.

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

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

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

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

- o ⬅ touch this button to move the cursor to the left.

- o ➡ touch this button to move the cursor to the right.

- o **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.

Initial Startup Procedure

A site that has a brand new TLS-450 without Wireless 2 devices

1. Power up the TLS-450 Console and wait 5 minutes until the device 'Discover Mode' is Complete.
2. Setup the TLS-450 Console

A site that has a brand new TLS-450 with Wireless 2 devices

1. Power up all wireless devices.
2. Power up the TLS RF Console and wait about 5 minutes, before applying power to the TLS-450.
3. Power up the TLS-450 Console and wait 5 minutes until the device 'Discover Mode' is Complete.
4. Setup the TLS-450 Console.

Startup Display

The System Status - All Tanks screen (home screen) is the initial screen to display after powering up the console (see example below):
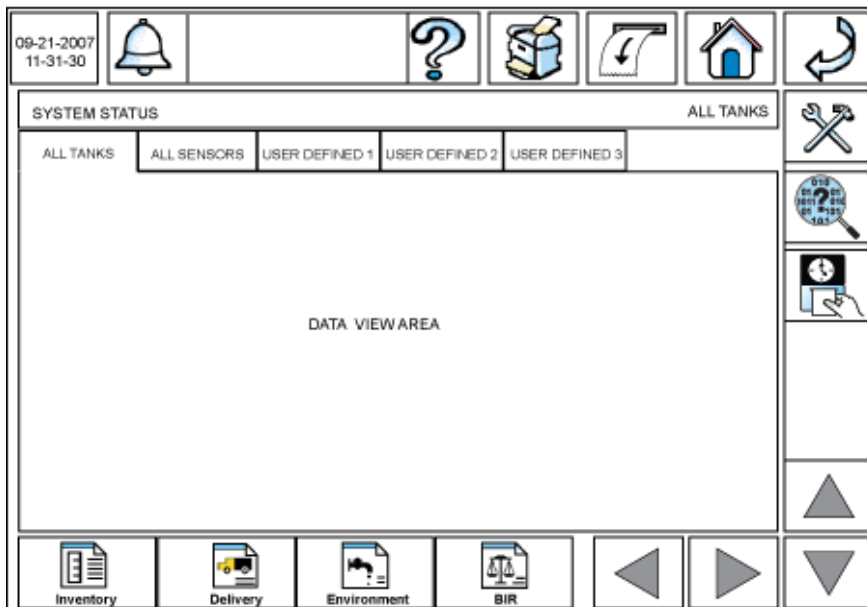
Touch the Setup button ⚒ to access the System Setup screen and perform the initial console setup following the sequence below:

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. Pumps and line Setup (in order of the Tab Screens left to right)
8. Automatic Events Setup - do after above setups - make sure communications is setup first - do address book first
9. Custom Alarms Setup
10. Custom Help Setup
11. Security Setup
12. Inventory Setup
13. Delivery Setup
14. Reconciliation Setup
15. Printer 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):
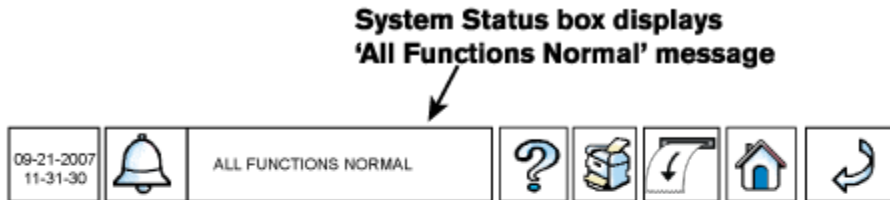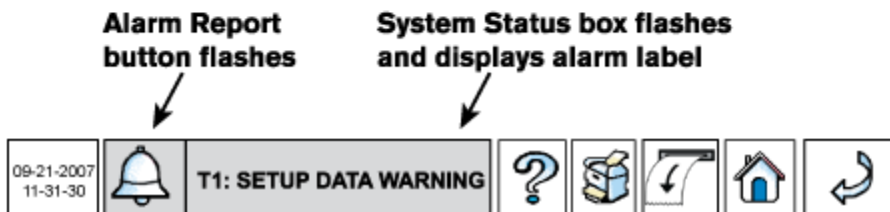
The Alarm Report button and System Status box will continue to flash until you acknowledge the alarm(s). The warning and alarm label(s) will continue to display (scroll) in the System Status box until you correct the cause of the problem.

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):
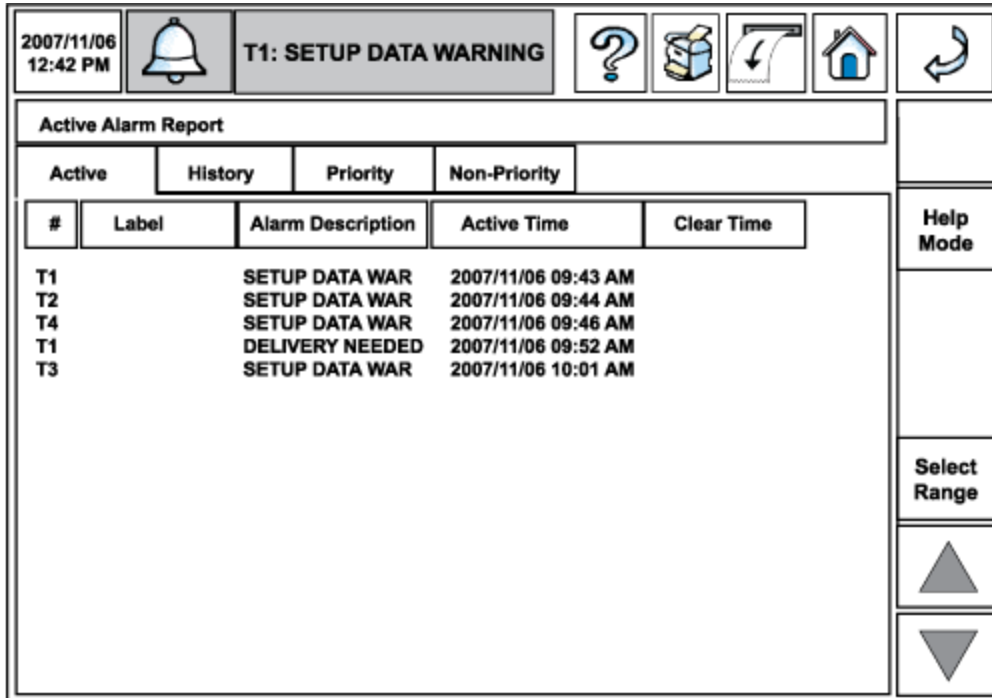
The Active Alarm Report screen shows all active and unacknowledged alarms and warnings. Once you have examined this list, touch the Alarm Report button a second time to acknowledge the unacknowledged alarms and silence the console beeper (the Alarm Report button and System Status box will also stop flashing 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):

| 2007/11/06 12:42 PM | 🔔 | T1: SETUP DATA WARNING | ❓ | | | 🏠 | | ↩ |

Active Alarm Report

| Active | History | Priority | Non-Priority |

#	Label	Alarm Description	Active Time	Clear Time
T1		SETUP DATA WAR	2007/11/06 09:43 AM	
T2		SETUP DATA WAR	2007/11/06 09:44 AM	
T4		SETUP DATA WAR	2007/11/06 09:46 AM	
T1		DELIVERY NEEDED	2007/11/06 09:52 AM	
T3		SETUP DATA WAR	2007/11/06 10:01 AM	

Help Mode

Select Range

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):

DELIVERY NEEDED

CAUSE
Product level dropped below preset limit.

ACTION
Call for delivery.

NOTE: This alarm message will continue to display (scroll) in the System Status box until you correct the cause of the problem.

More About Active Alarms

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 integral printer is mounted 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. Touch the Line Feed button to advance the paper a few lines and verify the paper is feeding correctly. Close the printer cover.
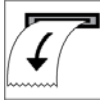
SETUP SCREENS

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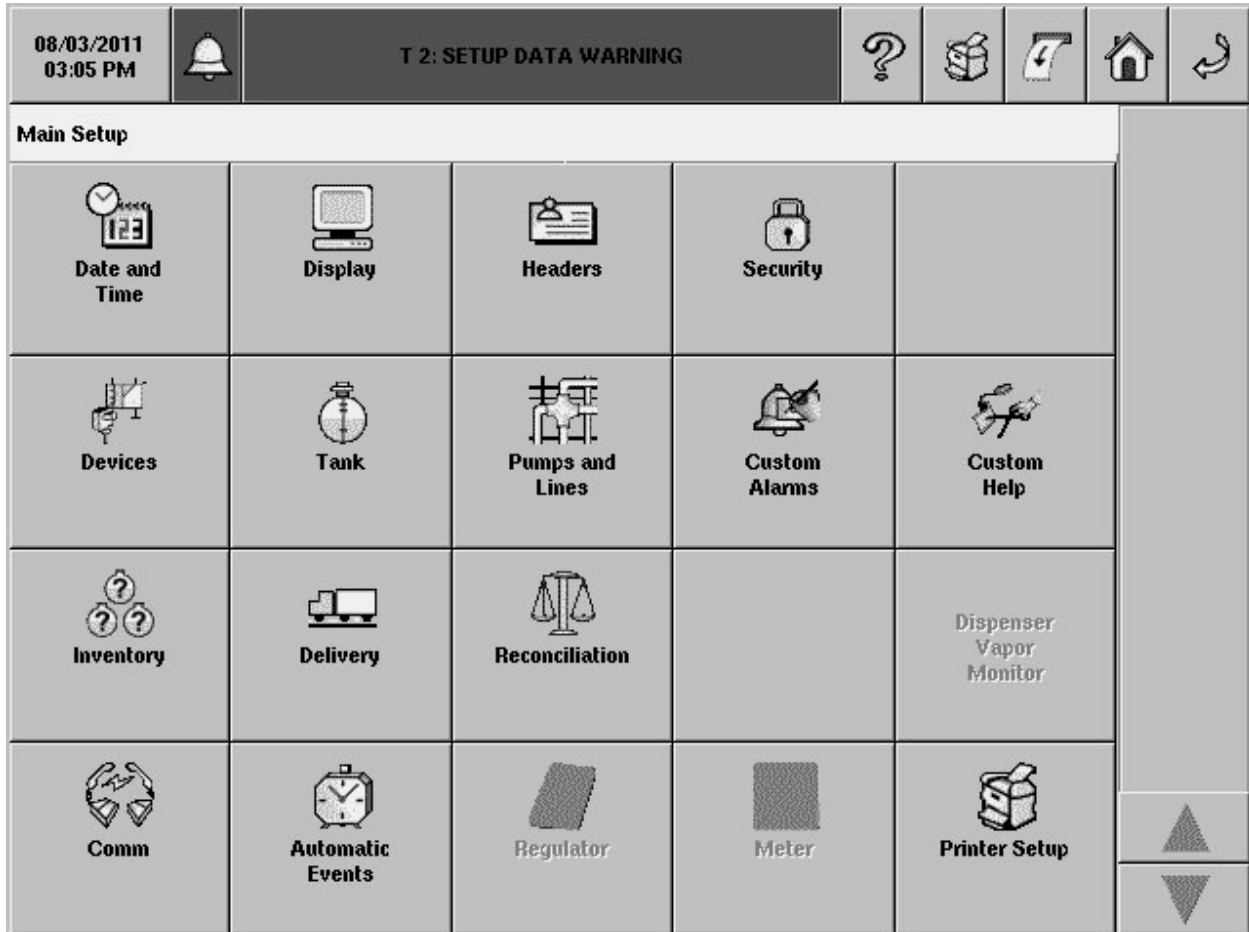
The Main Setup menu screen contains touch button navigators to all device setups in the console. If a button is dimmed, it is a disabled feature that is unavailable. Available system setups are discussed below.

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

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

Display Setup - Language and Units

| 07/10/2008 11:11 AM | 🔔 | **All Functions Normal** | ? | 📦 | ⊿ | 🏠 | ↩ |

Display Setup – Language & Units

| Language & Units | Date & Time Format | Number Format | System Status |

System Language English ▼

System Units English ▼

✓

✗

▲

▼

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

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Display Setup – Number Format

| Language & Units | Date & Time Format | Number Format | System Status |

Decimal Separator   .   ▼

Thousands Separator   None   ▼

✓

✕

▲

▼

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

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Display Setup – System Status

| Language & Units | Date & Time Format | Number Format | System Status | |

All Tanks Tab	Enabled	▼	✕
All Sensors Tab	Enabled	▼	✕
'User Defined 1' Tab	Enabled	▼	✕
'User Defined 2' Tab	Enabled	▼	✕
'User Defined 3' Tab	Enabled	▼	✕

✓ ✕ ▲ ▼

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 [icon] 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 [icon] 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 [icon] 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 [icon] 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

Tank 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: Tank Label or Tank Number
Default: Tank Number

Density

Note: This selection requires density measuring probe.

Allowable selections: Enabled, Disabled . Default: Disabled

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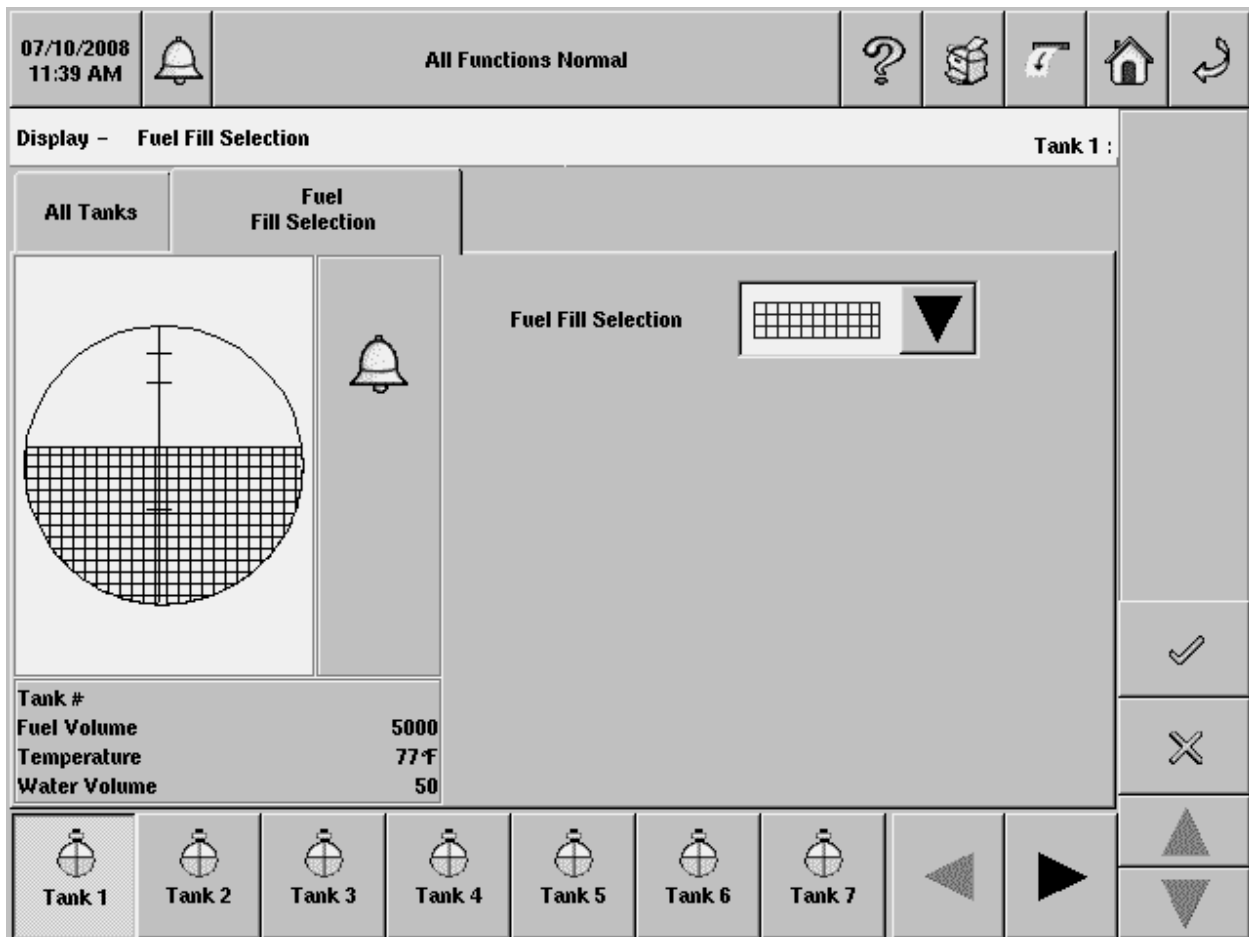
The Display - All Tanks - Fuel Fill Selection screen lets you select the pattern of the fuel in the tank status graphic.

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

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Display Setup – Liquid   **All Sensors Tab Advanced Setup**

Liquid	Type A (2-Wire CL)	Type B (3-Wire CL)	MAG	Ground Water	◁ ▶

🔔

🌟

Sensor Label	Disabled ▼
Alarm Condition Icon	Enabled ▼
Model	Enabled ▼
Category	Enabled ▼

✓

✕

▲

▼

Liquid #
Model   **Tri State**
Category   **Other Sensors**

This screen 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

User Defined 1-3 Tabs

Display Setup - User Defined 1 - 3 Tabs

User Defined tab screens show a graphical status view (created in Tank/Sensor Display Setups) of selected devices in the system. You can select which devices are to be included in each of these tab screens. For the User Defined tab screen(s) the number of Tank or Sensor graphics per page is fixed - 6 for a 7.4 LCD and 8 for a 10.4 LCD.

Each configured page of a User Defined Tab screen will be accessible using the Up/Down Buttons on the lower right of the screen. A page is considered configured if it contains at least one valid device entry. Initially the setup area will show one page where none of the device positions are assigned devices.

For any page, you can select the position of the device's status graphic in the grid by selecting a device for that position. You can also leave some of the positions blank (No Device) by not making a device selection.

Tab Name

You can replace "User Defined X" with an alphanumeric name on the screen's tab. Your entry must have no control characters or punctuation (non-leading and non-trailing spaces are allowed in your entry).

Allowable selections: 1 character minimum, 15 characters maximum
Default: User Defined "X" (where X = 1, 2 or 3)

Headers Setup

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Headers Setup

Header 1	ABC GAS	🔲
Header 2	123 Main St	🔲
Header 3	City, USA	🔲
Header 4	TLS-450	🔲
Fax Sender Name	ABC FAX	🔲
Fax Number	800-555-1234	🔲

✓ ✗ ▲ ▼

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

Security - System Security

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Security – System Security

Front Panel Security	Enabled	▼
Password	×××××××	▨

This screen establishes front panel and web access 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 / Web 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 / Web 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 -10 alphanumeric characters
Default: Empty

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.

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, i.e., Chem-ISO and LPG-ISO probes. The installation literature accompanying Chem-ISO and LPG-ISO probes 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. Low-Level Mag Probes - MAG7, MAG8 and MAG9: 4 in. (101mm), 3 in. (76mm), 2 in. (50mm), 1 in. (25mm), 4 in. Phase Separation and Custom.
Default: 2 in.(50mm), 3 in.(76mm) or 4 in. (101mm) depending on probe type.

Notes:

1. If the Custom float size is selected, fuel offset, invalid fuel, water offset, and water minimum parameter fields below are enabled for edit.
2. Only circuit codes, D004, D005 and D006 are allowed to set the float type to 4 in phase separation.

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	-	-	-	-	-
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.

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

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Device Setup – Liquid Sensor   Sensor 1 :

Probes	Relays	External Inputs	Liquid Sensor	Type A Sensor (2–Wire CL)	◁ ▶

Configured	Enabled	▼
Address	B1.S1.13	▼
Label		🖎
Model	Tri–State(Single Float)	▼
Category	Other	▼

Liquid 1	Liquid 2	Liquid 3	Liquid 4	Liquid 5	Liquid 6	Liquid 7	◀ ▶

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.

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.

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 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

07/10/2008 11:33 AM 🔔	**All Functions Normal**	? 📦 𝒯 🏠 ↵

Device Setup – Ground Water Sensor   Sensor 1 :   🔍

ype B Sensor (3–Wire CL)	MAG Sensor	Ground Water Sensor	Vapor Sensor	◀ ▶

Configured	Disabled ▼
Address	Not Assigned ▼
Label	[ ] 🕸
Address [2]	[ ]
Category	Other ▼

✓

✗

| 🗋 GmdWtr 1 | 🗋 GmdWtr 2 | 🗋 GmdWtr 3 | 🗋 GmdWtr 4 | 🗋 GmdWtr 5 | 🗋 GmdWtr 6 | 🗋 GmdWtr 7 | ◀ ▶ | ▲ ▼ |

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. 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

| 07/10/2008 11:34 AM | 🔔 | **All Functions Normal** | ❓ | 📦 | 🔲 | 🏠 | ↩ |

Device Setup – Vapor Sensor   Sensor 1 :   🔍

| ype B Sensor (3–Wire CL) | MAG Sensor | Ground Water Sensor | Vapor Sensor | ◀ ▶ |

Configured	Disabled	▼
Address	Not Assigned	▼
Label		🔳
Address [2]		
Threshold		🔳

✓ ✗

| Vapor 1 | Vapor 2 | Vapor 3 | Vapor 4 | Vapor 5 | Vapor 6 | Vapor 7 | ◀ ▶ | ▲ ▼ |

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.

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

| 07/23/2008 06:11 PM | 🔔 | **All Functions Normal** | | ❓ | 📦 | 📐 | 🏠 | ↩ |

| Device Setup – Line Pressure Sensor | Sensor 1 : | 🔍 |

| MAG Sensor | Ground Water Sensor | Vapor Sensor | **Line Pressure Sensor** | ◀ ▷ |

Configured   [Enabled   ] ▼

Address   [B1.S1.7   ] ▼

Label   [   ] 🔲

Serial Number [547817027   ]

| Press 1 | Press 2 | Press 3 | Press 4 | Press 5 | Press 6 | Press 7 | ◀ ▶ | ✓ ✗ △ ▽ |

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.

Device Setup - LV/MDIM

This screen allows you to setup Low Voltage Mechanical Dispenser Interface Modules (LVDIMs) and Mechanical Dispenser Interface Modules (MDIMs) installed in the console. You access each of your site's LVDIM or MDIM 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 addresses, Not Assigned
Default: Not Assigned

Label

Allowable selections: Up to 20 alphanumeric characters
Default: Blank

Unit Conversion

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

Pulse Conversion

Allowable selections: 1/2, 2.5, 10, 25, 100, 250, 500, 1000 or Custom
Default: 1/2

Custom

This field is only available if Custom is selected for Pulse Conversion above. Enter a custom pulse conversion using the numeric keypad to the right of the window.

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

Tank 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 drop down list.
Default: 'Not Assigned'

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

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

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 these 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)
AdBlue or Urea	0.00045	0.00081
Alcohol	0.00063	0.00114
Aviation Gas	0.00075	0.00135
Diesel (fuel oil #2) [Derv]	0.00045	0.00081
< Derv> Biodiesel (B20)	0.00045	0.00081
< Derv> Biodiesel (B100)	0.00045	0.00081
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) - Propane*	0.00160	0.00288
Liquefied Petroleum Gas (LPG) - Butane*	0.00109	0.00196
Leaded Gasoline	0.00070	0.00126
Motor Oil	0.00047	0.00085
Premium [4 Star]	0.00070	0.00126
Regular Unleaded Gasoline	0.00070	0.00126
Super Unleaded Gasoline	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

*Coefficient dependent on temperature, 15°C is nominal.

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.)

Meter Data Present

When this feature is enabled, all meter data collected from the dispensers will be reported to the system. If dispenser data for this tank is being reported to the DIM then this parameter must be set to Enabled.

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%

Stick Offset Fuel

Allowable entry: -144 to +144 in (-3657.60 to 3657.60 mm)
Default: 0

Stick Offset Water

Allowable entry: -144 to +144 in (-3657.60 to 3657.60 mm)
Default: 0

Delivery Delay

Enter the number of minutes to wait after the Console determines that a Delivery is complete.

This delay period can prevent false Alarms and Warnings due to turbulence in the Tank caused by Deliveries.

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

The Tank Setup - Limits screen sets Tank capacity values, along with Tank Alarm set points. These values apply to the currently 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).
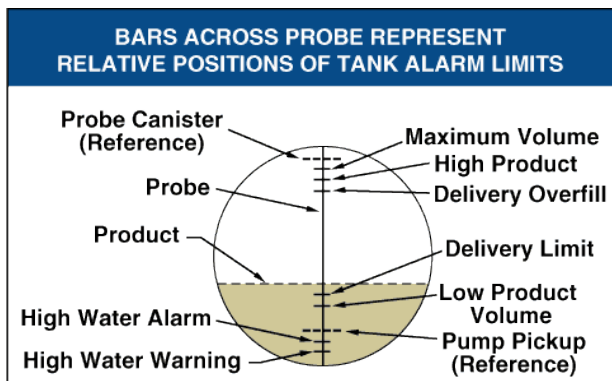
Figure 1.

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

High Product (% of Maximum Volume)

High Product Alarms occur when the Volume of fluid in the Tank exceeds the value you enter in this field.

Note: 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 Console 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 field is especially useful to warn of an impending overfill.

Set this limit to 98% if the Maximum Volume value is greater than 25,000 liters.

Set this limit to 96% if the Maximum Volume is less than 25,000 liters

Delivery Overfill (% of Maximum Volume)

Delivery Overfill Alarms warn of a potential overfill during a Delivery. When the Volume reaches this value, the TLS-450 Console can activate an Overfill Alarm, and triggers 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).

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 field (See Figure 1).

Low Product

Low Product Alarms warn when the Volume in the Tank drops to the level you enter in this field (See Figure 1).

In international installations, assuming no water is present in the Tank, this limit should be set no lower than:

- The Tank Volume at 250mm for Mag probe type 8473.
- The Tank Volume at 125mm for Mag probe type 8493.

These are the minimum Volumes that can be measured by each Probe type.

High Water Warning

The High Water Warning acts as a Pre-Warning to the High Water Alarm. Set this value lower than the High Water Alarm (See Figure 1).

When Console detects that the Water level in the Tank is higher than the High Water Warning threshold value a Warning is posted. This behavior, however is affected by Deliveries as described below.

High Water Alarm

Set this value at a level lower than the Pump Pickup value for the submersible Pump or suction Line (See Figure 1).

When Console detects that the Water level in the Tank is higher than the High Water Alarm value an Alarm is posted.

Water Alarm Filter Level

The Console can be configured to provide water Alarm filtering during Deliveries. Filtering may be required because turbulence in a Tank during Delivery may cause false Water Alarms. On a per Tank basis, the user is able to select the level of filtering; Low, Medium or High. The default filter setting of Low will provide the quickest Alarm response time, but may be susceptible to false Alarms. In most applications the Water Alarm Filter Level setting of Low will not produce false water Alarms.

Adjustments to the Delivery fill tube may eliminate false water Alarms caused by Delivery turbulence. If Deliveries are causing an unacceptable number of false water Alarms increase the Water Alarm Filter Level to Medium. If the false water Alarms continue increase the filter level to High.

The three filter levels are explained in more detail below.

LOW FILTER

When the Water Alarm Filter is set to Low Deliveries will not inhibit the posting of Water Alarms.

With the Low setting the Console detects that a Delivery is occurring when the fuel level in the Tank increases by 25 Gallons per Minute (GPM).

Low Filter - High Water Alarm
During a Delivery if the Console detects a High Water Alarm condition for three minutes it posts both an High Water Alarm and a High Water Warning immediately. The Delivery may still be in-progress when the Alarm and Warning occurs.

During a Delivery if the Water level is less than the High Water Alarm value the Console will clear the Alarm.

Low Filter - High Water Warning
During a Delivery if the Console detects a High Water Warning condition for three minutes, but does not detect a High Water Alarm condition during this time, the Console posts a High Water Warning after the Delivery is complete.

If the Delivery is in progress for more than 60 minutes, the High Water Warning posts after 63 minutes from the start of Delivery detection.

The same logic applies to the clearing of the High Water Warning.

Low Filter - Maximum Height for the No-Delay Condition
If the Water level is six inches or above the High Water Alarm value for three minutes, then the Console posts a High Water Alarm and High Water Warning, even when a Delivery is in progress.

MEDIUM FILTER

The Medium Filter, like the Low Filter detects that a Delivery is occurring when the fuel level in the Tank increases by 25 Gallons per Minute (GPM).

Medium Filter - High Water Alarm
During a Delivery if the Console detects a High Water Alarm condition for three minutes, it posts both a High Water Alarm and a High Water Warning after the Delivery completes.

If the Delivery is in progress for more than 30 minutes, the High Water Alarm posts after 33 minutes from the start of Delivery detection.

The same logic applies to the clearing of the High Water Alarm.

Medium Filter -High Water Warning
During a Delivery if the Console detects a High Water Warning condition for three minutes the Console posts a High Water Warning after the Delivery completes.

If the Delivery is in progress for more than 60 minutes, the High Water Warning posts after 63 minutes from the start of Delivery detection.

The same logic applies to the clearing of the High Water Warning.

Medium Filter - Maximum Height for the No-Delay Condition
Like the Low Filter, if the Water level is six inches or above the High Water Alarm value for three minutes, then the Console posts a High Water Alarm and High Water Warning, even when a Delivery is in progress.

HIGH FILTER

The Water Alarm Filter setting of High follows the same behavior as the Medium level filter, however in this case the Console detects that a Delivery is occurring when the fuel level in the Tank increases by six Gallons per Minute (GPM).

High Filter - High Water Alarm
During a Delivery if the Console detects a High Water Alarm condition for three minutes, the Console posts both a High Water Alarm and High Water Warning after the Delivery completes.

If the Delivery is in progress for more than 45 minutes, the High Water Alarm posts after 48 minutes from the start of Delivery detection.

The same logic applies to the clearing of the High Water Alarm.

High Filter - High Water Warning
During a Delivery if the Console detects a High Water Warning condition for three minutes, but does not detect a High Water Alarm condition during this time, the Console posts a Warning after the Delivery completes.

If the Delivery is in progress for more than 60 minutes, the Console posts a High Water Warning after 63 minutes from the start of Delivery detection.

The same logic applies to the clearing of the High Water Warning.

High Filter - Maximum Height for the No-Delay Condition
If water level is 10 inches or more for three minutes, then the Console posts a High Water Alarm and High Water Warning, even when a Delivery is in progress.

Leak Alarm Limit

During a Leak Test the Leak Alarm Limit warns when the cumulative TC Product loss from a Tank reaches the Leak Alarm Limit. It identifies and warns 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 liters) will warn of:

- A 1 gph (4 lph) leak in 8 hours.
- A 2 gph (8 lph) leak in 4 hours.

Note: the system automatically interprets the limit you enter as a negative. It is not necessary to enter the minus (-) sign.

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 TC 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.

Density Low Limit

Density Low Alarms occur when the Fuel Density value falls below the value you enter in this field.

Density High Limit

Density High Alarms occur when the Fuel Density value rises above the value you enter in this field.

Tank Setup - Environmental Tests

03/03/2010 12:25 PM	🔔	**All Functions Normal**	?	📦	🗒	🏠	↩

Tank Setup – Environmental Tests   Tank 1 :

General	Limits	Environmental Tests	All Tanks	Product	Chart	◄ ►

Tank Test Method   Disabled ▼

✓

✗

▲

▼

Tank 1	Tank 2	Tank 3	Tank 4	Tank 5	Tank 6	Tank 7	◄ ►

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 information is 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 [123] 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
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 is set to Auto. When enabled, this feature may reduce false alarms. Two tests in a row must fail before a Gross Leak Test Fail alarm is posted.

Allowable selections: Enabled, Disabled
Default: Disabled

Duration

Allowable selections: 2 - 24 Hours
Default: 2

Leak Min. Periodic (% 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 (% 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 - - -

03/03/2010 03:51 PM	🔔	T 1: DELIVERY NEEDED	?	🗄	📄	🏠	↩

Tank Setup – Environmental Tests   Tank 1 : regular

✱	Environmental Tests	All Tanks	Product	Chart	Manual Calibration	◀ ▶

Tank Test Method ✱	CSLD	▼
Gross Test Auto-Confirm	Disabled	▼
Probability Of Detection	95%	▼
Climate Factor	MODERATE	▼
CSLD Evap. Compensation	Disabled	▽

✓   ✕   ▲ ▼

Tank 1	Tank 2	Tank 3	Tank 4	Tank 5	Tank 6	Tank 7	◀ ▶
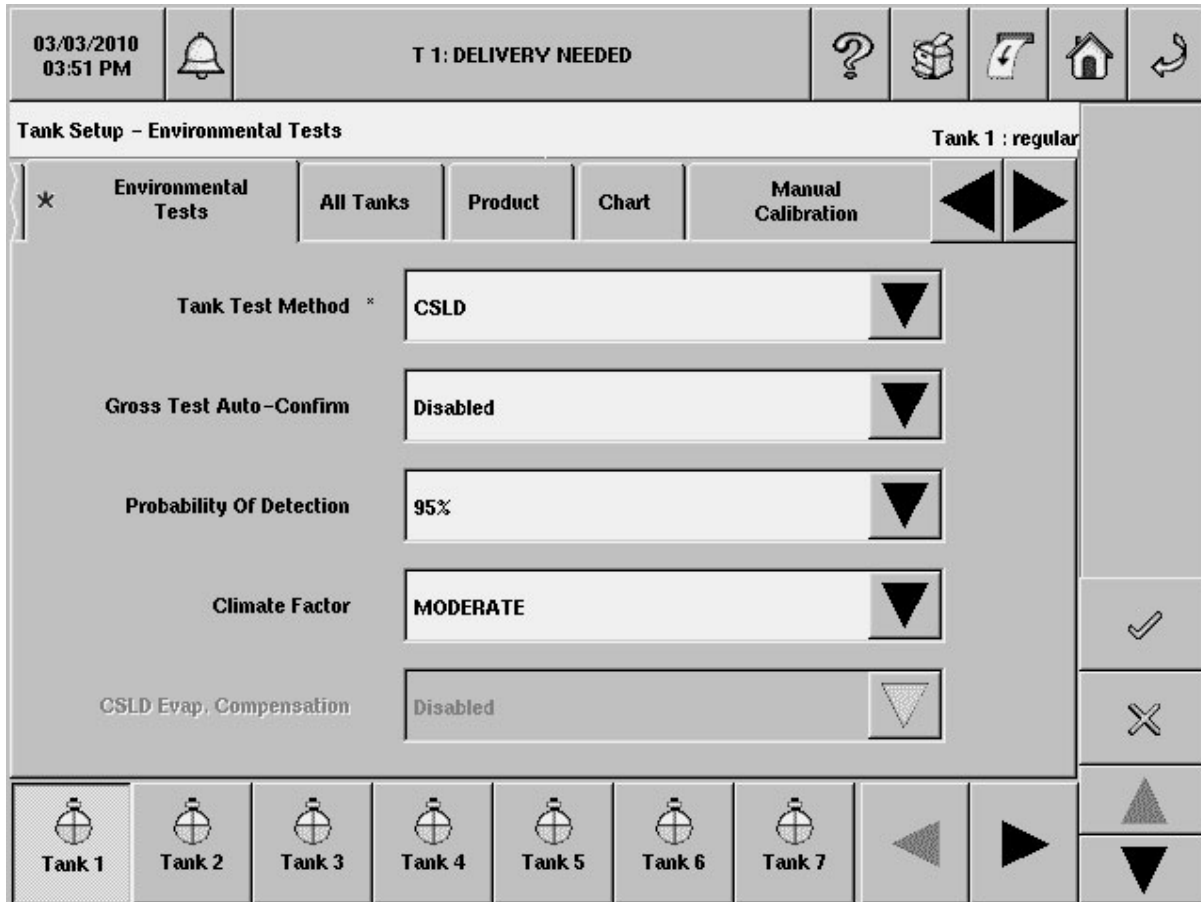
Gross Test Auto-Confirm

When enabled, this feature may reduce false alarms. Two tests in a row must fail before a Gross Leak Test Fail alarm is posted.

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

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

Stage II Vapor Recovery

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

Allowable selections: Enabled, Disabled
Default: Disabled

Tank Setup - All Tanks

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Tank Setup – All Tanks   All Tanks

| General | Limits | Environmental Tests | All Tanks | Product | Chart | ◀ ▶ |

User Ullage   Disabled ▼

User Ullage %   90

Print TC Volumes   Disabled ▼

TC Reference [℉]   60.0

CSLD Evap. Reid Vap. Pressure Chart   JAN 0.0   ▽ ✖

Periodic Test Needed Warnings   Disabled ▽

This screen contains parameters that apply across 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

CSLD Evap. Reid Vap. Pressure Chart

This field appears only when the Tank Test Method selection is set to CSLD, the Climate Factor selection is set to Extreme and the CSLD Evap. Compensation selection is set to Enabled in the Tank Setup - Environmental Tests tab screen.

You will need to enter a Reid Vapor Pressure (RVP) value for at least 1 month of the year. The RVP monthly values for your geographical area can be obtained from your local Petroleum Distributor.

Allowable range of valid RVP entries: 0 to 15.
Default: 00.0.

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

TC Density

Allowable Selection: Enabled/Disabled
Default: Disabled

Density Method

Allowable Selection: GOST, API
Default: API

Tank Setup - Product

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Tank Setup – Product

General	Limits	Environmental Tests	All Tanks	Product	Chart	◁ ▶

Edit

Product#	Product Label
1	Not Assigned
2	Not Assigned
3	Not Assigned
4	Not Assigned
5	Not Assigned
6	Not Assigned
7	Not Assigned
8	Not Assigned
9	Not Assigned
10	Not Assigned
11	Not Assigned
12	Not Assigned
13	Not Assigned
14	Not Assigned
15	Not Assigned
16	Not Assigned

Set Tanks Product

View All Products

This screen lets you view, edit product labels for all tanks in the system and determine the content of Reconciliation reports.

Report Column Descriptions

Product

This column contains the product number.

Product Label

This column contains the assigned label for the product number. The default is 'Not Assigned'.

Control Buttons (Right Side of Screen)

Edit

Touch (highlight) a product number in the data view area and then touch this button to display the **Edit Product Label** dialog box:

Product

Read-only field - displays the product number.

Product Label

Touch the keypad to the right of this field to change the product label (This label will appear on the right side of the Reconciliation report title bar).

Allowable selection: Alpha-Numeric label up to 20 characters max.
Default: Not Assigned or Current product label.

Touch the ✓ button to accept edited values or ✗ button to abort the change and close the **Edit Product Label** dialog box.

Set Tanks Product

Touch this button to open the 'Tank Setup - Product -Tank(s) Product Mapping' screen. This screen allows you to group single and manifolded tanks into product-summarized Reconciliation reports.

View All Products

Touch the 'View All Products' button to display the Tank Setup -View All Products screen. This screen displays all Product/Tank assignments.

Tank Setup - Product Mapping

This screen allows you to view and/or assign a product to a tank. These assignments group single and manifolded tanks into product-summarized Reconciliation reports.

Report Column Descriptions

Tank(s)
This column contains the Tank number.

Product
This column contains the product assigned to the tank. The default is 'Not Assigned'.

Control Buttons (Right Side of Screen)

Edit
Touch (highlight) a tank's row in the data view area and then touch this button to display the **Edit Tank(s) Product** dialog box:

Tank(s)

Read-only field displays the selected tank (e.g. T1).

Product

If the selected tank has a product assigned, it will appear in this field (e.g., F1: Regular Unleaded). If the selected tank has no product assigned, Not Assigned will appear in this field. Touch the down arrow to the right of this field to edit or assign a product to the selected tank.

Touch the ✓ button to accept edited values or ✗ button to abort the change and close the **Edit Tank(s) Product** dialog box.

Tank Setup - View All Products

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Tank Setup – Product – View All Products

Tank(s) Product Mapping	View All Products	

Product	Label	Tank(s)
1		T 1: regular

▲
▼

Touch the 'View All Products' button to display the Tank Setup -View All Products screen. This screen displays all Product/Tank assignments.

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

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

- 1 point - This method requires only the 100% (full) volume to profile the tank. This selection is used for horizontally installed, flat-ended cylindrical tanks, and should be selected when AccuChart II is available for this type tank.

- 4 Points - This method requires 4 volumes to profile the tank. The requested volumes are at percentages of height (e.g., the 75% volume of a 96" diameter tank = the volume at a height which is 75% of 96" or 72"). This selection can be used for all rounded- and dished-end tanks, and should be selected when AccuChart II is available for these type tanks.

- 20 points - This method requires 20 volumes to profile the tank. The requested volumes are at percentages of height (e.g., the 5% volume of a 96" diameter tank = the volume at a height which

is 5% of 96" or 4.8"). This selection can be used for all rounded- and dished-end tanks.

- Linear - This method requires only the 100% (full) volume to profile the tank. When using the linear tank profile you must enter the inside height of the tank in place of the inside diameter of the tank in Tank Diameter setup (see above). This profile can be used for flat-ended cylindrical tanks standing on end and for rectangular tanks.

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

Full Volume (at full height) in or mm

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

Display range: Volume = 0 to 264,172 gals (0 to 999,999 litres), Diameter = 0 to 390.0 inches (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 gals (0 to Full Volume litres)

End Shape

This field only appears when the 1 point chart is selected for 'Tank Profile' above.

Allowable selections: 0 to 1.0 in 0.1 increments (0.3 is the recommended end value for dished-end tanks)
Default: 0

Tank Setup - Manual Calibration

This screen allows you to (jump to the paragraph by touching the link):

- [View an existing manually calibrated chart](#),
- [Add a new manually calibrated chart](#), or
- [Update an existing manually calibrated chart](#) (Non-active charts only)

You cannot manually calibrate a tank by any method until you enter a Diameter and Capacity for that tank in the Tank Setup - General tab screen.

NOTE: Source and volume entries are user programmable for new charts, and read-only for charts being updated or viewed.

Viewing a Manually Calibrated Tank Chart

Open the Tank Setup - Manual Calibration screen for the selected tank. To view a manually calibrated chart for the selected tank, touch the **Setup** button on the right side of the screen to open the 'Tank Chart Setup' -dialog box. Touch the down arrow to the right of the **Function** field and select **View Chart**. Touch the down arrow to the right of the **Chart Name** field and select the name of the chart you would like to review.

The five columns of the Manual Calibration chart (Data Area) are described below.

- Point - This column lists the entered points of the chart .
- Height - This column lists the height of product in the tank at each chart point.
- Volume Change - This is read-only field showing the change in volume between chart points.
- Volume - This column lists the volume of product in the tank at each chart point.
- Status - This column display a check (OK) or an X (No) to denote validity of the chart point.

Adding a New Manually Calibrated Tank Chart

NOTE: The active chart on each tank may not be edited, only viewed, and its name will not appear in the drop down.

You can manually calibrate a tank chart using one of three methods (touch the link to jump to the desired method):

- User Entered: Entering height and volume values for each point from the tank manufacturer's tank chart
- Metered Drop: Entering metered volume received at each probe-read height point
- Metered Dispense: Entering metered volume dispensed at each probe-read height point

ENTRY METHOD RESTRICTIONS:
- For non-manifolded tanks, you can select one of the following source options: User Entered, Metered Drop or Metered Dispense.
- For line manifolded tanks, you can select one of the following source options: User Entered or Metered Drop.
- For siphon manifolded tanks, you can only select the following option: User Entered.

USER ENTERED METHOD
The tank can be full or empty for this method.

1. Open the Tank Setup - Manual Calibration screen for the selected tank. To view a manually calibrated chart for the selected tank, touch the **Setup** button on the right side of the screen to open the 'Tank Chart Setup - Dialog Box'. Touch the down arrow to the right of the **Function** field and select **Create a New Chart**. Touch the down arrow to the right of the **Chart Name** field and enter the name of the new chart.

2. In the **Source** field select **User Entered**.

3. The **Volume Entry** field is grayed out for User Entered calibrations.

4. The **Max Step** field is read only and the volume displayed cannot be exceeded from one point to another.

5. Touch **OK** (check) to accept your entries and close the dialog.

6. Touch the **Add Point** button on the right of the screen to open the 'Add/Edit Tank Chart Point' dialog box.

7. The **Point** field will automatically start at 1 (and increment as you move to subsequent points). From the manufacturer's tank chart, enter Point 1's **Height** and **Volume** values. Touch the **OK** (check) button to enter the values for Point 1. Notice the Data Area of the screen displays your entry for Point 1.

8. Repeat the procedure in Step 6 until all points are entered.

9. After at least 10 points are entered, the **Make Chart** button on the right of the screen will become active. Touch this button to make the chart based on your entered points. Notice that the newly created chart will appear in the report area of the screen and its **Status** will be 'Ready'.

10. If this is the chart you want to use for the selected tank, touch the **Apply** button on the right side of the screen to make the chart active for the selected tank. The 'Confirm Apply' dialog box will display, touch the **Check** (OK) key to make this chart active for the selected tank. The *Warning Update Schedule is active and may override your choice of active chart* message indicates that the Update Schedule selection made in Tank Setup - AccuChart II tab screen may override this chart with an AccuChart II calibrated tank chart.

METERED DROP METHOD

For this method the tank can be empty or already contain some product (the amount of which you will enter as the volume/height for point 1).

1. Open the Tank Setup - Manual Calibration screen for the selected tank. To view a manually calibrated chart for the selected tank, touch the **Setup** button on the right side of the screen to open the 'Tank Chart Setup - Dialog Box'. Touch the down arrow to the right of the **Function** field and select **Create a New Chart**. Touch the down arrow to the right of the **Chart Name** field and enter the name of the new chart.

2. In the **Source** field select **Metered Drop**.

3. In the **Volume Entry** field select **Total Volume** if the meter totalizes the metered dispenses, or select **Volume Change** if the meter displays actual volume for each dispense.

4. The **Max Step** field is read only and the volume displayed cannot be exceeded from one point to another.

5. Touch **OK** (check) to accept your entries and close the dialog.

6. Touch the **Add Point** button on the right of the screen to open the 'Add/Edit Tank Chart Point' dialog box. For Point 1, if the tank is empty, enter 0 in the **Volume** field and the 0 in the **Height** field. If the tank contains some product, enter the existing product's measured volume and measured height. Touch **OK** (check) to accept your entries for point 1 and close the dialog. Notice the Data Area of the screen displays your entry for Point 1.

7. Notice the **Tank Idle** indicator now displays **Start Delivery**. Begin dispensing product into an approved container/tank and notice the **Start Delivery** indicator displays **Tank Busy** while the fuel height is changing. Continue dispensing until the **Tank Busy** indicator displays **Stop Delivery** at which point stop dispensing. Record the volume dispensed for the next chart point.

8. When the **Stop Delivery** indicator changes to **Tank Idle**, touch the **Add Point** button on the right of the screen to open the 'Add/Edit Tank Chart Point' dialog box. Notice the point has incremented to 2 and the **Height** field displays the product's measured height at point 2. Enter the previously recorded volume dispensed in the **Volume** field. Note: if the tank was not empty at the start of this process, the first volume entry should include the existing fuel volume in the tank. Touch **OK** (check) to accept your entries for point 2 and close the dialog box. Notice the Data Area of the screen now displays your entry for Point 2.

9. Repeat Steps 6 and 7, entering points until the tank's volume is down to around the tank's previously entered 'Low Product Limit' (at least 10 points).

10. After at least 10 points are entered, the **Make Chart** button on the right of the screen will become active. Touch this button to make the chart based on your entered points. Notice that the newly created chart will appear in the report area of the screen and its **Status** will be 'Ready'.

11. If this is the chart you want to use for the selected tank, touch the **Apply** button on the right side of the screen to make the chart active for the selected tank. The 'Confirm Apply' dialog box will display, touch the **Check** (OK) key to make this chart active for the selected tank. The *Warning Update Schedule is active and may override your choice of active chart* message indicates that the Update Schedule selection made in Tank Setup - AccuChart II tab screen may override this chart with an AccuChart II calibrated tank chart.

METERED DISPENSE METHOD

The tank should be full for this method.

1. Open the Tank Setup - Manual Calibration screen for the selected tank. To view a manually calibrated chart for the selected tank, touch the **Setup** button on the right side of the screen to open the 'Tank Chart Setup - Dialog Box'. Touch the down arrow to the right of the **Function** field and select **Create a New Chart**. Touch the down arrow to the right of the **Chart Name** field and enter the name of the new chart.

2. In the **Source** field select **Metered Dispense**.

3. In the **Volume Entry** field select **Total Volume** if the meter totalizes the metered dispenses, or select **Volume Change** if the meter displays actual volume for each dispense.

4. The **Max Step** field is read only and the volume displayed cannot be exceeded from one point to another.

5. Touch **OK** (check) to accept your entries and close the dialog.

6. Touch the **Add Point** button on the right of the screen to open the 'Add/Edit Tank Chart Point' dialog box. For Point 1, enter the tank's full capacity in the **Volume** field and the tank's height in the **Height** field. Touch **OK** (check) to accept your entries for point 1 and close the dialog. Notice the Data Area of the screen displays your entry for Point 1.

7. Notice the **Tank Idle** indicator now displays **Start Dispense**. Begin dispensing product into an approved container/tank and notice the **Start Dispense** indicator displays **Tank Busy** while the fuel height is changing. Continue dispensing until the **Tank Busy** indicator displays **Stop Dispense** at which point stop dispensing. Record the volume dispensed for the next chart point.

8. When the **Stop Dispense** indicator changes to **Tank Idle**, touch the **Add Point** button on the right of the screen to open the 'Add/Edit Tank Chart Point' dialog box. Notice the point has incremented to 2 and the **Heigh**t field displays the product's measured height at point 2. Enter the previously recorded volume dispensed in the **Volume** field. Touch **OK** (check) to accept your entries for point 2 and close the dialog. Notice the Data Area of the screen now displays your entry for Point 2.

9. Repeat Steps 6 and 7, entering points until the tank's volume is down to around the tank's previously entered 'Low Product Limit' (at least 10 points).

10. After at least 10 points are entered, the **Make Chart** button on the right of the screen will become active. Touch this button to make the chart based on your entered points. Notice that the newly created chart will appear in the report area of the screen and its **Status** will be 'Ready'.

11. If this is the chart you want to use for the selected tank, touch the **Apply** button on the right side of the screen to make the chart active for the selected tank. The 'Confirm Apply' dialog box will display,

touch the **Check** (OK) key to make this chart active for the selected tank. The *Warning Update Schedule is active and may override your choice of active chart* message indicates that the Update Schedule selection made in Tank Setup - AccuChart II tab screen may override this chart with an AccuChart II calibrated tank chart.

Updating a Manually Calibrated Tank Chart

Open the Tank Setup - Manual Calibration screen for the selected tank. To edit a manually calibrated chart for the selected tank, touch the **Setup** button on the right side of the screen to open the 'Tank Chart Setup - Dialog Box'. Touch the down arrow to the right of the **Function** field and select **Update a Non-Active Chart** (you cannot edit an active chart). Touch the down arrow to the right of the **Chart Name** field and select the name of the desired chart.

The chart points will display in the data view area of the screen. Touch the point you want to edit to select and the **Add Point** (to add the next point in the chart), **Edit Point** (to change this point's parameters) or **Delete Point** (to delete this point from the chart) buttons are activated on the right side of the screen.

When you have finished editing the chart, touch the **Make Chart** button to refresh the tank chart. When the status of the revised chart is 'Ready', touch the **Apply** button on the right side of the screen. The 'Confirm Apply' dialog box will display, touch the Check (OK) key to make this chart active for the selected tank. The *Warning Update Schedule is active and may override your choice of active chart* message indicates that the Update Schedule selection made in Tank Setup - AccuChart II tab screen may override this chart with an AccuChart II calibrated tank chart.

Control Buttons (right of screen)

Tank Busy

This is not a button but an indicator that displays tank states during metered dispense and metered drop calibrations. Possible messages include:

- **Tank Busy** - Displays during dispensing
- **Tank Idle** - Displays when there is no active dispensing, and the minimum height change requirement has been satisfied, but the user has not entered the new volume yet.
- **Start Dispense** - (Metered Dispense Method) Displays when the console is ready to start a metered dispense chart step.
- **Stop Dispense** - (Metered Dispense Method) Displays when the console is ready to end a metered dispense chart step.
- **Start Delivery** - (Metered Drop Method) Displays when the console is ready to start a metered drop chart step.
- **Stop Delivery** - (Metered Drop Method) Displays when the console is ready to end a metered drop chart step.

Add Point

Touch this button to open the 'Add/Edit Tank Chart Point' dialog box described below:

Point

New Chart - Automatically displays a 1 for the first point and increments a point at a time as you add points. Edit Chart - Displays the point selected from an existing chart. Allowable range: 1 to 100 points.

Height

New Chart - Displays 0 and the measured height for additional points. Edit Chart - Displays the entered height for the selected point. Allowable range: 0 to 1200.00 in (0 to 30,480.00 mm)

Volume

New Chart - This field is blank - You enter the tank chart value or the metered volume dispensed or dropped for this point. Edit Chart - Displays the volume entered for this point. Allowable range: 0 to 264,172 gal (0 to 999,999 Litres)

Edit Point

Touch this button to open the 'Add/Edit Tank Chart Point' dialog box for the selected point (see Add Point button above).

Delete Point

Touch this button to remove a selected point from a chart.

Make Chart

This button is grayed out until at least 10 points have been entered for a new chart. Touch this button to create a chart from the entered points.

Setup

Touch this button to open the 'Tank Chart Setup' dialog box described below:

Function

Allowable Selections: Create New Chart, Update Non-Active Chart, or View Chart. Default: Create New Chart.

Chart Name

Enter a name for the chart you want to created or for the tank chart you want to view or update.

New Chart

Allowable Selection: 1 to 20 alphanumeric characters. Default: Blank

Existing Chart

Select from a drop down list of previously created charts

Source

Enter the source of chart points for the chart.
Allowable Selections: User Entered, Metered Drop, Metered Dispense. Default: User Entered

Volume Entry

Grayed out except for User Entered calibration.
Allowable selections: Total Volume (meter totalizes dispensed amounts) or Volume Change (meter reads dispensed amount). Default: Total Volume

Max. Step

This is a read only field showing the volume of the tank at 5% of its capacity. It is recommended that this difference in dropped or dispensed volume not be exceeded between points.

Tank Setup – Tank Charts

This screen lists the active and inactive charts for the selected tank. Content of the report's columns are described below:

Name (Chart)

This is the name you entered for the chart.
Possible format: 20 alphanumeric characters

Date & Time

This column shows the date the chart was created.
Message format: MM/DD/YYYY - HH:MM

Type

The column displays the chart type.
Possible messages include: 1-point, 4-point, 20-point, Multi-point, Linear.

Source

Source of the chart.
Possible messages include: Automatic, Remote, User-Entered, Meter Drop, Meter Dispensed

Status

This column lists the chart's status.
Possible messages include: Active, Ready, Incomplete, Bad Point, Calculating

Quality

Quality is a combination of data sufficiency and goodness-of-fit. The higher the sufficiency and/or the better the fit, the higher the quality will be. NOTE: This column contains data only if chart type is Automatic or Remote.
Possible messages: 1 to 1000, where 1 = horrible and 1000 = very good

Control Buttons (right of screen)

The buttons below (except the diags and MORE buttons) are inactive until you have selected (touched) one of the charts in the report.

Apply

Touch this button to make the selected chart the active chart for this tank.

Delete

Touch this button to delete the selected chart for this tank. NOTE: you cannot delete the first (initial) chart for this tank.

Rename

Touch this button to rename the selected chart for this tank.

Diags (AccuChart II feature)

Touch this button to display the AccuChart II Diagnostics first tab screen (Delivery Instructions). AccuChart II diagnostic screens will allow you to get information and reports on this tank's charts, and to compare two of this tank's charts.

MORE

Touch this button to shift the report to the right to display the last two columns. Touch MORE again to shift the report back to the left.

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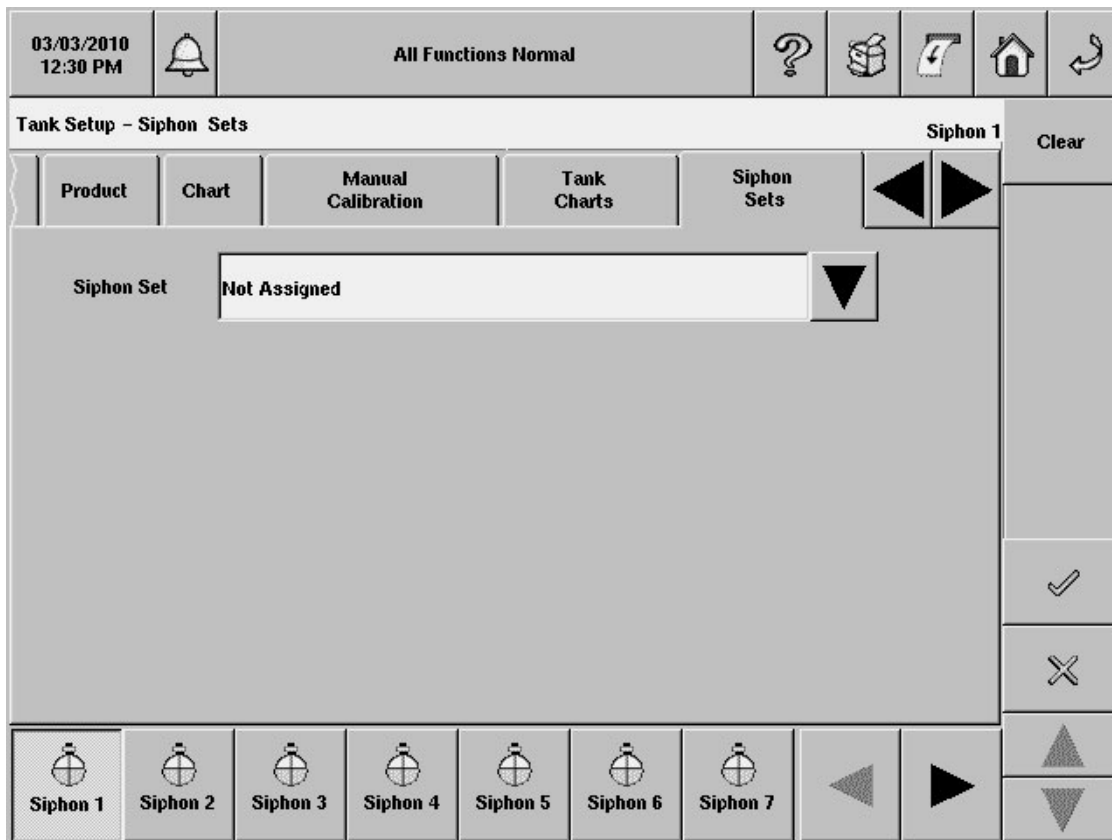
The Siphon Set tab is used to view and edit information about siphon manifolded sets in the system. Each set is composed of a list of tanks that are siphon manifolded together (See Figure 1 below).

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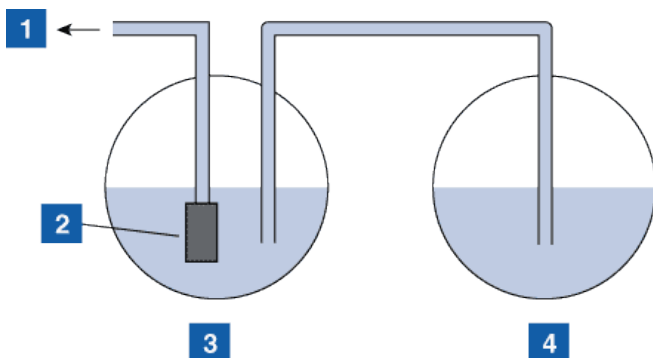
Figure 1.
Legend: 1 = line to dispensers, 2 = STP, 3 = Primary tank, 4 = Second tank

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.

Tank Setup - AccuChart II

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Tank Setup – AccuChart II   Tank 1 : regular   **Start**

Chart	Manual Calibration	Tank Charts	Siphon Sets	✳ AccuChart II	◀ ▷

Update Schedule ✳   **Periodic** ▼

Apply Date 1   [   ] 🔢

Apply Date 2   [   ] 🔢

Apply Date 3   [   ] 🔢   ✓

Apply Date 4   [   ] 🔢   ✗

Tank 1	Tank 2	Tank 3	Tank 4	Tank 5	Tank 6	Tank 7	◀ ▶	▲ ▼

Update Schedule

Descriptions of the available AccuChart II calibration update methods are listed below.

- **Immediate** - The active chart is updated every time AccuChart II generates a chart. Any resulting changes in product volume go into effect immediately.   The AccuChart II algorithm may generate charts multiple times during the calibration period, so this schedule choice may cause repeated changes in the reported volume of a tank. Alarms will be reported at the end of the calibration period if no charts have been generated and applied

- **Periodic** - You can pick up to 4 target dates on which the best chart created by AccuChart II will be made active. This will only occur if there is a chart available on that date. The target date choices will be stored as relative dates to allow easy rescheduling. Although, AccuChart II may generate charts multiple times during the calibration period, it is possible that at the update times chosen in this schedule choice there will be no new chart available. No alarms will be reported for a failure to apply a new calibration except for the final target date.

- **Complete** – At the end of the AccuChart II calibration period, AccuChart II will make the last chart generated by AccuChart II active. If no chart is available at the end of the calibration period, appropriate alarms will be generated.

- **Never** - The system will never automatically make any AccuChart II generated chart the active chart. Note: If you have entered another chart type, e.g., a 20 point chart for one of your tanks (ref. the Tank Setup - Chart tab screen) and you do not want that chart automatically replaced with the AccuChart II version, choose 'Never' for the that tank's Update Schedule.

Allowable selections: Immediate, Periodic, Complete, Never
Default: Never

Apply Date 1 - Date 4 Fields

These fields are selectable only if 'Update Schedule' is set to 'Periodic'. Recommended selection is to enter dates 14 days apart, i.e., 14, 28, 42 and 56.

Allowable selections: 0 to 56 days
Default: 30

Calibration Period

Your choice here will depend on tank activity. A low throughput tank (premium) may require a longer calibration period than a quick throughput tank (unleaded). For example, you could select start with a 14 day calibration period for the unleaded tank and 30 day calibration period for the premium tank. If at one day prior to the end of your Calibration Period selection, AccuChart II has insufficient data to create a tank chart, it posts a warning (if the AccuChart II Warning field is set to enabled), allowing you the opportunity to extend the Calibration Period.

Allowable selections: 14 to 120 days
Default: 30

Days Left to Calibration Completion

This is a read-only field showing the number of days left in the Calibration Period you select above.

Allowable selections: 0 to 120 days
Default: 30

Exclude Days

This field lets you select the day(s) to remove AccuChart II calibration data from the Calibration Period. For example, if the site had maintenance performed on a certain day(s), such as meter calibration, you can remove those days from the AccuChart II calibration data.

Allowable selections: Any day(s) from last calibration start or restart, ending today.
Default: No days

Enable AccuChart Warnings

In this field you can to post or not to post AccuChart II alarms and warnings.

Allowable selections: Enable or Disable. Default: Enable

Min Operating Level%

Enter the desired minimum operating height as percent of diameter.

Allowable selections: 0 to 45%. Default: 0%

Max Operating Level%

Enter the desired maximum operating height as percent of diameter.

Allowable selections: 50 to 99%. Default: 99%

AccuChart II Notes

1. If the TLS-450 is powered down during one of the Immediate or Periodic updates, or if a time/date change is made at this time, the update will be missed. If this occurs during the final Periodic update, or at the end of the calibration period for Immediate and Complete update selections, the calibration will be attempted at the next date change. The update will be done with this calibration, or the last generated calibration, or AccuChart II will generate warnings.

2. If you enter the Start Date values in a random order, the system will rearrange them in increasing order. Empty Apply Date 1 through 4 fields will be grouped at the bottom of the set. This may cause the entered values to move around.

3. If the calibration is in progress and the console clock is set back before the start of calibration, the start of calibration will be moved back to the new time, and the 'Update Schedule' dates will all be adjusted appropriately (including Periodic).

4. Touching the 'Start' button will bring up the confirmation dialog. If you click OK, the console will:

    -   Set the start of calibration to the current date.
    -   Set the Days Left To Calibration Completion equal to the number of days in calibration period.
    -   Clear all AccuChart II alarms and warnings.

5. While the calibration is running, the Start button changes to the 'Stop' button. If you touch the Stop button, a confirmation dialog ('Are you sure you want to Stop the AccuChart II Calibration?') will first be displayed before the calibration is stopped. Once you select OK in the confirmation dialog, the Stop button changes to the 'Start' button.

Pumps and Lines

PLLD 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 - 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 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

Event 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 - 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 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. Default: Environflex PP1503/2503

TABLE 1.

Pipe Type	Line Length, 1.5 Diameter Line Length, 2.0 Diameter Line Length, and 1st Line Length Fields	2.5 Diameter Line Length, 3.0 Diameter 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

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)

Custom Alarms

Custom Alarms Setup - Enable

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Custom Alarms – Enable

Enable	View	Setup

Custom Alarms | Enabled ▼ |

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

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Custom Alarms – View

More

Enable	View	Setup

Device Type	Dev. No.	Alarm Description	Custom Alarm Description	LCD Indication
VAPOR SENSOR	ALL	WATER ALARM		Yes
COMM		ALARM CLEAR WARNING		Yes
PRODUCT	ALL	CLOSE SHIFT WARNING		Yes
PRODUCT	ALL	HRM RECON WARNIG		No
PLLD LINE	Q 1	PLLD PUMP ON WARN		Yes
PLLD LINE	Q 1	FUEL OUT		Yes
HOSE	ALL	GROSS COLLECT WARN		Yes
HOSE	ALL	FLOW COLLECT FAIL		No

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

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Custom Alarms – Setup

Enable	View	**Setup**			

COMM — up

Alarm Description	Custom Alarm Description	LCD	LED	Beepe	▲
COMM ⊞					
EXTERNAL INPUT ⊞					
GROUND WATER SENSOR ⊞					
HOSE ⊞					
ISD ⊞					✓
LIQUID SENSOR ⊞					
MAG SENSOR ⊞					✗
MODBUS ⊞					
PLLD LINE ⊞					▲
PMC ⊞					
PRODUCT				▼	▼
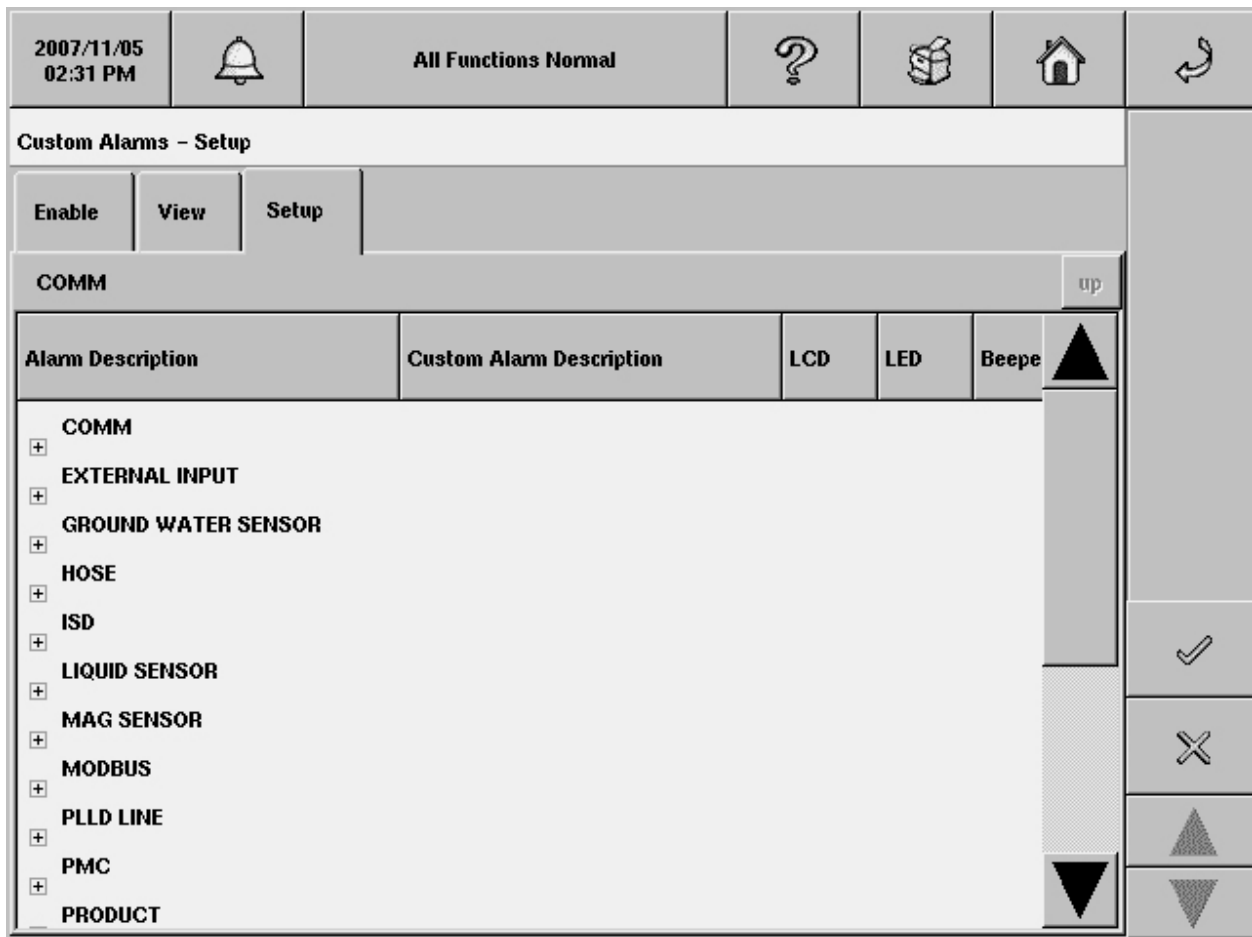
The Custom Alarms Setup screen can be used to enter a custom alarm label and also select the alarm indicators for the alarm.

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

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 <u>cause/action information about the alarm</u>.

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.

Inventory

Inventory Setup - Shift Close Method

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Inventory Setup – Shift Close Method

| Shift Close Method | Shift Times | Inventory Report Times | |

Shift Close Method   MANUAL   ▼

Shift Close Timeout   30   🗟

Max. Number of Shift/Day   3   🗟

✓

✕

▲

▼

This screen lets you setup daily shifts. At least one shift must be selected or the feature is disabled.

Shift Close Method

Touch the down arrow to select either 'Timed' or 'Manual' shift close method.

NOTES:

1. When shift closing is set to 'Timed', a manual shift close will close the shift for ALL tanks, but the tank(s) must be idle before a shift can close. Once a 'Timed' shift has been closed, no other shift can be closed until the shift duration ends.

2. When shift close is set to 'Manual', BIR manual shift close can be applied to all tanks or to an individual tank. The BIR tank will immediately close when the operator makes the request. There is no waiting or idle time. The remaining open tanks must be closed within 30 minutes (default Shift Close Timeout setting). Tanks open after the shift close timeout has expired will be automatically closed.

3. A new Shift Inventory report will be created and will include the shift number, and allow you to access current or historical reports.

Allowable selections: Timed, Manual
Default: Timed

Shift Close Timeout

Select a Shift Close Timeout period (Manual Shift Close Method only).

Allowable selections: 3 to 60 minutes
Default: 30 minutes

Max. Number of Shifts/Day

Enter the desired number of shifts per day (Manual Shift Close Method only).

Allowable selections: 1 to 8
Default: 3

Inventory Setup - Shift Times

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Inventory Setup – Shift Times

Shift Close Method	Shift Times	Inventory Report Times	

Shift 1	Disabled	▼
Shift 2	Disabled	▼
Shift 3	Disabled	▼
Shift 4	Disabled	▼
Shift 5	Disabled	▼
Shift 6	Disabled	▼

✓ ✕ ▲ ▼

When the selected shift close method is 'Timed', this screen lets you setup start times for each of the previously selected number of timed shifts (up to eight).

Shift 1 (up to Shift 8)

Touch the down arrow to the right of each shift to select a desired start time. Repeat for each remaining shift.

Allowable selections: Hour: 0 - 23 (or 1-12 if 12 Hr Format), Minute: 0 - 59, Meridiem: AM, PM (if 12 Hr Format) or Disabled
Default: Disabled

Inventory Setup - Inventory Report Times

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Inventory Setup – Inventory Report Times

Shift Close Method	Shift Times	Inventory Report Times	

Reporting Interval   24 Hours   ▼

Storage Length   [ ]

Log Start Time   12:00 AM   🕐

✓

✗

▲

▼

This screen lets you setup Inventory Report Times.

Reporting Interval

Allowable selections: Disabled, 5 min, 10 min, 15 min, 20 min, 30 min, 1 hr, 2 hrs, 3 hrs, 4 hrs, 6 hrs, 8 hrs, 12 hrs or 24 hrs
Default: Disabled

Storage Length

This is a read-only field which displays the maximum number of records..

Log Start Time

Allowable selections: Hour: 0 to 23 (or 1 to 12 if 12 Hr Format); Minute: 0 to 59; Meridiem: AM, PM (if 12 Hr Format)
Default: 12:00 AM (if 12 Hr Format); 12:00 (if 24 Hr Format)

Delivery

Delivery Setup

Delivery Method

Allowable selections: Standard, Manual or Automatic Quiet Period
Default: Standard

Ticketed Delivery

When you enable ticketed delivery, you can manually enter ticketed volumes using the receipts from delivery trucks. Enabling this feature generates reports showing delivery variances between ticketed volume and gauged volume and book variance.

Allowable selections: Enabled or Disabled
Default: Disabled

TC Ticketed Delivery

If you enabled ticketed delivery, you can choose whether the values you enter are standard (gross) volumes or temperature-compensated (TC) volumes. This field must be enabled for TC volumes to be included on the Delivery Reports.

Allowable selections: Standard or TC Volume. Default: Standard

Reconciliation

Reconciliation Setup - General

This screen lets you setup general Reconciliation parameters.

Product Threshold Alarm

If enabled, the Product Threshold Alarm will be activated when the programmed threshold for discrepancies between the fuel delivered amount and the dispensed fuel amount is exceeded. The system default is 1.00% of total meter sales (throughput) plus 130 gallons (492 litres) offset. In the U.S. the EPA has set this default as a criteria not to be exceeded. The Product Threshold Alarm is triggered when the Alarm Threshold plus offset exceeds the allowed variance.

Allowable selections: Enabled, Disabled
Default: Disabled

Daily Close Time

Enter the time you wish to designate as the daily closing time. At the programmed time, the system stores the current day's data, and prints a report. This feature cannot be disabled.

Allowable Selections:
- Hour: 0 to 23 (1 to 12 if 12 hour format)

- Minute: 0 to 59
- Meridiem: AM, PM (if 12 hour format)

Default: 02:00 (02:00 AM if 12 hour format)

Week Close Day

Allowable selections: Sunday to Saturday
Default: Sunday

Alarm Threshold Delivery Type

Alarm Threshold Delivery Type field is disabled (grayed out) when Ticketed Delivery is disabled. When Ticketed Delivery is enabled, the selections for this field are Standard or Ticketed. If Alarm Threshold Delivery type is set to Standard, the variance calculated by Periodic Reconciliation Report will be used. If set to Ticketed, the variance calculated by Book Variance Report will be used to trigger the Product Threshold Alarm.

Allowable selections: Standard, Ticketed
Default: Standard

Temperature Compensation

This field allows you to choose whether or not to calculate Business Inventory Reconciliation (BIR) volumes using the Programmable Temperature Compensation (TC) value. Select STANDARD (the default) if the meters are not temperature compensated. Select TC VOLUME if the meters are temperature compensated (the calculation of all BIR volumes will be based on the TC value).

Allowable selections: Standard or TC Volume
Default: Disabled

Meter Calibration Offset%

The Meter Calibration offset applies to all of the site's dispenser meters and is applied to the dispensed amount received. The default value is 0.000%.

Allowable selections: -1.000 to +1.000
Default: +0.000

BIR Status Warning Enable

Allowable selections: Enabled, Disabled
Default: Disabled

BIR Shift Close Warning Enable

Allowable selections: Enabled, Disabled
Default: Disabled

BIR Daily Close Warning Enable

Allowable selections: Enabled, Disabled
Default: Disabled

Reconciliation Setup - Threshold Alarms

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Reconciliation Setup – Threshold Alarms

| General | ✳ | Threshold Alarms |

Test Type ✳ [Daily ▼]   Rolling Days [31] 🔲

☐ % of Throughput [1.00] 🔲   Vol. Offset [130.00] 🔲

☐ % of Capacity [1.00] 🔲   Vol. Offset [130.00] 🔲

✳ ☑ % of Deliveries [1.00] 🔲   **Vol. Offset** [130.00] 🔲

☐ Fixed Values [130.00] 🔲

✓   ✗

Test 1   Test 2   Test 3   Test 4   ◄ ►   ▲ ▼

This screen contains information that allows you to select up to four reconciliation compliance monitoring test protocols.

You select one or more threshold determining references for each test protocol. The reference selections are: throughput, tank capacity, deliveries, or a fixed value. You input percentage and offset values that are applied to the reference selection to determine the threshold value. In the case of multiple references the largest threshold value is used to determine the result. The threshold references are:

- Percentage of throughput + vol. offset
- Percentage of (tank) capacity + vol. offset
- Percentage of deliveries + vol. offset
- Fixed value

Test Type

Select the monitoring period for the selected test protocol.

- Monthly - The threshold is compared against the monthly variance summation over a calendar month. The test is performed monthly.
- Rolling - You define the number of rolling days. The threshold is compared to the variance summation over the defined number of days. The test is performed daily.
- Daily - The daily variance is compared to the threshold. The test is performed daily.

- Rolling Consecutive - You define the number of rolling days. A test will pass when one of the daily variance thresholds is below the threshold set within the rolling period. For a test to fail, 'all' daily variance thresholds must exceed the threshold set for each day within the rolling period. The test is performed daily.

Allowable selections: Disabled, Monthly, Rolling, Daily, Rolling Consecutive
Default: Monthly

Rolling Days

If Test Type is not Rolling or Rolling Consecutive, Rolling Days is grayed out.

Allowable selections: 1 through 31
Default: 31

% of Throughput

This Alarm Threshold is the discrepancy between the total Meter Sales (throughput) and the Variance amount (Physical Inventory - Calculated Inventory).

> Where: Calculated Inventory = Opening Volume + Delivery - Metered Sales + Manual Adjustment
> Physical Inventory = Fuel amount in the tank at the close of the day.

The system default is 1.00% of total meter sales (throughput) plus 130 gallons (492 litres) offset. In the U.S. the EPA has set this default as criteria not to be exceeded. Alarm Threshold must be between 0.00 and 9.99 percent.

Allowable selections: 0.00 to 9.99
Default: 1.00

Vol. Offset

Enter the offset amount to be added to the % of Throughput value that will trigger the Product Threshold Alarm.

Allowable selections: 0 to 264,172 gal. (0 to 999,999 Litres)
Default: 130 gal. (492 Litres)

% of Capacity

This Alarm Threshold is the discrepancy between the tank setup Full Capacity amount and the Variance amount (Physical Inventory - Calculated Inventory).

The system default is 1.00% of total Tank Full capacity plus 130 gallons (492 litres) offset. In the U.S. the EPA has set this default as a criteria not to be exceeded. Alarm Threshold must be between 0.00 and 9.99 percent.

Allowable selections: 0.00 to 9.99
Default: 1.00

Vol. Offset

Enter the offset amount to be added to the % of Capacity value that will trigger the Product Threshold Alarm.

Allowable selections: 0 to 264,172 gal. (0 to 999,999 Litres)
Default: 130 gal. (492 Litres)

% of Deliveries

This Alarm Threshold is the discrepancy between the Fuel Delivery amount and the Variance amount (Physical Inventory - Calculated Inventory).

The system default is 1.00% of total Fuel Delivery plus 130 gallons (492 litres) offset. In the U.S. the EPA has set this default as a criteria not to be exceeded. Alarm Threshold must be between 0.00 and 9.99 percent.

Allowable selections: 0.00 to 9.99
Default: 1.00

Vol. Offset

Enter the offset amount to be added to the % of Deliveries value that will trigger the Product Threshold Alarm.

Allowable selections: 0 to 264172 gal. (0 to 999,999 Litres)
Default: 130 gal. (492 Litres)

Fixed Value

This Alarm Threshold is the discrepancy between the Fixed Value and the Variance amount (Physical Inventory - Calculated Inventory) without any offset.

Allowable selections: 0 to 264172 gal. (0 to 999,999 Litres)
Default: 80 gal (302 litres)

Comm

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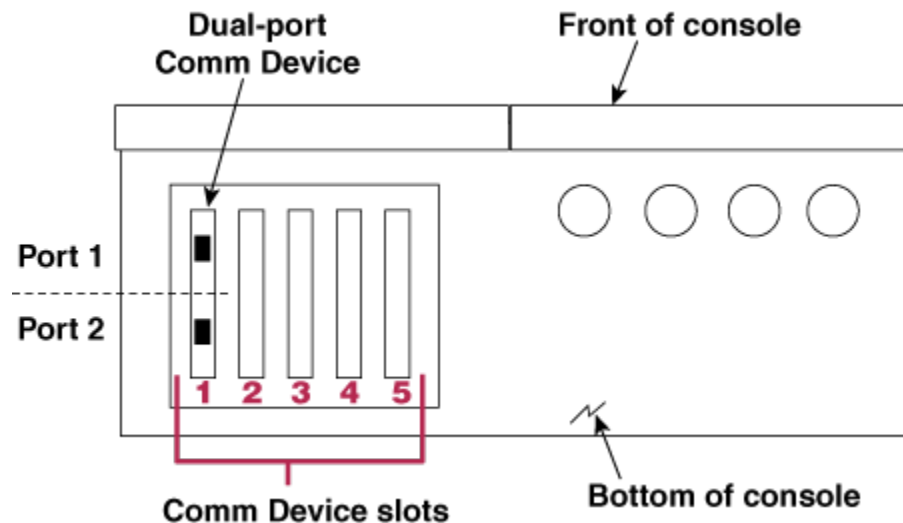
Refer to the two tables below to identify permissible slots and configurable ports for Comm Devices:

C = Configurable, NC = Non-Configurable

Comm Device	Comm Type	Slot 1		Slot 2	
		Port 1	Port 2	Port 1	Port 2
RS-232 Single Port (also EDIM, Satellite S-SAT and Satellite H-JBox apps.)	Serial	NC	C	NC	C
RS-232 Dual Port (also EDIM, Satellite S-SAT and Satellite H-JBox apps.)	Serial	C	C	C	C
RS-485 Single Port	Serial	NC	C	NC	C
RS-485 Dual Port	Serial	C	C	C	C
RS-232 / RS-485 Dual Port	Serial	C (RS-232)	C (RS-485)	C (RS-232)	C (RS-485)
SiteFax / Modem	Serial	NC	C	NC	C
CDIM	DIM	C	NC	C	NC

Comm Device	Comm Type	Slot 3		Slot 4		Slot 5	
		Port 1	Port 2	Port 1	Port 2	Port 1	Port 2
RS-232 Single Port (also EDIM, Satellite S-SAT and Satellite H-JBox apps.)	Serial	NC	C	---	---	---	---
RS-232 Dual Port (also EDIM, Satellite S-SAT and Satellite H-JBox apps.)	Serial	NC	C	C*	NC	---	---
RS-485 Single Port	Serial	NC	C	---	---	---	---
RS-485 Dual Port	Serial	NC	C	---	---	---	---
RS-232 / RS-485 Dual Port	Serial	NC	C (RS-485)	C*	NC	---	---
SiteFax / Modem	Serial	NC	C	---	---	---	---
Ethernet	TCPIP	---	---	NC	C	NC	C
Ethernet/ USB	TCPIP/ USB	---	---	NC	C (TCPIP)	C (USB)	C (TCPIP)
USB	USB	---	---	---	---	C	NC
CDIM	DIM	---	---	C**	NC	---	---

*Limited RS-232 availability (only RX, TX and Enable are active and this port is without full handshaking capability.
**Slot 4 is preferred for CDIM.

Comm Setup Procedure

There are four Comm Device - General Setups within this topic. Touch the applicable link below to jump to the desired setup:

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

Ethernet Devices

EDIM Devices

CDIM Devices

You can also refer to the DIM Information Tables in the References section for complete DIM string details.

RS-232/RS-485, Internal Modem, Satellite Hughes H-JBox and Satellite S-Sat Comm Devices – General (page 1)

The General tab screen pages hold dropdowns to choose and enable this group of Comm Devices and to set up their communication properties.

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

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 – General (page 2)

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

NOTE: Changing the Default Gateway will require a reboot of the console.

- A system can only have one Ethernet Comm Device configured as the Default Gateway.

- The first Ethernet Comm Device that is configured (Enabled) will automatically be the Default Gateway (Yes). Subsequent Ethernet 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). When 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 any other Ethernet Comm Devices will automatically be set to 'No', and the Default Gateway 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 Devices' 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 Gateway 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: Yes

Host Name

NOTE: Changing the Host Name will require a reboot of the console.

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

NOTE: Changing the IP Assignment will require a reboot of the console.

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

NOTE: Changing the IP Address will require a reboot of the console.

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

Ethernet Comm Devices – General (page 3)

Subnet Mask

NOTE: Changing the Subnet Mask will require a reboot of the console.

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.

Ethernet Comm Devices – General (page 4)

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 device-specific parameters for the Modem 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

EDIM Comm Devices – General (page 1)

```
┌─────────────────────────────────────────────────────────────────────┐
│ 11/30/2009    🔔        All Functions Normal      ?   📦  🗗  🏠  ↩  │
│  01:46 AM                                                             │
├─────────────────────────────────────────────────────────────────────┤
│ Comm Device Setup – General                              Comm 1 :    │
│ ┌────────┬─────┬──────────┬───────────┐                              │
│ │General │ DIM │ Advanced │ All Comms  │                             │
│ └────────┴─────┴──────────┴───────────┘                              │
│                                                                       │
│          Configured   [Enabled                    ▽]                 │
│                                                                       │
│              Slot     [1                          ▽]                 │
│                                                                       │
│              Port     [1                          ▽]                 │
│                                                                       │
│            Device     [EDIM CARD                  ▼]          ✓       │
│                                                                       │
│             Label     [                        ] 🔲          ✗       │
│                                                                       │
│  🖥     🖥     🖥     🖥     🖥     🖥     🖥                    ▲    │
│ Comm 1 Comm 2 Comm 3 Comm 4 Comm 5 Comm 6 Comm 7   ◀    ▶       ▼    │
└─────────────────────────────────────────────────────────────────────┘
```

Configured

When the card is auto-detected, this field will be enabled but grayed out.

Allowable selections: Enabled, Disabled. Default: Disabled

Slot

Read only when slot is detected, otherwise enter the configurable slot number (EDIMs 1,2,3 or 4)

Allowable selections: List, None
Default: None

Port

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

Allowable selections: List, None
Default: None

Device

The Auto detection mechanism may restrict the DIM 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 DIM 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 DIM Device.

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

EDIM Comm Devices – General (page 2)

DIM Protocol

Touch the down arrow to the right of this field and enter the applicable DIM Protocol for your DIM card.

Allowable selections: See Table 1 below for valid options.
Default: Unknown

Baud Rate

Touch the down arrow to the right of this field and enter the applicable Baud Rate for your DIM card.

Allowable selections: See Table 1 below for valid options.
Default: Unknown

Data Bits

Touch the down arrow to the right of this field and enter the applicable number of Data Bits for your DIM card.

Allowable selections: See Table 1 below for valid options.
Default: Unknown

Parity

Touch the down arrow to the right of this field and enter the applicable Parity for your DIM card.

Allowable selections: See Table 1 below for valid options.
Default: Unknown

Stop Bits

Touch the down arrow to the right of this field and enter the applicable number of Stop Bits for your DIM card.

Allowable selections: See Table 1 below for valid options.

Default: Unknown

Table 1. EDIMs Quick Reference Chart

DIM P/N	Software Rev.	Protocol	Baud Rate (Default)	Parity (Default)	Data Bits (Default)	Stop Bits (Default)	Notes
330280-401	349643	GilbarcoEDIM (Gilbarco GSite)	1200	Even	7	1	1
330280-001	330273	VRProtocolDIM (BIR)	9600	Odd	7	1	1, 2

NOTES:
1. DIMs implemented for V402.
2. Metric is the default setting for unit conversion. Requires '**G**' in parameter string for **gallon** units.

EDIM References

EDIM Parameter String Chart

Baud		Parity		Stop Bits		Data Bits		Conversion	
String	Rate	String	Type	String	Bits	String	Bits	String	Units
B9	9600	N	None	H	1	V	7	G	Gallons
B4	4800	E	Even	S	2	D	8	M	Metric
B2	2400	O	Odd	-----	-----	-----	-----	I	Imperial
B1	1200	-----	-----	-----	-----	-----	-----	-----	-----
B6	600	-----	-----	-----	-----	-----	-----	-----	-----
B3	300	-----	-----	-----	-----	-----	-----	-----	-----
BG	-----	-----	-----	-----	-----	-----	-----	-----	-----

EDIM Card - Female D Connector Pin Outs

Pin	Function
2	Transmit Data
3	Receive Data
7	Signal Ground

(EDIM) Comm Setup - DIM

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Comm Device Setup – DIM   Comm 1 :

| General | **DIM** | Advanced | All Comms |

Units Reported   METRIC   ▼

Suppress Communication Alarm   No   ▼

✓

✗

▲

▼

| 🖥 Comm 1 | 🖥 Comm 2 | 🖥 Comm 3 | 🖥 Comm 4 | 🖥 Comm 5 | 🖥 Comm 6 | 🖥 Comm 7 | ◀ | ▶ |

This screen allows you to enter EDIM reporting parameters.

Units Reported

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

Suppress Communication Alarm

This selection is for V-R Protocol only.

Allowable selections: Yes or No
Default: No

CDIM Comm Devices – General (page 1)

Configured

When the card is auto-detected, this field will be enabled but grayed out.

Allowable selections: Enabled, Disabled
Default: Disabled

Slot

Read only when slot is detected, otherwise enter the configurable slot number (CDIMs 1,2 or 4 [preferred]). Allowable selections: List, None. Default: None

Port

Some DIM Devices can have more than one port. If there is more than one port, you must select a port before selecting the valid DIM Device. If the DIM Device is auto-detected, this field will be enabled but grayed out.

Allowable selections: List, None
Default: None

Device

The Auto detection mechanism may restrict the DIM Device Type choices available to choose from in case a Device is already available in the slot. If the DIM Device is auto-detected, this field will be enabled but grayed out.

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 DIM 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).
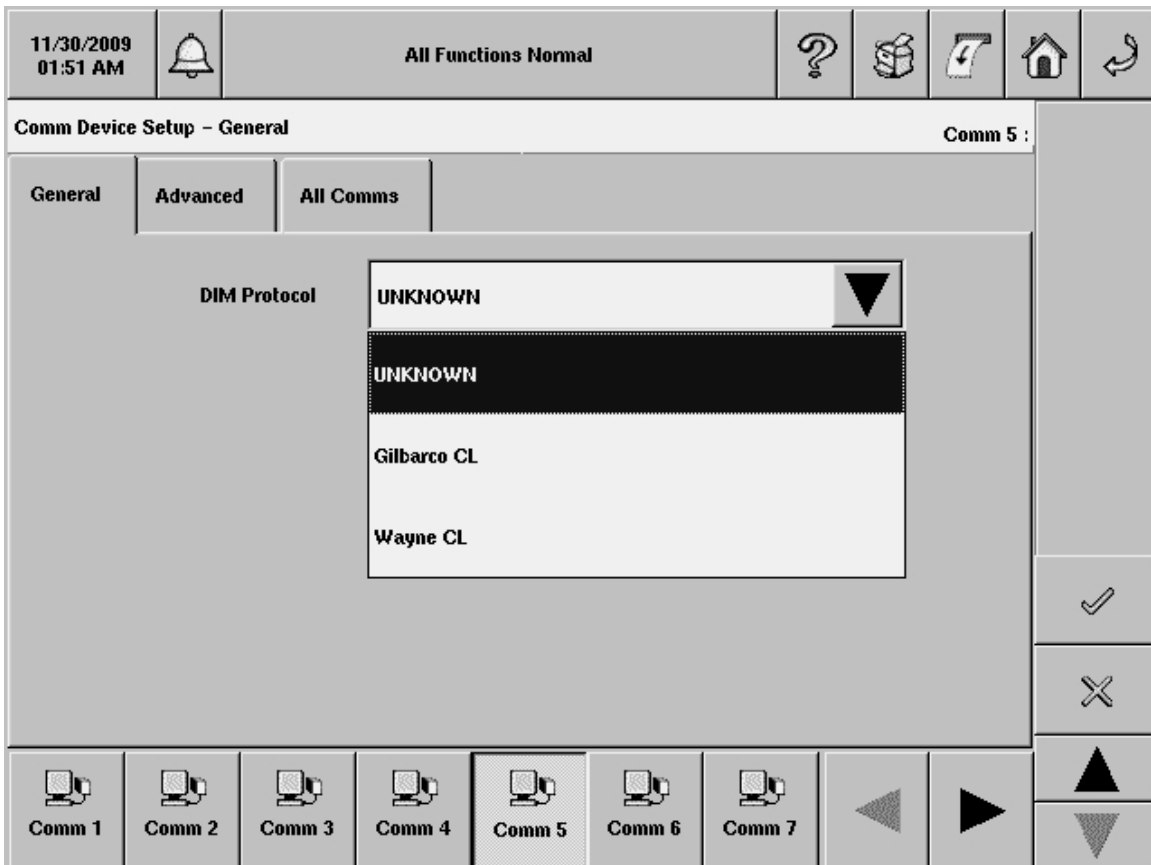
Allowable selections: List, None
Default: None

Label

Enter a unique label for the DIM Device.

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

CDIM Comm Devices – General (page 2)

DIM Protocol

Touch the down arrow to the right of this field and enter the applicable DIM Protocol for your DIM card.

Allowable selections: Gilbarco CL, Wayne CL or Unknown
Default: Unknown

CDIM Quick Reference Chart

DIM P/N	Software Rev.	Protocol	Baud Rate (Default)	Parity (Default)	Data Bits (Default)	Stop Bits (Default)	Notes	Pass Thru
330404-020	349634	Gilbarco CL	Proprietary				1, 2	NO
330404-010	349633	Wayne CL	Proprietary				1, 2	NO

NOTES:
1. Parameter string is never acquired.
2. DIMs implemented for V402.

Comm Setup - Advanced

There are three Comm Device - Advanced Setups within this topic. Touch the applicable link below to jump to the desired setup:

- **RS-232/RS-485, Internal Modem, Satellite Hughes H-JBox, Satellite S-Sat and Ethernet Comm Devices - Advanced Tab Setups**

- **EDIM Advanced Tab Setups**

- **CDIM Advanced Tab Setups**

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

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: Blank

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

Accepts non-printable characters through the GUI. Enter hex value as string with an opening and closing bracket. Convert text string to char value and save or show. Example: Enter [0x06][0x15]

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

ETX Characters - Computer

Accepts non-printable characters through the GUI. Enter hex value as string with an opening and closing bracket. Convert text string to char value and save or show. Example: Enter [0x06][0x15]

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

EDIM Advanced Tab Setups

Comm Port Security

This selection is only for DIMs that support pass-through - See Table 1 in Comm Setup - General topic. This entry does not apply to CDIMs and will be grayed out for DIMs that do not support pass-through.

Allowable selections: Enabled, Disabled
Default: Disabled

Security Code

This selection is only for DIMs that support pass-through - See Table 1 in Comm Setup - General topic. When the DIM is used in pass-through mode it does not pass DIM data. This field will be grayed out for DIMs that do not support pass-through.

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: Blank

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

Accepts non-printable characters through the GUI. Enter hex value as string with an opening and closing bracket. Convert text string to char value and save or show. Example: Enter [0x06][0x15]

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

ETX Characters - Computer

Accepts non-printable characters through the GUI. Enter hex value as string with an opening and closing bracket. Convert text string to char value and save or show. Example: Enter [0x06][0x15]

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

CDIM Advanced Tab Setups (page 1)

Comm Port Security

This entry does not apply to CDIMs.

Allowable selections: Enabled, Disabled
Default: Disabled

Security Code

This selection is only for DIMs that support pass-through - See Table 1 in Comm Setup - General topic. When the DIM is used in pass-through mode it does not pass DIM data. This field will be grayed out for DIMs that do not support pass-through.

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: Blank

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

Accepts non-printable characters through the GUI. Enter hex value as string with an opening and closing bracket. Convert text string to char value and save or show. Example: Enter [0x06][0x15]

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

ETX Characters - Computer

Accepts non-printable characters through the GUI. Enter hex value as string with an opening and closing bracket. Convert text string to char value and save or show. Example: Enter [0x06][0x15]

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

CDIM Advanced Tab Setups (page 2)

DIM Parameter String

Enter the desired parameter string for this DIM.

Allowable selections: Enter proprietary string. For additional string components, see Table below.
Default: Blank

DIM Parameter String Entries

Protocol	String	Description
Gilbarco CL	T	Do not collect cumulative totals
	R	Send captured message to TLS (engineering use only)
	W	Transaction field precision is hundredths (thousandths default)
	C	Cumulative field precision is hundredths (thousandths default)
Wayne CL	R	Send protocol to TLS (engineering use only)
V-R Protocol	J	Suppress Communication Alarm

Comm Setup - All Comms

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Comm Device Setup – All Comms   **All Comms**

General	DIM	Advanced	**All Comms**

Euro Protocol Prefix | S   ▼ |

H–Protocol Data Format | HEIGHT   ▼ |

✓

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▲

▼

This screen allows you to assign Euro Protocol prefixes and formats to RS-232 and EDIM messages.

Euro Protocol Prefix - International Option

This feature is for European applications only.

Allowable selections: S (standard Euro Protocol prefix) or d (special Euro Protocol prefix)
Default: S

H-Protocol Data Format - International Option

This feature is available only if there is an RS-232 or modem module installed in the console and H-protocol is used. This option allows either Tank Height or Tank Volume data for H-protocol. On power up, this feature will default to HEIGHT for backward compatibility. Accept the default if you are not using H-protocol.

Allowable selections: Height or Volume
Default: Volume

Automatic Events

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)

Save

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.

Cancel

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

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Add Contact Entry – Modem   Station Owner

| ★ Contacts | Modem | Fax | TCP / IP | Satellite | E-Mail |

Modem # (Computer) [   ] ⬚

Modem COM Port [Co 4:] ▼

Dial–Out String [   ] ⬚

Number of Retries [3] ⬚

Retry Delay Time [3] ⬚

✓ ✕ ▲ ▼

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

Control Buttons (lower right of screen)

Save

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.

Cancel

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

Control Buttons (lower right of screen)

Save

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.

Cancel

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

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Add Contact Entry – TCP / IP   **Station Owner**

| ★ Contacts | Modem | Fax | TCP / IP | Satellite | E-Mail |

Remote TCP / IP Address	0.0.0.0	🖩
Remote TCP / IP Port	20001	🖩
Local TCP / IP	Co 1:	▼
Number of Retries	3	🖩
Retry Delay Time	3	🖩

✓ ✗ ▲ ▼

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

Control Buttons (lower right of screen)

Save

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.

Cancel

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

Control Buttons (lower right of screen)

Save

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.

Cancel

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

Control Buttons (lower right of screen)

Save

If editing a contact's email information, touch this button to save the current record entries to the database. It will not clear the screen. If adding a contact's email information, touch this button to save the new entry's record to the database and clear the screen, ready for a new add.

Cancel

If editing a contact's email 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 - Task Log

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Automatic Events – Task Log #1

	Print Tasks	Auto Connect Tasks	Address Book	Task Log	◀ ▶

Report/Action	Contact	Date and Time	Retries	Device/Connection Mode	Status...

More

Remove Entry

Clear This Log

Select

The Automatic Events Setup - Task Log screen contains a History (Log) listing the results of assigned Automatic Event Activities that have occurred.

Report Column Descriptions

Event Time

This column shows the date and time when the task is triggered.

Event ID

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

Report/Action

Name of Report Transmitted or Action to perform.

Contact

Contact Name (for Auto Connect or Report data).

Last Attempt Time

The date and time when the Task was last attempted.

Attempts

The number of Task Attempts. Note: Each retry attempt is not added to the log. Instead, both the retry count of the existing record and the date and time are updated.
Value range: 1 to 99

Device/Connection Mode

Device Label that is involved in performing the function (e.g., Relay 1). When a Contact is involved in the Automatic Action it represents the Device used and Format of the Data to be transmitted.

Status

The status of the Auto Connect Transaction.

Status Message

None or a description of an error.

Control Buttons (on right of screen)

Remove Entry

You select a Task Record entry and then touch this button to remove the selected log entry.

Clear This Log

Clears the items in the Tasks Log as selected by the Current Filter.

Select

This function is presented as a Dialog in which you can choose from a variety of filtering options. These filtering options let you select automatic event records from All Tasks, Device Tasks, Print Tasks and Auto Connect tasks. They are also used to select Task Log records:

- **Select Report/Action** - Allowable selections: All Reports and Actions (including Auto Connect), All Reports, All Actions or Specific Reports and Actions in the Log selections as in 'Select Action' and 'Select Report' above. Default selection: All Reports and Actions

- **Select Contact** - Allowable selections: All Contacts or single select for specific contacts that show up on the List of the Currently Selected Tab. Default selection: All Contacts and Devices

- **Select Time Interval** - Allowable selections: Unrestricted (a specific time frame will not be part of the filter), Current Day, Current Week, Current Month, Current Year. Default selection: Unrestricted

- **Select Device/Connection Mode** - Allowable selections: All Connection Modes, Computer, Fax, EMail, SMS. Default selection: All Connection Modes

- **Select Status** - Allowable selections: Any Status, Successful, Pending, Failed. Default selection: Any Status

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

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Automatic Events – Device Tasks

All Device Tasks

All Tasks	Device Tasks	Print Tasks	Auto Connect Tasks	Add Bo	◁ ▶	**Add Task**

Event ID	Time/ Event	Action	Device/ Connection Mode	

Edit Task

Delete Task

▲ ▼

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. Touching this button will display a scroll bar which you then touch to scroll through the column's contents.

Automatic Events - Add Tasks - 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. 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

						Add Task
11/07/2008 09:07 AM	🔔		**All Functions Normal**	❓ 🗃 ✒ 🏠 ↩		
Automatic Events – Auto Connect Tasks				**All Auto Connect Tasks**		
All Tasks	Device Tasks	Print Tasks	Auto Connect Tasks	Add Bo ◁ ▶		Edit Task
Event ID	Time/ Event	Report/ Action	Contact	Connection Mode		Delete Task
						▲
						▼

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., Service Manager).

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 Hr sensitive. Default selection: 12:00 AM

Default: Field is empty.

Event (Field)

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

- Alarms
- Notifications (Notifications cannot 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

Meter

Meter Setup

This screen allows you apply temperature compensation corrections to volume amounts received from the site's dispenser meters.

TC Meters

This feature allows you to choose whether or not to calculate Business Inventory Reconciliation (BIR) volumes using the Temperature Compensation (TC) value. Select No (the default) if the meters are not temperature compensated. Select Yes if the meters are temperature compensated (the calculation of all BIR volumes will be based on the programmed TC value).

Allowable selections: Yes or No
Default: No

Printer Setup - Setup

Printer Setup Screen 1

This screen can configure printers connected locally to the USB port, or connected remotely through a communications network. You can also display printer status, and show jobs in printer queues.

Use the Get Printers button to locate available printers, or enter a URI (Uniform Resource Identifier) field, as described below.

First select a PRINTER button on the bottom of the screen: PRINTER 2 through PRINTER 5.

Note: The Integral printer TLSIntegralPrinter occupies PRINTER 1. This device is installed in the left door of the console.

Printer Setup Screen 2

Setup a Printer with the Get Printers Button

- Touch the Get Printers button on the right. The button dims to indicate that the console is searching for printers.

- When the button is not dimmed you can select a printer from the available printers listed in the Printer drop-down list.

- Set the Is Default field to Yes or No. The default printer is the first to display when you touch the Print Button on the top of the screen.

- Enter a Label for the printer. The console will display this label when you Print, display the Printer Status or display Print Jobs.

- Set the Driver Selection field to Manual driver selection if you want to select a Driver from the list of available drivers. Otherwise the console will choose the driver automatically based on the printer.

- Select a Paper Size to adjust the size of the printed page. The selections that you see depend on the print driver selected.

- Select Enabled in the Configured drop-down list.

Touch the **Check** button ✓ to complete configuration, or touch the **Cancel** button ✕ to clear the screen.

Setup a Network Printer with URI Field

- Choose Add Network Printer from the Printer drop-down list.

- Touch the numeric keypad button to enter a Uniform Resource Identifier (URI) for a Network printer.

- Touch the Check button to search for the printer on the network. If the printer is detected the console will display the full network address in the URI field. If it is not detected the console will clear the URI field.

- Set the Is Default field to Yes or No. The default printer is the first to display when you touch the Print Button on the top of the screen.

- Enter a Label for the printer. The console will display this label when you Print, display the Printer Status or display Print Jobs.

- Set the Driver Selection field to Manual driver selection if you want to select a Driver from the list of available drivers. Otherwise the console will choose the driver automatically based on the printer.

- Select a Paper Size to adjust the size of the printed page. The selections that you see depend on the print driver selected.

- Select Enabled in the Configured drop-down list.

Touch the **Check** button to complete configuration, or touch the **Cancel** button to clear the screen.

Removing Printers

Note: You cannot remove a printer from the available screens PRINTER 2 through PRINTER 5. You can, however, reuse the screens by assigning a different printer.

Model Information

The console stores and displays Model information about printers, for example HP LaserJet. This information is obtained from the software driver associated with the printer, so it may be generic in nature.

Printer Setup - Status
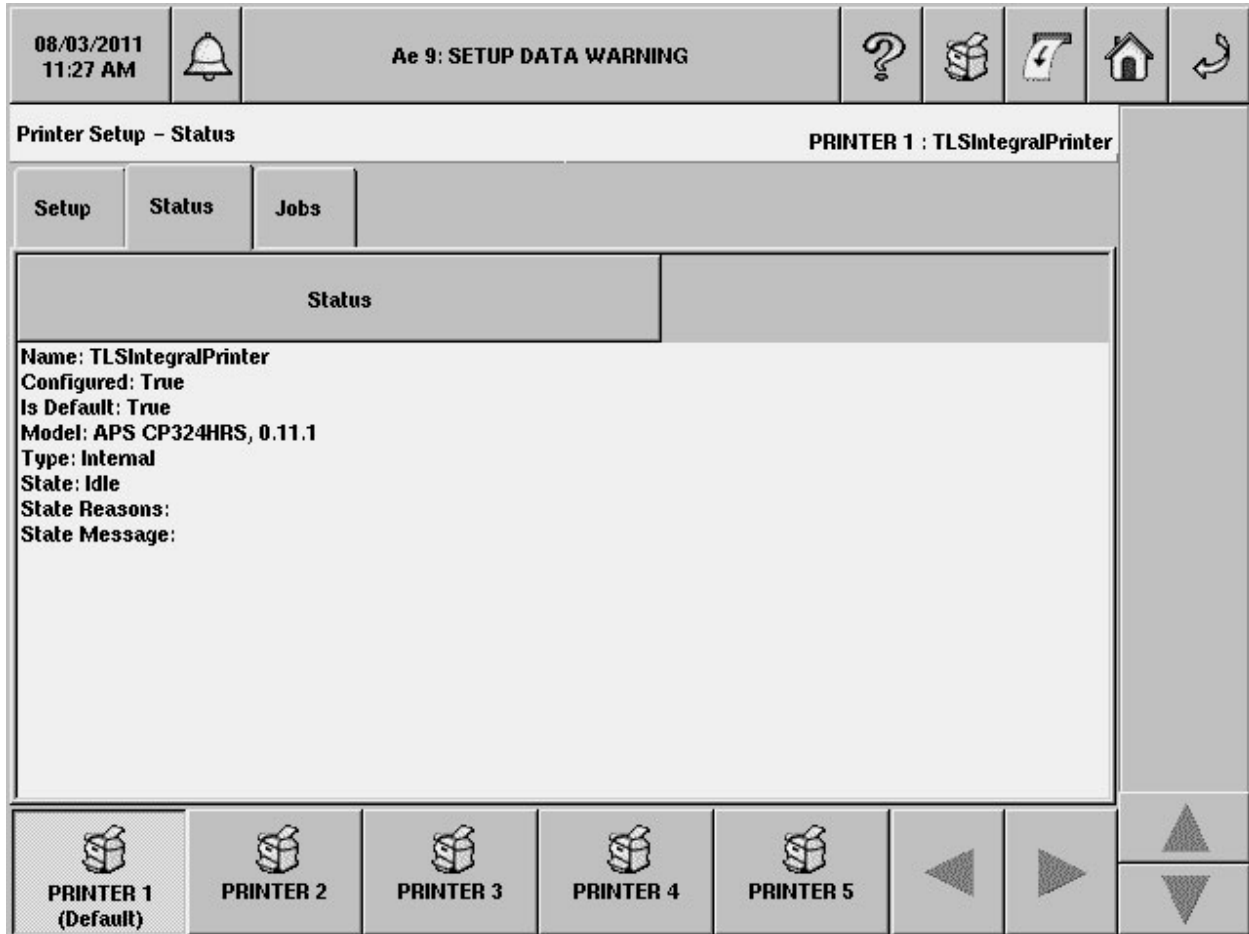
This screen displays the current status of connected printers.

Touch a PRINTER button on the bottom of the screen to select a printer screen number.

Name

The Label assigned to this printer when it was added in the Printer Setup screen.

Note: The name TLSIntegralPrinter, and the PRINTER 1 screen number are assigned to the integral printer,which is installed in the left door of the console.

Configured

True or false to indicate if the printer is currently configured.

Is Default

The default printer is the first to display when you touch the Print Button on the top of the screen.

Model

The make and model of the printer, for example HP LaserJet. This information is obtained from the software driver associated with the printer, so it may be generic in nature.

State

The current printer state; for example Printing a Job, Stopped.

State Reasons

Any message that may be associated with the current state. For example, the paper tray is empty.

State Messages

Any messages generated from the last print request.

Printer Setup – Jobs

| 08/03/2011 11:27 AM | 🔔 | Ae 4: SETUP DATA WARNING | ❓ | 📇 | 📄 | 🏠 | ↩ |

Printer Setup – Jobs

| Setup | Status | Jobs | | Cancel Jobs |

ID	Start Time	State	Printer	
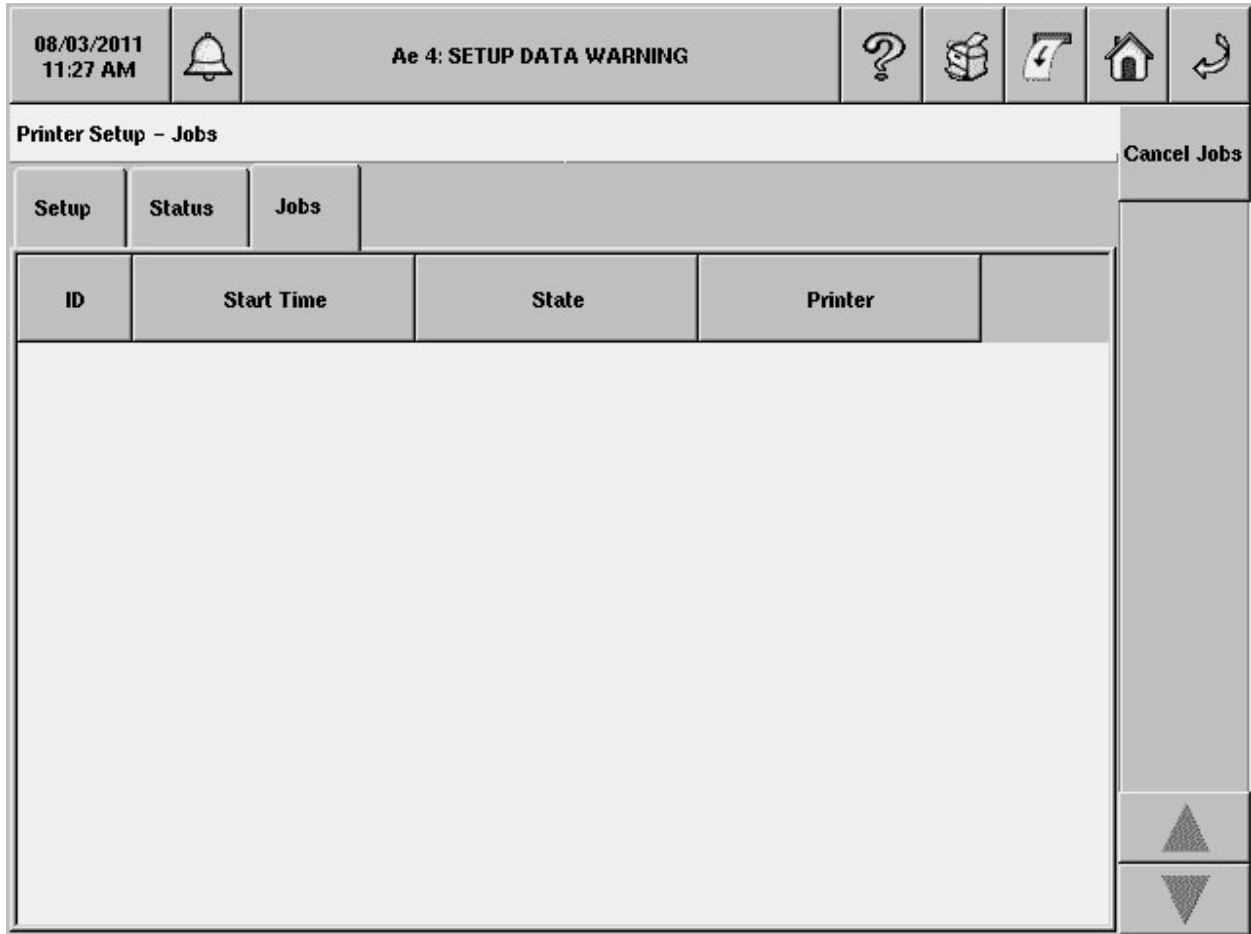
This screen displays a list of jobs in the printer queue.

Job ID

An identification number assigned by the console to the print job.

Start Time

The time the job started.

State

The current state of the job; for example Pending, Processing, Stopped, Canceled, etc.

Printer

The name assigned to the printer when it was added in the Printer Setup screen.

Cancel Jobs button

Touch this button to cancel all jobs in the list.

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 Tank Status Detail and Sensor 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 Date/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 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

Priority Alarm History Report

2007/11/06 04:37 PM	🔔	T 1: LOW PRODUCT ALARM	❓	📦	🏠	↩

Alarm History Report – Priority #1   More

| Active | History | Priority | Non–Priority | | Help Mode |

#	Label	Alarm Description	Active Time	Clear Time......
T 1		SUDDEN LOSS ALARM	2007/11/06 04:17 PM	
T 1		LOW PRODUCT ALARM	2007/11/06 04:16 PM	

Select Range

▲

▼

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

2007/11/06 12:25 PM	🔔	T 3: SETUP DATA WARNING	❓	📦	🏠	↵

Alarm History Report – Non-Priority #1

More

Active	History	Priority	Non-Priority	

Help Mode

#	Label	Alarm Description	Active Time	Clear Time......
T 1		DELIVERY NEEDED	2007/11/06 09:52 AM	
T 4		SETUP DATA WARNING	2007/11/06 09:46 AM	
T 2		SETUP DATA WARNING	2007/11/06 09:44 AM	
T 1		SETUP DATA WARNING	2007/11/06 09:43 AM	

Select Range

🔺

🔻

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

2007/11/06 10:52 AM	🔔	T 2: SETUP DATA WARNING	❓	📦	🏠	↩

Current Inventory Report   **All Tanks**

Current Inventory	Inventory History	Shift Inventory	

Fuel Volume	Ullage	Fuel Height	Water Height	Water Volume	Fuel Temp	
Tank 1 :						
4093	5907	38.6	3.0	100	71.9	
Tank 2 :						
4093	5907	38.6	3.0	100	71.9	
Tank 3 :						
6346	3653	54.6			75.6	
Tank 4 :						
1277	8722	16.7	2.5	77	76.6	

All Tanks	Tank 1	Tank 2	Tank 3	Tank 4		◀ ▶	▲ ▼

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 for probes that do not have a water float. 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)

Mass

This column will not display if the probe does not measure density.

Allowable range: Depends on tank volume and fuel density

Fuel Density

This column will not display if the probe does not measure density.

Allowable range: 42.139 to 56.185 lbs/ft^3 (675.00 to 900.00 kg/m^3)

Fuel TC Density

This column will not display if the probe does not measure density and if TC density is not enabled.

Allowable range: 42.139 to 56.185 lbs/ft^3 (675.00 to 900.00 kg/m^3)

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

07/28/2008 02:44 PM	🔔	Cn 7: AUTODIAL FAILURE	❓	📦	📖	🏠	↩

Inventory History Report   **Tank 1 : REGULAR**

From 07/13/2008 02:44 PM TO 07/28/2008 02:44 PM

Current Inventory	Inventory History	Shift Inventory	

Date & Time	Fuel Volume	Fuel Height	Water Height	Fuel Temp	
Tank 1 : REGULAR					
07/28/2008 02:32 PM	2694	32.7	0.0	60.0	

Select Range

⊕ Tank 1	⊕ Tank 2	⊕ Tank 3		◀	▶	▲ ▼

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)

Mass

This column will not display if the probe does not measure density.

Allowable range: Depends on tank volume and fuel density

Fuel Density

This column will not display if the probe does not measure density.

Allowable range: 42.139 to 56.185 lbs/ft^3 (675.00 to 900.00 kg/m^3)

Fuel TC Density

This column will not display if the probe does not measure density and if TC density is not enabled.

Allowable range: 42.139 to 56.185 lbs/ft^3 (675.00 to 900.00 kg/m^3)

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

10/25/2007 08:50 AM	🔔			?	📦	🏠	↩

Shift Inventory Report   Tank 3 : Tank3

Current Inventory	Inventory History	Shift Inventory	

Shift	Fuel Volume	Ullage	Delivery Vol	Fuel Height	Water Height	Water Vol	Fuel Temp
Tank 3 : Tank3							
10/25/2007 06:00 AM	1806	193		23.7	0.0		73.9
10/25/2007 08:43 AM	1806	193	0	23.7	0.0		74.2
10/24/2007 06:00 PM	1806	193		23.7	0.0		75.0
10/24/2007 07:00 PM	1806	193	0	23.7	0.0		74.9
10/24/2007 07:00 PM	1806	193		23.7	0.0		74.9
01/01/1970 12:00 AM	0	0	0	0.0	0.0		0.0

⊕ All Tanks	⊕ Tank 1	⊕ Tank 2	⊕ Tank 3		◀	▶	▲ ▼

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 the 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
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 the probe measures temperature.

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

Mass

This column will not display if the probe does not measure density.

Allowable range: Depends on tank volume and fuel density

Fuel Density

This column will not display if the probe does not measure density.

Allowable range: 42.139 to 56.185 lbs/ft^3 (675.00 to 900.00 kg/m^3)

Fuel TC Density

This column will not display if the probe does not measure density and if TC density is not enabled.

Allowable range: 42.139 to 56.185 lbs/ft^3 (675.00 to 900.00 kg/m^3)

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)

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

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)

Environmental Reports

Environmental Reports - Combined Tank Test

09/03/2009 07:19 PM	🔔	Ms 11: COMMUNICATION ALARM		❓	📦	𝄌	🏠	↩

Combined Tank Test Report – Passed Test Results #1   **Tank 2 : PRODUCT 2**   🛠

Combined Tank Test	Line Leak	Sensor Status	Sensor History		**More**

Report Type	Date & Time	Test Method	Total Hours	Average Volume	% dume..
Tank 2 : PRODUCT 2					
Last Gross	10/21/2008 07:27 AM	SLD		3000	30.0
Last Periodic	10/21/2008 05:16 AM	CSLD	38	3000	30.0
Fullest Periodic	10/18/2008 07:57 AM	CSLD	12	3000	30.0

⊕ Tank 1	⊕ Tank 2	⊕ Tank 3	⊕ Tank 4	⊕ Tank 5	⊕ Tank 6	◀ ▶	▲ ▼

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 Test screen.

Regulatory Compliance

Note: In-tank leak tests will not be declared a PASS unless the product level in the tank satisfies the minimum product level defined in our Third Party certification for the leak test being performed. In-tank leak tests performed with the product level below these minimum levels will be declared Invalid. Because the minimum product level requirements vary with local, state, and federal regulations, you need to ensure that the product level complies with the applicable regulations in your location.

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

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Sensor Status Report – All Sensors   View Data

| Combined Tank Test | Line Leak | Sensor Status | Sensor History |

#	Sensor Location	Status	
L 1	Liquid Sensor 1	FUEL ALARM	
L 2	Liquid Sensor 2	FUEL ALARM	
L 3	Liquid Sensor 3	FUEL ALARM	
L 4	Liquid Sensor 4	FUEL ALARM	
G 1	GW Sensor 1	FUEL ALARM	
G 2	GW Sensor 2	FUEL ALARM	
G 3	GW Sensor 3	FUEL ALARM	
G 4	GW Sensor 4	FUEL ALARM	
C 1	Type A 1	SHORT ALARM	
C 2	Type A 2	SENSOR OUT ALARM	
C 3	Type A 3	SHORT ALARM	
C 4	Type A 4	SHORT ALARM	
H 1	Type B 1	SHORT ALARM	
H 2	Type B 2	SHORT ALARM	
H 3	Type B 3	SHORT ALARM	
H 4	Type B 4	SHORT ALARM	
Ms 1	MagSensor 1	COMMUNICATION AL/	
Ms 2	MagSensor 2	COMMUNICATION AL/	
Ms 3	MagSensor 3	COMMUNICATION AL/	
Ms 4	MagSensor4	COMMUNICATION AL/	
Ms 5	MagSensor 5	COMMUNICATION AL/	
Ms 6	MagSensor 6	COMMUNICATION AL/	
Ms 7	MagSensor 7	COMMUNICATION AL/	

The Sensor Status Report - All Sensors screen displays a report with the current status of the following stand-alone 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 above : Sensor Status History Report - All Sensors. The second row will show the selected data time range of the report. In the example above: 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 Report Range Selection Dialogs help topic under Specialty Dialogs in the Online Help Table of Contents.

Delivery Reports

Delivery Report - Manual Delivery

The Manual Delivery report screen allows you to perform a manual delivery and is available only if the Delivery Method selected in Delivery Setup is Manual. Units are as selected in Display Setup - Language & Units.

Report Column Descriptions

Tank

This column lists the configured tank label.

Volume

This column displays the non-temperature compensated volume in the tank.

Manual Delivery In Progress

Manual Delivery In Progress does not display status of a TLS detected delivery, but only of the manual delivery.
Possible messages: Yes or No

Control Buttons (Right Side of Screen)

The **Start** and **Stop** buttons are used to perform a manual delivery to a selected tank.

1. You must determine the tank getting the delivery is in a quiet period by visual inspection of volume change (This volume is the Tank's Inventory Volume).
2. Once the **Start** button is touch to record the Delivery, there will be a 30 minute timeout period after which the Delivery will be declared ended (in case you forget to manually stop the Delivery).

Start (manual delivery)

To manually start a delivery, touch the tank in the data area of the report that will receive the delivery. Notice the **Start** and **Stop** buttons are activated. Touch the Start button and begin delivering fuel to the tank.

Stop (manual delivery)

Once the delivery is completed, touch the Stop to record the end of the delivery.

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

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

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)

Mass

This column will not display if the probe does not measure density.

Allowable range: Depends on tank volume and fuel density

Fuel Density

This column will not display if the probe does not measure density.

Allowable range: 42.139 to 56.185 lbs/ft^3 (675.00 to 900.00 kg/m^3)

Fuel TC Density

This column will not display if the probe does not measure density and if TC density is not enabled.

Allowable range: 42.139 to 56.185 lbs/ft^3 (675.00 to 900.00 kg/m^3)

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)

Fuel Height

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

Delivery History Report

03/05/2010 03:02 PM	🔔	F 1: SETUP DATA WARNING		？	📦	🎛	🏠	↩

Delivery Report | | | | Tank 1 : regular | More

Current Month

| Manual Delivery | Last Delivery | Delivery History | Adjusted Delivery | ◀ ▶ | |

Start/End Date&Time	Fuel Volume	Fuel TC Volume	Water Height	Fuel Temp...
Tank 1 : regular				

Tank 1 | | ◀ ▶ | Select Range ▲ ▼

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

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

Final 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)

Mass

This column will not display if the probe does not measure density.

Allowable range: Depends on tank volume and fuel density

Fuel Density

This column will not display if the probe does not measure density.

Allowable range: 42.139 to 56.185 lbs/ft^3 (675.00 to 900.00 kg/m^3)

Fuel TC Density

This column will not display if the probe does not measure density and if TC density is not enabled.

Allowable range: 42.139 to 56.185 lbs/ft^3 (675.00 to 900.00 kg/m^3)

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)

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

Delivery Report - Ticketed Delivery Report

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Ticketed Delivery Report – TC Volumes   Tank 1 : regular | Edit Record |

Current Month

Last Delivery	Delivery History	Adjusted Delivery	Ticketed Delivery	◀ ▷	Add Record

End Date&Time	Ticket Volume	Gauge Volume	Ticket– Gauge	Start Temp	End Temp	Estimated Delivery Temp	BOL...	More
03/03/2010 01:01 PM	0	0	0	0.0	0.0	0.0		

Select Range

Tank 1   ◀ ▶   ▲ ▼

The Ticketed Delivery Report lets you view, add or edit ticketed deliveries to the selected tank.

If a delivery is in progress the data for all the columns will be 0. While a delivery is in progress, the Add button in the right column is not selectable. When the delivery in progress has completed, the 'In Progress' record will be replaced with the delivery end date and time and data.

Displayed volumes will be Standard Volumes if TC Ticketed Delivery is not enabled in Delivery Setup, or TC Volumes if TC Ticketed Delivery is enabled.

Units are as selected in <u>Display Setup - Language & Units</u>.

End Date
Delivery End Date and Time - MM/DD/YYYY HH:MM (default format)

Gauge Volume
Volume in tank as read by probe.

Ticket Volume
Volume entered from delivery ticket.

Ticket - Gauge

The ticket volume minus gauge volume.

Start Temp

Temperature of fuel in tank before the delivery.

End Temp

Temperature of fuel in tank after the delivery.

Est. Delivery Temp

Estimated temperature of the delivered fuel which the TLS derived by looking at the volume and temperature before and after the delivery and doing a mass/thermal-energy calculation.

BOL

The bill of lading entered for the delivery.

Delivery ID

This column displays any entered delivery identification.

Control Button (on right of screen)

Edit Record

NOTE: At least a single row of data must be present and selected before the 'Edit Record' button is activated.

Touch this button to edit the selected ticketed delivery record in the Edit Ticket Delivery screen.

Add Record

Touch this button to add a ticketed delivery record in the Add Ticket Delivery screen.

More

Touch this button to cause the 'Ticketed Delivery' tab screen to scroll to the right displaying columns and data that are hidden on the right and are not displayed in the data area of the screen.

Select Range

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

Edit Delivery Ticket

This screen allows you to Edit a selected ticketed delivery record for the selected tank. Touch the Back button ↵ to return to 'Ticketed Delivery' screen.

| 03/05/2010 03:35 PM | 🔔 | Ln 1: SETUP DATA WARNING | ❓ | 🗺 | 🖨 | 🏠 | ↵ |

Edit Delivery Ticket

Prev. Record

| Delivery End Time | 03/03/2010 01:01 PM | 🕐 |

Next Record

| Tank | Tank 1:regular |

| Measured Delivery | 0 |

| Delivery Volume | 4500 | 🗝 |

| TC Delivery Volume | 0 | 🗝 |

✓

| Bill of Lading | | 🗝 |

✗

| Delivery ID | | 🗝 |

▲

▼

Delivery End Time

Date and time delivery ended

Tank

This is a read-only field showing the Tank receiving the delivery.

Measured Delivery

This is a read-only field showing the delivered volume as measured by the TLS.

Delivery Volume

Delivered volume as entered from the delivery ticket.

TC Delivery Volume

Visible only if TC Volume is selected for TC Ticketed Delivery in <u>Delivery Setup</u>.

Delivered TC volume as entered from the delivery ticket.

Bill of Lading

Bill of lading entry.

Allowable selection: Up to 20 alpha-numeric characters

Delivery ID

Delivery identification entry.

Allowable selection: Up to 20 alpha-numeric characters

Control Button (on right of screen)

Previous Record

Touch this button to populate the 'Edit Delivery Ticket' screen with the row of data previous to the one that was selected in the 'Ticketed Delivery' screen.

Next Record

Touch this button to populate the 'Edit Delivery Ticket' screen with the row of data following the one that was selected in the 'Ticketed Delivery' screen.

Add Delivery Ticket

This screen allows you to Add a ticketed delivery record for the selected tank. Touch the Back button ↩ to return to 'Ticketed Delivery' screen.

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Add Delivery Ticket

Delivery End Date	03/05/2010	🔢
Delivery End Time	03:33 PM	🕐
Tank	Tank 1:regular	
Measured Delivery	Not Available	
Delivery Volume	0	▨
TC Delivery Volume	0	▨
Bill of Lading		▨

✓ ✕ ▲ ▼

Delivery End Date
Date delivery ended.

Delivery End Time
Time delivery ended.

Tank
This is a read-only field showing the Tank receiving the delivery.

Measured Delivery
This is a read-only field showing 'Not Available'.

Delivery Volume

Delivered volume as entered from the delivery ticket.

Allowable selection: 0 to 264,172 gal (0 to 999,999 liters)

TC Delivery Volume

Visible only if TC Volume is selected for TC Ticketed Delivery in Delivery Setup.

Delivered volume as entered from the delivery ticket.

Allowable selection: 0 to 264,172 gal (0 to 999,999 liters)

Bill of Lading

Bill of lading entry.

Allowable selection: Up to 20 alpha-numeric characters

Delivery ID

Delivery identification entry.

Allowable selection: Up to 20 alpha-numeric characters

Delivery Report - Adjusted Delivery Report

This screen allows you to view adjusted delivery reports.

Units are as selected in Display Setup - Language & Units.

Report Column Descriptions

Start Date
Delivery Start Date and Time - MM/DD/YYYY HH:MM (default format)

End Date
Delivery End Date and Time - MM/DD/YYYY HH:MM (default format)

Start Volume
This column displays the volume in the tank before delivery.

End Volume
This column displays the volume in the tank after delivery.

Adjusted Delivery

This column displays the volume delivered.

TC Adjusted Delivery

Temperature compensated volume delivered. NOTE: This column only visible if Temperature Compensation is enabled (ref. [Tank Setup - All Tanks](#)).

Control Button (on right of screen)

Select Range

Touch the Select Range button to change the range of the data displayed. The default period is current month.

BIR Reports

Reconciliation Report - Reconciliation

NOTES:
For Reconciliation Reports, the following conditions are true:

- The current Rolling Report starts N days ago and runs to yesterday.
- The previous Rolling Report starts N+1 days ago, and runs to the day before yesterday.
- Weekly Reports start the week on the day of the week set up in Inventory Setup - Inventory Report Times tab.
- The current week report will always be a partial report. The previous week report is a complete week.
- Monthly Reports start on the 1st of the month.
- The current Monthly report is a partial report that starts on the 1st of the month and goes to today.
- The previous Monthly report is a complete month from 1st to last day of the previous month

Units are as selected in Display Setup - Language & Units.

Report Column Descriptions

Date & Time

This column contains the date/time of report (MM/DD/YYYY HH:MM - default format)

Shift#

This column contains the number of the shift at the time of the report (not visible if shifts are not being used).

Variance

This column contains the difference between calculated and measured volume.

Opening Volume

This column contains the measured volume at start of reconciliation period.

Gauged Delivery

This column contains the measured delivery increase adjusted for sales that occurred during the delivery.

Metered Sales

This column contains the reported metered sales volume.

Calculated Inventory

This column contains the calculated ending inventory derived from the measured starting volume minus reported sales plus measured deliveries.

Gauged Inventory

This column contains the measured inventory at the end of the reconciliation period.

Manual Adjust

This column contains a use-entered correction for known variance conditions, e.g., removing water from the tank, meter calibrating.

Water Height

This column displays the tank's measured water height.

Control Buttons (on right side of screen)

Manual Adjust

If you need to enter an adjustment for this tank touch this button to open the 'Enter Manual Adjust' - dialog box described below. To return to the 'Reconciliation Report' tab screen, touch the Back button at the top right of the screen.

Product

This field is read only and displays the tank's product.
Possible messages: Up to 20 alpha-numeric characters.

Date&Time

This field is read only and displays the date and time in the MM/DD/YYYY HH:MM format (default).

Tank

This field displays the tank label. The Tank field defaults to the lowest tank number in the product group. If only one tank is in the product group, the selection cannot be changed. This field allows you to pick the tank of the product which needs a fuel adjustment.

Manual Adjust

Touch the keypad button to the right of this field to enter the desired volume adjustment.

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

Check (OK)

Touch this button to accept the manual adjustment entry.

Cancel (X)

Touch this button to cancel the change.

BIR Diags

Touching the 'BIR Diags' button will display the Reconciliation Diagnostics screen:

- A Status tab displays the current status that impacts reconciliation data.
- A Reconciliation tab displays all records with Metered Sales, Variance and a reason(s) for the variance.

More

Touch this button to cause the 'Reconciliation' screen to scroll to the right displaying columns and data that are hidden on the right and are not displayed in the data area of the screen.

Report Filter

Touching the 'Report Filter' button displays the 'Report Filter' dialog. The 'Report Filter' dialog contains a 'Select Range' dialog and a 'Filter' selection dialog. The 'Select Range' dialog allows you to change the range of the displayed data. The 'Filter' selection dialog allows you to change between Daily View and Shift View.

Daily

a. Select Range
-Week Range - Current, Previous and Previous N periods
-Month Range - Current, Previous and Previous N periods
-Rolling - Current, Previous, and Previous n periods
-Date Range
b. Filter
- Show
(1) Records and Summaries
(2) Records Only
(3) Summaries Only
c. Defaults
- Select Range

(1) If Summary Period in Reconciliation Setup is Monthly - Current Month, displayed in terms of a By Month Range (Start is Current Month, End is Current Month)
(2) If Summary Period in Reconciliation Setup is Rolling - Current (Displayed as Current)
- Filter
(1) Show
(Records and Summaries)

Shift

a. Select Range
- By Single Date (Using Day/Month/Year Single Date picker)
- By Week Range (Using Week/Year From/To Picker)
- By Month Range (Using Month/Year From/To Picker) N Periods)
- By Date Range (Using Day/Month/Year From/To Picker)

b. Filter
-Show
(1) Records and Summaries
(2) Records Only
(3) Summaries Only

c. Defaults
- Select Range (Does not look at Summary Period Defaults in Reconciliation Setup)
(1) Current Day and Previous Day, displayed in terms of a Date Range (Start is Previous Day (Yesterday's Date), End is Current Day (Today's Date)
- Filter
(1) Show
(Records Only)

Reconciliation Reports - Book Variance Report

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Reconciliation Report – Book Variance #1			F 1:	More

Current Month (Records and Summaries)

| Reconciliation | Book Variance | Reconciliation Test Report | |

Closing Date & Time	Variance	Opening Volume	Ticketed Delivery	Metered Sales	Manual Adjust	Closed Book Inventory	G ...

Report Filter

Product 1

◀ ▶ 🔼 🔽

NOTES:

1. Book Variance report only appears when TC Ticketed Delivery is enabled in Delivery Setup.

2. For Reconciliation Reports, the following conditions are true:

   - The current Rolling Report starts N days ago and runs to yesterday.
   - The previous Rolling Report starts N+1 days ago, and runs to the day before yesterday.
   - Weekly Reports start the week on the day of the week set up in Inventory Setup - Inventory Report Times tab.
   - The current week report will always be a partial report. The previous week report is a complete week.
   - Monthly Reports start on the 1st of the month.
   - The current Monthly report is a partial report that starts on the 1st of the month and goes to today.
   - The previous Monthly report is a complete month from 1st to last day of the previous month

Report Column Descriptions

Date & Time

This column contains the date/time of report (MM/DD/YYYY HH:MM - default format)

Opening Volume

This column contains the measured volume at start of reconciliation period.

Metered Sales

This column contains the reported metered sales volume.

Ticketed Delivery

This column contains user-entered delivery volume.

Manual Adjust

This column contains a user-entered correction for known variance conditions, e.g., removing water from the tank, meter calibrating.

Closed Book Inventory

This column contains the calculated ending inventory derived from the measured starting volume minus reported sales plus ticketed deliveries.

Gauged Inventory

This column contains the measured inventory at the end of the reconciliation period.

Variance

This column contains the difference between calculated and measured volume.

Water Height

This column displays the tank's measured water height.

Control Buttons (on right side of screen)

More

Touch this button to cause the 'Book Variance' screen to scroll to the right displaying columns and data that are hidden on the right and are not displayed in the data area of the screen.

Report Filter

Touching the 'Report Filter' button displays the 'Report Filter' dialog. The 'Report Filter' dialog contains a 'Select Range' dialog and a 'Filter' selection dialog. The 'Select Range' dialog allows you to change the range of the displayed data. The 'Filter' selection dialog allows you to change between Daily View and Shift View.

Daily

a. Select Range
- -Week Range - Current, Previous and Previous N periods
- -Month Range - Current, Previous and Previous N periods
- -Rolling - Current, Previous, and Previous n periods
- -Date Range

b. Filter
- Show
    - (1) Records and Summaries
    - (2) Records Only
    - (3) Summaries Only

c. Defaults
- Select Range
    - (1) If Summary Period in Reconciliation Setup is Monthly - Current Month, displayed in terms of a By Month Range (Start is Current Month, End is Current Month)
    - (2) If Summary Period in Reconciliation Setup is Rolling - Current (Displayed as Current)

- Filter
    - (1) Show
        (Records and Summaries)

Shift

a. Select Range
- - By Single Date (Using Day/Month/Year Single Date picker)
- - By Week Range (Using Week/Year From/To Picker)
- - By Month Range (Using Month/Year From/To Picker) N Periods)
- - By Date Range (Using Day/Month/Year From/To Picker)

b. Filter
- -Show
    - (1) Records and Summaries
    - (2) Records Only
    - (3) Summaries Only

c. Defaults
- - Select Range (Does not look at Summary Period Defaults in Reconciliation   Setup)
    - (1) Current Day and Previous Day, displayed in terms of a Date Range (Start is Previous Day (Yesterday's Date), End is Current Day (Today's Date)
- - Filter
    - (1) Show
        (Records Only)

Reconciliation Reports - Reconciliation Test Report

This screen contains Reconciliation Variable Threshold test results.

Report Column Descriptions

End Date
Date of test.

Threshold Type
Disabled, Monthly, Rolling Day, Daily, Rolling Consecutive Day

Result
Pass/Fail

Sales
Sales volume in system units.

Delivery

Delivered volumes in system units.

Variance

Variance in system units.

Threshold Limit

Volume in system units.

Control Buttons (on right side of screen)

More

Touch this button to cause the 'Reconciliation Test Report' screen to scroll to the right displaying columns and data that are hidden on the right and are not displayed in the data area of the screen.

Report Filter

Touching the 'Report Filter' button displays the 'Report Filter' dialog. The 'Report Filter' dialog contains 'Period' dialog selections and 'Period Range' dialog selections.

DIAGNOSTIC SCREENS

Diagnostics Main Screen
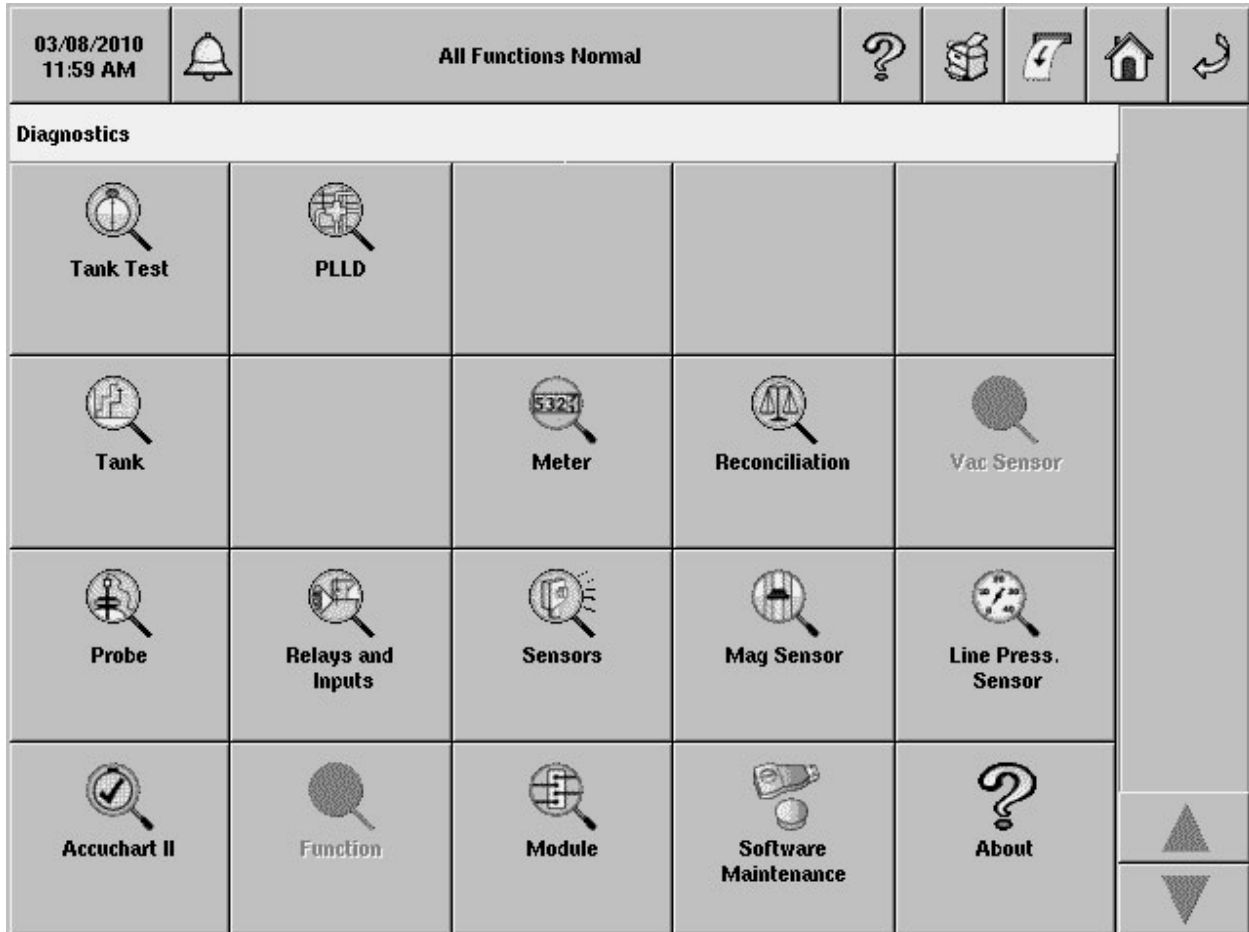
The Diagnostic main screen gives you access (depending on installed features) to the site's current and historical tank and line test results. Also from Diagnostic screens, you can manually run tank tests, PLLD line tests and view technical data from monitored devices. Detailed functions of diagnostic screens, which are used primarily by trained service personnel to analyze console/device performance, are not discussed in this manual.

Tank Test Diagnostics

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

#
This column lists the device code followed by device iteration number, e.g., C1.

Tank Label
This column lists the tank label.

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.

Regulatory Compliance

Note: In-tank leak tests will not be declared a PASS unless the product level in the tank satisfies the minimum product level defined in our Third Party certification for the leak test being performed. In-tank leak tests performed with the product level below these minimum levels will be declared Invalid. Because the minimum product level requirements vary with local, state, and federal regulations, you need to ensure that the product level complies with the applicable regulations in your location.

Tank Test Diagnostics - CSLD Rate Table

11/06/2007 05:43 PM	🔔	T 4: SETUP DATA WARNING	❓	📦	🏠	↩

Tank Test Diagnostics – CSLD Rate Table #1   **All Tanks**

CSLD Test Status	CSLD Rate Table	CSLD Monthly	SLD Last Test	◄ ▶

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

Buttons (right column): **More**, 🛠, **Clear Table**, **Select Range**, ▲ ▼

Bottom tabs: **All Tanks** | **Tank 1** | **Tank 2** | **Tank 3** | **Tank 4** | **Tank 5** | **Tank 6** | ◄ ▶

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"

Regulatory Compliance

Note: In-tank leak tests will not be declared a PASS unless the product level in the tank satisfies the minimum product level defined in our Third Party certification for the leak test being performed. In-tank leak tests performed with the product level below these minimum levels will be declared Invalid. Because the minimum product level requirements vary with local, state, and federal regulations, you need to ensure that the product level complies with the applicable regulations in your location.

Tank Test Diagnostics - CSLD Monthly

11/05/2007 02:19 PM	🔔	T 4: PERIODIC TEST FAIL	❓	📦	🏠	↩

Tank Test Diagnostics – CSLD Monthly Report				All Tanks	✂

CSLD Rate Table	CSLD Monthly	SLD Last Test	SLD In Progress	S His ◀ ▶

Date/Time	CSLD State Change	

Tank 1 : * PRODUCT1
Probe Serial Number : 78643211

11/04/2007 08:13:37 AM	Warning
11/03/2007 05:11:31 PM	Pass
11/02/2007 08:08:00 PM	No Results Available

Tank 2 : * PRODUCT2
Probe Serial Number : 78643212

11/05/2007 11:17:47 AM	Fail
11/03/2007 11:10:33 AM	Warning
11/02/2007 08:08:01 PM	No Results Available

Tank 3 : * PRODUCT3
Probe Serial Number : 78643213

11/03/2007 05:11:35 PM	Warning
11/02/2007 08:08:02 PM	No Results Available

Tank 4 : * PRODUCT4
Probe Serial Number : 78643214

11/05/2007 08:17:51 AM	Fail

Select Range

All Tanks	Tank 1	Tank 2	Tank 3	Tank 4	Tank 5	Tank 6	◀ ▶	△ ▽

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

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- 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.

Regulatory Compliance

Note: In-tank leak tests will not be declared a PASS unless the product level in the tank satisfies the minimum product level defined in our Third Party certification for the leak test being performed. In-tank leak tests performed with the product level below these minimum levels will be declared Invalid. Because the minimum product level requirements vary with local, state, and federal regulations, you need to ensure that the product level complies with the applicable regulations in your location.

Tank Test Diagnostics - SLD Last Test

11/06/2007 05:30 PM	🔔	T 3: SETUP DATA WARNING	❓ 📦 🏠 ↩

Tank Test Diagnostics – SLD Last Test Results　　　　　　　　**All Tanks**　　🛠

CSLD Monthly	SLD Last Test	SLD In Progress	SLD History	◀ ▷	Manual Test

Test Type	Start Time	Test Result	Reason	Leak Rate	Hours	Tank Volume
Tank 1 : * Regular						
Annual	11/05/2007 05:32 PM	Pass		0.00	8.0	5000.0
Periodic	11/05/2007 05:32 PM	Pass		0.00	8.0	5000.0
Gross	11/05/2007 05:32 PM	Pass		0.00		5000.0
Tank 2 : * Midgrade East						
Annual	11/05/2007 05:32 PM	Fail		−0.10	8.0	4999.9
Periodic	11/05/2007 05:32 PM	Pass		−0.10	8.0	4999.9
Gross	11/05/2007 05:32 PM	Pass		−0.10		4999.9
Tank 3 : * Super East						
Annual	11/05/2007 05:32 PM	Fail		−0.20	8.0	4999.9
Periodic	11/05/2007 05:32 PM	Fail		−0.20	8.0	4999.9
Gross	11/05/2007 05:32 PM	Pass		−0.20		4999.9
Tank 4 : * Regular West						
Annual	11/05/2007 05:32 PM	Fail		−2.97	8.0	4998.5
Periodic	11/05/2007 05:32 PM	Fail		−2.97	8.0	4998.5
Gross	11/05/2007 05:32 PM	Fail		−2.97		4998.5

All Tanks	Tank 1	Tank 2	Tank 3	Tank 4	Tank 5	Tank 6	◀ ▶	▲ ▼

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:

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- 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.

Regulatory Compliance

Note: In-tank leak tests will not be declared a PASS unless the product level in the tank satisfies the minimum product level defined in our Third Party certification for the leak test being performed. In-tank leak tests performed with the product level below these minimum levels will be declared Invalid. Because the minimum product level requirements vary with local, state, and federal regulations, you need to ensure that the product level complies with the applicable regulations in your location.

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.

Regulatory Compliance

Note: In-tank leak tests will not be declared a PASS unless the product level in the tank satisfies the minimum product level defined in our Third Party certification for the leak test being performed. In-tank leak tests performed with the product level below these minimum levels will be declared Invalid. Because the minimum product level requirements vary with local, state, and federal regulations, you need to ensure that the product level complies with the applicable regulations in your location.

Manual Static Leak Detect screen

11/07/2007 11:48 AM	🔔	T 4: HIGH WATER WARNING	❓	📦	🏠	↵

Tank Test Diagnostics – Manual Static Leak Detect   **Tank 1 : PRODUCT 1**

		Start
Tests Running	T 1 : Off	**Stop**
Test Control	Manual Stop ▼	**Start All Tanks**
Test Rate[Gal/Hr]	0.2 gal/hr ▼	**Stop All Tanks**

⊕ Tank 1   ◀ ▶   ▲ ▼

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 History

11/06/2007 05:31 PM	🔔	T 5: SETUP DATA WARNING	❓	🎁	🏠	↩

Tank Test Diagnostics – SLD History   **All Tanks**   ⚒

CSLD Monthly	SLD Last Test	SLD In Progress	SLD History	◀ ▷	Manual Test

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							
Tank 6 : * Super west							

⊕ All Tanks	⊕ Tank 1	⊕ Tank 2	⊕ Tank 3	⊕ Tank 4	⊕ Tank 5	⊕ Tank 6	◀ ▶	▲ ▼

Select Range

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"

Regulatory Compliance

Note: In-tank leak tests will not be declared a PASS unless the product level in the tank satisfies the minimum product level defined in our Third Party certification for the leak test being performed. In-tank leak tests performed with the product level below these minimum levels will be declared Invalid. Because the minimum product level requirements vary with local, state, and federal regulations, you need to ensure that the product level complies with the applicable regulations in your location.

Pumps and Lines

PLLD Diagnostics - Manual Test

11/06/2007 05:48 PM	🔔	All Functions Normal		❓	📦	🏠	↩

PLLD Diagnostics – Manual Test   **All Lines**   **Start**

Manual Test	PLLD Status	3.0 gph Tests	Mid–Range Tests	N◄ ▶	**Stop**

Test | 3.0 ▼ |

Test	Manual Test Status	PLLD Test Status	
Line 1 : PRESSURE LLD #1			
		Test Complete	
Line 2 : PRESSURE LLD #2			
		Test Complete	
Line 3 : PRESSURE LLD #3			
		Test Complete	
Line 4 : PRESSURE LLD #4			
		Test Complete	
Line 5 : PRESSURE LLD #5			
		Test Complete	
Line 6 : PRESSURE LLD #6			
		Test Complete	

All Lines	Line 1	Line 2	Line 3	Line 4	Line 5	Line 6	◄ ▶	▲ ▼

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). Note - 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)

Device code followed by 1 to 32 (e.g., Q1)

Label (PLLD line label)

Label (assigned in setup)

Dispensing (flag)

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)

On, Off

Handle (state)

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

| 11/06/2007 05:49 PM | 🔔 | All Functions Normal | ❓ | 📦 | 🏠 | ↩ |

PLLD Diagnostics – 3.0 gph Test Results   **All Lines**

| Manual Test | PLLD Status | 3.0 gph Tests | Mid–Range Tests | N◀ ▶ |

Date/Time	Pump On	First Read	Second Read	Status	
Line 1 : PRESSURE LLD #1					
11/01/2007 01:24 PM	39.0	20.0	20.0	Pass	
11/01/2007 12:27 PM	39.1	20.0	20.0	Pass	
11/01/2007 12:23 PM	40.0	20.0	20.0	Pass	
11/01/2007 11:51 AM	39.5	20.0	20.0	Pass	
11/01/2007 11:48 AM	40.0	20.0	20.0	Pass	
Line 2 : PRESSURE LLD #2					
11/01/2007 01:24 PM	39.4	20.0	20.0	Pass	
11/01/2007 12:27 PM	39.7	20.0	20.0	Pass	
11/01/2007 12:23 PM	40.0	20.0	20.0	Pass	
11/01/2007 11:52 AM	39.7	20.0	20.0	Pass	
11/01/2007 11:48 AM	40.0	20.0	20.0	Pass	
Line 3 : PRESSURE LLD #3					
11/01/2007 01:25 PM	39.7	20.0	20.0	Pass	
11/01/2007 12:28 PM	39.9	20.0	20.0	Pass	
11/01/2007 12:24 PM	40.0	20.0	20.0	Pass	

| All Lines | Line 1 | Line 2 | Line 3 | Line 4 | Line 5 | Line 6 | ◀ ▶ | ▲ ▼ |

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

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 Diagnostics - Communication screen.

PLLD Diagnostics - Mid-Range Test Results

11/06/2007 05:50 PM	🔔	T 2: HIGH WATER WARNING	❓	📦	🏠	↩

PLLD Diagnostics – Mid Range Test Results   All Lines

Manual Test	PLLD Status	3.0 gph Tests	Mid–Range Tests	N◀ ▶

Date/Time	Pump On	First Read	Second Read	Status	
Line 1 : PRESSURE LLD #1					
11/01/2007 01:55 PM	39.0	20.0	20.0 Pass		
11/01/2007 12:58 PM	39.1	20.0	20.0 Pass		
Line 2 : PRESSURE LLD #2					
11/01/2007 01:56 PM	39.4	20.0	20.0 Pass		
11/01/2007 12:59 PM	39.7	20.0	20.0 Pass		
Line 3 : PRESSURE LLD #3					
11/01/2007 01:57 PM	39.7	20.0	20.0 Pass		
11/01/2007 01:00 PM	39.9	20.0	20.0 Pass		
Line 4 : PRESSURE LLD #4					
11/01/2007 01:59 PM	39.8	20.0	20.0 Pass		
11/01/2007 01:02 PM	39.9	20.0	20.0 Pass		
Line 5 : PRESSURE LLD #5					
11/01/2007 02:00 PM	39.9	20.0	20.0 Pass		
11/01/2007 01:03 PM	39.9	20.0	20.0 Pass		
Line 6 : PRESSURE LLD #6					

All Lines	Line 1	Line 2	Line 3	Line 4	Line 5	Line 6	◀	▶	▲ ▼

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 Diagnostics - Communication screen.

PLLD Diagnostics - No-Vent Aborts

11/06/2007 05:50 PM	🔔	T 4: HIGH WATER WARNING	❓	📦	🏠	↩

PLLD Diagnostics – No-Vent Test Aborts			All Lines

3.0 gph Tests	Mid-Range Tests	No-Vent Aborts	0.2 gph Tests	◀ ▶

#	Label	Test Aborts	Total Tests	
Q 1	PRESSURE LLD #1	1	4	
Q 2	PRESSURE LLD #2	0	2	
Q 3	PRESSURE LLD #3	0	2	
Q 4	PRESSURE LLD #4	0	2	
Q 5	PRESSURE LLD #5	0	2	
Q 6	PRESSURE LLD #6	0	2	
Q 7		0	0	
Q 8		0	0	

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)
Device code followed by 1 to 32 (e.g., Q1)

Label (PLLD line label)
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 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.

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 Diagnostics - Communication screen.

PLLD Diagnostics - 0.1 gph (0.38lph) Test Results

| 05/07/2010 10:24 AM | 🔔 | M 1: SETUP DATA WARNING | ❓ | 📇 | 🗐 | 🏠 | ↩ |

PLLD Diagnostics – 0.1 gph Test Results   Line 1 :

| Mid-Range Tests | No-Vent Aborts | 0.2 gph Tests | 0.1 gph Tests | ◀ | ▷ |

Date/Time	Pump On	Ratio	Duration	Results	

Line 1: PRESSURE LLD#1

| 11/02/2009 01:15 PM | 39.0 | 0.72 | 0:16 | PASS |

Line 1

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.

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 Diagnostics - Communication screen.

Tank

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.

Meter

Meter Diagnostics - Meter Events

The Meter Events screen lists up to one page of time-ordered meter start/stop events.

Date & Time

Date/time of start or stop meter event.

Fuel Position

Fueling position reported by the POS terminal.

Meter

Meter number reported by the POS terminal.

User FP

Fuel position as labeled by the station operator.

Event Type

POS reported meter events as they occurred in time, prefixed by Start or Stop as applicable.

Transaction Volume

Volume dispensed as reported by the POS terminal with stopped meter event.

Control Button (Right side of Screen)

Clear All

The Clear All button is only enabled when at least one record is available. Touch this button to clear all meter events from screen.

Meter Diagnostics - Tank Map

03/08/2010 10:04 AM	🔔	M 1: SETUP DATA WARNING	❓	📓	🗗	🏠	↩

Meter Diagnostics – Tank Map

								Edit
Meter Events		Tank Map		Manual Mapping				Lock All
Source	User FP	Real FP	Real Meter	Tank/ Blend	Locked	Last Report Time		Unlock All
								Clear All
								▲
								▼

This screen displays the meter-to-tank map. This is the screen you want to use to verify meter mapping, or to view if the site should go unmapped, suspending BIR.

Source

DIM module connected to reporting POS terminal.

User FP

Fuel position as labeled by the operator.

Real FP

Fuel position reported by the POS terminal.

Real Meter

Meter number reported by the POS terminal.

Tank/Blend

Possible messages:

- Tank Label
- Blend Label
- Unmapped
- Probeless (unmonitored tanks, such as propane)
- R (retired) - If an unmapped meter has not been reported by a POS within 24 hours of the last report, the meter is declared 'retired'. A retired meter may be a phantom meter incorrectly reported by the POS, or it may be a seldom heard from meter, such as one connected to a kerosene tank. Until the 'retired' meter is mapped, every time the meter is activated, and for 24 hours thereafter, BIR is suspended.

Locked

User has locked tank-to-meter mapping for this meter. Auto meter mapping will not change it.

Last Report Time

Last transaction reported for this meter.

Control Buttons (Right side of screen)

Edit

This button is grayed out unless at least one record in the data view area is selected. When the desired record is highlighted, touch the Edit button to display the 'Edit Tank Map' - dialog box which is described below:

Edit Tank Map - Dialog Box

The selected record will populate the appropriate fields in the 'Edit Tank Map' dialog. When the 'Tank Map' record has been edited using the 'Edit Tank Map' dialog, the new data will replace the old data in the selected record. The fields of the Edit Tank Map dialog are described below:

- **Locked** - The user can only lock an entry if it is mapped or probeless. Retired entries are unmapped, and cannot be locked. A Probeless tank assignment will be locked. You cannot unlock the meter assignment (the Locked field is inactive). Touch the Down arrow to select: Yes or No.
- **Tank/Blend** - Touch the Down arrow to select:
- **Tank Label**
- **Blend Label**
- **Unmapped** - Select this entry if the meter was incorrectly mapped and you want the automapping feature to correctly map the meter (This suspends BIR until the meters are all mapped).
- **Probeless** - Select this entry for meters from which the POS reports activity, but that are not monitored by the TLS, such as propane or kerosene.
- **User FP** - Touch the numeric keypad button to enter the desired fuel position. Allowable selections: 1 to 72
- **Real FP** - This field is read only and the entry is based on the selected Map Record.
- **Real Meter** - This field is read only and the entry is based on the selected Map Record.

Lock All

This button is grayed out unless at least one record is in the data view area. Touch this button to lock all entries in the tank map.

Unlock All

This button is grayed out unless at least one record is in the data view area. Touch this button to unlock all entries in the tank map.

Clear All

This button is grayed out unless at least one record is in the data view area. Touch this button to clear all entries in the data view area.

Meter Diagnostics - Manual Mapping

The Manual Mapping diagnostic screen will help you assign meters to tanks with small volume dispensing events and to identify post-blend metering. This screen displays active events as they are reported by the POS terminal.

Report Column Descriptions

Transaction Time
Date/time of transaction.

Real FP
Fueling position reported by the POS terminal.

Real Meter
Meter number reported by the POS terminal.

Volume
This volume dispensed to manually map the meters you set in the 'Enter Max Meas. Volume' dialog box described below.

Tank/Blend

Possible messages: Tank Label, Blend Label, Unmapped, Probeless or R (retired)

User FP

Fuel position as labeled by the station operator.

Locked

Possible messages: Yes or No. If yes, user has locked tank to meter mapping for this meter. Auto meter mapping will not change it.

Control Buttons (Right side of screen)

Edit

This button is grayed out unless at least one record in the data view area is selected. When the desired record is highlighted, touch the Edit button to display the 'Edit Tank Map' - dialog box which is described below.

Edit Tank Map - Dialog Box

The selected record will populate the appropriate fields in the 'Edit Tank Map' dialog. When the 'Tank Map' record has been edited using the 'Edit Tank Map' dialog, the new data will replace the old data in the selected record. The fields of the Edit Tank Map dialog are described below:

- **Locked** - The user can only lock an entry if it is mapped or probeless. Retired entries are unmapped, and cannot be locked. A Probeless tank assignment will be locked. You cannot unlock the meter assignment (the Locked field is inactive). Touch the Down arrow to select: Yes or No
- **Tank/Blend** - Touch the Down arrow to select: Tank Label, Blend Label, Unmapped, Probeless or R (retired)
- **User FP** - Fuel position as labeled by the station operator. Allowable selections: 1 to 72
- **Real FP** - This field is read only - Fueling position reported by the POS terminal.
- **Real Meter** - This field is read only - Meter number reported by the POS terminal.

Max Meas. Volume

Touching this button displays the 'Enter Maximum Measured Volume' - dialog described below:

Volume - Touch the numeric keypad to the right of the Volume field and enter a desired maximum measuring volume. This volume is the maximum allowed into the Manual Mapping screen. The normally higher dispenses associated with commercial transactions are filtered out while you are manually mapping meters. Allowable selections: 0 - 2.58 gal (0 to 10 litres).

Touch the ✓ button to accept edited value or ✗ button to abort the change and close the 'Enter Maximum Measured Volume' dialog box.

Clear All

When at least one event record is visible in the data view area this button is active. Touch the Clear All button to remove all event records from the data view area.

More

Touching the 'More' button will shift the report over (right or left) to reveal additional columns outside of the data view area.

Reconciliation

Reconciliation Diagnostics - Status

This screen contains a list of causes for Reconciliation events.

Report Column Description

Reason

Each of the possible reasons is described below:

- DIM out/alarm/setup issues - Any dim alarms. All tanks will be set.

- DIM missing starts or stops - Set when a fake start or fake end event is generated. A fake start indicates we received an end event but no start event. A fake end indicates we have received a start event and no event. Normal trigger time is 15 minutes. All tanks will be set.

- DIM data from phantom meters - When an 'invalid meter' (end event and meter count = 0 or > 2) is received   All tanks will be set.

- Meter-map - not complete - Set when any dim events received and one of the tanks is not mapped. All tanks will be set.

- Meter-map - unstable/changes during period - Any time the meter map table is changed (reset, clear, unlock, lock, mapped). All tanks will be set.

- Invalid fuel height - When an 'Invalid Fuel Height' is triggered. Set per individual tank.

- Probe-out - When a 'Probe Out Alarm' is triggered. Set per individual tank.

- Water removed - Check at Daily /Shift close time. Set when the water height from the previous close is greater then the current water height. Set per individual tank.

- Power outage - Always get set on power up or system reset. All tanks will be set.

- Tank Chart Change (indicate what tank chart is used, and its quality level) [set per tank] - Check at Daily /Shift close time.
  Set when the time of the tank chart from the previous close is different from the current recorded time. Set per individual tank.

- DIM Queue Over Run - When we are receiving more Dim events then can be handled. All tanks will be set.

Control Buttons (on right side of screen)

Manual Clear

Touching the 'Manual Clear' button causes the 'Confirm Manual Clear' dialog to display in which you can clear the events from the screen.

Reconciliation Diagnostics - Reconciliation

03/08/2010 10:18 AM	🔔	M 1: DISABLED DIM ALARM		❓	📠	🖨	🏠	↩

Reconciliation Diagnostics – Reconciliation #1				**Product 1 :**	**More**
From 02/21/2010 10:17 AM TO 03/08/2010 10:17 AM					
Status	**Reconciliation**				**BIR Report**
Date & Time		**Metered Sales**	**Variance**	**Status Warning Reasons...**	
Product 1 :					
					Select Range

Product 1   ◀ ▶ ▲ ▼

This screen contains every daily Reconciliation record, including total sales and variance for the day. If during the day an event occurred that could have affected the variance, the reasons column will show one or more possible causes.

1. Variances are calculated daily as follows:

   - Computed Daily end volume = Start volume - total sales + deliveries

   - Daily variance = Computed daily end volume - measured end volume

2. Daily sales and variances are totaled over the defined reconciliation period.

3. The total variance over the defined reconciliation period is compared to the Periodic Reconciliation Alarm Threshold (User programmed % of total metered sales + offset).

4. If the total variance over the defined reconciliation period exceeds the Periodic Reconciliation Alarm Threshold, the event is added to this report.

Report Column Descriptions

Date & Time

Time the reconciliation record was added.

Metered Sales

The total metered sales over the defined reconciliation period.

Variance

Total variance over the defined reconciliation period.

Reasons

Possible messages:

- DIM out/alarm/setup issues - Any dim alarms. All tanks will be set.

- DIM missing starts or stops - Set when a fake start or fake end event is generated. A fake start indicates we received an end event but no start event. A fake end indicates we have received a start event and no event. Normal trigger time is 15 minutes. All tanks will be set.

- DIM data from phantom meters - When an 'invalid meter' (end event and meter count = 0 or > 2) is received   All tanks will be set.

- Meter-map - not complete - Set when any dim events received and one of the tanks is not mapped. All tanks will be set.

- Meter-map - unstable/changes during period - Any time the meter map table is changed (reset, clear, unlock, lock, mapped). All tanks will be set.

- Invalid fuel height - When an 'Invalid Fuel Height' is triggered. Set per individual tank.

- Probe out - When a 'Probe Out Alarm' is triggered. Set per individual tank.

- Water removed - Check at Daily /Shift close time. Set when the water height from the previous close is greater then the current water height. Set per individual tank.

- Power outage - Always get set on power up or system reset. All tanks will be set.

- Tank Chart Change (indicate what tank chart is used, and its quality level) [set per tank] - Check at Daily /Shift close time.
   Set when the time of the tank chart from the previous close is different from the current recorded time. Set per individual tank.

- DIM Queue Overrun - When we are receiving more Dim events then can be handled. All tanks will be set.

Control Buttons (on right side of screen)

More

Touching the 'More' button will shift the report over (right or left) to reveal additional columns outside of the data view area.

BIR Report

Touch this button to view the daily record Reconciliation Report for the selected product.

Select Range

Touch this button to select whether to filter the contents of the report by a Date Range, by week, by month or a rolling period.

Probe

Probe Diagnostics - General

The Probe Diagnostics - General screen displays a report with general information about each probe.

Report Column Descriptions

Type
Probe Type Description (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 <u>Device Setup - Probes</u> screen.

Probe Diagnostics - Reference Distance

2007/11/06 11:08 AM	🔔	T 1: DELIVERY NEEDED	❓	📦	🏠	↩

Diagnostics – Probes – Reference Distance   **All Probes**   ✂

General	Reference Distance	Channel	MAG Options	Communication	

Type	Serial No.	Original Date	Original Reference	Current Date	Current Reference
Probe 1: – Tank 1					
MAG7	3555185547	2007/11/06	102.15	2007/11/06	102.15
Probe 2: – Tank 2					
MAG7	3555185547	2007/11/06	102.15	2007/11/06	102.15
Probe 3: – Tank 3					
MAG10	3555185550	2007/11/06	102.23	2007/11/06	102.23
Probe 4: – Tank 4					
MAG1	3270820499	2007/11/06	43.70	2007/11/06	43.70

All Probe	Probe 1	Probe 2	Probe 3	Probe 4		◄ ►	▲ ▼

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 (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 Buttons (right of screen)

Probe Setup

Touch this button open the Device Setup - Probes screen.

Probe Diagnostics - Channel

07/28/2008 02:32 PM	🔔	Cn 8: SETUP DATA WARNING	❓	🗑	📋	🏠	↩

Diagnostics – Probes – Last Sample #1   Probe 1 | **More** |

General	Reference Distance	Channel	MAG Options	Communication	

	0	**1**	**2**	**3**	**4**	**5**	**6**	**7......**

Probe 1: REGULAR – Tank 1

	0	1	2	3	4	5	6	7
00	49152.00	568.00	5830.00	5830.00	5830.00	5830.00	5830.00	5829.00
10	5829.00	5829.00	40000.00	21993.00	21993.00	21993.00	21993.00	21993.00
20	11.00	1200.00	40768.00	32770.00	63232.00	1.00	0.00	1.00

Probe 1 | Probe 2 | Probe 3 | ◀ | ▶ | ▲ ▼

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 <u>Device Setup - Probes</u> screen.

Probe Diagnostics - Mag Options

07/28/2008 02:32 PM	🔔	Pm 2: PUMP OUT		❓	📦	📇	🏠	↩

Diagnostics – Probes – MAG Options #1   Probe 1   **More**

General	Reference Distance	Channel	MAG Options	Communication	✕

Low Temperature	Water	Leak 0.1	Leak 0.2	Leak 3.0......
Probe 1: REGULAR– Tank 1				
NO	YES	YES	YES	YES

Probe 1   Probe 2   Probe 3   ◀ ▶   ▲ ▼

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 <u>Device Setup - Probes</u> screen.

Probe Diagnostics - Communication

07/28/2008 02:33 PM	🔔	R 3: DEVICE OUT WARNING		❓	📦	🖼	🏠	↩

Diagnostics – Probes – Communication #1   Probe 1 | More |

General	Reference Distance	Channel	MAG Options	Communication		✖

Type	Status	Samples Read	Samples Used	Parity......
Probe 1: REGULAR – Tank 1				
MAG1	OK	232	231	0

🖊 Probe 1	🖊 Probe 2	🖊 Probe 3		◀	▶	▲ ▼

The Probe Diagnostics - Communication screen displays a report with communication health and status parameters for each probe.

Report Column Descriptions

Type
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 & Inputs

Relays and External Inputs Diagnostics - Relays

The Relays and External Inputs Diagnostics - Relays screen lets you test all configured relays (except PLLD relays). Two types of relay tests are available:

1. Sequential Test: This test sets selected relays to INACTIVE for two seconds and then sets them to ACTIVE for two seconds. When the test is complete the relays are automatically reset to their original state.

2. Relay Inspection Test: This test sets selected relays to a selectable state, ACTIVE or INACTIVE, until the test is complete. When you finish the test the relays are automatically reset to their original state.

Column Descriptions

Relay Selection Check boxes

Check boxes are unchecked when the screen first opens. Relays can be individually selected / deselected by touching the check box by a specific relay. PLLD relays cannot be selected for these tests, so their check boxes will be grayed out in the relay list.

(Relay identifier)

Device code followed by 1 to 32 (e.g., R1)

Address

Relay Device Address

Value: Console Number/Module slot/Module connection (e.g., B0.S5.2)

Status

Relay State.

Possible messages: Active, Inactive

Duration

Time the Relay has been in the current state.

Type

The Relay type. Possible messages include:

- STANDARD - The On/Off state is determined by assigned alarms/warnings.

- 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.

Control Buttons (right of screen)

- **Setup** - touch to return to the Device Setup - Relays screen.

- **Test Relays** button - see Sequential Testing Procedure below.

- **Activate Relays**, **Deactivate Relays** and **Finish Test** buttons - see Inspection Testing Procedure below.

Sequential Testing Procedure

To perform this test:

1. Select one or more relays. When the first relay is selected, the Test Relays button will become active (e.g. not grayed-out). After all the relays required for the test have been selected (checked), touch the Test Relays button to start the sequential test.

2. For each selected relay, the system will perform the following sequence:

    • Save State: The current relay state will be saved before a test is run on that specific relay.

    • Highlight Relay: For the relay being tested, the screen will highlight that relay during its test.

    • Deactivate Relay: The relay being tested will be put in an Inactive state for 2 seconds and the status of the relay on the screen will be set to Sw Test.

    • Activate Relay: The relay being tested will be put in an Active state for 2 seconds and the status of the relay on the screen will be set to Sw Test.

    • Reset Relay: Once the test completes, the relay will be returned to its original status which was saved at the beginning of the test. The status of the relay on the screen will be reset to its original status and it will no longer be highlighted. The test will continue with the next relay.

3. Test Completion: When the test has run through all the selected relays, the check boxes of the selected relays will remain selected. Touch the selected relays to deselect them or close the screen.

Inspection Testing Procedure

1. Select relays: When the first relay is selected, the Activate Relays and Deactivate Relays buttons will become active (e.g. not grayed-out). Notice the Finish Test button is still grayed-out. The Test Relays button will be grayed-out (used for sequential testing only).

2. Start the Test: After all the relays required for the test have been selected (checked), touch either the Activate Relays or Deactivate Relays button to start the Relay Inspection test. The relays should be set to either Active or Inactive depending on the button pushed. Notice the Finish Test button is not grayed-out.

    • Save State: For each selected relay, its current state will be saved before the test is run on all selected relays.
    • Highlight Relay: All selected relays being tested will be highlighted on the screen during the test.
    • Set Relays: All the selected relays will be set to the Active or Inactive state depending on the button touched. The relays will remain in the selected state until the Finish Test button is touched. The status for each relay will be updated to indicate the test being performed (e.g. Active or Inactive).

    Finish Test: To finish the test, touch the Finish Test button and the following occurs:

    • Reset Relay: All selected relays will be returned their original state which was previously saved at the beginning of the test. The state of the relays on the screen should be set to their previous state as well.
    • Reset Screen: All selected relays will be set to normal on the screen (e.g. highlight removed).

    Test Completion: When the test completes, the selected relays will remain selected. Touch the selected relays to deselect them or close the screen.

Relays and External Inputs Diagnostics - External Inputs

2007/11/06 04:24 PM	🔔	T 4: HIGH PRODUCT ALARM	❓	📦	🏠	↩

Relays and External Inputs Diagnostics – External Inputs

Relays	External Inputs	

#	Address	Status	Duration	Type	
E1	B1.S3.2	Inactive	0028 18:14:06	Standard	

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 Button (right of screen)

Setup

Touch this button to open the "Device Setup - External Inputs" screen.

Sensor

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 Button (right of screen)

Setup ⚒

Touch this button open the [Device Setup – Liquid Sensor](#) screen.

Sensor Diagnostics - Vapor

| 2007/11/06 04:26 PM | 🔔 | T 2: SETUP DATA WARNING | ❓ | 📦 | 🏠 | ↩ |

Diagnostics – Sensors – Vapor   Sensor 1:   ✖

| Liquid | Vapor | Groundwater | 2–Wire CL | 3–Wire CL |

Category	Sample Counter	Value 1	Value 2	Vapor Concentration	Status
Sensor 1: Other Sensors	0	0.000	0.000	0 Normal	

| All Vapor | Vapor 1 |

◀ ▶   ▲ ▼

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 Button (right of screen)

Setup

Touch this button open the Device Setup – Vapor 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 Button (right of screen)

Setup

Touch this button open the <u>Device Setup – Groundwater Sensor</u> screen

Sensor Diagnostics - 2-Wire CL

2007/11/06 04:26 PM	🔔	T 2: SETUP DATA WARNING	❓	📦	🏠	↩

Diagnostics – Sensors – 2-Wire CL #1				Sensor 1:	**More**

Liquid	Vapor	Groundwater	2-Wire CL	3-Wire CL		🛠

Type	Category	Sample Counter	Value	Status......
Sensor 1: Discrim. Interstitial	Other Sensors	0	0.000 Normal	

All Type A	Type A 1		◀ ▶	▲ ▼

The Sensor Diagnostics 2-Wire CL screen displays a report with information about each Type A 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 Button (right of screen)

Setup
Touch this button open the Device Setup – Type A Sensor (2-Wire CL) screen.

Sensor Diagnostics - 3-Wire CL

2007/11/06 04:27 PM	🔔	T 3: SETUP DATA WARNING	❓	📦	🏠	↵

Diagnostics – Sensors – 3–Wire CL #1   Sensor 1:   **More**

Liquid	Vapor	Groundwater	2–Wire CL	3–Wire CL		

Type	Category	Sample Counter	Value 1	Value 2	Status......
Sensor 1: Ultra/Z–1	Other Sensors	0	0.000	0.000	Normal

All Type B   Type B 1   ◀ ▶   ▲ ▼

The Sensor Diagnostics 3-Wire CL screen displays a report with information about each Type B 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 Button (right of screen)

Setup ⚒

Touch this button open the <u>Device Setup – Type B Sensor (3-Wire CL)</u> screen.

Mag Sensor

Mag Sensor Diagnostics - General

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)

Mag Sensor Diagnostics - General Screen Refresh Rate

The Mag Sensor Diagnostics - General data will be refreshed every 8 seconds.

Control Button (right of screen)

Setup

Touch this button open the Device Setup - Mag Sensor screen.

Mag Sensor Diagnostics - Comm

2007/11/06 11:03 AM	🔔	T 4: SETUP DATA WARNING	❓	📦	🏠	↩

Diagnostics – Comm   **MAG**

General	Comm	Constants	Channel

Samples Read	Samples Used	Parity Errors	Partial Read	Comm Errors	Restarts
MAG 1:					
49	48	0	0	0	0

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

Mag Sensor Diagnostics - Comm Screen Refresh Rate

The Mag Sensor Diagnostics - Comm data will be refreshed every 8 seconds.

Control Button (right of screen)

Setup

Touch this button open the <u>Device Setup - Mag Sensor</u> screen.

Mag Sensor Diagnostics - Constants

2007/11/06 11:04 AM	🔔	T 1: DELIVERY NEEDED	❓	📦	🏠	↩

Diagnostics – Constants								MAG	✕

General	Comm	**Constants**	Channel		

Serial Number	Model	Length	Gradient	Min Threshold	Max Threshold	Num Floats	Temp	Install Pos
MAG 1:								
0017945	112	24.00	395.420	1.7	22.0	2	Yes	Yes

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

2007/11/06 11:05 AM	🔔	T 4: SETUP DATA WARNING	❓	🎁	🏠	↩

Diagnostics – Channel											MAG	🛠

General	Comm	Constants	**Channel**								**View Data**

#	0	1	2	3	4	5	6	7	8	9

MAG 1:
'945
AM

)ata

00	B610	05CD	297D	0235	2BB2	297D	4619	0000	0008	C862
10	0001	4025	B0BC	4372	41CE	B0B9	00A1	80C4	0081	80C4
20	83A4	83B2	0000	0000	7366	41E7	251C	0258	01F4	02BC
30	0228	2B2F	0898	00AA	0FFE	0070	0960	0004	0924	3FCC
40	CCCD	0F45	4000	0000	0346	40A0	0000	016D	4080	0000
50	81B9									

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**.

Mag Sensor Diagnostics - Channel Screen Refresh Rate

The Mag Sensor Diagnostics - Channel data will be refreshed every 8 seconds.

Control Buttons (right of screen)

Setup ✕

Touch this button open the [Device Setup - Mag Sensor](#) screen.

Line Pressure Sensor

LPR Sensor Diagnostics - General

2007/11/06 04:28 PM	🔔	T 1: SUDDEN LOSS ALARM		❓	🎁	🏠	↩

LPR Sensor Diagnostics - Communications						LPSensr	More

General	Comm	Constants	Channel				

	Samples Read	Samples Used	Parity Errors	Partial Read	Comm Errors	Restarts
LPSensr 1:	0	0	0	0	0	0
LPSensr 2:	0	0	0	0	0	0
LPSensr 3:	0	0	0	0	0	0
LPSensr 4:	0	0	0	0	0	0
LPSensr 5:	0	0	0	0	0	0
LPSensr 6:	0	0	0	0	0	0
LPSensr 7:	0	0	0	0	0	0
LPSensr 8:	0	0	0	0	0	0

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

311

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)

More

Touching the 'More' button will shift the report over (right or left) to reveal additional columns outside of the data view area.

Setup

Touch this button open the <u>Device Setup - Line Pressure Sensor</u> screen.

PLLD Diagnostic

Touch this button to open the PLLD <u>Diagnostics – PLLD Status</u> screen.

LPR Sensor Diagnostics - Communications

	T 1: SUDDEN LOSS ALARM	②	⑤	⑥	↩

LPR Sensor Diagnostics - Communications   **LPSensr**

More

General	Comm	Constants	Channel		

Samples Read	Samples Used	Parity Errors	Partial Read	Comm Errors	Restarts
LPSensr 1:					
0	0	0	0	0	0
LPSensr 2:					
0	0	0	0	0	0
LPSensr 3:					
0	0	0	0	0	0
LPSensr 4:					
0	0	0	0	0	0
LPSensr 5:					
0	0	0	0	0	0
LPSensr 6:					
0	0	0	0	0	0
LPSensr 7:					
0	0	0	0	0	0
LPSensr 8:					
0	0	0	0	0	0

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)

More

Touching the 'More' button will shift the report over (right or left) to reveal additional columns outside of the data view area.

Setup

Touch this button open the Device Setup - Line Pressure Sensor screen.

PLLD Diagnostic

Touch this button to open the PLLD Diagnostics – PLLD Status screen.

LPR Sensor Diagnostics - Constants

2007/11/06 04:29 PM	🔔	T 1: DELIVERY NEEDED	❓	🎁	🏠	↩

LPR Sensor Diagnostics - Constants				LPSensr	More

General	Comm	Constants	Channel		

Serial Number	Model	Firmware Version	Slope	Offset
LPSensr 1:				
1179467423	1	1	500.0	10000.0
LPSensr 2:				
1179532959	1	1	500.0	10000.0
LPSensr 3:				
1179598495	1	1	500.0	10000.0
LPSensr 4:				
1179664031	1	1	500.0	10000.0
LPSensr 5:				
557909571	1	1	500.0	10000.0
LPSensr 6:				
557975107	1	1	500.0	10000.0
LPSensr 7:				
558040643	1	1	500.0	10000.0
LPSensr 8:				
558106179	1	1	500.0	10000.0

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

315

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)

More

Touching the 'More' button will shift the report over (right or left) to reveal additional columns outside of the data view area.

Setup

Touch this button open the [Device Setup - Line Pressure Sensor](#) screen.

PLLD Diagnostic

Touch this button to open the PLLD [Diagnostics – PLLD Status](#) screen.

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)

More

Touching the 'More' button will shift the report over (right or left) to reveal additional columns outside of the data view area.

Setup

Touch this button open the Device Setup - Line Pressure Sensor screen.

PLLD Diagnostic

Touch this button to open the PLLD Diagnostics – PLLD Status screen.

AccuChart II

AccuChart II Diagnostics - Delivery Instructions

This screen contains instructions to help you achieve calibration data over the range of the tank. Only tanks that are actively running AccuChart II and have actionable messages will appear in this report. Messages will be generated by AccuChart II and added to this list. AccuChart II will also decide when existing messages should be changed or removed.

Report Column Descriptions

Tank

Selected tank label.

Date

Date message posted.

Delivery Instructions

Possible messages include:
1. No Message.
2. Schedule a delivery to fill your tank to xx level.
3. Postpone delivery until tank level recedes to yy level.

AccuChart II Diagnostics - Time Ordered Comparison

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Accuchart II Diagnostics – Time Ordered Sales Comparison Tank 1 : Regular

Time Ordered Comparison	Histogram Comparison	Error Plot Comparison	◀ ▶	Comp.

Open Date	Sales Volume	initial user chart Variance	Last AccuChart Variance
10/14/2009	1157.5	−41.3	−0.4
10/13/2009	483.3	−15.4	0.4
10/12/2009	1155.3	−29.5	−0.6
10/11/2009	2223.0	33.4	0.1
10/10/2009	369.0	37.8	−0.5
10/09/2009	1919.4	12.4	−0.8
10/08/2009	2151.1	−62.9	0.2
10/07/2009	1928.7	−64.2	−0.3
10/06/2009	1481.7	−24.0	−1.0
10/05/2009	1809.8	78.8	−0.2
10/04/2009	1724.1	0.6	−0.4
10/03/2009	1645.4	−46.7	0.1
10/02/2009	217.7	−8.6	−1.0
10/01/2009	695.9	−24.6	0.1
09/30/2009	58.7	−1.1	0.9
09/29/2009	2517.8	−65.9	−0.4
09/28/2009	1782.3	40.0	0.6
09/27/2009	283.9	26.7	0.3

Show Var% • Show Deliv • Select Range

Tank 1 | Tank 2 | Tank 3 | Tank 4 | Tank 5 | Tank 6 | Tank 7 | ◀ ▶ | ▲ ▼

This report lists all tank calibrating records applied to two selectable tank charts, over a selectable range, with variances displayed for each chart in adjoining columns. You can display the Variances as volumes or as percentage of sales volumes. A separate button gives you a report of Delivery variances made using both charts within the selected calibration period.

Report Column Descriptions

Open Date & Time

Start time of tank calibration record.

Sales Volume

Total sales reported by the POS terminal during the tank calibration record.

'Chart Name 1' Variance

Variance for the record as determined using 'Chart Name 1' calibration data.

Chart Name 2 Variance

Variance for the record as determined using 'Chart Name 2' calibration data.

Control Buttons (Right side of screen)

Comp.

Touching the 'Compare' button will show the 'Select Charts to Compare' dialog. You select the tank charts to compare from the drop down list beside each field.

Touch the ✓ button to accept the selections or ✗ button to abort and close the **Charts to Compare** dialog box.

Show Var %

Touching the 'Show Var%' button will change the variance column heads from 'Variance' to 'Variance %' and the data from volume entries to percentage of sales volume entries.

Show Var.

Touching the 'Show Var' button will change the variance column heads from 'Variance%' to 'Variance ' and the data from percentage of sales volume entries to volume entries.

Show Deliv

Touching the 'Show Deliv(ery)' button will only be visible if Ticketed Deliveries are enabled, otherwise it will be hidden. Touching the 'Show Deliv' button; changes its label to 'Show Sales', puts 'Time Ordered Delivery Comparison' in the title bar and displays the following columns:
- End of Delivery Date & Time
- Chart label / Delivery Variance
- Chart label / Delivery Variance

Delivery variance is calculated as follows:
> Delivery Variance = Ticketed Delivery volume - measured delivery volume corrected for sales during the delivery.

The delivery variance report lets you compare, side by side, the variances in deliveries as determined from the two charts you select.

Show Sales

Touching the 'Show Sales' button; changes its label to 'Show Deliv', puts 'Time Ordered Sales Comparison' in the title bar and displays the following columns:
- Open Delivery Date & Time
- Sales Volume
- Chart label / Variance
- Chart label / Variance

More

The More button will only be shown if Ticketed Deliveries are enabled. Otherwise it will be hidden. Touching the 'More' button will show the extra columns when deliveries are shown.

Select Range

Pressing the 'Select Range' button will bring up the standard Select Range dialog. This range will be used to limit the data shown in the report. By default, it will be the last 30 days of reconciliation records.

AccuChart II Diagnostics - Histogram Comparison
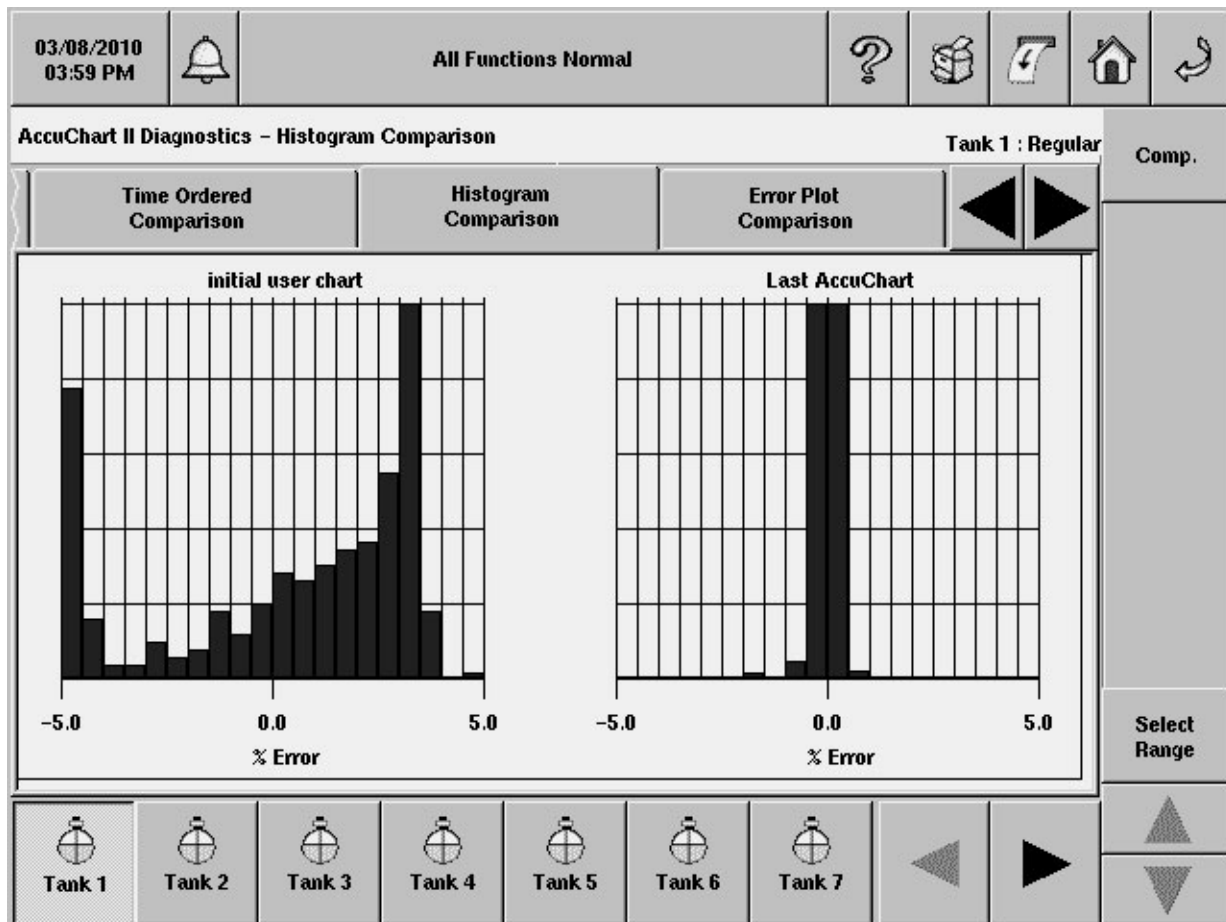
This screen lets you view a histogram comparison of two charts using the same data from one tank. The plots depict the accuracy of each of the charts over the tank's operating range - empty to full. The ideal goal of the calibration is to have one bar on the zero line across the full range of the tank (no error).

Control Buttons (Right side of screen)

Comp.

Touching the 'Compare' button will show the 'Select Charts to Compare' dialog. You select the tank charts to compare from the drop down list beside each field.

Touch the ✓ button to accept the selections or ✗ button to abort and close the **Charts to Compare** dialog box.

Select Range

Pressing the 'Select Range' button will bring up the standard Select Range dialog. This range will be used to limit the data shown in the report. By default, it will be the last 30 days of reconciliation records.

AccuChart II Diagnostics - Error Plot Comparison
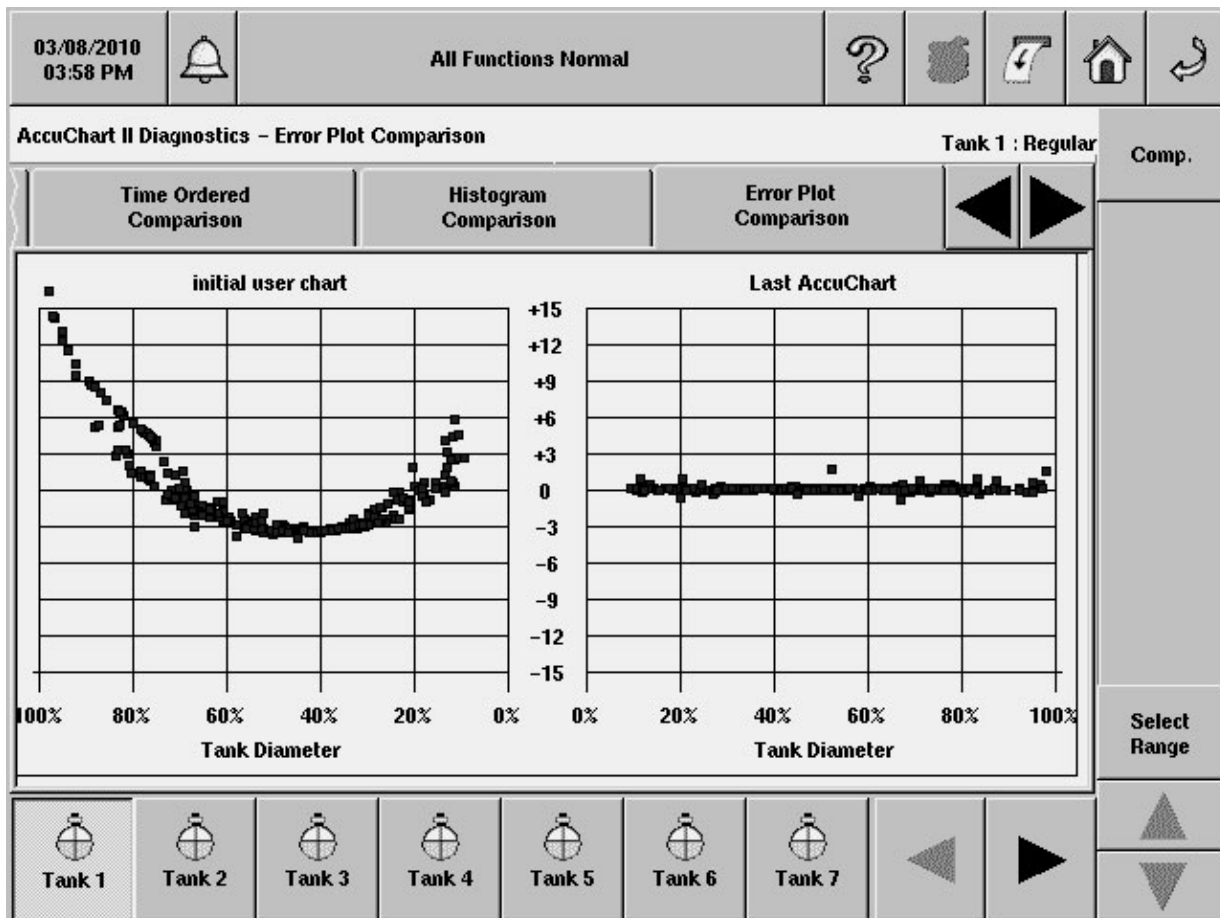
This screen lets you view an error plot comparison of two charts using the same data from one tank. The plots depict the accuracy of each of the charts over the tank's operating range - empty to full. The ideal goal of the calibration is to have all points on the zero line across the full range of the tank (no error).

Control Buttons (Right side of screen)

Comp.

Touching the 'Compare' button will show the Select Charts to Compare dialog. You select the tank charts to compare from the drop down list beside each field.

Touch the ✓ button to accept the selections or ✗ button to abort and close the **Charts to Compare** dialog box.

Select Range

Pressing the 'Select Range' button will bring up the standard Select Range dialog. This range will be used to limit the data shown in the report. By default, it will be the last 30 days of reconciliation records.

AccuChart II Diagnostics - Calibration Feedback
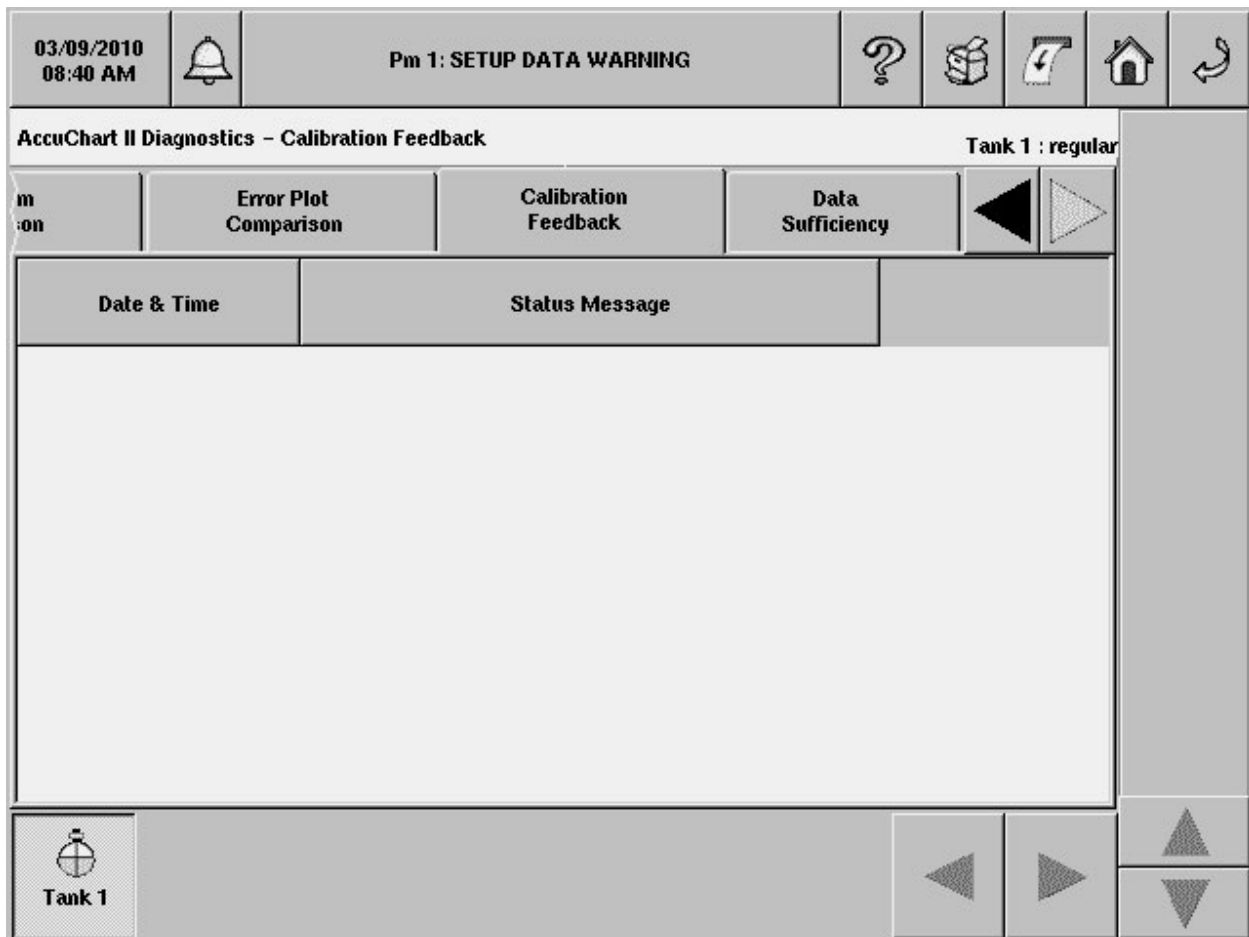
This screen contains alarms and warnings that are only issued for Automatic AccuChart II, not Manual Chart, or Remote Chart. Restarting calibration or the completion of calibration will clear these alarms, except where noted.

To minimize the risk of false/premature alarms, no warnings will be posted until Automatic AccuChart II has been running for at least 48 hours.

In addition to appearing in the AccuChart II Diagnostics - Calibration Feedback Warning Report, the warnings described below will also be displayed in the Alarm Status button and the Alarm Reports.

Report Column Descriptions

Date & Time

Date and time alarm was posted.

Status Message

Possible messages include:

- **Insufficient data collection rate** - Warning will be posted when the average number of records generated per day is less than N, and the throughput is below a threshold T.

- **Noisy data** - Warning will be posted after a calibration is generated, and the RMS Error of the data exceeds a threshold T.

- **Data too regionally concentrated** - Warning will be posted after N records are generated over time T, and the data sufficiency is less than the current threshold.

- **Initial tank parameters suspicious** - Warning will be posted after a calibration is generated, and the search algorithm hits a boundary.

- **Station too busy** - Warning will be posted when the average number of records generated per day is less than N, and the throughput is above a threshold T.

- **No Successful Calibration Has Happened** - Warning will be posted after a calibration should have been generated, but the algorithm was unable to generate a calibration. When you try to clear the warning, you will be prompted to extend, terminate, or restart the calibration period. Selecting any of these options will clear this warning.

- **Calibration done, quality validation required** - Warning will be posted after a calibration is generated, but the quality of the calibration is low. When you try to clear the warning, you will be prompted to extend, terminate, or restart the calibration period. Selecting any of these options will clear this warning.

AccuChart II Diagnostics - Data Sufficiency
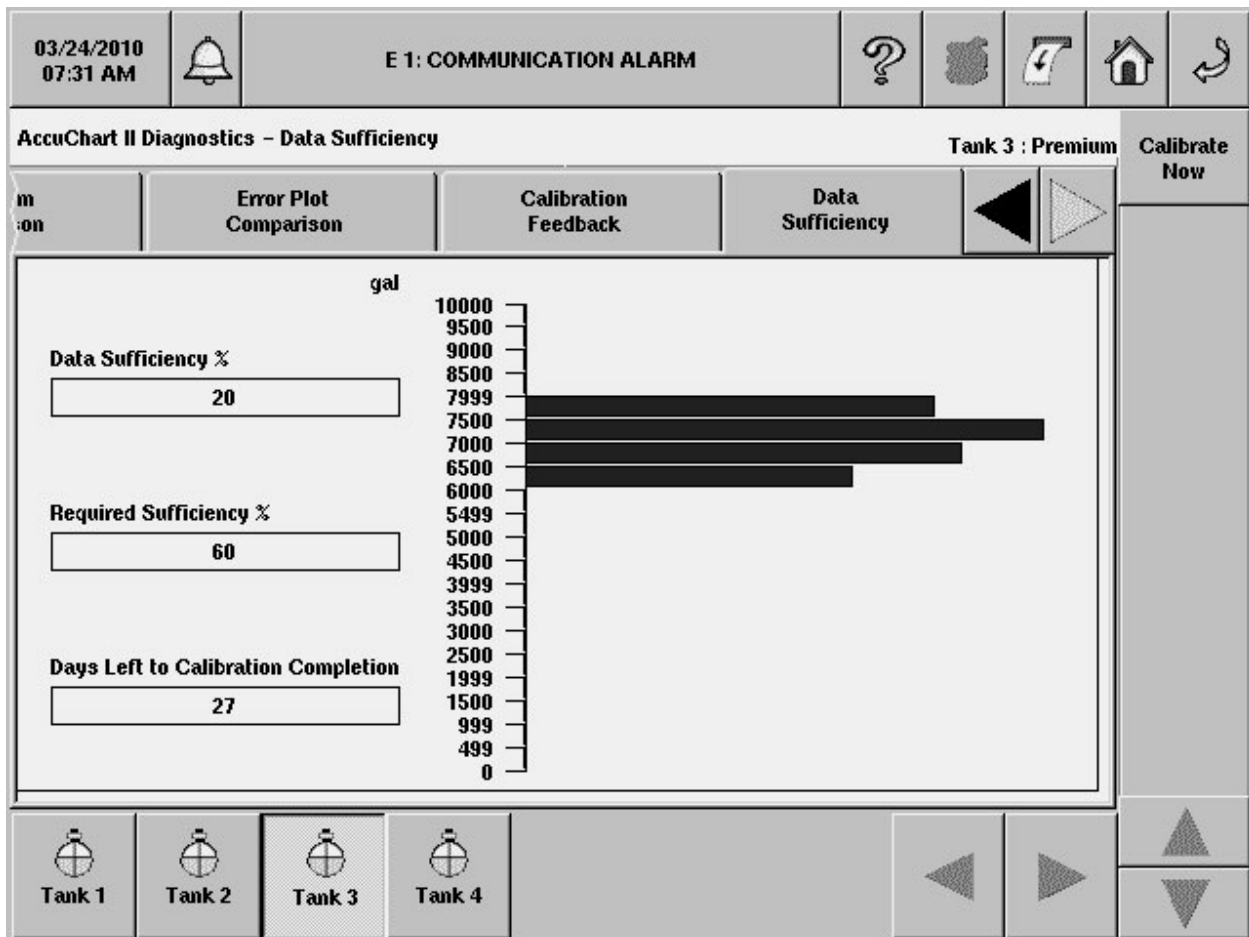
This screen lets you view a histogram of the data collected for the tank's calibration. The data in the chart will be for the current calibration if one is in progress, or for the last completed. The bars depict the concentration of data collected at different levels of the tank. Ideally you would want collected data (bars) across all levels of the tank.

When the chart calibration is applied to the tank depends on your 'Update Schedule' field's entry in the Tank Setup - AccuChart II screen.

Only tanks that are actively running AccuChart II will have tank buttons on the bottom of the screen.

Data Sufficiency %

This read-only field contains the current percentage of collected calibration data. This percentage is updated as the data sufficiency approaches the Required Sufficiency % target. This field is updated at midnight of each day, or after you initiate a Calibrate Now procedure.

Required Sufficiency %

This read-only field contains the amount of data required to perform a calibration. Once the Data Sufficiency % achieves the Required Sufficiency % target and the calibration has been performed, the Required Sufficiency % is raised to a higher level. For example, from 60% to 70%. The tank calibration

will restart and continue until the Data Sufficiency % achieves the upgraded Required Sufficiency % value. This field is updated at midnight of each day, or after you initiate a Calibrate Now procedure.

Days Left to Calibration Completion

This read-only field contains the days left in the chart calibration process. The number of days to calibrate was selected in the Calibration Period field in the Tank Setup - AccuChart II screen.

Sufficiency Improvement Action

The 'Sufficiency Improvement Action' field will only appear after one or more of the following warnings have been posted:

- Data Too Regionally Concentrated - Schedule more deliveries if insufficient data in top half of tank. Schedule fewer deliveries if insufficient data in bottom half of tank.

- Station Too Busy - Temporarily halt dispensing to introduce more idle periods.

The list of possible action messages in the 'Sufficiency Improvement Action' field includes:

- Stop Dispensing

- Start Dispensing

- Schedule Delivery Now

- Postpone Delivery

Control Buttons (Right side of screen)

Calibrate Now

Touching the 'Calibrate Now' button will let you force a calibration regardless of the current data sufficiency percentage. The name of the calibration will be 'Last AccuChart'. Pressing 'Calibrate Now' will bring up the 'Confirm Calibrating Now' dialog.

If a calibration is running on the selected tank, the 'Calibrate Now' button will display 'Calibrating'. If AccuChart II is not collecting data on the selected tank, the 'Calibrate Now' button will be disabled. If a calibration is running on an unselected tank, the 'Calibrate Now' button will be disabled.

Results of the Calibrate Now procedure will update the 'Data Sufficiency %' and 'Required Sufficiency %' fields.

Modules

Module Diagnostics - Hardware Configuration

This screen lists console's module locations and hardware/software details.

Report Column Descriptions

Address

This column contains the physical address of the module, B1.S4 = Master 450/slot 4 [module bay - behind right door], Slot 1 = Comm slot 1 [comm bay - behind left door]).

Module Type

This column contains the module type, e.g., USM-8 (Universal Sensor Module with 8 Inputs).

Board Part Number

This column contains the module's part number.

Serial Number

This column contains the module's serial number.

HW Build Date

This column contains the date the console was factory programmed.

Firmware Revision

This column contains the revision level of the console's firmware. This column will be blank for all Comm Cards.

SW Build Date

This column contains the date the console's software was compiled. This column will be blank for all Comm Cards except CDIMs.

Module Diagnostics - Device Directory

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Module Diagnostics – Device Directory

| Hardware Configuration | Device Directory | Device Assignments | Comm | |

Address	Type	Serial Number	Date Code	State
B1.S1	UNIVERSAL SENS MODULE – 16	0000656641		In Service
B1.S1.1	MAG PROBE	0000176011	0/00	In Service
B1.S1.2	MAG PROBE	0000176012	0/00	In Service
B1.S1.3	MAG PROBE	0000176013	0/00	In Service
B1.S1.4	MAG PROBE	0000176014	0/00	In Service
B1.S1.5	MAG PROBE	0000176015	0/00	In Service
B1.S1.6	MAG PROBE	0000176016	0/00	In Service
B1.S1.7	LINE P SENSOR	0547817027	0/00	In Service
B1.S1.8	LINE P SENSOR	0547882563	0/00	In Service
B1.S1.9	LINE P SENSOR	0547948099	0/00	In Service
B1.S1.10	LINE P SENSOR	1179270815	0/00	In Service
B1.S1.11	LINE P SENSOR	1179336351	0/00	In Service
B1.S1.12	LINE P SENSOR	1179401887	0/00	In Service
B1.S1.13	LEGACY RESISTIVE	0000165536	0/00	In Service
B1.S1.14	LEGACY RESISTIVE	0000165536	0/00	In Service
B1.S1.15	LEGACY RESISTIVE	0000165536	0/00	In Service
B1.S1.16	LEGACY RESISTIVE	0000165536	0/00	In Service
B1.S2	UNIVERSAL SENS MODULE – 16	0000656642		In Service
B1.S2.1	LEGACY CURRENT	0000165536	0/00	In Service
B1.S2.2	LEGACY CURRENT	0000165536	0/00	In Service
B1.S2.3	LEGACY CURRENT	0000165536	0/00	In Service
B1.S2.4	LEGACY CURRENT	0000165536	0/00	In Service
B1.S2.5	LEGACY RESISTIVE	0000165536	0/00	In Service

This screen lists the console's installed modules and their connected devices.

Report Column Descriptions

Address

This column contains the physical address of the device, e.g., B1.S1 = Universal Sensor Module, B1.S1.4 = device connected to terminal 4 of the USM in slot 1).

Type

This column contains the device type, e.g., Universal Sensor Module, Mag Probe, etc.

Serial Number

This column contains the device's serial number.

Date Code

This column contains the factory build date (WW/YY) - product revision level.

State

This column contains the current status of the device. Possible messages: In Service or Out of Service

Module Diagnostics - Device Assignments

M/Er	Bus Address	Type	Primary Assignment	Secondary Assignment
	12/07/2009 12:24 PM		Q 5: SETUP DATA WARNING	

Module Diagnostics – Device Assignments

	Hardware Configuration		Device Directory	Device Assignments	Comm	

M/Er	Bus Address	Type	Primary Assignment	Secondary Assignment
M	B1.S1	USC – 16		
	B1.S1.1	Probe	Pb 1:	T 1: PRODUCT 1
	B1.S1.2	Probe	Pb 2:	T 2: PRODUCT 2
	B1.S1.3	Probe	Pb 3:	T 3: PRODUCT 3
	B1.S1.4	Probe	Pb 4:	T 4: PRODUCT 4
	B1.S1.5	Probe	Pb 5:	T 5: PRODUCT 5
	B1.S1.6	Probe	Pb 6:	T 6: PRODUCT 6
	B1.S1.7	LPSensr	PI 1:	Ln 1: PRESSURE LLD #1
	B1.S1.8	LPSensr	PI 2:	Ln 2: PRESSURE LLD #2
	B1.S1.9	LPSensr	PI 3:	Ln 3: PRESSURE LLD #3
	B1.S1.10	LPSensr	PI 4:	Ln 4: PRESSURE LLD #4
	B1.S1.11	LPSensr	PI 5:	Ln 5: PRESSURE LLD #5
	B1.S1.12	LPSensr	PI 6:	Ln 6: PRESSURE LLD #6
	B1.S1.13	ResSens	L 1: Liquid Sensor 1	
	B1.S1.14	ResSens	L 2: Liquid Sensor 2	
	B1.S1.15	ResSens	L 3: Liquid Sensor 3	
	B1.S1.16	ResSens	L 4: Liquid Sensor 4	
M	B1.S2	USC – 16		
	B1.S2.1	CurSens	C 1: Type A 1	
	B1.S2.2	CurSens	C 2: Type A 2	
	B1.S2.3	CurSens	C 3: Type A 3	
	B1.S2.4	CurSens	C 4: Type A 4	
	B1.S2.5	ResSens	G 1: GW Sensor 1	

This screen contains modules, their connected devices and the device's primary and secondary assignments.

Report Column Descriptions

M/Err

This column would be blank if everything is OK. If the device is a module, an 'M' will show up first. If there is an error it will be indicated by '!' followed by a reason code. If possible, other fields will be flagged with the '!' identifier to help point to the source of the problem. Possible errors are as follows:

- !1 missing primary assignment (if secondary missing two only !1 is displayed)
- !2 missing secondary assignment
- !3 Incorrect device assignment - device type changed

Bus Address

This column contains the bus address of the device, e.g., B1.S1.4 (Master 450, Slot 1, terminal 4).

Type

This column contains the device label, e.g., Probe

NOTES:

1. If a module slot inside the console is not populated (or recognized by the system) type will be 'None'.
2. If a device position on a module is not populated (or recognized by the system) type will be 'None'.

Primary Assignment

This column contains the device's primary assignment, e.g., P4. An error mark '!' is shown in case of a problem.

Secondary Assignment

This column contains the device's secondary assignment, e.g., T4:Product 4. An error mark '!' is shown in case of a problem.

Module Diagnostics - Comm

This screen contains a report of data transmission and reception results for installed communication modules.

Report Column Descriptions

Comm Number

This column contains the comm card number, e.g., Co 1.

Slot

This column contains the comm bay slot and module port of the installed comm card, e.g., S1-P2 (Slot 1, Port 2).

Comm Type

This column contains the comm card type, e.g., RS232 card.

Bytes Received

This column contains the number of bytes received since the counter was reset.

Bytes Transmitted

This column contains the number of bytes transmitted since the counter was reset.

Parity Errors

This column contains the number of parity errors since the counter was reset.

Overrun Errors

This column contains the number of overrun errors since the counter was reset.

Framing Errors

This column contains the number of framing errors since the counter was reset.

Break Interrupts

This column contains the number of break interrupts since the counter was reset.

Counter Reset Date and Time

This column contains the date and time you last reset this card's counters.

Control Buttons (right of screen)

More

Touch this button to scroll the data area to the right to view additional columnar data.

Show Details

Touch a comm card's entry (row) in the screen and then touch this button to open a report showing the comm number and detailed diagnostic data.

Reset Counters

Touch a comm card's entry (row) in the screen and then touch this button to reset the counters for this card's comm port.

Module Diagnostics - Firmware Upgrade

03/03/2010 02:52 PM	🔔	T 1: SETUP DATA WARNING		❓	🖐	📂	🏠	↩

Module Diagnostics – Firmware Upgrade

Install

	Address	Module Type	Serial Number	Current Firmware Revision	Available Firmware Revision
☐	B1.S1	IOM – 14	0000000123	001–B	001–B
☐	B1.S2	USM – 16	0008220001	001–B	001–B

Device Directory | Device Assignments | Comm | Firmware Upgrade | ◀ ▷

When new software has been installed in the console, newer module firmware may also be included for your console's USM, IOM, MDIM and/or LVDIM modules. This screen lets you check for, and install, newer firmware for each of these modules (see procedure below).

Report Column Descriptions

Address

This column contains the physical address of the device, e.g., B1.S1.

Module Type

This column contains the device type, e.g., USM-16 (Universal Sensor Module with 16 inputs).

Serial Number

This column contains the device's serial number.

Current Firmware Revision

This column contains the current firmware of the device, e.g. 001-A.

Available Firmware Revision

This column contains the available revision of device's firmware, e.g. 001-B. If the current firmware revision is 001-A, and the available firmware revision is 001-B, you can install the latest firmware (B) to this device.

Control Buttons (Right side of screen)

Install

This button is grayed out until you select a module for firmware upgrading by touching the check box beside that module.

Installing a Firmware Upgrade

1. Touch the check box beside any module that qualifies for upgrade firmware (see Available Firmware Revision paragraph above).

2. The Confirm Download dialog box appears. Touch the OK button. Note: Once the download process is initiated, you cannot cancel the download process nor to revert back to previous revision.

    The GUI will display the state of the firmware download status in the status bar or in a separate progress bar dialog box. Following download states will be notified to the user:

    - Firmware Download Initiated for 'device'
    - Firmware Download In-Progress for 'device'
    - Firmware Download Complete for 'device'
    - Firmware Download Process completed
    - Selected Modules: 'number of modules'; Success: 'number of modules'

Software Maintenance

Connecting USB Thumb Drive for Software Maintenance Procedures

Follow the steps below to connect a valid V-R Code/Features USB thumb drive or a V-R Recovery USB thumb drive to the TLS-450 console prior to performing Software Maintenance procedures.

1. Get the USB Adapter and upgrade i-button from the upgrade kit. Remove the plastic end cap from the USB Adapter and Insert the i-button in the adapter as shown in the diagram below:
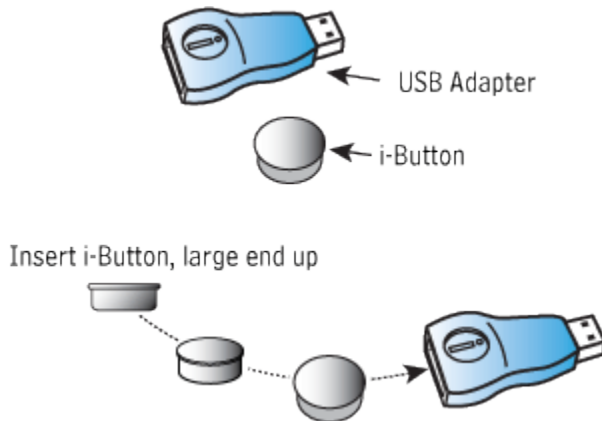
2. Replace the plastic retaining cap on the adapter after inserting the i-Button.

3. Plug the USB Adapter into the USB port of the console's Ethernet/USB card and follow the required Software Maintenance procedures. When you have completed the Software Maintenance procedure(s) remove the thumbdrive.

   If the console does not have an Ethernet/USB card, continue to step 4.

4. Turn off power to the console.
5. Using a T-15 Torx driver, remove the two #8 taptite screws the left door of the console (see below):

#8 Taptite screw

#8 Taptite screw

sw feat act1.eps
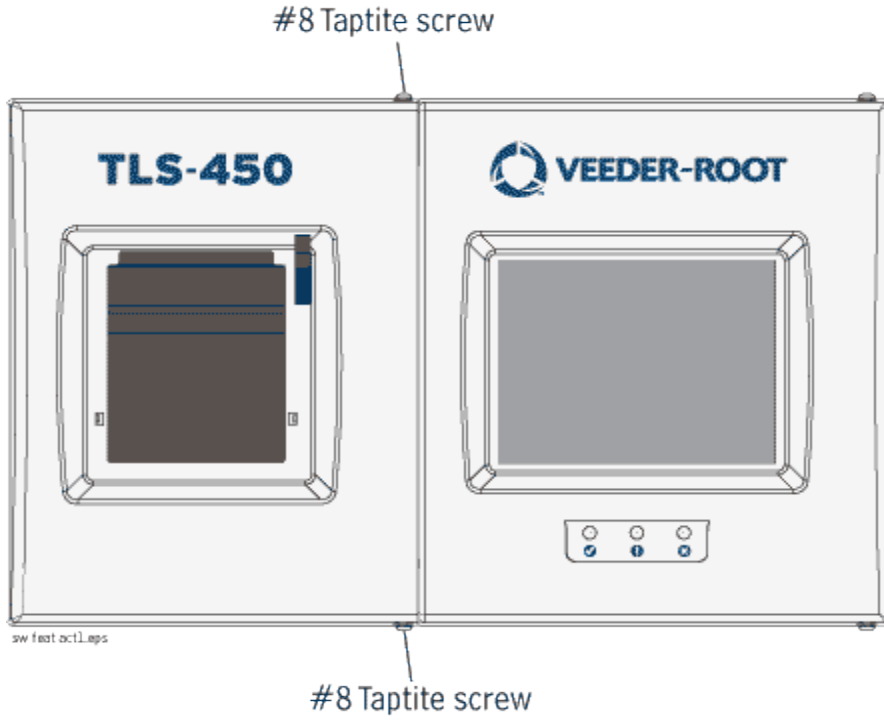
6. Disconnect the Printer's USB cable from its connector on the CPU board and insert the USB Adapter into the CPU connector (see below):

Top of CPU board

Printer USB Connection

Comm module

sw feat act2.eps
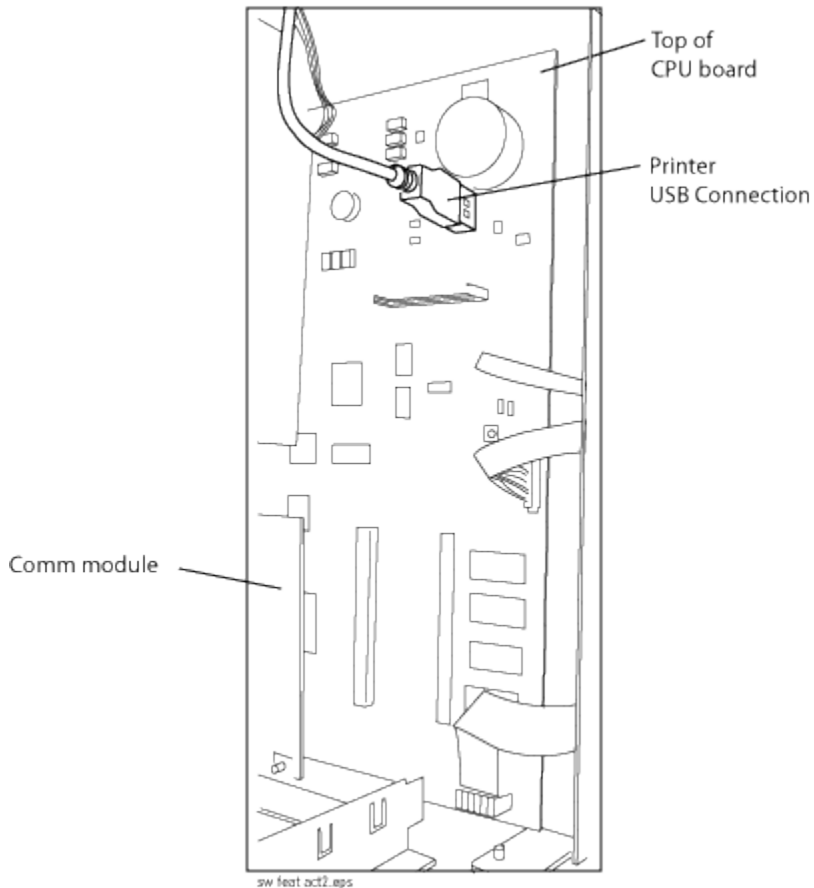
7. Plug the USB Adapter into the CPU board's printer USB port.

8. Close the door.

9. Turn on power to the console and follow the required Software Maintenance procedures. When you have completed the Software Maintenance procedure(s) reverse the steps 4 through 7 above to remove the thumbdrive and reattach the printer cable to its CPU board connector.

10. Close the door and replace the two #8 taptite screws.

Software Maintenance - Backup Restore

03/09/2010 08:37 AM	🔔	T 1: DELIVERY NEEDED	℗			🏠	↩

Software Maintenance – Backup Restore

Backup Restore	Download	Install	

IDLE

Backup	Restore	Prepare USB Recovery Drive	Revert to Previous Software Version
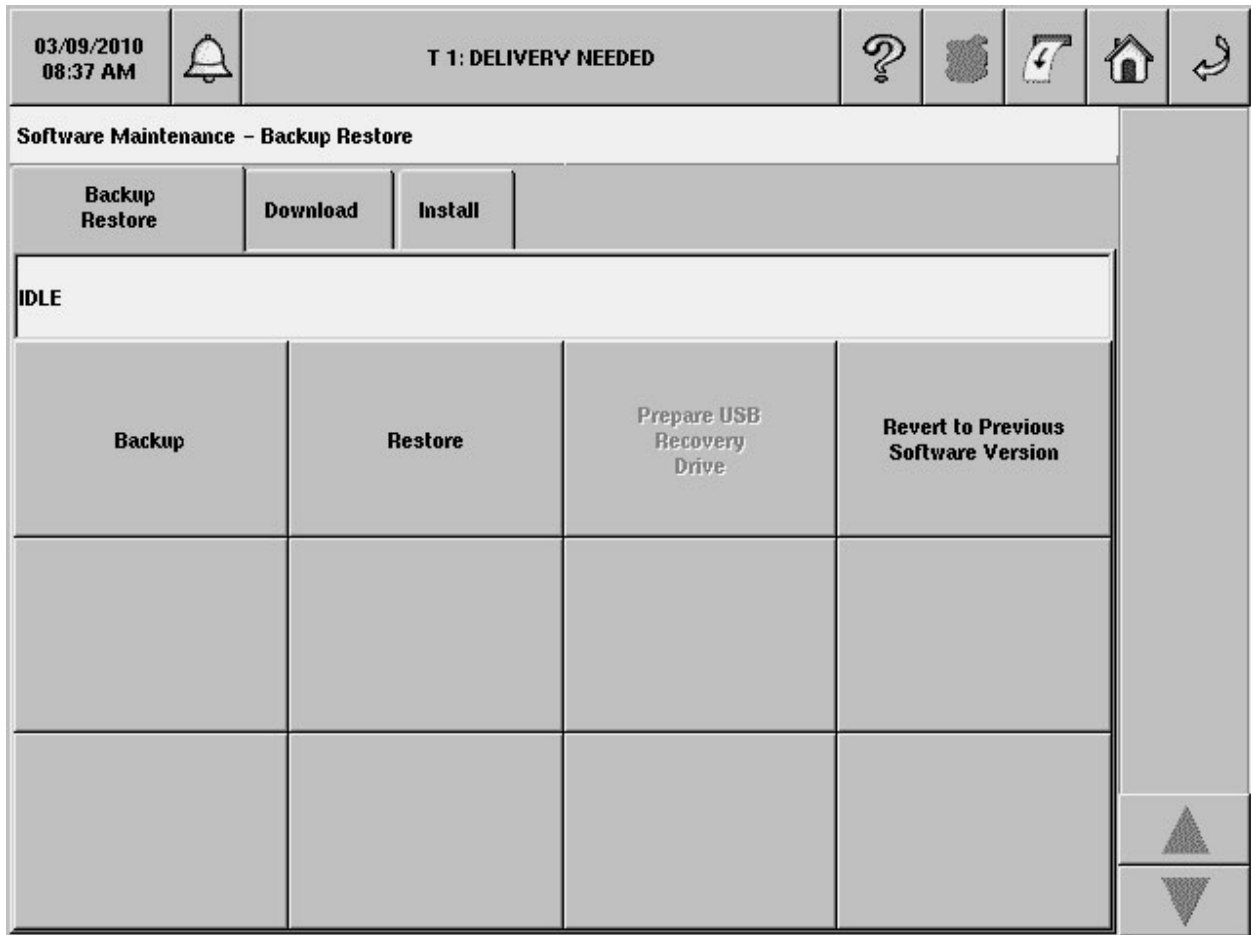
The Backup / Restore screen is used to control console system software/feature/data file backup, restore or revert operations. A valid V-R USB Recovery Thumb Drive is required for backup and recover operations. For ultimate protection against possible loss of data and to protect against system crashes, 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.

Backup/Restore Screen Fields and Buttons

Status Bar

Displays the current operation in progress. Possible messages include:
- Idle
- Discovering Backup Device
- Backup Operation has started
- Restore Operation 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. The console will be restarted before the Restore has completed.

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 console 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 - Download
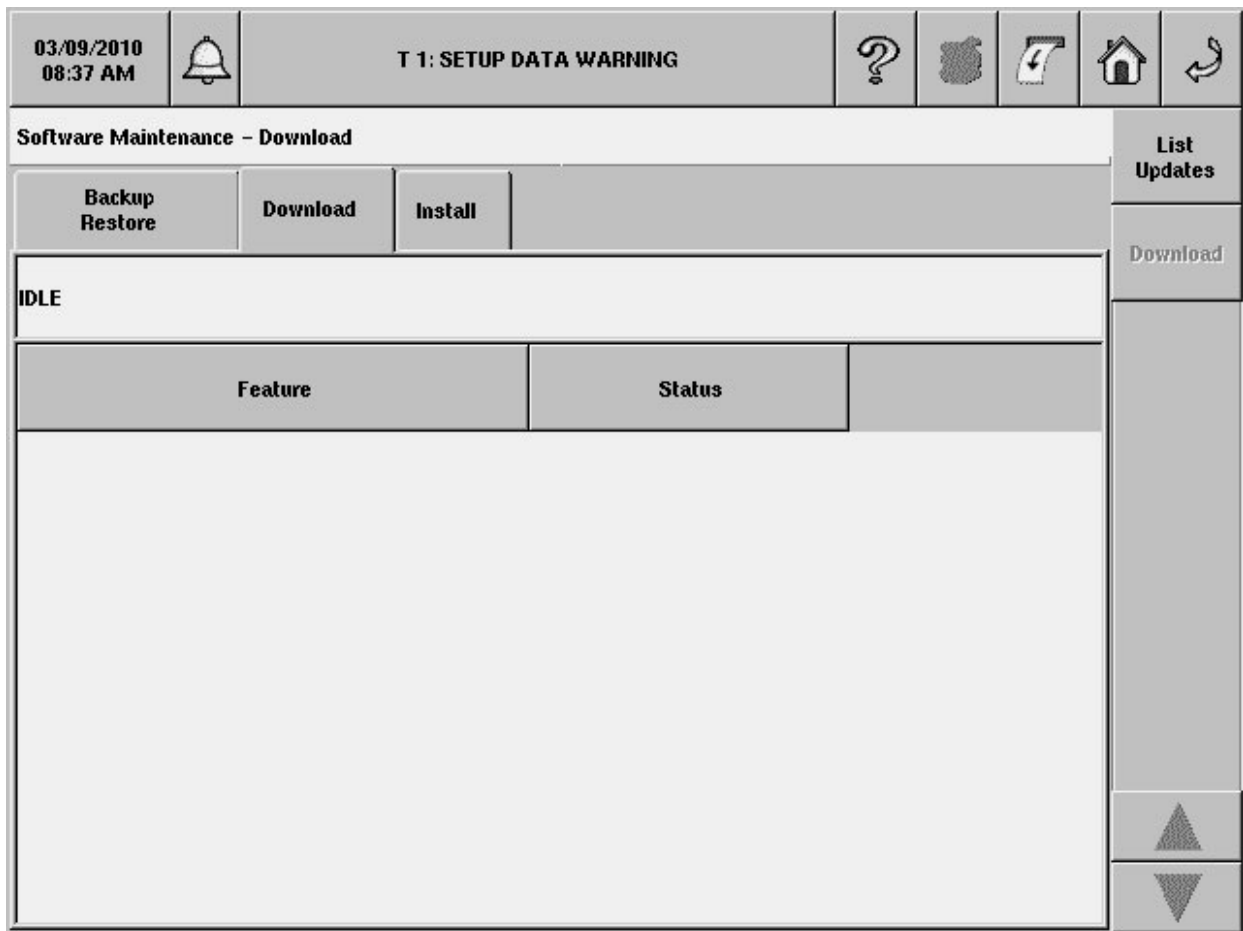
The Download tab screen is used to control USB downloads from either a valid V-R Code/Features USB thumb drive or a V-R Recovery USB thumb drive that is plugged into a USB port in the console.

Download Procedure

When the Download tab is selected, the USB will automatically be queried for updates that are available. 'Reading Update List' is displayed in the status bar while the list is being acquired. When the list is aquired, the status bar will display 'Waiting selection'. Updates and statuses will be displayed in the Feature/Status columns. Multiple updates may be selected.

The 'List Updates' button will requery for available updates and provide a list in the Feature column. When the list is acquired, a check will be made to see which updates have already been installed. A 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 Feature 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 'Waiting Selection'.

NOTE: keep V-R Code/Feature and Recovery USB thumb drives in a secure location.

Download Screen Fields and Buttons

Status Bar

Displays the current operation in progress. Possible messages include:
- Reading Update List
- Waiting Selection
- Downloading

Feature

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)

List Updates

Touch to query 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 - Install
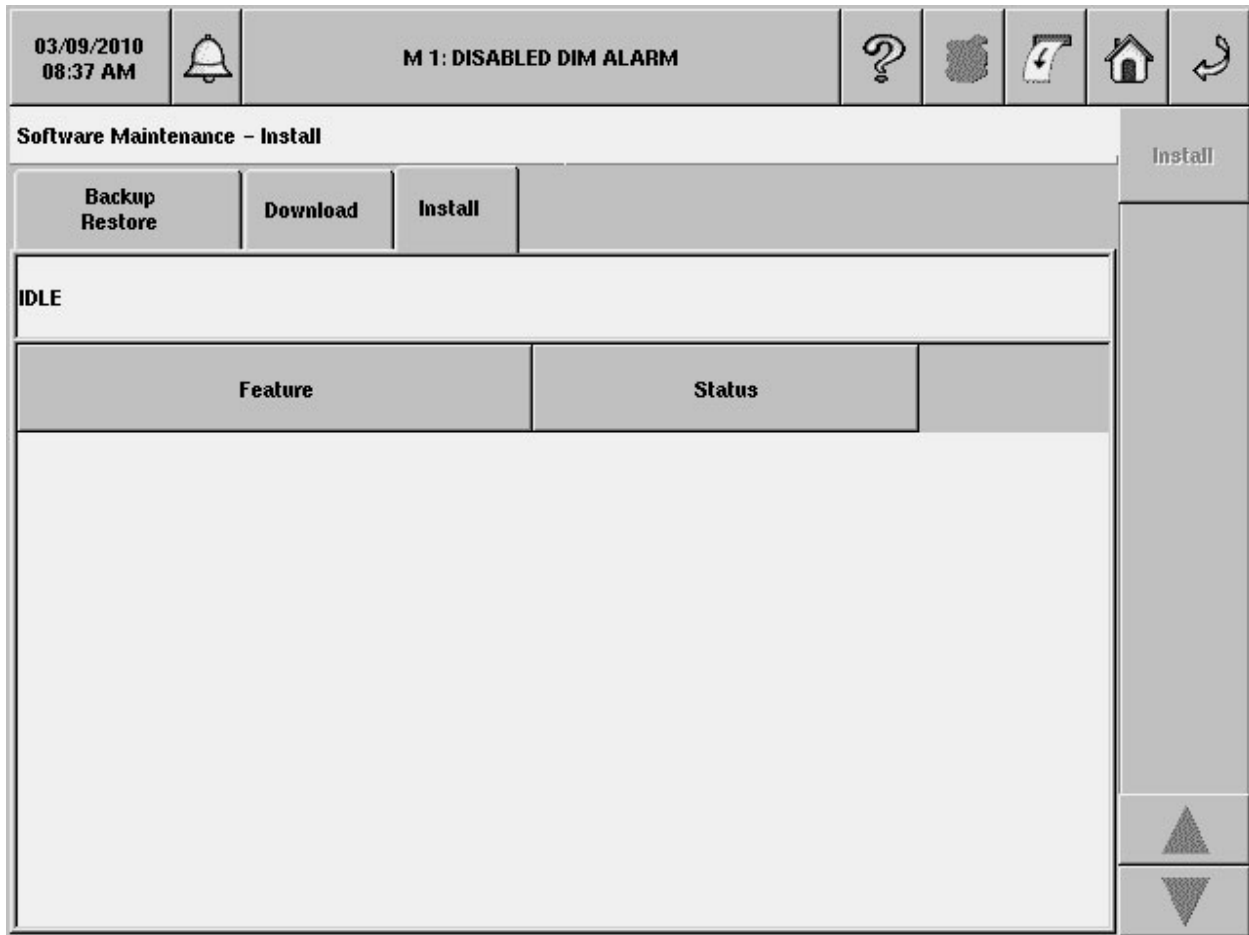
The Install tab screen is use to control the installation of downloaded software. During the installation process, several dialog boxes will be displayed to inform you of key events.

During Installation there must be no dispensing. However, the installation process only takes a few minutes. Following installation, the console converts the setup databases. If new features are installed and activated, setup(s) relevant to the new feature(s) will be required.

Installation Procedure

1. Touch the features on the list you want to install and then touch the Install button on the right side of the screen.
2. Touch the OK button on the System Restart dialog box, or touch Cancel to abort the installation or to reselect the feature(s) you want to install. The console will restart with the newly installed features.
3. If you used the USB port of the Ethernet/USB module to install the new features, remove the USB Adapter and put it in a safe place. Perform setup for the newly installed features.
4. If you used the CPU board printer's USB port to install the new features, turn off power to the console. Open the left door of the console and remove the USB Adapter from the printer port and reconnect the Printer cable. Close the left door and replace the two #8 taptite screws. Turn on power to the console and perform setup for the newly installed features.

Install Screen Fields

Status Bar

Displays the current operation in progress. Possible messages include:
- Idle
- Scanning Devices
- Reading Update List
- Waiting Selection
- Downloading

Feature

This column contains a list of features which are available to be installed. Multiple features may be installed 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 Install
- Installation in Progress

Control Button (Right Side of Screen)

Install

Touch to install a selected (checked) feature. This button is inactive until at least one entry has been selected.

About

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.
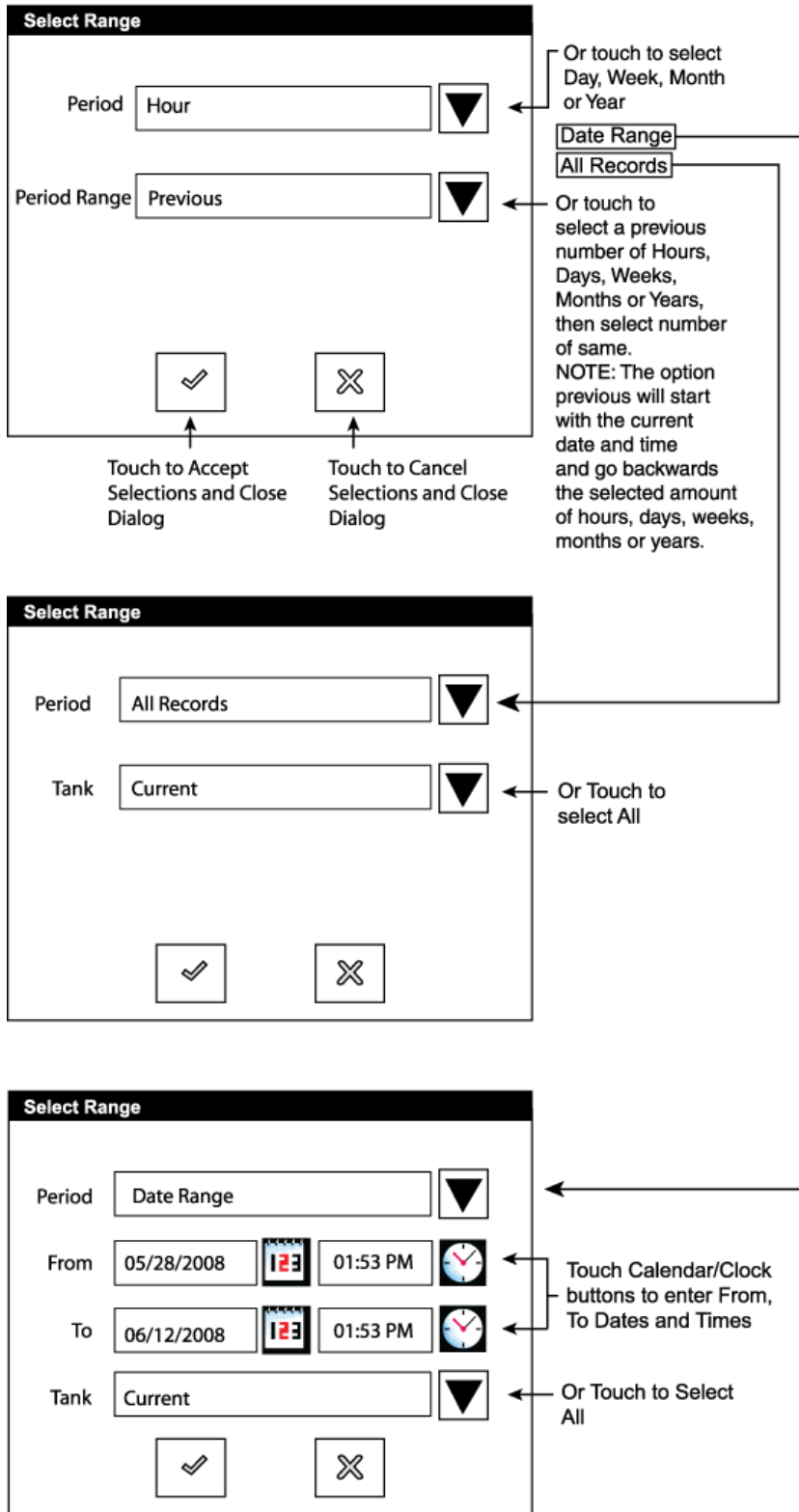
PERIODIC MAINTENANCE CHECKLIST

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.

Maintenance Operation	When to Perform	What To Do
		6. Verify line leak tests are being performed (if line leak installed).
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).
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).

Maintenance Operation	When to Perform	What To Do

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).

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.

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

Maintenance Operation	When to Perform	What To Do
		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

DIM Information Tables

DIM Quick Reference Table

DIM P/N	SOFT-WARE REV	PROTOCOL	HARD-WARE TYPE	DEFAULT SETTINGS				NOTES	PASS THRU
				BAUD	PARITY	LENGTH	STOP		
330280-401	349643	Gilbarco GSite	EDIM	1200	Even	7	1	7	------
330404-020	349634	Gilbarco CL	CDIM	Proprietary				1, 7	No
331354-001	331353	Tokheim 67A&B	CDIMII	9600	None	8	1	1, 4, 6	No
330280-201	330384	Tokheim DHC	EDIM	1200	Even	7	1	5	------
330404-010	349633	Wayne CL	CDIM	Proprietary				1, 7	No
330404-001	330435	Schlumberger	CDIM	1200	Even	7	2	2, 5	No
330404-002	331274	Schlumberger SAM	CDIM	4800	Odd	7	1	------	No
331001-002	349753	Gasboy RS422	LDIM	9600	None	8	1	------	------
331001-003	349753	Gasboy CFN	LDIM	9600	None	8	1	5	------
330280-001	330273	V-R Protocol (BIR)	EDIM	9600	Odd	7	1	Metric, 3, 7	------
331001-003	330270	Mechanical	MDIM	N/A				2	------
331313-001	330270	Low Volt Mech.	LVDIM	N/A				2	------
332328-002	349806	Wayne IDPOS	TDIM	N/A				1	------
332328-003	349806	Smart Crind	TDIM	N/A				1	------
331001-001	349646	Tominaga	LDIM	19200	Even	8	1	1, 3, 5, 8	------
330404-040	349633	Bennett	CDIM	4800	Even	8	1	1, 8	No
330280-511	349631	UK Block	EDIM	2400	Even	7	1	2, 8	No
330280-601	349641	Scheidt & Bach	EDIM	1200	None	8	1	2, 8	------

NOTES:
1. Parameter string is never required.
2. Will not generate Comm Alarm.
3. Metric is the default setting for unit conversion. Requires 'G' in parameter string for gallon units.
4. A two port CDIM. Normal CDIMs have 3 ports - CDIMII has two ports that monitor two comm channels each.
5. No blending.
6. Use 'P' in parameter string for Tokheim 2+1, 3+1 and 4+1 blending dispensers.
7. DIMs implemented for V402.
8. Non-U.S. DIM.

DIM Specific Parameters

STRING	DESCRIPTION
	GILBARCO GSITE (Pass Through)
	None
	GILBARCO CL
T	Do not collect cumulative totals
R	Send captured message to TLS (Engr. use only)
W	Transaction field precision is hundredths (thousandths default)
C	Cumulative field precision is hundredths (thousandths default)
	TOKHEIM 67A&B
T	Blender only site - collects only blender messages
R	Send captured message to TLS (Engr. use only)
P	Plus one dispensers at site - use plus one algorithm
	TOKHEIM DHC
T	Tank volume enabled. TLS will report to DHC tank volumes
	WAYNE CL
R	Send protocol to TLS (Engr. use only)
	SCHLUMBERGER
R	Send protocol to TLS (Engr. use only)
	SCHLUMBERGER SAM
T	Send protocol of controller transmit line to TLS (Engr. use only)
R	Send protocol of controller receiver line to TLS (Engr. use only)
	GASBOY RS422
	None
	GASBOY CFN
	None
	V-R PROTOCOL (BIR) (Pass Through)
J	Suppress Comm Alarm
	MECHANICAL
L	Pulse out loop-back signal
	(see Pulse Conversion Parameters Table)
	LOW VOLT MECHANICAL
L	Pulse out loop-back signal
	(see Pulse Conversion Parameters Table)

STRING	DESCRIPTION
	WAYNE IDPOS
	None
	SMART CRIND
	None
	TOMINAGA
	None
	BENNETT
T	Send protocol of controller transmit line to TLS (Engr. use only)
R	Send protocol of controller receiver line to TLS (Engr. use only)
	UK BLOCK
M	Manifold set
	Manifold start (followed by manifold tank numbers)
	SCHEIDT & BACH
	None

DIM Parameter Definitions

BAUD		PARITY		STOP BITS		DATA BITS		CONVERSION	
STRING	RATE	STRING	TYPE	STRING	BITS	STRING	BITS	STRING	UNITS
B9	9600	N	None	H	1	V	7	G	Gallons
B4	4800	E	Even	S	2	D	8	M	Metric
B2	2400	O	Odd	------	------	------	------	I	Imperial
B1	1200	------	------	------	------	------	------	------	------
B6	600	------	------	------	------	------	------	------	------
B3	300	------	------	------	------	------	------	------	------
BG	***	------	------	------	------	------	------	------	------

Pulse Conversion Parameters for MDIM

STRING	PULSES PER UNIT VOLUME
P	100 (7697 Pulser)
F	10 (7697 on High Volume Pump)
T	25 (7874 Pulse/Totalizer) MDIM / LVDIM default
Q	2.5 (7874 on High Volume Pump)
A	1/2
S	1
W	250
X	500
Y	1000

Female D Connector Pin Outs

PIN	FUNCTION
2	Transmit data
3	Receive data
7	Signal ground

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 Sensor 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	Phase Sep./ Density	Leak Detect	Water Detect
C000	Std, 0.10 GPH, 2-float	MAG1	No	0.10 GPH	Yes
C001	Std, 0.20 GPH, 2-float	MAG2	No	0.20 GPH	Yes
D000	Std, Inv only, 2-float	MAG3	No	None	Yes
D001	Alt, 0.10 GPH, 1-float	MAG4	No	0.10 GPH	No
D002	Alt, 0.20 GPH, 1-float	MAG5	No	0.20 GPH	No
D003	Alt, Inv only, 1-float	MAG6	No	None	No
D004	LRP, 0.10 GPH, 2-float	MAG7	Phase Sep.	0.10 GPH	Yes
D005	LRP, 0.20 GPH, 2-float	MAG8	Phase Sep.	0.20 GPH	Yes
D006	LRP, Inv only, 2-float	MAG9	Phase Sep.	None	Yes
D007	LRP, 0.10 GPH, 1-float	MAG10	No	0.10 GPH	No
D008	LRP, 0.20 GPH, 1-float	MAG11	No	0.20 GPH	No
D009	LRP, Inv only, 1-float	MAG12	No	None	No
D021	GLB, Inv only, 2-float	GLB8	No	None	Yes
D022	GLB, Inv only, 2-float	GLB9	No	None	Yes
D023	GLB, Inv only, 1-float	GLB10	No	None	No
D024	GLB, Inv only, 1-float	GLB11	No	None	No
D041	0.10 GPH	MAG-D	Density	0.10 GPH	Yes
D042	0.20 GPH	MAG-D	Density	0.20 GPH	Yes
D043	Inv only	MAG-D	Density	None	Yes

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):

Web Access

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

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- **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

- **BIR**
  - Current BIR Report
  - Previous BIR Report
  - Current Book Report
  - Previous Book Report
  - Test Results Report
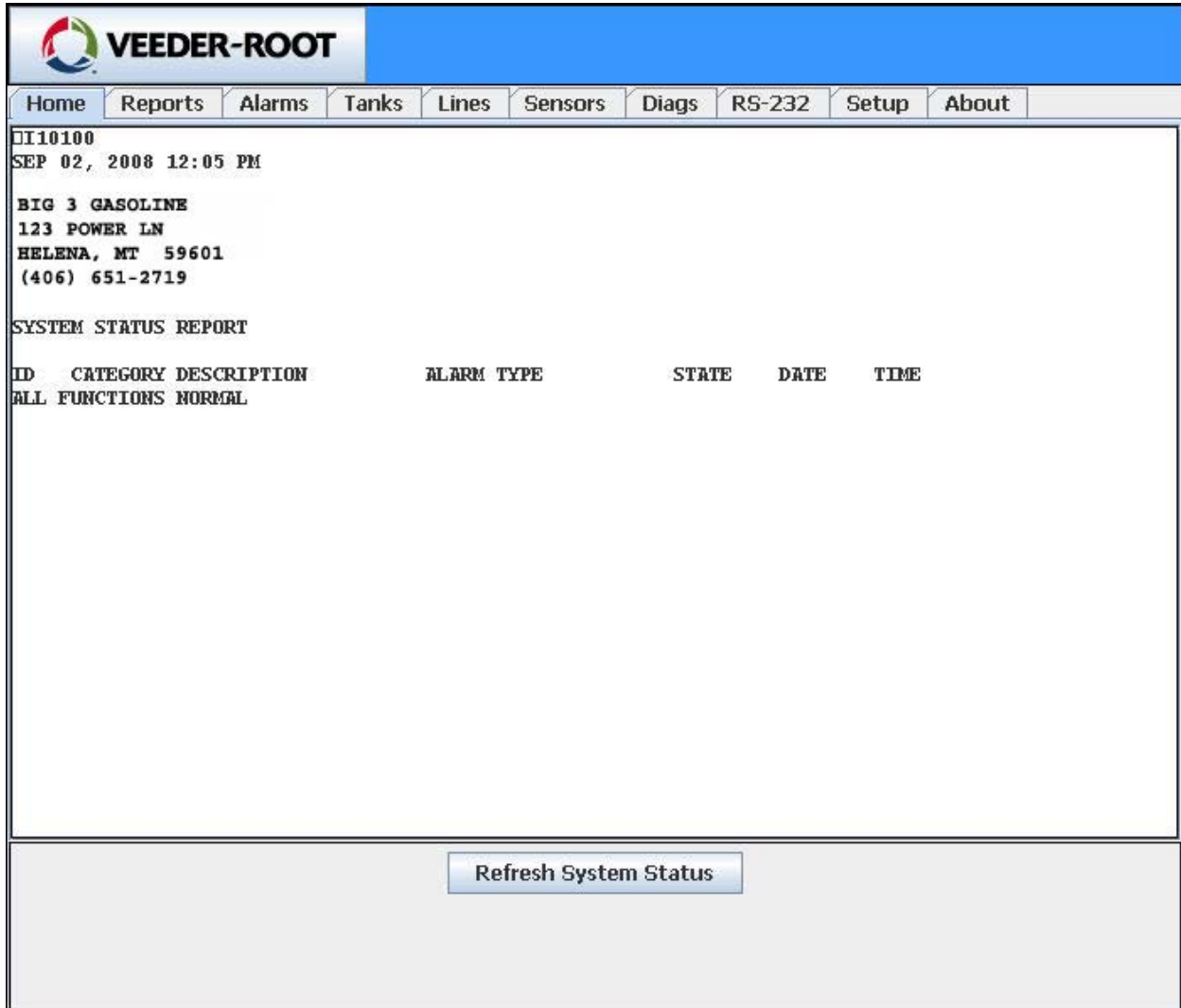
- **Diags**
  This page lists hardware/software features about the TLS-450.

- **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 BIR - Current BIR Report Page

The TLS-450 Web Access BIR – Current BIR Report page example is shown below:

Web Access BIR - Previous BIR Report Page

The TLS-450 Web Access BIR – Previous BIR Report page example is shown below:

Web Access BIR - Current Book Report Page

The TLS-450 Web Access BIR – Current Book Report page example is shown below:

Web Access BIR - Current Book Report Page

The TLS-450 Web Access BIR – Current Book Report page example is shown below:

Web Access BIR - Test Results Report Page

The TLS-450 Web Access BIR – Test Results Report page example is shown below:

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:
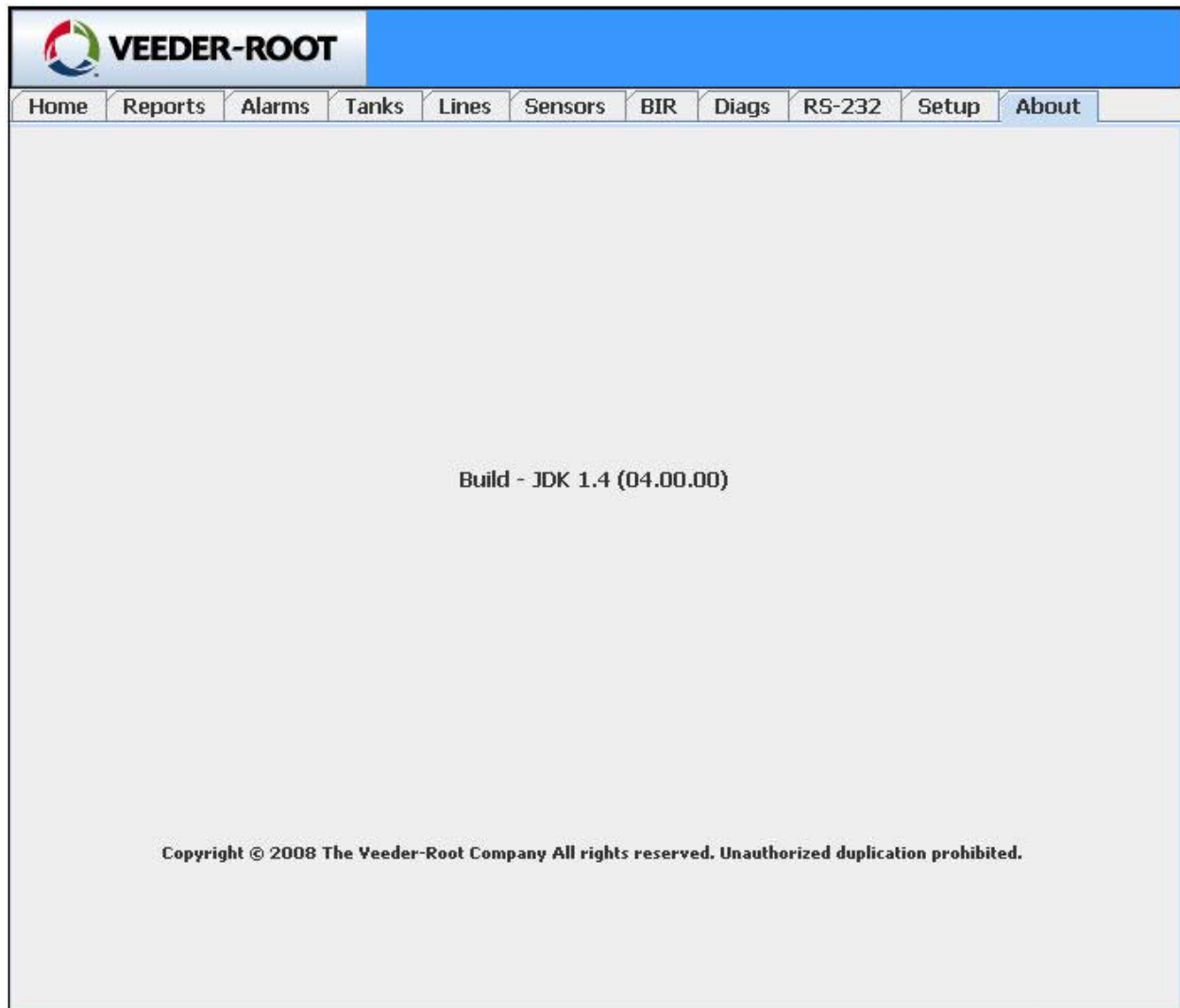
This page displays the version of Veeder-Root's Web Access software installed in the TLS-450 console.

VEEDER-ROOT