

# Introduction

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



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

## Contractor Certification Requirements

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

### **Level 1 -**

Contractors holding valid Level 1 Certification are approved to perform wiring and conduit routing, equipment mounting, probe and sensor installation, tank and line preparation, and line leak detector installation.

### **Level 2/3/4 -**

Contractors holding valid Level 2, 3, or 4 Certifications are approved to perform installation checkout, startup, programming and operations training, troubleshooting and servicing for all Veeder-Root Tank Monitoring Systems, including Line Leak Detection and associated accessories.

### **Warranty Registrations -**







Warranty Registrations may only be submitted by selected distributors.

## Related Manuals

- TLS-4XX Site Prep Manual (P/N 577013-879 )
- TLS-4XX Setup, Operation Screens Manual (P/N 577013-940)
- Electronic Line Leak Detectors Application Guide (P/N 577013-465)

## Safety Precautions

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

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

## Safety Warnings

### **WARNING**



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



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



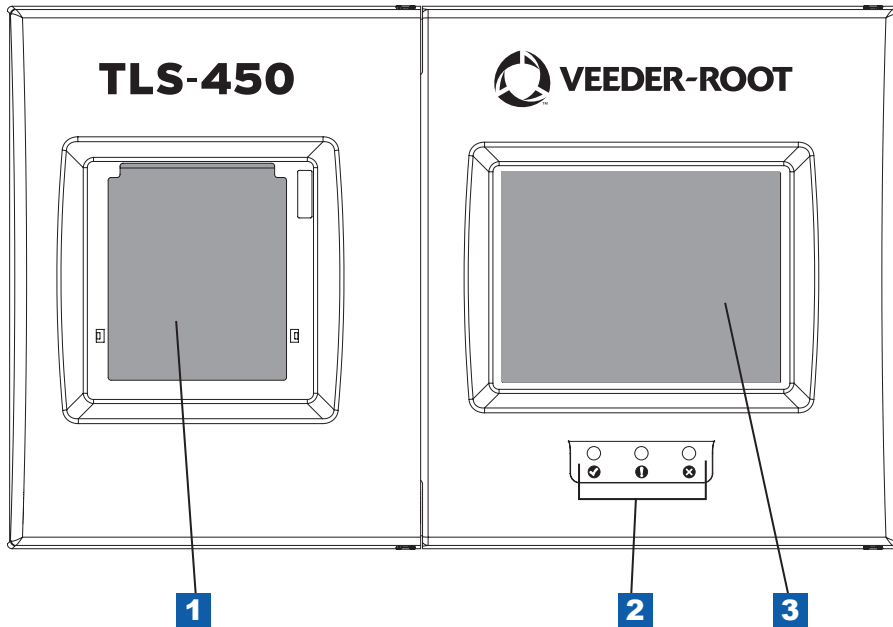
Attempting to service tank monitors and equipment without proper training can cause damage to property, environment, resulting in personal injury or death.

Improper programming and operation may result in equipment self-test failures and submersible pump shutdowns. It is the owner's responsibility to:

1. Ensure that this equipment is properly programmed.
2. Promptly investigate any alarm conditions.
3. Operate this equipment in accordance with the instructions in this document.

# Front Panel Layout

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



## Item 1 - Printer

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

### To add/replace a paper roll:

Lower the front panel paper cover (it rotates down and into the door).

Flip the lever to the right of the small paper feed roller down to disengage it.

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.

Remove and discard the old roll of paper.




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.

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.

Feed the end of the paper through the slot in the cover as you close the paper cover.



## Item 2 - System Visual Status LEDs

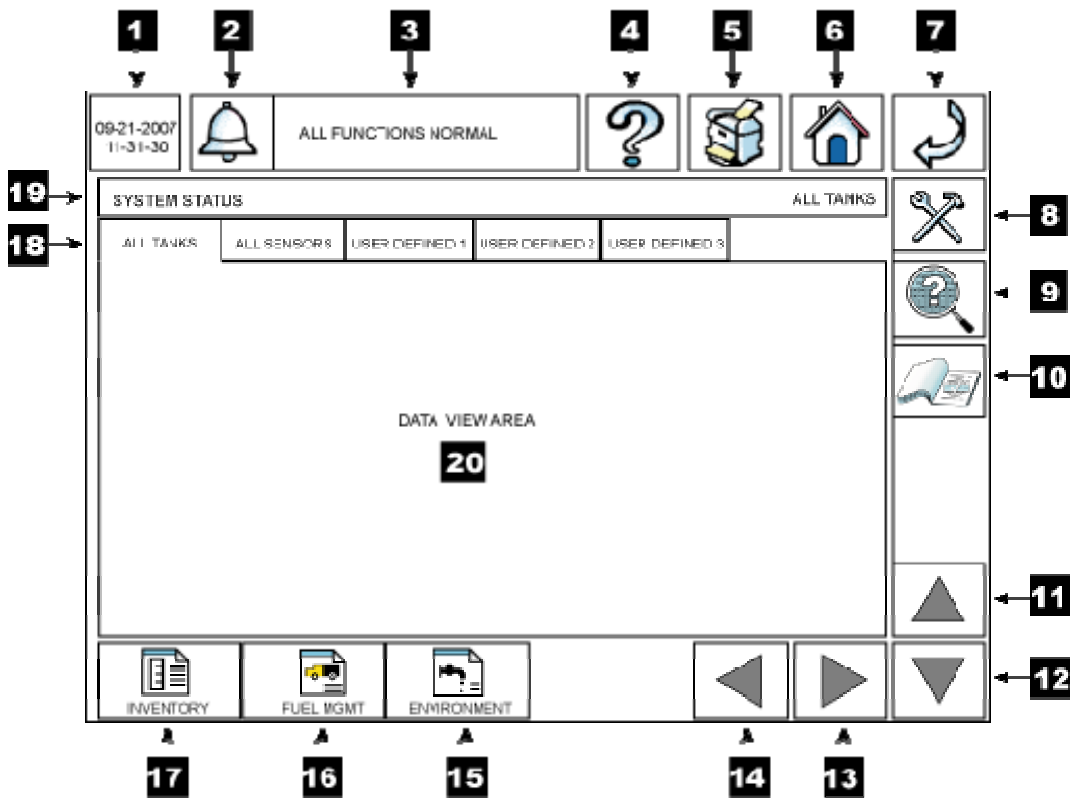
-  The check symbol is beneath a green LED. When the green LED is lit, there are no alarms active (normal)
-  The exclamation symbol is beneath a yellow LED. When the yellow LED is lit, there is at least one warning (minor) active.
-  The X symbol is beneath a red LED. When the red LED is lit, there 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 and diagnostic information for all configured devices (tanks, sensors, etc.).

## 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: <ul style="list-style-type: none"> <li>- Active Alarms Report</li> <li>- Alarm History Report - All Alarms</li> <li>- Alarm History Report - Priority Alarms</li> <li>- Alarm History Report - Non-Priority Alarms</li> </ul>
3	System Status Box - The System Status box displays system alarm, warning and notice messages. If there are no active or inactive alarms, the system status message "All Functions Normal" is

Area/Touch Button	Action/Description
	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. You can navigate to the help table of contents or other areas of help information for the console.
5	Print button - Touching the Print button will print the contents of the data view area to the optional integral printer. Nothing will print if the view is empty or printing is not relevant to that screen. If the system has no printer this button will be disabled.
6	Home button - Touching the Home button returns you to the System Status - All Tanks screen shown in the figure above.
7	Back button - Touching the Back button displays the previously viewed screen.
8	Setup button - Touching the Setup button displays the main System Setup Screen.
9	Diagnostic button - Touching the Diagnostic button displays the main Diagnostic Screen.
10	Regulator Report button - Touching the Regulator button accesses the following Regulator Reports (if enabled): <ul style="list-style-type: none"> <li>- Combined Tank Test Report</li> <li>- Static Leak Test Report</li> <li>- Line Leak Test Report</li> <li>- Sensor Status Report</li> <li>- Sensor History Report</li> </ul>
11	Scroll Up button - Touch the Scroll Up button to scroll upward through the contents of the Data View area in batches that will fit in the data view area of the display. It will be Enabled/Disabled based on Records or Data available for display.
12	Scroll Down button - Touch the Scroll Down scroll button to scroll downward through the contents of the Data View area in Batches that will fit in the data view area of the display. It will be Enabled/Disabled based on Records or Data available for display.
13	Scroll Right button - When the number of data report columns or bottom row device buttons is greater than can be shown at once, touch this button to scroll right to access off-screen data/devices. This button will be disabled unless necessary.
14	Scroll Left button - When the number of data report columns or bottom row device buttons is greater than can be shown at once, touch this button to scroll left to access off-screen data/devices. This button will be disabled unless necessary.
15	Environmental Report button - Touching this button accesses the following Environmental Reports: <ul style="list-style-type: none"> <li>- Combined Tank Test Report</li> <li>- Static Leak Test Report</li> <li>- Line Leak Test Report</li> <li>- Sensor Status Report</li> <li>- Sensor History Report</li> </ul>
16	Delivery Report button - Touching this button displays the Delivery Report.

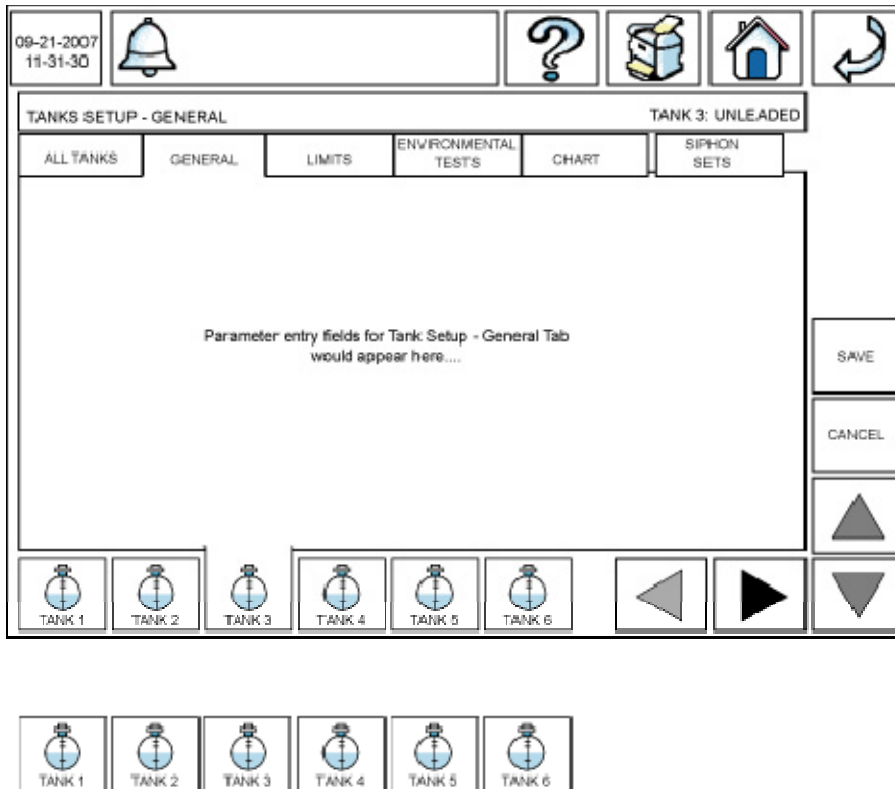
Area/Touch Button	Action/Description
17	Inventory Report button - Touching this button accesses the following Inventory Reports: - Current Inventory Report - Inventory History Report - Shift Inventory Report
18	Tab Screen buttons - Touching any of the Tab Screen buttons displays the related screen: - All Tanks current status screen - All Sensors current status screen - User Defined 1, 2, 3 (user configured) status screens
19	Title Bar - The title bar area will always be present and will provide text to help identify the current screen in the Data View area. Information related to the name of the screen, selected tab screen name, and specific device or object being displayed will be present. The right side of the title bar contains additional title information. Often this is the name or label of a selected item.
20	Data View area - The Data View area displays the requested report, setup fields, etc.

## Setup, Operation, Diagnostic Touch Screen Layout

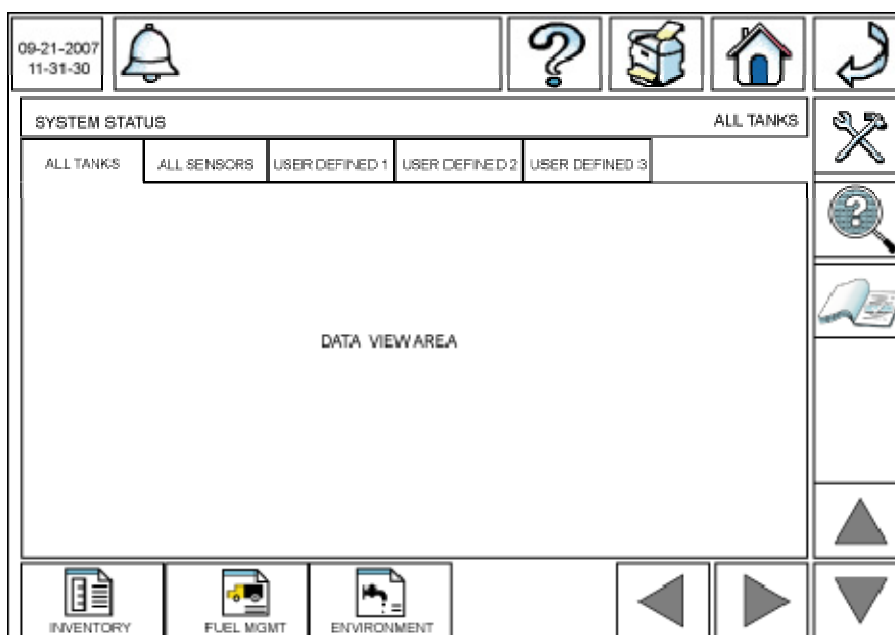
The top button row of all console screens is shown below. The Date/time box on the left and the touch buttons to the right are present across all screens.



When in 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).

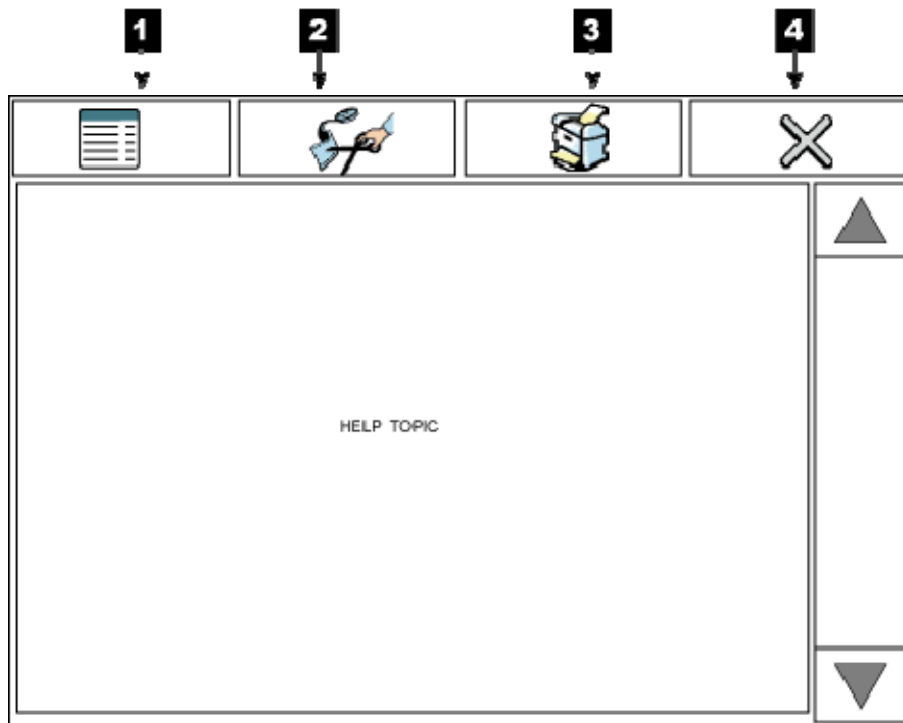


The data area displays the information associated with any selected setup, report or diagnostic screen. Tabs at the top of the data area (All Tanks, All Sensors, User Defined 1, etc. in the diagram below), if present, provide access to related data screens when touched.



## 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 integral 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):

The screenshot shows a software interface for the TLS-450 Direct Access (TM). At the top, there's a status bar with a date and time '12/28/200 / 12:08 PM', a bell icon, and 'Ln 1: LINE C'. Below this is a section titled 'Display Setup - Language & Units'. There are three tabs: 'Language & Units' (which has a star icon next to it), 'Date & Time Format', and 'Number Format'. Under the 'Language & Units' tab, there are two fields: 'System Language' and 'System Units'. The 'System Language' field is set to 'Spanish' and has a star icon next to it. The 'System Units' field is set to 'US'.

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

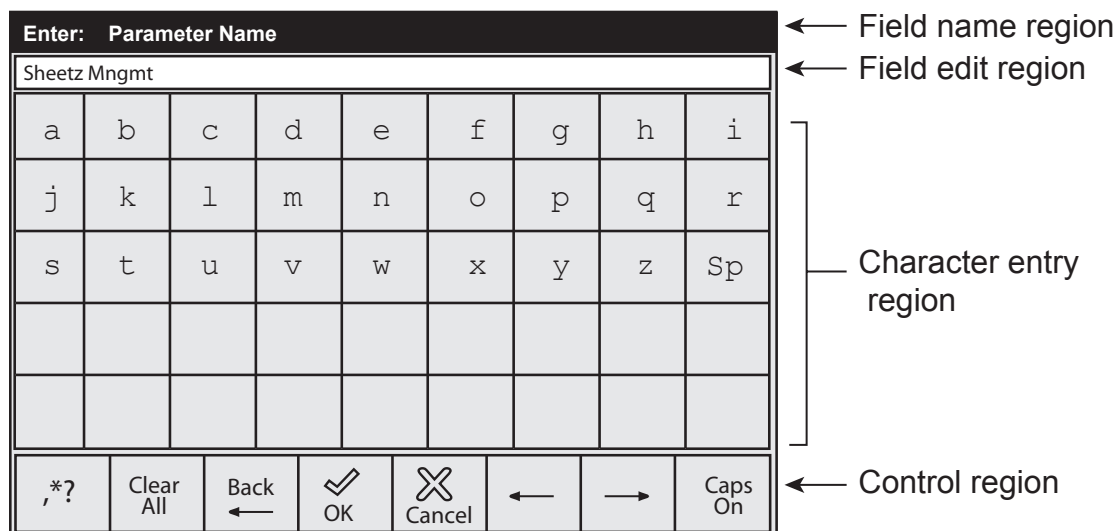
If you try and leave the screen after editing a field, but before saving your change, a Save dialog box will display, forcing you to either save or cancel your edit before leaving the screen.

## 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.



The diagram shows the Alpha Entry Keypad interface with the following components and labels:

- Field name region:** Points to the top header area labeled "Enter: Parameter Name".
- Field edit region:** Points to the text input area containing "Sheetz Mngmt".
- Character entry region:** Points to the grid of character buttons (a-i, j-r, s-z, Sp, and two empty rows).
- Control region:** Points to the bottom row of buttons: ",\*?", "Clear All", "Back", "OK", "Cancel", left arrow, right arrow, and "Caps On".

Enter: Parameter Name								
Sheetz Mngmt								
a	b	c	d	e	f	g	h	i
j	k	l	m	n	o	p	q	r
s	t	u	v	w	x	y	z	Sp
,*?	Clear All	Back	OK	Cancel	←	→	Caps On	

### Field Name Region

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

### Field Edit Region

This is the view area to show the value as it is being entered (entries are left justified).

### Character Entry Region

This region has Buttons that enter characters in the Field Edit Line.

### Control Region

The region has the following buttons, from left to right:

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



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

## Numeric Entry Keypad

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

Enter: Ullage					← Field name region	
20					← Field edit region	
1	2	3	+	-	Character entry region	
4	5	6	.	,		
7	8	9	0			
Clear All	Back ←	✓ OK	✗ Cancel	←	→	← Control region

### 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.

Enter: Parameter Name								
Parameter1234 String 87?#								
1	2	3	4	5	6	7	8	9
0	.	,	*	-	+	=	(	)
"	'	:	;		\	/	[	]
?	!	%	&	@		#	{	}
`	~	^	\$	Sp	ı	ı	<	>
,*?	Clear All	Back	✓ OK	✗ Cancel	←	→	Caps On	

← Field name region

← Field edit region

Character entry region

← Control region

## 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 'ç' and 'j' symbols and other language specific punctuation characters will only show up for languages that need them.

## Hexidecimal Entry Keypad

The Hexidecimal Entry Keypad dialog lets you enter characters that are used with Hexadecimal entries.

The diagram shows the Hexidecimal Entry Keypad dialog with the following components and labels:

- Field name region:** The top bar labeled "Enter: Parameter Name".
- Field edit region:** The input field showing the value "2FFB".
- Character entry region:** A grid of buttons for entering hexadecimal characters:

1	2	3	A	B	C
4	5	6	D	E	F
7	8	9	0		
- Control region:** A row of control buttons: "Clear All", "Back" (left arrow), "OK" (checkmark), "Cancel" (X), and left/right navigation arrows.

### 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:

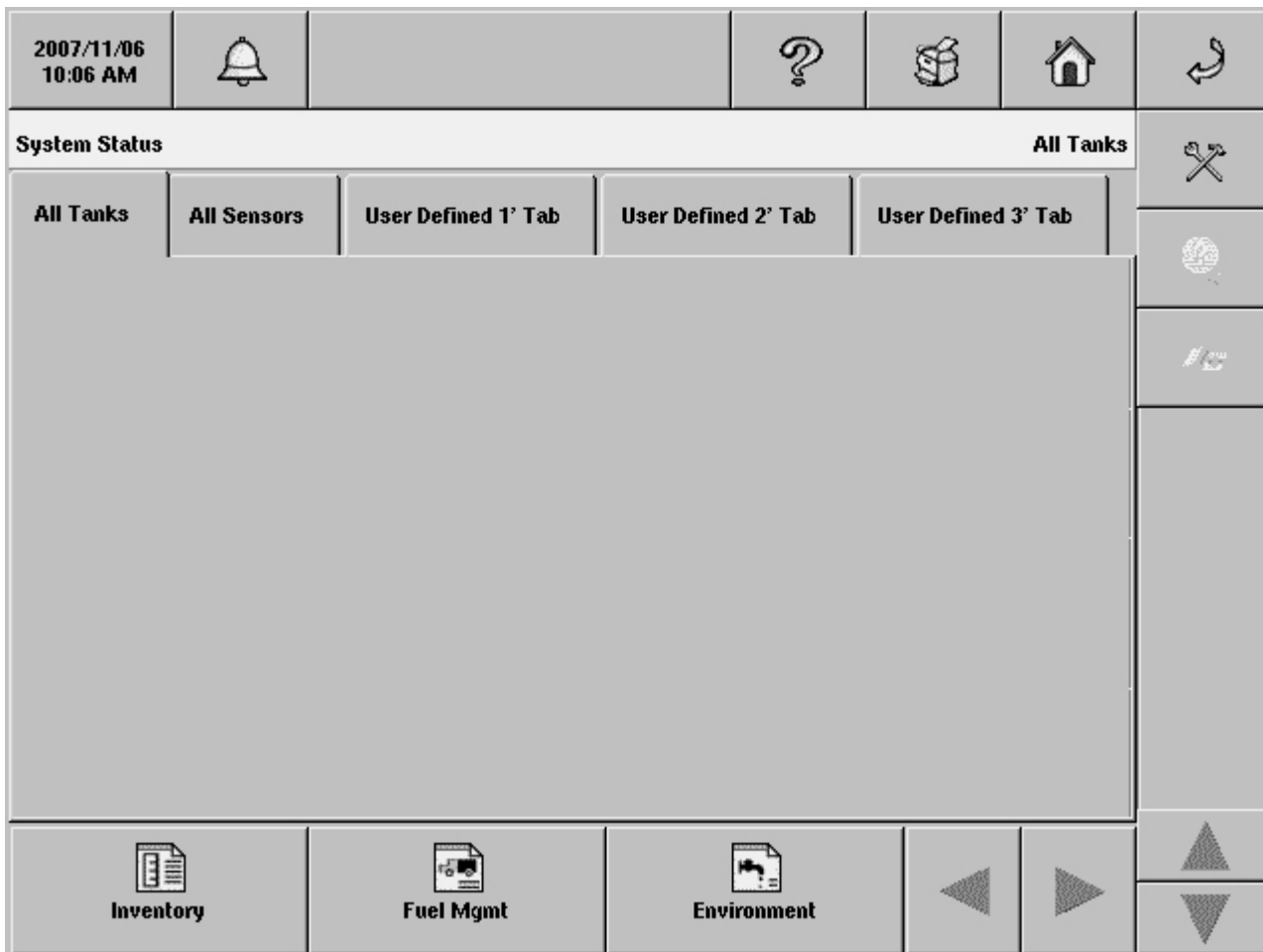
Hex letters from A-F are always shown in upper case.


System does not use "0x" preface for hex numbers.

# Initial Console Setup Sequence

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

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



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

- Date and Time Setup
- Headers Setup
- Display Setup
- Devices (probes, sensors, relays) Setup
- Communication Setup

- Tanks Setup (in order of the Tab Screens left to right)
- Pumps and Lines Setup (in order of the Tab Screens left to right)
- Automatic Events Setup – do after above setups - make sure communications is setup first – do address book first
- Custom Alarms Setup
- Custom Help Setup
- Regulators' Report Setup
- Security Setup

# Understanding Alarms

## What Happens When An Alarm Is Posted?

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

Normal condition

System Status box displays 'All Functions Normal' message



Alarm condition

Alarm Report button flashes

System Status box flashes and displays alarm label










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):

2007/11/06 12:24 PM				T 4: SETUP DATA WARNING									
Active Alarm Report													
Active		History		Priority		Non-Priority							Help Mode
#	Label		Alarm Description		Active Time		Clear Time						
T 1			SETUP DATA WAR		2007/11/06 09:43 AM								
T 2			SETUP DATA WAR		2007/11/06 09:44 AM								
T 4			SETUP DATA WAR		2007/11/06 09:46 AM								
T 1			DELIVERY NEEDED		2007/11/06 09:52 AM								
T 3			SETUP DATA WAR		2007/11/06 10:01 AM								
												Select Range	
													
													

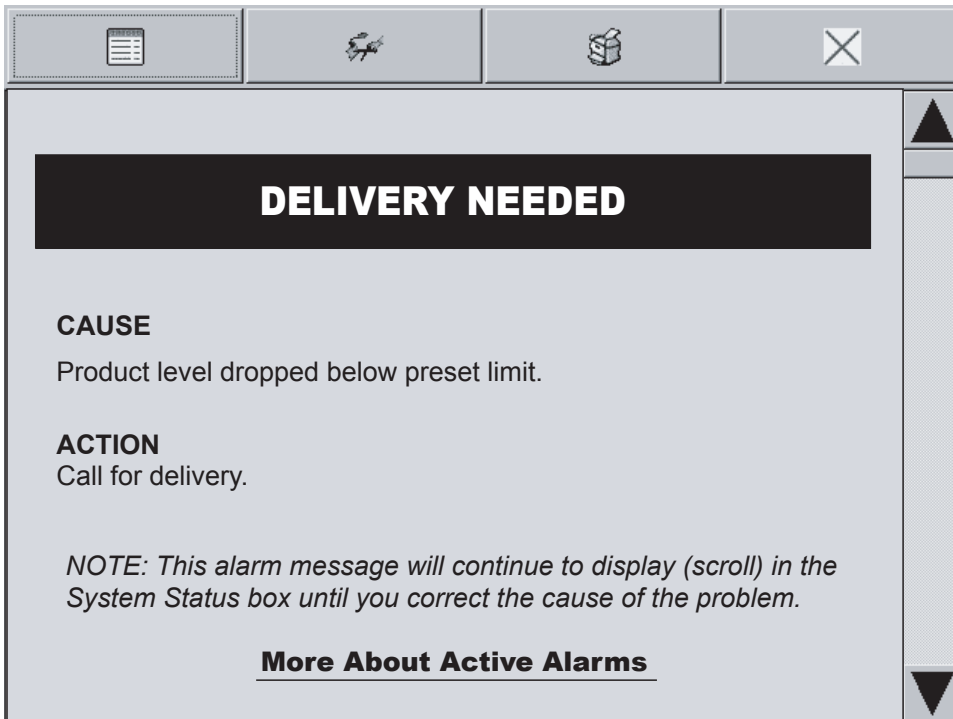


## How Do I Learn More About an Alarm and What To Do About It?





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 12:24 PM				T 4: SETUP DATA WARNING										
Active Alarm Report												Help Mode		
Active		History		Priority		Non-Priority								
#	Label		Alarm Description		Active Time		Clear Time						Select Range   	
T 1			SETUP DATA WAR		2007/11/06 09:43 AM									
T 2			SETUP DATA WAR		2007/11/06 09:44 AM									
T 4			SETUP DATA WAR		2007/11/06 09:46 AM									
T 1			DELIVERY NEEDED		2007/11/06 09:52 AM									
T 3			SETUP DATA WAR		2007/11/06 10:01 AM									

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



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

 <b>WARNING!</b>	
	<p><b>This system operates near highly combustible fuel storage tanks. Leaking tanks can create serious environmental and health hazards.</b></p>
	<p><b>If you have not been trained in proper service procedures and hazards involved, refer all service to a qualified Veeder-Root Service Representative.</b></p>
	<p><b>Attempting to service tank monitors and equipment without proper training can cause damage to property, environment, resulting in personal injury or death.</b></p>

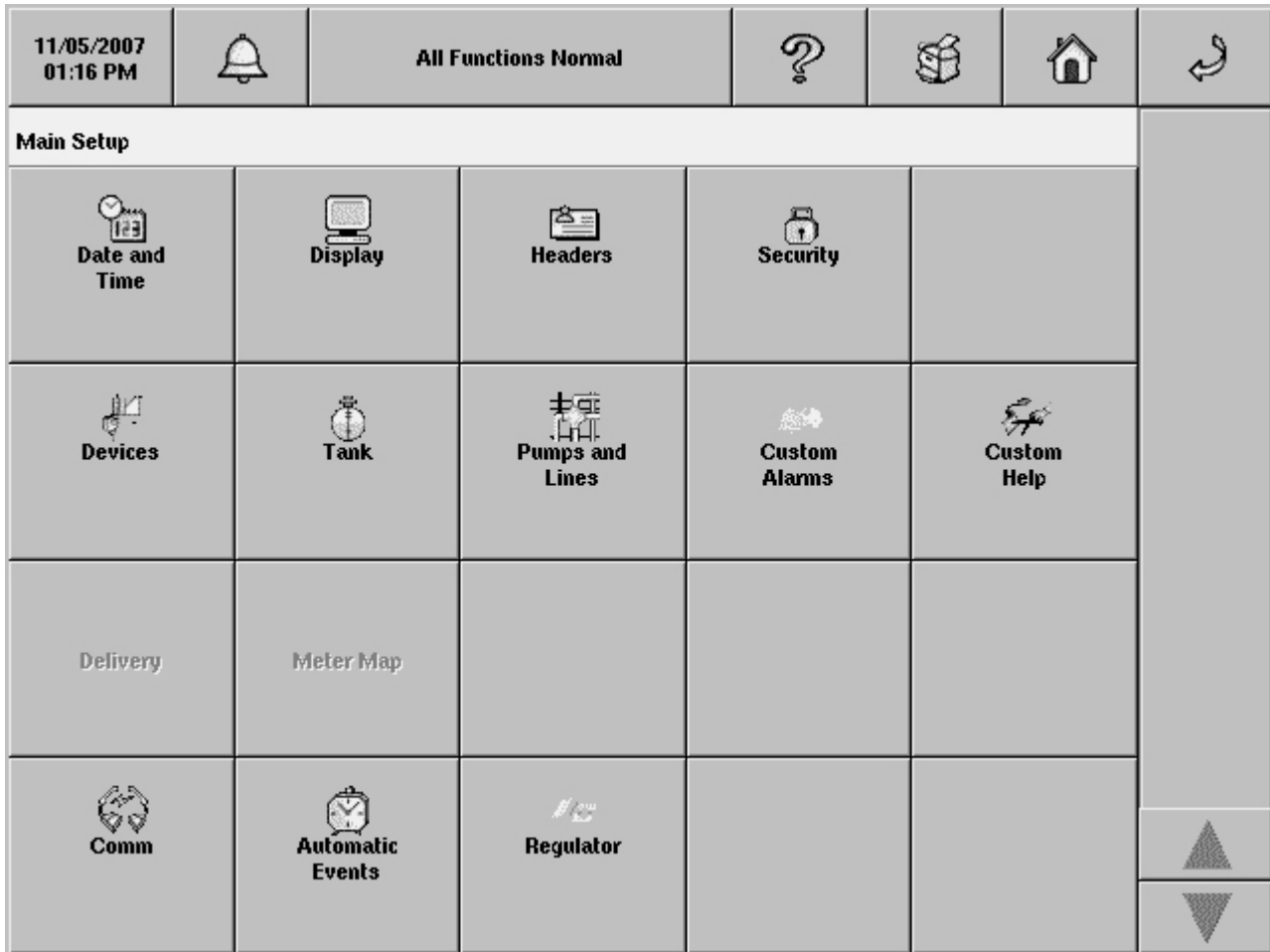
Touch the Cancel button  at the top of the Alarm Help screen to return to the Alarm Help Mode screen. Touch the Previous button  in the Alarm Help Mode screen to exit the Active Alarm Report.

## **Setup Screens**

# Main Setup Screen

The Main Setup menu screen contains touch button navigators to all setup areas in the console. All feature setups in the console are assigned a button on the Main Setup screen grid and have a fixed place. If a button is dimmed, it is a disabled feature that is unavailable. Available system setups are discussed below.

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



## Date and Time Setup

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

- Date and Time Setup tab screens include:
- Date & Time Set
- Daylight Savings
- Report Times (Shift/Inventory Close) setup

## Display setup



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

Display Setup tab screens include:

- Language & Units
- Date & Time Format
- Number Format
- System Status Setup

This setup lets you determine which tank and device status tab screens will be accessible from the main or home screen. The tab screens available include: All Tanks, All Sensors, and up to 3 User Defined tab screens.

## Headers Setup



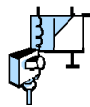
This section contains the 4 Header Station Information fields. It also contains the options of adding a fax sender's name and fax number to the header info set, and whether to include the header info set on all printouts.

## Security Setup



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

## Devices Setup



The Devices Setup lets you configure and setup all sensing devices, inputs from external inputs or control through relays monitored by the console. Devices can be connected directly to USM modules and I/O modules installed in the console or connected via communication links to hardware outside of the console. Most devices also have properties that are unique based on their device type. The setup of these parameters is done via a setup tab screen available for each device type and/or device group.

Devices Setup tab screens include:

- Modules
- Probes
- Relays
- External Inputs
- Liquid Sensor
- Type A Sensor (2-Wire CL)
- Type B Sensor (3-Wire CL)

- MAG Sensor
- Ground Water Sensor
- Vapor Sensor
- Line Pressure Sensor

## Tank Setup



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

Tank Setup tab screens include:

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

## Pumps and Lines Setup



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

- Pumps and Lines Setup tab screens include:
- Pumps - Settings for individual pumps
- All Lines - Settings that apply across all lines in system
- Lines - Settings for individual lines
- All PLLD - Settings that apply across all PLLDs in system
- PLLD - Settings for individual PLLDs

## Custom Alarms Setup



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

Custom Alarms Setup tab screens include:

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

## Custom Help Setup



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

Custom Help Setup tab screens include:

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

## Automatic Events Setup



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

Automatic Events can be setup for two categories:

1. Time based



2. Event based (Alarms and Notifications)



Automatic Events Setup tab screens include:

- Device Tasks - Use this screen to set up and define the Device-Related Automatic tasks to be performed.
- Print Tasks - Use this screen to set up and define the Printer-Related Automatic tasks to be performed.
- Auto Connect Tasks - Use this screen to set up and define the Auto-Connect and Related Automatic tasks to be performed.
- Address Book - Use this screen to set up and define a List of Addressees (Contacts List) if the action is intended for either Data Transmission or to alert an external device that something of importance has happened at the Console so that it can be polled by that device (Outbound Connection in Computer mode, for example).
- All Tasks - Use this screen to view a report-like description of all Automatic Tasks (Device, Print and Auto Connect) you have set up.
- Task Log - you may need to follow up on automatic tasks. This screen contains a History (Log) listing the results of assigned tasks.

## Comm Setup



The Comm Setup lets you configure installed communication devices. Each type of Comm Device will have a set of tab screens to enter its own specific setup parameters.

Comm Device types include:

- RS-232
- RS-485
- Internal Modem
- Satellite – H-JBox
- Satellite – S-SAT
- TCP/IP

## Regulator Report Setup














The Regulator Report Setup allows you to enable/disable access to the following reports from the Regulator reports screen:

- The Combined Tank Test historic report (displays both the SLD (Static Leak Detect) and CSLD (Continuous Static Leak Detect) passed test results)
- The Last Passed SLD leak test report
- The most-recent and historical Line Leak test report
- The current and historical Sensor Status Reports



# Date & Time Setup - Date & Time Set

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

11/05/2007 01:17 PM		All Functions Normal				
Date & Time Setup - Date & Time Set						
Date & Time Set	Daylight Savings	Report Times				
Set Current Date	<input type="text" value="11/05/2007"/>					
Set Current Time	<input type="text" value="01:17 PM"/>					
						
						
						
						

## Set Current Date

Enter the current date.

Allowable selections: Month: 1 - 12, Day: 1 - 31, Year: 1970 - 2038

Default: Today's date

## Set Current Time

Enter the current time.

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















Default: Today's time

# Date & Time Setup - 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.

11/05/2007 01:18 PM		All Functions Normal				
Date & Time Setup - Daylight Savings						
Date & Time Set	Daylight Savings	Report Times				
Feature *	Enabled 					
Start Date	MAR SECOND WEEK SUN 					
Start Time	02:00 AM 					
End Date	NOV FIRST WEEK SUN 					
End Time	02:00 AM 					
						
						

## 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 - Report Times

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

11/05/2007 01:21 PM		All Functions Normal				
Date & Time Setup - Report Times						
Date & Time Set	Daylight Savings	Report Times				
Shift 1		08:00 AM				
Shift 2		02:00 PM				
Shift 3		08:00 PM				
Shift 4		02:00 AM				
Inventory Close		SHIFT CLOSE				

### Shift 1

Allowable Selections: Disabled, Set Time  
Default: Disabled

### Set Time

#### Hours

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

### **Minutes**

Allowable Selections: 0 to 59

### **AM/PM (If 12 Hr Format)**

Allowable Selections: AM, PM

## **Shift 2**

Allowable Selections: Disabled, Set Time  
Default: Disabled

### **Set Time**

#### **Hours**

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

#### **Minutes**

Allowable Selections: 0 to 59

#### **AM/PM (If 12 Hr Format)**

Allowable Selections: AM, PM

## **Shift 3**

Allowable Selections: Disabled, Set Time  
Default: Disabled

### **Set Time**

#### **Hours**

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

#### **Minutes**

Allowable Selections: 0 to 59

#### **AM/PM (If 12 Hr Format)**

Allowable Selections: AM, PM

## Shift 4

Allowable Selections: Disabled, Set Time  
Default: Disabled

### Set Time

#### Hours

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

#### Minutes

Allowable Selections: 0 to 59

#### AM/PM (If 12 Hr Format)

Allowable Selections: AM, PM

## Inventory Close

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

### Hourly

This selection requires further inputs and will be entered using the 'Select Inventory Hourly Close Time' dialog box. The Inventory Close will occur at the number of minutes passed the current hour, or of the next hour if the time has already passed. Subsequent inventory closes will occur according to the repeat interval selected. After the hourly close is selected and configured using the dialog box, the field displays 'MM min. passed hour - every NN hours' where MM is the minutes selected and NN is the repeat interval.

#### Minutes Passed Hour

Allowable Selections: 00 to 59  
Default: 00

#### Repeat Interval

Allowable Selections: 1 to 24 hours  
Default: 1 hour

## **Daily**

### **Hours**

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

### **Minutes**

Allowable Selections: 0 to 59

### **AM/PM (If 12 Hr Format)**

Allowable Selections: AM, PM

## **Shift Close**

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
















## **Day Close**

This selection schedules Inventory Close time for same time as the Day Close time.



# Headers Setup

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

12/25/2007 05:40 PM		All Functions Normal				
<b>Headers Setup</b>						
Header 1	<input type="text"/>					
Header 2	<input type="text"/>					
Header 3	<input type="text"/>					
Header 4	<input type="text"/>					
Fax Sender Name	<input type="text"/>					
Fax Number	<input type="text"/>					
Include Header Information on Printouts		<input type="checkbox"/>				
						

## Header 1

Allowable selections: Alphanumeric Text Field Length - 21 Characters  
Default: Empty

## Header 2

Allowable selections: Alphanumeric Text Field Length - 21 Characters  
Default: Empty

### **Header 3**

Allowable selections: Alphanumeric Text Field Length - 21 Characters  
Default: Empty

### **Header 4**

Allowable selections: Alphanumeric Text Field Length - 21 Characters  
Default: Empty

### **Fax Sender Name**

Allowable selections: Alphanumeric Text Field Length - 21 Characters  
Default: Empty

### **Fax Number**






Allowable selections: Numeric Field Length – 40 digits  
Default: Empty

### **Include Header Information on Printouts**

Check box: Checked, Unchecked (No headers on printouts)  
Default: Checked

# Display Setup - Language and Units

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

11/05/2007 01:22 PM		All Functions Normal				
Display Setup - Language & Units						
Language & Units	Date & Time Format	Number Format	System Status			
System Language	<div>English</div> <div>▼</div>					
System Units	<div>US</div> <div>▼</div>					
				<div>✓</div>		
				<div>✕</div>		
				<div>▲</div>		
				<div>▼</div>		

## System Language













Allowable selections: English, Spanish, Chinese  
Default: English

## System Units

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

11/05/2007 01:22 PM		All Functions Normal				
Display Setup - Date & Time Format						
Language & Units	Date & Time Format	Number Format	System Status			
Date Format	<input type="text" value="yyyy_mm_dd"/>					
Date Separator	<input type="text" value="/"/>					
Time Format	<input type="text" value="12-hour xM"/>					
						
						
						
						

## Date Format

Allowable selections: YYYY\_MM\_DD, DD\_MM\_YYYY, MM\_DD\_YYYY, MON\_DD\_YYYY  
Default: MM\_DD\_YYYY

## Date Separator

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












## Time Format

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

Default: 12-hour xM

# Display Setup - Number Format

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

2007/11/05 01:23 PM		All Functions Normal				
Display Setup - Number Format						
Language & Units	Date & Time Format	Number Format	System Status			
Decimal Separator	<input type="text" value="."/> 					
Thousands Separator	<input type="text" value=","/> 					
						
						
						
						

## Decimal Separator

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

## Thousands Separator

Allowable selections: ",", ".", None  
Default: None


## Display Setup - System Status

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

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


2007/11/05 01:24 PM		All Functions Normal				
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					

### All Tanks Tab

Selecting Enable in the All Tanks Tab field and then touching the Advanced Setup button  to the right of the field opens the Display - All Tanks Tab Advanced Setup screen. In this screen you select informational text and/or icons to display in the tank graphics displayed on the home screen (System Status 'All Tanks') and on any System Status 'User Defined' screens, if assigned.


Allowable selections: Enabled, Disabled  
Default: Enabled

## All Sensors Tab

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


Allowable selections: Enabled, Disabled  
Default: Enabled

## 'User Defined 1' Tab

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


Allowable selections: Enabled, Disabled  
Default: Enabled

## 'User Defined 2' Tab

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

Allowable selections: Enabled, Disabled  
Default: Enabled

## 'User Defined 3' Tab

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






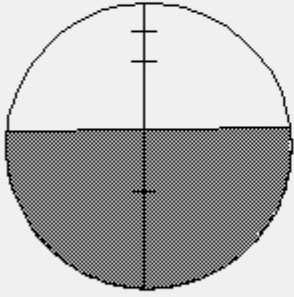


Allowable selections: Enabled, Disabled  
Default: Enabled



# Display - All Tanks - All Tanks Tab Advanced Setup

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

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

2007/11/05 01:25 PM			All Functions Normal					
Display - All Tanks				All Tanks Tab Advanced Setup				
All Tanks		Fuel Fill Selection						
		 		Icon Shape Circle ▼				
				Product Label Enabled ▼				
				Fuel Volume Bottom Text ▼				
				Fuel Volume TC Enabled ▼				
				Water Height Enabled ▼				
				Temperature Bottom Text ▼				
Tank #		Regular		✓				
Fuel Volume		5000		✕				
Water Height		500		▲				
Temperature		27C		▼				

## Icon Shape

Allowable selections: Circle or Rectangle  
Default: Circle

## Product Label

Allowable selections: Enabled, Disabled  
Default: Disabled

## **Fuel Volume**

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

## **Fuel Volume TC**

Allowable selections: Enabled, Disabled  
Default: Disabled

## **Water Height**

Note: This selection requires water measuring probes.

Allowable selections: Enabled, Disabled  
Default: Disabled

## **Temperature**

Allowable selections: Enabled, Disabled  
Default: Disabled

## **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: Enabled, Disabled  
Default: Disabled

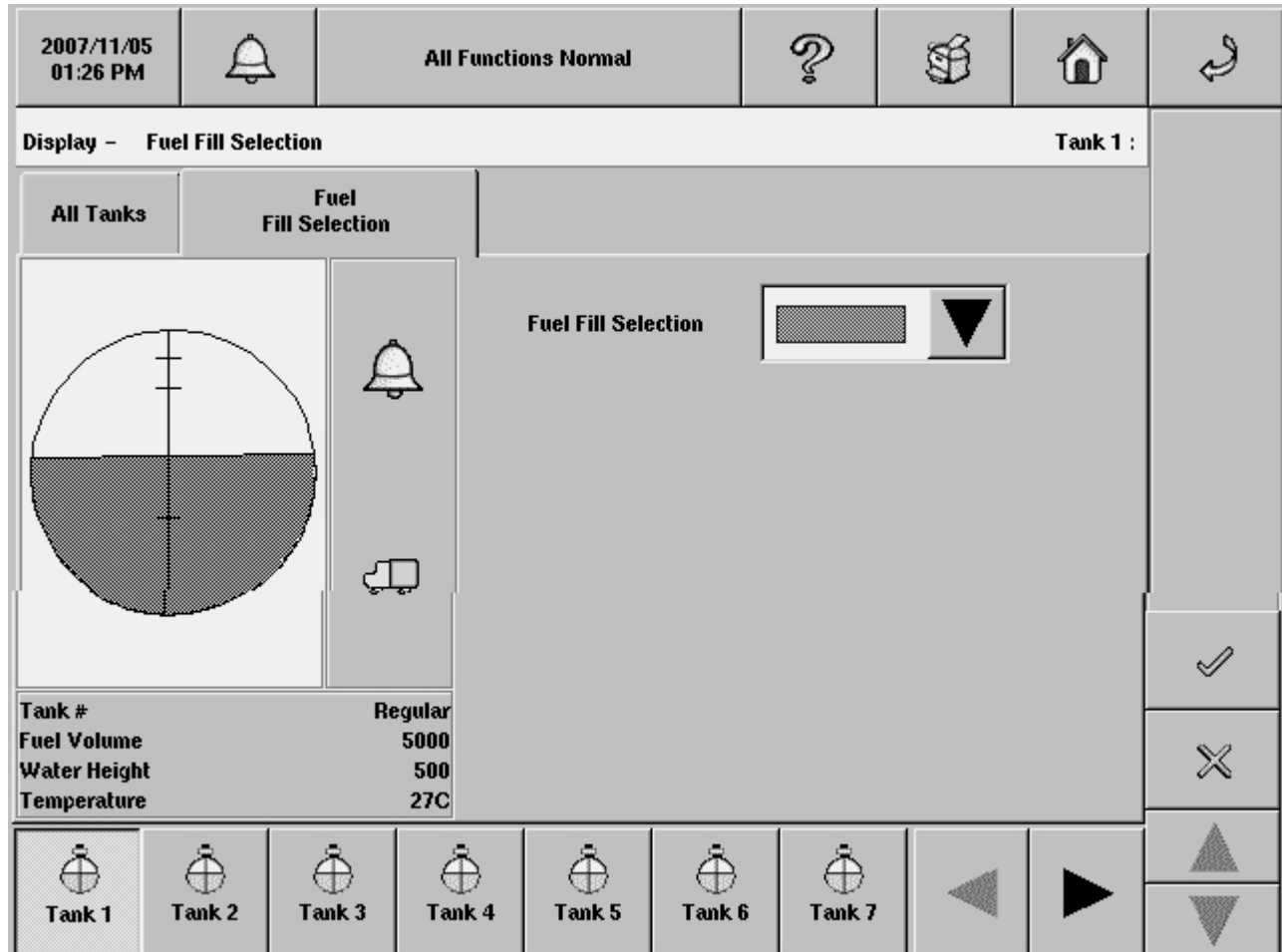
## **Tank Ribbon Label**

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

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

## Display - All Tanks - Fuel Fill Selection

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



### Fuel Fill Selection

















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

Allowable selections: Various patterns  
Default: Fine screen

# Display Setup - All Sensors Tab Advanced Setup

This screen 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.

An example Display Setup screen for the Liquid Sensor is shown below.

2007/11/05 01:28 PM		All Functions Normal				
Display Setup - Liquid			All Sensors Tab Advanced Setup			
Liquid	Type A (2-Wire CL)	Type B (3-Wire CL)	MAG	Ground Water		
		Sensor Label		Enabled		
		Alarm Condition Icon		Enabled		
		Model		Enabled		
		Category		Enabled		
Liquid #		Liquid Sensor				
Model		Tri State				
Category		Other Sensors				
						
						
						
						

## Liquid

### 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)**

### **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)**

### **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**

### **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**

### **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**

### **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**

### **Sensor Label**

Allowable selections: Enabled, Disabled  
Default: Disabled

### **Alarm Condition Icon**

Allowable selections: Enabled, Disabled  
Default: Disabled

## **Pressure**

Allowable selections: Enabled, Disabled

Default: Disabled

## **Altitude Pressure Offset**

Allowable selections: Enabled, Disabled

Default: Disabled



## 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.

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 (maximum of 6). 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.

2007/11/05  
02:07 PM

All Functions Normal

Display Setup - User Defined 1' Tab

Page 1

Tab Name

No Device

No Device

No Device

No Device

No Device

No Device

✓

✗

▲

▼

### 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)

## Device Setups - Modules

This screen displays all modules recognized by the console and the status of any devices connected to those modules. This is a read-only screen. If a module has a position that has no device connected, the type will be listed as none for that position. To see each module individually, touch the desired module's button at the bottom of the screen.

A Table of Device Identifiers is included containing codes representing devices that may be installed in, or connected to the console. Some of these devices are optional and may not be installed/visible in your console.

2007/11/06 02:41 PM		T 1: DELIVERY NEEDED					
Device Setup – Modules#1							All Modules
Modules	Probes	Relays	External Inputs	Liquid Sensor	Type (		
Err	Bus Address	Mo	Type	ID	Primary Assignment		
All Module	Module 1	Module 2	Module 3	Module 4	Module 5	Module 6	

### All Modules View

#### Err

This column will either be blank (no errors) or will have an exclamation point (!) followed by a reason code number from 1 - 99.

## Bus Address

This column lists the Bus Addresses of devices connected to the console.

Whenever possible the console will try to detect automatically, the device type of devices connected to it. When the console detects the device type installed at a particular Bus Address, the console will display that location to the user on the appropriate screens.

The VR Bus address is not allowed to be setup before a device has been physically connected to and recognized by the console. When setting up a device, a list of device addresses that match the device type are available. Once an address has been assigned to a device, the address will no longer be available for assignment to another device.

The Bus Address format is represented as a string in the format *Bb.Ss.Address number*, where:

Bb = the Box identifier where *b* represents the Box number in the range 1 - 8. Box 1 is always the Main Console. Boxes > 1 refer to expansion consoles.

Ss = the Slot identifier where *s* represents the Slot number in the range 1-8.

Address number (module connection): 1 -16 (i.e. The position a device is connected to on the module). NOTE: 3-wire devices require two adjacent address on a module, see examples below.

Bus Address Examples:

B1.S4 - a module located at Slot 4 in Box 1

B2.S3 - a module located at Slot 3 in Box 1

B1.S4.3 - a 2-wire device connected to position 3 on the module located at Slot 4 in Box 1

B2.S4.9.10 - a 3-wire device connected to positions 9 and 10 on module located at Slot 4 in Box 2

B1.S4.12.13 - a 3-wire device connected to positions 12 and 13 on module located at Slot 4 in Box 1

## Mo

A "Mo" in this column identifies a module. All devices/addresses following this address and until the next "Mo" marked address appears, are devices connected to this module.

## Type

This column displays either a module type and number of connectors (e.g., I/O - 8, USM - 16, etc.), or a connected device's label (e.g., Probe, Mag Sensor, Vacuum Sensor, etc.).

## ID Primary Assignment

These two columns display a device's primary ID and label for the device (e.g., for probe 1 = Pb 1 / unleaded 1).

## ID Secondary Assignment

These two columns display a device's secondary ID and label for the device (e.g., for probe 1 = T1 / Pb 1).

## Single Module View

When an individual module button at the bottom of the screen is touched, the display will be identical to the All Modules view as will the each column's data, except only data for the selected module will be displayed. In the title bar, instead of "All Modules" you will see Module "x", where x = the slot number of the individual module.

All of the columnar data visible for all modules/devices in All Modules view will display for an individual Module view, except that the devices visible will only be those connected to the selected module.

## 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
Comm Device	Co	CommDev	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	Hv	HvdcSns	Hydrocarbon Sensor
Line	Ln	Line	Line
Line Pressure Sensor (PLLD)	Pl	Press	Line Pressure Sensor
Liquid Sensor	L	Liquid	Liquid Sensor
Mag Sensor	Ms	Mag	Mag Sensor
Meter	m	Meter	Meter
MDIM	M	MDIM	MDIM
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
Receiver	D	Recvr	Receiver
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

## 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.

2007/11/06 09:56 AM				T 1: DELIVERY NEEDED									
Device Setup - Probes										Probe 1 :			
Probes		Relays		External Inputs		Liquid Sensor		Type A Sen (2-Wire C					
Configured		Enabled											
Address		B1.S1.1											
Label													
Serial Number		3555185547											
Probe Type		MAG7											
Probe 1		Probe 2		Probe 3		Probe 4		Probe 5		Probe 6		Probe 7	

### Configured

Note:

Do not enable probe until its address is assigned!

Once enabled, do not disable probe if it is assigned to a tank. You must first unassign the probe from the tank before the probe can be disabled.

Allowable selections: Enabled, Disabled

Default: Disabled

## Address

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

Default: Not Assigned

## Label

Allowable selections: Up to 20 alphanumeric characters

Default: Blank

## Serial Number

Read only

## Probe Type

Read only

## Float Type

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

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

Default: 2 in.(50mm), 3 in.(76mm) or 4 in. (101mm) depending on probe type

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

## Fuel Offset (Custom Float Type)

Allowable selections: -8 in. to 8 in. (-203.2 to 203.2mm)

Default: Default varies according to Probe type and Float type. Refer to tables below for US values. Metric values are calculated using the formula;  $\text{mm} = 25.4 * \text{in.}$

## 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;  $\text{mm} = 25.4 * \text{in.}$

## 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)

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	2.500	-
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 assign alarm limits, line leak alarms, sensor alarms, and inputs from external devices to specific relays. Signals from an alarm limit or device triggers the relay assigned to it. You must enter data individually for each relay.

2007/11/06 09:57 AM				T 1: SETUP DATA WARNING									
Device Setup - Relays										Relay 1 :			
Probes		Relays		External Inputs		Liquid Sensor		Type A Sen (2-Wire C					
Configured		Enabled											
Address		B8.S5.1											
Label													
Type		Standard											
Orientation		Normally Open											
Relay 1		Relay 2		Relay 3		Relay 4		Relay 5		Relay 6		Relay 7	

### 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 - Responds to a pump request received from an assigned Pump Sense external input or Line Pressure Sensor.

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 tanks 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.

VAPOR PROCESSOR (ISD Option) - Select this relay type to allow console to control In-Station Diagnostic (ISD) Vapor Processor's On/Off state.

Allowable selections:

- Standard
- Pump Control Output
- Momentary
- Pump Comm Control
- Vapor Processor

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

## Assignment (Pump Control Output/Comm Control Relay Types Only)

This is a read-only field showing Device Type, NM, Label Pump for Pump Output Control or Line for Pump Comm Control.

## Device Setup - External Inputs

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

2007/11/06 09:57 AM		T 1: SETUP DATA WARNING				
Device Setup - Relays						Relay 1 :
Probes	Relays	External Inputs	Liquid Sensor	Type A Sen (2-Wire C		
Configured	Enabled					
Address	B8.S5.1					
Label						
Type	Standard					
Orientation	Normally Open					
 Relay 1	 Relay 2	 Relay 3	 Relay 4	 Relay 5	 Relay 6	 Relay 7

### 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 for any input device connected for the purpose of using the system's reporting, alarm, and data communications features.

**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.

**PUMP SENSE** - Select this input type when the input is used to indicate the On/Off state of the pump.

**STANDARD ACK** - - Select this relay type when using an external input (e.g., remote pushbutton) as an ALARM/TEST key.

**VAPOR PROCESSOR (ISD option only)** - Select this input type to allow console to control In-Station Diagnostic (ISD) Vapor Processor's On/Off state.

Allowable selections:

- Standard
- Generator
- Pump Sense
- Standard ACK
- Vapor Processor (available with ISD option only)

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

## Assignment (Pump Sense External Input Type Only)

This is a read-only field showing Device Type, Num, Label Line for Pump Sense

## Device Setup - Liquid Sensor

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

2007/11/06 03:55 PM		T 2: HIGH PRODUCT ALARM				
Device Setup - Liquid Sensor						Sensor 1 :
Modules	Probes	Relays	External Inputs	Liquid Sensor		
Configured	Enabled					
Address	Not Assigned					
Label	<input type="text"/>					
Model	Tri-State(Single Float)					
Category	Other					
Liquid 1	Liquid 2	Liquid 3	Liquid 4	Liquid 5	Liquid 6	Liquid 7

### 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.

2007/11/06 03:56 PM				T 3: HIGH PRODUCT ALARM									
Device Setup - Type A Sensor (2-Wire CL)										Sensor 1 :			
Relays		External Inputs		Liquid Sensor		Type A Sensor (2-Wire CL)							
Configured		Enabled											
Address		Not Assigned											
Label													
Model		Discrim. Interstitial											
Category		Other											
Type A 1		Type A 2		Type A 3		Type A 4		Type A 5		Type A 6		Type A 7	

### 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.

2007/11/06 03:56 PM		T 3: SETUP DATA WARNING				
Device Setup - Type B Sensor (3-Wire CL)						Sensor 1 :
Type A Sensor (2-Wire CL)		Type B Sensor (3-Wire CL)	MAG Sensor			
Configured	Enabled					   
Address	Not Assigned					
Label						
Address [2]						
Model	Ultra/Z-1					
Type B 1	Type B 2	Type B 3	Type B 4	Type B 5	Type B 6	Type B 7

### 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.

The setup parameter thresholds available are: Fuel Alarm, Fuel Warning, Water Warning, Water Alarm, High Liquid Alarm, High Liquid Warning, Low Liquid Alarm, Low Liquid Warning, Temperature Warning, Install Fault.

Mag Sensor Alarm Thresholds - The Compare Direction is either '<' or '>'. If the Alarm Threshold comparison in the indicated direction is reached the Alarm/Warning will be triggered. Also, the list of Alarm Thresholds is dynamic as it depends on the list of Alarms and Thresholds that have been programmed in the Sensor itself.

Upgrade Delay - If the Device does not allow the user to change the Upgrade Delay period, then the field is read-only. The Upgrade Delay period will only be valid for Alarms that are "Upgradable".

Alarms and Thresholds - If an alarm threshold is not programmable, then the field is read-only.

2007/11/06 09:58 AM		T 4: SETUP DATA WARNING				
Device Setup - MAG Sensor						Sensor 1 :
Wire CL)	MAG Sensor	Ground Water Sensor	Vapor Sensor			
Configured	Enabled					 
Address	B1.S1.5					
Label						
Serial Number	17945					
Alarm Delay	0					
 MAG 1	 MAG 2	 MAG 3	 MAG 4	 MAG 5	 MAG 6	 MAG 7

## 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.

## Alarm Delay

This is the time in hours that all uncleared warnings will delay before upgrading to alarms. This value is read-only unless the sensor has been factory set to upgradable.

Allowable selections: 0-9999 Hours

Default: Assigned by sensor

## Water Warning

If this feature is programmable and enabled, enter the height in inches (or mm if metric units selected) at which the Water Warning will activate.

If this feature is not programmable, it is a read-only indicator of the value that was preset at the factory.

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

Default: 0

## Water Alarm

If this feature is programmable and enabled, enter the height in inches (or mm if metric units selected) at which the Water Alarm will activate.

If this feature is not programmable, it is a read-only indicator of the value that was preset at the factory.

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

Default: 0

# Device Setup - Groundwater Sensor

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

2007/11/06 03:57 PM		T 4: SETUP DATA WARNING				
Device Setup - Ground Water Sensor						Sensor 1 :
e B Sensor (Wire CL)	MAG Sensor	Ground Water Sensor	Vapor Sensor			
Configured	Enabled					
Address	Not Assigned					
Label	<input type="text"/>					
Address [2]	<input type="text"/>					
Category	Other					
 GmdWtr 1	 GmdWtr 2	 GmdWtr 3	 GmdWtr 4	 GmdWtr 5	 GmdWtr 6	 GmdWtr 7

## Configured

Allowable selections: Enabled, Disabled  
Default: Disabled

## Address

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

## **Label**

Allowable selections: Up to 20 alphanumeric characters

Default: Blank

## **Address [2]**

Allowable selections: Read-only - next sequential address

## **Category**

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

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

Default: Other Sensors

## Device Setup - Vapor Sensor

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

2007/11/06 03:58 PM				T 2: SETUP DATA WARNING									
Device Setup - Vapor Sensor										Sensor 1 :			
MAG ensor		Ground Water Sensor		Vapor Sensor		Line Pressure Sensor							
Configured		Enabled											
Address		Not Assigned											
Label													
Address [2]													
Threshold													
Vapor 1		Vapor 2		Vapor 3		Vapor 4		Vapor 5		Vapor 6		Vapor 7	

### 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.

 <b>WARNING!</b>	
	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

Turn Off all AC power to the console.  
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.

Find the module connections of the Vapor Sensor which is to be measured for a vapor threshold value. Measure the resistance across the "+" (black wire) and "-" (green wire) terminals using an ohmmeter. Multiply the measured resistance by 4 to determine the vapor threshold value that you should enter. Enter the calculated vapor threshold value.

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

## Category

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

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

## Device Setup - Line Pressure Sensor

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

2007/11/06 03:58 PM		T 1: DELIVERY NEEDED				
Device Setup - Line Pressure Sensor						Sensor 8 :
MAG ensor	Ground Water Sensor	Vapor Sensor	Line Pressure Sensor			
Configured		Enabled				
Address		B1.S2.4				
Label						
Serial Number		558106179				
Altitude Pressure Offset		0.0				
 Press 2	 Press 3	 Press 4	 Press 5	 Press 6	 Press 7	 Press 8

### 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 entry.

## Type

There are 2 different PLLD sensor types. Each type can be identified as follows: Non-Vented (sensor has an aluminum top) and High Pressure (sensor has a plastic top with a metal nameplate [this type is currently being shipped]).

Allowable selections: Non-Vented, High Pressure

Default: Non-Vented

## Pressure Offset

New sensors are now factory sealed and their internal chamber cannot be equalized to atmospheric pressure by opening a vent screw as in the past. The Pressure Offset test procedure described in this section must be performed when using new PLLD sensors with serial numbers of 100,000 or above, in sites located at altitudes above 2,000 feet (609 m). Note: this procedure can also be used with sensors having serial numbers below 100,000 instead of using the vent screw to equalize pressure.

The table below illustrates approximate absolute pressures that are for reference only. The sensor's actual reading may vary slightly due to its construction, A/D conversion, head pressure in the lines, etc. Before this procedure is performed, the pressure in the line **MUST** be vented to zero. It is recommended that this procedure be performed immediately after installing the sensor, before energizing the STP.

<b>Altitude Ft (m)</b>	<b>Atmospheric Pressure Offset Psi (kPa)</b>
Sea Level – 2000 (609)	No Change
2000 – 3000 (609 – 914)	+1 (+6.9)
3000 – 4000 (914-1219)	+1.5 (+10.3)
4000 – 5000 (1219-1524)	+2.0 (+13.8)
5000 – 6000 (1524-1829)	+2.5 (+17.2)
6000 – 7000 (1829-2134)	+3.0 (+20.7)
7000 – 8000 (2134-2438)	+3.4 (+23.4)
8000 – 9000 (2438 – 2743)	+3.8 (+26.2)
9000 – 10000 (2743-3048)	+4.2 (+28.9)
10000 – 12000 (3048-3658)	+4.6 (+31.7)
12000 – 14000 (3658-4267)	+5.4 (+37.2)
14000 (4267) - above	+5.7 (+39.3)

There are three steps involved in entering the Pressure Offset for the line pressure sensor.

## First- Vent the Line



Turn Off, lock out, tag power to the STP.  
Vent the line to zero.  
Reseal the line.  
Turn On power to the STP

## Second - Run a Pressure Offset Test

Go to the PLLD Diagnostics screen and select the Pressure Offset screen. Run a Pressure Offset Test for the line pressure sensor to determine its Pressure Offset value.

NOTE: The maximum offset pressure range is  $\pm 5$  psi ( $\pm 34.5$  kPa). If the Pressure Offset is greater than  $\pm 5$  psi, repeat the test. If the Pressure Offset is again out of range, either the line's pressure is not completely vented or there is a hardware problem. If necessary, refer to the PLLD troubleshooting manual (P/N 577013-344) for further instructions.

## Third - Enter the Pressure Offset Value

Return to this Line Pressure Setup screen and enter the Pressure Offset determined in the test, for the sensor.

Allowable pressure offset range:  $\pm 5$  psi ( $\pm 34.5$  kPa)  
Default: 0

# Comm Setup - General

This screen lets you choose and enable a Comm Device and set up its general communication properties.

2007/11/05 02:35 PM		All Functions Normal				
Comm Device Setup - General						Comm 1 :
General		Format	Advanced			
Configured		Enabled				
Slot		1				
Port		1				
Device		RS232 CARD				
Label						
 Comm 1	 Comm 2	 Comm 3	 Comm 4	 Comm 5	 Comm 6	 Comm 7

## Initial Setup - No Comm Card in Console Slot

Initially no comm devices are configured and the only tab that is available is the General Tab with the common fields and their default values. You select a Comm Device button and pick the slot in which it is installed. Then you select a comm device type. After these selections are made, the appropriate Tabs and rest of the fields for that Comm Device Type will display on the screen with their default values. You then make all additional necessary changes for this selected Comm Device Type and save the Comm Device data.

If you leave the Comm Device as Disabled then no Alarms or Warnings will be shown. Once you set the configured state as Enabled for a Comm Device then a System Warning or Alarm (internal, not a dialog) will be generated if that board is not installed.

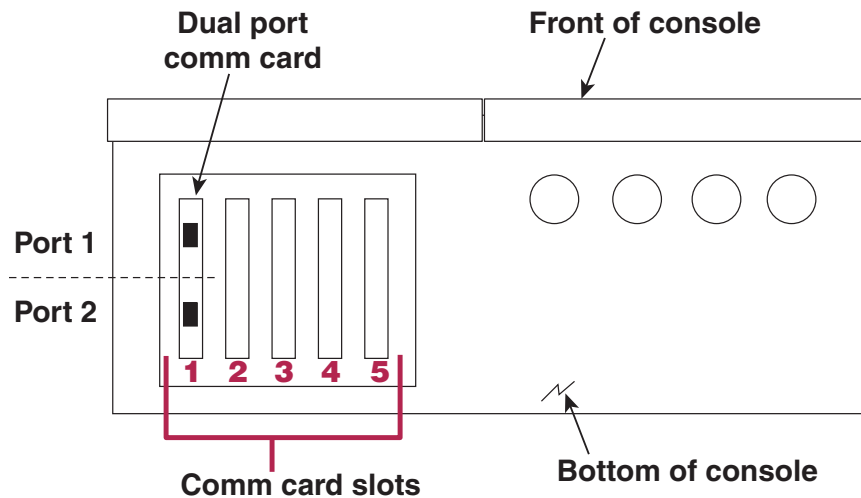
## Initial Setup - Comm Card in Console Slot

The initial setup when a comm card is in a console slot is essentially the same as when there is no comm card installed (see above), except for the following:

- The options available on the Device Field depend on the slot that has been detected.
- Once you set the configure state to Enabled for a slot, then a System Warning or Alarm (internal) will be generated if the wrong type board is installed in that slot.

## Console comm card permissible slots and configurable ports

To identify comm card ports, refer to the figure below:



Refer to the table below to identify permissible slots and configurable ports for comm cards:

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

C = Configurable, NC = Non-Configurable

## **RS-232, RS-485, Internal Modem, Satellite H-JBox, and Satellite S-Sat Comm Cards**

When selecting ports in the setup steps below, dual-port comm cards will have a number in parentheses to identify the port, i.e., RS-232 (1), RS-232 (2), etc.

### **Configured**

Allowable selections: Enabled, Disabled  
Default: Disabled

### **Slot**

Allowable selections: List, None  
Default: None

### **Port**

Each slot can have more than one port. So if there is more than one port, you must select a port before selecting the valid Comm card. If the card is auto-detected or already installed, then this field is disabled.

Allowable selections: List, None  
Default: None

### **Device**

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

If there is no card 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).

For dual comm cards (more than one card of the same Comm Device type), the devices will have a number in parentheses to identify them uniquely (i.e. RS-232 (1), RS-232 (2), etc.).

Allowable selections: List, None  
Default: None

### **Label**

Enter a unique label for this Comm Device. The label can be blank, however, a warning will display recommending a label be assigned.

Allowable selections: Up to 20 alphanumeric characters  
Default: Comm Device Identifier, Number and the word "Label"



## **Baud Rate**

Allowable selections: 300,600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200  
Default: RS-232 = 1200, RS-485 = 2400, Wireless (option) = 9600

## **Data Bits**

Allowable selections: Proprietary, Unknown  
Default: Proprietary

## **Parity**

Allowable selections: Proprietary, Unknown, No Parity  
Default: Proprietary

## **Stop Bits**

Allowable selections: Proprietary, Unknown  
Default: Proprietary

## **Satellite Connection String (Satellite H-JBox Comm Cards Only)**

Allowable selections: Alphanumeric, maximum 30 Characters  
Default: Empty

## **DTR state (Satellite S-SAT Comm Cards Only)**

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

## **TCP/IP Comm Cards**

### **IP Assignment**

Allowable selections: Static, Dynamic  
Default: Static

### **Assigned IP**

Read-only numeric: XXX.XXX.XXX.XXX (0 to 255 each field)  
Default: 0.0.0.0

## **IP Address**

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

Default: 0.0.0.0

## **Local IP Port**

Allowable selections: Numeric 0 to 65535

Default: 10001

## **Subnet Mask**

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

Default: 0.0.0.0

## **Gateway IP**

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

Default: 0.0.0.0

## Comm Setup - Format

This screen lets you enter Date, Time, Language, Units and Numeric properties related to each of the allowable Comm Devices listed below.

2007/11/05 02:36 PM				All Functions Normal									
Comm Device Setup - Format										Comm 1 :			
General		Format		Advanced									
Serial Language		ENGLISH											
Serial Units		US											
Date Format		MM_DD_YYYY											
Date Separator		/											
Time Format		12-HOUR xM											
Comm 1		Comm 2		Comm 3		Comm 4		Comm 5		Comm 6		Comm 7	

### RS-232 / RS-485

FIELD	ALLOWABLE SELECTIONS	DEFAULT
Serial Language	English, Spanish	English
Serial Units	U.S., Metric, Imperial	U.S.
Date Format	MON-DD-YYYY, YYYY-MM-DD, MM-DD-YYYY, DD-MM-YYYY	MM-DD-YYYY
Date Separator	"-", "/", "."	"/"
Time Format	24-hour, 12-hour xM (x = A/P)	12-hour xM
Decimal Separator	"", ".", "	"."
Thousands Separator	",", " ", None	None

## Internal Modem

FIELD	ALLOWABLE SELECTIONS	DEFAULT
<b>Serial Language</b>	English, Spanish	English
<b>Serial Units</b>	U.S., Metric, Imperial	U.S.
<b>Date Format</b>	MON-DD-YYYY, YYYY-MM-DD, MM-DD-YYYY, DD-MM-YYYY	MM-DD-YYYY
<b>Date Separator</b>	"-", "/", "."	"/"
<b>Time Format</b>	24-hour, 12-hour xM (x = A/P)	12-hour xM
<b>Decimal Separator</b>	"", " ", "."	" "
<b>Thousands Separator</b>	"", " ", None	None

## Satellite H-JBox

FIELD	ALLOWABLE SELECTIONS	DEFAULT
<b>Serial Language</b>	English, Spanish	English
<b>Serial Units</b>	U.S., Metric, Imperial	U.S.
<b>Date Format</b>	MON-DD-YYYY, YYYY-MM-DD, MM-DD-YYYY, DD-MM-YYYY	MM-DD-YYYY
<b>Date Separator</b>	"-", "/", "."	"/"
<b>Time Format</b>	24-hour, 12-hour xM (x = A/P)	12-hour xM
<b>Decimal Separator</b>	"", " ", "."	" "
<b>Thousands Separator</b>	"", " ", None	None

## Satellite S-SAT

FIELD	ALLOWABLE SELECTIONS	DEFAULT
<b>Serial Language</b>	English, Spanish	English
<b>Serial Units</b>	U.S., Metric, Imperial	U.S.
<b>Date Format</b>	MON-DD-YYYY, YYYY-MM-DD, MM-DD-YYYY, DD-MM-YYYY	MM-DD-YYYY
<b>Date Separator</b>	"-", "/", "."	"/"
<b>Time Format</b>	24-hour, 12-hour xM (x = A/P)	12-hour xM
<b>Decimal Separator</b>	"", " ", "."	" "
<b>Thousands Separator</b>	"", " ", None	None

# Comm Setup - Advanced

This tab lets you select highly-sensitive properties related to all Comm Device types.

2007/11/05 02:37 PM		All Functions Normal				
Comm Device Setup - Advanced						Comm 1 :
General	Format	Advanced				
Security Code		abc				
RS-232 End of Message		Enabled				
Comm 1	Comm 2	Comm 3	Comm 4	Comm 5	Comm 6	Comm 7

FIELD	ALLOWABLE SELECTIONS	DEFAULT
Security Code	6-digit numeric string	Empty
RS-232 End of Message*	Enabled/Disabled	Disabled

\*This feature notifies the receiver that the message is complete. The default value is disabled. To enable the feature so that an end of message character is sent by the RS-232 command select enabled.

# Tank Setup - All Tanks

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

2007/11/06 09:48 AM		T 2: SETUP DATA WARNING				
Tank Setup - All Tanks						All Tanks
All Tanks	General	Limits	Environmental Tests	Chart	Siphon Sets	
Ullage		90				
Print TC Volumes		Disabled				
TC Reference [ °F ]		60.0				
CSLD Reid Vapor Pressure		Disabled				
CSLD Evap. Reid Vap. Pressure Chart		Jan 0.00				
Periodic Test Needed Warnings		Disabled				

## 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 Reid Vapor Pressure (RVP)

Enabling CSLD Evaporation Reid Vapor Pressure (RVP) allows you to enter evaporation compensation values for each month for non-diesel tanks at the site.

Note: CSLD Reid Vapor Pressure is enabled only if Climate is set to Extreme (reference Tank Setup - Environmental Tests screen/Climate Factor (CSLD) paragraph) and CSLD Evaporation Compensation is enabled.

Allowable Selection: Enabled/Disabled

Default: Disabled

## CSLD Evaporation RVP Chart

The CSLD Evaporation Reid Vapor Pressure Chart field has 3 parts: a display field, a dropdown list button, and an advanced setup button. The display field shows the first non-zero month entry of the Reid Vapor Pressure chart with the RVP value for that month.

Touching the dropdown list button displays the Reid Vapor Pressure Chart (a read only, non-selectable list to view the RVP chart entries for that month).

Touching the Advanced Setup button to the right of the parameter entry field and dropdown button displays a screen for the Reid Vapor Pressure Chart entries. You enter values for each month field using the numeric keypad interface.

**Notes:**

The CSLD Reid Vapor Pressure Chart is enabled only if: Climate field is set to Extreme; CSLD Evaporation Compensation is enabled; and CSLD Reid Vapor Pressure is enabled.

## **Periodic Test Needed Warning**

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

Allowable Selection: Enabled/Disabled

Default: Disabled

### **Days Before Periodic Warning**

Allowable Selection: 0 - 30

Default: 25 days

### **Days Before Periodic Alarm**

Allowable Selection: 0 - 30

Default: 30 days

## **Annual Test Needed Warning**

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

Allowable Selection: Enabled/Disabled

Default: Disabled

### **Days Before Annual Warning**

Allowable Selection: 0 - 365

Default: 355 days

### **Days Before Annual Alarm**

Allowable Selection: 0 - 365

Default: 365 days



# Tank Setup - General

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

2007/11/06 09:49 AM		T 4: SETUP DATA WARNING				
Tank Setup - General						Tank 1 :
All Tanks	General	Limits	Environmental Tests	Chart	Siphon Sets	
Configured		Enabled				
Product Label		<input type="text"/>				
Product Code		1				
Probe		1				
Probe Offset [ in ]		0.0				
Tank 1	Tank 2	Tank 3	Tank 4	Tank 5	Tank 6	Tank 7

## Configured

To configure a tank the following must be true:

- A probe must be assigned to the tank
- The probe must have a valid address
- The tank must have a viable chart as follows;
  - All charts must include diameter and full volume,
  - A 4 point chart must have the diameter and 3 valid tank chart volumes,

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

Allowable selections: Enabled or Disabled

Default: Disabled

## Product Label

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

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

Default: Blank

## Product Code

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

Allowable entry: 1 character (all ASCII characters in the set 20h to 7Eh)

Default: A single character based on tank number , e.g., 1 to 9 for tank numbers 1 to 9 or A to W for tank numbers 10 to 32.

## Probe

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

Allowable entry: Select this probe's identifier from the dropdown list.

Default: 'Not Assigned'

## Full Volume (Capacity)

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

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

Default: 0

## Diameter

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

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

Default: 0

## Probe Offset

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

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

Default: 0

## Tank Tilt

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

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

Default: 0.00

## Thermal Coefficient

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

Product	Thermal Coefficient (U.S. Units)	Thermal Coefficient (Metric Units)
Alcohol	0.00063	0.00114
Aviation Gas	0.00075	0.00135
Diesel (fuel oil #2) [DERV]	0.00045	0.00081
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

<b>Product</b>	<b>Thermal Coefficient (U.S. Units)</b>	<b>Thermal Coefficient (Metric Units)</b>
Liquefied Petroleum Gas (LPG)	0.00160	0.00288
Leaded	0.00070	0.00126
Motor Oil	0.00047	0.00085
Premium [4 Star]	0.00070	0.00126
Regular Unleaded	0.00070	0.00126
Super Unleaded	0.00070	0.00126
Low benzene unleaded petrol	0.00070	0.00126
Transmission Fluid	0.00047	0.00085
Turbine Oil	0.00047	0.00085
Water	0.00012	0.00022
Washer Fluid	0.00047	0.00085
Used Oil	0.00044	0.00079

Allowable entry: 0.0 to 0.0016 gal/gal/ °F (0.0 to 0.00288 L/L/ °C)

Default: 0.0 (A value of 0.0 in this field means that TC volume is uncompensated volume, which is not compensated for temperature.)

## **Fuel Density (Optional Feature)**

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

Allowable entry: 0.0 to 2000.0000

Default: 0.0

## **Accept Dispenser Information (Optional Feature)**

Allowable entry: Enabled, Disabled

Default: Enabled

## Pump Threshold (%)

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

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

Default: 10.00%

## Delivery Delay

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

Allowable entry: 1 to 99 minutes

Default: 1

## Gross Test Fail

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

Allowable selections: Enabled or Disabled

Default: Enabled

## Precision 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 annual leak test fails.

Allowable selections: Enabled or Disabled

Default: Disabled

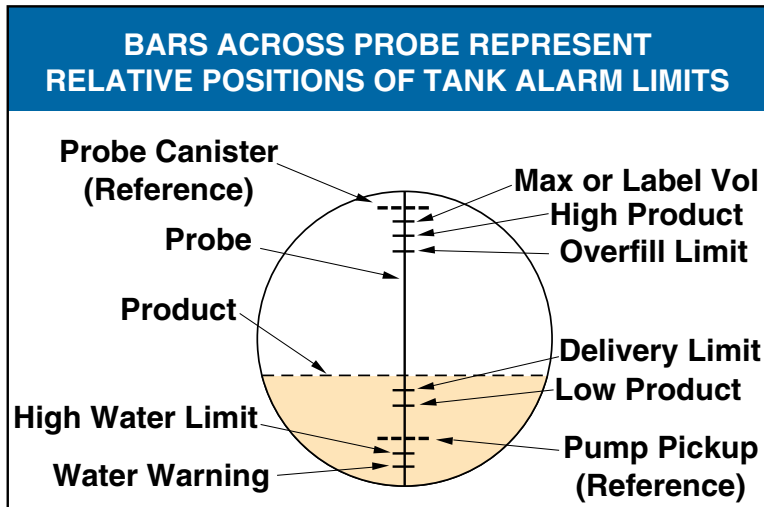
# Tank Setup - Limits

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

2007/11/06 09:52 AM		T 4: SETUP DATA WARNING				
Tank Setup - Limits						Tank 1 :
All Tanks	General	Limits	Environmental Tests	Chart	Siphon Sets	
Max. Volume (Label Vol.) [ gal ]		10000				
High Product (% of max. vol.)		90				
Delivery Overfill(% of max. vol.)		95				
Delivery Limit (% of full vol.)		95				
Low Product [ gal ]		1000				
Tank 1	Tank 2	Tank 3	Tank 4	Tank 5	Tank 6	Tank 7

## 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).



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**Figure 1.**

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

## High Product (% of Maximum Volume)

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

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

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

## Delivery Overfill (% of Maximum Volume)

Delivery Overfill warns of a potential overfill only during a bulk delivery. When the volume reaches this value, the system can activate an on-site overfill alarm and trigger a printout showing the tank number, date, time, and product. Set this percentage no greater than 90% of the tank's capacity. In international installations set this percentage to no greater than 99% of maximum (label) volume (See Figure 1).

Allowable entry: 0 to 100%  
Default: 0%

## Delivery Limit (% of Full Volume)

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

Allowable entry: 0 to 100%  
Default: 0%

## Low Product Volume

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

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

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

## High Water Warning

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

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

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

## High Water Alarm

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

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

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

## Leak Alarm Limit

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



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

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

Default: 99 gallons (374 litres)

## **Sudden Loss Limit**

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

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

Default: 99 gallons (374 litres)

# Tank Setup - Environmental Tests

This screen provides a choice of disabling a tank test (default), or enabling SLD or CSLD tests for a selected tank. Once a Tank Test Method has been chosen, the corresponding setup parameters for either SLD or CSLD will be displayed in the data view area. Choosing a test enables this test and provides the settings by which the test will be conducted. However, enabling a test is not the same as starting the test, which may be started at a later point.

## SLD (Test Method)

2007/11/06 09:53 AM				T 1: SETUP DATA WARNING											
Tank Setup - Environmental Tests											Tank 1 :				
All Tanks		General		Limits		Environmental Tests		Chart		Siphon Sets					
Tank Test Method				SLD											
Gross Test Auto-Confirm				Disabled											
Leak Test Rate				0.2 GPH											
Periodic Test Type				Standard											
Test Frequency				2007/11/06, 12:00 AM											
Tank 1		Tank 2		Tank 3		Tank 4		Tank 5		Tank 6		Tank 7			

## Tank Test Method

SLD (Static Leak Detect) tests - leak tests run automatically during scheduled times and information is stored for leak test reports.

CSLD (Continuous Static Leak Detection) tests - leak tests run automatically during idle tank times and information is stored for leak test reports.

Allowable selections: Disabled, SLD, CSLD  
Default: Disabled

## **Gross Test Auto-Confirm**

Test Frequency Period is set to Automatic (Pump Sense must be available for this selection).

Allowable selections: Enabled, Disabled  
Default: Disabled

## **Leak Test Rate (SLD)**

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

## **Periodic Test Type (SLD)**

Two periodic SLD test types are available:

- 'Standard' - performs a 2-hour periodic leak test.
- 'Quick' - performs a 0.2 gph (0.76 lph) test in one hour.

Allowable selections: Standard, Quick  
Default: Standard

## **Test Frequency (SLD)**

Select the Test Frequency for performing SLD tests:

### **Period**

Allowable selections: On Date, Annually by Day of Week, Annually by Day of Month, Monthly by Day of Week, Monthly by Day of Month, Weekly, Daily, or Auto (When the option 'Auto' is chosen, all other fields will become disabled. Pump Sense must be available).  
Default: On Date

### **Month**

Allowable selections: January - December  
Default: January

## **Week Number**

Allowable selections: 1 - 4, Last Week  
Default: 1

## **Day of Week**

Allowable selections: Sunday - Saturday  
Default: Sunday

## **Day of Month**

Allowable selections: 1 - 31  
Default: 1

## **Time of Day**

Allowable selections: Time in hours and minutes, 12 hour sensitive  
Default: 12:00 AM

## **Duration**

Allowable selections: 2 - 24 Hours  
Default: 2

## **Leak Min. Periodic (%of full volume)**

Allowable selections: 0 - 100%  
Default: 0

## **Leak Min. Annual (%of full volume)**

Allowable selections: 0 - 100%  
Default: 0

## **Early Stop**

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

## CSLD (Test Method)

2007/11/06 09:54 AM			T 2: SETUP DATA WARNING					
Tank Setup – Environmental Tests								Tank 1 :
All Tanks	General	Limits	Environmental Tests	Chart	Siphon Sets			
Tank Test Method			CSLD					
Gross Test Auto-Confirm			Disabled					
Probability Of Detection			95%					
Climate Factor			Moderate					
Tank CSLD Evap. Compensation			Disabled					
 Tank 1	 Tank 2	 Tank 3	 Tank 4	 Tank 5	 Tank 6	 Tank 7		

## Tank Test Method

- SLD (Static Leak Detect) tests - leak tests run automatically during scheduled times and information is stored for leak test reports.
- CSLD (Continuous Static Leak Detection) tests - leak tests run automatically during idle tank times and information is stored for leak test reports.

Allowable selections: Disabled, SLD, CSLD  
Default: Disabled

## **Gross Test Auto-Confirm**

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

Allowable selections: Enabled, Disabled  
Default: Disabled

## **Probability of Detection**

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

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

## **Climate Factor**

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

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

Allowable selections: Moderate, Extreme  
Default: Moderate

## **Tank CSLD Evap. Compensation (CSLD)**

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

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

Allowable selections: Enabled, Disabled  
Default: Disabled

## **Tank Stage II Vapor Recovery**

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

Allowable selections: Enabled, Disabled  
Default: Disabled

# Tank Setup - 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).

2007/11/06 09:54 AM		T 1: DELIVERY NEEDED				
Tank Setup - Chart						Tank 1 :
All Tanks	General	Limits	Environmental Tests	Chart	Siphon Sets	
Tank Profile		One Point Chart				
Full Volume 90.0 in		10000.0				
Tank 1	Tank 2	Tank 3	Tank 4	Tank 5	Tank 6	Tank 7

## Tank Profile

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

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

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

Default: 1 point chart

## **Full Volume (at full height) in. or mm**

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

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

## **Enter volumes at read only heights**

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

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

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

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



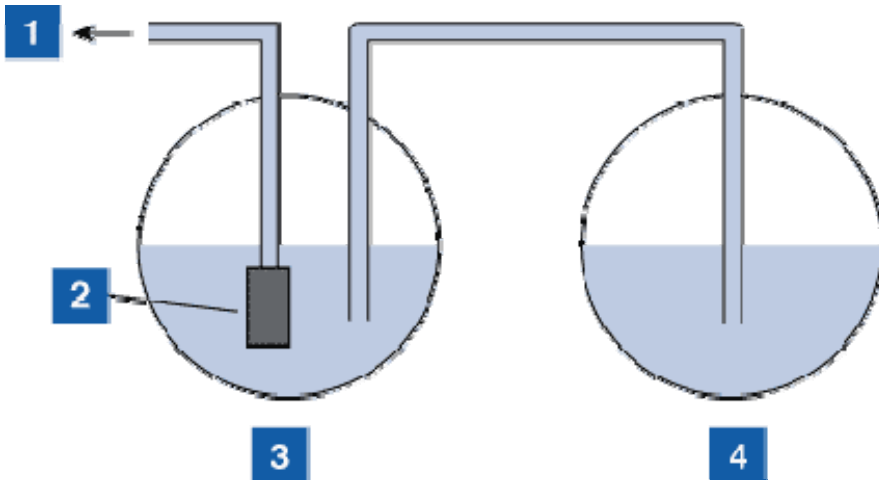
# Tank Setup - Siphon Sets

The Siphon Set screen is used to view and edit information about siphon manifolded sets in the system.

2007/11/06 09:55 AM		T 4: SETUP DATA WARNING					
Tank Setup - Siphon Sets						Siphon 1	Clear
All Tanks	General	Limits	Environmental Tests	Chart	Siphon Sets		
Siphon Set		<div>Tank1: <input type="text"/></div>					
Second		<div>Tank2: <input type="text"/></div>					
 Siphon 1	 Siphon 2	 Siphon 3	 Siphon 4				

Each siphon 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.

## Pumps and Lines Setup - Pumps

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

2007/11/05 02:19 PM			All Functions Normal					
Pump and Line Setup - Pumps								Pump 1 :
Pumps	All Lines	Lines	All PLLD	PLLD				
Configured	<div>Enabled </div>							
Pump Label	<div><input type="text"/></div>							
Mode	<div>TLS Pump Control </div>							
Tank	<div>!Tank 1: </div>							
Pump Control	<div>Not Assigned </div>							
Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6	Pump 7		

### 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 Devices setup. Selecting a pump sense input enables pump sense for the selected pump. More than one pump may use the same pump sense input. This feature is only enabled if Mode entry is "TLS Pump Control" or "Pump Sense".

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

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

## Line

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

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

## Pumps and Lines Setup - All Lines

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

2007/11/05 02:19 PM		All Functions Normal					
Pump and Line Setup - All Lines						All Lines	
Pumps	All Lines	Lines	All PLLD	PLLD			
Line Lockout Schedule		<div>Daily</div>					
Start Time		<div>12:00 AM</div>					
End Time		<div>12:00 PM</div>					

### Line Lockout Schedule

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

## 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

## Individual

Individual schedule allows you to enter up to seven separate lockout schedules. You program each lockout period with an Event Start day and time, and an Event End day and time. For example, lockouts 1 through 5 could be programmed to lock out the line leak test each day from Monday through Friday to accommodate hours when the station is closed. Lockout 6 could be programmed to lock out the test from Friday night to Monday morning if the site is closed for the weekend. If lockout schedules are programmed incorrectly, the line leak tests may not run. Make sure you have programmed the settings correctly.

### Event Start

Allowable selections: Disabled, Monday - Sunday  
Default: Disabled

### Start Time

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

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

### End

Allowable selections: Disabled, Monday - Sunday  
Default: Disabled

### End Time

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

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

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

## Pumps and Lines Setup - Lines

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

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

2007/11/05 02:20 PM				All Functions Normal									
Pump and Line Setup - Lines										Line 1 :			
Pumps		All Lines		Lines		All PLLD		PLLD					
Configured		Enabled											
Line Label													
Leak Monitoring		PLLD											
Pressure Sensor		! Line Pressure 1:											
Line Manifolded		No											
 Line 1		 Line 2		 Line 3		 Line 4		 Line 5		 Line 6		 Line 7	

### 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 selection, pumps in the set will be displayed in read only fields below the first pump field on the screen. Only the first pump field will have the multi-select drop down launch button next to it.

Pumps selected for a line should have the same pump mode setting or an error message box will be shown describing why the selected pump cannot be added to the list. The maximum number of pumps that can be added to a single line is 8.

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

Default: Not Assigned

## Pumps and Lines Setup - All PLLD

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

2007/11/06 02:39 PM		T 1: DELIVERY NEEDED				
Pump and Line Setup - All PLLD						All PLLD
Pumps	All Lines	Lines	All PLLD	PLLD		
Line Re-Enable Method			Pass Line Test			
Periodic Test Warnings			Disabled			
Days before Periodic Warning			25			
Days before Periodic Alarm			30			
Annual Test Warnings			Disabled			
Days before Annual Warning			355			

### Line Re-Enable Method

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

### Periodic Test Needed Warning

Periodic Test Warnings, when enabled, inform 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 precision (0.1gph [0.38 lph]) test and running the next test. Note: In previous TLS consoles this was referred to as Precision Test Duration.

Allowable selections: 12 to 744 hours (When CSLD is not enabled for a tank), 60 to 744 hours (When CSLD is enabled for a tank)

Default selection: 12 hours (When CSLD is not enabled for any tank), 744 hours (When CSLD is enabled for a tank)

## 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: Disabled

## **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: Disabled

## 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.

2007/11/06 04:00 PM		T 3: HIGH PRODUCT ALARM				
Pump and Line Setup - PLLD						Line 1 :
Pumps	All Lines	Lines	All PLLD	PLLD		
Configure		Enabled				
Controlling Pump		Not Assigned				
Pipe Type		Enviroflex PP1503/2503				
1.5 in Diameter Length [Ft]						
2.5 in Diameter Length [Ft]		0				
Line 1	Line 2	Line 3	Line 4	Line 5	Line 6	Line 7

### Configure

Allowable selections: Disabled, Enabled

Default: Enabled

## Controlling Pump

Allowable selections: Disabled, Enabled  
Default: Enabled

## 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: Refer to Line Leak Application Guide Manual (P/N 577013-465)  
Default: Environflex PP1503/2503

## Line Length

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

Different line length fields will appear based on the pipe type selected for the line.

Allowable selections: Refer to Line Leak Application Guide Manual (P/N 577013-465)  
Default: Blank

### 1.5 in Diameter Length

Allowable selections: Refer to Line Leak Application Guide Manual (P/N 577013-465)  
Default: Blank

### 2.5 in Diameter Length

Allowable selections: Refer to Line Leak Application Guide Manual (P/N 577013-465)  
Default: Blank

### 2.0 in Diameter Length

Allowable selections: Refer to Line Leak Application Guide Manual (P/N 577013-465)  
Default: Blank

### 3.0 in Diameter Length

Allowable selections: Refer to Line Leak Application Guide Manual (P/N 577013-465)  
Default: Blank

## 1st Line Length

Allowable selections: Refer to Line Leak Application Guide Manual (P/N 577013-465)  
Default: Blank

## 1st Line Diameter

Allowable selections: 0 to 3.00 in (0 to 76.20mm)  
Default: 0.00

## Configure

Allowable selections: Disabled, Enabled  
Default: Enabled

## 1st Line Bulk Modulus

Allowable selections: 1000 to 200,000 psi (6892 to 1,378,359kPa)  
Default: 0

## 2nd Line Length

Allowable selections: Refer to Line Leak Application Guide Manual (P/N 577013-465)  
Default: Blank

## 2nd Line Diameter

Allowable selections: 0 to 3.00 in (0 to 76.20mm)  
Default: 0.00

## 2nd Line Bulk Modulus

Allowable selections: 1000 to 200,000 psi (6892 to 1,378,359kPa)  
Default: 0

## 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 blackout period (selected in Precision Test Duration setup) is then observed. Following the test blackout 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 (0.38lph) 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 blackout period (selected in Precision Test Delay setup) is then observed. Following the test blackout period, the test sequence repeats after the next dispense. This selection also enables manual 0.1 gph (0.38lph) testing. (Note: The Repetitive option is not available if the 0.1 (0.38lph) On Demand PLLD software feature is installed.)
- Auto - 6 months after the last passed 0.1 gph (0.38lph) test. Also enables manual 0.1 gph (0.38lph) testing.
- Manual - 0.1 gph (0.38lph) tests run only when manually started.

Default: Disabled

## Passive 0.1 gph (0.38lph) Line Leak Test

Allowable selections: Yes, No

Default: No

## Shutdown Rate

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

Default: 3.0 gph (11.3lph)

## **Low Pressure Shutoff**

Allowable selections: Disabled, Enabled

Default: Disabled

## **Low Pressure Shutoff Value**

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

Default: 0

## **Continuous Handle Timeout**

Allowable selections: 1 to 16 hours

Default: 16 hours

## **Fuel Out Limit**

Allowable selections: 0.00 to 15.00 in (0.00 to 381.00mm)

Default: 10.00 in (254mm)

# Automatic Events Setup - Task Log

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

11/07/2007 09:02 AM		T 1: SETUP DATA WARNING					
Automatic Events - Task Log #1							More
	Print Tasks	Auto Connect Tasks	Address Book	Task Log			Remove Entry
Report/Action	Contact	Date and Time	Retries	Device/Connection Mode	Status...		Clear This Log
						Select	

## Report Column Descriptions

### Report/Action

Name of Report Transmitted or Action to perform.

### Contact

Contact Name (for Auto Connect or Report data).

### Date and Time

The time when the Task was first attempted.

## **Retries**

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.

## **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 log entry.

### **Clear This Log**

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

### **Select**

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

### **Select Report/Action**

Allowable selections: All Reports and Actions (including Auto Connect), Auto Connect or all 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 Devices (includes Printer Devices) and Connection Modes, or all selections as in 'Select Device', 'Select Connection Mode' and 'Select Printer' above.

Default selection: All Connection Modes

## **Select Status**

Allowable selections: Any Status, Success, Pending, Failed

Default selection: Any Status

# 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.

2007/11/06 03:45 PM		T 1: SETUP DATA WARNING				
Automatic Events - Address Book #1						More
Device Tasks	Print Tasks	Auto Connect Tasks	Address Book	1		
Contact Name	Modem Number	Fax Number	Remote Host Address and Port			
contact	9-1-555-555-5555		0.0.0.0			
						Add Entry
						Edit Entry
						Delete Entry

## Report Column Descriptions

### Contact

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

### Modem

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**

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.

2007/11/05 06:38 PM		All Functions Normal				
Add/Edit Contact Entry - Contacts						
Contacts	Modem	Fax	TCP / IP	Satellite	E-Mail	SMS
Contact Name	<input type="text"/>					
						
						
						
						

### 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

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.

2007/11/05 06:39 PM		All Functions Normal					
Add/Edit Contact Entry - Modem							Test Conn.
Contacts	Modem	Fax	TCP / IP	Satellite	E-Mail	SMS	
Modem # (Computer)		<input type="text"/>					
Modem COM Port		<input type="text"/>					
Dial-Out String		<input type="text"/>					
Test Status		<input type="text"/>					

### 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

## **Test Status**

Read only textual information displaying the status of the chosen connection's test, maximum 1000 characters.

## **Control Buttons (right of screen)**

### **Test Connection**

Touch this button to performs any necessary tests as needed for Communication Mechanism/Device troubleshooting. Any test status or other messages will be displayed on the Test Status area of that screen

### **Clear Test Status**

Touch this button to clear the 'Test Status' Area.

### **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.

2007/11/05 06:39 PM		All Functions Normal				
Add/Edit Contact Entry - Fax						Test Conn.
Contacts	Modem	Fax	TCP / IP	Satellite	E-Mail	SMS
Fax Number		<input type="text"/>				
Fax Modem COM Port		<input type="text"/>				
Dial-Out String		<input type="text"/>				
Test Status		<input type="text"/>				

### Fax Number

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

Allowable selection: 40 character maximum

Default selection: Empty

## **Fax Modem**

Select the fax modem 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

## **Test Status**

Read only textual information displaying the status of the chosen connection's test, maximum 1000 characters.

## **Control Buttons (right of screen)**

### **Test Connection**

Touch this button to performs any necessary tests as needed for Communication Mechanism/Device troubleshooting. Any test status or other messages will be displayed on the Test Status area of that screen

### **Clear Test Status**

Touch this button to clear the 'Test Status' Area.

### **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

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 a TCP/IP card is installed in the console.

2007/11/05 06:40 PM		All Functions Normal					
Add/Edit Contact Entry - TCP / IP							Test Conn.
Contacts	Modem	Fax	TCP / IP	Satellite	E-Mail	SMS	
Remote TCP / IP Address		<input type="text" value="0.0.0.0"/>					
Remote TCP / IP Port		<input type="text" value="20001"/>					
Local Port		<input type="text" value="Co 3:"/>					
Test Status		<input type="text"/>					

### 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.veeder.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 TCP/IP Comm Devices.

Default selection: First TCP/IP on List (if available, otherwise, Empty)

## Test Status

Read only textual information displaying the status of the chosen connection's test, maximum 1000 characters.

## Control Buttons (right of screen)

### Test Connection

Touch this button to performs any necessary tests as needed for Communication Mechanism/Device troubleshooting. Any test status or other messages will be displayed on the Test Status area of that screen

### Clear Test Status

Touch this button to clear the 'Test Status' Area.

### 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 card is installed in the console.

2007/11/05 06:40 PM		All Functions Normal					
Add/Edit Contact Entry - Satellite							Test Conn.
Contacts	Modem	Fax	TCP / IP	Satellite	E-Mail	SMS	
Satellite Conn. String		<input type="text"/>					
Satellite COM Port		<input type="text"/>					
Test Status		<input type="text"/>					
Number of Retries		<input type="text"/>					
Retry Delay Time		<input type="text"/>					

### Satellite Connection String

Enter the current contact's Satellite connection string.

Allowable selection: AlphaNumeric, maximum 30 characters  
Default selection: Empty

### Satellite

Select the Satellite assignment for the current contact.



Allowable selection: Available Satellite comm devices

Default selection: First Satellite on list (if available, otherwise, empty)

## **Test Status**

Read only textual information displaying the status of the chosen connection's test, maximum 1000 characters.

## **Control Buttons (right of screen)**

### **Test Connection**

Touch this button to perform any necessary tests as needed for Communication Mechanism/Device troubleshooting. Any test status or other messages will be displayed on the Test Status area of that screen

### **Clear Test Status**

Touch this button to clear the 'Test Status' Area.

### **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.

2007/11/05 06:41 PM		All Functions Normal				
Add/Edit Contact Entry - E-Mail						Test Conn.
Contacts	Modem	Fax	TCP / IP	Satellite	E-Mail	SMS
E-Mail Address		<input type="text"/>				
E-Mail Server Name		<input type="text"/>				
E-Mail Server Port		<input type="text"/>				
Test Status		<input type="text"/>				

### E-Mail Address

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

Allowable selection: AlphaNumeric, maximum 50 characters

Default selection: Empty

## **E-mail Server Name**

Enter the current contact's e-mail server address.

Allowable selection: IP Address Formatted XXX.XXX.XXX.XXX, where XXX is 0 to 255, OR also a server address such as 'myServer.veeder.com'. Maximum 50 characters.

Default selection: Empty

## **E-mail Server Port**

Enter the port dedicated to current contact's E-Mail on the E-Mail Server.

Allowable selection: 1 to 16384

Default selection: 25

## **Test Status**

Read only textual information displaying the status of the chosen connection's test, maximum 1000 characters.

## **Control Buttons (right of screen)**

### **Test Connection**

Touch this button to performs any necessary tests as needed for Communication Mechanism/Device troubleshooting. Any test status or other messages will be displayed on the Test Status area of that screen

### **Clear Test Status**

Touch this button to clear the 'Test Status' Area.

### **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.

## 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.

2007/11/06 03:43 PM		T 1: HIGH PRODUCT ALARM				
Automatic Events - Add Task - Auto Connect						
Device	Print	Auto Connect				
Time/Event	<input type="text"/>					
Connection Mode	<input type="text" value="Modem"/>					
Contact	<input type="text"/>					

### Time (Field)

Touch this button 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

## **Event (Field)**

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

Alarms

Notifications

External Inputs

## **Contact (Field)**

Select a specific contact from your Address Book entries.

## **Connection Mode (Field)**

Select from computer-mode auto connect methods such as: Computer to TCP/IP, Computer to Modem or Computer to Satellite.

## **Device (Field)**

Select from non-computer mode auto connect methods such as: FAX or E-Mail.

## **Report (Field)**

Select the report(s) to be issued.

## 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.

2007/11/06 03:40 PM				T 3: SETUP DATA WARNING									
Automatic Events - All Tasks										All Tasks		Add Task	
All Tasks		Device Tasks		Print Tasks		Auto Connect Tasks		Add Bo					
Time/ Event		Report/ Action		Contact		Device/ Connection Mode						Edit Task	
Annually by Day of Month, J		CSLD Daily Report				Internal Printer						Delete Task	
												Select	
												View Data	

## Report Column Descriptions

### Time Event

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

### 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., Sheetz 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.

### Select

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

### Select Time/Event

Allowable selections: All Times and Events, All Times, All Events, or Specific Event Categories  
Default selection: All Times and Events



## **Select Report/Action**

Allowable selections: All Reports and Actions (including Auto Connect), Auto Connect or all 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 Device/Connection Mode**

Allowable selections: All Devices (includes Printer Devices) and Connection Modes, or all selections as in 'Select Device', 'Select Connection Mode' and 'Select Printer' above.

Default selection: All Connection Modes

## Automatic Events Setup - Device Tasks

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

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

11/17/2007 05:41 AM			T 6: SETUP DATA WARNING					
Automatic Events - Add Task - Device								
Device	Print	Auto Connect						
Event	OVERFILL ALARM : T1, T2, T3, T4, T5, T6, T7, T8							
Device	R1 :							
Action	On							

### Report Column Descriptions

#### 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.

### Select

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

#### Select Time/Event

Allowable selections: All Times and Events, All Times, All Events, or Specific Event Categories

Default selection: All Times and Events

#### Select Action

Allowable selections: All Actions, All On Relays, All Off Relays, All On Pump, All Off Pump or single select for specific Actions that show up on the List of the Currently Selected Tab

Default selection: All Actions













#### Select Device

Allowable selections: All Devices, or single select for specific devices that show up on the List of the Currently Selected Tab

Default selection: All Devices

## Automatic Events Add Tasks - Device

The Automatic Events Add Tasks - Device screen lets you add a new device task to the console's automatic task requirements.

2007/11/06 03:42 PM		T 4: HIGH PRODUCT ALARM				
Automatic Events - Add Task - Device						
Device	Print	Auto Connect				
Event	<input type="text"/>					
Device	<input type="text" value="R1 :"/>					
Action	<input type="text" value="On"/>					
						
						
						
						

### Event (Field)

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

## Alarms

## External Inputs

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

## **Device (Field)**

Select the specific relay from the drop-down list of available relays.

## **Action (Field)**

Select the Action to be performed, e.g., Relay On or Relay Off.

## 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.

11/17/2007 05:43 AM		L 3: FUEL ALARM				
Automatic Events - Print Tasks						All Print Tasks
Device Tasks	Print Tasks	Auto Connect Tasks	Address Book			
Time/ Event	Report	Printer				
Daily, 02:00 AM Shift Close	CSLD Daily Report Shift Inventory Report	Internal Printer Internal Printer				
						Add Task
						Edit Task
						Delete Task
						Select

### Report Column Descriptions

#### 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.

### **Select**

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

#### **Select Time/Event**

Allowable selections: All Times and Events, All Times, All Events, or Specific Event Categories

Default selection: All Times and Events

#### **Select Report**

Allowable selections: All Reports or single select for specific Report Categories for Reports that show up on the List of the Currently Selected Tab

Default selection: All Reports

#### **Select Printer**

Allowable selections: All Printers or single select for specific Printers that show up on the List of the Currently Selected Tab

Default selection: All Printers

# Automatic Events Add Tasks - Print

The Automatic Events Add Tasks - Print screen lets you add a task selection to print automatically.

2007/11/06 03:42 PM		T 4: SETUP DATA WARNING										
Automatic Events - Add Task - Print												
Device	Print	Auto Connect										
Time/Event	<input type="text"/>											
Printer	<input type="text" value="Internal Printer"/>											
Report	<input type="text"/>											

## 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

## **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

## **Printer (Field)**

Select Printer(s) from the dropdown list of available Comm Device Printers.

## **Reports (Field)**










Select Report(s) to be printed.

## Automatic Events Setup - Auto Connect Tasks

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

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

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

11/17/2007 05:45 AM		T 4: SUDDEN LOSS ALARM				
Automatic Events – Auto Connect Tasks						All Auto Connect Tasks
Device Tasks	Print Tasks	Auto Connect Tasks	Address Book		 	Add Task
Time/ Event	Report/ Action	Contact	Connection Mode			Edit Task
SLD Test Complete	SLD Last Test Results	Home Office	FAX			Delete Task
Delivery Complete	Most Recent Delivery Report	Home Office	FAX			Select
Shift Close	Shift Inventory Report	Home Office	FAX			View Data
						
						

## Report Column Descriptions

### 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

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., Mrs. Lozier).

### 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.

### Select

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

#### Select Time/Event

Allowable selections: All Times and Events, All Times, All Events, or Specific Event Categories

Default selection: All Times and Events

#### Select Report/Action

Allowable selections: All Reports and Actions (including Auto Connect), Auto Connect or all 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 Connection Mode**

Allowable selections: All Connection Modes or single select for specific Connection Modes that show up on the list of the Currently Selected Tab










Default selection: All Connection Modes

## Custom Alarms - Setup

The Custom Alarms Setup screen can be used to enter a custom alarm label and also select the alarm indicators for the alarm. The data view area contains the list of alarm categories. Touching a category displays all of the standard alarm labels within that alarm category.

2007/11/05 02:31 PM		All Functions Normal				
Custom Alarms - Setup						
Enable	View	Setup				
COMM						up
Alarm Description	Custom Alarm Description	LCD	LED	Beepe		
<div> <div>+</div> <div>COMM</div> </div> <div> <div>+</div> <div>EXTERNAL INPUT</div> </div> <div> <div>+</div> <div>GROUND WATER SENSOR</div> </div> <div> <div>+</div> <div>HOSE</div> </div> <div> <div>+</div> <div>ISD</div> </div> <div> <div>+</div> <div>LIQUID SENSOR</div> </div> <div> <div>+</div> <div>MAG SENSOR</div> </div> <div> <div>+</div> <div>MODBUS</div> </div> <div> <div>+</div> <div>PLLD LINE</div> </div> <div> <div>+</div> <div>PMC</div> </div> <div> <div>+</div> <div>PRODUCT</div> </div>						<div></div> <div></div> <div></div> <div></div>

To enter a custom alarm label, select an alarm category and then select the alarm you want to re-label (see example screen below for editing COMM – ALARM CLEAR WARNING).

2007/11/05 02:32 PM		All Functions Normal				
Custom Help Setup – Alarms						Create/ Edit
Enable	Alarms					View
Alarm Category	<input type="text" value="COMM"/> 					
Alarm Type	<input type="text" value="ALARM CLEAR WARNING"/> 					
						
						

Once an alarm is selected, touching the Create/Edit button to open the Customization of Alarms dialog box in which you can make your selections:



## **Alarm Description**

The standard alarm label is listed for this alarm.

## **Custom Alarm Label**

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

Allowable selection: 1 to 20 alphanumeric characters

Default selection: Empty

## **Control Buttons (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 Alarms Setup - Enable

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

2007/11/05 02:27 PM		All Functions Normal				
Custom Alarms - Enable						
Enable	View	Setup				
Custom Alarms	<div>Enabled </div>					
						
						
						
						

### Custom Alarms








Select if you want to create custom alarm labels that will be substituted for the console's standard alarm labels.

Allowable selections: Enabled/Disabled

Default selection: Disabled

## Custom Alarms Setup - View

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

2007/11/05 02:30 PM		All Functions Normal				
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		
						
						

### 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 Help Setup - Alarms

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

2007/11/05 02:32 PM		All Functions Normal				
Custom Help Setup - Alarms						Create/ Edit
Enable	Alarms					View
Alarm Category	<div>COMM</div> <div>▼</div>					
Alarm Type	<div>ALARM CLEAR WARNING</div> <div>▼</div>					
						▲
						▼

### 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.

## 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.

2007/11/05 02:31 PM		All Functions Normal				
Custom Help Setup - Enable						
Enable	Alarms					
Custom Help View	<div>Enabled </div>					
Custom Help Edit	<div>Enabled </div>					
						
						
						
						

### 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

# Regulator Report Setup

Regulator Report setup allows you to enable or disable access to all or individual of the reports discussed below.

2007/11/05 06:23 PM		All Functions Normal				
Regulator's Report Setup						
Combined Tank Test	<input type="text"/>					
SLD	<input type="text"/>					
Passed Line Test Result	<input type="text"/>					
Sensor Status	<input type="text"/>					
MAG	<input type="text"/>					

Any enabled reports will be accessible after touching the Reports button on the right edge of the System Status screens (see below).





# Reports

## Combined Tank Test

Places the Combined Tank Test report on the Regulator Reports screen. The Combined Tank Test report is a historic report and displays both the SLD (Static Leak Detect) and CSLD (Continuous Static Leak Detect) passed test results within the last 12 month period.

Allowable selections: Enable - All Tanks, Enable - selected tanks or Disable

Default: Disabled

## SLD

Places the Static Leak Detect (SLD) Test report on the Regulator Reports screen.

The purpose of this report is to show the Last Passed SLD leak test reports. There are three types of SLD tests available:

Annual: minimum 0.1 gph (0.38 lph) test

Periodic: minimum 0.2 gph (0.76 lph) test

Gross: minimum 3.0 gph (11.3 lph) test

The report displays the following categories of test results, if available:

Last Annual Passed

Last Gross Passed

Last Periodic Passed

Allowable selections: Enable - All Tanks, Enable - selected tanks or Disable

Default: Disabled

## Line Leak

Places the Line Leak Test report on the Regulator Reports screen.

The Line Leak test report displays information about most-recent and historical Line Leak test results:

Passed Test Results - most recent passed line leak test results for all line leak test types for each monitored line.

Passed Test History - displays a report with the history of passed line leak test results for all line leak test types for each monitored line.

Allowable selections: Enable - All Lines, Enable - selected Lines or Disable

Default: Disabled

## Sensors












Places the Sensors report on the Regulator reports screen. The Sensors report provides historical status for each sensor type indicating its location, status and active times.

Allowable selections: Enable - All Sensors, Enable - selected Sensors or Disable

Default: Disabled

# System Security Setup

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.

2007/11/05 02:13 PM		All Functions Normal				
Security - System Security						
Front Panel/Web Security		Enabled 				
Password		xxxxxxx 				
						
						
						
						

## 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 the 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/Web Security

Security to the Console both from the Front Panel and from the Web 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, also 0 characters (to use default internal password)

Default: Empty

# 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 Status Box 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 Status Box will acknowledge all unacknowledged alarms and turn off the console beeper (if it is turned on).

2007/11/06 12:24 PM				T 4: SETUP DATA WARNING											
Active Alarm Report												Help Mode			
Active		History		Priority		Non-Priority								View Data	
#	Label		Alarm Description			Active Time			Clear Time						
T 1			SETUP DATA WAR			2007/11/06 09:43 AM									
T 2			SETUP DATA WAR			2007/11/06 09:44 AM									
T 4			SETUP DATA WAR			2007/11/06 09:46 AM									
T 1			DELIVERY NEEDED			2007/11/06 09:52 AM									
T 3			SETUP DATA WAR			2007/11/06 10:01 AM									
														Select Range	

## 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.

2007/11/06 12:25 PM		T 2: SETUP DATA WARNING					
Alarm History Report – All Alarms #1						More	
Active	History	Priority	Non – Priority				Help Mode
#	Label	Alarm Description	Active Time	Clear Time.....			Select Range
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				

## 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

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.

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	
							
							

## Report Column Descriptions

### #

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

### Label

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

## **Alarm Description**

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

## **Active Time**

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

## **Clear Date/Time**

This column lists date/time the alarm was cleared.

## **Control Buttons (on right of screen)**

### **Help Mode**

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

The Help Mode feature is disabled by default.

### **Select Range**

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

#### **Period**

Default selection: Date Range

#### **From**








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

#### **To**

Default Selection: Today's date, Time now

# Non-Priority Alarm History Report

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

2007/11/06 12:25 PM			T 3: SETUP DATA WARNING					
Alarm History Report – Non–Priority #1								More
Active		History		Priority	Non–Priority			
#	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
								
								

## 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 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 - Shift Inventory

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

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	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			

### Report Column Descriptions

#### Shift

Top line of record - Shift Start Date and Time.

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

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

## **Fuel Volume**

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

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

## **Fuel TC Volume**

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

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

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

## **Ullage 100%**

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

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

## **Ullage xx%**

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

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

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

## **Delivery Volume**

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

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

## **Fuel Height**

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

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

## **Water Height**

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

Top line of record - Shift Start Water Height

Second line of record - Shift Stop/Current Water Height

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

## **Water Volume**

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

Top line of record - Shift Start Water Volume

Second line of record - Shift Stop/Current Water Volume

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

## **Fuel Temp.**

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

Top line of record - Shift Start Fuel Temperature

Second line of record - Shift Stop/Current Fuel Temperature

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

# Inventory Reports - Current Inventory

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

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

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		

## Report Column Descriptions

### Fuel Volume

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



## **Fuel TC Volume**

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

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

## **Ullage 100%**

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

## **Ullage xx%**

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

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

## **Fuel Height**

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

## **Water Height**

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

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

## **Water Volume**

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

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

## **Fuel Temp.**

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

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

## **Current Inventory Report Screen Refresh Rate**

The current inventory data will be refreshed every 30 seconds.

# Inventory Reports - Inventory History

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

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

2007/11/06 11:35 AM		T 1: SETUP DATA WARNING				
Inventory History Report						All Tanks
Current Inventory	Inventory History	Shift Inventory				
Date & Time	Fuel Volume	Ullage	Fuel Height	Water Height	Fuel Temp	
Tank 1 :						
2007/11/06 11:00 AM	4093	5907	38.6	3.0	71.9	
Tank 2 :						
2007/11/06 11:00 AM	4093	5907	38.6	3.0	71.9	
Tank 3 :						
2007/11/06 11:00 AM	6346	3654	54.6		75.6	
Tank 4 :						
2007/11/06 11:00 AM	1277	8723	16.7	2.5	76.7	
						Select Range
All Tanks	Tank 1	Tank 2	Tank 3	Tank 4		

## 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)

## **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)

## **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

# Delivery Report

The Delivery Report screen serves as the default screen for Fuel Management Reports and shows increases in the tank's inventory.

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)

2007/11/06 10:51 AM		T 1: SETUP DATA WARNING				
<b>Delivery Report</b>						<b>All Tanks</b>
<b>Start/End Date &amp; Time</b>	<b>Fuel Volume</b>	<b>Water Height</b>	<b>Fuel Temp</b>	<b>Fuel Height</b>		
<b>Tank 1 :</b> <b>Tank 2 :</b> <b>Tank 3 :</b> <b>Tank 4 :</b> <b>Start :</b> 2007/11/06 10:03 AM <b>683</b> <b>2.5</b> <b>76.7</b> <b>10.8</b> <b>End :</b> 2007/11/06 10:05 AM <b>1277</b> <b>2.4</b> <b>76.5</b> <b>16.7</b> <b>Amount:</b> <b>594</b>						
						<b>Select Range</b>
<b>All Tanks</b>	<b>Tank 1</b>	<b>Tank 2</b>	<b>Tank 3</b>	<b>Tank 4</b>		

## Report Column Descriptions

### Start/End Date & Time

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

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

### Fuel Volume

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

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

### Fuel TC Volume

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

Top line of record - Delivery Start Fuel TC Volume  
Second line of record - Delivery Stop Fuel TC Volume

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

### Water Height

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

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

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

### Fuel Temp.

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

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

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

### Fuel Height

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

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

## **Control Button (on right of screen)**

### **Select Range**

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

### **Period**

Default selection: All Records

### **Tank**

Default Selection: Current Tank

## Environmental Reports - Line Leak

The Environmental Reports - Line Leak screen displays a report with the most recent Passed line leak test results for all line leak test types on each line.

11/06/2007 05:54 PM		T 1: HIGH WATER WARNING				
Line Leak Reports – Passed Test Results						All Lines
Combined Tank Test	SLD	Line Leak	Sensors			
Test Type	Date & Time					
Line 1 : PRESSURE LLD #1						
0.1 Gal/Hr.		11/01/2007 01:15 PM				
0.2 Gal/Hr.		11/01/2007 01:55 PM				
3.0 Gal/Hr.		11/01/2007 01:24 PM				
Line 2 : PRESSURE LLD #2						
0.1 Gal/Hr.		11/01/2007 01:16 PM				
0.2 Gal/Hr.		11/01/2007 01:56 PM				
3.0 Gal/Hr.		11/01/2007 01:24 PM				
Line 3 : PRESSURE LLD #3						
0.1 Gal/Hr.		11/01/2007 01:16 PM				
0.2 Gal/Hr.		11/01/2007 01:58 PM				
3.0 Gal/Hr.		11/01/2007 01:25 PM				
Line 4 : PRESSURE LLD #4						
0.1 Gal/Hr.		11/01/2007 01:18 PM				
0.2 Gal/Hr.		11/01/2007 01:59 PM				
3.0 Gal/Hr.		11/01/2007 01:25 PM				
All Lines	Line 1	Line 2	Line 3	Line 4	Line 5	Line 6

### Report Column Descriptions

#### Test Type

Possible messages:

3.0 gph (11.3 lph)

0.2 gph (0.76 lph)

0.1 gph (0.38 lph)



## **Date and Time**

Date and time of test.

## **Control Buttons (on right of screen)**

### **Setup**

Touch this button open the Pump and Lines Setup - Lines screen.

### **Report Filter**

Touch this button to open the Line Leak Reports - Passed Test History report screen.

## Environmental Reports - Combined Tank Test

The Environmental Reports - Combined Tank Test screen displays both Static Leak Detect (SLD) and Continuous Statistical Leak Detection (CLSD) test results on one report. This is a historic report and displays only results with a status of Passed. There are several categories of results that may be captured in this report:

- Last Gross Test Passed
- Last Annual Test Passed
- Fullest Annual Test Passed
- Last Periodic Test Passed
- Fullest Periodic Test Passed Each Month

The default view displays test results which occurred within the last 12 month period.

11/06/2007 05:27 PM		T 6: SETUP DATA WARNING				
Combined Tank Test Report – Passed Test Results						All Tanks
Combined Tank Test	SLD	Line Leak	Sensors			
Report Type	Date & Time	Test Method	Total Hours	Average Volume	% Volume	
Tank 1 : * Regular						
Fullest Annual	11/05/2007 05:32 PM	SLD	8	5000	50.5	
Fullest Periodic	11/05/2007 05:32 PM	SLD	8	5000	50.5	
Last Annual	11/05/2007 05:32 PM	SLD	8	5000	50.5	
Last Gross	11/05/2007 05:32 PM	SLD		5000	50.5	
Last Periodic	11/05/2007 05:32 PM	SLD	8	5000	50.5	
Tank 2 : * Midgrade East						
Fullest Periodic	11/05/2007 05:32 PM	SLD	8	4999	49.9	
Last Gross	11/05/2007 05:32 PM	SLD		4999	49.9	
Last Periodic	11/05/2007 05:32 PM	SLD	8	4999	49.9	
Tank 3 : * Super East						
Last Gross	11/05/2007 05:32 PM	SLD		4999	49.9	
Tank 4 : * Regular West						
Tank 5 : * Mid-grade West						
Tank 6 : * Super west						
Fullest Periodic	11/05/2007 05:32 PM	SLD	8	5000	50.5	
All Tanks	Tank 1	Tank 2	Tank 3	Tank 4	Tank 5	Tank 6

## Report Column Descriptions

### Report Type

Possible messages:

- Fullest Annual
- Fullest Periodic
- Last Annual
- Last Gross
- Last Periodic

### Date & Time

Date and time of test.

### Test Method

Possible messages:

- SLD
- CSLD

### Total Hours

The Total Hours field will always be blank for a gross test. Gross tests run for 30 minutes maximum; the duration is not configurable or reported.

Possible length of test: 0 to 24

### Average Volume

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

### % Volume

Allowable range: 0.0 to 100.0%

## Control Buttons (on right of screen)

### Tank Test Setup

Touch this button open the Tank Setup - Environmental/Leak Test screen.

## Select Range

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

## Period

Default selection: Previous 1 year

## Tank

Default Selection: Current Tank

## Environmental Reports - SLD

The Environmental Reports - SLD screen shows the Last Passed Static Leak Detect leak test reports.

There are three types of SLD tests available:
















- Annual: minimum 0.1 gph (0.38 lph) test
- Periodic: minimum 0.2 gph (0.76 lph) test
- Gross: minimum 3.0 gph (11.3 lph)

The report displays the following categories of test results, if available:

- Last Annual Passed
- Last Gross Passed
- Last Periodic Passed

The Annual and Periodic leak tests are not valid for all probe types and will not be displayed unless the probe for the selected tank has this capability. Gross tests are not run by all stations. Periodic tests are run most frequently.

The most recently completed SLD tests and in-progress tests can be viewed in the Tank Tests Diagnostics section. In addition, an SLD Historic report is also available in Diagnostics, which will display both Passed and Failed results.

11/07/2007 02:09 PM		T 6: SETUP DATA WARNING					
Static Leak Test Last Passed Report #1						Tank 1 : * Regular	
Combined Tank Test	SLD	Line Leak	Sensors				More
Test Type	Date & Time	Status	Total Hours	Average Volume	% lume.		
Last Annual	11/05/2007 05:32 PM	Pass	8	5000	50.5		
Last Periodic	11/05/2007 05:32 PM	Pass	8	5000	50.5		
Last Gross	11/05/2007 05:32 PM	Pass		5000	50.5		
							 
All Tanks	Tank 1	Tank 2	Tank 3	Tank 4	Tank 5	Tank 6	

## Report Column Descriptions

### Test Type

Possible messages:

- Last Annual
- Last Gross
- Last Periodic

### Date & Time

Date and time of test.

### Status

Only message: Pass

### Total Hours

Allowable range: 0 to 24 hours

### Average Volume

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

### % Volume

Allowable range: 0.0 to 100.0%

## Control Button (on right of screen)

### SLD Test Setup








Touch this button open the Tank Setup - Environmental/Leak Test screen.

## Environmental Reports - Sensors

The Environmental Reports - All Sensors screen displays a report with the status of the following standalone sensors:

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

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.

11/07/2007 11:44 AM		T 1: HIGH WATER WARNING						
Sensor Status History Report – All Sensors							View Data	
Combined Tank Test		SLD	Line Leak	Sensors				Report Filter
#	Sensor Location	Status	Active Time	Clear Time				
Ms : Mag Sensor 1                      Alarm								
								Select Range
								
								

## 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):

- Setup Data Warning
- Fuel Alarm
- Out Alarm
- Short Alarm
- Water Alarm
- Water Out Alarm
- High Liquid Alarm
- Low Liquid Alarm
- Liquid Warning
- Communication Alarm
- Fuel Warning
- Water Warning
- High Liquid Warning
- High Liquid Alarm
- Low Liquid Warning
- Low Liquid Alarm
- Temperature Warning
- Relay Active
- Install Fault Alarm

### Active Time

Active 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 screen from the following list of sensor types:

- 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.

Default selection: Previous month

# Environmental Line Leak Report - Passed Test History

The Environmental Line Leak Reports - Passed Test History report displays a history of passed line leak test results for all line leak test types for each line.

11/07/2007 09:32 AM		All Functions Normal					
Line Leak Reports – Passed Test History						All Lines	View Data
Test Type	Date & Time	3.0 Gal/Hr. Prev. 24 hours	3.0 Gal/Hr. Since Midnight				Report Filter
Line 1 : PRESSURE LLD #1							
0.1 Gal/Hr. (0.38 Liter: 11/01/2007 01:15 PM		18658.00	18658.00				
Line 2 : PRESSURE LLD #2							
0.1 Gal/Hr. (0.38 Liter: 11/01/2007 01:16 PM		0.00	0.00				
Line 3 : PRESSURE LLD #3							
0.1 Gal/Hr. (0.38 Liter: 11/01/2007 01:16 PM		0.00	0.00				
Line 4 : PRESSURE LLD #4							
0.1 Gal/Hr. (0.38 Liter: 11/01/2007 01:18 PM		0.00	0.00				
Line 5 : PRESSURE LLD #5							
0.1 Gal/Hr. (0.38 Liter: 11/01/2007 01:20 PM		0.00	0.00				
Line 6 : PRESSURE LLD #6							
0.1 Gal/Hr. (0.38 Liter: 11/01/2007 01:22 PM		0.00	0.00				
						Select Range	
All Lines	Line 1	Line 2	Line 3	Line 4	Line 5	Line 6	

## Report Column Descriptions

### Test Type

This column lists the passed 3.0 Gal/Hr. (11.3 lph), 0.2 Gal/Hr. (0.76 lph), 0.1 Gal/Hr. (0.38 lph) tests for the line(s).

Notes for this column's entries:

1. Only be the last passed 3.0 gph (11.3 lph) test for each line will be listed.
2. Up to the last 12 passed 0.2 gph (0.76 lph) tests for each line will be listed.
3. Up to the last 12 passed 0.1 gph (0.38 lph) tests for each line will be listed.

## **Date and Time**

This column lists the date and time of the test.

## **3.0 Gal/Hr. (11.3 lph) Prev. 24 hours**

This column lists the number of 3.0 gph (11.3 lph) tests passed in the previous 24 hours.

Note: 0.2 gph (0.76 lph) and 0.1 gph (0.38 lph) tests will not show in this column.

## **3.0 Gal/Hr. (11.3 lph) Since Midnight**

This column will show the number of 3.0 gph (11.3 lph) tests passed since midnight.

Note: 0.2 gph (0.76 lph) and 0.1 gph (0.38 lph) tests will not show in this column.

## **Control Buttons (on right of screen)**

### **Select Range**

Touch this button to open a dialog box and select a specific time span for the report.

Default selection: Previous year

# Regulator Line Leak Passed Test Report

The Regulator Line Leak Passed Test Report displays the most recently passed line leak test results for all line leak test types on each line.

## Report Column Descriptions

### Test Type

Possible messages:

- 3.0 gph (11.3 lph)
- 0.2 gph (0.76 lph)
- 0.1 gph (0.38 lph)

### Date and Time

Date and time of test.

### Control Button (on right of screen)

### Report Filter

Touch this button to open the Line Leak Reports - Passed Test History report screen.

# Regulator Combined Tank Test Report

The Regulator Combined Tank Test Report displays both Static Leak Detect (SLD) and Continuous Statistical Leak Detection (CLSD) test results in 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 Annual Test Passed
- Fullest Annual Test Passed
- Last Periodic Test Passed
- Fullest Periodic Test Passed Each Month

The default view displays test results which occurred within the last 12 month period.

## Report Column Descriptions

### Report 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)**

### **Select Range**

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

### **Period**

Default selection: All Records

### **Tank**

Default Selection: All Tanks

# Regulator SLD Last Passed Test Report

The Regulator SLD (Static Leak Detect) Test Results Report displays the Last Passed SLD leak tests.

There are three types of SLD tests available:

- Annual: minimum 0.1 gph (0.38 lph) test
- Periodic: minimum 0.2 gph (0.76 lph) test
- Gross: minimum 3.0 gph (11.3 lph)

The report displays the following categories of test results, if available:

- Last Annual Passed
- Last Gross Passed
- Last Periodic Passed

The Annual and Periodic leak tests are not valid for all probe types and will not be displayed unless the probe for the selected tank has this capability. Gross tests are not run by all stations. Periodic tests are run most frequently.

## Report Column Descriptions

### Test Type

Possible messages:

- Last Annual
- Last Gross
- Last Periodic

### Date & Time

Date and time of test.

### Status

Only message: Pass

### Total Hours

Allowable range: 0 to 24 hours

### Average Volume

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

### % Volume

Allowable range: 0.0 to 100.0%

# Regulator Sensor Status History Report

The Regulator Sensor Status History Report displays the historical status of one or more of the following standalone sensors over a selected time period:

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

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.

## 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):

- Setup Data Warning
- Fuel Alarm
- Out Alarm
- Short Alarm
- Water Alarm
- Water Out Alarm
- High Liquid Alarm
- Low Liquid Alarm
- Liquid Warning
- Communication Alarm
- Fuel Warning
- Water Warning
- High Liquid Warning
- High Liquid Alarm
- Low Liquid Warning



- Low Liquid Alarm
- Temperature Warning
- Relay Active
- Install Fault Alarm

## **Active Time**

Active 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 screen from the following list of sensor types:

- 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.

Default selection: Previous month

# Regulator Line Leak Passed Test History Report

The Regulator Line Leak Passed Test History report displays a history of passed line leak test results for all line leak test types for each line.

## Report Column Descriptions

### Test Type

This column lists the passed 3.0 Gal/Hr. (11.3 lph), 0.2 Gal/Hr. (0.76 lph), 0.1 Gal/Hr. (0.38 lph) tests for the line(s).

Notes for this column's entries:

1. Only the last passed 3.0 gph (11.3 lph) test for each line will be listed.
2. Up to the last 12 passed 0.2 gph (0.76 lph) tests for each line will be listed.
3. Up to the last 12 passed 0.1 gph (0.38 lph) tests for each line will be listed.

### Date and Time

This column lists the date and time of the test.

### 3.0 Gal/Hr. (11.3 lph) Prev. 24 hours

This column lists the number of 3.0 gph (11.3 lph) tests passed in the previous 24 hours.

Note: 0.2 gph (0.76 lph) and 0.1 gph (0.38 lph) tests will not show in this column.

### 3.0 Gal/Hr. (11.3 lph) Since Midnight

This column will show the number of 3.0 gph (11.3 lph) tests passed since midnight.

Note: 0.2 gph (0.76 lph) and 0.1 gph (0.38 lph) tests will not show in this column.

## Control Buttons (on right of screen)

### Select Range

Touch this button to open a dialog box and select a specific time span for the report.

Default selection: Previous year

# Regulator Vapor Sensor Status History Report

The Regulator Vapor Sensor Status History displays the status of all Vapor 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.

## Report Column Descriptions

### #

This column lists the device code followed by device iteration number, e.g., V1.

### Sensor Location

This column lists the location of the sensor.

### Status

This column lists the sensor status, as applicable.

Possible messages include:

- Setup Data Warning
- Fuel Alarm
- Sensor Out Alarm
- Short Alarm
- Water Alarm

### Active Time

Active 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 screen from the following list of sensor types:

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

## Select Range

Touch this button to open a dialog box and select a specific time span for the report.

Default selection: Previous month

# Regulator Type A Sensor Status History Report

The Regulator Type A Sensor Status History displays the status of all Type A 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.

## 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:

- Setup Data Warning
- Fuel Alarm
- Sensor Out Alarm
- Short Alarm
- Water Alarm

### Active Time

Active 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 screen from the following list of sensor types:

- Liquid
- 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.

Default selection: Previous month

# Regulator Type B Sensor Status History Report

The Regulator Type B Sensor Status History displays the status of all Type B 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.

## Report Column Descriptions

### #

This column lists the device code followed by device iteration number, e.g., H1.

### Sensor Location

This column lists the location of the sensor.

### Status

This column lists the sensor status, as applicable.

Possible messages include:

- Setup Data Warning
- Fuel Alarm
- Sensor Out Alarm
- Short Alarm
- Water Alarm
- Water Out Alarm
- High Liquid Alarm
- Low Liquid Alarm
- Liquid Warning

### Active Time

Active 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 screen from the following list of sensor types:

- Liquid
- Type A (2-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.

Default selection: Previous month



# Regulator Liquid Sensor Status History Report

The Regulator Liquid Sensors Status History displays the status of all Liquid 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.

## 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.

### Status

This column lists the sensor status, as applicable.

Possible messages include:

- Setup Data Warning
- Fuel Alarm
- Sensor Out Alarm
- Short Alarm
- Water Alarm
- Water Out Alarm
- High Liquid Alarm
- Low Liquid Alarm
- Liquid Warning

### Active Time

Active 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 screen from the following list of sensor types:

- 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.

Default selection: Previous month

# Regulator Mag Sensor Status History Report

The Regulator Mag Sensor Status History displays the status of all Mag 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.

## Report Column Descriptions

### #

This column lists the device code followed by device iteration number, e.g., MS1.

### Sensor Location

This column lists the location of the sensor.

### Status

This column lists the sensor status, as applicable.

Possible messages include:

- Setup Data Warning
- Fuel Alarm
- Water Alarm
- High Liquid Alarm
- Low Liquid Alarm
- Communication Alarm
- Fault Alarm
- Fuel Warning
- Water Warning
- High Liquid Warning
- High Liquid Alarm
- Low Liquid Warning
- Low Liquid Alarm
- Temperature Warning
- Relay Active
- Install Fault Alarm

### Active Time

Active 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 screen from the following list of sensor types:

- Liquid
- Type A (2-Wire CL)
- Type B (3-Wire CL)
- Ground Water
- Vapor

### **Select Range**

Touch this button to open a dialog box and select a specific time span for the report.

Default selection: Previous month

# Regulator Ground Water Sensor Status History Report

The Regulator Ground Water Sensor Status History displays the status of all Ground Water 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.

## Report Column Descriptions

### #

This column lists the device code followed by device iteration number, e.g., G1.

### Sensor Location

This column lists the location of the sensor.

### Status

This column lists the sensor status, as applicable.

Possible messages include:

- Setup Data Warning
- Fuel Alarm
- Sensor Out Alarm
- Short Alarm
- Water Alarm
- Water Out Alarm

### Active Time

Active 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 screen from the following list of sensor types:

- Liquid
- Type A (2-Wire CL)
- Type B (3-Wire CL)

- MAG
- Vapor

## Select Range

Touch this button to open a dialog box and select a specific time span for the report.

Default selection: Previous month

# Regulator Sensor Status Report

The Regulator Sensor Status Report displays the current status of one or more of the following standalone sensors.

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

## 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):

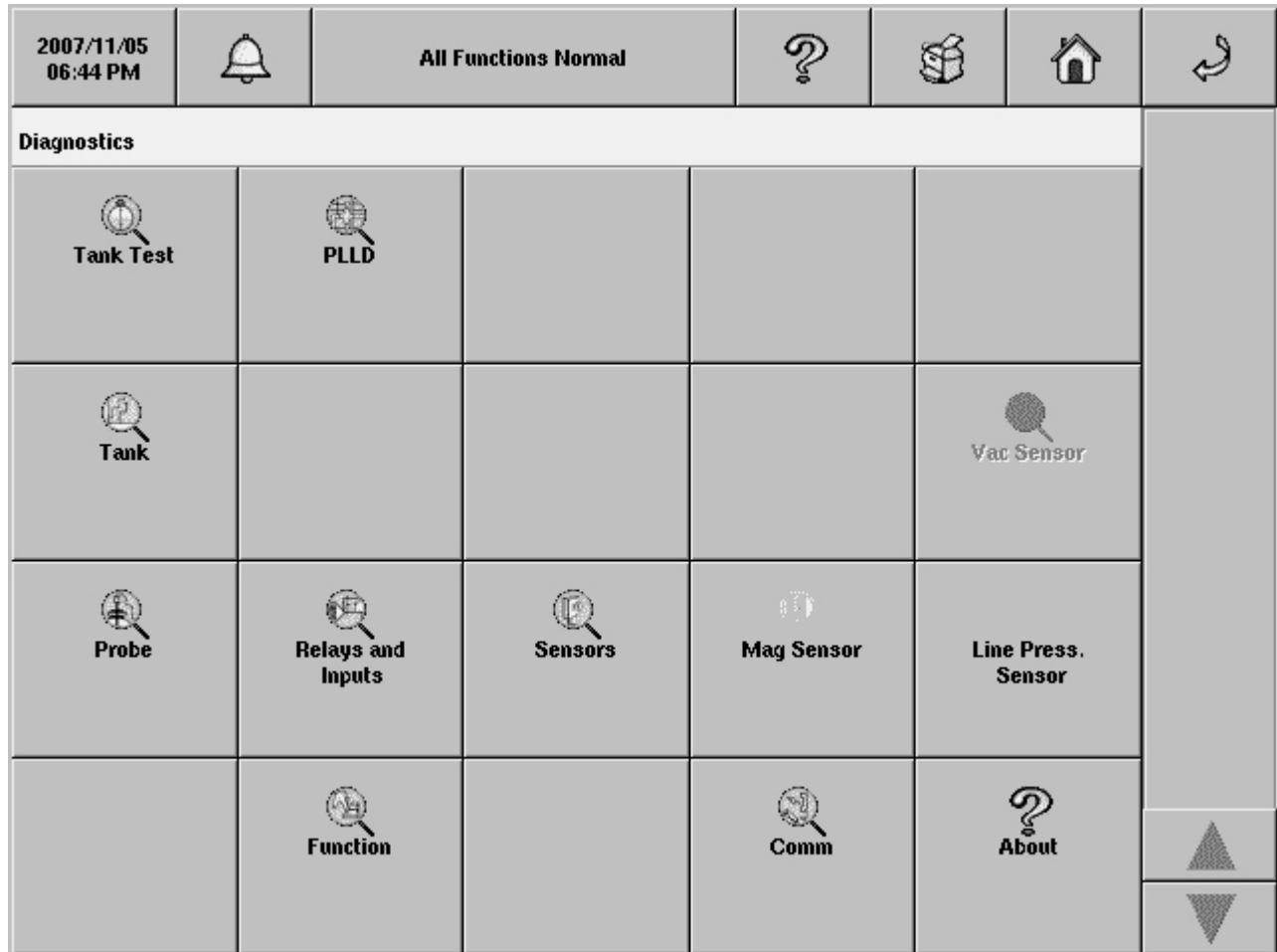
- Normal
- Setup Data Warning
- Fuel Alarm
- Out Alarm
- Short Alarm
- Water Alarm
- Water Out Alarm
- High Liquid Alarm
- Low Liquid Alarm
- Liquid Warning
- Communication Alarm
- Fuel Warning
- Water Warning
- High Liquid Warning
- High Liquid Alarm
- Low Liquid Warning
- Low Liquid Alarm
- Temperature Warning
- Relay Active
- Install Alarm
- Fault Alarm

## **Diagnostic Screens**



## Main Diagnostics Screen

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



### Tank Test

The Tank Test diagnostics contain information on all environmental tank tests. Each report has quick access to the appropriate tank test setup screen.

CSLD and/or SLD tabs will be displayed only if these features are supported and at least one tank has the respective feature enabled. Current or active reports will not be visible for tanks that are not configured or inactive. Historic reports will be available for tanks even if they are not configured or if they are inactive.

## **Available Tank Test Diagnostic Reports:**

- CSLD Test Status Report (current CSLD test status)
- CSLD Rate Table Report (CSLD rate table)
- CSLD Monthly Report (CSLD state changes)
- SLD Last Test Report (most recently completed SLD tests)
- SLD In-Progress Reports (SLD active tests)
- SLD History Report (all SLD test results)

## **Tank**

Tank diagnostics contains information related to tank inventory volumes, tank chart, and Accuchart.

## **Available Tank Diagnostic Reports:**

- 30 Second Samples Report (30 second inventory samples)
- Tank Chart Report (tank chart report)

## **PLLD**

The PLLD Diagnostics provide access to the PLLD Manual Test interface and all PLLD diagnostic reports. Each report has quick access to the PLLD setup screen.

Current or active reports will not be visible for PLLD Lines that are not configured or inactive. Historic reports will be available for PLLD lines even if they are not configured or if they are inactive, as long as they have data to display.

## **Available PLLD Reports and Diagnostic screens**

- PLLD Status Report (general status and diagnostic information about PLLD)
- PLLD Manual Test (start or stop PLLD tests manually for one or all lines)
- 3.0 gph (11.3 lph) Tests Report (3.0 gph diagnostics test results)
- Mid-Range Tests Report (mid-range Diagnostics Test Results)
- No-Vent Aborts Report (No-Vent Test Aborts Information)
- 0.2 gph (0.76 lph) Auto-Confirm Report (0.2 gph auto-confirm data)
- 0.2 gph (0.76 lph) Tests Report (0.2 gph diagnostics test results)
- 0.1 gph (0.38 lph) Auto-Confirm Report (0.1 gph auto-confirm data)
- 0.1 gph (0.38 lph) Tests Report (0.1 gph diagnostics test results)
- Pressure Offset (pressure offset history interface for a pressure offset test)

## Probe

The Probe diagnostics contain information/diagnostics about probes.

### Available Probe Diagnostic Reports

- General Report (general information about each probe)
- Reference Distance Report (Original and Current Reference distances for each probe)
- Last sample Report (last sample information for each probe)
- Mag Options Report (options supported by mag probes)
- Communication Report (communication health and status parameters for each probe)

## Relays and Inputs

The Relays and Inputs diagnostics contain information on relays and external inputs.

### Available Relay and External Inputs Diagnostic Reports

- Relays (diagnostic information about each relay )
- External Inputs (diagnostic information about each external input)

## Sensors

The Sensor diagnostics contain reports on the activity and condition of Liquid, Vapor, Groundwater, 2-wire CL and 3-wire CL sensors.

### Available Sensor Diagnostic Reports

- Liquid (Diagnostic information about each Liquid Sensor)
- Vapor (Diagnostic information about each Vapor Sensor)
- Groundwater (Diagnostic information about each Groundwater Sensor)
- 2-Wire CL (diagnostic information about each 2-wire CL sensor)
- 3-Wire CL (diagnostic information about each 3-wire CL sensor)

# Mag Sensors

Mag Sensor diagnostics contain reports on the activity and condition of Mag Sensors.

## Available Mag Sensor Diagnostic Reports

- General (general diagnostic information)
- Comm (communication diagnostic information)
- Constants (constants diagnostic information)
- Channel (channel data)

# Line Pressure Sensors

Line Pressure Sensor diagnostics contain reports on the activity and condition of Line Pressure Sensors.

## Available Line Pressure Sensor Diagnostic Reports

- General (general diagnostic information)
- Comm (communication diagnostic information)
- Constants (constants diagnostic information)
- Channel (channel data)

# Function

The Function tests section is composed of areas containing basic functional tests for the standard console hardware.

## Available Hardware Function Tests

- LCD Test (tests the pixels on the front panel touch screen)
- LCD Calibration Test (tests the sensitivity of the front panel touch screen)

## About

The About - System screen displays your console's software version and information on installed features. Examples of information that may appear in this screen are shown below:

TLS-450 Software Version NN.MM

### Component Versions:

- Core vNN.MM.XX
- Database vNN.MM.XX
- DS vNN.MM.XX
- Interface vNN.MM.XX
- Comm vNN.MM.XX
- Command vNN.MM.XX

### Loaded Components:

- PLLD vNN.MM.XX
- SLD vNN.MM.XX

# Tank Test Diagnostics - CSLD Monthly

The CSLD Monthly Diagnostics report displays the 0.2 gph (0.76 lph) CSLD tests for the current or previous month with state changes for each test. The default view is all tanks for the current month.

Siphon manifolded tanks are treated as one tank in CSLD. The tanks in the manifolded set share the same table and results. Deleting the table for any tank within the set will in effect delete the table of all the members in the set. All tank probe serial numbers will be listed in the report for siphon manifolded tanks.

You will only be able to access tanks that have CSLD enabled or have CSLD history.

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

## Report Column Descriptions

### Date/Time

Value range: Date and Time

## **CSLD State Change**

Possible results that will display in this column:

- Pass
- Fail
- 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: Current, Previous, Previous n selections

#### **Select Tank(s)**

Select tank(s) to report: "All Tanks" or "Current Tank"

## **CSLD Test Setup**

Touch this button open the Tank Setup - CSLD Test Setup screen.

## Tank Test Diagnostics - CSLD Rate Table

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.

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
All Tanks	Tank 1	Tank 2	Tank 3	Tank 4	Tank 5	Tank 6			

## 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 264,172 gal (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".

# 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.

11/06/2007 05:42 PM				T 4: SETUP DATA WARNING											
Tank Test Diagnostics – CSLD Test Status											All Tanks				
CSLD Test Status			CSLD Rate Table			CSLD Monthly			SLD Last Test						
#	Tank Label			Test Status			Minutes								
T 1	* PRODUCT1			End Delay			0.0								
T 2	* PRODUCT2			No Test			0.0								
T 3	* PRODUCT3			No Test			0.0								
T 4	* PRODUCT4			No Test			0.0								
T 5	* PRODUCT5			No Test			0.0								
T 6	* PRODUCT6			No Test			0.0								

- Test abort
- Test pre-delay
- Test end delay

## **Minutes Column**

Value range: 0.0 to 180.0 minutes

## **CSLD Test Status Refresh Rate**

The CSLD Test Status data will be refreshed every 30 seconds.

## Tank Test Diagnostics - SLD Last Test

The SLD Last Test screen is a report showing the most recently completed SLD test results for all tanks or a specific tank.  
NOTE: Tanks must have the SLD Environmental Test Method enabled.

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				
Test Type	Start Time	Test Result	Reason	Leak Rate	Hours	Tank Volume	<div>Manual Test</div>	
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		

### 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:

- Insuf Smpl on First Per (insufficient TLS samples In first period)
- Insuf Smpl on Last Per (insufficient TLS samples In last period)
- Recent Delivery (test started too soon after delivery)
- Zone Temp Chg (one or more in-fuel thermistors changed too much)
- Temp Chg (average fuel temperature changed too much)
- Head Temp Chg (probe head temperature changed too much)
- Temp out of Range (one or more in-fuel thermistors out of range)
- Test too Short (test too short)
- Percent Vol Too Low (tank volume too low)
- Invalid Fuel Level (insufficient separation between fuel and water floats)
- Product Level Increase (leak rate is excessively positive)

## Leak Rate

Value range: -26.42 to 26.42 gal (-99.99 to 99.99 L)

## Hours

Value range: 0.0 to 24.0 (blank for gross test)

## Tank Volume

Value range: 0.0 to 264,172.0 gal (0.0 to 999,999.0 L)

## Control Buttons (right of screen)

### Setup

Touch this button to open the Tank Setup - SLD Test Setup screen

### Manual Test













Touch this button to access the Manual Static Leak Detect screen to start a SLD test.

## Manual Static Leak Detect screen

This screen displays when you touch the Manual Test button from any of the Tank Test Diagnostic SLD screens. You select all parameters necessary to start an SLD test using this dialog. This dialog allows you to start or stop an SLD test for All Tanks or a single tank.

Notes:

1. The Test Control, Test Rate, and Test Duration fields will be disabled when an SLD Test is active.
2. Tank tests will be 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.

11/07/2007 11:48 AM		T 4: HIGH WATER WARNING				
Tank Test Diagnostics – Manual Static Leak Detect					Tank 1 : PRODUCT 1	
Tests Running		T 1 : Off				Start
Test Control		Manual Stop 				Stop All Tanks
Test Rate[Gal/Hr]		0.2 gal/hr 				Stop All Tanks
<div>  <b>Tank 1</b> </div>						 
						
						

## Test Running

Tests Running is a read-only field. The field will display the Tanks (i.e. T1, T2, T3, T4) that are currently under an SLD test. If a test starts or stops due to automatic Scheduling, the Tests Running field will update to reflect the current status. The Tests Running field will update immediately when a test is stopped or a test completes.

## Test Control

Allowable selections: Timed duration, Manual Stop  
Default: Timed duration

## Test Rate

Allowable selections: 0.1 gal/hr (0.38 ltr/hr), 0.2 gal/hr (0.76 ltr/hr)  
Default: 0.2 gal/hr

## Test Duration

The Test Duration field will be present only when the Test Control is set to Timed Duration.

Allowable selections: 2 - 24 hours  
Default: 2 hours

## Test Control Buttons (on right of screen)

### Start

Touch this button to start a manual test of a selected tank. This button is disabled if tests are running for the currently selected tank, or if Start All Tanks is selected to start tests for all tanks.

### Stop

Touch this button to stop a manual test of a selected tank. This button is disabled if test are not running for the currently selected tank, or if Stop All Tanks is selected to stop tests for all tanks.

### Start All Tanks

Touch this button to start an SLD test for all tanks using the field selections for an individual tank.

### Stop All Tanks

Touch this button to stop all SLD tests that are running.



# Tank Test Diagnostics - SLD In-Progress

The SLD In-Progress report will display any SLD tests that are currently active, or in-progress. This screen will be refreshed every 30 seconds. Since all in-progress SLD tests have a result of Invalid while the test is running, the Result field will be blank until the test completes. Once the in-progress test is complete, all fields are updated and the test result will remain on the screen until you exit the screen. The Status field will indicate if a SLD test is not active for the currently selected tank(s).

Tanks must have SLD enabled and be configured with a probe that supports leak detection to be visible in this report.

11/06/2007 05:31 PM		T 2: SETUP DATA WARNING				
Tank Test Diagnostics - SLD Test In-Progress						All Tanks
	CSLD Monthly	SLD Last Test	SLD In Progress	SLD History		
<b>Tank 1 : * Regular</b> Status: OFF      Test Type: 0.1 Gal/Hr Result: Pass Reason: Start Time: 11/05/2007 05:32 PM      Duration: 8.0 Hrs Start Temp: 60.0 °F      Leak Rate: 0.00 gal/Hr Ending Temp: 60.0 °F      Threshold: 0.07 gal/Hr Start Volume: 5000.0 gal      Fuel Height: 50.0 in Percent Volume: 50.0 %      Water Height: 0.0 in Cumulative Periodic Volume Change (Gal): 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00						Manual Test
<b>Tank 2 : * Midgrade East</b> Status: OFF      Test Type: 0.1 Gal/Hr Result: Fail Reason: Start Time: 11/05/2007 05:32 PM      Duration: 8.0 Hrs Start Temp: 60.0 °F      Leak Rate: -0.10 gal/Hr Ending Temp: 60.0 °F      Threshold: 0.07 gal/Hr Start Volume: 4999.9 gal      Fuel Height: 50.0 in Percent Volume: 49.0 %      Water Height: 0.0 in						
All Tanks	Tank 1	Tank 2	Tank 3	Tank 4	Tank 5	Tank 6

## 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.

Possible messages:

- Low Level,
- Recent Delivery,
- Zone Temp Chg,
- Temp Chg,
- Head Temp Chg,
- Temp out of Range,
- Test too Short,
- Percent Vol Too Low,
- Invalid Fuel Level,
- Product Level Increase

## Start Time

Value range: Date/Time

## Duration

Value range: 0 - 24 hours (blank for gross test)

## Start Temp

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

## Leak Rate

Value range: -26.417 to 26.417 gal (-99.999 to 99.999L)

## End Temp

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

## Threshold

Value range: 0.00 to 9.99 gal (0.00 to 37.82L)

## **Start Volume**

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

## **Fuel Height**

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

## **Percent Volume**

Value range: 0.0 to 100.0

## **Water Height**

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

## **Cumulative Periodic Volume Change**

There is one Cumulative Periodic Volume Change field for each completed one half hour of test duration, up to 47 fields maximum. The fields will be displayed in rows of ten fields maximum.

Value range: -26.41 to 26.41 gal (-99.99 to 99.99L)

## **SLD Test In-Progress Report Refresh Rate**

The SLD Test In-Progress Report data will be refreshed every 30 seconds.

## **Test Control Buttons (on right of screen)**

### **Setup**

Touch this button to open the Tank Setup - SLD Test Setup screen.

### **Manual Test**

Touch this button to open the Manual Static Leak Detect screen to start or stop a SLD test.

## Tank Test Diagnostics - SLD History

The SLD History report looks much like the SLD History report that is displayed in the Environmental Reports section. This report shows additional details that the environmental SLD History report does not display. In addition, this report includes all test results, both Passed and Failed; the environmental report shows only the Last Passed results.

Tanks must have SLD enabled and be configured with a probe that supports leak detection to be visible in this report.

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			
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		

## Report Column Descriptions

### Test Type

Value range: Annual, Gross, Periodic

## **Date & Time**

Value range: Date/Time

## **Test Result**

Value range: Pass, Fail

## **Hours**

Value range: 0.0 to 24.0 (blank for Gross test)

## **Leak Rate**

Value range: -26.42 to 26.42 gal/hour (-99.99 to 99.99L/hour)

## **Tank Volume**

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

## **%Volume**

Value range: 0.0 to 100.0

## **SLD History Report Refresh Rate**

The SLD History Report data will be refreshed every 30 seconds.

## **Control Buttons (right of screen)**

### **Setup**

Touch this button to open the Tank Setup - SLD Test Setup screen

### **Manual Test**

Touch this button to access the Manual Static Leak Detect screen in which you can start a SLD test.

## Select Range

Touch this button to setup the report's contents:

### Select Option List

Select data for report: All Records, Day, Week, Month, Year, Date Range

### Period Option List

Select period: Previous, Previous n selections

### Select Tank(s)

Select tank(s) to report: 'All Tanks' or 'Current Tank'

# PLLD Diagnostics - Pressure Offset Test

The PLLD Diagnostic Pressure Offset Test screen displays the last five pressure offset test records. When a test is started a new row will be added to the screen with a time stamp and no pressure offset, but a Test Status that says “In-Progress”. When the test is complete, the screen will refresh and show the test results.

## Report Column Descriptions

### Date/Time

For previously run (historic records) this column will display the completion date/time of those pressure offset tests. For a test in progress this column will display the time the test started.

Value range: Date and Time

### Pressure Offset

Pressure offset measured.

Value range: -5.0 to 5.0 psi (-34.4 to 34.4kPa)

### Test Status

Status of the test.

Possible messages:

- Complete
- In-Progress

## PLLD Pressure Offset Screen Refresh Rate

The PLLD Pressure Offset screen will be refreshed only at the end of a test. If no test is run, no refresh is needed.

## Control Buttons (on right of screen)

### Setup

Touch this button to open the "Line Pressure Setup" screen.

### Start

Touch this button to start a line pressure offset test.

# PLLD Diagnostics - Manual Test

The PLLD Diagnostics Manual Test screen lets you select all parameters necessary to start or stop PLLD tests (3.0 gph (11.3 lph), 0.2 gph (0.76 lph) or 0.1 gph (0.38 lph)) for individual lines or all lines at once.

## Test Notes

1. Tests always run in the order: 3.0 (11.3), 0.2 (0.76), and 0.1 (0.38).
2. Approximate test times, assuming no dispense (which would restart the test(s) after the dispense) and no thermals, are 3.0 (11.3) - several minutes, 0.2 (0.76) - 30 minutes, and 0.1 (0.38) - 45 minutes.
3. A 3.0 (11.3) test runs that test only.
4. A 0.2 (0.76) test is automatically preceded by a 3.0 (11.3) test. Selecting a 0.2 (0.76) test bypasses the '0.2 (0.76) Line Test Auto-Confirm' PLLD setup selection (if enabled).
5. A 0.1 (0.38) test is automatically preceded by 3.0 (11.3) and 0.2 (0.76) tests. Selecting a 0.1 (0.38) test bypasses the '0.2 (0.76) Line Test Auto-Confirm' and '0.1 (0.38) Line Test Auto-Confirm' PLLD setup selections (if enabled).

11/06/2007 05:48 PM		All Functions Normal				
PLLD Diagnostics - Manual Test						All Lines
Manual Test	PLLD Status	3.0 gph Tests	Mid-Range Tests			Start
Test <div> 3.0  </div>						Stop
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



## 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.

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.

When the Start Button is pressed for the selected test, any tests that are currently in progress (Manual or Automatic) will be re-started (from the very beginning as Manual).

## Stop

Touch this button to stop a manual test of all lines (or an Individual Line) - see note below:

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.

11/06/2007 05:48 PM				All Functions Normal										
PLLD Diagnostics – PLLD Status											All Lines			
Manual Test		PLLD Status		3.0 gph Tests		Mid-Range Tests		N						
#		Label		Dispensing		Test Status		Pump		Handle		Pressure		
Q 1		PRESSURE LLD #1		Enabled		Test Complete		Off		Off		0.000		
Q 2		PRESSURE LLD #2		Enabled		Test Complete		Off		Off		0.000		
Q 3		PRESSURE LLD #3		Enabled		Test Complete		Off		Off		0.000		
Q 4		PRESSURE LLD #4		Enabled		Test Complete		Off		Off		0.000		
Q 5		PRESSURE LLD #5		Enabled		Test Complete		Off		Off		0.000		
Q 6		PRESSURE LLD #6		Enabled		Test Complete		Off		Off		0.000		

### Report Column Descriptions

#### # (PLLD line identifier)

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

#### Label (PLLD line label)

Value range: Label (assigned in setup)

## **Dispensing (flag)**

Value range: Enabled, Disabled

## **Test Status**

Possible messages include:

- Disable Alarm
- Dispensing
- Line Lockout (console is in a line lockout period)
- Pressure Check (checking for high pressure after a 3.0 gph [11.3 lph] test)
- Running Pump
- Test Aborted
- Test Complete
- Test Delay
- Test Pending
- Testing at 0.1 (0.38)
- Testing at 0.2 (0.76)
- Testing at 3.0 (11.3)

## **Pump (state)**

Value range: On, Off

## **Handle (state)**

Value range: On, Off

## **Pressure (measured on line)**

Value range: -14.000 to 99.999 psi (-96.485 to 689.173kPa)

## **PLLD Status - Refresh Rate**

The PLLD Status screen will be refreshed every second.

## **Control Buttons (right of screen)**

### **Setup**

Touch this button to open the PLLD Setup 'Pump and Line Setup - Line Leak Detect - PLLD' screen.

### **Diagnostics (line pressure sensor)**

Touch this button to open the Smart Sensors, Line Pressure Sensor diagnostics screen.

## PLLD Diagnostics - 3.0 gph (11.3lph) Test Results

The PLLD Diagnostics - 3.0 gph (11.3 lph) Tests screen displays a report with the last five 3.0 gph (11.3 lph) test results (including passed and failed tests) for all lines with PLLD.

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/A		
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	

### Report Column Descriptions

#### Date/Time

Value range: The Date and Time of the test.

#### Pump On

The pressure reading when turning On the pump.

Value range: -14.0 to 99.9 psi (-96.5 to 689.2kPa)

## **First Read**

The first pressure reading of the 3.0 (11.3) test.

Value range: -14.0 to 99.9 psi (-96.5 to 689.2kPa)

## **Second Read**

The second pressure reading of the 3.0 (11.3) test.

Value range: -14.0 to 99.9 psi (-96.5 to 689.2kPa)

## **Status**

Possible messages:

- Pass
- Fail
- High Pressure

## **Control Buttons (right of screen)**

### **Setup**

Touch this button to open the PLLD Setup 'Pump and Line Setup - Line Leak Detect - PLLD' screen.

### **Diagnostics (line pressure sensor)**

Touch this button to open the Smart Sensors, Line Pressure Sensor diagnostics screen.

# PLLD Diagnostics - Mid-Range Test Results

The PLLD Diagnostics - Mid-Range Tests screen displays a report with the last five mid-range test results (including passed and failed tests) for all lines with PLLD.

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	No					
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			

## 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 - Line Leak Detect - PLLD' screen.

### **Diagnostics (line pressure sensor)**

Touch this button to open the Smart Sensors, Line Pressure Sensor diagnostics screen.



## PLLD Diagnostics - No-Vent Aborts

The No-Vent Test Aborts Tab of the PLLD Diagnostics interface displays a report with No-Vent Test Aborts information about all lines with PLLD in the system.

This screen will only be available if the 0.2 gph (0.76 lph) or 0.1 gph (0.39 lph) line leak test features are available.

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 Auto-Confirm						
#		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									

### Report Column Descriptions

#### # (PLLD line identifier)

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

### **Label (PLLD line label)**

Value range: Label (assigned in setup)

### **Test Aborts**

Number of tests that were aborted because of a “No-Vent” failure.

Value range: 1 - 99

### **Total Tests**

Number of total tests run.

Value range: 1- 99

## **Control Buttons (right of screen)**

### **Setup**

Touch this button to open the PLLD Setup “Pump and Line Setup - Line Leak Detect - PLLD” screen.

### **Diagnostics (line pressure sensor)**

Touch this button to open the Smart Sensors, Line Pressure Sensor diagnostics screen.

## PLLD Diagnostics - 0.2 gph (0.76 lph) Auto-Confirm

The PLLD Diagnostics 0.2 gph (0.76 lph) Auto-Confirm screen displays a report with 0.2 gph (0.76 lph) Auto-Confirm Data for all lines with PLLD in the system.

PLLD Auto-Confirm is a filter for PLLD precision tests that operates by evaluating a series of tests. As tests are completed they are added to the filter. The collected tests are then evaluated, and if a conclusion is drawn, the result is posted as a Pass or a Fail.

This screen will only be available if the 0.2 Line Leak Test feature is available.

11/06/2007 05:51 PM		T 4: HIGH WATER WARNING						
PLLD Diagnostics – 0.2 gph Auto-confirm Data #1							All Lines	More
3.0 gph Tests	Mid-Range Tests		No-Vent Aborts		0.2 gph Auto-Confirm			
Test	Start Date/Time	Duration	Seq Passes	Seq Fails	Total Passes	Total Fails	Reason Code	
Line 1 : PRESSURE LLD #1								
Last	11/01/2007 01:55 PM	0	0	0	0	0	0 Manual Test	
Last	11/01/2007 10:42 AM	8180	0	0	0	0	0 Manual Test	
Line 2 : PRESSURE LLD #2								
Last	11/01/2007 01:56 PM	0	0	0	0	0	0 Manual Test	
Last	11/01/2007 10:42 AM	8235	0	0	0	0	0 Manual Test	
Line 3 : PRESSURE LLD #3								
Last	11/01/2007 01:58 PM	0	0	0	0	0	0 Manual Test	
Last	11/01/2007 10:42 AM	8292	0	0	0	0	0 Manual Test	
Line 4 : PRESSURE LLD #4								
Last	11/01/2007 01:59 PM	0	0	0	0	0	0 Manual Test	
Last	11/01/2007 10:42 AM	8375	0	0	0	0	0 Manual Test	
Line 5 : PRESSURE LLD #5								
Last	11/01/2007 02:00 PM	0	0	0	0	0	0 Manual Test	
Last	11/01/2007 10:42 AM	8466	0	0	0	0	0 Manual Test	
Line 6 : PRESSURE LLD #6								
All Lines	Line 1	Line 2	Line 3	Line 4	Line 5	Line 6		

## Report Column Descriptions

### Test

The Current or Last test. For any line, the 'Current' record is always shown first.

Value range: Current, Last

### Start Date/Time

The Start Date and Time of the test.

Value range: Date and Time

### Duration

Test Duration in days.

Value range: 1 to 999 (days)

### Seq. Passes

The number of Sequential Test Passes.

Value range: 0 to 6

### Seq. Fails

The number of Sequential Test Fails.

Value range: 0 to 6

### Total Passes

The number of Total Test Passes

Value range: 0 to 6

### Total Fails

The number of Total Test Fails

Value range: 0 to 6

## Reason Code

The reason for the Pass or the Fail, if applicable. The maximum number of tests an Auto-Confirm filter will collect is 6. There are several criteria which will cause the filter to produce a result.

Possible messages:

- **Idle, Working** - When the filter is actively collecting tests it is *Working* and the result is None. At the conclusion of the sequence the filter becomes *Idle* (result None) and it remains in this state until new tests are added. Precision tests do not run continuously.
- **Max Count** - If the tests are noisy (i.e. pass, fail, pass, fail...) the filter will collect tests until the Max Count has been reached and draw a conclusion (Pass or Fail) based on the data collected.
- **Time Out** - There is also a requirement where a test result must be produced by a certain time. If the filter has not drawn a conclusion by this time, it is forced to do it (Pass or Fail) and the reason code is called Time Out.
- **Manual Test** - When a manual test is initiated, the result is drawn immediately (Pass or Fail). In that case the filter will disregard collected results and act on the result of the manual test immediately.
- **Mid Test Fail** - The Mid Test is part of the 0.2 test. It indicates a larger leak and is not filtered. A Mid-Test failure will force the filter to draw a Failing conclusion immediately, and the result is called Mid Test Fail (result Fail).
- **Sequential** - If two sequential passes (or two sequential fails) enter the filter the result is a Pass (or a Fail) - Reason: Sequential.
- **No Ann** (0.1 gph [0.38 lph])
- **Test Auto-Confirm** - This is the odd situation where the filter has been enabled for the 0.2 (0.76) test but not the 0.1 (0.38) test. To run a 0.1 (0.38) test the 0.2 (0.76) test must run first. If the 0.2 (0.76) test fails, since the 0.1 (0.38) is not filtered and that is the desired test, then the filter will Fail immediately, and the result is called No 0.1 (0.38) Auto-Confirm.

## Result

The results of the test.

Possible messages:

- None
- Pass
- Fail
- Retest
- Abort
- Filtered

## **Control Buttons (right of screen)**

### **Setup**

Touch this button to open the PLLD Setup 'Pump and Line Setup - Line Leak Detect - PLLD' screen.

### **Diagnostics (line pressure sensor)**

Touch this button to open the Smart Sensors, Line Pressure Sensor diagnostics 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.

11/06/2007 05:51 PM		T 4: HIGH WATER WARNING					
PLLD Diagnostics – 0.2 gph Test Results							All Lines
Mid-Range Tests	No-Vent Aborts		0.2 gph Auto-Confirm		0.2 gph Tests		
Date/Time	Pump On	Ratio	Duration	Results	 		
Line 1 : PRESSURE LLD #1							
11/01/2007 01:55 PM	38.3	0.50	0:31	PASS			
11/01/2007 12:58 PM	38.9	0.29	0:31	PASS			
Line 2 : PRESSURE LLD #2							
11/01/2007 01:56 PM	39.4	0.48	0:31	PASS			
11/01/2007 12:59 PM	39.6	0.27	0:31	PASS			
Line 3 : PRESSURE LLD #3							
11/01/2007 01:58 PM	39.7	0.47	0:32	PASS			
11/01/2007 01:00 PM	39.8	0.27	0:32	PASS			
Line 4 : PRESSURE LLD #4							
11/01/2007 01:59 PM	39.8	0.47	0:33	PASS			
11/01/2007 01:02 PM	39.8	0.27	0:33	PASS			
Line 5 : PRESSURE LLD #5							
11/01/2007 02:00 PM	39.8	0.47	0:34	PASS			
11/01/2007 01:03 PM	39.9	0.27	0:34	PASS			
Line 6 : PRESSURE LLD #6							
All Lines	Line 1	Line 2	Line 3	Line 4	Line 5	Line 6	

### Report Column Descriptions

#### Date/Time

The Date and Time of the test.

Value range: Date and Time

## **Pump On**

The pressure reading when turning On the Pump.

Value range: -14.0 to 99.9 psi (-96.5 to 689.2kPa)

## **Ratio**

Pump On Ratio = Ramp/Fail threshold ( $>1.0$  = Fail and  $<1.0$  = Pass) and is used to indicate how close the test is to fail the threshold. Large variations in ratio indicate an intermittent problem such as the valve not always seating properly.

Value range: 0.00 to 99.99

## **Duration**

Test Duration in hours and fraction of an hour in minutes. Long durations indicate there was a lot of thermal activity during the test.

Value range: HH:MM (where HH = 0 to 99, MM = 0 to 59)

## **Results**

The results of the test.

Possible messages:

- Pass
- Fail

## **Control Buttons (right of screen)**

### **Setup**

Touch this button to open the PLLD Setup 'Pump and Line Setup - Line Leak Detect - PLLD' screen.

### **Diagnostics (line pressure sensor)**

Touch this button to open the Smart Sensors, Line Pressure Sensor diagnostics screen.



## PLLD Diagnostics - 0.1 gph (0.38lph) Auto-Confirm

The PLLD Diagnostics 0.1 gph (0.38 lph) Auto-Confirm screen displays a report with 0.1 gph (0.38 lph) Auto-Confirm Data for all lines with PLLD in the system.

PLLD Auto-Confirm is a filter for PLLD precision tests that operates by evaluating a series of tests. As tests are completed they are added to the filter. The collected tests are then evaluated, and if a conclusion is drawn, the result is posted as a Pass or a Fail.

This screen will only be available if the 0.1 Line Leak Test feature is available.

11/06/2007 05:52 PM				T 2: HIGH WATER WARNING									
PLLD Diagnostics - 0.1 gph Auto-Confirm Data #1										All Lines		More	
0.2 gph Auto-Confirm		0.2 gph Tests		0.1 gph Auto-Confirm		0.1 gph Tests							
Test	Start Date/Time	Duration	Seq Passes	Seq Fails	Total Passes	Total Fails	Reason Code						
Line 1 : PRESSURE LLD #1													
Line 2 : PRESSURE LLD #2													
Line 3 : PRESSURE LLD #3													
Line 4 : PRESSURE LLD #4													
Line 5 : PRESSURE LLD #5													
Line 6 : PRESSURE LLD #6													
Line 7 :													
Line 8 :													
All Lines	Line 1	Line 2	Line 3	Line 4	Line 5	Line 6							

## Report Column Descriptions

### Test

The Current or Last test. For any line, the 'Current' record is always shown first.

Value range: Current, Last

### Start Date/Time

The Start Date and Time of the test.

Value range: Date and Time

### Duration

Test Duration in days.

Value range: 1 to 999 (days)

### Seq. Passes

The number of Sequential Test Passes.

Value range: 0 to 6

### Seq. Fails

The number of Sequential Test Fails.

Value range: 0 to 6

### Total Passes

The number of Total Test Passes

Value range: 0 to 6

### Total Fails

The number of Total Test Fails

Value range: 0 to 6

## Reason Code

The reason for the Pass or the Fail, if applicable. The maximum number of tests an Auto-Confirm filter will collect is 6. There are several criteria which will cause the filter to produce a result.

Possible messages:

- **Idle, Working** - When the filter is actively collecting tests it is *Working* and the result is None. At the conclusion of the sequence the filter becomes *Idle* (result None) and it remains in this state until new tests are added. Precision tests do not run continuously.
- **Max Count** - If the tests are noisy (i.e. pass, fail, pass, fail...) the filter will collect tests until the Max Count has been reached and draw a conclusion (Pass or Fail) based on the data collected.
- **Time Out** - There is also a requirement where a test result must be produced by a certain time. If the filter has not drawn a conclusion by this time, it is forced to do it (Pass or Fail) and the reason code is called Time Out.
- **Manual Test** - When a manual test is initiated, the result is drawn immediately (Pass or Fail). In that case the filter will disregard collected results and act on the result of the manual test immediately.
- **Mid Test Fail** - The Mid Test is part of the 0.1 test. It indicates a larger leak and is not filtered. A Mid-Test failure will force the filter to draw a Failing conclusion immediately, and the result is called Mid Test Fail (result Fail).
- **Sequential** - If two sequential passes (or two sequential fails) enter the filter the result is a Pass (or a Fail) - Reason: Sequential.
- **No Ann (0.1 gph [0.38 lph]) Test Auto-Confirm** - This is the odd situation where the filter has been enabled for the 0.2 (0.76) test but not the 0.1 (0.38) test. To run a 0.1 (0.38) test the 0.2 (0.76) test must run first. If the 0.2 (0.76) test fails, since the 0.1 (0.38) is not filtered and that is the desired test, then the filter will Fail immediately, and the result is called No 0.1 (0.38) Auto-Confirm.

## Result

The results of the test.

Possible messages:

- None
- Pass
- Fail
- Retest
- Abort
- Filtered

## Control Buttons (right of screen)

### Setup

Touch this button to open the PLLD Setup 'Pump and Line Setup - Line Leak Detect - PLLD' screen.

### Diagnostics (line pressure sensor)

Touch this button to open the Smart Sensors, Line Pressure Sensor diagnostics screen.

## PLLD Diagnostics - 0.1 gph (0.38lph) Test Results

The PLLD Diagnostics 0.1 gph (0.38 lph) Tests screen displays a report with the last five 0.1 gph (0.38 lph) test results (including passed and failed tests) for all lines with PLLD.

This screen will only be available if the 0.1 Line Leak Test feature is available.

11/06/2007 05:53 PM		T 4: HIGH WATER WARNING						
PLLD Diagnostics – 0.1 gph Test Results								All Lines
0.2 gph Auto-Confirm		0.2 gph Tests		0.1 gph Auto-Confirm		0.1 gph Tests		
Date/Time		Pump On	Ratio	Duration	Results			
Line 1 : PRESSURE LLD #1								
11/01/2007 01:15 PM		39.0	0.72	0:16	PASS			
Line 2 : PRESSURE LLD #2								
11/01/2007 01:16 PM		39.6	0.72	0:16	PASS			
Line 3 : PRESSURE LLD #3								
11/01/2007 01:16 PM		39.8	0.72	0:15	PASS			
Line 4 : PRESSURE LLD #4								
11/01/2007 01:18 PM		39.9	0.72	0:16	PASS			
Line 5 : PRESSURE LLD #5								
11/01/2007 01:20 PM		39.9	0.72	0:16	PASS			
Line 6 : PRESSURE LLD #6								
11/01/2007 01:22 PM		39.9	0.72	0:17	PASS			
Line 7 :								
Line 8 :								
All Lines	Line 1	Line 2	Line 3	Line 4	Line 5	Line 6		

### Report Column Descriptions

#### Date/Time

The Date and Time of the test.

Value range: Date and Time

## **Pump On**

The pressure reading when turning On the Pump.

Value range: -14.0 to 99.9 psi (-96.5 to 689.2kPa)

## **Ratio**

Pump On Ratio = Ramp/Fail threshold ( $>1.0$  = Fail and  $<1.0$  = Pass) and is used to indicate how close the test is to fail the threshold. Large variations in ratio indicate an intermittent problem such as the valve not always seating properly.

Value range: 0.00 to 99.99

## **Duration**

Test Duration in hours and fraction of an hour in minutes. Long durations indicate there was a lot of thermal activity during the test.

Value range: HH:MM (where HH = 0 to 99, MM = 0 to 59)

## **Results**

The results of the test.

Possible messages:

- Pass
- Fail

## **Control Buttons (right of screen)**

### **Setup**

Touch this button to open the PLLD Setup 'Pump and Line Setup - Line Leak Detect - PLLD' screen.

### **Diagnostics (line pressure sensor)**

Touch this button to open the Smart Sensors, Line Pressure Sensor diagnostics screen.

# Tank Diagnostics - 30 Second Inventory Samples

The Tank Diagnostics 30 Second Samples report is a Moving Average Table. It is used to diagnose problems with several console features, such as CSLD, ISD, etc. This report shows the last 60 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.

2007/11/06 11:33 AM		T 2: SETUP DATA WARNING				
Tank Diagnostics - 30 Second Inventory Samples						Tank 1 :
30 Second Inventory Samples		Tank Chart				
Date/Time	Samples	Volume	Height	Avg Temp	Top Temp	Bd Temp
Tank 1 : (Volume is TC)						
2007/11/06 11:33:27 AM	25	4061.29	38.566	71.86	72.01	72.05
2007/11/06 11:32:57 AM	25	4061.29	38.566	71.86	72.01	72.05
2007/11/06 11:32:27 AM	26	4061.29	38.566	71.86	72.01	72.05
2007/11/06 11:31:57 AM	26	4061.29	38.566	71.86	72.01	72.05
2007/11/06 11:31:27 AM	25	4061.29	38.566	71.86	72.01	72.05
2007/11/06 11:30:57 AM	25	4061.29	38.566	71.86	72.01	72.05
2007/11/06 11:30:27 AM	26	4061.29	38.566	71.86	72.01	72.05
	25	4061.29	38.566	71.86	72.01	72.05
2007/11/06 11:29:27 AM	25	4061.29	38.566	71.86	72.01	72.05
2007/11/06 11:28:57 AM	26	4061.29	38.566	71.86	72.01	72.05
2007/11/06 11:28:27 AM	25	4061.29	38.566	71.86	72.01	72.05
2007/11/06 11:27:57 AM	26	4061.29	38.566	71.86	72.01	72.05
2007/11/06 11:27:27 AM	25	4061.29	38.566	71.86	72.01	72.05
2007/11/06 11:26:57 AM	25	4061.29	38.566	71.86	72.01	72.05
2007/11/06 11:26:27 AM	26	4061.29	38.566	71.86	72.01	72.05
2007/11/06 11:25:57 AM	25	4061.29	38.566	71.86	72.01	72.05
2007/11/06 11:25:27 AM	26	4061.29	38.566	71.86	72.01	72.05
All Tanks	Tank 1	Tank 2	Tank 3	Tank 4		

## 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.

## Tank Diagnostics - Tank Chart

The Tank Diagnostics Tank Chart screen lets you view the tank height/volume pairs at selected step sizes.

The default height step size is 0.5 inches for U.S. units and 1 centimeter for Metric units. You can set the height step size to any increment by selecting the Step Size button.

This tab is visible if the console supports tank and tank chart, and there is at least one configured tank. The probe is not required to be active to view the tank's chart. If there is no chart available for the selected tank, the screen will display the "No data available".

11/07/2007 11:55 AM				T 1: HIGH WATER WARNING										
Tank Diagnostics - Tank Chart											All Tanks		Step Size	
30 Second Inventory Samples				Tank Chart										
Depth	Capacity	Depth	Capacity	Depth	Capacity	Depth	Capacity	Depth	Capacity	Depth	Capacity			
All Tanks		Tank 1		Tank 2		Tank 3		Tank 4		Tank 5		Tank 6		

### Report Column Descriptions

The 2nd, 3rd, etc Depth/Capacity column pairs are continuations of the first column pair.



## **Depth**

Value range: 0 to 390.000 in. (0 to 9906.000mm)

## **Capacity**

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

## **Control Buttons (right of screen)**

### **Setup**

Touch this button to open the Tank Setup - Chart Setup screen.

### **Step Size**

Touch this button to display a numeric keypad which will allow you to enter a step size. The minimum step size is 0.010 inches (0.397mm). The maximum step size is the diameter of the selected tank.

## Probe Diagnostics - General

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

[illegible]

## Report Column Descriptions

## Type

### Probe Type Description

Value: probe type (e.g., Mag 1)

## **Code**

Circuit Code (Hex number)

Value range: 0000-FFFF

## **Length**

Probe Length

Value range: 0.00 to 390.99 in. (0.00 to 9906.00mm)

## **Serial No.**

Probe Serial Number

Value range: 0 to 7 characters

## **Date (Yr/Wk)**

Build Date by Year / Week

Value range: YY/0 - 52

## **Rev**

Revision Number

Value range: 00 to 99

## **Gradient**

Probe Gradient

Value range: 0.000 to 999.999

## **Probe Diagnostics - General Screen Refresh Rate**

The General Probe Diagnostics data will be refreshed every 30 seconds.

## **Control Button (right of screen)**

### **Probe Setup**

Touch this button open the Device Setup - Probes screen.

## Probe Diagnostics - Reference Distance

The Probe Diagnostics - Reference Distance screen displays a report with Original and Current Reference distances for each probe.

2007/11/06 11:08 AM		T 1: DELIVERY NEEDED				
Diagnostics - Probes - Reference Distance						All Probes
General	Reference Distance	Last Sample	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		

### Report Column Descriptions

#### Type

Probe Type Description

Value: probe type (e.g., Mag 1)

## **Serial No.**

Probe Serial Number

Value range: 0 to 7 characters

## **Original Date**

Original Reference Distance Reading Date

Value range: Year, month, and day

## **Original Reference**

Original Reference Distance Reading

Value: 0.00 to 390.00 in. (0.00 to 9906.00mm)

## **Current Date**

Current Reference Distance Reading Date

Value: Year, month, and day

## **Current Reference**

Current Reference Distance Reading

Value: 0.00 to 390.00 in. (0.00 to 9906.00mm)

## **Probe Diagnostics - Reference Distance Screen Refresh Rate**

The Probe Reference Distance data will be refreshed every 30 seconds.

## **Control Buttons (right of screen)**

### **Probe Setup**

Touch this button open the Device Setup - Probes screen

## Probe Diagnostics - Last Sample

The Probe Diagnostics - Last Sample screen displays a report with Last Sample information for each probe.

2007/11/06 11:08 AM		T 1: DELIVERY NEEDED									
Diagnostics – Probes – Last Sample										All Probes	
General	Reference Distance		Last Sample		MAG Options		Communication				
	0	1	2	3	4	5	6	7	8	9	
Probe 1: – Tank 1											
00	d004	070b	3601	3611	3621	3631	3641	3651	3661	3671	
10	3681	3691	b322	4b8f	4b9f	4baf	4bbf	4bcf	4bdf	b329	
20	d38b	d3e7	e229	8002	f700	8892	0000	8c2d	8c30	0000	
Probe 2: – Tank 2											
00	d004	070b	3601	3611	3621	3631	3641	3651	3661	3671	
10	3681	3691	b322	4b8f	4b9f	4baf	4bbf	4bcf	4bdf	b329	
20	d38b	d3e7	e229	8002	f700	8892	0000	8c2d	8c30	0000	
Probe 3: – Tank 3											
00	d007	0000	4d80	4d90	4da0	4db0	4dc0	4dd0	4de0	4df0	
10	4e00	4e10	b37c	44eb	44fb	450b	451b	452b	453b	b383	
20	d38e	d3e7	e28c	8002	f700	8892	0000	8cac	8caf	0000	
Probe 4: – Tank 4											
00	c000	07c1	169e	169f	169f	169f	169e	169e	169e	169f	
10	169e	169e	b0f6	452c	42a2	4299	4271	4298	4232	b0f0	
20	c293	c2f4	e2b4	8001	8ca0	9074	8000	3c34	3c35	0000	
All Probe	Probe 1	Probe 2	Probe 3	Probe 4							

### Report Description

Each probe's last sample channel data is preceded by the following information:

**Probe number (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 (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	<b>B610</b>	05EB	29FC	<b>0235</b>	2C32	29FD	E240	0001	0008	C941
10	0001	61A7	0000	0000	0000	0000	<b>00A1</b>	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 Last Sample Refresh Rate

The Probe Diagnostics Last Sample data will be refreshed every 5 seconds.

## Control Button (right of screen)

### Probe Setup

Touch this button open the Device Setup - Probes screen.

# Probe Diagnostics - Mag Options

The Probe Diagnostics - Mag Options screen displays a report with options supported by Mag Probes.

2007/11/06 11:09 AM		T 1: SETUP DATA WARNING				
Diagnostics – Probes – MAG Options						All Probes 
General	Reference Distance	Last Sample	MAG Options	Communication		
Low Temperature	Water	Leak 0.1	Leak 0.2	Leak 3.0		
Probe 1: – Tank 1 NO	YES	YES	YES	YES		
Probe 2: – Tank 2 NO	YES	YES	YES	YES		
Probe 3: – Tank 3 NO	NO	YES	YES	YES		
Probe 4: – Tank 4 NO	YES	YES	YES	YES		
All Probe	Probe 1	Probe 2	Probe 3	Probe 4		

## Report Column Descriptions

### Low Temp

Indicates whether or not the probe supports the low temperature option.

Possible messages:

- Yes
- No



## **Water**

Indicates whether or not the probe supports the water option.

Possible messages:

- Yes
- No

## **Leak 0.1(0.38)**

Indicates whether or not the probe supports the leak 0.1 (gph [0.38 lph]) option.

Possible messages:

- Yes
- No

## **Leak 0.2 (0.76)**

Indicates whether or not the probe supports the leak 0.2 (gph [0.76 lph]) option.

Possible messages:

- Yes
- No

## **Leak 3.0 (11.3)**

Indicates whether or not the probe supports the leak 3.0 (gph [11.3 lph]) option.

Possible messages:

- Yes
- No

## **Probe Diagnostics - Mag Options Screen Refresh Rate**

The Mag Options data will be refreshed every 30 seconds.

## **Control Button (right of screen)**

### **Probe Setup**

Touch this button open the Device Setup - Probes screen.

## Probe Diagnostics - Communication

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

2007/11/06 11:32 AM		T 2: SETUP DATA WARNING				
Diagnostics - Probes - Communication #1						All Probes
General	Reference Distance	Last Sample	MAG Options	Communication		More
Type	Status	Samples Read	Samples Used	Parity	Partial	
Probe 1: - Tank 1						
MAG7	OK	8737	8736	0	0	
Probe 2: - Tank 2						
MAG7	OK	8736	8735	0	0	
Probe 3: - Tank 3						
MAG10	OK	8734	8733	0	0	
Probe 4: - Tank 4						
MAG1	OK	8732	8727	0	0	
All Probe	Probe 1	Probe 2	Probe 3	Probe 4		

### Report Column Descriptions

#### Type

Probe type.

Value: probe type (e.g., Mag 1)

## **Status**

Probe Status.

Possible messages:

- OK
- OUT

## **Samples Read**

Number of samples read.

Value range: 0 to 4294967295

## **Samples Used**

Number of samples used.

Value range: 0 to 4294967295

## **Parity**

Number of parity errors.

Value range: 0 to 999999

## **Partial**

Number of partial errors.

Value range: 0 to 999999

## **Comm Errors**

Number of comm errors.

Value range: 0 to 999999

## **Probe Diagnostics - Communication Refresh Rate**

The communication data will be refreshed every 5 seconds.









## **Control Button (right of screen)**

### **Probe Setup**

Touch this button open the Device Setup - Probes screen.

# Relays and External Inputs Diagnostics - Relays

The Relays and External Inputs Diagnostics - Relays screen displays a report with diagnostic information about each relay.

2007/11/06 04:24 PM		T 2: HIGH PRODUCT ALARM					
Relays and External Inputs Diagnostics - Relays						More	
Relays		External Inputs					
#	Address	Status	Duration	Type			
R1	B8.S5.1	Inactive	0028 00:00:07	Standard			
							
							

## Report Column Descriptions

### # (Relay identifier)

Relay Identifier

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

## **Address**

Relay Device Address

Value: Box/slot/connection (e.g., B0.S5.2)

## **Status**

Relay State

Possible messages: Active, Inactive

## **Duration**

Time the Relay has been in the current state.

Value range: 0000 to 9999 days plus hh:mm:ss (e.g., 00001 03:05:48)

## **Type**

The Relay type.

Possible messages:

- Standard
- Pump Output
- Momentary
- Pump Comm Control

## **Relay Diagnostic Screen Refresh Rate**

The Relay data will be updated on change of state.







## **Control Buttons (right of screen)**

### **Setup**

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

# Relays and External Inputs Diagnostics - External Inputs

The Relays and External Inputs Diagnostics - External Inputs screen displays a report with diagnostic information about each external input.

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		

## Report Column Descriptions

### # (External input identifier)

External Input Identifier

Value: Device code followed by 1 to 32 (e.g., I1)

## **Address**

External Input Device Address

Value: Box/slot/connection (e.g., B0.S5.2)

## **Status**

External Input State

Possible messages: Active, Inactive

## **Duration**

Time the External Input has been in the current state.

Value range: 0000 to 9999 days plus hh:mm:ss (e.g., 00001 03:05:48)

## **Type**

The External Input type.

Possible messages:

- Standard
- Generator
- Pump Sense
- Standard ACK

## **External Input Diagnostic Screen Refresh Rate**

The External Input data will be updated on change of state.

## **Control Buttons (right of screen)**

### **Setup**

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

## Sensor Diagnostics - Liquid

The Sensor Diagnostics - Liquid screen displays a report with information about each Liquid Sensor.

2007/11/06 04:25 PM				T 4: HIGH PRODUCT ALARM									
Diagnostics - Sensors - Liquid										Sensor 1:			
Liquid		Vapor		Groundwater		2-Wire CL		3-Wire CL					
Type		Category		Sample Counter		Value		Status					
<b>Sensor 1:</b> Tri-State(Single Float) Other Sensors                      0                      0.000 Normal													
All Liquid		Liquid 1											

### Report Column Descriptions

#### Type

Sensor Type Description

Possible messages:

- Tri-State (Single Float)
- Normally Closed
- Dual Point Hydrostatic
- Dual Float Discriminating
- Dual Float High Vapor
- Interceptor Sensor



## Category

Sensor Category Description

Possible messages:

- Other Sensors
- Annular
- Dispenser Pan
- Monitoring Well
- STP Sump
- Containment Sump

## Sample Counter

Sensor Sample Counter value

Value range: 0 to 99

## Value

Resistance value

Value range: 0 to 1000000000

## Status

Sensor Status

Possible messages:

- Normal
- Unknown
- Setup Data Warning
- Fuel Alarm
- Out Alarm
- Short Alarm
- Water Alarm
- Water Out Alarm
- High Liquid Alarm
- Low Liquid Alarm
- Liquid Warning

## **Sensor Diagnostics Liquid Sensor Refresh Rate**

The Liquid Sensor Diagnostics data will be refreshed every 5 seconds.

## **Control Buttons (right of screen)**

### **Sensor Setup**

Touch this button open the Device Setup – Liquid Sensor screen

# Sensor Diagnostics - Vapor

The Sensor Diagnostics - Vapor screen displays a report with information about each Vapor Sensor.

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											

## Report Column Descriptions

### Category

Sensor Category Description

Possible messages:

- Other Sensors
- Annular
- Dispenser Pan
- Monitoring Well
- STP Sump
- Containment Sump

## **Sample Counter**

Sensor Sample Counter value

Value range: 0 to 99

## **Value 1**

Resistance value 1

Value range: 0 to 1000000000

## **Value 2**

Resistance value 2

Value range: 0 to 1000000000

## **Vapor Concentration**

The Vapor Concentration value in Parts Per Million

Value range: 0 to 999999999

## **Status**

Sensor Status

Possible messages:

- Normal
- Unknown
- Setup Data Warning
- Fuel Alarm
- Out Alarm
- Short Alarm
- Water Alarm
- Water Out Alarm
- High Liquid Alarm
- Low Liquid Alarm
- Liquid Warning

## **Sensor Diagnostics Vapor Sensor Refresh Rate**

The Vapor Sensor Diagnostics data will be refreshed every 5 seconds.

## **Control Buttons (right of screen)**

### **Sensor Setup**

Touch this button open the Device Setup – Vapor Sensor screen

# Sensor Diagnostics – Ground Water

The Sensor Diagnostics – Ground Water screen displays a report with information about each Ground Water Sensor.

2007/11/06 04:26 PM				T 1: SUDDEN LOSS ALARM									
Diagnostics – Sensors – Groundwater										Sensor 1:			
Liquid		Vapor		Groundwater		2-Wire CL		3-Wire CL					
Category		Sample Counter		Value 1		Value 2		Status					
Sensor 1:													
Other Sensors		0		0.000		0.000		Normal					
All GmdWtr		GmdWtr 1											

## Report Column Descriptions

### Category

Sensor Category Description

Possible messages:

- Other Sensors
- Annular
- Dispenser Pan
- Monitoring Well
- STP Sump
- Containment Sump

## **Sample Counter**

Sensor Sample Counter value

Value range: 0 to 99

## **Value 1**

Resistance value 1

Value range: 0 to 1000000000

## **Value 2**

Resistance value 2

Value range: 0 to 1000000000

## **Status**

Sensor Status

Possible messages:

- Normal
- Unknown
- Setup Data Warning
- Fuel Alarm
- Out Alarm
- Short Alarm
- Water Alarm
- Water Out Alarm
- High Liquid Alarm
- Low Liquid Alarm
- Liquid Warning

## **Sensor Diagnostics Groundwater Sensor Refresh Rate**

The Groundwater Sensor Diagnostics data will be refreshed every 5 seconds.

## **Control Buttons (right of screen)**

### **Sensor Setup**

Touch this button open the Device Setup - Sensor screen

## Sensor Diagnostics - 2-Wire CL

The Sensor Diagnostics 2-Wire CL screen displays a report with information about each 2-Wire CL Sensor.

2007/11/06 04:26 PM		T 2: SETUP DATA WARNING				
Diagnostics - Sensors - 2-Wire CL #1						Sensor 1:
Liquid	Vapor	Groundwater	2-Wire CL	3-Wire CL		
						More
Type	Category	Sample Counter	Value	Status.....		
Sensor 1: Discrim. Interstitial      Other Sensors      0      0.000 Normal						
<div> <div> </div> <div> </div> </div>						
All Type A		Type A 1				

## Report Column Descriptions

## Type

### Sensor Type Description

Possible messages:

- ULTRA 2
- Discriminating Interstitial



## Category

Sensor Category Description

Possible messages:

- Other Sensors
- Annular
- Dispenser Pan
- Monitoring Well
- STP Sump
- Containment Sump

## Sample Counter

Sensor Sample Counter value

Value range: 0 to 99

## Value

Resistance or current value

Value range: 0 to 1000000000 (Resistance Value) or 0.0 to 50.0 (Current Value in microamps)

## Status

Sensor Status

Possible messages:

- Normal
- Unknown
- Setup Data Warning
- Fuel Alarm
- Out Alarm
- Short Alarm
- Water Alarm
- Water Out Alarm
- High Liquid Alarm
- Low Liquid Alarm
- Liquid Warning

## **Sensor Diagnostics 2-Wire CL Sensor Refresh Rate**

The 2-Wire CL Sensor Diagnostics data will be refreshed every 5 seconds.

## **Control Buttons (right of screen)**

### **Sensor Setup**

Touch this button open the Device Setup - Sensor screen

## Sensor Diagnostics - 3-Wire CL

The Sensor Diagnostics 3-Wire CL screen displays a report with information about each 3-Wire CL Sensor.

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													

### Report Column Descriptions

#### Type

Sensor Type Description

Possible messages:

- 4Site Pan/Sump:Standard
- 4Site Pan/Sump:Hi Vapor

## Category

Sensor Category Description

Possible messages:

- Other Sensors
- Annular
- Dispenser Pan
- Monitoring Well
- STP Sump
- Containment sump

## Sample Counter

Sensor Sample Counter value

Value range: 0 to 99

## Value 1

Resistance or current value

Value range: 0 to 1000000000 (Resistance Value) or 0.0 to 50.0 (Current Value in microamps)

## Value 2

Resistance value

Value range: 0 to 1000000000

## Status

Sensor Status

Possible messages:

- Normal
- Unknown
- Setup Data Warning
- Fuel Alarm
- Out Alarm
- Short Alarm
- Water Alarm
- Water Out Alarm
- High Liquid Alarm
- Low Liquid Alarm
- Liquid Warning

## **Sensor Diagnostics 3-Wire CL Sensor Refresh Rate**

The 3-Wire CL Sensor Diagnostics data will be refreshed every 5 seconds.

### **Control Buttons (right of screen)**

#### **Sensor Setup**

Touch this button open the Device Setup - Sensor screen

## Mag Sensor Diagnostics - General

The Mag Sensor Diagnostics - General screen displays a report with general diagnostic information about all Mag Sensors.

[illegible]

## 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: XXXXXXXX

## Date

Sensor Date Code

Value: Year/week (YY/WW)

## Fuel Height

Fuel Height detected by the Mag Sensor

Value range: 0.00 to 144.00 in. (0.00 to 3657.60mm)

## Water Height

Water Height detected by the Mag Sensor

Value range: 0.00 to 144.00 in. (0.00 to 3657.60mm)

## Total Height

Absolute liquid height as measured by the Mag Sensor

Value range: 0.00 to 144.00 in. (0.00 to 3657.60mm)

## **Control Buttons (right of screen)**

### **Setup**

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

## **Mag Sensor Diagnostics - General Screen Refresh Rate**

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



# Mag Sensor Diagnostics - Comm

The Mag Sensor Diagnostics - Comm screen displays a report with communication diagnostic information about all Mag Sensors.

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

## Report Column Descriptions

### Samples Read

Number of Samples Read

Value range: 0 to 4294967295

## **Samples Used**

Number of Samples Used

Value range: 0 to 4294967295

## **Parity Errors**

Number of Parity Errors

Value range: 0 to 999999

## **Partial Read**

Number of Partial Errors

Value range: 0 to 999999

## **Comm Errors**

Number of Comm Errors

Value range: 0 to 999999

## **Restarts**

Number of Restarts

Value range: 0 to 999999

## **Control Buttons (right of screen)**

### **Setup**






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

## **Mag Sensor Diagnostics - Comm Screen Refresh Rate**

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

## Mag Sensor Diagnostics - Constants

The Mag Sensor Diagnostics - Constants screen displays a report with constants diagnostic information about all Mag Sensors.

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

## Report Column Descriptions

## Serial Number

Mag Sensor Serial Number

Value: XXXXXXXX

## **Model**

Mag Sensor Model Number

Value range: 0 to 65535

## **Length**

Mag Sensor Length

Value range: 0.00 to 144.00 in. (0.00 to 3657.60mm)

## **Gradient**

Mag Sensor Gradient - counts per inch (no conversion here)

Value range: 100.000 to 400.000

## **Min. Threshold**

Mag Sensor Minimum Threshold

Value range: 0.1 to 144.0 in. (2.5 to 3657.6mm)

## **Max. Threshold**

Mag Sensor Maximum Threshold

Value range: 0.1 to 144.0 in. (2.5 to 3657.6mm)

## **Num. Floats**

Mag Sensor Number of Floats

Possible messages:

- 1
- 2

## **Temp.**

Mag Sensor Temperature Enabled Flag

Possible messages:

- Yes
- No

## **Install Pos.**

Mag Sensor Install Position Enabled Flag

Possible messages:

- Yes
- No

## **Control Buttons (right of screen)**

### **Setup**

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

# Mag Sensor Diagnostics - Channel

The Mag Sensor Diagnostics - Channel screen displays a report with channel diagnostic information about all Mag Sensors.

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															
Data															
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														

## Report Description

Each Mag Sensor's channel data is preceded by the following information:

- Mag Sensor number (e.g., 1) and type (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	<b>B610</b>	05EB	29FC	<b>0235</b>	2C32	29FD	E240	0001	0008	C941
10	0001	61A7	0000	0000	0000	0000	<b>00A1</b>	80C4	0081	80C4

In the example above, the last sample for Channel 0 is **B610**, for Channel 3 it is **0235**, and for channel 16 it is **00A1**.

## Control Buttons (right of screen)

### Setup

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

## Mag Sensor Diagnostics - Channel Screen Refresh Rate

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

# Line Pressure Sensor Diagnostics - General

The Line Pressure Sensor Diagnostics - General screen displays a report with general diagnostic information about all Line Pressure Sensors in the system.

2007/11/06 04:28 PM		T 3: SETUP DATA WARNING				
Diagnostics – General						LPSensr
General	Comm	Constants	Channel			
Type	Status	Serial Number	Date	Pressure		
LPSensr 1:						
063–LINE P SENSOR		1179467423	01/09	0.000		
LPSensr 2:						
063–LINE P SENSOR		1179532959	01/09	0.000		
LPSensr 3:						
063–LINE P SENSOR		1179598495	01/09	0.000		
LPSensr 4:						
063–LINE P SENSOR		1179664031	01/09	0.000		
LPSensr 5:						
063–LINE P SENSOR		557909571	01/09	0.000		
LPSensr 6:						
063–LINE P SENSOR		557975107	01/09	0.000		
LPSensr 7:						
063–LINE P SENSOR		558040643	01/09	0.000		
LPSensr 8:						
063–LINE P SENSOR		558106179	01/09	0.000		

## Report Column Descriptions

### Type

Sensor Type

Value: 063 -Line P Sensor



## Status

Sensor Status

Possible messages:

- Normal
- Inactive

## Serial Number

Sensor Serial Number

Value: XXXXXXXX

## 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 - Line Pressure Sensor - General screen refresh rate

The Line Pressure Sensor Diagnostics - General data will be refreshed every second.

## Control Buttons (right of screen)

### Setup

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

### Diagnostic

Touch this button to open the PLLD Diagnostics screens.

# Line Pressure Sensor Diagnostics - Comm

The Line Pressure Sensor Diagnostics - Comm screen displays a report with communication diagnostic information for all Line Pressure Sensors.

2007/11/06 04:28 PM				T 1: SUDDEN LOSS ALARM													
Diagnostics - Comm											LPSensr						
General		Comm		Constants		Channel											
Samples Read				Samples Used				Parity Errors		Partial Read		Comm Errors		Restarts		 	
LPSensr 1:				0				0		0		0		0			
LPSensr 2:				0				0		0		0		0			
LPSensr 3:				0				0		0		0		0			
LPSensr 4:				0				0		0		0		0			
LPSensr 5:				0				0		0		0		0			
LPSensr 6:				0				0		0		0		0			
LPSensr 7:				0				0		0		0		0			
LPSensr 8:				0				0		0		0		0			
				0				0		0		0		0			

## 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 - Line Pressure Sensor - Comm screen refresh rate**

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

## **Control Buttons (right of screen)**

### **Setup**

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

### **Diagnostic**

Touch this button to open the PLLD Diagnostics screens.

# Line Pressure Sensor Diagnostics - Constants

The Line Pressure Sensor Diagnostics - Constants screen displays a report with constants diagnostic information about all Line Pressure Sensors in the system.

2007/11/06 04:29 PM				T 1: DELIVERY NEEDED															
Diagnostics – Constants											LPSensr								
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		

## Report Column Descriptions

### Serial Number

Line Pressure Sensor Serial Number

Value: XXXXXXXX

## **Model**

Line Pressure Sensor Model Number

Value range: 0 to 65535

## **Firmware Version**

Line Pressure Sensor Software Version

Value range: 0 to 99

## **Slope**

Line Pressure Sensor Slope

Value range: 0.000 to 65535.000

## **Offset**

Line Pressure Sensor Offset

Value range: 0.000 to 65535.000

## **Control Buttons (right of screen)**

### **Setup**

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

### **Diagnostic**

Touch this button to open the PLLD Diagnostics screens.

# Line Pressure Sensor Diagnostics - Channel

The Line Pressure Sensor Diagnostics - Channel screen displays a report with channel diagnostic information about all Line Pressure Sensors.

2007/11/06 04:29 PM				T 1: SETUP DATA WARNING											
Diagnostics - Channel											LPSensr				
General		Comm		Constants		Channel									
#	0	1	2	3	4	5	6	7	8	9					
LPSensr 1:															
LPSensr 2:															
LPSensr 3:															
LPSensr 4:															
LPSensr 5:															
LPSensr 6:															
LPSensr 7:															
LPSensr 8:															

## 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 (XXXXXXX)
- 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	<b>B610</b>	05EB	29FC	<b>0235</b>	2C32	29FD	E240	0001	0008	C941
10	0001	61A7	0000	0000	0000	0000	<b>00A1</b>	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**.

## Diagnostics - Line Pressure Sensor - Channel screen refresh rate

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

### Control Buttons (right of screen)

#### Setup

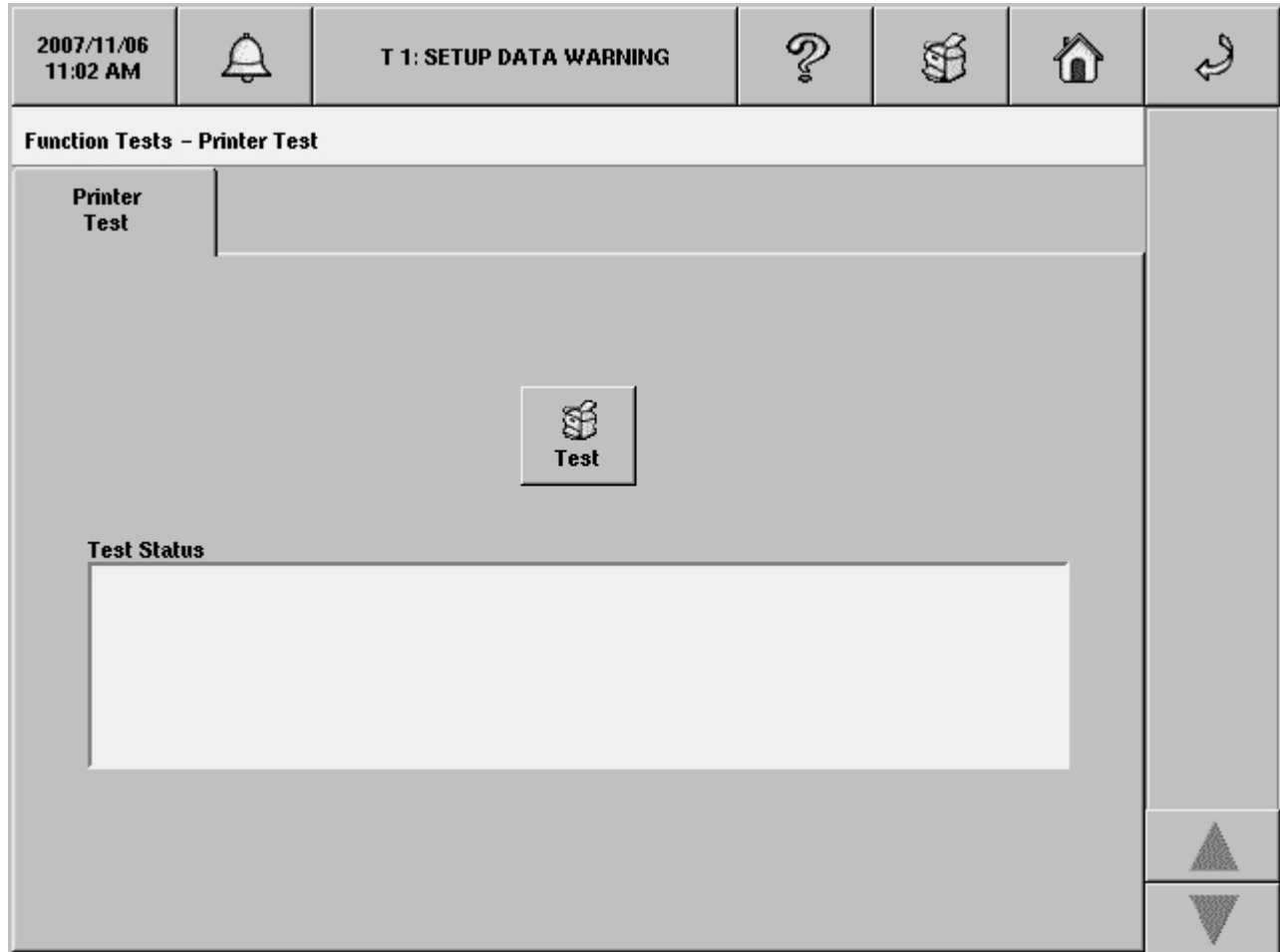
Touch this button open the Device Setup - Line Pressure Sensor screen.

#### Diagnostic

Touch this button to open the PLLD Diagnostics screens.

## Function Tests - Printer

The Function Tests - Printer Test screen lets you perform a quick test of the internal printer (if available).



### Printer Test Button

Touch the Test button to have the console print the following test message on the internal printer:

*Testing Printer – Printing Ninety Digits – 02/16/2006 09:25:30 AM*  
*0123456789012345678901234567890123456789012345678901234567890123456789*  
*0123456789*

### Test Status

Any status or error messages as a result of the Printer Test will be displayed in the Test Status area. The message will include a time stamp (time with seconds' resolution) on the first line followed by Status or Error message on the next line.



## Function Tests – LCD Test Screen

Selection of the LCD function test button displays the LCD test screen. The tests consist of a series of test patterns.

The user is prompted to start the test by touching the screen.

**“TOUCH SCREEN TO START TEST”**

**“TOUCH SCREEN TO SWITCH TO NEXT TEST PATTERN”**

### Test Patterns

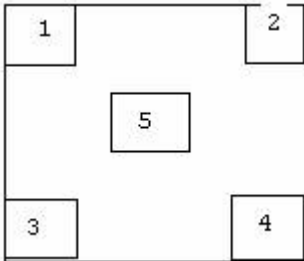
- First screen is all black
- Second screen is all white
- Third screen is a checkered pattern with checks approximately one inch by one inch (alternating black and white).  
First check box in upper left corner is white
- Fourth screen is a checkered pattern with checks approximately one inch by one inch (alternating black and white) .  
First check box in upper left corner is black

When done the screen will return back to the menu grid.

## Function Tests – LCD Touch Test

Selection of the Touch function test button displays the touch test screen.

The user selects the buttons in a selected order as suggested below. The goal is to test all corners and the center.



When a button is hit, the corresponding xy coordinate is displayed as well as the expected range of values. A pass/fail evaluation is displayed

Example below:

BUTTON 1: X = 25, Y = 25 :

EXPECTED RANGE:  $x > 1$   $X < 50$ ,  $Y > 1$   $Y < 50$

RESULTS: PASS

## **Specialty Dialog Screens**

# Numeric Keypad Dialog

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

The diagram shows a numeric keypad dialog with the following components and labels:

- Field name region:** A dark header bar at the top containing the text "Enter: Ullage".
- Field edit region:** A white input field below the header, currently displaying the value "20".
- Character entry region:** A grid of buttons for entering digits and symbols:

1	2	3	+	-
4	5	6	.	,
7	8	9	0	
- Control region:** A row of six buttons at the bottom:

Clear All	Back ←	✓ OK	✗ Cancel	←	→
-----------	-----------	---------	-------------	---	---

## 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:

1. 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.
2. 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.

# Alpha Keypad Dialog

The Alpha Keypad Dialog provides letters of the Alphabet to enter alpha and alphanumeric entries.\

The diagram shows the Alpha Keypad Dialog interface with the following components and labels:

- Field name region:** Points to the top header bar labeled "Enter: Parameter Name".
- Field edit region:** Points to the text input area below the header, which currently displays "Sheetz Mngmt".
- Character entry region:** Points to the grid of character buttons (a-z and Sp) used for input.
- Control region:** Points to the bottom row of buttons including ",\*?", "Clear All", "Back", "OK", "Cancel", left and right arrows, and "Caps On".

Enter: Parameter Name								
Sheetz Mngmt								
a	b	c	d	e	f	g	h	i
j	k	l	m	n	o	p	q	r
s	t	u	v	w	x	y	z	Sp
,*?	Clear All	Back	OK	Cancel	←	→	Caps On	

## 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.

The diagram shows the Enhanced Numeric Keypad Dialog interface. It consists of several regions:

- Field name region:** A dark header bar at the top containing the text "Enter: Parameter Name".
- Field edit region:** A text input field below the header, containing the text "Parameter|234 String 87?#".
- Character entry region:** A grid of 5 rows and 9 columns of buttons. The first row contains digits 1-9. The second row contains 0, ., ,, \*, -, +, =, (, and ). The third row contains ", ' , :, ;, \, /, [, and ]. The fourth row contains ?, !, %, &, @, |, #, {, and }. The fifth row contains ` , ~, ^, \$, Sp (Space), i, i, <, and >.
- Control region:** A row of buttons at the bottom: ,\*? (toggle), Clear All, Back (with left arrow), OK (with checkmark), Cancel (with X), left arrow, right arrow, and Caps On.

## 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 'ç' and 'j' symbols and other language specific punctuation characters will only show up for languages that need them.

# Hexidecimal Keypad Dialog

The Hexidecimal Keypad Dialog lets you enter characters that are used with Hexadecimal entries.

The diagram shows a dialog box with the following structure:

- Field name region:** A dark header bar at the top containing the text "Enter: Parameter Name".
- Field edit region:** A white rectangular box below the header, currently displaying the hexadecimal value "2FFB".
- Character entry region:** A grid of buttons below the edit region. The first two rows contain hexadecimal digits 1-9 and letters A-F. The third row contains digits 7, 8, 9, and a large "0" button.
- Control region:** A row of six buttons at the bottom: "Clear All", "Back" (with a left arrow), "OK" (with a checkmark), "Cancel" (with an X), a left arrow, and a right arrow.

Labels with arrows point to each of these four regions on the right side of the dialog.

## 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:

1. Hex letters from A-F are always shown in upper case.
2. System does not use "0x" preface for hex numbers.

## **Periodic Maintenance Checklist**

# System Periodic Maintenance Checklist

Veeder-Root environmental monitoring consoles installed in accordance with installation manual requirements are designed to detect and report conditions that inhibit proper operation. Veeder-Root consoles self-diagnose essential components, and if a component failure is detected, will not complete and report tank and line tests. The console will issue an audible and visual alarm when a failed or disconnected sensor is detected (NOTE! The audible alarm may have been disabled in Custom Alarm Setup).

 <b>WARNING</b>	
	<p><b>This system operates near highly combustible fuel storage tanks. Leaking tanks can create serious environmental and health hazards.</b></p>
	<p><b>If you have not been trained in proper service procedures and hazards involved, refer all service to a qualified Veeder-Root Service Representative.</b></p>
	<p><b>Attempting to service tank monitors and equipment without proper training can cause damage to property, environment, resulting in personal injury or death.</b></p>

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	<p><b>A. Owner or Station Attendant</b> During or immediately after running a 3.0 gph (11.3 lph) self-test, visually inspect the flexible fuel lines for leakage. Check flexible fuel control lines for any chafing or excessive corrosion.</p> <p><b>B. Service Contractor</b> Verify epoxy kits have been installed on field wiring.</p>
Console	Yearly	<p>Check printer for paper if equipped. Print out or check system inventory and verify to actual inventory. Verify in-tank tests are being performed as required by printing reports. Press Alarm/Test button to verify power, warning and alarm indicators light and audible alarm sounds. Verify line leak tests are being performed (if line leak installed).</p>

Maintenance Operation	When to Perform	What To Do
Mag Probes	Yearly	<p><b>A. Owner or Station Attendant</b> Inspect probe cables for any cracking or swelling.</p> <p><b>B. Service Contractor</b> Replace probe cables (ref. item A.1). Verify epoxy kits have been installed on field wiring. Mag probes only - Inspect floats and probe shaft for any residue build up. Clean with mineral spirits as necessary.</p> <p>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.</p>
PLLD	Yearly	<p><b>A. Owner or Station Attendant</b> Check submersible pump head for leakage at PLLD transducer port and functional element with pump On. Check PLLD transducer cable for any cracking or damage.</p> <p><b>B. Service Contractor</b> Verify epoxy kits have been installed on field wiring. Replace PLLD transducer if cable is cracked or damaged (ref. item A.2).</p>
Dispenser Pan, Containment Sump Sensor (float type)	Yearly	<p><b>A. Owner or Station Attendant</b> Inspect sensors to verify float moves freely. Turn sensor upside down to verify the monitor liquid alarm is activated. Inspect sensor cable for any cracking or damage.</p> <p><b>B. Service Contractor</b> Verify epoxy kits have been installed on field wiring. Replace Dispenser Pan/Containment Sump sensor cables if cracked or damaged. Replace Containment Sump sensor if cable is cracked or damaged (ref. item A.3).</p>
Dispenser Pan Sensor (Solid-State)	Yearly	<p><b>A. Owner or Station Attendant</b> Inspect sensor cable for any cracking or damage. Verify sensor is firmly secured in an upright position on the bottom of the pan.</p> <p><b>B. Service Contractor</b> Verify epoxy kits have been installed on field wiring. Replace sensor cable if cracked or damaged (ref. item A.1).</p>
Containment Sump Sensor (Solid-State)	Yearly	<p><b>A. Owner or Station Attendant</b> Inspect sensor cable for any cracking or damage. Verify sensor is firmly secured in an upright position on the bottom of the containment sump.</p> <p><b>B. Service Contractor</b></p>

Maintenance Operation	When to Perform	What To Do
		Verify epoxy kits have been installed on field wiring. Replace sensor cable if cracked or damaged (ref. item A.1).
Vapor Sensor	Yearly	<p><b>A. Owner or Station Attendant</b> Inspect sensor cable for any cracking or damage.</p> <p><b>B. Service Contractor</b> Verify epoxy kits have been installed on field wiring. Replace sensor cable if cracked or damaged (ref. item A.1).</p>
Groundwater Sensor	Yearly	<p><b>A. Owner or Station Attendant</b> Inspect sensor cable for any cracking or damage. Lift sensor above water level in the well and verify the system activates a "WATER OUT" alarm.</p> <p><b>B. Service Contractor</b> Verify epoxy kits have been installed on field wiring. Replace sensor if cable is cracked or damaged (ref. item A.1). If the sensor does not alarm (ref. item A.2), replace the sensor.</p>
Hydrostatic Sensor	Yearly	<p><b>A. Owner or Station Attendant</b> Inspect sensor cable for any cracking or damage.</p> <p><b>B. Service Contractor</b> Remove sensor from brine reservoir and verify floats move freely. With sensor in its upright position, the system should activate a "FUEL ALARM". Turn the sensor upside down to be sure the system activates a "WATER ALARM". If the sensor does not alarm in both conditions, replace the sensor. Verify epoxy kits have been installed on field wiring. Replace sensor if cable is cracked or damaged (ref. item A.1).</p>
Mag Sensor	Yearly	<p><b>A. Owner or Station Attendant</b> Inspect sensor cable for any cracking or damage. Check that sensor is resting firmly on bottom of monitored pan/sump.</p> <p><b>B. Service Contractor</b> Replace Mag Sensor cable if cracked or damaged (ref. item A.1). Verify epoxy kits have been installed on field wiring.</p>