TLS-50 Console

Quick Help

VEEDER-ROOT

Notice

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Introduction

TLS-50 Description

The TLS-50 Tank Monitoring System monitors up to six in-tank probes for a wide variety of fluids. Probes are available to measure inventory only or inventory plus product temperature and/or water height. System status is available to the operator through a front panel display and remotely, via an optional RS-232 serial interface port (Figure 1).
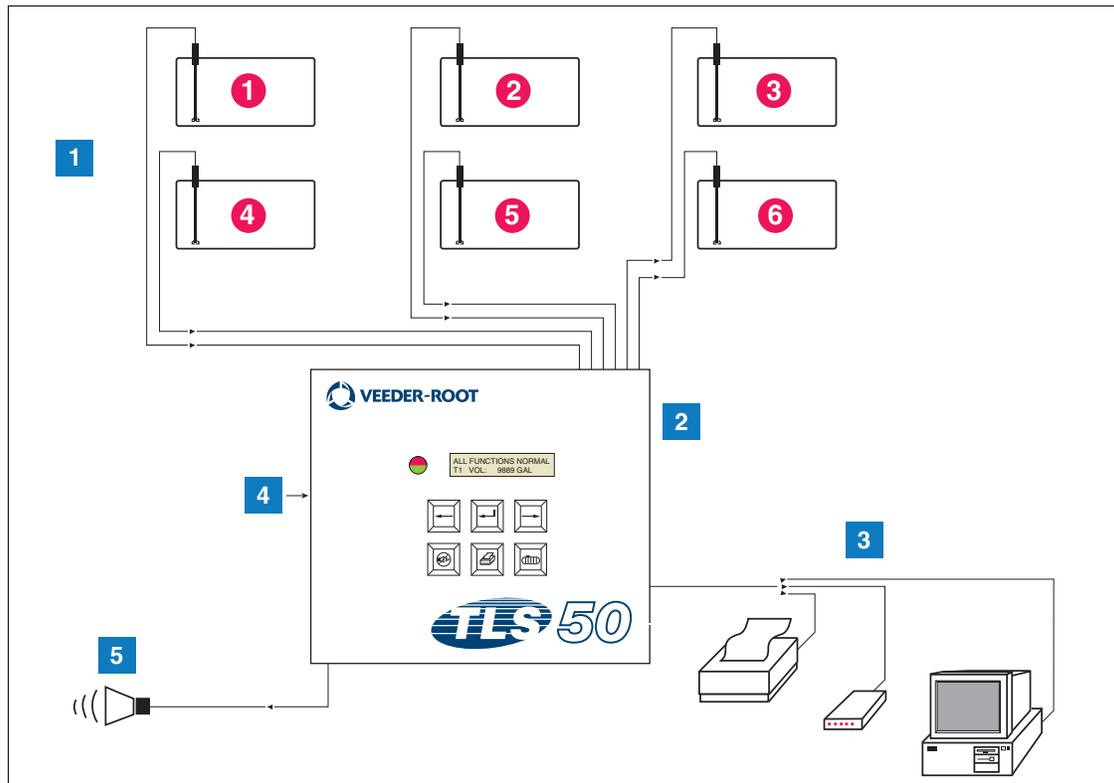
Figure 1.   Console Inputs And Outputs

LEGEND FOR NUMBERED BOXES IN Figure 1	
1. Monitor Up To 6 Probes In Customer's Tanks	4. Console Power 115/230 VAC
2. Console	5. Overfill Alarm Relay Output with Alarm Package Option
3. Serial Interface Port with Serial Package Option Customer's Printer, Modem, or Computer (Limited to one external device)	

SYSTEM OPTIONS

Two system options are available:

1. Alarm package - includes product level alarms and an overfill alarm activated relay output.

2. Alarm and Serial package - includes the Alarm package and an optional serial interface port providing three user-selectable types of communication: printer, modem, or serial.

- **If Printer was selected in Communication Setup Type**, the operator can print the Tank Status Report and Inventory Report, and Setup Report and Diagnostic Report (if enabled). Note, the Diagnostic Report is only for system troubleshooting and is not discussed in this manual. See the TLS-50 Site Prep Manual for a description of this report.

- **If Modem was selected in Communication Setup Type**, during the initialization sequence an auto-answer command will be transmitted to the modem.

- **If either Modem or Serial was selected in Communication Setup Type**, the user may use a serial language different from the local language (the serial language selections will be languages that map to the standard ASCII character set).

Restricting System Programming Access

To protect against unauthorized access to system operation, two security features can be enabled.

SYSTEM SECURITY

A switch in the console can be set to prevent access to the setup and diagnostic menus after initial programming.

SERIAL SECURITY

A switch in the console can be set that requires the operator to enter a 6-digit security code before the system will respond to a serial command (models with Serial Package option only). The default serial security code is 000000. The security code itself can be changed with a serial command. However, the serial security code switch must be reset to the Open position to inhibit the security code requirement.

Front Panel Controls

The components on the front panel of the TLS-50 are shown in Figure 2. In addition to the front panel red LED flashing when an alarm is activated, an audible beeper inside the console is also switched on.
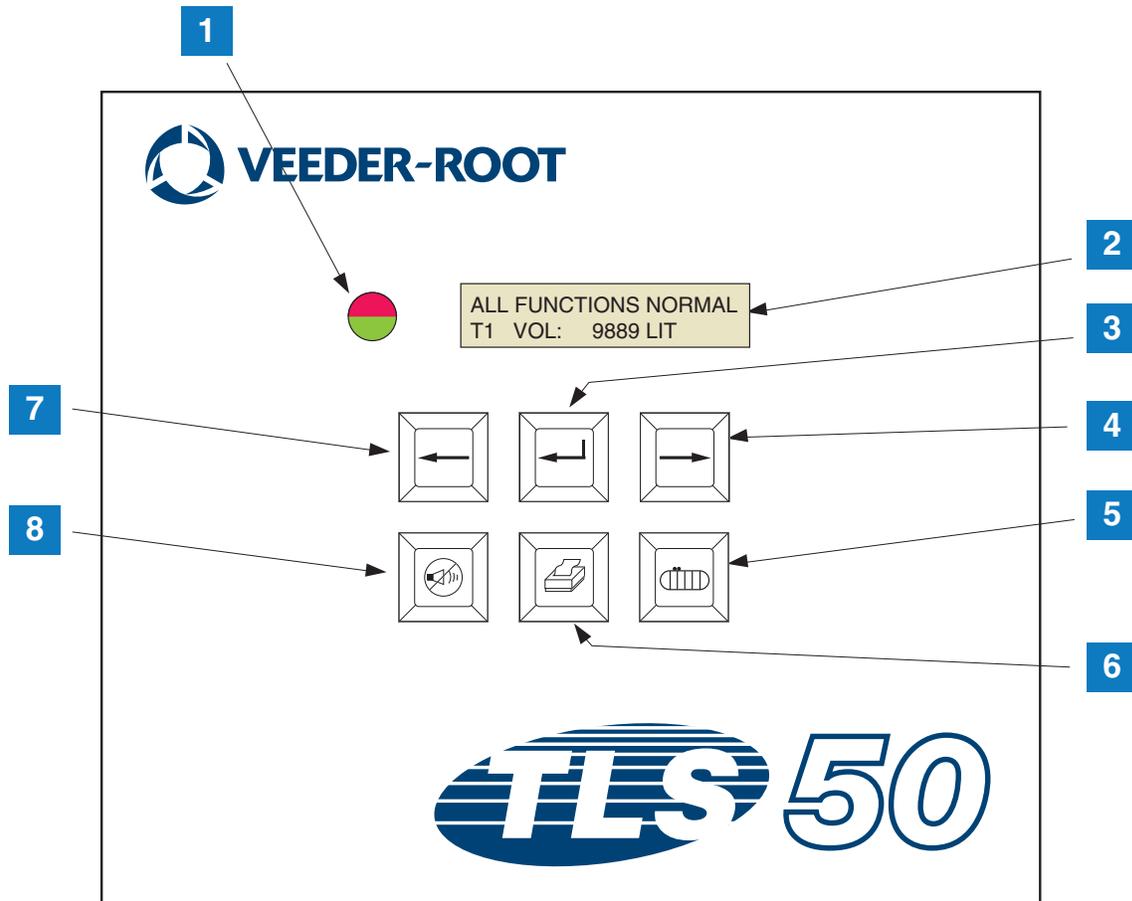
Figure 2.   Front Panel Controls

LEGEND FOR NUMBERED BOXES IN Figure 2	
1. Bi-Color LED: Green (Continuously On) = Normal; Red (Flashing) = Alarm	6. Print Key (Blank on consoles w/o Serial Package Option)
2. LCD Display	7. Back key
3. Enter key	8. Alarm silence key
4. Select key	
5. Tank key	

LCD DISPLAY

The front panel Liquid Crystal Display (LCD) contains two lines. When the system is in the Top Level Menu, the top line of the display contains system status and/or alarm information. The bottom line contains Tank inventory information. When the system is in one of the three Setup submenus, the top line displays the name of the Setup menu and the bottom line displays the current setup parameter.

KEYPAD

The front panel keys are used to scroll through the tank parameter displays and to make changes to the system setup.

	Select key - press to scroll from one display to the next in the current menu. If the display shown is the last in a submenu, the Select key scrolls the display up to the display at the top of the submenu.
	Enter key - press to scroll to the first display in the submenu of the current item. If the current item does not have a submenu there is no response.
	Back key - press to scroll back to the previous display in the current menu. If the display is the first in a submenu, you scroll to the display that was used to enter the submenu.
	Silent key - press to deactivate the audible alarm annunciators; the internal beeper and in the case of an overfill alarm, the remote overfill alarm output. If another alarm occurs after the annunciators have been deactivated, the annunciators will reactivate. The beeper and remote alarm output can be tested by an extended key press of the Silent key.
	Tank key - press to scroll to the next tank number.
	Print key - press to print the report associated with the current displayed menu item. If the report includes tank information, the report will contain data for all configured tanks. This key is blank if the console does not have the Serial Package option.

Display Messages

TANK PARAMETERS

The following tank parameters are displayed one at a time as the operator scrolls through the Top Level Menu.

• Product Volume,
• Product Height,
• Temperature Compensated Volume - (requires probes that have temperature measurement capability),
• Product Temperature (requires probes that have temperature measurement capability),
• Water Height (requires probes that have water measurement capability).

Pressing the Tank key allows the user to select which tank's data is displayed. If a parameter is not available for any tank in the system, that display will not appear as you scroll through the menus. When viewing a display that is available in one of the tanks, but is not available for the current tank, a "**NO DATA**" message will be displayed for that parameter.

ALARMS

When an alarm occurs, the console's internal beeper will activate, the front panel LED will flash red, and the top line of the display will contain the alarm message. In the case of multiple alarms, the main display screen will automatically scroll through the active alarms. Press the Silent key to switch off the internal beeper. The red LED will continue to flash until the alarm condition is remedied.

When an alarm condition returns to the normal state the alarm will be removed from the list of alarms. If no alarms are active, the LED will return to the Normal state (continuous green), the beeper will be switched off, and the top line of the display status line will read ALL FUNCTIONS NORMAL.

Table 1. Alarm Index, Cause, and Corrective Action

Alarm	Cause	Action
PROBE OUT	Hardware failure - probe inoperative, or its interconnecting wiring to console is damaged.	Call for service following the procedures established for your site.
INVALID HEIGHT	Product level too low, causing the fuel and water floats to be too close together.	Call for delivery.
LOW TEMPERATURE*	Probe temperature drops below -4°F (-19.8°C).	Probe returns to normal operation after probe temperature rises above -4°F (-19.8°C).
NO TANKS CONFIGURED	No tanks are configured in Tank Setup.	Configure at least one tank in Tank Setup.
MAX PRODUCT (Alarm Package Option)	Product volume increased beyond preset limit.	Stop delivery. Do not allow additional delivery until product volume decreases below preset limit.
OVERFILL (Alarm Package Option)	Product volume increased beyond preset limit.	Stop delivery. Check for spillage.
LOW PRODUCT (Alarm Package Option)	Product volume decreased below preset limit.	Call for delivery.
HIGH WATER (Alarm Package Option)	Water level rose above preset limit.	Remove water from tank.

*Note, an active LOW TEMPERATURE alarm will inhibit any of the Alarm Package alarms

Printing Out Reports

With the TLS-50 Console Serial Package option you can print the reports described in this section on any printer that has a 9-pin dot matrix print head, a serial interface, and is capable of emulating Epson print commands. The report formats will fit on either letter size or A4 size paper.

You press the Print key to print a report. However, what report you print depends on what is visible in the LCD display.

PRINTED REPORT FORMATS

The TLS-50 Console must have the Serial Package option and have the following Communications Setup selections enabled:

- Baud rate set to 9600 (recommended) - However, if you experience problems printing at 9600 baud, lower the baud rate to 2400),
- Parity set to None (recommended),
- Data length set to 8 (required),
- Stop bit set to 1 (recommended), and
- Handshake set to XON/XOFF (may be required at the higher baud rates).

Note, for printing to occur, the TLS-50 and printer communications settings must match.

Inventory Report Example

TANK	VOLUME	TC VOLUME	HEIGHT	WATER	TEMP
1	8284	8191	73.4	1.5	79.6
2	8813	–	79.1	3.2	–
3	11983	–	90.4	–	–

Notes:

3. If the system setup parameter PRINT TC VOL is set to No, the TC VOLUME and TEMP columns will not print.

4. If none of the connected probes have temperature measurement capability, the TC VOLUME and TEMP columns will not print. However, if any probes in the system have temperature measurement capability, the TC Volume and TEMP columns will print for those probes, but not for the others.

5. If none of the connected probes have water measurement capability, the WATER column will not print. However, if any probes in the system have water measurement capability, the WATER column will print for those probes, but not for the others.

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