


Console Description	<p>The TLS-350PLUS Automatic Tank Gauge offers the benefits of in-tank inventory, leak detection, and compliance. It is intended for retail and commercial operations.</p>				
TLS-350PLUS Consoles, Standard Hardware & Software	<p>Part # & Description</p> <ol style="list-style-type: none"> 848290-022 TLS-350PLUS Console with Integral Printer - 120V UL/cUL 848290-002 TLS-350PLUS Console without Integral Printer - 120V UL/cUL 		<p>Software Enhancement Modules</p> <ol style="list-style-type: none"> 330160-002 Continuous Statistical Leak Detection (CSLD) for TLS-350 Series Consoles 330160-003 Fuel Manager for TLS-350 Series Consoles 330160-010 Ultimate Testing: Pressurized Line Leak Detection (PLLD) for TLS-350 Series Consoles 330160-060 Risk Management: Wireless/Pressurized Line Leak Detection (PLLD) for TLS-350 Series Consoles 330160-050 Base Compliance: Wireless/Pressurized Line Leak Detection (PLLD) for TLS-350 Series Consoles 330160-004 In-Station Diagnostics (ISD): for TLS-350 Series Consoles 		
TLS-350PLUS Device Modules	<p>Low Power Compartment Interface Modules (Limit 8 per console unless otherwise noted)</p>			<p>High Power Compartment Interface Modules (Limit 8 per console unless otherwise noted)</p>	
	<p>Description</p>	<p>Part #</p>	<p>Interfacing Device Part #'s</p>	<p>Description</p>	<p>Part #</p>
	<p>Four-Input Probe Module</p>	<p>329356-002</p>	<p>Used for interface to all Mag Probes</p>	<p>Four-Relay Output Module – Provides dry contact switch for 120 VAC source (used for positive shutdown or external alarms)</p>	<p>329359-001</p>
	<p>Eight-Input Smart Sensor Module</p>	<p>329356-004</p>	<p>Used to Interface with Mag Sump Sensors only</p>	<p>Two-Input/Two-Relay Output Interface – 2 inputs provide 12VDC - 35VDC rated input, outputs rated 120V for Generator applications and Pump Sensing</p>	<p>329360-001</p>
	<p>Vacuum Sensor Module, Seven-Input Smart Sensor w/ Embedded Pressure Sensor Interface for Vac Sensor Monitoring & ISD (min. 1 req'd for Vac Sensor Monitoring)</p>	<p>332250-001</p>	<p>Used to Interface with vacuum sensors and Mag Sump Sensors</p>	<p>Four-Input Pump Sense Module (1 per 4 STPs req'd for Continuous STP Run Monitor feature with software V27 or higher) – Used with Continuous STP run Monitor and CSLD, 120V</p>	<p>329999-001</p>
	<p>Eight-Input Interstitial/Liquid Sensor Module for use with Series 7943 Liquid Sensors</p>	<p>329358-001</p>	<p>Series 7943 Liquid Sensors include 794380-322/352, 794380-209/209/323/333, 794390-409/420/430/460, 794380-301/303/304, 794690-xxx</p>	<p>Pump Relay Monitor Module (1 per 4 STPs req'd for Continuous STP Run Monitor feature with software V27 or higher). Rated for 240V – Designed to detect faulty STP control relay</p>	<p>847490-504</p>
	<p>Five-Input Vapor Sensor Module for use with Series 7943 Vapor Sensors</p>	<p>329357-001</p>	<p>Series 7943 Vapor sensors include 794390-700</p>	<p>Dispenser Controller Module – 10 amp relay, 120V – controls dispenser power for shut down purposes</p>	<p>331408-001</p>
	<p>Five-Input Groundwater Sensor Module for use with Series 7943 Groundwater Sensors</p>	<p>329399-001</p>	<p>Series 7943 Groundwater Sensors include 794380-621/622/624</p>	<p>Three-Output Pressurized Line Leak Controller (Max 2/console for use w/ PLLD) – Provides dispenser handle inputs and high power output to STP control relays – 120V</p>	<p>330374-001</p>
	<p>Eight-Input Type A Sensor Module for use with Series 7943 Non-Discriminating Dispenser Pan & Containment Sump Sensors</p>	<p>329956-001</p>	<p>Series 7943 Non-Discriminating Dispenser Pan & Containment Sump Sensors include 794380-321/351, 794380-343/344/345</p>		
	<p>Six-Input Type B Sensor Module for use with Series 7943 Discriminating Dispenser Pan & Containment Sump Sensors</p>	<p>329950-001</p>	<p>Series 7943 Discriminating Dispenser Pan & Containment Sump Sensors include 794380-320/350</p>		
TLS-350PLUS Communications & Memory Expansion Modules	<p>Communication Compartment Modules (Limit 4 per console unless otherwise noted)</p>			<p>Memory Expansion Modules</p>	
	<p>Description</p>	<p>Part #</p>	<p>Description</p>	<p>Part #</p>	
	<p>RS-232 Interface Module with Auxiliary Port</p>	<p>330148-001</p>	<p>Memory Expansion Module for ECPU1 board, 1 MEG</p>	<p>333760-102</p>	

TLS-350PLUS Communications & Memory Expansion Modules (Continued)	Communication Compartment Modules (limit 4 per console unless otherwise noted)		Memory Expansion Modules	
	Description	Part #	Description	Part #
	RS-232 Interface Module (Max 3/console)	329362-001	Memory Expansion Module for ECPU2 board, 1 MEG (req'd for version 27 or higher on > 8 tanks or BIR w/ manifold tanks)	333760-201
	RS-232 Satellite Module	329362-003	Memory Expansion Module for ECPU2 board, 2 MEG (req'd for ISD or Maintenance Tracker)	333760-203
	RS-232 Serial Satellite Module	329362-004	System Compatibilities Guide	
	RS-232 Single Port Module, DB25, w/ Maintenance Tracker ID Resistor	329362-005	Feature/Console	TLS-350R PC-350R TLS-350PLUS PC-350PLUS
	Dual Port RS-232/RS-485 Module Interface (only used in Comm. Slots 3 & 4)	330586-001	CONSOLE DESIGN	
	Dual Port Remote Display Module Satellite RS-232	330586-011	Modular/Expandable Features	•
	Dual Port Remote Display Module Satellite RS-485 (Amoco)	330586-015	Fixed Features	
	Dual Port RS-485 Module/Serial Satellite (Shell)	330586-016	Integral Printer	Optional
Dual Port RS-232/RS-485 Module DB9 with Maintenance Tracker ID Resistor (only used in Comm Slots 3 & 4)	330586-017	INVENTORY CONTROL		
SiteFax™ Module 300/1200/2400-Baud Fax/Modem Interface (Max 3/console, phone cable included)	330149-002	Business Inventory Reconciliation	•*	
Ethernet TCP/IP Communications Module	330020-425	Variance Analysis	•*	
Specifications		Fuel Manager	Optional	
Operating Temperature	+32 to +118°F (0 to +45°C)		Complete Inventory Reports	•
Storage Temperature	-40 to +162°F (-40 to +74°C)		Programmable Auto Report Times	•
Installation Location	Indoors, climate-controlled space		Inventory Increase Report	•
Relative Humidity	0-90% (non-condensing)		IN-TANK LEAK TEST	
External Dimensions	19.75" x 11.25" x 7.1875" (50.165cm x 28.575cm x 18.26cm)		0.1 GPH Tank Tightness Testing	•
Construction	16GA (0.060 in/0.1524 cm) powder coated steel		0.2 GPH Tank Tightness Testing	•
Console Power Wiring Requirements	AC Power Wiring – Wires carrying 120 or 240 VAC from power panel to the console should be #14 AWG (or larger) wire for line, neutral & chassis ground (3); and 4 sq. mm, rated for at least 90C for barrier ground.		Continuous Statistical Leak Detection	Optional
Probe & Sensor to Console Wiring Requirements	<ol style="list-style-type: none"> Wire Type – Shielded cable required regardless of conduit material or application. It must be rated less than 100 picofarad per ft manufactured with a suitable material such as Carol C2534 or Belden 88760, 8760, or 8770. Wire Length – Maximum 1,000ft (304.8m) to meet intrinsic safety requirements. Improper system operation could result for runs over 1,000ft (304.8m). Wire Gauges – Color coded – shielded cable used in all installations. Wires should be #14 -#18 AWG stranded copper wire and installed as Class 2 circuits. As an alternate method when approved by the local authority having jurisdiction, #22 AWG wire such as 88761 may be suitable with the following requirements: wire run is less than 750ft (228.6m); Capacitance does not exceed 100 pF/ft; Inductance does not exceed 0.2 uH/ft. 		Selectable Test Rates	•
System Power Requirements	Universal AC power supply: 100 to 249VAC, 50/60Hz, 2A max.		Programmable Automatic Test Schedules	•
Display Specifications	20 character liquid crystal display		PASS, FAIL, or INVALID Indicators	•
Custom User Access	Front Panel Display control through user specific log-in		LINE LEAK DETECTION	
Approvals	UL cUL, ATEX, IECEx		Integral Line Leak Detector	Optional
Third Party Evaluations	http://www.nwglde.org/evals/veeder_root_zf.html		Programmable Line Test Features	Optional
Product Installation Guide	https://www.veeder.com/us/technical-document-library		INTERSTITIAL/SUMP LEAK SENSING	
			Tank Annulus	•
			Sump	•
			Dispenser Pan	•
			Mag Sump	•
			Sensor Location Identifiers	•
			VAPOR WELL MONITORING	
			Hydrocarbon Vapor Detection	•
			High Water Level Alarm	•
			GROUNDWATER MONITORING	
			Hydrocarbon Liquid Detection	•
			Low Water Alarm	•
			SECONDARY CONTAINMENT VACUUM SENSING SYSTEM (SCVS)	
			Vacuum Sensors	•
			AIR VAPOR MONITORING	
			In-Station Diagnostics (ISD)	Optional
			Carbon Canister Vapor Polisher	Optional
			Vapor Pressure Sensor	Optional
			Vapor Flowmeter	Optional

* Standard in TLS-350R, Upgradeable in TLS-350PLUS

Notice

Veeder-Root makes no warranty of any kind with regard to this publication, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

Veeder-Root shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this publication.

Veeder-Root reserves the right to change system options or features, or the information contained in this publication.

This publication contains proprietary information which is protected by copyright. All rights reserved. No part of this publication may be photocopied, reproduced, or translated to another language without the prior written consent of Veeder-Root.

Example Illustrations

Illustrations used in this guide for example sensor installations may contain components that are customer supplied and not included with the sensor. Please check with your Veeder-Root Distributor for recommended installation accessories.

Third Party Evaluations

Third party evaluations of the Veeder-Root sensors contained in this application guide can be found under the Veeder-Root vendor name on the National Work Group on Leak Detection Evaluations (NWGLDE) website:

<http://www.nwglde.org>