



2555.2.1

**System Comparison:** **Veeder-Root 350 Systems** **INCON T5 Series System**

Feature	TLS-350R PC-350R TLS-350 Plus PC-350 Plus	TS-550
<b>CONSOLE DESIGN</b>		
Modular/Expandable Features	X	X
Fixed Features		
LCD Touch screen		optional
Full Alpha-numeric Keyboard (Excludes PC Consoles)	X	
Integral Printer	optional	optional
<b>INVENTORY CONTROL</b>		
Graphical Inventory Status		X
Business Inventory Reconciliation	X*	optional
Variance Analysis	X*	X
Sales Dollars		
Fuel Manager	optional	
Complete Inventory Reports	X	X
Programmable Auto Report Times	X	X
Inventory Increase Report	X	X
*Standard in TLS-350R, Upgradeable in TLS-350 Plus		
<b>IN-TANK LEAK TEST</b>		
0.2 GPH Automatic Tank Gauging	X	X
Continuous Statistical Leak Detection	optional	optional
0.1 GPH Tank Tightness Testing	X	X
Selectable Test Rates	X	X
Programmable Automatic Test Schedules	X	X
All or Single-Tank Tests	X	X
Leak Test Validity Check	X	X
PASS, FAIL, or INVALID Indicators	X	X
<b>LINE LEAK DETECTION</b>		
Integral Line Leak Detector	optional	optional
interface to External ELLD system		
Programmable Line Test Features	optional	X
<b>IN-STATION DIAGNOSTICS (ISD)</b>		
	optional	optional
<b>INTERSTITIAL/SUMP LEAK SENSING</b>		
Tank Annulus	X	X
Sump	X	X
Dispenser Pan	X	X
Mag Sump	X	X
Sensor Location Identifiers	X	X
<b>VAPOR WELL MONITORING</b>		
Hydrocarbon Vapor Detection	X	X
High Water Level Alarm	X	X
<b>GROUNDWATER MONITORING</b>		
Hydrocarbon Liquid Detection	X	X
Low Water Alarm	X	X
<b>SECONDARY CONTAINMENT VACUUM MONITORING</b>		
Vacuum Sensors	X	optional
<b>ALARM</b>		
Leak	X	X
Overfill	X	X
High Level	X	X
Sudden Loss / INCON Theft	X	X
High Water	X	X
Low Inventory	X	X
External Input	X	X

Liquid Sensor		X
Programmable Alarm Limits	X	X

**DATA COMMUNICATIONS**

RS-232	optional	X
Internal Fax / Data modem	optional	optional
Web Server		X
Ethernet	optional	X
Remote Printer Interface	optional	X

**SYSTEM CAPABILITIES**

Manifold Tank Capability	X	X
Self-Diagnostics	X	X
Setup Archive Feature	X	
Emergency Generator Capability	X	X
Dispenser Interface Modules	optional	optional
Dispenser Hook Isolation		X
STP Controller Digital interface		X
Memory Backup Capability	X	X
Internal Alarm Annunciator	X	X
Up to 3 years data storage		
FAX notification on time or event		X
Email notification on time or event		X
Automatic Events / Rules Engine		X
Custom Status Dashboard		
On Board Help		
Custom Help		
Custom Alarms		X
Environmental Reports (Compliance Reports Summary)		X
Sensor Reports		X
Web access		X
Remote Access Software	optional	optional

**SYSTEM CAPACITIES**

In-Tank Probes	12*	72*
Pressurized Line Leak Detectors	6*	48*
Wireless Pressurized Line Leak Detectors	9*	
Discriminating Interstitial Sensor / INCON TSP-DIS	64*	48*
Discriminating Non Solid-State Containment Sensor / INCON TSP-DDS/DTS	64*	48*
Solid-State Dispenser Pan Sensor	48*	
Solid-State Containment Sump Sensor	48*	
Interstitial Sensors / INCON TSP-EIS	64*	48*
Sump Sensors / INCON TSP-ULS	64*	72*
Vapor Sensors / INCON TSP-DVS	40*	48*
Groundwater Sensors / INCON TSP-MWS	40*	48*
Vacuum Sensor	39*	48*
Hydrostatic Sensor / INCON TSP-HIS (XL)	64*	48*
Mag Sump Sensor	40*	72*
Output Relays	32*	50*
External Inputs low voltage	16*	50*
External Inputs high voltage		120*

\*The numbers shown indicate the maximum number of probes/sensors the system can handle with one console if all slots are filled with that type of interface module.

\*The numbers shown indicate the maximum number of probes/sensors/inputs/outputs the system can handle with an Expansion console if up to 6 slots are filled with each type of interface module.

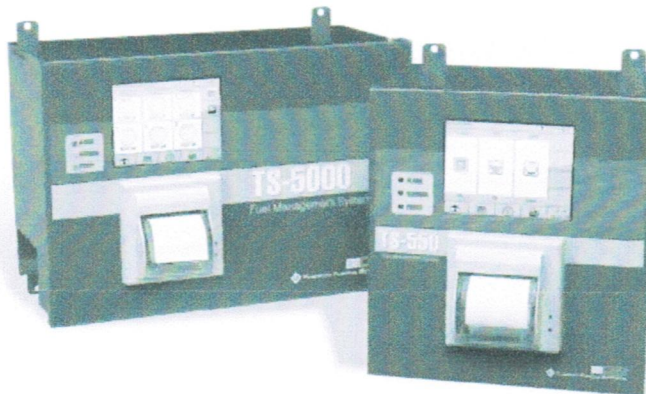
\*\* Total maximum number of sensors (8)

## Advantages

- Monitors up to 72 tanks.
- Continuous inventory monitoring and tank testing through proven magnetostrictive probe technology.
- Highest rated continuous 24 hour leak detection (SCALD) in the industry.
- Density measurement and alarm capabilities.
- Patented AutoLearn™ electronic line leak detection capability, including Statistical Line Leak Detection for high throughput lines.
- Standard communication ports including one Ethernet and USB, two RS-232.
- Internal fax and data modem options.
- Interstitial and piping sump leak sensing for up to 72 sensors.
- Can handle 72 dispenser hook inputs, eliminating need for an external box.
- Approved by the California Air Resources Board EO VR-202 & VR-208.

## TS-550 and TS-5000 Fuel Management Systems

The TS-550 and TS-5000 fuel management systems' modular design provides compliance and fuel management capability in a single enclosure.



## Specifications

- Number of tanks monitored: 72.
- Input channels: 2.
- Output only channels: 2.
- Display type: touch screen LCD.
- Printer type: thermal.
- Applicable liquids: petroleum, chemicals and hazardous waste.
- Level units: inches, centimeters and millimeters.
- Volume units: gallons or liters.
- Display size: 320 × 240 pixels.
- Power requirements: 110 to 220 VAC, +15%, -10%, 150 Watt maximum, 1.5 Amps.
- Operating temperature: 32° to 104 °F (0° to 40 °C).
- Storage temperature: -4° to 140 °F (-20° to 60 °C).
- Intrinsic safety rating:  
US - Class I, Div. I, Group D.  
Europe - Group IIA, Zone 0.
- LCD backlight contains mercury, dispose of properly.

## Applications

The flexible architecture of the TS-550 and TS-5000 allows multiple applications to run concurrently, satisfying current business and regulatory requirements.

- Fuel management system applications provide accurate inventory information, third party-approved tank and line leak detection, automated inventory reconciliation and submersible pump monitoring.

- The vapor recovery monitoring application gauges the effectiveness of a station's vapor recovery equipment through continuous monitoring of gasoline vapors during fueling operations.
- Secondary containment monitoring application continuously monitors the interstitial spaces of double wall tanks, lines and sumps, and notifies station owners when a release of product into the environment has occurred.

## Capabilities

The TS-550 and TS-5000 are built on an established open-system software platform.

- Standard Ethernet connection allows easy integration to existing wide area networks.
- XML-based software allows remote access to data without software.
- Graphical touch screen LCD allows text to be displayed in native language.
- Generic interface modules give flexibility in configuring station monitoring requirements.
- E-mail notification gives station owners real-time status information.
- Multiple printing options give flexibility in style and format of reports.
- Monitor back-up generators for fuel inventory control, run status reports, and continuous leak detection.

## Approvals

- UL, cUL, ATEX, IECEx
- Third party certification of leak detection capabilities

## TS-550 110 and 220 VAC Models

Model	Description
T550	TS-550 base console without display and printer
T550D	TS-550 base console with display and without printer
T550DP	TS-550 base console with display and printer

## TS-5000 110 and 220 VAC Models

Model	Description
T5000	TS-5000 base console without display and printer
T5000D	TS-5000 base console with display and without printer
T5000DP	TS-5000 base console with display and printer

## Expansion Console

Model	Description
TS-EXPC	Secondary console to add eleven additional plug-in modules to the primary TS-550/5000 console, comes without a display or printer

## TS-550 and TS-5000 Console Hardware and Software Options

TS-550 and TS-5000 consoles come standard with the ability to perform in-tank static leak detection. The following software and hardware options can be added to customize your console. The internal hardware options will be factory installed when ordered with the console.

### Internal Hardware Options

Part Number	Description
TS-DIMIB	(I) Internal dispenser interface module, dispenser interface cable must be ordered separately
TS-LON	(E) EcheLON communication module, IFSF protocol capability
TS-MDMIB	(M) Internal modem, includes fax and data software capability

Note: Only one TS-DIM or TS-LON module can be installed per console.

### Internal Software Options

Part Number	Description
TS-TT	(T) Statistical Continuous Automatic Leak Detection, 24 hour continuous tank testing software
TS-TRAC	(R) Tank inventory reconciliation and auto calibration
TS-ELLD	(L) Electronic line leak detection
TS-VRM	(V) Vapor recovery monitoring, ISD
TS-VRMB	(B) Vapor recovery monitoring for balance sites (VRM I.I)
TS-SCM	(S) Secondary containment monitoring

## TS-550 and TS-5000 Fuel Management System Console Ordering Guide

Console model, software and hardware options can be listed separately or combined when ordering. Systems shipped from the factory will list the combined part number. Complete console part numbers have a specific order and are created using the following guidelines:

### TX DPM Y / TRL V S

#### TX = Model

T550 = TS-550, 110 or 220 VAC.

T5000 = TS-5000, 110 or 220 VAC.

#### DPM Y = Hardware Options

D = Display.

P = Printer.

M = Internal modem.

Y = I for dispenser interface module or E for a LON module.

#### TRL V S = Software Options

T = SCALD 24-hour tank testing.

R = Reconciliation.

L = Line leak detection.

V = Vapor recovery monitoring, V for assist or B for balance.

S = Secondary containment monitoring.

## Fuel Management System Console Accessories

### TS-550 and TS-5000 Fuel Management System Console Interface Modules

TS-550 and TS-5000 consoles come standard with a power supply module and a controller module. Additional interface modules can be installed. Interface modules ordered with a console will be installed at the factory. The following guidelines must be followed:

- TS-550: Six total modules can be installed with a maximum of four intrinsically safe modules and a maximum of three of any one kind of module.
- TS-5000: Eleven total modules can be installed with a maximum of nine intrinsically safe modules and a maximum of three of any one kind of module.

#### Intrinsically Safe Modules

Part Number	Description
TS-PRB	1 <sup>2</sup> input probe module, LL2 Series mag probes, VFM flow meters and DMS Mag sensors
TS-2WSNS	1 <sup>2</sup> input 2-wire sensor module, TSP-ULS and TSP-HLS sensors
TS-3WSNS	8 input 3-wire sensor module, TSP-EIS, TSP-DIS, TSP-DDS, TSP-DTS, TSP-HIS, TSP-MWS and TSP-DVS sensors
TS-420IB	8 input 4-20 mA module, LSU500 transducers and VPS and SCCM pressure sensors

#### Non-Intrinsically Safe Modules

Part Number	Description
TS-ACI	12 input AC input module, dispenser hook inputs
TS-RLY	8 output relay module, SCCM solenoid and STP control
TS-10ARLY	6 output 10 Amp relay output module, dispenser power
TS-IO	Input output module, 4 output 4-20 mA, 8 input 3-240 VAC/DC
TS-420EXP	8 input 4-20 mA module, LSU500E transducers and external devices

Note: TS-RLY Module is not required for STP control when utilizing turbine pump interface (TPI) communications. The TS-420EXP module requires Controller Module software version 9.5 or greater

### TS-LS500 AutoLearn™ with Statistical Line Leak Detection

Pressurized line leak detection provides automatic 3.0 gph hourly, 0.2 gph monthly and 0.1 gph annual precision line leak detection for TS-550 and TS-5000 consoles. Statistical Line Leak Detection (SLLD) is a standard feature that can provide 0.2 gph monthly results on even high throughput lines. Available in intrinsically safe and explosion proof models. Use explosion proof when low voltage conduit is not available. The TS-420IB or TS-420EXP, TS-ACI and TS-RLY module and TS-ELLD software option must be ordered and installed in the fuel management system console.

#### Intrinsically Safe

For new installations where separate low voltage conduits can be used. Use TS-420IB module.

Part Number	Description
TS-LS500/2	2-line transducer kit
TS-LS500/3	3-line transducer kit
TS-LS500/4	4-line transducer kit

Note: Using turbine pump interface (TPI) communications eliminates the need for a TS-RLY module; FFS intelligent controllers required.

#### Explosion Proof

For retrofit installations where only a high voltage conduit can be used. Use TS-420EXP module.

Part Number	Description
TS-LS500E/2	2-line transducer kit, explosion proof
TS-LS500E/3	3-line transducer kit, explosion proof
TS-LS500E/4	4-line transducer kit, explosion proof

Note: Using turbine pump interface (TPI) communications eliminates the need for a TS-RLY module; FFS intelligent controllers required.

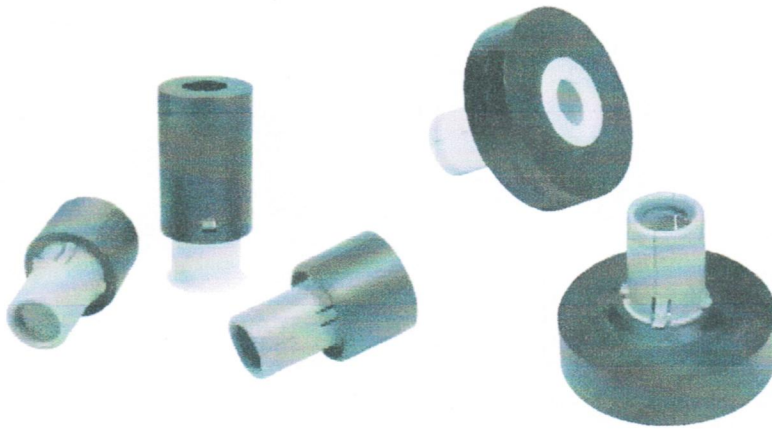
#### Alternative Fuels Accessories

Part Number	Description
TS-AFALNIP	Leak generator needle valve kit required for E85 installations

### Dispenser Interface Module Cables

Part Number	Description
TSP-WDCBL	Wayne cable
TSP-TDCBL	Tokheim cable
TSP-GDCBL	Gilbarco cable
TSP-GSDCBL	Gilbarco G-Site cable
TSP-BDBCL	Bennett 515 only cable

## Float Kits



Model	Description
TSP-IDF2	2" float set for diesel tanks
TSP-IGF2	2" float set for gasoline tanks
TSP-IDF4	4" float set for diesel tanks
TSP-IGF4	4" float set for gasoline tanks
TSP-LPGF	2" float for LPG tanks, with or without isolation sleeve
TSP-SSP	2-1/16" OD, #316 stainless steel float for chemical applications only

Note: Order one float set for each LL2 Mag probe.

### 2" and 4" Float Kit Advantages

- Designed for applications involving 2", 3" or 4" riser pipes.
- Each float set contains a product and water float.
- Constructed of nitrile rubber and kynar. Water floats contain either stainless steel or nickel plated brass ballast. Compatible with a wide variety of petroleum products.
- Water floats are colored red for gasoline and blue for diesel.

### TSP-SSP Chemical Float Advantages

- #316 stainless steel product float with 2-1/16" OD.
- Suitable for use in a wide variety of chemical applications, consult factory for chemical compatibility issues.
- Use one float per TSP-LL2-I probe.
- Float specific gravity 0.55 to 0.63.
- Collapse pressure 500 psi/g minimum.

### LPG Float Advantages

- Designed for applications involving tank openings of at least 2".
- Single float used for monitoring the level of LPG (propane) fuel.
- Suitable for monitoring pressurized products.
- For use in USTs or ASTs with TSP-LL2 or TSP-LL2-I probes. TSP-LPG/EU float can be used with locally supplied tank isolation sleeves.

## Probe Installation Kits

FFS Probe installation kits primarily come in two styles, Suspension and Bottom Mount. The Suspension kits are used to install TSP-LL2-xxx Leak Detection probes in underground storage tank applications using either 2" or 4" riser pipes. Suspension isolates the probe from possible tank deflection and also keeps in it a true vertical orientation for optimal float movement and measurement accuracy. These kits also provide a tight seal to the tank to prevent water intrusion and meet regulatory requirements. The 4" models also provide a quick release cap for easy access to the probe for inspection or maintenance. TSP-LL2-xxx-I Inventory Control probes come with hardware that allows them to be installed on the tank bottom. The Bottom Mount install kits provide the same tight seal and ease of access without the need for the suspension hardware necessary in leak detection applications. Both styles work well on either steel or fiberglass tanks.



### Advantages

- The TSP-K4AS install kit is for use with chemical or other installations where it is desirable for the probe head to be outside of the riser. It consists of a #316 SS 4" cap and compression fitting that is installed on the probe shaft so that only the floats and shaft are exposed to the tank contents. Includes TSP-UVPK probe head protection kit.
- The TSP-LPGK install kit is for use with pressurized LPG tanks where the probe head will reside outside of the tank opening. It consists of a special compression fitting, designed to retain the contents of the pressurized tank, that is installed on the probe shaft and then inserted into a user supplied cap with a 3/4" NPT hole. Includes TSP-UVPK probe head protection kit.

### Suspension Kits

Part Number	Description
TSP-K2A	Leak detection probe install kit for 2" riser pipes
TSP-K2B	Leak detection probe install kit for 2" riser pipes with BSP threads
TSP-K4A	Leak detection probe install kit for 4" riser pipes
TSP-K4B	Leak detection probe install kit for 4" riser pipes with BSP threads

### Bottom Mount Kits

Part Number	Description
TSP-C2A	Inventory probe Install kit for 2" risers
TSP-C2B	Inventory probe Install kit for 2" risers with BSP threads
TSP-C4A	Inventory probe install kit for 4" risers
TSP-C4B	Inventory probe install kit for 4" risers with BSP thread

### Other Kits

Part Number	Description
TSP-K4AS	#316 stainless steel mag probe install kit for 4" riser pipes
TSP-LPGK	LPG probe install kit, 149" maximum LL2 probe length

Note: TSP-LPGK install kit is not needed when locally supplied tank isolation sleeve is utilized.

### Cables

Part Number	Description
600-0042	Belden #87761, runs up to 500'
600-0055	Belden #89182, runs 500' to 1,500'
600-0080	Quick disconnect probe cable

- Notes:
1. Cable is sold in 500' increments.
  2. Orders greater than 500' will ship in 1000' and 500' rolls.
  3. Contact tech support for more information on cable requirements.

### Accessories

Part Number	Description
TSP-DB1	One direct burial splice connector kit
TSP-DB10	Pack of 10 direct burial splice connector kits
TSP-DBTOOL	Epoxy dispensing tool
TSP-KW30	Pack of 30 3M splice connectors
TSP-UVPK	Ultraviolet protection kit - protects probe electronics when installed in AST applications

- Notes:
1. Use the TSP-DB1 or TSP-DB10 for direct burial cable applications or when weatherproof junction boxes are not used.
  2. The DBTOOL is required to dispense the epoxy.
  3. Each direct burial splice connector kit includes a receptacle, three splice connectors and epoxy for the dispensing tool.

## Advantages

- Easy to use and install.
- Uses innovative, magnetostrictive position measurement technology to report liquid levels.
- Highly stable performance.
- Unparalleled accuracy and performance when used with a Franklin Fueling Systems Automatic Tank Gauge.
- Screw-in electrical connector provides quick installation or removal eliminating the need to resplice wires.
- Intrinsically safe circuits for hazardous locations.

## Theory of Operation

- An electromagnetic field is created inside the probe head and forms around a long waveguide within the probe shaft when position measurements are taken.
- The electromagnetic field interacts with the magnetic field of the float(s) and produces a shock wave in the waveguide that travels at a known speed.
- When the shock wave is detected at the probe head, the probe creates a signal that corresponds precisely to the product level.
- Product expansion calculations are enabled by temperature sensors that are located at various points in the probe shaft.

# Leak Detection and Inventory Control Probes

TSP-LL2 liquid level probes are advanced instruments that use magnetostrictive position measurement technology to accurately report inventory levels in storage tanks.



## Specifications

- Operating temperature:  $-40^{\circ}$  to  $140^{\circ}$  °F ( $-40^{\circ}$  to  $60^{\circ}$  °C).
- Storage temperature:  $-40^{\circ}$  to  $158^{\circ}$  °F ( $-40^{\circ}$  to  $70^{\circ}$  °C).
- Intrinsic safety rating: Class I, Div. 1, Group D.
- Non-linearity:  $\pm 0.025\%$  of full scale.
- Repeatability:  $\pm 0.001\%$ .
- Temperature sensors: 5 thermistors located in the shaft.
- Temperature resolution:  $\pm 0.02^{\circ}$  °F ( $\pm 0.01^{\circ}$  °C).
- Probe pigtail: 10' long two conductor cables with shields and polyurethane jacket.
- Interface cable:  
0' to 200' - Belden 87760.  
0' to 400' - Belden 87761.  
0' to 1500' - Belden 89182.  
Consult factory for others.
- Shaft, E-ring and washer materials:  
# 316 stainless steel. Housing - anodized aluminum, MIL-A-8625C, Type 2, Class 2.  
Floats - nitrophenyl, Kynar and nickel plated brass.
- Float kits must be ordered separately.

## Applications

The LL2 Series of liquid level probes feature exceptional linearity, resolution and stability, and are used in underground and aboveground storage tanks. Two types of probes are manufactured for use with Franklin Fueling Systems Automatic Tank Gauges.

- The TSP-LL2 probe is typically used for underground storage tanks and petroleum applications when static or SCALD leak detection is required.

- The TSP-LL2-I probe is typically used for aboveground storage tanks, chemical or oil waste, or underground storage tanks that do not require in-tank leak detection.
- Probes are available in many sizes that are suitable for all common tanks.
- Easily installed into 2", 3" or 4" riser pipes.

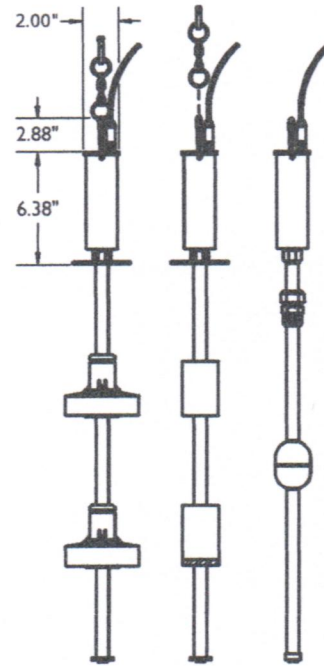
## Capabilities

- Probes can report the level of up to 3 floats.
- The TSP-LL2 is capable of precise leak detection, density measurement and inventory monitoring.
- The TSP-LL2-I is capable of inventory monitoring.
- Use the appropriate FFS suspension type installation kit to install all TSP-LL2 leak detection probes.
- Use the appropriate FFS bottom mount type installation kit for installing all TSP-LL2-I Inventory Control probes. These probes come with special hardware for installation on the tank bottom.
- Float kits must be ordered separately.

## Leak Detection

Model	Description
TSP-LL2-29	2' diameter tank probe
TSP-LL2-41	3' diameter tank probe
TSP-LL2-53	4' diameter tank probe
TSP-LL2-65	5' diameter tank probe
TSP-LL2-69	5'4" diameter tank probe
TSP-LL2-77	6' diameter tank probe
TSP-LL2-81	6'4" diameter tank probe
TSP-LL2-89	7' diameter tank probe
TSP-LL2-101	8' diameter tank probe
TSP-LL2-113	9' diameter tank probe
TSP-LL2-125	10' diameter tank probe
TSP-LL2-131	10'6" diameter tank probe
TSP-LL2-137	11' diameter tank probe
TSP-LL2-149	12' diameter tank probe

- Notes: 1. Custom probe lengths are available; contact factory for price and delivery.  
 2. These probes are used with all Franklin Fueling Systems ATG consoles.  
 3. Float kits must be ordered separately.



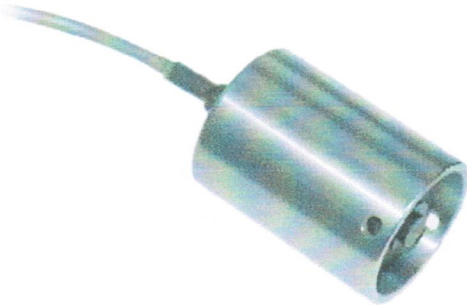
## Inventory Control

Model	Description
TSP-LL2-29-I	2' diameter tank probe
TSP-LL2-41-I	3' diameter tank probe
TSP-LL2-53-I	4' diameter tank probe
TSP-LL2-65-I	5' diameter tank probe
TSP-LL2-69-I	5'4" diameter tank probe
TSP-LL2-77-I	6' diameter tank probe
TSP-LL2-81-I	6'4" diameter tank probe
TSP-LL2-89-I	7' diameter tank probe
TSP-LL2-101-I	8' diameter tank probe
TSP-LL2-113-I	9' diameter tank probe
TSP-LL2-125-I	10' diameter tank probe
TSP-LL2-131-I	10'6" diameter tank probe
TSP-LL2-137-I	11' diameter tank probe
TSP-LL2-149-I	12' diameter tank probe
TSP-LL2-161-I	13' diameter tank probe
TSP-LL2-173-I	14' diameter tank probe
TSP-LL2-185-I	15' diameter tank probe
TSP-LL2-197-I	16' diameter tank probe
TSP-LL2-209-I	17' diameter tank probe
TSP-LL2-221-I	18' diameter tank probe

- Notes: 1. Orders for probes larger than 149" cannot be canceled and are non-returnable.  
 2. These probes are used with Franklin Fueling Systems ATGs.  
 3. Not for leak detection.  
 4. Float kits must be ordered separately.  
 5. Comes with bottom mount hardware. For replacement hardware kits, order TSSP-BMKT

## TSP-ULS Liquid Sensor

The TSP-ULS liquid sensor is a low cost sensor which may be used with all Tank Sentinel® and fuel management system consoles. This sensor is also compatible with S940 Sensor Alarm Console. Based on float-switch technology and made of chemically resistant materials, the TSP-ULS may be installed in sumps, dispenser pans, steel double wall tanks or other locations where the presence of liquid indicates a leak has occurred.

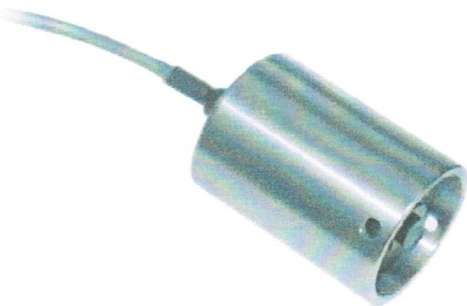


Model	Description
TSP-ULS	Universal liquid sump sensor
TSP-K12	Interstitial sensor riser cap kit for 2" riser pipes

Note: This sensor communicates with the console using 2 wires.

## TSP-UHS Universal Hydrostatic Sensor

The TSP-UHS Universal Hydrostatic Sensor uses float switch technology to continuously monitor liquid filled double wall containment sumps. Normally submerged, the single float TSP-UHS will provide an indication if there is a loss of monitoring liquid.



Model	Description
TSP-UHS	Universal Hydrostatic Sensor
HM-KIT	Hydrostatic monitoring installation kit. Includes: flexible brine tube, sensor housing clamp, sensor housing, sensor cap and hardware

Note: This sensor communicates with the console using 2 wires.

### Application

For dry steel tank interstitial and containment sump monitoring.

### Advantages

- Highly reliable float technology and closed output circuit ensures that leaks are detected.
- Chemical-resistant materials assure compatibility with most liquids.

### Installation

Each TSP-ULS comes with a 25' cable. 1/2" NPT thread is provided on the compression gland fitting attached to the sensor's cable, allowing it to be suspended from standard electrical boxes and fittings. The sensor may be positioned vertically by adjusting cable length. For steel interstitial tanks, TSP-ULS is lowered into the opening provided on the tank and is suspended by optional TSP-K12 installation kit. Other mounting methods available depending upon application and location.

### Application

Typically used for hydrostatic monitoring of the liquid in a double wall sump interstice.

### Advantages

- Highly reliable float technology and closed output circuit ensures that leaks are detected.
- Chemical-resistant materials.

### Installation

Each TSP-UHS comes with a 25' cable. The sensor can be installed into the reservoir of a liquid filled double wall containment sump. The sensor must be installed in a vertical position at a level where it is normally submerged. The TSP-UHS will alert if the liquid level drops below the bottom of the sensor.

**Advantages**

- Pulsating light and electromechanical buzzer warn of alarm conditions.
- Ideal for outdoor applications where a high intensity alarm is necessary.
- Can be combined with TS-RK remote acknowledge schemes.
- Has adjustable sound level with useful range of over 200 feet.

**Installation**

- Install within 1000 feet of console.
- Wiring: Type THHN, TFFN or THWN, 18 AWG or larger installed in conduits and completely separated from probe and sensor circuits.
- Operates directly from 110 VAC line power.
- For use in indoor/outdoor applications that have high background noise.

# TS-RA2 Remote Audible and Visible Alarm Unit

The TS-RA2 is a high intensity remote audible and visible alarm unit for use with Franklin Fueling Systems Automatic Tank Gauges. The unit may be used as an overfill alarm as required by federal, state and local regulations, or as a general purpose remote alarm annunciator.



Model	Description
TS-RA2	High intensity, tank overfill alarm with light and horn
TS-RK	Remote tank overfill alarm acknowledge unit