



## **UNDERGROUND STORAGE TANK (UST) MONITORING SYSTEM AND SENSOR FIELD GUIDE**

### **CUPA CONFERENCE MARCH 2023**

This is a Field Guide presented with UST Components 101  
CUPA Conference March 2023, Anaheim California

This document is NOT a complete list (Nor is intended to be) of all systems/components  
All information also has website and document links for reference.

## TABLE OF CONTENTS

<b>Veeder Root</b>	<b>Page 3-6</b>
<b>Franklin Fueling/Incon/EBW</b>	<b>Page 7-10</b>
<b>Stand Alone Sensor</b>	<b>Page 10</b>
<b>BRAVO Float/Chain Mechanism</b>	<b>Page 11</b>
<b>Simmons Corp/Clearview</b>	<b>Page 11</b>
<b>Pneumercator Systems</b>	<b>Page 12-13</b>
<b>RONAN Systems</b>	<b>Page 14</b>
<b>OMNTEC</b>	<b>Page 15</b>
<b>Universal/Leak Alert</b>	<b>Page 15</b>
<b>Line Leak Detectors</b>	<b>Page 16-17</b>
<b>Common Field Test Apparatuses</b>	<b>Page 18</b>
<b>Veeder Root 2-1 Box</b>	<b>Page 18</b>
<b><u>Additional Resources:</u></b>	
LG 113 should always be checked for confirmation of current approvals.	<a href="#">LG 113</a>
SWRCB UST Construction, Monitoring and Testing Table	<a href="#">PDF GUIDE</a>

*\*This is not a list of EVERY sensor out there. This is a list of common sensors that have been seen in multiple counties. All components are listed in LG-113 and NWGLDE. Check panel/sensor compatibility.*

# VEEDER ROOT

## VEEDER ROOT SENSOR APPLICATION GUIDE









*\*This Guide has been used as reference for sensor specifics\**

Veeder Root (VR) Certification and ICC Service Tech Required Certifications

[www.veeder.com/us](http://www.veeder.com/us)



### Veeder Root Monitoring Panels

Model Number	Description	Photo (Field)
<p><b>TLS 450</b></p>  <p><i>Image Source: Veeder Root Website</i></p>	<ul style="list-style-type: none"> <li>- New Veeder TLS 450 PLUS.</li> <li>- Not yet approved for CARB ISD (March 2023).</li> <li>- Approved for UST Monitoring.</li> <li>- Shows full alarm history.</li> </ul>	
<p><b>TLS 350 Plus/R</b></p>  <p><i>Image Source: Veeder Root Website</i></p>	<ul style="list-style-type: none"> <li>- Common Current Panel.</li> <li>- Can support Electronic Leak Detectors.</li> <li>- No longer will be supported/Difficult to get updated parts/boards (2023).</li> <li>- Only Prints last three (3) alarms per sensor.</li> <li>- Subject to Cold Starts.</li> </ul>	
<p><b>TLS 300C</b> <b>1 Module, 8 Sensors Only</b></p>	<ul style="list-style-type: none"> <li>- Refer to Sensor application guide for compatibility.</li> <li>- 300C does not support some sensors or Electronic Leak Detectors.</li> <li>- Will not support Optical Sensors.</li> </ul>	
<p><b>TLS 250</b></p>  <p>- One of the first. No longer made. <i>Source: Google Images</i></p>	<p><b>Gilabro EMC/Simplicity are TLS 350/300s.</b></p>   <ul style="list-style-type: none"> <li>- Old covers from old company/model.</li> <li>- Operationally/Functionally, these are TLS 350s or 300Cs.</li> </ul>	

*\*This is not a list of EVERY sensor out there. This is a list of common sensors that have been seen in multiple counties. All components are listed in LG-113 and NWGLDE. Check panel/sensor compatibility.*









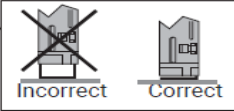

## Sump and Under Dispenser Containment (UDC) Sensors

Discriminating: Detects the presence of, and differentiates between, hydrocarbons and other liquids.










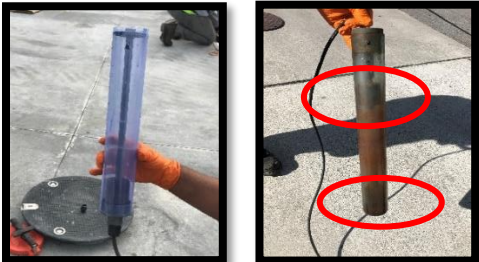
Optical: Looking at phase changes in the light beams by causing them to interact or interfere with one another.

Position Sensitive: Housing must compress position indicator witch (Tamper Foot) against the bottom of the sump.

Stand Alone: When liquid is detected in the dispenser pan, the sensor shuts down AC power to the dispenser only.

Model Number	Description	Photo (Field/Website)
<b>001</b>	Stand Alone Sensor	See "Stand Alone Sensor" Section
<b>205: ~16" L</b>	<ul style="list-style-type: none"> <li>- Pre-208 Sensor (PVC Housing).</li> <li>- No Longer Made.</li> <li>- If fails, replace accordingly.</li> <li>- Sensor is not on LG113.</li> </ul>	
<b>208: 12' Cable, 12" L</b> <b>209: 30' Cable, 12" L</b>	<ul style="list-style-type: none"> <li>- Most Common Sensor.</li> <li>- 209 has a longer cable for deeper sumps (30').</li> </ul>	
<b>320: 12' Cable, 11.6" L</b> - Dispenser Pan Sensor - <i>E85 Compatible</i>  <b>350: 12' Cable, 22.1" L</b> - Fill/STP Sump Sensor - <i>E85 Compatible</i>	<ul style="list-style-type: none"> <li>- Discriminating Sensor.</li> <li>- Optical Solid-State Sensor.</li> <li>- Data Label Shown as Black on the Guide.</li> </ul> 	 <p style="text-align: center;"><b>VR 320                  VR 350</b></p>
<b>321: 12' Cable, 11.6" L</b> - Dispenser Pan Sensor - <i>E85 Compatible</i> - <i>B100 Compatible</i>  <b>351: 12' Cable, 22.1" L</b> - Fill/STP Sump Sensor - <i>E85 Compatible</i> - <i>B100 Compatible</i>	<ul style="list-style-type: none"> <li>- Non-Discriminating Sensor.</li> <li>- Optical Solid-State Sensor.</li> <li>- Data label is Shown as Red on the Guide.</li> </ul> 	 <p style="text-align: center;"><b>VR 321                  VR 351</b></p>
<b>322: 12' Cable, 11.6" L</b> - Dispenser Pan Sensor - <i>E85 Compatible</i>  <b>352: 12' Cable, 22.1" L</b> - Fill/STP Sump Sensor - <i>E85 Compatible</i>	<ul style="list-style-type: none"> <li>- Discriminating Sensor.</li> <li>- Product Permeable/Float Sensor.</li> <li>- Data Label Shown as Blue on the Guide.</li> </ul> 	 <p style="text-align: center;"><b>VR 322                  VR 352</b></p>
<b>323: 12' Cable, 12" L</b> - <i>E85, B100 Compatible.</i>  	<ul style="list-style-type: none"> <li>- Non-Discriminating Sensor.</li> <li>- Position Sensitive Sensor.</li> <li>- When tamper foot drops, will go into Sensor Out alarm.</li> </ul>	

*\*This is not a list of EVERY sensor out there. This is a list of common sensors that have been seen in multiple counties. All components are listed in LG-113 and NWGLDE. Check panel/sensor compatibility.*

Vacuum, Pressure, Hydrostatic (VPH) Sump, UDC and Piping Sensors		
Model Number	Description	Photo (Field/Website)
<p><b>304: 8' Cable</b></p> 	<ul style="list-style-type: none"> <li>- Hydrostatic Sensor for Sumps and UDCs.</li> <li>- Float is UP in positions and detects low brine when float is DOWN.</li> <li>- Look the same as a VR 420.</li> </ul>	
<p><b>Vacuum Sensors (463, 464)</b></p> 	<ul style="list-style-type: none"> <li>- 464 is the Float/Liquid sensor.</li> <li>- 463 is the Vac Box Sensor.</li> <li>- Sumps may be monitored by Vacuum also.</li> <li>- Modern Welding Steel USTs are Vacuum Monitored and require a Vacuum sensor and an appropriate Interstitial Sensor (420, 430, 460, 344).</li> </ul>	
<p><b>Unit Boxes</b></p> 	<ul style="list-style-type: none"> <li>- Part Number Varies by piping or UST type.</li> <li>- Refer to Veeder Root Website for Details.   <a href="#">VACUUM SENSORS</a></li> <li>- Right Photo is at some Corporate Chevron Sites.</li> </ul>	
Interstitial (Annular) Sensors <i>(Some pre-2004 USTs do have Brine Filled Annular)</i>		
Interstitial Hydrostatic Sensors for Brine Filled/Monitored USTs		
<p><b>301: 12' Cable, 6" L</b> <i>- E85 Compatible</i></p> 	<ul style="list-style-type: none"> <li>- Hydrostatic sensors for DW Fiberglass UST.</li> <li>- Single Float Sensor.</li> <li>- Low Brine Alarms only.</li> </ul>	
<p><b>302: No Longer Made</b> <b>303: 12' Cable, 17.3" L</b> <i>- E85 Compatible</i></p> 	<ul style="list-style-type: none"> <li>- Hydrostatic Sensor for DW Fiberglass UST.</li> <li><b>302</b></li> <li>- Two Floats for High Liquid and Low Liquid Alarms.</li> <li>- No Longer Made but still used.</li> <li><b>303</b></li> <li>- One Float for High Liquid and Low Liquid Alarms.</li> </ul>	 <p style="text-align: center;"><b>VR 303</b>                      <b>VR 302</b></p>

*\*This is not a list of EVERY sensor out there. This is a list of common sensors that have been seen in multiple counties. All components are listed in LG-113 and NWGLDE. Check panel/sensor compatibility.*

Interstitial Sensors for Double Walled FIBERGLASS USTs		
Model Number	Description	Photo (Field/Website)
341	<ul style="list-style-type: none"> <li>- Optical Solid-State Sensor.</li> <li>- Predecessor to the 343, 345.</li> </ul>	
<b>343: 25' Cable</b> - <i>B100 Compatible</i> <b>345: 25' Cable</b> - <i>E85, B100 Compatible</i> 	<ul style="list-style-type: none"> <li>- Fits 4' to 10' USTs (Diameter)</li> <li>- They look the same.</li> <li>- 343: Discriminating Sensor</li> <li>- 345: Non-Discriminating Sensor</li> </ul>	 <p style="text-align: center;"><b>VR 343</b>                      <b>VR 345</b></p>
407, 409 (Old)	<ul style="list-style-type: none"> <li>- Old 407, 409 wrapped in white and black sleeves.</li> <li>- Current 409 models are not.</li> <li>- 407 has smaller cable for smaller USTs.</li> </ul>	
<b>409 (Current Model)</b> 25' Cable 	<ul style="list-style-type: none"> <li>- Non-Discriminating Sensor.</li> <li>- Fits 4' to 10' USTs (Diameter)</li> </ul>	
Interstitial Sensors for Double Walled STEEL USTs		
<b>340: Old Model</b> <b>344: 25' Cable</b> 	<ul style="list-style-type: none"> <li>- Micro Optical Sensor for Steel USTs.</li> <li>- Smaller for Narrow Annular Spaces.</li> <li>- <i>E85, E100, B100 Compatible</i></li> </ul>	 <p style="text-align: center;"><b>340</b>                      <b>344</b></p>
<b>420: 16' Cable</b> <b>460: 30' Cable</b> 	<ul style="list-style-type: none"> <li>- Annular sensors for DW Steel USTs.</li> <li>- Older 420's sensors have black housing that would split, therefore causing them to get stuck in the interstitial space.</li> <li>- <a href="#">LG Letter 08/13/2010</a></li> </ul>	
<b>430: 15' Cable</b> 	<ul style="list-style-type: none"> <li>- Interstitial Sensor for High Alcohol Product.</li> <li>- <i>E85, E100, B100 Compatible</i></li> </ul>	

*\*This is not a list of EVERY sensor out there. This is a list of common sensors that have been seen in multiple counties. All components are listed in LG-113 and NWGLDE. Check panel/sensor compatibility.*

# FRANKLIN FUELING | INCON | EBW

[www.franklinfueling.com](http://www.franklinfueling.com) | [www.ffspro.exceeds.com/student/catalog](http://www.ffspro.exceeds.com/student/catalog)



ICC Service Tech | Level 1: FMS Installation | Level 2: FMS Programming

*Check Website for Panel Compatibility and for Fuel Compatibilities and Tech Support*

## SENSOR SELECTION



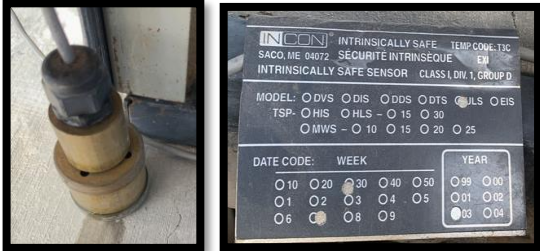




### FFS PRO UNIVERSITY CERTIFICATIONS LIST

*\*FF Website used for image references\**

## Monitoring Panels



Model Number	Description	Photo (Field/Web)
<p><b>EBW Autostik Jr. / II</b></p> <p><b>LS-3A</b> Piping, Dispenser Sump, Steel Tank Interstitial Sensor</p> <p><b>LS-7A</b> Fiberglass Tank Intestinal (Wrap Around)</p> <p><b>LS-5A</b> Discriminating Sump/Dispenser Sensor</p>	<ul style="list-style-type: none"> <li>- Bought by Franklin In 2000.</li> <li>- No longer supported but can be certified by Franklin tester.</li> <li>- Use Franklin certifications.</li> <li>- Will have older EBW LS-3A (Most Common), LS-5A (Haven't Seen), LS-7A.</li> <li>- LS-35A is a dual float hydrostatic tank interstitial sensor (Haven't Seen).</li> <li>- LG113 does not show console can support current (ULS) sensors.</li> </ul>	
<p><b>TS 1001/2001 Sentinel</b></p>	<ul style="list-style-type: none"> <li>- Systems show full alarms history.</li> <li>- Systems do NOT Cold start like VR.</li> </ul>	
<p><b>TS-5000</b></p>	<ul style="list-style-type: none"> <li>- No longer on the Franklin Website.</li> <li>- Gave way to the EVO Series.</li> </ul>	
<p><b>EVO Series</b></p>	<ul style="list-style-type: none"> <li>- Current Models on the website.</li> <li>- Models are EVO 200, EVO 400, 550, EVO 5000, EVO 600 and EVO 6000.</li> </ul>	

*\*This is not a list of EVERY sensor out there. This is a list of common sensors that have been seen in multiple counties. All components are listed in LG-113 and NWGLDE. Check panel/sensor compatibility.*

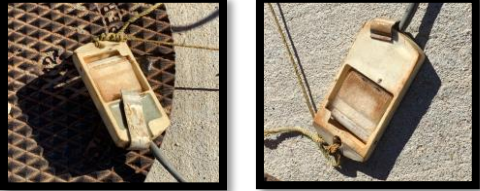







Sump and Under Dispenser Container and Intertitial Sensors		
Model Number	Description	Photo (Field/Web)
<p><b>LS-3A</b> <b>EBW Auto-Stik</b></p>	<ul style="list-style-type: none"> <li>- "Old" version of Universal Leak Sensor (ULS).</li> <li>- Looks the like an old ULS, but a narrower diameter on the bottom section.</li> <li>- May be used for sump, UDC AND Annular space for DW Steel UST.</li> </ul>	
<p><b>LS-5A</b> <b>EBW Autostik</b></p>	<ul style="list-style-type: none"> <li>- Discriminating Sump and UDC Sensor.</li> </ul>	
<p><b>Universal Leak Sensor (ULS)</b> Older Model <i>Sensor installed in 2003</i></p>	<ul style="list-style-type: none"> <li>- For sumps, UDCs and Steel DW USTs Annular.</li> <li>- Look for tag on the sensor.</li> <li>- Newer versions will look more like a bell sensor.</li> <li>- Bottom portion is a bit wider than LS-3A sensor above.</li> </ul>	
<p><b>Universal Leak Sensor (ULS)</b> <b>25' Cable</b> <i>E85 and B100 Compatible</i></p> 	<ul style="list-style-type: none"> <li>- Current Model.</li> <li>- Can also be used in sumps and UDCs per Franklin Selection Guide.</li> </ul>	
<p><b>Universal Hydrostatic Sensor (UHS)</b> Older Model</p>	<ul style="list-style-type: none"> <li>- New versions look like new ULS.</li> <li>- Older versions look like old ULS.</li> <li>- Most will have a label indicating ULS, LHS, EIS etc.</li> <li>- Used for VPH Systems for the Brine monitored Sumps and UDCs.</li> </ul>	
<p><b>Universal Hydrostatic Sensor (UHS)</b> <b>25' Cable</b> <i>E85 and B100 Compatible</i></p>	<ul style="list-style-type: none"> <li>- Current Model.</li> <li>- Containment Sump/UDC Only.</li> <li>- Used for sump, UDC, UST Interstice hydrostatic monitoring.</li> </ul>	

*\*This is not a list of EVERY sensor out there. This is a list of common sensors that have been seen in multiple counties. All components are listed in LG-113 and NWGLDE. Check panel/sensor compatibility.*

















<p><b>Discriminating Dispenser Sump Sensor (DDS)</b> <i>E85 and B100 Compatible</i></p>	<ul style="list-style-type: none"> <li>- Dispenser Sump (UDC) sensor.</li> <li>- Web Photo only from FF Sensor Guide.</li> <li>- Length of sensor not specified.</li> </ul>	
<p><b>Discriminating Turbine Sump Sensor (DTS)</b> <i>E85 and B100 Compatible</i></p>	<ul style="list-style-type: none"> <li>- Containment Sump Sensor (Turbine and Fill).</li> <li>- Web Photo only from FF Sensor Guide.</li> <li>- Length of sensor not specified.</li> </ul>	

**Tank Interstitial Sensors**

Model Number	Description	Photo (Field/Web)
<p><b>LS-7A</b> <b>EBW Autostik</b></p> <p><b>LS-30A</b> Dual Float for Hydrostatic Interstitial.</p>	<ul style="list-style-type: none"> <li>- Dry Interstitial sensor for DW Fiberglass USTs.</li> <li>- No longer made. Frankling Fueling Certifications Required.</li> </ul> <p>LS-30A: No Photo Available.</p>	
<p><b>Electro-Optic Interstitial Sensor (EIS)</b> <b>25' Cable</b> <i>E85 and B100 Compatible</i></p> 	<ul style="list-style-type: none"> <li>- For Double Wall Steel AND Fiberglass USTs.</li> <li>- Dry Interstitial Sensor.</li> <li>- Optical Sensor.</li> </ul> <p><i>"For FG tanks, the EIS is pulled into the interstitial space using a "fish" string or wire..."</i> (FF Field Sensor PDF)</p>	
<p><b>Discriminating Interstitial Sensor (DIS)</b> <b>25' Cable</b> <i>E85 and B100 Compatible</i></p>	<ul style="list-style-type: none"> <li>- For Double Wall Steel AND Fiberglass USTs.</li> <li>- Dry Interstitial Sensor.</li> </ul> <p><i>"For FG tanks, the EIS is pulled into the interstitial space using a "fish" string or wire..."</i> (FF Field Sensor PDF).</p> <ul style="list-style-type: none"> <li>- Looks the same as the EIS.</li> </ul>	 <p>Web Photo FF Sensor Guide</p>
<p><b>Hydrostatic Interstitial Sensor (HIS)</b> <i>E85 and B100 Compatible</i></p> 	<ul style="list-style-type: none"> <li>- For DW Fiberglass USTs that are liquid (Brine) Filled.</li> <li>- Non-Discriminating.</li> <li>- Compatible with all Brines.</li> </ul>	
<p><b>Horizontal Float Switch Sensor (HFS)</b> <b>25" Cable</b> <i>E85 and B100 Compatible</i></p> 	<ul style="list-style-type: none"> <li>- Wrap around sensor for dry interstitial DW Fiberglass USTs.</li> <li>- Looks very similar to Ronan and Pneumeracator wrap around sensors.</li> </ul>	

*\*This is not a list of EVERY sensor out there. This is a list of common sensors that have been seen in multiple counties. All components are listed in LG-113 and NWGLDE. Check panel/sensor compatibility.*

Vacuum Secondary Sensor for Interstitial (VPH System)		
Model Number	Description	Photo (Field/Web)
<p><b>TS-SCCM</b></p> 	<ul style="list-style-type: none"> <li>- Monitors secondary of piping, sump or DW UST with vacuum.</li> <li>- Only vacuum sensor on website.</li> <li>- Does not have a high float part like the VR.</li> <li>- Sensor located inside the Blue Box.</li> <li>- Older TS consoles may not support software.</li> </ul>	 
STAND ALONE SENSORS		
Model Number	Description	Photo (Field/Web)
<p><b>Veeder Root 001 5' Cable, 11.6" L</b></p> 	<ul style="list-style-type: none"> <li>- Non-Discriminating Sensor.</li> <li>- Shuts Off Power to Dispensers through Intrinsically Safe Controller.</li> <li>- VR Guide indicates can be used in Dispenser Pan and Fill/STP Sumps.</li> </ul>	 
<p><b>Beaudreau (BEI) 406 (\$406)</b> Now Franklin Fueling FF DC400 Certification required.</p>	<ul style="list-style-type: none"> <li>- Stand Alone Optical Sensor (No moving floats/switches).</li> <li>- No longer made or supported.</li> <li>- Franklin S404 Dispensers Cutoff is the typical sensor replacement.</li> <li>- Will have a Model 404-I Controller Box (Right Photo).</li> </ul>	 
<p><b>Franklin S404 DC400 (Dispenser Cut Off)</b></p> 	<ul style="list-style-type: none"> <li>- Stand Alone Float Sensor.</li> <li>- S404 is the Sensor.</li> <li>- Compatible with 404-4 Controller Box.</li> <li>- Replacement for BEI 406 Stand Alone.</li> <li>- Franklin DC400 Certification Required.</li> </ul>	 
<p><b>Beaudreau Electric Marketing (BEM) DCS140NL</b></p> 	<ul style="list-style-type: none"> <li>- Stand Alone.</li> <li>- In LG113.</li> <li>- Can be used in Turbine and Dispenser Sumps.</li> <li>- Certification: ?</li> </ul> <p><a href="#">WEB LINK</a></p>	 



*\*This is not a list of EVERY sensor out there. This is a list of common sensors that have been seen in multiple counties. All components are listed in LG-113 and NWGLDE. Check panel/sensor compatibility.*

**BRAVO Float and Chain Mechanism**

Mechanical Leak Detection in Shallow Bravo UDCs  
 ICC Service Tech and BRAVO Certification required for testing.



**UDC Mechanical Float Trip**

Model Number	Description	Photo (Field)
Float and Chain Mechanism 	<ul style="list-style-type: none"> <li>- Each product piping in the UDC has a float and chain with dividers separating the areas (Could see three or maybe even four).</li> <li>- Float will rise when a leak occurs, rises and trips the impact/shear valve that it is attached to, shutting down the dispenser.</li> </ul>	Shear Valve Engaged      Shear Valve Tripped 



**Simmons Corp/Clearview**

(originally listed as Caldwell and Simmons Systems Corp. on LG 113)


**Simmons/Caldwell Tank Manager Monitoring Systems**

ICC Service Tech and Simmons Certification. They still certify.

**Monitoring Panel**

Model Number	Description	Photos (Field/Web)
TMW 650 Tank Managing 	<ul style="list-style-type: none"> <li>- Only two systems seen in CERS (Other in Hayward).</li> <li>- Located under Caldwell in LG 113.</li> <li>- Software computer based. No panel or console.</li> <li>- TMW 650 is the Software.</li> <li>- Alarm history is digital.</li> <li>- No Fail/Safe shut down method. Must shut off at main electric panel.</li> </ul>	

**Sump, UDC and Annular Sensors**

TM-LIQ	<ul style="list-style-type: none"> <li>- Sump, UDC and Annular sensor for DW Steel USTs.</li> <li>- Cannot be replaced if fails.</li> <li>- No longer manufactured.</li> <li>- Float sensor.</li> <li>- TMLIQ is the only sensor listed in LG113 and NWGLDE.</li> </ul>	
--------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------

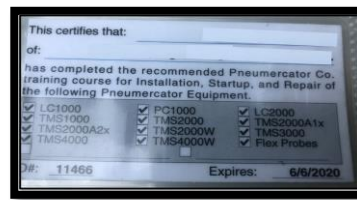
*\*This is not a list of EVERY sensor out there. This is a list of common sensors that have been seen in multiple counties. All components are listed in LG-113 and NWGLDE. Check panel/sensor compatibility.*

# PNEUMERCATOR

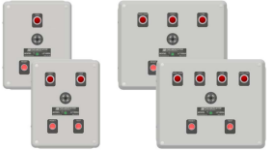







ICC Service Tech and Pneumeractor Certifications required for EACH system

[www.pneumeractor.com](http://www.pneumeractor.com) | [SENSOR PRODUCT PAGE](#)






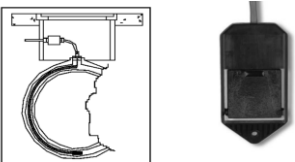
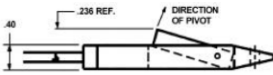




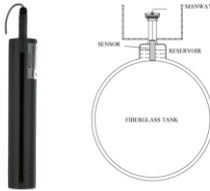

Spec sheets on website and LG 113 list all comptaible sensors for each console. Systems do NOT Cold Start like VR.



## Monitoring Panels

Model Number	Description	Photo (Web/Field)
<p><b>LC 1000, LC 1001</b> <b>LC = Leak Level Console</b></p> 	<ul style="list-style-type: none"> <li>- Panel does not have a printer.</li> <li>- Common with Waste Oil or New Oil or Generator (Gravity/Suction) USTs that do not have turbines.</li> <li>- This is allowable as there is no requirement for a printer per HSC and CCR Title 23.</li> <li>- Alarms still must be documented the same.</li> </ul>	
<p><b>LC 2000</b></p> 	<ul style="list-style-type: none"> <li>- When panels have a printer, it must be utilized how it was approved, meaning if the printer isn't functioning, it may be written as a violation and required to be fixed.</li> <li>- Full alarm history can be printed.</li> </ul>	
<p><b>TMS 2000</b></p> 	<ul style="list-style-type: none"> <li>- TMS is Tank Management System</li> <li>- This Console is for up to 2 USTs only.</li> </ul>	
<p><b>TMS 3000</b></p> 	<ul style="list-style-type: none"> <li>- Up to twelve (12) USTs.</li> </ul>	
<p><b>TMS 4000</b></p>	<ul style="list-style-type: none"> <li>- Touch Screen, Digital, Fancy</li> </ul>	<p>No Photo. Have Not Seen on a System.</p>

*\*This is not a list of EVERY sensor out there. This is a list of common sensors that have been seen in multiple counties. All components are listed in LG-113 and NWGLDE. Check panel/sensor compatibility.*

Sump, UDC and Annular Sensors		
Model Number	Description	Photo (Web/Field)
<b>LS600 LDBN</b> Older Model Narrow Straight	- Used for Sump, UDC and Annular/Interstitial. - Float sensors. - Not chemical compatible float. - Annular for a DW Steel UST.	
<b>LS600 LDBN</b> 25' Cable Current Model  	- Used for Sump, UDC, Annular and can be used for high level alarm for overflow.	
<b>LS600 LDSS</b> 25" Cable  	- Used for Sump, UDC or Annular. - Stainless steel float and Teflon housing for chemical monitoring. - Compatible with MOST chemicals including Caustics.	
<b>LS610</b>  	- Wrap around for fiberglass dry interstitial.  	
<b>ES825-100F/CF</b> Older Model C = Chemical Photo is older CF Model	- Standard solid state optical sensors for dry interstitials for vaults or DW Steel USTs. - Micro sensor and can fit into more narrow interstitials. - Chemical resistant sensor body for acids, alkalines and solvents.	
<b>ES825-100F/CF</b> Current Model  	- Used for dry annular space in DW Steel USTs or other Vault like USTs. - Photos are website spec sheets. - Chemically Compatible.	
<b>RSU800</b>  	- Brine sensor dual float for brine filled fiberglass USTs. - Will have a high alarms and low alarm like the VR 303.	

*\*This is not a list of EVERY sensor out there. This is a list of common sensors that have been seen in multiple counties. All components are listed in LG-113 and NWGLDE. Check panel/sensor compatibility.*





# RONAN SYSTEMS



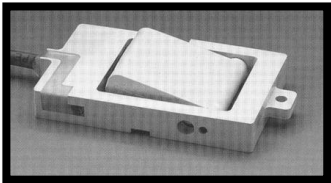

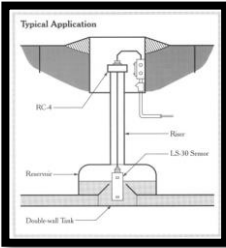

[www.ronansystems.com](http://www.ronansystems.com)

ICC Service Tech and Ronan Certifications Required

## Monitoring Panel

Model Number	Description	Photo (Field/Web)
<p><b>X76S</b></p> 	<ul style="list-style-type: none"> <li>- Approved for gasoline, diesel, waste oil and other hydrocarbons.</li> <li>- Have not seen it at a traditional gas station (Pressurized).</li> </ul>	

## Sump, UDC and Annular Sensors

<p><b>LS-3</b></p> 	<ul style="list-style-type: none"> <li>- Float sensor for UDC, Sumps and Annular for DW Steel USTs.</li> <li>- LS-1 is the same type except small diameter to fit into narrower spaces.</li> </ul> <p><a href="#">Photo: Product Brochure.</a></p>	
<p><b>LS-7</b></p> 	<ul style="list-style-type: none"> <li>- Wrap around switch annular sensor for DW Fiberglass USTs.</li> </ul> <p><a href="#">Photo: Product Brochure.</a></p>	
<p><b>LS-30</b></p> 	<ul style="list-style-type: none"> <li>- Dual Float hydrostatic reservoir sensor for Brine Filled Annular.</li> </ul> <p><a href="#">Photo: Product Brochure.</a></p>	

*\*This is not a list of EVERY sensor out there. This is a list of common sensors that have been seen in multiple counties. All components are listed in LG-113 and NWGLDE. Check panel/sensor compatibility.*








# OMNTEC

[www.omntec.com](http://www.omntec.com)

ICC Service Tech and Omntec Certifications Required







## Monitoring Panel

Model Number	Description	Photos (Field/Web)
<b>LU Series</b> 	<ul style="list-style-type: none"> <li>- LU2 Console</li> <li>- LU (#) indicates how many sensors the console can have.</li> <li>- Photo is a LU2 console for leak and one high alarms.</li> </ul>	
Sumps, UDC and Annular Sensors		
<b>LS-ASC   ASC .895</b> <b>12' Cable</b> 	<ul style="list-style-type: none"> <li>- Used for Sumps, UDCs and Annular for DW Steel USTs.</li> <li>- Noted by its Red Color.</li> <li>- Optical Sensors.</li> <li>- Can also be used for high level.</li> <li>- Solid state optical sensors.</li> </ul>	 
<b>Other</b>	<ul style="list-style-type: none"> <li>- Multiple sensors listed on LG113</li> </ul>	No Photos of other sensors.

## Universal Sensors and Devices, Inc Leak Alert System

This system is no longer manufactured and no longer certifies.

## Monitoring Panel

Model Number	Description	Photo (Field/Web)
<b>Leak Alert LA-X4</b>	<ul style="list-style-type: none"> <li>- Other possible consoles listed in LG 113: LA01, LA-02, LA-04, LA-08.</li> <li>- No longer certifications for this system.</li> </ul>	 
Sump, UDC and Annular Sensors		
<b>DLS-01</b>	<ul style="list-style-type: none"> <li>- Stand Alone Sensor</li> <li>- Looks like a Box with a solid rod going to the bottom of the UDC.</li> <li>- Other sensors in LG 113: LS-20, LS-36, LS-70.</li> </ul>	 
<b>LALS-1</b>	<ul style="list-style-type: none"> <li>- Annual Sensor for Steel DW USTs.</li> <li>- Other sensors listed in LG 113:</li> </ul>	 

*\*This is not a list of EVERY sensor out there. This is a list of common sensors that have been seen in multiple counties. All components are listed in LG-113 and NWGLDE. Check panel/sensor compatibility.*

# LINE LEAK DETECTORS (LLD)

LLDs will be located on the Turbine  
 Mechanical (MLLD) and Electronic Pressurized (PLLD)  
 Mechanical will place the system into slow flow (Trickle Mode) when detecting a leak.  
 Electronic is connected to the console and can shut down the turbine.

## VEEDER ROOT

Veeder Root RED JACKET FXV and RED JACKET CPT (Old Electronic)

Red Jacket purchased by Veeder Root in 2001

FX1V = Gasoline | FX1DV = Diesel

Older LLDs will show Red Jacket. Older version is bulkier (Right Photo)





ICC Service Tech and Veeder Root Certifications required.

**Mechanical LLD FX1X (Gas), FXDV (Diesel) *Not E85 or B100 Compatible***

FX2V (Gas) and FX2DV (Diesel) Discontinued July 1, 2021



## Electronic Pressurized LLD (PLLD)

Model Number	Description	Photo (Field/Web)
<p><b>001 Series</b></p> 	<ul style="list-style-type: none"> <li>- Can be programmed to shut down during leak alarm.</li> <li>- <b><u>Must be installed on SW Piping and programmed for 0.2 Monthly Test or 0.1 Line Tightness Test 12 Months.</u></b></li> <li>- Can run a 0.1 Annual Test for systems that do not have fail/safe that require it.</li> <li>- <i>E85 and B100 Compatible.</i></li> </ul>	
<p>Red Jacket CPT (Old Electronic)</p> 	<ul style="list-style-type: none"> <li>- Listed under Marley Pump Co. in LG 113 but is also now Veeder Root.</li> <li>- Earlier Version of Electronic.</li> <li>- Has it's own separate alarm box and will not be connected to the Veeder Root or other Console.</li> <li>- Each LLD requires it's own box (3 LLDs, 3 Boxes).</li> </ul>	

*\*This is not a list of EVERY sensor out there. This is a list of common sensors that have been seen in multiple counties. All components are listed in LG-113 and NWGLDE. Check panel/sensor compatibility.*



## VAPORLESS MANUFACTURING (VMI)

[www.vaporless.com](http://www.vaporless.com)

Website also has list of Certified Testers and Installers

[Vaporless Manufacturing Mechanical VMI LD 2000/2200 \(High Flow\)](#)

Contains an in-line adjustable pressure relief valve

*E85 or B100 Compatible (Current Model)*

Per VMI, must be tested by the VMI Leak Detector Test Equipment (LDT-890)

ICC Service Technician (Testing) and VMI Mechanical Leak Detector for install/replacement.

### Older Model LD 2000



### Current Model LD 2000



## FE PETRO FRANKLIN FUELING

[www.franklinfueling.com](http://www.franklinfueling.com)

ICC Service Tech and FMS Level 1 and Level 2 for Electronic LLD.

Usually Tested with the VMI Field Testing Box LDT-890 (Will need VMI Certification)

Mechanical LDs are connected by Solid Copper Vent Tubing.

Standard MLD+G/D = Gas/Diesel not Compatible with E85 or B100.

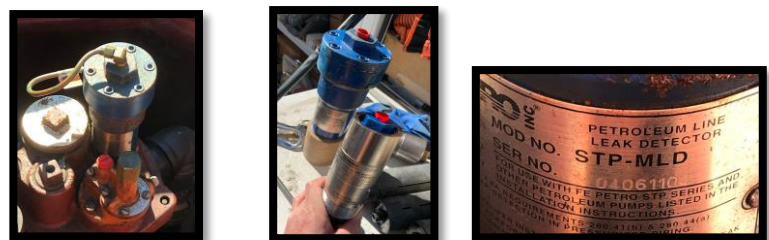
[MLD+AG = E85 Compatible](#) | [MLD+BD = B100 Compatible \(Current Models\)](#)

### Mechanical LLD FE PETRO

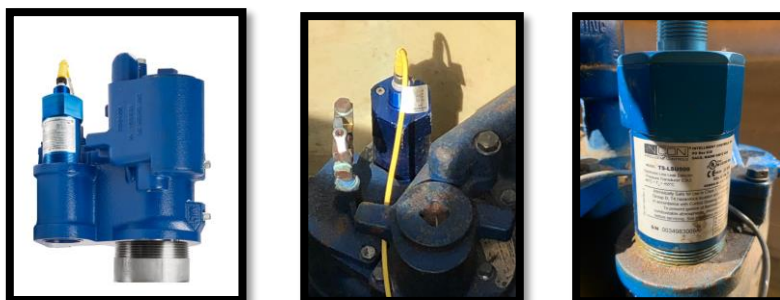
#### MLD Current Model



#### MLD Old Model



### Electronic LLD TS-LSU 500



[WEBLINK](#)

*\*This is not a list of EVERY sensor out there. This is a list of common sensors that have been seen in multiple counties. All components are listed in LG-113 and NWGLDE. Check panel/sensor compatibility.*

# Field Testing Apparatus (Boxes)

HSC and CCR Title 23 DO NOT specify HOW to certify LLDs.

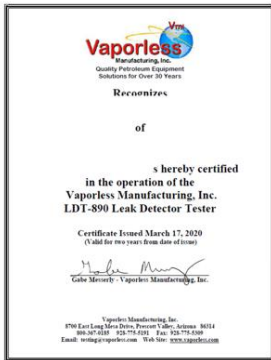
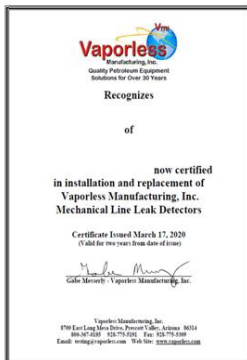
VMI States that the VMI LDT-890 must be used for the VMI LD 2000 LLD.

Tanknology has their own FTA which VMI has allowed use for LD 2000 Certification.

## Some Examples

The VMI LDT-890 Test Equipment can be used to test all Leak Detectors.

### Vaporless VMI LDT-890



### Tanknology LTD-5000



Tanknology has their own FTA which VMI has allowed use for LD 2000 Certification.

Only Tanknology technicians are certified to use this LDT Tester.

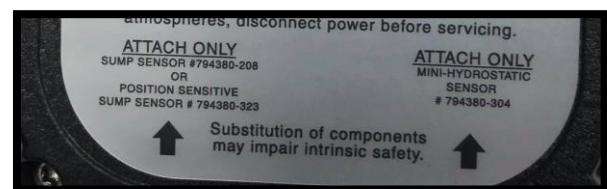
\*There are a couple other test boxes out there. VMI does not allow their LLD to be tested with these other boxes.

### VEEDER ROOT 2-1 BOX

The Veeder-Root 2 to 1 Sensor Input Box is designed for use in brine filled, double wall dispenser sumps and connects to a sump or position sensitive sump sensor installed on the base of the sump and to a mini-hydrostatic sensor monitoring the interstice brine.

The Sensor Input Box permits the TLS console to increase from 8 to 16, the number of sump/hydrostatic sensor pairs that can be monitored by one module.

Source: Veeder Root



\*This is not a list of EVERY sensor out there. This is a list of common sensors that have been seen in multiple counties. All components are listed in LG-113 and NWGLDE. Check panel/sensor compatibility.