Sensor Products

Application Guide
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**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

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# Sensor Application Matrix

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1 Single use only if sensor was exposed to E85 or E100 (Test per Sensor Operability Guide [P/N 577013-814] in E-10 or less)
2 Small Containment Areas (i.e. Spill Buckets)
# Sensor Description

This type of discriminating sensor is installed in a dispenser pan and will detect the presence of, and differentiate between, hydrocarbons and other liquids.

## Sensor Matrix

### Discriminating Dispenser Pan Sensor

<table>
<thead>
<tr>
<th>Sensor Matrix</th>
<th>Form Number</th>
<th>Where Used (Typical)</th>
<th>Fuel Compatibility</th>
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<td>Dispenser Pan</td>
<td>794380-322</td>
<td>Yes</td>
<td>Gas, Diesel</td>
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<td>Spill Containment</td>
<td>Yes</td>
<td>Yes</td>
<td>Kerosene, Jet Fuel</td>
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<td>STP Sump</td>
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<td>Yes</td>
<td>Aviation Gas</td>
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<td>Convault Tank</td>
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### Form Number

- 794380-322

### Where Used (Typical)

- Dispenser Pan
- Spill Containment
- STP Sump
- Convault Tank

### Fuel Compatibility

- Gas
- Diesel
- Kerosene
- Jet Fuel
- Aviation Gas

### Console Compatibility (International Only)

<table>
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<tr>
<th>Console Compatibility (International Only)</th>
<th>Recommended Min. Console Software</th>
<th>Module Form #</th>
<th>Module Description</th>
<th># Of Modules Per Console</th>
<th># Of Sensor Inputs Per Module</th>
<th>Availability</th>
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<td>TLS-450PLUS (8600 Series)</td>
<td>6A or Higher</td>
<td>332812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
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<td>TLS-450</td>
<td>4A or Higher</td>
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<td>Universal Sensor Module (USM)</td>
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<td>²TLS4 (8601 Series)</td>
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<td>Interstitial Sensor Interface Module</td>
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### Installation Kit

- 330020-012 Universal Sensor Mounting Kit (Sold separately)

### Alarm Notification

- Normal: Sensor in Normal State- No liquid detected
- Low Liquid: Liquid detected at a minimum of 1.37” (3.48cm)
- High Liquid: Liquid detected at a minimum of 7.66” (19.45cm)
- Fuel Alarm: Permeable material saturated with Fuel
- Sensor Out: Sensor not communicating to ATG / Console

### Specifications

- **Operating Principle**: Product Permeable, Reed Switch /Float
- **Product Activation Height**: Gas - 0.125” (3.175mm); Water - low 1.37” (3.48cm), High 7.66” (19.45cm)
- **Operating Temp**: +32 to +140°F (0 to +60°C)
- **Dimensions**: 11.6” (29.4cm) high, 2.2” (5.6cm) dia.
- **Miscellaneous / Notes**: Standard Cable Length: 12 Feet
- **Third Party Evaluation Links**: TLS-3XX/TLS-450 Series Consoles
- **Product Link**: Discriminating Dispenser Pan Sensor
- **Warranty with System**: 1 Yr Parts & Labor
- **Warranty (When purchased separately)**: 1 Yr Parts Only

### Example Installation

1. Rubber grommet seal clamped on inside - or as recommended by dispenser pan manufacturer.
2. Weatherproof junction box with 1/2-inch N.P.T. threads (16 cubic inch volume minimum).
3. Dispenser pan sensor should:
   1. Rest in the cup or the lowest point of the dispenser containment sump.
   2. Be positioned so as to be removable by pulling the sensor straight up out of the pan.
   3. Be mounted in a true vertical position.
## Sensor Description

This type of discriminating sensor is installed in a containment sump area. It detects the presence of, and differentiates between, hydrocarbons and other liquids.

### Form Number

794380-352

### Category

- Discriminating
- Non-Discriminating
- Position Sensitive
- Level Sensing
- Static Testing
- Hydrostatic

### Sensor Matrix

<table>
<thead>
<tr>
<th>Dispenser Pan</th>
<th>Annular Space</th>
<th>Monitoring Well</th>
<th>Oil/Water Separator Tank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spill Containment</td>
<td>✓</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>STP Sump</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Convault Tank</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Fuel Compatibility

- Gas
- Diesel
- Kerosene
- Jet Fuel
- Aviation Gas
- E-15
- E-85
- DEF
- Bio-Diesel 20
- Motor Oil
- Bio-Diesel 100

1 Single Use Only (Test per Sensor Operability Guide in E-10 or less)

### Console Compatibility

**Recommended Min. Console Software**

<table>
<thead>
<tr>
<th>Console</th>
<th>Module Form #</th>
<th>Module Description</th>
<th># Of Modules Per Console</th>
<th># Of Sensor Inputs Per Module</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLS-450PLUS (8600 Series) 6A or Higher</td>
<td>332812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>16</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-450 4A or Higher</td>
<td>332812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 8 - TLS-4XX w/opt. TLS-XB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2TLS4 (8601 Series) 6A or Higher</td>
<td>330020-750</td>
<td>Universal Sensor Interface Module</td>
<td>12</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4i (8601 Series)</td>
<td>330020-750</td>
<td>Universal Sensor Interface Module</td>
<td>6</td>
<td>6</td>
<td>Included</td>
</tr>
<tr>
<td>2TLS4B (8601 Series)</td>
<td>330020-751</td>
<td>Universal Sensor Interface Module</td>
<td>1</td>
<td>1</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4c (8601 Series)</td>
<td>330020-751</td>
<td>Universal Sensor Interface Module</td>
<td>8</td>
<td>8</td>
<td>Included</td>
</tr>
<tr>
<td>TLS-350/R/PLUS 124/324 or Higher</td>
<td>329358-001</td>
<td>Interstitial Sensor Interface Module</td>
<td>Up to 4</td>
<td>4</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-350J</td>
<td>329356-003</td>
<td>4 Probe / 4 Sensor Interface Module</td>
<td>4</td>
<td>4</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-300i</td>
<td>330230-001</td>
<td>4 Probe / 8 Sensor Interface Module</td>
<td>8</td>
<td>8</td>
<td>Included</td>
</tr>
<tr>
<td>TLS-300C</td>
<td>330513-001</td>
<td>2 Probe / 8 Sensor Options</td>
<td>16</td>
<td>16</td>
<td>Included</td>
</tr>
</tbody>
</table>

### Alarm Notification

- Normal: Sensor in Normal State - No liquid detected
- Low Liquid: Liquid detected at a minimum of 1.35” (3.4cm)
- High Liquid: Liquid detected at a minimum of 12.28” (31.19cm)
- Fuel Alarm: Permeable material saturated with Fuel
- Sensor Out: Sensor not communicating to ATG / Console

### Installation Kit

330020-012 Universal Sensor Mounting Kit (Sold separately)

### Specifications

- **Operating Principle**: Product Permeable, Reed Switch /Float
- **Product Activation Height**: Gas - 0.125” (3.175mm); Water - low 1.35” (3.4cm), High 12.28” (31.19cm)
- **Operating Temp**: +32 to +140°F (0 to +60°C)
- **Dimensions**: 22.1” (56.1cm) high, 2.2” (5.6cm) dia.
- **Miscellaneous / Notes**: Standard Cable Length: 12 Feet
- **Third Party Evaluation Links**: TLS-3XX/TLS-450 Series Consoles, TLS4 (8601 Series) Consoles
- **Product Link**: Discriminating Containment Sump Sensor

### Warranty

- **With System**: 1 Yr Parts & Labor
- **When purchased separately**: 1 Yr Parts Only

### Example Installation

- Submersible pump
- Containment sump sensor
- 1/2” NPT cord grip supplied w/cable
- Weatherproof junction box
- Important: do not mount sensor to flexible product line
- Seal-off
- Rigid conduit to console
- Brackets, clamp, etc., from optional Universal Sensor Mounting Kit
**Solid-State - (Optical) Discriminating Dispenser Pan Sensor**

This type of discriminating sensor is installed in a dispenser containment sump area. It detects the presence of, and differentiates between, hydrocarbons and other liquids.

### Sensor Description

- **Dispenser Pan**
- **Spill Containment**
- **STP Sump**
- **Convault Tank**
- **Annular Space**
- **Monitoring Well**
- **Oil/Water Separator Tank**

### Form Number

794380-320

### Where Used (Typical)

- Dispenser Pan
- Spill Containment
- STP Sump
- Convault Tank

### Fuel Compatibility

- Gas
- Diesel
- Kerosene
- Jet Fuel
- Aviation Gas
- E-15
- E-85
- Green Diesel
- DEF
- Waste Oil
- Bio-Diesel 20
- Motor Oil
- Bio-Diesel 100

### Console Compatibility (*International Only*)

<table>
<thead>
<tr>
<th>Console</th>
<th>Recommended Min. Console Software</th>
<th>Module Form #</th>
<th>Module Description</th>
<th># Of Modules Per Console</th>
<th># Of Sensor Inputs Per Module</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLS-450PLUS (8600 Series)</td>
<td>6A or Higher</td>
<td>332812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-450</td>
<td>4A or Higher</td>
<td>332812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>2TLS4 (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-750</td>
<td>Universal Sensor Module (USM)</td>
<td>6</td>
<td>Included</td>
<td></td>
</tr>
<tr>
<td>TLS4r (8601 Series)</td>
<td>4A or Higher</td>
<td>330020-750</td>
<td>Universal Sensor Module (USM)</td>
<td>4</td>
<td>Included</td>
<td></td>
</tr>
<tr>
<td>2TLS4B (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-751</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 8</td>
<td>6</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS4c (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-751</td>
<td>Universal Sensor Module (USM)</td>
<td>6</td>
<td>Included</td>
<td></td>
</tr>
<tr>
<td>TLS-350/R/PLUS</td>
<td>124/324 or Higher</td>
<td>329950-001</td>
<td>Type B Interface Module</td>
<td>Up to 8</td>
<td>6</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-350/PLUS</td>
<td>NA</td>
<td></td>
<td>NA</td>
<td>NA</td>
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</tr>
<tr>
<td>TLS-300i</td>
<td>NA</td>
<td></td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>TLS-300C</td>
<td>NA</td>
<td></td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

### Alarm Notification

- Normal: Sensor in Normal State- No liquid detected
- Low Liquid: Liquid detected at a minimum of 1.37” (3.4cm)
- High Liquid: Liquid detected at a minimum of 7.66” (19.45cm)
- Fuel Alarm: Permeable material saturated with fuel
- Sensor Out: Sensor not communicating to ATG / Console

### Installation Kit

- 330020-012 Universal Sensor Mounting Kit (Sold separately)

### Specifications

**Operating Principle**: Electrical conductivity / optical

**Product Activation Height**: Gas - 0.125” (3.175mm); Water - low 1.37” (3.4cm), High 7.66” (19.45cm)

**Operating Temp**: -40 to +122°F (-40 to +50°C)

**Dimensions**: 11.6” (29.4cm) high, 2.2” (5.6cm) dia.

**Miscellaneous / Notes**: Standard Cable Length: 12 Feet

**Third Party Evaluation Links**
- TLS-350/TLS-450 Series Consoles
- TLS4 (8601 Series) Consoles

**Product Link**: Solid-State Discriminating Dispenser Pan Sensor

**Warranty with System**: 1 Yr Parts & Labor

**Warranty (When purchased separately)**: 1 Yr Parts Only

---

*Dispenser pan sensor should:
1. Rest in the cup or the lowest point of the dispenser pan.
2. Be positioned so as to be removable by pulling the sensor straight up out of the pan.
3. Be mounted in a true vertical position.*
## Solid-State - (Optical)
### Discriminating Containment Sump Sensor

This type of discriminating sensor is installed in a containment sump and will detect the presence of, and differentiate between, hydrocarbons and other liquids.

### Form Number

**794380-350**

---

### Sensor Description

- **Solid-State - (Optical)**
- **Discriminating Containment Sump Sensor**

This type of discriminating sensor is installed in a containment sump and will detect the presence of, and differentiate between, hydrocarbons and other liquids.

### Where Used (Typical)

- Dispenser Pan
- Spill Containment
- STP Sump
- Convault Tank
- Annular Space
- Monitoring Well
- Oil/Water Separator Tank

---

### Fuel Compatibility

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>Compatibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas</td>
<td>E-15</td>
</tr>
<tr>
<td>Diesel</td>
<td>E-85&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>Kerosene</td>
<td>E-100</td>
</tr>
<tr>
<td>Jet Fuel</td>
<td>Bio-Diesel 20</td>
</tr>
<tr>
<td>Aviation Gas</td>
<td>Bio-Diesel 100</td>
</tr>
</tbody>
</table>

<sup>1</sup> Single Use Only (Test per Sensor Operability Guide in E-10 or less)

---

### Console Compatibility (*International Only*)

<table>
<thead>
<tr>
<th>Console</th>
<th>Min. Console Software</th>
<th>Module Form #</th>
<th>Module Description</th>
<th># Of Modules Per Console</th>
<th># Of Sensor Inputs Per Module</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLS-450PLUS (8600 Series)</td>
<td>6A or Higher</td>
<td>332812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-450</td>
<td>4A or Higher</td>
<td>332812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>2TLS4 (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-750</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>1</td>
<td>6</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4i (8601 Series)</td>
<td></td>
<td>330020-750</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>1</td>
<td>6</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4 (8601 Series)</td>
<td></td>
<td>330020-751</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>1</td>
<td>6</td>
<td>Included</td>
</tr>
<tr>
<td>TLS-350/R/PLUS</td>
<td>124/324 or Higher</td>
<td>329950-001</td>
<td>Type B Interface Module</td>
<td>Up to 8</td>
<td>6</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-300</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS-300C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

### Alarm Notification

- Normal: Sensor in Normal State - No liquid detected
- Low Liquid: Liquid detected at a minimum of 1.37" (3.48cm)
- High Liquid: Liquid detected at a minimum of 10.3" (26.2cm)
- Fuel Alarm: Permeable material saturated with Fuel
- Sensor Out: Sensor not communicating to ATG / Console

---

### Installation Kit

330020-012 Universal Sensor Mounting Kit (Sold separately)

---

### Specifications

- **Operating Principle**: Electrical conductivity / optical
- **Product Activation Height**: Gas - 0.125" (3.175mm); Water - Low - 1.37" (3.4cm), High - 10.3" (26.2cm)
- **Operating Temp**: -40 to +122°F (-40 to +50°C)
- **Dimensions**: 22.1" (56.1cm) high, 2.2" (5.6cm) dia.
- **Miscellaneous / Notes**: Standard Cable Length: 12 Feet
- **Third Party Evaluation Links**: TLS-350/TLS-450 Series Consoles TLS4 (8601 Series) Consoles
- **Product Link**: Solid-State Discriminating Containment Sump Sensor
- **Warranty with System**: 1 Yr Parts & Labor
- **Warranty (When purchased separately)**: 1 Yr Parts Only

---

### Example Installation

[Diagram showing installation of sensor and related components such as pumps, junction boxes, and sensor mountings.]
**Sensor Description**

**Magnetostrictive Discriminating Level Indicating Containment Sump Sensor**

This type of sensor is installed in a dispenser pan or containment sump and will detect the presence of, and differentiate between, fuel and other liquids.

**Form Number**

857080-111 (12''), -112 (24'') / 857080-211 (12''), -212 (24''). The -211 and -212 sensors are capable of performing a Sump Integrity Test.

**Where Used (Typical)**

- Dispenser Pan
- Spill Containment
- STP Sump
- Convault Tank
- Annular Space
- Monitoring Well
- Oil/Water Separator Tank

**Fuel Compatibility**

- Gas
- Diesel
- Kerosene
- Jet Fuel
- Aviation Gas
- E-15
- E-85
- DEF
- Waste Oil
- Bio-Diesel 20
- Motor Oil
- Bio-Diesel 100
- Green Diesel
- Jet Fuel
- Aviation Gas
- E-15
- E-85
- DEF
- Waste Oil
- Bio-Diesel 20
- Motor Oil
- Bio-Diesel 100

**Console Compatibility (International Only)**

<table>
<thead>
<tr>
<th>Recommended Min. Console Software</th>
<th>Module Form #</th>
<th>Module Description</th>
<th># Of Modules Per Console</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLS-450PLUS (8600 Series) 6A or Higher</td>
<td>332812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
</tr>
<tr>
<td>TLS-450 4A or Higher</td>
<td>332812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
</tr>
<tr>
<td>TLS4 (8601 Series) 6A or Higher</td>
<td>330020-750</td>
<td>Universal Sensor Input/Output Module (USIOM-AC)</td>
<td>1</td>
</tr>
<tr>
<td>TLS4i (8601 Series) 6A or Higher</td>
<td>330020-751</td>
<td>Universal Sensor Input/Output Module (USIOM-AC)</td>
<td>1</td>
</tr>
<tr>
<td>TLS4B (8601 Series)</td>
<td>330020-751</td>
<td>Universal Sensor Input/Output Module (USIOM-AC)</td>
<td>1</td>
</tr>
<tr>
<td>TLS4c (8601 Series)</td>
<td>330020-751</td>
<td>Universal Sensor Input/Output Module (USIOM-AC)</td>
<td>1</td>
</tr>
<tr>
<td>TLS-350/R/PLUS 124/324 or Higher (-211 and -212 sensors require 126/326 or higher)</td>
<td>329356-004</td>
<td>Smart Sensor Interface Module</td>
<td>Up to 8</td>
</tr>
</tbody>
</table>

**Alarm Notification**

- Normal
- Water Alarm
- Fuel Alarm
- Sensor Comm Alarm

**Installation Kit**

- Universal Sensor Mounting Kit (Sold separately)

**Specifications**

- Operating Principle: Magnetostrictive probe with dual floats
- Product Activation Height: Water 1.614'' (4.1cm), Fuel 1.368'' (3.47cm)
- Operating Temp: -40°C to +60°C
- Dimensions: 2.4'' (6.1cm) Diameter; 21.4'' (54.4cm) Long (-111 and -211 models), 33.4'' (84.8cm) Long (-112 and -212 models)
- Miscellaneous / Notes: Standard Cable Length: 10 Feet
- Product Link: Mag Sump Sensor
- Warranty with System: 1 Yr Parts & Labor
- Warranty (When purchased separately): 1 Yr Parts Only
Sensor Description: Solid-State - Non-Discriminating Dispenser Pan Sensor

This solid-state, non-discriminating sensor is installed typically in a dispenser pan location to detect the presence of a liquid. Its optical liquid level technology requires no moving parts, allowing it to operate in sub-zero temperatures.

Form Number: 794380-321

Where Used (Typical):
- Dispenser Pan
- Spill Containment
- STP Sump
- Convault Tank
- Annular Space
- Monitoring Well
- Oil/Water Separator Tank

Fuel Compatibility:
- Gas E-15
- Diesel E-85
- Kerosene E-100
- Jet Fuel Bio-Diesel 20
- Aviation Gas Bio-Diesel 100

Consol compatibility (*international only):

<table>
<thead>
<tr>
<th>Console Compatibility</th>
<th>Recommended Module Form #</th>
<th>Module Description</th>
<th># Of Modules Per Console</th>
<th># Of Sensor Inputs Per Module</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLS-450PLUS (8600 Series)</td>
<td>6A or Higher</td>
<td>332812-001 Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>16</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-450</td>
<td>4A or Higher</td>
<td>332812-001 Universal Sensor Module (USM)</td>
<td>Up to 8 - TLS-4XX w/opt. TLS-XB</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4i (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-751 Universal Sensor Input Output Module (USIO-M-AC)</td>
<td>1</td>
<td>6</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS4c (8601 Series)</td>
<td>330020-751</td>
<td>Type A Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-350/R/PLUS</td>
<td>124/324 or Higher</td>
<td>329956-001</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>TLS-350J</td>
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<td></td>
</tr>
<tr>
<td>TLS-300i</td>
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<tr>
<td>TLS-300C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Alarm Notification:
- Normal Sensor in Normal State - No liquid detected
- Fuel Alarm Liquid detected - Approx. 1.0" (2.54cm)
- Sensor Out Sensor not communicating to ATG / Console

Installation Kit:
- 330020-012 Universal Sensor Mounting Kit (Sold separately)

Specifications:
- Operating Principle: Optical - Looking at phase changes in the light beams by causing them to interact or interfere with one another
- Product Activation Height: Fuel or Water - Approx. 1" (2.54cm)
- Operating Temp: -40 to +122°F (-40 to +50°C)
- Dimensions: 11.6" (29.4cm) high, 2.2" (5.6cm) dia.
- Miscellaneous / Notes: Standard Cable Length: 12 Feet (3.66m)
- Third Party Evaluation Links:
  - TLS-3XX/TLS-450 Series Consoles
  - TLS4 (8601 Series) Consoles

Example Installation:
- Weatherproof junction box with 1/2-inch N.P.T. threads (16 cubic inch volume minimum).
- Rubber grommet seal clamped on inside - or as recommended by dispenser pan manufacturer.
- 1/2'' Rigid conduit to console
- Dispenser pan sensor*
- Brackets, clamp, etc., from Universal sensor mounting kit

*Dispenser pan sensor should:
1. Rest in the cup or the lowest point of the dispenser pan.
2. Be positioned so as to be removable by pulling the sensor straight up out of the pan.
3. Be mounted in a true vertical position.
**Sensor Description**

**Solid-State - Non-Discriminating Containment Sump Sensor**

This solid-state, non-discriminating sensor is installed typically in a containment sump area to detect the presence of a liquid. Its optical liquid level technology requires no moving parts, allowing it to operate in sub-zero temperatures.

**Form Number**

794380-351

**Where Used (Typical)**

- Dispenser Pan
- Spill Containment
- STP Sump
- Convault Tank
- Annular Space
- Monitoring Well
- Oil/Water Separator Tank

**Fuel Compatibility**

- Gas
- Diesel
- Jet Fuel
- Aviation Gas
- Kerosene
- E-15
- E-85
- E-100
- DEF
- Waste Oil
- Bio-Diesel 20
- Bio-Diesel 100

**Console Compatibility**

(*International Only*)

**Recommended Min. Console Software**

<table>
<thead>
<tr>
<th>Module Form #</th>
<th>Module Description</th>
<th># Of Modules Per Console</th>
<th># Of Sensor Inputs Per Module</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLS-450PLUS (8600 Series) 6A or Higher 332812-001 Universal Sensor Module (USM) Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/opt. TLS-XB 16 Sold Separately</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS-450 4A or Higher 332812-001 Universal Sensor Module (USM) Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/opt. TLS-XB 16 Sold Separately</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>¹TLS4 (8601 Series) 6A or Higher 330020-750 Universal Sensor Input Output Module (USIOM-AC) 1 Included</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS4i (8601 Series) 330020-750 6 Included</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>¹TLS4B (8601 Series) 330020-751 12 Included</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS4c (8601 Series) 330020-751 6 Included</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS-350/R/PLUS 124/324 or Higher 8 Sold Separately</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>330020-012 Universal Sensor Mounting Kit (Sold separately)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Alarm Notification**

- Normal: Sensor in Normal State - No liquid detected
- Fuel Alarm: Liquid detected - Approx. 1.0” (2.54cm)
- High Liquid: Sensor not communicating to ATG / Console

**Installation Kit**

330020-012 Universal Sensor Mounting Kit (Sold separately)

**Specifications**

- **Operating Principle**: Optical - Looking at phase changes in the light beams by causing them to interact or interfere with one another
- **Product Activation Height**: Fuel or Water - Approx. 1” (2.54cm)
- **Operating Temp**: -40 to +122°F (-40 to +50°C)
- **Dimensions**: 22.1” (56.1cm) high, 2.2” (5.6cm) dia.
- **Miscellaneous / Notes**: Standard Cable Length: 12 Feet (3.66m)
- **Third Party Evaluation Links**: TLS-350/TLS-450 Series Consoles, TLS4 (8601 Series) Consoles
- **Product Link**: Solid-State Non-Discriminating Containment Sump Sensor

**Warranty**

- With System: 1 Yr Parts & Labor
- When purchased separately: 1 Yr Parts Only

---

**Important!** DO NOT MOUNT SENSOR TO FLEXIBLE PRODUCT LINE.
### Sensor Description

**Piping Sump Sensor**
The piping Sump Sensor is installed in a tank piping sump (STP Containment Sump) and will detect the presence of a liquid.

### Where Used (Typical)

<table>
<thead>
<tr>
<th>Category</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dispenser Pan</td>
</tr>
<tr>
<td></td>
<td>Spill Containment</td>
</tr>
<tr>
<td></td>
<td>STP Sump</td>
</tr>
<tr>
<td></td>
<td>Convault Tank</td>
</tr>
</tbody>
</table>

### Fuel Compatibility

- **Gas**
  - E–15
- **Diesel**
  - E–85
- **Kerosene**
  - E–100
- **Jet Fuel**
  - Bio–Diesel 20
- **Aviation Gas**
  - Bio–Diesel 100

### Console Compatibility (*International Only*)

<table>
<thead>
<tr>
<th>Recommended Min. Console Software</th>
<th>Module Form #</th>
<th>Module Description</th>
<th># Of Modules Per Console</th>
<th># Of Sensor Inputs Per Module</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLS-450PLUS (8600 Series)</td>
<td>6A or Higher</td>
<td>332812-001 Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>Up to 8 - TLS-4XX w/opt. TLS-XB</td>
<td>16</td>
</tr>
<tr>
<td>TLS-450</td>
<td>4A or Higher</td>
<td>332812-001 Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>Up to 8 - TLS-4XX w/opt. TLS-XB</td>
<td>16</td>
</tr>
<tr>
<td>1TLS4 (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-750 Universal Sensor Input Output Module (USIOM-AC)</td>
<td>1</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4i (8601 Series)</td>
<td></td>
<td>330020-750 Universal Sensor Input Output Module (USIOM-AC)</td>
<td>1</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>1TLS4B (8601 Series)</td>
<td></td>
<td>330020-750 Universal Sensor Input Output Module (USIOM-AC)</td>
<td>1</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4c (8601 Series)</td>
<td></td>
<td>330020-750 Universal Sensor Input Output Module (USIOM-AC)</td>
<td>1</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>TLS-350/R/PLUS</td>
<td>124/324 or Higher</td>
<td>329358-001 Interstitial Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-350J</td>
<td></td>
<td>329356-003 4 Probe / 4 Sensor Interface Module</td>
<td>4</td>
<td>4</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-300i</td>
<td></td>
<td>330230-001 4 Probe / 8 Sensor Interface Module</td>
<td>8</td>
<td>8</td>
<td>Included</td>
</tr>
<tr>
<td>TLS-300C</td>
<td></td>
<td>330513-001 2 Probe / 8 Sensor Options</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Alarm Notification

- **Normal**
  - Sensor in Normal State: No liquid detected
- **Fuel Alarm**
  - Liquid detected at a minimum of 1.84” (4.67cm)
- **Sensor Out**
  - Sensor not communicating to ATG / Console

### Installation Kit

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>330020-076</td>
<td>Sensor Mounting Kit is included (see example installation below).</td>
</tr>
</tbody>
</table>

### Specifications

- **Operating Principle**
  - Float/magnetic reed switch
- **Product Activation Height**
  - Liquid 1.84” (4.67cm)
- **Operating Temp**
  - +32 to +140°F (0 to +60°C)
- **Dimensions**
  - 12” (30.5cm) high, 1.9” (4.8cm) dia.
- **Miscellaneous / Notes**
  - Standard Cable Length: 12 Feet (3.66m). Installation kit 330020-076 included (see example installation).
- **Third Party Evaluation Links**
  - TLS-3XX/TLS-450 Series Consoles
  - TLS4 (8601 Series) Consoles

### WARRANT WITH SYSTEM

- **1 Yr Parts & Labor**
- **Warranty (When purchased separately)**
  - 1 Yr Parts Only

---

**IMPORTANT!**

DO NOT MOUNT SENSOR TO FLEXIBLE PRODUCT LINE.

---

**Example Installation**

- **Cable to junction box and seal-off**
- **Existing conduit or piping**
- **Product pipe**
- **Sump sensor**
- **Sump base**

*Sump sensor should:
1. Rest on the base of the sump.
2. Be positioned as close to outer wall as possible.
3. Be mounted in a true vertical position.
4. Be installed only in a dry sump.*
### Sensor Description

**Non-Discriminating Standalone Dispenser Pan Sensor**

The Non-Discriminating Standalone Dispenser Pan Sensor is designed to detect liquid in a dispenser pan containment. When fluid is detected in the dispenser pan, this sensor shuts down (removes) AC power to the dispenser without the need for additional relays, circuitry, wiring, or an ATG System. The separate sensor control interface ensures intrinsically-safe integrity in a Class 1 Div. 1 Group D; Class 1 Zone 0 IIA hazardous area.

### Form Number

847990-001

### Where Used (Typical)

- Dispenser Pan
- Spill Containment
- STP Sump
- Convault Tank
- Annular Space
- Monitoring Well
- Oil/Water Separator Tank

### Fuel Compatibility

- Gas
- Diesel
- Kerosene
- Jet Fuel
- Aviation Gas
- E-15
- E-85
- E-100
- Bio-Diesel 20
- Bio-Diesel 100
- DEF
- Green Diesel
- Waste Oil
- Motor Oil
- Neutral
- Gas
- Diesel
- Kerosene
- Jet Fuel
- Aviation Gas
- E-15
- E-85
- E-100
- Bio-Diesel 20
- Bio-Diesel 100
- DEF
- Green Diesel
- Waste Oil
- Motor Oil

### Console Compatibility

Not Required

### Alarm Notification

- Normal Dispenser operational
- Liquid detected Remove power to the dispenser
- Sensor out Remove power to the dispenser

### Installation Kit

330020-012 Universal Sensor Mounting Kit (Sold separately)

### Specifications

- **Operating Principle**: Reed switch/float
- **Product Activation Height**: Gasoline: 1.71” (4.34cm), water: 1.62” (4.11cm)
- **Operating Temp**: +32 to +140°F (0 to +60°C) (freezing liquids)
- **Dimensions**: 11.6” (29.4cm) high, 2.2” (5.6cm) dia.

### Miscellaneous / Notes

- Latching alarm circuitry ensures dispenser can’t be restarted until hazardous condition has been corrected.
- Connects directly to dispenser wiring.
- Controls most manufacturer’s dispensers.
- Cable length: 5 feet (1.5m).
- Control interface dimensions: 9.4” (23.9cm) high, 2.2” (5.6cm) dia.

### Third Party Evaluation Links

http://nwglde.org/evals/veeder_root_p.html

### Product Link

Non-Discriminating Stand-Alone Dispenser Pan Sensor

### Warranty with System

1 Yr Parts & Labor

### Warranty (When purchased separately)

1 Yr Parts Only

---

**Example Installation**

1. Rest in the cup or the lowest point of the dispenser pan.
2. Be positioned so as to be removable by pulling the sensor straight up out of the pan.
3. Be mounted in a true vertical position.

---

**Dispenser Control Interface**

- Power 120 Vac
- Neutral
- Existing conduit
- 1-1/2" to 3/4" NPT Reducer
- 3/4" NPT nipple (Customer supplied)
- Junction box (in dispenser)
- Optional Universal Sensor mounting kit
## Sensor Description

This Sensor is installed in a containment sump or dispenser pan and will detect the presence of, and differentiate between, hydrocarbons and other liquids.

### Position Sensitive Sensor

- **Form Number:** 794380-323

### Where Used (Typical)

- **Dispenser Pan**
- **Spill Containment**
- **STP Sump**
- **Convault Tank**

### Fuel Compatibility

- **Gas**
- **Diesel**
- **Kerosene**
- **Jet Fuel**
- **Aviation Gas**
- **E-15**
- **E-85**
- **E-100**
- **DEF**
- **Bio-Diesel 20**
- **Motor Oil**
- **Bio-Diesel 100**

### Console Compatibility (*International Only*)

<table>
<thead>
<tr>
<th>Console Compatibility</th>
<th>Recommended Min. Console Software</th>
<th>Module Form #</th>
<th>Module Description</th>
<th># Of Modules Per Console</th>
<th># Of Sensor Inputs Per Module</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLS-450PLUS (8600 Series)</td>
<td>6A or Higher</td>
<td>332812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>16</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-450</td>
<td>4A or Higher</td>
<td>332812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 8 - TLS-4XX w/ opt. TLS-XB</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td><strong>1TLS4 (8601 Series)</strong></td>
<td>6A or Higher</td>
<td>330020-750</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>1</td>
<td>6</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4i (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-750</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>1</td>
<td>6</td>
<td>Included</td>
</tr>
<tr>
<td><strong>1TLS4B (8601 Series)</strong></td>
<td>6A or Higher</td>
<td>330020-751</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>1</td>
<td>6</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4c (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-751</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>1</td>
<td>6</td>
<td>Included</td>
</tr>
<tr>
<td>TLS-350/R/PLUS</td>
<td>124/324 or higher</td>
<td>329358-001</td>
<td>Interstitial Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-350J</td>
<td>124/324 or higher</td>
<td>329356-003</td>
<td>4 Probe / 4 Sensor Interface Module</td>
<td>4</td>
<td>Included</td>
<td></td>
</tr>
<tr>
<td>TLS-300i</td>
<td>124/324 or higher</td>
<td>330230-001</td>
<td>4 Probe / 8 Sensor Interface Module</td>
<td>8</td>
<td>Included</td>
<td></td>
</tr>
<tr>
<td>TLS-300C</td>
<td>124/324 or higher</td>
<td>330513-001</td>
<td>2 Probe / 8 Sensor Options</td>
<td>8</td>
<td>Included</td>
<td></td>
</tr>
</tbody>
</table>

### Alarm Notification

- **Normal**
- **Sensor Out alarm**
- **Fuel alarm**

### Installation Kit

- **330020-012** Universal Sensor Mounting Kit (Sold separately)

### Specifications

- **Operating Principle**: Product permeable, reed switch / float
- **Product Activation Height**: Liquid - Approx. 1.5” (3.81cm)
- **Operating Temp**: +32 to +140°F (0 to 60°C)
- **Dimensions**: 12” (30.5cm) high, 2.2” (5.6cm) dia.
- **Miscellaneous / Notes**: Standard Cable Length: 12 Feet (3.66m).
- **Third Party Evaluation Links**: TLS-3XX/TLS-450 Series Consoles, TLS4 (8601 Series) Consoles
- **Product Link**: Position Sensitive Sensor
- **Warranty with System**: 1 Yr Parts & Labor
- **Warranty (When purchased separately)**: 1 Yr Parts Only

---

**IMPORTANT!**

DO NOT MOUNT SENSOR TO FLEXIBLE PRODUCT LINE.

---

**IMPORTANT!**

Housing must compress position indicator against bottom of the sump or you will have a 'Sensor Out' alarm.

---

**Submersible pump**

**Containment sump**

**Sensor**

**1/2” NPT cord grip supplied w/cable**

**Weatherproof junction box**

**Seal-off**

**Rigid conduit to console**

**Brackets, clamp, etc. from optional Universal sensor mounting kit**

**Product line**

---
### Sensor Description

**Solid-State (Optical) Discriminating Interstitial Sensor for Double-Wall Fiberglass Tanks**

The Discriminating Interstitial Sensor for double-wall fiberglass tanks uses solid-state liquid level sensing technology to detect liquid in the interstitial space of the tank.

### Form Number

**794380-343**

### Where Used (Typical)

- Dispenser Pan
- Spill Containment
- STP Sump
- Convaut Tank

### Fuel Compatibility

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>Compatibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas</td>
<td>E--15</td>
</tr>
<tr>
<td>Diesel</td>
<td>E--85</td>
</tr>
<tr>
<td>Kerosene</td>
<td>E--100</td>
</tr>
<tr>
<td>Jet Fuel</td>
<td>Bio-Diesel 20</td>
</tr>
<tr>
<td>Aviation Gas</td>
<td>Bio-Diesel 100</td>
</tr>
<tr>
<td></td>
<td>Green Diesel</td>
</tr>
<tr>
<td></td>
<td>DEF</td>
</tr>
<tr>
<td></td>
<td>Waste Oil</td>
</tr>
</tbody>
</table>

### Console Compatibility (*International Only*)

<table>
<thead>
<tr>
<th>Console</th>
<th>Min. Console Software</th>
<th>Module Form #</th>
<th>Module Description</th>
<th># Of Modules Per Console</th>
<th># Of Sensor Inputs Per Module</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLS-450PLUS</td>
<td>6A or Higher</td>
<td>323821-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>16</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-450</td>
<td>4A or Higher</td>
<td>323821-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 8 - TLS-4XX w/opt. TLS-XB</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4 (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-750</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>1</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>TLS4B (8601 Series)</td>
<td></td>
<td>330020-751</td>
<td>Type A Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-350/R/PLUS</td>
<td>124/324 or Higher</td>
<td>329956-001</td>
<td>Sensor in Normal State - No liquid detected</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS-350J</td>
<td></td>
<td></td>
<td>Liquid alarm</td>
<td>Water detected</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS-300i</td>
<td></td>
<td></td>
<td>Fuel alarm</td>
<td>Fuel or Fuel/Water detected</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS-300C</td>
<td></td>
<td></td>
<td>Sensor out</td>
<td>Sensor not communicating to ATG / Console</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Specifications

<table>
<thead>
<tr>
<th>Category</th>
<th>Discriminating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Discriminating</td>
<td></td>
</tr>
<tr>
<td>Position Sensitive</td>
<td></td>
</tr>
<tr>
<td>Level Sensing</td>
<td></td>
</tr>
<tr>
<td>Static Testing</td>
<td></td>
</tr>
<tr>
<td>Hydrostatic</td>
<td></td>
</tr>
</tbody>
</table>

### Alarm Notification

- Normal
- Liquid alarm
- Fuel alarm
- Sensor out

### Example Installation

- Manhole Seal-off
- Weatherproof junction box
- Rigid conduit (to Console)
- Sensor must reach bottom of tank

---

### Third Party Evaluation Links

- **TLS-350/TLS-450 Series Consoles**
- **TLS4 (8601 Series) Consoles**

### Product Link

- [Solid-State Discriminating Interstitial Sensor](#)

### Warranty

- **Warranty with System**
  - 1 Yr Parts & Labor
- **Warranty (When purchased separately)**
  - 1 Yr Parts Only
### Sensor Description

**Interstitial Sensor for Double-Wall Fiberglass Tanks**

The Non-Discriminating Interstitial Sensor for double-wall fiberglass tanks detects the presence of liquid in the interstitial space of the tank.

### Form Number

**794390-409**

### Where Used (Typical)

- Dispenser Pan
- Split Containment
- STP Sump
- Convirtank

### Fuel Compatibility

- Gas
- Diesel
- Jet Fuel
- Aviation Gas
- Kerosene
- E-15
- E-85
- E-100
- DEF
- Waste Oil
- Bio-Diesel 20
- Bio-Diesel 100

### Console Compatibility (*International Only*)

**Recommended Min. Console Software**

<table>
<thead>
<tr>
<th>Console Compatibility</th>
<th>Module Form #</th>
<th>Module Description</th>
<th># Of Modules Per Console</th>
<th># Of Sensor Inputs Per Module</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLS-450 PLUS (8600 Series)</td>
<td>6A or Higher</td>
<td>323812-001 Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>16</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-450</td>
<td>4A or Higher</td>
<td>323812-001 Universal Sensor Module (USIOM-AC)</td>
<td>Up to 8 - TLS-4XX w/ opt. TLS-XB</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4i (8601 Series)</td>
<td>330020-750</td>
<td>4 Probe / 4 Sensor Interface Module</td>
<td>1</td>
<td>6</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4b (8601 Series)</td>
<td>330020-751</td>
<td>4 Probe / 8 Sensor Interface Module</td>
<td>8</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-350/R/PLUS</td>
<td>124/324 or Higher</td>
<td>329358-001 Interstitial Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-350J</td>
<td>329356-003</td>
<td>4 Probe / 4 Sensor Interface Module</td>
<td>4</td>
<td>4</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-300i</td>
<td>330230-001</td>
<td>4 Probe / 8 Sensor Interface Module</td>
<td>8</td>
<td>8</td>
<td>Included</td>
</tr>
<tr>
<td>TLS-300C</td>
<td>330513-001</td>
<td>2 Probe / 8 Sensor Options</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Alarm Notification

- Normal: Sensor in Normal State - No liquid detected
- Liquid alarm: Liquid detected
- Sensor out: Sensor not communicating to ATG / Console

### Specifications

**Operating Principle**  Reed switch / float

**Product Activation Height**  0.28" (0.71cm)

**Operating Temp**  -4 to +140°F (-20 to +60°C)

**Dimensions**  2.2" (5.6cm) length, 1.3" (3.3cm) width, 0.6" (1.5cm) thick

**Miscellaneous / Notes**  Standard cable 25 feet (7.6m) fits 4 to 10 feet 1.2 to 3m I.D. fiberglass tanks

**Example Installation**

- Manhole Seal-off
- Rigid conduit (to Console)
- Weatherproof junction box
- Standard cable 25 feet (7.6m) fits 4 to 10 feet 1.2 to 3m I.D. fiberglass tanks

**Third Party Evaluation Links**

- TLS-3XX/TLS-450 Series Consoles
- TLS4 (8601 Series) Consoles

**Product Link**

- Non-Discriminating Interstitial Sensor

**Warranty with System**  1 Yr Parts & Labor

**Warranty (When purchased separately)**  1 Yr Parts Only
**Sensor Description**

Solid-State Alternative Ethanol Fluid Interstitial Sensor for Double-Wall Fiberglass Tanks

The interstitial sensor for double-wall fiberglass tanks with high alcohol product uses solid-state liquid level sensing technology to detect liquid in the interstitial space of the tank.

---

**Form Number**

794380-345

---

**Where Used (Typical)**

- Dispenser Pan
- Spill Containment
- STP Sump
- Convault Tank

**Category**

- Discriminating
- Non-Discriminating
- Position Sensitive
- Level Sensing
- Static Testing
- Hydrostatic

---

**Fuel Compatibility**

- Gas
- Diesel
- Kerosene
- Jet Fuel
- Aviation Gas
- E-15
- E-85
- E-100
- Bio-Diesel 20
- Bio-Diesel 100
- Green Diesel
- DEF
- Waste Oil

---

**Console Compatibility (“International Only”)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Module Form</th>
<th>Module Description</th>
<th># of Modules Per Console</th>
<th># of Sensor Inputs Per Module</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLS-450PLUS (8600 Series)</td>
<td>6A or Higher</td>
<td>332812-001 Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>16</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-450</td>
<td>4A or Higher</td>
<td>332812-001 Universal Sensor Module (USM)</td>
<td>Up to 8 - TLS-4XX w/opt. TLS-XB</td>
<td>16</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS4 (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-750 Universal Sensor Input Output Module (USIOM-AC)</td>
<td>12</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4i (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-751 Universal Sensor Input Output Module (USIOM-AC)</td>
<td>6</td>
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<td>Included</td>
</tr>
<tr>
<td>TLS4c (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-751 Universal Sensor Input Output Module (USIOM-AC)</td>
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<tr>
<td>TLS-350/R/PLUS</td>
<td>124/324 or Higher</td>
<td>329956-001 Type A Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-350J</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>TLS-300i</td>
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<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

---

**Alarm Notification**

- Normal: Sensor in Normal State - No liquid detected
- Fuel alarm: Liquid detected
- Sensor out: Sensor not communicating to ATG / Console

---

**Specifications**

**Operating Principle**

Optical - looking at phase changes in the light beams by causing them to interact or interfere with one another

**Product Activation Height**

Fuel or Water <0.2” (0.5cm); E85 <0.4” (1cm)

**Operating Temp**

-40 to +122°F (-40 to +50°C)

**Dimensions**

4.3” (11cm) length, 1.5” (3.8cm) width, 0.5” (1.3cm) thick

**Miscellaneous / Notes**

- Standard Cable 25 feet (7.6m) Fits 4 to 10 foot [1.2 to 3m] I.D. fiberglass tanks
- Product Link: Solid-State Alternative Ethanol Fluid Interstitial Sensor
- Warranty with System: 1 Yr Parts & Labor
- Warranty (When purchased separately): 1 Yr Parts Only

---

**Example Installation**

Manhole - Seal-off
Riser - Weatherproof junction box
Fiberglass Tank
Sensor must reach bottom of tank.
Veeder-Root Sensor Application Guide

<table>
<thead>
<tr>
<th>Sensor Description</th>
<th>Interstitial Sensor for Steel Tanks</th>
<th>The Interstitial Sensor for steel tanks is non-discriminating and detects the presence of liquid between the double walls of the tank.</th>
</tr>
</thead>
</table>

**Form Number**

| 794390-420 (16' cable); 794390-460 (30' cable) |

Where Used (Typical)

- Dispenser Pan
- Spill Containment
- STP Sump
- Convault Tank
- Annular Space
- Monitoring Well
- Oil/Water Separator Tank

**Category**

- Discriminating
- Non-Discriminating
- Position Sensitive
- Level Sensing
- Static Testing
- Hydrostatic

**Fuel Compatibility**

- Gas
- Diesel
- Kerosene
- Jet Fuel
- Aviation Gas
- E-15
- E-85
- Green Diesel
- DEF
- Waste Oil
- Bio-Diesel 20
- Bio-Diesel 100

**Console Compatibility ("International Only")**

<table>
<thead>
<tr>
<th>Module Form #</th>
<th>Module Description</th>
<th># Of Modules Per Console</th>
<th># Of Sensor Inputs Per Module</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLS-450PLUS (8600 Series) 6A or Higher</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>16</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-450 4A or Higher</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 8 - TLS-4XX w/opt. TLS-XB</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4 (8601 Series) 6A or Higher</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>1</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>TLS4 (8601 Series) 124/324 or Higher</td>
<td>Interstitial Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-350J 124/324 or Higher</td>
<td>4 Probe / 4 Sensor Interface Module</td>
<td>4</td>
<td>4</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-300i 124/324 or Higher</td>
<td>4 Probe / 8 Sensor Interface Module</td>
<td>8</td>
<td>Included</td>
<td></td>
</tr>
<tr>
<td>TLS-300C</td>
<td>2 Probe / 8 Sensor Options</td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Alarm Notification**

- Normal: Sensor in Normal State - No liquid detected
- Fuel alarm: Liquid detected
- Sensor out: Sensor not communicating to ATG / Console

**Installation Kit**

| 312020-928 2'' (50mm) Interstitial sensor riser cap kit (sold separately) |

**Specifications**

- Operating Principle: Reed switch / float
- Product Activation Height: 1.4'' (3.56cm)
- Operating Temp: -4 to +140°F (-20 to +60°C)
- Dimensions: 2.5'' (6.4cm) high, 1.5'' (3.8cm) diameter
- Miscellaneous / Notes: 794380-420 (cable 16 feet [4.9m]); 794380-460 (cable 30 feet [9.1m]); 312020-928 (2'' [50mm] Riser cap and adapter kit)

**Third Party Evaluation Links**

- TLS-3XX/TLS-450 Series Consoles
- TLS4 (8601 Series) Consoles

**Product Link**

- Interstitial Sensor for Steel Tanks

**Warranty**

- With System: 1 Yr Parts & Labor
- When purchased separately: 1 Yr Parts Only

---

**Example Installation**

- Weatherproof junction box
- Seal-off
- 1/2'' NPT cord grips
- Appropriate reducer with 1/2'' NPT opening for cable cord grip
- Leader cable
- Riser
- Tank
- Manhole
- Seal-off

Sensor must rest on bottom of interstitial riser
## Sensor Description

**Position Sensitive Interstitial Sensor for Steel Tanks**

The sensor detects the presence of liquid in small containment areas (i.e., spill buckets) of double wall steel tanks. In addition, it provides an alarm when the sensor is not positioned correctly on the bottom of the interstitial space.

<table>
<thead>
<tr>
<th>Sensor Matrix</th>
<th></th>
</tr>
</thead>
</table>

## Form Number

**794380-333**

## Where Used (Typical)

- Dispenser Pan
- Spill Containment
- STP Sump
- Convault Tank

## Fuel Compatibility

- Gas
- Diesel
- Kerosene
- Jet Fuel
- Aviation Gas

## Console Compatibility (*International Only*)

<table>
<thead>
<tr>
<th>Recommended Min. Console Software</th>
<th>Module Form #</th>
<th>Module Description</th>
<th># Of Modules Per Console</th>
<th># Of Sensor Inputs Per Module</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLS-450PLUS (8600 Series) 6A or Higher</td>
<td>332812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>16</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-450 4A or Higher</td>
<td>332812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 8 - TLS-4XX w/opt. TLS-XB</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>TL4S (8601 Series) 6A or Higher</td>
<td>330020-750</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>1</td>
<td>6</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4i (8601 Series)</td>
<td>330020-751</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>1</td>
<td>6</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4c (8601 Series)</td>
<td>330020-751</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>1</td>
<td>6</td>
<td>Included</td>
</tr>
<tr>
<td>TLS-350/R/PLUS 124/324 or Higher</td>
<td>329358-001</td>
<td>Interstitial Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-350J</td>
<td>329356-003</td>
<td>4 Probe / 4 Sensor Interface Module</td>
<td>1</td>
<td>4</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-300i</td>
<td>330230-001</td>
<td>4 Probe / 8 Sensor Interface Module</td>
<td>1</td>
<td>8</td>
<td>Included</td>
</tr>
<tr>
<td>TLS-300C</td>
<td>330513-001</td>
<td>2 Probe / 8 Sensor Options</td>
<td>1</td>
<td>8</td>
<td>Included</td>
</tr>
</tbody>
</table>

## Alarm Notification

- Normal Sensor in Normal State - No liquid detected
- Fuel alarm Not sitting correctly on bottom of interstitial space or liquid detected
- Sensor out Sensor not communicating to ATG / Console

## Installation Kit

**312020-92B** 2” (50mm) Interstitial sensor riser cap kit (sold separately)

## Specifications

### Operating Principle

**Reed Switch / Float**

### Product Activation Height

1.4” (3.6cm)

### Operating Temp

-4 to +140°F (-20 to +60°C)

### Dimensions

3.5” (8.9cm) High, 1.75” (4.4cm) Diameter

### Miscellaneous / Notes

Standard Cable Length: 20 Feet (6.09m); 312020-92B (2” [50mm] Riser cap and adapter kit)

### Third Party Evaluation Links

- TLS-3XX/TLS-450 Series Consoles
- TLS4 (8601 Series) Consoles

### Product Link

**Position Sensitive Interstitial Sensor for Steel Tanks**

### Warranty with System

1 Yr Parts & Labor

### Warranty (When purchased separately)

1 Yr Parts Only
### Sensor Description

**Interstitial High Alcohol Sensor for Steel Tanks**

The Interstitial Sensor for steel tanks with high alcohol product detects the presence of liquid between the double walls of the tank.

### Where Used (Typical)

- Dispenser Pan
- Spill Containment
- STP Sump
- Convault Tank

### Form Number

794380-430

### Fuel Compatibility

- Gas
- Diesel
- Kerosene
- Jet Fuel
- Aviation Gas

### Console Compatibility (*International Only*)

<table>
<thead>
<tr>
<th>Console Compatibility</th>
<th>Recommended Min. Console Software</th>
<th>Module Form #</th>
<th>Module Description</th>
<th># Of Modules Per Console</th>
<th># Of Sensor Inputs Per Module</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLS-450 PLUS (8600 Series)</td>
<td>6A or Higher</td>
<td>332812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>16</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-450</td>
<td>4A or Higher</td>
<td>332812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 8 - TLS-4XX w/opt. TLS-XB</td>
<td>16</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS4i (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-750</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td></td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4b (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-751</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td></td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>TLS-350/R/PLUS</td>
<td>124/324 or Higher</td>
<td>329358-001</td>
<td>Interstitial Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-350J</td>
<td>124/324 or Higher</td>
<td>329358-003</td>
<td>4 Probe / 4 Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-300i</td>
<td></td>
<td>330230-001</td>
<td>4 Probe / 8 Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Included</td>
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<tr>
<td>TLS-300C</td>
<td></td>
<td>330513-001</td>
<td>2 Probe / 8 Sensor Options</td>
<td>Up to 8</td>
<td>8</td>
<td>Included</td>
</tr>
</tbody>
</table>

### Alarm Notification

- Normal
- Fuel alarm
- Sensor out

### Installation Kit

312020-928

*2" (50mm) Interstitial sensor riser cap kit (sold separately)*

### Specifications

- **Operating Principle**: Reed switch / float
- **Product Activation Height**: 1.1" (2.8cm)
- **Operating Temp**: -4 to +140°F (-20 to +60°C)
- **Dimensions**: 2.5" (6.4cm) high, 1.5" (3.8cm) diameter
- **Miscellaneous / Notes**: Standard cable 15 feet [4.5m] cable; 312020-928 (2" [50mm] Riser and adapter kit)
- **Third Party Evaluation Links**: TLS-3XX/TLS-450 Series Consoles
- **Product Link**: Interstitial High Alcohol Sensor for Steel Tanks
- **Warranty with System**: 1 Yr Parts & Labor
- **Warranty (When purchased separately)**: 1 Yr Parts Only

### Diagram

*Weatherproof junction box*

*Manhole*

*Seal-off*

*Rigid conduit (to Console)*

*Appropriate reducer with 1/2" NPT opening for cable cord grip*

*1/2" NPT cord grips*

*Leader cable*

*Riser*

*Tank*

*Sensor must rest on bottom of interstitial riser*
## Sensor Description

**MicroSensor**  
The non-discriminating small, easy to install solid-state MicroSensor is designed to detect liquid in the interstitial space of a steel tank or a fill riser containment.

### Form Number

**794380-344**

### Where Used (Typical)

- Dispenser Pan
- Spill Containment
- STP Sump
- Convault Tank

### Fuel Compatibility

- Gas
- Diesel
- Kerosene
- Jet Fuel
- Aviation Gas
- E-15
- E-85
- E-100
- DEF
- Waste Oil
- Bio-Diesel 20
- Motor Oil
- Bio-Diesel 100
- Green Diesel
- Diesel
- Jet Fuel
- Aviation Gas
- E-15
- E-85
- E-100
- DEF
- Waste Oil
- Bio-Diesel 20
- Motor Oil
- Bio-Diesel 100

### Console Compatibility (*International Only*)

<table>
<thead>
<tr>
<th>Console Compatibility</th>
<th>Recommended Min. Console Software</th>
<th>Module Form #</th>
<th>Module Description</th>
<th># Of Modules Per Console</th>
<th># Of Sensor Inputs Per Module</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLS-450PLUS (8600 Series)</td>
<td>6A or Higher</td>
<td>332812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>16</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-450</td>
<td>4A or Higher</td>
<td>332812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 8 - TLS-4XX w/ opt. TLS-XB</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>¹TLS4 (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-750</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>1</td>
<td>6</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>¹TLS4i (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-751</td>
<td>Type A Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>¹TLS4B (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-751</td>
<td>Type A Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>¹TLS4c (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-751</td>
<td>Type A Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-350/R/PLUS</td>
<td>124/324 or Higher</td>
<td>329956-001</td>
<td>Type A Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-350J</td>
<td>124/324 or Higher</td>
<td>329956-001</td>
<td>Type A Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
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<tr>
<td>TLS-300i</td>
<td>124/324 or Higher</td>
<td>329956-001</td>
<td>Type A Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-300C</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Alarm Notification

- Normal
- Fuel alarm
- Sensor out

### Installation Kit

**312020-928**  
2" Cap Adapter Kit (Sold separately)

### Specifications

<table>
<thead>
<tr>
<th>Operating Principle</th>
<th>Optical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Activation Height</td>
<td>1&quot; (2.54cm)</td>
</tr>
<tr>
<td>Operating Temp</td>
<td>-40 to +122°F (-40 to +50°C)</td>
</tr>
<tr>
<td>Dimensions</td>
<td>Dia. 0.63&quot; (16mm), Length 2&quot; (51mm)</td>
</tr>
<tr>
<td>Miscellaneous / Notes</td>
<td>Standard Cable Length: 25 Feet (7.6m); 312020-928 (2&quot; [50mm] Riser cap and Adapter kit)</td>
</tr>
</tbody>
</table>
| Third Party Evaluation Links | TLS-350/TLS-450 Series Consoles  
TLS4 (8601 Series) Consoles |
| Product Link | MicroSensor |
| Warranty with System | 1 Yr Parts & Labor |

### Example Installation

- Weatherproof junction box
- Seal-off
- Rigid conduit (to Console)
- Appropriate reducer with 1/2" NPT opening for cable cord grip
- Minimum riser diameter 1 inch (2.54cm)
- MicroSensor must rest on bottom of interstitial riser

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Sensor Description: Dual-Point Hydrostatic Reservoir Sensor (Brine Filled Double Wall Tank Sensor)

The Hydrostatic Reservoir Sensor accurately detects fluid level change in the reservoir and interstice of a double wall storage tank. The Dual-Point version is ideal for high groundwater areas, and can differentiate between a high level alarm condition and a low level alarm condition. If an inner-wall leak occurs, the brine seeps into the tank triggering a low level alarm, if an outer wall leak occurs, fluid seeps into the interstice triggering a high level alarm.

Form Number: 794380-303

Where Used (Typical):
- Dispenser Pan
- Spill Containment
- Sump
- Convert Tank

Category:
- Discerning
- Non-Discerning
- Position Sensitive
- Level Sensing
- Static Testing
- Hydrostatic

Fuel Compatibility:
- Gas
- Diesel
- Kerosene
- Jet Fuel
- Aviation Gas
- E-15
- E-85
- DEF
- B100
- Waste Oil
- Bio-Diesel 20
- Bio-Diesel 100
- Single Use Only (Test per Sensor Operability Guide in E-10 or less)

Console Compatibility (*International Only1):
- TLS-450PLUS (8600 Series) 6A or Higher 332812-001 Universal Sensor Module (USM) Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/opt. TLS-XB 16 Sold Separately
- TLS-450 4A or Higher 332812-001 12
- TLS4 (8601 Series) 6A or Higher 330020-750 Universal Sensor Input Output Module (USIOM-AC) 12 Included
- TLS4B (8601 Series) 330020-751 6
- TLS4c (8601 Series) 330020-751 1
- TLS-350/R/PLUS 124/324 or Higher 329958-001 Interstitial Sensor Interface Module Up to 8 8 Sold Separately
- TLS-350J 329356-003 4 Probe / 4 Sensor Interface Module 4 Sold Separately
- TLS-300i 330230-001 4 Probe / 8 Sensor Interface Module 8 Included
- TLS-300C 330513-001 2 Probe / 8 Sensor Options

Alarm Notification:
- Normal: Float is in the Center position (correct amount of brine in reservoir)
- Low liquid: Brine drops below 1.2” (3cm)
- High liquid: Brine rises above 13.13” (33.4cm)
- Sensor out: Sensor not communicating to ATG / Console

Specifications:
- Operating Principle: Reed Switch / Float
- Product Activation Height:
  - Low 1.2” (3cm), High 13.13” (33.4cm)
- Operating Temp: -13 to +122°F (-25 to +50°C)
- Dimensions: 17.3” (43.9cm) High, 2.5” (6.4cm) Dia.
- Miscellaneous / Notes:
  - Standard Cable Length: 12 ft (3.65m)
  - Vented riser cap assembly included
  - Reservoir solutions: Up to 50% ethylene glycol in water; up to 50% propylene glycol in water; salt brine solution of up to 30% CaCl.

Third Party Evaluation Links:
- TLS-3XX/TLS-450 Series Consoles
- TLS4 (8601 Series) Consoles

Product Link:
- Dual-Point Hydrostatic Reservoir Sensor

Warranty with System:
- 1 Yr Parts & Labor

Warranty (When purchased separately):
- 1 Yr Parts Only

Example Installation:
- Manhole
- Weatherproof junction box
- Seal-off
- Rigid conduit (to console)
- Vented riser pipe cap w/ vent tube
- Dual-Point Hydrostatic Sensor
- Float
- Reservoir
- Double-wall tank
- Brine level
# Sensor Description

**Single-Point Hydrostatic Reservoir Sensor (Brine Filled Double Wall Tank Sensor)**

The Hydrostatic Reservoir Sensor accurately detects fluid level change in the reservoir and interstice of a double wall storage tank. The Single-Point version can be used in low groundwater locations. If an inner-wall leak occurs, the brine seeps into the tank triggering a fuel alarm, or if the outer wall leaks, the brine seeps out of the tank interstice triggering a fuel alarm.

## Form Number

794380-301

## Where Used (Typical)

- Dispenser Pan
- Spill Containment
- STP Sump
- Convault Tank
- Annular Space
- Monitoring Well
- Oil/Water Separator Tank

## Fuel Compatibility

- Gas
- Diesel
- Kerosene
- Jet Fuel
- Aviation Gas
- Bio–Diesel 20
- Bio–Diesel 100
- DEF
- Green Diesel
- Waste Oil
- Motor Oil
- E–15
- E–85
- E–100

*Single Use Only (Test per Sensor Operability Guide in E-10 or less)

## Category

- Discriminating
- Non–Discriminating
- Position Sensitive
- Level Sensing
- Static Testing
- Hydrostatic

## Console Compatibility (*International Only*)

***Recommended Min. Console Software***

<table>
<thead>
<tr>
<th>Console Compatibility</th>
<th>Module Form #</th>
<th>Module Description</th>
<th># Of Modules Per Console</th>
<th># Of Sensor Inputs Per Module</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLS-450PLUS (8600 Series) 6A or Higher</td>
<td>332812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>16</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-450</td>
<td>332812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 8 - TLS-4XX w/optional TLS-XB</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4 (8601 Series) 6A or Higher</td>
<td>330020-750</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>1</td>
<td>6</td>
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</tr>
<tr>
<td>TLS4B (8601 Series) 6A or Higher</td>
<td>330020-751</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>1</td>
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</tr>
<tr>
<td>TLS4c (8601 Series) 6A or Higher</td>
<td>330020-751</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>1</td>
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<td></td>
</tr>
<tr>
<td>TLS-350/R/PLUS 124/324 or Higher</td>
<td>329958-001</td>
<td>Interstitial Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-350J</td>
<td>329356-003</td>
<td>4 Probe / 4 Sensor Interface Module</td>
<td>4</td>
<td>4</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-300i</td>
<td>330230-001</td>
<td>4 Probe / 8 Sensor Interface Module</td>
<td>8</td>
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<td></td>
</tr>
<tr>
<td>TLS-300C</td>
<td>330513-001</td>
<td>2 Probe / 8 Sensor Options</td>
<td>8</td>
<td>Included</td>
<td></td>
</tr>
</tbody>
</table>

## Alarm Notification

- Normal: Float is in the UP position (correct amount of brine in reservoir)
- Fuel alarm: Brine level below 1.74" (4.4cm)
- Sensor out: Sensor not communicating to ATG / Console

## Specifications

- **Operating Principle**: Reed Switch / Float
- **Product Activation Height**: 1.75" (4.4cm)
- **Operating Temp**: -13 to +135°F (-25 to +57°C)
- **Dimensions**: 6" (15cm) high, 2.5" (6.4cm) dia.
- **Miscellaneous / Notes**:
  - Standard Cable Length: 12 ft (3.65m)
  - Vented riser cap assembly included
  - Reservoir solutions: Up to 50% ethylene glycol in water; up to 50% propylene glycol in water; salt brine solution of up to 30% CaCl

## Third Party Evaluation Links

- TLS-3XX/TLS-450 Series Consoles
- TLS4 (8601 Series) Consoles

## Product Link

**Single-Point Hydrostatic Reservoir Sensor**

## Warranty with System

- 1 Yr Parts & Labor

## Warranty (When purchased separately)

- 1 Yr Parts Only

---

**Example Installation**

- Manhole
- Weatherproof junction box
- Seal-off
- Rigid conduit (to console)
- Vented riser pipe cap w/vent tube
- Single–Point Hydrostatic Sensor
- Reservoir
- Double–wall tank
**Sensor Description**

**Single-Point Mini-Hydrostatic Sensor for Double Wall Sumps**

The Single-Point Mini-Hydrostatic sensor accurately detects fluid level change in the interstice reservoir of a double-wall sump. If a leak occurs in the sump interstice, the brine seeps out of the reservoir triggering a low level alarm.

---

**Form Number**

794380-304

---

**Where Used (Typical)**

- Dispenser Pan
- Spill Containment
- STP Sump
- Convault Tank

---

**Category**

- Discriminating
- Non-Discriminating
- Position Sensitive
- Level Sensing
- Static Testing
- Hydrostatic

---

**Fuel Compatibility**

- Gas
- Diesel
- Kerosene
- Jet Fuel
- Aviation Gas

- E–15
- E–85
- DEF
- E–100
- Waste Oil
- Bio–Diesel 20
- Bio–Diesel 100

---

**Console Compatibility (‘International Only’)**

<table>
<thead>
<tr>
<th>Console Compatibility</th>
<th>Recommended Min. Console Software</th>
<th>Module Form #</th>
<th>Module Description</th>
<th># Of Modules Per Console</th>
<th># Of Sensor Inputs Per Module</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLS-450PLUS (8600 Series)</td>
<td>6A or Higher</td>
<td>332812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>16</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-450</td>
<td>4A or Higher</td>
<td>332812-001</td>
<td></td>
<td>Up to 8 - TLS-4XX w/opt. TLS-XB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1TLS4 (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-750</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>1</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4i (8601 Series)</td>
<td></td>
<td>330020-750</td>
<td></td>
<td></td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>TLS4c (8601 Series)</td>
<td></td>
<td>330020-751</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS-350/R/PLUS</td>
<td>124/324 or Higher</td>
<td>329958-001</td>
<td>Interstitial Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-350J</td>
<td>124/324 or Higher</td>
<td>329356-003</td>
<td>4 Probe / 4 Sensor Interface Module</td>
<td></td>
<td>4</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-300i</td>
<td>330230-001</td>
<td>4 Probe / 8 Sensor Interface Module</td>
<td></td>
<td>1</td>
<td>8</td>
<td>Included</td>
</tr>
<tr>
<td>TLS-300C</td>
<td>330513-001</td>
<td>2 Probe / 8 Sensor Options</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Alarm Notification**

- Normal: Float is in UP position (correct amount of brine in reservoir)
- Fuel alarm: Float is in DOWN position (low brine level in reservoir)
- Sensor out: Sensor not communicating to ATG / Console

---

**Specifications**

- **Operating Principle**: Reed Switch /Float
- **Product Activation Height**: 0.79” (2cm)
- **Operating Temp**: -13 to +122°F (-25 to +50°C)
- **Dimensions**: 2.5” (6.4cm) high, 1.5” (3.8cm) dia.
- **Miscellaneous / Notes**: Standard Cable Length: 8 Feet (2.43m); up to 50% ethylene glycol in water; up to 50% propylene glycol in water; salt brine solution of up to 30% CaCl.

---

**Third Party Evaluation Links**

- TLS-3XX/TLS-450 Series Consoles
- TLS4 (8601 Series) Consoles

---

**Product Link**

- Single-Point Mini-Hydrostatic Sensor

---

**Warranty with System**

- 1 Yr Parts & Labor

---

**Warranty (When purchased separately)**

- 1 Yr Parts Only
**Sensor Description**

**Vapor Sensor**

The Vapor Sensor detects hydrocarbon vapor exceeding the programmed threshold limit in the monitoring well.

---

**Form Number**

794390-700

---

**Where Used (Typical)**

- Dispenser Pan
- Spill Containment
- STP Sump
- Convault Tank
- Annular Space
- Monitoring Well
- Oil/Water Separator Tank

---

**Fuel Compatibility**

- Gas
- Diesel
- Jet Fuel
- Aviation Gas
- E-15
- E-85
- E-100
- Bio-Diesel 20
- Bio-Diesel 100
- Green Diesel
- DEF
- Waste Oil
- Motor Oil

---

**Console Compatibility**

(*International Only*)

<table>
<thead>
<tr>
<th>Sensor Model</th>
<th>Minimum Console</th>
<th>Module Form #</th>
<th>Module Description</th>
<th># Of Modules Per Console</th>
<th># Of Sensor Inputs Per Module</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLS-450PLUS (8600 Series)</td>
<td>6A or Higher</td>
<td>322812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-450</td>
<td>4A or Higher</td>
<td>322812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 8 - TLS-4XX w/opt. TLS-XB</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS4 (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-750</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>Up to 8</td>
<td>6</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4i (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-750</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>Up to 8</td>
<td>6</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4B (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-751</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>Up to 8</td>
<td>4</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4c (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-751</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>Up to 8</td>
<td>4</td>
<td>Included</td>
</tr>
<tr>
<td>TLS-350/R/PLUS</td>
<td>124/324 or Higher</td>
<td>329357-001</td>
<td>Vapor Sensor Interface Module</td>
<td>Up to 8</td>
<td>5</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-350J</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>TLS-300i</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>TLS-300C</td>
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<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

---

**Alarm Notification**

- Short alarm: A short has occurred in the sensor wiring or in the sensor.
- Water alarm: The vapor sensor is immersed in water and is incapable of detecting fuel vapors.
- Fuel alarm: Fuel vapors are present in the area being monitored by the sensor.
- Sensor Out alarm: Sensor setup was performed incorrectly; it is disconnected; or, it is not functioning properly.

---

**Installation Kit**

312020-939 4-inch (100mm) cap and adapter kit (Sold separately)

---

**Specifications**

- **Operating Principle**: Adsorber
- **Product Activation Height**: Gasoline vapor >500 ppm
- **Operating Temp**: -4 to +140°F (-20 to +60°C)
- **Dimensions (Sensor)**: 4.9” (12.4cm) long, 1.1” (2.8cm) dia.
- **Miscellaneous / Notes**: Standard Cable 18 feet (5.5m)
- **Third Party Evaluation**: TLS-350/TLS-450 Series Consoles

---

**Example Installation**

- Manhole
- Cap and cord grips
- Rigid conduit (to Console)
- Weatherproof junction box and seal-off
- Suspend vapor sensor 12 inches above highest level reached by water table, if known; or 12 inches above the bottom of the well, or any water in the well.
- Perforated PVC monitoring well housing
- Vapor sensor
**Groundwater Sensor**

The Groundwater Sensor detects free hydrocarbons in the C5 to C16 range on the water table in up to 20 feet deep monitoring wells.

**Form Number**

- 794380-621 (7 - 10 foot [2 - 3m] wells)
- 794380-622 (10 - 15 foot [3 - 4.5m] wells)
- 794380-624 (15 - 20 foot [4.5 - 6m] wells)

**Where Used (Typical)**

<table>
<thead>
<tr>
<th>Dispenser Pan</th>
<th>Spill Containment</th>
<th>Annular Space</th>
<th>Monitoring Well</th>
<th>STP Sump</th>
<th>Oil/Water Separator Tank</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Fuel Compatibility**

- Gas
- Diesel
- Kerosene
- Jet Fuel
- Aviation Gas
- Bio-Diesel 20
- Motor Oil
- E–15
- E–85
- DEF
- Waste Oil
- Green Diesel
- Bio-Diesel 100

**Console Compatibility**

<table>
<thead>
<tr>
<th>Sensor Interface Modules</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLS-350/R/PLUS 124/324 or Higher</td>
</tr>
<tr>
<td>TLS-450 PLUS (8600 Series) 6A or Higher</td>
</tr>
<tr>
<td>TLS-450 4A or Higher</td>
</tr>
<tr>
<td>TLS-450 1TLS4 (8601 Series) 6A or Higher</td>
</tr>
<tr>
<td>TLS4 (8601 Series) 6A or Higher</td>
</tr>
<tr>
<td>TLS4b (8601 Series)</td>
</tr>
<tr>
<td>TLS4c (8601 Series)</td>
</tr>
<tr>
<td>TLS-350J</td>
</tr>
<tr>
<td>TLS-300i</td>
</tr>
<tr>
<td>TLS-300C</td>
</tr>
</tbody>
</table>

**Alarm Notification**

- Normal: Sensor in water - no hydrocarbons detected.
- Water out: Sensor not in water - well dry
- Fuel alarm: Permeable material saturated with Fuel
- Sensor out: Sensor not communicating to ATG / Console

**Specifications**

- **Operating Principle**: Electrical conductivity
- **Product Activation Height**: 0.02” (0.5mm)
- **Operating Temp**: +32 to +104°F (0 to +40°C)
- **Dimensions (Water Float)**: 4.9” (12.4cm) long, 1.1” (2.8cm) dia.
- **Miscellaneous / Notes**: Locking cap included; cable length 64” (162.6cm)
- **Third Party Evaluation Links**: TLS-3XX/TLS-450 Series Consoles, TLS4 (8601 Series) Consoles
- **Product Link**: Groundwater Sensor
- **Warranty with System**: 1 Yr Parts & Labor
- **Warranty (When purchased separately)**: 1 Yr Parts Only

**Example Installation**

- Suspend water float 2” – 4” (5 – 10cm) above bottom of well. NOTE: Water float must be submerged or console will indicate WATER OUT alarm.
### Sensor Description

The Oil Water Separator Sensor (OWSS) allows you to utilize your existing Veeder-Root system for your Oil Water Separator tank. The OWSS facilitates operation of the tank by monitoring product thresholds, and will activate alarms on the TLS monitoring system when tank contents exceed a predetermined threshold. The probe also provides the conditions for these alarms and a full alarm history.

### Form Number

**794690-XXX**

### Where Used (Typical)

| Dispenser Pan | Annular Space |
| Spill Containment | Monitoring Well |
| STP Sump | Oil/Water Separator Tank |

### Fuel Compatibility

- Gas
- Diesel
- Kerosene
- Jet Fuel
- Aviation Gas
- Bio-Diesel 20
- Motor Oil
- Bio-Diesel 100
- E-15
- E-85
- DEF
- E-100
- Waste Oil
- Green Diesel

### Where Used (Typical)

- Dispenser Pan
- Oil/Water Separator Tank
- Annular Space
- Monitoring Well
- Spill Containment
- STP Sump

### Category

- Discriminating
- Non-Discriminating
- Position Sensitive
- Level Sensing
- Static Testing
- Hydrostatic
- Vapor
- Groundwater
- Oil/Water Separator

### Console Compatibility (International Only)

<table>
<thead>
<tr>
<th>Console</th>
<th>Recommended Min. Console Software</th>
<th>Module Form #</th>
<th>Module Description</th>
<th># Of Modules Per Console</th>
<th># Of Sensor Inputs Per Module</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLS-450 PLUS (8600 Series)</td>
<td>6A or Higher</td>
<td>332812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>16</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-450</td>
<td>4A or Higher</td>
<td>332812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 8 - TLS-4XX w/opt. TLS-XB</td>
<td>16</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS4 (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-750</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>1</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4i (8601 Series)</td>
<td>330020-750</td>
<td>1</td>
<td>6</td>
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<td></td>
</tr>
<tr>
<td>TLS4c (8601 Series)</td>
<td>330020-751</td>
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<td>6</td>
<td>Included</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS-350/R/PLUS</td>
<td>124/324 or Higher</td>
<td>329358-001</td>
<td>Interstitial Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-350J</td>
<td>329356-003</td>
<td>4 Probe / 4 Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
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<tr>
<td>TLS-300i</td>
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<td>4 Probe / 8 Sensor Interface Module</td>
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<tr>
<td>TLS-300C</td>
<td>330513-001</td>
<td>2 Probe / 8 Sensor Options</td>
<td>8</td>
<td>Included</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Alarm Notification

- Normal: Tank is properly setup with liquid
- Liquid warning: Oil is present in tank
- Liquid alarm: Oil has reached its maximum volume, remove from tank
- Sensor out: Sensor not communicating to ATG / Console

### Specifications

#### Operating Principle

Reed switch / float

#### Product Activation Height

Custom-Based on Tank Configuration

#### Operating Temp

0 to +140°F (0 to +60°C)

#### Dimensions

Custom-Based on Tank Configuration

#### Miscellaneous / Notes

Standard Cable Length: 12 Feet - See Appendix B in this manual for sensor sizing

#### Product Link

Oil Water Separator Sensor

#### Warranty with System

1 Yr Parts & Labor

#### Warranty (When purchased separately)

1 Yr Parts Only
## Appendix A - Sensor Type Programming Table

The table below is helpful when selecting Sensor Type (for TLS-3XX Series consoles) or Sensor Model (for TLS4/8601 and TLS-450 and TLS-450PLUS consoles) during sensor setup.

### Sensor Type Programming Table for TLS Consoles

<table>
<thead>
<tr>
<th>Sensor</th>
<th>Form Number</th>
<th>Sensor Category (Location)</th>
<th>TLS-3XX Series Sensor Type</th>
<th>TLS/4601 Series TLS-450 and TLS-450PLUS Sensor Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discriminating Dispenser Pan and Sump Sensors - Standard</td>
<td>794380-322 (DPS), 794380-352 (CSS)</td>
<td>Sump/Pan</td>
<td>Liquid Sensor Setup: Sensor Type - Dual Float Discriminating</td>
<td>Device Setup Liquid Sensor: Model - Dual Float Discriminating</td>
</tr>
<tr>
<td>Mag Sump Sensor</td>
<td>857080-XXX</td>
<td>Sump/Pan</td>
<td>Smart Sensor Setup: Sensor Category: Mag Sensor</td>
<td>Device Setup MAG Sensor</td>
</tr>
<tr>
<td>Solid-State Dispenser Pan and Containment Sump</td>
<td>794380-321 (DP); 794380-351 (CS)</td>
<td>Sump/Pan</td>
<td>2-Wire C.L. Setup: Sensor Type - Ultra 2</td>
<td>Device Setup Type A Sensor: Model - Ultra 2</td>
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<tr>
<td>Piping Sump</td>
<td>794380-208</td>
<td>Sump/Pan</td>
<td>Liquid Sensor Setup: Sensor Type - Tri-State Liquid</td>
<td>Device Setup Liquid Sensor: Model - Tri-State</td>
</tr>
<tr>
<td>Interstitial High Alcohol Sensors for Steel Tanks High Alcohol Compatible!</td>
<td>794380-345</td>
<td>Annular Space</td>
<td>2-Wire C.L. Setup: Sensor Type - Ultra 2</td>
<td>Device Setup Type A Sensor: Model - Ultra 2</td>
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<td>Interstitial Sensors for Steel Tanks</td>
<td>794390-4X0</td>
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<td>Liquid Sensor Setup: Sensor Type - Tri-State Liquid</td>
<td>Device Setup Liquid Sensor: Model - Tri-State</td>
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<td>MicroSensor High Alcohol Compatible!</td>
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<td>2-Wire C.L. Setup: Sensor Type - Ultra 2</td>
<td>Device Setup Type A Sensor: Model - Ultra 2</td>
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<td>Hydrostatic Reservoir</td>
<td>794380-301 (1 float)</td>
<td>Annular Space</td>
<td>Liquid Sensor Setup: Sensor Type - Tri-State Liquid</td>
<td>Device Setup Liquid Sensor: Model - Tri-State</td>
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<td>Single-Point Mini Hydrostatic Sensor for Double Wall Sumps</td>
<td>794380-303 (1 float)</td>
<td>Annular Space</td>
<td>Liquid Sensor Setup: Sensor Type - Dual Point Hydrostatic</td>
<td>Device Setup Liquid Sensor: Model - Dual Point Hydrostatic</td>
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<td>Vapor</td>
<td>794390-700</td>
<td>Monitor Well</td>
<td>Vapor Sensor Setup</td>
<td>Device Setup Vapor Sensor</td>
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<td>Groundwater</td>
<td>794380-62X</td>
<td>Monitor Well</td>
<td>Groundwater Sensor Setup</td>
<td>Device Setup Groundwater Sensor</td>
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<tr>
<td>Oil/Water Separator</td>
<td>794690-XXX</td>
<td>Oil/Water Separator Tank</td>
<td>Liquid Sensor Setup: Sensor Type - Dual Float Discriminating</td>
<td>Device Setup Liquid Sensor: Model - Dual Float Discriminating</td>
</tr>
</tbody>
</table>
Appendix B - How To Order An Oil/Water Separator Sensor (OWSS)

Sensor Sizing
To determine the correct sensor length for the oil/water separator tank application use the manufacturer’s tank chart to determine height - to - volume thresholds for warning and alarm conditions and make three measurements, including verifying fluid depths on the manufacturer’s tank chart.

1. Determining The Lowest Point Of The Bottom (Alarm) Float
   Measure and record the distance from inside the top of the tank to the maximum depth of waste oil/water interface in the tank as recommended by the tank’s manufacturer (Fig.B-1). Subtract 3 inches from this measurement to determine the lowest permissible point in the tank for the centerline of the sensor’s bottom (alarm) float and note this measurement as D1.

2. Determining Distance From Top Of Riser To Top Of Tank
   Measure from the top of the riser down to the top of the tank and if using the riser reducing 4x2 fitting note this measurement as D2, OR, If using the riser reducing 4x2 coupling add 3” to the measured distance and note this measurement as D2 (Fig.B-2)
3. **Determining The Top (Warning) Float Position**
   Consult the tank chart to determine the height of the top warning level (centerline of the top float). Measure the distance from the top of the tank to the centerline of the top float (Fig.B-3). **Note this measurement as D3.**

4. **Determining Correct Sensor To Order**
   Use the D1, D2 and D3 measurements made in Steps 1 - 3 to determine the part number of the sensor from the V-R Oil/Water Separator Sensor matrix shown in Fig.B-4.

   For example: 
   - D1 = 33", D2 = 24.5, D3 = 13"
   - D2 + D3 = Top float position, i.e., 24.5 + 13 = 37.5" (Dimension A in the V-R P/N matrix)
   - D1 - D3 = Bottom float position, i.e., 33 - 13 = 20" (Dimension B in the V-R P/N matrix)

   Using the OWSS float positions calculated in the example above, the top float (Warning) would activate at 13 inches below the top of the tank and the bottom float (Alarm) would activate at 33" below the top of the tank. The correct part number for these example float positions would be 764690-053.

   Round dimension A or B down to the nearest available option if necessary. Note: doing so will impact the float Warnings and Alarms generated on the TLS system.

   **Alarm Conditions**

<table>
<thead>
<tr>
<th>Alarm Type</th>
<th>Alarm Condition</th>
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<tbody>
<tr>
<td>Liquid Warning</td>
<td>Oil present in tank</td>
</tr>
<tr>
<td>Liquid Alarm</td>
<td>Oil has reached its maximum volume, remove from tank</td>
</tr>
<tr>
<td>Sensor Out Alarm</td>
<td>No communication to ATG</td>
</tr>
<tr>
<td>Normal</td>
<td>Tank is properly setup with liquid</td>
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</table>
Order OWSS part number 764690-XXX, where XXX equals the three digits where Dimensions A and B intersect in the part number matrix:

![Oil/Water Separator Sensor Part Number Matrix](image-url)

---

**DIMENSION "B"**

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<th>22&quot;</th>
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<td>-179</td>
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</table>

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Fig. B-4.- Oil/Water Separator Sensor Part Number Matrix
Appendix C - Direct Burial Cable

The Veeder-Root direct burial cable system provides everything needed for an alternative wiring installation method for use with our probes and sensors. Installation of buried cable should only be done in those locations where existing conduit is not available, and where local codes permit the use of buried cable instead of conduit, and epoxy splices instead of junction boxes. Before considering buried cable runs, check with the local authority having jurisdiction to be sure that direct burial practices are acceptable at your location.

If you are unfamiliar with direct burial techniques, you should consider either of two Veeder-Root kits:

- Direct Burial Cable Site Preparation kit (P/N 848100-500) which contains the Direct Burial Installation Manual, a splice kit installation manual and the 890-SL joint sealant instruction guide.
- Direct Burial Cable Site Demonstration kit (P/N 848100-502) which contains one splice kit with installation instructions, a 890-SL joint sealant instruction guide, a 6-inch piece of 2 conductor direct burial wire.

After reviewing the contents of these kits, and after verifying local code requirements, you should be much more informed as to the applicability of this wiring method for your site.

Direct Burial Cable Specifications

<table>
<thead>
<tr>
<th>2-CONDUCTOR, SHIELDED CABLE</th>
<th>3-CONDUCTOR, SHIELDED CABLE</th>
</tr>
</thead>
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<tr>
<td>Item</td>
<td>Description</td>
</tr>
<tr>
<td>Primaries</td>
<td>Primaries</td>
</tr>
<tr>
<td>Conductor</td>
<td>#18 AWG (19/30) tinned copper</td>
</tr>
<tr>
<td>Insulation Type</td>
<td>Fluoropolymer</td>
</tr>
<tr>
<td>Primary O.D.</td>
<td>0.063&quot; (1.6mm) nominal</td>
</tr>
<tr>
<td>Drain</td>
<td>#20 AWG (7/28) tinned copper, located under the tape</td>
</tr>
<tr>
<td>Jacket</td>
<td>Jacket</td>
</tr>
<tr>
<td>Insulation type</td>
<td>Fluoropolymer</td>
</tr>
<tr>
<td>Final O.D.</td>
<td>0.161&quot; (4.1mm)</td>
</tr>
<tr>
<td>Color</td>
<td>Red tint</td>
</tr>
<tr>
<td>UL temp rating</td>
<td>257°F (125°C)</td>
</tr>
</tbody>
</table>

Direct Burial Cable Components

Order equal lengths of filler rod and either type cable. Refer to V-R manual 576013-858 to estimate length.

- Filler rod - P/N 848100-1XX (lengths of 100 to 2000 feet [30.5 to 610m], in increments of 100 feet [30.5m])
- Filler rod installation tool P/N 848100-904 (adjusts to 1/8" [0.32cm], 1/4" [6.4mm], 3/8" [9.5mm], or 1/2" [12.7mm] saw cuts)
- 2-conductor cable - P/N 848100-2XX (lengths of 100 to 2000 feet (30.5 to 610m), in increments of 100 feet)
- 3-conductor cable - P/N 848100-3XX (lengths of 100 to 2000 feet, in increments of 100 feet)
- Cartridge of 890-SL sealant P/N 848100-800 (60 linear feet [18m] in 1/4" [6.4mm] wide cut)
- 4.5 gallon (17 liter) can of 890-SL sealant P/N 848100-805 (1200 linear feet [365m] in 1/4" [6.4mm] wide cut)
• Sealant cartridge gun, manual driven - P/N 8481021 (for use with P/N 848100-800 cartridge)
• Sealant bulk gun, air driven - P/N 848100-903 (for use with P/N 848100-805 4.5 gallon (17 liter) can)

Direct Burial Cable Installation Example