Sensor Products

Application Guide
Notice

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

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

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

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

**Example Illustrations**

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

**Third Party Evaluations**

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

http://www.nwglde.org

©Veeder-Root 2019. All rights reserved.
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor Application Matrix</td>
<td>1</td>
</tr>
<tr>
<td>Appendix A - Sensor Type Programming Table</td>
<td>A-1</td>
</tr>
<tr>
<td>Appendix B - How To Order An Oil/Water Separator Sensor (OWSS)</td>
<td>B-1</td>
</tr>
<tr>
<td>Appendix C - Direct Burial Cable</td>
<td>C-1</td>
</tr>
</tbody>
</table>
### Sensor Application Matrix

<table>
<thead>
<tr>
<th>Sensor Description</th>
<th>Form #</th>
<th>Category</th>
<th>Fuel Compatibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPS Standard Dispenser Pan</td>
<td>794380-322</td>
<td>2</td>
<td>X X X X X X X X X</td>
</tr>
<tr>
<td>CSS Standard Containment Sump</td>
<td>794380-352</td>
<td>3</td>
<td>X X X X X</td>
</tr>
<tr>
<td>DPO Optical Dispenser Pan</td>
<td>794380-320</td>
<td>4</td>
<td>X X X X X X X X</td>
</tr>
<tr>
<td>CSO Optical Containment Sump</td>
<td>794380-350</td>
<td>5</td>
<td>X X X X X X X X</td>
</tr>
<tr>
<td>MSS Mag Sump Sensor</td>
<td>857080-XXX</td>
<td>6</td>
<td>X X X X X X X X X</td>
</tr>
<tr>
<td>SSDP Solid-State Dispenser Pan</td>
<td>794380-321</td>
<td>7</td>
<td>X X X X X X X X X</td>
</tr>
<tr>
<td>SSCS Solid-State Containment Sump</td>
<td>794380-351</td>
<td>8</td>
<td>X X X X X X X X X</td>
</tr>
<tr>
<td>Piping Sump</td>
<td>794380-208</td>
<td>9</td>
<td>X X X X X X X X X</td>
</tr>
<tr>
<td>Non-Discriminating Standalone Dispenser Pan</td>
<td>847990-001</td>
<td>10</td>
<td>X X X X X X X X X</td>
</tr>
<tr>
<td>Position-Sensitive</td>
<td>794380-323</td>
<td>11</td>
<td>X X X X X X X X X</td>
</tr>
<tr>
<td>Interstitial for Fiberglass Tanks, Discriminating</td>
<td>794380-343</td>
<td>12</td>
<td>X X X X X X X X X</td>
</tr>
<tr>
<td>Interstitial for Fiberglass Tanks</td>
<td>794390-409</td>
<td>13</td>
<td>X X X X X X X X X</td>
</tr>
<tr>
<td>Interstitial for Fiberglass Tanks, High Alcohol</td>
<td>794380-345</td>
<td>14</td>
<td>X X X X X X X X X</td>
</tr>
<tr>
<td>Interstitial for Steel Tanks</td>
<td>794390-4X0</td>
<td>15</td>
<td>X X X X X X X X X</td>
</tr>
<tr>
<td>Interstitial for Steel Tanks, Position Sensitive</td>
<td>794380-333</td>
<td>16</td>
<td>X X X X X X X X X</td>
</tr>
<tr>
<td>Interstitial for Steel Tanks, High Alcohol</td>
<td>794380-430</td>
<td>17</td>
<td>X X X X X X X X X</td>
</tr>
<tr>
<td>Interstitial for Steel Tanks, High Alcohol, small footprint</td>
<td>794380-344</td>
<td>18</td>
<td>X X X X X X X X X</td>
</tr>
<tr>
<td>Hydrostatic Reservoir (Dual Point)</td>
<td>794380-303</td>
<td>19</td>
<td>X X X X X X X X X</td>
</tr>
<tr>
<td>Single-Point Hydrostatic Sensor</td>
<td>794380-301</td>
<td>20</td>
<td>X X X X X X X X X</td>
</tr>
<tr>
<td>Single-Point Mini-Hydrostatic Reservoir (High Alcohol)</td>
<td>794380-304</td>
<td>21</td>
<td>X X X X X X X X X</td>
</tr>
<tr>
<td>Vapor</td>
<td>794390-700</td>
<td>22</td>
<td>X X X X X X X</td>
</tr>
<tr>
<td>Groundwater</td>
<td>794380-62X</td>
<td>23</td>
<td>X X X X X X X</td>
</tr>
<tr>
<td>Oil / Water Separator</td>
<td>794690-XXX</td>
<td>24</td>
<td>X X X X X X X</td>
</tr>
</tbody>
</table>

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

Discriminating Dispenser Pan Sensor

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

### Form Number

794380-322

### 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 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></td>
<td></td>
<td></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>12</td>
<td>Included</td>
</tr>
<tr>
<td>TSL4 (8601 Series)</td>
<td></td>
<td>330020-750</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2TLS4B (8601 Series)</td>
<td></td>
<td>330020-751</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TSL4c (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>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></td>
<td>329356-003</td>
<td>4 Probe / 4 Sensor Interface Module</td>
<td>Up to 8</td>
<td></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></td>
<td>8</td>
<td>Included</td>
</tr>
<tr>
<td>TLS-300C</td>
<td></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
- Low Liquid: Liquid detected at a minimum of 1.37" (3.48cm)
- High Liquid: Liquid detected at a minimum of 7.66" (19.45cm)

### 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 1.37" (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
- SSL4 (8601 Series) Consoles

### Example Installation

- U-channel
- Cord grip
- Product line
- Dispenser containment sump
- Weatherproof junction box with 1/2-inch N.P.T. threads (16 cubic inch volume minimum).
- Seal-off
- Rubber grommet seal clamped on inside - or as recommended by dispenser pan manufacturer.
- 1/2" Rigid conduit to console
- Dispenser pan sensor

Dispenser pan sensor should:
1. Rest in the cup or 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**

| Discerning Containment Sump Sensor | 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 |

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

**Console Compatibility (International Only)²**

<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-450 PLUS (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>Up to 8 - TLS-4XX w/opt. TLS-XB</td>
<td></td>
<td></td>
<td></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>12</td>
<td>Included</td>
</tr>
<tr>
<td>□ TLS4a (8601 Series) 6A or Higher</td>
<td>330020-750</td>
<td></td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ TLS4b (8601 Series) 6A or Higher</td>
<td>330020-751</td>
<td>Included</td>
<td></td>
<td></td>
<td></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 124/324 or Higher</td>
<td>329356-003</td>
<td>4 Probe / 4 Sensor Interface Module</td>
<td>4</td>
<td>Sold Separately</td>
<td></td>
</tr>
<tr>
<td>□ TLS-300i</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>330513-001</td>
<td>2 Probe / 8 Sensor Options</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Alarm Notification**

- Normal
- Low Liquid
- High Liquid
- Fuel Alarm
- Sensor Out

**Installation Kit**

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

**Specifications**

- Product Permeable, Reed Switch / Float
- Gas - 0.125" (3.175mm); Water - low 1.35" (3.4cm), High 12.28" (31.19cm)
- +32 to +140°F (0 to +60°C)
- 22.1" (56.1cm) high, 2.2" (5.6cm) dia.
- Standard Cable Length: 12 Feet
- "IMPORTANT! DO NOT MOUNT SENSOR TO FLEXIBLE PRODUCT LINE.

**Example Installation**

- Containment sump sensor
- Submersible pump
- 1/2" NPT cord grip supplied w/cable
- Weatherproof junction box
- Submersible pump
- Seal-off
- Rigid conduit to console
- Product line
**Sensor Description**

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.

<table>
<thead>
<tr>
<th>Form Number</th>
<th>794380-320</th>
</tr>
</thead>
</table>

**Where Used (Typical)**

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

**Catagory**

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

**Fuel Compatibility**

- Gas
- Diesel
- Kerosene
- Jet Fuel
- Aviation Gas
- E-85
- DEF
- Waste Oil
- Motor 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>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>330020-750</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>1</td>
<td>6</td>
<td>Included</td>
</tr>
<tr>
<td>329950-001</td>
<td>Type B Interface Module</td>
<td>Up to 8</td>
<td>6</td>
<td>Sold Separately</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**

- System: 1 Yr Parts & Labor
- 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.*
### 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.

### Form Number

**794380-350**

### 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
- Diesel
- Waste Oil
- bio-Diesel 20
- Motor Oil
- bio-Diesel 100

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

### 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 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 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 Module (USM)</td>
<td>Up to 8 - TLS-4XX w/opt. TLS-XB</td>
<td>8</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>Up to 8 - TLS-4XX w/opt. TLS-XB</td>
<td>8</td>
<td>Sold Separately</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-300i</td>
<td>NA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS-300C</td>
<td>NA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Alarm Notification

- Normal
- Low Liquid
- High Liquid
- Fuel Alarm
- Sensor Out

<table>
<thead>
<tr>
<th>Alarm Notification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Sensor in Normal State- No liquid detected</td>
</tr>
<tr>
<td>Low Liquid</td>
<td>Liquid detected at a minimum of 1.37” (3.48cm)</td>
</tr>
<tr>
<td>High Liquid</td>
<td>Liquid detected at a minimum of 10.3” (26.2cm)</td>
</tr>
<tr>
<td>Fuel Alarm</td>
<td>Permeable material saturated with Fuel</td>
</tr>
<tr>
<td>Sensor Out</td>
<td>Sensor not communicating to ATG / Console</td>
</tr>
</tbody>
</table>

### Installation Kit

- 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 of installation process]

**IMPORTANT!**

DO NOT MOUNT SENSOR TO FLEXIBLE PRODUCT LINE.

**DO NOT MOUNT SENSOR TO FLEXIBLE PRODUCT LINE.**
## 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") / 857080-211 (12") / 857080-112 (24") / 857080-212 (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
- Bio-Diesel 20
- Bio-Diesel 100
- E-15
- E-85
- DEF
- Waste Oil
- Motor Oil
- Green Diesel
- DEF
- Waste Oil
- Motor Oil

## 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>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>1</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4a (8601 Series)</td>
<td>330020-750</td>
<td>6</td>
<td>Sold Separately</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS4B (8601 Series)</td>
<td>330020-751</td>
<td>6</td>
<td>Sold Separately</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS350/R/PLUS</td>
<td>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>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-300i</td>
<td>NA</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
- Water Alarm: Water detected at a minimum of 1.614” (2.83cm)
- Fuel Alarm: Fuel detected 1.368” (3.47cm)
- Sensor Comm Alarm: Sensor not communicating to ATG / Console

## Installation Kit

- Universal Sensor Mounting Kit (Sold separately)

## Specifications

### Operating Principle

Magneetostrictive 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

- Dia 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

### Third Party Evaluation Links

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

### 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

### 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
- 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>
<th># Of Sensor Inputs Per Module</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLS-450 PLUS (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></td>
<td>Up to 8 - TLS-4XX w/opt. TLS-XB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1TLS4 (8601 Series) 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>330020-751</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS4c (8601 Series)</td>
<td>330020-751</td>
<td></td>
<td></td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>TLS-350/R/PLUS 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-35J</td>
<td>330020-012</td>
<td>Universal Sensor Mounting Kit (Sold separately)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS-300i</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>
</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

<table>
<thead>
<tr>
<th>Operating Principle</th>
<th>Optical- Looking at phase changes in the light beams by causing them to interact or interfere with one another</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Activation Height</td>
<td>Fuel or Water - Approx. 1” (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>11.6” (29.4cm) high, 2.2” (5.6cm) dia.</td>
</tr>
<tr>
<td>Miscellaneous / Notes</td>
<td>Standard Cable Length: 12 Feet (3.66m)</td>
</tr>
<tr>
<td>Third Party Evaluation Links</td>
<td>TLS-3XX/TLS-450 Series Consoles TLS4 (8601 Series) Consoles</td>
</tr>
<tr>
<td>Product Link</td>
<td>Solid-State - Non-Discriminating Dispenser Pan Sensor</td>
</tr>
<tr>
<td>Warranty with System</td>
<td>1 Yr Parts &amp; Labor</td>
</tr>
<tr>
<td>Warranty (When purchased separately)</td>
<td>1 Yr Parts Only</td>
</tr>
</tbody>
</table>

### Example Installation

- Brackets, clamp, etc., from Universal sensor mounting kit
- 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
- Dispenser pan

---

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

**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
- DEF
- Waste Oil
- Bio-Diesel 20
- Bio-Diesel 100
- Green Diesel
- Motor Oil

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

<table>
<thead>
<tr>
<th>Console Compatibility (<em>International Only</em>)</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>16</td>
<td>Up to 4 - TLS-4XX &amp; Up to 8 - TLS-4XX w/ opt. TLS-XB</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>16</td>
<td>Up to 4 - TLS-4XX &amp; Up to 8 - TLS-4XX w/ opt. TLS-XB</td>
<td>Sold Separately</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>12</td>
<td>Included</td>
<td></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>12</td>
<td>Included</td>
<td></td>
</tr>
<tr>
<td>1TLS4B (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-751</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>6</td>
<td>Included</td>
<td></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>6</td>
<td>Included</td>
<td></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>8</td>
<td>Up to 8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-350J</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>TLS-300I</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>TLS-300C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</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
- **Product Link:** Solid-State Non-Discriminating Containment Sump Sensor
- **Warranty with System:** 1 Yr Parts & Labor
- **Warranty (When purchased separately):** 1 Yr Parts Only

---

**Example Installation**

![Example of sensor installation](image_url)
### 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.

### Form Number

<table>
<thead>
<tr>
<th>Sensor Matrix</th>
<th>Sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>794380-208</td>
</tr>
</tbody>
</table>

### 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
- Bio-Diesel 100

### Category

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

### Console Compatibility

(*International Only*)

<table>
<thead>
<tr>
<th>Category</th>
<th>Base Model</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/TLX-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>Up to 12</td>
<td>4</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>Up to 12</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 12</td>
<td>8</td>
<td>Sold Separately</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 12</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>Up to 4</td>
<td>4</td>
<td>Sold Separately</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>Up to 8</td>
<td>8</td>
<td>Included</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>Up to 2</td>
<td>2</td>
<td>Included</td>
</tr>
</tbody>
</table>

### Alarm Notification

- Normal
- Fuel Alarm
- Sensor Out

### Installation Kit

- 330020-076 Sensor Mounting Kit is included (see example installation below).

### Specifications

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

### Product Link

- Piping Sump Sensor

### Warranty

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

### Example Installation

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 IA hazardous area.

---

**Form Number** 847990-001

**Where Used (Typical)**

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

**Category**

- 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
- DEF
- Green Diesel
- Waste Oil
- Motor Oil
- Oil/Water Separator Tank

**Where Used (Typical)**

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

**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:** Fuel: 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.
- **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://www.nwglde.org/evals/veeder_root_o.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 pan sensor**

- Power 120 Vac
- Neutral
- To dispenser

- Existing conduit
- 1-1/2" NPT coupling

- 1-1/2" to 3/4" NPT Reducer

- 3/4" NPT nipple (Customer supplied)
- Junction box (in dispenser)

- Optional Universal Sensor mounting kit

---

**Dispenser Control Interface**

- Dispenser Pan sensor
**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.

**Form Number**

794380-323

**Where Used (Typical)**

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

**Fuel Compatibility**

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

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

<table>
<thead>
<tr>
<th>Sensor Interface Modules</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>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/opt. TLS-XB</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4 (8601 Series)</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>TLS4iv (8601 Series)</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>TLS4c (8601 Series)</td>
<td>330020-751</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>1</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>TLS-350R/PLUS</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>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>8</td>
<td>8</td>
<td>Included</td>
</tr>
</tbody>
</table>

**Alarm Notification**

- Sensor Out alarm: Sensor not resting on bottom of containment or sensor not communicating to ATG/Console
- Fuel alarm: Liquid detected in containment area at approx. 1.5” (3.81cm)

**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°F 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

---

**Diagram**

- 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

**Example Installation**

- 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.
### 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
- Convault Tank

### Fuel Compatibility

- Gas
- Diesel
- Kerosene
- Jet Fuel
- Aviation Gas
- E-15
- E-85
- E-100
- DEF
- 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>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>332812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>16 Sold Separately</td>
</tr>
<tr>
<td>330020-750</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>Up to 8 - TLS-4XX w/opt. TLS-XB</td>
<td>12 Included</td>
</tr>
<tr>
<td>329956-001</td>
<td>Type A Sensor Interface Module</td>
<td>Up to 8</td>
<td>8 Sold Separately</td>
</tr>
</tbody>
</table>

### Alarm Notification

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

### Specifications

- **Operating Principle**: Optical sensor and conductivity
- **Product Activation Height**: Fuel or Water - <0.1" (0.25cm)
- **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

### Example Installation

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

---

### Warranty

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

Interstellar Sensor for Double-Wall Fiberglass Tanks

The Non-Discriminating Interstellar 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
- Spill Containment
- STP Sump
- Convoluted Tank

### Fuel Compatibility

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

### Console Compatibility

<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>4A or Higher</td>
<td>32812-001</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>32812-001</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>6A or Higher</td>
<td>33020-751</td>
<td>Interstitial Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS4B (8601 Series)</td>
<td>6A or Higher</td>
<td>33020-751</td>
<td>4 Probe / 4 Sensor Interface Module</td>
<td>1</td>
<td>4</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-450J</td>
<td>124/324 or Higher</td>
<td>329358-001</td>
<td>4 Probe / 8 Sensor Interface Module</td>
<td>8</td>
<td>Included</td>
<td></td>
</tr>
<tr>
<td>TLS-300C</td>
<td>2 Probe / 8 Sensor Options</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 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

### 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
☐ Annular Space
☐ Spill Containment
☐ Monitoring Well
☐ STP Sump
☐ Oil/Water Separator Tank
☐ Convault Tank

Category

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

Fuel Compatibility

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

Console Compatibility (*International Only*)

Recommended Min. Console Software

Sensor Interface Modules

<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 16 Sold Separately</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS-450 4A or Higher 332812-001</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</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1TLS4i (8601 Series) 330020-750</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1TLS4B (8601 Series) 330020-751</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1TLS4c (8601 Series) 330020-751</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS-350/R/PLUS 124/324 or Higher 329960-001 Type A Sensor Interface Module Up to 8 8 Sold Separately</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS-350J</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS-300i</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS-300C</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
Sensor out: Sensor not communicating to ATG / Console

Specifications

Example Installation

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

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

Product Link
Solid-State Alternative Ethanol Fluid Interstitial Sensor

Warranty with System
1 Yr Parts & Labor

Warranty (When purchased separately)
1 Yr Parts Only

[Diagram of sensor installation]
**Sensor Description**

**Interstitial Sensor for Steel Tanks**

The Interstitial Sensor for steel tanks is non-discriminating and detects the presence of liquid between the double walls of the tank.

---

**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
- DEF
- E–100
- Waste Oil
- Bio–Diesel 20
- Bio–Diesel 100

**Console Compatibility**

(*International Only*)

<table>
<thead>
<tr>
<th>Console Type</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>16</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-450</td>
<td>4A or Higher</td>
<td>332812-001</td>
<td></td>
<td></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></td>
<td></td>
</tr>
<tr>
<td>1TLS4B (8601 Series)</td>
<td></td>
<td>330020-751</td>
<td></td>
<td></td>
<td></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>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></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></td>
<td>330230-001</td>
<td>4 Probe / 8 Sensor Interface Module</td>
<td></td>
<td>8</td>
<td>Included</td>
</tr>
<tr>
<td>TLS-300C</td>
<td></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
- 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
- **Product Link**: Interstitial Sensor for Steel Tanks
- **Warranty with System**: 1 Yr Parts & Labor
- **Warranty (When purchased separately)**: 1 Yr Parts Only

---

**Example Installation**

- Weatherproof junction box
- 1/2” NPT cord grips
- Rigid conduit (to Console)
- Manhole
- Seal-off
- Appropriate reducer with 1/2” NPT opening for cable cord grip
- Leader cable
- Riser
- Tank
- 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.

### Form Number

**794380-333**

### Where Used (Typical)

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

### 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>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</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)</td>
<td></td>
<td></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></td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4B (8601 Series)</td>
<td>1TLS4c (8601 Series)</td>
<td>330020-751</td>
<td></td>
<td>6</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></td>
<td>329356-003</td>
<td>4 Probe / 4 Sensor Interface Module</td>
<td>4</td>
<td></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>1</td>
<td>8</td>
<td>Included</td>
</tr>
<tr>
<td>TLS-300C</td>
<td></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
- **Fuel alarm**: Not sitting correctly on bottom of interstitial space or 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” (3.6cm)
- **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); 312020-928 (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

### Example Installation

- Weatherproof junction box
- 1/2” NPT Cord grips
- Appropriate reducer with 1/2” NPT opening for cable cord grip
- Rigid conduit (to Console)
- Manhole
- Seal-off
- Sensor must rest on bottom of interstitial riser
### 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.

### Form Number

| Form Number | 794380-430 |

### 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
- E−100
- 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>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>1</td>
<td>12</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>6</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>329356-003</td>
<td>4 Probe / 8 Sensor Interface Module</td>
<td>4</td>
<td>4</td>
<td>Sold Separately</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>8</td>
<td>Included</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>8</td>
<td>Included</td>
</tr>
</tbody>
</table>

### Alarm Notification

- Normal: Sensor in Normal State - No liquid detected
- Fuel alarm: Water or Fuel 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**: 1.1” (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 cap and adapter kit)
- **Third Party Evaluation Links**: TLS-3XX/TLS-450 Series Consoles TLS4 (8601 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

### Example Installation

![Example Installation Diagram](image-url)
**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
- 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: Motor Oil
- E–15
- Green Diesel
- DEF
- Waste Oil
- Bio–Diesel 100

**Console Compatibility**

(“International Only”)

<table>
<thead>
<tr>
<th>Recommended Min. Console Software</th>
<th>Console Compatibility 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 (USM)</td>
<td>Universal Sensor Module</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS-450</td>
<td>4A or Higher (USM)</td>
<td>Universal Sensor Module</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS-450PLUS 329956-001</td>
<td>124/324 or Higher (USM)</td>
<td>Type A Sensor Interface Module</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1TLS4 (8601 Series)</td>
<td>6A or Higher (USM)</td>
<td>Universal Sensor Module</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS4i (8601 Series)</td>
<td>6A or Higher (USM)</td>
<td>Universal Sensor Module</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS4c (8601 Series)</td>
<td>6A or Higher (USM)</td>
<td>Universal Sensor Module</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS-350/R/PLUS</td>
<td>124/324 or Higher (USM)</td>
<td>Universal Sensor Module</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS-350J</td>
<td>124/324 or Higher (USM)</td>
<td>Universal Sensor Module</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS-300i</td>
<td>124/324 or Higher (USM)</td>
<td>Universal Sensor Module</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS-300C</td>
<td>124/324 or Higher (USM)</td>
<td>Universal Sensor Module</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” (2.54cm)
- Sensor out: Sensor not communicating to ATG / Console

**Installation Kit**

312020-928 2” Cap Adapter Kit (Sold separately)

**Specifications**

- Operating Principle: Optical
- Product Activation Height: 1” (2.54cm)
- Operating Temp: -40 to +122°F (-40 to +50°C)
- Dimensions: Dia. 0.63” (16mm), Length 2” (51mm)
- Miscellaneous / Notes: Standard Cable Length: 25 Feet (7.6m); 312020-928 (2” [50mm] Riser cap and Adapter kit)

**Third Party Evaluation Links**

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

**Product Link**

MicroSensor

**Warranty with System**

1 Yr Parts & Labor

**Warranty (When purchased separately)**

1 Yr Parts Only

---

**Example Installation**

Weatherproof junction box

Manhole

Seal-off

Rigid conduit (to Console)

1/2” NPT Cord grips

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

Sensor cable

Minimum riser diameter

1 inch (2.54cm)

MicroSensor must rest on bottom of interstitial riser
### 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
- STP Sump
- Convault Tank
- Annular Space
- Monitoring Well
- Oil/Water Separator Tank

### Fuel Compatibility

|------|-----|--------|----------|----------|--------------|------|------|--------------|-----|----------|---------------|----------|

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

### Console Compatibility (*International Only1*)

<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>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</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>Up to 8 - TLS-4XX w/opt. TLS-XB</td>
<td>12</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>6</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>12</td>
<td>6</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>1</td>
<td>12</td>
<td>6</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>12</td>
<td>6</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>4</td>
<td>4</td>
<td>Sold Separately</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>8</td>
<td>Included</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>8</td>
<td>Included</td>
</tr>
</tbody>
</table>

### 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
- 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
**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
- Split Containment
- STP Sump
- Convault Tank

**Category**

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

---

**Fuel Compatibility**

- Gas
- Diesel
- Kerosene
- Jet Fuel
- Aviation Gas
- Ethylene glycol
- Propylene glycol
- Salt brine solution

---

**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 Sold Separately</td>
<td></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/optional TLS-XB</td>
<td>12 Included</td>
<td></td>
</tr>
<tr>
<td>TLS4/450 (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-750</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 8 - TLS-4XX w/optional TLS-XB</td>
<td>6 Included</td>
<td></td>
</tr>
<tr>
<td>TLS4B/450 (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-751</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 8 - TLS-4XX w/optional TLS-XB</td>
<td>6 Included</td>
<td></td>
</tr>
<tr>
<td>TLS350 (8601 Series)</td>
<td>124/324 or Higher</td>
<td>329958-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 8 - TLS-4XX w/optional TLS-XB</td>
<td>8 Sold Separately</td>
<td></td>
</tr>
<tr>
<td>TLS-350J</td>
<td>4A or Higher</td>
<td>329356-003</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 8 - TLS-4XX w/optional TLS-XB</td>
<td>4 Sold Separately</td>
<td></td>
</tr>
<tr>
<td>TLS-300i</td>
<td>6A or Higher</td>
<td>330230-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 8 - TLS-4XX w/optional TLS-XB</td>
<td>8 Included</td>
<td></td>
</tr>
<tr>
<td>TLS-300C</td>
<td>6A or Higher</td>
<td>330513-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 8 - TLS-4XX w/optional TLS-XB</td>
<td>8 Included</td>
<td></td>
</tr>
</tbody>
</table>

**Alarm Notification**

- Normal
- Fuel alarm
- Sensor out

**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; salinity solutions 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
Vented riser pipe
Seal-off
cap w/vent tube
Rigid conduit
(to console)
Single-Point
Hydrostatic Sensor
Brine level
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

### 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-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>Flexible</td>
</tr>
<tr>
<td>TLS4i (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-751</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>12</td>
<td>12</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>6</td>
<td>6</td>
<td>Included</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>4</td>
<td>4</td>
<td>Included</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>
<td></td>
</tr>
<tr>
<td>TLS-300C</td>
<td>330513-001</td>
<td>2 Probe / 8 Sensor Options</td>
<td>8</td>
<td>8</td>
<td>Included</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.

### Example Installation

- Double-wall sump
- Concrete pad
- Coupling and seals as required for conduit egress
- Seal-off and junction box
- Use tie wraps to keep cable clear of sump components and lid

### Third Party Evaluation Links

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

### Product Link

- Single-Point Mini-Hydrostatic Sensor

### Warranty

- 1 Yr Parts & Labor
- 1 Yr Parts Only

---

*Note: Graphics and additional information are not included in the text representation.*
### 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)

<table>
<thead>
<tr>
<th>Category</th>
<th>Dispenser Pan</th>
<th>Spill Containment</th>
<th>Monitoring Well</th>
<th>Oil/Water Separator Tank</th>
</tr>
</thead>
</table>

### Fuel Compatibility

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

### 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>8</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>6</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>4</td>
<td>Included</td>
</tr>
<tr>
<td>TLS-350/R/PLUS 124/324 or Higher</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></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>TLS-300i</td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>TLS-300C</td>
<td></td>
<td></td>
<td></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
- **TLS4 (8601 Series) Consoles**
- **Product Link:** Vapor Sensor
- **Warranty with System:** 1 Yr Parts & Labor
- **Warranty (When purchased separately):** 1 Yr Parts Only

---

![Example Installation Image]
Sensor Description

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)

Dispenser Pan
Spill Containment
STP Sump
Convault Tank

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)

Category

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

Fuel Compatibility

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

Console Compatibility (*International Only*)

Recommended Min. Console Software

Module Form # Module Description # Of Sensor Inputs Per Module Availability

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 8 Sold Separately

TLS-450 4A or Higher 332812-001

1TLS4 (8601 Series) 6A or Higher 330020-750 Universal Sensor Input Output Module (USIOM-AC) 1 Included

1TLS4B (8601 Series) 330020-751

1TLS4c (8601 Series) 330020-751

TLS-350/R/PLUS 124/324 or Higher 329399-001 Groundwater Sensor Interface Module Up to 8 5 Sold Separately

TLS-350J

TLS-300i

TLS-300C

Alarming 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 AG / 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
TSL-3XX/TLS-450 Series Consoles
TL4S (8601 Series) Consoles

Product Link
Groundwater Sensor

Warranty with System
1 Yr Parts & Labor

Warranty (When purchased separately)
1 Yr Parts Only

Example Installation

Cord grips
Weatherproof junction box and seal off

Rigid conduit (to console)

Perforated PVC monitoring well housing

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 well cap w/ locking handle

Sensor

Water float
### Sensor Description

**Oil/Water Separator Sensor (OWSS)**

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
- Spill Containment
- STP Sump
- Convault Tank
- Oil/Water Separator Tank

---

### Fuel Compatibility

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

---

### Console Compatibility (International Only)

- TLS-450PLUS (8600 Series) 6A or Higher
- TLS-450 4A or Higher
- TLS4 (8601 Series) 6A or Higher
- TLS4i (8601 Series)
- TLS4B (8601 Series)
- TLS4c (8601 Series)
- TLS-350/R/PLUS
- TLS-350J 124/324 or Higher
- TLS-300i
- TLS-300C

---

### Sensor Interface Modules

<table>
<thead>
<tr>
<th>Module Form #</th>
<th>Module Description</th>
<th># Of Modules Per Console</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>332812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td></td>
</tr>
<tr>
<td>332812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 8 - TLS-4XX w/ opt. TLS-XB</td>
<td></td>
</tr>
<tr>
<td>330020-750</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>1</td>
<td>Included</td>
</tr>
<tr>
<td>330020-751</td>
<td>Interstitial Sensor Interface Module</td>
<td>Up to 8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>329358-001</td>
<td>4 Probe / 4 Sensor Interface Module</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>330230-001</td>
<td>2 Probe / 8 Sensor Options</td>
<td>8</td>
<td>Included</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>TLS4/8601 Series TSL-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>
</tr>
<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 Double-Wall Fiberglass Tanks</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>
</tr>
<tr>
<td>Interstitial Sensors for Steel Tanks</td>
<td>794390-4X0</td>
<td>Annular Space</td>
<td>Liquid Sensor Setup: Sensor Type - Tri-State Liquid</td>
<td>Device Setup Liquid Sensor: Model - Tri-State</td>
</tr>
<tr>
<td>MicroSensor</td>
<td>794380-344</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>
</tr>
<tr>
<td>Hydrostatic Reservoir</td>
<td>794380-301 (1 float); 794380-303 (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>
</tr>
<tr>
<td>Vapor</td>
<td>794390-700</td>
<td>Monitor Well</td>
<td>Vapor Sensor Setup</td>
<td>Device Setup Vapor Sensor</td>
</tr>
<tr>
<td>Groundwater</td>
<td>794380-62X</td>
<td>Monitor Well</td>
<td>Groundwater Sensor Setup</td>
<td>Device Setup Groundwater Sensor</td>
</tr>
<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.**

![Fig. B-3.- Determining Distance D3](image)

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>
</tr>
</thead>
<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>
</tr>
</tbody>
</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)
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>
<tbody>
<tr>
<td>Item</td>
<td>Description</td>
</tr>
<tr>
<td>Primaries</td>
<td></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” (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></td>
</tr>
<tr>
<td>Insulation type</td>
<td>Fluoropolymer</td>
</tr>
<tr>
<td>Final O.D.</td>
<td>0.161” (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