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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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<td>Piping Sump-12' (3.66m) Cable</td>
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<td>Category</td>
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</table>

**Notes:**

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

**Part Number:** 794380-322

**Category**
- Discriminating
- Non-Discriminating
- Position Sensitive

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

1. Single use only (Test per Sensor Operability Guide in E-10 or less)

**Console Compatibility (International Only)**

<table>
<thead>
<tr>
<th>Console Compatibility</th>
<th>Recommended Min. Console Software</th>
<th>Module Part #</th>
<th>Module Description</th>
<th># of Modules per Console</th>
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<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>Sold Separately</td>
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<tr>
<td>TLS-450</td>
<td>4A or Higher</td>
<td>330020-750</td>
<td>Universal Sensor Input/Output Module (USIOM-AC)</td>
<td>1</td>
<td>Included</td>
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<tr>
<td>TLS4 (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-751</td>
<td>Universal Sensor Input/Output Module (USIOM-AC)</td>
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<tr>
<td>TLS4i (8601 Series)</td>
<td>6A or Higher</td>
<td>332935-001</td>
<td>Interstitial Sensor Interface Module</td>
<td>Up to 8</td>
<td>Sold Separately</td>
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<tr>
<td>TLS4B (8601 Series)</td>
<td>6A or Higher</td>
<td>332935-003</td>
<td>4 Probe / 8 Sensor Interface Module</td>
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<td>TLS4c (8601 Series)</td>
<td>6A or Higher</td>
<td>330513-001</td>
<td>2 Probe / 8 Sensor Options</td>
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</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)
- 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 1.37" (3.48cm), High 7.66" (19.45cm)
- Operating Temperature: +32 to +140°F (+0 to +60°C)
- Dimensions: 11.6" (29.4cm) high, 2.2" (5.6cm) dia.
- Miscellaneous/Notes: Standard Cable Length: 12ft (3.66m)
- Product Link: Discriminating Dispenser Pan Sensor
- Warranty with System: 1 Yr Parts & Labor
- Warranty (When purchased separately): 1 Yr Parts Only

**Example Installation**
- IMPORTANT! DO NOT MOUNT SENSOR TO FLEXIBLE PRODUCT LINE.
- 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.

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

**Notes**
- 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.

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

**Product Link**
- Discriminating Dispenser Pan Sensor

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

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

**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 Temperature: +32 to +140°F (+0 to +60°C)
- Dimensions: 11.6" (29.4cm) high, 2.2" (5.6cm) dia.
- Miscellaneous/Notes: Standard Cable Length: 12ft (3.66m)
- Product Link: Discriminating Dispenser Pan Sensor
- Warranty with System: 1 Yr Parts & Labor
- Warranty (When purchased separately): 1 Yr Parts Only

**Example Installation**
- IMPORTANT! DO NOT MOUNT SENSOR TO FLEXIBLE PRODUCT LINE.
- 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.

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

**Notes**
- 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.

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

**Product Link**
- Discriminating Dispenser Pan Sensor

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

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

**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 Temperature: +32 to +140°F (+0 to +60°C)
- Dimensions: 11.6" (29.4cm) high, 2.2" (5.6cm) dia.
- Miscellaneous/Notes: Standard Cable Length: 12ft (3.66m)
- Product Link: Discriminating Dispenser Pan Sensor
- Warranty with System: 1 Yr Parts & Labor
- Warranty (When purchased separately): 1 Yr Parts Only

**Example Installation**
- IMPORTANT! DO NOT MOUNT SENSOR TO FLEXIBLE PRODUCT LINE.
- 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.

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

**Notes**
- 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.
Discriminating Containment Sump Sensor Specifications

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

<table>
<thead>
<tr>
<th>Part Number</th>
<th>794380-352</th>
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</table>

### 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
- Motor Oil
- Single use only (Test per Sensor Operability Guide in E-10 or less)

### Console Compatibility (International Only)

<table>
<thead>
<tr>
<th>Module Part #</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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<tr>
<td>332812-001</td>
<td>Universal Sensor Module (USM)</td>
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<td>330020-750</td>
<td>Universal Sensor Input Out-put Module (USIOM-AC)</td>
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<td>12</td>
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<td>330020-751</td>
<td></td>
<td>Up to 8 - TLS-4XX w/ opt. TLS-XB</td>
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<tr>
<td>329358-001</td>
<td>Interstitial Sensor Interface Module</td>
<td>Up to 8</td>
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<td>2 Probe / 8 Sensor Options</td>
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### 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 Temperature: +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 ft (3.66m)
- Product Link: Discriminating Containment Sump 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.

1/2" (1.27cm) NPT cord grip supplied w/ cable

Weatherproof junction box

Rigid conduit to console

Brackets, clamp, etc., from optional Universal Sensor Mounting Kit

Submersible pump

Containment sump

1/2" (1.27cm) NPT cord grip supplied w/ cable

Weatherproof junction box

Rigid conduit to console

Brackets, clamp, etc., from optional Universal Sensor Mounting Kit

---

www.veeder.com
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## 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.

### Part Number

- **794380-320**

### Category

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

### Fuel Compatibility

- **Gas**
- **Diesel**
- **Kerosene**
- **Jet Fuel**
- **Aviation Gas**
- **Green Diesel**
- **DEF**
- **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

- **TLS-450PLUS (8600 Series)**
  - 6A or Higher
  - Module Part #: 332812-001
  - Module Description: Universal Sensor Module (USM)
  - # of Modules per Console: Up to 4 - TLS-4XX
  - # of Sensor Inputs per Module: 8
  - Availability: Sold Separately

- **TLS-450**
  - 4A or Higher
  - Module Part #: 330020-750
  - Module Description: Universal Sensor Input Output Module (USIOM-AC)
  - # of Modules per Console: 1
  - # of Sensor Inputs per Module: 6
  - Included

- **TLS4i (8601 Series)**
  - Module Part #: 332812-001
  - Module Description: Universal Sensor Module (USM)
  - # of Modules per Console: Up to 4 - TLS-4XX
  - # of Sensor Inputs per Module: 8
  - Availability: Sold Separately

- **TLS-350/R/PLUS**
  - 124/324 or Higher
  - Module Part #: 329950-001
  - Module Description: Type B Interface Module
  - # of Modules per Console: Up to 8
  - # of Sensor Inputs per Module: 6
  - Availability: Sold Separately

- **TLS-300i**
  - Module Part #: 330020-012
  - Module Description: 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” (3.4cm)

- **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 Temperature**
  - -40 to +122°F (-40 to +50°C)

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

- **Miscellaneous/Notes**
  - Standard Cable Length: 12ft (3.66m)

### 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**

### Where Used (Typical)

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

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1. Rubber grommet seal clamped on inside - or as recommended by dispenser pan manufacturer
2. Weatherproof junction box with 1/2” (1.27cm) NPT threads (16 cubic inch (262cm³) volume minimum).

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**Example Installation**

- Brackets, clamp, etc., from Universal sensor mounting kit
- Weatherproof junction box with 1/2” (1.27cm) NPT threads (16 cubic inch (262cm³) volume minimum).
- Rubber grommet seal clamped on inside - or as recommended by dispenser pan manufacturer
- 1/2” (1.27cm) Rigid conduit to console
- Dispenser pan

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*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 Sensor Specifications

### 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.

### Part Number

794380-350

### Category

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

### Fuel Compatibility

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

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Module Part #</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>Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>8</td>
<td>Sold Separately</td>
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<tr>
<td>TLS-450</td>
<td>4A or Higher</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 8 - TLS-4XX w/ opt. TLS-XB</td>
<td>8</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4 (8601 Series)</td>
<td>6A or Higher</td>
<td>Universal Sensor Input Out-put Module (USIOM-AC)</td>
<td>1</td>
<td>6</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS4B (8601 Series)</td>
<td>6A or Higher</td>
<td>Universal Sensor Input Out-put Module (USIOM-AC)</td>
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<td>Sold Separately</td>
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<tr>
<td>TLS4c (8601 Series)</td>
<td>6A or Higher</td>
<td>Universal Sensor Input Out-put Module (USIOM-AC)</td>
<td>6</td>
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<td>Sold Separately</td>
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<tr>
<td>TLS-350/R/PLUS</td>
<td>124/324 or Higher</td>
<td>Type B Interface Module</td>
<td>Up to 8</td>
<td>6</td>
<td>Included</td>
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<tr>
<td>TLS-300i</td>
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<tr>
<td>TLS-300C</td>
<td></td>
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<td></td>
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<td>N/A</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 Temperature**: -40 to +122°F (-40 to +50°C)
- **Dimensions**: 22.1" (56.1cm) high, 2.2" (5.6cm) dia.
- **Miscellaneous/Notes**: Standard Cable Length: 12ft (3.66m)
- **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

### Where Used (Typical)

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

### Third Party Evaluation Links

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

### Submersible Pump

- 1/2" (1.27cm) NPT cord grip supplied w/ cable
- Weatherproof junction box
- Seal-off
- Rigid conduit to console
- Brackets, clamp, etc., from optional Universal Sensor Mounting Kit

### Installation Kit

330020-012 Universal Sensor Mounting Kit (Sold separately)

**IMPORTANT!**

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.

### Part Number

857080-111 (12"/30.48cm), -112 (24"/60.96cm) / 857080-211 (12"/30.48cm), -212 (24"/60.96cm).

The -211 and -212 sensors are capable of performing a Sump Integrity Test.

### Category

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

### Fuel Compatibility

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

### Console Compatibility (“International Only”)

<table>
<thead>
<tr>
<th>Category</th>
<th>Fuel Compatibility</th>
<th>Module Part #</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>332812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>16</td>
<td>Sold Separately</td>
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<td></td>
<td>4A or Higher</td>
<td></td>
<td></td>
<td>Up to 8 - TLS-4XX</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>w/ opt. TLS-XB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS4 (8601)</td>
<td>6A or Higher</td>
<td>330020-750</td>
<td>Universal Sensor Input/Out-put Module (USIOM-AC)</td>
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<td>330020-751</td>
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<td>TLS4B (8601)</td>
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<tr>
<td>TLS4c (8601)</td>
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<tr>
<td>TLS-350/R/PLUS</td>
<td>124/324 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>
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<td>(-211 and -212</td>
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<td>sensors require</td>
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<td></td>
<td>126/326 or higher</td>
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<tr>
<td>TLS-300i</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>TLS-300C</td>
<td></td>
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<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" (4.1cm)
- Fuel Alarm: Fuel detected 1.368" (3.47cm)
- Sensor Comm. Alarm: Sensor not communicating to ATG/Console

### Installation Kit

- 330020-012 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 Temperature:** -40°F to +140°F (-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: 10ft (3.66m)
- **Third Party Evaluation Links:** TLS-350/TLS-450 Series Consoles TL54 (8601 Series) Consoles
- **Product Link:** Mag Sump Sensor
- **Warranty with System:** 1 Yr Parts & Labor
- **Warranty (When purchased separately):** 1 Yr Parts Only

### Example Installation

- Containment sump
- Mag Sensor
- Submersible pump
- Cord grip
- Weatherproof junction box
- Seal-off
- 1/2" (1.27cm) Rigid conduit to console
- Brackets, clamp, etc. from optional Universal sensor mounting kit

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**IMPORTANT! DO NOT MOUNT SENSOR TO FLEXIBLE PRODUC T LINE.**
### Sensor Description

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.

### Part Number

- **Part Number:** 794380-321

### Fuel Compatibility

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

### Category

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

### Console Compatibility (*International Only* 1)

<table>
<thead>
<tr>
<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>Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>16</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>Universal Sensor Output Module (USOM-AC)</td>
<td>Up to 8 - TLS-4XX w/ opt. TLS-XB</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>Type A Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
</tbody>
</table>

### Alarm Notification

- Normal: Sensor in Normal State - No liquid detected
- Fuel Alarm: Liquid detected - Approx. 1” (2.54cm)
- Sensor Out: Sensor not communicating to ATG/Console

### Installation Kit

- **Part Number:** 330020-012
- **Description:** 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 Temperature:** -40 to +122°F (-40 to +50°C)
- **Dimensions:** 11.6” (29.4cm) high, 2.2” (5.6cm) dia.
- **Miscellaneous/Notes:** Standard Cable Length: 12ft (3.66m)
- **Third Party Evaluation Links:** TLS-3XX/TLS-450 Series Consoles TLS4 (8601 Series) Consoles
- **Product Link:** Solid-State - Non-Discriminating Dispenser Pan Sensor

### Example Installation

- Weatherproof junction box with 1/2” (1.27cm) NPT threads (16 cubic inch (262cm³) volume minimum)
- Rubber grommet seal clamped on inside - or as recommended by dispenser pan manufacturer
- Dispenser pan sensor
- U-channel
- Cord grip
- 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.

Part Number
794380-351

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
- Motor Oil

Console Compatibility

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

Recommended Min. Console Software

- 332812-001 Universal Sensor Module (USM)
- 330020-750 Universal Sensor Input Out-put Module (USIOM-AC)
- 329956-001 Type A Sensor Interface Module

Sensor Interface Modules

- Module Part #: 332812-001
- Module Description: Universal Sensor Module (USM)
- # of Modules per Console: Up to 4
- # of Sensor Inputs per Module: 16
- Availability: Sold Separately

- Module Part #: 330020-750
- Module Description: Universal Sensor Input Out-put Module (USIOM-AC)
- # of Modules per Console: 1
- # of Sensor Inputs per Module: 12
- Availability: Included

- Module Part #: 329956-001
- Module Description: Type A Sensor Interface Module
- # of Modules per Console: Up to 8
- # of Sensor Inputs per Module: 8
- Availability: Sold Separately

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 Temperature: -40 to +122°F (-40 to +50°C)
- Dimensions: 22.1" (56.1cm) high, 2.2" (5.6cm) dia.
- Miscellaneous/Notes: Standard Cable Length: 12ft (3.66m)
- Product Link: Solid-State Non-Discriminating Containment Sump Sensor
- Warranty with System: 1 Yr Parts & Labor
- Warranty (When purchased separately): 1 Yr Parts Only
- Where Used (Typical):
  - Dispenser Pan
  - Spill Containment
  - STP Sump
  - Convault Tank
  - Annular Space
  - Monitoring Well
  - Oil/Water Separator Tank

Example Installation

- Submersible pump
- Containment sump sensor
- 1/2" (1.27cm)NPT cord grip supplied w/ cable
- Weatherproof junction box
- Seal-off
- Rigid conduit to console
- Brackets, clamp, etc., from optional Universal Sensor Mounting Kit

IMPORTANT! Do not mount sensor to flexible product line.
The Piping Sump Sensor is installed in a tank piping sump (STP Containment Sump) and will detect the presence of a liquid.

### Part Number
- Piping Sump Sensor: 794380-208

### 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
- Motor Oil
- Bio-Diesel 100
- Green Diesel

### Console Compatibility

#### TLS-450PLUS (8600 Series)
- **Part Number:** 6A or Higher
- **Module:** 332812-001
- **Module Description:** Universal Sensor Module (USM)
- **# of Modules per Console:** Up to 4
- **Availability:** Sold Separately

#### TLS-450
- **Part Number:** 4A or Higher
- **Module:** 330020-750
- **Module Description:** Universal Sensor Input Out-put Module (USIOM-AC)
- **# of Modules per Console:** 1
- **Availability:** Included

#### TLS4 (8601 Series)¹
- **Part Number:** 6A or Higher
- **Module:** 330020-750
- **Module Description:** Universal Sensor Input Out-put Module (USIOM-AC)
- **# of Modules per Console:** Up to 8
- **Availability:** Sold Separately

#### TLS4i (8601 Series)
- **Part Number:** 330020-750
- **Module Description:** Universal Sensor Input Out-put Module (USIOM-AC)
- **# of Modules per Console:** 1
- **Availability:** Included

#### TLS4B (8601 Series)³
- **Part Number:** 330020-750
- **Module Description:** Universal Sensor Input Out-put Module (USIOM-AC)
- **# of Modules per Console:** Up to 8
- **Availability:** Sold Separately

#### TLS4c (8601 Series)
- **Part Number:** 330020-750
- **Module Description:** Universal Sensor Input Out-put Module (USIOM-AC)
- **# of Modules per Console:** 1
- **Availability:** Included

#### TLS-350/R/PLUS
- **Part Number:** 124/324 or Higher
- **Module:** 330230-001
- **Module Description:** 4 Probe / 8 Sensor Interface Module
- **# of Modules per Console:** 8
- **Availability:** Sold Separately

#### TLS-350i
- **Part Number:** 330230-001
- **Module Description:** 4 Probe / 8 Sensor Interface Module
- **# of Modules per Console:** 8
- **Availability:** Included

#### TLS-300C
- **Part Number:** 330513-001
- **Module Description:** 2 Probe / 8 Sensor Options
- **# of Modules per Console:** 8
- **Availability:** Sold Separately

### Alarm Notification
- Normal
- Fuel Alarm
- Sensor Out

### Installation Kit
- **Part Number:** 330020-076
- **Description:** Piping Sump Sensor Mounting Kit is included (see example installation below).

### 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: 12ft (3.66m) 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
- **Warranty (When purchased separately):** 1 Yr Parts Only

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

### Example Installation

**IMPORTANT!**

DO NOT MOUNT SENSOR TO FLEXIBLE PRODUCTS.

Cable to junction box and seal-off

*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.
## Non-Discriminating Standalone Dispenser Pan Sensor Specifications

<table>
<thead>
<tr>
<th>Sensor Description</th>
<th>Non-Discriminating Standalone Dispenser Pan Sensor</th>
<th>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.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>847990-001</td>
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<tr>
<td>Category</td>
<td></td>
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</tr>
<tr>
<td>Discriminating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Discriminating</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>Position Sensitive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level Sensing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Static Testing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydrostatic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel Compatibility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas</td>
<td>✔️</td>
<td>Green Diesel</td>
</tr>
<tr>
<td>Diesel</td>
<td>✔️</td>
<td>DEF</td>
</tr>
<tr>
<td>Kerosene</td>
<td>✔️</td>
<td>Waste Oil</td>
</tr>
<tr>
<td>Jet Fuel</td>
<td>✔️</td>
<td>Motor Oil</td>
</tr>
<tr>
<td>Bio-Diesel 20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bio-Diesel 100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Console Compatibility</td>
<td>Not Required</td>
<td></td>
</tr>
<tr>
<td>Alarm Notification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>Dispenser operational</td>
<td></td>
</tr>
<tr>
<td>Liquid Detected</td>
<td>Remove power to the dispenser</td>
<td></td>
</tr>
<tr>
<td>Sensor Out</td>
<td>Remove power to the dispenser</td>
<td></td>
</tr>
<tr>
<td>Installation Kit</td>
<td>330020-012</td>
<td>Universal Sensor Mounting Kit (Sold separately)</td>
</tr>
<tr>
<td>Specifications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Principle</td>
<td>Reed switch/float</td>
<td></td>
</tr>
<tr>
<td>Product Activation Height</td>
<td>Gasoline: 1.71” (4.34cm), water: 1.62” (4.11cm)</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>+32 to +140°F (0 to +60°C) (freezing liquids)</td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>11.6” (29.4cm) high, 2.2” (5.6cm) dia.</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous/Notes</td>
<td>Latching alarm circuitry ensures dispenser can not be restarted until hazardous condition has been corrected. Connects directly to dispenser wiring. Controls most manufacturer’s dispensers. Cable length: 5ft (1.5m). Control interface dimensions: 9.4” (23.9cm) high, 2.2” (5.6cm) dia.</td>
<td></td>
</tr>
<tr>
<td>Product Link</td>
<td>Non-Discriminating Stand-Alone Dispenser Pan Sensor</td>
<td></td>
</tr>
<tr>
<td>Warranty with System</td>
<td>1 Yr Parts &amp; Labor</td>
<td></td>
</tr>
<tr>
<td>Warranty (When purchased separately)</td>
<td>1 Yr Parts Only</td>
<td></td>
</tr>
<tr>
<td>Where Used (Typical)</td>
<td>Dispenser Pan ✔️</td>
<td></td>
</tr>
<tr>
<td>Spill Containment</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>STP Sump</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Convault Tank</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annular Space</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitoring Well</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil/Water Separator Tank</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Operating Principle
Reed switch/float

### Product Activation Height
- Gasoline: 1.71” (4.34cm)
- Water: 1.62” (4.11cm)

### Operating Temperature
+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 not be restarted until hazardous condition has been corrected.
- Connects directly to dispenser wiring.
- Controls most manufacturer’s dispensers.
- Cable length: 5ft (1.5m).
- Control interface dimensions: 9.4” (23.9cm) high, 2.2” (5.6cm) dia.

### Third Party Evaluation Link

### Product Link
Non-Discriminating Stand-Alone Dispenser Pan Sensor

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

*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

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

### Part Number

<table>
<thead>
<tr>
<th>Category</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Discriminating</td>
<td>✔</td>
</tr>
<tr>
<td>Non-Discriminating</td>
<td>✔</td>
</tr>
<tr>
<td>Position Sensitive</td>
<td>✔</td>
</tr>
</tbody>
</table>

### Fuel Compatibility

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

### Console Compatibility

<table>
<thead>
<tr>
<th>Console Compatibility</th>
<th>Recommended Min. Console Software</th>
<th>Module Part #</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>Universal Sensor Module (USM)</td>
<td>332812-001</td>
<td>Up to 4 - TLS-4XX</td>
<td>16</td>
<td>Sold Separately</td>
<td></td>
</tr>
<tr>
<td>TLS-450 4A or Higher</td>
<td>Universal Sensor Input Output Module (USOM-AC)</td>
<td>330020-750</td>
<td>1</td>
<td>12</td>
<td>Included</td>
<td></td>
</tr>
<tr>
<td>TLS4 (8601 Series) 6A or Higher</td>
<td>Universal Sensor Input Output Module (USOM-AC)</td>
<td>330020-751</td>
<td>1</td>
<td>6</td>
<td>Sold Separately</td>
<td></td>
</tr>
<tr>
<td>TLS4i (8601 Series) 6A or Higher</td>
<td>Universal Sensor Input Output Module (USOM-AC)</td>
<td>330020-750</td>
<td>1</td>
<td>12</td>
<td>Included</td>
<td></td>
</tr>
<tr>
<td>TLS4b (8601 Series) 6A or Higher</td>
<td>Universal Sensor Input Output Module (USOM-AC)</td>
<td>330020-751</td>
<td>1</td>
<td>6</td>
<td>Sold Separately</td>
<td></td>
</tr>
<tr>
<td>TLS4c (8601 Series) 6A or Higher</td>
<td>Universal Sensor Input Output Module (USOM-AC)</td>
<td>330020-750</td>
<td>1</td>
<td>12</td>
<td>Included</td>
<td></td>
</tr>
<tr>
<td>TLS-350/R/PLUS 124/324 or Higher</td>
<td>Universal Sensor Input Output Module (USOM-AC)</td>
<td>330020-751</td>
<td>1</td>
<td>6</td>
<td>Sold Separately</td>
<td></td>
</tr>
<tr>
<td>TLS-350J 124/324 or Higher</td>
<td>Universal Sensor Input Output Module (USOM-AC)</td>
<td>330020-751</td>
<td>1</td>
<td>6</td>
<td>Sold Separately</td>
<td></td>
</tr>
<tr>
<td>TLS-300i 124/324 or Higher</td>
<td>Universal Sensor Input Output Module (USOM-AC)</td>
<td>330020-751</td>
<td>1</td>
<td>6</td>
<td>Sold Separately</td>
<td></td>
</tr>
<tr>
<td>TLS-300C 124/324 or Higher</td>
<td>Universal Sensor Input Output Module (USOM-AC)</td>
<td>330020-751</td>
<td>1</td>
<td>6</td>
<td>Sold Separately</td>
<td></td>
</tr>
</tbody>
</table>

### Alarm Notification

<table>
<thead>
<tr>
<th>Alarm Notification</th>
<th>Sensor in Normal State - No liquid detected</th>
<th>Sensor not resting on bottom of containment or sensor not communicating to ATG/Console</th>
<th>Liquid detected in containment area at approx. 1.5” (3.81cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alarm</td>
<td>Normal</td>
<td>Fuel Alarm</td>
<td>Installation Kit</td>
</tr>
<tr>
<td></td>
<td>Sensor Out</td>
<td>Fuel Alarm</td>
<td>Universal Sensor Mounting Kit (Sold separately)</td>
</tr>
</tbody>
</table>

### Installation Kit

<table>
<thead>
<tr>
<th>Installation Kit</th>
<th>Universal Sensor Mounting Kit (Sold separately)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>330020-012</td>
</tr>
</tbody>
</table>

### Specifications

- **Operating Principle**: Product Permeable, Reed Switch / Float
- **Product Activation Height**: Liquid - Approx. 1.5” (3.81cm)
- **Operating Temperature**: +32 to +140°F (0 to +60°C)
- **Dimensions**: 12” (30.5cm) high, 2.2” (5.6cm) dia.
- **Miscellaneous/Notes**: Standard Cable Length: 12ft (3.66m).
- **Third Party Evaluation Links**: TLS-3XX/TLS-450 Series Consoles TLS4 (8601 Series) Consoles

### Example Installation

Example image showing the installation setup with various components labeled.

### Where Used (Typical)

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

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

<table>
<thead>
<tr>
<th>Sensor Description</th>
<th>Solid-State (Optical)-Discriminating Interstitial Sensor for Double-Wall Fiberglass Tanks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Part Number</strong></td>
<td>794380-343</td>
</tr>
</tbody>
</table>

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

## Console Compatibility (*International Only*)

<table>
<thead>
<tr>
<th>Console Model</th>
<th>Part Number</th>
<th>Module Description</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>Universal Sensor Module (USM)</td>
<td>16</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-450</td>
<td>4A or Higher</td>
<td>Universal Sensor Input Out-put Module (USIOM-AC)</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4 (8601 Series)</td>
<td>6A or Higher</td>
<td>Universal Sensor Input Out-put Module (USIOM-AC)</td>
<td>6</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4i (8601 Series)</td>
<td>330020-751</td>
<td>Type A Sensor Interface Module</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS4B (8601 Series)</td>
<td>330020-751</td>
<td>Type A Sensor Interface Module</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>TLS-350/R PLUS</td>
<td>124/324 or Higher</td>
<td>Type A Sensor Interface Module</td>
<td>8</td>
<td>Sold Separately</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
- 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 Temperature**: -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 25ft (7.6m) Fits 4 to 10ft (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 Discriminating 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
- Rigid conduit to console
- Fiberglass tank
- Sensor must reach bottom of tank

---

**Where Used (Typical)**

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

Interstitial Sensor for Double-Wall Fiberglass Tanks

The Non-Discriminating Interstitial Sensor for Double-Wall Fiber-Glass Tanks detects the presence of liquid in the interstitial space of the tank.

**Part Number**

794390-409

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

**Console Compatibility (International Only)**

- TLS-450PLUS (8600 Series)
  - 6A or Higher
  - Module Part # 32812-001
  - Module Description: Universal Sensor Module (USM)
  - # of Modules per Console: Up to 4 - TLS-4XX
  - # of Sensor Inputs per Module: 16
  - Availability: Sold Separately

- TLS-450
  - 4A or Higher
  - Module Part # 330020-750
  - Module Description: Universal Sensor Input Out-put Module (USIOM-AC)
  - # of Modules per Console: Up to 4 - TLS-4XX
  - # of Sensor Inputs per Module: 12
  - Availability: Included

- TLS4i (8601 Series)
  - 6A or Higher
  - Module Part # 329358-001
  - Module Description: Interstitial Sensor Interface Module
  - # of Modules per Console: Up to 8
  - # of Sensor Inputs per Module: 8
  - Availability: Sold Separately

- TLS4 (8601 Series)
  - 124/324 or Higher
  - Module Part # 329356-003
  - Module Description: 4 Probe / 4 Sensor Interface Module
  - # of Modules per Console: Up to 4
  - # of Sensor Inputs per Module: 4
  - Availability: Sold Separately

- TLS-350C
  - 2 Probe / 8 Sensor Options
  - Module Part # 330513-001
  - Module Description: 2 Probe / 8 Sensor Options
  - # of Modules per Console: 1
  - # of Sensor Inputs per Module: 8
  - Availability: Included

**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 Temperature: -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 25ft (7.5m) Fits 4 to 10ft (1.2 to 3m) I.D. fiberglass tanks
- Third Party Evaluation Links: TLS-3XX/TLS-450 Series Consoles
- TLS-4801 Series Consoles
- Product Link: Non-Discriminating Interstitial Sensor
- Warranty with System: 1 Yr Parts & Labor
- Warranty (When purchased separately): 1 Yr Parts Only

**Where Used (Typical)**

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

**Example Installation**

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

**Technical Details**

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

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## Sensor Description

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.

### Part Number

| Part Number | 794380-345 |

### Category

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

### Fuel Compatibility

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

### Console Compatibility (*International Only*)

- TLS-450PLUS (8600 Series)
- TLS-450
- TLS4 (8601 Series)
- TLS4i (8601 Series)
- TLS4B (8601 Series)
- TLS4c (8601 Series)
- TLS-350/R/PLUS
- TLS-350J
- TLS-300i
- TLS-300C

### 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 Temperature
-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 25ft (7.6m) fits 4 to 10ft (1.2 to 3m) i.d. fiberglass tanks

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

### Example Installation

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

---

All information contained in this document is subject to change without notice.
### Sensor Description

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

| Part Number | 794390-420 (16'/4.88m cable); 794390-460 (30'/9.14m cable) |

### Category

- [ ] Discriminating
- [ ] Non-Discriminating
- [ ] Level Sensing
- [ ] Static Testing
- [ ] Hydrostatic

### Fuel Compatibility

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

### Console Compatibility (*International Only*)

<table>
<thead>
<tr>
<th>Module Part #</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 w/ opt. TLS-XB</td>
<td>16</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>330020-750</td>
<td>Universal Sensor Input Out-put Module (USIOM-AC)</td>
<td>Up to 8 - TLS-4XX</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>330230-001</td>
<td>Interstitial Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<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: 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 and Adaptor kit (sold separately)

### Specifications

- **Operating Principle**: Reed Switch / Float
- **Product Activation Height**: 1.4” (3.56cm)
- **Operating Temperature**: -4 to +140°F (-20 to +60°C)
- **Dimensions**: 2.5” (6.4cm) high, 1.5” (3.8cm) diameter
- **Miscellaneous/Notes**: 794380-420 (cable 16ft (4.9m)); 794380-460 (cable 30ft (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
- **Warranty (When purchased separately)**: 1 Yr Parts Only

### Example Installation

Weatherproof junction box
Manhole
1/2” (1.27cm) NPT cord grips
Appropriate reducer with 1/2” (1.27cm) NPT opening for cable cord grip
Riser
Sensor must rest on bottom of interstitial riser
Dispenser Pan
STP Sump
Monitoring Well
Convault Tank
Oil/Water Separator Tank
**Position Sensitive Interstitial Sensor for Steel Tanks Specifications**

### Sensor Description

This type of 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.

### Part Number

| Part Number | 794380-333 |

### 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
- Motor Oil
- Green Diesel
- Bio-Diesel 20
- Bio-Diesel 100

### Console Compatibility (*International Only* 1)

#### Recommended Min. Console Software

<table>
<thead>
<tr>
<th>Console Compatibility</th>
<th>Module Part #</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>Up to 8 - TLS-4XX w/ opt. TLS-XB</td>
<td>16</td>
</tr>
<tr>
<td>TLS-450</td>
<td>330020-750</td>
<td>Universal Sensor Input Out-put Module (USIM-AC)</td>
<td>1</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>TLS-4c (8601 Series)</td>
<td>330020-751</td>
<td>Interstitial 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>329358-001</td>
<td>4 Probe / 4 Sensor Interface Module</td>
<td>1</td>
<td>4</td>
<td>Sold Separately</td>
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<tr>
<td>TLS-350J</td>
<td>329356-003</td>
<td>4 Probe / 8 Sensor Interface Module</td>
<td>8</td>
<td>Included</td>
<td></td>
</tr>
<tr>
<td>TLS-300i</td>
<td>330230-001</td>
<td>2 Probe / 8 Sensor Options</td>
<td>2</td>
<td>Included</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 Temperature**: -4 to +140°F (-20 to +60°C)
- **Dimensions**: 3.5” (8.9cm) high, 1.75” (4.4cm) diameter
- **Miscellaneous/Notes**: Standard Cable Length: 20ft (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
- Seal-off Rigid conduit to console
- 1/2” (1.27cm) NPT Cord grips
- Appropriate reducer with 1/2” (1.27cm) NPT opening for cable cord grip
- Sensor cable
- Minimum riser diameter 1 inch (2.54cm)
- Sensor must rest on bottom of interstitial riser

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**Contact**: www.veeder.com 1-888-561-7942

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## 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.

### Part Number
- 794380-430

### 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
- Green Diesel
- DEF
- Waste Oil
- Motor Oil

### Console Compatibility ("International Only")

<table>
<thead>
<tr>
<th>Module Part #</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>Sold Separately</td>
</tr>
<tr>
<td>330020-750</td>
<td>Universal Sensor Input Out-put Module (USIOM-AC)</td>
<td>Up to 8 - TLS-4XX w/ opt. TLS-XB</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>329358-001</td>
<td>Interstitial Sensor Interface Module</td>
<td>Up to 8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>329356-003</td>
<td>4 Probe / 4 Sensor Interface Module</td>
<td>Up to 8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>330230-001</td>
<td>4 Probe / 8 Sensor Interface Module</td>
<td>Up to 8</td>
<td>Included</td>
</tr>
<tr>
<td>330513-001</td>
<td>2 Probe / 8 Sensor Options</td>
<td></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 Temperature**: -4 to +140°F (-20 to +60°C)
- **Dimensions**: 2.5" (6.4cm) high, 1.5" (3.8cm) diameter
- **Miscellaneous/Notes**: Standard cable 15ft (4.57m); 312020-928 2" (50mm) Riser cap 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

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

---

**Example Installation**

- Weatherproof junction box
- 1/2" (1.27cm) NPT cord grips
- Appropriate reducer with 1/2" (1.27cm) NPT opening for cable cord grip
- Seal-off
- Rigid conduit to console
- Manhole
- Leader cable
- Riser
- Tank
- Sensor must rest on bottom of interstitial riser

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## MicroSensor Specifications

### Sensor Description

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.

### Part Number

794380-344

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

### Where Used (Typical)

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

### Console Compatibility (*International Only1)

<table>
<thead>
<tr>
<th>Console Model</th>
<th>Fuel Compatibility</th>
<th>Min. Console Software</th>
<th>Recommended Min. Console Software</th>
<th>Module Part #</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>E-15, E-5</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>
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</tr>
<tr>
<td>TLS-450</td>
<td>6A or Higher</td>
<td>330020-750</td>
<td>Universal Sensor Input Out-put Module (USOM-AC)</td>
<td>1</td>
<td>12</td>
<td>Included</td>
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<td></td>
</tr>
<tr>
<td>TLS4 (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-751</td>
<td>Type A Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS350/R/PLUS</td>
<td>124/324 or Higher</td>
<td>329956-001</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<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” (50mm) Interstitial Sensor Riser Cap and Adapter kit (Sold separately)

### Specifications

#### Operating Principle
Optical

#### Product Activation Height
1” (2.54cm)

#### Operating Temperature
-40 to +122°F (-40 to +50°C)

#### Dimensions
Dia. 0.63” (16mm), Length 2” (51mm)

#### Miscellaneous/Notes
Standard Cable Length: 25ft (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
- Seal-off
- Rigid conduit to console
- Manhole
- 1/2” (1.27cm) NPT Cord grips
- Appropriate reducer with 1/2” (1.27cm) NPT opening for cable cord grip
- Minimum riser diameter 1 inch (2.54cm)
- MicroSensor must rest on bottom of interstitial riser
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.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>794380-303</th>
</tr>
</thead>
</table>

### Fuel Compatibility

- Gas
- Diesel
- Kerosene
- Jet Fuel
- Aviation Gas
- Bio-Diesel 20
- 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 Compatibility</th>
<th>Recommended Min. Console Software</th>
<th>Module Part #</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>332812-750</td>
<td>Universal Sensor Module</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>330020-750</td>
<td>Universal Sensor Input Out-put Module (USIOM-AC)</td>
<td>1</td>
<td>6</td>
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</tr>
<tr>
<td>TLS4B (8601 Series)</td>
<td>330020-715</td>
<td>Interstitial Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
<td></td>
</tr>
<tr>
<td>TLS4c (8601 Series)</td>
<td>332998-001</td>
<td>Interstitial Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Included</td>
<td></td>
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<tr>
<td>TLS-350/R/PLUS</td>
<td>124/324 or Higher</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>8</td>
<td>8</td>
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</tr>
<tr>
<td>TLS-300C</td>
<td>330513-001</td>
<td>2 Probe / 8 Sensor Options</td>
<td>4</td>
<td>Included</td>
<td></td>
<td></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) H, 2.5” (6.4cm) Dia.
- **Miscellaneous/Notes**: Standard Cable Length: 12ft (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

---

**All information contained in this document is subject to change without notice.**
### 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. If the outer wall leaks, the brine seeps out of the tank interstice triggering a fuel alarm.

### Part Number

794380-301

### 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
- DEF
- Waste Oil
- Motor Oil

### Console Compatibility (*International Only*)

<table>
<thead>
<tr>
<th>Console Compatibility</th>
<th>Module Part #</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 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></td>
<td>Up to 8 - TLS-4XX w/ opt. TLS-XB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS4 (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-750 Universal Sensor Input Out-put Module (USIOM-AC)</td>
<td>1</td>
<td>12</td>
<td>Included</td>
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<tr>
<td>TLS4B (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-751</td>
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<td>6</td>
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</tr>
<tr>
<td>TLS4c (8601 Series)</td>
<td>6A or Higher</td>
<td>329958-001 Interstitial 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>329356-003 4 Probe / 4 Sensor Interface Module</td>
<td>Up to 8</td>
<td>4</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-300i</td>
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<td>330230-001 4 Probe / 8 Sensor Interface Module</td>
<td>Up to 8</td>
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<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: 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

### Where Used (Typical)

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

### Specifications

- Operating Principle: Reed Switch / Float
- Product Activation Height: 1.75" (4.4cm)
- Operating Temperature: -13 to +135°F (-25 to +57°C)
- Dimensions: 6" (15cm) high, 2.5" (6.4cm) dia.

### Miscellaneous/Notes

- Standard Cable Length: 12ft (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
## 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.

### Part Number

794380-304

### Category

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

### Fuel Compatibility

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

### Console Compatibility (*International Only*)

<table>
<thead>
<tr>
<th>Console</th>
<th>Min. Console Software</th>
<th>Module Part #</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>Sold Separately</td>
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</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>Included</td>
</tr>
<tr>
<td>TLS4 (8601 Series) 1</td>
<td>6A or Higher</td>
<td>330002-750</td>
<td>Universal Sensor Input Out-put Module (USIOM-AC)</td>
<td>1</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4i (8601 Series) 1</td>
<td>6A or Higher</td>
<td>330020-751</td>
<td>Universal Sensor Input Out-put Module (USIOM-AC)</td>
<td>1</td>
<td>6</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4c (8601 Series) 1</td>
<td>6A or Higher</td>
<td>330020-751</td>
<td>Universal Sensor Input Out-put 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>332996-001</td>
<td>Interstitial Sensor Interface Module</td>
<td>Up to 8</td>
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<td>Included</td>
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<tr>
<td>TLS-350J</td>
<td>124/324 or Higher</td>
<td>332936-003</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 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 Temperature: -13 to +122°F (-25 to +50°C)
- Dimensions: 2.5” (6.4cm) high, 1.5” (3.8cm) dia.
- Miscellaneous/Notes: Standard Cable Length: 8ft (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
- Separate Purchase: 1 Yr Parts Only

### Where Used (Typical)

- Convault Tank
- Annular Space
- Monitoring Well
- Oil/Water Separator Tank

---

All information contained in this document is subject to change without notice.
### Sensor Description
The Vapor Monitoring Well Sensor detects hydrocarbon vapor exceeding the programmed threshold limit in the monitoring well.

### Part Number
794390-700

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

### Fuel Compatibility
- Gas
- Diesel
- Kerosene
- Jet Fuel
- Aviation Gas
- E-15
- E-85
- E-100
- Green Diesel
- DEF
- Waste Oil
- Motor 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 Part #</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-430PLUS (8600 Series)</td>
<td>6A or Higher</td>
<td>32812-001</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 8 - TLS-4XX w/ opt. TLS-XB</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 Out-put 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>330020-751</td>
<td>Universal Sensor Input Out-put Module (USIOM-AC)</td>
<td>1</td>
<td>4</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4B (8601 Series)</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-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>
<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
- 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” (100mm) Vapor Sensor Riser Cap (Sold separately)

### Specifications
- **Operating Principle**: Adsistor
- **Product Activation Height**: Gasoline Vapor >500 ppm
- **Operating Temperature**: -4 to +140°F (-20 to +60°C)
- **Dimensions (Sensor)**: 4.9” (12.4cm) long, 1.1” (2.8cm) dia.
- **Miscellaneous/Notes**: Standard Cable 18ft (5.5m)
- **Third Party Evaluation Links**: TLS-350/TLS-450 Series Consoles TLS-450 (8601 Series) Consoles

### Example Installation
- Suspend vapor sensor 12” (30.48cm) above highest level reached by water table, if known; or 12” (30.48cm) above the bottom of the well, or any water in the well.
- Cap and cord grips
- Manhole
- Weatherproof junction box and seal-off
- Perforated PVC monitoring well housing
- Rigid conduit to console

---

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

---

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**Sensor Description**

Groundwater Sensor: The Groundwater Sensor detects free hydrocarbons in the C5 to C16 range on the water table in up to 20ft (6.1m) deep monitoring wells.

**Part Number**

- 794380-621 for 7-10ft (2-3m) wells; 794380-622 for 10-5ft (3.4m) wells; 794380-624 for 15-20 ft (4.5-6m) wells.

**Category**

- Discriminating
- Non-Discriminating
- Position Sensitive
- Level Sensing

**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
- Motor Oil

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

<table>
<thead>
<tr>
<th>Category</th>
<th>Min. Console Software</th>
<th>Module Part #</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>640957-001</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>640957-002</td>
<td>Universal Sensor Input Module (USIM)</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 Module (USIM)</td>
<td>Up to 8 - TLS-4XX w/ opt. TLS-XB</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS4i (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-751</td>
<td>Universal Sensor Input Module (USIM)</td>
<td>Up to 8 - TLS-4XX w/ opt. TLS-XB</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS4b (8601 Series)</td>
<td>4A or Higher</td>
<td>330020-752</td>
<td>Universal Sensor Input Module (USIM)</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>4A or Higher</td>
<td>330020-753</td>
<td>Universal Sensor Input Module (USIM)</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>329399-001</td>
<td>Groundwater 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>
<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>
<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: 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 Temperature**: +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
- **Product Link**: Groundwater Sensor
- **Warranty with System**: 1 Yr Parts & Labor
- **Warranty (When purchased separately)**: 1 Yr Parts Only

**Where Used (Typical)**

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

**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.
- Weatherproof junction box and seal off
- Rigid conduit to console
- Perforated PVC monitoring well housing
- Extra sensor length should not exceed 2ft (60cm)

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**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.

**Part Number**

794690-xxx

**Category**

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

**Fuel Compatibility**

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

**Console Compatibility (International Only)***

**Recommended Min. Console Software**

<table>
<thead>
<tr>
<th>Module Part #</th>
<th>Module Description</th>
<th># of Sensor Inputs per Module</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>332812-001</td>
<td>Universal Sensor Module (USM) Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/ opt. TLS-XB</td>
<td>16</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>330020-750</td>
<td>Universal Sensor Input Out-put Module (USIOM-AC)</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>330200-751</td>
<td></td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>329358-001</td>
<td>Intersitial Sensor Interface Module Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>329356-003</td>
<td>4 Probe / 4 Sensor Interface Module</td>
<td>4</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>330230-001</td>
<td>4 Probe / 8 Sensor Interface Module</td>
<td>8</td>
<td>Included</td>
</tr>
<tr>
<td>330513-001</td>
<td>2 Probe / 8 Sensor Options</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 Temperature: 0 to +140°F (0 to +60°C)
- Dimensions: Custom-Based on Tank Configuration
- Miscellaneous/Notes: Standard Cable Length: 12ft (3.66m) - 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

**Where Used (Typical)**

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

---

* *Note: TLS-450PLUS (8600 Series) requires 6A or Higher.*
## Appendix A - Sensor Type Programming Table

The table below is helpful when selecting Sensor Type (for TLS3 Series consoles) or Sensor Model (for TLS4/8601 and TLS-450 and TLS-450PLUS consoles) during sensor setup.

<table>
<thead>
<tr>
<th>Sensor Type Programming Table for TLS Consoles</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sensor</strong></td>
</tr>
<tr>
<td>Discriminating Dispenser Pan and Sump - Standard</td>
</tr>
<tr>
<td>Mag Sump</td>
</tr>
<tr>
<td>Solid-State Dispenser Pan and Containment Sump</td>
</tr>
<tr>
<td>Piping Sump-12' (3.66m)</td>
</tr>
<tr>
<td>Solid-State Interstitial High Alcohol for Double-Wall Fiberglass Tanks [High Alcohol Compatible!]</td>
</tr>
<tr>
<td>Interstitial for Steel Tanks</td>
</tr>
<tr>
<td>Position Sensitive Interstitial for Steel Tanks with 20' (6.1m) Cable [High Alcohol Compatible!]</td>
</tr>
<tr>
<td>Interstitial High Alcohol for Steel Tanks with 15' (4.57m) Cable [High Alcohol Compatible!]</td>
</tr>
<tr>
<td>MicroSensor [High Alcohol Compatible!]</td>
</tr>
<tr>
<td>Hydrostatic Reservoir</td>
</tr>
<tr>
<td>Hydrostatic Reservoir</td>
</tr>
<tr>
<td>Vapor Monitoring Well</td>
</tr>
<tr>
<td>Groundwater</td>
</tr>
<tr>
<td>Oil Water Separator</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 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" (7.62cm) 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" (7.62cm) 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 the Top (Warning) Float Position](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 Veeder-Root Oil Water Separator Sensor matrix shown in Fig.B-4.

   **For example:**
   - D1 = 33” (83.82cm), D2 = 24.5” (62.23cm), D3 = 13” (33.02cm)
   - D2 + D3 = Top Float position, i.e., 24.5” (62.23cm) + 13” (33.02cm) = 37.5” (95.25cm) (Dimension A in the Veeder-Root P/N matrix)
   - D1 - D3 = Bottom Float position, i.e., 33” (83.82cm) - 13” (33.02cm) = 20” (50.8cm) (Dimension B in the Veeder-Root P/N matrix)

   Using the OWSS float positions calculated in the example above, the Top Float (Warning Float) would activate at 13” (33.02cm) below the top of the tank and the Bottom Float (Alarm Float) would activate at 33” (83.82cm) below the top of the tank. The correct part number for these example float positions would be 794690-053.

   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 794690-XXX, where XXX equals the three digits where Dimensions A and B intersect in the 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 Demonstration Kit (P/N 848100-502) which contains one splice kit with installation instructions, a 890-SL joint sealant instruction guide, a 6" (15.24cm) piece of 2 conductor direct burial wire and filler rod.

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>Item</th>
<th>Description</th>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primaries</td>
<td>Primaries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conductor</td>
<td>#18 AWG (19/30) tinned copper</td>
<td>Conductor</td>
<td>#18 AWG (19/30) tinned copper</td>
</tr>
<tr>
<td>Insulation Type</td>
<td>Fluoropolymer</td>
<td>Insulation Type</td>
<td>Fluoropolymer</td>
</tr>
<tr>
<td>Primary O.D.</td>
<td>0.063&quot; (1.6mm) nominal</td>
<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>
<td>Drain</td>
<td>#20 AWG (7/28) tinned copper, located under the tape</td>
</tr>
<tr>
<td>Jacket</td>
<td>Jacket</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insulation Type</td>
<td>Fluoropolymer</td>
<td>Insulation Type</td>
<td>Fluoropolymer</td>
</tr>
<tr>
<td>Final O.D.</td>
<td>0.161&quot; (4.1mm)</td>
<td>Final O.D.</td>
<td>0.171&quot; (4.34mm)</td>
</tr>
<tr>
<td>Color</td>
<td>Red tint</td>
<td>Color</td>
<td>Blue tint</td>
</tr>
<tr>
<td>UL Temp Rating</td>
<td>257°F (125°C)</td>
<td>UL Temp Rating</td>
<td>392°F (200°C)</td>
</tr>
</tbody>
</table>

Direct Burial Cable Components

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

- Filler rod - P/N 848100-1XX, lengths of 100’ to 2000’ (30.5 to 610m), in increments of 100’ (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’ (30.5 to 610m), in increments of 100’
- 3-conductor cable - P/N 848100-3XX, lengths of 100’ to 2000’, in increments of 100’
- 29oz. 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 848100-901 (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