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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](http://www.nwglde.org)
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<td>Single-Point Mini-Hydrostatic Reservoir (High Alcohol)</td>
<td>794380-304</td>
</tr>
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<td>Monitoring Well Vapor</td>
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<tr>
<td>Groundwater</td>
<td>794380-62X</td>
</tr>
<tr>
<td>Oil Water Separator</td>
<td>794690-XXX</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)

NOTE: P/Ns with X included represent multiple part numbers.
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.

Part Number: 794380-322

Category
- [ ] Discriminating
- [ ] Non-Discriminating
- [ ] Position Sensitive
- [ ] Level Sensing
- [ ] Static Testing
- [ ] Hydrostatic

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

Part Number: 794380-322

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

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)

Example Installation
- U-channel
- 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

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

IMPORTANT! DO NOT MOUNT SENSOR TO FLEXIBLE PRODUCT LINE.

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# 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>
</tr>
</thead>
</table>

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

## Fuel Compatibility
- **Gas**
- **Diesel**
- **Kerosene**
- **Jet Fuel**
- **Aviation Gas**
- **Bio-Diesel 20**
- **Waste Oil**
- **Motor Oil**
- **Bio-Diesel 100**

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

## Console Compatibility (International Only2)

<table>
<thead>
<tr>
<th>Console Compatibility</th>
<th>Recommended Min. Console Software</th>
<th>Sensor Interface Modules</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TLS-450PLUS (8600 Series)</strong></td>
<td>6A or Higher</td>
<td>332812-001 Universal Sensor Module (USM)</td>
</tr>
<tr>
<td><strong>TLS-450</strong></td>
<td>4A or Higher</td>
<td>330020-750 Universal Sensor Input-out Module (USIOM-AC)</td>
</tr>
<tr>
<td><strong>TLS4 (8601 Series)</strong></td>
<td>6A or Higher</td>
<td>330020-751 Universal Sensor Input-out Module (USIOM-AC)</td>
</tr>
<tr>
<td><strong>TLS4i (8601 Series)</strong></td>
<td>6A or Higher</td>
<td>330020-750 Universal Sensor Input-out Module (USIOM-AC)</td>
</tr>
<tr>
<td><strong>TLS4B (8601 Series)</strong></td>
<td>6A or Higher</td>
<td>330020-751 Universal Sensor Input-out Module (USIOM-AC)</td>
</tr>
<tr>
<td><strong>TLS4c (8601 Series)</strong></td>
<td>6A or Higher</td>
<td>330020-751 Universal Sensor Input-out Module (USIOM-AC)</td>
</tr>
<tr>
<td><strong>TLS-350/R/PLUS</strong></td>
<td>124/324 or Higher</td>
<td>329358-001 Universal Sensor Mounting Kit</td>
</tr>
<tr>
<td><strong>TLS-350J</strong></td>
<td>124/324 or Higher</td>
<td>329358-001 Universal Sensor Mounting Kit</td>
</tr>
<tr>
<td><strong>TLS-300i</strong></td>
<td>124/324 or Higher</td>
<td>330513-001 Universal Sensor Mounting Kit</td>
</tr>
<tr>
<td><strong>TLS-300C</strong></td>
<td>124/324 or Higher</td>
<td>330513-001 Universal Sensor Mounting Kit</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
- **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)
- **Third Party Evaluation Links**: TLS-3XX/TLS-450 Series Consoles, TLS4 (8601 Series) Consoles
- **Product Link**: Discriminating Containment Sump Sensor
- **Warranty with System**: 1 Yr Parts & Labor
- **Warranty (When purchased separately)**: 1 Yr Parts Only

## Example Installation
- **Contamination sump sensor**
- **Contamination sump**
- **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**

---

1. Single use only (Test per Sensor Operability Guide in E-10 or less)
Solid-State (Optical) - Discriminating Dispenser Pan Sensor Specifications

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
- Level Sensing
- Static Testing
- Position Sensitive
- Hydrostatic

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

**Console Compatibility**

<table>
<thead>
<tr>
<th>Console Compatibility (*International Only2)</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>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-450</td>
<td>4A or Higher</td>
<td></td>
<td></td>
<td>Up to 8 - TLS-4XX w/ opt. TLS-XB</td>
<td></td>
<td></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>
<td>Included</td>
</tr>
<tr>
<td>TLS4c (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-751</td>
<td></td>
<td></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>TLS350/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></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
- Liquid detected at a minimum of 1.37” (3.4cm)
- Liquid detected at a minimum of 7.66” (19.45cm)
- Permeable material saturated with fuel
- Sensor not communicating to ATG/Console

**Install 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)
- 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
- Convault Tank

**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
- 1/2” (1.27cm) Rigid conduit to console
- Dispenser pan
- Dispenser pan sensor*

*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

- **Sensor Description**: 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
- **Part Number**: 794380-350

### Category
- Discriminating
- Non-Discriminating
- Position Sensitive

### 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
- **Category**: Fuel Compatibility
- **Part Number**: 794380-350

### Sensor Interface Modules

<table>
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<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</td>
<td>8</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>6</td>
<td>Included</td>
</tr>
<tr>
<td>330020-751</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" (3.48cm)
- 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
- **Part Number**: 330020-012

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

### Where Used (Typical)
- Dispenser Pan
- Annular Space
- Spill Containment Monitoring Well
- STP Sump Oil/Water Separator Tank
- Containment sump
- 1/2" (1.27cm) NPT cord grip supplied w/ cable
- Weatherproof junction box
- Seal-off
- Submersible pump
- Containment sump
- Rigid conduit to console
- Brackets, clamp, etc., from optional Universal Sensor Mounting Kit
- Important: Do not mount sensor to flexible product line.
# 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.

## Sensor Description

- **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.

## Part Number

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>857080-111</td>
<td>12”/30.48cm</td>
</tr>
<tr>
<td>857080-112</td>
<td>24”/60.96cm</td>
</tr>
<tr>
<td>857080-211</td>
<td>12”/30.48cm</td>
</tr>
<tr>
<td>857080-212</td>
<td>24”/60.96cm</td>
</tr>
</tbody>
</table>

## Fuel Compatibility

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

## Console Compatibility

**Category:** ("International Only")

### Fuel Compatibility

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

## 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 (3.06m)
- **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

## 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

- **Recommended Min. Console Software:** N/A
- **Module Part #**
  - Universal Sensor Module (USM): 332812-001
  - Universal Sensor Input/Output Module (USIOM): 330020-750
  - Smart Sensor Interface Module: 329356-004

## Sensor Interface Modules

<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</td>
<td>16</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>330020-750</td>
<td>Universal Sensor Input/Output Module (USIOM)</td>
<td>1</td>
<td>Included</td>
<td></td>
</tr>
<tr>
<td>329356-004</td>
<td>Smart Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
</tbody>
</table>

## Where Used (Typical)

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

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

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联系方式:

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### 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 |

### Category

| Discriminating | Non-Discriminating | 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

**Note:** Single use only (Test per Sensor Operability Guide in E-10 or less)

### Fuel Compatibility ("International Only")

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

### Console Compatibility

<table>
<thead>
<tr>
<th>Console Compatibility *(&quot;International Only&quot;)</th>
<th>Recommended Min. Console Software</th>
<th>Sensor Interface Modules</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>16</td>
<td>Sold Separately</td>
</tr>
<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>12</td>
<td>Included</td>
</tr>
<tr>
<td>TSL4i (8601 Series)</td>
<td>6A or Higher</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>TSL4 (8601 Series)</td>
<td>6A or Higher</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>TSL4c (8601 Series)</td>
<td>6A or Higher</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>TSL-350/R/PLUS</td>
<td>124/324 or Higher</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>
</tbody>
</table>

### Alarm Notification

<table>
<thead>
<tr>
<th>Alarm Notification</th>
<th>Sensor Interface Modules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Sensor in Normal State - No liquid detected</td>
</tr>
<tr>
<td>Fuel Alarm</td>
<td>Liquid detected - Approx. 1.0” (2.54cm)</td>
</tr>
<tr>
<td>Sensor Out</td>
<td>Sensor not communicating to ATG/Console</td>
</tr>
</tbody>
</table>

### Installation Kit

<table>
<thead>
<tr>
<th>Installation Kit</th>
<th>Sensor Interface Modules</th>
</tr>
</thead>
<tbody>
<tr>
<td>330020-012</td>
<td>Universal Sensor Mounting Kit (sold separately)</td>
</tr>
</tbody>
</table>

### Specifications

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Example Installation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Principle</td>
<td>Optical - Looking at phase changes in the light beams by causing them to interact or interfere with one another</td>
</tr>
<tr>
<td>Product Activation Height</td>
<td>Fuel or Water - Approx. 1” (2.54cm)</td>
</tr>
<tr>
<td>Operating Temperature</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: 12ft (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>

### Where Used (Typical)

- Dispenser Pan
- Spill Containment
- STP Sump

### Misc.

- 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.*
## 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

| Part Number | 794380-351 |

### Category

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

### Fuel Compatibility

| Gas | Diesel | Kerosene | Jet Fuel | Aviation Gas | E-15 | E-85³ | Green Diesel | Waste Oil | Motor Oil | Bio-Diesel 20 | Bio-Diesel 100 |

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

### 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-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></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS4 (8601 Series)¹</td>
<td>6A or Higher</td>
<td>330020-750</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)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS4B (8601 Series)³</td>
<td></td>
<td>330020-751</td>
<td></td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS4c (8601 Series)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></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>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-350J</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS-300i</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS-300C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Alarm Notification

| Normal | Fuel Alarm | Sensor Out |

| Sensor in Normal State - No liquid detected | Liquid detected - Approx. 1.0” (2.54cm) | 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)

#### Third Party Evaluation Links

TLS-350/TLS-450 Series Consoles

TLS4 (8601 Series) Consoles

#### Product Link

Solid-State Non-Discriminating Containment Sump Sensor

### Warranty

| With System | 1 Yr Parts & Labor |

| Warranty |  |

| When purchased separately | 1 Yr Parts Only |

### Where Used (Typical)

| Dispenser Pan | Convault Tank |

| Spill Containment | Annular Space |

| STP Sump | Monitoring Well |

| Oil/Water Separator Tank | |
### Sensor Description

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

**Part Number**: 794380-208

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

### Console Compatibility

- **International Only**: Only applicable for international versions.

#### Recommended Min. Console Software

<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>TLS-450PLUS (8600 Series)</td>
<td>6A or Higher</td>
<td>32812-001 Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>16</td>
</tr>
<tr>
<td>TLS-450</td>
<td>4A or Higher</td>
<td>32812-001 Universal Sensor Module (USM)</td>
<td>Up to 8 - TLS-4XX w/ opt. TLS-XB</td>
<td>Sold Separately</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>
</tr>
<tr>
<td>TLS4i (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-750 Universal Sensor Input Out-put Module (USIOM-AC)</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>TLS4B (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-750 Universal Sensor Input Out-put Module (USIOM-AC)</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>TLS4c (8601 Series)</td>
<td>6A or Higher</td>
<td>330020-750 Universal Sensor Input Out-put Module (USIOM-AC)</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>TLS-350/R/PLUS</td>
<td>124/324 or Higher</td>
<td>329358-001 Interstitial Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
</tr>
<tr>
<td>TLS-350J</td>
<td>124/324 or Higher</td>
<td>329358-001 Interstitial Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
</tr>
<tr>
<td>TLS-300i</td>
<td>124/324 or Higher</td>
<td>329358-001 Interstitial Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
</tr>
<tr>
<td>TLS-300C</td>
<td>124/324 or Higher</td>
<td>329358-001 Interstitial Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
</tr>
</tbody>
</table>

### Alarm Notification

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

### Installation Kit

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

### Specifications

<table>
<thead>
<tr>
<th>Operating Principle</th>
<th>Product Activation Height</th>
<th>Operating Temp</th>
<th>Dimensions</th>
<th>Miscellaneous/Notes</th>
<th>Third Party Evaluation Links</th>
<th>Product Link</th>
<th>Warranty with System</th>
<th>Warranty (When purchased separately)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Float/magnetic reed switch</td>
<td>Liquid 1.84&quot; (4.67cm)</td>
<td>+32 to +140°F (0 to +60°C)</td>
<td>12&quot; (30.5cm) high, 1.9&quot; (4.8cm) dia.</td>
<td>Standard Cable Length: 12ft (3.66m) Installation kit 330020-076 included (see example installation).</td>
<td>TLS-3XX/TLS-450 Series Consoles TLS4 (8601 Series) Consoles</td>
<td>Piping Sump Sensor</td>
<td>1 Yr Parts &amp; Labor</td>
<td>1 Yr Parts Only</td>
</tr>
</tbody>
</table>

### Example Installation

- Cable to junction box and seal-off
- Existing conduit or piping
- Cable to junction box and seal-off
- Sump sensor (installation examples)
- Sump base

*IMPORTANT! DO NOT MOUNT SENSOR TO FLEXIBLE PRODUCK TINE.*

*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

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.

### Part Number

| Part Number | 847990-001 |

### Category

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

### Fuel Compatibility

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

### Console Compatibility

- Not Required

### Alarm Notification

- Normal
- Dispenser operational
- Liquid Detected
- Remove power to the dispenser
- Sensor Out
- Remove power to the dispenser

### Installation Kit

| Installation Kit | 330020-012 |

| Universal Sensor Mounting Kit (Sold separately) |

### Specifications

| Operating Principle | Reed switch/float |
| Product Activation Height | Gasoline: 1.71" (4.34cm), water: 1.62" (4.11cm) |
| Operating 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. |
| Product Link | Non-Discriminating Stand-Alone Dispenser Pan Sensor |

### Example Installation

1. **Power**: 120 VAC Neutral
2. **Existing conduit**: 1-1/2" (3.81cm) to 3/4" (1.9cm) NPT Reducer
3. **3/4" (1.9cm) NPT nipple** (customer supplied)
4. **Junction box** (in dispenser)
5. **Optional 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.*

### Where Used (Typical)

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

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<table>
<thead>
<tr>
<th>Sensor Description</th>
<th>Position Sensitive Sensor</th>
<th>This sensor is installed in a containment sump or dispenser pan and will detect the presence of, and differentiate between, hydrocarbons and other liquids.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>794380-323</td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td></td>
<td>Discerning, Non-Discerning, Level Sensing, Static Testing, Hydrostatic</td>
</tr>
<tr>
<td>Fuel Compatibility</td>
<td></td>
<td>Gas, Diesel, Kerosene, Jet Fuel, Aviation Gas, Green Diesel, DEF, Waste Oil, Motor Oil, Bio-Diesel 20, Bio-Diesel 100</td>
</tr>
<tr>
<td>Console Compatibility</td>
<td></td>
<td>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 124/324 or Higher, TLS-300I 332812-001, TLS-300C 330513-001</td>
</tr>
<tr>
<td>Recommended Min. Console Software</td>
<td></td>
<td>Module Part #</td>
</tr>
<tr>
<td>Sensor Description</td>
<td></td>
<td>332812-001</td>
</tr>
<tr>
<td>Fuel Compatibility</td>
<td></td>
<td>330020-750</td>
</tr>
<tr>
<td>Alarm Notification</td>
<td></td>
<td>329358-001</td>
</tr>
<tr>
<td>Installation Kit</td>
<td></td>
<td>330020-012</td>
</tr>
<tr>
<td>Specifications</td>
<td></td>
<td>Operating Principle</td>
</tr>
<tr>
<td>Product Activation Height</td>
<td></td>
<td>Liquid - Approx. 1.5” (3.81cm)</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td></td>
<td>+32 to +140°F (0 to +60°C)</td>
</tr>
<tr>
<td>Dimensions</td>
<td></td>
<td>12” (30.5cm) high, 2.2” (5.6cm) dia.</td>
</tr>
<tr>
<td>Miscellaneous/Notes</td>
<td></td>
<td>Standard Cable Length: 12ft (3.66m).</td>
</tr>
<tr>
<td>Third Party Evaluation Links</td>
<td></td>
<td>TLS-3XX/TLS-450 Series Consoles, TLS4 (8601 Series) Consoles</td>
</tr>
<tr>
<td>Product Link</td>
<td></td>
<td>Position Sensitive Sensor</td>
</tr>
<tr>
<td>Warranty with System</td>
<td></td>
<td>1 Yr Parts &amp; Labor</td>
</tr>
<tr>
<td>Warranty (When purchased separately)</td>
<td></td>
<td>1 Yr Parts Only</td>
</tr>
<tr>
<td>Where Used (Typical)</td>
<td></td>
<td>Dispenser Pan, Spill Containment, STP Sump</td>
</tr>
</tbody>
</table>

IMPORTANT! DO NOT MOUNT SENSOR TO FLEXIBLE PRODUC TLINE.

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.
---|---|---
Part Number | 794380-343 |
Category | Discriminating, Non-Discriminating, Position Sensitive |
Fuel Compatibility | Gas E:15, Diesel E:85, Kerosene E:100, Jet Fuel Bio-Diesel 20, Aviation Gas Bio-Diesel 100, Green Diesel E:95, DEF, Waste Oil E:100, Motor Oil |

### Console Compatibility (*International Only*)

<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)</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>330020-751</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>329963-001</td>
<td>Type A Sensor Interface Module</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Alarm Notification

- Normal: Sensor in Normal State - No liquid detected
- 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

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## Interstitial Sensor for Double-Wall Fiberglass Tanks Specifications

<table>
<thead>
<tr>
<th>Sensor Description</th>
<th>Interstitial Sensor for Double-Wall Fiberglass Tanks</th>
<th>The Non-Discriminating Interstitial Sensor for Double-Wall Fiber-Glass Tanks detects the presence of liquid in the interstitial space of the tank.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>794390-409</td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td>Discriminating</td>
<td>Level Sensing</td>
</tr>
<tr>
<td></td>
<td>Non-Discriminating</td>
<td>Static Testing</td>
</tr>
<tr>
<td></td>
<td>Position Sensitive</td>
<td>Hydrostatic</td>
</tr>
<tr>
<td>Fuel Compatibility</td>
<td>Gas</td>
<td>E:15</td>
</tr>
<tr>
<td></td>
<td>Diesel</td>
<td>E:85</td>
</tr>
<tr>
<td></td>
<td>Kerosene</td>
<td>E:100</td>
</tr>
<tr>
<td></td>
<td>Jet Fuel</td>
<td>Bio-Diesel 20</td>
</tr>
<tr>
<td></td>
<td>Aviation Gas</td>
<td>Bio-Diesel 100</td>
</tr>
<tr>
<td>Console Compatibility (<em>International Only</em>)</td>
<td>TLS-450PLUS (8600 Series)</td>
<td>6A or Higher</td>
</tr>
<tr>
<td></td>
<td>TLS-450</td>
<td>4A or Higher</td>
</tr>
<tr>
<td></td>
<td>TLS4 (8601 Series)</td>
<td>6A or Higher</td>
</tr>
<tr>
<td></td>
<td>TLS4i (8601 Series)</td>
<td>6A or Higher</td>
</tr>
<tr>
<td></td>
<td>TLS4B (8601 Series)</td>
<td>6A or Higher</td>
</tr>
<tr>
<td></td>
<td>TLS4c (8601 Series)</td>
<td>6A or Higher</td>
</tr>
<tr>
<td>Alarm Notification</td>
<td>Normal</td>
<td>Sensor in Normal State - No liquid detected</td>
</tr>
<tr>
<td></td>
<td>Liquid Alarm</td>
<td>Liquid detected</td>
</tr>
<tr>
<td></td>
<td>Sensor Out</td>
<td></td>
</tr>
</tbody>
</table>

### 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-4XX 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

### Example Installation

- Manhole
- Riser
- Seal-off
- Weatherproof junction box
- Fiber glass tank
- Sensor must reach bottom of tank

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

Part Number

794380-345

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 (*International Only)

Recommended Min. Console Software

Sensor Interface Modules

<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>6A or Higher</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>6A or Higher</td>
<td>Universal Sensor Input Out-put Module (USIOM-AC)</td>
<td>1</td>
<td>Included</td>
</tr>
<tr>
<td>124/324 or Higher</td>
<td>Type A Sensor Interface Module</td>
<td>Up to 8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>4A or Higher</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 8 - TLS-4XX w/ opt. TLS-xB</td>
<td>16</td>
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<tr>
<td>4A or Higher</td>
<td>Universal Sensor Input Out-put Module (USIOM-AC)</td>
<td>1</td>
<td>Included</td>
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<tr>
<td>6A or Higher</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 8 - TLS-4XX w/ opt. TLS-xB</td>
<td>16</td>
</tr>
<tr>
<td>6A or Higher</td>
<td>Universal Sensor Input Out-put Module (USIOM-AC)</td>
<td>1</td>
<td>Included</td>
</tr>
<tr>
<td>124/324 or Higher</td>
<td>Type A Sensor Interface Module</td>
<td>Up to 8</td>
<td>Sold Separately</td>
</tr>
</tbody>
</table>

Alarm Notification

Normal
Sensor in Normal State - No liquid detected
Fuel Alarm
Liquid detected
Sensor Out
Sensor not communicating to ATG/Console

Specifications

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

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

Operating 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 Alternative Ethanol Fluid Interstitial Sensor

Warranty with System
1 Yr Parts & Labor

Warranty (When purchased separately)
1 Yr Parts Only

Where Used (Typical)

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

Example Installation

Manhole
Seal-off
Weatherproof junction box
Rigid conduit (to console)
Fiberglass tank
Sensor must reach bottom of tank
**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
- Position Sensitive
- Level Sensing
- Static Testing
- Hydrostatic

**Fuel Compatibility**

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

**Console Compatibility**

- **(International Only)**

<table>
<thead>
<tr>
<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>Universal Sensor Module (USM)</td>
<td>332812-001</td>
<td>6A or Higher</td>
<td>Up to 4 - TLS-4XX</td>
<td>16</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>Universal Sensor Input Out-put Module (USIOM-AC)</td>
<td>330020-750</td>
<td>6A or Higher</td>
<td>Up to 8 - TLS-4XX w/ opt. TLS-XB</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>Universal Sensor Input Out-put Module (USIOM-AC)</td>
<td>330020-751</td>
<td>6A or Higher</td>
<td>Up to 8 - TLS-4XX w/ opt. TLS-XB</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>Universal Sensor Input Out-put Module (USIOM-AC)</td>
<td>330020-751</td>
<td>6A or Higher</td>
<td>Up to 8 - TLS-4XX w/ opt. TLS-XB</td>
<td>1</td>
<td>Included</td>
</tr>
<tr>
<td>Universal Sensor Input Out-put Module (USIOM-AC)</td>
<td>329358-001</td>
<td>6A or Higher</td>
<td>Up to 8 - TLS-4XX w/ opt. TLS-XB</td>
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<td>Sold Separately</td>
</tr>
<tr>
<td>Universal Sensor Input Out-put Module (USIOM-AC)</td>
<td>330230-001</td>
<td>6A or Higher</td>
<td>Up to 8 - TLS-4XX w/ opt. TLS-XB</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 Adapter kit (sold separately)

**Specifications**

- **Example Installation**
  - Weatherproof junction box
  - Rigid conduit to Console
  - Seal-off
  - Appropriate reducer with 1/2" (1.27cm) NPT opening for cable cord grip
  - Manhole
  - Leader cable
  - Tank

- **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

**Warranty with System**

- 1 Yr Parts & Labor
- 1 Yr Parts Only
Position Sensitive Interstitial Sensor for Steel Tanks

**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**

794380-333

**Where Used (Typical)**

- Dispenser Pan
- Spill Containment
- STP Sump
- Convault Tank
- Gas
- Diesel
- Kerosene
- Jet Fuel
- Aviation Gas

**Category**

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

**Fuel Compatibility**

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

**Console Compatibility**

<table>
<thead>
<tr>
<th>Console Compatibility (<em>International Only</em>)</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>4A or Higher</td>
<td>6A or Higher</td>
<td>32812-001</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/ opt. TLS-XB</td>
<td>16</td>
</tr>
<tr>
<td>TLS-450</td>
<td>6A or Higher</td>
<td>330020-750</td>
<td>Universal Sensor Input Output Module (USIOM-AC)</td>
<td>1</td>
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<tr>
<td>TSL4 (8601 Series)</td>
<td>330020-751</td>
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<td>TSL4i (8601 Series)</td>
<td>330020-751</td>
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<tr>
<td>TSL4B (8601 Series)</td>
<td>329358-001</td>
<td>8</td>
<td>Interstitial Sensor Interface Module</td>
<td>Up to 8</td>
<td>8</td>
<td>Sold Separately</td>
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<tr>
<td>TSL4c (8601 Series)</td>
<td>329356-003</td>
<td>4</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>TSL-350/R/PLUS (8600 Series)</td>
<td>329230-001</td>
<td>2</td>
<td>4 Probe / 8 Sensor Interface Module</td>
<td>8</td>
<td>8</td>
<td>Included</td>
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<tr>
<td>TSL-350J</td>
<td>330513-001</td>
<td>2</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 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 TSL4 (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
- Rigid conduit to console
- Appropriate reducer with 1/2" (1.27cm) NPT opening for cable cord grip
- 1/2" (1.27cm) NPT Cord grips
- Sensor cable
- Minimum riser diameter 1 inch (2.54cm)
- Sensor must rest on bottom of interstitial riser
- Seal-off
- Manhole

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**Sensor Description**

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

<table>
<thead>
<tr>
<th>Part Number</th>
<th>794380-430</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category</td>
<td></td>
</tr>
<tr>
<td>Discriminating</td>
<td></td>
</tr>
<tr>
<td>Non-Discriminating</td>
<td></td>
</tr>
<tr>
<td>Position Sensitive</td>
<td></td>
</tr>
<tr>
<td>Fuel Compatibility</td>
<td></td>
</tr>
<tr>
<td>Gas</td>
<td>E-15</td>
</tr>
<tr>
<td>Diesel</td>
<td>E-85</td>
</tr>
<tr>
<td>Kerosene</td>
<td>E-100</td>
</tr>
<tr>
<td>Jet Fuel</td>
<td>Bio-Diesel 20</td>
</tr>
<tr>
<td>Aviation Gas</td>
<td>Bio-Diesel 100</td>
</tr>
</tbody>
</table>

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

<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>TLS-450PLUS (8600 Series)</td>
<td>6A or Higher</td>
<td>16</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-450</td>
<td>6A or Higher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLS4 (8601 Series)</td>
<td>6A or Higher</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4i (8601 Series)</td>
<td>6A or Higher</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>TLS4B (8601 Series)</td>
<td>6A or Higher</td>
<td>Up to 8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS4c (8601 Series)</td>
<td>2 Probe / 8 Sensor Options</td>
<td>12</td>
<td>Included</td>
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<tr>
<td>TLS-350/R/PLUS</td>
<td>124/324 or Higher</td>
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<tr>
<td>TLS-350J</td>
<td>124/324 or Higher</td>
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</tr>
<tr>
<td>TLS-300i</td>
<td>124/324 or Higher</td>
<td></td>
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</tr>
<tr>
<td>TLS-300C</td>
<td>124/324 or Higher</td>
<td></td>
<td></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
- Interstitial High Alcohol Sensor for Steel Tanks
- 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

Manhole

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

Leader cable

Riser

Tank

Sensor must rest on bottom of interstitial riser
Sensor Description: MicroSensor

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

Part Number: 794380-344

Category:
- [ ] Discriminating
- [x] Non-Discriminating
- [ ] Position Sensitive
- [ ] Level Sensing
- [ ] Static Testing
- [ ] Hydrostatic

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

Console Compatibility (*International Only1)

<table>
<thead>
<tr>
<th>Module</th>
<th>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 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>330020-750 Universal Sensor Input Out-put Module (USIOM-AC)</td>
<td>1</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>TLS-4C (8601 Series)</td>
<td>124/324 or Higher</td>
<td>329956-001 Type A 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 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:
- 1 Yr Parts & Labor
- 1 Yr Parts Only

Example Installation:
- MicroSensor
- Weatherproof junction box
- Manhole
- Seal-off
- Rigid conduit to console

Installation Kit:
- 312020-928 (2" (50mm) Interstitial Sensor Riser Cap and Adapter kit) (Sold separately)

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

**Part Number**

794380-303

**Category**

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

**Fuel Compatibility**

- Gas
- Diesel
- Kerosene
- Jet Fuel
- Aviation Gas
- E-15
- E-95
- E-100
- Bio-Diesel 20
- Bio-Diesel 100
- Green Diesel
- DEF
- Waste Oil
- Motor Oil

**Console Compatibility (International Only)**

<table>
<thead>
<tr>
<th>Module Description</th>
<th>Part #</th>
<th># of Sensor Inputs per Module</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal Sensor Module (USM)</td>
<td>332812-001</td>
<td>16</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>Universal Sensor Input Out-put Module (USIOM-AC)</td>
<td>330020-750</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>Universal Sensor Input Out-put Module (USIOM-AC)</td>
<td>330020-751</td>
<td>6</td>
<td>Included</td>
</tr>
<tr>
<td>Interstitial Sensor Interface Module</td>
<td>329958-001</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>4 Probe / 4 Sensor Interface Module</td>
<td>329356-003</td>
<td>4</td>
<td>Sold Separately</td>
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<tr>
<td>4 Probe / 8 Sensor Interface Module</td>
<td>330230-001</td>
<td>8</td>
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</tr>
<tr>
<td>2 Probe / 8 Sensor Options</td>
<td>330513-001</td>
<td>4</td>
<td>Included</td>
</tr>
</tbody>
</table>

**Where Used (Typical)**

- Dispenser Pan
- STP Sump
- Convault Tank
- Oil/Water Separator Tank
- Annular Space
- Monitoring Well
- Weatherproof junction box
- Manhole
- Weatherproof junction box
- Seal-off
- Rigid conduit to 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: 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

**Example Installation**

- Vented riser pipe cap w/ vent tube
- Double-wall tank
- Manhole
- Weatherproof junction box
- Float
- Reservoir
- Brine level
- Seal-off
- Rigid conduit to console
**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**

### Fuel Compatibility

- Gas
- Diesel
- Kerosene
- Jet Fuel
- Aviation Gas
- Green Diesel
- E-15
- E-45
- E-85
- E-100
- Bio-Diesel 20
- Bio-Diesel 100
- Motor Oil
- DEF
- Waste Oil

### 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>TLS-450PLUS (8600 Series)</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 4 - TLS-4XX</td>
<td>6</td>
<td>Included</td>
</tr>
<tr>
<td>TLS-450</td>
<td>Universal Sensor Module (USM)</td>
<td>Up to 8 - TLS-4XX</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS4i (8601 Series)</td>
<td>Universal Sensor Module (USM)</td>
<td></td>
<td></td>
<td>Included</td>
</tr>
<tr>
<td>TLS4c (8601 Series)</td>
<td>Interstitial Sensor Interface Module</td>
<td></td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-350/PR/PLUS</td>
<td>Interstitial Sensor Interface Module</td>
<td></td>
<td></td>
<td>Included</td>
</tr>
<tr>
<td>TLS-350J</td>
<td>4 Probe / 4 Sensor Interface Module</td>
<td></td>
<td>4</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-300i</td>
<td>4 Probe / 8 Sensor Interface Module</td>
<td></td>
<td>8</td>
<td>Included</td>
</tr>
<tr>
<td>TLS-300C</td>
<td>2 Probe / 8 Sensor Options</td>
<td></td>
<td></td>
<td>Sold Separately</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

---

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**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
- 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**

*International Only*

- TLS-450PLUS (8600 Series)
- TLS-450
- TLS4 (8601 Series)¹
- TLS4i (8601 Series)
- TLS4Bi (8601 Series)¹
- TLS-350/R/PLUS
- TLS-350J
- TLS-300i
- TLS-300C

**Recommended Min. Console Software**

- 6A or Higher
- 4A or Higher
- 6A or Higher
- 12A/324 or Higher
- 124/324 or Higher

**Sensor Interface Modules**

<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>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>330020-750</td>
<td>Universal Sensor Input Module (USIOM-AC)</td>
<td>Up to 8 - TLS-4XX w/ opt. TLS-XB</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<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>329356-003</td>
<td>4 Probe / 4 Sensor Interface Module</td>
<td>Up to 8</td>
<td>4</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>8</td>
<td>Included</td>
</tr>
<tr>
<td>330513-001</td>
<td>2 Probe / 8 Sensor Options</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Alarm Notification**

- Normal
- Fuel Alarm
- Sensor Out

**Specifications**

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

**Third Party Evaluation Links**

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

**Product Link**

- Single-Point Mini-Hydrostatic Sensor

**Warranty with System**

- 1 Yr Parts & Labor

**Warranty (When purchased separately)**

- 1 Yr Parts Only

**Where Used (Typical)**

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

---

**Example Installation**

- Double-wall sump
- Coupling and seals as required for conduit egress (customer supplied)
- Seal-off and junction box (customer supplied)
- Rigid conduit to console
- Use tie wraps to keep cable clear of sump components and lid

---

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# Monitoring Well Vapor Sensor Specifications

## Sensor Description
The Vapor Monitoring Well Sensor detects hydrocarbon vapor exceeding the programmed threshold limit in the monitoring well.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>794390-700</th>
</tr>
</thead>
</table>

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

## Console Compatibility

### TLS-430PLUS (8600 Series)
- Minimum: 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
- Minimum: 4A or Higher
- Module Part #: 332812-001
- Module Description: Universal Sensor Module (USM)
- # of Modules per Console: Up to 8 - TLS-4XX w/ opt. TLS-XB
- # of Sensor Inputs per Module: 8
- Availability: Sold Separately

### TLS4 (8601 Series)
- Minimum: 6A or Higher
- Module Part #: 330020-750
- Module Description: Universal Sensor Input Out-put Module (USIOM-AC)
- # of Modules per Console: 1
- # of Sensor Inputs per Module: 6
- Availability: Included

### TLS4i (8601 Series)
- Minimum: 6A or Higher
- Module Part #: 330020-751
- Module Description: Universal Sensor Input Out-put Module (USIOM-AC)
- # of Modules per Console: 1
- # of Sensor Inputs per Module: 4

### TLS-450/R/PLUS
- Minimum: 124/324 or Higher
- Module Part #: 329357-001
- Module Description: Vapor Sensor Interface Module
- # of Modules per Console: Up to 8
- # of Sensor Inputs per Module: 5
- Availability: Sold Separately

### TLS-450J
- N/A

### TLS-300i
- N/A

### TLS-300C
- N/A

## 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
- TLS4 (8601 Series) Consoles

### Product Link
- Vapor 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**

1. 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.
2. Manhole
3. Cap and cord grips
4. Weatherproof junction box and seal-off
5. Rigid conduit to console
6. Perforated PVC monitoring well housing
7. Vapor sensor

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

**Part Number**
- 794380-621 for 7-10 ft (2-3 m) wells
- 794380-622 for 10-5 ft (3-4.5 m) wells
- 794380-624 for 15-20 ft (4.5-6 m) wells

### 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>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>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-450</td>
<td>4A or Higher</td>
<td>6A or Higher</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>330020-750</td>
<td>330020-751</td>
<td>Groundwater Sensor Interface Module</td>
<td>Up to 8</td>
<td>5</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS300C</td>
<td>329399-001</td>
<td>N/A</td>
<td>329399-001</td>
<td>329399-001</td>
<td>329399-001</td>
<td>329399-001</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

### 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.

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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
- [ ] Motor Oil

**Console Compatibility (International Only)**

<table>
<thead>
<tr>
<th>Console</th>
<th>Recommended Min. Console Software</th>
<th>Module Part #</th>
<th>Module Description</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></td>
<td>32812-001</td>
<td>Universal Sensor Module (USM) Up to 4 - TLS-4XX</td>
<td>16</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS-450 4A or Higher</td>
<td></td>
<td>330020-750</td>
<td>Universal Sensor Input Module (USIM-AC) Up to 8 - TLS-4XX w/ opt. TLS-XB</td>
<td>12</td>
<td>Included</td>
</tr>
<tr>
<td>TLS4 (8601 Series) 6A or Higher</td>
<td></td>
<td>329356-003</td>
<td>Universal Sensor Input Module (USIM-AC)</td>
<td>4</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS4i (8601 Series) 6A or Higher</td>
<td></td>
<td>329356-001</td>
<td>Interstitial Sensor Interface Module</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS4B (8601 Series) 6A or Higher</td>
<td></td>
<td>329358-001</td>
<td>Interstitial Sensor Interface Module</td>
<td>8</td>
<td>Sold Separately</td>
</tr>
<tr>
<td>TLS4C (8601 Series) 6A or Higher</td>
<td></td>
<td>330513-001</td>
<td>2 Probe / 4 Sensor Options</td>
<td>8</td>
<td>Included</td>
</tr>
</tbody>
</table>

**Alarm Notification**
- Normal
- Liquid Warning
- Liquid Alarm
- Sensor Out

**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
- STP Sump
- Monitoring Well
- Oil/Water Separator Tank
- Convault Tank
- Oil/Water Separator Tank

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# 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.

## Sensor Type Programming Table for TLS Consoles

<table>
<thead>
<tr>
<th>Sensor Type/Category</th>
<th>Part Number</th>
<th>Sensor Type</th>
<th>TLS3 Series Sensor Type</th>
<th>TLS4/8601 Series TLS-450 and TLS-450PLUS Sensor Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discriminating Dispenser Pan and Sump - 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</td>
<td>857080-XXX</td>
<td>Sump/Pan</td>
<td>Smart Sensor Setup: Sensor Type - 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-12' (3.66m)</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>Solid-State Interstitial High Alcohol for Double-Wall Fiberglass Tanks High Alcohol Compatible!</td>
<td>794380-345</td>
<td>Annular Space</td>
<td>2-Wire C.L. Setup: Sensor Type - Ultra 2</td>
<td>Device Setup Type A Sensor: Model - Ultra 2</td>
</tr>
<tr>
<td>Interstitial for Steel Tanks</td>
<td>794380-4X0</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>Position Sensitive Interstitial for Steel Tanks with 20’ (6.1m) Cable High Alcohol Compatible!</td>
<td>794380-333</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>Interstitial High Alcohol for Steel Tanks with 15’ (4.57m) Cable High Alcohol Compatible!</td>
<td>794380-430</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 High Alcohol Compatible!</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)</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 Monitoring Well</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” (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.

![Fig. B-1- Determining Lowest Point for OWSS's Bottom Float](image)

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).

![Fig. B-2- Determining Distance from Top of Riser to Top of Tank](image)
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:**
   
   \[
   D1 = 33" \text{ (83.82cm)}, \quad D2 = 24.5" \text{ (62.23cm)}, \quad D3 = 13" \text{ (33.02cm)}
   \]
   
   \[D2 + D3 = \text{Top Float position, i.e., } 24.5" \text{ (62.23cm)} + 13" \text{ (33.02cm)} = 37.5" \text{ (95.25cm)} \text{ (Dimension A in the Veeder-Root P/N matrix)}
   \]
   
   \[D1 - D3 = \text{Bottom Float position, i.e., } 33" \text{ (83.82cm)} - 13" \text{ (33.02cm)} = 20" \text{ (50.8cm)} \text{ (Dimension B in the Veeder-Root P/N matrix)}
   \]

   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:

![Fig. B-4- 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 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>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>Primaries</td>
</tr>
<tr>
<td>Conductor</td>
<td>#18 AWG (19/30) tinned copper</td>
</tr>
<tr>
<td>Insulation Type</td>
<td>Fluoropolymer</td>
</tr>
<tr>
<td>Primary O.D.</td>
<td>0.063” (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>
<tr>
<td></td>
<td></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

![Diagram of direct burial cable installation example]