

# Oil/Water Separator Sensor

## Installation Manual



# Notice

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Contact TLS Systems Technical Support for additional troubleshooting information at 800-323-1799.

## **DAMAGE CLAIMS / LOST EQUIPMENT**

Thoroughly examine all components and units as soon as they are received. If any cartons are damaged or missing, write a complete and detailed description of the damage or shortage on the face of the freight bill. The carrier's agent must verify the inspection and sign the description. Refuse only the damaged product, not the entire shipment.

Veeder-Root must be notified of any damages and/or shortages within 30 days of receipt of the shipment, as stated in our Terms and Conditions.

## **VEEDER-ROOT'S PREFERRED CARRIER**

1. Contact Veeder-Root Customer Service at 800-873-3313 with the specific part numbers and quantities that were missing or received damaged.
2. Fax signed Bill of Lading (BOL) to Veeder-Root Customer Service at 800-234-5350.
3. Veeder-Root will file the claim with the carrier and replace the damaged/missing product at no charge to the customer. Customer Service will work with production facility to have the replacement product shipped as soon as possible.

## **CUSTOMER'S PREFERRED CARRIER**

1. It is the customer's responsibility to file a claim with their carrier.
2. Customer may submit a replacement purchase order. Customer is responsible for all charges and freight associated with replacement order. Customer Service will work with production facility to have the replacement product shipped as soon as possible.
3. If "lost" equipment is delivered at a later date and is not needed, Veeder-Root will allow a Return to Stock without a restocking fee.
4. Veeder-Root will NOT be responsible for any compensation when a customer chooses their own carrier.

## **RETURN SHIPPING**

For the parts return procedure, please follow the appropriate instructions in the "General Returned Goods Policy" pages in the "Policies and Literature" section of the Veeder-Root **North American Environmental Products** price list. Veeder-Root will not accept any return product without a Return Goods Authorization (RGA) number clearly printed on the outside of the package.

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## Introduction

This manual contains procedures for the installation or replacement of Veeder-Root Oil/Water Separator Sensor, part number 794690-XXX.

This manual assumes field wiring has been run from the console to the tank in which this sensor will be installed following instructions in the appropriate console's site prep manual.

### Contractor Certification Requirements

Veeder-Root requires the following minimum training certifications for contractors who will install and setup the equipment discussed in this manual:

**Installer (Level 1) Certification:** Contractors holding valid Installer Certification are approved to perform wiring and conduit routing; equipment mounting; probe, sensor and carbon canister vapor polisher installation; wireless equipment installation; tank and line preparation; and line leak detector installation.

**ATG Technician (Level 2/3 or 4) Certification:** Contractors holding valid ATG Technician Certifications are approved to perform installation checkout, startup, programming and operations training, system tests, troubleshooting and servicing for all Veeder-Root Series Tank Monitoring Systems, including Line Leak Detection. In addition, Contractors with the following sub-certification designations are approved to perform installation checkout, startup, programming, system tests, troubleshooting, service techniques and operations training on the designated system.

- Wireless 2
- Tall Tank

**Warranty Registrations** may only be submitted by selected Distributors.

### Product Marking Information

#### Related Documents

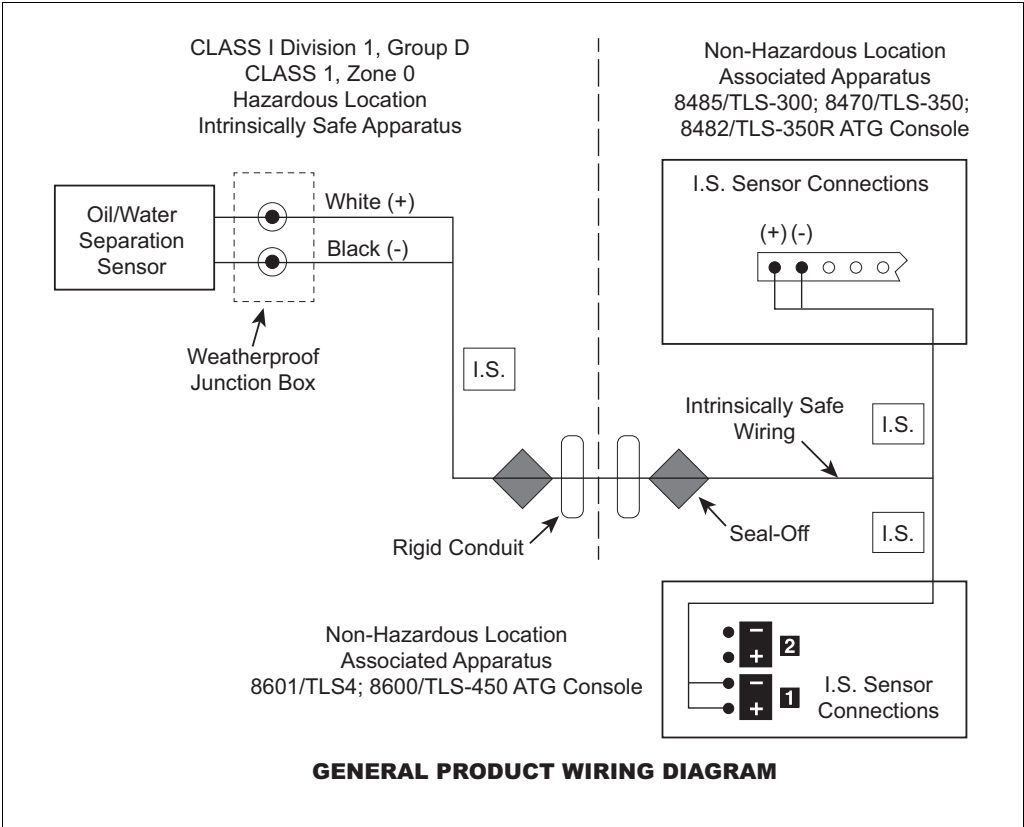
#### DOCUMENTS REQUIRED TO INSTALL EQUIPMENT

This intrinsically safe apparatus is only for use as part of a Veeder-Root Automatic Tank Gauging System (ATG Console with probes and sensors). To install intrinsically safe apparatus, use the specific control drawing that appears on the nameplate of the applicable associated apparatus (ATG Console):


Equipment	UL/cUL Control Drawing Document No.
<b>Associated Apparatus</b>	
TLS-450/8600	331940-008
TLS-350, TLS-350R	331940-011
TLS-300	331940-013
TLS4/8601	331940-018

The control drawings contain information related to the correct installation of the overall intrinsically Safe System. This includes information such as maximum number of apparatus, specific apparatus allowed in the system,


maximum cable lengths, references to codes, proper grounding and so on. Control drawings can be found on the accompanying Compact Disk (TECH DOCS CD) or on the internet at [veeder.com](http://veeder.com) under SUPPORT; VR TECHNICAL DOCUMENTS; DRAWINGS.








Product Label Contents

**VEEDER-ROOT**  
CL I, DIV. 1, GP.D  
CL I, ZONE 0  
AEx ia IIA  
Ex ia IIA  
TC=T4  
SECURITE INTRINSEQUE

I.S. CIRCUIT FOR HAZLOC SENSOR  
F/N 794680-XXX  
S/N XXXXXX  
 $-40^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$   
MANUAL NO. 577013-737

  
24G6  
c **UL** us  
LISTED

## Safety Warnings









 <b>WARNING</b>	
   	<p>This product is to be installed in systems operating near locations where highly combustible fuels or vapors may be present.</p> <p><b>FAILURE TO COMPLY WITH THE FOLLOWING WARNINGS AND SAFETY PRECAUTIONS COULD CAUSE DAMAGE TO PROPERTY, ENVIRONMENT, RESULTING IN SERIOUS INJURY OR DEATH.</b></p> <ol style="list-style-type: none"> <li>1. Read and follow all instructions in this manual, including all safety warnings.</li> <li>2. Comply with all applicable codes including: the National Electrical Code; federal, state, and local codes; and other applicable safety codes.</li> <li>3. Do not alter or modify any component or substitute components in package.</li> <li>4. Warning! Substitution of components may impair intrinsic safety.</li> <li>5. Field wiring to the Oil/Water Separator Sensor must not share a conduit with any non-intrinsically safe device's wiring.</li> <li>6. Warning! To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.</li> <li>7. Before installing or taking the unit into a hazardous area, earth the unit in a safe area to remove any static charge. Then immediately transport the unit to the installation site. Do not rub or clean the unit prior to installation. Cleaning is not required under normal service conditions. Do not rub or clean the unit after installation. If the unit is not fixed to a known earth point when installed, ensure that a separate earth connection is made to prevent the potential of a static discharge. When fitting or removing the unit, use of anti-static footwear or clothing is required.</li> <li>8. Materials used in the construction of this device do not contain, by mass, more than 10% in total of aluminum, magnesium, zirconium and titanium or 7.5% in total of magnesium, titanium and zirconium.</li> </ol>



**Failure to install this product in accordance with its instructions and warnings will result in voiding of all warranties with this product.**

## Safety Symbols

The following safety symbols may be used throughout this manual to alert you to important safety hazards and precautions.

 <p><b>EXPLOSIVE</b> Fuels and their vapors are extremely explosive if ignited.</p>	 <p><b>FLAMMABLE</b> Fuels and their vapors are extremely flammable.</p>
 <p><b>TURN POWER OFF</b> Live power to a device creates a potential shock hazard. Turn Off power to the device and associated accessories when servicing the unit</p>	 <p><b>WARNING</b> Heed the adjacent instructions to avoid equipment damage or personal injury.</p>
 <p><b>WEAR EYE PROTECTION</b> Wear eye protection when working with pressurized fuel lines or epoxy sealant to avoid possible eye injury.</p>	 <p><b>GLOVES</b> Wear gloves to protect hands from irritation or injury.</p>
 <p><b>READ ALL RELATED MANUALS</b> Knowledge of all related procedures before you begin work is important. Read and understand all manuals thoroughly. If you do not understand a procedure, ask someone who does.</p>	 <p><b>INJURY</b> Careless or improper handling of materials can result in bodily injury.</p>

## Installation

### Installation Hardware

The Oil/Water Separator Sensor is fixed with a 2-inch NPT bushing that installs into a 2-inch riser pipe or bushing. For tanks with a 4-inch NPT riser or bushing, a customer supplied 4 to 2 inch coupling (e.g., McMaster-Carr P/N 44605K335) or 4- to 2-inch reducer (e.g., McMaster-Carr P/N 6850K25) may be required. The field wiring connections are completed using the Oil/Water Separator Sensor installation kit (see Table 1) and are enclosed in a customer supplied waterproof junction box.

**Table 1. Installation Kit, P/N 312020-969**

Quantity	Description	Part No.
2	Wire Nuts	576008-461
1	Sealant Packs	514100-304
1	Tie Wraps	510901-337
1	Cord Grip	331028-011

### Installing the Sensor

Follow these steps to install the Sensor:



1. Turn OFF the AC power to the console.
2. Remove the sensor from its packaging.
3. To install the sensor, the tank riser must have a 2-inch NPT threaded opening at the top end.
4. Remove the plug or cap from the level sensor riser
5. The Oil/Water Separator Sensor is installed by lowering it into the tank and by threading it into the 2-inch NPT riser or appropriate bushing/coupling (see Figure 1). Tighten the sensor to prevent leakage.



**Seal the threads using a UL-classified sealant suitable for the fluid involved.**

6. Using the appropriate fittings and conduit which conform to the National Electrical Code as well as state and local codes, connect the conduit for the sensor field wiring from the console to the junction box in manway.

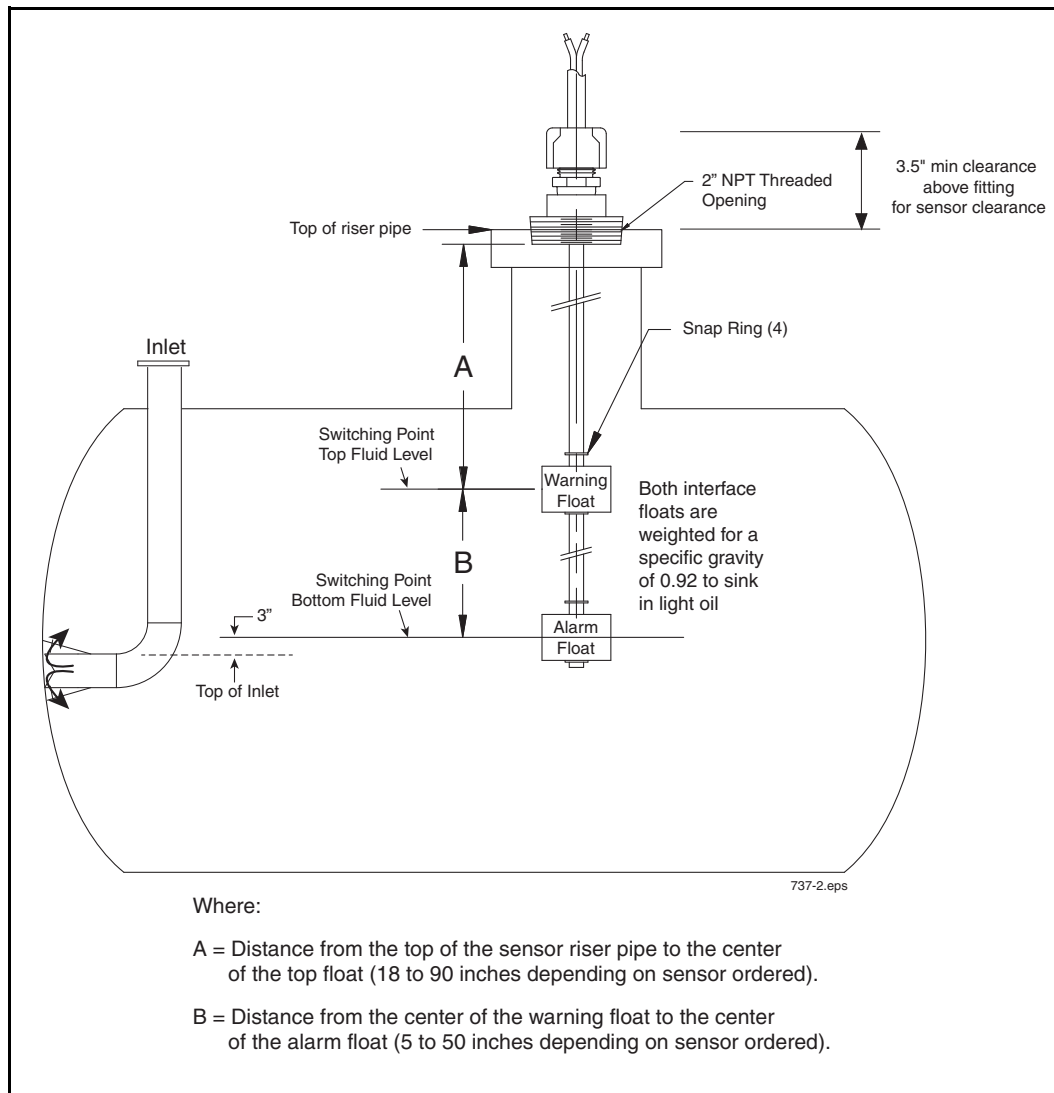


Figure 1. Oil / Water Separator Sensor (Dry Tank Installed) - Riser Installation Example

## Connecting the Field Wiring

1. Using the wire nuts provided with the sensor, connect the sensor cable leads to the field wires in the junction box (see Figure 3).
2. Do NOT terminate shield or drain wire at this location, ground shield and drain wires at console only.
3. Seal wire nuts with epoxy sealant using one bag for two wire nut connections (see Figure 3).
4. Replace the junction box cover and tighten it to ensure the box is sealed.



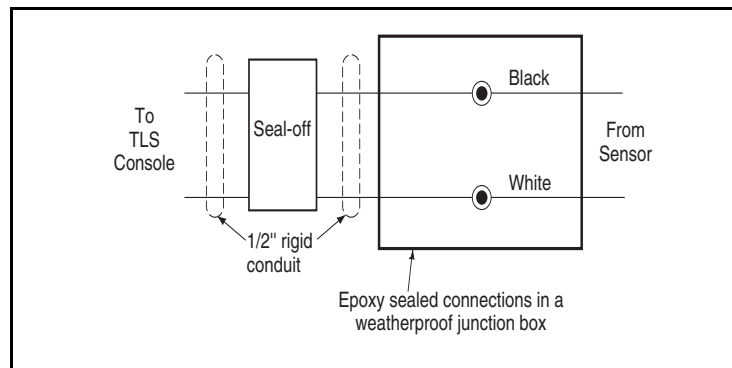


Figure 2. Oil/Water Separator Sensor Field Wiring Diagram

**A**

**B**

**C**

**Instructions:**

NOTE: When temperature is below 50°F (10°C), keep resin in a warm place prior to mixing (e.g., in an inside pocket next to body).

1. Open epoxy sealant package, and remove resin pak.
2. Holding resin pak as shown in A, bend pak along long length.
3. As shown in B, firmly squeeze the RED SIDE of the resin, forcing it through the center seal and into BLACK SIDE.
4. Mix thoroughly to a uniform color by squeezing contents back and forth 25-30 times.
5. Squeeze mixed, warm resin into one end of bag and cutoff other end.
6. Slowly insert wiring connections into sealing pack until they fit snugly against the opposite end as shown in C.
7. Twist open end of bag and use tie wrap to close it off and position the tie wrapped end up until the resin jells.

**CAUTION:** Epoxy sealant is irritating to eyes, respiratory system, and skin. Can cause allergic skin reaction. Contains: epoxy resin and Cycloaliphatic epoxycarboxylate.

**Precautions:** Wear suitable protective clothing, gloves, eye, and face protection. Use only in well ventilated areas. Wash thoroughly before eating, drinking, or smoking.

consoles\epxy2w.eps

Figure 3. Epoxy Sealant for Two-Wire Connections

## TLS Console Liquid Sensor Setup

For Oil/Water Separator sensors, in the entry for Liquid Sensor Type, select **Dual Float Discriminating**.

TLS Alarm States

Figure 4 illustrates the various alarm states of the Oil/Water Separator sensor. Note: If the top float is stuck in the up position, the nominal resistance will read 85K ohms.

NOTE IMPORTANT

If tank liquid is below the Warning Float or Alarm Float trip point, liquid will need to be added to the tank to clear the ATG Warning or Alarm.

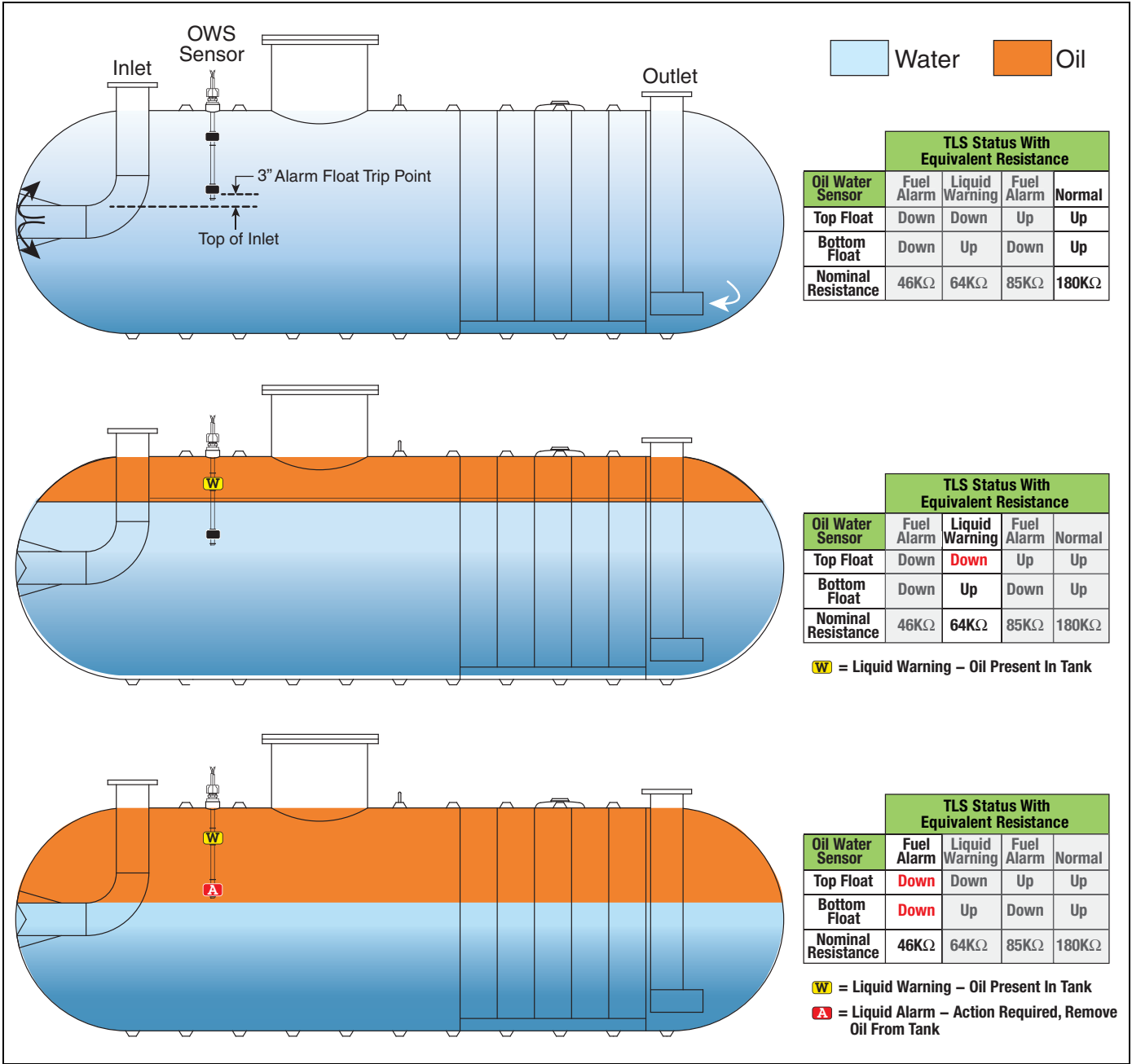


Figure 4. TLS Alarm States

