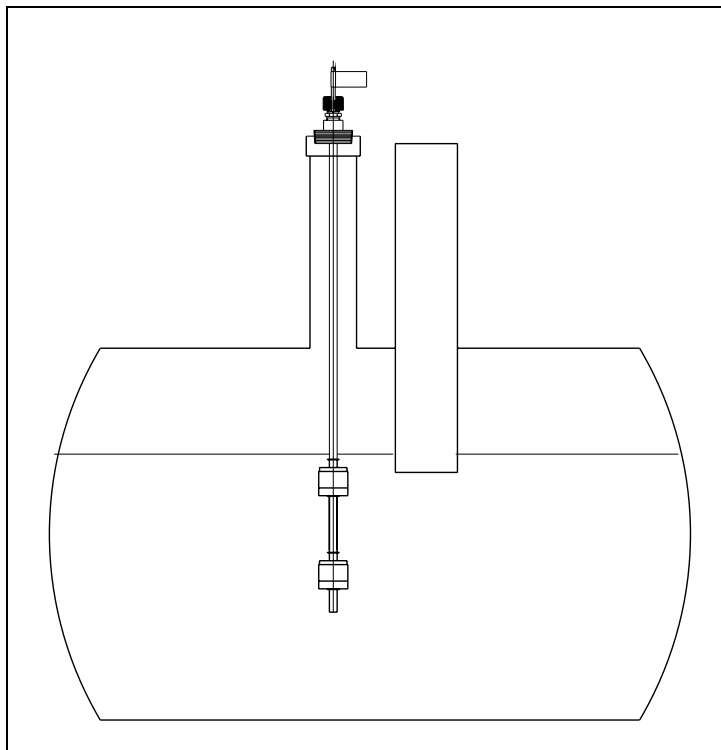


# Oil/Water Separator Sensor

## Installation Manual



# Notice

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1. Call Customer Service at (800) 873-3313 to obtain an RGA number.
2. Clearly print the RGA number on the packages being returned. No package can be received without this number.
3. All shipments of Veeder-Root products must be prepaid.
4. If the unit is damaged, return it in the original shipping container with shock absorbing material provided. Veeder-Root will accept no liability for damage caused by improper packing.
5. Address the shipment to Veeder-Root Co., 6th Avenue at Burns Crossing, Altoona, Pennsylvania 16602.
6. All warranty returns must also include a legible WSR (warranty service report) with problem description and corrective action sections filled out in detail.

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# Introduction

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

This manual assumes that all preliminary site preparation is complete, and that field wiring from the monitor to the sensor junction box is in place.

## Related Manuals

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For new installations, reference the manual below to connect the sensor to the console or contact your Veeder-Root representative for further assistance.

576013-879 TLS-350 & TLS-350R Site Prep and Installation Guide

576013-623 TLS-350 System Setup Instructions

## Contractor Certification Requirements

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

**Level 1** Contractors holding valid Level 1 Certification are approved to perform wiring and conduit routing, equipment mounting, probe and sensor installation, tank and line preparation, and line leak detector installation.



**Level 2/3** Contractors holding valid Level 2 or 3 Certifications are approved to perform installation checkout, startup, programming and operations training, troubleshooting and servicing for all Veeder-Root Tank Monitoring Systems, including Line Leak Detection and associated accessories.

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

## Safety Symbols

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

	<b>Explosive</b> Fuels and their vapors are extremely explosive if ignited.
	<b>Flammable</b> Fuels and their vapors are extremely flammable.

	<p><b>Turn Power Off</b> Live power to a device creates a potential shock hazard. Always turn power off to the device and associated accessories when servicing the unit.</p>
	<p><b>Wear Eye Protection</b> Fuel spray from residual pressure in the lines can cause serious eye injuries. Always wear eye protection.</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>Gloves</b> Wear gloves to protect hands from irritation or injury.</p>
	<p><b>Injury</b> Careless or improper handling of materials can result in bodily injury.</p>

**Warnings and Important Notes**

<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>Fire or explosion resulting in serious injury or death could result if the equipment is improperly installed or modified. Serious contamination of the environment may also occur.</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. Field wiring to the Oil/Water Separator Sensor must not be shared with wiring conduit with any non-intrinsically safe device.</li> </ol>

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

# Installation

## Installation Hardware

The Oil/Water Separator Sensor comes with the following hardware necessary to mount it in the tank:

Quantity	Description	Part No.
2	Wire Nuts	576008-461
1	Sealant Packs	514100-304
1	Tie Wraps	510901-337
1	Cord Grip	337028-011

## 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. In order to install the sensor, the tank riser must have a 2-inch NPT threaded opening or larger at the top end. If the opening is larger than 2-inch NPT, a reducer will also be required.
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 (see Figure 1). Tighten the sensor to prevent leakage.

### Important

*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.

### Important

*Ensure the conduit is sealed in accordance with the National Electrical Codes and the Automotive and Marine Service Station Codes since they pass from a Class I, Division I or Division II area into a non-hazardous area.*

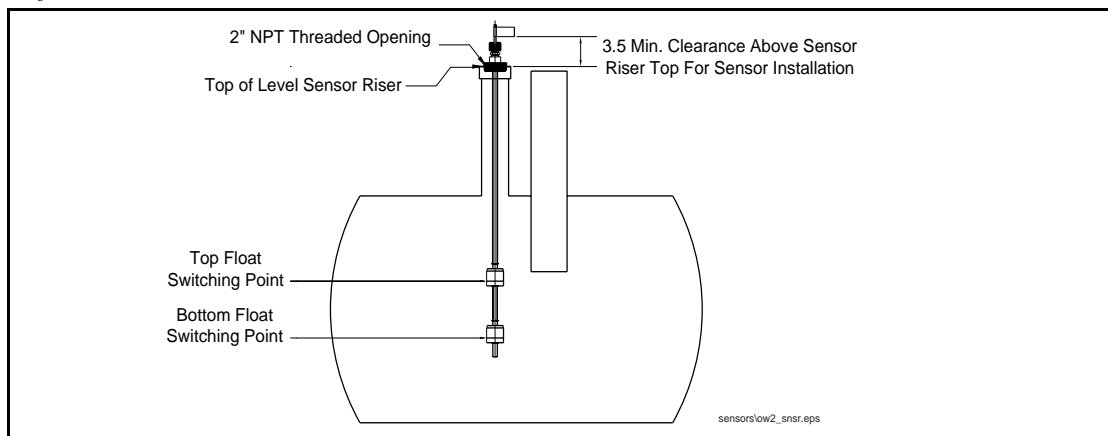


Figure 1. Oil/Water Separator Sensor (installed)

# Wiring

## Requirements

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Minimum Requirements for proper operation:

1. TLS-350 (R) Console with Interstitial Interface Module Part Number 847490-102.
2. TLS-350 (R) software Version 8 or later.

## Field Wiring Requirements

### WIRE TYPE

In order to ensure the best operating systems available, Veeder-Root **REQUIRES** the use of shielded cable for all probes and sensors regardless of conduit material or application. In these installations, shielded cable must be rated less than 100 picofarad per foot and be manufactured with a material suitable for the environment, such as Carol™ C2534 or Belden™ 88760, or 8760.

NOTE: Throughout this manual, when mentioning any cable or wire being used for sensor to console wiring, it will be referring to shielded cable.

The conduit used must be properly sealed in accordance with the National Electrical Code (NFPA 70) and the Automotive and Marine Service Station Code (NFPA 30A) since they pass from a Class I, Division II area into a nonhazardous area.

### WIRE LENGTH

Improper system operation could result in undetected potential environmental and health hazards if the probe- or sensor-to-console wire runs exceed 1000 feet. Wire runs must be less than 1000 feet to meet intrinsic safety requirements.

### SPLICES

Veeder-Root recommends that no splices be made in the wire run between a sensor or probe junction box and the console. Each splice degrades signal strength and could result in poor system performance.

### WIRE GAUGES

Sensor-to-monitor wires should be #18, #16, or #14 AWG copper wire.

### Important

*The Oil/Water Separator Sensor must not share conduit with any non-intrinsically safe device. Do not share conduit for sensors to more than one console.*

## Connecting the Wires

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1. Using the wire nuts provided with the sensor, connect the sensor cable leads to the field wires in the junction box (see Figure 2).

- Do NOT terminate shield or drain wire at this location, ground shield and drain wires at console only.

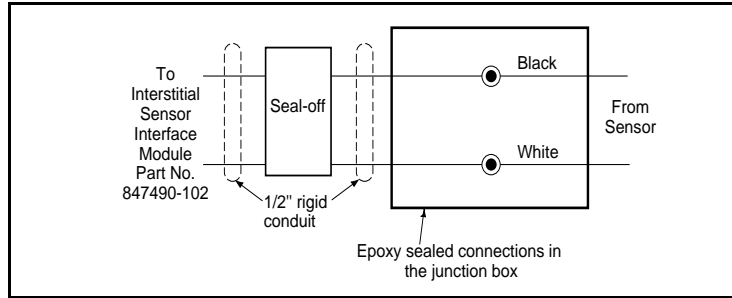


Figure 2. Oil/Water Sensor (Interstitial Sensor Interface) Wiring Installation Diagram

### Sealing Wiring Connections With Epoxy



**CAUTION:** Epoxy sealant may be irritating to eyes and skin. May cause skin sensitization in susceptible individuals. May be absorbed through the skin. Epoxy sealant contains epoxy resin and vinyl cyclohexane dioxide. Vinyl cyclohexane dioxide has caused skin cancer in animal tests. Avoid eye and skin contact. Wear chemically resistant gloves and safety glasses. Use only in well ventilated areas.

**Important**

*If more than two wire nut connections share an epoxy sealant bag, the connections will not be properly sealed. Improper sealing of the connections may result in inaccurate sensor readings and false alarm conditions.  
Epoxy packs must be used for all field connections.*

#### To Seal The Wiring Connections:

- Seal wire nuts with epoxy sealant using one bag for two wire nut connections (see Figure 3).

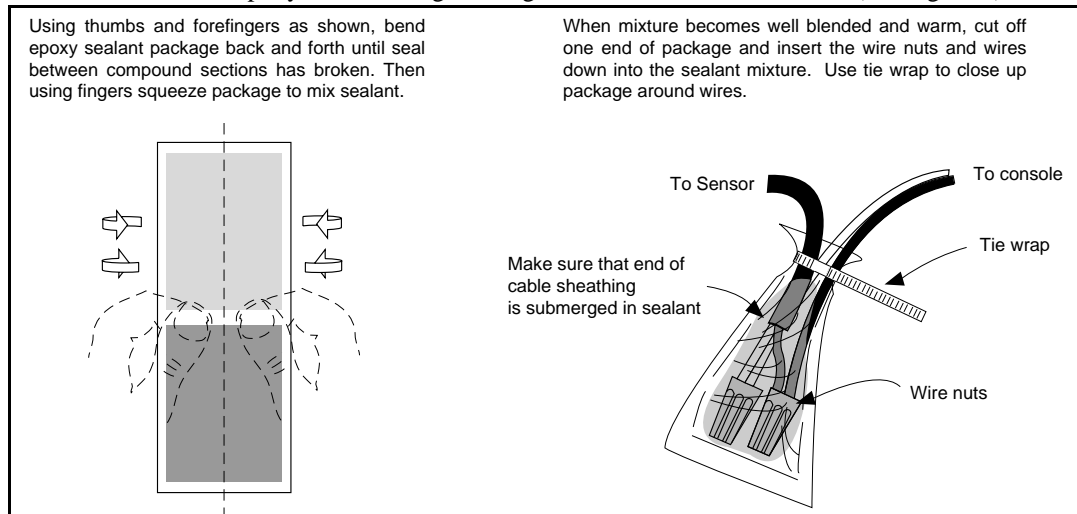


Figure 3. Epoxy Sealant for Two-Wire Connections

- Replace the junction box cover and tighten it to ensure the box is sealed.
- If additional sealing pack and wire nuts are needed, an installation kit part number 312020-969 can be ordered from Veeder-Root.



# Sensor Setup

## Sensor Alarms

Follow the setup instructions in manual No. 567013-623, section 18, **Liquid Sensor Setup Data**, to setup this sensor as **Dual Discriminating type**.

Table 1 lists the Oil/Water Separator Sensor's alarms, their causes and suggestive corrective actions.

**Table 1: Oil/Water Separator Sensor Operational Messages**

Display Message	Front Panel Indicator	Cause	Action
Short Alarm	Alarm	An internal short has occurred in the sensor.	Call for service following the procedures established for your site.
Fuel Alarm	Alarm	The oil level in the separator tank has reached the critical level defined by the customer at time of purchase.	Oil MUST be pumped out IMMEDIATELY to prevent possible accidental discharge. Tank MUST be filled with water for proper tank and sensor operation.
Liquid Warning	Warning	The oil level in the separator tank has reached a sufficient level as defined by the customer, indicating need to schedule oil removal.	Oil removal should be scheduled as soon as possible. Tank MUST be filled with water for proper tank and sensor operation.
Sensor Out Alarm	Alarm	The sensor is disconnected or is not functioning properly.	Sensor problem must be corrected or sensor replaced. Call for service by following the procedures established for your site.
		Liquid sensor setup was performed incorrectly.	Reenter this liquid sensor's setup values.

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