Manual No: **576013-763** ● Revision: **K**

Groundwater Sensor

Installation Guide

VEEDER-ROOT

Notice

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

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

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

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.

Figures

Introduction

This manual tells you how to install the Veeder-Root Groundwater Sensor, Part No. 794380-62X. The manual assumes all preliminary site preparation is completed, and that field wiring from the monitor to the sensor junction box is in place.

For new installations, or if site preparation is necessary, refer to the appropriate Veeder-Root Site Preparation and Installation Instructions or contact your Veeder-Root representative for assistance.

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 Certification (Level 1): 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.

Technician Certification (Level 2/3): Contractors holding valid 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

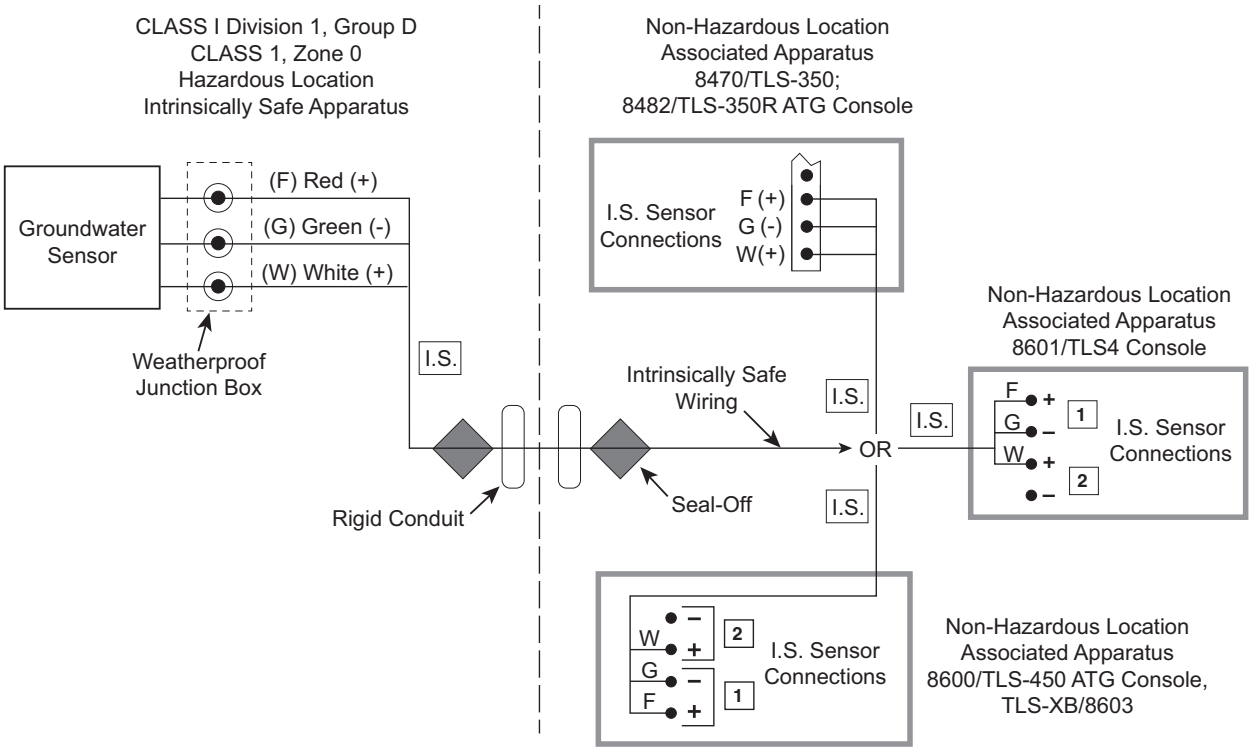
RELATED DOCUMENTS

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.
Associated Apparatus	
TLS-450/8600	331940-008
TLS-350, TLS-350R	331940-011
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 under SUPPORT; VR TECHNICAL DOCUMENTS; DRAWINGS.



GENERAL PRODUCT WIRING DIAGRAM

Product Label Contents

VEEDER-ROOT TM

I.S. CIRCUIT FOR HAZLOC SENSOR
F/N 794380-XXX
S/N XXXXXX

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

-40°C ≤ Ta ≤ +60°C

MANUAL NO. 576013-763

24G6
c UL us
LISTED

Safety Warnings

To protect yourself and your equipment, observe the following warnings and important information:

⚠ WARNING

This product is to be installed and operated in the highly combustible environment of a gasoline storage tank where flammable liquids and explosive vapors may be present.

FAILURE TO COMPLY WITH THE FOLLOWING WARNINGS AND SAFETY PRECAUTIONS COULD CAUSE DAMAGE TO PROPERTY, ENVIRONMENT, RESULTING IN SERIOUS INJURY OR DEATH.

1. **Read and follow all instructions in this manual, including all safety warnings to protect yourself and others from serious injury, explosion, or electrical shock.**
2. **Comply with all applicable codes including: the National Electrical Code; federal, state, and local codes; and other applicable safety codes.**
3. **To protect yourself and others from being struck by vehicles, block off your work area during installation or service.**
4. **Do not alter or modify any component or substitute components in this kit.**
5. **Warning! Substitution of components may impair intrinsic safety.**
6. **Field wiring to the Sensor must not share a conduit with any non-intrinsically safe device's wiring.**
7. **Warning! To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.**
8. **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.**
9. **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.**
10. **A groundwater sensor should be installed only in wet wells where preliminary testing has determined that water in the well is not contaminated, or contaminated water has been remediated and is now clean.**

Safety Symbols

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

EXPLOSIVE
Fuels and their vapors are extremely explosive if ignited.

FLAMMABLE
Fuels and their vapors are extremely flammable.

ELECTRICITY
High voltage exists in, and is supplied to, the device. A potential shock hazard exists.

TURN POWER OFF
Live power to a device creates a potential shock hazard. Turn Off power to the device and associated accessories when servicing the unit.

GLOVES Wear gloves to protect hands from irritation or injury.	**USE SAFETY BARRICADES** Unauthorized people or vehicles in the work area are dangerous. Always use safety cones or barricades, safety tape, and your vehicle to block the work area.
WEAR EYE PROTECTION Fuel spray from residual pressure in the lines can cause serious eye injuries. Always wear eye protection.	**INJURY** Careless or improper handling of materials can result in bodily injury.
READ ALL RELATED MANUALS 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.	

Installation Components

- Groundwater sensor P/N 794380-62X
- Installation Kit - P/N 330020-280 (Figure 1)
- Manual 576013-763

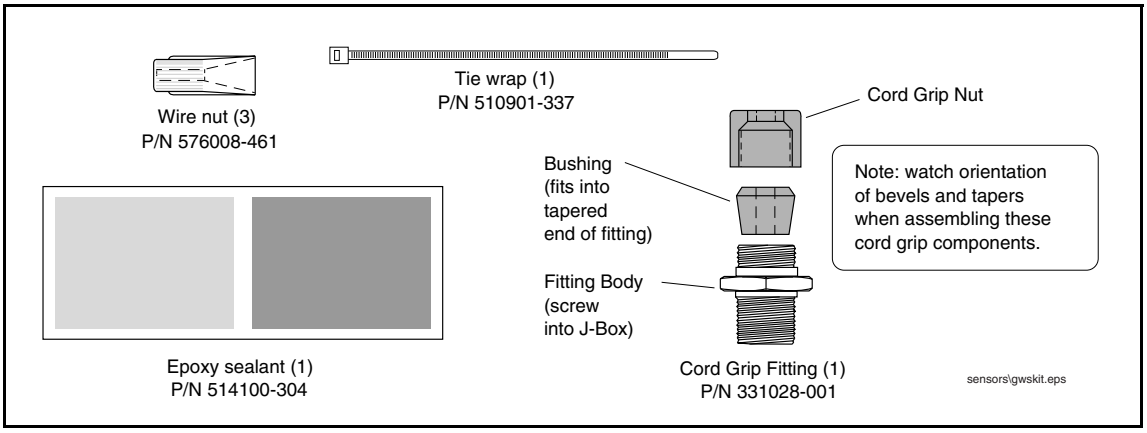


Figure 1. Installation Kit

Sensor Installation

1. Turn off AC power to the Veeder-Root monitoring system.
2. Remove any existing cap from the well in which the sensor will be installed. (A new well cap is supplied with the groundwater sensor.)
3. Lower the groundwater sensor into the monitoring well until the water float touches the bottom of the well.
4. Raise the sensor 2-inches to 4-inches from the bottom of the well and mark the sensor with a piece of tape at the point even with the top of the well casing.
5. Secure the sensor at the point marked with the tape to the retainer under the sensor well cap. Allow any excess sensor length (should be no more than 2-feet) to hang loosely from the retainer [Figure 2].

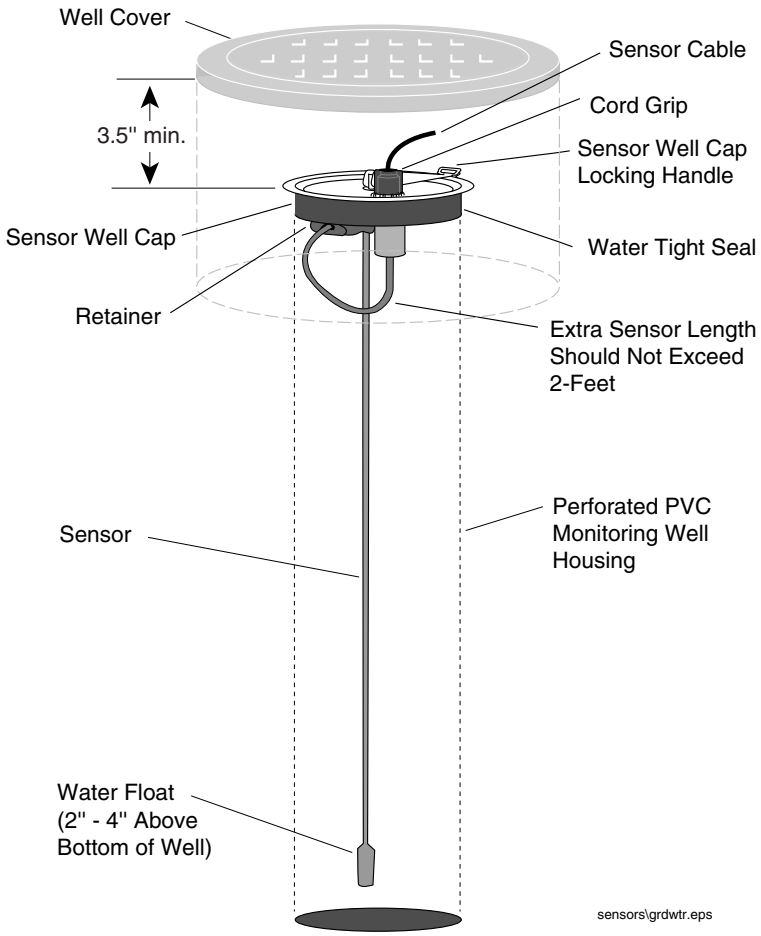
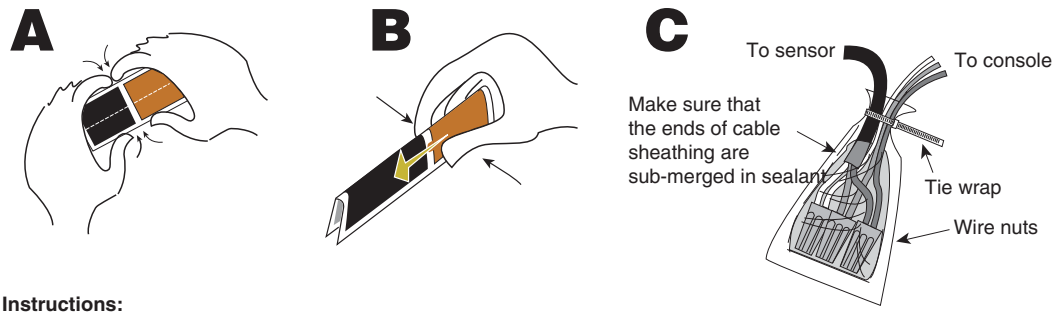


Figure 2. Groundwater Sensor Installation

6. Press the sensor well cap into the top of the well with the excess sensor length hanging inside the well housing.
7. Press down the locking handle on the sensor well cap to secure it in position and to form a water-tight seal between the sensor well cap and the monitoring well housing.
8. Pass the end of the sensor cable through the nut, bushing, and cord grip fitting and into the Junction box (J-box). Pull the excess cable through the fitting and out the opened side of the J-box.
9. After sliding the J-box cord grip fitting up to the J-box, apply the UL-classified sealant (suitable for use with the fuel involved) to the fitting then screw it into the J-box. Tighten the J-box cord grip fitting nut to ensure a watertight seal at the sensor cable entry.
10. Using the wiring nuts, connect the wires from the sensor cable to the field wires from the console (see General Product Wiring Diagram on page 2). Be sure to observe proper polarity between sensor and console.
11. Seal wire nuts with epoxy sealant following instructions in Figure 3.
12. For additional security, a padlock may be installed on the sensor cap to ensure that the locking handle cannot be opened by unauthorized personnel.



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\epxy3w.eps

Figure 3. Epoxy Sealing Field Wiring Connections

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For technical support, sales or other assistance, please visit:
www.veeder.com