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High/Low Level Sensor for Guardian Systems

Installation Guide

VEEDER-ROOT

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For complete warranty, technical support, and additional product information, refer to your console's Operator Manual.

DAMAGE CLAIMS

1. Thoroughly examine all components and units as soon as they are received. If damaged, write a complete and detailed description of the damage on the face of the freight bill. The carrier's agent *must* verify the inspection and sign the description.
2. Immediately notify the delivering carrier of damage or loss. This notification may be given either in person or by telephone. Written confirmation must be mailed within 48 hours. Railroads and motor carriers are reluctant to make adjustments for damaged merchandise unless inspected and reported promptly.
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RETURN SHIPPING

For the parts return procedure, please follow the instruction in the "Veeder-Root Warranty and Dispatch Program" pages in the "Policies, Literature, and Contact" Section of the Veeder-Root **Consoles - North America** Price List.

Figures

Introduction

This manual contains procedures for the installation or replacement of the Veeder-Root High/Low Level Sensor, part number 7945X0-000. Sensors are available in single- or dual-level varieties.

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

For new installations, refer to the applicable sections of this manual and to:

576013-977 Guardian Site Preparation and Installation Instructions Manual,

or contact your Veeder-Root representative for further assistance.

Safety Symbols

The following safety symbols are 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.
	**No Smoking** Sparks and embers from burning cigarettes or pipes can ignite fuels and their vapors.		**No Open Flames** Open flames from matches, lighters, welding torches, etc. can ignite fuels and their vapors.
	**No Power Tools** Sparks from power tools (such as drills) can ignite fuels and their vapors.		**No Vehicles** Moving vehicles in the area during service can create a potential for personal injury to you or others. Sparks from starting vehicles can ignite fuels and their vapors.

 **No People in the Area** Unauthorized people in the area during service can create a potential for personal injury to you and them.	 **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.
 **Gloves** Wear gloves to protect hands from irritation or 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.

Warnings and Important Notes

⚠ WARNING

This product is to be installed in systems operating near locations where highly combustible fuels or vapors may be present.

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.

1. **Read and follow all instructions in this manual, including all safety warnings.**
2. **Comply with all applicable codes including: the National Electrical Code; federal, state, and local codes; and other applicable safety codes.**
3. **Do not alter or modify any component or substitute components in this kit.**
4. **Field wiring to the High/Low Sensor must not be shared with wiring conduit with any non-intrinsically safe device.**

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

Installation

Installation Hardware

The High/Low level sensor comes with hardware necessart to mount it in the tank (see table). The number of components used will depend upon whether a single- or dual-level sensor is used.

Quantity	Description
4	Wire Nuts
2	Sealant Packs
2	Tie Wraps

Installing the Sensor

Follow these steps to install the High/Low Level 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 must have a 2-inch NPT threaded opening or larger. If the opening is larger than 2-inch NPT, a reducer will also be required.
4. Remove the plug or cap from the tank opening.
5. The High/Low Level Sensor is installed by lowering it into the tank and by threading it into the 2-inch NPT tank opening or riser (see Figure 1 on page 3). Tighten the sensor to prevent leakage.

Important ☞ Installation of the High/Low Level Sensor into a riser will result in alarm levels different than those specified when the sensor was ordered depending on the length of the riser. Seal the threads using a UL-classified sealant suitable for the fuel involved.

6. Using 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 sensor housing. The High/Low Sensor has an opening which accepts 1/2-inch NPT threaded conduit.

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.

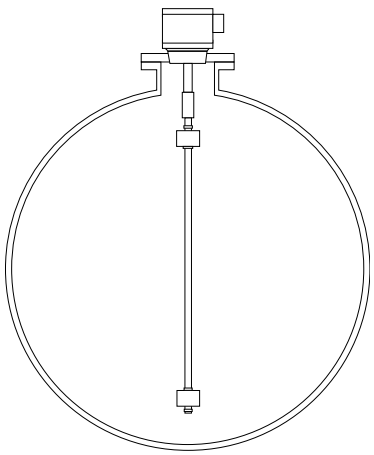


Figure 1. High/Low Level Sensor (Installed)

Wiring

Connecting Sensor to Field Wiring

1. Remove the 4 screws which secure the cover of the High/Low sensor wiring compartment and set aside for later reinstallation.
2. Carefully remove the cover and gasket and set aside for later reinstallation.
3. Using the wire nuts provided with the sensor, connect the sensor wires to the field wires in the sensor junction box (see Figure 2).

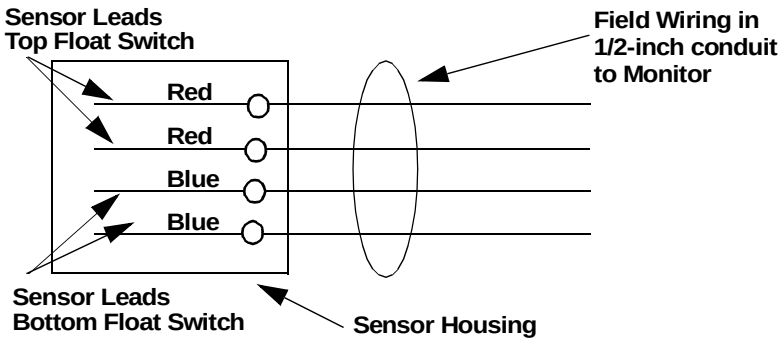
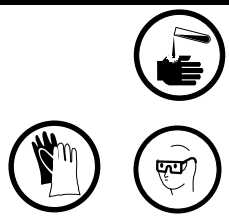


Figure 2. Field Wiring Diagram

Important ☞ There are 3 float versions: top and bottom (Dual Float), top only (Single Float), and bottom only (Single Float). Only the Dual Float Sensors will contain all 4 wires; single float versions will only have 2 wires.

Sealing Wiring Connections With Epoxy

⚠ WARNING



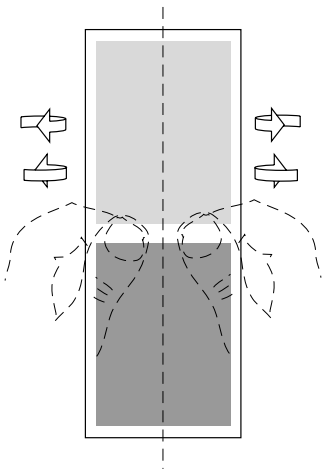
Epoxy sealant may be irritating to skin and eyes, absorbed through the skin, or cause skin sensitization in susceptible individuals.

Minor injury may result. Also materials contained in epoxy have caused skin cancer in animal tests.

Avoid skin and eye contact. Wear appropriate safety equipment. Use only in well ventilated areas.

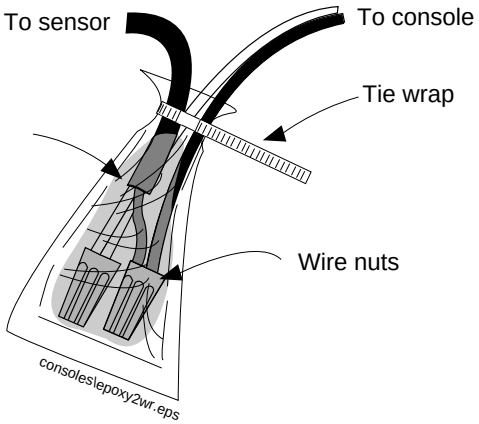
Important☞ If more than two wire nut connections share an epoxy sealant bag, the connections will not be properly sealed. Improper sealing of the connections may result in inaccurate sensor readings and false alarm conditions. Use two epoxy bags for Dual Float versions. To seal the wiring connections:

1. Seal wire nuts with epoxy sealant using one bag for two wire nut connections (see Figure 3).
2. Replace the sensor gasket and cover, and secure them using the 4 screws previously removed. Tighten securely to ensure that gasket is compressed.



Using thumbs and forefingers as shown, bend epoxy sealant package back and forth until seal between compound sections has broken. Then using fingers squeeze package to mix sealant.

When mixture becomes well blended and warm, cut off one end of package and insert the wire nuts and wires down into the sealant mixture. Use tie wrap to close up package around wires.



Make sure that end of cable jacket is submerged in sealant.

Figure 3. Epoxy Sealant for Two-Wire Connections

Sales Offices

Veeder-Root has offices around the world to serve you.

Headquarters

Veeder-Root Company
125 Powder Forest Drive
Simsbury, CT 06070-7684 U.S.A.
(860) 651-2700 FAX: (860) 651-2719

England

Veeder-Root Environmental Systems Limited
Hydrex House, Garden Road
Richmond, Surrey TW9 4NR ENGLAND
+44 20 8392 1355

Brazil

Veeder-Root do BRASIL
Rua ado Benatti, 92
Caixa Postal 8343
01051 Sao Paulo BRAZIL
55-11-861-2155

Germany

Veeder-Root GmbH
Uhlandstrasse 49
D-78554 Aldingen GERMANY
49 (0)7424 1400

France

Veeder-Root SARL
ZI des Mardelles
94-106 rue Blaise Pascal
93600 Aulnay-sous-Bois FRANCE
33 (0)1 4879 5599

Canada

Veeder-Root Canada
151 Superior Boulevard, Suite 24
Mississauga, Ontario, L5T 2L1 CANADA
905-670-2755

Singapore

Veeder-Root Singapore
246 MacPherson Road
#08-01 Betime Building
348578 Singapore
65 745 9265

Mexico

Veeder-Root Mexico
Prado de las Camelias
No. 4483-4
Praddos Tepeyac C.P. 45500
Zapopan, Jal., MEXICO
(52) 36-47-3750