

# TLS-350 Series Sensor Modules

## Installation Guide

# Notice

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## **RETURN SHIPPING**

For the parts return procedure, please follow the appropriate instructions in the "General Returned Goods Policy" and "Parts Return" pages in the "Policies and Literature" section of the Veeder-Root **North American Environmental Products** price list.

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## Introduction

This manual contains procedures for the installation or replacement of the following sensor interface modules:

- Veeder-Root Type A Interface Module  
Part No. 329956-001 (with console)
- Veeder-Root Type B Interface Module  
Part No. 329950-001 (with console)
- Veeder-Root Vapor Sensor Interface Module  
Part No. 329357-001 (with console)
- Veeder-Root Groundwater Sensor Interface Module  
Part No. 329399-001 (with console)
- Veeder-Root Interstitial Sensor Interface Module  
Part No. 329358-001 (with console)

The above parts are for TLS 350 Series Consoles designed and manufactured by Veeder-Root. This manual assumes all preliminary site preparation is completed, and that field wiring from the sensor junction box to the console is in place.

## 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.

## Related Manuals







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If site preparation or field wiring is necessary, you must refer to the following manual for installation instructions:







576013-879      TLS-3XX Series Consoles Site Prep and Installation Manual

## Safety Precautions

The following safety symbols may be used in 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>ELECTRICITY</b> High voltage exists in, and is supplied to, the device. A potential shock hazard exists.</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>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>

## Warnings and Important Notes

 <b>WARNING</b>	
    	<p><b>You are working with a device in which potentially lethal voltages may be present.</b></p> <p><b>This product is to be installed in systems operating near locations where highly combustible fuels or vapors may be present.</b></p> <p><b>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.</b></p> <ol style="list-style-type: none"> <li><b>1. Read and follow all instructions in this manual, including all safety warnings.</b></li> <li><b>2. Turn POWER OFF before installing these modules.</b></li> <li><b>3. Comply with all applicable codes including: the National Electrical Code; federal, state, and local codes; and other applicable safety codes.</b></li> <li><b>4. Substitution of components may impair intrinsic safety.</b></li> <li><b>5. Do not use this component for other systems aside from the TLS Console. Install only as described in this manual.</b></li> </ol>

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

To help ensure proper installation and unit performance, we recommend that a Veeder-Root Authorized Service Contractor install this equipment.

# Installation

## Module/Connector Positions

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Installing interface modules in a TLS-350 Series Console is a simple process. However, there are important points to remember:

1. For each module, a corresponding expansion slot with connector must be available.
2. ALL unused expansion slots **MUST** be covered with blank face plates.

### MODULE POSITION

- Record in the circuit directory (inside front panel), the type of module, sensor locations, etc., beside the slot number.
- Once a particular type of module has been installed in that slot, the system will always look for that type of module in that slot.

### CONNECTOR POSITION



- Identify all connectors according to their slot location using the self-adhesive numbering labels supplied with each module.
- Once a device has been wired to certain terminals on the connector and the system has been programmed, terminal positions may not be changed without reprogramming the system.

## Installing Modules

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The steps below apply for any of the sensor modules discussed in this manual. Additional information regarding the below steps can be found in the Veeder-Root TLS-3XX Series Consoles Site Preparation and Installation manual.

1. Open the right-hand door of the console by unscrewing the right-top and right-bottom locking bolts.
2. To retain current programming, be sure that the CPU (for TLS-350) or ECPU (for TLS-350R) battery backup switch is in the On position (see Figure 1 on page 4). If you have to set the battery backup switch to the On position, avoid touching any circuit components with your hand or any conductive tool.

 <b>WARNING</b>	
	<p><b>You are working with a device in which potentially lethal voltages may be present.</b></p> <p><b>If high voltage is shorted across any barrier terminal, explosion and fire could result.</b></p> <p><b>Turn Off, tag and lockout power to the console before installing/wiring any module.</b></p>

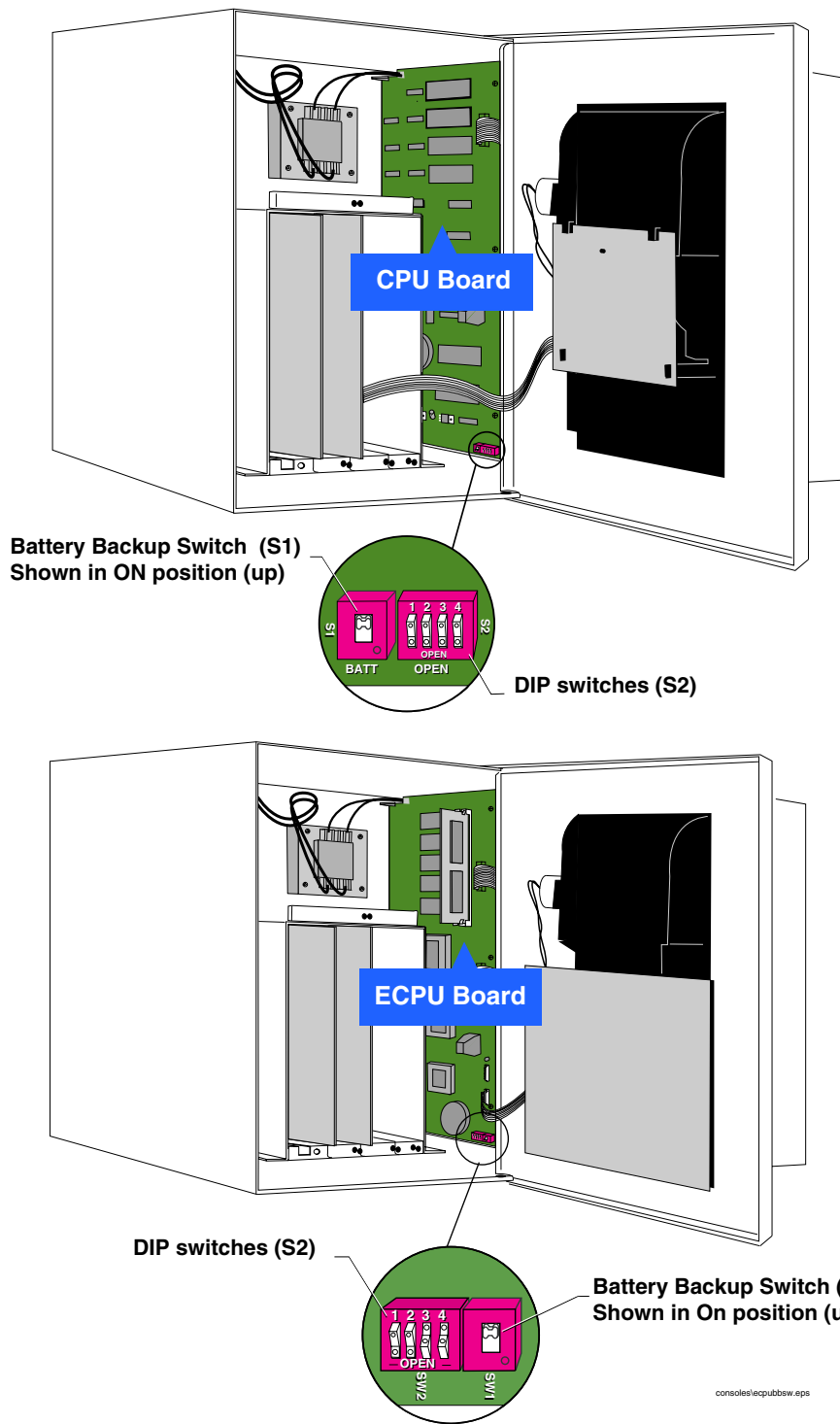


Figure 1. CPU/ECPU Boards - Battery Backup Switch in On Position



3. Locate the IS bay in the right side of the console (Figure 2). Avoid shorting high voltage across any component or module to the intrinsically safe (IS) bay of the console. This could result in an explosion near the sensor.

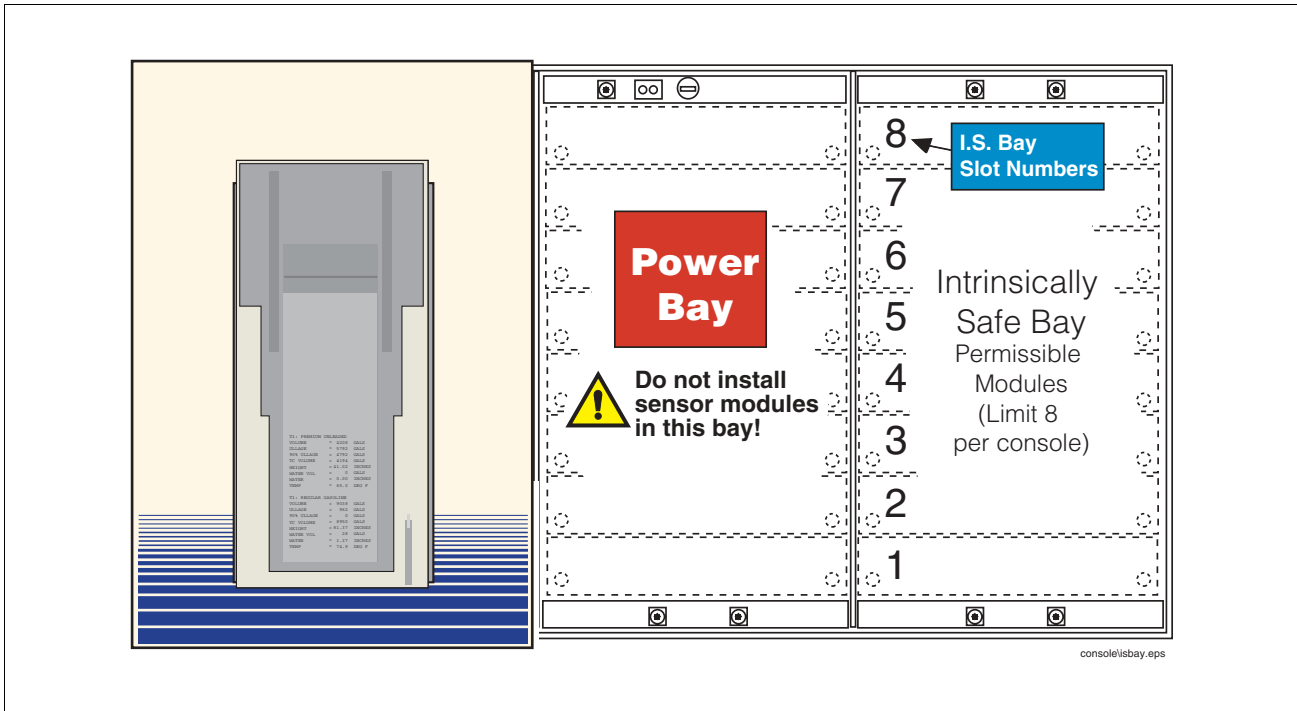


Figure 2. Locating the intrinsically safe bay in the TLS Console

4. Remove the blank panel from the desired module slot in the IS bay.
5. Carefully slide the new module into the slot until the connector on the rear of the module engages completely with the connector on the expansion board at the back of the slot. Do not apply excessive force.
6. Press in the snap-in fasteners on each side of the module's face plate to "lock" the module in place.
7. When finished installing modules, make sure all unused slots in the console are covered with snap-in blank plates! (Veeder-Root Module Cover Part No. 329339-001.)



**IMPORTANT!** If you are installing these modules in a system that has already been programmed, you cannot change the position of existing modules and/or connectors without reprogramming the entire system. If any connectors were removed during installation, be sure they are reconnected to their original modules. Improper system operation will result if any sensor/module position is changed without re-programming.

## Connecting Sensor Wiring to Modules

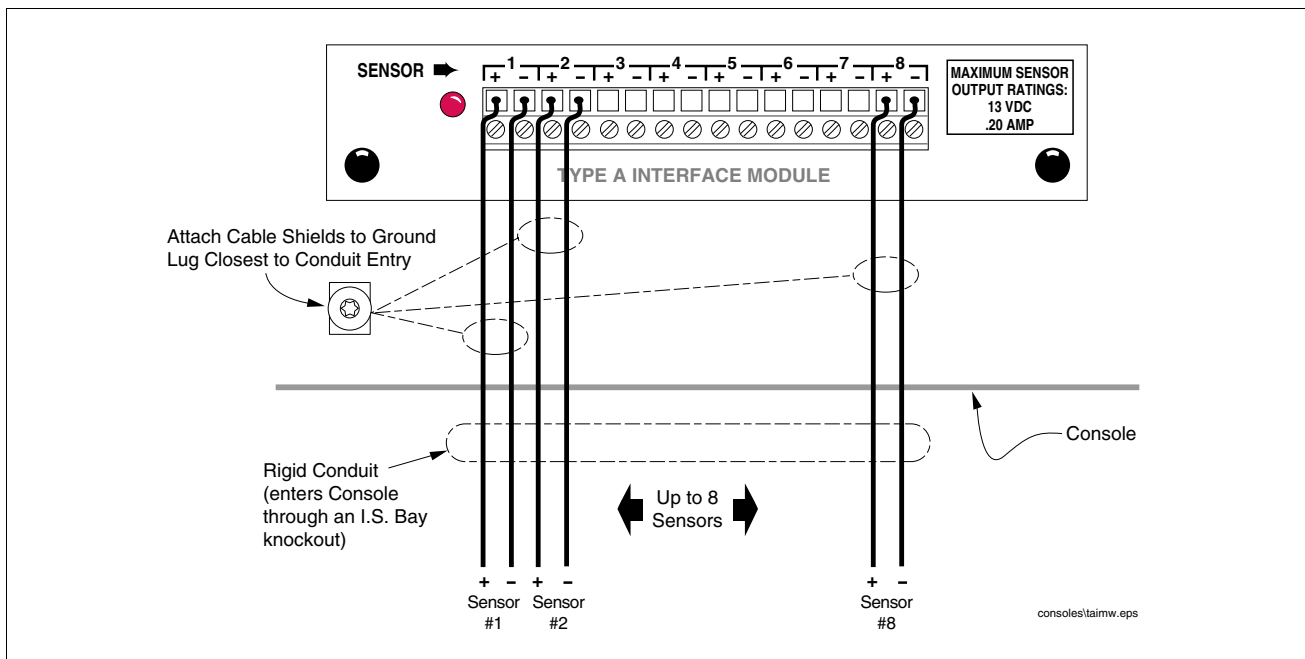
Connectors are supplied with each interface module. They provide screw terminations for sensors. See Table 1 on page 6 for interface module type and its maximum allowed number of sensors. Be sure to record on the circuit directory the type of module and the name or location of each sensor wired to each connector.

**Table 1.- Maximum Sensors Per Interface Module**

Interface Module	Number of Sensors
Type A	8
Type B	6
Vapor Sensor	5
Groundwater Sensor	5
Interstitial Sensor	8

**TYPE A AND INTERSTITIAL SENSOR MODULES**

For Type A and Interstitial Sensor Interface Modules, connect the two marked or color-coded wires from each sensor to the appropriate terminals (see Figure 3 and Figure 4). Be sure to maintain the proper polarity between the sensor wires and their respective module connector terminals.



**Figure 3. Type A Interface Module Wiring Diagram**

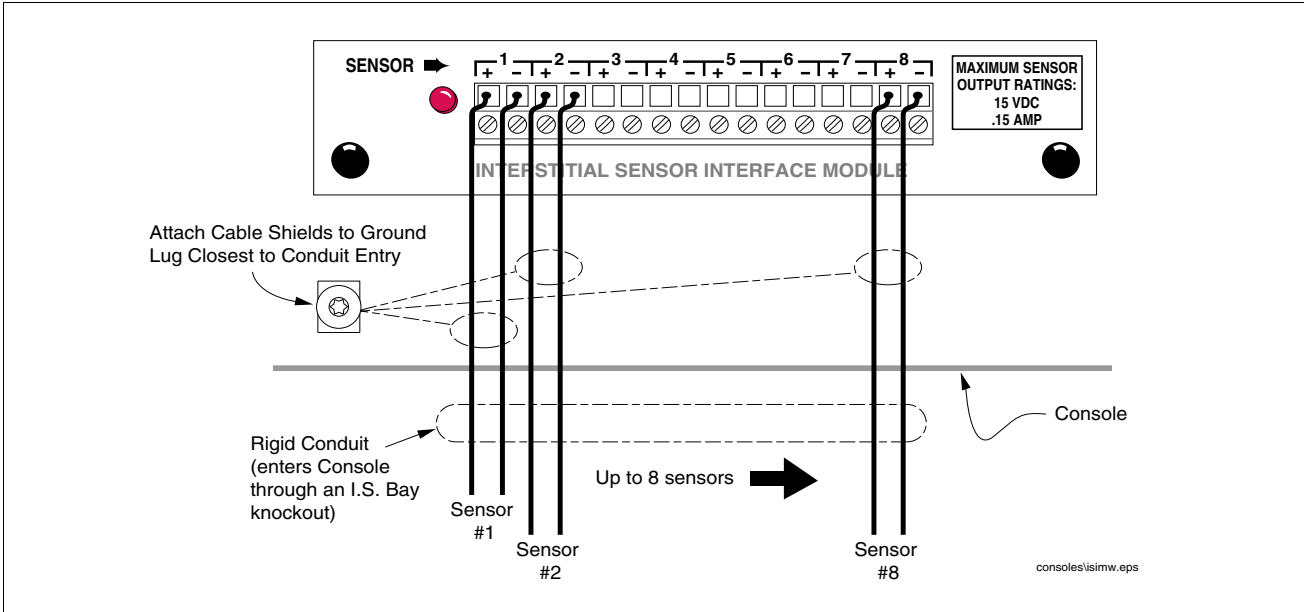


Figure 4. Interstitial Sensor Interface Module Wiring Diagram

**TYPE B, VAPOR SENSOR, & GROUNDWATER SENSOR MODULES**

For Type B, Vapor Sensor, and Groundwater Sensor Interface Modules, connect the three marked or color-coded wires from each sensor to the appropriate terminals (see Figure 5, Figure 6, and Figure 7 on page 8):

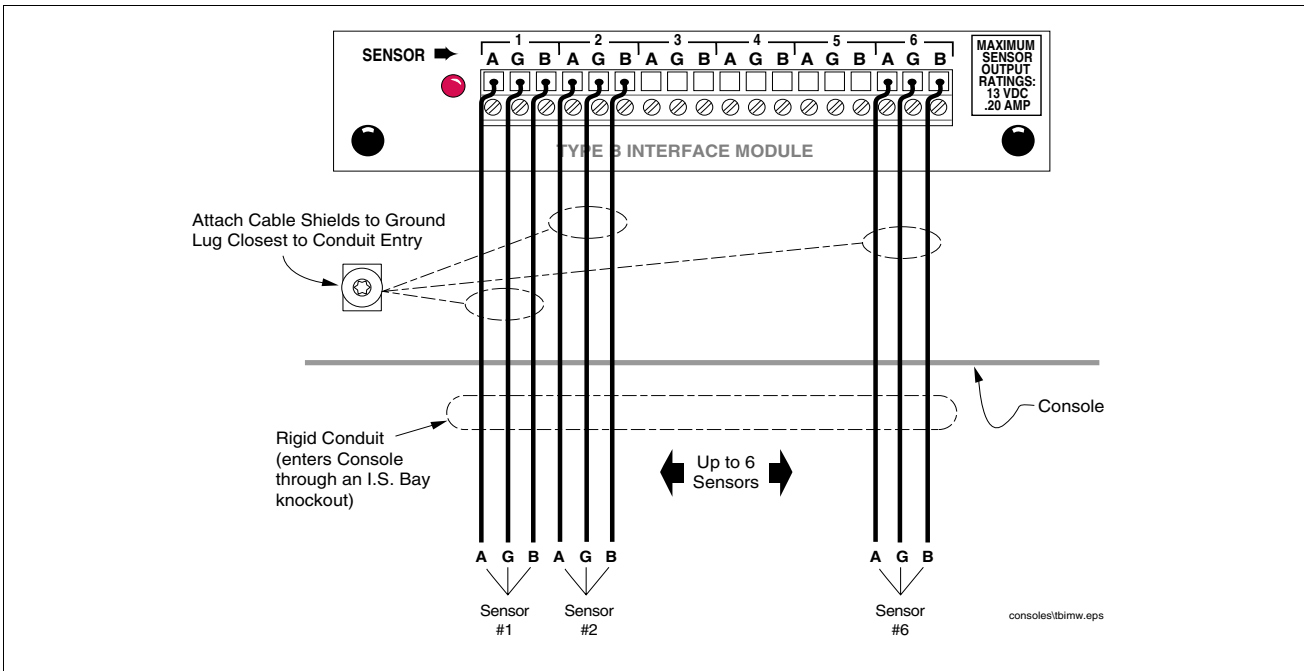


Figure 5. Type B Interface Module Wiring Diagram

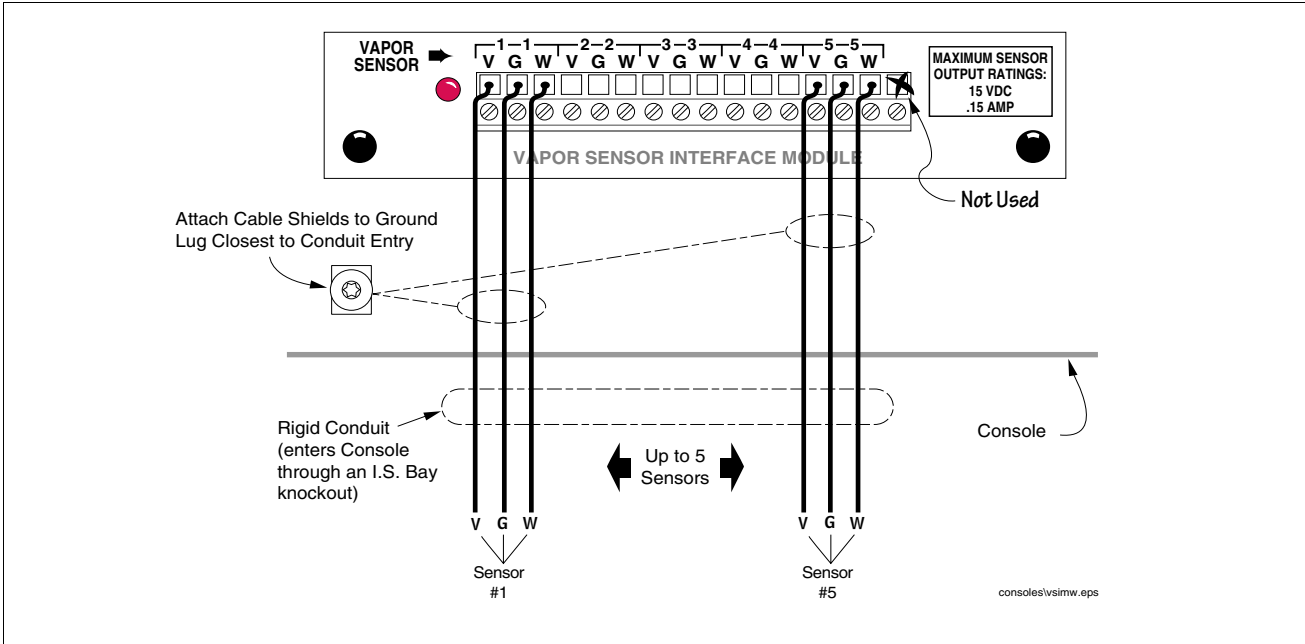


Figure 6. Vapor Sensor Interface Module Wiring Diagram

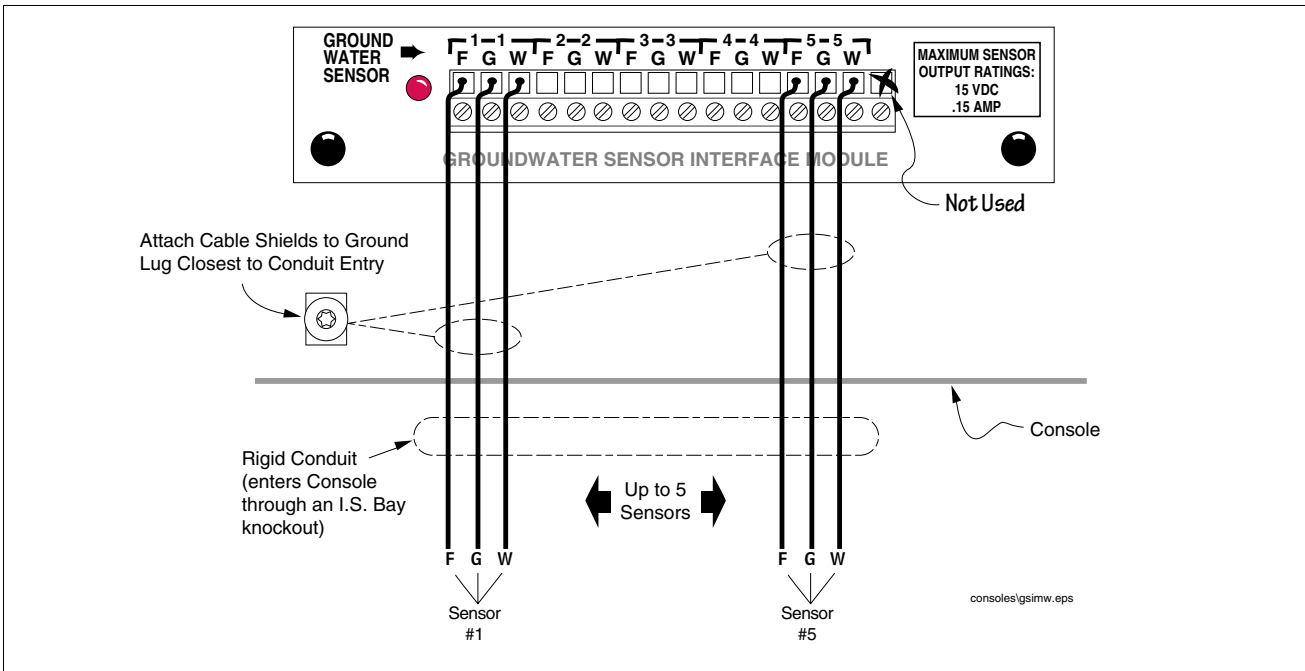


Figure 7. Groundwater Sensor Interface Module Wiring Diagram



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