Mag Sump Sensor

Installation Guide

VEEDER-ROOT

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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.

Figures

Introduction

This manual contains procedures for the installation or replacement of the Veeder-Root Mag Sump Sensor. This manual assumes all preliminary site preparation is completed, and that field wiring from the console to the pan/sump junction box is in place.

Following Mag Sump Sensor installation, you will need to configure and select certain programmable features of this sensor at the TLS Console. NOTE: If the Mag Sump Sensor you are installing has **NO** programmable features (i.e., alarm upgrade delay, water warning height, or water alarm height), you will not be able to enter Mag Sensor Setup.

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

VR Vapor Products Certification: Contractors holding a certification with the following designations are approved to perform installation checkout, startup, programming, system tests, troubleshooting, service techniques and operations training on the designated system.
  • ISD – In Station Diagnostics
  • PMC – Pressure Management Control
  • CCVP - Veeder-Root Vapor Polisher
  • Wireless – ISD/PMC Wireless
  • A current Veeder-Root Technician Certification is a prerequisite for the VR Vapor Products course.

Warranty Registrations may only be submitted by selected Distributors.
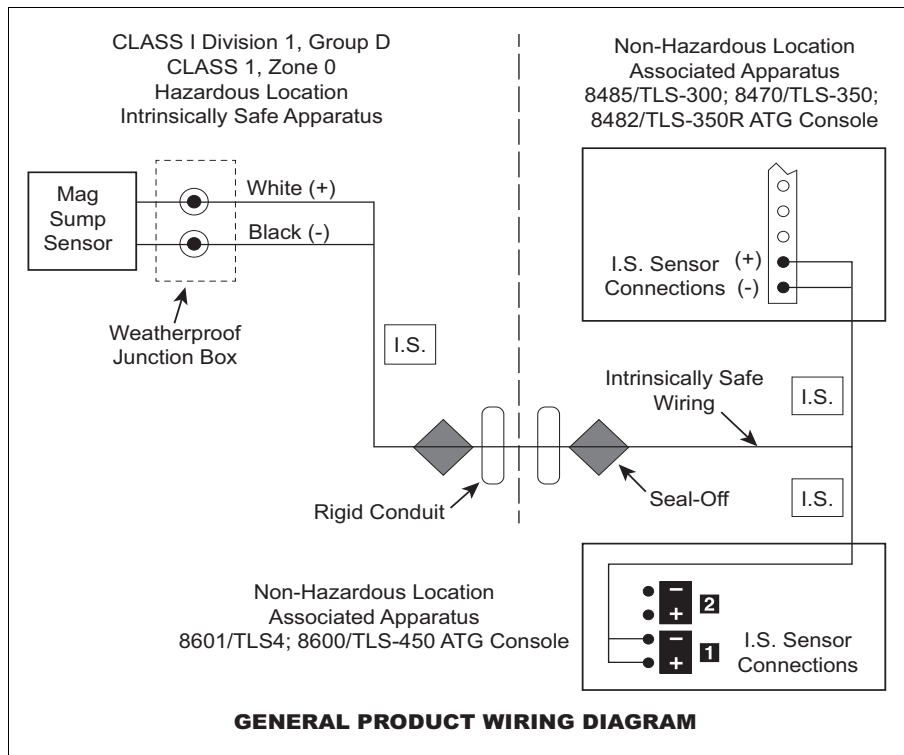
Product Marking Information

RELATED DOCUMENTS

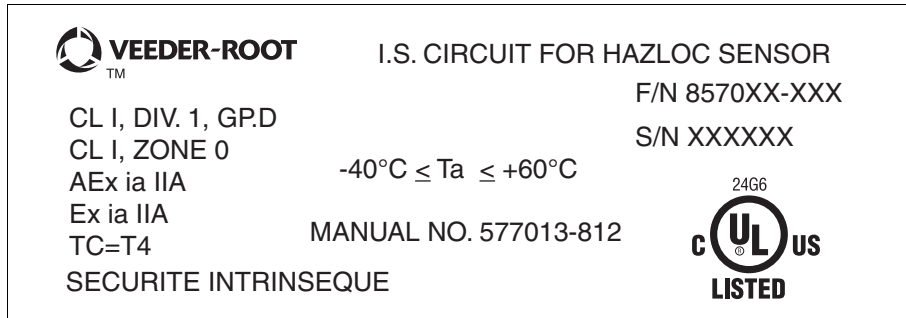### *Documents Required to Install Equipment*

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
TLS-300	331940-013
TLS4/8601	331940-018
Intrinsically Safe Apparatus for Wireless Applications	
Tank Gauge Accessories	331940-012

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.

CLASS I Division 1, Group D
CLASS 1, Zone 0
Hazardous Location
Intrinsically Safe Apparatus

Non-Hazardous Location
Associated Apparatus
8485/TLS-300; 8470/TLS-350;
8482/TLS-350R ATG Console

Mag Sump Sensor

White (+)

Black (-)

I.S. Sensor Connections (+) (-)

Weatherproof Junction Box

I.S.

Intrinsically Safe Wiring

I.S.

Rigid Conduit

Seal-Off

I.S.

Non-Hazardous Location
Associated Apparatus
8601/TLS4; 8600/TLS-450 ATG Console

I.S. Sensor Connections

GENERAL PRODUCT WIRING DIAGRAM

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 8570XX-XXX

S/N XXXXXX

-40°C ≤ Ta ≤ +60°C

MANUAL NO. 577013-812

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 in systems operating near locations where highly combustible fuels or 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. **Materials used in the construction of this device contain aluminum. Care must be taken to avoid ignition hazards due to impact or friction.**

9. **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.**

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

Safety Precautions

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.
	WEAR EYE PROTECTION Wear eye protection when working with pressurized fuel lines or epoxy sealant to avoid possible eye injury.		**GLOVES** Wear gloves to protect hands from irritation or injury.
	INJURY Careless or improper handling of materials can result in bodily 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.
	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.		

Related Manuals

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

577013-879   TLS-4XX Site Prep and Installation Manual

576013-623   TLS-3XX System Setup Manual

Equipment Needed for Installation

1. Mag Sump Sensor (available in two lengths):

    1-foot measurement range, 22-inch overall length - Part No. 857080-XX1

    2-foot measurement range, 34-inch overall length - Part No. 857080-XX2

2. Cable - 10 feet - Part No. 330272-002

3. Cable Seal Kit - Part No. 330020-067

4. Optional - Universal Sensor Mounting kit - Part No. 330020-012.

Installation

Installation Requirements

1. The sensor must rest in the lowest point of the pan or sump and completely compress the position indicator or you will have a 'Sensor Out' alarm (see example illustrations).

2. The sensor should be mounted in a true vertical position to ensure proper operation of the sensor.

3. The sensor should be mounted such that you can pull the sensor straight out of the pan/sump if service is required.

INSTALLATION PROCEDURE

IMPORTANT! Do not install the sensor if there is any liquid in the pan or sump. Failure to comply can result in equipment damage or undetected potential environmental and health hazards.

1. Turn OFF power to the TLS Console.

2. Make sure no liquid exists in the pan/sump.

3. Remove Mag Sump Sensor from its shipping box. Hold the sensor flat (horizontally), and remove the insert from the outer tube of the sensor. NOTE! failure to remove the insert will result in an alarm condition following the setup procedure.

SENSOR INSTALLATION

Figure 1 through Figure 3 show sensor installation examples using rigid conduit to the console. However, direct burial cable could be used from the junction box to the console. Also, the examples make use of the optional universal sensor mounting kit.
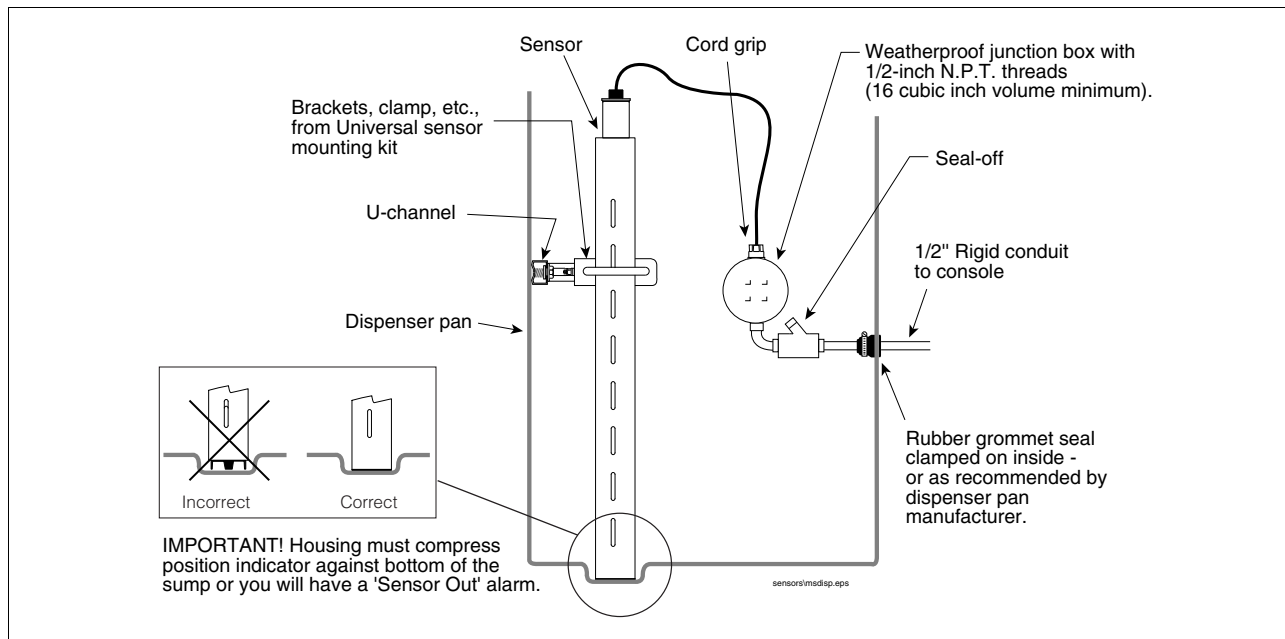

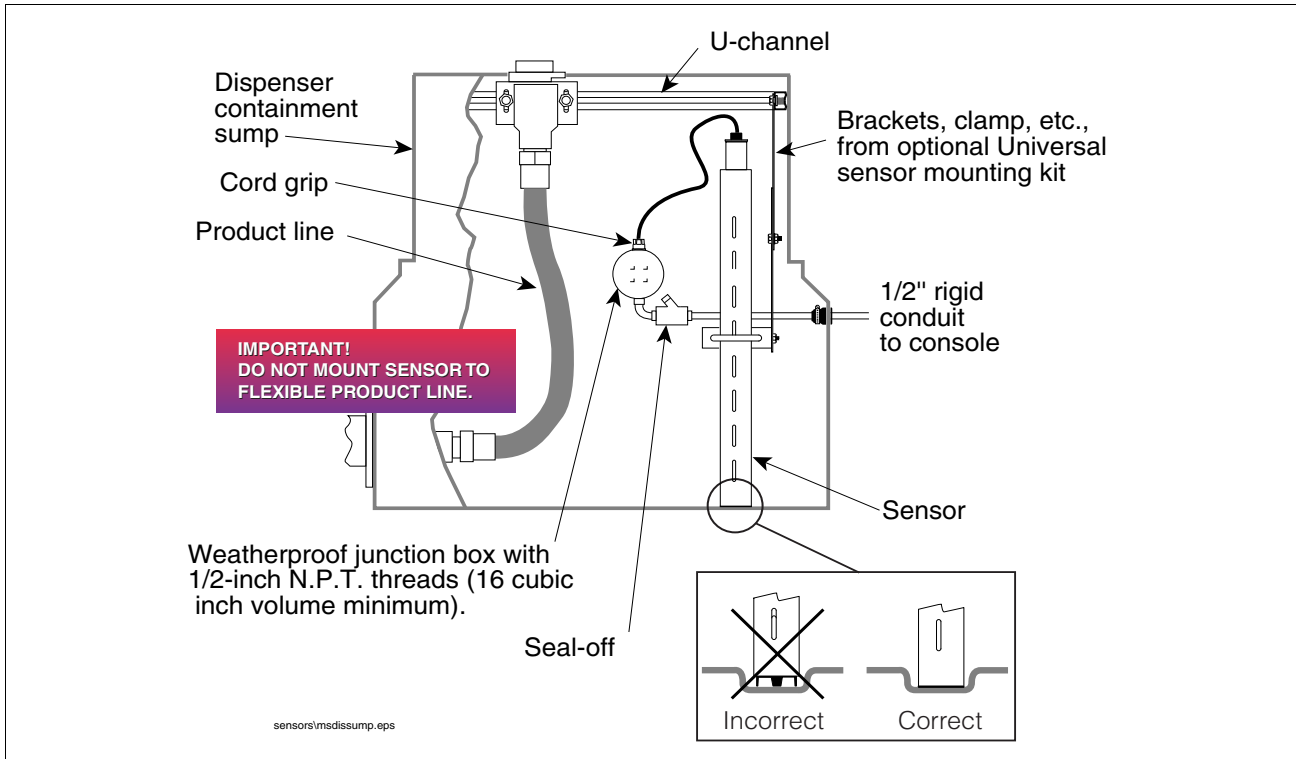**Figure 1.   Example Dispenser Pan Installation**

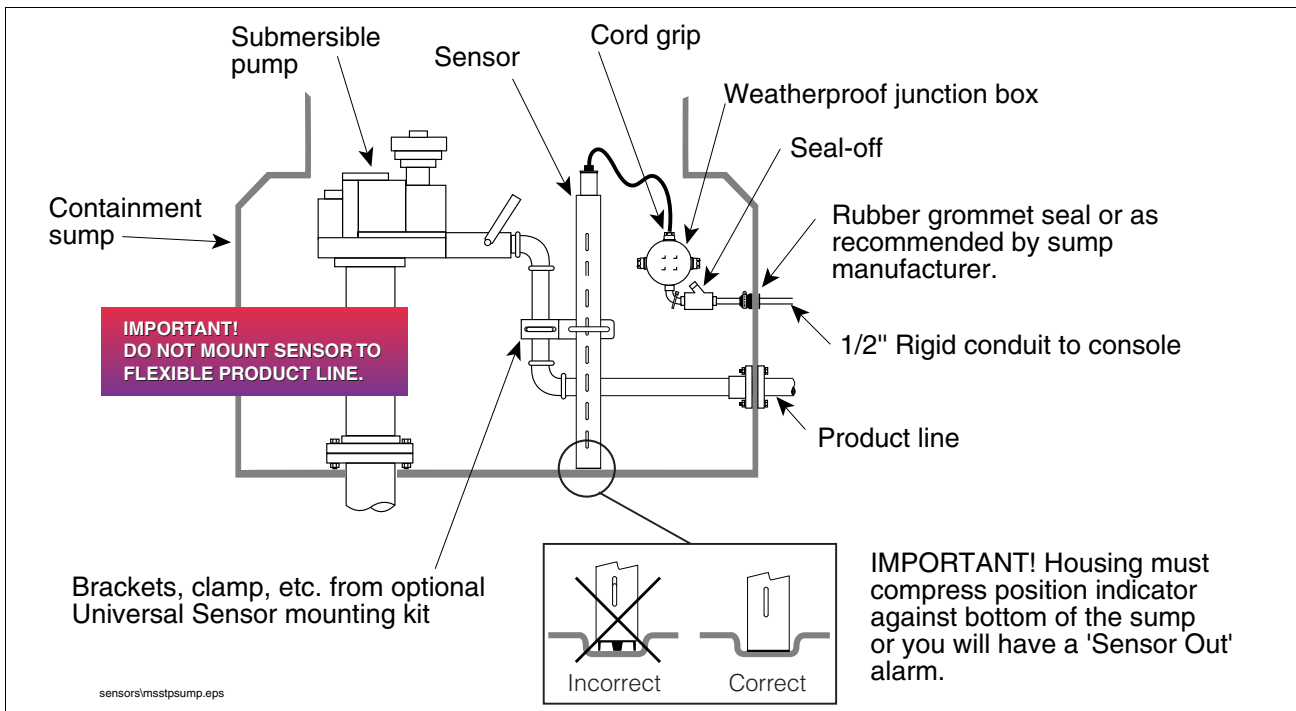Figure 2.   Example Dispenser Containment Sump Installation

Figure 3.   Example STP Containment Sump Installation

SENSOR WIRING

1. Firmly hold the top of the sensor, and attach the sensor cable connector into the receptacle in the top of the sensor. Be sure the connector is attached securely by tightening the locking nut.

2. Install the cord grip supplied with the cable seal kit in the pan/sump junction box in which the field wiring from the console terminates.

3. Coil up the excess cable and tie wrap it out of the way. Feed the two-lead end of the sensor cable through the cord grip in the junction box. Tighten the cord grip nut to ensure a watertight seal at the cable entry.

4. Using wire nuts, connect the two-wire cable to the field wires from the console as shown in Figure 4.
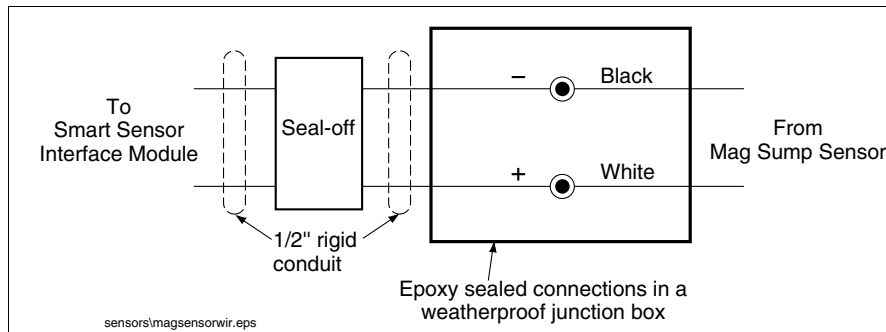

Figure 4. Field Wiring Connections (Observe Polarity)

5. Seal wire nuts with epoxy sealant following the instructions in Figure 5.

6. Push the epoxy sealed bag into the junction box. Replace and tighten the junction box cover.

7. The Mag Sump sensor connects to a Smart Sensor module in the TLS-3XX Console or to a USM module in the TLS-4XX Console - observe polarity.

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.

Figure 5. Epoxy Sealing Two-Wire Connections

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