TSP-UHS Universal Hydrostatic Sensor Installation Instructions

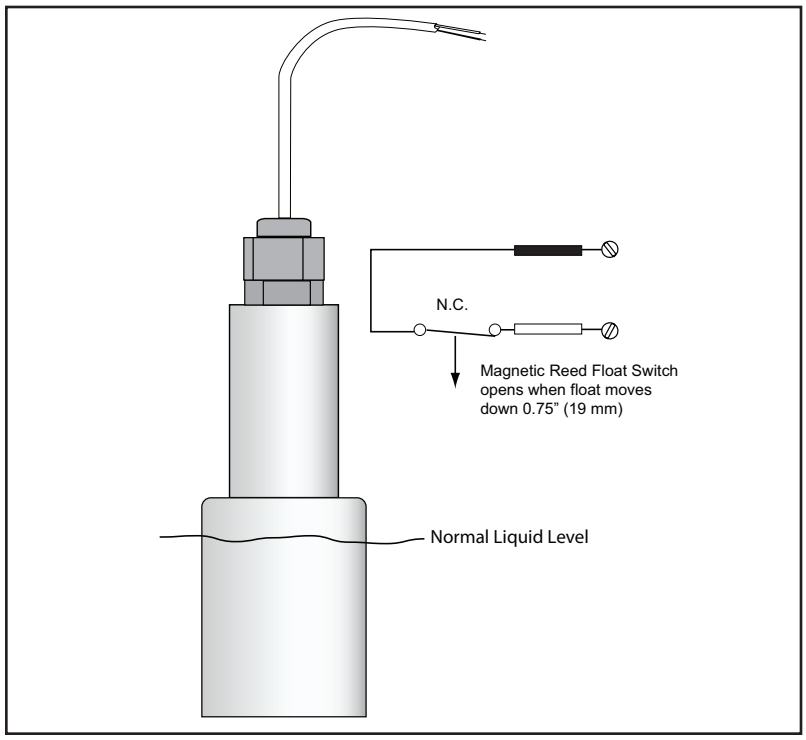

Figure 1: TSP-UHS Overview

Overview

The TSP-UHS is a Standard sensor that is used to detect the loss of a liquid in the normally solution-filled sensor reservoir connected to the interstitial areas of double-wall dispenser sumps. The sensor is supplied with electrical connectors, 25 feet of cable, and a cord-grip fitting (see diagrams). The TSP-UHS uses magnetic-float / reed-switch technology (the sensor must be suspended vertically so the float can freely follow the level of a liquid).

When the float drops more than 3/4 of an inch, the magnetically sensitive reed switch will open. An open circuit is recognized as an alarm-condition at the intrinsically safe (I.S) leak detection circuits of the FFS (Franklin Fueling Systems) ATG console.

Testing the TSP-UHS

This device can be tested by lifting the sensor from the sensor reservoir. This will cause an alarm at the ATG console. Test the sensor for proper operation on a yearly basis, or more frequently per local code.

Materials Required

- Optional: TSP-DB1 Epoxy Seal kit for no-strip electrical connectors – recommended for sites: within flood zones, high groundwater tables, with poor drainage, or when Junction Boxes are not used
- 1/2 or 3/4 inch NPT (National Pipe Thread, tapered), Rigid Metal Conduit (RMC) or nonmetallic (PVC) conduit if allowed by local code
- EYS Seal fittings and Epoxy to fill the fitting after operational testing is completed (as required).
- Weatherproof Junction Box, gasket, and cover, plus a 3/4 to 1/2 inch NPT reducing bushing if 1/2 inch RMC is used. Refer to the ATG Installation Guide for recommended electrical Junction Boxes
- Wire: THHN, TFFN or THWN, 18 AWG, White & Black, or Alpha Cable # 58411, 0.114 O.D., 1,500 feet (457 meters) max. length. If using nonmetallic (PVC) conduit, Alpha Wire P/N 58411 (2.8 mm) 0.112" O.D. must be used (INCON P / N 600-0062).
- Slip joint pliers to seat the no-strip, self-sealing wire connectors. Connectors are supplied with the sensor
- UL Classified Thread Sealant or pipe dope.

Installation Sequence:

1. Install Conduit, EYS fittings, and Weatherproof Junction Box.

Mechanical installation

Warning **Electrical shock hazards: ensure all power going to the ATG console is turned off, tagged, and locked-out at the power panel before doing any maintenance or installation work at the ATG console**

2. Pull the sensor cable through the cord grip fitting at the Junction Box and tighten all remaining cord-grip fittings. Trim wire/cables to a 6 or 8 inch (15 or 20 cm) service-loop, and splice the sensor and console cable/wires together.
3. Power up Console for next step
4. Test sensor (verify that an alarm is produced at ATG console), if it does produce an alarm, seal EYS seal fittings and electrical connectors with epoxy – Electrical installation
5. Turn Off Power again if other devices are to be installed.
6. Reinstall all safety covers and guards, junction box gasket and covers. Use pipe-dope to seal all fitting threads.
7. Record the location where the sensor was installed.
8. Turn On Power and Program the ATG. Refer to all sections relating to sensors in the Setup/ Programming Guide manual: Service Technician setup.

General Installation

Warning **It is the installer's responsibility to comply with all applicable federal, state and local codes. Failure to do so may create an Environmental Hazard.**

Plan your conduit routing. Dig trenches as necessary to install conduit from each manhole junction box to the Intrinsically Safe (I.S.) knockouts at the ATG console. A junction box inside of the building as a pull box to combine several sensor cables. If this is done, then only one I.S. conduit knockout will be used.

If installing in a Phil-Tite double-wall dispenser sump, refer to Franklin Fueling Systems instructions 602019026.

Warning **Conduits must have EYS seal fittings installed in accordance with NFPA 70 (National Electric Code) and NFPA 30A (Automotive and Marine Service Station Code). Failure to seal conduits in accordance with NFPA 30A, and NFPA 70 could allow flammable vapors to travel through the conduit in the ATG console. An explosion could result causing serious injury, property loss, or death.**

You must install a weatherproof, electrical junction box inside each manhole. The junction box should be installed high on the manhole wall to prevent it from being submerged during heavy rains.

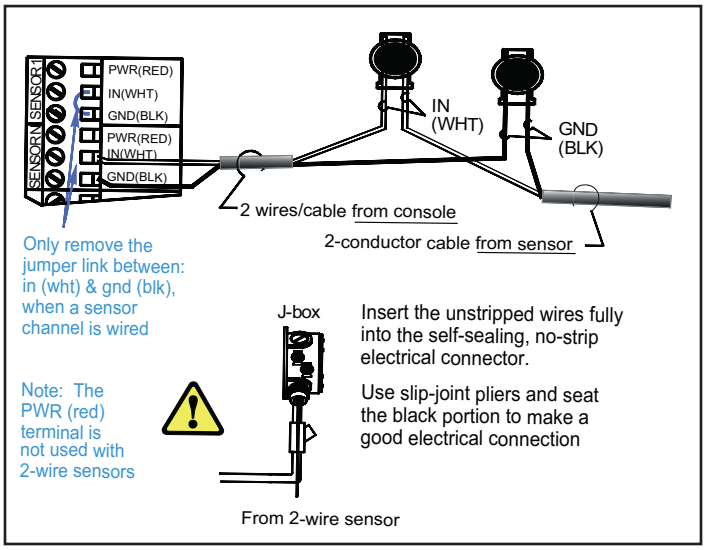

Figure 2: Splice Connection

Seal all threaded fittings and conduit threads to produce a weatherproof seal during installation/maintenance.

Electrical Wiring

The two-wire TSP-UHS sensor does not have a red (power) conductor, therefore, if there is a PWR (RED) interface terminal at the console, it is not used. When a 3-conductor Alpha cable is used, the red conductor can be clipped or taped back on both ends.

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