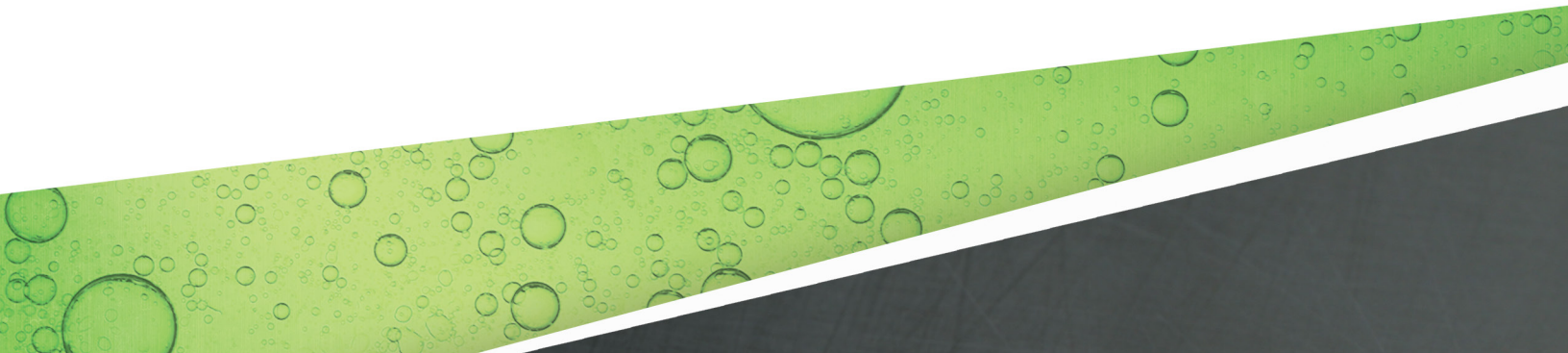


FMP-UHS UNIVERSAL HYDROSTATIC SENSOR

INSTALLATION GUIDE



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Conventions used in this manual

This manual includes safety precautions and other important information presented in the following format:

NOTE: This provides helpful supplementary information.

IMPORTANT: This provides instructions to avoid damaging hardware or a potential hazard to the environment, for example: fuel leakage from equipment that could harm the environment.

▲ CAUTION: This indicates a potentially hazardous situation that could result in minor or moderate injury if not avoided. This may also be used to alert against unsafe practices.

▲ WARNING: This indicates a potentially hazardous situation that could result in severe injury or death if not avoided.

▲ DANGER: This indicates an imminently hazardous situation that will result in death if not avoided.

Operating precautions

Franklin Fueling Systems (FFS) equipment is designed to be installed in areas where volatile liquids such as gasoline and diesel fuel are present. Working in such a hazardous environment presents a risk of severe injury or death if you do not follow standard industry practices and the instructions in this manual. Before you work with or install the equipment covered in this manual, or any related equipment, read this entire manual, particularly the following precautions:

IMPORTANT: To help prevent spillage from an underground storage tank, make sure the delivery equipment is well-maintained, that there is a proper connection, and that the fill adaptor is tight. Delivery personnel should inspect delivery elbows and hoses for damage and missing parts.

▲ CAUTION: Use only original FFS parts. Substituting non-FFS parts could cause the device to fail, which could create a hazardous condition and/or harm the environment.

▲ WARNING: Follow all codes that govern how you install and service this product and the entire system. Always lock out and tag electrical circuit breakers while installing or servicing this equipment and related equipment. A potentially lethal electrical shock hazard and the possibility of an explosion or fire from a spark can result if the electrical circuit breakers are accidentally turned on while you are installing or servicing this product. Refer to this manual (and documentation for related equipment) for complete installation and safety information.

▲ WARNING: Before you enter a containment sump, check for the presence of hydrocarbon vapors. Inhaling these vapors can make you dizzy or unconscious, and if ignited, they can explode and cause serious injury or death. Containment sumps are designed to trap hazardous liquid spills and prevent environmental contamination, so they can accumulate dangerous amounts of hydrocarbon vapors. Check the atmosphere in the sump regularly while you are working in it. If vapors reach unsafe levels, exit the sump and ventilate it with fresh air before you resume working. Always have another person standing by for assistance.

▲ WARNING: Follow all federal, state, and local laws governing the installation of this product and its associated systems. When no other regulations apply, follow NFPA codes 30, 30A, and 70 from the National Fire Protection Association. Failure to follow these codes could result in severe injury, death, serious property damage, and/or environmental contamination.

▲ WARNING: Always secure the work area from moving vehicles. The equipment in this manual is usually mounted underground, so reduced visibility puts service personnel working on it in danger from moving vehicles that enter the work area. To help prevent this safety hazard, secure the area by using a service truck (or some other vehicle) to block access to the work area.

▲ DANGER: Make sure you check the installation location for potential ignition sources such as flames, sparks, radio waves, ionizing radiation, and ultrasound sonic waves. If you identify any potential ignition sources, you must make sure safety measures are implemented.

Installation

The FMP-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 sumps. The sensor is supplied with electrical connectors, 25 feet of cable, and a cord-grip fitting. The FMP-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 opens. An open circuit is recognized as an alarm-condition at the intrinsically safe (IS) leak detection circuits of the Franklin Fueling Systems (FFS) automatic tank gauge (ATG) console.

Equipment required

- 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) maximum length. If you are 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.
- Optional: FMP-DB1 Epoxy Seal kit for no-strip electrical connectors. This is recommended for sites in flood zones, with high groundwater tables, with poor drainage, or where junction boxes are not used.

Installing the FMP-UHS sensor

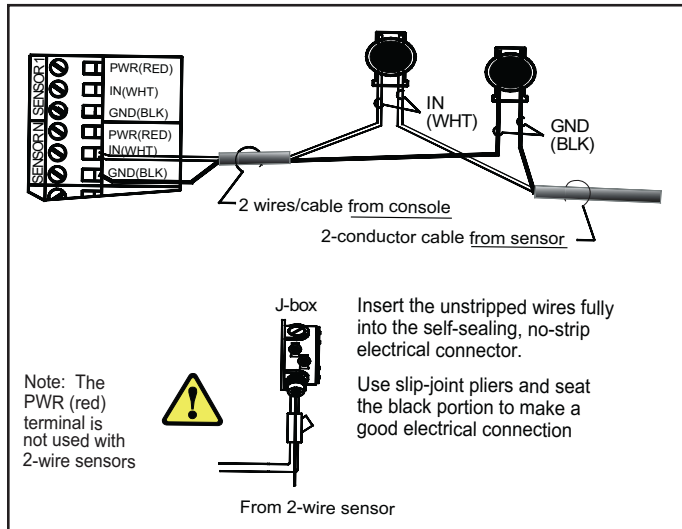
NOTE: Plan your conduit routing. Dig trenches as necessary to install conduit from each manhole junction box to the Intrinsically Safe (IS) knockouts at the ATG console. Make sure there is a junction box inside the building you can use as a pull box to combine several sensor cables. If this is the case, you use only one IS conduit knockout.

NOTE: If you are installing in a Phil-Tite double-wall dispenser sump, please see the *Fiberglass Dispenser Sump Single Wall and Double Wall Installation Instructions* (part number 602019026).

IMPORTANT: 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.

▲ 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). If conduits do not have these seal fittings, flammable vapors could travel through the conduit in the ATG console, and an explosion could result causing property loss, serious injury, or death.

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



Mechanical installation

▲ WARNING: Make sure all power 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.

1. Install Conduit, EYS fittings, and a weatherproof junction box.
2. Pull the sensor cable through the cord-grip fitting at the junction box and tighten all remaining cord-grip fittings.
3. Trim wires and cables to a 6 or 8 inch (15 or 20 cm) service-loop, and splice the sensor and console cables and wires together.
4. Turn on power to the console.
5. Test the sensor. (For more information, see the "Testing the FMP-UHS" section of this manual.)
6. Check the ATG console for an alarm. If there is an alarm, seal the EYS seal fittings and electrical connectors with epoxy.
7. If you are going to install other devices, turn off power to the console.
8. Reinstall all safety covers and guards, as well as the junction box gasket and covers. Use pipe-dope to seal all fitting threads.
9. Record the location where you installed the sensor.
10. Turn on power and program the ATG. Refer to all sections relating to sensors in the Setup/ Programming Guide: Service Technician setup.

Electrical wiring

The two-wire FMP-UHS sensor does not have a red (power) conductor, so 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.

Testing the FMP-UHS

To test this device, lift the sensor from the sensor reservoir. This causes an alarm at the ATG console. Test the sensor for proper operation on a yearly basis, or more frequently, according to local code.