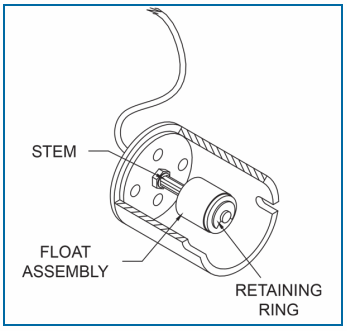
Single Level Sump Sensor-Float Switch

Smart Sensor Equipped with Intellisense™ Technology

30-0231-L

Description

The primary function of the single-level sensor is to sense liquid in sumps, fuel dispenser pans and other locations where there is liquid that could indicate that a leak has occurred. A float inside the sensor moves up when the liquid level increases. The float switch will operate and cause an alarm condition in the controller. If there is a break in the cable it will cause an alarm condition in the system.



Specifications	
Primary Use(s):	Sumps and Fuel Dispenser Pans
Detects:	Liquid
Operating Temperature:	-40°C to +70°C (-40°F to 158°F)
Dimensions:	Diameter: 7.4 cm (2.90 inches), 9.5 cm (3.70 inches)

Specifications	
Cable Requirements:	Belden #88760 or Alpha #55371 3.6m (12 feet) of gas & oil resistant cable to the inline ISIM + 1.3m (4 feet) ISIM tail.
Maximum Wiring Length*:	305 m (1,000 ft.) field wiring
Alarm Threshold Configuration:	Fully Automatic
Diagnostic Reading on sensor setup:	**0 to 0.5** (normal), **485 to 495** (in alarm)
Multi-Drop Restriction	ProGauge / Integra: 12 on each I.S. barrier channel (48 total per barrier) Nano: See Mixed Multi-Drop Installation in the M2010 Nano Installation Guide.
Connections:	Red = Power, Black = Signal, Shield = Ground

NOTE: *This is the maximum length of wire to be used to connect all sensors on one channel. This length includes the wire from the VSmart to each sensor board in the string.

Installation

WARNING: Make sure you read and fully understand the warnings and information found in the **Hazardous Areas** section of your console's Installation Guide before you install or do the servicing of this sensor.

IMPORTANT: This Smart Sensor must ONLY be connected to a DFS ProGauge or OPW Fuel Management Systems 12V IS Barrier. This will make sure that operation conditions are safe.

CAUTION: ALWAYS obey Local and National Electrical Codes applicable to the installation location.

Make sure that the cables from the field wiring to the controller are in conduit that is dedicated to intrinsically safe wiring.

Use wire-nuts and epoxy-resin seal-packs for field connections (refer to M00-390008 Waterproof Electrical Connections for information).

NOTE: If this sensor is used to monitor a normally dry well, use a meter to set the float position so the sensor is in a closed position when there is NO liquid level (the float will be in the lower position). To monitor a normally wet well, use a meter to set the float so that the sensor is in a closed condition WITH a liquid level (the float will be in the upper position).

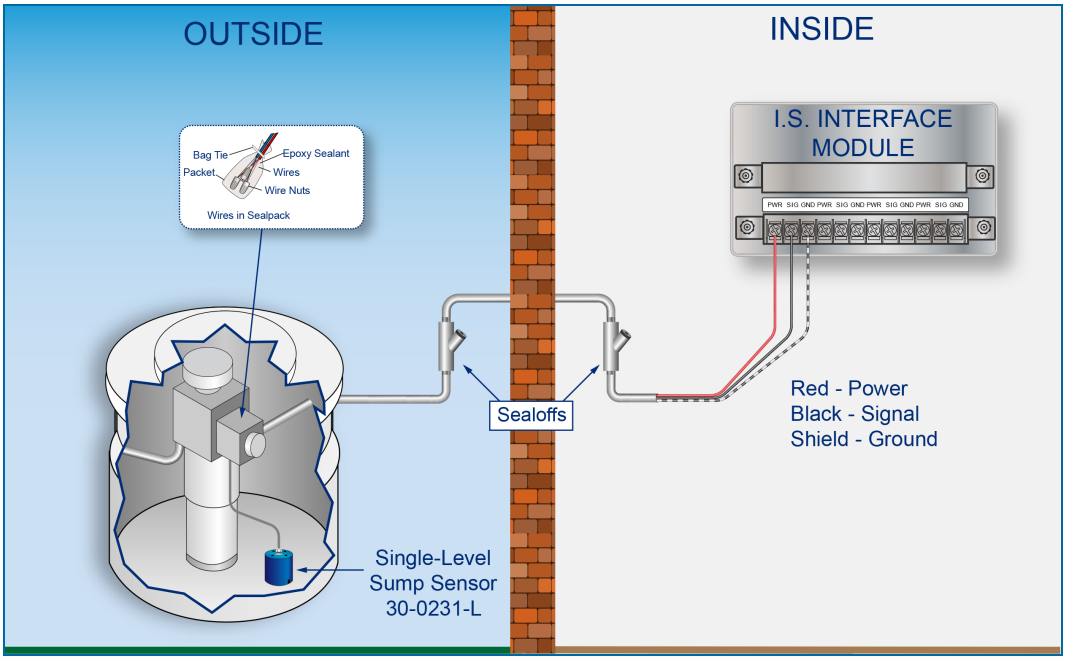
IMPORTANT: This sensor can only be used with a 12V intrinically safe (IS) Barrier Module. Sensors can be connected in parallel up to a maximum of 12 sensors on each channel (48 total on each barrier). This Sensor CANNOT be connected in parallel with devices other than Smart Sensors. It cannot be mixed with non-Smart sensors.

- This sensor uses ONE I.S. Module position
- Start with the Connections table and “Typical Installation" drawing below.
- Make sure the sump pit or pan is dry.
- Install the sensor on the bottom of the sump/pan. Attach the sensor wire to a pipe or bracket with a tie wrap.
- Connect the sensor cable to the sensor.
- Connect the sensor wires to the field wires in the junction box. Use the supplied cable gland and silicon wire nuts.
- Seal the electrical connections with the epoxy seal packs
- Install explosion-resistant sealing fittings at both ends of the conduit. Refer to the **Probe-Cable Seal-offs** section of the console's Installation Guide for instructions.

Connections

Sensor Wire Color	12V Smart Sensor Interface Channel
Red	Power
Black (hydrocarbon sensor)	Signal
Shield (or 3rd conductor)	Ground

Typical Installation Drawing



Controller Setup

The sensor must be **Auto Detected** on the console. Alarm thresholds are configured automatically through the *Intellisense* mechanism between the sensor and the console.

Float Sensor Test

CAUTION: Use caution to prevent dangerous conditions when you do work in a hazardous area.

Make sure that the area has sufficient airflow when you do a test or remove contamination from the sensor. Make sure there are no open flames or hot surfaces near the work area.

- Turn the sensor so the bottom opening points up and wait for a minimum of two (2) minutes.
- Make sure that the controller is not in an alarm condition.
- Put the sensor back in its normal position. Make sure that the alarm condition stops.

If the controller does not go into an alarm condition, look to see if the thresholds are correctly programmed in the system. Look to see if the float is in the correct position (refer to the applicable instruction above). A sensor or wiring fault will cause a system alarm. Do a continuity test in the wiring and junction boxes. Make sure there is continuity with no short circuits.