OPW
FUEL MANAGEMENT SYSTEMS

M00-040.00 - Level Indicator (Float) Kit Procedure Guide

Part #30-1509-xx: 2-inch Standard Float Kits

Part #30-1514-xx: 2-inch Stainless-Steel Float Kits

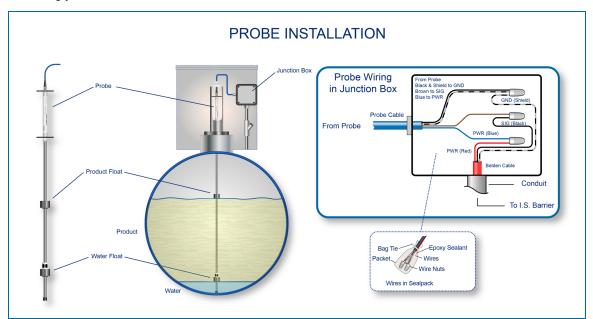**Part #30-1509-AEF: Aqueous Ethanol Float Kit**

This document describes the weight specification on the enclosed Water Level Indicator, correct range of products that can be used, identifying the Water Level Indicator for its intended product group, compatible fluid products, level indicator(s) installation, level indicator kit part numbers and contents.

Product Level vs. Water Level

The illustration below shows how the probe components work together.

The Product Level Indicator floats on the gasoline or diesel fuel and registers the overall height of the fuel. You can use the Product Level Indicator with or without a Water Level Indicator.

Standard Water Level Indicators feature one of two different ballast weights and are etched to show gasoline or diesel. Stainless-Steel Water Level Indicators are weighted internally and are laser-etched with their specific-gravity value. Because fuel products are less dense than water, Water Level Indicators sink through the product and float on the water. Water height at the product/water boundary can be determined accordingly.

Probe Installation in Underground Tank
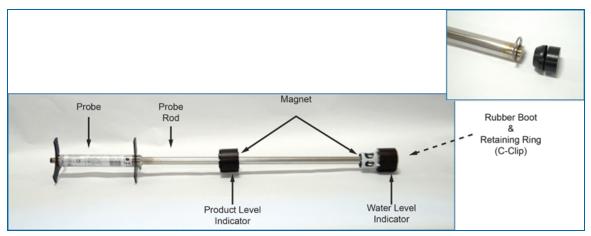
DOVER
FUELING SOLUTIONS

Instructional Video: "Multi-drop Probe & Sensor Wiring Instructions"

To watch the instructional video "Multi-drop Probe & Sensor Wiring Instructions" that includes instructions for the Probe Level Indicator (float) installation and the assembly of the epoxy seal packs, scan the QR code below or use the link:

https://www.youtube.com/watch?v=9jRkkA6TM8Q&feature=share&list=UUrOc6LztKeCWZyejcVGYj8A

Install the Level Indicator Floats

Probe Components

The procedure for assembling the probe level indicators (floats) and probe cable is outlined below.
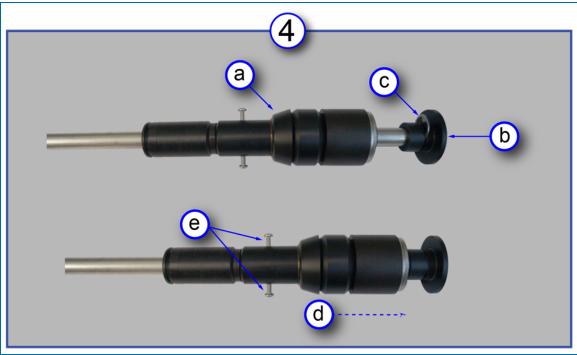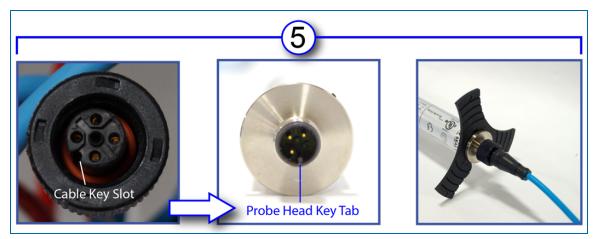
IMPORTANT: If the wrong type of water level indicator is used, it may float to the top and register an unusually high water level, not register at all or sink too far and register an unusually low water level. If your product-fluid density does not fit into one of these groups, contact OPW Fuel Management Systems customer sales department for recommendations.

Cable Key Slot

Probe Head Key Tab

1. Install the Product Float – Slide the float over the probe rod from the bottom of the rod. Make sure the magnet is facing toward the bottom end of the probe (For a Stainless-Steel Product Level Indicator make sure the etched "UP" faces UP). If you are installing a product float only, skip to Step 3.

2. Install the Water Float (if applicable) - Slide the float over the probe rod from the bottom of the rod. Make sure the magnet is facing toward the top of the probe (For a Stainless-Steel Water Level Indicator make sure the etched "UP" faces UP).

3. Install the rubber boot by sliding it onto the end of the probe rod until it stops. Slip the supplied C-Clamp into the slotted groove and push in until it snaps into place.

4. If you are using an AEF (Aqueous Ethanol Float), install it as follows:

   a. Slide the AEF onto the bottom of the probe in the orientation shown in the photo.

   b. Install the Probe End Boot by sliding it onto the end of the probe until it stops.

   c. Slip the supplied C-Clamp into the slotted groove and push in until it snaps into place.

   d. Slide the AEF down until it is flush with the top of the boot.

   e. Secure the AEF to the probe shaft using the two (2) #8-32 X 5/8" Phillips Pan Head Screws supplied with the float kit.

5. Install the probe cable. The probe-cable plug connector has a key slot that aligns with a corresponding key tab in the probe tip. This allows the plug to fit in only one direction.

   ■ Place the plug connector over the probe tip

   ■ Rotate the plug until you feel the connector key slot slide over the probe-tip key tab

   ■ Push the connector in all the way

   ■ Rotate the outer compressor ring of the connector until it is snug against the top of the probe

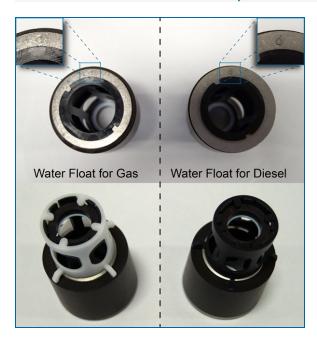| Product Density and Chemical Compatibility of Standard Level Indicators (Floats)			
Product Group	**Compatibility**	**API**	**Specific Gravity**
Gasoline	Gasoline Aviation Gasoline Regular Unleaded Regular Leaded Premium Unleaded Gasoline/Methanol blend, less than 5% methanol Gasohol, less than 40% ethanol	45 < API < 78	0.68 < d < 0.80
Diesel	Diesel Jet Fuel Kerosene Motor Oil Toluene Gear Oil Transmission Oil	26 < API < 45	0.80 < d < 0.90

NOTE: If the level indicator is used in a non-compatible fluid, swelling, cracking and dissolving may occur, leading to level-indicator failure. If your product is not chemically compatible with the level indicators, contact OPW Fuel Management Systems Customer Service for recommendations.

NOTICE: The product float for LPG is not certified for applications in which it will be subjected to pressures at or above 300PSI. Pressures higher than 300PSI will damage the device, preventing it from providing accurate measurements.

Determine the Product Group for a Standard Water Level Indicator

Water Float for Gas   Water Float for Diesel

Standard Water Level Indicators feature one of two different ballast weights and are etched for gasoline or diesel (See Figure 4). This weight allows the level indicator to sink through the product, but to float on the water. This registers the height of the water at the product/water boundary. The weight is certified by OPW Fuel Management Systems for use with one of two product groups, the gasoline group OR the diesel group. There is a mark etched on the ballast weight plate ("g" for gasoline, "d" for diesel). The water float for gas also has a white outer ring while the water float for diesel is black. Stainless-Steel Water Level Indicators are weighted internally and are laser-etched with their specific gravity rating.

Probe Cable Wiring (10-1185 & 10-1185-20)

PLACE LABEL HERE

(when this document comes with a new probe)

Attach the new probe label in the box above. This label contains important programming information for your probe. File this label with your system manual or other safe location.

Probe Cable p/n 10-1185 (6-foot) and 10-1185-20 (20-foot)

The Micro-DC Plug 3-pole cable is compatible with all probes manufactured by OPW Fuel Management Systems.

⚠️ **NOTICE:** Improper wiring can cause permanent damage to the probe!

Use only gas and oil resistant, shielded 2-conductor cable to extend the probe cable to a system or I.S. barrier (Belden #88760 [available from OPW Fuel Management Systems as part number 12-1300] or Alpha # 55371 cable).

CAUTION: Be sure that cabling to the controller is in rigid steel conduit dedicated to intrinsically safe wiring.

Install seal-offs at both ends of the conduit run.

Use bushings where probe cables enter the junction box.

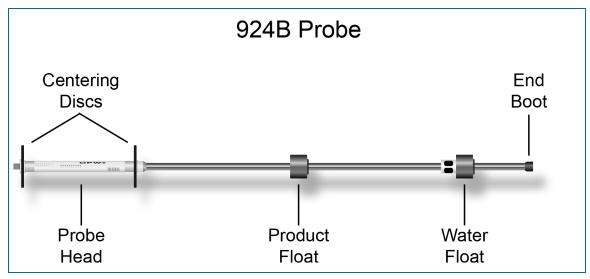The probe must be connected with the supplied cable only.

Use the included wire nuts and epoxy seal packs to connect the probe cable to the cable running to the barrier. Refer to **M00-390008 Waterproof Electrical Connections** for more information.
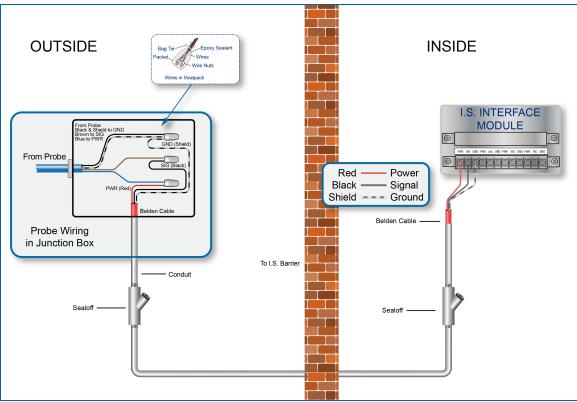
IMPORTANT: Identify your system and the type of probe you are installing before installation.

924B Probe Connections

924B Probe

Centering
Discs

End
Boot

Probe
Head

Product
Float

Water
Float

OUTSIDE

INSIDE

Bag Tie
Packet
Epoxy Sealant
Wires
Wire Nuts
Wires in Sealpack

From Probe
Black & Shield to GND
Brown to SIG
Blue to PWR

From Probe

GND (Shield)

SIG (Black)

PWR (Red)

Belden Cable

Probe Wiring
in Junction Box

I.S. INTERFACE
MODULE

PWR SIG GND PWR SIG GND PWR SIG GND PWR SIG GND

Red — Power
Black — Signal
Shield --- Ground

Belden Cable

Conduit

To I.S. Barrier
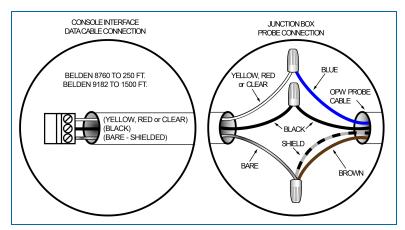
Sealoff

Sealoff

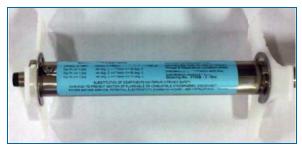Probe Wiring to Barrier

EECO Probe Connections
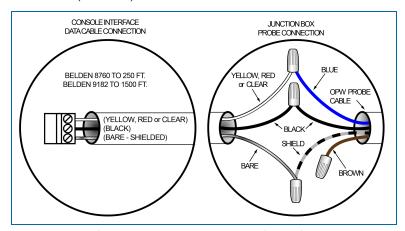

EECO Probe

Wiring Installation for EECO Probes to 1500, 2000 and Galaxy Systems

TLM-B Probe (Blue Label) Connections

TLM-B Probe (Blue Label)

Wiring Installation for TLMB-Probe to 1500, 2000 and Galaxy Systems