

Oil in Water Monitor HSS 1006 Hydro Surveillance System

Bulletin SSIN018 Issue/Rev. 0.1 (9/17)

The **INVALCO HSS 1006** has been designed for municipal and industrial applications to measure PPM levels of hydrocarbons in aqueous solutions. Typical applications include PPM trace amounts of oil in effluent water from storm water runoff, oil in cooling water, produced water, and oil/water separators. Other measurements and mediums can be monitored on request (i. e. colorants in fluids, etc.).

The INVALCO HSS 1006 uses a UV fluorescence technique to target the aromatic component of the oil contamination. Through a site calibration this aromatic tag provides an indication relative to total oil.

A continuous sample flow is tapped or pumped off the process line and directed through the HydroSense chamber. It passes behind the non-contacting UV light source and is targeted with filtered light energy. The soluble and emulsified oils in the water will excite from this light energy and fluoresce light energy back out of the water at a signature wavelength. The intensity of light energy at this wavelength is measured to provide an indication of the ppm concentration.



Features and Benefits

- The special UV absorbing flow plate sheens the water over a large surface area. The resulting high surface area to depth ratio provides many benefits.
- The sensitivity to oil molecules is increased by maximizing the optical viewing area.
- The minimal depth discourages oil molecules from 'hiding' behind particulates in the water.
- The large lamp source targets the water from multiple angles to get a representative sampling of all oil.
- The large sample target area ensures a representative and stable snapshot of the water conditions
- The unit can tolerate suspended solids up to 400 mg/l
- Non-contacting optics minimizes maintenance
- Compensation for temperature and lamp deterioration minimizes recalibration requirements
- Alarm warns of impending lamp replacement
- Long life lamp expectancy of 18 months
- Continuous on-line monitoring reads the water 50 times/second with an averaged display update every 1 second
- No consumables or chemical used
- Sample flow gravity outfalls to drain
- Available with CSA Zone 2 approval or with Pressurization Systems for Zone 1
- Designed for harsh environments with a 316 SS Housing
- No tools necessary for routine maintenance or lamp replacement
- The flow or power does not require to be turned off during routine maintenance
- Multi-point calibration available to customize response curves

Specifications

Power

- 115 VAC, 50/60 Hz., 150 VA (including lamp power supply)
- 10 VA (controller only)(optional 220 VAC, or 24 VDC)

Display

Four line LCD with simultaneous display in PPM, Cal Location, current temperature, and bar graph.

Alarm Setpoints

Two independent SPDT, 7 amp, 120VAC dry relay contacts with LED panel indication

Relay Time Delay

0-99 second delay on

Range

0- 300 ppm Hydrocarbon in Water linear, up to 1000 ppm trending

Accuracy

- ± 1 PPM
- The performance is based on a calibration to a known hydrocarbon concentration and a stable background water. The hydrocarbon make-up and variations in the contaminating compounds may affect the actual output.

Resolution

0.1 PPM

Calibration

10 Locations, Up to 5 concentration entry points per location

Signal Output

4-20 mA DC, 900 ohms, isolated

Communication Output

RS-485/modbus or optional HART protocol

Signal Filtering

20 -1000 samples /average

Process Temperature

- 32°F - 212°F (0-100 °C) with cooler
- 32°F - 104°F (0-40 °C) without cooler

Environment Temperature

- 50°F - 104°F (10-40 °C) without Air conditioning
- 50°F - 131°F (10-55 °C) with Air conditioning

Temperature Compensation

Compensation 50°F - 104°F (10-40 °C) (ambient air)

Maintenance Alarms

- 2 x SPDT, 7 amp @ 120 VAC dry;
- One for lamp failure alarm, one for zero offset drift

Sample Inlet

3/8" NPT female

Sample Outlet

2" NPT male (outfall must be unrestricted gravity to drain)

Inlet flow rate

Minimum 5.0 litre/minute (continuous and stable)

Inlet pressure

Minimum 2 psi, maximum 100 psi, minimum 20 psi when equipped with optional cooler

Enclosure Rating

Type 4X Stainless Steel with viewing window, CSA Approved Ex Zone 2

Enclosure Dimensions

12.0" X 37.5" X 9.25"D

Pressurization/Purge

Eexp available for Zone 2 where CSA Zone 2 is not applicable

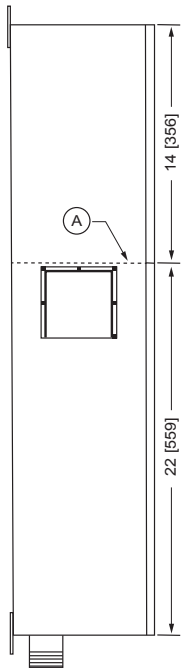
Shipping Weight

75 lbs (34Kg)

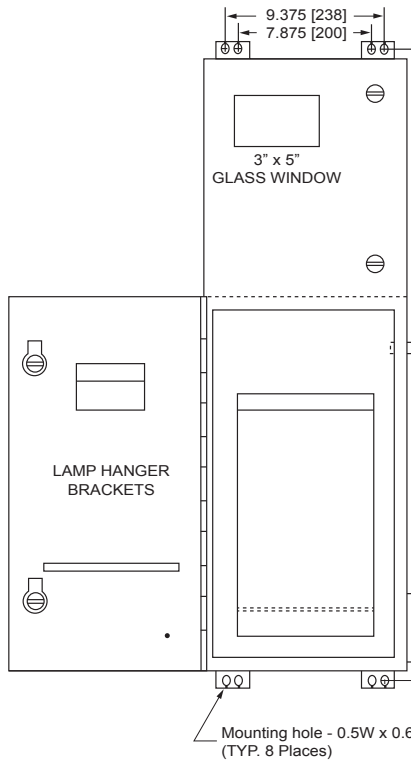
Please consult factory for Part Number and additional information.

Dimensions

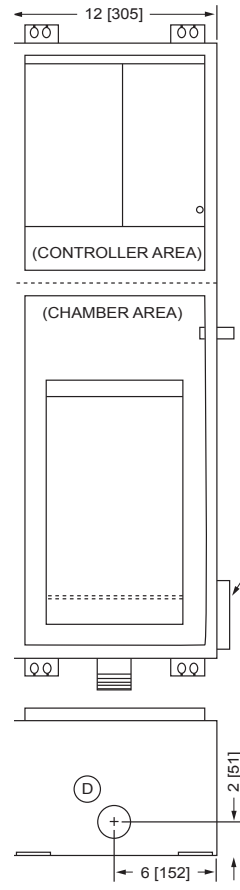
LEFT SIDE VIEW



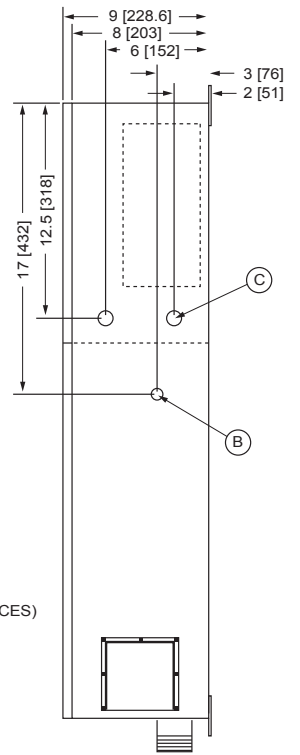
FRONT VIEW WITH DOORS



FRONT VIEW WITHOUT DOORS



RIGHT SIDE VIEW



Notes:

- All dimensions are in inches and [mm]
- All material is 316 SS
- Overall hydrosense dimensions are 36 x 12 x 9D
- Controller nominal dimensions are 14 x 12 x 9D
- Chamber nominal dimensions are 22 x 12 x 9D
- The hydrosense consists of 2 enclosures welded together.
- Process sample inlet - 3/8" FNPT
- Power inlet and signal outlet - two 1/2" conduit holes
- Drain outlet - 2" NPT

BOTTOM VIEW

The specifications contained herein are subject to change without notice and any user of said specifications should verify from the manufacturer that the specifications are currently in effect. Otherwise, the manufacturer assumes no responsibility for the use of specifications which may have been changed and are no longer in effect.
Contact information is subject to change. For the most current contact information, visit our website at www.fmctechnologies.com/measurementsolutions and click on the "Contact Us" link in the left-hand column.

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