



Online Oil-in-Water Monitors

Datasheet for OilWatcher™ Online Oil-in-Water Monitor

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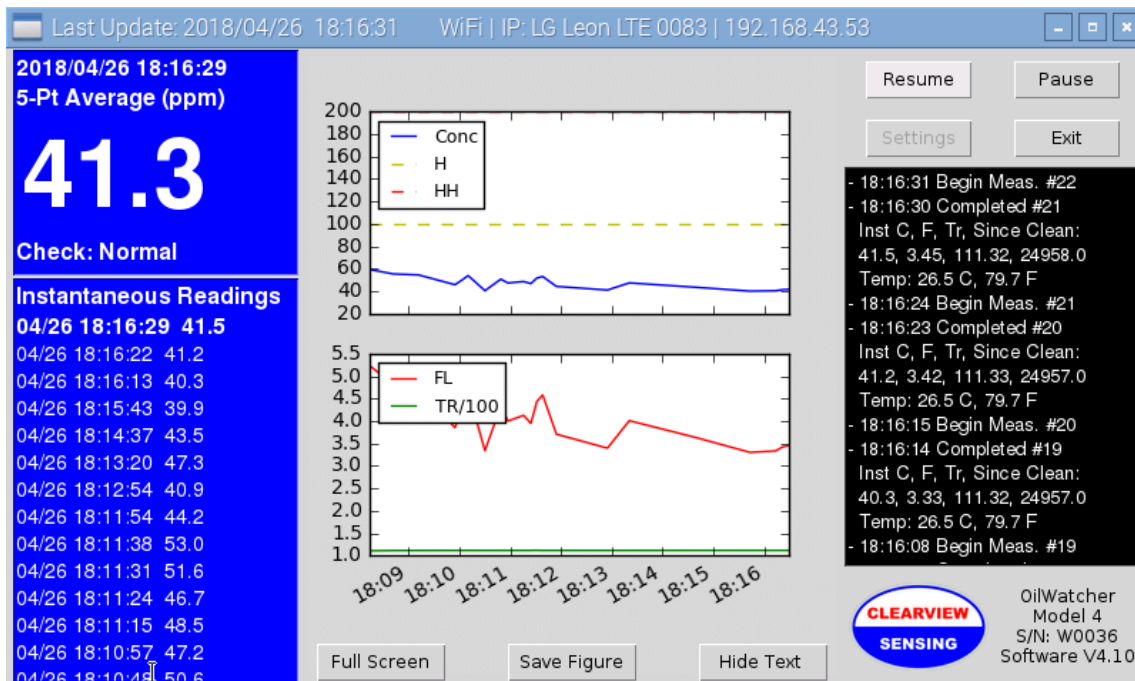
Overview

The OilWatcher online oil-in-water monitor uses laser induced fluorescence and light absorption to measure the oil content in process water. With dual-modal measurements, oil content from 0.1 to 5000 mg/L or ppm measured in real-time. A free-oil configuration is available for oil concentration in the 0.5% to 10% range. The technology is implemented with the criteria of achieving an online accuracy matching that from laboratory analysis of grab samples, including the effect of moderate fluctuations in water characteristics such as solid content and gas bubbles. OilWatcher can be used to detect large changes in oil content or to determine where the water quality stays within thresholds.

OilWatcher is simple to use, has flexible configurations and requires minimal maintenance. It can be used online or single sample, and can be configured with manual cleaning, semi-automatic and fully automatic cleaning. It has uses in produced water disposal for oil and gas production, water treatment facilities, laboratories, refineries, desalination plant, and more.



A Non-Hazardous Location Unit
(Model 43A, Main Module)



OilWatcher Graphical User Interface

<p>Technical Specifications</p> <p>Measurement Principles:</p> <p>Accuracy:</p> <p>Range:</p> <p>Reading Stability:</p> <p>Response Time:</p>	<p>Fluorescence and Light Absorption. Turbidity and color compensation.</p> <p>Online: Within 25% (typically within 15%) of actual, for moderately stable base water turbidity and color. Below 1 mg/L: within 0.3 mg/L</p> <p>0.1 ppm – 10% oil Primary models: 0.1–20, 1–500, 10–5,000 ppm, 0.5% - 10% Other range specifications available on request</p> <p>Online running standard deviation < 10% of running average</p> <p>Adjustable – typically 60 sec. As fast as once every 10 sec.</p>
<p>Maintenance</p> <p>Major Service and Frequency:</p> <p>Calibration:</p> <p>Service Life:</p> <p>Cleaning (the models use the same measurement principles and differ only in cleaning configuration)</p>	<p>Light source replacement once every year. Major maintenance (replacement of wearable parts once every 5 years)</p> <p>Once for each new water type, with online samples 20 years with maintenance every 5 years</p> <p>Model 41: Manual cleaning Model 42: Manually controlled cleaning Model 43: Semi-automated cleaning (automated starting and ending, bi-weekly changing of cleaning solution) Model 44: Fully-automated cleaning (automated starting and ending, quarterly to semi-annual changing of neat cleaning chemical)</p>
<p>Operating Conditions</p> <p>Process Pressure:</p> <p>Process Temperature:</p> <p>Flow Rate:</p> <p>Ambient Temperature:</p>	<p>100 psig (6.9 barg) standard Higher pressure rating available on request</p> <p>14 (non-freezing) to 160°F (-10 to 70°C) standard Higher and lower temperature ratings available</p> <p>Up to 10 gallons/min. No lower limits for measurement. For online side-stream installation, higher flowrate is beneficial for reducing cleaning frequency; 2 - 5 gallons/min is recommended; lower flowrates acceptable.</p> <p>14 to 160°F (-10 to 70°C) for operation, -40 to 185°F (-40 to 85°C) for storage</p>
<p>Power, Weight, Dimensions</p> <p>Power Supply:</p> <p>Power Consumption:</p> <p>Material:</p>	<p>120 V/ 60 HZ or 220 V/50 HZ single phase. Max 10 A. Other voltages and DC available on request</p> <p>< 15 W when not cleaning. < 500 W max during cleaning.</p> <p>Wetted materials: 316L stainless steel. PVC and other materials available on request. Seal: Viton. Other materials available on request. Optical windows: Sapphire</p>

<p>Weight and Dimensions (Approximate, Varying by Model):</p>	<p>Model 41 Non-Hazardous Location (1 module): 16 lbs (7.3 kg), 16 in W X 30 in H X 6 in D (406 mm W X 762 mm H X 152 mm D)</p> <p>Model 42 Non-Hazardous Location (2 modules connected by flexible tubings): Main module: 20 lbs (9.1 kg), 20 in W X 38 in H X 6 in D (508 mm W X 965 mm H X 152 mm D) Tank and Pump module: 15 lbs (6.8 kg), 13 in Dia. X 21 in H (φ330 mm X 533 m H)</p> <p>Model 42 Hazardous Location (3 modules connected by flexible tubing) Main module: 60 lbs (22.7 kg), 36 in W x 36 in H x 18 in D (914 mm W x 914 mm H x 457 mm D) Pump module: 50 lbs (22.7 kg), 24 in W x 36 in H x 24 in D (609 mm W x 914 mm H x 609 mm D) including frame. Size and weight can be reduced significantly without the frame. Tank: 3 lbs (1.4 kg) when empty, 13 in Dia. X 21 in H (330 mm Dia. X 533 mm H)</p> <p>Model 43 Non-Hazardous Location (2 modules connected by flexible tubings): Main module: 30 lbs (13.6 kg), 22 in W X 38 in H X 9 in D (559 mm W X 965 mm H X 229 mm D) Tank and Pump module: 15 lbs (6.8 kg) empty, 13 in Dia. X 21 in H (φ330 mm X 533 m H)</p> <p>Model 43 Hazardous Location (3 modules connected by flexible tubings): Main module: 50 lbs (22.7 kg), 30 in W x 36 in H x 18 in D (762 mm W x 914 mm H x 457 mm D) Pump module: 50 lbs (22.7 kg), 24 in W x 36 in H x 24 in D (609 mm W x 914 mm H x 609 mm D) including frame. Size and weight can be reduced significantly without the frame. Tank: 3 lbs (1.4 kg) when empty, 13 in Dia. X 21 in H (330 mm Dia. X 533 mm H)</p>
<p>Communication</p> <p>Keyboard & Mouse</p> <p>Remote Access via Ethernet or Wi-Fi:</p> <p>Modbus TCP/IP</p> <p>Modbus RS485:</p> <p>4-20 mA Analog Output</p>	<p>Wireless keyboard and mouse for non-hazardous location, or hazardous location rated touchscreen tablet</p> <p>Standard</p> <p>Standard</p> <p>Available</p> <p>Available</p>
<p>Access to Process Water</p>	<p>Side Stream</p> <p>Single Sample</p>
<p>Locations of Use</p>	<p>Non-hazardous Location</p> <p>Class I Division 2 or Equivalent Hazardous Location</p>

MODEL 41A



MODEL 41B/42A



MODEL 43A



MODEL 43B



MODEL 42H (Hazardous - C1D2)



MODEL 43H (Hazardous - C1D2)

