S-One-FS / S-One-FP

Laser Induced Fluorescence Oil in Water Analyser
Side-Stream and/or Inline, for Safe Areas

Ultrasonics | Fluorescence | Spectroscopy

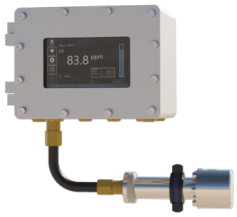
The Advanced Sensors S-One represents the latest generation of our highly successful range of analysers for measuring oil in water. The analyser comprises a central controller that can accommodate up to two measurement modules. The measurement modules are available in side stream and inline configurations, with the S-One-FS designed for placement in a process bypass loop and the S-One-FP intended for direct installation in a process pipe. The S-One-FP and S-One-FS use Laser Induced Fluorescence (LIF) technology to provide precise and continuous measurements of oil concentrations in water across a broad range of oil types.

Operators can rely on the accurate, real-time data provided by the S-One to record precise discharge measurements, quickly respond to process changes, and improve process efficiency, thereby reducing costs. In addition, the S-One allows for easy integration of third-party sensors with the controller through Modbus and 4-20mA inputs.

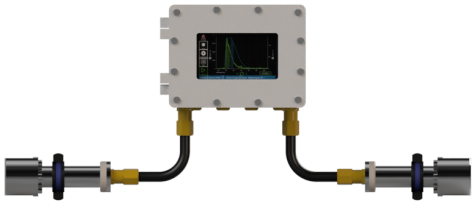
Application Examples

The S-One is ideally suited for a wide range of applications, including unconventional oil, discharge management, process improvement, cooling water, wastewater treatment, and oil leak detection. To determine the optimal configuration for your specific application, please get in touch with ASL.

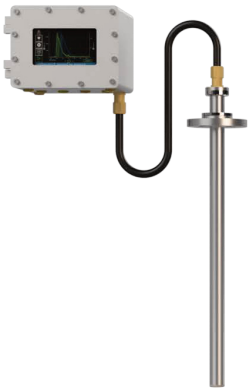
The Analyser is available in 5 model configurations



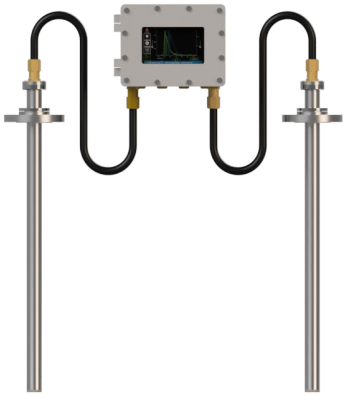
S-One-FS
Side-Stream analyser
with one measurement cell



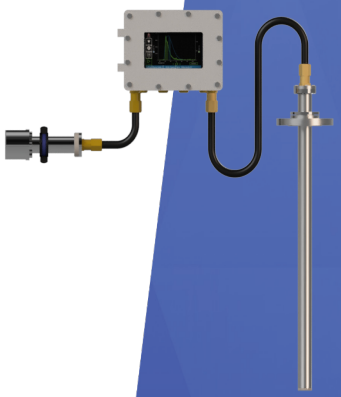
S-One-FS-FS
Dual Side-Stream analyser
with two measurement cells



S-One-FP
Inline analyser
with one measurement probe



S-One-FP-FP
Dual Inline analyser
with two measurement probes



X-One-FP-FS or X-One-FS-FP
Side-Stream and Inline analyser
with one measurement cell and probe

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S-One-FS / S-One-FP

Laser Induced Fluorescence Oil in Water Analyser
Side-Stream and/or Inline, for Safe Areas

Ultrasonics | Fluorescence | Spectroscopy

BENEFITS

- Low cost of ownership
- Independent controller acts as a hub for 3rd party and for future Advanced Sensors measurement devices
- No user required maintenance, Enhanced Ultrasonic Cleaning removes fouling build up
- Consistent accurate performance
- No sample conditioning system required
- Laser lifetime of 36 months. (Factor of 2 extension over previous generation model)
- No degradation of signal over the period of 36 months
- Same sample used for analyser and lab measurement for better accuracy
- Remote control of the analyser
- Analyser outputs accessible remotely via HART, Modbus, Ethernet and 4-20mA
- Visibility of process changes provided via spectral fingerprint

FEATURES

- Enhanced Ultrasonic Cleaning
- Laser Induced Fluorescence [LIF]
- Dual measurement options
- Remote management and diagnostics
- Easy to install
- Spectral representation of the fluorescence signal
- Ability to connect 3rd party devices to the controller via Modbus and 4-20mA
- Database storage of all data
- Export historical data via .PDFs and .CSV files
- Optional integrated laboratory sample point

Additional for Probe/Inline

- Hot insertion/extraction

For pressures in the range 3-5 bar_g a low pressure extraction tool is recommended. For pressures above 5 bar_g a high pressure extraction tool is required

Additional for Cell/Side-Stream

- Optional flexibility of measurement cell location

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Measurement Performance		
Measurement principle	Laser Induced Fluorescence (LIF)	
Cleaning principle	Enhanced Ultrasonics (automatic)	
Range	0-20,000 ppm	
Repeatability	±1% of measurement range	
Accuracy	±1% of measurement range	
Measurement frequency	Min 1 second intervals, continuous results	
Operating Conditions		
Process temperature	Up to 100°C	
Operating pressure	Up to 15 bar_g	
Process velocity with Probe	Nominal 10 m/s	
Process flow on Cell	Up to 25 l/m	
Ambient Conditions		
Certified for use between	-20°C to +60°C	
Spectrometer Specification		
Measurement wavelength range	475-1,050 nm	
Pixel resolution	0.24 nm	
Utilities		
Power supply	100 to 240 VAC	
Power frequency	50Hz or 60 Hz	
Power consumption	25W normal, 180W peak	
Certification		
Ingress protection	IP rated for both IP66 and IP68	
Enclosure classification	Type 4X	
CE compliant	CE	
Weight & Dimensions		
Weight	Controller Measurement Probe Measurement Cell	24 Kg 6 Kg 3.5Kg
Dimensions	Controller Measurement Probe Measurement Cell	L 280 mm x H 200 mm x D 195 mm Up to 1m Length with 38mm Diameter Longer probe lengths on request L 225 mm Diameter 76.5mm (Max)
Communications		
2 x 4-20 mA Output	Can be configured as passive or active at the factory Configurable measurement reporting	
1 x 4-20 mA Input	Readings from external measurement device displayed at the controller interface	
Up to 5 x Digital Inputs (Adding valves to the configuration will reduce the number) Up to 3 x Digital Outputs (Dry contacts)	Start/Stop cycle control Configurable as alarm contacts	
Remote access	Windows Remote Desktop	
Internal data storage	>10 years	
User passwords	3 level password protection	
Optional Communications		
HART	Hart version 7	
Modbus RTU output	Modbus tables provided on request	
Modbus RTU input	Enables connection of an external measurement device	
Extended ethernet	2 wire connection, capable of up to 1.3km distance	

Additional Information	
Cable entries	8 x M20
Options for wetted components include	Stainless Steel 316L, 25 Cr Duplex, 22 Cr Duplex, Hastelloy C-276, Monel 400, Inconel 625, Incoloy 825 and 6Mo
Controller material	Stainless Steel 316L
Conduit length	Up to 10m (for longer lengths please contact Advanced Sensors)
Dual Cell S-One-FS-FS Dual Probe and cell S-One-FS-FP Dual Probe S-One-FP-FP	Allows dual simultaneous measurement
Analyser Stand	Optional
Additional Information Cell (FS Models)	
Process connection	½" NPT Connection (additional optional connections available e.g. flanged connections)
Optional ultrasonic homogenisation	Facilitated via an optional flow valve
Additional Information Probe (FP Models)	
Hot insertion/extraction	Up to 15 bar_g
Flange fitting	2" ASME RF (various other flange ratings and sizes available upon request)

Laser Radiation. Avoid direct eye exposure.

Laser classification as per IEC60825 is Class 2 and Compliant with IEC60825-1 class 1 thermal limits.

Dependent on sample matrix & instrument configuration. User may select any desired measurement from 0-10 ppm, 0-100 ppm [...] up to 20,000 ppm

Under ideal conditions, with a homogenised sample.

Note: Lab calibration with potable water and following ASL standards preparation method can achieve accuracy and repeatability of +/-1% of calibrated range.

Option to extend the interval via software, min time will depend on the oil being measured

For Higher flow rates contact Advanced Sensors

Contact ASL for assistance with device integration

Contact Us

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