

# S-One-DS / S-One-DP

Deep UV Fluorescence Oil in Water Analyser  
Side-Stream or Inline, for Non-Hazardous Areas



Ultrasonics



Deep UV Fluorescence

The Advanced Sensors S-One is the next generation of our incredibly successful range of analysers for Oil in Water measurements.

The S-One-DS and S-One-DP are Oil in Water analysers that use Deep UV Fluorescence to provide continuous accurate measurements of oil concentrations in water. The analyser detects a wide range of oils types from light refined oils through to heavy crude oils.

Reliable real-time data enables operators to record accurate discharge measurements, react to process changes and improve process efficiency thus enabling cost reductions. The analysers comprise a central controller with up to two measurement modules. The measurement module is available in side stream and inline configurations for placement in a process by-pass loop (S-One-DS) or directly in a process pipe (S-One-DP) respectively. The S-One additionally facilitates interconnection of 3<sup>rd</sup> party sensors to the controller via Modbus and 4-20mA inputs.

## Application Examples

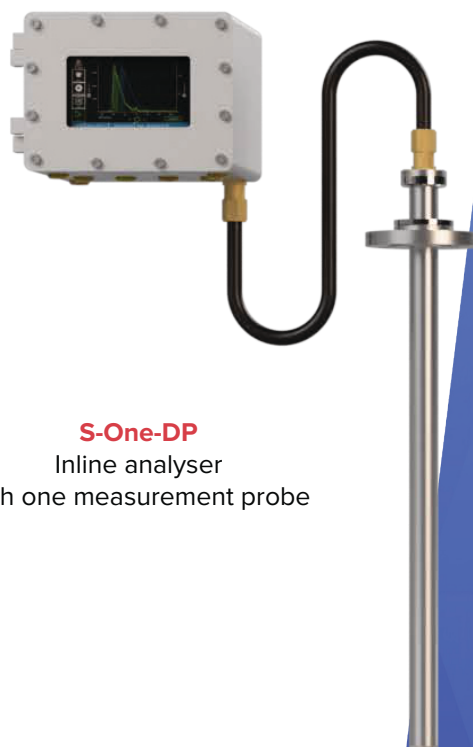
The S-One with Deep UV Fluorescence is ideally suited for refineries, marine, industrial and waste-water oil in water monitoring. Applications range from measuring oil concentration in marine exhaust scrubbers, heat exchangers, steam condensate, cooling water and boiler feed amongst others.

The analyser is available in 2 model configurations



### S-One-DS

Side-Stream analyser  
with one measurement cell



### S-One-DP

Inline analyser  
with one measurement probe

# S-One-DS / S-One-DP

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## BENEFITS

- Compact, lightweight design
- Low cost of ownership
- Deep UV fluorescence measures everything that standard UV fluorescence does, as well as lighter oils and condensates
- Independent controller acts as a hub for 3<sup>rd</sup> party and for future Advanced Sensors measurement devices
- No user required maintenance, Artificial Intelligence (AI) Enhanced Ultrasonic Cleaning removes fouling build up
- Consistent accurate performance
- No sample conditioning system required
- Long-life UV LED
- 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

## FEATURES

- AI Enhanced Ultrasonic Cleaning
- Deep UV Fluorescence
- Remote management and diagnostics
- Easy to install
- 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 to Probe/Inline

- Hot insertion/extraction

For pressures in the range 3-5 bar<sub>g</sub>, a low pressure extraction tool is recommended. For pressures above 5 bar<sub>g</sub>, a high pressure extraction tool is required

### Additional to Cell/Side-Stream

- Optional automatic compensation for oil droplet size variation
- Optional flexibility of measurement cell location



Measurement Performance		
Measurement principle	Deep UV Fluorescence	
Cleaning principle	AI Enhanced Ultrasonics (automatic)	
Range	0-100,000 ppm ↗	
Repeatability	±1% of measurement range Ⓢ	
Accuracy	±1% of measurement range Ⓢ	
Measurement frequency	1 Second intervals, continuous results ⌚	
Operating Conditions		
Process temperature	Up to 100°C	
Operating pressure	Up to 15 bar <sub>g</sub>	
Process velocity with Probe	Nominal 10 m/s ↻	
Process flow on Cell	Up to 25 l/m ↻	
Ambient Conditions		
Ambient temperature for operation	-20°C to +60°C	
Utilities		
Power supply	100 to 240 VAC	
Power frequency	50 or 60 Hz	
Power consumption	25W normal, 150W peak	
Certification		
Ingress protection	IP rated for both IP66 and IP68	
Enclosure classification	NEMA 4X	
UK	UKCA	
CE compliant	CE	
Weight & Dimensions		
Weight	Controller Measurement Probe Measurement Cell	24 Kg 6 Kg 3.5Kg
Dimensions	Controller	L 280 mm x H 200 mm x D 195 mm
	Measurement Probe	Up to 1m Length with 38mm Diameter Longer probe lengths on request
	Measurement Cell	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 4 x Digital Inputs 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
Wetted components	Stainless Steel 316L, 25 Cr Duplex, 22 Cr Duplex, Hastelloy C-276, Monel 400, Inconel 625, Incoloy 825 and other options available on request
Controller material	Stainless Steel 316L
Conduit length	Up to 30m
Additional Information Cell	
Process connection	½" NPT Connection (additional optional connections available e.g. flanged connections)
Optional ultrasonic homogenisation	Facilitated via an optional flow valve
Analyser Stand	Optional
Additional Information Probe	
Hot insertion/extraction	Up to 15 bar <sub>g</sub>
Flange fitting	2" ASME RF (various flange ratings and sizes available upon request)

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

⌚ For Higher flow rates contact Advanced Sensors

✱ Contact ASL for assistance with device integration

## Contact Us

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