UK Distribution by: IMA Ltd, Parkwell House, Otley Road, Guiseley, West Yorkshire, LS20 8BH
Website: www.ima.co.uk Email: info@ima.co.uk Tel: +44(0)1943 878877

EX-400M

Side Stream/Slip Stream PPM, Solids and Oil Droplet Water Monitor - Analyzer

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EX-400M

The introduction of Advanced Sensors revolutionary oil in water analyzers in 2005 gave users the first on-going maintenance free analyzer to provide continuous uninterrupted accurate measurements of oil concentrations.

Now, with the introduction of Microscopy, Advanced Sensors have enhanced the existing range of products by utilising video imaging to measure Total Suspended Solids (TSS), Oil Droplet Size and Gas bubble size measurements, whilst still taking advantage of patented self cleaning technology to keep fouling from impacting the data gathered.

Features

- Video microscopy measurement
- Zero routine maintenance using patented ultrasonic cleaning mechanisms and software
- High concentration measurement capabilities allowing user configurable ranges from 0-1,000 PPM
- +/-4% accuracy and 98% measurement repeatability
- Complete remote capabilities through proprietary software for real-time live data and offline review
- No flow conditioning or flow control
- Plumb'n'Play – easy installation into new or existing installations
- Multiple communications configurations – 4-20mA, HART, Modbus, Ethernet, ADSL
- Data and image storage on analyzer for up to 120 days

Benefits

- With no consumables and no regular operator intervention, the Advanced Sensors analyzer offers very low Cost Of Ownership (COO)
- Advanced software capabilities allow complete remote control and monitoring. Ideal for un-manned locations and remote process monitoring
- Easy to use windows based interface
- Automatic reports generated for all data captured

Stainless Steel enclosure optional

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Technical Specification

Microscopy Specification

Measurement principle	CCD Camera 2D Image
Image Resolution	2 Million Pixels
Lighting	Controlled LED lighting with 5 year MTBF
Number of Images Per Dataset	1-50 Images (User Configurable)
Time between each Image	0.1 to 10 Seconds (User Configurable)
Imaging Modes	Flowing, Static, High Gas Content Mode

Image Processing

Advanced Sensors Image Processing Engine (no 3rd party Algorithms)
Shape and object matching used to classify objects in the image
No need to change parameters for different turbidity samples, due to Automatic exposure time and Multi-level image threshold algorithms

Measured Items

Hydrocarbons, Total Suspended Solids + Gas PPM
Hydrocarbons, Total Suspended Solids + Gas Dimensions
Turbidity: Measurement in AU

Microscopy PPM

Range	0-1,000 PPM
Calibration	4 parameter curve fit with gain correction
Auto-Calibration	Microscopy PPM can auto calibrate itself

Sample of Microscopy Measured Parameters

PPM	Turbidity
% Concentration	No. of Objects Per Image
High Sensitivity Circularity	Aspect Ratio
Convexity	Elongation
Size	DV10, DV50 and DV90
Diameter PED (Circle of Equal Perimeter)	Configurable Object Sharpness
Length, Width	Volume, Area

Microscopy Size Range

Dimensional Range	1-450um
Accuracy	±4% of measurement range
Repeatability	> 98%
Calibration	Size calibrated to known latex beads

Microscopy Turbidity

Range	0-1,500 AU
Light Frequency	White light
Measurement Timeline	Every Image Cycle

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EX-400M Technical Specification

Data Storage

Image Storage	30-60 days depending on schedule
Data of every Particle Measured	120 days storage

MiView Offline Software

Powerful client software for complete analysis of data from system
Connect live to the analyzer over the network for real-time analysis
View historical data for process review
Look at the performance of processes at different points
Generate reports automatically from the data

Operating Conditions

Process Temperature	0°C to 100°C (option to 180°C)
Process Pressure	0-35 barg (design pressure 180 barg)
Process Flow	0-25 l/min (optional 0-1000l/min)
Operational Ambient Temperature	-20°C to 55°C

Utilities

Power Supply	110 or 230 VAC, 50-60 Hz
Power Consumption	60W normal, 300W peak
Instrument Air	5-8 barg (for pneumatic valve; electric valve optional)

Weight & Dimensions

Weight	76.9kg+ inc. stand, valve and chamber
Footprint	600W x 670D mm
Clear Space	500mm front and rear
Height	1.12m typical (optional variants)

Communications

4-20 mA	Passive
HART, Modbus (over HART), Wireless (Wi-Fi), 2-wire ADSL	Optional
Ethernet	Standard
Remote Access	VNC, Master Remote Manager
Internal Data Storage	>10 years
Security	Multiple level password protection

Additional Information

Flange Fitting	1” ANSI standard, flange types and sizes optional
Wetted Parts	316SS (Hastelloy, Inconel, CR25, CR22, Titanium, Monel)
Sample take off point	Standard – integral to analyzer
Viewing Window	Standard
Homogenisation	Ultrasonic
Gas Removal, Solids Removal, Temp. Conditioning, Flow Control	Not Required
Discrepancy for Oil droplet size	Automatic Oil Droplet Size compensation
Ingress Protection	IP66
Enclosure Material	Aluminium (SS 316L optional)
ATEX Exd II 2 G IIB T4, IECEX, CSA, Class 1 Div 1	
Size calibration of objects conforms to ASTM E1951 Standard Guide for Calibrating Reticles and Light Microscope Magnifications	
Microscopy Alarms set by user	
Automatic Cleaning Using Ultrasonics	