

RIVERTRACE

SMART PFM 107 OIL-IN-WATER MONITOR



PRINCIPLE OF OPERATION

The SMART PFM monitor has been designed specifically for use in analysis of oily water samples, this is undertaken by backlighting microscopy combined with image processing. A diffused light beam is emitted across the measuring cell to illuminate the oily water sample. A series of images are taken of the sample at a microscopic level. The images are then analysed via an advanced image analysis algorithm to distinguish oil particles and to extract essential information such as concentration, size, number and density. The data of oil in water content is displayed on the LCD screen.

Oil concentrations, alarms and fault log are stored within the system to comply with the reporting requirements of IMO resolution MEPC.107(49) and can be downloaded onto a pc via LAN or USB for further analysis.

The SMART PFM 107 offers a choice of auto cleaning methods to ensure the accuracy is maintained at all times. The cleaning is fully automatic and operates whenever it senses contamination of the optical windows.

APPLICATIONS

- Drill Rig Slop Tanks
- Oily Water Separator Discharge
- Regulatory Compliance
- Produced Water Discharge

FEATURES

- Oil type independent
- On Screen Flow Rate
- Solid Discrimination to MEPC.107(49)
- 7" full colour touch screen.
- Camera display to view contaminants within the sample.



Exd version

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SPECIFICATION

MEASUREMENT	
Clean water calibration	Required
Oil range	0-40 ppm
Resolution	1.0 ppm
Accuracy oil	±1 ppm
Response time	< 3.5 sec. (oil reading)
ALARMS	
Oil alarm 1 set point	15 ppm standard – (1-15 ppm adjustable)
Oil alarm 2 set point	15ppm Standard – (1-40 ppm adjustable)
Oil alarm 1 & 2 delays	AL1 - 0-2 seconds user adjustable (for overboard valve) AL2 – 0-70 seconds.
Alarm contacts	2 SP alarm relays 5A @ 250 VAC (NC in alarm)
USER INTERFACE	
LCD display:	7" Touchscreen LCD display--
INPUT/OUTPUT	
Analogue output	Loop powered 4-20 mA (standard)
Cable terminals	Accept cores of 2.5 mm2 (HV) and 1.5 mm2 (LV)
Cable glands	Accept 10-14 mm cable diameters
Switch inputs	2× switch inputs: for separator & flow switch feedbacks
DATA STORAGE & RETRIEVAL	
IMO data	Stored on hard drive of the system – encrypted USB memory stick is provided with software to download and read encrypted IMO data
ENVIRONMENTAL & SAMPLE	
Ambient humidity	95% RH Max @55°C (131°F)
Ambient temperature	0 to 55°C (32 to 131°F) (standard – Increased range optional)
Flow temperature	0°C to 70°C (32 to 140°F)
Flow rate	0.5- 2 L/min
Flow pressure	0.5 to 6 bars (16 to 87 PSI)
Design pressure	8 bars (145 PSI)
Pipe fittings	¾ inch BSPP
Inclination	25° in any plane from normal mounting
SYSTEM & SUPPLY	
Supply voltage	100 to 240 Vac
Supply voltage consumption	50 VA normal, 100 VA peak
Supply tolerance	±10% of nominal voltage
Auto clean pressure	4-6 bar compressed air
Protection class	IP65
Approvals	MED and MEPC.107(49)
CONSTRUCTION & OTHER CRITERIA	
Security	Protection of all calibration dependent items
Auto clean timing	Variable 1 to 360 min (360 min factory default)
Weight	29.5 Kg (65 lbs)
Dimensions	Height: 528mm (20.8"), Width: 600mm (23.6"), Depth: 280mm (11")

Specifications and system descriptions accurate at time of printing. These are subject to change.