



Principle of operation

The monitor measures particulates in the sample stream on a continuous basis by passing the process fluid through a proprietary photo optical measuring cell developed by Rivertrace Technologies.

Using a combination of optical recognition algorithms and light intensity it is possible to differentiate between Oil particles, Gas/Air Bubbles and Solid particulates in the range 0-500 microns. Flow and particulate characteristics can be visualised live via remote access and via optional dedicated software on any Windows PC.

Oil concentration, pressure, temperature and oil alarm status are displayed on an easy to read back lit alpha numeric display. 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 accessed remotely or downloaded onto a pc via LAN or USB for further analysis. When connected to the internet it is possible for remote diagnostics to be performed by the manufacturer or an approved service centre.

The Smart PFM offers a choice of auto cleaning methods to ensure the accuracy is maintained at all times. Dependant of the utilities available you can choose from an air driven solenoid, electronic actuator or high power ultrasonic cleaning method. The cleaning is fully automatic and operates whenever it senses contamination of the optical windows.

| Features | Applications |
|---|---|
| Oil, gas, suspended solid inflow measurements | Bilge water discharge |
| Oil type independent – no calibration required | Regulatory compliance |
| Solid particles and gas contamination independent | Drilling rig surface water and slop discharge |
| Measure concentration, size and number density of oil, solids and gas | Oil/Water separator discharge |
| Embedded windows with full auto restore via USB memory Stick | Produced water discharge |

| Specifications | |
|---------------------------------|--|
| Oil concentration range | 0 - 40 ppm for MEPC 107(49) – higher ranges available |
| Oil concentration accuracy | +/- 1 ppm |
| Particle size range | 1 to 500 µm |
| Oil alarm 1 & 2 operating point | 5 ppm or 15 ppm maximum (adjustable) |
| Oil alarm 1 operating delay | 1 - 5 seconds |
| Oil alarm 2 operating delay | 10 to 600 seconds |
| Alarm contact rating | 5 Amps at 230 VAC |
| Alarm relay mode | De-energised in alarm state |
| Output signal | 4-20 mA |
| Network communication | Ethernet (RJ45) – remote access – Wi-Fi optional with additional hardware |
| IMO Data transfer | USB 2 Memory stick |
| Ambient temperature | 0°C to 55°C (32°F to 131°F) |
| Humidity | 95% maximum non condensing |
| Sample temperature | 1 to 70°C (33.8°F to 158°F) |
| Sample flowrate | 0.5 to 5 l/min (0.26 to 1.3 gpm) |
| Sample pressure | 1 to 10 bars (14.5 to 145 psi) |
| Clean water requirements | None |
| Cleaning system | Compressed air at 6 bar (87 psi) |
| Weight | 28 kg (62 lbs) |
| Dimensions [mm] | Height: 528mm (20.8”), Width: 600mm (23.6”), Depth: 280mm (11”) |
| Supply voltage | 100-240 VAC or 24 VDC option available |
| Supply variation | +/- 10% of nominal voltage |
| Supply frequency | 50 - 60 Hz |
| Power consumption | 50 VA normal, 100 VA peak |
| Degree of ingress protection | IP65 |
| Approvals (pending) | MEPC.107 (49), MED, UL |