

Drillship & Offshore Applications



Drillships and Offshore production and storage units for oil and natural gas provide a unique challenge for environmental compliance. The vessels are usually stationary, therefore, when operating within the maritime boundaries of a nation, are often required to conform to local emissions regulations to gain an operating permit.

Emsys Maritime have extensive experience in solving air permit applications and have provided a comprehensive consultancy services to support air permit submissions.

Whether a drillship, semi-sub, FPSO, FSO, FLNG, Shuttle Tanker or offshore construction/decommissioning vessel, Emsys has proven solutions to measuring emissions for compliance applications

Why Emsys?

- A comprehensive suite of monitored gases and particulate matter to cover most offshore applications
- Emsys can provide NTE (Not to Exceed) reporting and/or total pollutant inventory
- Emsys can utilise all 3 allowable methods of exhaust gas measurement, Carbon Balance, Mass Flow Measurement or air/fuel to cover the requirements of typical air permits
- Emsys is extremely compact and can be retrofitted easily to any vessel and any engine or boiler, this is a significant benefit where space is at a premium on retrofit applications
- Emsys is highly robust and suitable to operate in high temperature/high humidity environments without supplemental air conditioning
- Emsys is Type Approved for Offshore applications by ABS and DNV-GL



Technical Specification

Model Number	Emsys-iS
Ambient Temperature	0-+55 °C
Measurement Method	Extractive using Heated Filter Probes and Heated Sampling Lines, Hot-Wet sampling on a 'round-robin' basis. Sample returned to process
Measurement Technique	Multi-Channel QCL laser, IR Absorption Spectroscopy
Laser Classification	CLASS 1 BS EN 60825-1:2007 Safety of laser products Equipment classification and requirements (identical to IEC 60825-1 2007)
Repeatability	+/- 2%
Accuracy	+/- 2%
Linearity	R2 for a linear fit is ≥ 0.9990 . Error < 2% of full scale when analyzed to MCERTS standard
Measurement Rate	Up to 10 Hz
T90 Time	>10s for all gases except NH3
Zero Noise (2 sigma)	< detection limit for each component
Span Noise (2 sigma)	< 2% of full range for each component
24 hour zero drift	< detection limit for each component
24 hour span drift	< 2% of full range for each component
Pathlength (Cell internal)	2m
Cell temperature	180 °C
Cell pressure	300 Torr \pm 50 Torr
NO	0-2000 ppm (LOD 5ppm)
NO2	0-500ppm (LOD 1ppm)
CO	0-3000 ppm (LOD 5ppm)
CO2	0-15 % (LOD 0.1%)
SO2	0-200 / 0-500 / 0-1000 ppm (LOD 3ppm / 1ppm)
H2O	0-20 % (LOD 0.1%)
CH4	0-3000 ppm (LOD 5ppm)
Environmental Specification	Tested to IACS-E10
Analyzer Equivalence	ISO 8178/1 Part 7
Type Approvals	ABS, DNV-GL, Korean Register
# of Measurement Points	Single Enclosure – Up to 4, Multiple Enclosures (Up to 3) 12 points
Power Supply	230 VAC – Power requirement (kW) subject to # of points & length of Heated Sample Line
Air Supply	NOT REQUIRED
Enclosure Air Conditioning	NOT REQUIRED
Enclosure Rating	IP55 standard / IP56 Optional (weather deck mounting)
Enclosure dimensions	800mm (H) x 600mm (W) x 300mm (D)
Exhaust duct sizes	300mm – 5metres
	IACS E10
Communications Protocol	MODBUS RTU
Typical Applications	MARPOL Annex VI (NOx), engine testing, EGCS compliance monitoring, methane slip measurement, mass emissions totalizing, funnel smoke monitoring, charterer's CSR reporting, Class Notation compliance
US Patent	8,184,296,B2
EU Patent	EP 2 394 153 B1
Heated Filter Probe / PAB Enclosure / PM Enclosure Rating	IP65