

MEG ARTS® - ANALYER WITH REAL TIME DISPLAY AND SAMPLING

The MEG ARTS® system developed by Online Electronics Ltd provides highly accurate and reliable analysis of Mono-Ethylene Glycol or other fluid received subsea from a pipeline conditioning train. The system can operate autonomously when the support vessel is at the launch end of the pipeline. When a ROV is available at the pig receiver the analysis data can be monitored and sampling controlled in real time.

The flowing MEG is analysed for conformity with project purity, dryness, or hydrate suppression requirements. Values of density, pressure and temperature are logged and displayed on a high visibility OLED display. Up to 7 samples are captured for recovery to surface to confirm composition. 6 sample captures can be initiated by any combination of independent analyser limit levels and sequencing by ROV switch. The 7th sample capture is initially by ROV as a fully manual sample. The flexibility enables sampling for desalination as well as multiple samples of critical parts of the train.

KEY BENEFITS

- Pipeline conditioning assured through real time data, logged data, and physical sampling
- Graphical summary of pipeline conditioning operation
- Automatic sampling eliminates need for vessel at, or transit to, receive location resulting in significant savings in vessel time and costs
- Optional ROV sampling allows for multiple samples from a single switch meaning ROV does not need to relocate to different valves
- Samples can be captured from specified train positions with ROV sampling
- Suitable for a wide range of pipeline diameters



ANALYSIS, DISPLAY AND SAMPLING SKID: Equipment is packaged in a mini-skid suitable for offshore lifting. The skid is self-contained carrying the Controller with logging and battery power, analysis sensors, sample cylinders and solenoid operated valves. The skid can be wet stored before an operation and activated when required by ROV switch. When placed on the seabed, mattresses may be needed. After recovery to the vessel, hand valves are provided for discharging samples without skid disassembly. Logged data can be downloaded to a PC.

PIPELINE INTERFACE: MEG ARTS® is connected to the header or discharge line from the pig receiver or other available connection according to pipeline configuration. The offtake uses a scoop or J-tube taking a proportion of the flow through the analysis and sample loop. The sample flow may be returned closed loop to the discharge.

ROV INTERFACES: The sample loop typically uses 19 mm (¾") diameter hose which can be combined with a light stab for ROV handling. Several metres of hose can be stowed as a single turn round the skid. ROV switches and the analyser display are accessible on the top face of the skid. A covers across the top of the skid protects valves and prevents snagging of the lifting set.

GENERAL DATA:

Maximum operating depth	3000 m (9800 ft)
Minimum operating depth	50 m for sample from 25 m length MEG batch at 0.35 m/s 160 ft for sample from 80 ft length MEG batch at 1.1 fps
Maximum pig receiving speed	0.5 m/s (1.6 fps) in 20" pipeline with 4" discharge 0.75 m/s (2.5 fps) in 8" pipeline with 2" discharge
Density sensor accuracy	±0.5 kg/m ³ (0.6% span seawater to pure MEG) range 500 kg/m ³ to 1500 kg/m ³
Display	63 mm x 33 mm (2.5" x 1.3")
Logging capacity	258,000 entries at 1 s to 10 s interval, memory wrap option each entry contains Date, Time, Density, Pressure, Temperature, and Sample Status
Battery life	>10 days
Volume of each sample	0.35 L (13 US fl oz)
Operating temperature	Controller -5°C to +30°C (23°F to 86°F) Storage -20°C to +50°C (-4°F to 122°F)
Maximum gross weight in air	500 kg (1100 lbs)
Overall dimensions	1250 mm x 900 mm x 410 mm

MATERIALS:

Skid	Stainless Steel
Controller and sensor housings	Alloy Bronze CA104
Valves, tubing and ROV switches	Stainless Steel
Sample cylinders	Duplex Stainless Steel