



Technology for Precision Measurements



WATER CUT ANALYZERS



REAL-TIME MEASUREMENT

Provides real-time measurement of the amount of water in hydrocarbons flowing through the entire volume of the measurement section. Determines emulsion phase continuously.

TOUCHSCREEN DISPLAY

Observe measurement trends graphed on the high resolution color display.

DATA LOGGING

Convenient data logging functionality for post processing of data time series.

FLOW COMPUTING

Determines Net Oil and Net Water within the Analyzer when provided flow input signaling.

FAST CONFIGURATION

Every Analyzer is one-time factory calibrated for the life of the Analyzer enabling fast configuration in the field.

APPLICATIONS

- Steam Assisted Gravity Drainage (SAGD)
- Fiscal & Custody Transfer
- Pipeline Monitoring
- Automatic Well Testing (AWT)
- Lease Automatic Custody Transfer (LACT)
- Condensate Metering
- Separation Tank Control
- Basic Sediment & Water (BS&W)

PRECISE & REPEATABLE

The metering element is based on the highly responsive oscillator load-pull technology. This offers precise and repeatable measurements that are field proven. For example, a 1% change in water shifts the oscillator by 2MHz.

QUALITY & DURABILITY

These Analyzers are manufactured to the highest standard to provide quality & durability over the long-term. Electronic assemblies are subjected to burn-in cycles. Measurement Sections are inspected and hydrostatically tested. Factory calibration is the final and distinguishing step in the manufacturing process. Phase Dynamics is an ISO 9001 certified company.

CERTIFICATIONS

- CSA Class 1, Div 1, Grp C&D, Zone 1, Grp IIB
- FM Approvals Class 1, Div 1, Grp C&D
- ATEX EEx d IIB T5, PED A1
- CE Mark, Ex II 2 GD

SPECIFICATIONS

Parameter	Low Range			Mid Range	Full Range	High Range
Range	0-4%	0-10%	0-20%	0% - Inversion	0-100%	80-100%
Uncertainty (2 σ)	$\pm 0.04\%$	$\pm 0.04\%$, 0-4% $\pm 0.1\%$, 4-10%	$\pm 0.04\%$, 0-4% $\pm 0.1\%$, 4-10% $\pm 0.2\%$, 10-20%	$\pm 0.5\%$	$\pm 0.5\%$ oil ϕ $\pm 1.0\%$ water ϕ	$\pm 0.6\%$ water ϕ
Repeatability	$\pm 0.02\%$		$\pm 0.1\%$		$\pm 0.1\%$ oil ϕ $\pm 0.5\%$ water ϕ	$\pm 0.6\%$
Resolution	0.01%		0.1%			

Features

- Built-in temperature and density adjustments
- Automated salinity and gas algorithms
- Continuous determination of emulsion phase
- Sensor measures the entire volume of fluids
- Capture function to time-stamp sample grab
- 60 well/stream configuration in each Analyzer

Electronics Enclosure

Explosion proof: aluminum or stainless steel, IP66

Non-explosion proof: fiberglass, NEMA 4X

Display

6-inch color touchscreen, 4-line x 20-character LCD

Power

Supply: 100—240Vac or 24Vdc

Consumption: 18 Watts typical, 33 Watts maximum

Input / Output Interface

Analog I/O 4-20mA, 1x or 5x

Pulse input, 1x or 3x

MODBUS RTU RS-485, 4x

HART v5/6, 1x

Alarm Relay, 2x

Temperature

Ambient: -40°C to $+60^{\circ}\text{C}$

Process: 0°C to $+315^{\circ}\text{C}$

Process Connections

ANSI Class 150# through 1500#

Measurement Section

Flow-through type: 1" through 4"

Configuration shapes: L, Z, U

Insertion type: for pipe diameters ≥ 6 -inches

Insertion connection: 3-inch

Suggested flow-rates: 2 to 14 feet/second

Materials: 316/316L SS, Duplex, Hastelloy

Temperature compensation: built-in RTD sensor

System cable up to 150 feet

Workmanship Standards

- ASME Section IX
- ASME B 31.3
- EN 10204
- NACE MR0175-99