

**WATER CUT ANALYZERS**

**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.

**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.

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<table>
<thead>
<tr>
<th>Parameter</th>
<th>Low Range</th>
<th>Mid Range</th>
<th>Full Range</th>
<th>High Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range</td>
<td>0-4%</td>
<td>0-10%</td>
<td>0-20%</td>
<td>0% - Inversion</td>
</tr>
<tr>
<td>Uncertainty (2σ)</td>
<td>±0.04%</td>
<td>±0.04%, 0-4%</td>
<td>±0.04%, 0-4%</td>
<td>±0.5%</td>
</tr>
<tr>
<td></td>
<td>±0.1%, 4-10%</td>
<td>±0.1%, 4-10%</td>
<td>±0.1%, 4-10%</td>
<td>±1.0% water φ</td>
</tr>
<tr>
<td>Repeatability</td>
<td>±0.02%</td>
<td>±0.1%</td>
<td>±0.1% oil φ</td>
<td>±0.6%</td>
</tr>
<tr>
<td>Resolution</td>
<td>0.01%</td>
<td>0.1%</td>
<td>0.5% water φ</td>
<td>±0.6%</td>
</tr>
</tbody>
</table>

**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°C
Process: 0°C to +315°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