



По вопросам продаж и поддержки обращайтесь:
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Phase Dynamics

Parts Per Million Water-In-Oil Analyzers



- 10 ppm to 1,000 ppm Water
- 1/2" Flow-Through Tubing Connections
- High Pressure - to 3,000 psi
- On-Line Measurement
- Recovers from 100% Water Without Damage to Sensor
- Responds Quickly to Increasing Water Content

- **New Generation Sensor and Electronics**
- **CSA, FM, CE, EEX Available**
- **Temperature Probe Included**
- **Density and Flow Capability**

- **Oil Field Proven Rugged Design**
- **ModBus RTU & 4-20 mA**
- **24 VDC or 120/220 VAC Power**
- **Operator Interface System With Color Touch Screen**

Typically used for measurement in liquid propane, propylene and other pipelined products to determine when incoming product exceeds required moisture levels. The analyzer can also be used to detect heat exchanger break through to protect expensive catalyst beds. Flexibility for the user is provided through the use of stainless steel tubing to connect anywhere in the process where a 10 psi pressure drop can be obtained. A flow rate of 3 to 7 liters per minute is sufficient.

Zero validation with an alternative molecular sieve bed is available. Phase Dynamics' Analyzers offer the most reliable, maintenance free measurement possible. The system utilizes the patented, "Oscillator Load Pull" microwave technology which provides the reproducibility and accuracy required for these applications. This technology coupled with the Company's patented use of aluminum oxide beads provides the process measurement to ppm levels.

All functions of the analyzers are accessed through use of an Operator Interface System which includes a color touch screen. Output is MODBUS-RTU and 4-20 mA current loop. Full digital access to the information is standard. Measurement Section Electronics is explosion proof. Temperature measurement is included. The system is insensitive to small density changes.



PPM Water Analyzer Operational Specifications



PARAMETER	Range	Comments
RANGE	10 ppm to 1,000 ppm	Response Time is Determined by Flow Rate
UNCERTAINTY	+/- 20 ppm	
REPEATABILITY	+/- 10 ppm	
RESOLUTION	1 ppm	
FLUID TEMPERATURE	32 - 300° F	
FLOW RATE	3 to 7 liters/minute	
RESPONSE TIME (Minutes)	10 minutes	To Achieve 80% of Final Value – Responds within seconds for a step change in water

System Specifications

General:

Power Requirements:

18-28 VDC
120/220 VAC Optional
15 Watts Typical, 27 Watts Maximum

Outputs:

Analog: 4-20ma, 12 bit D-to-A Conversion
Digital: RS-485 Modbus RTU

Fluid Temperature Compensation:

Automatic with Built-in RTD Temperature Probe
Temperature Averaging

Ambient Temperature Ranges:

Measurement Section: -40° to +120° F
Electronics: +32° to +120° F

Fluid Temperatures:

Standard 32° to 300° F

Electronics Enclosures:

3 or 6 Conduit Entry Explosion Proof Enclosures: 17.4 H x 14.0 W x 9.9 D inches; 59 lbs., NEMA 7; Class 1, Div. 1, Groups C & D; EEx d IIB T5 89°C

Rain and Dust Tight Fiberglass Enclosure: 16.3 H x 10.5 W x 7.9 D inches; 17 lbs., NEMA 4X

Touch Screen Display:

Full Color plus Graphics & Compact Flash Card for Data Storage

Measurement Section:

Pressure Ratings:

Fitting Dependent

Construction:

316/316L Standard; Other Materials Available; Designed and Fabricated per ASME B31.3 & ASME IX; Full Material Certifications Optional

Process Connections:

1/2" Swagelok Fittings; Others Optional

Cables:

Between Standard Analyzer Measurement Section and Electronics Enclosure:

Dedicated 19 Conductor, 22 AWG, 3 Twisted Pairs, 1/2" Diameter, Special Factory installed Military Connector (armored cable not available). 150 feet Maximum Length between Electronics and Measurement Section; typically in Conduit. A 14 gauge ground wire MUST be connected between measurement section and main electronics to assure proper operation and meet FM requirements.

Certifications:

Explosion Proof Enclosures; CSA, FM, ATEX/PED (Optional)
NEMA4X Fiberglass Enclosure CSA Approved (Optional)

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