

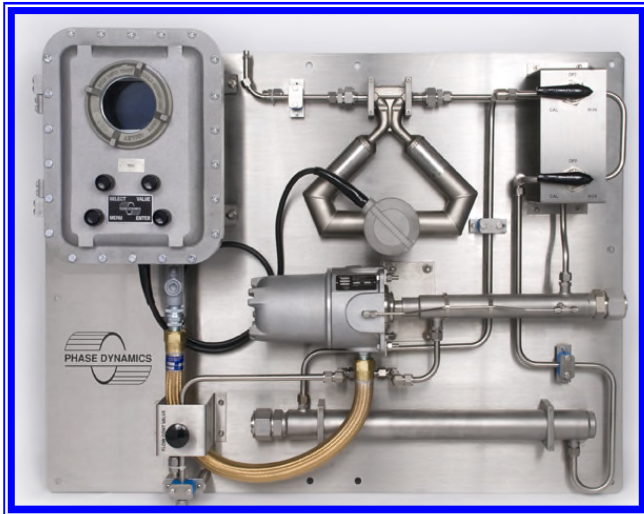


Phase Dynamics

Technology for Precision Measurements

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Parts Per Million Water-In-Condensate Analyzers



- **0 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**
- **Zero Check With Molecular Sieve**

- **CSA, FM, ATEX & PED**
- **RTD Temperature Measurement**
- **Configurable 4-20mA & Alarm**
- **Density Measurement**
- **Loop Flow Rate Indication**

- **USB Data Logging capability**
- **Color Touch Screen Interface**
- **Modbus RTU, HART**
- **24 VDC, 120 VAC and 230 VAC**

Typically used for measurement in liquid condensate lines, olefin processing and ppm level of water in hydrocarbons. It is used 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. A 10 psi pressure drop will assure appropriate flow rates of 3 to 7 liters per minute. Zero validation with a molecular

sieve bed switched in before the analyzer.

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.

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. Full digital access to the information including an on board USB logging is standard.

PPM Water Analyzer Operational Specifications

PARAMETER	Range	Comments
RANGE	0 ppm to 1,000 ppm	
UNCERTAINTY	20 ppm	
REPEATABILITY	+/- 10 ppm	
RESOLUTION	1 ppm	
FLUID TEMPERATURE	32 - 300° F	
FLOW RATE	3 to 7 liters/minute	
RESPONSE TIME	Instantaneous When Process Changes	To Achieve 80% of Final Value Depends upon Flow Rate

System Specifications

Measurement Section:

Construction:

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

Certifications:

CSA Class 1, Div. 1, Groups C&D
FM Approval
CE Mark, Ex II 2 GD
Ex d IIB T5

Process Connections:

0.5 inch Tubing, Swagelok or Gyrolok

Electronics Enclosure:

4 Conduit Entry Explosion Proof Enclosure:
17.4 H x 14.0 W x 9.9 D inches; 59 lbs., NEMA
4X,7,9
Class 1, Div. 1, Groups C & D; Ex d IIB T5

Outputs & Alarms:

Outputs Analog: 4-20mA, Enhanced 1each,
Expanded 5 each
Outputs Digital: 4 MODBUS RTU, HART Optional

Includes Field Definable Relay, NO or NC Rated 1A,
120V
System Error Relay, NO or NC, Rated 1A, 120 V

Process/Ambient Temperatures:

Fluid Temperature Compensation:

Automatic with Built-in RTD Temperature Probe

Ambient Temperature Ranges:

Measurement Section: -40° to +140° F

Electronics: +32° to +140° F

- 40° to +140° F (With Optional Heater)

Operational Fluid Temperatures:

Standard 32° to 220° F, Optional 32° to 300° F

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 installed in Flexible Conduit 316
Stainless Steel with glands.

Certifications:

Explosion Proof Enclosures; CSA, FM, ATEX/PED
(Optional)
NACE MR0175

Power Requirements:

18-28 VDC

120-230 VAC 50-60 Hz (Optional)

16 Watts Typical, 29 Watts Maximum, 36 Watts
Expanded