



ASPROC

Water in TEG - MEG Analyzers

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Phase Dynamics

Technology for Precision Measurements

Water in TEG, MEG & EG Analyzers



- **0-10%, 0-20% Ranges Available**
- **Full Factory Calibration**
- **Temperature Compensated**
- **TEG, MEG, and EG Capable**
- **Flow-Through Analyzers in 2" 3" and 4" Pipe Sizes**

- **CSA, FM, ATEX & PED**
- **RTD Temperature Measurement**
- **Configurable Current Loop & Alarm Outputs**
- **Net Oil and Net Water (With Flow Input)**

- **24 VDC, 120 VAC and 230 VAC**
- **Touch Screen Electronics Provide Data Logging & Other Capabilities Including Graphics**
- **MODBUS RTU Interface**

These Water in TriEthyleneGlycol (TEG) Analyzers were developed specifically for TEG, EG and MEG use in the petroleum industry. The TEG Analyzer is typically used to monitor the glycol to assure the water is not too high before returning it to the process. Flexibility for the user is provided for through various configurations from 2" through 4" diameter measurement sections.

The Analyzer is calibrated with TEG, MEG or EG at the factory and includes temperature compensation. Phase Dynamics utilizes the unique, patented, "Oscillator Load Pull" microwave technology which provides for the ability to measure these difficult chemicals. All functions of the analyzers can be accessed through the front panel by four push button switches.

The color touch screen indicates the measurement value as well as temperature, net oil, net water (with flow meter input). Full digital Modbus RTU provides access to the entire technical and process information. Electronics are available in NEMA 4 or explosion proof enclosures depending upon the application's requirement.



TEG Analyzer Operational Specifications

PARAMETER	Low Range	
RANGE	0-10%	0-20%
UNCERTAINTY*	+/- 0.2 %	+/- 0.2% 0 -10% +/- 0.3% 10% -20%
REPEATABILITY	+/- 0.05%	+/- 0.1% 0 - 10% +/- 0.2% 10% - 20%
RESOLUTION	0.01%	0.01%
FLUID TEMPERATURE	10 - 80° C	10 - 80° C

* All percentages are expressed as absolute water content percentages within a 2 Sigma deviation (95% Confidence). The wider the operational temperature range the larger the uncertainty.

General System Specifications

Measurement Section:

Pressure Ratings:

Flange Sizes up to ANSI 1,500; Raised Face Flanges Standard;
RTJ and Flat Face Optional

Construction:

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

Certifications:

Class 1, Div. 1, Groups C&D;
EEx d IIB T5 78°C

Process Connections:

TEG Analyzers: 2, 3, 4 inch Flanges

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

See Figure 1

8 Conduit Entry Explosion Proof Enclosures:

17.4 H x 14.0 W x 11.9 D inches; 71 lbs., NEMA 7; Class 1,
Div. 1, Groups C & D; EEx d IIB T5 89°C

See Figure 1

Rain and Dust Tight Fiberglass Enclosure:

16.3 H x 10.5 W x 7.9 D inches; 17 lbs., NEMA 4X;

See Figure 2

Alarms:

Any Electronics Enclosure:

Includes Dry Contact Closure Rated 1 Amp, 120 VAC, Field
Definable Setpoint

System Error Dry Contact, NO or NC Rated 1 Amp, 120 VA

Process/Ambient Temperatures:

Fluid Temperature Compensation:

Automatic with Built-in RTD Temperature Probe

Ambient Temperature Ranges:

Measurement Section: -40° to +120° F

Electronics: +32° to +120° F

- 40° to +120° F (With Optional Heater)

Operational Fluid Temperatures:

Standard 32° to 160° F

Optional 32° to 220° F

Temperature Compensation Uncertainty Depends upon
Operational Fluid Temperature Range

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)





Enhanced Electronics:

Power Requirements:

18-28 VDC
120-230 VAC 50-60 Hz (Optional)
16 Watts Typical, 27 Watts Maximum

Outputs:

Analog: 4-20mA, 16 bit D-to-A Conversion
Digital: Four (4) RS-485 Modbus RTU, HART

Inputs:

Frequency: Voltage or Magnetic Pickup Pulse
(3mV to 15V max.) with Field Selectable
Definition
Analog: 0-20 or 4-20 mA, 16 bit A-to-D
Conversion with Field Selectable Definition

Expanded Electronics:

Power Requirements:

18-28 VDC
120-230 VAC 50-60 Hz (Optional)
16 Watts Typical, 28 Watts Maximum

Outputs:

Analog: Five (5) 4-20mA, 16 bit D-to-A
Conversion
Digital: Four (4) RS-485 Modbus RTU, HART

Inputs:

Frequency: Three (3) Voltage or Magnetic Pickup
Pulse (3mV to 15V max.) with Field Selectable
Definition
Analog: Five (5) 4-20mA 16 bit A-to-D Conversion
Field Selectable Definition

