

Water Cut Analyzer Operational Specifications

PARAMETER	Low Range		Mid Range	Full Range	High Range
RANGE	0-4% & 0-10%	0-20%	0-Inversion	0-100%	80-100%
UNCERTAINTY*	+/- 0.04% (0-4%) +/- 0.1% (4-10%)	+/- 0.2% Oil Phase Only	+/- 0.5% Oil Phase Only	Oil Phase +/- 0.5% Water Phase +/- 1%	+/- 0.6% Water Phase Only
REPEATABILITY	+/- 0.02%	+/- 0.1%	+/- 0.1%	Oil Phase +/- 0.1% Water Phase +/- 0.5	Water Phase +/- 0.3%
RESOLUTION	0.01%	0.1%	0.1%	0.1%	0.1%
FLUID TEMPERATURE	60 - 160° F	60 - 160° F	60 - 160° F	60 - 160° F	60 - 160° F
HIGH TEMP. VERSION	60 - 220° F	60 - 220° F	100 - 600° F	100 - 600° F	100 - 600° F
SALINITY	Not Applicable	Not Applicable	Not Applicable	0.5% - 8% Water Φ Oil Φ Not a Factor	0.5% - 8% Water Φ

* All percentages are expressed as absolute water content percentages within a 2 Sigma deviation (95% Confidence).

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 - IP66 (Optional)

Process Connections:

Low Range Analyzers: 1, 2, 3, 4 inch Flanges and Insertion Type in 3" Flange
All Other Analyzers: 2, 3, 4 inch Flanges Insertion in 3" Flange

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 4, 7, 9 & 4X;
Class 1, Div. 1, Groups C & D; EEx d IIB T5 89°C - IP66 (Optional); [See Figure 1](#)

8 Conduit Entry Explosion Proof Enclosures:

17.4 H x 14.0 W x 11.9 D inches; 71 lbs., NEMA 4, 7, 9 & 4X;
Class 1, Div. 1, Groups C & D; EEx d IIB T5 89°C - IP66 (Optional); [See Figure 1](#)

Rain and Dust Tight Fiberglass Enclosure:

16.3 H x 10.5 W x 7.9 D inches; 17 lbs., NEMA 4; [See Figure 2](#)

Alarms:

Stand-Alone Integral Transmitter: Does not include any relays

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; Sun Shade Recommended
- 40° to +120° F (With Optional Heater)

Fluid Temperatures:

Standard 60° to 160° F
Optional 60° to 220° F
Optional 100° to 400° F
Optional 100° to 600° F
Lower Temperatures Optional

Cables:

Between Standard Analyzer Measurement Section and Electronics Enclosure:

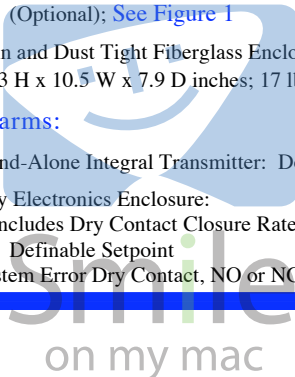
Dedicated 19 Conductor, 22 AWG, 3 Twisted Pairs, 1/2" Diameter, Special Factory installed Military Connector (armored cable not available). 150 feet Maximum Length between Electronics and Measurement Section; typically in Conduit. A 14 gauge ground wire MUST be connected between measurement section and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

Between Stand-Alone Analyzer and Optional Electronics:

Optional 9 Conductor Composite Cable (2 Twisted Pairs 24 AWG, 1 Twisted Pair 20 AWG, 3 Conductors 18 AWG), PVC Jacket (armored cable available). Nominal Diameter 9.68 mm (fits 1/2" conduit). 400 feet Maximum Length.

Certifications:

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



Power & Electronics Specifications

Stand-Alone Analyzer:

Power Requirements:
18-28 VDC
25 Watts Typical, 50 Watts Maximum

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

Standard Analyzer:

Power Requirements:
100-130 VAC 60 Hz (50 Hz Optional)
200-260 VAC 50-60 Hz (Optional)
18-28 VDC (Optional)
25 Watts Typical, 50 Watts Maximum

Outputs:
Analog: Field Selectable 0-20mA or 4-20ma, 12 bit D-to-A Conversion
Digital: Modbus RTU RS-485 Standard, RS-485 ASCII (Optional), RS-422 ASCII (Optional), HART (Optional)

Inputs:
Frequency: Voltage or Magnetic Pickup Pulse (3mV to 15V max.) with Field Selectable Definition
Analog: 0-20 or 4-20 mA with Field Selectable Definition

Enhanced Electronics:

Power Requirements:
18-28 VDC
120-230 VAC 50-60 Hz (Optional)
25 Watts Typical, 50 Watts Maximum

Outputs:
Analog: 4-20mA, 16 bit D-to-A Conversion
Digital: Four 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)
25 Watts Typical, 50 Watts Maximum

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

Inputs:
Frequency: 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

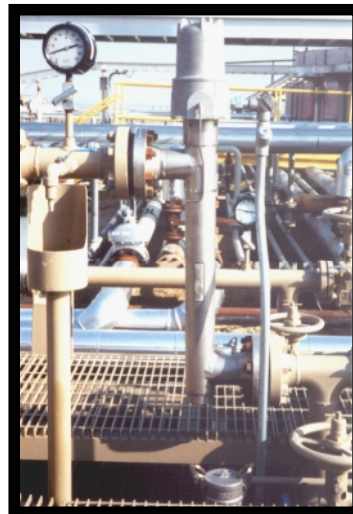


← Insertion Analyzer
Group Line Testing
Pipelines
Well Testing
Emulsion Interface Control



↑ Flow-Through
Group Line Testing
Pipelines
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