

NUFLO™

Watercut Monitor

The NuFlo Watercut Monitor is a solid state electronic instrument that determines the percent watercut in an oil emulsion without requiring the physical separation of the fluids. The capacitance probe technique employed by the Watercut Monitor allows the emulsion stream to be continuously surveyed. The frequency generated by the capacitance probe oscillator is determined by the watercut of the emulsion stream in the probe. The Watercut Monitor compensates for the non-linear relationship between frequency and watercut by strictly digital techniques. The result is a 4-20mA output signal which varies linearly with watercut. The 4-20mA output of the Watercut Monitor may be a completely floating signal because of the use of opto-isolation circuitry. This mode of operation requires the optional isolating power supply board or the use of two external power supplies. The Watercut Monitor may be operated with a single external power supply if a floating output signal is not required.

Specifications

Power Supply

- Watercut Monitor: 12-30 VDC, 150mA Max., 5mV peak to peak Max. ripple
- Analog Output: 24-48 VDC, 20 mA Max., 5mV peak to peak Max. ripple (Refer to Table 1)
- Temperature Range: 0-158°F
- Probe Size: 2-in.- 6-in. (Refer to Table 2)
- Probe End Connections: 2-in.- 6-in. (Refer to Table 2)
- Watercut Range: 0-100% Standard, other ranges available be special request
- Output: 4-20mA linear signal representing 0-100% watercut (standard)
- Accuracy: 1% over 0-100% range with homogeneous emulsion



Approvals

- Explosion Proof CSA
- EExia IIB T3

Table 1 – Current Loop Specifications

Supply Voltage	Maximum Load
24 VDC	450 ohm
28 VDC	600 ohm
32 VDC	700 ohm
40 VDC	800 ohm
48 VDC	1000 ohm

Table 2 – Capacitance Probe Specifications

Flanged Ends			Grooved Ends			Threaded Ends		
Probe Size (in.)	Flange Rating ANSI	Flange Face-to-Face Length (in.)	Nominal Size (in.)	Grooved Ends (in.)	Length (in.)	Nominal Size (in.)	Grooved Ends (in.)	Length (in.)
2	150	10.0	2	2 ES	10.0	2	2 API LP	10.0
	300	10.0	3	3 ES	12.0			
	600	10.0	4	4 ES	12.0			
3	150	12.0	6	6 ES	12.0			
	300	12.0						
	600	12.0						
4	150	12.0						
	300	12.0						
	600	12.0						
6	150	12.0						
	300	12.0						
	600	12.0						

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