Model WCM 7300M

Bulletin SSIN016 Issue/Rev. 0.2 (1/23)

Temperature Compensated Water Cut Monitor (WCM)

The Model WCM 7300M is designed to provide the highest possible sensitivity, resolution, and accuracy for water content determination in crude oil, other hydrocarbons, or other low dielectric liquids from a maximum of 25% to 1,000 parts per million (ppm). In oil and natural gas (condensate) production, water cut measurements are significantly improved with the WCM 7300M technology. Enhanced digital signal processing and full product temperature compensation are two of the technological advancements applied by this device. Probe sizes from 2 inch (") through 12" are available. 4-20 milliampere (mA) and 0-5 volts (V) outputs are available for remote readout. Water cut, process temperature, or probe electrical value can be selected for viewing without removing condulet cover by use of a supplied magnet to operate an internal reed switch.

Product Temperature Compensation

The base dielectric constant (Dk) of oils can change with changes in temperature. This can cause traditional monitors to change without a variance in water content. For example: For a 10 °F change, a typical crude oil may show a reading shift of as much as 0.1%, which normally would be considered as water. The WCM 7300M measures product temperature and calculates a corrected cut reading, providing a true water or sediment and water (S&W) cut at any temperature between 25 °F and 160 °F.

Applications

- LACT (Lease Automatic Custody Transfer) units—Detect and provide relay contact closure that can be used to reroute oil that has excess water cut.
- Pipeline loading—Monitor the transfer of petroleum/condensate products from loading facilities.
- Dehydration equipment—Determine and enhance equipment efficiencies by monitoring the product and indicating water content.
- Fuel oil monitoring—Determine contamination of fuel oil by condensation or other external factors before entry to engine.
- Storage and treating facilities—Monitor and detect undesirable conditions, as well as interface detection during dewatering of storage tanks.

Specifications

Power Supply

20-30 volts direct current (VDC) +/-10% at nominal, 100 mA maximum

S&W Full Scale Range

0-25%

Accuracy

Accuracy is defined as the variance observed between the 7300M reading and the water grind out of the oil.

The normal variances are:

- +/- .05 from 0 to 5% water
- +/- .1 from 5 to 10% water
- +/- .15 from 10 to 15% water
- +/- .2 to .25 from 15 to 25% water

Displays

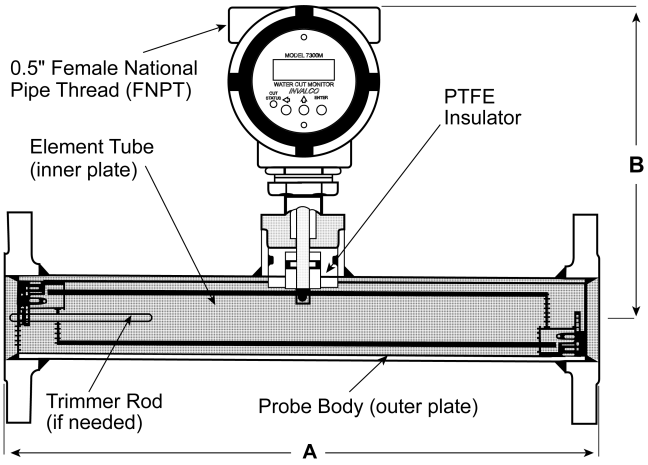
One line 16 character, alphanumeric liquid crystal display (LCD) showing by selection:

- Water cut
- Process temperature
- Probe electrical value

The red/green light-emitting diode (LED) shows good oil, bad oil, or by passing, condition.

Dimensions

Inches to the nearest tenth (millimeters to the nearest whole mm), each independently dimensioned from respective engineering drawings.



Standard Sizes			
Size	**Dimension A**	**Dimension B**	**Weight (lb)**
2 Inch	17.0" (431)	8.6" (218)	20
3 Inch	32.0" (811)	9.0" (228)	45
4 Inch	32.0" (811)	9.5" (241)	72
6 Inch	32.0" (811)	10.5" (266)	127
8 Inch	32.0" (811)	11.5" (291)	190
10 Inch	32.0" (811)	12.6" (319)	268
12 Inch +	Consult the factory.		

Approvals

UL certified Class I Div. 1 Groups C & D

Modeling Code and Ordering Information

WCM 7300M	Water Cut Monitor: Digital, Temperature Compensating, Ranges from 0 - 20% Water Probe Material: Carbon Steel						
|	**Code**	**Probe Body Size**					
|	2	2 inch inside diameter (ID) x 17 inch face to face					
|	3	3 inch ID x 32 inch face to face					
|	4	4 inch ID x 32 inch face to face					
|	6	6 inch ID x 32 inch face to face					
|	8	8 inch ID x 32 inch face to face					
|	|	**Code**	**Screwed Ends**				
|	|	00	Screwed ends (to 3 inch only)				
|	|	00	Grooved ends/Victaulic (to 3 inch only)				
|	|	00	150 lb ANSI raised face				
|	|	30	300 lb ANSI raised face				
|	|	60	600 lb ANSI raised face (SCH 80)				
|	|	90	900 lb ANSI raised face				
|	|	05	150 lb. ANSI RTJ				
|	|	35	300 lb ANSI RTJ				
|	|	65	600 lb ANSI RTJ (SCH 80)				
|	|	95	900 lb ANSI RTJ (SCH 80)				
|	|	115	1500 lb ANSI RTJ (SCH 80)				
|	|	|	**Code**	**Material and Temperature Options**			
|	|	|	B	Standard materials, A53B carbon steel, 0-160 ° F			
|	|	|	H	Standard materials/high temperature, 0-375 ° F			
|	|	|	S	316 stainless steel materials, 0-160 °F			
|	|	|	T	316 stainless steel/high temperature, 0-375 ° F			
|	|	|	|	**Code**	**Connection Style**		
|	|	|	|	S	Screwed connections, male national pipe thread (MNPT)		
|	|	|	|	G	Victaulic connections (grooved)		
|	|	|	|	F	Flanged connections		
|	|	|	|	|	**Code**	**Open**	
|	|	|	|	|	P	Epoxy	
Example:	|	|	|	|	|		
WCM 7300M -	**4**	**60 -**	**B**	**F**	**P**	**=**	**WCM 730 - 460 - BFP**
Choose one code selection from each option group to build model number.							

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