

WIO-300 Series

INLINE OR BYPASS WATER CUT ANALYSER



Water Cut



Capacitive



Smart Sensor



WIO-300 Series

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Advanced Sensors EX rated WIO-300 series is a range of Water Cut analysers that measure the amount of water in oil to high levels of accuracy. Water Cut is also referred to as Water in Oil, BS&W, OWD or WFM. The smart sensor technology uses a capacitive method to measure the percentage of water contained within the sample, with a large measurement range from a few 100ppms to 100% water*. No need for a separate controller, all technology including display and controller is included in the sensor. Optionally, it can come as a blind system without display.

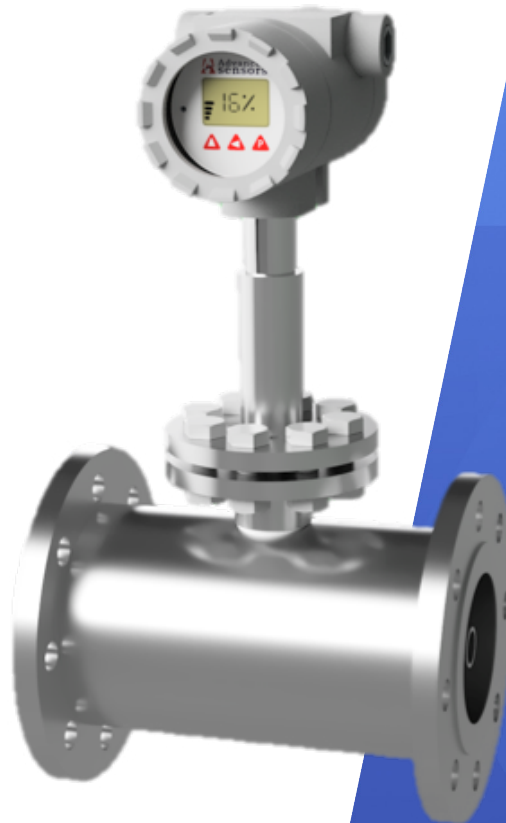
If the measurement point is not homogenized, a static mixer can be added to provide the analyser with a true representation of the sample. The static mixer elements are fitted in accordance to ISO 3171 and API MPMS8.2.

The range includes three models

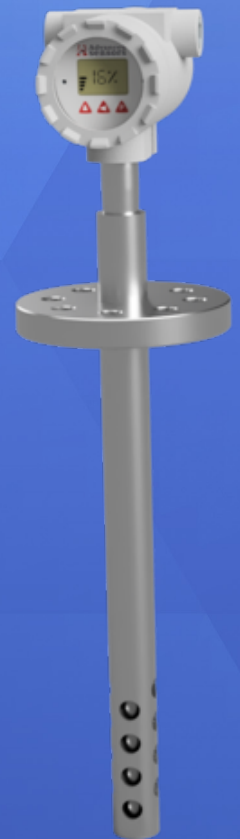
WIO-300S	1-8 Inch spool section format
WIO-300K	4-32 Inch Iso Kinetic, spool section format
WIO-300P	8-48 Inch Insertion/Extraction



WIO-300S



WIO-300K



WIO-300P

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APPLICATIONS

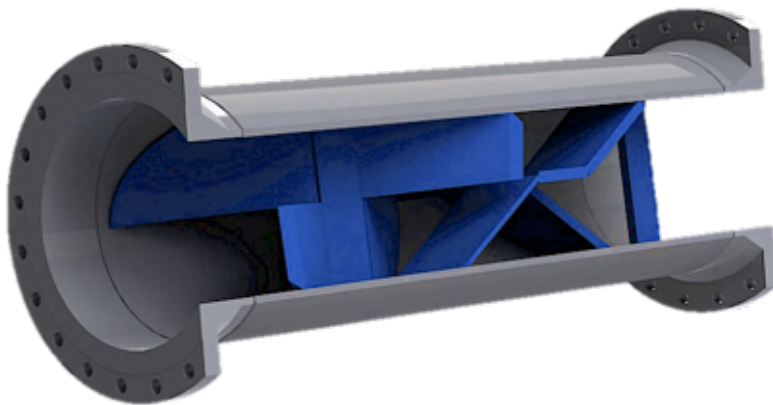
Applications include Tank Dewatering, Oil Skimming, Interface Detector, Antifoam and Demulsifier chemical feed systems, Waste-water treatment, Desalter control, Automatic tank dewatering, Oil produced from the separator, Oil that is flowing from the well, Crude oil transferred in pipelines and loading tankers.

BENEFITS

- Smart sensor, no need for a separate controller
- Three models allowing the analyser to accommodate a vast variety of piping specifications
- Option to combine the Water Cut with Advanced Sensors Oil in Water Analysers
- Low power consumption
- Easy to use and install
- Bypass and inline options
- ATEX or FM/UL Explosion Proof

FEATURES

- High level of accuracy +/-0.05% up to 5% water cut
- Large measurement range 200ppm to 100% water in oil*
- Optional static mixer
- Optional spool section
- Temperature compensation
- 4-20mA and Hart communications
- Iso Kinetic Sampling in the WIO-300K and WIO-300P
- Optional Hot Insertion/Extraction Kit for WIO-300P



Static Mixer



Hot Extraction/ Insertion Tool

Measurement Performance		
Measurement principle	Capacitance	
Range and accuracy*	+/-0.01% up to 1% water cut +/-0.05% up to 5% water cut +/-0.1% from 5% to 10% water cut +/-0.2% from 10% to 25% water cut +/-0.5% from 25% to 65% or 100% (sweet water) water cut	
Resolution	0.003%	
Response time	1 sec	
Temperature Compensation	Yes	
Operating Conditions		
Process temperature	0-120°C standard version, 0-240°C high temperature version	
Process pressure	Up to 100bar _g depends on flange rating	
Operational ambient temperature	-40 to +65°C	
Utilities		
Power	24VDC	
Certification		
Ingress Protection	IP66/67 Nema 4X&7	
Certification	IECEX	Ex db IIC T4 Gb Ta= -20 to +60°C
	CSA/UL	Class I Zone 1 AEx db IIC T6 Gb Ex db IIC T4 Gb Class I Division 1 Gr. ABCD T4/T5 Ta= -20 to +60°C
	ATEX	Ex II 2 G Ex db IIC T4 Gb Ta= -20 to +60°C
Pressure Certifications	PED (EU Zone) limited to size/pressure that falls within SEP	
Weight & Dimensions (for shipping)		
Length	WIO-300S: 1 inch: 220mm 1.5 inch: 330mm 2-8 inch: 430mm WIO-300K: From 430mm WIO-300P: Depends on the configuration	
Length with static mixer	Application dependent	
Insertion Port (WIO-300P)	2 or 3 inch	
Weight and full dimensions	Depends on the configuration. Please contact Advanced Sensors about your application	
Communications		
4-20mA	Yes	
Hart	Yes	
Additional Information		
Hot insertion/extraction	ANSI 150, ANSI 300, ANSI 600	
Wetted parts	SS316L, Duplex, Super Duplex, Hastelloy	
Enclosure material	SS316L or Aluminium	

*Range will depend on operating conditions; in general, 0-65% for most applications and up to 100% for example sweet water. Please contact Advanced Sensors to discuss your application needs.