

# PULSONIC AVOCET

## SLUDGE BLANKET MONITOR



### Installation and Operation

The Ultrasonic Transducer is immersed just below the surface of the water and pointed directly at the bottom of the tank. The Avocet uses time of flight echo processing and advanced algorithms to lock on the true sludge interface level and ignore the floating solid particles and troublesome rag layers. The unique algorithms have been designed to automatically filter all floating particles and electrical noise interference for unmatched performance.

A simple 3-button keypad is used by the operator to input the tank depth. The Avocet automatically does the rest with its advanced echo processing and signal gain adjustment. The LCD screen displays the echo profile for visual confirmation of the sludge level relative to the tank bottom. A 4-20mA signal is provided proportional to the sludge level for SCADA input.

To overcome build up of solids on the sensor an air purge facility removes debris and reduces the need for continual maintenance.

Alarm states can be programmed for sensor failure/scum detection and high level sedimentation. An optional data storage facility enables the operator to observe the sedimentation performance over any historical period.

The Avocet sets itself apart from other sludge blanket monitors by using extremely high ultrasonic frequencies of 1.1 MHz, and coupled with advanced signal processing, this allows the detection of very small particles even in hostile environments.

### Applications

The Avocet is used to monitor and control the blanket level in settlement tanks for a wide range of industries and applications, including;

- Primary Sedimentation
- Secondary and Final Clarifiers
- Remote Settlement Tanks
- Sludge Thickeners
- DAF Tanks
- Sequential Batch Reactors (SBR)
- Lamella Clarifiers
- Counter Current Decantation (CCD) Tanks
- Mining & Process Settling Ponds and Lagoons

The Avocet is particularly suited for identifying auto-desludging and overflow alarm signals and for monitoring the general biological health of thick sludge blankets.

### Benefits

- Sediment relative density throughout the tank shown on LCD display.
- Improved efficiency and control of the treatment process.
- Warning of biological upset or hydraulic imbalance.
- Reduce site operational costs significantly with improved process control.
- Reduced sensor maintenance (air purge cleaning).
- Improves health and safety as no manual readings are needed.



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### TECHNICAL SPECIFICATION

<b>Technology/Operation</b>	
<b>Measuring Principle</b>	Underwater ultrasonic sludge level measurement
<b>Measuring Range</b>	0.6-12 metres (2-39 ft)
<b>Performance</b>	
<b>Accuracy</b>	+/- 0.03m
<b>Resolution</b>	0.003m
<b>Response Rate</b>	Fully adjustable
<b>Echo Processing</b>	Sophisticated algorithms using 32 bit Digital Signal Processing
<b>Power Supply</b>	115/230 VAC
<b>Outputs and Communications</b>	
<b>Analogue</b>	1 4-20mA output, 750Ω
<b>Digital</b>	4 SPDT programmable relays, 5A @ 230 VAC (2 user programmable, 1 purge control, 1 LOE)
<b>Telemetry (optional)</b>	Site specific, range up to 2 miles (3km)
<b>Communication</b>	Standard RS232, optional RS485
<b>Programming</b>	
<b>User Interface</b>	3-button keypad with menu driven programming
<b>Echo Profile</b>	Graphical LCD display of raw echo profile
<b>Programming Security</b>	Password protected
<b>Data Integrity</b>	Non-volatile RAM
<b>Environment</b>	
<b>Temperature Range (electronics)</b>	-20°C to +60°C (-4°F to +140°F)
<b>Outdoor Rating</b>	IP65, UL Approved Enclosure with UV Protected Clear Lid
<b>Design</b>	
<b>Dimensions</b>	280 x 219 x 156 mm (11.0 x 8.6 x 6.1 inch)
<b>Cable Entry</b>	8 Available for Wall Mount: 1xM12, 1xPG9, 5xM20 bottom row
<b>Mounting</b>	2 Fixed Holes & 1 Hanging Hole, Optional DIN Rail Tabs
<b>Enclosure Material</b>	Polycarbonate, flamae resistant to UL94-5V
<b>Weight</b>	Approximately 1.4Kg (3 lbs)
<b>Transducer Specifications</b>	
<b>Standard Cable Length</b>	20 metres (66 ft), optional custom lengths
<b>Cable Specification</b>	Shielded Coax Cable
<b>Maximum Cable Run</b>	50 metres (150 ft)
<b>Temperature Range (Transducer)</b>	-40°C to +95°C (-40°F to +200°F)
<b>Dimensions</b>	50mm diameter x 75mm length (2 x 3 inches)
<b>Mounting</b>	1 inch NPT Male Thread
<b>Material</b>	PVC Housing, IP68 Rating
<b>Beam Angle &amp; Frequency</b>	6° total, 12. MHz
<b>Cleaning</b>	Hose Tail Air Pipe Connector for Air Purge
<b>Cleaning Frequency</b>	User-programmable, 1-720 minutes (12 hours)
<b>Weight</b>	Approximately 0.5 Kg (1 lbs)

Note: In line with our aim of continuous product improvement, these specifications are subject to change at any time without notice. Pulsonic Technologies take no responsibility for the use of these figures. All figures quoted are based on test conditions and may be subject to variation due to environmental conditions.