



## Pipeline Model PSA-AV

### *Area Velocity Smart Sensor*



#### Proven Technology with Innovations

The Pipeline Model PSA-AV is an integrated area velocity flow sensor. It combines proven pressure depth and continuous wave Doppler velocity technologies with innovative sensor level signal processing performed within the sensor. This combination results in vastly improved sensor accuracy and stability.

#### Velocity Sensor

The sensor employs continuous wave Doppler velocity technology which has been proven in open channel flow metering applications for over 25 years. Additionally, the sensor uses Progressive Spectral Analyzer technology (PSA-Patent Pending), which improves the quality of the signal, the accuracy of the readings, and reduces the power consumption.

#### Level Sensor

The pressure level sensor has a 100% piezoresistive ceramic pressure sensor which is being used for the first time at this price point in the sewer flow metering industry. This technology offers improvements over the previously used pressure depth measurement technologies because it has a rugged, reinforced structure. This enhancement provides more durability in hostile and corrosive sewer environments. The ceramic sensor ensures high linearity across the entire range of measurements and reduces the effects of hysteresis and sensor drift.

The sensor-to-water interface is a unique Teflon protected membrane that will not puncture or foul from debris in the water.

#### Signal Processing in the Sensor

The sensor processes the data within inches of the real-world signal it is sensing. This means that all signal processing power is applied toward producing the best measurement possible and therefore it does not have to try to separate the "good" signal from electronic noise introduced by the sensor cable. The sensor delivers the processed measurements to the logger over industry standard RS-485 serial communication using Modbus Communication Protocol (an industry standard communication protocol).

#### Fit for Duty

The sensor's cable is the smallest diameter cable available in the market today. This is important because a smaller cable minimizes obstructions to the flow.

Additionally, a thinner cable is much easier to manage during installation and maintenance. The cable is terminated with an industry proven connector to ensure no moisture interferes with the transmission of data.

#### Flow Measurement Options

This sensor connects directly into a Telog Recording Telemetry Unit, RV33 or FW33, FloWav ShortBoard Models 1000 and 2000, and other SCADA systems with a Modbus RTU platform.



#### Proven Technology

- Stable pressure depth technology
- Continuous wave Doppler velocity

#### Innovations

- Progressive Spectral Analyzer (Patent Pending)
- Sensor Level Intelligence - SLI (tm)
- Integrated wireless communication
- 100% ceramic piezoresistive crystal construction
- Sensor level signal processing
- Minimal power consumption
- USB communications cables available



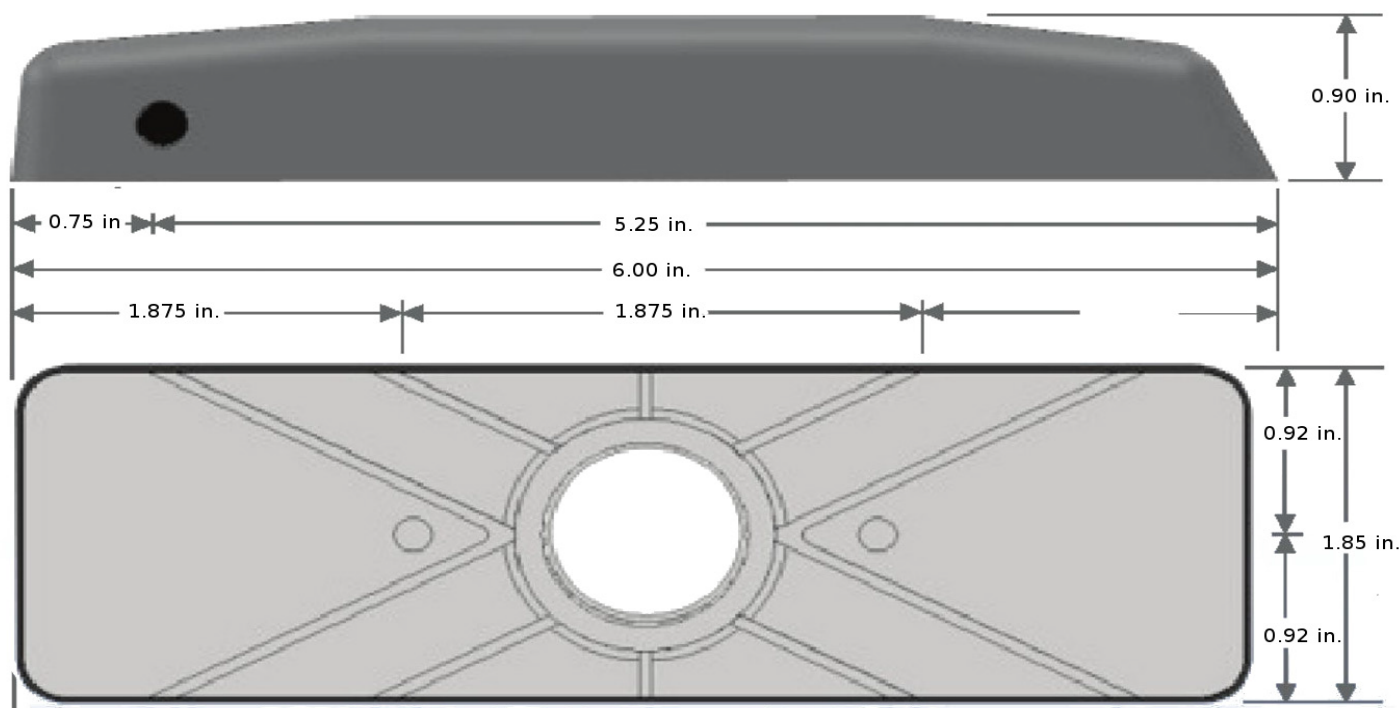


## Pipeline Model PSA-AV Specifications

General	
Type	Combined Doppler Velocity and Pressure Depth with temperature compensation
Material	Epoxy encapsulated PVC housing
Dimensions	0.9 by 1.85 by 6.0 in. (H x W x L)
Cable	Black polyurethane jacket with vent tube
Cable Diameter	0.250 in. +/- 0.005 in.
Cable Length	35 feet (custom lengths available)
Connector	Bulgin 9-pin circular, IP67
Vent Tube	Nylon 0.055 in. ID by 0.085 in. OD
Power	+9 to +16 Vdc, 250 mA
Communications Interface	Two-wire, RS-485
Communications Protocol	Modbus RTU
Velocity Spectrum	Progressive Signal Analysis (Patent Pending)
Mounting Screws	Two #6-32 by 1/2 in., ss flat tapered
Standard Warranty	1 year parts and labor

Velocity Sensor	
Method	Dopler ultrasound, twin PZT disks
Transducer Type	Ceramic Disks
Minimum Depth	0.90 in.
Range	-5 to 20 ft/s
Accuracy	+/-2% of reading
Operating Temp	32 deg F to 160 degF

Depth Sensor	
Method	Pressure Sensor, 500 mBar
Transducer Type	Ceramic Piezoresistive
Range	0 to 15 feet
Max Allowed Level	45 feet
Accuracy	+/-0.25% full scale +/-1% of reading from 32 deg F to 160 deg F
Compensated Range	32 deg F to 86 deg F



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