

# AV|GATED®

Gated Area-Velocity flow measurement in a reliable, rugged, and affordable sensor, engineered by the most trusted name in wastewater flow monitoring!

Wastewater flow measurement using the *Area-Velocity Method* requires knowledge of the average flow velocity. A variety of approaches have been developed over the years to measure average velocity, but gated velocity methods are traditionally recognized among the most accurate and reliable. Gated velocity sensors work by measuring flow velocity at multiple discrete points, allowing the sensor to better characterize the velocity distribution and best measure average velocity. The ADS® AV|GATED sensor combines proven depth measurement methods with state-of-the-art gated velocity measurement technology to provide *accurate* and *reliable* area-velocity sewer flow measurements.



**Gated Velocity.** The AV|GATED sensor brings gated velocity technology into everyday use, and measures average velocity through a wide range of flow conditions.

**Dual Depth.** The AV|GATED sensor leverages dual depth technology. Ultrasonic depth optimizes measurements up to full pipe, while pressure depth provides redundancy and allows measurements during surcharge conditions.

**Rugged Construction.** Built with a rugged housing that is impact and abrasion-resistant and a contoured form factor that resists debris, the AV|GATED sensor is designed to operate in tough sewer environments.

## Multiple Sensing Technologies

### Gated Doppler Velocity

Gated velocity technology works by measuring flow velocity at multiple discrete points, allowing the sensor to better characterize the velocity distribution and best measure average velocity. The returning reflected signal is processed using a digital signal processor, from which average velocity is calculated.



### Ultrasonic Depth

Ultrasonic depth technology operates by measuring the elapsed time for an ultrasonic signal to travel to the flow surface and back, and calculates the distance to the flow surface. This information, in conjunction with data pertaining to pipe geometry, is used to compute wetted area area of flow. Ultrasonic depth optimizes measurements up to full pipe, while pressure depth provides redundancy and allows measurements during surcharge conditions.

### Pressure Depth

Pressure depth technology measures the depth of flow by recording the difference in atmospheric and water height pressure. The pressure depth technology of the AV|GATED sensor serves as a back up the ultrasonic depth sensor. In addition, the pressure depth records the depth of surcharge.

## Compatibility with the ADS TRITON+®

The AV|GATED sensor is designed to work *exclusively* with the ADS TRITON+ flow monitor. It is one of the latest offerings in the TRITON+ array of sensors.

The TRITON+ is an intrinsically safe, "Fit-for-Purpose" open channel flow monitor for use in sanitary, combined, and storm sewers. It is designed to be the most versatile flow monitoring system available for wastewater collection applications. It supports single pipe or dual pipe flow measurement installations.



For more information, please visit the ADS website at [www.adsenv.com/triton](http://www.adsenv.com/triton).

## Applications

The AV|GATED sensor is designed for use in many flow monitoring applications, including:

- Infiltration/inflow programs
- Inter-agency billing networks
- Combined sewer overflow (CSO) monitoring
- Sanitary sewer overflow (SSO) monitoring
- Sewer capacity studies/trending
- Rehabilitation effectiveness monitoring
- Comprehensive sewer performance monitoring
- Sewer master plan studies



The AV|GATED sensor is built with a rugged Polycarbonate housing that is impact and abrasion-resistant and a contoured form factor that resists debris. The sensor is designed to operate in harsh sewer environments.

## AV|GATED Sensor Specifications

### Housing

Solid molded polycarbonate providing high impact and high abrasion resistance

### Color

High-visibility safety orange

### Weight

2 pounds (0.91 kg)

### Dimensions

**Width:** 1.49 in. (38 mm)

**Height:** 0.83 in. (21 mm)

**Length:** 7.12 in. (181 mm)

### Temperatures

**Operating:** -4° to 140° F (-20° to 60° C)

**Storage:** -4° to 167° F (-20° to 75° C)

**\*Note:** This sensor will *not* produce accurate readings in frozen flow.

### Sensor Cable

**Standard Length:** 35 ft. (10.7 m)

**Extended Lengths:** Extension cables available up to 300 ft (91.4 m)

**Diameter:** 0.28 in. (0.72 cm)

**Cable Jacket Material:** Polyurethane

### Operating Range

**Ultrasonic Depth:** 1 in. to 72 in. (25.4 mm to 1828.8 mm)

**Pressure Depth (standard):** 0 to 10 PSI; 0 in. to 277 in. (0 to 7036 mm)

**Gated Velocity:** -20 to +20 feet per second (-9.1 to 9.1 m/sec); minimum depth for velocity is 5 in. (127 mm); Gated Velocity may operate in shallower flows depending on site hydraulics.

### Accuracy

**Ultrasonic Depth:** ±0.13 in. (3.2 mm) or ±0.5% of flow depth; whichever is greater

**Pressure Depth:** ±1% of full range

**Gated Velocity:** ±0.2 ft/s or ±4% of average flow velocity; whichever is greater

### Resolution

**Ultrasonic Depth:** 0.01 in. (0.25 mm)

**Pressure Depth:** 0.01 in. (0.25 mm)

**Gated Velocity:** 0.01 feet per second (0.003 m/sec)

### Certifications

- Certified under the ATEX European Intrinsic Safety standards for Zone 0 rated hazardous areas

- Certified under IECEx (International Electrotechnical Commission) Intrinsic Safety Standards for use in Zone 0 rated hazardous areas (equivalent to Class I, Division 1, Groups C & D)

- CSA Certified to Class 225803 – Process Control Equipment, Intrinsically Safe and Non-Incendive Systems – For Zone 0 Hazardous Locations, Ex ia IIB T3 (152° C) in Canada

- CSA Certified to Class 225883 – Process Control Equipment, Intrinsically Safe and Non-Incendive Systems – For Class I Zone 0 Hazardous Locations, AEx ia IIB T3 (152° C) in the USA (equivalent to Class I, Division 1, Groups C & D)

### Compatibility

ADS TRITON+ flow monitor

### Mounting Method

ADS stainless steel mounting band/ring

Learn more at [www.adsenv.com/avgated](http://www.adsenv.com/avgated)



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