Isco Product Data

Isco 750 Area Velocity Flow Module

No weir or flume needed. Handles submerged, surcharged, and reverse flow.

Our AV sensors use patented Doppler technology to directly measure average velocity in the flow stream. An integral pressure transducer measures liquid depth to determine flow area. Isco 6700 Series and Avalanche® samplers then calculate flow rate by multiplying the area of the flow stream by its average velocity.

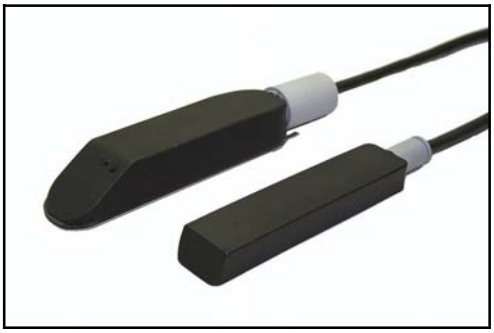
The 750 gives you greater accuracy in applications where weirs or flumes are not practical, or where submerged, full pipe, surcharged, and reverse flow conditions may occur. With area velocity, you don't have to estimate the slope and roughness of the channel. And Isco's exclusive 500 kHz Doppler penetrates farther into deep flow streams than one MHz systems, whose shorter wavelength can cause them to give "nearsighted" velocity measurement in typical wastewater applications. The Doppler system continuously profiles the flow stream, eliminating profiling and calibration required by electromagnetic systems.

Standard Features

- Sealed Area Velocity sensors resist fouling by oil and grease. Streamlined shapes shed debris.
- Choice of standard (10 ft) and extended (30 ft) level measurement range.
- During the program's operation, flow, velocity, and level values are viewable on the sampler's LCD display.
- Level and velocity data stored in the sampler are available for later retrieval, reporting, and graphing using Isco Flowlink® software.

Applications

- Accurate open-channel flow measurement without a weir or flume
- Pretreatment compliance
- Stormwater runoff monitoring
- Permit enforcement
- Sewer flow monitoring
- Combined sewer overflow studies
- Inflow and infiltration studies
- River and stream gauging



Isco offers both standard and low-profile area velocity sensors to meet your specific needs. The standard sensor (left) is most suitable in larger pipes and turbid flows with high concentrations of suspended solids and entrained air. An extended-range version of this sensor is available. See back.

Our low-profile unit can sense velocity in flows typically down to 1 inch (25 mm) deep. The compact design minimizes flow stream obstruction. The solid epoxy exterior is highly resistant to chemicals.

Specifications

Flow Module

Size *(H x W x D)*	4.9 x 5.7 x 2.0 in (12.4 x 14.5 x 5.1 cm)
Weight	0.93 lbs (0.42 kg)
Material	Polystyrene
Enclosure *(self certified)*	NEMA 4X, 6 (IP67)
Power *(provided by 6700 Series Sampler)*	9 to 14V DC
Program Memory	Non-volatile, programmable flash; can be updated via interrogator port on 6700 Series Sampler using a PC
Level and Velocity Measurement Data Storage Interval *(programmable through 6700 Series Sampler)*	1, 2, 5, 10, 15, or 30 minutes
Operating Temperature	32° to 120°F (0° to 49°C)
Storage Temperature	0° to 140°F (-18° to 60°C)

Area Velocity Sensors

	Standard Sensor	Low-profile Sensor
Length	6.6 in (16.8 cm)	6.0 in (15.2 cm)
Width	1.6 in (4.1 cm)	1.31 in (3.3 cm)
Height	1.2 in (3.0 cm)	0.75 in (1.9 cm)
Nose Angle	35° from horizontal	N/A
Cable Length		
Standard range sensors	25 ft (7.6 m)	25 ft (7.6 m)
Extended range sensor	50 ft (15.2 m)	None available
Cable Diameter	0.37 in (0.9 cm)	0.37 in (0.9 cm)
Weight *(including cable)*		
Standard range sensors	2.1 lbs (.96 kg)	2.1 lbs (.96 kg)
Extended range sensor	3.9 lbs (1.8 kg)	None available
Level Measurement Method	Submerged pressure transducer mounted in the flow stream	
Transducer Type	Differential linear integrated circuit pressure transducer	
Level Measurement Range		
Standard	0.05 to 10 ft (0.015 to 3.05 m)	0.05 to 10 ft (0.015 to 3.05 m)
Extended range	0.05 to 30 ft (0.015 to 9.14 m)	None available
Maximum Allowable Level		
Standard range sensors	20 ft (6.1 m)	20 ft (6.1 m)
Extended range sensor	40 ft (12.2 m)	None available

Area Velocity Sensors (continued)

	Standard Sensor	Low-profile Sensor
Level Measurement Accuracy	*Non-linearity, repeatability, and hysteresis at 77°F (25°C) Does not include temperature coefficient.*	
	Level*	**Error**
Standard-range sensors	0.033 to 5.0 ft (0.01 to1.52 m)	±0.008 ft/ft (±0.008 m/m)
	>5.0 ft (>1.52 m)	±0.012 ft/ft (±0.012 m/m)
Extended-range sensor	0.05 to 15 ft (0.015 to 4.57 m)	±0.03 ft (±0.009 m)
	0.05 to 21 ft (0.015 to 6.40 m)	±0.09 ft (±0.027 m)
	0.05 to 30 ft (0.015 to 9.14 m)	±0.30 ft (±0.09 m)
Temperature Coefficient	*Maximum error within compensated temperature range (per degree of temperature change)*	
	Level*	**Error**
Standard-range sensors	0.05 to 4.0 ft (0.015 to 1.22 m)	±0.005 ft /°F (±0.0027 m/°C)
	4.0 to 10 ft (1.22 to 3.05 m)	±0.007 ft /°F (±0.0038 m/°C)
Extended-range sensor	0.05 to 30 ft (0.015 to 9.14 m)	±0.008 ft /°F (±0.0044 m/°C)
Velocity Measurement		
Method	Doppler ultrasonic	
Frequency	500 kHz	
Typical minimum depth	0.25 ft. (75 mm)	
Range	-5 to + 20 ft/s (-1.5 to + 6.1 m/s)	
Accuracy *(Uniform velocity profile)*	**Velocity**	**Error**
	-5 to +5 ft/s (1.5 to +1.5 m/s)	±0.1 ft/s (±0.03 m/s)
	5 to 20 ft/s (1.5 to 6.1 m/s)	±2% of reading
Resolution	±0.024 ft/s (±0.0073 m/s)	
Operating Temperature	32° to 120°F (0° to 49°C)	
Compensated Temperature	32° to 140°F (0° to 60°C)	
Materials		
Sensor	Polybutadiene-based polyurethane, stainless steel	Epoxy, chlorinated polyvinyl chloride (CPVC), stainless steel
Cable	Polyvinyl chloride (PVC), chlorinated polyvinyl chloride (CPVC)	

**Actual vertical distance between the area velocity sensor and the liquid surface.*

Ordering Information

Description	Part Number
750 Area Velocity Probe Flow Module	
w/Low-profile area velocity sensor and 10 ft (3.05 m) level measurement range	**68-6700-106**
w/Standard area velocity sensor and 10 ft (3.05 m) level measurement range	**68-6700-075**
w/Standard area velocity sensor and 30 ft (9.14 m) level measurement range	**68-6700-076**
750 Accessories	
Quick-disconnect Box	**60-3254-004**

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