

H-ADFM[®] Velocity Profiler for Wide Open Channels

The introduction of the revolutionary H-ADFM Flow Meter has made pulse Doppler technology available for open channel applications 10 feet in width and greater. The H-ADFM has set a new standard for flow rate measurement accuracy that previously was not attainable in wide channel applications.

The H-ADFM pulse Doppler velocity profiling technology measures the horizontal distribution of velocity within the flow, across a channel. Horizontal profiling provides increased information of the velocity structure and flow conditions; information that a single point measurement on the surface or in the flow cannot provide.

The H-ADFM mounts on the side of a channel allowing easy access to the system for maintenance when needed. Additionally, several H-ADFM sensors can be “stacked”, providing horizontal profiles at multiple levels in the depth of flow. This generates increased accuracy and enables superior data quality even in difficult hydraulic conditions.

The H-ADFM’s advanced flow measurement performance capability makes it versatile and the most precise and accurate choice available for metering sites in very large pipes and open channels, particularly those with non-uniform, rapidly changing, backwatered, near zero, zero or reverse flow conditions.

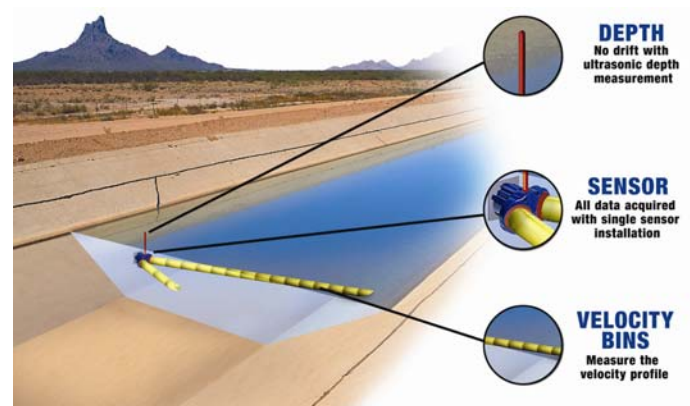
Applications

- ◆ Wastewater collection systems
- ◆ Combined sewer systems and outfalls
- ◆ Wastewater treatment facilities
- ◆ Irrigation canals and channels
- ◆ Industrial process and discharges
- ◆ Stormwater conveyance and outfalls



Standard Features

- ◆ Pulse Doppler velocity profiling technology
- ◆ Redundant cross-channel velocity sensors and upward-looking depth sensor combined in a single housing
- ◆ Sensor submersible to 100 ft of depth.
- ◆ Stainless steel mounting bracket for installation on the channel side
- ◆ Data quality verification information (signal strength and correlation)
- ◆ Rugged, long lasting construction
- ◆ Real-time data output
- ◆ Industry standard communications protocol interfaces (optional)
- ◆ Secondary depth sensor (optional), pressure or ultrasonic
- ◆ Sensor and processing electronics all in a single module



Specifications

H-ADFM Velocity Profiler	
Measurement Performance	
Flow Rate	
Flow Accuracy:	±2.5% of reading
Velocity	
Velocity Range:	±15 ft/s (±5 m/sec)
Number of Cells:	1-128
Velocity Bin Size:	0.8 to 12 ft (250 mm to 4 m)
Maximum profiling range ¹ :	65 ft (20 m) at 1200 kHz
Minimum recommended channel width:	10 ft (3 m) at 1200 kHz
Accuracy:	±0.5% ±0.01ft/s (3mm/s)
Water Level	
Measurement Range:	0.3 to 30 feet (100 mm to 9 m)
Accuracy:	±0.25%
Transducer Assembly	
Geometry:	2 beams, ±20°
Beam width:	1.5°
H-ADFM Standard Internal Sensors	
Temperature	
Range:	25 to 105°F (-4 to 40°C)
Accuracy:	±0.4°F (0.2°C)
Tilt (2 axes)	
Range:	±10°
Accuracy:	±0.2° at 0°, ±0.5° at 10°
Physical	
H-ADFM Sensor	
Weight:	7.5lb (3.4kg)
Dimensions (H x W x D, mounted horizontally):	7.2 x 7.2 x 7.4 inches (183 x 183 x 189 mm)
Construction:	Cast polyurethane with titanium hardware, mounting plate included.
Sensor Signal Cable	
Operating Temperature	-40 to 125°F (-40 to 52°C)
Material:	Polyethylene jacket
Length:	80 ft (25 m)
Minimum Bend Radius:	6 in (150 mm)
Outer Diameter:	0.5 in (13 mm) nominal

¹ Maximum range depends on a number of factors, including temperature, salinity, suspended materials, etc

Communications	
RS-232:	Simultaneous RS-232 and internal logging supported. Serial data rates 300 to 115,200 bps.
Power	
Voltage:	9 to 18 VDC
Max Current:	1.5 A
Power consumption:	Energy consumption depends on velocity profiling parameters. Contact the Isco factory or your Isco representative for an accurate prediction in your specific application.
Software	
WinH-ADFM Software is a comprehensive software package for H-ADFM set-up, operation, data review, and data management.	



H-ADFM is well suited for monitoring flow in wide channels such as chlorine contact basins. Inset shows sensor mounting on vertical wall of basin.



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