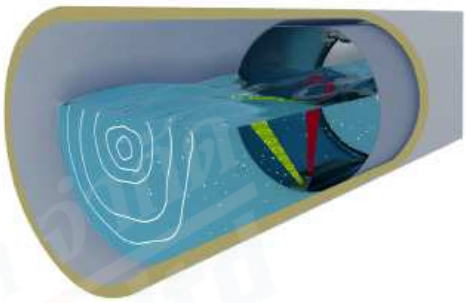
Smart Measurement

ALSONIC

Doppler Open Channel Flow Meter
Model ALSONIC-DAVM Series

GENERAL

The ALSONIC-DAVM area velocity flow meter is designed for applications in full or partially full pipes 150 - 6000 mm (6-240 inches) in diameter, or open channels with flow widths 200-10000mm (8-400 inches) and depths of 20-10000 mm (3/4-400 inches). It uses advanced Doppler profiling technology to directly measure velocity profiles making it the best choice for sites with nonuniform, rapidly changing, backwatered, near zero, negative or reverse flow conditions. This eliminates the need for onsite calibration, thereby reducing significantly the cost of installation. Used in conjunction with an integral upward looking ultrasonic or a secondary external pressure sensor (optional) for determining the depth, the meter uses a numerical model for averaged velocity in the entire cross section and the continuity equation to calculate flow. Information on the level, velocity, flow, temperature, conductivity and position offset can be taken from transmitter/flow computer or directly from sensor. This meter will log up to 16GB of data. In addition the flow meter can control a sampler in a flow-proportional sampling mode by means of a pulse output.



SPECIFICATIONS

Flow computer

Transmitter:	Wall mount	Portable
Power Supply:	AC: 85-265V, 45~63Hz DC: 12-28V, I_{max}=23mA	Battery: 11.1V, 6600mAh AC charger: 220VAC, 1-2A
Protection:	IP66	IP67
Fluid Temperature:	-4~140°F (-20°C~+60°C)	-4~140°F (-20°C~+60°C)
Enclosure Material:	GFRP	ABS
Display:	4.5" LCD	4.5" LCD
Input:	RS485, One Wire	RS485, One Wire
Output:	velocity, depth, temperature, conductivity, tilt	velocity, depth, temperature, conductivity, tilt
Communication:	Std - pulse, 2x4~20mA Opt - RS485/Modbus, datalogger, GPRS	Std - display, 2x4~20mA Opt - pulse, RS485/Modbus, datalogger, GPRS
Dimensions:	L×W×H: 4.6"x7.75"x4.5" (244×196×114 mm)	L×W×H: 10.6"x8.5"x6.9" (270×215×175 mm)
Weight:	5.3lb (2.4 kg)	6.6lb (3 kg)
Data Logger:	16GB	16GB
Applications:	partially full pipe: 6"~240" (150-6000mm) Open Channel: 8"~400" (200-10000mm)	partially full pipe: 6"~240" (150-6000mm); Open Channel: 8"~400" (200-10000mm)

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Transducer

Velocity:	Measuring Range	0.65~5.25ft/s (0.2-1.6m/s) Opt: 0.65~39ft/s (0.2-12m/s) (bi-directional)
	Accuracy	±1% RD
	Resolution	0.04 in/sec (1mm/s)
Depth (ultrasonic):	Measuring Range	¾"~400" (20mm to 5000mm), (5m)
	Accuracy	±1% FS
	Frequency	1 MHz
	Resolution	0.04" (1mm)
Depth (pressure):	Measuring Range	¾"~400" (20mm to 10000mm), (10m)
	Accuracy	±1% FS
	Resolution	0.04" (1mm)
Temperature:	Measuring Range	32 ~ 140°F (0 ~ 60°C)
	Accuracy	±1°F (±0.5°C)
	Resolution	0.2°F (0.1°C)
Conductivity:	Measuring Range	0 to 200,000 µS/cm
	Accuracy	± 1% RD
	Resolution	±1 µS/cm
Tilt:	Measuring Range	±70°@ vertical and horizontal
	Accuracy	±1°@ angle < 45°
Output:	SDI-12	velocity, depth, temperature, conductivity, tilt
	Modbus	velocity, depth, temperature, conductivity, tilt
	One wire	pressure
Other:	Power Supply	10-24 V_{DC} ,50 µA standby, 150mA active for 1 second @12V_{DC}
	Operating temperature	32 ~ 140°F (0 ~ 60°C)
	Storage temperature	-20°C - +60°C, 0–100% RH to 140 °F (60°C)
	Particle concertration	>50 ppm
	Frequency	2 MHz
	Protection	IP68
	Shock resistance	up to 2g, conforms to IEC60068-2-6
	Interference-resistant	conforms to EN61326/A1
	Cable	Std 15m
		up to 60m for SDI-12
		up to 500m for RS485
	Materials	Sensor enclosure - Epoxy, Installation bracket - 304SS
	Dimensions	L×W×H: 135×50×20 (mm) 5.3"x 2"x 0.8"
	Weight	2.2lb (1kg) (incl. 200g sensor and 15m cable)

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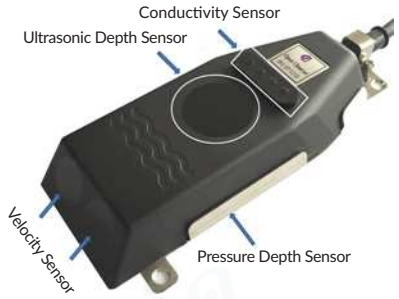
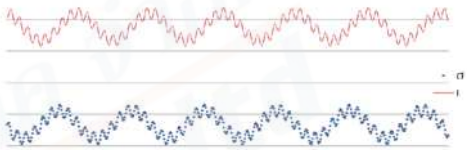
TECHNICAL INFORMATION



INDEPENDENT OUTPUT SENSOR

The sensor sends output independently to the control system or PC directly (with our program). For velocity, flow, level, temperature, conductivity, and position offset RS-485/Modbus is used. For velocity and flow, SDI-12 is used. One wire barometric is used for pressure. The power supply is $12V_{DC}$. The sensor is standard IP68, and the cable is up to 500m.



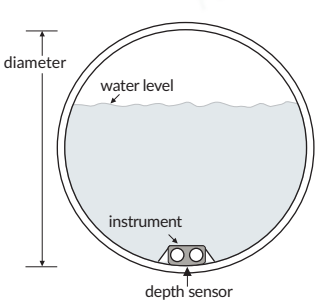
PROGRAM

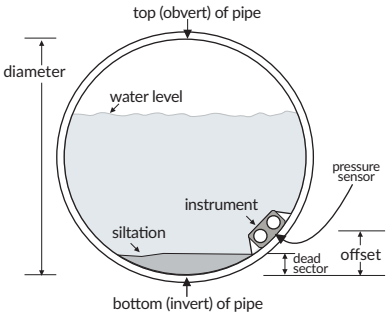
The software lets you easily communicate directly with the sensor to view current and download logged data. Drop-down menus allow even unexperienced users to quickly learn the program. The program communicates via a RS485 connection and is able to run on Windows computers.

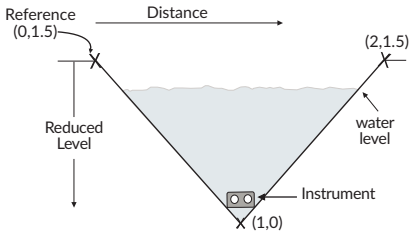
MOUNTING SYSTEMS

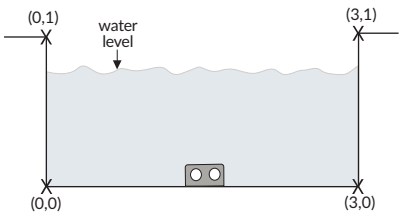
Mounting Plate, Spring Ring and Scissors Rings

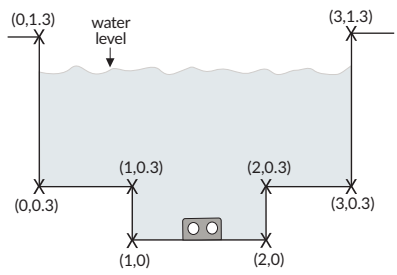
All sensors can be attached to a mounting plate or spring or scissors rings to install the sensors in minutes thereby reducing time in the manhole. The sensor is first attached to a carrier and can than slide onto any of the compatible mounting systems. This maintains a height suitable for measuring flow rates and velocities at very low water levels. To install the sensors in rectangular, trapezoidal or earthen channels, we recommend the sensor mounting plate. Stainless steel spring rings simplify sensor installation in cylindrical pipes. Standard diameter sizes ranging from 150 mm (6 inches) to 600 mm (24 inches) are available. You can install the sensor and fasten the cable to the downstream edge of the ring in place before you enter the manhole. The self-expanding device is tightened by expanding the band for a friction fit inside the pipe. The adjustable scissors ring is installed in large diameter pipes from 500 mm (20 inches) to 1800 mm (72 inches) in diameter. It consists of a base section, one or more pairs of extensions to fit the size of the pipe, and a scissors mechanism.

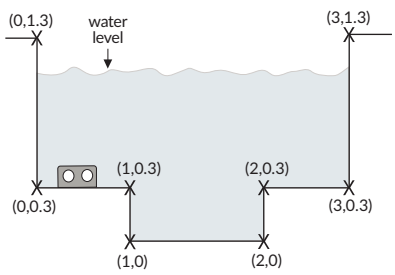












TYPE OF FLUID	Please provide the name of your fluid, including operating density and viscosity.
CHANNEL GEOMETRY	Please specify the type of channel (rectangular, circular, trapezoidal)
PROCESS TEMPERATURE	We will calibrate your flowmeter as close to your operating conditions as possible.
TYPE OF ELECTRONICS	Please specify output and installation type (wall mount, panel mount, etc.)
LEVEL INSTRUMENT	Please provide a make & model for the level transmitter that will be used.

ALSONIC DAVM

ALSONIC DAVM	**-	*-	**	**-	*	*	DESCRIPTION
Portable ①	P						Transmitter
Wall Mount ②	W						
No Transmitter ③	N						
10-24V_{DC}②③		DC					Power supply
85-265V_{AC}, 45~63Hz ①②		AC					
Standard - display ①②			S				Output
No output ①③			N				
Pulse ①②			P				
4-20mA ①②			I				
RS485 ①②③			C				
Data logger - 16GB ①②			D				
GPRS ①②			G				
SDI-12 ③			E				
None ①②				N			Transducer
Standard sensor - 0.65~5.25 ft/s (0.2-1.6m/s) bi-directional ①②③				S			
Extend sensor - 0.65~39 ft/s (0.2-12m/s) bi-directional ①②③				L			
Standard 50' (15m)					N		Signal Cable
To be advised **m					**		
Program to read sensor via SDI-12/RS485 ③						SF	Options
Installation Kit						IS	