

accQrate

Hybrid Ultrasonic Flowmeter



The accQrate Hybrid Ultrasonic Flow Meter can measure fluid flow in virtually any fluid in which sound waves can travel. The accQrate meters are considered “hybrid” because they can measure fluid flow using either the Doppler or Transit-Time methods. The accQrate ultrasonic sound transducers are clamped to the outside of the pipe wall and include no moving parts.

This method of flow measurement is safe, non-intrusive, and very easy to service.

In the Doppler measurement mode accQrate measures velocity by measuring frequency difference between transmitted wave and waves returned after getting reflected from particles in fluid. The difference is called Doppler Shift. The Doppler measurement method is best suited for fluid having particles.

In the Transit-Time mode, the accQrate measure velocity by measuring signal travel time between two sensors in direction of flow as well as in opposite direction. This is also called Time of Flight measurement. In the Transit-Time measurement is best suited for cleaner fluid.

The availability of both measurement modes Doppler and Transit-Time, make accQrate suitable for almost all fluids whether it is with or without particles and bubbles. Additionally the Signal Processing Unit (SPU) of the accQrate has an Automatic Gain Control (AGC) algorithm that periodically adjusts the gain to maintain the optimum power level for changing fluid condition.

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Applications:

- Sewage
- Wastewater
- Pulp & Paper Slurries
- DI Water
- Discharge Water
- Caustics
- Chemical Slurries
- Ground Water
- Food and Beverages
- Petrochemical
- Any Sound Conducting Liquid

Standard Features:

- **Selectable** Doppler or Transit-Time
- **Non-Invasive** Clamp On Transducers
- **High Quality** QVGA Display
- **Nema 4X** (IP 66) Washdown Enclosure Tamper Resistant Interface

accQrate Hybrid Ultrasonic Flowmeter

Dimensions (HxWxD):	21 x 17 x 9 1/2 in (533 x 432 x 241 mm)
Weight (Dry):	24 lbs. (10.9 kg)
Pipe Linear Materials:	Most plastic liners
Pipe Materials:	Most metal and plastic pipes
Measuring Principle:	Hybrid. User-selectable Doppler or Transit-Time operating modes
Fluid Types:	Virtually any acoustically conductive fluid. Transit-Time mode from 0% to 10% (0 to 100,000 ppm) particulate. Doppler mode from 0.02% to 15% (200 to 150,000 ppm) of 50 micron particulate
Fluid Velocity Range:	0.25 to 30 feet per second (0.07 to 9 meters per second)
Nominal Pipe Sizes:	2.0 in–100 in (63 mm–2500 mm)

SPU (Signal Processing Unit)

Enclosure:	NEMA 4X (IP66), Powder coated aluminum, SS clamps and hardware
-Dimensions:	11.00 H x 8.60 W x 5.00 D in (279 H x 218 W x 127 D mm)
-Weight:	9.5 lb (4.3 kg)
Mounting:	Wall, pipe (vertical or horizontal) or panel mounting. Hardware included.
-Panel Opening:	10.63 H x 8.10 W in (270 H x 206 W mm)
-Panel Depth. Rear:	2.78 in (71 mm), Front: 2.18 in
Power Requirements:	95–264 VAC 50/60Hz or 15–30 VDC; 30 watts maximum
Operating Temperature:	14 °F to 140 °F (-10 ° to 60 °C)
-Storage:	-40 °F to 158 °F (-40 ° to 70 °C)
Display:	320 x 240 pixel QVGA backlit LCD, UV resistant. Simultaneous Rate and Total: 10 digit maximum + exponent to E+32 Decimal point factor configured

Display Languages: English, Spanish, French, or German factory configured

Keypad: Two-button positive action tactile switch keyboard

Display Volume Units: Factory configured Rate and Total display units in: U.S. Gallons, ounces, barrels (US liquid), barrels (US oil), cubic feet, acre, feet, Imperial (British) gallons, liter, cubic meter, or user defined “custom” units
Rate display in feet or meters per second

Display Time Units: Factory configured for seconds, minutes, hours, days

Display/Output Update Time: Factory configured for 1.0 seconds

Flow Rate Display Averaging: Factory configured for 5.0 seconds

Outputs: Isolated 4–20 mA output—factory scaled at 0 to 30 ft/s

0–1000Hz Pulse output—factory scaled at 0 to 30 ft/s

Data Logging: Data/time stamped flow rate and flow total data in FAT32 file format, easily imported into Excel. Factory configured to trigger at 3 minutes time intervals. Over 500,000 log events possible with included 3MB SD Card

Clamp-On Transducers

Housing:	NEMA 6P (IP67), Nickel plated aluminum, SS clamps and hardware
-Dimensions:	3.12 H x 2.95 W x 1.60 D in (79 H x 75 W x 41 D mm)
-Weight:	0.8 lb (0.4 kg) each (excluding cable)
Cable:	Shielded coaxial RG/U Type:59. PVC jacket, black. RoHS Compliant
-Standard Length:	10 ft (3 m)
-Optional Lengths Available:	25 ft (7 m), 50 ft (15 m), 100 ft (30 m)
-Pipe Surface Temperature:	-20 ° to 300 °F (-34 ° to 150 °C)

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Teledyne ISCO is continually improving its products and reserves the right to change product specifications, replacement parts, schematics, and instructions without notice.



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