

Teledyne RD Instruments

Vertical ADCP (V-ADCP)

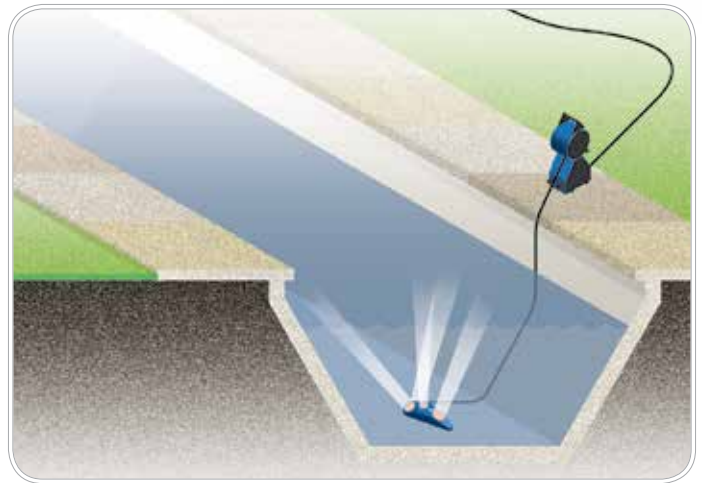
Vertical Acoustic Doppler Current Profiler

Flow and Velocity Profile Solution

The VERTICAL ACOUSTIC DOPPLER CURRENT PROFILER (V-ADCP) is designed for high-accuracy measurement of water flow and level and velocity profile in open channels. The new generation V-ADCP uses Teledyne RD Instruments' Broadband pulsed-Doppler technology, which provides high precision and resolution in water velocity measurements.

V-ADCP deployment options:

- **Self-Contained:** The V-ADCP has an internal battery and recorder. As a result, it can be left on-site for months collecting valuable data, which can be quickly and easily downloaded to a PC during a site visit.
- **Real-Time Data Collection:** The V-ADCP can be installed in a remote site and integrated with a telemetry system. This configuration allows you to view real-time V-ADCP data directly from your office.
- **Portable Flow Meter:** The V-ADCP may be used as a portable flow meter allowing you to conduct spot checks at multiple sites.



V-ADCP Applications

- Open Channels
- Stormwater Channels
- Rivers and Streams
- Irrigation Canals

PRODUCT FEATURES

- **Accurate:** Teledyne RDI's Broadband technology allows for small cells and/or short averaging/sampling intervals and highly accurate velocity data.
- **Versatile:** The V-ADCP offers a range of 3–150 user-selectable velocity measurement cells, with cell sizes from 3cm–20cm and profiling range from 0.2–5m
- **Compact:** The unit's small transducer is mounted to the bottom of an open channel, allowing for minimal flow disturbance.
- **Water Level Indicator:** The V-ADCP includes an accurate water level sensor.
- **User-friendly:** The system includes highly intuitive user friendly Windows based software.
- **Easy to install:** No time-consuming, complex calibration is required for installation in narrow channels.
- **Versatile:** The V-ADCP can be configured for real-time or self-contained flow monitoring applications.



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TECHNICAL SPECIFICATIONS

Water Velocity Profiling (Broadband mode)	Profiling range	0.2m ¹ to 5m ²	
	Velocity range	±5m/s default, ±20m/s maximum	
	Accuracy	±0.5%, ±2mm/s	
	Resolution	1mm/s	
	Number of cells	3–150	
	Cell size	3cm to 10cm	
	Blanking distance	3cm	
Data output rate	User-programmable, 1Hz maximum		
Flow measurement accuracy	2-5% ³		
Transducer and Hardware	Frequency	2.4MHz	
	Configuration	Three beams (velocity measurement)	
	Beam angle	20°, ±25°	
	Beam width	0.95°	
	Internal memory	4MB	
	Communications	Interface: RS-232 Baud rate: 1200 to 115,200bps	
Standard Sensors	Sensor	Temperature	Acoustic Stage
	Range	-5°C to 45°C	0.1-10m (default)
	Accuracy	±0.5°C	±0.1%, ±3mm
	Resolution	0.01°C	0.1mm
Software	Windows™-based: • PlanCV: Deployment planning • Q-Monitor-V: System set-up, data acquisition, playback, and flow calculation		
Power	Input	10–28VDC	
	Internal battery	3@6VDC alkaline lantern batteries, 570wh	
	Consumption	0.11w @ 10% duty cycle	
Environmental	Operating temperature	-5°C to 40°C	
	Storage temperature	-25°C to 60°C	
	Vibration	meets IEC 60721-3-2 standard	
	Housing weight	5.2kg (with internal battery)	
Dimensions	Housing	Length 340mm; width 180mm; depth 140mm	
	Transducer	Length 202mm; width 92mm; depth 39mm (line drawings available upon request)	

1 Assume one good cell (minimum cell size); range measured from the transducer surface.
 2 Assume fresh water; actual range depends on temperature and suspended solids concentration.
 3 Assume narrow channels.

Sample flow and velocity profile collected in a rectangle channel.

