

ChannelMaster H-ADCP

HORIZONTAL ACOUSTIC DOPPLER CURRENT PROFILER

Open Channel Flow and Water Level On-Line Monitoring

The compact, flexible, and affordable **ChannelMaster** is a horizontally-oriented Acoustic Doppler Current Profiler (H-ADCP) designed to collect high-accuracy water velocity, stage, and discharge data for a wide array of applications.

By leveraging Teledyne RDI's BroadBand technology, ChannelMaster allows you to obtain unmatched data quality, even in low velocities and complex flows, where a single cell cannot provide enough information.

The ChannelMaster's innovative design includes everything you need to collect high-quality data. The standard unit comes equipped with temperature, pressure, pitch and roll sensors, and a vertical beam.

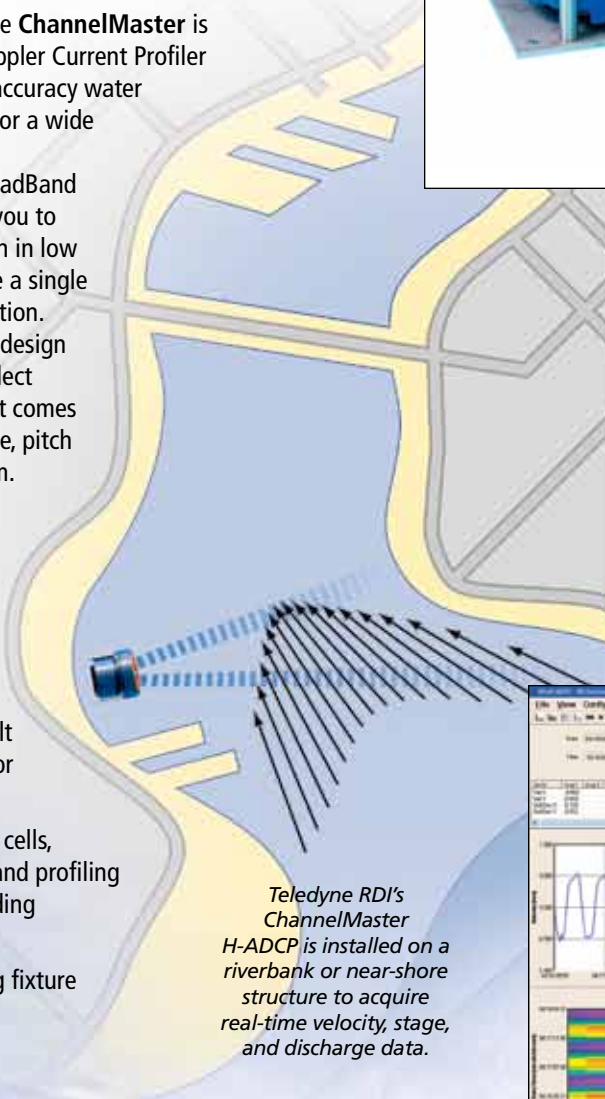
ChannelMaster provides:

- Teledyne RDI's BroadBand technology, which allows for small cells and/or short averaging/sampling intervals
- Ability to measure highly accurate velocities even in difficult environments such as slow flow or rapidly changing flow
- A range of 1–128 user-selectable cells, with cell sizes from 25cm to 8m and profiling ranges from 1m to 300m (depending on system frequency)
- Standard stainless steel mounting fixture

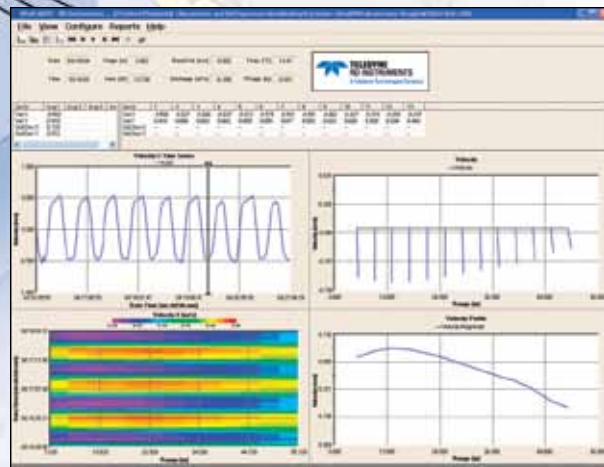


ChannelMaster Applications:

- *Rivers, streams, and irrigation canals:* Monitor discharge and water level. Easily integrated with a telemetry or SCADA system.
- *Estuaries:* Measure complex currents for environmental monitoring or circulation model calibrations or verifications.
- *Port and Harbors:* Monitor currents to provide velocity information for vessel maneuvering and safety.



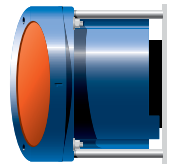
Teledyne RDI's ChannelMaster H-ADCP is installed on a riverbank or near-shore structure to acquire real-time velocity, stage, and discharge data.



ChannelMaster H-ADCP data samples.

ChannelMaster H-ADCP

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Technical Specifications

Model Name	CM300	CM600	CM1200
System frequency	300kHz	600kHz	1200kHz
Water Velocity Profiling (Broadband mode)			
Profiling range	4m ^a to 300m ^b	2m ^a to 90m ^b	1m ^a to 25m ^b
Velocity range	±5m/s default, ±20m/s maximum		
Accuracy	±0.5% of water velocity relative to ADCP, ±2mm/s		
Resolution	1mm/s	1mm/s	1mm/s
Number of cells	1-128	1-128	1-128
Cell size	1m to 8m	0.5m to 4m	0.2m to 2m
Blanking distance	1m	0.5m	0.2m
Data output rate	User-programmable		
Physical Properties			
Weight in air	6.8kg	4.76kg	3.4kg
Weight in water	3.17kg	2 kg	1.58kg
Height	18.3cm	18.3cm	18.3cm
Width	32.5cm	26.4cm	18.3cm
Depth	19.8cm	19.3cm	18.9cm
Transducer			
Geometry	2 beams, ±20°	2 beams, ±20°	2 beams, ±20°
Beam width	2.2°	1.5°	1.5°

^a Assume one good cell (minimum cell size); range measured from the transducer surface.

^b Assume fresh water; actual range depends on temperature and suspended solids concentration.

Standard Sensors

Sensor	Temperature	Tilt (pitch and roll)	Pressure	Acoustic Stage
Range:	-4°C to 40°C	±10°	0.1m to 10m	0.1m to 10m*
Accuracy:	±0.2°C	±0.2°@2°, ±0.5°@10°	0.5%	±0.1%, ±3mm
Resolution:	0.01°C	0.01°	1mm	0.1mm

* User-programmable to 18m maximum.

Software

- **WinH-ADCP:** System setup, data acquisition, discharge calculation, data display, and summary report
- **PlanCV:** Deployment planning, predicting precision, power usage, etc.

Other Hardware & Features

- 4mb internal recorder
- 25m power and communications cable standard, longer available
- Stainless steel mounting plate
- Built-in index-velocity method flow calculator

Communications

RS-232 with SDI-12, or RS-422

- SDI-12 supports v 1.3 (concurrent).
- Simultaneous SDI-12, and internal logging supported.

Serial baud rates: 300–115,200 bps

Construction

Cast polyurethane with titanium hardware, mounting plate included.

Power

Voltage: 10-18VDC
Max. current: 1.5A
Power consumption: 0.1W @ 10% duty cycle (typical)

Environmental

Operating temperature: -5°C to 45°C
Storage temperature: -20°C to 50°C



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