

Vectrino

– A new generation

3D water velocity sensor!

The Vectrino is a high-resolution acoustic velocimeter used to measure 3D water velocity in a wide variety of applications from the laboratory to the ocean. The basis measurement technology is coherent Doppler processing, which is characterized by accurate data with no appreciable zero offset.

What Is New?

The Vectrino represents a leap forward in performance:

- ✓ Minimized size of the electronics makes it fit inside the base instrument.
- ✓ Reduced probe size minimizes the flow interference from the probe itself.
- ✓ Added a fourth receiver to improve turbulence measurements and provide redundancy.
- ✓ Increased internal sampling rate to reduce measurement noise.
- ✓ Increased maximum velocity range.
- ✓ Probe configuration file stored on probe board simplifies a change of probes.
- ✓ Integrated temperature sensor in the probe.
- ✓ Parallelized receiver increases the number of samples by four (Vectrino⁺ firmware only).

Upgrade

You can upgrade your NDV or ADV[®] to a Vectrino. The upgrade consists of a new cable and a circuit board that fits inside your signal conditioning module. You can choose to upgrade to the standard or to the Vectrino⁺ firmware.

Multiple Systems

The Vectrino software is designed to test, configure, and collect data with a single Vectrino. To synchronize data collection from multiple Vectrinos and store all the data to a single file, you need the PolySync software.



The Vectrino⁺ Option

The Vectrino can be configured with the standard or the Vectrino⁺ ("Vectrino Plus") firmware.

The standard firmware has a performance similar to that of the NDV/ADV[®], with a maximum output rate of 25 Hz.

The Vectrino⁺ firmware runs four receivers in parallel and allows data collection rates up to 200 Hz. Several enhancements are planned for the Vectrino⁺ firmware, including a separate echo sounder mode.

Configuration

The Vectrino can be configured to use a variety of probes and housings. To check what is best for your application, please visit our web site to see photographs of available options.

Specifications

Water Velocity Measurements

Range	± 0.01, 0.1, 0.3, 1, 2, 4 m/s*) (user selectable)
Accuracy	± 0.5% of measured value
± 1 mm/s	
Sampling rate (output)	1–25 Hz 1–200 Hz (Vectrino+ firmware)

*) The velocity range is not the same in the horizontal and vertical direction. Please refer to the configuration software.

Sampling Volume

Distance from probe	0.05 m
Diameter	6 mm
Height (user selectable)	3–15 mm

Echo Intensity

Acoustic frequency	10 MHz
Resolution	Linear scale
Dynamic range	25 dB

Sensors

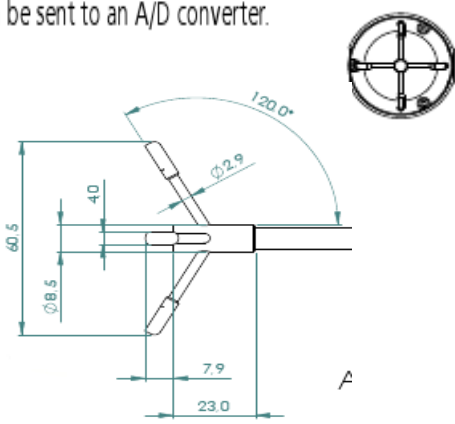
Temperature	Thermistor embedded in probe
• Range	–4°C to 40°C
• Accuracy/Resolution	1°C/0.1°C
• Time response	5 min

Data Communication

I/O	RS 232. The software supports commercially available converters.
most	
USB–RS 232	
Baud rate	300–115 200
User control	Handled via Vectrino Win32® software, ActiveX® function calls, direct commands.
or	
Analog outputs	3 channels standard, one for each
each	velocity component.
Output range is	0–5 V, scaling is user



The Vectrino consists of two basic elements: the probe attached to a cylindrical housing and the processor inside the housing. From here the processed data is sent over a serial line or analog signals can be sent to an A/D converter.



selectable.

Synchronization

SynchIn and SynchOut

Multi Unit Operation

Software	CollectV™ software
I/O	RS 232–USB support for devices with 1, 2, 4, and 8 serial ports.

Software (“Vectrino”)

Operating system	Windows®2000, Windows®XP
Functions	Instrument configuration, data collection, data storage. Probe test modes.

Power

DC Input	12–48 VDC
Peak current	2.5 A at 12 VDC (user selectable)
Max. consumption, 200Hz	1.5 W

Connectors

Bulkhead	IP 68 connector or MCBH-12-FS, bronze (Impulse) – see also below.
options	
Cable	IP 68 or PMCIL-12-MP – see also options below.

Materials

Standard model (316)	Delrin® housing. Stainless steel probe and screws.
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Environmental

Operating temperature	–5°C to 45°C
Storage temperature	–15°C to 60°C
Shock and vibration	IEC 721-3-2

Options

- Standard or Vectrino+ firmware (upgrade to Vectrino+ firmware is also available as retrofit)
- 4-beam down-looking probe or side-looking probe. Fixed stem or flexible cable
- 12-pin IP 68 waterproof connector (1h at 20m) or Impulse 12-pin underwater connector
- 10, 20, 30 or 50m cable with choice of IP68 or Impulse underwater connector
- RS 232–USB converter (one-to-one, four-to-one or eight-to-one)
- Combined transportation and storage case

Dimensions

