

Vector - 300 m

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Echantillonne des vitesses 3D jusqu'à 64 Hz pour études en zones côtières

The Vector is a high-accuracy single-point current meter that is capable of acquiring 3D velocity in a very small volume at rates up to 64 Hz. It is widely used for sediment transport applications, small-scale turbulence measurements and coastal engineering studies. It has an excellent track record of delivering outstanding data quality in a variety of applications. This version is suitable for use down to a depth of 300 m. The Vector's titanium version is suitable for investigating deep- water currents.

Applications

Highlights

- [/] Small-scale turbulence
- [/] Sampling up to 64 Hz
- [/] Small sampling volume for measurements close to boundaries

- [/] Wave orbital studies
- [/] Studies of bottom boundary layers
- [/] Ocean engineering projects
- [/] Coastal studies
- [/] River turbulence
- [/] Low flow measurements
- [/] Flux measurements

Technical specifications

[arrow] Water velocity measurements

Maximum profiling range	N/A
Distance from probe	0.15 m
Sampling volume diameter	15 mm
Sampling volume height (user-selectable)	5-20 mm
Cell size	N/A

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Water velocity measurements

Velocity range	±0.01, 0.1, 0.3, 1, 2, 4, 7 m/s (software-selectable)
Adaptive ping interval	N/A
Accuracy	±0.5% of measured value ±1 mm/s
Velocity precision	typ. 1% of velocity range (at 16 Hz)
Sampling rate (output)	1-64 Hz
Internal sampling rate	100-250 Hz

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Distance measurements

Minimum range	N/A
Maximum range	N/A
Cell size	N/A
Accuracy	N/A
Sampling rate	N/A

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Echo intensity

Acoustic frequency	6 MHz
Resolution	0.45 dB
Dynamic range	90 dB

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Sensors

Temperature:	Thermistor embedded in end bell
Temp. range	-4 to +40 °C
Temp. accuracy/resolution	0.1 °C/0.01 °C
Temp. time response	10 min
Compass:	Magnetometer
Accuracy/resolution	2°/0.1° for tilt < 20°
Tilt:	Liquid level
Accuracy/resolution	0.2°/0.1°
Maximum tilt	30°
Up or Down	Automatic detect
Pressure:	Piezoresistive

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Sensors

Standard range 0-20 m (inquire for options)
Accuracy/precision 0.5% FS / Better than 0.005% of full scale
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Analog inputs

No. of channels 2
Supply voltage to Three options selectable through firmware commands:1)
analog output devices Battery voltage/500 mA, 2) +5 V/250 mA, 3) +12 V/100 mA
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Data recording

Capacity (standard): 9 MB, can add 4/16 GB
Data record (Standard) 24 bytes at sampling rate + 28 bytes/second
Data record (IMU) 72 bytes at sampling rate
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Real-time clock

Accuracy ± 1 min/year
Backup in absence of power 4 weeks
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Data communications

I/O RS-232 or RS-422
Communication baud rate 300-115 200 Bd
Recorder download baud rate 600/1200 kBd for both RS-232 and RS-422
User control Handled via "Vector" software, ActiveX® function calls, or direct commands.
Analog outputs 3 channels standard, one for each velocity component or two velocities and pressure.
Output range 0-5 V, scaling is user-selectable.
Synchronization TTL (5V tolerant) sync in/sync out, start on sync, sample on sync
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Connectors

Bulkhead MCBH-8-FS

Cable PMCIL-8-MP on 10 m polyurethane cable
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Software

Functions Deployment planning, instrument configuration, data retrieval and conversion (for Windows®).
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Multi unit operation

Software N/A

I/O N/A
[arrow]

Power

DC input 9-15V DC

Maximum peak current 3 A

Max. consumption 1.5 W at 64 Hz

Typical consumption, 4 Hz 0.6 - 1 W

Sleep consumption < 100 µA

Transmit power 2 adjustable levels
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Batteries

Battery capacity 50 Wh (alkaline or Li-ion), 165 Wh (lithium), single or dual

New battery voltage 13.5 V DC (alkaline)

Data collection capacity Refer to planning section in software
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Environmental

Operating temperature -4 to +40 °C

Storage temperature -20 to +60 °C

Vibration IEC 60068-1/IEC60068-2-64

Depth rating 300m
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Materials

Standard model POM housing, titanium probe and fasteners

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Dimensions

Maximum diameter 75 mm

Maximum length 468 mm (housing only), 246 mm (fixed stem) add 110 mm for double battery

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Weight

No batteries Weight in air: 2.32 kg, in water: buoyant

2 batteries Weight in air: 3.20 kg, in water: 0.54 kg

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Options

Probe mounted on fixed stem or on 2 m cable

Vertical or horizontal probes

Alkaline, lithium or Li-ion external batteries

IMU - Inertial Measurement Unit