VELOCIMETER

Vectrino Profiler

Boundary velocity profile measurements over 30 mm with 1 mm vertical resolution

As the name suggests, this velocimeter is the profiling version of the Vectrino system. The Vectrino Profiler's strength lies in collecting a small profile of up to 30 cells that are only 1 mm in height. It is globally used as the standard flow-measuring tool for hydraulic laboratory applications.

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Highlights

- ✓ Boundary profile measurements
- ✓ 1 mm vertical resolution
- ✓ 100 Hz maximum sampling rate

Applications

- ✓ Projects highlighting the effect of vegetation on near-bed flows
- ✓ Simulated bed changes in flumes
- ✓ Measurements of high-resolution flow profiles in laboratory flumes
- ✓ Turbulence measurements in laboratory flumes

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Technical specifications

⟶ Water velocity measurements	
Maximum profiling range	Up to 30 mm
Distance from probe	40-70 mm from probe
Sampling volume diameter	7 mm
Sampling volume Height (user-selectable)	N/A
Cell size	1-4 mm (user-selectable)
Velocity range	Increments of 0.1 m/s, maximum 3.0 m/s
Adaptive ping interval	Once, or at 1 second to 1 hour interval
Accuracy	±1% of measured value ±1 mm/s
Velocity precision	N/A
Sampling rate (output)	1-100 Hz
Internal sampling rate	N/A
⟶ Distance measurements	
Minimum range	20 mm
Maximum range	Up to 2 meters depending on signal strength
Cell size	1-4 mm (user-selectable)
Accuracy	0.5 mm at 1 mm cell size
Sampling rate	1-10 Hz
⟶ Echo intensity	
Acoustic frequency	10 MHz
Resolution	Linear & Log scale
Dynamic range	60 dB
⟶ Sensors	
Temperature:	Thermistor embedded in probe
Temp. range	-4 to +32 C

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⟶ Sensors	
Temp. accuracy/resolution	1 °C/0.1 °C
Temp. time response	5 min
Compass:	N/A
Accuracy/resolution	N/A
Tilt:	N/A
Accuracy/resolution	N/A
Maximum tilt	N/A
Up or Down	N/A
Pressure:	N/A
Standard range	N/A
Accuracy/precision	N/A
⟶ Analog inputs	
No. of channels	N/A
Supply voltage to analog output devices	N/A
⟶ Data recording	
Capacity (standard)	N/A
Data record	N/A
⟶ Real-time clock	
Accuracy	N/A
Backup in absence of power	N/A
⟶ Data communications	
I/O	RS422
Communication baud rate	Up to 1.25 Mbps
Recorder download baud rate	N/A
User control	Handled via ”Vectrino Profiler” configuration and collection software.
Analog outputs	N/A

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→ Data communications	
Output range	N/A
Synchronization	RS-485 sync in or sync out
→ Connectors	
Bulkhead	MCBH-12-FS, bronze
Cable	PMCIL-12-MP – see also options below
→ Software	
Functions	Deployment planning, instrument configuration, data retrieval and conversion (for Windows®)
→ Multi unit operation	
Software	Vectrino Profiler software allows multiple Vectrino Profiler to be run within a single instance of the program
I/O	RS 485–USB support for devices with 1, 2, 4,and 8 serial ports.
→ Power	
DC input	12-48 V DC
Maximum peak current	2.5 A at 12 V DC
Max. consumption	4 W at 100 Hz
Typical consumption, 4 Hz	N/A
Sleep consumption	N/A
Transmit power	N/A
→ Batteries	
Battery capacity	N/A
New battery voltage	N/A
Data collection capacity	N/A
→ Environmental	
Operating temperature	-4 to +32 °C
Storage temperature	-15 to +60 °C
Shock and vibration	IEC 721-3-4

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⟶ Environmental	
Depth rating	20 m
⟶ Materials	
Standard model	POM housing. Stainless steel (316) probe and fasteners
⟶ Dimensions	
Maximum diameter	66 mm
Maximum length	350 mm (housing only), 365 mm (fixed stem)
⟶ Weight	
Weight in air	1.2 kg
Weight in water	Neutral
⟶ Options	
4-beam down-looking probe. Fixed stem or 1 m flexible cable.	
10, 20, 30 or 50 m cable with Impulse underwater connector	
RS 232–USB converter (one-to-one, four-to-one or eight-to-one)	