HORIZONTAL CURRENT PROFILER

2D Horizontal Profiler - 400 kHz

Up to 130 m horizontal profiling range; ideal for side-wall applications

The 2D Horizontal Profiler is the ideal tool for current measurements from a physical structure in, for example, port entrances. This ADCP provides the two horizontal flow components at multiple distances from the mounting and is commonly used in online applications where immediate access to current data is critical.

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Highlights

- Up to 130 m horizontal profiling range
- Ideal for wall-mounted applications
- Corrosion-free housing

Applications

- Port entrances with challenging flow conditions
- Flow measurements upstream and downstream of tidal turbines
- Flow measurements from marine structures at draft depth

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Technical specifications

⟶ Water velocity measurements	
Maximum profiling range	100-130 m
Cell size	1.0-8.0 m
Number of cells	Typical 20-40, max. 128
Velocity range	±10 m/s horizontal, ±5 m/s along beam
Accuracy	±1% of measured value ±0.5 cm/s
Velocity precision	Consult instrument software
Maximum output rate	1 Hz
Internal sampling rate	3 Hz
⟶ Echo intensity	
Sampling	Same as velocity
Resolution	0.45 dB
Dynamic range	90 dB
Transducer acoustic frequency	400 kHz
Number of beams	2, slanted at 25°
Beam width	1.7°
Beam width vertical beam	N/A
⟶ Wave measurement option (AST)	
Maximum depth	N/A
Data types	N/A
Sampling rate velocity (output)	N/A
Sampling rate AST (output)	N/A
No. of samples per burst	N/A
⟶ Wave estimates	
Range	N/A
Accuracy/resolution (Hs)	N/A
Accuracy/resolution (Dir)	N/A
Period range	N/A
Cut-off period (Hs)	N/A
Cut-off period (dir)	N/A
⟶ Sensors	
Temperature:	Thermistor embedded in housing
Temp. range	-4 to +40 °C
Temp. accuracy/resolution	0.1 °C/0.01 °C

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⟶ Sensors	
Temp. time response	< 5 min
Compass:	Magnetoresistive
Accuracy/resolution	2°/0.1° for tilt <15°
Tilt:	Liquid level
Accuracy/resolution	0.2°/0.1°
Maximum tilt	30°
Up or Down	Automatic detect
Pressure:	Piezoresistive
Range	0-100 m
Accuracy	0.5% of full scale (optional 0.1% of full scale)
Resolution	0.005% of full scale
⟶ Analog inputs	
No. of channels	2
Supply voltage to analog output devices	Three options selectable through firmware commands: 1) Battery voltage/500 mA, 2) +5 V/250 mA, 3) +12 V/100 mA
Voltage input	0-5 V
Resolution	16-bit A/D
⟶ Data recording	
Capacity	9 MB, can add 4/16 GB
Profile record	Ncells*9 + 120 bytes
Wave record	N/A
Mode	Stop when full (default) or wrap mode
⟶ Real-time clock	
Accuracy	±1 min/year
Backup in absence of power	1 year
⟶ Data communications	
I/O	RS-232 or RS-422. Software supports most commercially available USB-RS-232 converters
Communication baud rate	300-115200 Bd
Recorder download baud rate	600/1200 kBd for both RS-232 and RS-422
User control	Handled via ”AWAC” software, or ActiveX®controls.
Output formats	NMEA, Binary. Prolog provides same types also for processed wave and current data

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⟶ Connectors	
Bulkhead	MCBH-2-FS, MCBH-8-FS, optional Souriau M-series metalconnector for online use
Cable	PMCIL-8-MP on 10 m polyurethane cable
⟶ Software	
Functions	Deployment planning, instrument configuration, data retrieval and conversion (for Windows®)
⟶ Power	
DC input	9-18 V DC
Maximum peak current	3 A
Avg. power consumption	Typical 1 W when sampling
Sleep current	< 100 ?A
Transmit power	1-30 W, 3 adjustable levels
⟶ Environmental	
Operating temperature	-4 to +40 °C
Storage temperature	-20 to +60 °C
Shock and vibration	IEC 721-3-2
EMC approval	IEC 61000
Depth rating	300 m
⟶ Materials	
Standard model	POM and polyurethane plastics with titanium fasteners
⟶ Dimensions	
Maximum diameter	306 mm
Maximum length	203 mm
⟶ Weight	
Weight in air	8.8 kg
Weight in water	3.2 kg
⟶ Online cable	
Polyurethane jacket, Shore D hardness, 13 mm in diameter, max 2 km. Inquire for longer cables	