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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.

This instrument can also be used to perform river discharge measurements by River Insight.

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
- ✓ This instrument is used to perform river discharge measurements by River Insight.

Technical specifications

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 Fransducer acoustic frequency 400 kHz Number of beams 2, slanted at 25* 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 velocity (output) N/A No. of samples per burst N/A Wave estimates Range N/A Accuracy/resolution (Dir) N/A Period range N/A Cut-off period (Hs) N/A Period range 4 to +40 °C Femperature: Thermistor embedded in housing Femp. range 4 to +40 °C Femp. range 4 for micro and maximum range of the micro period range Femp. range 4 to +40 °C Femp. accuracy/resolution 0.1 °C/0.01 °C Femp. accuracy/resolution 0.1 °C/0.01 °C Femp. accuracy/resolution 0.1 °C/0.01 °C Femp. time response 4 5 min	→ Water velocity measurements	
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 vertical beam N/A N/A N/A Wave measurement option (AST) Wave measurement option (AST) Maximum depth N/A Mo. of samples per burst N/A N/A N/A Accuracy/resolution (Hs) N/A Accuracy/resolution (Dir)		100-130 m
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Temp. time response < 5 min Compass: Magnetoresistive	Temp. range	-4 to +40 °C
Compass: Magnetoresistive	Temp. accuracy/resolution	0.1 °C/0.01 °C
· -	Temp. time response	< 5 min
000000000000000000000000000000000000000	Compass:	Magnetoresistive
Accuracy/resolution 2°/0.1° for tilt <15°	Accuracy/resolution	2°/0.1° for tilt <15°

→ Sensors	
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
→ Connectors	
Bulkhead	MCBH-2-FS, MCBH-8-FS, optional Souriau M-series metal connector for online use
Cable	PMCIL-8-MP on 10 m polyurethane cable
→ Software	
Functions	Deployment planning, instrument configuration, data retrieval and conversion (for Windows $\ensuremath{\$}$)
→ Power	
DC input	9-18 V DC

→ Power	
Maximum peak current	3 A
Avg. power consumption	Typical 1 W when sampling
Sleep current	< 100 μΑ
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