2D Horizontal Profiler 400 kHz

300 m, Generation 2

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.

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

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 (along beam)	User-selectable 1.0 to 5.0 m/s
Accuracy	±1% of measured value ±0.5 cm/s
Velocity precision	Consult instrument software
Maximum output rate	1 Hz
Internal sampling rate	2 Hz

*Dependent on measurement conditions

Echo intensity	
Sampling	Same as velocity
Resolution	0.5 dB
Dynamic range	90 dB
Transducer acoustic frequency	400 kHz
Number of beams	2, slanted at 25°

Echo intensity

Beam width	0.75° (1.5° total)
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 in head
Temp. range	-4 to +40 °C
Temp. accuracy/resolution	0.1 °C/0.01 °C
Temp. time response	< 5 min
Compass:	Solid state magnetometer
Accuracy/resolution	2°/0.1° for tilt <30° *
Tilt:	Solid state accelerometer
Accuracy/resolution	0.2° for tilt <30° /0.1°
Maximum tilt	Full 3D
Up or Down	Automatic detect
Pressure:	Piezoresistive
Range	50 m / 100 m / 300 m
Accuracy / precision	0.1% FS / 0.005% of full scale

*TBC

Data recording

Capacity	16 GB

Real-time clock

Accuracy	±1 min/year
Backup in absence of power	1 year

Data communications

Ethernet	0/100 Mbits Auto MDI-X
TCP/IP, UDP, HTTP protocols	
Fixed IP/DHCP client/AutoIP, UPn	
Serial I/O	Configurable RS-232 or RS-422

Data communications

Serial communication baud rate	9600-115200 Baud
Controller interface	ASCII command interface over Telnet and serial
Output formats	Binary, NMEA or ASCII data output. See Integration Manual

Connectors

Bulkhead (Impulse)	MCBH-2-FS, MCBH-8-FS, optional Souriau
Cable	PMCIL-8-MP on 10 m polyurethane cable, Souriau option

Software

Functions	Deployment planning, instrument configuration, data retrieval and conversion (for Windows®)

Power

DC input	12-48 VDC
Absolute maximum DC input	51 VDC
Maximum peak current	1 A
Sleep current	< 40 µA
Transmit power	Maximum 30 W, adjustable

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	Delrin® and polyurethane plastics with titanium screws

Dimensions (see drawings for details)

Maximum diameter	306 mm
Maximum length	203 mm

Weight

Weight in air	8.8 kg
Weight in water	3.2 kg