

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.

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

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

Echo intensity

Transducer acoustic frequency	400 kHz
Number of beams	2, slanted at 25°
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
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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	

Data communications

Fixed IP/DHCP client/AutoIP, UPn

Serial I/O Configurable RS-232 or RS-422

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