## 2D Horizontal Profiler - 300 m, 400 kHz

## Currently unavailable. New version coming soon

## Up to $130 \mathbf{m}$ 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

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

## Applications

$\checkmark$ Port entrances with challenging flow conditions
$\checkmark$ Flow measurements upstream and downstream of tidal turbines
$\checkmark$ Flow measurements from marine structures at draft depth
$\checkmark$ This instrument is used to perform river discharge measurements by River Insight.

## Technical specifications

| $\rightarrow$ 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 | $\pm 10 \mathrm{~m} / \mathrm{s}$ horizontal, $\pm 5 \mathrm{~m} / \mathrm{s}$ along beam |
| Accuracy | $\pm 1 \%$ of measured value $\pm 0.5 \mathrm{~cm} / \mathrm{s}$ |
| Velocity precision | Consult instrument software |
| Maximum output rate | 1 Hz |
| Internal sampling rate | 3 Hz |
| $\rightarrow$ 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 $25^{\circ}$ |
| Beam width | $0.85^{\circ}$ (1.7 ${ }^{\circ}$ total) |
| Beam width vertical beam | N/A |
| $\rightarrow$ 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 |
| $\rightarrow$ 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 |
| $\rightarrow$ Sensors |  |
| Temperature: | Thermistor embedded in housing |
| Temp. range | -4 to $+40^{\circ} \mathrm{C}$ |
| Temp. accuracy/resolution | $0.1{ }^{\circ} \mathrm{C} / 0.01{ }^{\circ} \mathrm{C}$ |
| Temp. time response | < 5 min |
| Compass: | Magnetoresistive |
| Accuracy/resolution | $2^{\circ} / 0.1^{\circ}$ for tilt $<15^{\circ}$ |

## $\rightarrow$ Sensors

| Tilt: | Liquid level |
| :---: | :---: |
| Accuracy/resolution | $0.2^{\circ} / 0.1^{\circ}$ |
| Maximum tilt | $30^{\circ}$ |
| 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 |
| $\rightarrow$ Analog inputs |  |
| No. of channels | 2 |
| Supply voltage to analog output devices | Three options selectable through firmware commands: 1) Battery voltage $/ 500 \mathrm{~mA}, 2$ ) $+5 \mathrm{~V} / 250 \mathrm{~mA}, 3)+12 \mathrm{~V} / 100 \mathrm{~mA}$ |
| Voltage input | 0-5 V |
| Resolution | 16-bit A/D |
| $\rightarrow$ 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 |
| $\rightarrow$ Real-time clock |  |
| Accuracy | $\pm 1 \mathrm{~min} / \mathrm{ye}$ ar |
| Backup in absence of power | 1 year |
| $\rightarrow$ 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 |
| $\rightarrow$ Connectors |  |

Bulkhead

## Cable

MCBH-2-FS, MCBH-8-FS, optional Souriau M-series metal connector for online use

PMCIL-8-MP on 10 m polyurethane cable

## $\rightarrow$ Software

Deployment planning, instrument configuration, data retrieval and conversion (for Windows ${ }^{\circledR}$ )

```
-> Power
```

DC input

| $\rightarrow$ Power |  |
| :--- | :--- |
| Maximum peak current | 3 A |
| Avg. power consumption | Typical 1 W when sampling |
| Sleep current | $100 \mu \mathrm{~A}$ |
| Transmit power | $1-30 \mathrm{~W}, 3$ adjustable levels |
| $\rightarrow$ Environmental | -4 to $+40^{\circ} \mathrm{C}$ |
| Operating temperature | -20 to $+60^{\circ} \mathrm{C}$ |
| Storage temperature | IEC $721-3-2$ |
| Shock and vibration | IEC 61000 |
| EMC approval | 300 m |
| Depth rating | POM and polyurethane plastics with titanium fasteners |
| $\rightarrow$ Materials |  |
| Standard model | 306 mm |
| $\rightarrow$ Dimensions | 203 mm |
| Maximum diameter |  |
| Maximum length | 8.8 kg |
| $\rightarrow$ Weight |  |
| Weight in air |  |
| Weight in water |  |
| $\rightarrow$ Online cable |  |
| Polyurene |  |

Polyurethane jacket, Shore D hardness, 13 mm in diameter, max 2 km . Inquire for longer cables

