

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) | ± 1 m/s, ± 2.5 m/s, ± 5 m/s |
| Velocity range (horizontal) | ± 2.3 m/s, ± 5.75 m/s, ± 11.5 m/s |
| Accuracy | $\pm 1\%$ of measured value ± 0.5 cm/s |
| Velocity precision | Consult instrument software |
| Maximum output rate | 1 Hz |
| Internal sampling rate | 2 Hz |

→ 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° |
| 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 |

→ Sensors

| | |
|----------------------|--------------------------------|
| 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 | 30 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 |
| 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

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

→ Software

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|-----------|--|
| Functions | MIDAS software for configuration and display - <i>Contact your local sales office for access</i> |
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→ Power

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|---------------------------|--------------------------|
| 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 |

→ Environmental

| | |
|--------------|-----------|
| EMC approval | IEC 61000 |
| Depth rating | 300 m |

→ Materials

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|----------------|--|
| Standard model | Delrin® and polyurethane plastics with titanium screws |
|----------------|--|

→ Dimensions (see drawings for details)

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|------------------|--------|
| Maximum diameter | 306 mm |
| Maximum length | 203 mm |

→ Weight

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|-----------------|--------|
| Weight in air | 8.8 kg |
| Weight in water | 3.2 kg |