CURRENT METER

# Aquadopp 3000 m

## Single-point current meter designed for very long-term deployments

With all the features and capabilities of the standard Aquadopp, the deepwater Aquadopp 3000 m current meter has been used and proven by oceanographers around the world for almost 20 years. Thanks to innovative data diagnostic features for challenging environments, it provides exceptionally high-quality 3D currents in a form factor that is easy to install in any type of mooring line configuration, or simply attached to a bottom or surface platform.

Raw magnetometer data can be stored for post calibration of compass when used without the inductive modem option.

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## Highlights

- Single-point current meter
- Designed for very long-term deployments
- Diagnostics mode for mooring performance evaluation

## Applications

- Studies of deep-water currents
- Studies of tidal currents
- Attached to mooring lines
- In conjunction with riser monitoring systems
- Measurements of unaffected currents from physical structures
- Alternative to conventional current meters with errors due to fouling
- Combination of currents and high-accuracy CTD data
- Near-bed current measurements from landers
- Deep ocean mining support

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## Technical specifications

| ⟶ Water velocity measurements | |
|---|---|
| Maximum profiling range | N/A |
| Cell size | 0.75 m |
| Minimum blanking | 0.50 m |
| Maximum number of cells | 1 |
| Measurement cell position | 0.5-5.0 m (user-selectable) |
| Default position (along beam) | 0.50-2.0 m |
| Velocity range | ±5 m/s |
| Accuracy | ±1% of measured value ±0.5 cm/s |
| Velocity precision | Consult instrument software |
| Maximum sampling rate (output) | 1 Hz |
| Internal sampling rate | 23 Hz |
| ⟶ Echo intensity | |
| Sampling | Same as velocity |
| Resolution | 0.45 dB |
| Dynamic range | 90 dB |
| Transducer acoustic frequency | 2 MHz |
| Number of beams | 3 |
| Beam width | 3.4° |
| ⟶ HR option | |
| Maximum profiling range | N/A |
| Cell size | N/A |
| Minimum blanking | N/A |
| Maximum number of cells | N/A |
| Range/Velocity limitations | N/A |

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| | |
|---|---|
| ⟶ HR option | |
| Accuracy | N/A |
| Max. sampling rate | N/A |
| ⟶ Z-Cell option | |
| Cell zero acoustic frequency | N/A |
| Maximum profiling range | N/A |
| Number of beams | N/A |
| ⟶ Sensors | |
| Temperature: | Thermistor embedded in head |
| Temp. range | -4 to +40 °C |
| Temp. accuracy/resolution | 0.1 °C/0.01 °C |
| Temp. time response | 10 min |
| Compass: | Magnetometer |
| Accuracy/resolution | 2°/0.1° for tilt < 20° |
| Tilt: | Liquid level |
| Accuracy/resolution | 0.2°/0.1° |
| Maximum tilt | 30° |
| Up or Down | Automatic detect |
| Pressure: | Piezoresistive |
| Range | 3000 m |
| Accuracy/precision | 0.5% FS / 0.005% of full scale |
| ⟶ Analog inputs | |
| No. of channels | 2 |
| Supply voltage to analogoutput devices | Three options selectable through firmwarecommands: 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 |

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## → Data recording

| | |
|---|---|
| Capacity | 9 MB, can add 4/16 GB |

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|---|---|
| **⟶ Data recording** | |
| Data record | 40 bytes |
| Diagnostics record | 40 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 | 4 weeks |
| **⟶ Data communications** | |
| I/O | RS-232 or RS-422 |
| Communication baud rate | 300-115200 Bd |
| Recorder download baud rate | 600/1200 kBd for both RS-232 and RS-422 |
| User control | Handled via "Aquadopp" software, ActiveX®function calls, or direct commands with binaryor ASCII data output |
| **⟶ Connectors** | |
| Bulkhead (Impulse) | MCBH-8-FS |
| Cable | PMCIL-8-MP on 10 m polyurethane cable |
| **⟶ Software** | |
| Functions | Deployment planning, instrument configuration,data retrieval and conversion (for Windows®) |
| **⟶ Power** | |
| DC input | 9-15 V DC |
| Maximum peak current | 3 A |
| Avg. power consumption | 0.015 W |
| Sleep current | < 100 µA |
| Transmit power | 20 W |
| **⟶ Batteries** | |
| Battery capacity | 50 Wh (alkaline or Li-ion), 165 Wh (lithium), Single or dual |

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|---|---|
| **→ Batteries** | |
| New battery voltage | 13.5 V DC (alkaline) |
| **→ Environmental** | |
| Operating temperature | -5 to +40 °C |
| Storage temperature | -20 to +60 °C |
| Shock and vibration | IEC 721-3-2 |
| EMC approval | IEC 61000 |
| Depth rating | 3000 m |
| **→ Materials** | |
| Standard model | POM housing |
| **→ Dimensions** | |
| Maximum diameter | 84 mm |
| Maximum length | ~500 mm (single battery) or +110 mm (double battery) depending on head configuration |
| **→ Weight** | |
| Weight in air | 3.6 kg |
| Weight in water | 1.2 kg |
| **→ Options** | |

1) Alkaline, lithium or Li-ion external batteries, 2) Inquire for different head configurations