

Aquadopp® 2000/6000 m

The most versatile ocean
current meters available



Imagine an ocean current meter without need for recalibration, without moving parts, with the ability to withstand fouling and with the sampling volume moved away from the mounting structure.

These are among the factors making the Aquadopp® family the most versatile ocean current meters available.

The 6000m Aquadopp® is “the big brother” in the line of Aquadopp® models. The all-titanium mechanical housing is built to last at great ocean depths. The overall design is the results of a testing and verification process that has included many of the world’s largest oceanographic institutions.

Rugged and resistant, the 6000m model still retains all the capabilities of the standard Aquadopp®. Built from Titanium grade 2, the instrument is heavier than the standard instrument, but at 8kg, it is still possible to handle one or two units without any lifting equipment.

The 2000m model is made of plastic with a metal cylinder inside. As a result, the 2000m model is lighter than the pure-titanium 6000m model and it represents an affordable alternative for the deployment in intermediate waters.

Both types have a transducer sensor head made from machined Delrin® materials with the transducers symmetrically distributed in the horizontal plane while at the same time looking slightly upwards (25°).

In the deep ocean, there are fewer suspended particles than in the zone close to the surface. While there are significant variations across the globe, mid-water deployments represent a real challenge for instruments that depend on acoustic backscatter. Considerable work has been done to understand the factors that affect the acoustic signal strength and to improve the magnitude of the returned echo. This work is reflected in the design of the current electronics and 6000m transducer design. Verified performance in the deep ocean is well documented – see our web site for details.

- ✓ No moving parts, no recalibration needed!
- ✓ Use Diagnostic mode to measure and get the full picture of mooring motion details.
- ✓ Record all relevant parameters including acoustic signal strength, tilt, compass, battery voltage, and status/error code.
- ✓ Set the measurement interval, averaging interval and exact pinging rate independently in the deployment planning menu included as part of the standard software.
- ✓ Compass solution includes hard iron calibration routines to remove cable and mounting clamps effects.
- ✓ Inquire for other transducer configurations.
- ✓ Inquire for special communication options such as acoustic or inductive modems.



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Specifications

Water Velocity Measurement

Range	± 3m/s (inquire for higher ranges)
Accuracy	1% of measured value ± 0.5 cm/s
Maximum sampling rate (output)	1Hz
Internal sampling rate	23Hz

Measurement Area

Measurement cell size	0.75m
Measurement cell position	0.35–5.0m (user selectable)
Default position (along beam)	0.35–1.85m

Doppler Uncertainty (noise)

Typical uncertainty for default configurations	0.5–1.0cm/s
Uncertainty in U,V at 1Hz sampling rate	1.5cm/s

Echo Intensity

Acoustic frequency	2MHz
Resolution	0.45dB
Dynamic range	90dB

Sensors

Temperature	Thermistor embedded in head
Range	–4°C to 40°C
Accuracy/Resolution	0.1°C/0.01°C
Time response	10 min

Compass	Flux-gate with liquid tilt
Maximum tilt	30°
Accuracy/Resolution	2°/0.1° for tilt < 20°

Tilt	Liquid level
Accuracy/Resolution	0.2°/0.1° for tilt < 20°
Up or down	Automatic detect

Pressure	Piezoresistive
Range	0–2000/6000m (standard)
Accuracy/Resolution	0.25% / Better than 0.005% of full scale per sample

Data Communication

I/O	RS232, analog input, RS422 or analog output. Software supports most commercially available USB–RS232 converters
Baud rate	300–115200
User control	Handled via Win32® software, ActiveX® function calls, or direct commands with binary or ASCII data output

Software (“Aquadopp DW”)

Operating system	Windows® 2000, XP
Functions	Deployment planning, start with alarm, data retrieval, ASCII conversion. Online data collection and graphical display. Test modes

Data Recording

Capacity (standard)	9 MB, expandable to 33, 89, or 161MB
Data record	40 bytes
Diagnostic record	40 bytes

Power

DC input	9–16Vdc
Peak current	2A at 12Vdc (user adjustable)
Max consumption 1Hz	1.4 W
Avg. consumption	0.2W (0.02Hz), 0.02W (0.002Hz)
Sleep consumption	0.0013 W
Battery capacity	50 Wh. Extended 6000m version has two battery packs (i.e. double capacity)
New battery voltage	13.5 Vdc

Data collection (alkaline)	5 months at 10-min, ± 1.0cm/s noise (10 months for double battery version at 10-min, ± 1.0cm/s noise)
Data collection (lithium)	15 months at 10-min, ± 1.0cm/s noise (30 months for double battery version at 10-min, ± 1.0cm/s noise)

Connectors

Bulkhead (Impulse)	LPMBH-8-FS 2000m: bronze 6000m: titanium
Cable	PLPMIL-8-MP on 10m polyurethane cable

From the year 2005 Inline connectors type MCBH-8-FS will be used. This will cause the endbell to be somewhat longer than today.

Materials

Standard model	2000m: Delrin® and polyurethane plastics with titanium screws 6000m: Delrin® and titanium
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Environmental

Operating temperature	–5°C to 45°C
Storage temperature	–15°C to 60°C
Shock and vibration	IEC 721-3-2
Pressure rating	0–2000m/0–6000m

Antifouling Paint

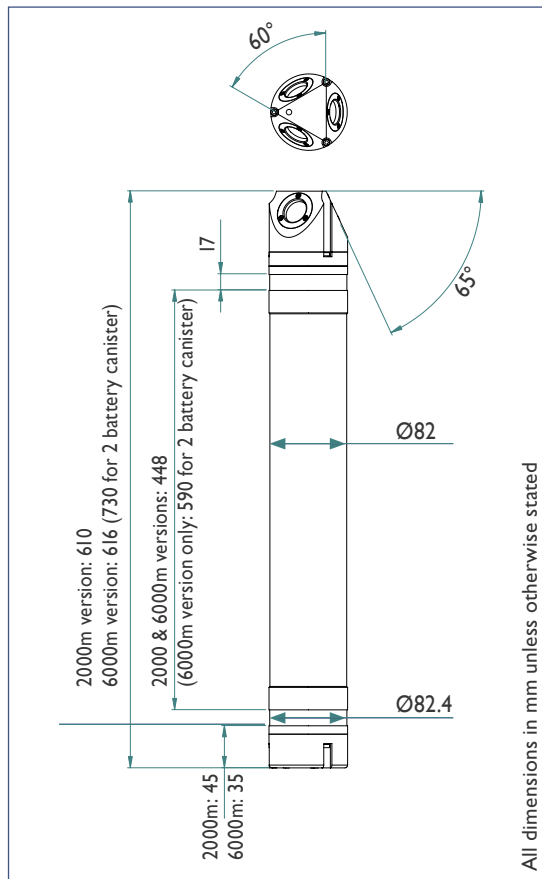
May be applied to all surfaces

Dimensions

Cylinder	Diameter: 84mm (both types) Length: 597mm (2000m) Length: 636mm (6000m) Length: 756mm (Extended 6000m)
Approx. weight in air	4.4kg(2000m), 8kg (6000m)
Approx. weight in water	1.2 kg (2000m), 4.8kg (6000m)

Options

Battery	Lithium batteries
Head configuration	Inquire
Communication solution	Inquire



All dimensions in mm unless otherwise stated

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