

Aquadopp[®] Profiler

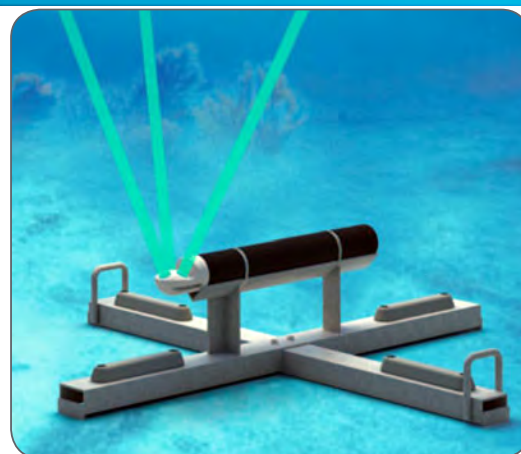


The Aquadopp[®] measures water column current profiles using acoustic Doppler technology.

Designed for a multitude of applications from coasts to rivers, the Profiler is a small, lightweight & cost-effective solution for shallow water (<100 m). Deploy it on the bottom, on a buoy or on a mooring line. Aquadopp is complete including all parts required for a self-contained deployment with internal batteries & a datalogger. Additional configurations are available.

SPECIFICATIONS				
<i>Specifications subject to change without notice</i>				
WATER VELOCITY MEASUREMENT				
Acoustic frequency	0.4MHz	0.6MHz	1.0MHz	2.0MHz
Max. profiling range*	60-90m	30-40m	12-20m	4-10m
Cell size	2-8m	1-4m	0.3-4m	0.1-2m
Beam width	3.7°	3.0°	3.4°	1.7°
Minimum blanking	1m	0.50m	0.20m	0.05m
Number of beams	3			
Maximum # cells	128			
Velocity Range	±10m/s (inquire for extended range)			
Accuracy	1% of measured value ±0.5cm/s			
Max. Sampling rate	1Hz			
Velocity uncertainty	Consult software program			
*Measures current profile in user-specified number of instrument cells out to a maximum range depending on acoustic scattering conditions. The lower range occurs with clear water & small cells & higher range with large cells & acoustically turbid water.				
CELL ZERO (OPTIONAL FOR 0.6MHZ AND 1MHZ TRANSDUCERS)				
Cell zero acoustic frequency	2Mz			
Max. profiling range*	0.4-0.9m			
Number of beams	3			
ECHO INTENSITY				
Sampling	Same as velocity			
Resolution	0.45dB			
Dynamic range	90dB			
HR MODE WATER VELOCITY MEASUREMENT				
Acoustic Frequency	1.0MHz		2.0MHz	
Maximum profiling range*	6m		3m	
Cell size	20-300mm		7-150mm	
Beam width	3.4°		1.7°	
Minimum blanking	0.2m		0.03m	
Maximum # cells	128			
Range/velocity limitations	Profiling range/velocity product shouldn't exceed 0.5m ² /s (2MHz system) or 1.0m ² /s for 1MHz.			
Accuracy	1% of measured value ±0.5cm/s			
Max. Sampling rate	1Hz (continuous mode), 8Hz (burst mode)			
Velocity uncertainty	Consult software program			

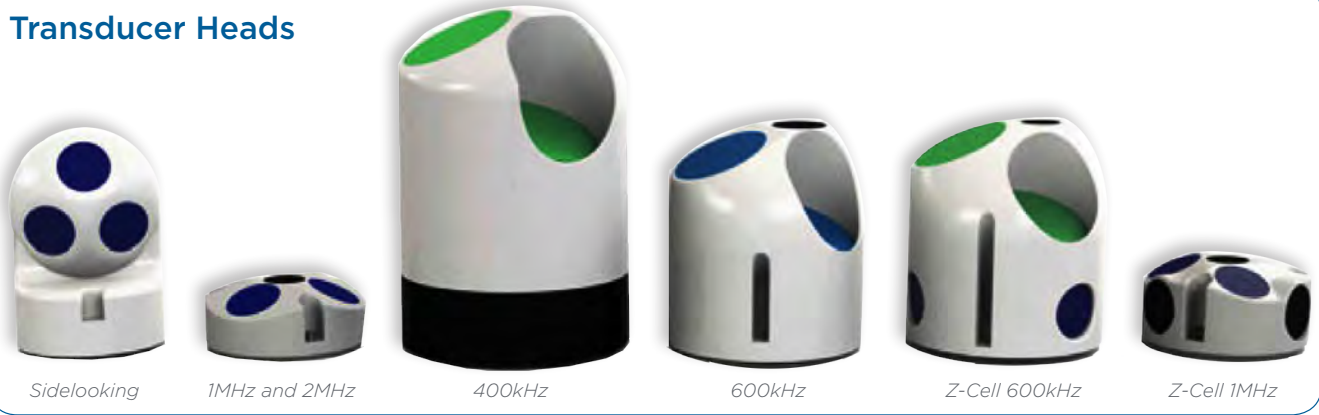
Specifications continued on page 2.



FEATURES

- ▶ Surface to bottom velocity profiles
- ▶ Profiling ranges from 0.5 to 90 m
- ▶ Online data communications
- ▶ Small, light, easy to deploy
- ▶ All plastic and titanium parts eliminate corrosion
- ▶ No moving parts that can be blocked or damaged
- ▶ Remote sampling volume is not affected by bio-fouling
- ▶ Z-Cell option eliminates blanking distance
- ▶ Effective directional wave gauge
- ▶ Internal compass, tilt, pressure, and temperature sensors
- ▶ Online data communication options
- ▶ Small and light weight (less than 3.5 kg)
- ▶ Log data from external analog sensors, such as OBS or CT sensors
- ▶ Internal data recording (16 GB)
- ▶ Reduced blanking distance (5 cm)
- ▶ 3D velocity profiles, 0.7 - 5 cm resolution
- ▶ Continuous (1 Hz) and burst (max 8 Hz) sampling modes
- ▶ Extended velocity range mode for energetic environments
- ▶ Configurable for selected beam samplings (1, 2 or 3 beams)
- ▶ Measures to within a few cm of the bottom (or ice layer)
- ▶ Easily switch between "normal" and HR Profiler modes
- ▶ Simultaneous measurements of velocity profiles and acoustic scattering strength

Transducer Heads



STANDARD SENSORS	
Temperature	Thermistor embedded
Range	-4°C to 30°C
Accuracy/resolution	0.1°C/0.01°C
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	0-100m (standard), inquire for options
Accuracy/resolution	0.5%/0.005% of full scale
ANALOG INPUTS	
# of channels	2
Voltage supply	3 options selectable thru firmware commands: •Battery voltage/500 mA •+5V / 250 mA •+12V /100 mA
Voltage input	0-5V
Resolution	16 bit A/D
DATA COMMUNICATION	
I/O	RS232, RS422. Software supports most available USB-RS232 converters
Baud rate	300-115200 (baud)
Recorder download baud rate	600/1200 k.Baud for both RS232 & RS422
DATA RECORDING	
Capacity	9 MB, can add 32/ 176/352/MB & 4GB Prolog
Data record	32 bytes + 9xNcells
Mode	Stop when full (default) or wrap mode
Software	AquaPro
Operating system	Windows®XP, Windows® 7
Functions	Deployment planning, data retrieval,ASCII conversion, online data collection, & display
POWER	
DC Input	9-15VDC
Peak current	3A
Max average consumption at 1Hz	0.2-1.5W

Sleep consumption	0.0003 mW (RS232) 0.005 mW (RS422)
Transmit power	0.3-20W, 3 adjustable levels
REAL TIME CLOCK	
Accuracy	+/- 1 min/year
Backup in absence of power	4 weeks
INTERNAL BATTERIES	
Type/capacity	18 AA Alkaline cells/50Wh
New battery	13.5VDC
Duration (10-minute avg.)	80 days for 2MHz, 0.5m cells. 50 days for 1MHz, 1.0m cells
MATERIALS	
Standard	Delrin & polyurethane plastics w/titanium screws
Intermediate / deepwater	Titanium & Delrin plastics Connector
CONNECTORS	
Bulkhead Impulse	MCBH-8-FS
Cable	PMCIL-8-MP on 10-m polyurethane cable
ENVIRONMENTAL	
Operating temperature	-5°C to 35°C
Storage temperature	-20°C to 60°C
Shock & vibration	IEC 721-3-2
Depth rating	300m
DIMENSIONS	
	0.4MHZ 0.6MHZ 1/ 2 MHZ
Weight in air	3.4 kg 2.9 kg 2.2 kg
Weight in water	0.2 kg 0.4 kg 0.2 kg
Length	see dimensional drawings
Diameter	see dimensional drawings
OPTIONS	
Batteries	Lithium, Li-Io rechargeable
External batteries	Alkaline, Lithium or Lithium Ion
Transducer head	Right angle head for 1 or 2MHz. Special configurations.
Deep water systems	3000m & 6000m versions
Communications	Special harness (for RS422)