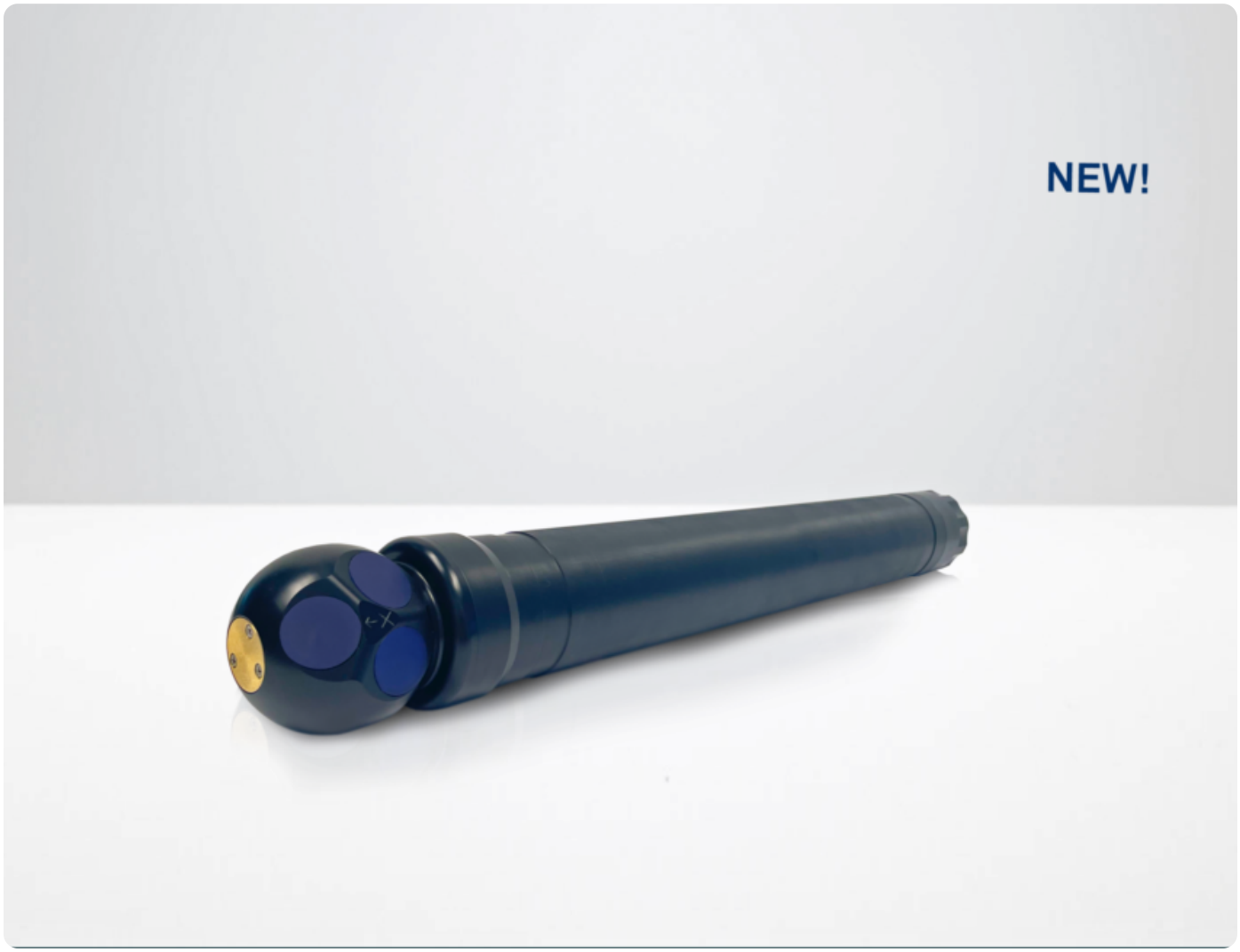
Aquadopp Profiler 2 MHz



Small and compact, short-range current profiling; option for PUV wave measurements

The Aquadopp Profiler is a highly versatile Acoustic Doppler Current Profiler (ADCP) available in four profiling range options, from < 1 m to > 85 m. Designed for simple yet powerful operation, this current profiler is packed with features used by engineers and researchers to enable accurate and effective hydrodynamic data collection in a variety of environmental conditions.

Highlights

- Up to 10 m current profiling range
- Optional right-angle head
- PUV-based directional wave measurements

Applications

- Near-bed current profiles with fine vertical resolution
- Mean flow measurements with high focus on ease of use and simplicity
- Measurements in flow regimes with strong variations in flow speeds
- Projects with needs for both high-resolution and normal-range current measurements
- Measurements of combinations of waves and currents
- Studies of deep-water currents
- Studies of tidal currents
- Mounted on surface buoys
- Suitable for wave buoys

Technical specifications

→ Water velocity measurements	
Maximum profiling range	4-10 m
Cell size	0.1-2 m
Minimum blanking	0.05 m
Maximum number of cells	96
Measurement cell position	N/A
Default position (along beam)	N/A
Velocity range	±10 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 (along slanted beams)	
Sampling	Same as velocity
Resolution	0.45 dB
Dynamic range	90 dB
Transducer acoustic frequency	2 MHz
Number of beams	3
Beam width	1.7°
→ HR option	
Maximum profiling range	3 m
Cell size	7-150 mm
Minimum blanking	0.03 m
Maximum number of cells	128
Range/Velocity limitations	Product of profiling range and velocity should not exceed 0.5 m2/s (2 MHz system)
Accuracy	±1% of measured value ±0.5 cm/s
Max. sampling rate	1 Hz (continuous mode,)8 Hz (burst mode)”
→ 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°

→ Sensors	
Up or Down	Automatic detect
Pressure:	Piezoresistive
Range	0-100 m (inquire for options)
Accuracy/precision	0.5% FS / 0.005% of full scale
→ Data recording	
Capacity	9 MB, can add 4/16 GB
Data record	9*Ncells + 32 bytes
Diagnostics record	N/A
Wave record	Nsamples * 24 + 60 bytes
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 binary or ASCII data output
→ 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	0.03 W
Sleep current	< 100 µA
Transmit power	0.3-20 W, 3 adjustable levels
→ Batteries	
Battery capacity	1) 50 Wh (alkaline or Li-ion), 2) 165 Wh (lithium), 3) Single or dual
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 60068-1/IEC60068-2-27/IEC60068-2-64
EMC approval	IEC 61000
Depth rating	300 m, (3000 m and 6000 m option)

→ Connectors	
Bulkhead	MCBH-8-FS
Cable	PMCIL-8-MP on 10 m polyurethane cable
→ Materials	
Standard model	POM and polyurethane plastics with titanium fasteners
→ Dimensions	
Maximum diameter	75 mm
Maximum length	~550 mm (single battery), +110 mm (double battery) depending on head configuration
→ Weight	
Weight in air	2.2 kg
Weight in water	0.2 kg
→ Options	

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