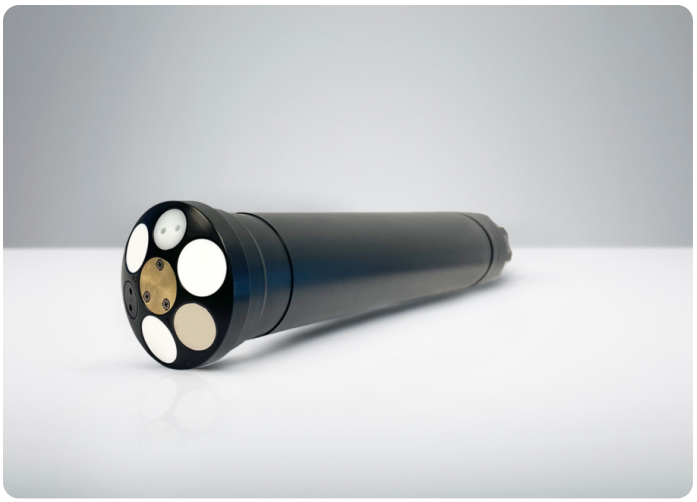
Aquadopp Profiler 1 MHz

Small and compact, with up to 25 m current profiling range; 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. The 1 MHz version has a current profiling range of up to 25 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 25 m current profiling range
- Optional right-angle head
- PUV wave measurements

Applications

- 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
- Studies of deep-water currents
- Studies of tidal currents
- Measurements of combinations of waves and currents
- Suitable for wave buoys
- This instrument is used to perform river discharge measurements by River Insight.

Technical specifications

Water velocity measurements	
Maximum profiling range	12-25 m
Cell size	0.3-4 m
Minimum blanking	0.20 m
Maximum number of cells	96
Measurement cell position	N/A
Default position (along beam)	N/A
Velocity range	±10 m/s

Water velocity measurements	
Accuracy	±1% of measured value ±0.5 cm/s
Velocity precision	Consult instrument software
Maximum sampling rate (output)	1 Hz
Internal sampling rate	7 Hz

Echo intensity (along slanted beams)	
Sampling	Same as velocity
Resolution	0.45 dB
Dynamic range	90 dB
Transducer acoustic frequency	1 MHz
Number of beams	3
Beam width	3.4°

HR option	
Maximum profiling range	6 m
Cell size	20-300 mm
Minimum blanking	0.2 m
Maximum number of cells	128
Range/Velocity limitations	Product of profiling range and velocity should not exceed 1.0 m2/s
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°
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

Real-time clock	
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	0.05 W
Sleep current	< 100 µA
Transmit power	0.3-20 W, 4 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 721-3-7
EMC approval	IEC 61000
Depth rating	300 m (3000 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

Online cable information

Cable length	0-10m; 10-50m; 50-500m
Power wire gauge	20AWG; 20AWG; 18AWG
Hardware	Standard; Standard; Long cable kit
Input voltage	9-24VDC; 24VDC +/-0,5; 48VDC +2/-5
Absolut maximum DC input	26 VDC; 26 VDC; 51 VDC
Communication	RS232/RS422/115200; RS232/RS422/115200; RS422/115200