

CURRENT PROFILER

# Aquadopp Profiler 600 kHz



Up to 40 m current profiling range; easy to operate and deploy

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 600 kHz version has a current profiling range of up to 40 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.

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## Highlights

- ✓ Up to 40 m current profiling range
- ✓ Ideal for mean current measurements
- ✓ Easy to operate and deploy

## Applications

- ✓ Mean flow measurements with high focus on ease of use and simplicity
- ✓ Measurements in flow regimes with strong variations in flow speeds
- ✓ Studies of tidal currents
- ✓ Measurements of combinations of waves and currents
- ✓ Suitable for wave buoys

## Technical specifications

### → Water velocity measurements

Maximum profiling range	30-40 m
Cell size	1-4 m
Minimum blanking	0.50 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	4 Hz

### → Echo intensity (along slanted beams)

Sampling	Same as velocity
Resolution	0.45 dB
Dynamic range	90 dB
Transducer acoustic frequency	600 kHz
Number of beams	3
Beam width	3.0°

### → 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
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

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## → Sensors

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

## → Analog inputs

No. of channels	2
Supply voltage to analog output devices	Three options selectable through firmware commands: 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

## → 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

## → Connectors

Bulkhead	MCBH-8-FS
Cable	PMCIL-8-MP on 10m polyurethane cable

## → Software

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## 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	0.06 W
Sleep current	< 100 $\mu$ A
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 721-3-6
EMC approval	IEC 61000
Depth rating	300 m

### → Materials

Standard model	POM and polyurethane plastics with titanium fasteners
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### → Dimensions

Maximum diameter	100 mm
Maximum length	~550 mm (single battery), +110 mm (double battery) depending on head configuration

### → Weight

Weight in air	2.9 kg
Weight in water	0.4 kg

### → Options

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