

## Aquadopp Profiler 400 kHz



### **Up to 90 m current profiling range; ideal for mean current measurements**

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The Aquadopp Profiler is a highly versatile Acoustic Doppler Current Profiler (ADCP) available in four profiling range options, from  $< 1$  m to  $> 90$  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 90 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
- ✓ Suitable for wave buoys

## Technical specifications

### → Water velocity measurements

Nominal profiling range*	90 m
Cell size	1-8 m
Maximum number of cells	200
Minimum blanking	1 m
Velocity range (along beam)	$\pm 1$ m/s, $\pm 2.5$ m/s, $\pm 5$ m/s
Accuracy	$\pm 1\%$ of measured value $\pm 0.5$ cm/s
Velocity range (horizontal)	$\pm 2.3$ m/s, $\pm 5.75$ m/s, $\pm 11.5$ m/s
Horizontal velocity precision**	Typ. 1cm/s
Maximum sampling rate (output)	1 Hz
Wave measurement	PUV (optional)

\* Depending on scattering conditions

\*\* Consult instrument SW

### → Echo intensity

Sampling	Same as velocity
Resolution	0.5 dB
Dynamic range	90 dB
Transducer acoustic frequency	400 kHz
Number of beams	3
Beam width	1.9° (3.8° total)

### → Sensors

Temperature:	
Temp. range	-4 to +40 °C
Temp. accuracy/resolution	0.1 °C/0.01 °C
Temp. time response	<1 min
Compass:	
Accuracy/resolution	<2° for tilt <30°/0.01°
Tilt:	
Accuracy/resolution	0.2° for tilt <30°/0.01°
Maximum tilt	Full 3D
Up or Down	Automatic detect
Pressure:	
Range	30m/100m/500m
Accuracy/Precision	0.5% FS/ 0.005% of full scale

### → Data recording

Capacity	16 GB
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### → Real-time clock

Accuracy	±1 min/year
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Backup in absence of power	4 weeks
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### → Data communications

I/O	RS-422 (Inquire for RS-232)
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Communication Baud Rate	9600 Baud-1.2 Mbaud (default 115200 Baud)
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User control	Nortek Deployment Software or direct ASCII commands, with binary or ASCII data output
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### → Software

Operating system	Agnostic
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Functions	Deployment planning, instrument configuration, data retrieval and conversion. Online data display.
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### → Power

DC input	9-24 VDC
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Absolute maximum DC input	26 VDC
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Maximum peak current	4.5 A
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Power consumption	Consult Nortek Deployment Software
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Sleep current	< 10 uA
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Transmit power	Adjustable
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### → Batteries

Internal Battery Capacity	1-3x 50 Wh (Alkaline), 2-3x 165 Wh (Lithium), 1-3x 76 Wh (Li-Ion)
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Battery weight	430 g per 50 Wh (Alkaline), 380 g per 165 Wh (Lithium), 300 g per 76 Wh (Li-Ion)
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New battery voltage	13.5 VDC
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### → Environmental

Operating temperature	-5 to +40 °C
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Storage temperature	-20 to +60 °C
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Shock and vibration	Shock: IEC 60068-2-27, Vibration: IEC 60068-2-64
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EMC	EN IEC 61000-6-2:2019, EN IEC 61000-6-4:2019
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Depth rating	500 m
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### → Connectors

Bulkhead (Impulse)	MCBH-8-FS Brass
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Cable	PMCIL-8-MP on 5 m (default) polyurethane cable
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### → Materials

POM, Naval Brass, Titanium Gr. 5, Epoxy

### → Dimensions (see drawings for details)

Maximum housing diameter	75 mm
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Maximum length	685 mm
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### → Weight

Weight in air (without batteries)	3700 g
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Weight in water (without batteries)	50 g
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## → Head Configurations

S4VP	Shallow water, 400 kHz, Vertical orientation, Profiler
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