

Aquadopp Profiler 600 kHz

500m, Z-Cell, Generation 2

Up to 40 m current profiling range and no blanking; ideal for mean and boundary current measurements



Need to collect accurate 3D currents very near the seabed or sea surface, in addition to a full water-column profile?

The Z-Cell (Zero Cell) 600 kHz Aquadopp allows current measurement to start right at the instrument's level through an innovative approach: it has side-looking beams fully integrated into the instrument's head, effectively removing the blanking distance normally applicable to ADCPs.

See the details of the Generation 2 Aquadopp updates in the release notes here.

Highlights

- ✓ Up to 40 m current profiling range
- ✓ Capable of measuring surface or bottom currents
- ✓ Ideal for mean current measurements

Applications

- Mounted on bottom frames, with ability to also measure near-bed currents
- Mounted on surface buoys, with the ability to also measure surface currents
- Mean flow measurements with high focus on ease of use and simplicity
- ✓ Studies of tidal currents

Technical specifications

Water velocity measurements		
Nominal profiling range *	40 m	
Cell size	0.5-8m	
Maximum number of cells	200	
Minimum blanking	0 m with Z-cell enabled	
Velocity range (along beam)	User-selectable 1.0 to 5.0 m/s	
Accuracy	$\pm 1\%$ of measured value ± 0.5 cm/s	
Horizontal velocity precision**	Typ. 1cm/s	
Maximum sampling rate (output)	1 Hz	
Wave measurement	PUV (optional)	
* Depending on scattering conditions		

Water velocity measurements

** Consult instrument SW

** Consult instrument SW	
Echo intensity	
Sampling	Same as velocity
Resolution	0.5 dB
Dynamic range	90 dB
Transducer acoustic frequency	600 kHz
Number of beams	3
Beam width	1.55° (3.1° total)
Sensors	
Temperature:	
Temp. range	-4 to +40 °C
Temp. accuracy/resolution	0.1 °C/0.01 °C
Temp. time response	<1 min
Compass:	Solid State Magnetometer
Accuracy/resolution	<2° for tilt <30°/0.01°
Tilt:	Solid State Accelerometer
Accuracy/resolution	0.2° for tilt <30°/0.01°
Maximum tilt	Full 3D
Up or Down	Automatic detect
Pressure:	Piezoresistive
Range	30 m / 100 m / 500 m
Accuracy/Precision	0.5% FS / 0.005% of full scale
Data recording	
Capacity	16 GB
Real-time clock	
Accuracy	±1 min/year
Backup in absence of power	4 weeks
Data communications	
1/0	RS-422 (Inquire for RS-232)
Communication baud rate	9600 Baud-1.2 Mbaud (default 115200 Baud)
User control	Nortek Deployment Software or direct ASCII commands, with binary or ASCII data output
Software	
Operating system	Cross platform
Functions	Deployment planning, instrument configuration, data retrieval and conversion. Online data display.
Power	
DC input	9-24 VDC
Absolute maximum DC input	26 VDC
Maximum peak current	4.5 A
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Power	
Power consumption	Consult Nortek Deployment Software
Sleep current	< 40 uA
Transmit power	Adjustable

Batteries	
Internal battery capacity	1-3x 50 Wh (Alkaline)
2-3x 165 Wh (Lithium)	
1-3x 76Wh (Li-Ion)	
Battery weight	430g per 50 Wh (Alkaline)
380g per 165 Wh (Lithium)	
300g per 76Wh (Li-lon)	

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

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

Materials

POM, Naval Brass, Titanium Gr.5, Epoxy

Dimensions	(see drawings	for details)
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Maximum housing diameter	75 mm
Maximum length	686 mm

Weight	
Weight in air (without batteries)	3580 g
Weight in water (without batteries)	160 g
Weight in air, short (without batteries)	2980 g
Weight in water, short (without batteries)	610 g

Head configurations

Shallow water, 400 kHz, Vertical orientation, Z-cell Profile	S4VZ	Shallow water, 400 kHz, Vertical orientation, Z-cell Profile
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Online cable information	
Cable length	A) 0-10m, B) 10-50m, C) 50-500m
Power wire gauge	A) 20AWG, B) 20AWG, C) 18AWG
Hardware	A) Standard, B) Standard, C) Long cable kit *
Input voltage	A) 9-24VDC, B) 24VDC +/-0,5, C) 48VDC +2/-5
Absolut maximum DC input	A) 26 VDC, B) 26 VDC, C) 51 VDC
Communication	A) RS232/RS422/115200, B) RS232/RS422/115200, C) RS422/115200

Online cable information

*Start-up voltage: greater than or equal to 26V. Recommended operating range: 43-50 V.