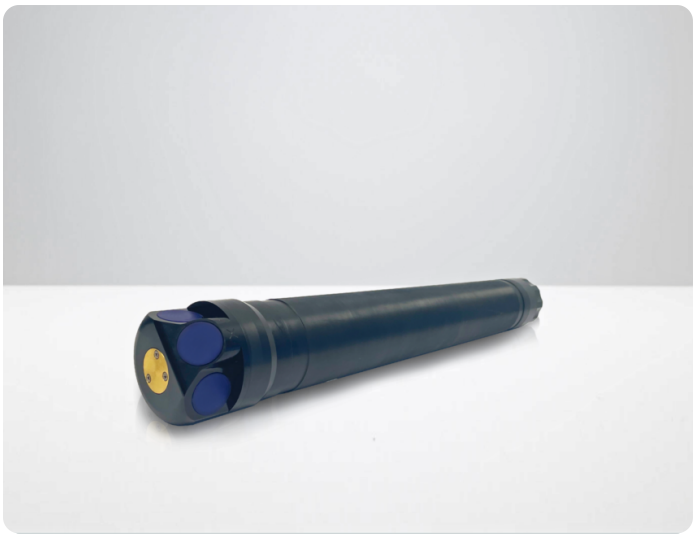
Aquadopp

500 m, Generation 2

Highly versatile single-point current meter with the option to perform PUV wave measurements



The Aquadopp 500 m is a compact, accurate and affordable single-point current meter for applications where a current profile is not needed. Designed for use in several deployment scenarios, from mooring lines to bottom-mounted structures, it also has the option to perform PUV-based directional wave measurements, making it a cost-effective and simple solution.

The Aquadopp now offers 6% broadband measurements and “hibernation mode” between measurements, enabling precise data collection with lower power consumption. Combined with mechanical improvements allowing for more internal battery storage, the modern Aquadopp design extends potential deployment duration.

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

Highlights

- Single-point current meter
- Simple and robust operation
- Ideal for mooring lines
- LED blinks when pinging for peace of mind during deployment

Applications

- Shallow-water current measurements
- Attached to mooring lines
- Combined with riser monitoring systems
- Studies of tidal currents
- Near-bed current measurements

Technical specifications

Water velocity measurements	
Cell size	0.75 m
Maximum number of cells	1
Blanking distance	0.1-5.0 m (user-selectable)
Velocity range (along beam)	User-selectable 1.0 to 5.0 m/s
Accuracy	±1% of measured value ±0.5 cm/s
Horizontal velocity precision (consult instrument SW)	Typ. 1 cm/s
Maximum sampling rate (output)	1 Hz
Wave measurements	PUV (optional)

Echo intensity

Sampling	Same as velocity
Resolution	0.5 dB
Dynamic range	90 dB
Transducer acoustic frequency	2 MHz
Number of beams	3 (see GA drawings for angles)
Beam width	0.85° (1.7° 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

Digital inputs

No. of channels	1
Digital input format	MicroCat CTD

Data recording

Capacity	16 GB

Real-time clock

Accuracy	±1 min/year
Backup in absence of power	4 weeks

Data communications

I/O	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

Power	
Maximum peak current	4.5 A
Power consumption	Consult Nortek Deployment Software
Sleep current	< 40 uA
Transmit power	Adjustable

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

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 5 m (default) polyurethane cable

Materials	
Standard model	POM, Naval Brass, Titanium Gr.5, Epoxy

Dimensions (see drawings for details)	
Maximum housing diameter	75 mm
Maximum length	3 battery housing: 597 mm. 1 battery housing: 359 mm

Weight	
Weight in air (without batteries)	S2VC: 2480 g
Weight in water (without batteries)	S2VC: -150 g
Weight in air, short housing (without batteries)	1880 g
Weight in water, short housing (without batteries)	300 g

Head configurations	
S2VC	Shallow water, 2MHz, Vertical orientation, Current meter

Online cable configurations	
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