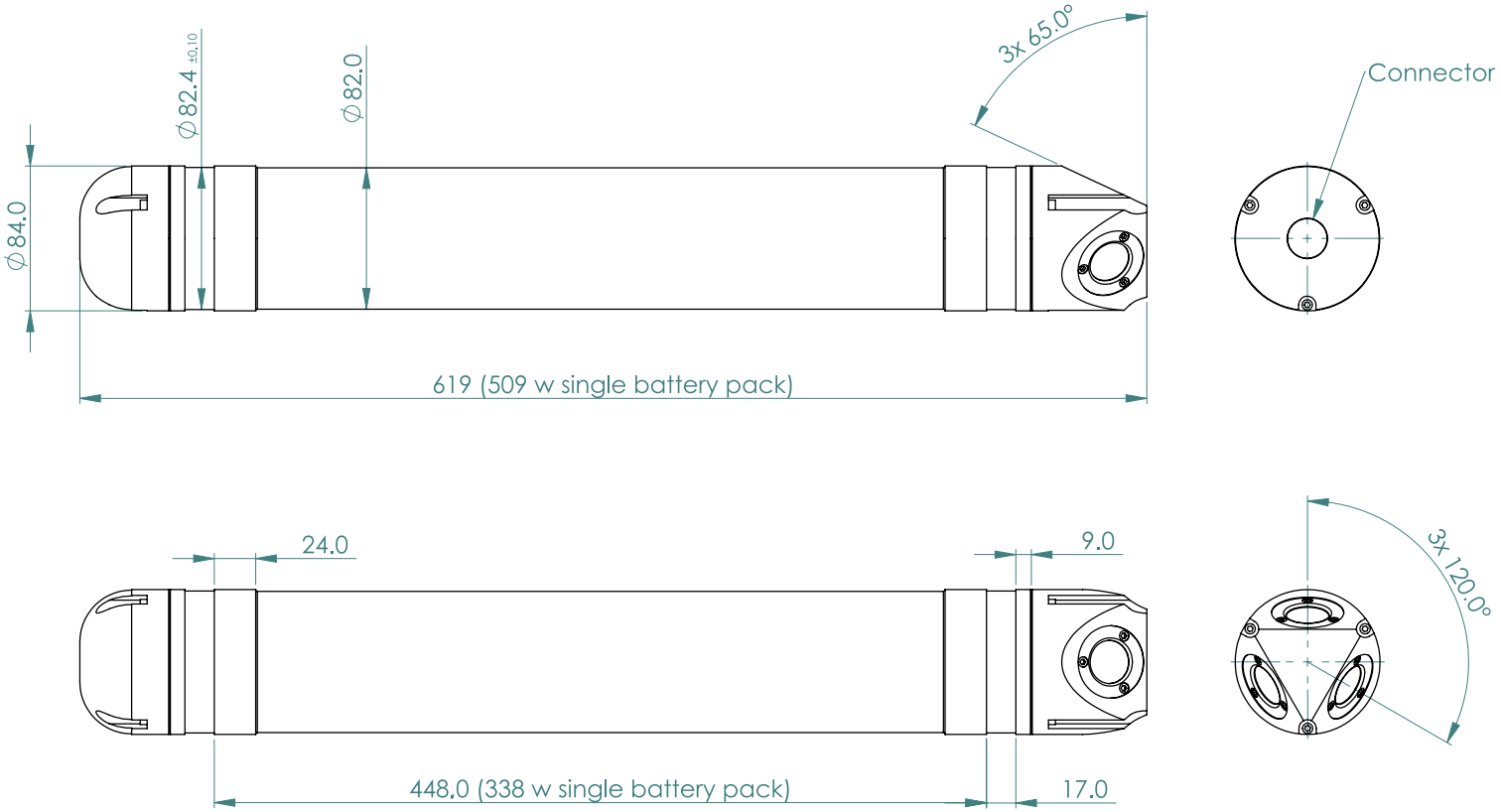
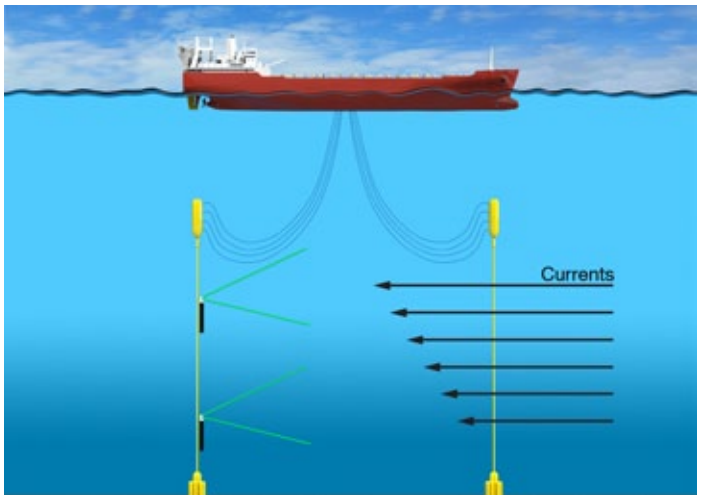
Aquadopp©
3000m

Deep water Aquadopp current meters can be used anywhere in the ocean and provide accurate data both to scientist and engineers. The instrument is small in size but has a sophisticated interface that makes it ideal for use as part of integrated measurement systems.



All dimensions in mm.

The Aquadopp® measures the Doppler shift occurring, when transmitting and receiving sound pulses transmitted along two or more narrow acoustic beams. This shift is proportional to the velocity component along those beams. By combining this information with the exact beam geometry, either 2D (2 beams) or 3D (3 beams) velocity is calculated.



The Aquadopp can be used in a variety of applications. One example is an Aquadopp 3000m mounted on a oil rig riser. The condition of the oil riser and the mooring system is critical to safe and successful operation and production, especially in deeper waters. One important variable is monitoring of the currents around the riser structure during operation, in order to supervise the mechanical integrity of the structures.

CURRENT AND WAVE MEASUREMENTS IN THE OCEAN, LAKE AND LABORATORY

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True innovation makes a difference

Technical Specifications

Water Velocity Measurement	
Range:	± 3m/s (inquire for higher ranges)
Accuracy:	1% of measured value ± 0.5 cm/s
Maximum sampling rate (output):	1Hz
Internal sampling rate:	23Hz
Measurement Area	
Measurement cell size:	0.75m
Measurement cell position:	0.35–5.0m(user selectable)
Default position (along beam):	0.35–1.85m
Doppler Uncertainty (noise)	
Typical uncertainty for default configurations:	0.5–1.0cm/s
Uncertainty in U,V at 1Hz sampling rate:	1.5cm/s
Echo Intensity	
Acoustic frequency:	2MHz
Resolution:	0.45dB
Dynamic range:	90dB
Sensors	
Temperature:	Thermistor embedded in head
Range:	–4°C to 40°C
Accuracy/Resolution:	0.1°C/0.01°C
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
Standard Range:	3000m
Accuracy/Resolution:	0.5% / Better than 0.005% of full scale per sample
Analog Inputs	
Number of channels:	2
Supply voltage to analog output devices:	Three options selectable through firmware commands: ●Battery voltage / 500mA ●+5V / 250mA ●+12V /100mA
Voltage input:	0–5V
Resolution:	16 bit A/D
Data Communication	
I/O:	RS 232, analog input, RS 422 or analog output. Software supports most commercially available USB–RS232 converters
Communication Baud rate:	300–115200 Baud
Recorder download baud rate:	600/1200 kBaud for both RS232 and RS422
User control:	Handled via Win32® software, ActiveX® function calls, or direct commands with binary or ASCII data output
Software ("Aquadopp DW")	
Operating system:	Windows®XP, Windows®7
Functions:	Deployment planning, start with alarm, data retrieval, ASCII conversion. Online data collection and graphical display. Test modes
Data Recording	
Capacity(standard):	9 MB, can add 32/176/352/MB
Data record:	40 bytes
Diagnostic record:	40 bytes

Power	
DC input:	9–15VDC
Peak current:	3A at 12VDC (user adjustable)
Max consumption 1Hz:	1.4 W
Avg. consumption:	0.2W (0.02Hz), 0.02W (0.002Hz)
Sleep consumption:	0.0013 W
Transmitt power:	0.3-20W, 3 adjustable levels
Battery capacity:	50 Wh
New battery voltage:	13.5 VDC
Data collection (alkaline):	5 months at 10-min, ±1.0cm/s noise
Data collection (lithium):	15 months at 10-min, ±1.0cm/s noise
Real time clock	
Accuracy:	+/- 1min/year
Backup in absence of power:	4 weeks
Connectors	
Bulkhead (Impulse):	MCBH-8-FS
Cable:	PMCIL-8-MP on 10m polyurethane cable
Materials	
Standard model:	Delrin® and titanium
Environmental	
Operating temperature:	–4°C to 40°C
Storage temperature:	–20°C to 60°C
Shock and vibration:	IEC 721-3-2
Pressure rating:	0–3000m
Antifouling Paint	
May be applied to all surfaces	
Dimensions	
Cylinder:	see dimensional drawings
Approx. weight in air:	3.6kg
Approx. weight in water:	1.2 kg
Options	
Battery:	Lithium or lithium Ion
External batteries:	Alkaline, Lithium or Lithium Ion (see battery brochure for details)
Head configuration:	Inquire

Contact Nortek or your local representative for information about sensor head geometries and application area.

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