CURRENT METER

Aquadopp 3000 m

Single-point current meter designed for very long-term deployments

With all the features and capabilities of the standard Aquadopp, the deepwater Aquadopp 3000 m current meter has been used and proven by oceanographers around the world for almost 20 years. Thanks to innovative data diagnostic features for challenging environments, it provides exceptionally high-quality 3D currents in a form factor that is easy to install in any type of mooring line configuration, or simply attached to a bottom or surface platform.

Raw magnetometer data can be stored for post calibration of compass when used without the inductive modem option.

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Highlights

- Single-point current meter
- Designed for very long-term deployments
- Diagnostics mode for mooring performance evaluation

Applications

- Studies of deep-water currents
- Studies of tidal currents
- Attached to mooring lines
- In conjunction with riser monitoring systems
- Measurements of unaffected currents from physical structures
- Alternative to conventional current meters with errors due to fouling
- Combination of currents and high-accuracy CTD data
- Near-bed current measurements from landers
- Deep ocean mining support

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Technical specifications

⟶ Water velocity measurements	
Maximum profiling range	N/A
Cell size	0.75 m
Minimum blanking	0.50 m
Maximum number of cells	1
Measurement cell position	0.5-5.0 m (user-selectable)
Default position (along beam)	0.50-2.0 m
Velocity range	±5 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	23 Hz
⟶ Echo intensity	
Sampling	Same as velocity
Resolution	0.45 dB
Dynamic range	90 dB
Transducer acoustic frequency	2 MHz
Number of beams	3
Beam width	3.4°
⟶ 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	3000 m
Accuracy/precision	0.5% FS / 0.005% of full scale
⟶ Analog inputs	
No. of channels	2
Supply voltage to analogoutput devices	Three options selectable through firmwarecommands: 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	40 bytes
Diagnostics record	40 bytes
Wave record	N/A
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 binaryor ASCII data output
⟶ Connectors	
Bulkhead	MCBH-8-FS
Cable	PMCIL-8-MP on 10 m 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	0.015 W
Sleep current	< 100 ?A
Transmit power	20 W
⟶ Batteries	
Battery capacity	50 Wh (alkaline or Li-ion), 165 Wh (lithium), 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 721-3-2
EMC approval	IEC 61000
Depth rating	3000 m
⟶ Materials	
Standard model	POM housing
⟶ Dimensions	
Maximum diameter	84 mm
Maximum length	~500 mm (single battery) or +110 mm (double battery) depending on head configuration
⟶ Weight	
Weight in air	3.6 kg
Weight in water	1.2 kg
⟶ Options	

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