DOPPLER VELOCITY LOG

DVL500 - 300 m

Bottom-track from 0.3 to 200 m range; 300 m operational depth

The DVL500 is a universal Doppler Velocity Log that combines compact design with unprecedented functionality. It can fly higher in the water column and closer to the seabed than similar equipment. This 500 kHz Doppler Velocity Log is used by industry leaders in the subsea market because of its high accuracy and state-of-the-art technology.

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Highlights

- Bottom track from 0.3-200 m range
- Per-ping and per-beam data quality estimates
- 300 m operational depth

Applications

- Highly accurate subsea surveys
- AUVs with long missions or high accuracy requirements
- Easy integration with leading inertial navigation systems (INS)

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Technical specifications

⟶ Bottom velocity	
Single ping std @ 3 m/s	0.5 cm/s
Long-term accuracy	±0.1% / ±0.1 cm/s
Minimum altitude	0.3 m
Maximum altitude	200 m
Velocity resolution	0.01 mm/s
Maximum ping rate	8 Hz max
⟶ Water tracking	
Minimum accuracy	0.3% of measured value ± 0.3 cm/s
Minimum range	4.0 m
⟶ Current profiling	
Minimum accuracy	0.3% of measured value ± 0.3 cm/s
Velocity resolution	0.1 cm/s
Interval	User-specified Nth ping
Maximum range	70 m
Blanking	0.5 m
Cell size	0.5-4.0 m
Max # cells	140
⟶ Environmental	
Operating temperature	-4 to +40 °C
Storage temperature	-20 to +60 °C

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⟶ Mechanical	
Depth rating	300 m
Weight	3.5 kg
Weight in water	0.5 kg
Height	203 mm
Diameter	ø186 mm
⟶ Hardware	
Frequency of operation	500 kHz
Beam width	2.9°
Configuration	4-beam Janus array convex transducer, 25° beam angle
Internal memory	16 GB / 64 GB optional
Frequency of operation	500 kHz
Bandwidth	25% centered at transmit frequency
⟶ Interfaces	
Serial (either serial or ethernet)	Configurable RS232 or RS422, 8-pin male
Ethernet	10/100 Mbits Auto MDI-X. TCP/IP, UDP/IP, HTTP protocols. Fixed IP / DHCP client /Auto IP address assignment. UPnP and Nortek proprietary instrument discovery over Ethernet. IEEE1588/PTP and NTP for absolute time stamping. Multiple simultaneous data format transmission possible.
Data formats	Nortek proprietary w/ 1 ms time stamp accuracy, NMEA0183, Variants of PDx
Trigger	Internal 1, 2, 3, 4, 5, 6, 7 or 8 Hz or Trigger In. Trigger option through command (Ethernet or serial) External TTL or 485 lines: (configurable Rising/Falling/Edges)
⟶ Sensors	
Pressure	0.1% FS /precision better than 0.002% of full scale per sample
Temperature	-4° to +40 °C ± 0.1 °C
⟶ Power	
DC input	12-48 V
Maximum continuous current	1.5 A
Average power	3.0 W*

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Power

* Power based on 1 Hz sampling and altitude with greatest transmit pulse.

Materials

Standard models	POM housing