

DVL 500 - 6000 m, Generation 3



Bottom-track from 0.1 to 200 m range; 6000 m operational depth

The DVL 500 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, and maximum operational depth is 6000 m. 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.

Highlights

- ✓ Highly accurate subsea surveys
- ✓ AUVs with long missions or high accuracy requirements
- ✓ 6000 m operational depth

Applications

- ✓ Precision navigation for highly accurate subsea survey vehicles
- ✓ Integration on AUVs with long missions or high accuracy requirements
- ✓ Navigation for large ROVs with deep-water requirements

Technical specifications

→ Bottom velocity

Single ping std @ 1.5 m/s	0.8 cm/s at 1/2 max altitude
Long-term accuracy	±0.1% / ±0.1 cm/s (export-controlled), >1% (license-free)
Minimum altitude	0.1 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
Vibration	IEC60068-2-64
EMC approval	IEC/EN 61000-6-2, 61000-6-3

→ Mechanical

Depth rating	6000 m
Weight	7.0 kg
Weight in water	4.1 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
Bandwidth	25% centered at transmit frequency

→ Interfaces

Serial (either serial or ethernet)	Configurable RS232 or RS422, 8-pin male
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→ Interfaces

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.
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Data formats	Nortek proprietary w/ 1 ms time stamp accuracy, NMEA0183, Variants of PDx
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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)
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→ Sensors

Pressure	0.1% FS /precision better than 0.002% of full scale per sample
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Temperature	-4° to 40 °C ± 0.1 °C
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→ Power

DC input	12-48 V
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Maximum continuous current	1.5 A
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Average power	3.0 W*
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* Power based on 1 Hz sampling and altitude with greatest transmit pulse.

→ Materials

Materials	POM and titanium housing
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