

DVL 500 Compact - 6000 m, Generation 3



Bottom-track from 0.1 to 175 m range; 6000 m operational depth

The DVL 500 Compact combines the compact design of the standard DVL 1000 with the superior bottom-track range of the DVL 500. It can fly higher in the water column and closer to the seabed than similar equipment, enabling small vehicles to do bigger jobs.

Highlights

- ✓ Bottom-track from 0.1-175 m range
- ✓ Per-ping and per-beam data quality estimates
- ✓ 6000 m operational depth

Applications

- ✓ Next-generation compact survey vehicles
- ✓ Small vehicles requiring longer bottom track range in deep water
- ✓ Compact AUVs with high accuracy requirements
- ✓ Increase range of vehicles with existing DVL1000 without vehicle redesign

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	175 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	4.15 kg / OEM 2.5 kg
Weight in water	1.7 kg
Height	185 mm
Diameter	∅ 114 mm

* DVL1000 products delivered before March 2024 are depth rated to 4000m not 6000m. Please contact Nortek if you are unsure about the depth-rating of your instrument.

→ Hardware

Frequency of operation	500 kHz
Beam width	5.8°
Configuration	4-beam Janus array convex transducer, 25° beam angle
Internal memory	16 GB / 64 GB optional
Frequency of operation	500 kHz

→ Hardware

Bandwidth 25% centered at transmit frequency

→ Interfaces

Serial (either serial or Ethernet)	Configurable RS-232 or RS-422, SubConn connector, 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*

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

→ Materials

Standard models	POM and titanium housing
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