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.

Download our guide to Nortek DVLs here.

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 DVL 1000 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

Current profiling

Maximum range*	70 m
Blanking	0.5 m
Cell size	0.5-4.0 m
Max # cells	140

*Dependent on measurement conditions

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	ø 114 mm

* DVL 500c 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
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