DVL 333

6000 m, Generation 3

Bottom-track from 0.1 to 375 m range; 6000 m operational depth



The DVL 333 is a long-range Doppler Velocity Log that benefits from increased range with no compromise in performance or form factor. It allows vehicles to maintain bottom lock in a greater range of environments, increasing mission duration on long-range subsea vehicles. This 333 kHz DVL is used by innovators in the uncrewed vehicle sector looking to expand vehicle capabilities into new environments.

Download our guide to Nortek DVLs here.

Highlights

- Bottom track from 0.1-375 m range
- Per-ping and per-beam data quality estimates
- No change in form factor compared to higher-frequency options

Applications

- Large UUVs/ AUVs operating at high altitudes in deep water
- Deep-water large ROVs with high accuracy and long range requirements
- Increase range of vehicles with existing DVL500 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 (1)	±0.1% / ±0.1 cm/s (export-controlled), >1% (license-free)
Minimum altitude	0.1 m
Maximum altitude	375 m (2)
Velocity resolution	Better than 0.01 mm/s
Maximum ping rate (3)	8 Hz
(1) Following standard calibration procedures	
(2) Bottom-track distance dependent on bottom type	
(3) Inquire for more options	

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*	100 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	7.0 kg
Weight in water	4.1 kg
Height	203 mm
Diameter	ø186 mm

Hardware

Frequency of operation	333 kHz
Beam width	4.3°
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 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. OD0, PD4, PD5, PD6
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

Power

Maximum continuous current	1.5 A
Average power	4.0 W (4)

(4) Power based on 1 Hz sampling and altitude with greatest transmit pulse.

Materials

Standard models	POM and titanium housing