DVL333 - 6000 m

Bottom-track from 0.3 to 375 m range; 6000 m operational depth

The DVL333 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.

Highlights

- Bottom track from 0.3-375 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
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
→ 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

→ 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. 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
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