

# 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.

Download our guide to Nortek DVLS [here](#).

## 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        | $\pm 0.1\% / \pm 0.1$ 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 $\pm 0.3$ cm/s |
| Minimum range    | 4.0 m                                 |

### Current profiling

|                     |                                       |
|---------------------|---------------------------------------|
| Minimum accuracy    | 0.3% of measured value $\pm 0.3$ 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          | 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  |
| 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. EEE1588/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

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

## Materials

Materials

POM and titanium housing