

Fusion DVL1000



A sensor hub that makes vehicle control and navigation possible.

The Fusion DVL1000 is a sensor package that has all the necessary sensors and data products to aid in subsea navigation and vehicle control. This includes estimates of distance from the surface and bottom, attitude, heading and velocity.

Fusion DVL1000



Highlights

- ✓ Small size
- ✓ Complete sensor suite
- ✓ Proven performance

Applications

- ✓ Small ROV
- ✓ Micro AUV
- ✓ Coastal USV

Technical specifications

—> Bottom tracking

Maximum altitude	50 m
Minimum altitude	5 cm
Long-term accuracy	>1% (license-free), <0.1% (export-controlled)
Velocity resolution	0.01 mm/s
Single ping standard	0.5 cm/s
Maximum ping rate	2 Hz

—> Altimeter

Range	50 m
Accuracy	1% of measured value
Resolution	0.1 cm

—> Environmental

Operating temperature	-4 to +40 °C
Storage temperature	-20 to +60 °C

—> Mechanical design (shallow/deep)

Depth rating	300 m
Height	42 mm
Diameter	90 mm
Weight in air	535 g
Weight in water	295 g

—> Power

Voltage range	10-32 V
Average power	< 4 W
Maximum peak power	35 W

—> Communication

Serial	RS-422
Ethernet	10/100 Mbits Auto MDI-X.TCP/IP, UDP/IP. Fixed IP / mDNS/DHCP client /Auto IP address assignment. (Multiple simultaneous data format transmission possible.) Data formats Nortek proprietary.

—> Hardware

Frequency of operation	1 MHz
Beam width	3.4°
Vertical beam angle	20°

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→ AHRS

Pitch and roll accuracy	0.35°
Heading accuracy	0.5°
Output rate	25 Hz

→ Pressure sensor

Pressure accuracy	0.1% FS /precision better than 0.002% of full scale
Temperature	-4° to +40 °C ± 0.1 °C

→ Magnetometer

Range	800 ?T
Repeatability over ±200?T	20 nT
Noise	50 nT
Sampling	75 Hz

→ Accelerometers

Range	40 g
Bias - repeatability	6 mg
Velocity random walk	0.039 m/sec/?hr
Bias instability	135x10-6 m/sec ²
Scale factor stability	0.10 %
Sampling rate	100 Hz

→ Gyroscopes

Range	2000°/s
Bias - repeatability	1.4°/s
Angular random walk	0.3°/?hr
Bias instability	8°/h
Linear acceleration effect	1.02x10-3 (°/s)/(m/s ²)
Vibration rectification error	5.6x10-6 (°/s)/(m/s ²) ²
Sampling rate	100 Hz