Workhorse Navigator DVL

Doppler Velocity Log 1200, 600 or 300 kHz

Nearly all commercial AUVs and many ROVs are fitted with the Workhorse Navigator Doppler Velocity Log (DVL), often integrated with other navigation systems (e.g. Kearfott INS). Small, lightweight and highly accurate, the DVL is the underwater contractor's first choice for fast and precise velocity and altitude updates for every type of underwater task. If you need your vehicle to hover with no deviation or to maintain high-accuracy station on a survey line, the Workhorse Navigator is an essential element of your precise positioning system. Use Navigator, too, for towed fish positioning and dredge plume or sediment tracking.

Frequency	Min. Altitude	Max. Altitude
1200 kHz	0.3m	30m
600 kHz	0.7m	90m
300 kHz	1.0m	200m

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RD Instruments

www.rdinstruments.com

Included in a complete system:

Transducer and electronics: 6061 aluminum transducer head with four beams at 30 degrees from vertical in convex configuration, electronics assemblies, fluxgate compass, pitch, roll and temperature sensor.

Pressure case, all frequencies: Aluminum 2000m-rated housing and endcap with wet-mateable connector and dummy plug.

Power supply: 110-220VAC/24VDC power converter for laboratory testing.

Input/output cables: standard 5 meter communications/power cable and standard 5m pigtail power/communications cable.

Manuals and software: users guide; operation manual; and easy-to-use software package.

Spares/tool kit: maintenance/tool kit.

Ship case: ruggedized shipping case.

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Bottom Velocity

	Std. dev.[1] at 1m/s	Std. dev.[1] at 3m/s	Std. dev.[1] at 5m/s	Accuracy	Min (typical) Altitude	Max[2] Altitude
	mm/s	mm/s	mm/s			
1200kHz	± 3	± 4	± 5	± 0.2%, ± 0.1cm/s	0.5m	30m
600kHz	± 3	± 5	± 6	± 0.2%, ± 0.1cm/s	0.7m	90m
300kHz	± 3	± 6	± 8	± 0.4%, ± 0.2cm/s	1.0m	200m

Note: (1) Standard Deviation (Std.Dev.) refers to single ping horizontal velocity, specified at 1/2 the maximum altitude. (2) Specified at 5°C.

Water Reference Velocity

	Layer size 1m	Layer size 2m	Layer size 4m	Layer size 8m	Accuracy	Min Range	Max Range
1200kHz	20mm/s	13mm/s	8mm/s	8mm/s	± 0.2%, ±1mm/s	0.25m	18m
600kHz	40mm/s	20mm/s	13mm/s	8mm/s	± 0.3%, ±2mm/s	0.7m	50m
300kHz	80mm/s	40mm/s	20mm/s	13mm/s	± 0.4%, ± 2mm/s	1.0m	110m

Parameters

Standard data output is orthogonal coordinate system (forward, starboard, up) in instrument reference frame. The Navigator can use its internal compass to convert output to earth coordinates, or it can output velocities measured parallel to the beams.
Number of depth cells: 1-128
Velocity resolution: 1mm/s
Ping rate: 2 Hz (typical)

Transducer and Hardware

Beam angle: 30°
Configuration: 4 beam, convex
Communications: Two serial ports are switch-selectable for RS-232 or RS-422. ASCII or binary output at 1200-115,200 baud.
RDS3 Synchronization: Synchronize with external devices via break pulses on the RS-485 bus. A Navigator can act as a master or a slave, but as a slave only if it is always powered on.

Standard Sensors

Temperature (mounted on transducer)
- Range: -5° to 45°C
- Precision: ± 0.4°C
- Resolution: 0.01°

Tilt
- Range: ± 15°
- Accuracy : ± 0.5°
- Precision: ± 0.5°
- Resolution: 0.01°

Compass (fluxgate type, includes built-in field calibration feature)
- Accuracy: ± 2° [3]
- Precision: ± 0.5°
- Resolution: 0.01°
- Maximum tilt: 15°

Note: 3) @ 60° magnetic dip angle

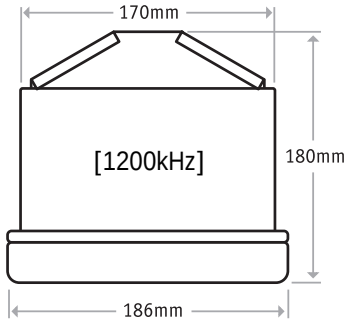
Power

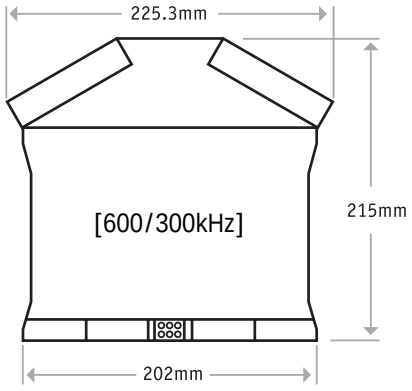
DC input: 20 - 60V DC, external supply
Current: 0.4A minimum power supply capability
Transmit
- 8W @ 32V (1200kHz)
- 17W @ 32V (600kHz)
- 17W @ 31V (300kHz)
- Standby power: 1mW

Environmental

Standard depth rating: 2000m. Optional to 6000m.
Operating temperature: -5° to 45°C
Storage temperature: -30° to 75°C
Weight in air: 6.4kgs (1200kHz)
11.6kgs (600 and 300kHz)
Weight in water: 4.2kgs (1200kHz)
6.7kgs (600 and 300kHz)

Dimensions





Upgrades Available

- High pressure housing to 6000m
- Current profiling software
- Remote Head Configuration

For More Information

Call, e-mail or visit our web page. Ask for our Primer about ADCPs.

Internet: www.rdinstruments.com

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