

Workhorse Navigator

DOPPLER VELOCITY LOG (DVL)

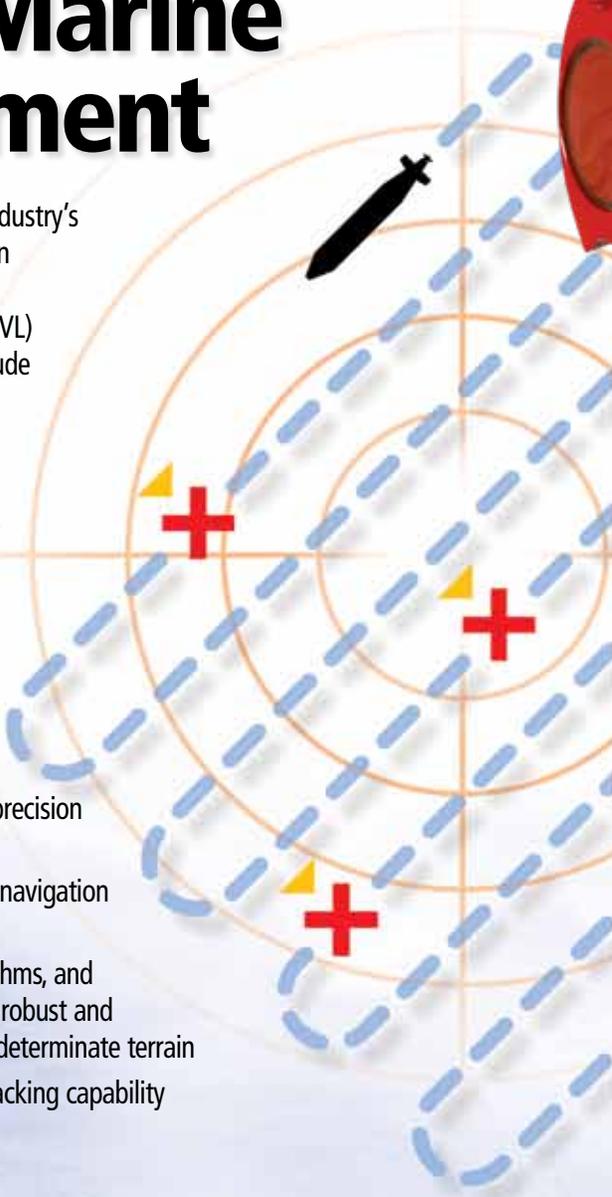
Precision Navigation for the Marine Environment

The Workhorse Navigator is the industry's first choice for precision navigation applications. Teledyne RDI's highly acclaimed Doppler Velocity Log (DVL) provides precise velocity and altitude updates for a wide variety of underwater tasks.

The highly flexible design allows the unit to be used in a standalone configuration or integrated with other navigation systems.

The compact and powerful Workhorse Navigator provides:

- Patented BroadBand processing technology, providing users with both short and long-term high-precision velocity data
- Reliable and accurate high-rate navigation and positioning data
- Proven bottom detection algorithms, and single ping bottom location, for robust and reliable bottom tracking over indeterminate terrain
- Superior low-altitude bottom tracking capability
- Real-time current profiling data



Navigator Applications:

- Subsea vehicle and surface vessel navigation
- Hydrographic, geophysical, and oceanographic survey positioning data
- LBL and USBL position aiding
- Spool piece metrology
- Inertial navigation correction and integration
- Cable burial operations
- Deep water positioning
- Station keeping and autopilot control
- Pipeline touchdown monitoring
- Dredge spoils, plume, and sediment tracking

Navigator full suite of capabilities:

- Bottom track velocity
- Water track velocity
- Altitude: 4 individual measurements
- Error velocity (data quality indicator)
- Temperature
- Heading/Tilt
- Acoustic echo intensity
- Pressure and depth (optional)
- Current profiling (optional)



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MEASURING WATER IN MOTION AND MOTION IN WATER

Workhorse Navigator

DOPPLER VELOCITY LOG (DVL)



Technical Specifications

Model	WHN 300	WHN 600	WHN 1200	
Bottom Velocity				
Single-ping precision				
Std dev at 1m/s ¹	±0.3cm/s	±0.3cm/s	±0.3cm/s	
Std dev at 3m/s ¹	±0.6cm/s	±0.5cm/s	±0.4cm/s	
Std dev at 5m/s ¹	±0.8cm/s	±0.6cm/s	±0.5cm/s	
Long-term accuracy	±0.4%±0.2cm/s	±0.2%±0.1cm/s	±0.2%±0.1cm/s	
Minimum altitude ²	1.0m	0.7m	0.5m (0.25 optional)	
Maximum altitude ²	200m	90m	30m	
Parameters				
Velocity range ³	±10m/s	±10m/s	±10m/s	
Velocity resolution	0.1cm/s	0.1cm/s	0.1cm/s	
Ping rate	7Hz max	7Hz max	7Hz max	
Water Reference Velocity				
Accuracy	±0.4% ±0.2cm/s	±0.3% ±0.2cm/s	±0.2% ±0.1cm/s	
Layer size	selectable	selectable	selectable	
Minimum range	1m	0.7m	0.25m	
Maximum range	110m	50m	18m	
Environmental				
Operating temperature	-5 to 45°C	-5 to 45°C	-5 to 45°C	
Storage temperature	-30 to 75°C	-30 to 75°C	-30 to 75°C	
Depth rating	3000m or 6000m			
Weight in air:	3000m	15.8kg	15.8kg	12.4kg
	6000m	20.1kg	20.1kg	18.0kg
Weight in water:	3000m	8.8kg	8.8kg	6.1kg
	6000m	13.6kg	13.6kg	12.1kg
Power				
DC input	20–50VDC, external supply (48VDC typical)			
Current	0.4A minimum power supply capability			
Transmit ⁴				
Peak power @ 24VDC	66w	21w	8w	
Average power (typical)	8w	3w	3w	

¹Standard deviation refers to single-ping horizontal velocity, specified at half the maximum altitude.

²@5°C and 35 ppt, 42VDC.

³Maximum bottom-tracking range may be reduced due to flow noise at high speed and/or cavitation.

⁴@ 15% duty cycle at peak power (standby 1mW).

Standard Sensors

Compass: ±2° @ 60° dip, 0.5g
Tilt: ±0.5° up to ±15°
Temperature: -5° to 45°C

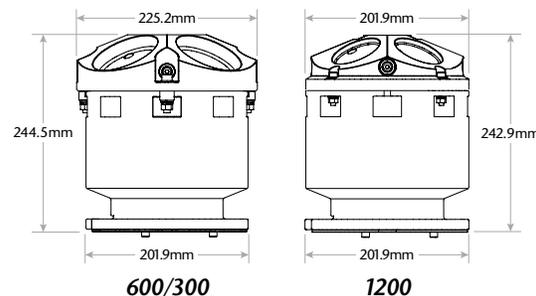
Hardware

Configuration: 4-beam Janus array convex transducer, 30° beam angle
Communications: NMEA0183, ASCII or binary outputs at 1200–115,200 baud user-selectable; serial port is switch-selectable for RS232 or RS422
Trigger inputs: 1) ASCII; 2) RDS3; 3) low latency

Options

- Current profiling firmware upgrade
- Integrated pressure sensor (±0.25% full scale)
- 25m serial/DC/computer cable
- 5m serial/DC/computer cable
- Internal memory cards (2GB max)
- Enhanced low altitude bottom tracking for model 1200

Dimensions



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