

Explorer PA

DOPPLER VELOCITY LOG (DVL)

Phased Array Performance in a Compact Package

The navigation solution you've been waiting for has arrived

Introducing the new Phased Array line of Explorer Doppler Velocity Logs (DVLs). This product family offers a full spectrum of precision navigation solutions designed for your littoral to deep water endeavors.

The revolutionary phased array transducer delivers the performance and reliability you've come to expect from Teledyne RD Instruments, with the added performance benefits that only phased array technology can provide.

Explorer's innovative design consistently delivers high accuracy, precision Doppler navigation and current profiling capability, in a compact package designed to meet the stringent weight and power constraints of today's next gen vehicles.

Remote or self-contained, shallow water or deep, the Explorer family of DVLs has a navigation solution ideally suited for your unique system requirements. Explore the possibilities!

Typical Platforms:

- Autonomous Underwater Vehicles (AUV)
- Remotely Operated Vehicles (ROV)
- Unmanned Surface Vehicles (USV)
- Coastal Gliders
- Towed Vehicles
- Diver Consoles



Explorer PA Features:

- New phased array transducer delivers increased performance at a reduced size, weight, and profile
- Compact design ideally suited for next-generation littoral platforms
- Self-contained or remote configuration options available to meet your unique needs
- Configurations for your littoral or deep water applications
- Flexible design facilitates easy communication with other sensors
- Teledyne RDI's proven bottom-tracking algorithms ensure data quality, reliability, and unmatched performance
- Upgradable to include ADCP (Acoustic Doppler Current Profiling) capability

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Specifications

Bottom Tracking	Phased Array
Maximum Altitude ^{1,3}	80m
Minimum Altitude	0.5m (0.31m optionally)
Velocity Range ²	± 9.5m/s
Long Term Accuracy	± 0.3% ± 0.2cm/s
Precision @ 1 m/s ⁴	± 0.7cm/s
Precision @ 3 m/s ⁴	± 1.9cm/s
Precision @ 5 m/s ⁴	± 3.0cm/s
Resolution	0.1cm/s (default), 0.001cm/s (selectable)
Ping Rate	12Hz max

Water Profiling	
Maximum Range ^{1,3}	35m
Minimum Range	0.7m
Velocity Range ²	± 16.5m/s
Long Term Accuracy	± 0.4% ± 0.2 cm/s
Precision ³ @ 1m/s	± 3.7cm/s
Resolution	0.1cm/s

Acoustic	
Center Frequency	614.4kHz
1-Way Beam Width	2.4°
Number of Beams	4
Beam Angle	30°

¹ @ 5°C and 35 ppt, 24V input.

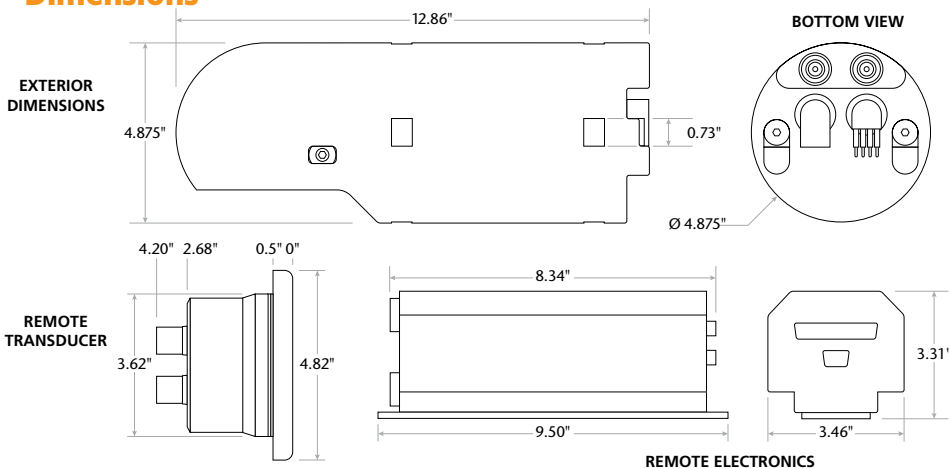
² When mounted with beam 3 at 45°. Also, for platforms with forward velocity higher than reverse (or vice versa) the maximum velocity can be increased 4.75 m/s for bottom track via a firmware command.

³ Maximum range may be reduced due to flow noise.

⁴ Standard deviation refers to single-ping horizontal velocity, specified at half the maximum altitude.

⁵ Electronics platform designed to interface with stated 3rd party sensors.

Dimensions



Environmental

Maximum Operating Depth:

300m / 1000m (based on configuration)

Operating Temperature: -5°C to 40°C

Storage Temperature: -25°C to 60°C

Weight in air:

Self-Contained 500m 4kg

Self-Contained 1000m 4.3kg

Remote Head w/2m Cable 300m 2.36kg

Remote Head w/2m Cable 1000m 2.55kg

Weight in water:

Self-Contained 500m 0.5kg

Self-Contained 1000m 0.8kg

Sensor Interfaces⁵

- Magnetic Compass
- Pressure
- Speed of Sound
- CTD
- Echo Sounder
- GPS
- Temperature

Power

DC Input: 12-24VDC, 24VDC typical

Current: 0.4A minimum

supply capability

Peak Power @ 24V: 12W

Average Power

while transmitting

(typical): 2W

Average

Quiescent Power: 1.1W

Upgrades Available

Current Profiling

Low Altitude Bottom Tracking

Honeywell Heading, Pitch and Roll

Communications

No. of Channels: 4: combination of RS232 and RS422



TELEDYNE
RD INSTRUMENTS
Everywhereyoulook™
www.rdinstruments.com
www.dvlnav.com



Free 24/7 emergency support

Teledyne RD Instruments

14020 Stowe Drive, Poway, CA 92064 USA

Tel. +1-858-842-2600 • Fax +1-858-842-2822 • E-mail: rdisales@teledyne.com

Les Nertieres 5 Avenue Hector Pintus 06610 La Gaude France

Tel. +33-49-211-0930 • Fax +33-49-211-0931 • E-mail: rdie@teledyne.com

