Teledyne RD Instruments

Explorer

Doppler Velocity Log (DVL)

Navigation Performance in a Compact Package

The navigation solution you've been waiting for has arrived!

Introducing the new EXPLORER FAMILY of Doppler Velocity Logs (DVLs). This product family offers a full spectrum of precision navigation solutions designed for your littoral to mid-depth 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.

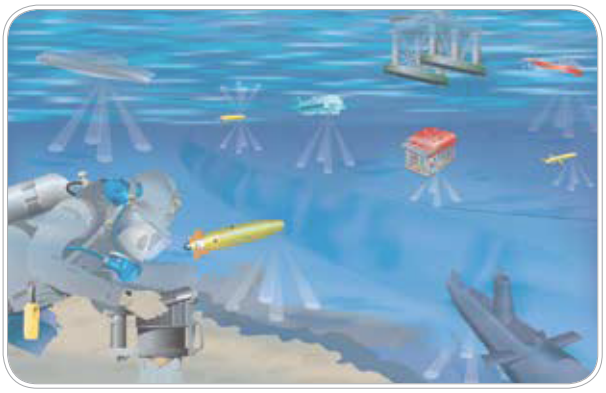
The Piston Array transducer delivers proven Teledyne RDI performance for depths up to 4000 meters.

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 generation 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
- Submersibles



PRODUCT FEATURES

- Phased array transducers deliver increased performance at a reduced size, weight, and profile
- Piston array transducers deliver increased depth rating, reduced size, weight, and profile
- Compact design ideally suited for next-generation littoral platforms
- Self-contained or remote configuration options available to meet your needs
- 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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TECHNICAL SPECIFICATIONS

		Phased Array	Piston
Bottom Tracking	Maximum Altitude[1,3]	81m	66m
	Minimum Altitude	0.5m (0.31m optionally)	0.5m (0.25m optionally)
	Velocity Range[2]	±9m/s	±17.0 m/s
	Long Term Accuracy[4]	±0.3% ± 0.2cm/s	±0.5% ± 0.2cm/s
	Long Term Accuracy[5]	±1.15% ± 0.2cm/s	±1.15% ± 0.2cm/s
	Precision @ 1m/s[6]	±1.0cm/s	±1.0cm/s
	Precision @ 3m/s[6]	±1.8cm/s	±1.9cm/s
	Precision @ 5m/s[6]	±2.6cm/s	±2.8 cm/s
	Resolution	0.1cm/s (default), 0.001cm/s (selectable)	0.1cm/s (default), 0.001cm/s (selectable)
	Ping Rate	12Hz max	12Hz max
Water Profiling	Maximum Range[1,3]	35m	25m
	Minimum Range	1.33m	1.33m
	Velocity Range[2]	±12 m/s	±12 m/s
	Long Term Accuracy	±0.3% ± 0.2 cm/s	±0.5% ± 0.2cm/s
	Precision @ 1m/s and 2m bin size[6]	±4.7cm/s	±2.3cm/s
	Precision @ 3m/s and 2m bin size[6]	±4.8cm/s	±2.5cm/s
	Precision @ 5m/s and 2m bin size[6]	±5.0cm/s	±2.6cm/s
	Resolution	0.1cm/s	0.1cm/s
	Cell Sizes	10 to 800cm	10 to 800cm
Acoustic	Center Frequency	614.4kHz	614.4kHz
	Source Level (re 1µPa)	207dB	204dB
	1-Way Beam Width	2.2°	3.8°
	Number of Beams	4 (phased array)	4
	Beam Angle	30° nominal	30°
	Bandwidth (nominal)	6.25% of center frequency	25% of center frequency
Depth Rating		1000m	1000m/4000m (based on configuration)
Environmental	Operating Temperature	-5°C to 40°C	
	Storage Temperature	-25°C to 60°C	
	Weight in air	Self-Contained 1000m (Rt. Angle/Inline) / 4000m (R. Angle/Inline)	4.3kg/4.3kg / 7.9kg/8.6kg
		Remote Head w/2m Cable 1000m	2.55kg
	Weight in water	Self-Contained 1000m (Rt. Angle/Inline) / 4000m (R. Angle/Inline)	0.8kg/0.8kg / 2.7kg/3.3kg
Sensor Interfaces	Magnetic Compass • Pressure • Speed of Sound • CTD • Echo Sounder • GPS • Temperature • Heading, Pitch and Roll		
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		
Communications	No. of Channels	4: combination of RS232 and RS422	
Dimensions	Phased Array Self-Contained 1000m	Rt. Angle/Inline: 32.6L x 12.4 Ø / 29.5L x 12.4 Ø	
	Piston Self-Contained 4000m	Rt. Angle/Inline: 36.9L x 14.3 Ø / 34.4L x 14.3 Ø	

1 @ 5°C and 35 ppt salinity, 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 ECCN 6A001
5 ECCN 6A991
6 Standard deviation refers to single-ping horizontal velocity, specified at half the maximum altitude.

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