

# AquaTrak™

## High Accuracy Correlation Velocity Log (CVL)



AquaTrak™ CVL

### CVL over DVL - The Case

The broad beam of a CVL is achieved using a relatively low frequency, which results in reduced acoustic absorption, coupled with strong seabed echoes from the vertical beam providing increased sonar range and higher accuracy than DVLs of a similar size and at a reduced source level.

AquaTrak™ provides greater precision and accuracy than a 1200kHz with the range of a 300kHz DVL. The AquaTrak™ CVL is able to maintain accuracy and bottom tracking throughout the entire range, across rapidly changing seabed conditions.

### AquaTrak™ - How it Works

Utilising advanced acoustic correlation techniques developed from synthetic aperture sonar processing methods, AquaTrak™ calculates high accuracy three dimensional velocity vectors, giving displacement between successive pings.

Using a planar array of piezocomposite transducers with a wide vertical beam, AquaTrak™ is able to maintain navigation precision even at zero velocity. Unlike Doppler based systems which rely on measuring the Doppler frequency shift, (which is reliant on knowing the speed of sound), a speed of sound measurement is not required by the AquaTrak™ CVL.

**AquaTrak™ CVL provides precision long range navigation and high-resolution accuracy from a compact, low power sensor.**

AquaTrak™ offers significant advantages over a conventional piston DVL (Doppler Velocity Log) and phased array DVLs and is suitable for all underwater vehicle applications; providing classleading precision and accuracy at low velocities.

### Benefits

- Class leading operating range of 0.5m to 300m
- Precision and accuracy greater than a 1200kHz DVL with the range of a 300kHz DVL
- Advanced Synthetic Aperture Sonar (SAS) processing techniques for superior performance
- Provides high accuracy data even at zero speed
- Replaces standalone altimeter
- Velocity estimate independent of speed of sound
- Direct replacement for standard DVLs for easy upgrade path
- Reduced power consumption for robust bottom tracking independent of altitude
- Maintains accuracy independent of pitch and roll

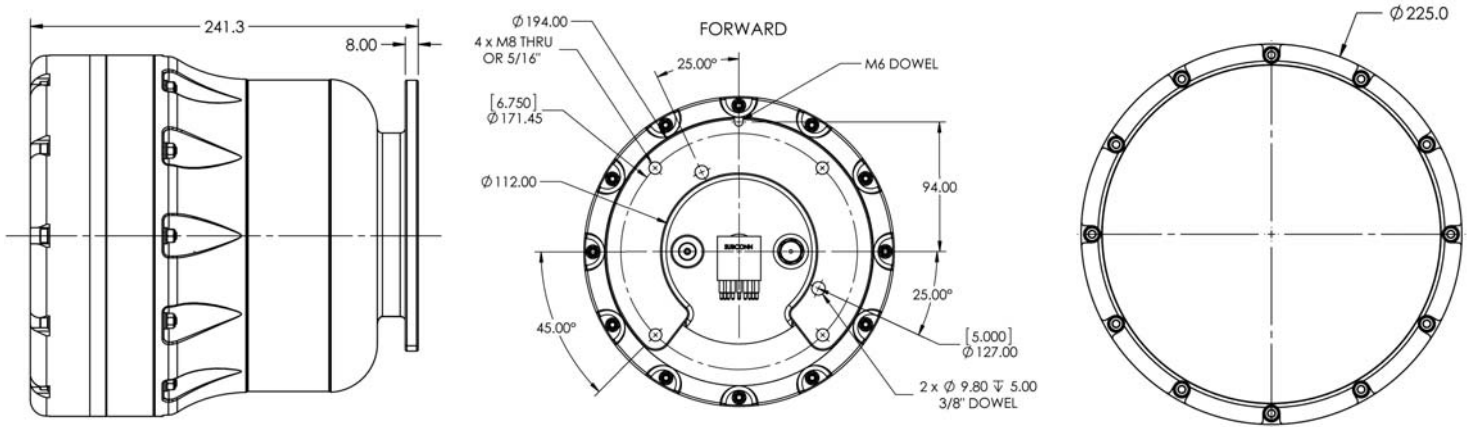
### Features

- Not subject to US re-export restrictions\*
- Compact size, fits existing footprint of industry standard DVL
- 3000m depth rating
- Single vertical wide beam requiring reduced source level for similar performance
- Standalone use or configured as part of inertial navigation system
- 20Hz data update rate

### Applications

- ROV and AUV navigation
- Towed vehicle navigation
- Inertial navigation correction and integration

# Specifications



Size: 241mm Height x 225mm Diameter

## Specifications

Min/ Max Range	0.5m/ 300m
Operating Frequency	150 kHz
Long Term Accuracy	± 0.1% ± 0.1cm/s
Bottom Velocity Precision	±0.3cm/s at 3m/s
Data Output Rate	20 Hz maximum
Operation Speed	Hover to 30+ knots

## Environmental

Operating Temperature	-5 to 45°C
Power Consumption	5W (average, independent of altitude)
Supply Voltage	18-75V DC
Communications	NMEA0183 (RS232), UDP/TCP, standard PD 4 / 6 / 11 messages
Connector	Subconn DLPBH13M, 13 Pin Low Profile, RDI replacement compatible/ 7 pin option available

## Sensors

Trigger Input	RS422
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## Mechanical

Depth Rating	3000m
Weight in Air	14.5 kg
Weight in Water	6.9 kg
Housing	6061-T6 Aluminum Hard Anodized

\*EU DUAL-USE: 6A001b.1.b

All specifications are subject to change in line with Tritech's policy of continual product development.

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