



## OEM Sound Velocity Sensors



Valeport "Time of Flight" sound velocity technology is available in a number of standard instrument packages, which we believe cater for the majority of applications requiring the ultimate in SV measurement.

However, our in-house design and manufacture capability means that we are able to provide customized versions of this technology to suit less mainstream or emerging applications, or for integration into third party systems. Please contact us to discuss your requirements

### Sensor Specifications

**Acoustic Frequency:** 2.5MHz

**Range:** 1375 - 1900m/s

This covers all known aquatic environments from cold pure water to The Dead Sea and The Marianas Trench. However, if you wish to measure sound velocity in another medium, the range can be adjusted to suit.

**Resolution:** 0.001m/s

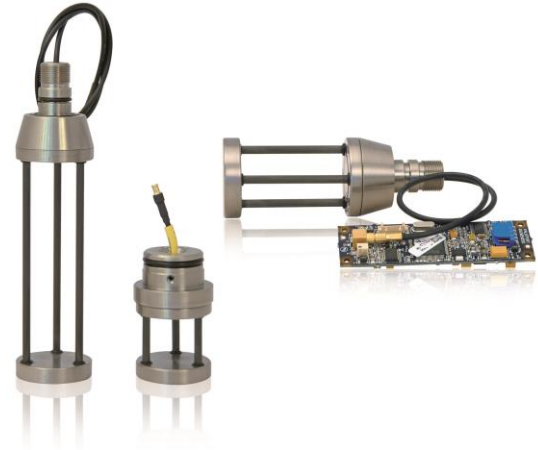
**Accuracy:** Dependent on sensor size

100mm	Random noise (point to point)	±0.002m/s
	Max systematic calibration error	±0.013m/s
	<u>Max systematic clock error</u>	<u>±0.002m/s</u>
	<b>Total max theoretical error</b>	<b>±0.017m/s</b>

50mm	Total max theoretical error	±0.019m/s
25mm	Total max theoretical error	±0.020m/s

*Other sensor sizes can be manufactured if required.*

The accuracy figure quoted is a worst case scenario based on Total Error Budget, as detailed above. Accuracy is independent of sample rate, since each reading is derived from a single acoustic pulse. We use no "rms", filtering or data averaging in the derivation of the quoted accuracy.



### Data Output

**Type:** RS232 & RS485 output, selected by command code

**Baud Rate:** 2400 - 115200 (NB. Low baud rates may limit data rate)

**Protocol:** 8 data bits, 1 stop bit, No parity, No flow control

**Sample Rate:** 1, 2, 4, 8, 16, 32 or 60Hz, or sample on demand

**Format:** Choose from mm/s (1510123), m/s to 3 decimal places (1510.123), or m/s to 2 decimal places (1510.12)

### Electrical

**Voltage:** 8 - 30vDC

**Power:** 0.25W

### Physical

**Depth Rating:** Standard sensor assembly rated to 6000m, 11000m version also available

**Transducer Window:** Polycarbonate

**Sensor Legs:** Carbon Composite

**Bulkhead & Reflector:** Titanium.

**Circuit Board:** 85 x 27mm

### Example Custom & OEM Applications

Acoustic Positioning Transponders

Seismic Streamers

AUVs

High Pressure Environments (Marianas Trench)

Submarines

Non-Aquatic Environments

Underway Profile / Winch Systems



*Customised Right Angle Configuration for Moving Vessel Profiler*

Datasheet Reference: OEMSV version 2A, Feb 2011