miniSVS
Sound Velocity Sensors

Our unique digital time of flight technology gives unmatched performance figures, with signal noise an order of magnitude better than any other sensor. The miniSVS is available in a selection of configurations and with optional pressure or temperature sensors. There are a variety of sizes to suit many applications.

miniSVS - still the most accurate sound velocity sensor in the world. Nothing else comes close.

Specifications

Product	miniSVS Sound Velocity Sensor
Country of origin	UK
Manufacturer	Valeport Limited

Data output

Unit has RS232 & RS485 output, selected by command code. RS232 data may be taken directly into a PC over cables up to 200m long, whereas RS485 is suitable for longer cables (up to 1000m) and allows for multiple addressed units on a single cable.

Baud rate	2400 - 115200 (NB. Low baud rates may limit data rate)
Protocol	8 data bits, 1 stop bit, No parity, No flow control

Sound velocity measurement

Each sound velocity measurement is made using a single pulse of sound travelling over a known distance, so is independent of the inherent calculation errors present in all CTDs. Our unique digital signal processing technique virtually eliminates signal noise, and gives almost instantaneous response; the digital measurement is also entirely linear, giving predictable performance under all conditions

Range	1375 - 1900m/s	
Resolution	0.001m/s	
Accuracy	Dependent on sensor size	
100mm	Random noise (point to point) Max systematic calibration errorr Max systematic clock erro Total max theoretical error	±0.002m/s ±0.013m/s ±0.002m/s ±0.017m/s
50mm	Total max theoretical error	±0.019m/s
25mm	Total max theoretical error	±0.020m/s
Acoustic Frequency	2.5MHz	

Pressure

Rate	SV	SV+P	SV+T
Single Sample	x	x	x
1Hz	x	x	x
2Hz	x	x	x
4Hz	x	x	x
8Hz	x	x	x
16Hz	x	x	x
32Hz	x	x	
60Hz	x		

Optional sensors

The miniSVS may be optionally supplied with either a pressure or temperature sensor (but not both). Data is sampled at the rates shown above

Sensor	Pressure	Temperature
Type	Strain gauge	PRT
Range	5, 10, 50, 100 or 600 Bar	-5°C to +35°C
Resolution	0.001% range	0.001°C
Accuracy	±0.05% range	±0.01°C

Electrical

Voltage	8 - 30vDC
Power	0.25W (SV only), 0.35W (SV + Pressure)
Connector	Subconn MCBH6F (alternatives on request)

Data Format

Examples of data formats are	<space>{sound_velocity}<cr><lf> <space>{pressure}<space>{sound_velocity}<cr><lf> <space>{temperature}<space>{sound_velocity}<cr><lf>
SV	Choose from mm/s (1510123), m/s to 3 decimal places (1510.123), or m/s to 2 decimal places (1510.12
Pressure	If fitted, pressure is always output in dBar with 5 digits, with a decimal point, including leading zeroes if necessary. Position of the point is dependent on sensor range, e.g 50dBar - 47.123 100dBar - 047.12 1000dBar - 0047.1
Temperature	If fitted, temperature is output as a 5 digit number with 3 decimal places and leading zeroes, signed if negative, e.g.

Physical

Please refer to factory for detailed dimensions if required.

Depth Rating	6000m (Titanium), 500m (acetal)
Weight	1kg (housed type)
Housing & Bulkhead	Titanium or acetal, as selected
Transducer Window	Polycarbonate
Sensor Legs	Carbon Composite
Reflector Plate	Titanium

Ordering

All systems supplied with operating manual and carry case. OEM units come with a test lead, housed units with a 0.5m pigtail.

Configuration	100mm	50mm	25mm
Titanium housed	0652004	0652005	0652006
Acetal housed	0652045	0652046	0652047
Bulkhead OEM	0652001	0652002	0652003
Remote OEM	0652007	0652008	0652009
Titanium + Pressure	0652004-P	0652005-P	0652006-P
Titanium + Temperature	0652004-T	0652005-T	0652006-T