



## miniSVS



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.**

### 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)	±0.002m/s
	Max systematic calibration error	±0.013m/s
	Max systematic clock error	±0.002m/s
	<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

Acoustic Frequency: 2.5MHz

Sample Rate: Selectable, dependent on configuration

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

### 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

### 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



### 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. 21.456  
02.298  
-03.174

### Physical

Please refer to drawing on reverse for detailed dimensions.

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

0652010 Spare 50cm Pigtail  
0652013 Pressure sensor option (specify range)  
0652028 Temperature sensor option

Datasheet Reference: miniSVS version 2A, Feb 2011