

## 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 is a variety of sizes to suit many applications.

**miniSVS - the most accurate sound velocity sensor in the world. Why settle for less?**

### Sound Velocity Measurement

Each sound velocity measurement is made using a single pulse of sound traveling 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:	1400 - 1600m/s (extended range on request)		
Resolution:	0.001m/s		
Accuracy:	Dependent on sensor size		
100mm	Random noise (95%)	±0.002m/s	
	Max systematic calibration error	±0.013m/s	
	Max systematic clock error	±0.015m/s	
	<b>Total max theoretical error</b>	<b>±0.03m/s</b>	
50mm	Total max theoretical error	±0.06m/s	
25mm	Total max theoretical error	±0.10m/s	

Acoustic Frequency: 2.5MHz

Sample Rate: Selectable, dependent on sensor size.

Rate	100mm	50mm	25mm
Single Sample	●	●	●
1Hz	●	●	●
2Hz	●	●	●
4Hz	●	●	●
8Hz	●	●	●
16Hz		● <sup>1</sup>	●

(\*Not possible with optional sensor fitted)

### Optional Sensors

The miniSVS may be optionally supplied with either a pressure or temperature sensor (but not both). Data is sampled at the same rate as 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	±0.1% 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. However, it also requires a suitable RS485 PC adaptor.

Baud Rate: 1200 - 38400

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 Titanium MCBH6F (alternatives on request)

### Data Format

```
<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

Weight: 1kg (housed type)

Housing & Bulkhead: Titanium

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
Bulkhead OEM	0652001	0652002	0652003
Remote OEM	0652007	0652008	0652009

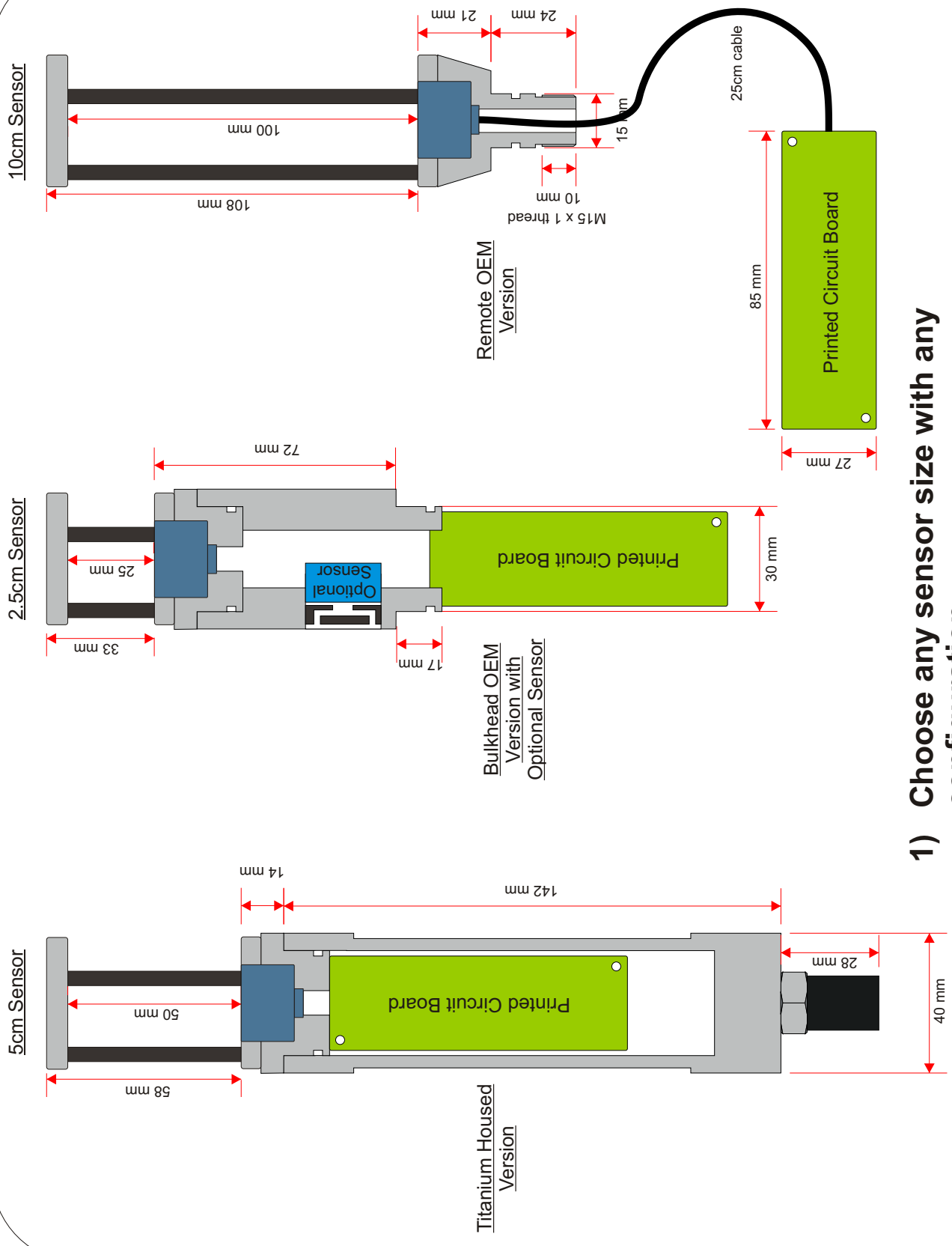
0652010 Spare 50cm Pigtail

0652013 Pressure sensor option (specify range)

0652028 Temperature sensor option

As part of our policy of continuing development, we reserve the right to alter at any time, without notice, all specifications, designs, prices and conditions of supply of all equipment.

Datasheet Reference Number: miniSVS v1B



- 1) Choose any sensor size with any configuration.
- 2) Custom designs on request.
- 3) Choose Pressure or Temperature as Optional