miniSVS -
Sound Velocity Sensor

Valeport's 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 number of size options to suit many applications.

The miniSVS is titanium housed as standard and 6000 m rated, its rugged design allows it to withstand the toughest conditions.

DATA SHEET

Product Details

SOUND SPEED

DIALOGUE X2 SOFTWARE

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VALEPORT

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

Acoustic Frequency: 2.5 MHz

Sample Rate: Selectable, dependent on configuration

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

Optional Sensors

The miniSVS may be optionally supplied with either a pressure or temperature sensor. Data is sampled at the rates shown above.

Sensor	Pressure	Temperature
Type	Strain Gauge	PRT
Range	2, 5, 10, 20, 30, 50, 100, 300 or 600 Bar	-5°C - +35°C
Resolution	0.001% range	0.001°C
Accuracy	±0.05% range	±0.01°C

Data Output

The miniSVS 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	9 - 28 V DC
Power	0.25 W (SV only) 0.35 W (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) 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 zeros if necessary. Position of the point is dependent on sensor range, e.g.	
	50 dBar	47.123
	100 dBar	047.12
	1000 dBar	0047.1
Temperature	If fitted, temperature is output as a 5 digit number with 3 decimal places and leading zeros, signed if negative, e.g.	
	21.456	02.298 -03.174

Physical

Please refer to factory for detailed dimensions if required.

Depth Rating	6000 m (Titanium)
Weight	1 kg (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 0.5 m pigtail.

Configuration	100 mm	50 mm	25 mm
Titanium Housing	0652004	0652005	0652006
Bulkhead OEM	-	-	0652003
Remote OEM	-	-	0652009
Titanium + Pressure	-	0652005-P-XX	0652006-P-XX
Titanium + Temperature	-	0652005-T	-
Acetal Housing	-	-	0652047

Note XX Where P = 2, 5, 10, 20, 30, 50, 100, 300 or 600 Bar.