

Sound Velocity Sensor

Modus SVS



A state of the art "Time of Flight" sensor, which gives very accurate, high resolution Speed of Sound Data.

FEATURES

- Time of flight measurement
- Optional pressure sensor
- High resolution data
- Temperature compensated
- Pressure compensated
- RS232, RS422 & RS485 outputs
- Programmable sampling
- Emulation mode
- Optional Titanium housing (6000m)
- 3 year warranty

APPLICATIONS

- Dredging operations
- Seismic operations
- Swath Sonar/Echosounder calibration
- ROVs
- Military applications

DESCRIPTION

The Modus SVS Sound Velocity Sensor utilises advanced Digital Signal Processing techniques to take the Time of Flight method of sound speed measurement to new heights. The new sensor is able to resolve sound measurements to 0.001 m/s, with an accuracy of ± 0.05 m/s (± 0.03 m/s rms) over the working range of temperature and pressure.

The SVS is just one of Valeport's new Modus sensors - a range of one & two sensor instruments designed for plug and play type interfacing to existing loggers, ROVs and other instrument packages.

Requiring only a voltage input of 9 to 30VDC, the sensors offer digital data outputs of RS232, RS422 and RS485 as standard, with the choice

being made by pin selection on the connector. Analogue output options are available on request.

The sensors will output data in the pre-set format when power is applied. A simple Windows based program allows the user to alter the pre-set format, choosing data output frequency of 1Hz, 2Hz, 4Hz or 8Hz, simple data averaging, depth triggered output (if pressure sensor fitted) or data on demand. In addition, the Modus SVS sensor has an emulation mode, where it can be set to mimic the outputs of a variety of other manufacturers' sensors. This allows the Valeport sensor to be swapped for pre-existing sensors without requiring re-configuration of the host package.

Sound Velocity Sensor

Modus SVS

SPECIFICATION

Sensors

Sound Velocity:

Range: 1400 to 1600 m/s
Resolution: 0.001m/s
Accuracy: $\pm 0.05\text{m/s}$
($\pm 0.03\text{m/s rms}$)

Pressure (optional):

Range: 20, 100, 1000 or 6000 dBar standard. Others available on request.
Resolution: 0.005% FS
Accuracy: $\pm 0.1\%$ FS

Physical

Housing: Acetal or Titanium housing, Invar & 316 grade stainless steel reflector, and zinc anode
Depth rating: 1000m (acetal)
6000m (titanium)
Connector: 10 way mini-Subconn standard (alternatives available)
Size: 88mm diameter by 337mm overall length (plus connector)
Weight: Air, 1.5kg (acetal)
3.9kg (titanium)
Water, 0.1kg (acetal)
2.5kg (titanium)

Communications

Output: RS232, RS422, RS485 fitted as standard
Protocol: 2400 to 38400 baud (also features autobaud detection). 8 data bits, 1 stop bit, no parity
Emulation Modes: AML SV Smart Sensor, SVP16, SVPlus, Odom Digibar Pro, NMEA + other formats

Data Acquisition

Acoustic frequency: 2.5MHz
Sample Period: Single pulse, maximum time of flight 145 μs .
Sample modes: Continuous data, data on demand, pressure triggered data (if pressure sensor fitted), average data output, or burst sampling
Output rate: 1Hz, 2Hz, 4Hz or 8Hz raw data continuous, up to 1 sample per day of averaged or burst data. Pressure triggered data or data on demand at 8Hz maximum.

Power Requirements

Input: 9 - 30vDC
Power: less than 0.4W

ORDERING

- 0651001** SVS Sensor, in acetal housing, supplied with 50cm pigtail/interface lead, Windows based setup software and operating manual with calibration certificate.
- 0651002** Titanium Housing
- 0651003** Optional pressure sensor. Please state required range.
- 0651004** Optional analogue output board for SVS sensor
- 0651005** Integral sensor guard
- 0651006** Stainless steel protective cage

Valeport manufactures a wide range of oceanographic and hydrometric instruments including self-recording and direct reading multi-parameter current meters, sound velocity probes, CTD probes, wave recorders, tide gauges, open channel flow meters, water and plankton samplers, winches, sinker weights, connectors and accessories.

VALEPORT 

Valeport Limited
Townstal Industrial Estate
Dartmouth, Devon TQ6 9LX
United Kingdom
Tel: +44 (0)1803 834031
Fax: +44 (0)1803 834320
e-mail: sales@valeport.co.uk
Web Site: <http://www.valeport.co.uk>