# MIDAS SVP
## Sound velocity profiler


The MIDAS SVP is the most accurate Sound Velocity Profiler in the world. As well as using Valeport's digital time of flight sound velocity sensor, it now comes as standard with a 0.01% pressure sensor. Every detail from the sensor accuracy through the titanium construction to the large memory and choice of communications methods has been considered - we truly believe it to be the ultimate SVP.

## Specifications

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|---|---|
| **Product** | MIDAS SVP sound velocity profiler |
| **Country of origin** | UK |
| **Manufacturer** | Valeport Limited |

## Sensors

The MIDAS SVP is fitted with Valeport's digital time of flight sound velocity sensor, a high accuracy temperature compensated piezo-resistive pressure transducer, and a fast response PRT temperature sensor.

## Temperature

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| **Range** | -5°C to +35°C |
| **Resolution** | 0.005°C |
| **Accuracy** | ±0.01°C |

## Pressure

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| **Range** | 10, 50, 100, 300 or 600bar |
| **Resolution** | 0.001% range |
| **Accuracy** | ±0.01% range |

## Data acquisition

The MIDAS SVP uses the concept of distributed processing, where each sensor has its own microprocessor controlling sampling and calibration of readings. Each of these is then controlled by a central processor, which issues global commands and handles all the data. This means that all data is sampled at precisely the same instant, giving superior quality profile data.

## Sampling modes

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| **Continuous** | Regular output from all sensors at 1, 2, 4 or 8Hz |
| **Burst** | Regular sampling pattern, where instrument takes a number of readings, then sleeps for a defined time. |
| **Trip/Profile** | Data is output as a chosen parameter changes by a set value, usually Pressure for profiling. |
| **Conditional** | Instrument sleeps until a selected parameter reaches a set value. |
| **Delay** | Instrument sleeps until predefined start time |

## Software

System is supplied with DataLog Express Windows based PC software, for instrument setup, data extraction and display. DataLog Express is license free.

## Memory

MIDAS SVP is fitted with 16Mb solid state non-volatile FLASH memory. Total capacity depends on sampling mode; continuous & burst modes have a single time stamp at the start of the file,trip mode (profiling) stores a time stamp with each reading. A single line of SVP data uses 8 bytes, and a time stamp uses 7 bytes.

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| **Continuous** | >2,000,000 data points |
| **Profile** | >1,000,000 data points (>100 profiles to 6000m). |

## Communications

The instrument will operate autonomously, with setup and data extraction performed by direct communications with PC before and after deployment. It also operates in real time, with a choice of communication protocols for a variety of cable lengths, all fitted as standard and selected by pin choice on the output connector:

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| **Standard**<br>**RS232**<br>**RS485** | <br>Up to 200m cable, direct to serial port via USB adaptor<br>Up to 1000m cable, addressable half duplex comms |
| **Options:**<br>**FSK** | <br>2 wire power & comms up to 6000m cable (cable dependant) |
| **Baud Rate** | 2400 - 115200 (FSK fixed at 19200, USB 460800) |
| **Protocol** | 8 data bits, 1 stop bit, No parity, No flow contro |

## Electrical

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| **Internal** | 8 x C cells, 1.5v alkaline or 3.6v lithium |
| **External** | 9 - 30vDC |
| **Power** | 0.6W (sampling), <1mW (sleeping) |
| **Battery Life** | <100 hours operation (alkaline)<br><250 hours operation (lithium) |
| **Connector** | Subconn Titanium MCBH10F |

## Physical

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|---|---|
| **Materials** | Titanium housing, polyurethane & carbon composite sensor components, stainless steel (316) deployment cage |
| **Depth Rating** | 6000m (may be limited by pressure sensor) |
| **Instrument size** | 88mmØ x 665mm long |
| **Cage size** | 750 x 140 x 120mm |
| **Weight (in cage)** | 11.5kg (in air), 8.5kg (in water) |
| **Shipping** | 100 x 18 x 49cm, 24kg |

## Ordering

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|---|---|
| **0650003-XX** | Titanium housing, polyurethane & carbon composite sensor components, stainless steel (316) deployment cage |
| **Note** | 6000m (may be limited by pressure sensor) |
| **0400002** | 88mmØ x 665mm long |
| **0400EA5** | 750 x 140 x 120mm |
| **TB0400FSK** | 11.5kg (in air), 8.5kg (in water) |

## Sound velocity

| | |
|---|---|
| **Range** | 1375 – 1900m/s |
| **Resolution** | 0.001m/s |
| **Accuracy** | ±0.02m/s |