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.

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.

Sound Velocity
- Range: 1375 – 1900m/s
- Resolution: 0.001m/s
- Accuracy: ±0.02m/s

Temperature
- Range: -5°C to +35°C
- Resolution: 0.005°C
- Accuracy: ±0.01°C

Pressure
- Range: 10, 50, 100, 300 or 600 bar
- 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
- Continuous: Regular output from all sensors at 1, 2, 4 or 8 Hz
- 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

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:

Standard
- RS232: Up to 200m cable, direct to serial port via USB adaptor
- RS485: Up to 1000m cable, addressable half duplex comms

Optional FSK
- 2 wire power & comms up to 6000m of cable (cable dependent)
  - Baud Rate: 2400 - 115200 (FSK fixed at 19200, USB 460800)
  - Protocol: 8 data bits, 1 stop bit, No parity, No flow control

Memory
The MIDAS SVP is fitted with 1.6Mb 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.

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

Electrical
- Internal: 8 x C cells, 1.5V alkaline or 3.6V lithium
- External: 9 – 30V DC
- Power: 0.6W [sampling], <1mW [sleeping]
- Battery Life: <100 hours operation [alkaline]
- <250 hours operation [lithium]
- Connector: SubConn Titanium MCBH10F

Physical
- 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: 11.5kg [in air], 8.5kg [in water] including cage
- Shipping: 100 x 18 x 49cm 24kg

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

Ordering
0650003-XX: MIDAS SVP Profiler
- Supplied with: Deployment cage, SubConn switch plug, 3m Communications Lead, USB adaptor, DataLog x2 software, Manual, tool kit and transit case.
- XX denotes transducer range
  Select from 10, 50, 100, 300 and 600 bar.
- 0400002: 16 Mbyte memory upgrade (max 64 Mbyte)
- 0400EA5: FSK modem adaptor
- TB0400FSK: Probe board set required for FSK operation

Datasheet Reference: MIDAS SVP - February 2016