

# GPS Echosounder

*MIDAS Surveyor*



**A portable dual frequency echosounder and GPS logger system designed for small scale hydrographic surveys.**

## ● FEATURES

- Single or dual frequency
- Integral GPS Receiver with SBAS Differential correction
- Tide / SV / Heave Correction
- Industry standard data outputs
- 16Mbyte logging memory
- Internal rechargeable batteries (10 hour life)
- Graphics LCD data display
- Remote fix button
- Rugged Housing (IP68)

## ● APPLICATIONS

- Harbour Maintenance
- River & Estuary Surveys
- Lake and Dam Surveys
- Education
- Civil Engineering
- Dredging Operations
- Navigation
- Pipeline Landfall
- Military
- Beach Profiling
- Dock Inspection

## ● INTRODUCTION

The Valeport MIDAS Surveyor system is a low-cost, portable hydrographic survey system. As standard the Surveyor is supplied with a single high frequency (210kHz) transducer and integral 12 channel DGPS receiver. Optionally, a high accuracy 16 channel DGPS system can be fitted instead - both receivers are SBAS DGPS enabled, and also accept an external correction input.

The system will log depth data at 6Hz (depth dependent) together with position data for a basic hydrographic survey. The Surveyor will also accept an additional low frequency (33kHz) transducer, and corrective data from external tide gauges, sound velocity and heave sensors.

The Surveyor performs real time Geodetic correction to WGS84, and outputs corrected depth data in a selection of industry standard formats. The onboard 16Mbyte memory logs all incoming data which is subsequently available for upload, again in a choice of formats.



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## ● SPECIFICATION

### **Depth**

MIDAS Surveyor accepts Single or Dual Frequency echosounder inputs. Standard configuration is to use analogue transducers with Valeport's own onboard digital signal processing for superior performance. The following transducers are available as standard, although others are acceptable.

### **High Frequency**

210kHz (optional 200kHz)

### **Low Frequency**

33kHz (optional 30kHz)

**Accuracy:** greater of  $\pm 0.01\text{m}$  or  $\pm 0.02\%$  reading.

**Resolution:** 0.01m

**Range:** 0.3 to 100m

**Sample Rate:** 6Hz

The instrument will also accept digital (RS232) transducer inputs instead, or input from any survey type external echosounder device.

### **Position**

#### **Standard:**

Integral A12 twelve channel DGPS receiver with SBAS (EGNOS / WAAS / MSAT) correction.

Horizontal Accuracy: 2m (CEP)

#### **Option:**

Integral DG16 sixteen channel DGPS receiver with SBAS (EGNOS / WAAS / MSAT) correction and IALA Beacon receiver.

Corrected Accuracy: 1m (95%)

Both systems also accept external DGPS or Marine Beacon correction.

**Update Rate:** 1Hz

Internal GPS receiver can also be disabled to allow external GPS or RTK input from third party receiver.

### **Event Marker**

System supplied with remote event marker on 3m cable.

### **Other Inputs:**

The MIDAS Surveyor will also accept and log data inputs from the following sensors. Heave & Tide inputs can also be used for real time correction of depth.

- Tidal data from Valeport Model 740 tide gauge receiver
- Sound Velocity data from Valeport miniSVS sensor.
- Heave data
- Direction data from gyrocompass.

### **Data Output:**

Real time RS232 data output of the following parameters:

- Position (WGS84 or local grid)
- Depth (raw or corrected)

### **Protocol**

8 data, 1 stop, no parity, baud rate from 2400 to 115200.

The following data formats are supported:

- NMEA
- Odom
- Atlas

### **Memory:**

16Mbyte FLASH memory provides up to 32 hours data logging (basic system).

32Mbyte memory is optionally available.

### **Power:**

Internal lead acid battery, 8.4Ah, providing 24 hours nominal working time. Batteries are recharged by external DC input (12 - 24vDC)

### **System Setups:**

- WGS84 Geodetic setup
- Local Grid setup
- Depth correction on/off
- Data Output formats
- Data Input formats

### **Data Display:**

Graphics LCD display 240 x 128 pixels (approx 110 x 70mm) provides numerical and graphical display of depth data (single or dual frequency), position data (WGS84 or local grid) and display of all additional incoming parameters. There is also an on-screen Help function.

### **Software**

Supplied with SurveyLog Windows based software for data download and display. All data is presented as ASCII text for easy import into appropriate hydrographic survey packages, or simply as CAD (x,y,z) format.

## ● ORDERING

**0420001** MIDAS Surveyor hydrographic survey package, comprising main logging unit with 16Mbyte FLASH memory, internal battery pack, external DC power lead, RS232 output cable, operating manual and SurveyLog software.

**0420002** 210kHz transducer with 10m cable and mounting spigot

**0420003** 33kHz transducer with 10m cable and mounting spigot

**0420004** Combined 33/210kHz transducer with 10m cable and spigot

**0420005** Integral 12 channel DGPS receiver with antenna, 5m cable and mounting spar

**0420006** Integral 16 channel DGPS receiver with antenna, 5m cable and mounting spar

**0420007** Marine Beacon combined receiver and antenna, with 5m cable and mounting spar

**0420008** RS232 input lead for external channel (DGPS, tide, heave etc.)

**N.B.: Full basic system comprises 0420001, 0420002 & 0420005.**



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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.

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