

BATHYMETRY

Products and Services Portfolio





Precision Depth Measurement

Bathymetry: the science of measuring depth. For surveying, dredging and underwater operations, accurate bathymetric data is critical, be it overall water depth or the location of specific instrumentation within the water column. Valeport presents a variety of integrated instrumentation packages designed to provide that high quality data, whatever the application.

Echosounders & Altimeters

Valeport's unique digital signal processing techniques use fuzzy logic to pick out and lock onto the genuine echo, while automatic power and gain control means that erroneous echoes are minimised and accurate readings can be made in water depths as shallow as 30cm. As a stand alone altimeter, this technology is ideal for integration into bathymetry packs. Combining the technology with integral GPS receiver and on board data logging provide our echosounders with the benefits of maximum versatility and minimal deployment time.

Bathypacks

A variety of integrated instrument packages and software designed to give an online overview of density and sound velocity profiles, with industry standard resonant quartz pressure sensors being used to provide highly accurate pressure based depth readings. Valeport's own sensors and unique distributed signal processing mean that the density and sound velocity profiles are the most accurate available, whilst UNESCO standard equations are utilised to give correct data conversion between pressure and depth units.



Echosounder

Are they only for shallow water use?

Yes - we deliberately went for the "small boat" market, simply because the product complements our small tide gauges and sound velocity profilers, to make a suite of instruments for quick and easy surveys. This philosophy of quick mobilisation and portability also explains the absence of paper chart recorders.

Can I use my own GPS?

Of course - the instruments will take in external GPS data instead of using the internal receiver. However, the internal receiver is a pretty good 12 channel device with SBAS correction, so if you want to use an external GPS input, we recommend that it you check it is better than the one we fit as standard.

What's the "fuzzy logic"?

With all echosounder transducers, you often get multiple echoes for a single ping. Valeport's products rely on providing a single depth value for each ping, so the correct echo has to be filtered out from the noise that is received. This is done by measuring the intensity and duration of each received echo, and then scoring it based on recent events - if you have regularly been getting a depth of 1m, it is unlikely that you will suddenly get a single reading of 100m. In addition, the system uses its recent history to work out how much power and gain it should be using to get a clean echo.

BathyPack & Altimeter

How do you calculate the correct depth from pressure?

The package calculates the mean density of the water all the way down through the column. As standard we then use the UNESCO pressure/depth equation to convert this into Depth. There is also the option to use the simple approximation method of just dividing the measured pressure by the mean density, so that data is compatible with previous work done using this method.

Why do I need a sound velocity sensor when it's already got CTD?

For accuracy. The CTD Sound Velocity equations all have inherent errors in them, no matter how accurate the CTD measurements are. The time of flight SV sensor is a much more accurate method - see the separate brochure on Sound Velocity for a full explanation.

Can I use any altimeter?

We do have our own, which is our "fuzzy logic" echosounder in an underwater housing. However, we can interface to most others that are on the market if you already own them.

What about the topside unit?

It's entirely optional. The whole package is governed by a Windows based program that will run on a PC or laptop. If you really need a 19" rack unit, then we offer one with an embedded PC, which simply runs the same software package.

Can I use more than one BathyPack at once?

Yes you can, but you don't have to. If you are working in a small area, then you can have one BathyPack and multiple individual pressure sensors fixed to different platforms, all inputting data to the same PC. Since the PC stores all the density profile information, it can apply the same calculations to all of the pressure sensors at once, providing a very cost-effective method of precisely locating multiple devices in the same environment.



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