Seabird 25plus for multibeam mapping

Originated by Jonathan Beaudoin on 14 Nov 2012

From: Jonathan Beaudoin on Wed, 14 Nov 2012

Hi all,

A colleague of mine is wondering if anybody has any thoughts on using a Seabird 25plus for CTD measurements in support of multibeam seafloor mapping operations as opposed to the usual 911plus systems we often find on ocean going research vessels. The individual sensor accuracies seem reasonable for mapping on paper but I'm wondering if anybody has noticed an appreciable difference between a 25plus and a 911plus for mapping operations.

Thanks,
jb

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Reply From: Marshall Swartz on Wed, 14 Nov 2012

The fact that the SBE25 pressure channel has significantly less resolution and accuracy than an SBE911+ may be a problem for you. At WHOI's MISO facility, we use three SBE25s for towed camera work, and when using a 7000m depth rated SBE29 pressure sensor, each bit of resolution is about 1.2dbar in pressure.

Because the SBE29 sensor is providing an analog voltage output to the SBE25 voltage digitizer, it cannot give better resolution than 1 part in 4096 across its full-scale range. If you can live with that, then you may be ok.

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Reply From: Marshall Swartz on Wed, 14 Nov 2012

I should add that the updated SBE25+ CTD, which replaces the SBE25, and with which I have no experience, has significantly better pressure resolution and accuracy specifications.

Reply From: Brennan Phillips on Thu, 15 Nov 2012

Hi Marshall,

I'm glad you responded to Erik's post... you're next on my list to talk to actually. We're budgeting out a rosette and profiler for the Nautilus, and the bottleneck is the cable on our hydrowinch. On it is an old .322 cable manufactured in Europe sometime in the early 90's, it is in fine condition (lightly used and heavily greased... Thank you Germany!). The composition is strange however... not coax, it has a single heavy gauge copper conductor and then two steel layers. So, if we went with the self-logging/firing 25plus, we'd save $30k+ between the CTD and the wire (plus we don't anticipate being near a traction winch anytime soon). So it's up to the science users... Multibeam and 'light' oceanographic customers... to determine whether we really need the 911plus.

Does this logic seem sound to you? From what I see we have a green light for multibeam purposes and our first potential user (Erik) is fine with it too.

Thanks and best regards,

-Brennan

Reply From: Dale Chayes on Thu, 15 Nov 2012

We routinely run an SBE19+ over 1,500 meters of 1-HO1 (Rochester PDF spec sheet at: http://www.rochestercables.com/pdfs/DataLines/A210100.pdf) single (24 AWG) conductor 0.1" OD double armored cable using seawater/armor for the return. The CTD is battery powered but the telemetry runs in real-time over the conductor.

There may be other SBE CTDs are capable of that.

For multibeam operations, you save some time by having the down-cast data ready for a creating a SSP before the cast is over rather than waiting for recover and download.

YMWV,

-Dale