

10.015 SOUND VELOCITY CALIBRATOR

Approval Date: 20 May 1998

Reviewed on : 23 October 2007

Version: 1

Purpose

The sound velocity calibrator measures sound velocity in water. It is used to calibrate the sound velocity setting of high accuracy hydrographic echo-sounders. In particular in stratified water the speed of sound may vary over depth. Especially under such conditions the calibrator is effective to increase echo-sounder accuracy.

Conditions & Requirements

- The instrument shall be of such a design that it operates reliably and accurately under the prevailing operational conditions.
- The instrument shall be easy to operate and maintain.
- The instrument shall be supplied with the accessories as needed for effective deployment.
- All materials on the instrument exterior shall be non-corrosive.
- The instrument shall be of a rugged design that can cope with the prevailing shock and vibration as experienced in mobile operations.
- The instrument shall have an expected technical lifetime of not less than 10 years.
- An operating and maintenance manual related to the type and model of the instrument, shall be part of the delivery.
- A control unit with integrated display shall be connected to the submersible sensor by electrical cable.
- The sound velocity readings shall be digitally displayed on the control unit.
- Power supply shall be from standard batteries.
- The displayed values shall not depend on supply voltage.

Specifications

1. Sensor

accuracy	1 m/s
velocity range	fresh/saltwater; 0 to 40°C
sampling time	<5 seconds
minimum depth	1 m
maximum depth	100 m
cable length	25 m

2. Control unit

power supply	standard dry cell(s), e.g. AA, C or D size
battery autonomy	10.000 readings
display	good readability in daylight
displayed units	m/s
resolution	0.1 m/s
operating temperature	0 to 50°C
humidity	95%
enclosure	rigid, portable, splash proof

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