

# 10.012

# PORTABLE ECHO-SOUNDER

**Approval Date: 11 August 1999**

**Reviewed on : 23 October 2007**

**Version: 3**

## Purpose

The portable echo-sounder specified here is an alternative for manual depth measurement at gauging stations. It will be used during discharge measurements from a boat.

## Conditions & Requirements

- The portable echo-sounder shall be of such a design that it operates reliably and accurately under the prevailing environmental conditions.
- The echo-sounder will be used in sediment laden rivers and canals.
- The echo-sounder shall be easy to operate and maintain.
- The echo-sounder shall be supplied with the accessories as needed for effective deployment.
- All materials on the echo-sounder exterior shall be non-corrosive.
- The echo-sounder shall have an expected technical lifetime of not less than 10 years.
- The echo-sounder shall be capable to operate for at least 6 months without any servicing.
- An operator's manual, related to the type and model of the echo-sounder, shall be part of the delivery.
- Actual water depth shall be digitally presented.
- The power supply shall be from batteries, e.g. internal alkaline batteries and/or external car battery.
- Power consumption shall be moderate.
- The displayed value shall not depend on supply voltage.
- The indicated range shall be distance to the bottom. Hence, the echo-sounder should suppress echoes from the water surface (backward sensitivity) and also the result of multiple echoes should be suppressed.
- The echo-sounder shall have adjustment facilities for draft, speed of sound, sensitivity and range.
- The echo-sounder shall have a good performance in sediment laden rivers and canals.
- An in-built chart recorder is not required.
- Optionally, the echo-sounder may display water depth on a LCD screen in graphical format.

## Specifications

The purchaser may execute his judicious discretion in the choice of configuration and options.

<b>depth range</b>	up to 50 m (selectable)
<b>acoustic frequency</b>	approx. 200 kHz
<b>transducer beam width</b>	narrow beam (approx. 8°)
<b>transducer cable length</b>	minimum 5 m
<b>accuracy</b>	≤0.2% of range
<b>unit of range</b>	m
<b>resolution of display</b>	0.10m or better

<b>power supply</b>	10 to 15 VDC, reverse polarity protected
<b>display</b>	LCD, optionally with graphic trace good readability in direct sunlight
<b>enclosure and connectors</b>	compliant with IP55
<b>operating temperature</b>	0 to 50 °C
<b>operating humidity</b>	100%

### **Accessories**

- charger for car battery

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