

10.020 DISCHARGE MEASURING SYSTEM

Approval Date: 20 May 1998

Reviewed on : 23 October 2007

Version: 1

Purpose

The discharge measuring system will be used to collect discharge data on rivers and canals by the moving boat method.

The system will be installed in a small boat. The boat is not included in the delivery.

The discharge measuring system shall comprise the following components:

Basic system

1. Acoustic Doppler Current Profiler (see 10.021)
2. data collection computer (see 10.017)
3. software for data acquisition, storage and processing (see 10.024)

Optional additions

4. electromagnetic current meter (see 10.022)
5. echo-sounder (see 10.014)
6. sound velocity calibrator (see 10.015)
7. differential global positioning system (see 10.016)
8. external compass (see 10.023)

Conditions & Requirements

- Primary requirement is that the ADCP, the data acquisition computer and the software match with each other.
- If optional equipment, e.g. echo-sounder, DGPS, external compass, is connected than is shall be supported by the hardware and the software.
- Data exchange between data acquisition computer, echo-sounder and DGPS shall be efficient and error free.
- While sailing pre-defined lines, from the one river bank to the other, the computer shall acquire data from the connected ADCP. Optionally, additional data are collected from one or more of the following instruments: DGPS positioning system, echo-sounder, compass and electromagnetic current meter. All data relevant to calculate discharge and the data required for production of profile charts (velocity, depth, and signal intensity) shall be stored on the data acquisition computer.
Upon arrival at the other riverbank, a discharge estimate shall be calculated. The data collection software shall be adequate for the application.
- The system will be installed on a boat with a length of about 8 m; the boat is not included in the delivery.
- The system shall be portable.
- The system shall be rugged and easy to install.
- The system shall be easy to operate.
- Preferably, power supply is from car-batteries.
- The boat shall have a shelter to protect the electronics against spray, rain and direct sunshine.
- The proper functioning of the bathymetry system shall be demonstrated satisfactory before the system can be procured.
- A small portable generator will be required to charge the batteries used for the moving boat equipment. The generator is not included in the delivery.

Remarks

- Drawings and fittings for installation of the equipment can only be provided when the boat or a drawing of the boat is available. The equipment will be purchased separately and be installed by a local workshop under supervision of a moving boat expert.

Optional equipment

- As the (optional) echo-sounder is portable, it might be combined with the other instruments and mounted in a portable box (e.g. an instrument flight case) with a front and a rear lid. The front lid should give access to the instruments, the rear lid to power, antennae connections (DGPS) etc. Some space might be reserved for the deck-box of an acoustic current profiler. (Not all ADCPs come with a deck-box, the latest version have the electronics incorporated in the sensor-head.)

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

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As per HP-I

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