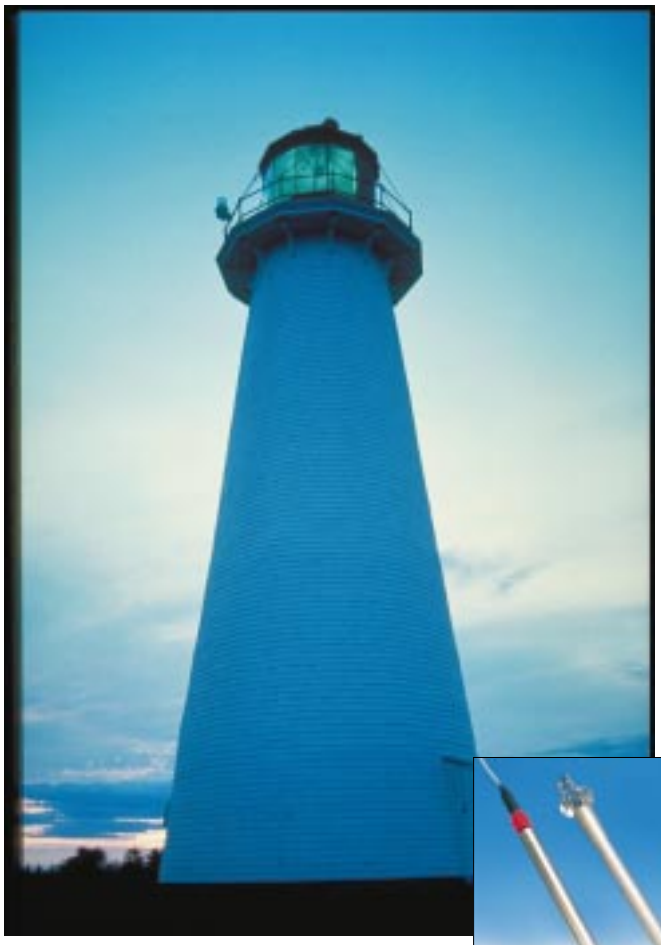
WHEN IT'S ALL ABOUT GETTING THE RIGHT SIGNAL



SOUND VELOCITY PROFILER

HMS 1820-CTD

A WAVE OF USEFUL PRODUCTS

MARIMATECH

HMS 1820-CTD
FEATURES

- Robust design
- Compact and lightweight
- Immediate calculation of sound velocity
- Interface to Multibeam and Single Beam systems
- Easy calibration
- Free fall profiling
- »Smart winch« available
- Annotation functions with built-in clock and calendar
- Operation with or without cable
- Subconn connectors

Sound Velocity Profiler

The HMS 1820-CTD Sound Velocity Profiler has a compact and robust design. It is the smallest and most advanced hydrographic CTD currently on the market. A precise and quick depth calculation is carried out thanks to the use of an emerging generation of processing techniques.

Typical hydrographic applications are:

- Rivers
- Lakes
- Harbours
- Offshore
- Research
- Environmental surveys
- Sediment surveys

Performance

The HMS 1820-CTD Sound Velocity Profiler provides accurate information on sound velocity.
The HMS 1820-CTD operates perfectly in salt water, equally well in fresh water. The salinity range is pre-set in the HMS 1820-CTD either from 0.1‰ to 15‰ or from 5‰ to 60‰.
The standard HMS 1820-CTD is equipped with a memory for up to 2,000 recordings.
A 25 metre long data cable is supplied with the HMS 1820-CTD.
There are two models of the Sound Velocity Profiler:

- HMS 1820-CTD/C (cable)
- HMS 1820-CTD/W (wire)

HMS 1820-CTD/C

The standard HMS 1820-CTD/C Sound Velocity Profiler is designed for carrying out profiles down to a depth of 25 metres. The 25 metre long umbilicial cable provides power and transmits data.
Sound velocity is calculated in the probe by means of the measured conductivity, temperature and depth. The accuracy of the sound velocity is better than ±1 metre per second. Salinity is also calculated in the probe by means of the measured conductivity.
The HMS 1820-CTD/C Sound Velocity Profiler is to be connected to the HMS 1820-H Hand Terminal – please see »Options«.

HMS 1820-CTD/W

The standard HMS 1820-CTD/W Sound Velocity Profiler is designed for carrying out profiles down to a depth of 250 metres – optionally down to 1,000 metres. The HMS 1820-CTD/W has built-in rechargeable batteries, which - fully charged - allow for ten hours of continuous operation.
Sound velocity is calculated either in the probe or in a PC by means of the measured conductivity, temperature and depth. The accuracy of the sound velocity is better than ±1 metre per second. Salinity is also calculated either in the probe or in a PC by means of the measured conductivity.
The software program CTD-Master is supplied with the HMS 1820-CTD/W Sound Velocity Profiler. This software program enables a detailed analysis of the water column to be carried out.
The HMS 1820-CTD/W Sound Velocity Profiler can be connected to a PC or to the HMS 1820-H Hand Terminal – please see »Options«. The 25 metre long umbilical cable can also be used with the HMS 1820-CTD/W for on-line profiling.

Capabilities

- Auto-logging function
- Average value of sound velocity via Hand Terminal and cable
- Data export for postprocessing *
- Easy interfacing
- Free fall profiling kit
- Free selection of measuring intervals
- Hard copy of curves and tables *
- Reads battery status
- Robust
- Stainless steel

* Applies only to HMS 1820-CTD/W

Options

HMS 1820-H Hand Terminal

The HMS 1820-H Hand Terminal has several purposes.

Firstly, the Hand Terminal supplies the HMS 1820-CTD/C with power through the 25 metre long umbilical cable. The power comes from standard alkaline batteries, which ensure 60 hours of operation.

Secondly, the Hand Terminal displays real-time data as well as the average of the sound velocity in the water column.

Finally, the HMS 1820-H Hand Terminal is used for calibration of the Sound Velocity Profiler.

HMS 1820-CTD/C and HMS 1820-H Hand Terminal

CTD Master Software Program

The CTD Master is standard with the HMS 1820-CTD/W. This software program enables a detailed analysis of the water column to be carried out as well as presenting this analysis in a diagram or a table. The following results are displayed in tables: Depth, temperature, sound velocity, salinity and conductivity.

HMS 1820-CTD/W and a laptop

»Smart Winch«

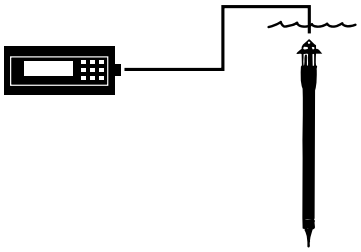
A portable »smart winch« is available for the HMS 1820-CTD/W. The winch is programmable and can automatically lower the HMS 1820-CTD/W to a pre-selected depth. The »auto-up« function stops the HMS 1820-CTD/W at the water surface and lifts it slowly up for easy access. The speed of the winch is programmable. The winch can handle 120 metres of 1.5 mm diameter wire.

Extended Depth Range

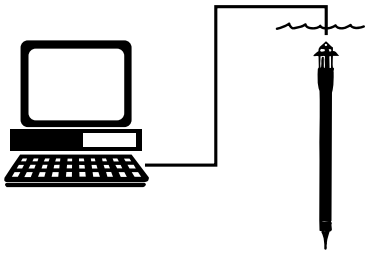
The HMS 1820-CTD/W is available to carry out profiles down to depths of 500, 750 and 1,000 metres.

HMS 1820-CTD/W and a »smart winch«

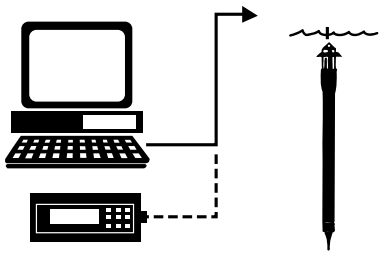
SPECIFICATION AND PERFORMANCE DATA



HMS 1820 CTD-W operated from Hand Terminal.



HMS 1820 CTD-W operated from PC



HMS 1820 CTD-W deep sea version records data without cable connection

CONDUCTIVITY/SALINITY

Sensor type
AS 250.

Operating principle
5 electrode method.
Electrode made of seawater resistant stainless steel.
Temperature compensation is carried out by means of the built-in software.

Measuring range
0.1 – 15‰ or 5 – 60‰.

Accuracy
Typical 0.1‰.

Settling time
< 100 mSec

Calibration
Calibration can be carried out by means of a potassium chloride (KCl) solution. Calibrating temperature is 15ºC.

TEMPERATURE

Sensor type
MT 2 type L.

Operating principle
Thermal element compensated by Pt-1000.

Measuring range
-25ºC to +60ºC.

Accuracy
Typical 0.1ºC.

Settling time
Typical 100 mSec.

Calibration
Calibration must be carried out at 0ºC (ice water) plus one other temperature, preferable between 20 and 30ºC.

DEPTH

Sensor type
SSC 3000AA.

Measuring ranges
0-25 m (by umbilical cable only)
0-250 m (by wire only)
0-1,000 m (optional – by wire only)

Accuracy
Typical 0.1% of range.

SOUND VELOCITY

Calculation
Sound velocity is calculated using the Medwin equation (other equations are available in the CTD Master).

Accuracy
In respect to sensors, better than ±1 m/sec.

INTERFACE

Probe to HMS 1820-H Hnd Terminal via RS-232C.
Probe to computer via RS-232C.

LOGGING

Logging is carried out automatically, by depth intervals (max. 10 loggings per second). Max. profiling speed is approximately 1.5 m/sec. (free fall).

POWER REQUIREMENTS

The HMS 1820-CTD requires a 6V DC power supply.
The HMS 1820-CTD/C obtains its power from the HMS 1820-H Hand Terminal, which requires 4 standard 1.5V alkaline batteries.
The HMS 1820-CTD/W obtains its power from the internal, rechargeable batteries. They are recharged through the power adapter at either 220 or 110V AC.

Dimensions	HMS 1820 CTD/C	HMS 1820 CTD/W	HMS 1820-H Hand Teminal	Transport container
Length	644 mm	810 mm	352 mm	875 mm
Width			192 mm	505 mm
Depth			76 mm	125 mm
Diameter	60 mm	40 mm		
Weight	2.0 kg	2.6 kg	2.8 kg	6.5 kg

Specifications may be changed without notice. 03/98.

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