The CTD60Mc - ultra deep sea is a high quality, high accuracy memory probe for oceanographic measurement of conductivity, temperature, ambient pressure at depths up to 11000 m (12000 bar).

The CTD60Mc - ultra deep sea is specifically designed for direct output of physical and calculated data such as salinity, sound velocity and density.

Main Features
- depth range up to 11000 m
- low weight
- easy handling
- non-corrosive titanium housing
- up to 3 sensors on the bottom cap
- calibration coefficients stored inside the probe
- output of calculated / physical data
- online measurement or memory mode
- rechargeable batteries
- data acquisition software for various versions of Microsoft Windows
- calculations according to UNESCO formulae

sensors: max. 3 on the bottom cap
standard sensors:
- Conductivity (C)
- Temperature (T)
- Pressure (D)
The CTD60Mc - ultra deep sea probe is a very small and handy microprocessor controlled multiparameter online and memory probe up to 11000 m.

Data are stored in a standard flash memory card with a capacity of 128 Mbytes. Up to 5,5 million CTD data sets can be recorded on this memory.

The CTD60Mc ultra deep sea allows operation in different modes:

I. Online operation:
   This mode is possible up to 350 m via RS-232 Interface, but is not recommended for this model. Only for testing.

II. Memory operation:

   Data Transfer:
   The probe can be operated in two different data transmission modes.

   I. Online operation:
   In this data transmission mode, the probe continuously determines the measured values of the individual sensors through an analog-to-digital conversion. The probe stores the data as the readings of the analog-to-digital conversions. The probe continuously generates raw data sets from the counter readings of the analog-digital conversions and some internal management data. The probe transmits the raw data sets over a binary data protocol to a unit for data display or data storage. The transformation of raw data into physical quantities is carried out in the software application “SDA” after they have been transferred.

   II. Physical data mode
   In this data transmission mode, the CTD60Mc ultra deep sea determines the measured values of the individual sensors through an analog-to-digital conversion. The probe stores the readings as a binary result of the analog-to-digital conversions. The probe receives the calibration coefficients before the actual measurement. The probe calculates the physical quantities from results of the analog-to-digital conversion and the associated calibration coefficients. The probe transmits the physical quantities via an ASCII protocol according to the NMEA standard to a unit for data display or data storage. The protocol to NMEA requires that the physical units are fixed.

The CTD60Mc ultra deep sea is equipped with a 4 channel data acquisition system with 20 bit resolution. A high long-term stability and automatic self-calibration of the analogue digital converter guarantees stable and precise CTD measurements for many years.

The supplied Standard Data Acquisition Software package “SST-SDA” includes the handling of the logging process and the display of online or recorded data with a shared graphic user interface. The “SST-SDA” is a part of our shipment.

Recording modes:
- Continuous mode: each data set is stored.
- Time mode: data sets are only stored at programmable intervals with several selectable schemes.
- Increment mode: data sets are stored at programmable depth stamps.

The CTD60Mc ultra deep sea sensors and equipment available on request.

Electrical specifications:
- Supply voltage: 7…15V DC
- Power consumption: approx. 0,3 W
- Serial port: USB / RS-232
- Data sampling rate: 5 datasets/s
- Connector: SUBCONN MCBH8M Ti

Mechanical specifications:
- Housing: titanium, grade 5
- Connector: titanium, neoprene

Dimensions and weights:
- Length (housing): 370 mm
- Length (protection frame): 125 mm
- Length (overall with connector): approx. 575 mm
- Diameter (housing): 60 mm
- Weight (in air): approx. 3 kg

All calculations correspond to the current UNESCO formulas.

PC requirements:
- Operating system: Microsoft Windows (all versions)
- Interface: USB or RS-232

We would be pleased to make an offer according to your requests and requirements.

Ordering:
00003076 CTD60Mc - ultra deep sea

<table>
<thead>
<tr>
<th>Sensors</th>
<th>Principle</th>
<th>Range</th>
<th>Accuracy</th>
<th>Resolution</th>
<th>Response time</th>
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<tbody>
<tr>
<td>Pressure (depth)</td>
<td>piezo</td>
<td>5, 10, 20, 50, 100, 200 bar</td>
<td>up to 0.05 % full scale in the range of –5...35°C</td>
<td>±0.002 °C</td>
<td>150 ms</td>
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<td></td>
<td>resistive</td>
<td></td>
<td>±0.005 °C</td>
<td>±0.002 mS/cm</td>
<td>0.0005 mS/cm</td>
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<tr>
<td>Temperature</td>
<td>Pt 100</td>
<td>-2 – 36 °C</td>
<td>±0.002 °C</td>
<td>150 ms</td>
<td>150 ms</td>
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<tr>
<td></td>
<td>4 pole</td>
<td>-2 – 60 °C</td>
<td>±0.005 °C</td>
<td>150 ms</td>
<td>150 ms</td>
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<tr>
<td>Conductivity</td>
<td>7-pole-cell</td>
<td>0 – 1 mS/cm</td>
<td>±0.002 mS/cm</td>
<td>±0.001 mS/cm</td>
<td>0.005 mS/cm</td>
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<td>0 – 300 mS/cm</td>
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Sensors: