

# CTD48

## Multiparameter Online Probe



Sea & Sun  
Technology

The CTD48 is a very small multiparameter probe for precise online measurements of pressure, temperature, conductivity and one optional parameter up to 6000 m.

### Main features:

- depth range up to 6000 m
- low weight
- easy handling
- non-corrosive titanium housing
- up to 4 sensors on the bottom cap
- data acquisition software for various versions of Microsoft Windows
- calculations according to UNESCO formulae



sensors: max. 4  
on the bottom cap

standard sensors:

- Conductivity (C)
- Temperature (T)
- Pressure (D)

additional sensors:

- Oxygen
- Turbidity
- pH
- Redox (ORP)





Photo: Karelian Research Centre  
Russian Academy of Sciences Laboratory of Hydrophysics

**The CTD48 is a high quality, high accuracy 4 channel probe for oceanographic and limnological online measurement of conductivity, temperature, pressure and one optional parameter for depth up to 6000 m.**

The probe is equipped with a precision microprocessor-controlled 4 channel 20 bit analog to digital converter.

#### Software:

The supplied Standard Data Acquisition Software package "SST-SDA" includes the handling of the logging process and the display of online data with a shared graphical user interface.

The "SST-SDA" calculates the physical values from the raw values supplied by the probe and the associated calibration coefficients. Salinity, density, sound velocity and depth will be calculated by using the UNESCO formulae.

#### Interface:

The CTD48 is equipped with several interfaces:

- RS-232
- RS-485
- FSK



CTD48, Bluetooth Cable Drum and Sea & Sun DataWatch  
Photo: Sea & Sun Technology GmbH

The **RS-232** port can be used with multi-conductor cable up to several hundred metres long. The user can operate the probe easily from small boats and ships. The serial data will be applied directly to the serial port of a PC. Power has to be provided externally e.g. by a 12V battery or a external power supply.

The **RS-485** is used for data transfer in areas with high environmental electromagnetic noise.

RS-485 interface can drive up to 1000 m cable length on nearly any cable.

**FSK** transmission is used mainly on single-conductor cables. Data is modulated on the power supply rail for a long distance data transmission. FSK operation requires a special power supply interface with a demodulator unit that converts the FSK data into RS-232 or USB 2.0 format.



Calibration lab  
Photo: Sea & Sun Technology GmbH

#### Electrical specifications:

- Supply voltage: 9...30V DC
- Power consumption: approx. 0.5 W (sensor-dependent)
- Serial port: RS-232; RS-485; FSK
- Data sampling rate: 5 CTD sets/s
- Connector: SUBCONN MCBH4M Ti

#### Mechanical specifications:

##### Materials:

Housing: titanium, grade 2 (up to 2000 m), titanium, grade 5 (up to 6000 m)

Connector: titanium, neoprene

##### Dimensions and weights:

- Length (housing):
- 240 mm (probes up to 2000 m)
  - 260 mm (probes up to 6000 m)
- Length (protection frame): 130 mm
- Length (overall, with connector):
- approx. 450 mm (probes up to 2000 m)
  - approx. 470 mm (probes up to 6000 m)
- Diameter (housing): 48 mm
- Weight (in air): approx. 1.2 kg

##### PC requirements:

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

All calculations correspond to the current UNESCO formulae.

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

## Equipment

1. Sea & Sun DataWatch
2. Bluetooth® Cable Drum
3. Cable Drum
4. Winch
5. Cable



1



2



3



4

#### Ordering:

- |          |                    |
|----------|--------------------|
| 30100001 | CTD48 up to 2000 m |
| 30100003 | CTD48 up to 6000 m |

sensors and equipment available on request



Sea & Sun DataWatch



Titanium protection cage



Temperature sensor

**Standard sensors:**

Sensor	Principle	Range	Accuracy	Resolution	Response time
<b>Pressure</b> (depth)	piezo resistive	5, 10, 20, 50, 100, 200, 400, 600 bar	up to 0.05 % full scale in the range of -5...35°C	0.002 % full scale	150 ms
<b>Temperature</b>	Pt 100 4-pole	-2 – 36 °C -2 – 60 °C	± 0.002 °C ± 0.005 °C	0.0005 °C 0.0005 °C	150 ms 150 ms
<b>Conductivity</b>	7-pole-cell	0 – 1 mS/cm 0 – 6 mS/cm 0 – 10 mS/cm 0 – 70 mS/cm	± 0.002 mS/cm	0.0005 mS/cm	150 ms
		0 – 200 mS/cm 0 – 300 mS/cm	± 0.010 mS/cm	0.005 mS/cm	150 ms

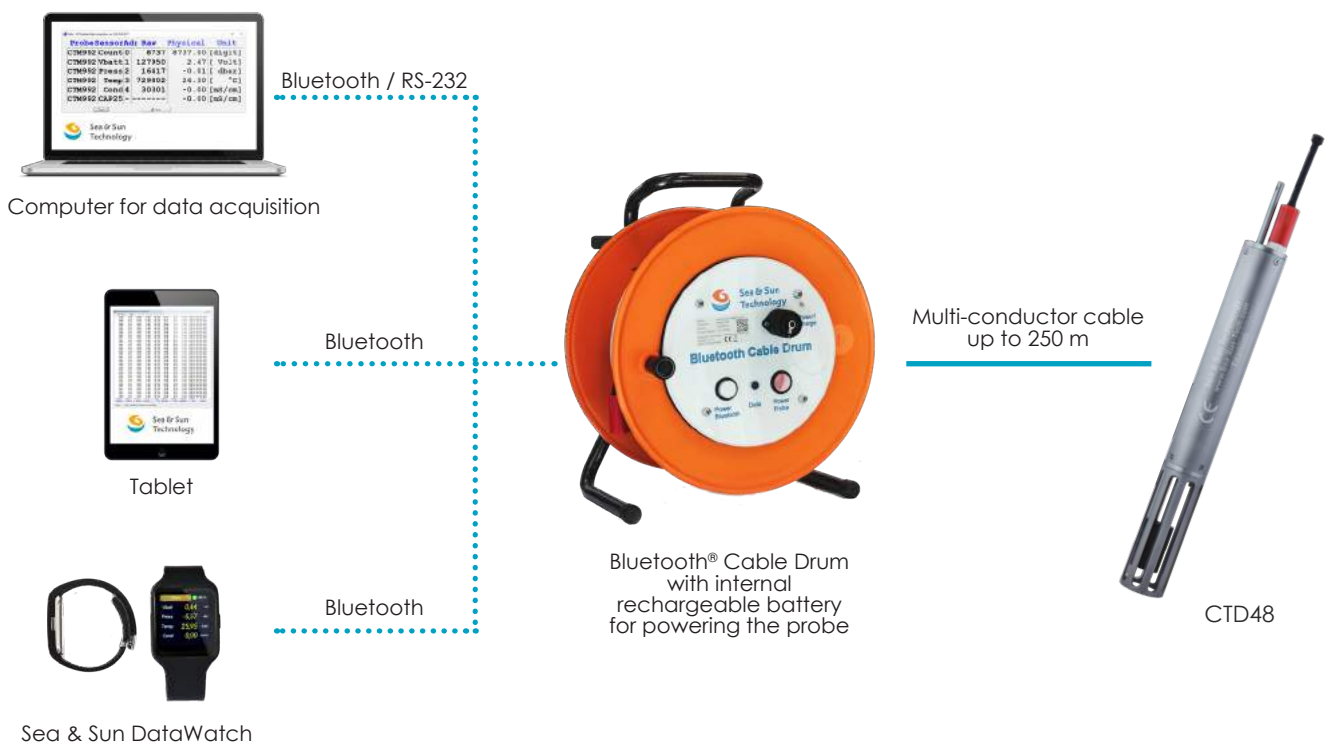
**Additional sensors:**

Sensor	Principle	Range	Accuracy	Resolution	Response time
<b>pH</b> (standard or H <sub>2</sub> S resistant)	combined electrode	4 – 10 pH 0 – 14 pH	± 0.02 pH	0.0002 pH	1 s
<b>Redox</b> (standard or H <sub>2</sub> S resistant)	combined electrode	± 2 Volt	± 20 mV	1.0 mV	1 s
<b>Oxygen</b>	clark electrode	0 – 250 %	± 3 % sat.	0.1 % sat.	3 s (63 %) 10 s (90 %)
<b>Fast Oxygen*</b>	clark electrode	0 – 150 %	± 2 % sat.	0.1 % sat.	200 ms (90%)
<b>Turbidity</b>	90 ° back scatter	0 – 25 FTU 0 – 125 FTU 0 – 500 FTU 0 – 4000 FTU **		0.1 FTU / NTU	100 ms

\* max. depth 100 m

\*\* output is non-linear above 1250 FTU

**Possible configuration:**



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### Delivery

The CTD48 will be delivered in a compact, robust and water resistant transport case including cables, connection plugs, instruction manual, USB stick with software, etc.



-  CTD48
-  Instruction manual
-  RS-232 to USB converter
-  Configuration cable
-  Software
-  Shackle

Distributor:



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