

# CTD90

## Multiparameter Online Probe



Sea & Sun  
Technology



08/2018 - All product specifications subject to change without notice - Photos: www.stock.adobe.com, own archive

### Main features:

- depth range up to 6000 m
- low weight
- easy handling
- non-corrosive titanium housing
- max. 16 channels
- up to 9 sensors on the bottom cap
- data acquisition software for various versions of Microsoft Windows
- calculations according to UNESCO formulae
- control and operation of water samplers and plankton nets

sensors: max. 9  
on the bottom cap

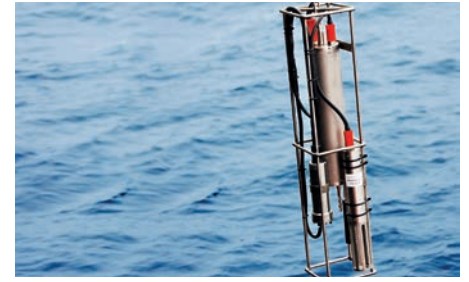
standard sensors:

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

additional sensors:

- Oxygen
- Turbidity
- pH (also H<sub>2</sub>S-resistant)
- Redox (ORP) also H<sub>2</sub>S-resistant
- Fluorometer
- Light irradiance (PAR)
- Currentmeter (with compass)
- Altimeter
- Transmissometer





The CTD90 is a high quality, high accuracy online multiparameter probe with max. 9 sensors for oceanographic and limnological measurement of physical, chemical and optical parameters for depth up to 6000 m.

The multiparameter probe CTD90 is designed for many different applications. In the limnic field it is used for controlling and monitoring dams, lakes and rivers plus ground water monitoring. In the oceanographic application it is used for profiling and monitoring stations. The probe is able to carry all necessary oceanographic parameters needed for scientific work and governmental tasks.

The probe can be equipped with maximum nine sensors mounted on the bottom cap. Those 9 channels can be extended to max. 16 channels when combined with external sensors.

#### 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 graphic 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.

The "SST-SDA" is a part of our shipment.

#### Interface:

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 regulated power supply.

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.

#### Electrical specifications:

- Supply voltage: 10...30V DC
- Power consumption: app. 0.5 W (sensor-dependent)
- Serial port: RS-232 (optional 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):
  - 410 mm (probes up to 2000 m)
  - 430 mm (probes up to 6000 m)
- Length (protection frame): 190 mm
- Length (overall, with connector):
  - approx. 600 mm (probes up to 2000 m)
  - approx. 620 mm (probes up to 6000 m)
- Diameter (housing): 90 mm
- Weight (in air): approx. 6 kg

##### PC requirements:

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

All calculations correspond to the current UNESCO formulas.

The system is able to control and operate motor driven water-sampler rosettes (e.g. from Hydro-Bios).

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. FSK-Interface
5. Winch
6. Cable



#### Ordering:

- |           |                    |
|-----------|--------------------|
| 30500011  | CTD90 up to 2000 m |
| 30500011+ |                    |
| 30500018  | CTD90 up to 6000 m |
- sensors and equipment available on request



Photo: Northern Water Problems Institute Karelian Research Centre Russian Academy of Sciences Laboratory of Hydrophysics

**Standard sensors:**

Sensor	Principle	Range	Accuracy	Resolution	Response time
Pressure (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
Temperature	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
Conductivity	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

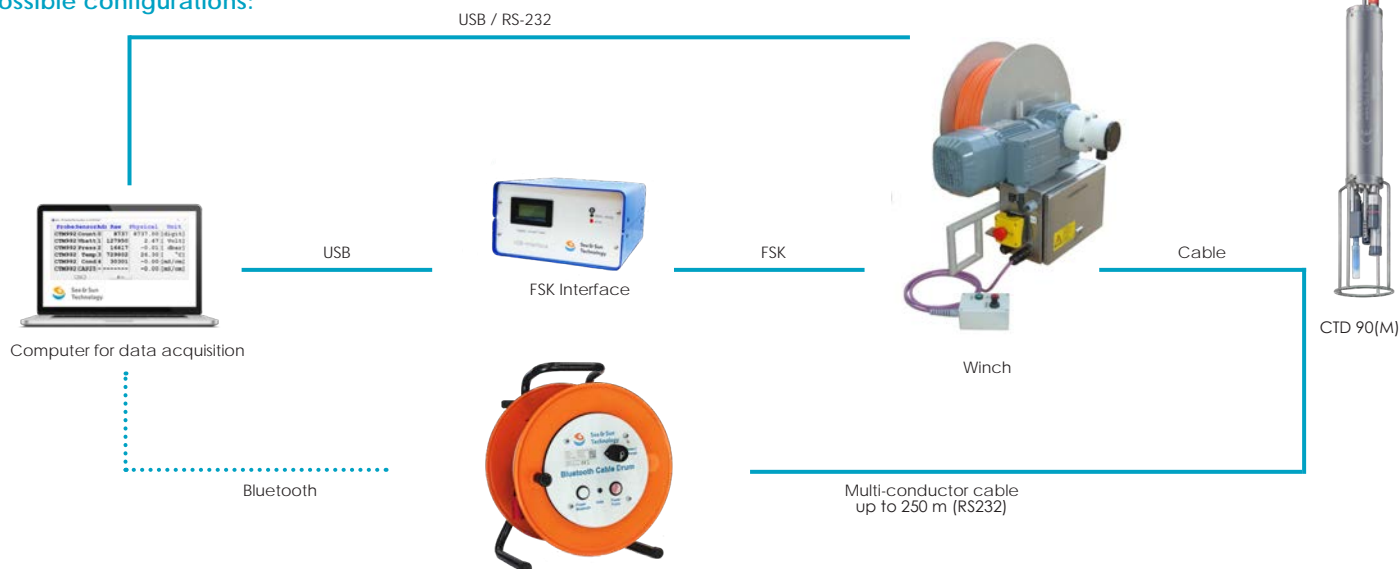
**Additional sensors:**

Sensor	Principle	Range	Accuracy	Resolution	Response time
pH (standard or H <sub>2</sub> S resistant)	combined electrode	4 – 10 pH 0 – 14 pH	± 0.02 pH	0.0002 pH	1 s
Redox (standard or H <sub>2</sub> S resistant)	combined electrode	± 2 Volt	± 20 mV	1.0 mV	1 s
Oxygen (SST-DO)	optical	0 – 250 % sat. 0 – 20 mg/l	± 2 % sat. ± 2 % sat.	0.01 % sat. 0.01 % sat.	2 s
Oxygen	clark electrode	0 – 250 %	± 3 % sat.	0.1 % sat.	3 s (63 %) 10 s (90 %)
Fast Oxygen*	clark electrode	0 – 150 %	± 2 % sat.	0.1 % sat.	200 ms (90%)
Turbidity	90 ° back scatter	0 – 25 FTU 0 – 125 FTU 0 – 500 FTU 0 – 4000 FTU **		0.1 FTU / NTU	100 ms
Light irradiance (PAR)	spherical quantum sensor	400-700 nm			10 ms
Currentmeter with compass	inductive	± 2,00 m/sec			
Fluorometer	CDOM / FDOM, Chlorophyll A, Fluorescein Dye, Oil-Crude, Oil-Fine, Optical Brighteners, Phycocyanin, Phycoerythrin, PTSA Dye, Rhodamine Dye, Tryptophan				

\* max. depth 100 m

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

**Possible configurations:**



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### Delivery

The CTD90 will be delivered in a compact, robust and water resistant transport case



CTD90



Instruction manual



RS-232 to USB converter



Configuration cable



Software



Shackle

Distributor:



Sea & Sun Technology GmbH  
Arndtstrasse 9-13  
24610 Trappenkamp Germany  
+49 4323 91 09 13  
+49 4323 91 09 15  
sales@sea-sun-tech.com  
www.sea-sun-tech.com

