

# CTD 90 Multi Parameter Probe



Highly accurate system for  
oceanographic and limnological applications

- ▶ titanium housing Ø 90 mm
- ▶ up to 16 channels
- ▶ depth range up to 6000 m
- ▶ control and operation of watersamplers and plankton nets
- ▶ 20 bit AD converter
- ▶ FSK / RS 232/485 output calculation according to UNESCO formulas
- ▶ easy handling
- ▶ low weight





## CTD90 Multi Parameter Probe

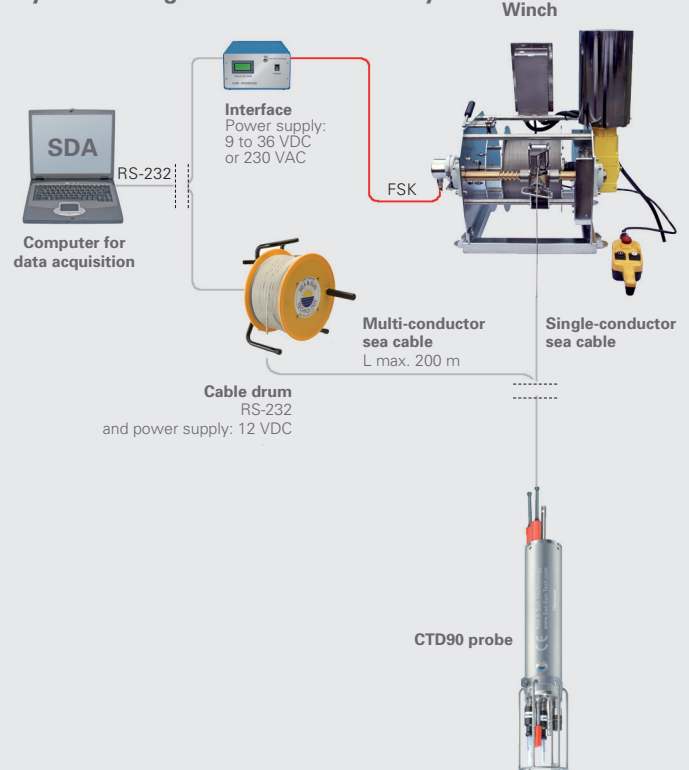
The CTD90 is a high quality, high accuracy multiparameter probe for oceanographic and limnological measurements of physical, chemical and optical parameters up to a depth of 6000 m. The probe can be equipped with a maximum of nine sensors mounted on the bottom cap. The numbers of sensors can be extended by connecting external units like fluorometers, currentmeters or other devices via underwater cable connection to the top cap. The system is able to control and operate motor driven water-sampler rosettes (Hydro-Bios).

The CTD90 is mainly designed for portable applications where low weight and easy handling are important features of the employment.

The CTD90 probe is equipped with a precision microprocessor controlled 20 bit (reduced to 16 bit) analogue to digital converter and has 16 channels. Data is available as RS-232 signal (multi-conductor sea-cable) and as digital FSK signal modulated on constant current (single conductor sea-cable). The probe can be powered by battery or DC-power supply (9 to 18 Volt) when using RS-232 output or by constant current with FSK output (coaxial connection) for longer distances. An interface for constant current supply is available.

A data acquisition program running under Windows® 95/98/2000/XP/7/Mac and Vista for display and calculation of the physical values is part of the system. All calculations correspond to the current UNESCO formulas.

### System configuration: FSK telemetry



### Standard Sensor Equipment/Dimensions

Sensors	Principle	Range	Accuracy	Resolution	Response time
Pressure temperature compensated material: Hastelloy	piezo-resistive	0-2.5, 10, 20, 50, 100, 200, 400, 600 bar	0.1 % full scale	0.002 % full scale	150 ms
Temperature	Pt 100 4 pol	-2 - + 36 °C	± 0.005 °C	0.001 °C	150 ms
Temperature	NTC FP 07	-2 - + 36 °C	± 0.010 °C	0.001 °C	150 ms
Conductivity	7-pole platinum cell	0 - 70 mS/cm	± 0.01 mS/cm	0.001 mS/cm	150 ms
Conductivity	7-pole platinum cell	0 - 7 mS/cm	± 0.005 mS/cm	0.001 mS/cm	150 ms
Conductivity	7-pole platinum cell	0 - 1 mS/cm	± 0.003 mS/cm	0.001 mS/cm	150 ms
Fast AMT Oxygen	Calvanic microsensor	0 - 200 % sat 0 - 20 mg/l	± 2 % sat ± 2 % sat	0.01 % sat 0.01 % sat	> 200 ms
H 160 dbar	single rod electr.	4 - 10 ph	± 0.02 ph	0.0002 pH	1 s
pH 1200 dbar	single rod electr.	4 - 10 pH	± 0.02 pH	0.0002 pH	1 s
Redox 160 dbar	single rod electr.	± 2 V	± 20 mV	1.0 mV	1 s
Redox 1200 dbar	single rod electr.	± 2 V	± 20 mV	1.0 mV	1 s
Nephelometer	90°	0 - 2000 FTU		0.1 NTU	100 ms
Currentmeter	inductiv	± 2.00 m/sec			
H <sub>2</sub> S	Amperometric micro-sensor	10 µg/l - 3 mg/l 50 µg/l - 10 mg/l 500 µg/l - 50 mg/l	2 % of	< 0.1 %	< 1s

#### Dimensions

Ø (housing) ..... 90 mm  
 Length (housing)..... appr. 350 mm  
 Length (overall) ..... appr. 600 mm

#### Material

Housing ..... titanium  
 Connector ..... titanium, neoprene

**Weight** (in air) ..... appr. 6.0 kg

The CTD90 is delivered in a compact, robust and water resistant plastic case including cables, connection plugs, an instruction manual and a software CD.



Distributor

**Sea & Sun Technology GmbH**  
 Arndtstrasse 9 - 13  
 D-24610 Trappenkamp  
 Germany

Tel.: +49 (0)4323-910913  
 Fax: +49 (0)4323-910915  
 e-mail@sea-sun-tech.com  
 www.sea-sun-tech.com