

CTD – Multiparametric water probe with conductivity-temperature-depth measurements (Rev.0 010224)



Description

The CTD 36XiW probes, are smart sensors for measuring hydrometric level (water column pressure), conductivity and temperature data of water; the acronym CTD stands for Conductivity, Temperature and Depth.

Temperature dependencies and nonlinearity are compensated by a mathematical model developed in the internal microcontroller.

The built-in Pt1000 temperature probe achieves an accuracy of $\pm 0.1^{\circ}\text{C}$ while for conductivity an accuracy of ± 2.5 percent of the selected range (0.2 / 2 / 20 / 200 mS/cm) is achieved. The probes are supplied with a galvanically isolated RS485 serial interface.

The measuring probe is housed in a submersible stainless steel case and is externally powered by stabilized 12Vdc; data acquisition, recording and transmission is done on the external Geoves data logger, which provides functional and storage autonomy for long time intervals.

These features ensure high reliability and durability resulting in less maintenance required

Principle of Operation

The CTD probe detects groundwater levels through the method of relative pressure measurement with atmospheric pressure compensation using a small tube to ventilate the air at the surface.

Conductivity is increasingly being monitored combined with measurements of groundwater hydrometric level and water temperature; in this way, possible contamination from saltwater seepage, particle deposits in the water, or pollutants in general can be detected.

Advantages

- ✓ Minimal maintenance
- ✓ Good measurement resolution
- ✓ Excellent robustness
- ✓ Probe diameter < 1"

Main applications

- ✓ Continuous and portable hydrological analysis
- ✓ Measurements in groundwater (natural wells, piezometers, etc...)
- ✓ Monitoring in surface waters (rivers, lakes, streams, dams, etc...)
- ✓ Landfills
- ✓ Civil and industrial sewage treatment plants

Technical specs

Model	CTD 36XiW – Water probe for Conductivity-Temperature-Depth measurements		
Parameter	Standard Range (other on request)	Accuracy	Resolution
1. Pt1000 Temperature:	0...50 °C (compensated)	0,1 °C	<0,01 °C
2. 6 electr. conductivity:	0.2, 2, 20 o 200 mS/cm f.s. (selectable by sw)	2,5% f.s.	≤ 0,05% f.s.
3. Water depth:	0...3bar	0,05 %FS max.	≤ 0,0005 %FS
Max working pressure	30bar (about 300m of water column)		
Working temperature	-10...80 °C		
Output interfacing	Serial RS485 port		
Cable	Shielded self-supporting with barometric compensation tube (please note: the end of the tube must remain outside the water; therefore, the submerged use limit of the probe depends on the length of the cable)		
Connector	IP68 plug		
Materials	Container: 316L stainless steel (DIN 1.4435), O-ring: Viton® Cable: Polyethylene (PE) Conductivity Sensor: Polyetheretherketone (PEEK) container; platinum electrodes		
Dimensions			
Weight	150g (cable excluded)		