CAMPBELL SCIENTIFIC®
WHEN MEASUREMENTS MATTER

OBS-3A

Turbidity and Temperature Monitoring System

Accurate, Rugged

Several sensors in one probe

Overview

The OBS-3A combines our OBS probe with pressure, temperature, and conductivity sensors in a battery-powered recording instrument. Batteries and electronics are contained in a housing capable of operating at depths of up to 300 meters—depending on the pressure sensor installed. *(OBS® is a registered trademark of Campbell Scientific.)*

Benefits and Features

- Runs 1,500 to 8,000 hours on three D-cell batteries
- Monitors sediment concentrations up to 5,000 mg/l and turbidity up to 4,000 NTUs
- Uses the field-proven OBS® technology (U.S. Patent No. 4,841,157) to measure turbidity
- Logs instrument depth, wave height, wave period, temperature, and salinity
- Records 200,000 lines of data in flash memory
- Programs set points and sampling times
- Offers an optional 5-point sedimentation calibration

Detailed Description

The heart of the OBS-3A monitoring system is an OBS sensor for measuring turbidity and suspended solids concentrations. This sensor detects near infrared (NIR) radiation scattered from suspended particles.

A fast-response, stainless steel-clad thermistor monitors temperature. Pressure is measured with a semiconductor piezoresistive strain gage, and conductivity is measured with a four-electrode conduction-type cell. Working depths of the pressure sensor are selected as an option. (See the Ordering Info.)

The monitor uses HydroSci software running under Windows XP, 7, and 8.

Specifications

Output	RS-232, RS-485
Maximum Submersion	300 m (984 ft)

Depth	
Connector	MCBH-8-FS, wet-pluggable
Operating Temperature Range	0° to 35°C
Storage Temperature Range	-20° to +70°C
Drift over Time	< 2% per year
Drift over Temperature	0.05% per °C
Maximum Sample Size	2048
Sampling Rate	1 to 25 Hz (when connected to a PC)
Maximum Data Rate	❱ 5 Hz (used autonomously) ❱ 25 Hz (connected to PC)
Data Capacity	8 MB
Maximum Number of Data Lines	200,000
Maximum Concentration Range	❱ 0.4 to 5,000 mg/L (for mud) Mud is defined as D_{50} = 20 µm. ❱ Concentration measurement range and accuracy depend on the sediment type. ❱ 2 to 100,000 mg/L (for sand) Sand is defined as D_{50} = 250 µm.
PC Interfaces	RS-232/115 kbps, RS-485/115 kbps
Battery Capacity	18 Ahr

Maximum Battery Life	8,000 h
Infrared Wavelength	850 nm
Pressure Measurement Range	0 to 10, 20, 50, 100, or 200 m
Turbidity Measurement Range	0.4 to 4,000 NTU
Conductivity Measurement Range	0 to 65 mS/cm (40 PSU, o/oo)
Concentration Accuracy	❱ 2% of reading (for mud) Mud is defined as D_{50} = 20 µm. ❱ 3.5% of reading (for sand) Sand is defined as D_{50} = 250 µm. ❱ Concentration measurement range and accuracy depend on the sediment type.
Pressure Accuracy	±0.5% of f.s. (where f.s. = 50, 100, or 200 dBar)
Turbidity Accuracy	< 2%
Temperature Accuracy	±0.5°C
Conductivity Accuracy	1%
Diameter	7.6 cm (3.0 in.)
Height	36.2 cm (14.3 in.)
Weight	1.5 kg (3.4 lb) without batteries

For comprehensive details, visit: www.campbellsci.com/obs-3a