



## 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)
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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 $D_{50} = 20 \mu\text{m}$ . › Concentration measurement range and accuracy depend on the sediment type. › 2 to 100,000 mg/L (for sand) Sand is defined as $D_{50} = 250 \mu\text{m}$ .
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 $D_{50} = 20 \mu\text{m}$ . › 3.5% of reading (for sand) Sand is defined as $D_{50} = 250 \mu\text{m}$ . › Concentration measurement range and accuracy depend on the sediment type.
Pressure Accuracy	$\pm 0.5\%$ of f.s. (where f.s. = 50, 100, or 200 dBar)
Turbidity Accuracy	< 2%
Temperature Accuracy	$\pm 0.5^\circ\text{C}$
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](http://www.campbellsci.com/obs-3a) 

