

SBE 37-SMP-ODO

MicroCAT CT(D)-DO

The SBE 37-SMP-ODO pumped MicroCAT is a high-accuracy conductivity and temperature (pressure optional) recorder with Serial interface (RS-232 or RS-485), internal batteries, Memory, integral Pump, and Optical Dissolved Oxygen. The MicroCAT is designed for moorings or other long-duration, fixed-site deployments.

Data is recorded in memory and can be output in real-time. Measured data and derived variables (salinity, sound velocity, specific conductivity) are output in engineering units.

Memory capacity exceeds 380,000 samples. Battery endurance varies, depending on sampling scheme and deployment temperature and pressure. Sampling every 15 minutes (10 °C, 500 dbar), the MicroCAT can be deployed for almost 9 months (25,000 samples).

Features

- Moored Conductivity, Temperature, Pressure (optional), and Optical Dissolved Oxygen, at user-programmable 10-sec to 6-hour intervals.
- Integral pump.
- RS-232 or RS-485 interface.
- Internal memory and battery pack (can be powered externally).
- Expendable anti-foulant devices, unique flow path, and pumping regimen for bio-fouling protection.
- Adaptive Pump Control for high-accuracy oxygen data.
- 350 m plastic or 7000 m titanium housing.
- Seasoft® V2 Windows software package (setup, data upload, and data processing).
- Field-proven MicroCAT family, with more than 10,000 instruments deployed.
- Five-year limited warranty.

Components

- Unique internal-field conductivity cell permits use of expendable anti-foulant devices, for long-term bio-fouling protection.
- Aged and pressure-protected thermistor has a long history of exceptional accuracy and stability.
- Optional strain-gauge pressure sensor with temperature compensation is available in eight ranges (maximum depth 7000 m).
- Oxygen sensor is field-proven, individually calibrated SBE 63 Optical Dissolved Oxygen sensor.
- Pump runs for each sample, providing improved conductivity and oxygen response, bio-fouling protection, and correlation of CTD and oxygen measurements.



Deploy in
orientation shown
(connector end down)
for proper operation

Options

- Plastic (350 m) or titanium (7000 m) housing.
- RS-232 or RS-485 interface.
- No pressure, or strain-gauge pressure sensor in one of 8 ranges.
- XSG or wet-pluggable MCBH connector.
- Wire mounting clamp and guide or brackets for mounting to a flat surface.

Measurement Range

Conductivity	0 to 7 S/m (0 to 70 mS/cm)
Temperature	-5 to 45 °C
Optional Pressure	20 / 100 / 350 / 600 / 1000 / 2000 / 3500 / 7000 (meters of deployment depth capability)
Dissolved Oxygen	120% of surface saturation in all natural waters (fresh and salt)

Initial Accuracy

Conductivity	± 0.0003 S/m (0.003 mS/cm)
Temperature	± 0.002 °C (-5 to 35 °C); ± 0.01 °C (35 °C to 45 °C)
Optional Pressure	± 0.1% of full scale range
Dissolved Oxygen	larger of ± 3 µmol/kg (0.07 ml/L, 0.1 mg/L) or ± 2%

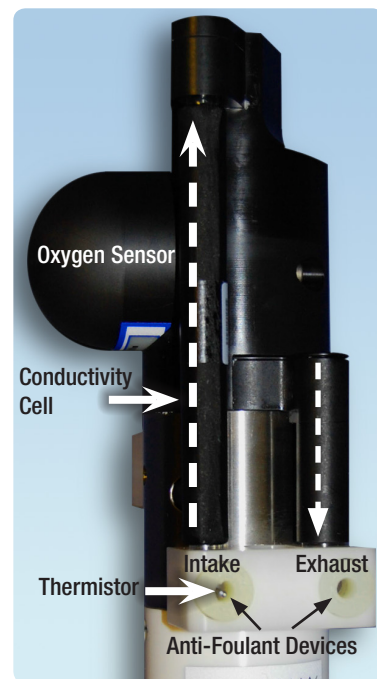
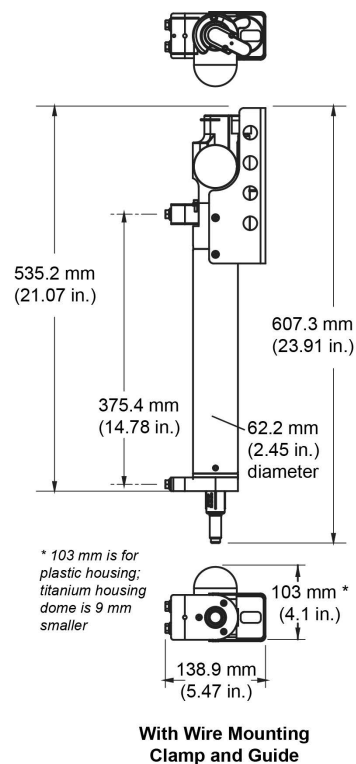
Typical Stability

Conductivity	0.0003 S/m (0.003 mS/cm) per month
Temperature	0.0002 °C per month
Optional Pressure	0.05% of full scale range per year
Dissolved Oxygen	sample-based drift < 1 µmol/kg/100,000 samples (20 °C)

Resolution

Conductivity	0.00001 S/m (0.0001 mS/cm)
Temperature	0.0001 °C
Optional Pressure	0.002% of full scale range
Dissolved Oxygen	0.2 µmol/kg

Acquisition Time	2.4 - 3.2 sec/sample (see manual)
Power Supply & Consumption	7.8 Amp-hour (nominal) battery pack, 257 KJoules (derated for calculations) 25,000 samples CTD-DO (see manual)
Optional External Power	0.25 Amps at 9-24 VDC
Memory Capacity	380,000 samples CTD-DO
Housing, Depth Rating, & Weight	Plastic: 350 m, 3.4 kg in air, 1.5 kg in water Titanium: 7000 m, 4.2 kg in air, 2.3 kg in water



Pumped flow through conductivity cell and oxygen sensor (conductivity cell guard removed)