

SBE 49

FASTCAT CTD SENSOR

Overview

The SBE 49 FastCAT is an integrated CTD sensor intended for use as a modular component in towed vehicles, ROVs, AUVs, or other autonomous platforms that can supply DC power and acquire serial data. It is an easy-to-use, light, and compact instrument, well suited to even the smallest vehicle. FastCAT must be externally powered, and its RS-232C data logged or telemetered by the vehicle to which it is mounted. FastCAT does not support auxiliary sensors; if such sensors are required, the user's vehicle must be equipped to acquire their signals independently.

FastCAT's pump-controlled / TC-ducted flow feature minimizes salinity spiking, and its 16 Hz sampling provides very high spatial resolution of oceanographic structures and gradients. Measured data and derived variables (salinity and sound velocity) are output in real-time in engineering units or raw HEX.

Features

Conductivity, Temperature, and Pressure at 16 Hz (16 samples/second) or polled sample acquisition

Integral pump

RS-232 interface, no memory or batteries—intended for use on vehicles that can supply power and acquire data

Unique flow path, pumping regimen, and (optional) expendable anti-foulant devices, for maximum bio-fouling protection

Pump-controlled, T-C ducted flow to minimize salinity spiking

Programmable real-time processing (aligning, filtering, and correcting for conductivity cell thermal mass effects) provides high-quality data for applications where post-processing is not feasible.

Depths to 350, 7000, or 10,500 m

Seasoft® V2 Windows software package (setup, real-time data acquisition, and data processing)

Five-year limited warranty



Components

- Unique internal-field conductivity cell permits use of T-C Duct, minimizing salinity spiking.
- Aged and pressure-protected thermistor has a long history of exceptional accuracy and stability.
- Pressure sensor with temperature compensation is available in nine strain-gauge ranges (to 10,500 m).
- Pump runs continuously for 16 Hz sampling, providing correlation of CTD measurements.

Options

- Plastic (350 m) or titanium (7000 or 10,500 m) housing
- Wet-pluggable MCBH connector
- Expendable anti-foulant devices
- SBE 33 Deck Unit & Sea-Bird water sampler (real-time operation on single-core armored cable to 10,000 m).

Field Specifications

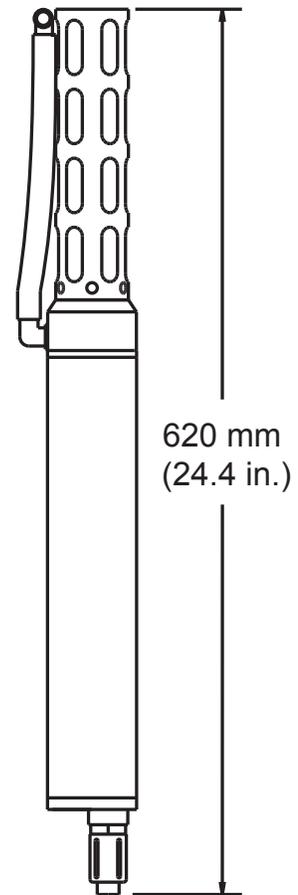
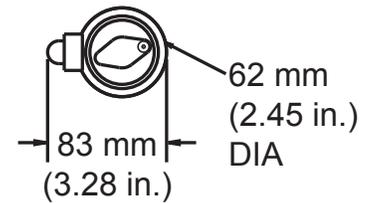
The specifications below represent the expected performance of the instrument when deployed in the field. Under controlled circumstances in a lab, we would expect the instrument to outperform these specifications.

We have chosen to display field specifications to give our users a true measure of how Sea-Bird Scientific instruments perform in harsh environments and applications. It is critical to keep this in mind when comparing specifications with instruments from other manufacturers.

Measurement Range	
Conductivity	0 to 9 S/m
Temperature	-5 to 35 °C
Pressure	0 to 20 / 100 / 350 / 600 / 1000 / 2000 / 3500 / 7000 / 10,500 m
Initial Accuracy	
Conductivity	± 0.0003 S/m
Temperature	± 0.002 °C
Pressure	± 0.1% of full scale range
Typical Stability	
Conductivity	0.0003 S/m per month
Temperature	0.0002 °C per month
Pressure	± 0.05% of full scale range per year
Resolution	
Conductivity	0.00005 S/m (most oceanic waters; 0.4 ppm in salinity)
Temperature	0.0001 °C
Pressure	0.002% of full scale range
Sampling Speed	
	16 Hz (16 samples/sec)
External Power Requirements	
	Input power: 0.75 Amps at 9-24 VDC
	Turn-on transient: 750 mA
	Sampling and transmitting (includes pump): 350 mA at 9 V; 285 mA at 12 V; 180 mA at 19 V
Housing, Depth Rating, & Weight	
	Plastic, 350 m, in air 1.8 kg, in water 0.5 kg
	Titanium, 7000 or 10,500 m, in air 2.7 kg, in water 1.4 kg

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FastCAT on Hydroid