

FastCAT CTD Sensor

SBE 49



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. 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.

FastCAT's temperature thermistor and conductivity cell are the same as used in our premium 911*plus* CTD system, while its pressure sensor (offered in seven full scale ranges from 20 to 7000 dbars) is the superior, micro-machined, silicon strain-gauge recently developed by Druck, Inc. Sophisticated interface circuitry provides very high resolution and accuracy.

FastCAT is an easy-to-use, light, and compact instrument ruggedly made of titanium and other low-maintenance (plastic) materials; it is well suited to even the smallest vehicle. There are straightforward commands for continuous (full rate or averaged) or single sample acquisition. EEPROM-stored calibration coefficients permit data output in ASCII engineering units (degrees C, Siemens/m, decibars, Salinity [PSU], and sound velocity [m/sec]), or the user can select raw data output if desired.

FastCAT must be externally powered, and its RS-232C data logged or telemetered by the vehicle to which it is mounted. As FastCAT does not support auxiliary sensors, where such sensors are required the user's vehicle must be equipped to acquire their signals independently.

CONFIGURATION

A FastCAT is supplied with:

- Titanium housing for depths to 7000 meters
- Strain-gauge pressure sensor
- Internal pump and T-C Duct
- XSG 4-pin I/O bulkhead connector
- MCBH Micro connector in lieu of XSG (optional)
- Expendable anti-foulant devices (optional)

SAMPLING MODES

FastCAT has two sampling modes:

- **Autonomous sampling** – FastCAT runs continuously and samples at sixteen scans per second (16 Hz). It can be set to average up to 255 samples, transmitting only the averaged data. FastCAT can be programmed to begin autonomous sampling when power is applied or on command.
- **Polled sampling** – On command, FastCAT takes one sample and transmits the data.

SOFTWARE

FastCAT is supplied with a powerful Win 95/98/NT/2000/XP software package, SEASOFT[®]-Win32. SEASOFT's modular programs include:

- SEATERM — terminal program for instrument setup and data display.
- SEASAVE — real-time data acquisition and display.
- SBE Data Processing — filtering, aligning, averaging, and plotting of CTD data and derived variables.



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SPECIFICATIONS

Measurement Range

Temperature	-5 to +35 °C
Conductivity	0 to 9 S/m
Pressure	0 to 20/100/350/1000/2000/3500/7000 meters

Initial Accuracy

Temperature	0.002 °C
Conductivity	0.0003 S/m
Pressure	0.1% of full scale range

Typical Stability (per month)

Temperature	0.0002 °C
Conductivity	0.0003 S/m
Pressure	0.004% of full scale range

Resolution

Temperature	0.0001 °C
Conductivity	0.00005 S/m (oceanic waters; resolves 0.4 ppm in salinity) 0.00007 S/m (high salinity waters; resolves 0.4 ppm in salinity) 0.00001 S/m (fresh waters; resolves 0.1 ppm in salinity)
Pressure	0.002% of full scale range

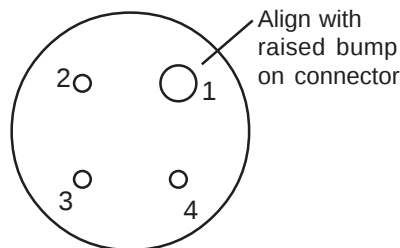
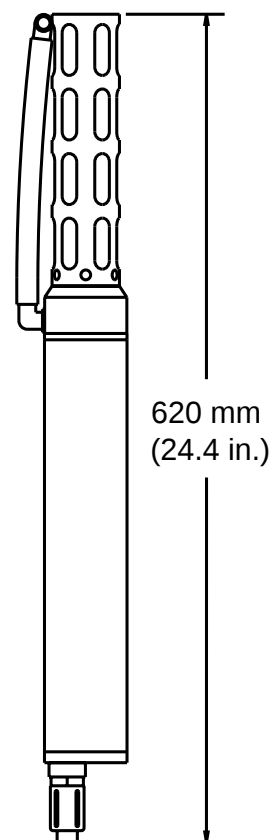
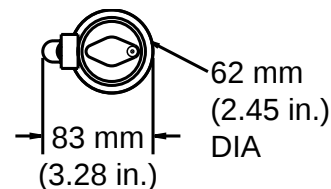
Power Requirements	standard 9-24 VDC; optional 12-28 VDC 3.5 Watts at 9 - 28 VDC 0.8 Watts pump off
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Housing Material	3AL/2.5V Titanium
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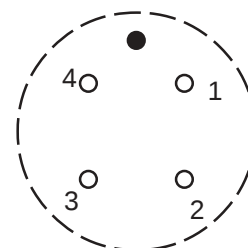
Depth Rating	7000 meters (22,900 feet)
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Weight

In air	2.7 kg (6 lbs)
In water	1.4 kg (3 lbs)



Standard Connector



Optional MCBH Connector

Pin	Description
1	Ground
2	RS-232C Receive from computer
3	RS-232C Transmit to computer
4	Power (9-24 VDC standard; 12-28 VDC optional)

