SEA-BIRD SCIENTIFIC

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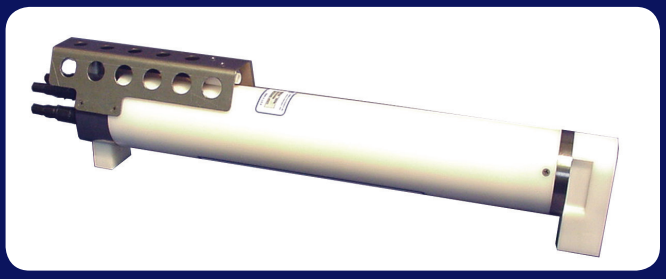
SBE 16plus-IM V2
SeaCAT CT(D)

The SBE 16plus-IM V2 SeaCAT is a high-accuracy conductivity and temperature (pressure optional) recorder with Inductive Modem (IM) interface designed for long-duration deployments on moorings. It supports numerous auxiliary sensors (dissolved oxygen, turbidity, fluorescence, PAR, etc.) with six A/D channels and one RS-232 data channel. The 16plus-IM V2 has internal batteries and memory.

Data is recorded in memory and can also be output in real-time in engineering units or raw HEX. Battery endurance varies, depending on the sampling scheme; nine alkaline D-cells provide power for 290,000 samples of C and T.



Features

- Moored Conductivity, Temperature, Pressure (optional), and up to seven auxiliary sensors, at user-programmable intervals (10 seconds to 4 hours).
- Inductive Modem (IM) interface, internal memory, and internal alkaline batteries.
- Expendable anti-foulant devices and optional pump for bio-fouling protection.
- Depths to 600, 7000, or 10,500 m (data transmission rated to 8000 m).
- Seasoft© V2 Windows software package (setup, data upload, and data processing).
- Next generation of the SeaCAT family, field-proven since 1987.
- Five-year limited warranty.

Components

- Inductive Modem (IM) system provides reliable, low-cost, real-time data transmission for up to 100 IM-enabled instruments using plastic-coated wire rope (typically 3x19 galvanized steel) as both transmission line and mooring tension member. IM instruments clamp anywhere along the mooring, which is easily reconfigured by sliding and re-clamping instruments on the cable. In a typical mooring, an Inductive Modem Module (IMM) in the buoy communicates with IM instruments and interfaces to a computer/data logger (not supplied by Sea-Bird) via RS-232. The data logger is programmed to poll each IM instrument for data, and sends the data to a satellite link, cell phone, etc.
- 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 pressure sensor with temperature compensation is available in eight strain-gauge ranges (to 7000 m) and eleven Digiquartz® ranges (to 10,500 m).
- Optional pump runs for each sample, providing improved conductivity and plumbed auxiliary sensor response, bio-fouling protection, and correlation of CTD and auxiliary sensor measurements.

Options

- Plastic (600 m) or titanium (7000 or 10,500 m) housing (data transmission rated to 8000 m).
- XSG/AG or wet-pluggable MCBH connectors.
- No pressure, or strain-gauge or Digiquartz® pressure sensor.
- SBE 5M pump for pumped conductivity; or SBE 5P or 5T pump for pumped conductivity and auxiliary sensor(s).
- Auxiliary sensors — dissolved oxygen, fluorescence, radiance (PAR), light transmission, turbidity, etc.
- Battery pack kit for lithium batteries (batteries not supplied by Sea-Bird).

Measurement Range

Conductivity	0 to 9 S/m
Temperature	-5 to +35 °C
Optional Pressure	Strain-gauge 0 to 20/100/350/600/1000/2000/3500/7000 m; Quartz 20/60/130/200/270/680/1400/2000/4200/7000/10,500 m

Initial Accuracy

Conductivity	± 0.0005 S/m
Temperature	± 0.005 °C
Optional Pressure	Strain-gauge ± 0.1% of full scale range; Quartz ± 0.02% of full scale range

Typical Stability

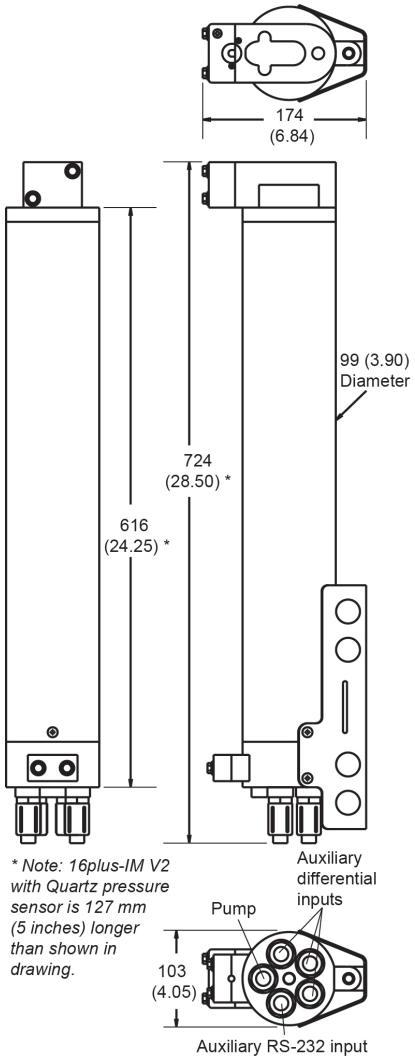
Conductivity	0.0003 S/m per month
Temperature	0.0002 °C per month
Optional Pressure	Strain-gauge ± 0.1% of full scale range per year; Quartz ± 0.02% of full scale range per year

Resolution

Conductivity	0.00005 S/m typical
Temperature	0.0001 °C
Optional Pressure	Strain-gauge 0.002% of full scale range; Quartz 0.0006% of full scale range for 1-sec integration

Memory & Data Storage	64 Mbyte non-volatile FLASH Bytes/sample: 6 T&C; 5 pressure; 2 each external voltage; 4 date & time (RS-232 sensor is sensor dependent)
Power Supply & Consumption	9 alkaline D-cell batteries provide 290,000 samples CT; 200,000 samples CTD; 110,000 samples CTD & SBE 5M pump (see manual)
Auxiliary Sensors	Power out up to 500 mA at 10.5 - 11 VDC; Voltage sensor A/D resolution 14 bits and input range 0-5 VDC
Housing, Depth Rating, & Weight	Acetal Copolymer Plastic, 600 m, in air 9 kg, in water 4 kg 3AL-2.5V Titanium, 7000 m, in air 17 kg, in water 12 kg 6AL-4V Titanium, 10,500 m

Dimensions in millimeters (inches)



** Note: 16plus-IM V2 with Quartz pressure sensor is 127 mm (5 inches) longer than shown in drawing.*

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