SEA-BIRD SCIENTIFIC

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SBE 21
SeaCAT Thermosalinograph

The externally powered SBE 21 accurately determines sea surface temperature and conductivity from underway vessels. Data is simultaneously stored in memory and output to a computer in real-time. Typically mounted near the ship's seawater intake, the SBE 21 connects to an AC-powered interface box near a computer. The interface box provides power and an isolated data interface, and contains a NMEA 0183 port for appending navigation data.

Memory capacity exceeds 10.6 million samples of temperature and conductivity; real-time output continues after the memory is full.

Bulkhead connectors are provided for optional auxiliary sensors:

- RS-232 interface for an SBE 38 temperature sensor. The SBE 38, installed at the seawater intake (ideally near the bow), measures sea surface temperature with minimal thermal contamination from the hull.
- Four single-ended or two differential 0-5 volt A/D input channels for voltage output auxiliary sensors.

Features

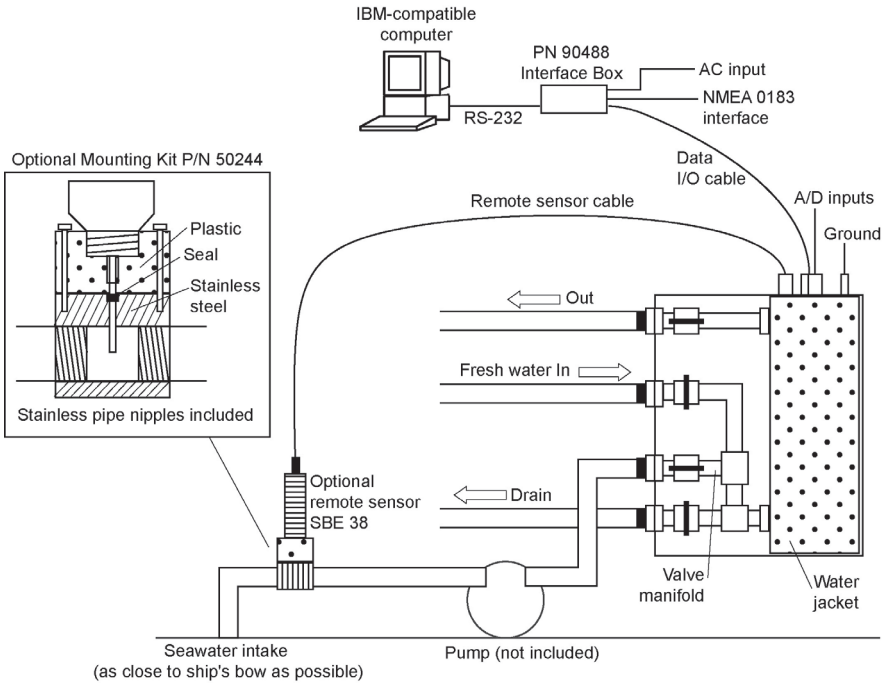
- Conductivity, Temperature, and auxiliary sensor data (SBE 38 remote temperature sensor and up to 4 voltage output sensors), continuously at 4 Hz (averaging, storing, and transmitting data at user-programmable 3-to 600-sec intervals) or taking a single measurement at user-programmable 3- to 600-sec intervals.
- Internal memory, powered externally.
- Expendable anti-foulant devices for bio-fouling protection.
- Valve control of seawater circulation and fresh-water flushing; sensor assembly easily removed for cleaning and calibration.
- Seasoft© V2 Windows software package (setup, and data acquisition, upload, and processing).
- SeaCAT family, field-proven since 1987.
- Five-year limited warranty.

Components

- Unique internal-field conductivity cell eliminates proximity effects. This is critically important for thermosalinographs, where the cell operates in a water jacket's confined volume, and also 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.

Mechanical Installation

The PVC base or back plate may be drilled for mounting to the ship. Seawater connections (for normal use) and fresh water connections (for cleaning) are PVC pipes with 1-inch (25.4-mm) U.S. standard NPT threads. Mating female fittings are provided, and can be easily adapted to locally available pipe sizes. A stainless steel and plastic in-line pipe mount is available for safe below-waterline installation of the remote temperature sensor.



Notes:
1. Seasave also supports acquisition of data from a NMEA device connected directly to computer (instead of Interface Box).
2. Some installations require a de-bubbler.

Measurement Range

Conductivity	0 to 7 S/m
Temperature, primary	-5 to 35 °C
Temperature, SBE 38 remote	-5 to 35 °C

Initial Accuracy

Conductivity	± 0.001 S/m
Temperature, primary	± 0.01 °C
Temperature, SBE 38 remote	± 0.001 °C

Resolution

Conductivity	0.0001 S/m
Temperature, primary	0.001 °C
Temperature, SBE 38 remote	0.0003 °C

Sample Interval	4 Hz (averaging, storing, and transmitting at user-programmable 3-to 600-sec intervals); or single measurement at user-programmable 3-to 600-sec intervals
Memory	T & C: 10.6 million samples; T, C, SBE 38, & 4 voltage sensors: 3.7 million samples
Water Jacket Volume	approximately 5 liters
Recommended Flow Rate	approximately 1 liter/sec
Operating Pressure	34.5 decibars (50 psi) maximum
Dimensions & Weight	57.7 high x 48.3 wide x 22.9 cm, 41 kg

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