

SBE 44

Underwater Inductive Modem (UIM)

The SBE 44 Underwater Inductive Modem makes it possible to integrate current meters, Doppler profilers, or other instruments having standard serial interfaces with MicroCATs and other instruments that communicate via Sea-Bird's Inductive Modem (IM) telemetry. The SBE 44 is designed for long-duration deployments on moorings. It has a built-in inductive cable coupler (split toroid) and cable clamp, providing data communications without the need for electrical connections, and an easy and secure attachment to any point on a jacketed mooring wire. An underwater bulkhead connector on the end cap provides the serial data connection, a control line, and switched power out.

When the SBE 44 receives a command over the IM link containing its unique ID, it relays the command to the serial instrument and transmits the reply over the IM link. A buffer allows the SBE 44 to interface to serial instruments at 300 to 19200 baud while transmitting data at 1200 baud over the IM link. Programmable setup parameters include timeout values, control signal logic, and sensor response termination logic, allowing the SBE 44 to interface to a wide variety of instruments without requiring custom programming.



Features

- Integrates RS-232 instruments to Sea-Bird's Inductive Modem (IM) telemetry system.
- Internal battery pack (can be powered externally) powers SBE 44, and can also power serial instrument.
- 7000 m titanium housing.
- Seasoft® V2 Windows software package (setup).
- Sea-Bird's field-proven IM telemetry, with more than 3000 Sea-Bird IM instruments deployed since 1997.
- 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.
- 30 Kbyte FIFO buffer allows SBE 44 to interface to a serial instrument at 300, 600, 1200, 2400, 4800, 9600, or 19200 baud while transmitting data at 1200 baud over the IM line.

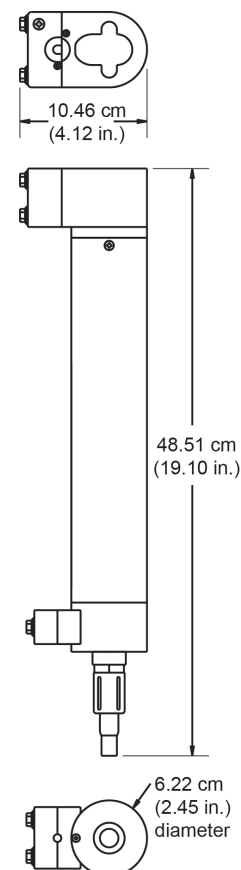
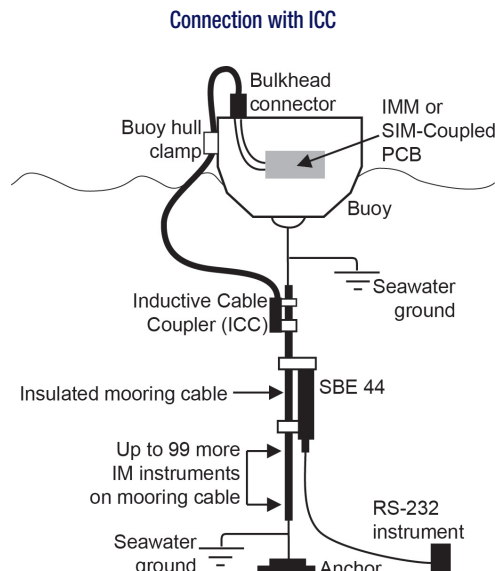
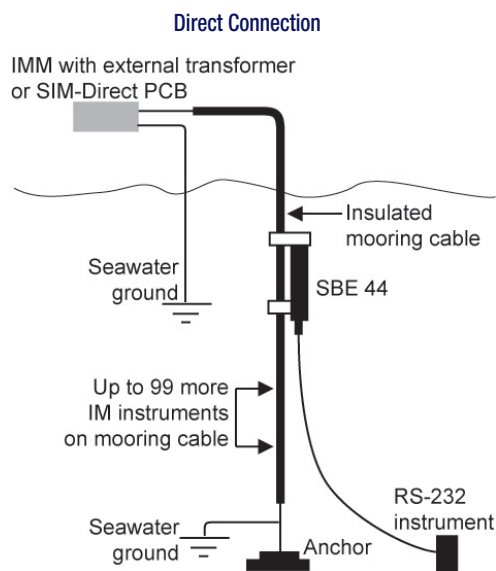
Options

- XSG or wet-pluggable MCBH connector.
- Wire guide and mounting clamp in one of 9 sizes.

Mooring Schematics

In a typical mooring, an Inductive Modem Module (IMM) or Surface Inductive Modem (SIM) housed in the buoy communicates with underwater IM instruments and is interfaced to a computer or data logger via an RS-232 serial port. The computer / data logger (not supplied by Sea-Bird) is programmed to poll each IM instrument on the mooring for its data, and send the files to a telemetry transmitter (satellite link, cell phone, RF modem, etc.). Communication between the computer / data logger and IMM/SIM is full-duplex RS-232C. Commands and data are transmitted half-duplex between the IMM/SIM and SBE 44. The SBE 44 interprets the commands, relays commands to the serial instrument, and transmits replies from the instrument to the IMM/SIM. There are two methods of connecting the IMM/SIM to the jacketed wire:

- In a direct connection (typical cable-to-shore applications), the bottom end of the wire is grounded to seawater, and the top end is insulated all the way to the IMM/SIM connection. A second wire from the IMM/SIM connects to seawater ground, completing the circuit.
- In typical surface buoys it may be preferable to connect the jacketed mooring wire to the buoy with a length of chain, grounding the wire to seawater at each end. An Inductive Cable Coupler (ICC) connects the IMM/SIM to the jacketed wire above the uppermost IM-enabled instrument and below the point where the wire is grounded.



Power Supply & Consumption

10.6 Amp-hour (nominal) battery pack, derated to 8.8 Amp-hour (if not supplying power to serial instrument) or 5.7 Amp-hour (if supplying power to serial instrument).

Quiescent current: < 100 microAmps.

Operating current: 10 milliAmps.

Maximum current to serial instrument: 1.5 Amps.

Sensor Interface

RS-232. Sensor baud rate 300, 600, 1200, 2400, 4800, 9600, or 19200 (IM telemetry rate 1200 baud).

Housing, Depth Rating, & Weight

Titanium, 7000 m, 3.2 kg in air, 2.1 kg in water

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