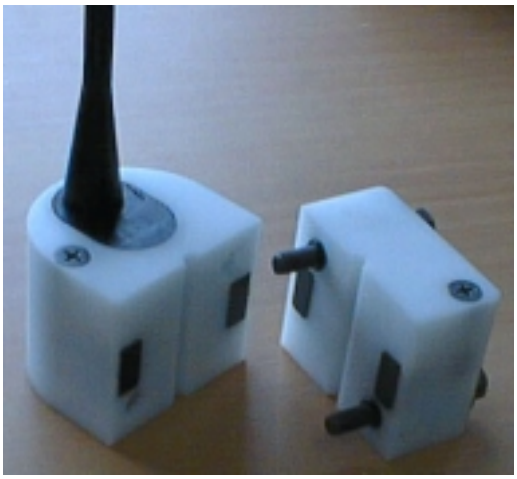
Inductive Cable Coupler

ICC



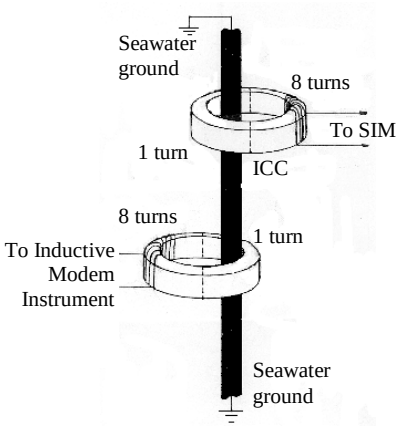
The Inductive Cable Coupler is an optional link in Sea-Bird's inductive modem telemetry systems, which provide data communications without the need for underwater electrical connections. An inductive modem telemetry system requires:

- Surface Inductive Modem (SIM), housed in a buoy or on land. The SIM provides the link between the underwater inductive modem instruments and the computer or buoy controller. Communication with the computer/buoy controller is via RS-232 (optional RS-485).
- Inductive Cable Coupler (ICC), which links the underwater inductive modem and the SIM *for typical buoy applications*.
- Underwater inductive modem instruments. The SIM can link to up to 100 inductively coupled instruments on a jacketed mooring wire. Compatible underwater modem instruments include:
  - SBE 37-IM MicroCAT Temperature and Conductivity (optional pressure) Recorder.
  - SBE 44 Underwater Inductive Modem, which links to a current meter, Doppler profiler, etc. with a standard serial interface.
  - SBE 16*plus* SEACAT C-T (optional pressure) Recorder, with optional inductive modem adapter.
  - Instruments by other manufacturers with built-in Sea-Bird underwater inductive modems.

Molded Core Cable assembly (MCC)

Cable Coupler Housing (CCH)

The Inductive Cable Coupler consists of two parts that are sold separately: the Molded Core Cable assembly (MCC) and the plastic clamp-on Cable Coupler Housing (CCH). The MCC is housed within the CCH, which makes it possible to replace the MCC if desired.



PRINCIPLES OF INDUCTIVE COUPLING

A transformer has two or more coils that share a magnetic field. Materials such as ferrite can be used to form a transformer *core* that ensures the necessary sharing of magnetic fields. For example, an AC voltage applied to an 8-turn *primary* winding will induce a voltage one-eighth as large on a 1-turn *secondary* winding.

When using the ICC with Sea-Bird's inductive modem telemetry system, the ends of the mooring cable are grounded to the seawater. This causes a current to flow through the mooring wire and seawater. The ICC senses this current, providing a voltage for presentation to the Surface Inductive Modem.

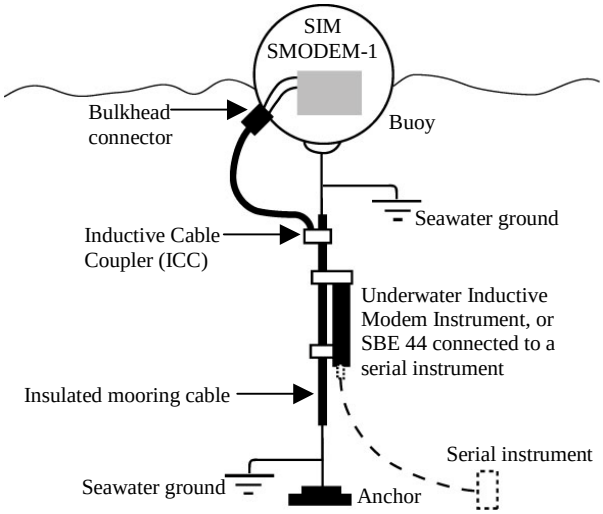
INDUCTIVE MODEM SYSTEM

Inductive Cable Coupler

- *Cable Coupler Housing* – eight mooring cable diameters (1/4 inch, 5/16 inch, 3/8 inch, 1/2 inch, 6 mm, 8 mm, 10 mm, or 12 mm)
- *Molded Core Cable assembly* – with pigtails or PGM-2FS molded-on connectors (lengths over 50 m [164 ft] not recommended):
  - Pigtails in three lengths (2, 5, or 10 m [6.6, 16.4, or 32.8 ft])
  - Molded-on connectors in two lengths (2 or 5 m [6.6 or 16.4 ft])

Underwater Inductive Modem Instrument - See SBE 37-IM, 44, and 16*plus* datasheets.

SIM - See Surface Inductive Modem datasheet.



Inductive Modem System

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