



SUMMARY

- Pressure measurements at 16 Hz (16 samples/second).
- RS-232 serial interface, optional 0 - 5 volt output.
- No memory or batteries — intended for use on vehicles that can supply power and acquire data.
- Depths to 7000 meters (titanium housing).

DESCRIPTION

The SBE 50 is a high-accuracy, high-resolution (16 Hz sampling) pressure sensor, intended for towed vehicle, ROV, AUV, or other autonomous profiling applications at depths up to 7000 meters (23,000 feet).

The SBE 50's strain-gauge pressure sensor is offered in eight full scale ranges from 20 to 7000 dbars. Compensation of the temperature influence on pressure offset and scale is performed by the SBE 50's CPU.

The SBE 50 is an easy-to-use, light, compact instrument ruggedly made of titanium and other low-maintenance (plastic) materials; it is well suited to even the smallest vehicle. Commands sent to the SBE 50 provide status display, data acquisition setup, and diagnostic tests. The SBE 50 must be externally powered, and its RS-232C data (and/or optional 0 - 5 volt output) logged or telemetered by the vehicle to which it is mounted. The SBE 50 does not support auxiliary sensor inputs.



SAMPLING MODES

The SBE 50 has two sampling modes:

- **Autonomous sampling** – The SBE 50 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. The SBE 50 can be programmed to begin autonomous sampling when power is applied or on command.
- **Polled sampling** – On command, SBE 50 takes one sample and transmits the data.

DATA OUTPUT

The SBE 50 outputs:

- Raw pressure and pressure temperature values, **or**
- Data in ASCII engineering units (pressure in decibars or psia, or depth in meters or feet) – pressure is calculated using calibration coefficients stored in EEPROM; depth is calculated from pressure, based on user selection of salt or fresh water and user-input latitude.

AUTONOMOUS WATER SAMPLER CONTROL

The SBE 50 can be integrated with the SBE 32 Carousel Water Sampler and Auto Fire Module (AFM) to provide autonomous water sampler control for a system deployed on a non-conducting cable. The AFM supplies power to the SBE 50 and monitors the pressure transmitted by the SBE 50 in real-time, closing water sampler bottles at pre-defined pressures or depths, or whenever the system is stationary for a specified period of time.

STANDARD FEATURES AND OPTIONS

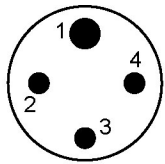
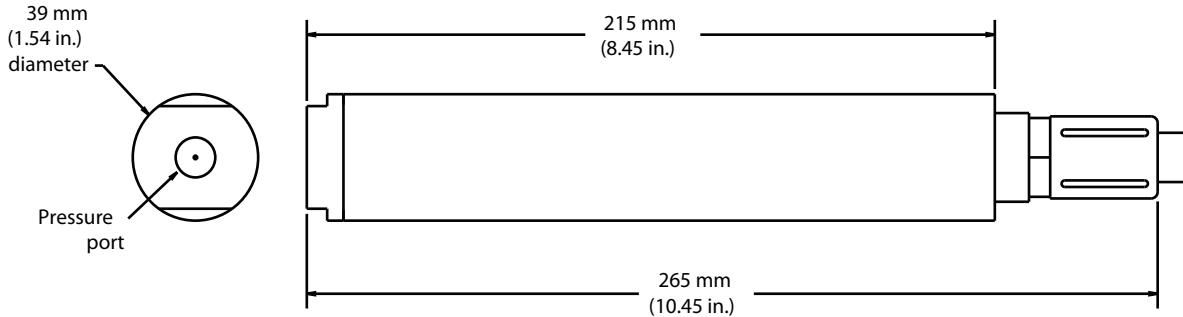
The SBE 50 is supplied with:

- Titanium housing for depths to 7000 meters
- Strain-gauge pressure sensor
- XSG 4-pin I/O bulkhead connector
- MCBH Micro connector in lieu of XSG (optional)

The SBE 50's **optional Voltage Output interface** provides 0 - 5 volt output proportional to the pressure or depth, *in addition* to the RS-232C output. When equipped with the Voltage Output Interface, the SBE 50 uses a 6-pin I/O bulkhead connector.

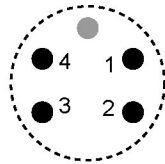
A Windows terminal program, **Seaterm**, is supplied for instrument setup, status display, and diagnostics.



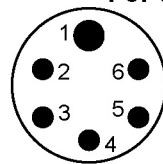


Standard 4-pin Connector
XSG-4-BCL-HP

Pin	Signal
1	Ground
2	RS-232 receive (from computer)
3	RS-232 transmit (to computer)
4	8-30 VDC power in

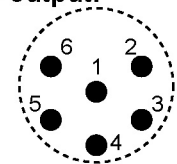


Optional 4-pin Wet-Pluggable Connector
MCBH-4MTI



6-pin Connector
AG-306-HP

For optional voltage output:



Optional 6-pin Wet-Pluggable Connector
MCBH-6MP (WB), TI
(3/8" length base, 1/2-20 thread)

Pin	Signal
1	Ground
2	RS-232 receive (from computer)
3	RS-232 transmit (to computer)
4	Pressure output voltage +
5	Pressure output voltage -
6	8-30 VDC power in

SPECIFICATIONS

Measurement Range 0 to 20 / 100 / 350 / 600 / 1000 / 2000 / 3500 / 7000 meters
(expressed in meters of deployment depth capability)

Initial Accuracy 0.1% of full scale range

Typical Stability 0.05% of full scale range per year

Resolution 0.002% of full scale range
(D/A resolution for optional 0 -5 volt output: 16 bit)

Power Requirements 8 - 30 VDC

Housing Material 3AL/2.5V Titanium

Depth Rating 7000 meters (22,900 feet)

Weight

In air 0.7 kg (1.5 lbs)
In water 0.4 kg (0.9 lbs)