

SBE 50 Digital Oceanographic Pressure Sensor Reference Sheet

(see SBE 50 User's Manual for complete details)

Sampling Modes

- **Autonomous sampling** –The SBE 50 continuously samples at 16 Hz. It can be set to average up to 255 samples, and transmits the averaged data. The SBE 50 can be programmed to begin autonomous sampling when power is applied or on command.
- **Polled sampling** – The SBE 50 takes one sample and transmits data.

Setup

1. Wiring to SBE 50:
 - A. Install the I/O cable connector, aligning the raised bump on the side of the connector with the large pin on the SBE 50.
 - B. Install the locking sleeve.
 - C. Connect the I/O cable connector to the computer.
 - D. Connect the I/O cable connector's red and black wires to the power supply (8-30 VDC).
2. Double click on SeaTerm.exe.
3. Once the main screen appears, in the Configure menu select SBE 50. Click on the COM settings tab in the dialog box. Input:
 - Serial Port: COM1 through COM10 are available
 - Baud Rate: 9600 (or other if applicable)
 - Data Bits: 8
 - Parity: No Parity
 - Mode: RS-232 (Full Duplex)
4. Click the Connect button on the Toolbar. The SBE 50 returns S> prompt. Send commands to set up the SBE 50 as desired (see commands on other side).

Deployment

1. Verify that hardware and external fittings are secure.
2. Immediately prior to deployment, apply power.
 - If **AUTORUN=Y**, the SBE 50 will begin sampling.
 - If **AUTORUN=N**, send the **START** command to begin autonomous (continuous) sampling or send the **TS** command to take a single sample.
3. If the SBE 50 is connected directly to the computer and you will be using SEATERM to view real-time data, press the Capture button on the Toolbar to save the data to a .cap file.

Command Instructions and List

- Input commands in upper or lower case letters and register commands by pressing Enter key.
- SBE 50 sends ?CMD if invalid command is entered.
- If system does not return S> prompt after executing a command, press Enter key to get S> prompt.
- If the SBE 50 is transmitting data and you want to stop it, send the **STOP** command or type Ctrl Z. Press the Enter key to get the S> prompt. Alternatively, remove power.
- The SBE 50 responds only to the **STOP** command while sampling autonomously.

Shown below are the commands used most commonly in the field. See the Manual for complete listing and detailed descriptions.

| CATEGORY | COMMAND | DESCRIPTION |
|--|-----------------------|--|
| Status | DS | Display status and setup parameters. |
| Setup | BAUD=x | x= baud rate (600, 1200, 2400, 4800, 9600, 19200, 38400). Default 9600. |
| | OUTPUTFORMAT=x | x=0: raw pressure and pressure temperature. x=1: pressure in psia. x=2: pressure in decibars. x=3: depth in meters for salt water. x=4: depth in feet for salt water. x=5: depth in meters for fresh water. x=6: depth in feet for fresh water. x=7: pressure (decibars) and scan number in hex. |
| | DECIMALS=x | x = number of digits to output to right of decimal point (for OUTPUTFORMAT=1 through 6). |
| | LATITUDE=x | x = latitude (degrees) to use in depth calculation (for OUTPUTFORMAT=3 and 4). |
| Optional 0-5 VDC Voltage Output | OUTPUTVOLT=x | x=Y: Optional voltage output enabled. x=N: Optional voltage output not enabled. |
| | VRANGE=x | x= Voltage output scale factor. Output voltage = $0.1 + (4.8 * P / VRANGE)$ where P = computed pressure or depth in units set with OUTPUTFORMAT= command. If computed voltage < 0.05, it is set to 0.05. If > 4.95, it is set to 4.95. |
| | VCAL | Test used to internally calculate SBE 50's D/A converter offset and scale factor. When VCAL is sent: 1. SBE 50 outputs 0.2 volts. Enter voltmeter reading (in volts) at prompt and press Enter. 2. SBE 50 outputs 4.8 volts. Enter voltmeter reading (in volts) at prompt and press Enter. |
| | VOLT=x | Set output voltage to x (volts). Use this command, and a voltmeter, to verify that D/A converter offset and scale factor calculated with VCAL are correct. If VCAL was performed properly, voltmeter reading should equal x. |
| Sampling | AUTORUN=x | x=N: Wait for a command when power is applied. Default. x=Y: Start autonomous sampling automatically when power is applied. |
| | NAVG=x | x= number of samples to average for autonomous sampling. SBE 50 samples at 16 Hz, averages NAVG samples, and transmits averaged data. Default=1. |
| | START | Start autonomous sampling now. |
| | STOP | Stop autonomous sampling. Press Enter key to get S> before entering command. |
| | TS | Take one sample and transmit data. |
| Coefficients (F=floating point number; S=string with no spaces) Date shown is when calibration was performed. Calibration coefficients are initially factory-set and should agree with Calibration Certificate shipped with SBE 50. | DCAL | Display calibration coefficients. |
| | PSN=S | F= Pressure sensor serial number. |
| | PRANGE=F | F= Full scale pressure range in psia. |
| | PCALDATE=S | S= Pressure calibration date. |
| | PA0=F | F= Pressure A0. |
| | PA1=F | F= Pressure A1. |
| | PA2=F | F= Pressure A2. |
| | PTCA0=F | F= Pressure ptca0. |
| | PTCA1=F | F= Pressure ptca1. |
| | PTCA2=F | F= Pressure ptca2. |
| | PTCB0=F | F= Pressure ptcb0. |
| | PTCB1=F | F= Pressure ptcb1. |
| | PTCB2=F | F= Pressure ptcb2. |
| | PTEMPA0=F | F= Pressure ptempa0. |
| PTEMPA1=F | F= Pressure ptempa1. | |
| PTEMPA2=F | F= Pressure ptempa2. | |
| POFFSET=F | F= Pressure offset. | |