SBE 39 Temperature (& pressure) Recorder Reference Sheet

(see SBE 39 User's Manual for complete details)

Sampling Modes

- **Polled sampling** – SBE 39 takes one sample and sends data to computer. Useful for integrating SBE 39 with satellite, radio, or wire telemetry equipment.
- **Autonomous sampling** – There are two types of Autonomous sampling:
  Interval sampling: At pre-programmed intervals, SBE 39 wakes up, samples, stores data in memory, and powers off.
  Continuous sampling: SBE 39 continuously samples and stores data in memory, and does not power off between samples.
- **Serial Line Sync** - A pulse on serial line causes SBE 39 to wake up, sample, store data in memory, and power off automatically. This mode provides easy integration with Acoustic Doppler Current Profilers (ADCPs) or current meters which can synchronize SBE 39 sampling with their own.

Communication Setup Parameters

1. Double click on seaterm.exe.
2. Once main screen appears, in Configure menu select SBE 39. Click on COM Settings tab in 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)

Deployment

1. Install a new battery or ensure existing battery has enough capacity to cover intended deployment. To install new battery:
   A. *For SBE 39 with external thermistor:* Unscrew plastic temperature guard.
   B. *Remove titanium end cap and electronics from housing*: Wipe dry housing/end cap seam. Unscrew end cap. Pull end cap and attached electronics out of housing. (For SBE 39 with external I/O connector: disconnect Molex connector connecting electronics to I/O connector.) Wipe dry end cap O-rings and mating surfaces in housing with lint-free cloth.
   C. *Replace battery*: Remove rubber band holding battery. Unsnap old battery and replace with new. Reinstall rubber band to secure battery.
   D. *Reinstall end cap and electronics*: Remove water from O-rings and mating surfaces with lint-free cloth. Inspect O-rings and mating surfaces for dirt, nicks, and cuts. Clean as necessary. Apply light coat of O-ring lubricant to O-ring and mating surfaces. (For SBE 39 with external I/O connector: reconnect Molex connector connecting electronics to I/O connector.) Fit end cap into housing. Screw end cap into housing.
   E. *For SBE 39 with external thermistor:* Reinstall plastic temperature guard.

2. Program SBE 39 for intended deployment (see other side of this sheet for *Command Instructions and List*):
   A. Set time and date.
   B. Establish logging parameters.
   C. Ensure all data has been uploaded, and then set **SAMPLENUM=0** to make entire memory available for recording. If **SAMPLENUM** is not reset to zero, data is stored after last recorded sample.
   D. Use one of following sequences to initiate logging:
      - **STARTNOW** to start logging now, taking a sample every **INTERVAL** seconds (if **INTERVAL=0**, SBE 39 samples continuously).
      - **STARTMMDDYY=**, **STARTHHMMSS=**, and **STARTLATER** to start logging at specified date and time, taking a sample every **INTERVAL** seconds (if **INTERVAL=0**, SBE 39 will sample continuously).
      - **SYNCMODE=Y** to place SBE 39 in serial line sync mode, so that a simple pulse on RS-232 line will initiate a sample.

3. Close housing if it was opened to install battery or program SBE 39 (for SBE 39 with internal I/O connector).

4. *For SBE 39 with optional bulkhead I/O connector*: Install dummy plug or I/O cable, and install locking sleeve.

5. Mount SBE 39, using Sea-Bird's mounting clamp or customer-supplied hardware.

Command Instructions and List

- Input commands to SBE 39 in upper or lower case letters and register commands by pressing the Enter key.
- SBE 39 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 new command is not received within 2 minutes after completion of a command, SBE 39 returns to quiescent (sleep) mode.
- If in quiescent (sleep) mode, re-establish communications by clicking Connect on Toolbar or pressing Enter key to get **S>** prompt.

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.
Setup	**MMDDYY=mmddyy**	Set real-time clock month, day, year. Must follow with **HHMMSS=**.
	DDMMYY=ddmmyy	Set real-time clock day, month, year. Must follow with **HHMMSS=**.
	HHMMSS=hhmmss	Set real-time clock hour, minute, second.
	BAUD=x	**x=** baud rate (1200, 2400, 4800, 9600, 19200, 38400). Default 9600.
	TXREALTIME=x	**x=Y:** Output real-time data to computer. Does not affect storing data to memory, but slightly increases current consumption. **x=N:** Do not output real-time data.
	SYNCMODE=x	**x=Y:** Enable Serial Line Sync Mode. When RS-232 RX line is high (3-10 VDC) for 1 - 1000 milliseconds, SBE 39 takes sample, stores data in FLASH memory, transmits real-time data (if **TXREALTIME=Y**), and powers down. **x=N:** Do not enable Serial Line Sync Mode.
	QS	Enter quiescent (sleep) mode. Data logging and memory retention unaffected.
Logging	**SAMPLENUM=x**	**x=** sample number for first sample when logging begins. After uploading data, set to 0 before starting to log again to make entire memory available for recording. If not reset to 0, data stored after last sample.
	INTERVAL=x	**x=** interval (seconds) between samples (0, or 3 - 32767). When commanded to start sampling with **STARTNOW** or **STARTLATER**, SBE 39 takes sample, stores data in FLASH memory, transmits real-time data (if **TXREALTIME=Y**), and powers down at **x** second intervals. If **x=0**, SBE 39 samples continuously without powering down between samples.
	STARTNOW	Start logging now.
	STARTMMDDYY= mmddyy	Delayed logging start: month day year. Must follow with **STARTHHMMSS=**.
	STARTDDMMYY= ddmmyy	Delayed logging start: day month year. Must follow with **STARTHHMMSS=**.
	STARTHHMMSS =hhmmss	Delayed logging start: hour, minute, second.
	STARTLATER	Start logging at delayed logging start time.
	STOP	Stop logging data or stop waiting to start logging. Press Enter key to get **S>** prompt before entering this command. Must send this command before uploading data.
Operating *Do not send these commands if SBE 39 is logging data.	**TS ***	Take sample and transmit converted data. Data not stored in FLASH memory.
	TSR *	Take sample and transmit raw data. Data not stored in FLASH memory.
	SLT *	Transmit converted data from last sample from buffer, and then take new sample. Data not stored in FLASH memory.
	SLTR *	Transmit raw data from last sample from buffer, and then take new sample. Data not stored in FLASH memory.
	TSS *	Take sample, store data in FLASH memory, transmit converted data, and turn power off.
	TSSON *	Take sample, store data in FLASH memory, and transmit converted data.
	SL	Transmit converted data from last sample from buffer.
Data Upload	**DDb,e**	Upload data in **ASCII** from scan b to scan e. Send **STOP** before sending this command.
	DBb,e	Upload data in **binary** from scan b to scan e. Send **STOP** before sending this command.
	BINARYTIME=x	**Applies to binary data upload only.** **x=Y**: Upload date and time for every scan from memory. **x=N**: Upload date and time only for beginning scan in each data block; use **INTERVAL=** to calculate and insert date and time for all other scans.
	***DB**	Display binary upload parameters.
Testing	**TT**	Measure temperature for 100 samples or until Esc key is pressed, output converted data.
	TP	Measure pressure and pressure temperature for 100 samples or until Esc key is pressed, output converted data.
	TTR	Measure temperature for 100 samples or until Esc key is pressed, output raw data
	TPR	Measure pressure and pressure temperature for 100 samples or until Esc key is pressed, output raw data.
Coefficients	**DC**	Display calibration coefficients.