

Auto Fire Module (AFM) Reference Sheet

(see AFM User's Manual for complete details)

System Setup and Deployment

Note: Except where noted otherwise, the term *CTD* refers to the SBE 19, 19*plus*, 19*plus* V2, and 25 CTD as well as the SBE 50 Pressure Sensor.

1. Install AFM and CTD on Carousel Water Sampler (SBE 32, 32C, or 32SC).
2. Connect AFM's data I/O cable to computer.
3. Set up AFM and CTD:
 - A. Select AFM with applicable CTD in SeatermAF's Configure menu.
 - B. Configure Options dialog box appears. On CTD Communications tab, input/select:
 - CTD Eprom version
 - Com port, baud rate, data bits, and parity for communication between CTD and computer (through AFM)
 - Upload baud rate, upload type, and header options - these selections can be made now or when you are ready to upload data after deployment (they have no effect on system operation)
 - C. On AFM Communication Settings tab, input/select:
 - Com port for communication between AFM and computer
 - Battery type in AFM (Note: if using NiMH batteries, select Ni-Cad)
 - Header options - this selection can be made now or when you are ready to upload data after deployment (they have no effect on system operation)
 - D. On AFM Bottle Closure Logic tab, input/select:
 - Configuration (.con) file - needed for SBE 19 or 25 only
 - Baud rate for communication of pressure data from CTD to AFM, for *close on downcast*, *upcast* or *when stationary*, pressures are used to determine when to close bottles.
 - Closure type - on downcast, on upcast, when stationary, or on elapsed time (can record or not record CTD data)
 - Stationary logic, for close when stationary
 - Upcast/downcast logic, for close on downcast or upcast
 - E. On Bottle Closure Pressures/Times tab, input:
 - Number of bottles to close during deployment
 - Bottle closure order
 - Closure pressures for closure on upcast or downcast, **or** closure times (elapsed minutes since AFM was armed) for closure on elapsed time.
 - For closure on downcast, pressures must **increase** from closure 1 to last closure.
 - For closure on upcast, pressures must **decrease** from closure 1 to last closure.
 - For closure on elapsed time, elapsed times must **increase** from closure to last closure.Click OK to overwrite existing settings (.ini) file, or click Save As to save settings as a new filename.
 - F. Click Connect AFM button to communicate with AFM.
 - G. Set date and time for AFM with **DateTime=mmddyyyhhmmss**.
 - H. Click Program button to send bottle closure parameters to AFM.
 - I. Click Connect CTD button to communicate with CTD.
 - J. Send desired commands to CTD to change instrument setup. Send **QS** to put CTD in quiescent (sleep) state (not applicable to SBE 50).

Notes:
If using **AFM with SBE 25** and you want to close bottles on upcast, verify that SBE 25 configuration entered with **CC** command is *Stop CTD on upcast (y/n)? = NO*.
4. Arm AFM and deploy system:
 - A. Click Connect AFM button to communicate with AFM.
 - B. Click ARM button.
 - C. Disconnect I/O cable from AFM and replace with dummy plug and locking sleeve.
 - D. SBE 19, 19*plus*, 19*plus* V2, or 25: Turn on CTD's magnetic switch to start logging.
SBBE 50: SeatermAF automatically sent **Start** to SBE 50 to start sampling when you armed the AFM.
 - E. Deploy system.

AFM Commands

- **Verify that computer is talking to AFM (shows A>), not CTD (shows S>).** If not, click Connect AFM on Toolbar.
- Input commands to AFM in upper or lower case letters and register commands by pressing Enter key.
- AFM sends `invalid command` if invalid command is entered.
- If system does not return A> prompt after executing a command, press Enter key to get A> prompt.
- If new command is not received within 2 hours after completion of a command, AFM returns to quiescent (sleep) state.
- If in quiescent (sleep) state, re-establish communications by clicking Connect AFM on Toolbar to get A> 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	GetSD	Get and display status data.
	GetHD	Get and display hardware data.
	GetEC	Get and display event counter data.
	ResetEC	Reset event counter.
	DS	Display status.
	DC	Display bottle closure parameters.
Date / Time	DateTime=mmddyyhhmmss	Set real-time clock date (mmddyyyy) and time (hhmmss).
Testing	32POn	Turn on power to Carousel for testing, to charge storage capacitor prior to firing. Wait 1 minute after sending command before test firing a bottle.
	32POff	Turn off power to Carousel when testing is complete.
	FireN	Fire bottle N (1, 2, 3 , etc.)
Arm / Disarm	Arm	Arm (enable) auto fire to close bottles. AFM automatically disarms after 24 hours.
	DA	Disarm (disable) auto fire to close bottles.
Data Upload	DD	Upload raw data from AFM (5 scans of CTD or SBE 50 data recorded in AFM memory for each bottle fired). Use Upload button on Toolbar if will be processing data with SBE Data Processing.

CTD Commands

- **Verify that computer is talking to CTD (shows S>), not AFM (shows A>).** If not, click Connect CTD on Toolbar.

See the instrument manual (SBE 19, 19*plus*, 19*plus* V2, 25, or 50) for command details.