

SBE 37-SI (RS-485) MicroCAT Reference Sheet

(see SBE 37-SI [RS-485] MicroCAT User's Manual for complete details)

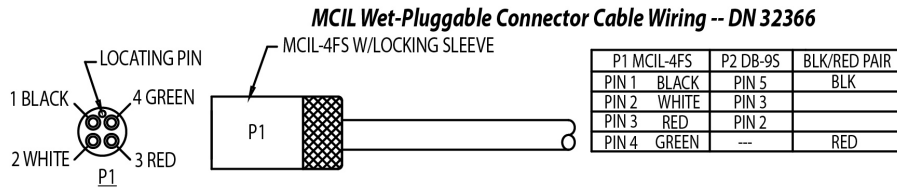
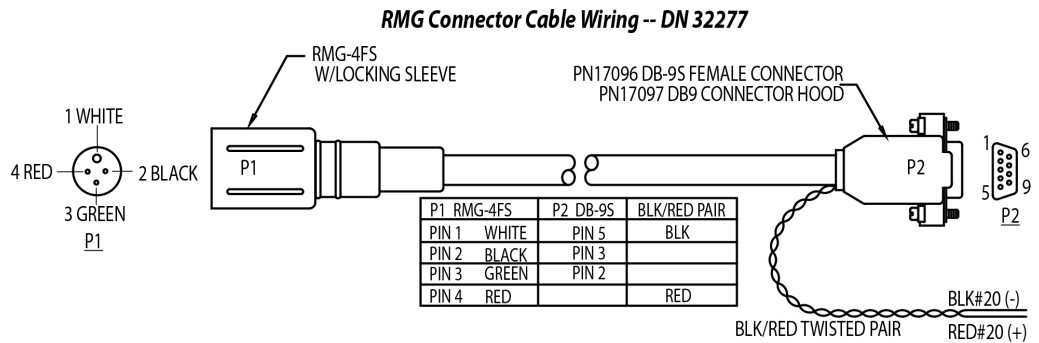
Note: *ii* in commands is MicroCAT's user-assigned ID (0 – 99). For example, #01gethd sends gethd to MicroCAT with ID=01.

Setup

1. Install I/O cable connector. Connect to computer serial port and power supply.
2. Double click on SeatermV2.exe. SeatermV2 opens; in Instruments menu, select *SBE 37 RS485*. Seaterm485 opens.
3. In Seaterm485's Communications menu, select *Configure*. In dialog box, select Comm port and baud rate (factory set to 9600). Set ID to *Automatically get ID* for 1 MicroCAT on line; set ID to *Use fixed ID* for multiple MicroCATs on line. Click OK.
4. Seaterm485 automatically connects to MicroCAT. As it connects, it sends **#iiGetHD** and displays response, and then fills Send Commands window with list of commands for your MicroCAT.
5. Set Date and Time — see Command Instructions and Command List.
6. Set up other parameters as desired — see Command Instructions and Command List. User-selectable sampling modes include:
 - **Autonomous** – At pre-programmed intervals, MicroCAT wakes up, samples, stores data in memory, and goes to sleep.
 - **Polled** – On command, MicroCAT takes 1 sample and sends data to computer. Useful for integrating with satellite, radio, or wire telemetry equipment.
 - **Serial Line Sync** - In response to simple pulse (or single character) on serial line, MicroCAT wakes up, samples, stores data in memory, transmits data (if **#iiTxSyncMode=Y**), and goes to sleep.

Deployment

1. Wiring– Install cable and locking sleeve. Connect cable to computer serial port and power supply (8.5 - 24 VDC).
2. Deploy MicroCAT, using Sea-Bird mounting brackets or customer-supplied hardware.



Data Upload

1. Connect cable from MicroCAT to computer and power supply.
2. Double click on SeatermV2.exe. SeatermV2 opens; in Instruments menu, select *SBE 37 RS485*. Seaterm485 opens.
3. In Seaterm485's Communications menu, select *Configure*. In dialog box, select Comm port and baud rate (factory set to 9600). Set ID to *Automatically get ID* for 1 MicroCAT on line; set ID to *Use fixed ID* for multiple MicroCATs on line. Click OK.
4. Seaterm485 automatically connects to MicroCAT. As it connects, it sends **#iiGetHD** and displays response, and then fills Send Commands window with list of commands for your MicroCAT.
5. If sampling autonomously (logging), command MicroCAT to stop logging by sending **#iiStop**.
6. Click Upload menu to upload stored data.
7. When upload completed, Seaterm485 prompts you to run SBE Data Processing to convert uploaded .hex file to .cnv file for use by other modules in data processing software. Process file and review data to ensure all data has been uploaded.
8. Process file and review data in Sea-Bird data processing software to ensure all data has been uploaded.

Command Instructions and List

- Input commands in upper or lower case letters, and register commands by pressing Enter key.
- MicroCAT sends an error message if invalid command is entered.
- If new command is not received within 2 minutes after completion of a command, MicroCAT returns to quiescent (sleep) state.
- If in quiescent (sleep) state, re-establish communications by selecting *Connect* in Seaterm485's Communications menu, sending two @ characters, or pressing any key.
- For reliable operation, all commands *may* need to be preceded with two @ characters.

Example (status command for MicroCAT 01): @#@01DS

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

CATEGORY	COMMAND	DESCRIPTION
ID	ID?	Get MicroCAT ID.
	*ID=ii	Set MicroCAT ID to ii, where ii= 0-99. Command must be sent twice.
Global	DateTime= mmddyyyymmss	Set clock month, day, year, hour, minute, second.
	GData	Command all MicroCATs to take 1 sample. MicroCATs hold data in buffer until receiving Dataii . Data not stored in FLASH memory.
	PwrOff	Enter quiescent (sleep) state. Main power turned off; data logging and memory retention unaffected.
Get Data	Dataii	Get data obtained with GData .
Status	#iiGetCD	Get and display configuration data.
	#iiGetSD	Get and display status data.
	#iiGetCC	Get and display calibration coefficients.
	#iiGetEC	Get and display event counter data.
	#iiResetEC	Reset event counter.
	#iiGetHD	Get and display hardware data.
	#iiDS or !iiDS	Get and display status.
General Setup	#iiDC	Get and display calibration coefficients.
	#iiBaudRate=x	x= baud rate (600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, or 115200).
	#iiRxDelay=x	x= delay after MicroCAT receives command until transmitter enabled (1 - 500 msec). Default 25 msec.
	#iiTxDelay=x	x= delay after MicroCAT transmits reply until transmitter disabled (1 - 500 msec). Default 25 msec.
	#iiDateTime= mmddyyyymmss	Set clock month, day, year, hour, minute, second.
	#iiOutputExecutedTag=x	x=Y: output XML Executed and Executing tags. x=N: do not.
Memory Setup	#iiReferencePressure=x	x= reference pressure (gauge) in db (used when MicroCAT has no pressure sensor).
	#iiInitLogging	Initialize logging to make entire memory available for recording.
Output Format Setup	#iiSampleNumber=x	x= sample number for last sample in memory. #iiSampleNumber=0 equivalent to #iiInitLogging.
	#iiOutputFormat=x	x=0: output raw decimal data. x=1: output converted decimal data. x=2: output converted decimal data in XML. x=3: output converted decimal data, alternate format.
	#iiOutputSal=x	x=Y: calculate and output salinity (psu). x=N: do not.
	#iiOutputSV=x	x=Y: calculate and output sound velocity (m/sec). x=N: do not.
	#iiOutputDensity=x	x=Y: calculate and output local density. x=N: do not.
	#iiOutputDepth=x	x=Y: calculate and output depth (m). x=N: do not.
Autonomous Sampling (Logging)	#iiLatitude=x	x= latitude (degrees) to use in depth calculation.
	#iiSampleInterval=x	x = interval between samples (6–21,600 sec). When commanded to start sampling with #iiStartNow or #iiStartLater, MicroCAT samples, stores data in FLASH memory, and goes to sleep at x sec intervals.
	#iiStartNow	Start logging now.
	#iiStartDateTime= mmddyyyymmss	Delayed logging start: month, day, year, hour, minute, second.
	#iiStartLater	Start logging at delayed logging start time.
Polled Sampling	#iiStop	Stop logging or waiting to start logging. Send #iiStop before uploading data.
	#iiTS	Take sample, store data in buffer, output data.
	#iiTSR	Take sample, store data in buffer, output data in raw decimal form (regardless of #iiOutputFormat=).
	#iiTSH	Take sample, store data in buffer, do not output data.
	#iiTSS	Take sample, store data in buffer and in FLASH memory, output data.
	#iiTSN:x	Take x samples and output data.
	#iiSL	Output last sample stored in buffer.
Serial Line Sync	#iiSLT	Output last sample stored in buffer, then take new sample, and store data in buffer.
	#iiSyncMode=x	x=Y: Enable serial line sync mode. x=N: Disable serial line sync mode.
Data Upload	#iiTxSyncMode=x	x=Y: Transmit real-time data in serial line sync mode. x=N: do not.
	#iiDDb,e	Upload data from scan b to e , in alternate converted decimal form (#iiOutputFormat=3) (regardless of setting for #iiOutputFormat).
Calibration Coefficients	#iiGetSamples:b,e	Upload data from scan b to e , in format defined by #iiOutputFormat.
	See manual	