EXTECH®
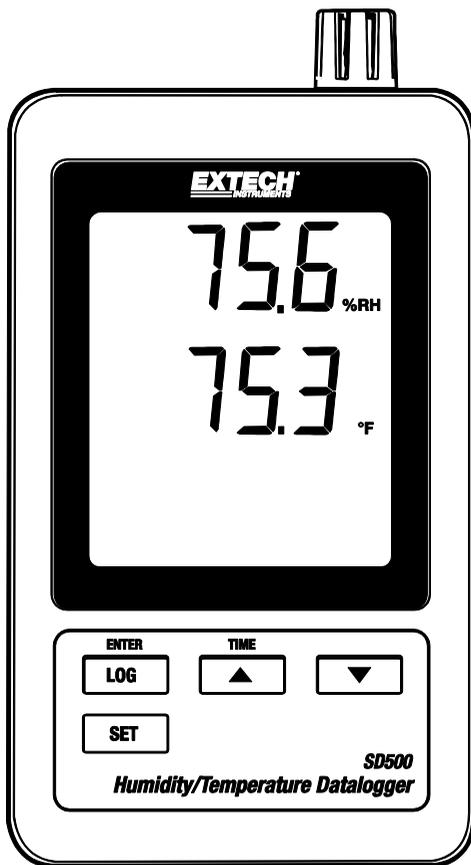
Datalogging Hygro-Thermometer

Model SD500

Introduction

Congratulations on your purchase of the Extech SD500 Temperature/Humidity Datalogger. This meter measures, displays, and stores temperature and relative humidity readings. Data is stored on a SD card for transfer to a PC. This meter is shipped fully tested and calibrated and, with proper use, will provide years of reliable service. Please visit the Extech Instruments website (www.extech.com) to check for the latest version of this User Guide. Extech Instruments is an ISO-9001 certified company.

Features

- LCD simultaneously displays Temperature and Relative Humidity

- Datalogger date/time stamps and stores readings on an SD card in Excel® format for easy transfer to a PC

- RS-232 PC interface jack

- Selectable data sampling rate: 5, 10, 30, 60, 120, 300, 600 seconds
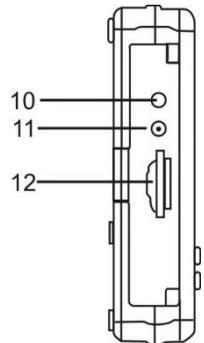
- Long battery life or AC adaptor

Product Description

1. Humidity Display
2. Temperature Display
3. Side Compartment
4. LOG (ENTER) button
5. SET button
6. Sensors
7. ▲ (TIME) button
8. ▼ button
9. AC adaptor socket
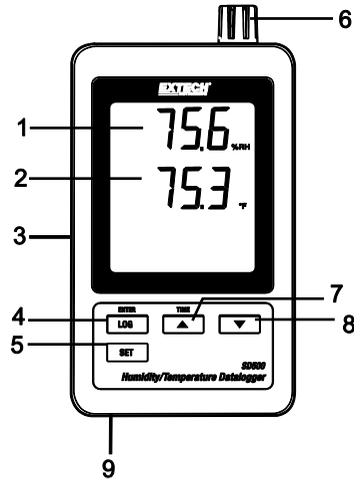
10. Reset button
11. RS-232 output
12. SD memory card socket

Note: Battery Compartment and Tilt Stand are located on the back of the meter.

Operation

Battery Warning, Installation and Replacement

1. When the ⊠ low battery icon appears in the display the batteries are weak and should be replaced. However, in-spec. measurements may still be made for several hours after low battery indicator appears before the instrument becomes inaccurate.

2. To replace or install batteries, remove the Philips head screw that secures the rear battery cover and lift off the cover.

3. Replace the six AAA batteries (use alkaline heavy duty type), observing polarity.

4. Replace and secure the cover.

Datalogging

1. Open the left side door and insert a formatted SD card

   Note: The SD card should be at least 1GB in capacity

   Note: Do not use memory cards formatted by other meters or cameras. Use the SD card formatting procedure under the advanced features section of this manual to correctly format the card.

   Note: The internal clock must be set to the correct time See the advanced features section of this manual to set the clock.

   Note: The default data structure uses a decimal point "." as the numeric decimal indicator. See the advanced features section of this manual to change this to a comma ",".

   Note: If the SD memory card is not installed, "**EMPTY**" will appear in the display

   Note: Displayed error messages:

   > CH-
   > CArd

   The memory card is full or there is a problem with the card

   > LobAt

   The battery is low and datalogging is disabled

   > No
   > CArd

   The SD card is not inserted

2. Press the LOGGER button for >2 seconds to begin logging. "DATALOGGER" will appear in the display and the meter will beep each time the data is recorded (if the beeper is enabled).

3. To stop datalogging, press the LOGGER button for >2 seconds. "DATALOGGER" will change to "DATA" and the meter will count down through the recorded data.

   NOTE: To avoid corrupting data, do not remove the memory card without properly ending the record function.

Time/Date/Sample Rate Check

Press and Hold the TIME button for >2 seconds and the display will cycle through the date, time and sample rate information.

SD Card Data Structure

1. When the SD card if first inserted into the datalogger the folder HTC01 is created.

2. The first datalogging session will then create a file HTC01001.XLS. All data will be saved to this file until the number of rows reaches 30,000.

3. After 30, 000 rows a new file, HTC01**002**.XLS is created. This is repeated every 30,000 rows until HTC010**99**.XLS. At this point a new folder, HTC**02** is created and the process is repeated. HTC**10** is the final folder.

Transferring Data to a PC

1. Remove the memory card from the datalogger and plug it into the SD card slot on the PC.

2. Launch Excel® and open the data file on the memory card from within the spreadsheet program. The file will appear similar to the figure below.

	A	B	C	D	E	F	G	H
1	Position	Date	Time	Ch1_Value	Ch1_Unit	Ch2_Value	Ch2_unit	
2	1	1/26/2010	14:23:42	35.4	%RH	74.5	DEGREE F	
3	2	1/26/2010	14:40:59	44.2	%RH	74.3	DEGREE F	
4	3	1/26/2010	14:41:00	46.3	%RH	74.4	DEGREE F	
5	4	1/26/2010	14:41:01	47.6	%RH	74.4	DEGREE F	
6	5	1/26/2010	14:41:02	48.7	%RH	74.4	DEGREE F	
7	6	1/26/2010	14:41:08	52.2	%RH	74.4	DEGREE F	
8	7	1/26/2010	14:41:09	51	%RH	74.4	DEGREE F	
9	8	1/26/2010	14:41:15	53.1	%RH	74.4	DEGREE F	
10	9	1/26/2010	14:41:21	54.2	%RH	74.4	DEGREE F	
11	10	1/26/2010	14:41:33	55.7	%RH	74.3	DEGREE F	
12	11	1/26/2010	14:42:00	56.9	%RH	74.4	DEGREE F	
13	12	1/26/2010	14:43:30	58.1	%RH	74.3	DEGREE F	
14	13	1/26/2010	14:48:20	59.3	%RH	74.1	DEGREE F	
15	14	1/26/2010	15:05:50	56.4	%RH	73.7	DEGREE F	
16	15	1/26/2010	15:05:51	53.8	%RH	73.7	DEGREE F	
17	16	1/26/2010	15:05:52	51.8	%RH	73.7	DEGREE F	
18	17	1/26/2010	15:05:53	49.9	%RH	73.7	DEGREE F	
19	18	1/26/2010	15:05:54	48.1	%RH	73.7	DEGREE F	
20	19	1/26/2010	15:06:00	51.2	%RH	73.7	DEGREE F	
21	20	1/26/2010	15:06:06	55	%RH	73.7	DEGREE F	
22	21	1/26/2010	15:06:12	56.9	%RH	73.7	DEGREE F	

Advanced Settings

The SET function is used to accomplish the following:

- Format the SD memory card
- Set the date and time
- Set the sampling time
- Set the beeper sound ON/OFF
- Set the SD card Decimal character
- Select the Temperature units
- Set the RS232 data output ON/OFF

1. Press and Hold the SET button for >2 seconds to enter the setting mode. The first function (Sd F) will appear in the display. Press the SET button to step through the seven functions. Use the ▲ and ▼ buttons to adjust the selected function. Use the "LOGGER" button to step through fields within a function. In the SET mode, if no button is pressed within 5 seconds the logger will revert to the standard mode.

2. Sd F – Format the SD card. Press the ▲ button to select yES or no. For yES, press the Enter button. When yES and Ent appear, press the Enter key again to format the card and erase all existing data. The screen will display a flashing yES and ESC while the memory is being erased and formatted.

3. dAtE – Set the date and time. Press the ▲ or ▼ buttons to adjust the selected field. Press the Enter button to store the value and to step through the various fields.

4. SP-t – Set the sample rate. Press the ▲ button to select the desired sample rate and press Enter to store the selection. The selections are: 5, 10, 30, 60, 120, 300, 600 seconds and AUTO. In AUTO, the data will be stored every time there is a value change of >1% RH or >1°C/F.

5. bEEP - Set the beeper ON or OFF. Press the ▲ button to select ON or OFF and press Enter to store the selection.

6. dEC - Set the SD card Decimal character. Press the ▲ button to select USA (decimal) or Euro (comma) and press Enter to store the selection.

7. t-CF - Set the Temp. unit to °F or °C and press Enter to store the selection.

8. rS232 - Set the RS232 data output ON/OFF. Press the ▲ button to select ON or off and press Enter to store the selection.

9. ESC – Exit the setting mode. Press the SET button to return to normal operation.

System RESET

If a condition appears where the CPU does not respond to keystrokes or the meter seems frozen, press the RESET button on the side of the datalogger (use a paper clip or similar pointed object) to return the meter to a working state.

RS-232/USB PC Interface

For streaming of data to a PC via the RS232 Output jack, the optional 407001-USB kit along with the 407001-PRO software (available free at www.extech.com/software/downloads are required.

Specifications

Display	2.4 x 2.0" (60 x 50 mm) LCD
Measurement sensors	Temperature: Internal sensor
	Relative Humidity: Precision capacitance type
Memory Card	SD memory card, 1 GB to 16 GB.
Datalogger Sampling Time	5/10/30/60/120/300/600 seconds or Auto.
Temperature Compensation	Automatic
Display update rate	Approx. 1 second
Data Output	RS 232
Operating Temperature	32 to 122°F (0 to 50°C)
Operating Humidity	Less than 90% RH
Power Supply	Six (6) AAA (UM4) Alkaline or heavy duty 1.5 V batteries or 9V AC adaptor.
Battery life	Dependent on sample rate, for new alkaline batteries and 60 second sampling time, > one month is typical. Fast sample rates will significantly reduce battery life.
Weight	0.62 lbs. (282 g)
Dimensions	5.2 x 3.1 x 1.3" (132 x 80 x 32mm)

	Range	Resolution	Accuracy (of reading)
Temperature	0.0 to 50.0 °C	0.1°C	± 0.8°C
	32.0 to 122.0°F	0.1°F	± 1.5°F
Relative Humidity	70 to 90%	0.1%	± (4% of reading + 1% RH)
	10 to 70%	0.1%	± 4% RH

Note: Above specification tests under the environment RF Field Strength less than 3 V/M & frequency less than 30 MHz only.

Battery Safety Reminders
- Please dispose of batteries responsibly; always observe local, state, and federal regulations with regard to battery disposal.
- Never dispose of batteries in a fire. Batteries may explode or leak.
- Never mix battery types. Always install new batteries of the same type.

Two-year Warranty

Teledyne FLIR warrants this Extech brand instrument *to be free of defects in parts and workmanship for* ***two years*** *from date of shipment (a six-month limited warranty applies to sensors and cables). To view the full warranty text please visit:*
https://www.flir.com/support-center/warranty/instruments/extech-product-warranty/.

Calibration and Repair Services

Teledyne FLIR offers calibration and repair services for the Extech brand products we sell. We offer NIST traceable calibration for most of our products. Contact us for information on calibration and repair availability, refer to the contact information below. Annual calibrations should be performed to verify meter performance and accuracy. Product specifications are subject to change without notice. Please visit our website for the most up-to-date product information: *www.flir.com/landing/extech/.*

Contact Customer Support

Customer Support - Local Telephone List: *https://support.flir.com/contact*

Obtain a Return Material Authorization (RMA): *https://customer.flir.com/Home*

Contact Customer Service: *https://support.flir.com/ContactService*

Technical Support Center: *https://support.flir.com*

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