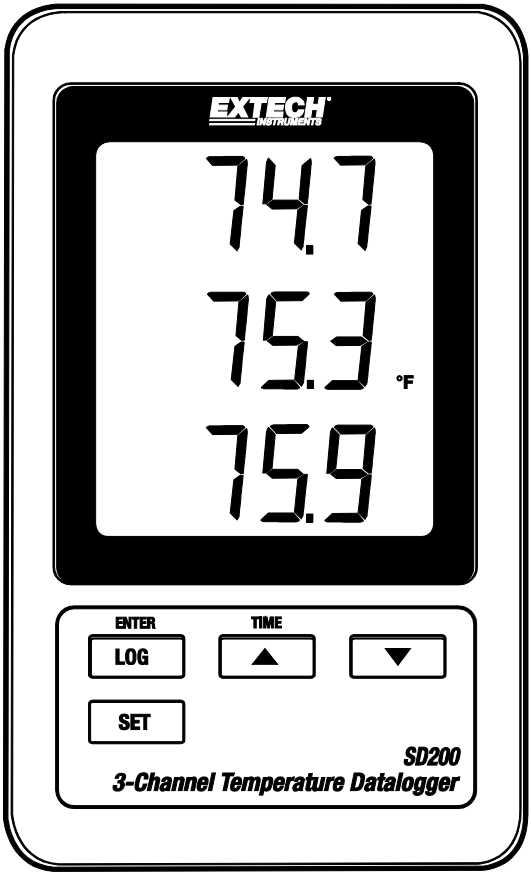
EXTECH®

USER MANUAL

Three-Channel Temperature Data Logger
Model SD200



CE

Additional languages available at www.extech.com

Introduction

Congratulations on your purchase of the Extech SD200 Three-Channel Temperature Data Logger. This meter displays and stores temperature readings for up to three type K thermocouple probes. Data is stored on a SD card in Microsoft Excel® format for easy transfer and use on a PC.

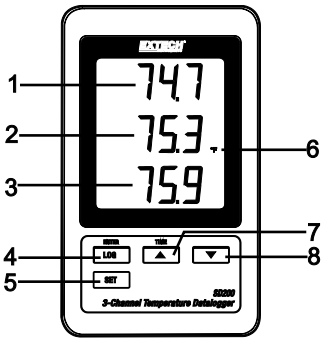
This meter is shipped fully tested and calibrated and, with proper use, will provide years of reliable service. Please visit the Extech website for customer support and the latest version of this user manual.

Features

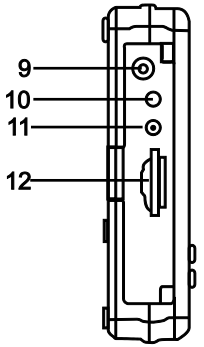
- Three-channel display simultaneously shows three temperature readings
- Store data log readings on SD card, transfer data to PC, and open in a spreadsheet
- Selectable data log sample rate: 5, 10, 30, 60, 120, 300, 600 seconds or automatic mode
- Battery powered or use AC adaptor
- Wide temperature range -148 to 2372°F (-100 to 1300°C) with 0.1° resolution
- Includes batteries, 2G SD card, AC adaptor, three Type-K bead wire probes, and mounting bracket

Product Description

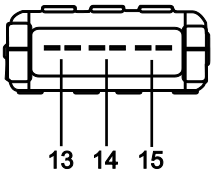
1. T1 display
2. T2 display
3. T3 display
4. LOG (ENTER) button
5. SET button
6. Temperature unit icon
7. ▲(TIME) Up arrow button
8. ▼ Down arrow button



9. AC adaptor connection
10. Reset button
11. PC (RS-232) jack
12. SD memory card slot



13. T1 thermocouple input
14. T2 thermocouple input
15. T3 thermocouple input



Note: Battery compartment and tilt stand on back of meter.

Operation

Meter Power

Install six (6) 'AAA' alkaline batteries in the rear compartment or use the supplied AC adaptor to power the meter.

1. Remove the Philips head screw that secures the rear battery compartment and lift off the cover.
2. Insert the batteries observing correct polarity.
3. Secure the compartment cover before use.
4. When the low battery icon appears, replace the batteries as soon as possible.

Battery Safety

- Dispose of batteries safely and in accordance with all applicable laws and regulations.
- Never dispose of batteries in a fire, batteries may explode or leak.
- Never mix battery types. always install new batteries of the same type.

Thermocouple Measurements

Maximum temperature for supplied probes: The supplied probes are rated to 482°F (250°C). Do not attempt to measure a higher temperature with the supplied probes. To measure higher than 482°F (250°C), a higher rated thermocouple must be obtained.

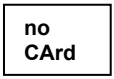
1. Insert up to three Type K thermocouples into the T1, T2, T3 jacks at the bottom of the meter, observing correct polarity (wide blade/narrow blade mini connectors).
2. Touch a thermocouple probe tip to a test surface.
3. Read the temperature on the display (T1, T2, T3 are displayed from top to bottom).
4. Dashes will be displayed for open or unused inputs.

Data Logging

1. Open the left side door and insert a formatted SD card. Read important SD card notes below.
   - The SD card should be at least 1 GB in capacity.
   - Do not use memory cards formatted by other meters or cameras. Use the SD card formatting procedure in the Advanced Settings section of this manual.
   - The internal clock must be set to the correct time. See the Advanced Settings section.
   - The default data structure uses a decimal point "." as the numeric decimal indicator. See the instructions in the Advanced Settings section to change to a comma ",".
   - If the SD memory card is not installed, "**EMPTY**" will appear on the display.
   - If a temperature probe is not connected, random numbers may appear in the data file.
   - If a temperature probe is not connected, the temperature unit symbol may not appear on the display after downloading data.
   - Displayed error messages:

     CH-CArd SD card full or damaged.

     LobAt Battery is low, data logging stopped.



SD card not inserted or is damaged.

2. Long press the LOGGER button to begin logging. “DATALOGGER” will appear in the display (between T2 and T3 displays). The meter will beep each time data are recorded (if the beeper is enabled).
3. To stop data logging, long press the LOGGER button. “DATALOGGER” will change to “DATA” and the meter will count down through the recorded data.

   NOTE: Do not remove the card without properly ending the record function, otherwise the data by be corrupted.

Time/Date/Sample Rate Check

Long press the TIME button, the display will cycle through the date, time, and data log sample rate.

SD Card Data Structure

1. When the SD card if first inserted, the folder named **TMC01** is created.
2. The first data logging session will create a file named **TMC01001**. All data will be saved to this file until the number of rows reaches 30,000.
3. After 30, 000 rows, a new file, named TMC010**02** is created. This is repeated every 30,000 rows until TMC010**99** is created. At this point a new folder, TMC**02** is created, and the process is repeated. TMC**10** is the final folder name.

Transferring Data to a PC

1. Remove the SD card from the data logger and insert it into the SD card slot on the PC (or into an external SD card reader).
2. Open a data file from the memory card in a spreadsheet. An opened file example is shown below.

	A	B	C	D	E	F	G	H	I	J
1	Position	Date	Time	Ch1_Value	Ch1_Unit	Ch2_Value	Ch2_unit	Ch3_Value	Ch3_unit	
2	1	5/26/2011	13:48:50	75.3	DEGREE F	76.8	DEGREE F	75.7	DEGREE F	
3	2	5/26/2011	13:48:54	75.5	DEGREE F	76.8	DEGREE F	76.4	DEGREE F	
4	3	5/26/2011	13:49:59	75.7	DEGREE F	76.8	DEGREE F	76.2	DEGREE F	
5	4	5/26/2011	13:49:04	75.9	DEGREE F	76.8	DEGREE F	75.5	DEGREE F	
6	5	5/26/2011	13:49:09	75.7	DEGREE F	76.8	DEGREE F	75.7	DEGREE F	
7	6	5/26/2011	13:49:14	75.9	DEGREE F	77	DEGREE F	75.9	DEGREE F	
8	7	5/26/2011	13:49:19	75.9	DEGREE F	77	DEGREE F	75	DEGREE F	
9	8	5/26/2011	13:49:24	75.9	DEGREE F	76.8	DEGREE F	74.6	DEGREE F	
10	9	5/26/2011	13:49:29	75.9	DEGREE F	76.8	DEGREE F	74.3	DEGREE F	
11	10	5/26/2011	13:49:34	75.9	DEGREE F	76.8	DEGREE F	74.6	DEGREE F	
12	11	5/26/2011	13:49:39	75.9	DEGREE F	76.8	DEGREE F	74.4	DEGREE F	
13	12	5/26/2011	13:49:44	75.9	DEGREE F	76.6	DEGREE F	74.3	DEGREE F	
14	13	5/26/2011	13:49:49	75.9	DEGREE F	76.8	DEGREE F	74.3	DEGREE F	
15	14	5/26/2011	13:49:54	75.9	DEGREE F	76.8	DEGREE F	74.4	DEGREE F	
16	15	5/26/2011	13:50:59	75.9	DEGREE F	76.8	DEGREE F	74.1	DEGREE F	
17	16	5/26/2011	13:50:04	75.9	DEGREE F	76.8	DEGREE F	74.6	DEGREE F	
18	17	5/26/2011	13:50:09	75.9	DEGREE F	76.8	DEGREE F	74.6	DEGREE F	
19	18	5/26/2011	13:50:14	75.9	DEGREE F	76.8	DEGREE F	75.2	DEGREE F	
20	19	5/26/2011	13:50:19	75.9	DEGREE F	76.8	DEGREE F	75.5	DEGREE F	
21	20	5/26/2011	13:50:24	75.9	DEGREE F	77	DEGREE F	75.3	DEGREE F	
22	21	5/26/2011	13:50:29	75.7	DEGREE F	76.6	DEGREE F	75.3	DEGREE F	
23	22	5/26/2011	13:50:34	75.7	DEGREE F	76.8	DEGREE F	75.5	DEGREE F	

Advanced Settings Mode

The SET function is used to:

- Format the SD memory card
- Set the date and time
- Set the data logger sample rate
- Set the beeper ON/OFF
- Set the SD card decimal character
- Select the temperature units
- Set the PC (RS232) data output ON/OFF

1. Long press the SET button. 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 move from field to field. If no button is pressed for 5 seconds, the meter exits the setting mode and returns to normal operation.
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 formatted.
3. **dAtE** – Set the date and time. Press the ▲ or ▼ buttons to adjust the selected (blinking) 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 temperature change > 1 degree.
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 US (decimal) or Euro (comma) and press Enter to store the selection.
7. **t-CF** - Set the temperature unit to °F or °C and press Enter to store the selection.
8. **rS232** - Set the PC interface (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 the display freezes or if the meter does not respond to keystrokes, press the RESET button, located on the side of the meter (use a paper clip or similar pointed object). If the meter does not reset, contact support services.

RS-232/USB PC Interface

To stream data to a PC, using the RS232 output jack, the optional 407001-USB cable along with the 407001-PRO software (available free at www.extech.com/software/downloads) are required. Instructions for use are provided in the software.

Specifications

Display	Multifunction LCD Size: 2.4 x 2.0 in. (60 x 50 mm)
Display update rate	One (1) second, approximately
Temperature probes	Type K thermocouples
SD memory card sizes	1 GB to 16 GB (2 GB card included)
Data logger sample rate	5, 10, 30, 60, 120, 300, 600 seconds or Automatic (AUTO)
Temperature compensation	Automatic
Data streaming	RS-232/USB PC interface
Operating conditions	32 to 122°F (0 to 50 °C); < 85% RH
Power supply	Six (6) 'AAA' 1.5 V alkaline batteries or AC adaptor
Battery life	With new batteries, and a 60-second sample rate, one month, or longer, is typical. Faster sample rates reduce battery life.
Dimensions	5.2 x 3.1 x 1.3 in. (132 x 80 x 32 mm)
Weight	9.9 oz. (282 g)

Temperature Ranges		
Maximum temperature for supplied probes: The supplied probes are rated to 482°F (250°C). Do not attempt to measure a higher temperature with the supplied probes. To measure higher than 482°F (250°C), a higher rated thermocouple must be obtained.		
Meter Range	Resolution	Accuracy (% of reading); does not include accuracy of probe
-50.0 to 1300.0 °C	0.1°C	± (0.5 % + 0.5°C)
-50.1 to -100.0°C		± (0.5 % + 1.0°C)
-58.0 to 2372.0°F	0.1°F	± (0.5 % + 1.0°F)
-58.1 to -148.0°F		± (0.5 % + 1.8°F)

Note: Specifications dependent on an environmental RF Field Strength < 3 V/M and a frequency < 30 MHz.

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. 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.*

Customer Support

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

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

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

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

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