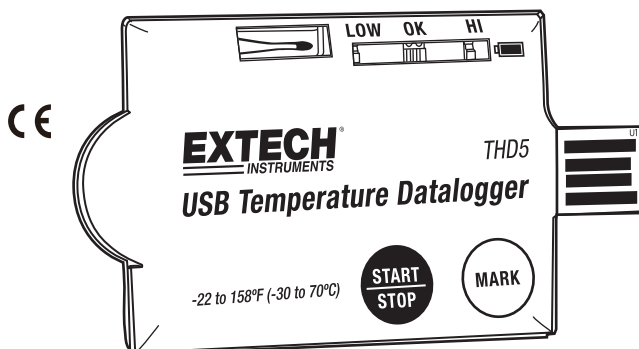# USB Temperature Datalogger

Model THD5

Introduction

Thank you for selecting the 'single-use' Extech Model THD5 USB Temperature Datalogger. This datalogger is specifically designed for monitoring the transportation of products subject to cold chain requirements.

The THD5 is an easy-to-use, waterproof (IP65), and portable USB Temperature Datalogger. The THD5 uses a USB 2.0 connector that can be plugged into a PC for user-customized datalogger setup. The THD5 can then be placed in an area where temperature is to be monitored. Once placed, the user can press the START button to begin recording. When completed, the THD5 can then be plugged back into the PC where a PDF report of logged temperature readings can be generated (Adobe Reader® software required).

Ten (10) one-time-use dataloggers are provided; each can log 8192 temperature readings. This device is shipped fully tested and calibrated.

Datalogger Description

1. USB 2.0 'Plug & Play' connector. USB driver is not required.

2. LED indicator:

   Low/High: Red LED blinks when measurement exceeds an alarm threshold

   Green OK: Green LED blinks three times every 5 seconds when logger is in standby mode. When logging is started, the green LED blinks every 2 seconds

   Red Low Battery: Red LED blinks every 2 seconds when power is too low to provide accurate logging

3. NTC thermistor provides accurate temperature measurements

4. Pre-installed CR2032 battery

5. START/STOP button:

   After the logger is programmed, press and hold the 'START' button for 2 seconds to begin logging. To stop, press and hold the 'STOP' button for 2 seconds.
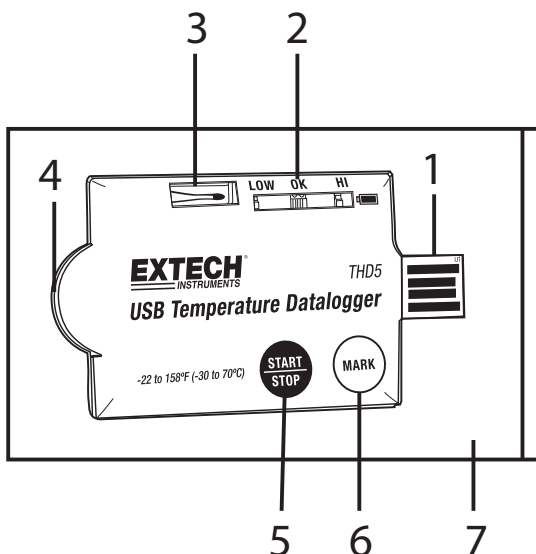
6. MARK button:

   This button is used to manually place a 'bookmark' in the datalog record. These time-stamped marks appear in the PDF report that can be generated on a PC.
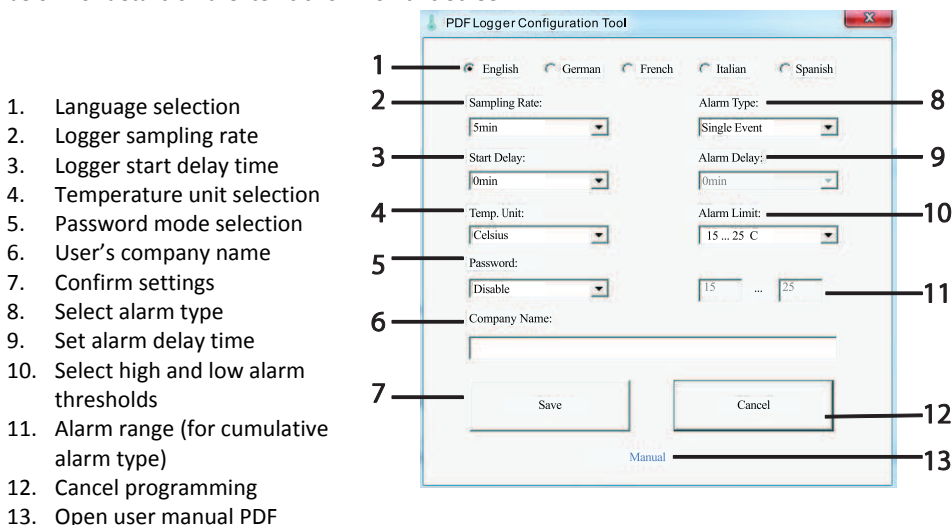
7. IP65 zipped plastic bag:

   Open the bag and remove the unit for programming.
   After programming, return the unit to the plastic bag and seal the bag before logging.

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Datalogger Configuration Screen Description

Connect the THD5 to the PC via the USB port to open this screen. Refer to the Operation Section below for details on the items shown on this Screen:

1. Language selection
2. Logger sampling rate
3. Logger start delay time
4. Temperature unit selection
5. Password mode selection
6. User's company name
7. Confirm settings
8. Select alarm type
9. Set alarm delay time
10. Select high and low alarm thresholds
11. Alarm range (for cumulative alarm type)
12. Cancel programming
13. Open user manual PDF

Operation

NOTES:
1. Adobe Reader® software is required.
2. Please program the logger and generate the PDF report at room temperature only.
3. The programming executable files are identified by the *.exe format.

Configuring the data logger

At any time before logging is started, the logger can be programmed and re-programmed.

1. Connect the data logger to a PC via the USB port.

2. The Logger status LEDs blink twice.

3. The software window will appear on the PC.

4. Click on 'Open Folder' to view the available files.

5. Open the file "PDF Logger Configuration Tool.exe".

6. The default language is English; select German, French, Italian, Spanish, or Portuguese as desired. The generated PDF report format will match the language selected.

7. To review the instruction manual, click 'Manual' to link to the User Manual PDF file.

8. The Programmable Parameters are defined below:

   - **User Company Name**

     Input a company name that will be printed on the PDF report (20 characters max.).

   - **Sampling rate**

     Select the datalogging sampling rate (interval) from 30 seconds to 2 hours.

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- **Start delay**

  Select a period of time that must elapse before recording can begin after the START button is pressed (select from 0 min to 2 hours).

- **Alarm delay**

  The preset alarm delay time for **single alarm type** is always zero.

  The adjustable alarm delay time for **cumulative alarm type** is 5 minutes to 2 hours.

- **Alarm types**

  Regardless of what alarm type is selected, the LED will continue flashing (once it is triggered) even when the measured value later returns to the normal range.

  Single Alarm: The LED alarm is triggered immediately when the measured value exceeds the alarm threshold.

  Cumulative: The LED alarm is not triggered when the measured value exceeds the alarm threshold. The LED alarm is triggered only when the average value, during the alarm delay time, exceeds the alarm threshold.

  Disable: No LED alarm function during the logging process

- **Alarm value**

  Select the alarm threshold value. For example if 2~8 ^{o}C is selected: When the measured value falls below 2°C or exceeds 8 ^{o}C the LED indicator will trigger.

- **Unit**

  Select the desired temperature unit for the PDF report (Celsius or Fahrenheit).

- **Time Zone**

  The THD5 Logger auto synchronizes the time zone with a PC when 'Save' is selected to confirm a setting. Note: Time zone changes occurring during logging are not taken into account.

- **Password**

  The password security function is OFF by default. The password function can be enabled and a 16 alphanumeric character (max.) password can be used to prevent unauthorized re-programming

Once all the programming is complete, press 'Save' to confirm the settings. If desired, close the setup window and remove the logger from the PC USB port.

The default values for above parameters:

Sampling rate	5 minutes
Start delay	0 minutes
Alarm delay	0 minutes
Temp. Unit	°C
Alarm Limits	15~25°C
Alarm Type	Single Event
Language	English
Password	Disabled
Company Name	Blank

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Start Datalogging

1. When the THD5 is successfully programmed, the green LED blinks three times every 5 seconds to indicate the logger is in standby mode
2. Place the unit into the supplied plastic bag and seal the zipped bag well; then press and hold the 'START' button for two seconds to start the datalogger
3. The Red LEDs will flash three times to indicate that the datalogger is activate
4. During the datalogging, the green LED will blink every two seconds. If battery power is too low to maintain normal operation, the red LED will blink
5. To place a bookmark manually during datalogging, press the 'MARK' button. Up to eight (8) bookmarks can be placed in a datalog session.

Download Logged Data (PDF Report)

Press and hold the 'STOP' button for two seconds to stop the datalogger (the logger automatically stops when the log reaches 8192 readings). Alternatively, plug the logger directly into the PC USB port to stop the logging and to generate a PDF report. After a few seconds the PDF report will be generated. The PDF report includes reading data and trend graph. The status LEDs will blink while the logger is generating the PDF report.

NOTE: Once the Datalogger is Started and then Stopped, the unit cannot be reused. A new unit would have to be used to make new recordings. Ten (10) loggers are supplied in the package.

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Specifications

Temperature Sensor	NTC Thermistor
Temperate range	-30~70°C (-22~158°F)
Temperature resolution	0.1^{o}C/^{o}F
Temperature Accuracy	±0.5^{o}C (0.9^{o}F)
Logger type	Single Use
Datalogger capacity	8192 readings
Sampling interval	30 seconds, 5, 10, 30, 60, 90, 120 minutes
Start delay	0, 5, 30, 45, 60, 90,120 minutes
Alarm ranges	-20~ -10°C, -10~0°C, 2~8°C, 0~15°C, 0~25°C, 15~25°C, etc.
Alarm delay	0, 5, 30, 45, 60, 90, 120 minutes
Alarm types	Single, Cumulative, and Disable
Operation Buttons	Two (2) Buttons: Start/Stop & Mark
LED indicator	Record, Low Battery, and High /Low Alarm
Number of supplied Loggers	Ten (10) single-use loggers supplied in the package
Operating temperature	-30~70°C (-22~158°F) for logging;
	Ensure room temperature when connected to PC
Operating Relative Humidity	< 80% RH
Dimensions	80 (L) x 43 (W) x 2.5 (D) mm (3.2 x 1.7 x 0.1")
Weight	~10g (0.4 oz.)
Battery	One (1) 3.0V CR2032 battery (installed before shipment)
Battery life	One (1) year
Safety	CE; Waterproof IP-65

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