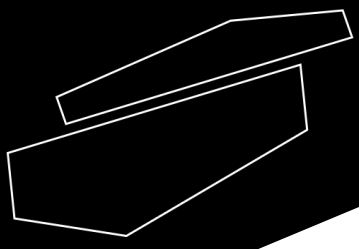
METRIA

Data Logger for High Temperatures, HT-2

Please read the User Manual carefully before use, and follow all operating and safety instructions!



user manual

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User Manual

EN

HT-2 Data Logger for High Temperatures

Preface

Users should read this Manual carefully, follow the instructions and procedures, and beware of all the cautions when using this instrument.

Service

In order to guarantee this equipment works safely and efficiently, it must receive regular maintenance. In case of any faults, do not try to repair it yourself. If help is needed, you can always contact your supplier or Labbox via **www.labbox.com.**

Please provide the customer care representative with the following information:

- Serial number
- Description of problem
- Your contact information

Warranty

This instrument is warranted to be free from defects in materials and workmanship under normal use and service, for a period of 12 months from the date of invoice. The warranty is extended only to the original purchaser. It shall not apply to any product or parts which have been damaged on account of improper installation, improper connections, misuse, accident, or abnormal conditions of operation.

For claim under the warranty please contact your supplier.

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At 121°C, the operation time should not exceed 48 hours.

At 134°C, the operation time should not exceed 30 minutes (0.5 hours).

Caution: The logger will be HOT when removed from the sterilizer. Handle with care.

Quick Guide

Step 1: Connect the logger to a USB port on a Windows computer to configure it.

Step 2: The logger will automatically start according to the chosen start delay time.
Step 3: Place the logger in the autoclave or the location where monitoring is required.
Step 4: Remove the logger and allow it to cool down to room temperature.
Step 5: Reconnect the logger to the Windows computer to read the recorded data.

Introduction

Congratulations on your purchase of this versatile high-temperature datalogger. Designed for monitoring temperatures to meet quality control requirements in laboratories and industrial settings, this datalogger records temperature measurements throughout the measurement period.

Equipped with user-defined programming functions, the datalogger generates measurement reports in PDF and Excel formats. No special software or USB drivers are required. The PDF report includes charts and statistics.

Read through the instruction manual before using this logger. The logger is calibrated before shipment.

Product Description

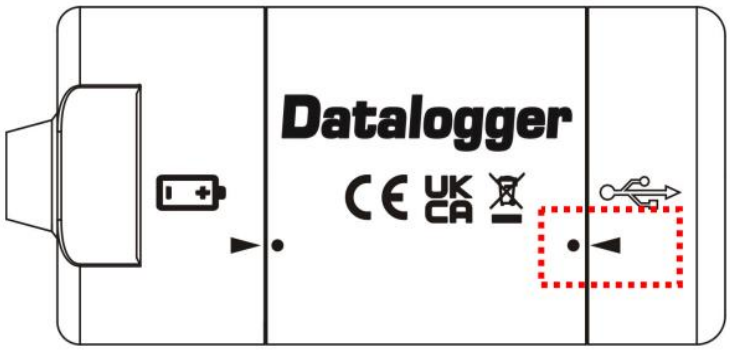
① USB 2.0 plug-and-play connector. No USB driver or PC software is required. A Type-C cable is included in the package.
② LED Indicator:

Status	**LED Indication**
Power OFF	All LEDs are OFF.
Standby	The green LED blinks dimly every 5 seconds when the logger is programmed to stand by and has not yet started logging. The LED brightness is weaker than during recording.
Recording	The green LED blinks every 5 seconds while the logging function is active.
Recording Ended (Data Not Yet Read)	The green LED flashes 3 times every 5 seconds after logging has ended, but the data has not yet been read out.
Low Power	The red LED blinks every 5 seconds when the power is low.

③ High Accuracy: Equipped with a built-in PT1000 sensor for precise temperature measurements.
④ Battery Cover: The logger operates on a 3.6V replaceable lithium battery, which is installed and pre-tested by the manufacturer. For battery replacement, please contact the retailer from whom you purchased the logger.
⑤ Waterproof USB Cover: To ensure the logger's waterproof feature, rotate the cover to the designated alignment point. To open, use a coin to turn the cover counterclockwise.

It is recommended to periodically clean the inner side of the USB cover and replace the O-ring to maintain optimal waterproof performance.

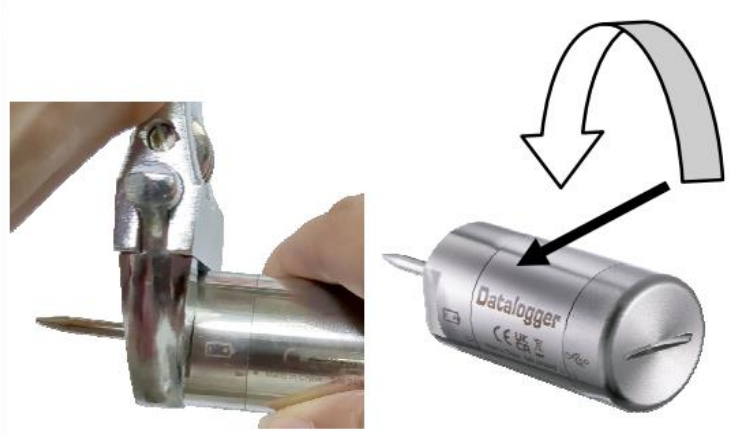
To close, rotate the cover clockwise until it aligns with the marking.



Battery Installation

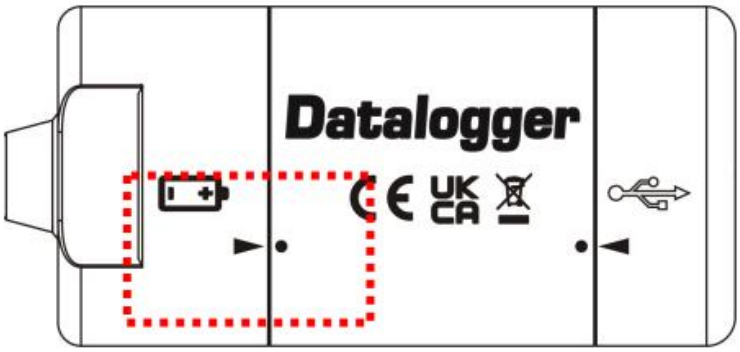
The battery is pre-installed and is replaceable but not rechargeable. It provides enough power for up to 1 million records or 18 months of use, whichever comes first. When the red LED blinks, contact the retailer where you purchased the datalogger to obtain a new battery. Follow the procedure below to replace the battery.

1. It is recommended to use a wrench to hold the logger in place.
2. Rotate the middle section of the logger counterclockwise.



3. Remove the old battery and O-ring, then install the new battery and O-ring. Ensure the battery is oriented correctly according to the polarity markings.

4. Rotate the cover clockwise until it aligns with the marking.



Operation

NOTE:

1. ***Adobe Reader software is required.***
2. ***Program the logger and generate the PDF and Excel reports at room temperature. For example, if the logger is removed from an autoclave, it should be allowed to return to ambient room temperature before generating the PDF report.***
3. ***The executable file for programming the logger is named PDF Logger Configuration Tool.***

Step 1: Configuring the Data Logger

Configuration changes can be made at any time before starting the logging function. Once logging has begun, configuration changes require stopping the logging first. If the logger is protected by a password, the password is needed to make any configuration changes.

- First, use a coin to open the USB cover. Then, connect the data logger to a PC using the USB Type-C cable. The green LED will remain on while the connection with the computer is established.
- Connect the data logger to a PC via the USB port. The green LED will turn ON while establishing the connection with the computer.
- The Windows folder management window will appear.
- If the correct file folder is not open, click on the Folder icon to view files.
- Open the file "PDF Logger Configuration Tool.exe."
- The default language is English, but the user may change it to one of several alternate languages: English, German, French, Italian, Spanish, or Portuguese.
- User-programmable parameters are as follows:

Sampling Rate
Select the sampling interval you need, from 1 second to 120 minutes.

Start Delay
Select the start delay from 0 minutes to 24 hours. For example, if the delay is 5 minutes and the sampling rate is 5 seconds, the first temperature measurement will be logged 5 minutes after the "Save" button in the software is pressed. All subsequent measurements will occur at 5-second (or the selected) intervals.

Unit of Measurement (UoM)
Select the unit of measurement to be displayed in the report. The available options are Celsius or Fahrenheit.

Password
The Password function is OFF by default. The user may enable it to prevent unauthorized reprogramming before the START button is pressed. A password may consist of up to 16 alphanumeric characters.

Company Name
A user-defined name, location, or descriptor can be entered under Company Name. It will be displayed as the title on the PDF report, with a maximum of 20 characters.

Effective Range
Select the temperature threshold values for the effective range. The report will indicate whether the core temperature remained within this range for a sufficient duration. For example, if you select 130 °C to 140 °C, it means that the effective core temperature range is between 130 °C and 140 °C. You can then review the effective duration within this range in the report after retrieving the data.

Time Zone
Before programming the logger, ensure that the PC is set to the correct time zone.
The logger will automatically synchronize to the PC's time zone when "Save" is pressed. Time zone changes during transit are not adjusted in the logged data.

The default values for the parameters are:
Sampling rate: 1 second
Start delay: 0 minutes
Effective range: 120.0 °C to 140.0 °C
Temperature unit: °C
Password: deactivated
Company name: blank
Language: English

Once all programming is complete, press "Save" to confirm the settings. You may then close the setup window and remove the logger from the PC USB port.

Step 2: Start Logging

- If the logger is successfully programmed and the start delay time is set to zero minutes, it will begin recording immediately after you disconnect it from the computer. The green LED will blink once every 5 seconds.
- If a delay time other than zero is selected, the green LED will blink dimly every 5 seconds, indicating that the logger is in standby mode. The LED brightness will be weaker than during recording. Once the delay period has elapsed, the LED will blink normally every 5 seconds to indicate that recording has started.
- During logging, if the battery power is too low to maintain normal operation, the LED will change to red and blink.

Step 3: Download Data

- Wait until the logger has cooled down to room temperature before proceeding.
- Plugging the logger into the PC USB port will stop the logging process.
- Open the file "PDF Logger Configuration Tool.exe."
- Select "Convert to PDF" or "Convert to Excel" to generate the report in your preferred format. The default language is English, but you can change it to one of several other languages.
- Choose the location where you want to save the generated report.
- The Excel report will contain all data from the PDF report, except for the graphs.
- The logger will automatically turn off after the report is generated and if no new recording session is programmed.
- If you stop the logger but forget to download the data, the logger will flash 3 times every 5 seconds.

  Since the logger will continue to consume power, it is strongly recommended to download the data as soon as possible to stop the LED flashing.

- If a new recording session is required, go to the configuration page to review the settings and press "SAVE", regardless of whether the settings are the same as the previous session.
- The recorded data will remain in the logger and will only be overwritten when a new recording session begins. Before starting a new session, you may return to the file generation feature to create a report in any of the available languages.

NOTE: The generated Excel file is a tab-delimited ASCII text file, which can be easily read by many programs. However, when opening the file in Microsoft Excel, a warning message may be displayed because the file is named with a ".csv" extension but the contents are similar to a ".txt" file. It can be safely opened.

Technical Data

Model	HT-2
Temperature Sensor	By a PT1000 sensor
Temperature Range	-40.0 °C to 140.0 °C (-40.0 °F to 284.0 °F)
Temperature Resolution	0.1 °C (0.1°F)
Temperature Accuracy	±0.4 °C
T90 Response Time	<20 seconds (RT to 90 °C)
Logging Type	Multiple use
Sampling Points	48,000
Battery Life	Replaceable, approximately 1 time per year
Meter/Probe Size	Meter: 64 mm (L) x 31.2 mm (Dia.) / Probe: 25.8 mm (L) x 3.5 mm (Dia.)
Material	The meter and probe are both made from SUS304 stainless steel
Operation Time	No longer than 48 hours at 121 °C; no longer than 30 minutes at 134 °C
Operating Temperature	-40 °C to 140 °C (during logging); room temperature (PC status)
Operating Relative Humidity	<80 %
Storage Temperature	-40 °C to 85 °C
Storage Relative Humidity	<90 %

Weight	Approximately 175 g
Battery	1 x 3.6V Lithium battery; installed before shipment; replaceable
Sampling Interval	1, 5, 10, 30 seconds, 5, 10, 30, 60, 90, 120 minutes
Start Delay	0, 5, 30, 45, 60, 90, 120 minutes, 24 hours
Operation Keys	No keys
LED Indicator	REC, low battery
Protection Class	IP68
Directives	EN 61326-1:2013
Operating System	Windows only

Nota importante para los aparatos electrónicos vendidos en España

Important note for electronic devices sold in Spain

Remarque importante pour les appareils électroniques vendus en Espagne

Instrucciones sobre la protección del medio ambiente y la eliminación de aparatos electrónicos:

Los aparatos eléctricos y electrónicos marcados con este símbolo no pueden desecharse en vertederos.
De conformidad con la Directiva 2002/96/ CE, los usuarios de la Unión Europea de aparatos eléctricos y electrónicos, tienen la oportunidad de retornar el instrumento para su eliminación al distribuidor o fabricante del equipo después de la compra de uno nuevo. La eliminación ilegal de aparatos eléctricos y electrónicos es castigada con multa administrativa.

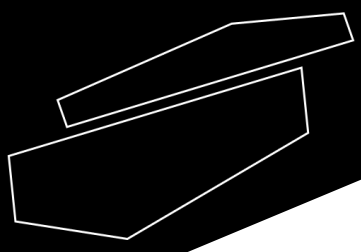
Nota importante para los aparatos electrónicos vendidos en Francia

Important note for electronic devices sold in France

Remarque importante pour les appareils électroniques vendus en France

Informations sur la protection du milieu environnemental et élimination des déchets électroniques :

Les appareils électriques et électroniques portant ce symbole ne peuvent pas être jetés dans les décharges.
En réponse à la règlementation, Labbox remplit ses obligations relatives à la fin de vie des équipements électriques de laboratoire qu'il met sur le marché en finançant la filière de recyclage de Récylum dédiée aux DEEE Pro qui les reprend gratuitement (plus d'informations sur www.recylum.com).
L'élimination illégale d'appareils électriques et électroniques est punie d'amende administrative.



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