

MANUAL tempmate®-S2

The single-use temperature datalogger with display



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1. Intended Use & Important Information

The tempmate-S2 is an easy-to-use data logger that records all relevant temperature (and humidity) data during its usage. This information can then easily be read out as a comprehensive and detailed PDF- or CSV-report without requiring any additional hard- or software.

The tempmate-S2 can be used for all kinds of applications where monitoring and recording temperature and humidity is required.

The data logger is provided ready-to-use in a default configuration and offers further possibilities through its free configuration software tempbase-2 (available on www.tempmate.com)

Quick Notes & Important Information:

The tempmate-S2 is available as pure temperature-device (S2T) and as temperature & humidity combination (S2TH); only the tempmate-S2 TH can measure and record humidity.

The tempmate-S2 is a single-use data logger; as such, once it has been stopped it cannot be started again. The device cannot be recharged, but it receives enough power via the USB connection to be able to read the data even after the expiry date.

The data logger runs for up to 180 days with its default configuration and if kept under optimal storage conditions (room temperatures) before. During the activity, it measures temperature between -30°C and +70°C (-22°F to 158°F) every 10 minutes.

The user can optionally configure the tempmate-S2 (through tempbase-2) before the logger was started. Start, stop, activity and status are indicated by the built-in display as well as LEDs, which allows a fast and easy evaluation.

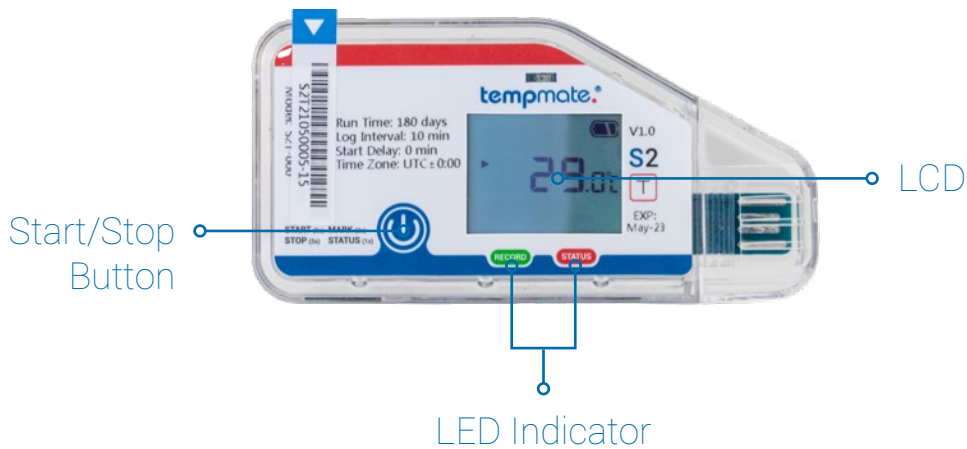
A full data report will be created once the data logger has been stopped and plugged in through USB. It is possible to create a temporary report while the data logger is active; while the data logger is connected, no data points are recorded.

The expiry date of each unit is printed on the front label; it is recommended to use the data logger as soon as possible and only within their shelf life.

2. Disposal Instructions

The tempmate-S2 has a built-in CR2450 Lithium metal button cell next to electronic parts and raw materials, and therefore requires the data logger to be disposed of by a waste or recycling service provider.

3. Device Description



LED Indication

Descriptions:

- Start/Stop Button: used to start and stop the data logger and switch through display pages
- LED Indicator: confirm start / stop, show current status and activity on request
- Serial Number & Detachable Label: each unit has a unique device serial number
- LCD: display shows current temperature, status, battery level, etc

LED-Indications and display:

The built-in LEDs and display on the front inform the user about every activity and status of the data logger; the current status can always be requested by pushing the start/stop button once (one short click). Depending on the status, the LEDs blink in a certain way.

	Start Logger				Not started	
5 sec.	Stop Logger			1 time	Low battery	3 sec. 
					Recording-OK	
					Recording-Alarm	
	Set Mark				Stopped-OK	
2 times	Mark limit full				Stopped-Alarm	

While the data logger is actively recording, the green RECORD LED will flash every 5 seconds automatically. The built-in display is automatically activated when the status is requested and shows further details.

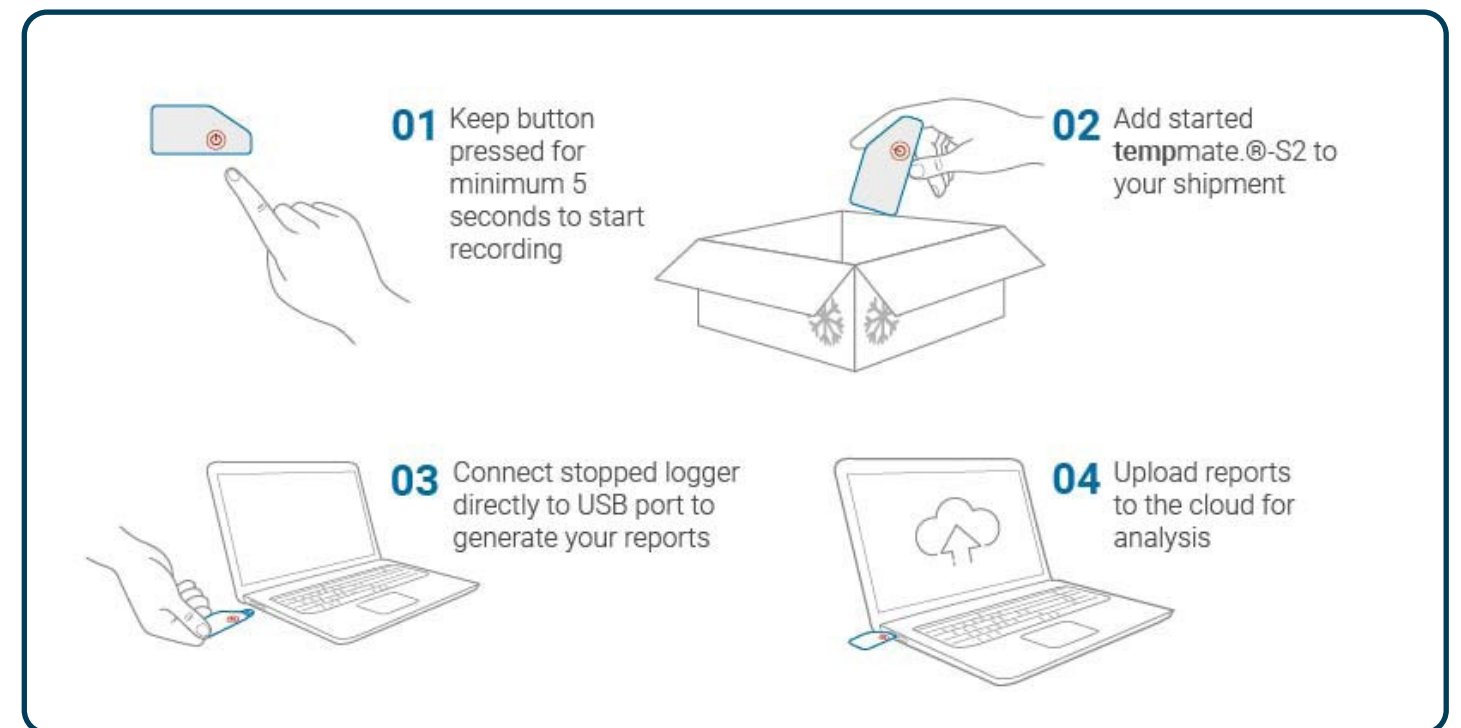
4. Equipment & Software

The tempmate-S2 is provided ready-to-use in packing units of 20 single units (if not sold otherwise).

Optionally, the tempmate-S2 can be configured and evaluated through tempbase-2, which allows the user to change every setting and adapt it to their application, as well as comprehensive possibilities to archive and work with recorded data.

tempbase-2 can be downloaded for free on www.tempmate.com

5. Quick Start Guide



- 1.** To start, keep the start/stop button pushed for minimum 5 seconds, until the RECORD LED blinks 10 times and the PLAY sign appears on the display
- 2.** Place the data logger and record the ambient temperature (and humidity)
- 3.** To stop, keep the start/stop button pushed for minimum 5 seconds, until the STATUS LED blinks 10 times and the STOP sign appears on the display
- 4.** Plug-in the data logger via USB and receive the full report as PDF & CSV file

6. Operation Instructions

1st STEP PREPARATION

- No further preparation is necessary, as the data logger is provided ready-to-use;
- Optionally, the user can configure the data logger through tempbase-2 before it is started;
- The tempmate-S2 can be kept outside of room temperature conditions (~21°C / 70°F), but this can potentially have an impact on the shelf life;

We recommend keeping the data logger in room temperature and conditioning it only shortly before the usage.

2nd STEP START, USAGE, STOP

Starting the data logger

- To start the data logger, keep the Start/Stop button  pushed for a minimum of 5 seconds
- A successful start is indicated by the LEDs on the front side, the green RECORD LED will blink 10 times in a row

The display will additionally show a PLAY sign on the left side
- The data logger is now activated and will record the near ambient temperature (and humidity)
- If no start delay was set, the first temperature data point will be saved after the first measurement interval is due
- If a start delay was set, the first data point will be recorded after the delay is due, and then follow the set measurement interval
- The label with the printed serial number can be detached optionally

Important: if the red STATUS LED flashes for 3 seconds while the data logger is started, a problem with the installed battery is indicated and the unit should not be used.

Usage while active

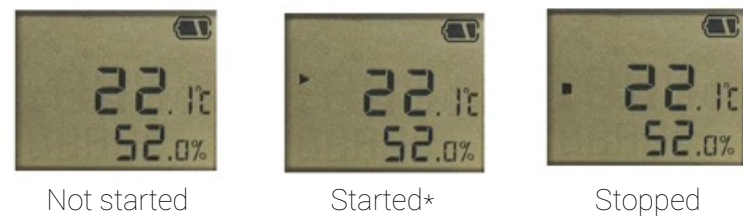
- Once the data logger is started, the RECORD LED will blink every 5 seconds to indicate its activity.
- The data logger should be placed as close as possible to the place of use; it should not be placed in-between or under heavy storages
- To fix the data logger on a surface, a strong glue spot on the back of each unit can be used.

Status Request:

The status can always be requested by pushing the Start/Stop button once (one short click).
The built-in RECORD and STATUS LEDs will blink in a certain way depending on the device's status:

- Data logger has not been started:
STATUS LED + RECORD LED flash 1 time 
- Data logger has been started, but a start delay is still active:
RECORD LED flashes for 3 seconds 
- Data logger is recording, and no alarm has been triggered:
RECORD LED flashes 1 time 
- Data logger is recording, and one alarm threshold has been triggered:
STATUS LED flashes 1 time 
- Data logger was stopped, and no alarm has been triggered:
RECORD LED flashes 2 times 
- Data Logger was stopped, and one alarm threshold has been triggered:
STATUS LED flashes 2 times 

The built-in display is automatically activated when the status is requested and shows further details.



- If the tempmate-S2 has not been started yet, it only shows the current surrounding temperature (and humidity) as well as the battery level
- Once started, the display shows a PLAY sign next to the temperature
- Once stopped, the display shows a STOP sign next to the temperature

By pushing the start/stop button repeatedly (not constantly), the user can switch to different pages:

	► Number measured values / "LOG": the number of data points that have been recorded since start		► MKT: the mean kinetic temperature of all recorded data points
	► Average value / "AVR": the average value of all recorded data points		► Lowest measured value / "MIN": the lowest value of all recorded data points
	► Highest measured value / "MAX": the highest value of all recorded data		► Time & Date: current time and date, depending on configuration

Stopping the data logger

- To stop the data logger, keep the Start/Stop Button pushed for a minimum of 5 seconds
- A successful stop is indicated by the LEDs on the front side, the red STATUS LED will blink 10 times in a row



The display will additionally show a PLAY sign on the left side

- The data logger is now stopped

Important:

- Once stopped, the data logger cannot be started anymore
- But the data logger continues recording in the background and creates a shadow-log, which can only be exported through tempbase-2

3rd STEP EVALUATION
Evaluation on device level

Per status request (see "Usage") the user can check if an alarm threshold has been breached during the recording:

- If no alarm has been triggered, the blue RECORD LED will blink 2 times: ■ ■
- If an alarm has been triggered, the red STATUS LED will blink 2 times: ■ ■

This gives an easy first information about the status of the whole recording.

Creating PDF or CSV report

The recorded data are primarily presented as PDF-report, which lists all important information about the measurement.

- Remove the protection cap and plug-in the data logger via USB
- Once plugged in, the STATUS and RECORD LED will start blinking alternately and the display will show "PDF" and "CSV"; during this, all recorded data is processed into a readable format and depending on the number of data points, this process can take up to 2 minutes.
- Please do not unplug the data logger during this process!
- Once all data is processed, the data logger will be recognized as flash-drive and will list all available files, including the report as PDF file.
- The report(s) can be saved locally via drag & drop, or by opening the files and save them through their application (Adobe Acrobat Reader recommended)

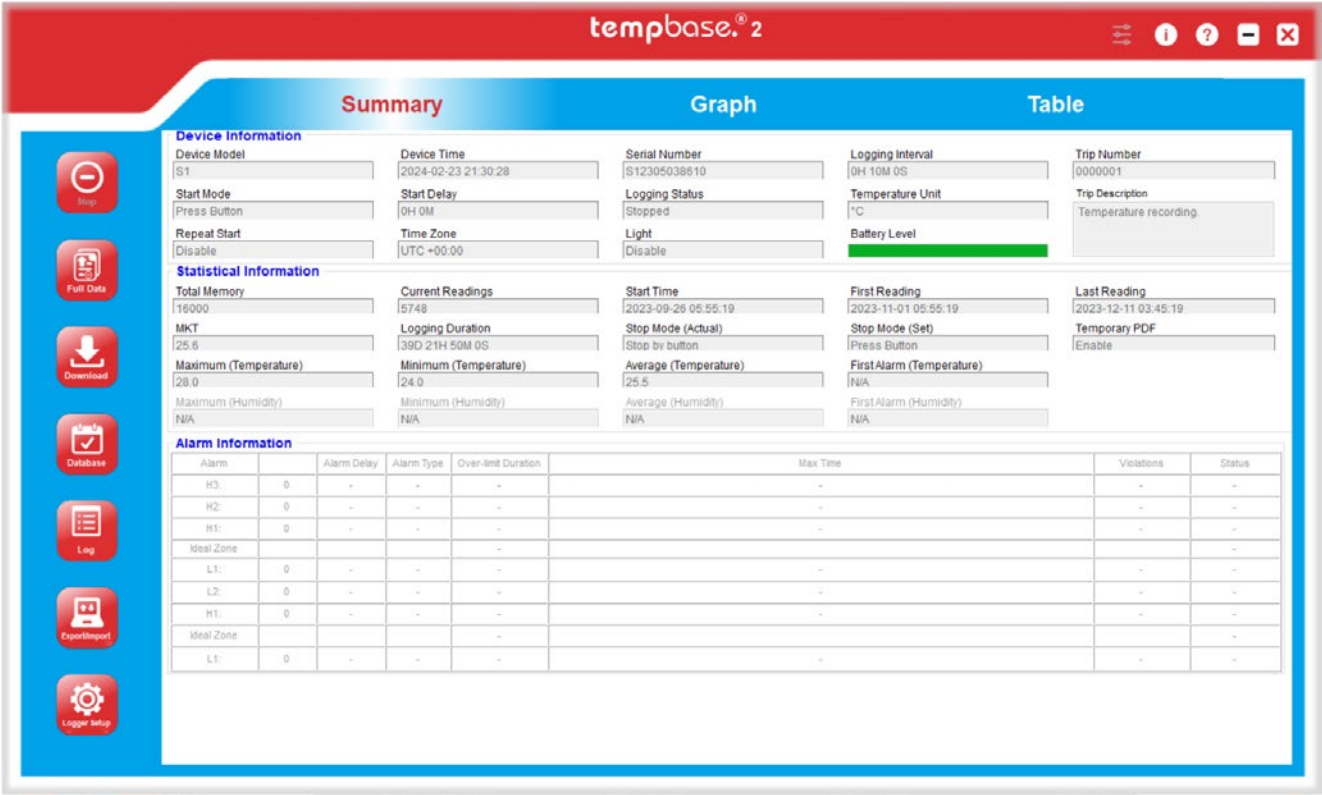
Important:

- the PDF/CSV reports are only created momentarily; once the data logger is unplugged, they must be created again
- the files on the data logger cannot be deleted completely, and deletion is not recommended; if they were deleted by the user on the device, they could be re-created by connecting them to USB again

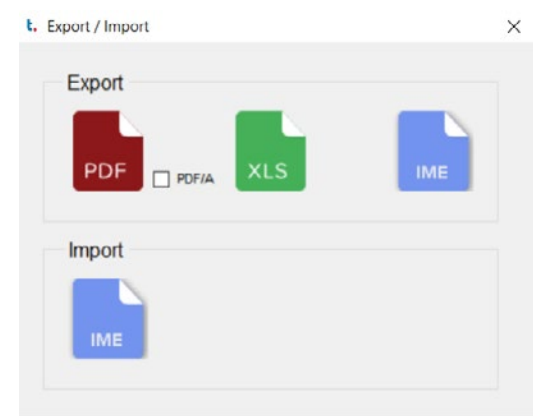
Evaluation on software level

Optionally or additionally to the PDF report, the recorded data can also be loaded into tempbase-2. This gives the user the ability to see the data of plugged-in devices, export them into different formats, create an archive of already installed devices, and more.

- Plug-in data logger via USB and wait until all data is processed
- Start tempbase-2
- tempbase-2 will load all data from the installed unit into its database and will open the "Summary"
- Graph will show the temperature process as graph
- Table will show all recorded data as list



- All data can optionally be exported as PDF or XLS file



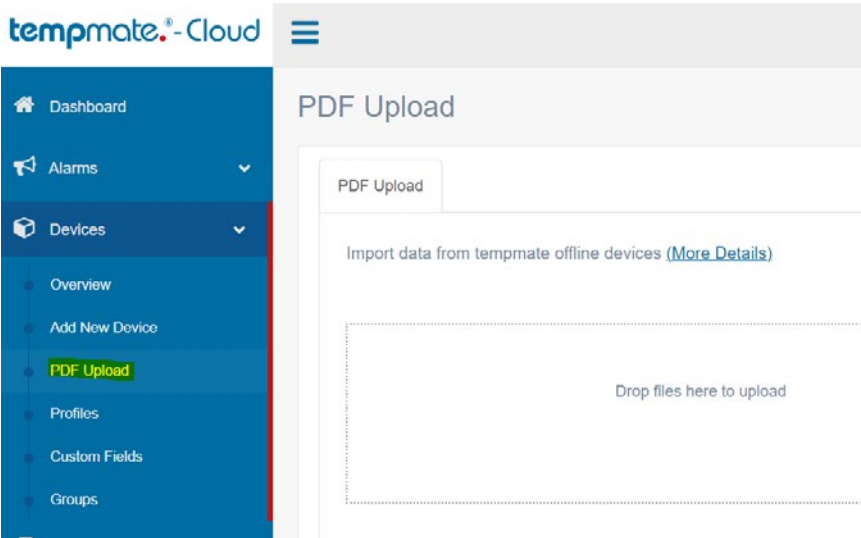
- Each data logger plugged in will automatically create an entry in the local Database and can be accessed later

[1]	Status	Data ID	Start Time	Current Readings	S1 (Max)	S1 (Min)	S2 (Max)	S2 (Min)
	✓	M2T231000137_20240223122917	2024-02-08 09:40:49	2171	25.9 °C	21.8 °C	N/A	N/A
	✓	M2T231000137_20240222150134	2024-02-08 09:40:49	2043	25.9 °C	21.8 °C	N/A	N/A
✓	✓	S12305038610_20240220094513	2023-09-26 05:55:19	5748	28.0 °C	24.0 °C	N/A	N/A
	✓	S12305038610_20240220093633	2023-09-26 05:55:19	5663	44.9 °C	11.2 °C	N/A	N/A
	✓	M2T231000137_20240214110349	2024-02-08 09:40:49	867	25.5 °C	22.1 °C	N/A	N/A
	✓	S2T2301029002_20240202114812	2023-12-15 12:09:23	553	9.0 °C	5.0 °C	N/A	N/A
	✓	S2T2211024310_20240202114642	2024-01-25 07:26:48	12	21.1 °C	20.9 °C	N/A	N/A
	✓	S2T2301029001_20240202114332	2023-12-15 12:09:42	553	8.4 °C	5.0 °C	N/A	N/A
	✓	S12308008120_20240131102312	2023-10-05 07:14:20	16000	25.4 °C	17.7 °C	N/A	N/A
	✓	TMM230400666_20240130113258	2024-01-02 14:14:50	8044	27.9 °C	18.7 °C	N/A	N/A
	✓	TMM230400666_20240130113242	2024-01-02 14:14:50	8044	27.9 °C	18.7 °C	N/A	N/A
	✓	TMM230400666_20240130112815	2024-01-02 14:14:50	8043	27.9 °C	18.7 °C	N/A	N/A
	✓	TMM230400666_20240130110519	2024-01-02 14:14:50	8038	27.9 °C	18.7 °C	N/A	N/A

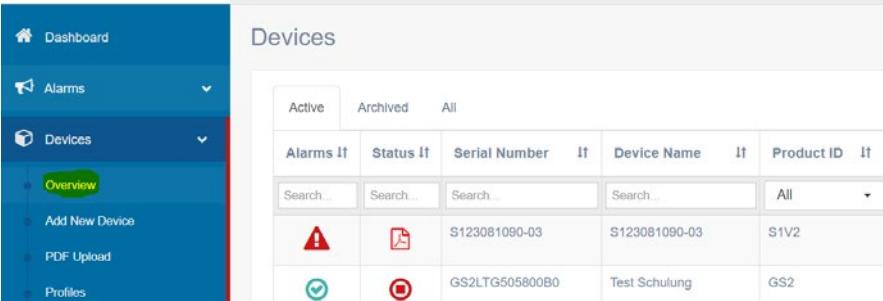
Please refer to the tempbase-2 manual for a full description of each function

Evaluation on cloud level

To save and share the recorded data, the PDF-report can be uploaded to an existing account in the tempmate-Cloud optionally or additionally.



Uploaded data reports can then be found within the user's device-overview, from there they can be evaluated later or shared externally.



Currently it is only possible to upload PDF reports directly from the data logger, not those exported through tempbase-2!

7. FAQ – Frequently Asked Questions

Q: How can I restart the tempmate-S2?

A: As a single-use device this data logger cannot be started again once it has been stopped; recorded data can always be accessed via USB connection.

Q: The data logger was accidentally stopped, what can be done?

A: The data logger continues recording after it was started. This data can only be accessed through tempbase-2, "Full Data" exports all recorded data points into the user's database, from where they can then be evaluated or exported.

Q: The expiry date is very near; when exactly is it due and can the data logger be used?

A: The printed expiry date starts the first day of the shown month and year; a start shortly before the EXP is due does not prolong the shelf life or the guaranteed functionality.

Q: I need the calibration certificate of this data logger, where can I receive it?

A: As batch-calibrated device each data logger comes with a permanently stored validation certificate in PDF format, which informs about the calibration process during the production.

Q: The PDF-report is unreadable, it shows unusual symbols.

A: The PDF-report can be re-created once the data logger was stopped. Keep the start/stop button pushed for 5 seconds, the display will show "PDF re". Once finished, the data logger can be read out again.

tempmate GmbH
Wannenäckerstr. 41
74078 Heilbronn, Germany

Tel. +49-7131-6354-0
sales@tempmate.com
www.tempmate.com



PLEASE, contact us for further questions.