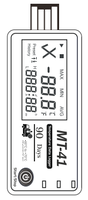
## User Manual

MarMonix

# MT41
# TEMPERATURE DATA LOGGER

Disposable Temperature Data Logger



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## Products Overview

The **MarMonix MT41 Temperature Data Logger** is a compact, disposable device designed to monitor and record temperature during transportation, storage, and handling of temperature-sensitive products.The MT41 continuously records temperature according to the configured recording interval and provides clear visual indications for normal operation, alarm conditions, and delayed recording.

Recorded data can be accessed through the integrated USB interface and exported as **PDF** or **CSV reports**.

## Main Features

- Temperature measurement and recording
- LCD display
- High- and low-temperature alarm monitoring
- Customizable recording interval
- Customizable recording duration
- Configurable start delay
- PDF/CSV data report through USB
- IP67 water and dust resistance
- Green, red and blue LED status indication
- °C / °F temperature units
- Up to 30,000 recorded data points
- Internal temperature sensor



## Product Components

The MT41 includes the following components:

| Component | Function |
|---|---|
| **Start/Stop Button** | Starts or stops the data logger |
| **Start Delay LED** | Indicates delayed recording mode |
| **OK LED** | Indicates normal recording |
| **Alarm LED** | Indicates a temperature alarm |
| **USB Interface** | Generates and exports recorded data |
| **LCD Display** | Displays temperature and recording information |
| **Temperature Sensor** | Measures temperature |
| **Battery** | Internal CR2032 battery |

## Typical applications

- The MarMonix MT41 is suitable for monitoring temperature during:
- Pharmaceutical transportation
- Medical product transportation
- Cold-chain logistics
- Food and beverage transportation
- Laboratory sample transportation
- Warehouse storage
- Refrigerated transportation



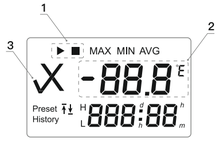
## Technical Specifications

| | |
|---|---|
| Model | MT41 |
| Sensor | Internal temperature sensor |
| Battery | CR2032 |
| Size | 82.3 * 31.6 * 7 mm |
| Weight | 21g |
| Waterproof Level | IP67 |
| Operation Temperature | −30℃~+70℃/−22℉~+158℉ |
| Temperature Accuracy | ±0.5℃ (−20℃~+40℃); ±1℃ (others) |
| Time Zone | Customizable, UTC +00:00 (default) |
| Record Capacity | Maximum 30,000 points |
| Log Interval | Customizable, 5 mins (default) |
| Log Duration | Customizable, 90 days (default) |
| Start Delay | Customizable, 30 mins (default) |
| Alarm Preset | Customizable, 2℃– 8℃ (default) |
| Data Interface | USB 2.0 |
| Temperature Unit | °C/℉ |



## LCD Display

The LCD provides information about the current recording condition and recorded temperature.




| Overview | | |
|---|---|---|
| No./ Icon | Function | Instruction |
| 1 | Recording state | ▶ Recording<br>■ Stopped |
| 2 | Temperature data | Display the last recorded temperature data |
| 3 | Alarm state | Normal: ✓<br>Alarm: X |
| Preset | Alarm preset value | The high/low temperature alarm setting |



| Display Examples | | |
|---|---|---|
| 1 | X 8.7℃ 90 d | The device is recording, and there are alarms.<br>The last recorded temperature is 8.7℃.<br>The remaining data to record is 90 days. |
| 3 | 8.4℃ 12 d | During the data recording, the average temperature is 8.4℃, and the recording duration is 12 days. |
| 5 | 8.7℃ 005.25 | During the data recording, the maximum temperature is 8.7℃, and the cumulative time of exceeding the preset highest alarm temperature lasts 5 hours and 25 minutes. |
| 4 | 1.3℃ 006.45 | During the data recording, the minimum temperature is 1.3℃, and the cumulative time of exceeding the preset lowest alarm temperature lasts 6 hours and 45 minutes. |

## LED Status Indication

- **Green LED – Normal Recording**

The green LED indicates that the logger is recording and the measured temperature is within the configured alarm limits.

- **Red LED – Alarm**

The red LED indicates that the recorded temperature has exceeded the configured high or low alarm limit.

- **Blue LED – Start Delay**

The blue LED indicates that the logger is waiting for the configured start-delay period to expire.

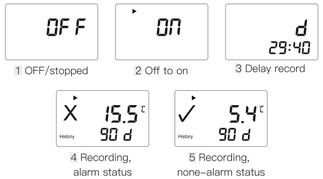


## Starting The Data Logger

**To start the MT41**

1. Ensure that the logger is in the stopped/shutdown state.
2. Press and hold the **Start/Stop button for approximately 3 seconds.**
3. The logger starts according to the configured start-delay setting.
4. If a start delay is configured, the blue LED indicates that the logger is waiting to begin recording.
5. When the delay expires, temperature recording starts automatically.






1 OFF/stopped 2 Off to on 3 Delay record

4 Recording, alarm status 5 Recording, none-alarm status

**Normal Recording**

During normal recording:

- The green LED flashes approximately every 10 seconds.
- The logger records temperature according to the configured recording interval.
- The LCD provides recording and temperature information.

**Alarm Recording**

If the temperature exceeds the configured alarm limits:

- The red LED flashes approximately every 10 seconds.
- The LCD indicates an alarm condition.
- Temperature recording continues.



## Start Delay

The MT41 supports a configurable start-delay function.

**Default start delay: 30 minutes**

During the delay period:

- Temperature recording has not yet started.
- The blue LED indicates delayed recording.
- After the configured delay, the logger automatically begins recording.

## Alarm Function

The MT41 monitors the recorded temperature against preset high and low limits.

**Default Alarm Range**

**2°C to 8°C**

An alarm condition occurs when the temperature exceeds either the configured high or low limit.The logger records the temperature and retains the alarm information for later review.The recorded information may include:

- Maximum temperature
- Minimum temperature
- Alarm status
- Cumulative time outside the preset limits



## Stopping The Data Logger

Recording Start to stop recording Stopped

The MT41 is designed as a **disposable data logger.**

To stop the logger manually:

1. Press and hold the **Start/Stop button for approximately 3 seconds**.
2. Continue holding until the device indicates that recording has stopped.

Connecting the logger to a computer through USB may also end the recording process and initiate data processing, depending on the device configuration.

**Once recording has been stopped, do not attempt to restart the logger unless the supplied configuration specifically supports restarting.**



## Data Export Through USB

The MT41 is equipped with a **USB 2.0 interface** for accessing recorded data.

The logger can generate:

- PDF report
- CSV data file

**Data Export Procedure**

1. Connect the MT41 to a computer using its USB interface.
2. The computer detects the logger.
3. The logger processes the recorded temperature data.
4. The PDF/CSV report is generated.
5. Open or copy the generated files to the computer.
6. Safely disconnect the logger after the data has been completely generated and copied.

**Important USB Notice**

When the logger is connected to a computer for the first time, the blue LED may flash while the PDF report is being generated.

**Do not disconnect the logger during this process**

Disconnecting the logger before report generation is complete may result in incomplete or missing data points.



## Important Operating Notes

1. The MT41 is a **disposable temperature data logger**.
2. Do not open or disassemble the device.
3. Do not attempt to replace the internal CR2032 battery during normal operation.
4. Do not repeatedly start or stop the logger unless specifically supported by the supplied configuration.
5. During recording, do not press and hold the Start/Stop button unnecessarily.
6. Do not connect the logger to a computer during recording unless required by the operating procedure.
7. Do not disconnect the logger while the PDF report is being generated.
8. If the red LED remains continuously illuminated rather than operating normally, the device may be damaged. Stop using the logger and contact your supplier.
9. Keep the logger within its specified operating temperature range.
10. The IP67 rating provides protection against dust and temporary water immersion under specified test conditions; avoid unnecessary exposure to liquids.
11. Handle the logger carefully during transportation and storage to prevent physical damage.

## Support

For technical support, product information, calibration documentation, or service assistance, please contact your authorized MarMonix Instruments distributor or supplier.