

SPECIFICATIONS

TEMP. RANGE: -80.0 TO 70.0 °C (-112.0 TO 158.0 °F)

TEMP. RESOLUTION: 0.1 °C, 0.1 °F

TEMP. ACCURACY: ±0.5°C

T90 RESPONSE: WITHIN 20 MINS

SAMPLING POINTS: SINGLE USE - 8192 POINTS;

MULTIPLE USE - 48000 POINTS

START DELAY: 0, 5, 30, 45, 60, 90, 120 MINUTES, 24 HOURS

ALARM DELAY: 0, 5, 30, 45, 60, 90, 120 MINUTES

ALARM TYPE: SINGLE, CUMULATIVE, DISABLE

LED INDICATOR: REC, LOW BATTERY,

HIGH/LOW ALARM

PROTECTION CLASS: IP67

INTRODUCTION

This data logger is designed for monitoring temperature subject to quality control requirements in transportation and storage. Temperature measurements are saved throughout the duration of the measurement period. This data logger is equipped with a user-defined programming function. The measurement report output is implemented using a PDF file and an Excel file. No unique software or USB driver is required. Read through the instruction manual before using this logger.

PRODUCT DESCRIPTION

1. USB 2.0 plug and play connector:

A USB driver is not required. PC software is also not required.

2. LED indicator

Status	LED indication
Power OFF	All LEDs are OFF.
Standby	OK Green LED blinks 3 times every 5 seconds when logger is programmed to stand by but not yet start to log.
Activate recording	Red LEDs flash in sequence 3 times to indicate you are activating a logger.
Recording	OK Green LED blinks every 10 seconds while the logging function is active.
Marking	Red/Red/Red LEDs flash in sequence to indicate you are marking the time stamp into the logger.
Stop recording	Red LEDs flash in sequence to indicate you are stopping the logger.

Over alarm threshold	Low/High Red LED blinks every 10 seconds when the measuring set limit value is exceeded during recording.
Recording complete	OK Green or Red Hi/Low alarm LED blinks every 5 seconds after the logging function is ended automatically or manually.
Battery is low	OK Red LED blinks every 5 seconds to indicate the battery power is below 3.0V.

3. GO (START/STOP) key: This logger can only be turned ON and OFF through a PC. Plugging into a PC to execute configuration may turn it on, and it will be turned off automatically after the report is generated. After the logger is programmed, press the GO key for 5 seconds to start logging. To stop logging, press the GO key again for 5 seconds. In the logging mode, short press key won't power off or stop the logger.

4. MARK key: To mark an event manually during the measurement period, press the MARK key for 5 seconds until the red LEDs flash in sequence. This MARK function is usually used when there is a transition, from one location to another. At most, 8 marks can be identified in the PDF report.

5. High-accuracy built-in PT1000 sensor for temperature measuring

6. Built-in battery: This logger is operated by a 1 pc 3.6V built-in lithium battery. The battery is not replaceable or rechargeable. The provided power is enough for 1 million time records or 18 months of usage. For example: If 10,000 records are made per trip, it is enough for 100 trips.

7. Hanger

8. Waterproof USB plug cover: Replace the plug cover after each logging trip to waterproof the logger.



Operation – Step 1: Configure the Data Logger

It is possible to make configuration changes anytime

before the logging function is started. Once the logger is started, configuration changes cannot be made unless the logging is stopped first. If the logger is locked with a password, the password is required to make configuration changes.

- First, connect the data logger to a PC via the USB port. The green LED is on while the connection with the computer is built.
- The Windows file display window will appear.
- If the correct file folder is not open, click on Folder to view files.
- Open the file "PDF Logger Configuration Tool.exe."
- The default language is English. The user may change it to one of five alternate languages. Available languages are English, German, French, Italian, Spanish, and Portuguese.

USER PROGRAMMABLE PARAMETERS ARE AS FOLLOWS:

Sampling rate: Select the sampling interval you need, from 30 seconds to 2 hours.

Start delay: Select the start delay, from 0 min to 24 hours. For example: If the delay is 5 minutes, and the sampling rate is 10 minutes, the real time to log the first temperature measurement is 5 minutes after the GO key is pressed. All measurements after the first measurement will be at a 10-minute (or selected) interval.

Unit of measurement (UoM): Select the unit that will be displayed on the report. The selections are Celsius or Fahrenheit.

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

Password: The password function default is OFF. The user may enable it to prevent unauthorized reprogramming prior to pressing the logger starting key. A password may have up to 16 alpha or numeric characters.

Alarm types: Regardless of the alarm type, if the red LED is triggered, it won't stop even if the reading returns to normal range or logging is stopped. To stop the red alarm LED, plug the logger into the computer to generate the report.

Single – An alarm is triggered immediately when the measured value exceeds the alarm threshold.

Cumulative – An alarm is not triggered when the measured value exceeds the alarm threshold, but only once the overall average value during alarm delay duration exceeds the alarm threshold.

Disable – There is no alarm function during the logging process.

Alarm delay: The preset alarm delay interval for a single alarm type is always ZERO. The adjustable alarm delay interval for a cumulative alarm type can be 5 minutes to 2 hours.

Alarm limits: Select the alarm threshold values. For example: If 2 – 8 °C is selected, it means that an alarm condition will occur below 2 °C or above 8 °C. The programmable alarm limit of each parameter is limited to one decimal. To summarize, to activate an alarm when the 30-minute average value of hazardous alarm delay period is higher than 8 °C, program the alarm delay as 30 minutes, alarm type as cumulative, and range as 2 – 8 °C.

Time zone: Before programming the logger, the user must assure that the PC is set for the correct time zone. The logger will auto-synchronize to the time zone of the PC, when Save is pressed. Time zone changes over the transit distance are not adjusted in the logged data.

The default values of above parameters are:

Sampling rate: 5 min.	Alarm type: disable
Start delay: 0 min.	Alarm delay: 0 min.
Temp. Unit: °C	Alarm limits: blank
Password: disable	Language: English
Company name: blank	

Once all the programming is done, press Save to confirm the setting and then you may close the setup window and remove the logger from the PC USB port.

Battery lifetime quick check for multi-use data logger: This logger is operated by a built-in lithium battery. The battery is not replaceable or rechargeable. The provided power is enough for 1 million records or approximately 12–18 months' usage. You may check how many records are used from beginning until the current time from the number provided in the gray column right below the alarm setting.

Operation – Step 2: Start Logging

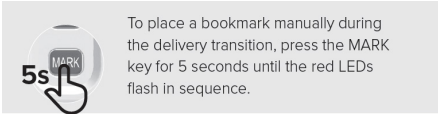
When the logger is successfully programmed, the green LED blinks 3 times every 5 seconds to indicate the logger is in standby mode.

If recording isn't activated within 30 minutes, the logger will sleep again to save battery power.

Put on the USB plug cover and then press the GO key for 5 seconds to start the logging.

Red LEDs will flash in sequence 3 times to indicate that the logging is activated.

During the logging, the green LED (or alarm LEDs) will blink every 10 seconds. If battery power is too low to maintain a normal operation, the red LED blinks. See LED Indicator table for more details.



Operation – Step 3: Download Data

Press the GO key for 5 seconds until the red LEDs flash in sequence to stop the logging.

Plugging the logger into the PC USB port can also stop the logging.

Open the file “PDF Logger Configuration Tool. exe.” Choose function “Convert to PDF” or “ Convert to Excel” to generate the report in the preferred format. The default language is English. The user may change it to one of five alternate languages. Click on the SAVE button. Select the preferred location to save the generated report to.

The created Excel report contains all data shown in the PDF report except the graph. Since the Excel content is editable, always use the PDF file as the main report. The logger will be turned off automatically after the report is generated and no new recording trip is programmed. If a new recording trip is required, be sure to go to configuration page to check the settings again and press SAVE, regardless of whether the settings are the same or are different from the previous trip.

The recorded data will be kept in the logger and only be overwritten when a new recording trip is started. Any time before this, you may return to the file generation feature to generate reports again in any languages you prefer.

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 “.csv” but the contents are like a “.txt” file. It can be safely opened.

WARRANTY, SERVICE, OR RECALIBRATION

For warranty, service, or recalibration, contact:

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