



**INSTRUCTION MANUAL**  
**MT643**  
**TEMPERATURE DATA LOGGER**





# Contents

## Page no

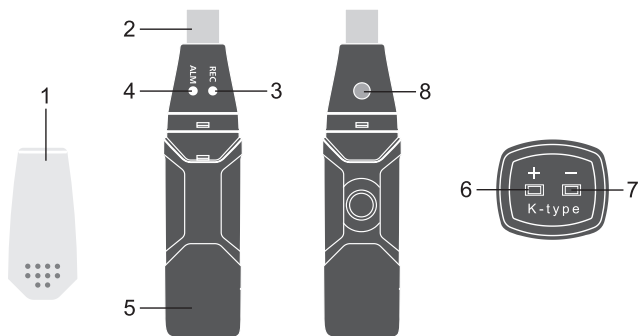
1. Features.....	4
2. Description.....	4
3. LED Status Guide.....	5
4. Operating Instructions.....	6
5. Software Operation.....	7
5.1. Datalogger Setup.....	7
5.2. Download Data.....	8
6. Specifications.....	9
6. Battery Replacement.....	10

## 1. FEATURES

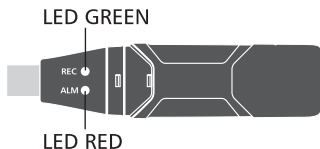
- Memory for 31,808 readings
- Status Indication
- USB Interface
- User-Selectable Alarm
- Analysis software
- Multi-mode to start logging
- Long battery life
- Selectable measuring cycle:  
1s, 2s, 5s, 10s, 30s, 1m, 5m, 10m, 30m, 1hr, 2hr, 3hr, 6hr, 12hr

## 2. DESCRIPTION

- 1 - Protective cover
- 2 - USB connector to PC port
- 3 - Alarm LED (red)
- 4 - Record LED (green)
- 5 - Mounting clip
- 6 - Type-K anode
- 7 - Type-K cathode
- 8 - Start Button



### 3. LED STATUS GUIDE



Function	Indication	Action
REC ALM	Both LED lights OFF Logging not active Or Low Battery	Start logging replace battery and download the data
REC ALM	One green flash every 10 sec.* Logging, no alarm condition** Green double flash every 10 sec.* Delayed start	To start, hold the start button until Green flash 4 times
REC ALM	Red double flash every 30 sec. * -Logging, low Temperature alarm. Red Triple flash every 30 sec. * -Logging, high temperature alarm. Red single flash every 20 sec. -Low Battery****	Data logging, it will stop automatically. No data will be lost. Replace battery and download data
REC ALM	Red single flash every 2 sec. -Type-K not connect to the logger	It won't logging until the Type-K probe connect to the logger.
REC ALM	Red and green single flash every 60 sec. -Logger memory full	Download data

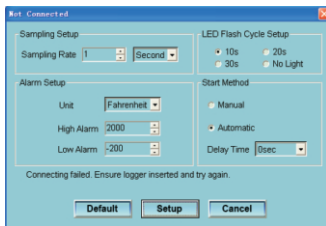
#### 4. OPERATING INSTRUCTIONS

- Setup the Data Logger by software before using it.
- Under the Manual mode, press and hold the button for 2s, Data Logger start to measure, and LED indicates the function at the same time. (see LED FLASH INDICATION for details.)
- Under the Automatic mode, you can choose the delay start time, if you choose to delay zero second, the Data Logger will start to measure after setup in software immediately, LED indicate the function at the same time. (see LED FLASH INDICATION for details.)
- During measurement, the green LED indicates the working state by flashing with the frequency setup in the software.
- If the Type-K probe is not connected to the logger, the red light will single flash every 2 sec. It won't record the data, connect the Type-K probe to the logger, it will start to record the data normally.
- When data logger memory full, Red LED and Green will flash every 60 sec.
- As the battery power is not sufficient, red LED will flash every 60 sec for indication.
- Press and hold the button for 2s until Red LED flashes four times, and then logging will stop, or connect the data logger to the host and download the data, the data logger will stop automatically.
- Data Logger data can be read time after time, the readings you are checking are the real time measured ones. (1 to 31808 readings); if you reset the data logger the last data will be lost.
- If the logger is logging, the Type-K probe is disconnected, the logger will stop logging automatically.
- Without battery, the latest hours data will be lost. Other data can be read in software after battery is installed.
- When replacing the battery, turn off the meter and open the battery cover. Then, replace the empty battery with a new 1/2AAA 3.6V battery and close the cover.
  - \* To save power, the logger's LED flashing-cycle can be changed to 20s or 30s via the supplied software.
  - \* To save power, alarm LEDs for temperature can be disabled via the supplied software.
  - \* When the battery is low, all operations will be disabled automatically. NOTE: Logging automatically stops when the battery weakens (logged data will be retained). The supplied software is required to restart logging and to download logged data.

## 5. SOFTWARE OPERATION

### 5.1. Data logger Setup

Click on the icon on the menu bar. The Setup window will appear as shown below; descriptions for each field in the Setup window are listed directly below for illustration:




- The Sampling Setup field instructs the DATA LOGGER to log readings at a specific rate. You can input specific sampling rate data at the left Combo box and select the time unit at the right Combo box.
  - The LED Flash Cycle Setup field can be set 10s/20s/30s by the user depending on the requirement. By selecting "No Light" option, there will be no flash there by increasing the battery life.
  - The Alarm Setup field allows the user to set HIGH and LOW temperature limits.
  - There are two start methods at the Start Method field:
    1. Manual: Choose this item, the user need to click the logger button to start data logging.
    2. Automatic: Choose this item the logger will start data logging automatic after the delay time.User can set a specific delay time, if the delay time is 0 second, the logger will start logging immediately.
- Click on the SETUP button to save changes. Press the DEFAULT button to set the Logger to factory default condition. Press the CANCEL button to abort the setup.

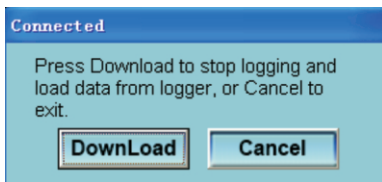
Notes: All stored data will be permanently erased when Setup is finished. To enable you to save the data before it is lost, click Cancel and then you need to download data.

The battery might be exhausted before logger finish specified sample points. Always ensure that the remaining power in the battery is sufficient for completing your logging task. If in doubt, we recommend that you always install a fresh battery before logging critical data.

## 5.2. Download Data

To transfer the readings stored in the Logger to the PC:

- Connect the DATA LOGGER to the USB port.
- Open the Data logger software program if it is not still running
- Click the Download icon .
- The Window shown below will appear. Click DOWNLOAD to begin transferring data.



Once the data is successfully downloaded, the window shown below will appear.





## 6. SPECIFICATIONS

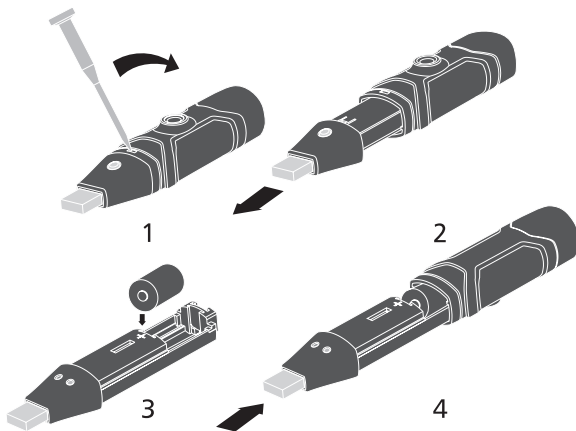
Function	Overall Range	Accuracy
Temperature	-200 to 1370°C (-328 to 2498°F)	$\pm 2^{\circ}\text{C}$ ( $\pm 4^{\circ}\text{F}$ ) (overall error) Max. $\pm 1^{\circ}\text{C}$ ( $\pm 2^{\circ}\text{F}$ ) (overall error) Typ.
Logging rate	Selectable sampling interval: From 1 seconds up to 24 hours	
Operating temperature	0 to 40°C (57.6 to 97.6°F)	
Operating humidity	0 to 85%RH	
Storage temperature	-10 to 60°C (39.6 to 117.6°F)	
Storage humidity	0 to 90%RH	
Battery type 3	6V lithium (1/2AA) (SAFT LS14250, Tadiran TL-5101 or equivalent)	
Battery life	1 year (typ.) depending on logging rate, ambient temperature & use of Alarm LEDs	
Dimensions	101 x 24 x 21.5mm	
Weight	172g	

## 7. BATTERY REPLACEMENT

Only use 3.6V lithium batteries. Before replacing the battery, remove the model from the PC. Follow diagrammatic and explanation steps 1 through 4 below:

- With a pointed object (e.g. a small screwdriver or similar), open the casing. Lever the casing off in the direction of the arrow.
- Pull the data logger from the casing.
- Replace/Insert the battery into the battery compartment observing the right polarity. The two displays briefly light up for control purposes (alternating, green, yellow, green).
- Slide the data logger back into the casing until it snaps into place. Now the data logger is ready for programing.

**Note:** Leaving the model plugged into the USB port for longer than necessary will cause some of the battery capacity to be lost.



**WARNING:** Handle lithium batteries carefully, observe warnings on battery casing. Dispose of in accordance with local regulations.





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## ***MAJOR TECH (PTY) LTD***

**South Africa**

 [www.major-tech.com](http://www.major-tech.com)

 [sales@major-tech.com](mailto:sales@major-tech.com)

**Australia**

 [www.majortech.com.au](http://www.majortech.com.au)

 [info@majortech.com.au](mailto:info@majortech.com.au)

