



Temperature logger

Rev. 1.01

October 2016

Preface

Thanks for purchasing our product!

Before your operation, please read this manual carefully and keep this manual in proper place so that it may be convenient for your future reference. If you have any question please contact us. Hopefully our product will provide you effective and reliable service.

Your encouragement will be our great honor!

A、 Introduction

This digital low power consumption product combines signal collection/display/storage and analysis functions, being widely applied in medical/pharmacy/agriculture/food process/biochemistry laboratory/electronics manufacture/air-conditioning/archive management/archaeological studies/textile fiber/cold chain transportation solutions via environment monitoring/alarming/recording.

1.1 Features

- ★ Suitable for humid and dusty environment with special IP67 water-proof structure.
- ★ High precision and quick response.
- ★ Low power consumption design for continuous operation over 12 months with 1/2 AA3.6V lithium battery which can be replaced quickly.
- ★ Allowing to set upper and lower limits for temperature alarming, the LED light flashes if the reading is beyond limits.
- ★ large data storage up to 61440 groups of data.
- ★ Attached with PC analysis software for users to manipulate the unit.

1.2 Application

It is widely applied in the fields of medicals, pharmacy, food process, biochemistry laboratory, agriculture studies, aerological sounding, electronics manufacture, airconditioning, archive management, archaeological studies, textile fibre, cold chain transportation.

1.3 Technical parameters

Precision	Typical $\pm 0.5^{\circ}\text{C}$ (See Fig 2-1)
Response time	5 ~ 30 S
Measuring range	-30 ~ 80 $^{\circ}\text{C}$
Memory size	61440

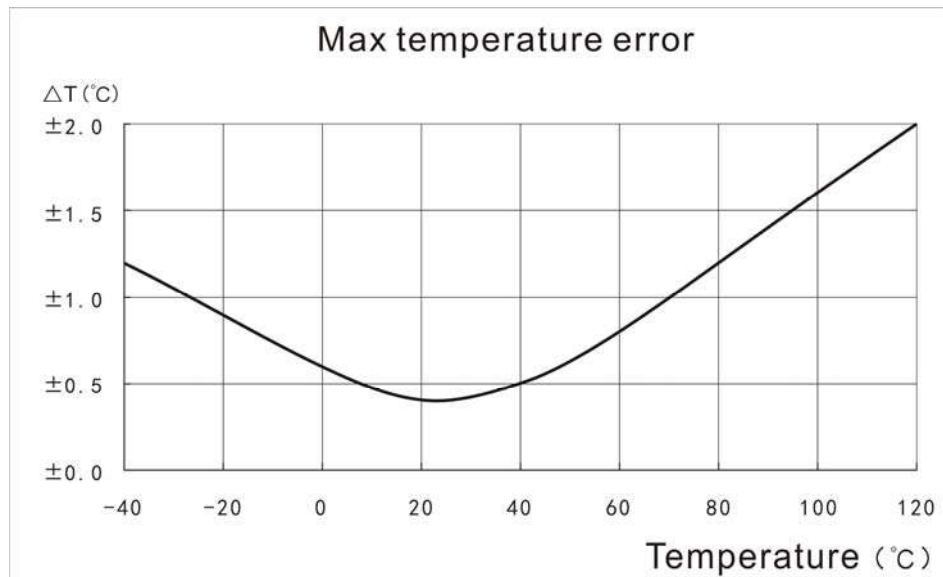


Figure 1-1 Max temperature error

1.4 Outer appearance

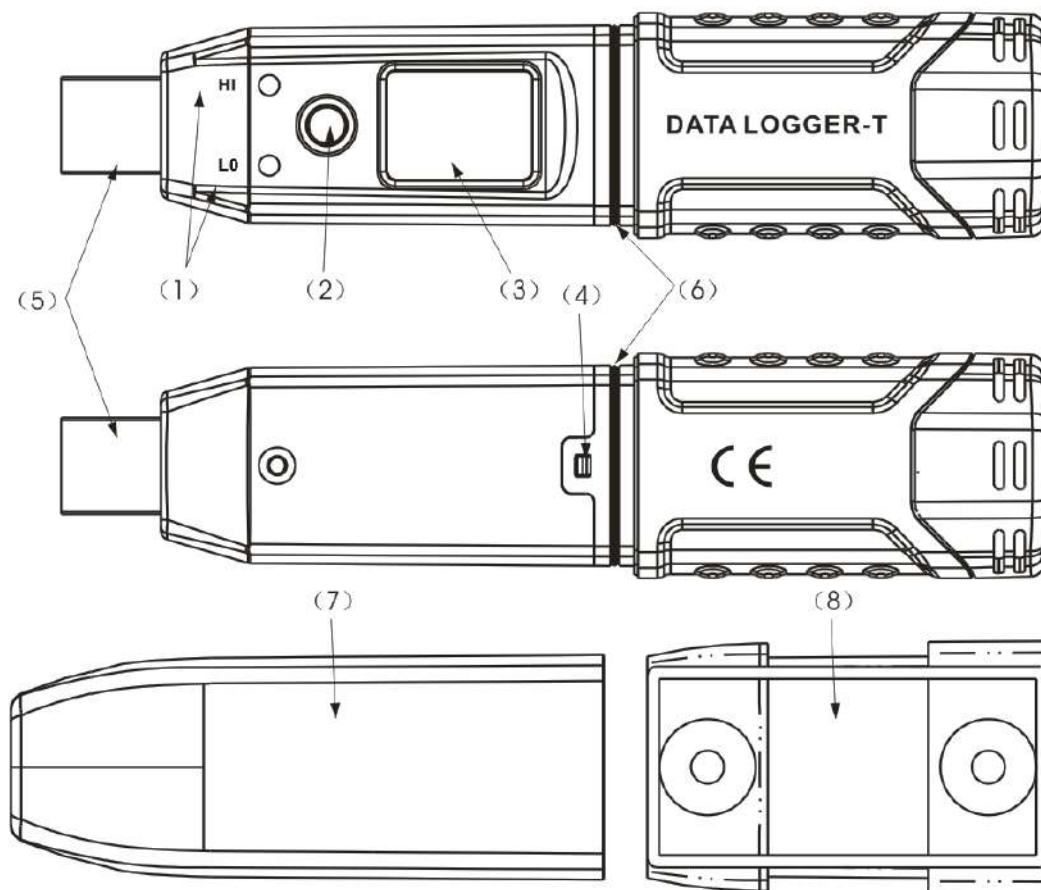


Figure 1-2 Outer appearance

- | | |
|-------------------|----------------------------------|
| (1) LED alarm | (5) USB socket |
| (2) Keys | (6) Water-proof ring |
| (3) LCD | (7) Transparent water-proof case |
| (4) Battery fixer | (8) Bracket |

1.5 LCD

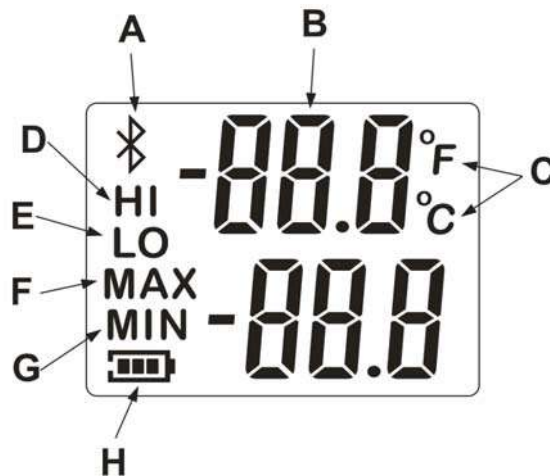


Figure 1-3 Display illustration

- | | |
|------------------------------|------------------------------|
| A. Blue teeth icon | E. Lower limit alarming icon |
| B. Reading | F. Maximum reading |
| C. Temperature unit icon | G. Minimum reading |
| D. Upper limit alarming icon | H. Battery volumn |

1.6 Keys

Turn on the unit by short press on the key and the number available to save the data appears in a short while, which upper three digitals denote hundred thousands place, ten thousands place and thousands place while the lower 3 denote hundreds place, tens place and ones place. The left reading in figure1-4 means 61440 groups of data remaining for record and the right reading in figure1-4 means no room for further recording. The temperature reading/date/time appears 2 seconds later. Short press on the key to review the next interfaces

1) HI; The upper digitals denote just-in-time temperature while lower ones denote upper limit and HI appears.

2) The upper digitals denote just-in-time temperature while lower ones denote lower limit and LO appears.

3) The upper digitals denote just-in-time temperature while lower ones denote maximum reading and MAX appears.

4) The upper digitals denote just-in-time temperature while lower ones denote minimum reading and MIN appears.

5) The upper digital denote thousands place and hundreds place of a year and the lower digital denote tens place and ones place.

6) The upper digital denote month and the lower day.

7) The upper digital denote hour and the lower minute.

8) The recording interval in terms of second appears by the upper digital denoting ten thousands place and thousands place while the lower digital give hundreds place, tens place and ones place.

The maximum and minimum readings above are the ones happened after this turning on. After turning on, the device begins to record the temperatures at an interval preset until the device is powered off or being connected to the PC via USB socket.

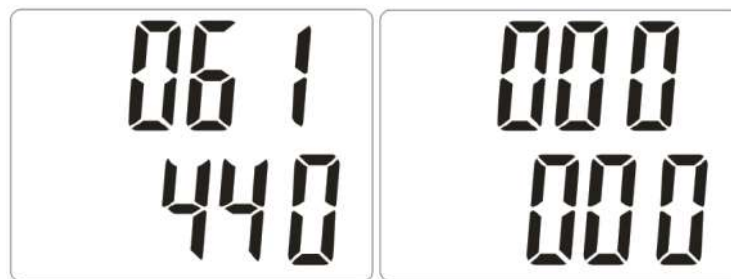


Figure 1-4 The remaining groups for saving the data

1.7 Error Code

This device has self-inspection function, it shows the following error code when error occurs

Err 0201 Temperature collection error

Err 0202 Temperature is too low that is beyond measuring range

Err 0203 Temperature is too high that is beyond measuring range

Err 0300~0305 Display error

Err 0400~0409 Data retrieving error

Err 0600 USB USB communication error

1.8 Replacement of battery

To save electricity, this device applies hardware power detecting method that only shows empty or full status, and rare making mistake.

When replacing the battery, press the snap on the battery compartment by a tool and open the battery door to load fresh battery.

Taking out the battery results in deleting the time and date information, so the time and date must be reset after re-loading the battery.

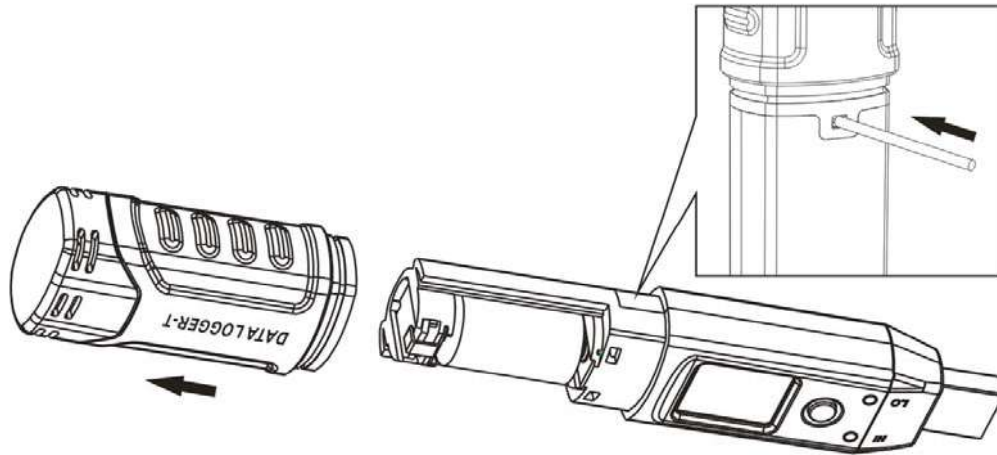


Figure 1-5 Battery installment

1.9 Host computer software

All parameters including time/date/recording interval/upper and lower limits/temperature unit must be configured in the software attached with this device, for details please refer to attachment How to Configure for GM1366

There is detailed operation instruction in the disc attached.

B、Notification

- ▲ For only water-proof degree IP 67, please do not operate the main device in liquid.
- ▲ With water-proof and anti-dust design, the temperature reading may be given with a delay.
- ▲ With ABS case, the device prevent acid-base erosion
- ▲ Please strictly follow the steps specified in the manual while replacing the battery or disassembling the device.
- ▲ The battery cannot be rechargeable, otherwise it is dangerous. The abandoned battery must be dealt with following the local law.

How to Configure for

Double click the software “  Data Logger-T.exe ” to run the program. If there is no device connected, the follow window appears.



Figure -1

The tool bar at the top of the window allows only “open” and “file list” selection, the status bar at the bottom displays “no device detected”.

1. Open

Click Open key to input the original data file (*.jmy) from the device as shown in figure-2

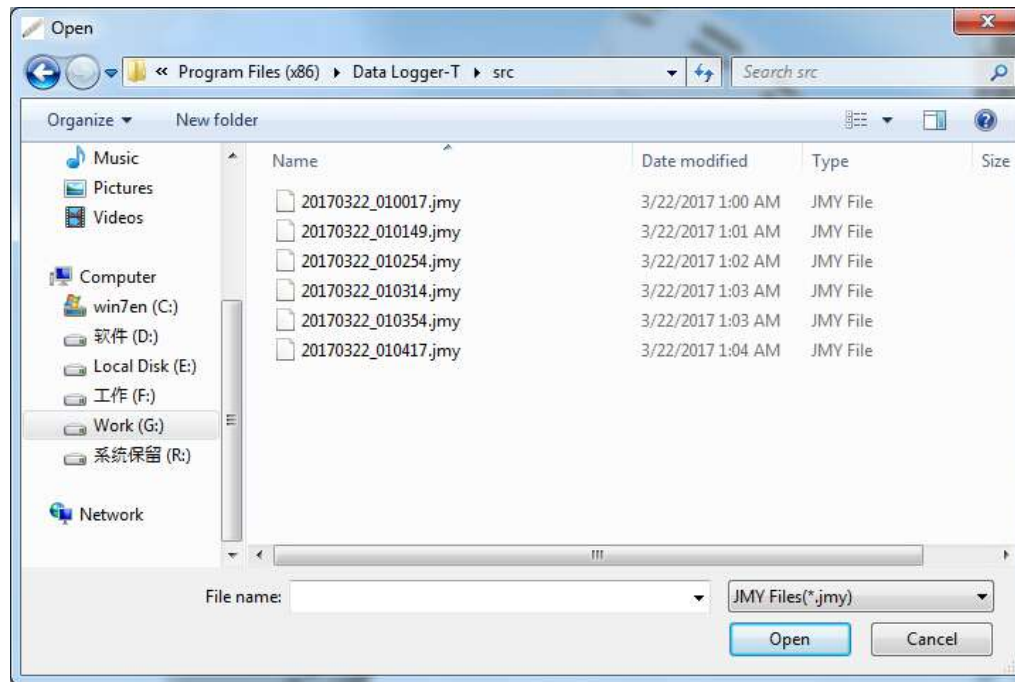


Figure -2

The original files can be accessed from device output, internet and flash disk. After opening the file it shows as below.



Figure -3

2.Major functions

Click File List key, the left panel shows the SRC format files under the install path of the program shown in the left panel of the window(the default file name is composed of date and time when the recording operation done).



Figure -4

Select the file on the left panel and click the right key of the mouse, the quick menu of delete appears, delete the same SRC file name under the install path. Double click the left key of the mouse to open the file.



Figure -5

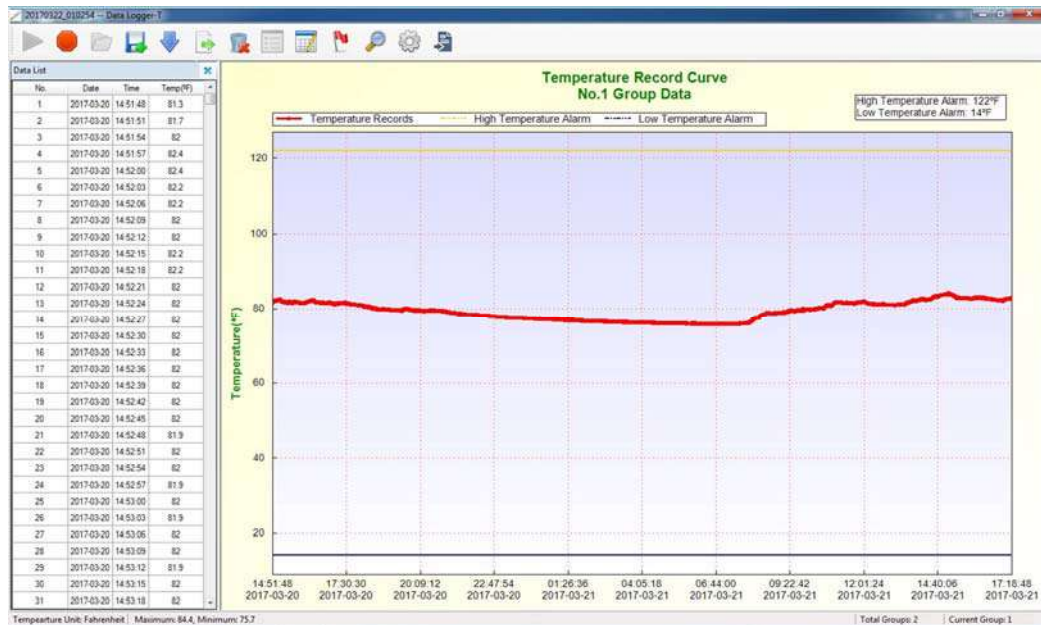


Figure -6

Title bar in the main window is to show the current files available for opening.
Figure -6 “20161102_170223”

The bottom status bar is to show the temperature unit, the maximum and minimum readings listed in the left panel, the total groups recorded in the files and number of the groups recorded.

The display proportion can be adjusted by dragging the parting line between the left panel and the drawing area. And the features of the left panel can be showed in the title bar on the top of the panel. Close key can be hidden in the left panel.

The right drawing area shows the temperature curve on the basis of the current recordings listed in the left panel. The main title displays the current series number. The bottom figure illustrated the meaning and color of the curves. The right upper text box shows the high/low temperature value. The X-axis gives the time information of the data recorded and the Y-axis gives the temperature of that time.

Click the “**Tempearture Unit: Fahrenheit**

” key at the left bottom to switch the temperature unit between the Celsius and Fahrenheit degree. The figure -7 shows an example to switch from Fahrenheit to Celsius degree.

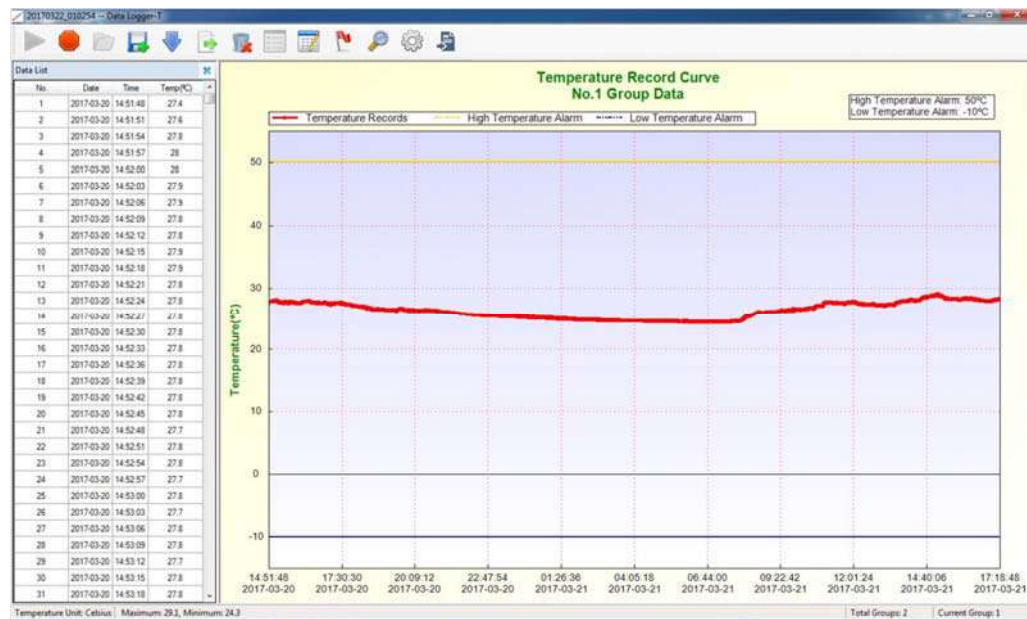


Figure -7

Click an item listed with the left key of the mouse, the software will locate the corresponding position in the drawing area. In the figure-8, click the data selected just now again to delete the selected item and the data buoy disappears.

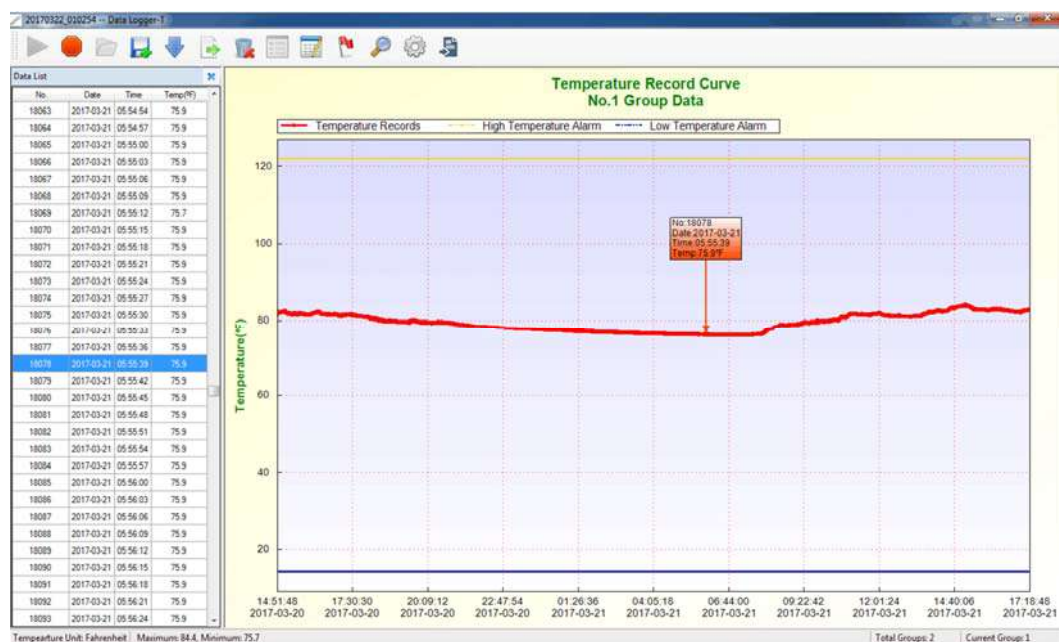


Figure -8

When the mouse pointer stays on the curve of the temperature curve the data buoy will display in the drawing area which will disappear in a short time. When the pointer of the mouse stays on the HI/LO temperature alarm curve a text box of

alarming limits preset will show as in the figure-9.



Figure -9

If there are more points recorded, drag the square box in the right drawing area with mouse to exaggerate the specified area. If you want go back to review the beginning status, select the “go back zoom in / move” by clicking the right key of the mouse in the table area.

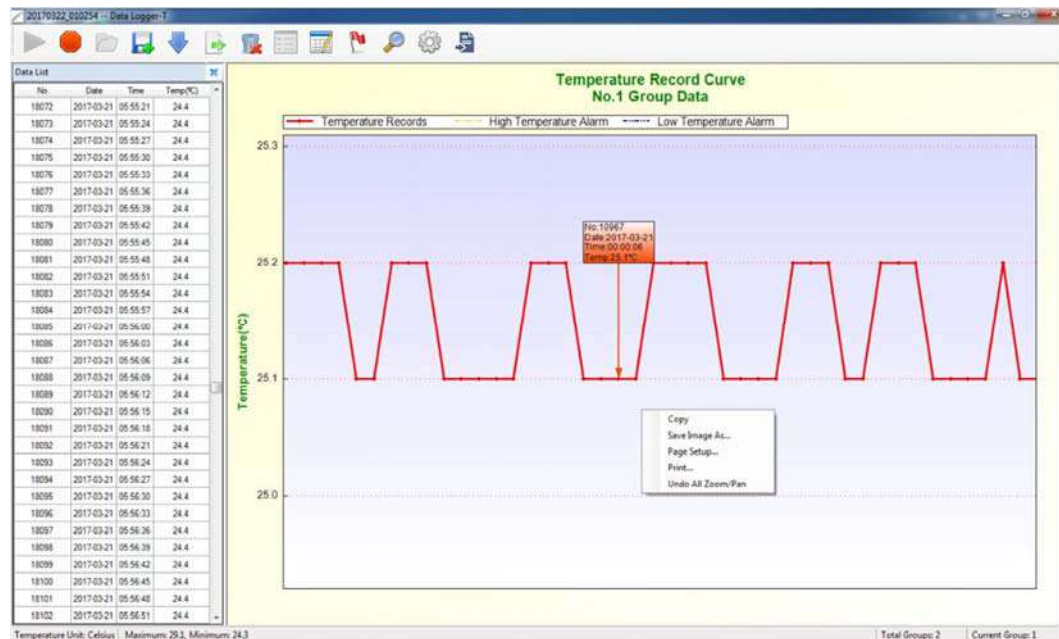


Figure -10

3. Data group switch

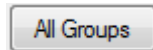
Click the View Switch key to switch to the next group of data and meanwhile the current data information will be refreshed and appear in the left right data list, drawing area and the bottom status information. This key only functions when the data list shows in the title bar on the left panel.

4. Mark Line key

Click this key to switch between the Mark Line and Hide Mark Line, and the HI/LO alarm line is default opened. When the Hide Mark Line functions the alarming text box at the upper right corner of the drawing area hide too.

5. Review

Click Review key, the title bar at the left panel shows Review Panel.



Click All Group key, all the record groups will be listed at the bottom (figure-11). The listed groups are named default from the recording time to the one last time, and date selection is not required.

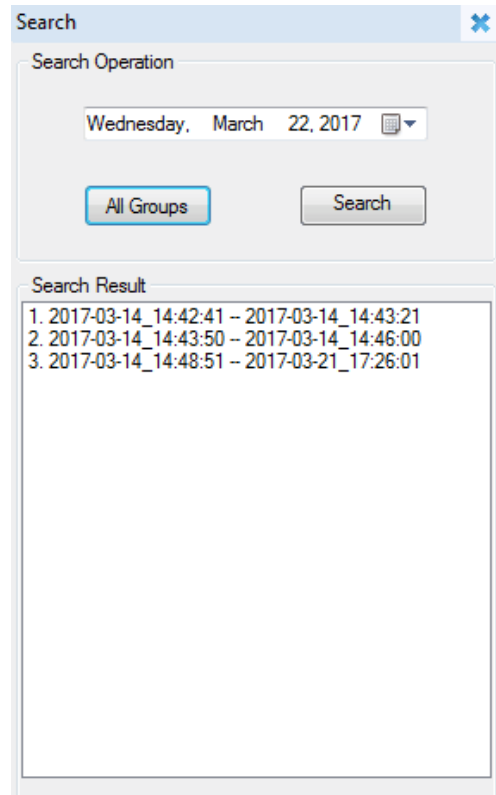


Figure -11

Double click the item in the search result, and open the corresponding record group to draw the table(figure-12). Use this All Groups Review function to obtain all the data record information quick accessed and switch to any group.

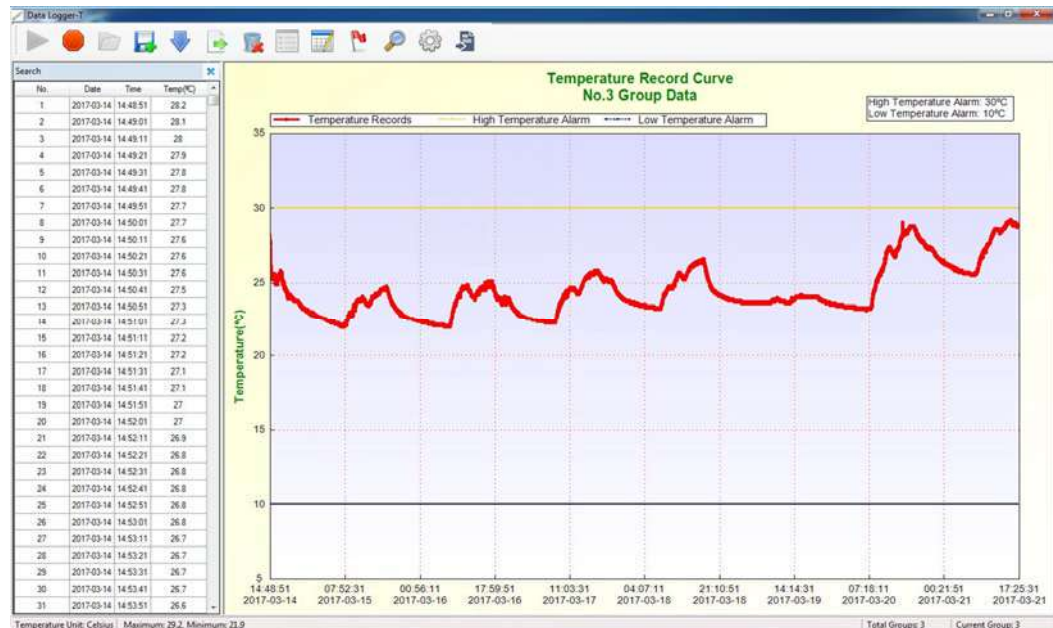
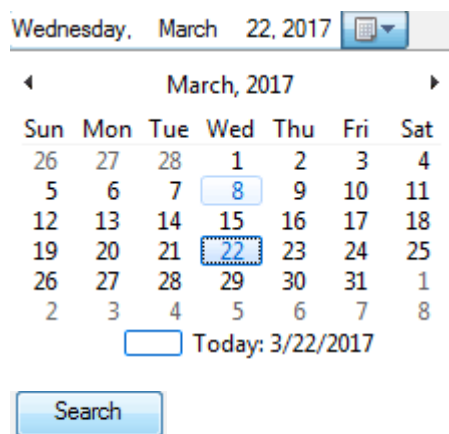
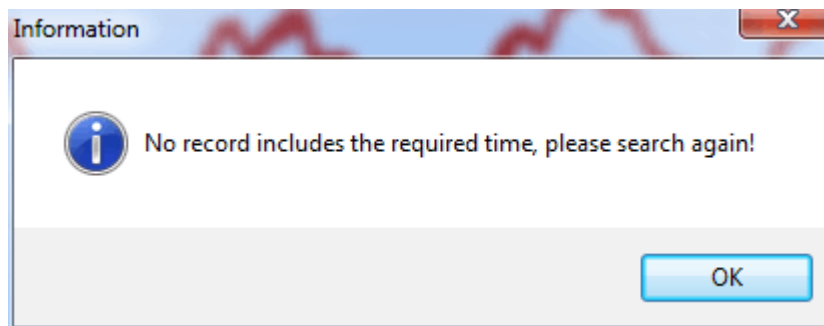


Figure -12



Click the right key at the date bar to select the target date then click the Review Groups to review if the data record with target date exists.

If there is no matching data, a notification will be given as below.



If the group exists the Review Result response the data group matching as shown in figure-13.

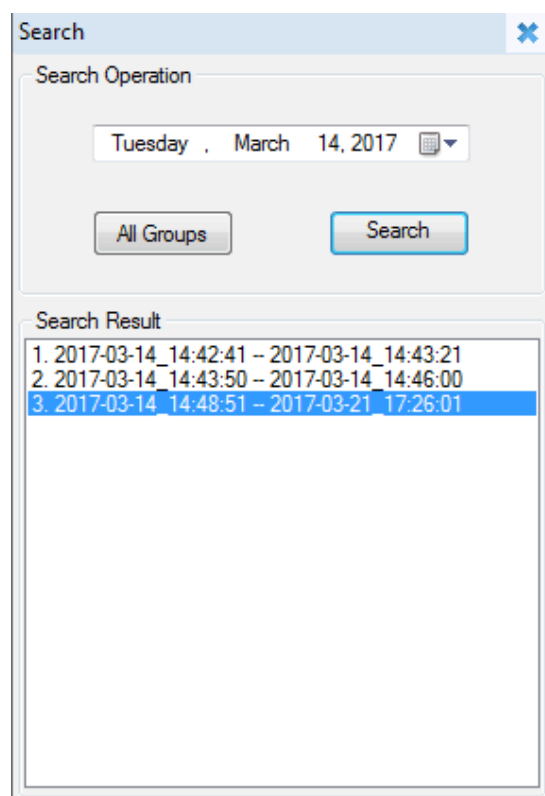


Figure -13

Double click the item in the search result to open the corresponding data group and quick access the first data and set all the data matching the review condition being selected as shown in figure-14.



Figure -14

6. Data list key

Click Data List key to switch the left panel to Data List

7. Data output

Click Download key, a file save path dialogue box pops up as shown in figure-15. When the paths selected, all data recorded will be output to a MDB file in Access database, and the files are named in form of the dates and time as downloaded as shown in figure-16.

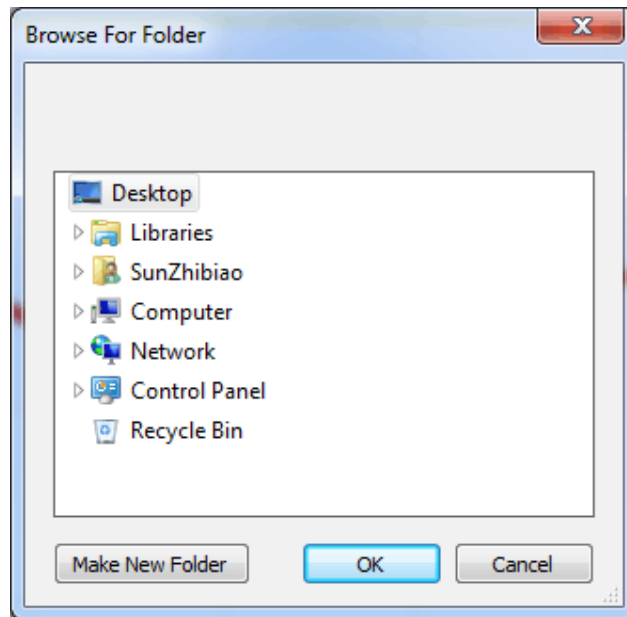


Figure -15

This computer

Database

Network

Family group

Control panel

Recycle bin

Shortcuts

New folder

Confirm

Cancel

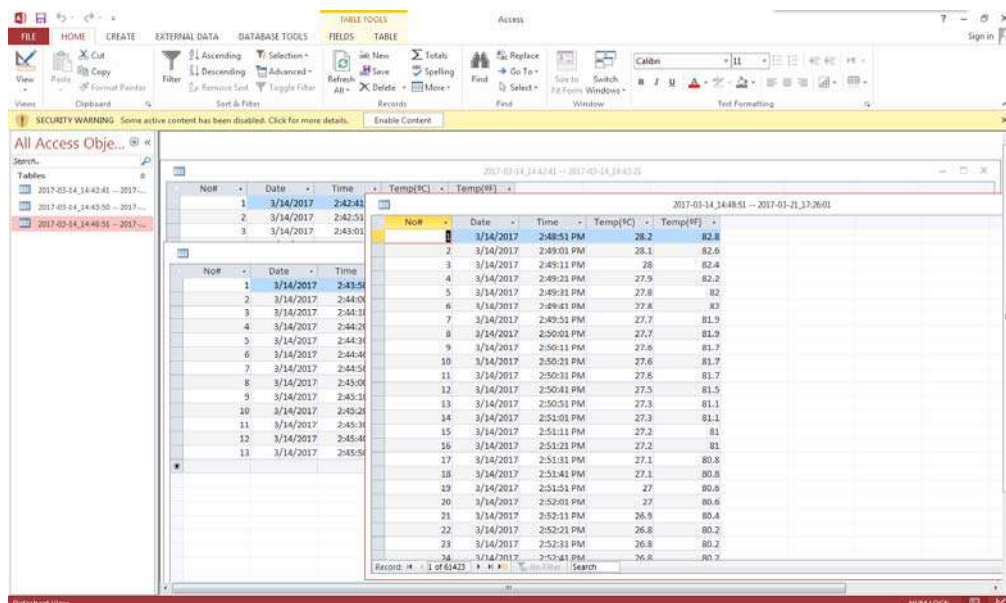


Figure -16

8. Close key

Click Close key to close the current file or disconnect the device with PC. If there is no device inserted the program will go back to initial status as shown in figure-1. Files can only be opened or data retrieved after the Close operation is done.

When the program goes back to the initial status, inserting the device will activate the Start function of the tool bar on the top and the left of the bottom show Ready, while the right shows the process bar, total groups and the current status information as shown in figure-17. When the device is removed this time, the program goes back to initial status as shown in figure-1



Figure -17

9. Start key

Click Start key, the program retrieve data from the device, and the progress bar at the bottom move forward, the retrieving fails, the program requests again until success of the job as shown in figure-18, the interface is switched to the above said data list function, and the Delete key and Set key are activated.



Figure -18

Temperature record curve -----

10. Save key

Click Save key to save the data retrieved under the folder SRC of the install path and generate a file named in format of time when saving it.

11. Delete key

Click Delete key to delete the data saved and initialize the storage space. Please confirm if it is necessary to save or download the data before delete operation. Click Start key after success of retrieving then click Delete key, the save or download job can still be performed.

12. Parameter setting

Click Set key, the left title bar shows as Panel Setting. This operation allows inputting temperature unit, high temperature alarming, low temperature alarming, record interval and time as shown in figure-19, click Confirm Settings after then. Please make sure the settings are valid, the program alerts if illegal inputting occurs as shown in figure-20. Alarming value allows setting number ranging from $-30^{\circ}\text{C} \sim 80^{\circ}\text{C}$ ($-22^{\circ}\text{F} \sim 176^{\circ}\text{F}$) with no more than tenth decimal and logically high temperature value is above the low temperature value. The record interval is set in unit of second ranging from 1 to 65535.

After setting done, the program will calculate the lasting time for future record based on the remaining storage space and record interval.

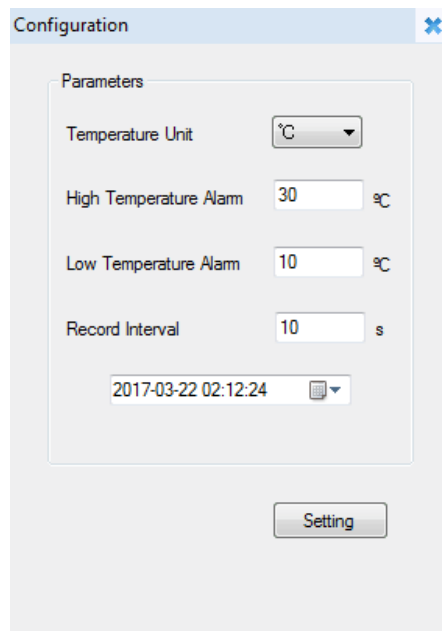


Figure -19
Panel setting
Parameter
Temperature unit
Record interval

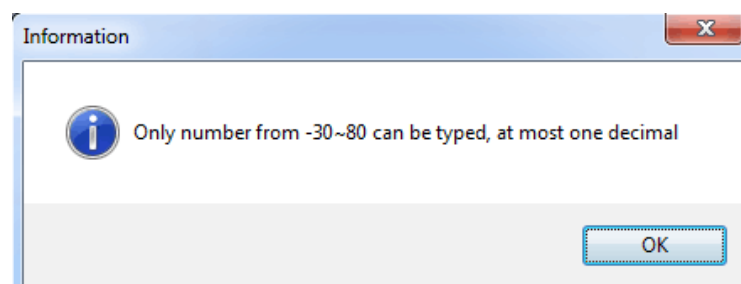


Figure -20

Alert
Input only number ranging from -30 to 80 with no more than tenth decimal
Confirm

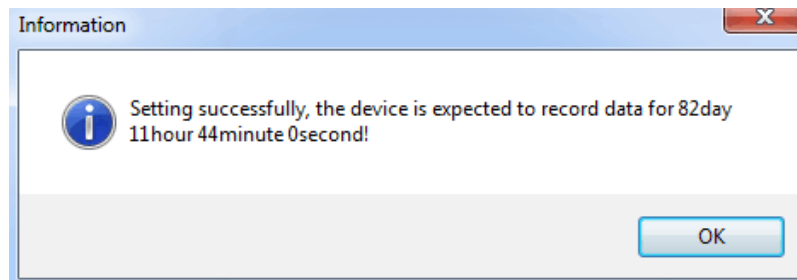


Figure -21

Setting success, and the space will be used up in 7 days 14 hours 2minutes and 40 seconds!