HUATO

User's Guide

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E-mail: sales@huato.com

HE70X/80X Handheld thermocouple thermometer /data logger

HE81X Handheld temperature & humidity thermometer/data logger

HUATO

HUATO Headquarters:

HUATO ELECTRIC CO., LTD.

Toll-Free: 0755-29977605

Customer Service: 0755-29977605

Engineering Service: 0755-29977605

Fax: +86-755-29748856

E-mail: sales@huato.com

For Other Locations Visit www.huato.cn

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Section 1.1 - HE70X and HE80X product introduction

1.1.1 - Introduction

HE70X-80X series is thermocouple thermometer. It can support 8 types thermocouple sensors (such as K, J, E, T, N, S, R, B), measuring -200degC to 1800degC with different sensor type suitable for the exact applications. HE70X-80X series are widely applied in industrial production fields, food processing industry, pharmaceutical industry and research testing fields as well as other temperature monitoring applications.

1.1.2 - Features

- 4 Channels T1/T2/T3/T4 temperatures are displayed separately.
- Manual recording and reading functions (88 groups), large capacity broken storage, can store 36,000 sets of data.
- The input isolation protection voltage is 350Vp-p between any channel.
- Unique design, ergonomics, protection of the sensor, beautiful appearance.
- Host Size(L x H x D): 189mm x 69mm x 44mm.
- LCD Screen Size: 54mm x 44mm.

1.1.3 - Application

- Industrial production.
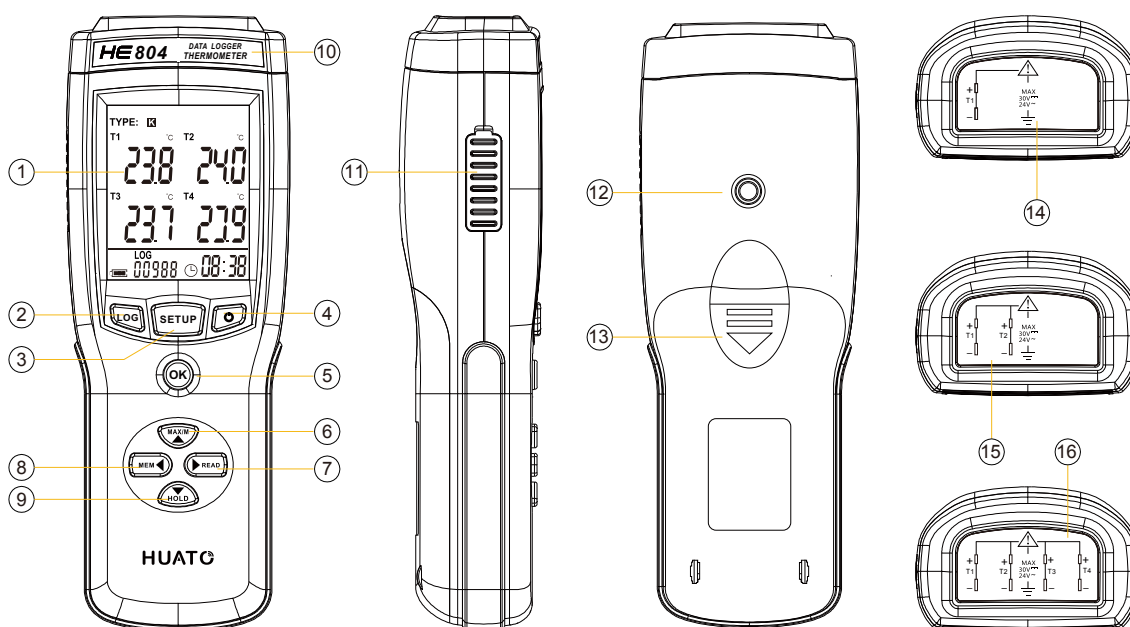- Food processing.
- Pharmaceutical.
- Research

NOTE:

There are no user serviceable parts inside your unit. Attempting to repair or service your unit may void your warranty.

1.1.4 - Data Logger Model

Model	Temperature Channel	Temperature Accuracy	Measuring Range	Handheld Recording Capacity	Auto Recording Capacity
HE701	1				
HE702	2	±1℃±5‰	-200~1800℃	88	（none）
HE704	4				
HE801	1				
HE802	2	±1℃±5‰	-200~1800℃	88	36,000
HE804	4				

1.1.5 - Temperature Data Logger Appearance
(HE701/HE702/HE704/HE801/HE802/HE804)

1. LCD Screen
2. LOG Button
3. Setup Button
4. ON/OFF
5. OK Button
6. Maximum and minimum checking buttons
7. Manual recording data checking button
8. The previous data checking button

9. Manual recording function button
10. Model label
11. USB port & DC power Jack (9V, 3.5mm)
12. Hole for fixed frame
13. Battery cover
14. 701/801 cap(sensor port)
15. 702/802 cap(sensor port)
16. 704/804 cap(sensor port)

1.1.6 - Single-channel LCD Screen (HE701，HE801)
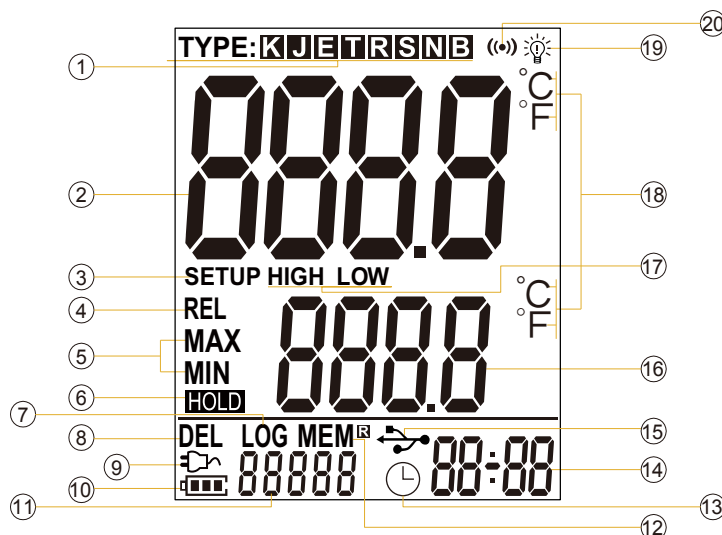
1. Sensor type symbol display area.
2. Temperature data display area.
3. This symbol shows being the setup status.
4. This symbol shows being the manual recording data checking status.
5. This symbol shows being the maximum and minimum data checking status.
6. This symbol shows being the holding fixed measuring data status.
7. This symbols shows that data can be deleted.
8. This symbol shows instrument is supported by external DC power.
9. Battery status indication.
10. This symbols shows being the logging status (HE80x only).
11. Count for auto-recording and manual-recordingdata.
12. This symbol shows being the manual-recording checking status.
13. Clock symbol.
14. Time display area.
15. This symbol shows instruments being the connection status with PC.
16. Maximum and minimum data display area.
17. This symbol shows being the maximum or minimum data checking status.
18. Symbol for temperature unit.
19. This symbol shows being the backlight status.
20. This symbol shows the setting limits are being exceeded.

1.1.7 - Two-channel LCD Screen (HE702，HE802)
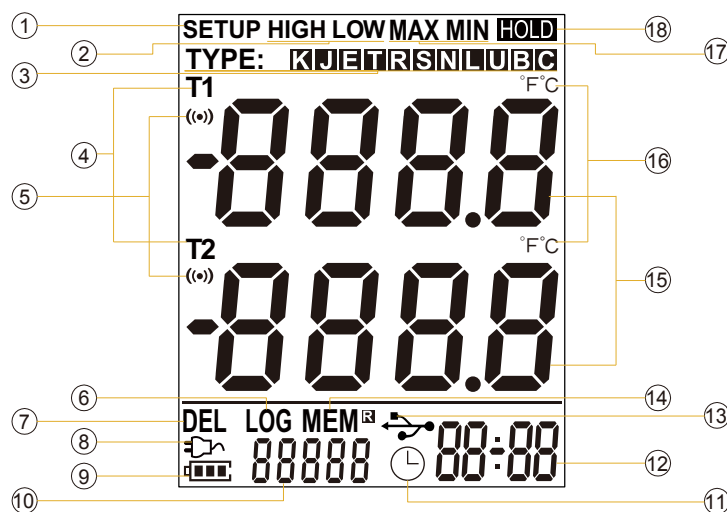
1. Setup mode.
2. Maximum/Minimum data checking status.
3. Sensor type symbol display area
4. Symbol for channel 1 and channel 2.
5. Shows that the setting limits for channel 1 or channel 2 are being exceeded.
6. logging status(HE80x only).
7. Manual-recording data can be deleted.
8. Instrument is being supported by DC external power Battery status indication.
9. Battery status indication.
10. Count for manual-recording or auto-recording data
11. Symbol for clock
12. Year/month-date/clock alternate display area
13. Instrument is being connected with PC.
14. Manual-recording data checking status. Display area for channel 1 and channel 2.
16. Symbols for temperature unit for channel 1 and channel 2.
17. Maximum or minimum data checking status
18. Holding fixed measuring data status

1.1.8 - Four-channel LCD Screen (HE704，HE804)
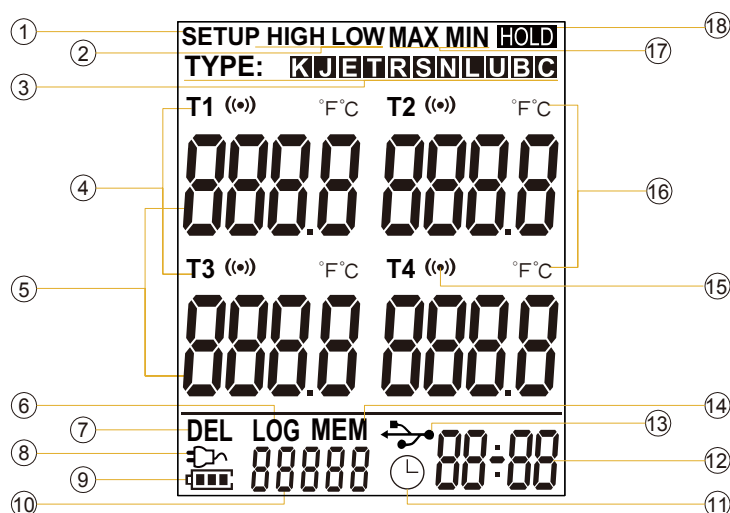
1. Setup mode.
2. Maximum or minimum data checking status.
3. Sensor type symbol display area.
4. T1,T2,T3,T4 for channel 1, channel 2, channel 3 and channel 4 respectively.
5. Data symbol for channel 1, channel 2, channel 3 and channel 4.
6. Logging status (HE80x only).
7. Manual-recording data can be deleted.
8. Instrument is being connected with PC.
9. Battery status indication.
10. Count for auto-recording or manual-recording data.
11. Symbol for clock.
12. Manual-recoding data checking status.
13. Instrument is being connected with PC.
14. Manual-recoding data checking status.
15. Setting limits are being exceeded.
16. Temperature unit for channel 1, channel 2, channel 3 and channel 4.
17. Maximum and minimum data checking status.
18. Holding fixed measuring data status.

Section 1.2 - HE81X product introduction

1.2.1 - Introduction

HE81x series Temperature and Humidity Data Logger, they are Comprehensive temperature and humidity measuring instruments which can measure the RH, air temperature, it has advanced functions such as backlight, check for MAX and MIN value and USB port telecommunication to download all recorded data.

1.2.2 - Features

- Adopt Swiss imported high precision temperature and humidity sensor.
- Manual recording and reading functions (88 groups), large capacity broken storage, can store 36,000 sets of data.
- Unique design, ergonomics, protection of the sensor, beautiful appearance.
- Host Size(L x H x D): TH Series (275mm x 69mm x 44mm)
    EX Series (189mm x 69mm x 44mm).
- LCD Screen Size: TH/EX Series (54mm x 44mm).

1.2.3 - Application

- Industrial production.
- Food processing.
- Pharmaceutical.
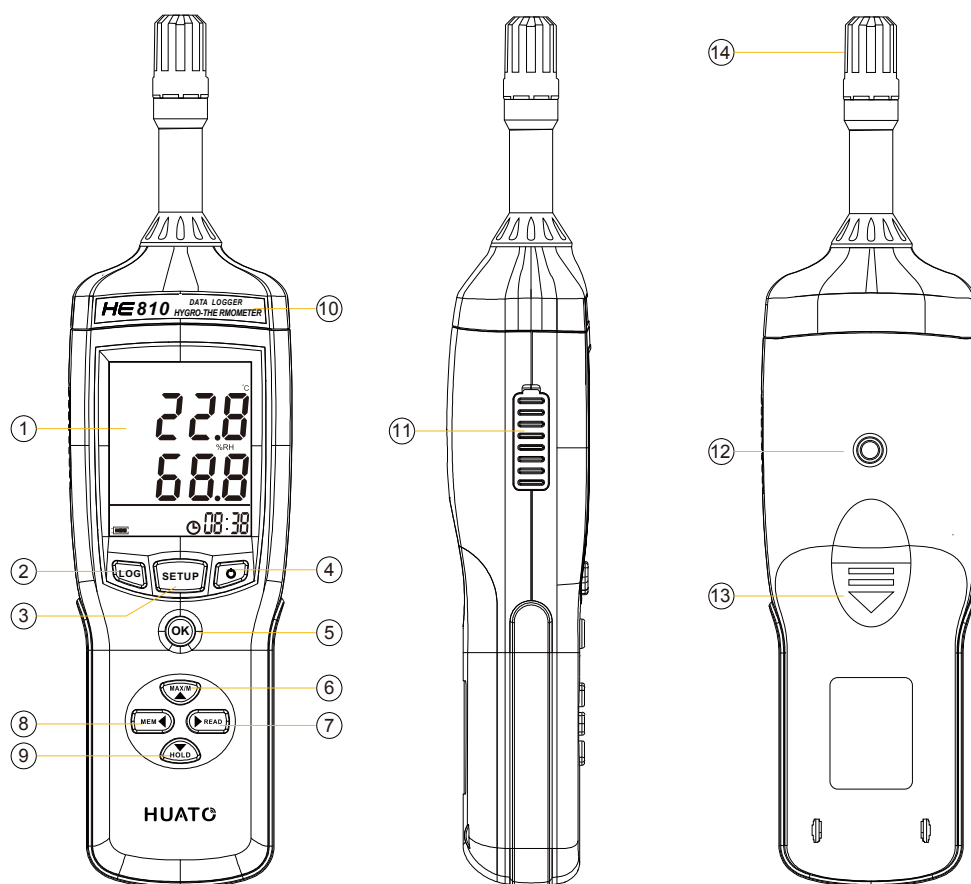- Air Condition / Heater Test.

◤ NOTE: ◥

There are no user serviceable parts inside your unit. Attempting to repair or service your unit may void your warranty.

1.2.4 - Data Logger Model

Model	Temperature Range	Humidity Range	Temperature Accuracy	Humidity Accuracy	Auto Recording Capacity
HE810-TH	-20~70°C	0~100%RH	±0.5°C	±5%RH	36.000
HE810-EX	-40~85°C				
HE815-TH	-20~70°C	0~100%RH	±0.3°C	±3%RH	
HE815-EX	-40~85°C				

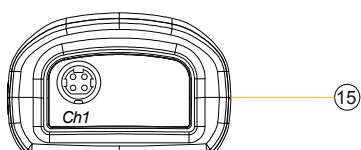## 1.2.5 - Temperature and Humidity Data Logger Appearance (HE810-TH/HE810-EX/HE815-TH/HE815-EX)

HE810-TH/HE815-TH

1. LCD Screen
2. LOG Button
3. Setup Button
4. ON/OFF
5. OK Button
6. Maximum and minimum checking buttons
7. Manual recording data checking button

8. The previous data checking button
9. Manual recording function button
10. Model label
11. USB port & DC power Jack (9V, 3.5mm)
12. Hole for fixed frame
13. Battery cover
14. Built-in sensor

HE810-EX/HE815-EX)

1. LCD Screen
2. LOG Button
3. Setup Button
4. ON/OFF
5. OK Button
6. Maximum and minimum checking buttons
7. Manual recording data checking button

8. The previous data checking button
9. Manual recording function button
10. Model label
11. USB port & DC power Jack (9V, 3.5mm)
12. Hole for fixed frame
13. Battery cover
14. External Cable Length 3 meter
15. 81x-EX Cap(Sensor Port)

1.2.6 - Two-channel LCD Screen
(HE810-TH/HE810-EX/HE815-TH/HE815-EX)
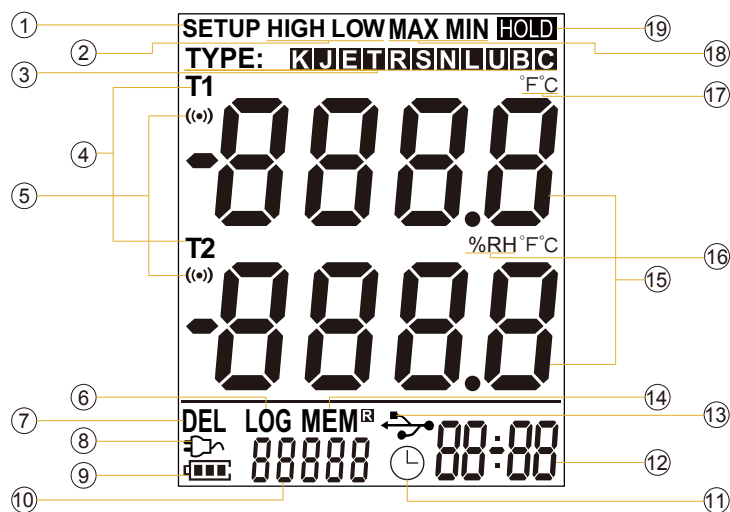
1. Setup mode.
2. Maximum/Minimum data checking status.
3. Sensor type symbol display area
4. Symbol for channel 1 and channel 2.
5. Shows that the setting limits for channel 1 or channel 2 are being exceeded.
6. logging status(HE80x only).
7. Manual-recording data can be deleted.
8. Instrument is being supported by DC external power Battery status indication.
9. Battery status indication.
10. Count for manual-recording or auto-recording data
11. Symbol for clock
12. Year/month-date/clock alternate display area
13. Instrument is being connected with PC.
14. Manual-recording data checking status. Display area for channel 1 and channel 2.
16. Symbol for Humidity unit
17. Symbols for temperature unit for channel 1 and channel 2.
18. Maximum or minimum data checking status
19. Holding fixed measuring data status

Section 1.3 - Button function instructions

⏻ : Click to turn on the instrument and press long for 3 seconds to turn it off. Automatic shutdown in 15 minutes.

LOG : Click to enter into the logging mode, click again to exit the logging mode. (HE8XX only)

SETUP : Click to enter into the setup mode, click again to exit the current mode and save the settings.
    1、℃ / ℉ switching button, usually ℃, (MEM◀) (▶READ)switch ℃ / ℉, ℉ lighting, OK to enter into the next setting mode.
    2、SETUP DEL MEM: show DIS in the LCD corner means CAN'T, (MAX/MIN▲) (HOLD▼) switch, show En and press OK to delete the manual-recording data.
    3、SETUP DEL LOG: show DIS in the LCD corner means CAN'T, (MAX/MIN▲) (HOLD▼) switch, show En and press OK to delete auto-recording data
    4、SETUP TYPE: lighting from K, (MEM◀) (▶READ) moving on one by one, OK key to confirm the sensor type.

ok : Setup switch button during the setup mode. Backlight button during the normal working mode

MAX/MIN▲ : Direction button during the setup mode. Maximum/minimum data checking button during the normal working mode.

MEM◀ : Direction button during the setup mode. Button for checking the previous manual-recording data during normal working status.

▶READ : Direction button during the setup mode Button for checking the manual-recording data during normal working status, total in 88 (capacity)

HOLD▼ : Direction button during the setup mode Holding the fixed measuring data status during the normal working mode

Section 2 - Installation and Instruction

This section will explain how to use the software to upload, read, configure and synchronize the settings, how to turn on/off the logger & enter/exist the logging mode, and how to delete and download the logging data.

Section 2.1 - Software Installation

2.1.1 - The Requirement of the Computer Hardware

1. OS: Windows XP/Vista/8/10 (32/64bit).

2. CPU: 1.6GHz.

3. Physical Memory: 512MB.

4. Hard-drive Space: 4 GB.

5. USB Port: 1.

2.1.2 - Install Driver & Software

Note: "If need to install Driver separately, please install 64 bit driver for Windows 64 bit computer & 32 bit driver for Windows 32 bit computer".

1. Install LogPro Software and Driver together(Default Path: C:\81x Logger).

2. Installation Steps: When enter the software, click the 'Install LogPro and Driver' (as below Pic), and then click the 'Next '(5 times), click the 'Install', click the 'Finish'. When entering the LogPro software interface, the installation driver software window will pop up. Click 'Install', and the success of installation will be displayed.
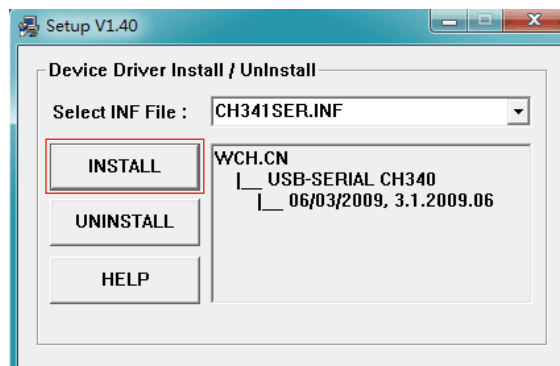

LogPro installation page
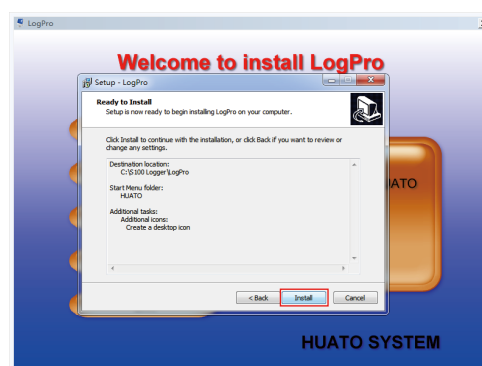
Default installation folder

The successful installed

Install driver

Section 2.2 - How to Read and Configure the Logger

2.2.1 - Read and Configure the Logger's Settings

1. Turn on and Insert the data logger to the computer[1].
2. Start LogPro software on the PC.
3. From the toolbar select Connect.
4. Load & Read the logger's current settings.
5. Configure the new settings.
6. Sync the settings & time. (The PC time will be synchronized to the logger as well.) .
7. From the toolbar select disconnect.
8. Sync the Computer's Data & Time to the Data Logger.
9. Unplug the logger from the computer, and then the logger is in Standby mode.
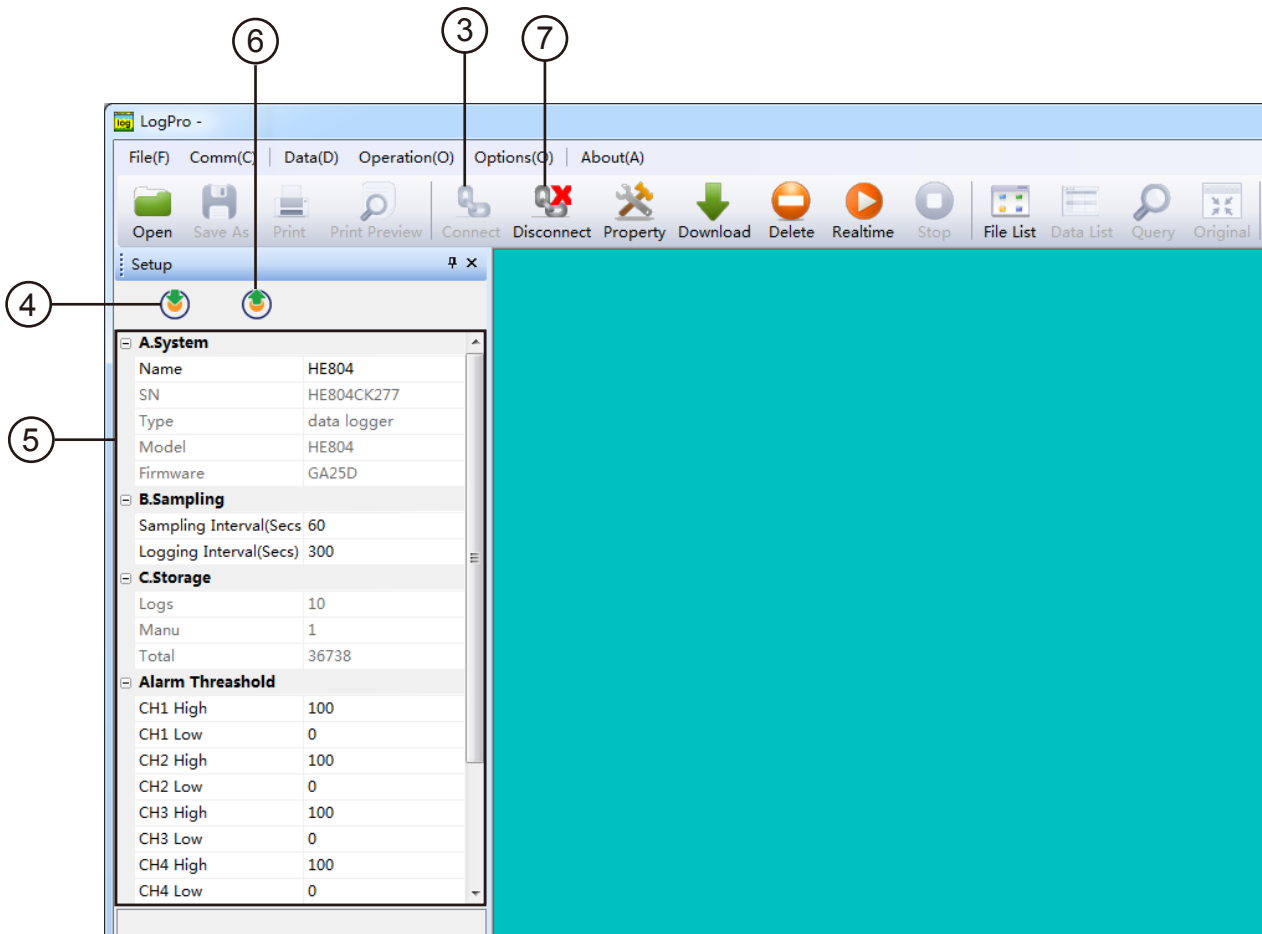
1. The windows operating system cannot handle USB devices being unplugged and plugged back too fast. When unplugging the logger, wait for about 5 seconds before plugging it in again. If you unplug and plug back a device too quickly, the computer may stop recognizing any USB devices on that port. If this happens you will have to restart the computer. This is a windows USB problem and is not related to LogPro.

2.2.2 - Setting Parameters Description

⊟ **A.System**	
Name	HE804
SN	HE804CK277
Type	data logger
Model	HE804
Firmware	GA25D
⊟ **B.Sampling**	
Sampling Interval(Secs)	60
Logging Interval(Secs)	300
⊟ **C.Storage**	
Logs	10
Manu	1
Total	36738
⊟ **Alarm Threashold**	
CH1 High	100
CH1 Low	0
CH2 High	100

| Setting Parameter	Text	Description
Name	English letters or numbers	Name of the logger
SN	10 characters	Must be the same as the one in the label of logger
Temperature	Celsius & Fahrenheit	Select the Celsius and Fahrenheit readings
Logging Interval (secs)	Number from 2 to 86400	Logging frequency
sampling Interval (secs)	Number from 1 to 240	Sampling frequency in LCD screen
Logs	Number from 0 to 43000	The count of records in the memory
Total	Number 43000	The total capacity of the logger's storage
Offset	Calibration mode: For example, pls fill in 1.5 if the displayed temperature is higher than the actual temperature of 1.5 ℃; fill in -1.5 if the displayed temperature is lower than the actual temperature of 1.5 ℃. If you need toadjust the humidity, do the same, thenumber field is -100~100.	Input positive number to decrease the value. Input negative number to increase the value.

Calibrate the logger: The logger is factory calibrated to an accuracy given in the device specifications. However, there may be times when you wish to adjust the calibration of your logger. Logpro provides you with the ability to perform a single point offset calibration. This calibration can be used to increase the accuracy of the logger for a restricted data range.

Section 2.3 - Download the Logging Data

10. Insert the data logger to the computer.

11. Start LogPro software on the PC.

12. From the toolbar select Connect.

13. From the toolbar select Download.
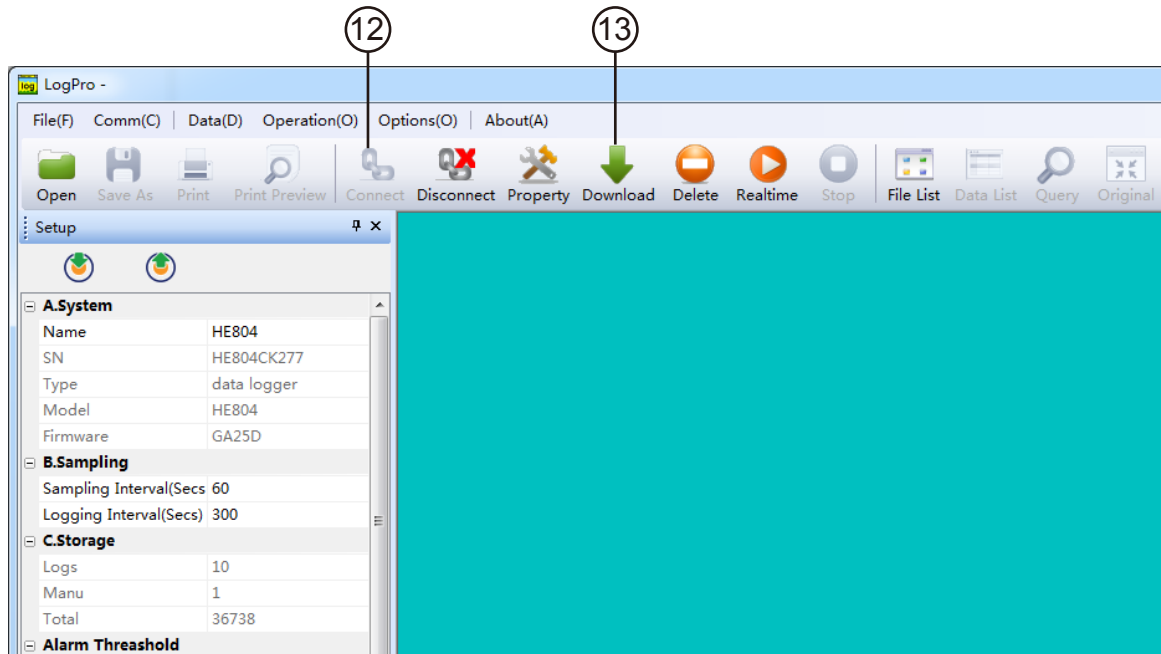
Once the data is downloaded from the logger to the PC, the log graph will be displayed.
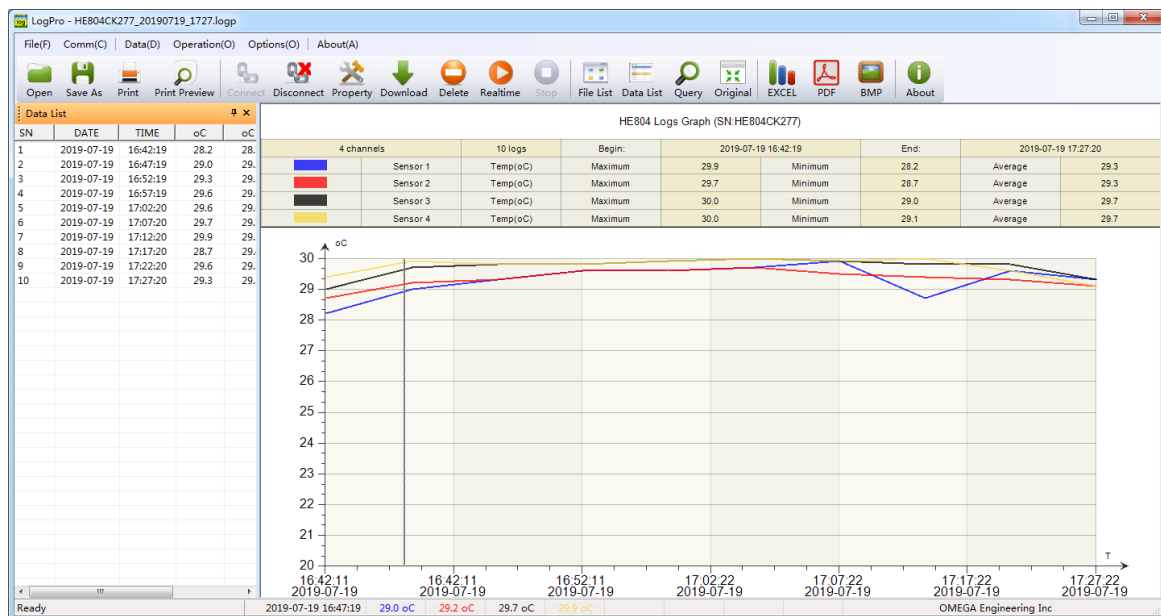
Tips: Press and hold the left mouse button to drag a box, when the left mouse button is released, the graph will be redraw with the data in the selected rectangle area. Click right button, then the graph will be redrawing with all the data in the logs file.

Section 2.4 - View Data Sheet

Click "Data List" button on the toolbar, and then the data listing window is shown below. Channel 3 unit is Dew Point. The Value is calculated from temperature & humidity.
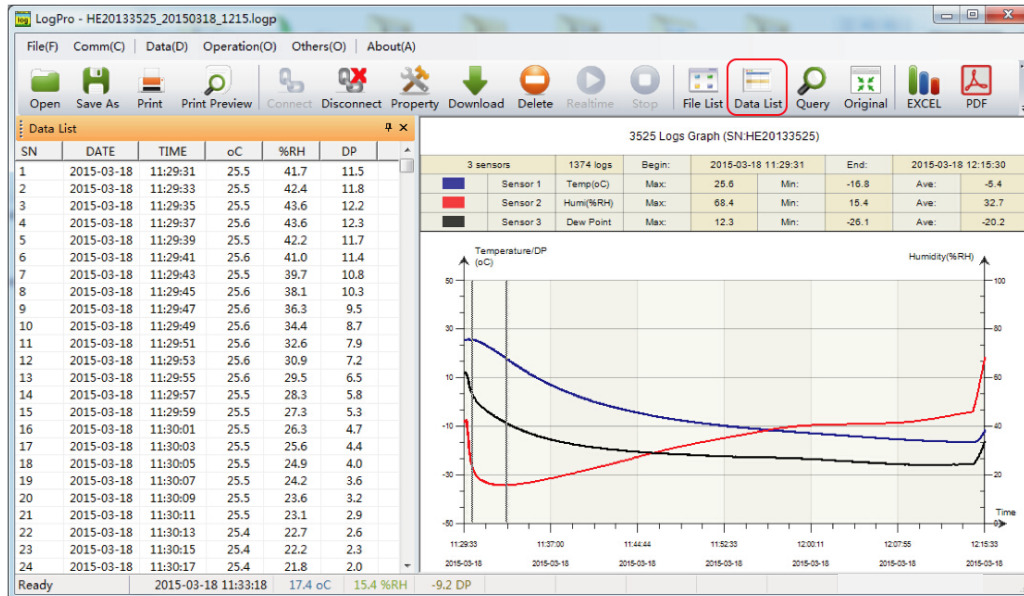

The data pane lists the data samples collected by the logging device.
The column width of each column is adjustable by using the left mouse button and dragging the column the desired width.

Section 2.5 - Exporting Logs from LogPro

-      Export data list to an Excel file.

-      Export data list to a PDF file.

-      Export graph to a BMP file.
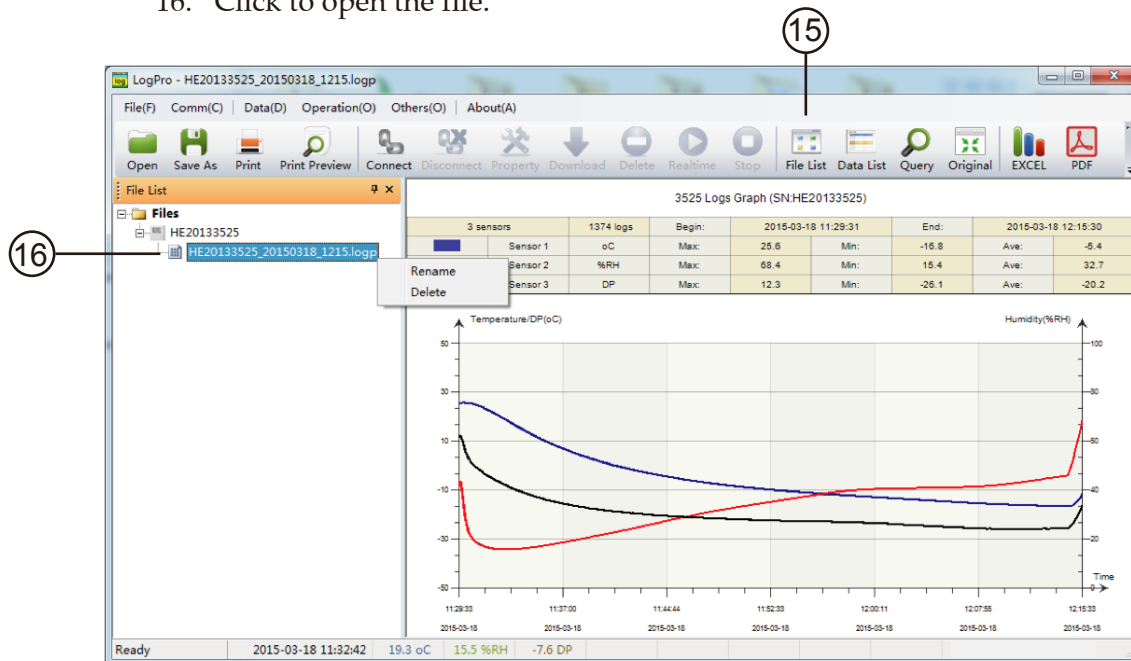
Section 2.6 - Delete Records in the Logger

14. From the toolbar select Delete.
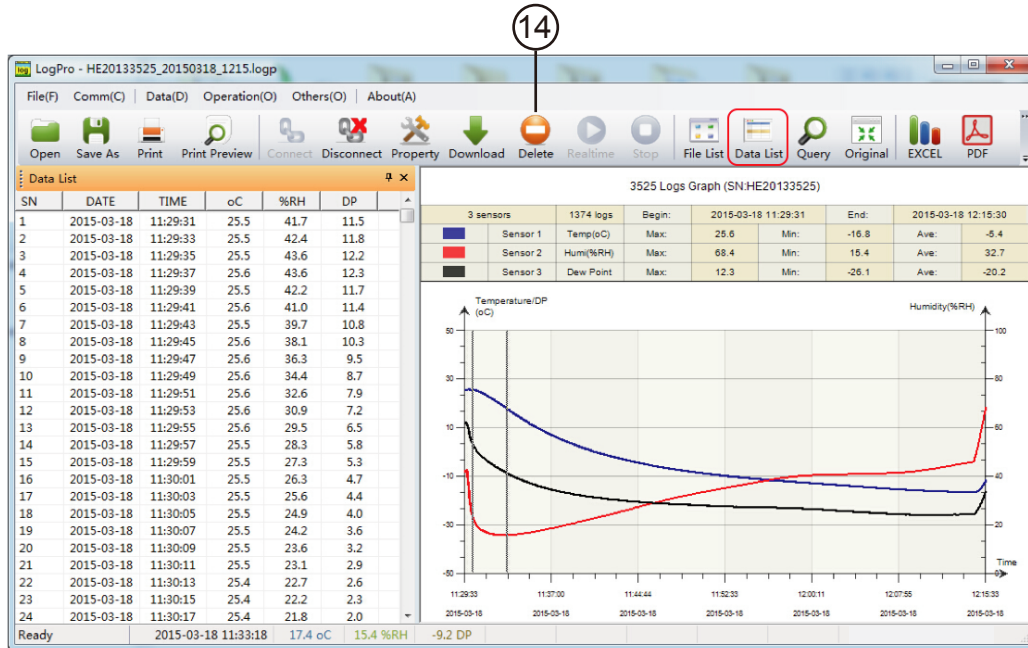
Section 2.7 - Check the Save File in File list

15. From the toolbar select File List.
16. Click to open the file.

- Double click left mouse button, then the selected file is opened.
- Click right mouse button, a popup menu is shown as below, you can rename or delete or log file.
- The save file is saved in the LogPro software's installation path in the PC's hard driver.

- HE70x/80x/81x are not waterproof. Do not connect loggers with computer when the logger is on water.

- Plastic shell is ABS, flame retardant, not resistant to acid and alkali.

- If repair is needed, only authorized technician could do the repair.

- The instrument configuration by 1 x 6LR61 (9V) battery is not rechargeable.

- USB power supply (5V) cannot let the Data Logger work.

4 ⊿ **FAQ**

Section 4.1 - LCD Screen Dim

Reason:

- Insufficient battery or the environment temperature is too low or too high.

Solution:

- In the case of insufficient battery, please replace the battery. If resulted from environment temperature, please immediately take the logger out of the environment.

Section 4.2 - Recording (LOG) are Automatically Stop

Reason:

- When the battery level is low, there will not be sufficient power to support recording function of the logger.

Solution:

- Replace the battery.

Section 4.3 - Software "Runtime Error"

Reason:

- OS forbid software creating files.

Solution:

- Run the program (software) as an administrator.

- Install software in D or E drive if available.

- A data logger name cannot contain any of the following characters: \ / : * ? " < > |

- Software's installation path cannot include Chinese character or garbage character.

Section 4.4 - Check COM Port Number

Press "Win" + "R" in keyboard -> Run "devmgmt.msc" to Open "Device Manager" in Windows-> Expand "Ports (COM & LPT)" -> "USB-serial CH340 (COM No.)" is the Data Logger.