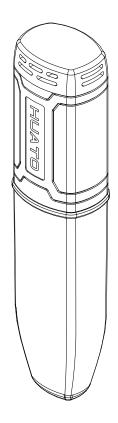
# HE17x Series USB Data Logger User Manual



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# **Chapter 1. USB Data Logger Hardware**

# **1.1 Introduction**

HE170 USB series has USB interface, enjoying elegant appearance and compact construction, specially designed for refrigerator and cold-chain transportation as well as container transport applications. HE170 USB series adopts friendly USB interface, friendly mounting bracket and the screws. HE170 USB series can show temperature/temperature and humidity simultaneously as well as the battery indication. The OK key can help to check the Max/Min/Current value and the upper and lower limits.

#### **1.2 Features**

- Waterproof and dustproof standard IP67, resisting moisture and dust.
- Can set temperature and humidity limit value and LED lights will flash when the value being exceeded.
- Lower consumption design, 1/2AA 3.6V Lithium battery, working for 12 months and easy to replace. (Logging Interval: 600s)
- Transfer logging data to PC through software and can be saved as different types to ensure the existence.
- Use high sensitivity sensor, fast reaction and high precision.
- Size(L x H x D): 126mm x 34mm x 28mm

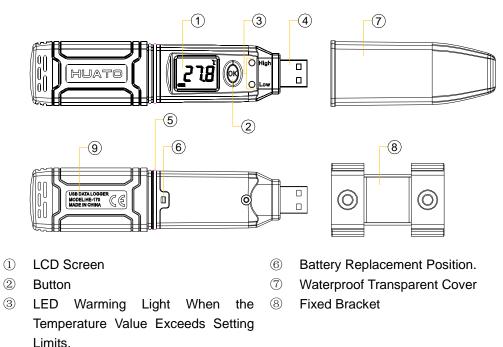
## **1.3 Application**

Wildly use in cold chain Transportation, Containers.

## 1.4 USB Data Logger Model

Model	Temperature Range	Humidity Range	Temperature Accuracy	Humidity Accuracy	Capacity of Records
HE170			<b>±1.0</b> ℃		
HE171		(None)	<b>±0.5</b> ℃	(None)	
HE172	<b>-30~70℃</b>		<b>±0.3</b> ℃		43,000
HE173		0.400% DU	<b>±0.5</b> ℃	±5%RH	
HE174		0~100%RH	<b>±0.3</b> ℃	±3%RH	

# **1.5 USB Temperature Data Logger Appearance** (HE170/HE171/HE172)



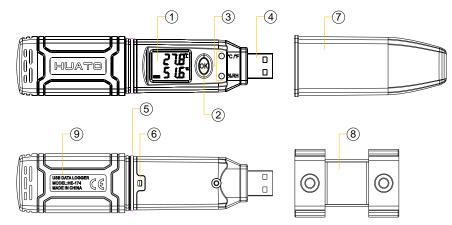
- 4 **USB** Connection Port
- 9 Model Label

- (5)Waterproof Ring
- 1.6 USB Temperature Data Logger Screen (HE170/HE171/HE172)



- (1)Display the High Limit
- 2 Display the Low Limit
- 3 Battery power indication.
- 4 Display the Minimum Value in Records
- Display (5)the Maximum Value in Records
- (6)symbol display shows being the logging status.
- (7)**Temperature Value**
- 8 Temperature Unit(°C or °F)

# 1.7 USB Temperature & Humidity Data Logger Appearance (HE173/HE174)



6

 $\bigcirc$ 

(8)

- LCD Screen 1
- 2 Button
- 3 LED Warming light When the Temperature or Humidity Value Exceeds the Setting Limits.
- **USB** Connection Port (4)
- (9)Model Label

**Fixed Bracket** 

Battery Replacement Position.

Waterproof Transparent Cover

⑤ Waterproof Ring

# 1.8 USB Temperature & Humidity Data Logger Screen (HE173/HE174)



- Display the High Limit 1
- 2 Display the Low Limit
- 5 Battery power indication.
- 6 Units symbol display °C or °F, %RH
- 3 Display Maximum the Value in Records
- 4 Display the Minimum Value in Records
- $\overline{7}$ Value

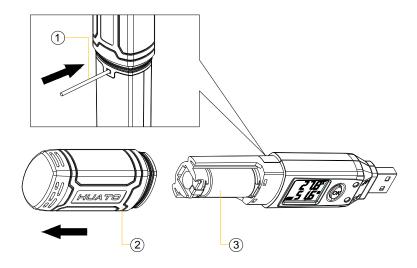
# 1.9 Button

OK Button

- 1. Press this button for long to 5seconds can turn on/off the logger.
- 2. Check the MAX; MIN; High & Low values as well as the current value in the working status.

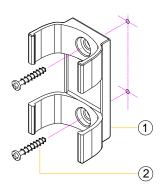
# **1.10 Install Battery**

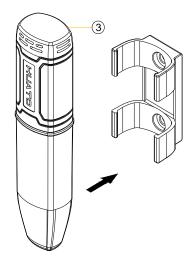
- 1. Open the Battery Cover
- 2. Remove shell
- 3. Install Battery



# 1.11 Fix USB Data Logger

- 1. Use Screw to Fix the Bracket onto the Wall.
- 2. Install the Data Logger.





# **Chapter 2. Logpro Software**

# 2.1 The Requirement of the Computer Hardware

- 1. OS: Windows2000/XP/Vista/Win7/Win8/Win10 (32/64-bit), nonsupport Linux/Unix OS.
- 2. CPU: 1.6GHz
- 3. Physical Memory: 512MB
- 4. Hard-drive Space: 4 GB
- 5. USB Port: 1

#### 2.2 Install Driver & Software

1. Install Driver

Put the assigned software disc into the computer driver and open the file to find

CH341SER

and select the driver based on the operating system.

OS Win7/Win8/Win10-64 select "CH341SER[64bit]".

OS Win XP; Vista; Win7-32 select "CH341SER[32bit]"



(1) Click 【CH341SER】

(2) Click 【INSTALL】—【Confirm】

	9F	Setup ¥1.40	
Click to install		Device Driver Install / UnInstall Select INF File : CH341SER.INF	•
	-	INSTALL     WCH.CN     I_ USB-SERIAL CH34     [_ 06/03/2009, 3.1.	
		UNINSTALL	
		HELP	

Install Logpro Software
 Notice: Please Install Logpro Software in D:\

#### 2.3 Setting the logger's properties to start a new measurement.

- 1. Connect the data logger to the computer.<sup>1</sup>
- 2. Running Logpro software on the PC.
- 3. From the toolbar select Connect.<sup>2</sup>
- 4. Read the logger's properties.
- 5. Set the properties.
- 6. Sync the properties & time. (The PC time will be synchronized to the logger as well.)
- 7. From the toolbar select Disconnect

LogPro -		-												x
File(F) Comm(C) D	ata(D) Operation	n(O) <mark>3</mark> Other	s(O) Abou	t(A)										
Open Save As Prin		Connect	Disconnect P	<u>×</u> roperty D	ownload	O Delete	Realtime	O Stop	File List	Data List	Query	Original	EXCEL	
Setup (USB Data Logge	er)	<del>.</del>												
Basic		X												
Name	3525													
Туре	Data Logger													
Model	TH200A													
SN	HE20133525													
Sampling Interval(s)	10													
Logging Interval(s)	600	=												
Logs	0													
Total	43000													
Temperature Type	С													
∃ Log Mode														
Start Mode	Start Now													
Delay Time	0													
Alarm Threashold														
CH1 High	90													
CH1 Low	-30													
CH2 High	99	+												
Ĺ		/												
Ready	Time											HUATO Elect	tronics.	

- 8. Unplug the logger from the Computer, and then the logger is in Standby mode<sup>3</sup>.
- 9. Press OK button on the logger, turn on the Data Logger and start recording.

<sup>&</sup>lt;sup>1</sup> 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.

<sup>&</sup>lt;sup>2</sup> If more than one logger is connected to your computer at the same time, the program will ask you to choose COM port manually.

<sup>&</sup>lt;sup>3</sup> The logger has three modes: 1.LOG: In the mode, the logger samples and records data timely. 2.Standby: In the mode, the logger stops to sample and record, and the LCD display is OFF. 3.OFF: In the mode, the logger stops to sample and record, and the LCD display is off. Logpro cannot connect to the logger also.

# 2.4 Properties Description

r	non	
Ξ	Basic	
	Name	3525
	Туре	Data Logger
	Model	TH200A
	SN	HE20133525
	Sampling Interval(s)	10
	Logging Interval(s)	600
	Logs	0
	Total	43000
	Temperature Type	С
	Log Mode	
	Start Mode	Start Now
	Delay Time	0
	Alarm Threashold	
	CH1 High	90
	CH1 Low	-30
	CH2 High	99
	CH2 Low	0
•	Offset	
	CH1	0.0
	CH2	0.0

	CH2 0.0					
Property	Text	Description				
Name	English letters or	Name of the logger				
	Numbers					
SN	10 Characters	Must be the same as the one in the label of				
		logger.				
Sampling Interval (s)	Number from 1 to 240	Sampling frequency in LCD screen				
Logging Interval (s)	Number from 2 to 86400	Logging frequency.				
Logs		The count of records in the memory.				
Capacity		The total capacity of the logger's storage.				
Temperature type	°C	The unit of temperature is centigrade				
	°F	The unit for Fahrenheit temperature				
Start Mode	Start Now	Start log when the Logger was turn ON.				
	Delay Start	Wait Delay Time then start log.				
	Timing Start	Start log when Delay Time: HHMMSS				
		e.g. 170000 means 17:00:00				
Delay Time		Input a Delay Time or Timing Time.				
High & Low Limit	CH1: Temperature	When the value over the limit, the buzz will				
	CH2: Humidity	sounds and alarm.				
Offset <sup>4</sup>	CH1: Temperature	Input positive number to decrease the value.				
	CH2: Humidity	Input negative number to increase the value.				

<sup>&</sup>lt;sup>4</sup> 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.

#### 2.5Start record time description

1. Select the mode to start the record in the property bar:

Start Now: the recorder starts immediately to record the data.

Delay start: the recorder starts to record the data after the set delay time.

Timing start: the recorder starts recording data at the specified time point .(Note: the recorder will start at the turn on state and the recorder will not start the record automatically when the logger at the turn off state).

2, Entry delay time or timing time in the property bar.

Start Now: the default is 0.

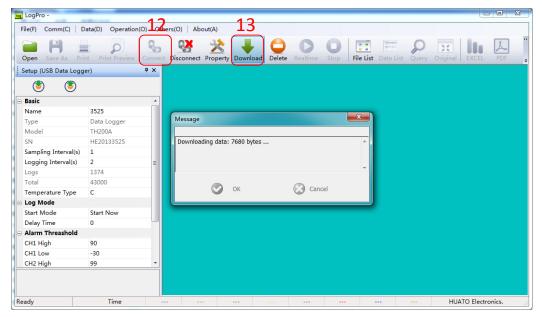
Delay start : fill in the delay time, the unit is second. For example, fill in 120 indicates that the instrument starts to record the data after turn on logger two minutes

Timing start: fill in the timing time and fill in the format of HHMMSS. For example, fill 180000 indicates that the instrument starts to record the data at 6:00:00pm

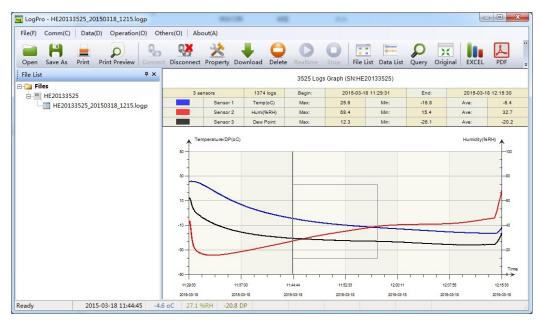
3,Synchronization property and time(The PC time will also be synchronized to the recorder).

#### 2.6 Download the Records after a Measurement.

- 10. Connect the data logger to a free USB port on the computer.
- 11. Running Logpro software on the PC.
- 12. From the toolbar select Connect.
- 13. From the toolbar select Download



Once the data is transferred from the logger to the PC, the data graph will be displayed. The graph display will be blank if there are not any logs.



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(Magnified data table). Click right button, then the graph will be redrawing with all the data in the logs file.

# 2.7 Data Listing Window

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.

	Pro - HE201335	-	-									1.00		_	
File(F)	Comm(C)	Data(D) (	Operation((	0) Others	s(O)   A	bout(A)					_				
Open	Save As		Preview	Connect [	Disconnec	t Propert	ty Downlo	ad Delete	Realtime	Stop	File List Data	a List Quer	/ Original	EXCEL	PDF
Data I	List					₽×							-		
SN	DATE	TIME	oC	%RH	DP					3525 Lo <u>o</u>	s Graph (SN:H	E20133525)			
	2015-03-18	11:29:31	25.5	41.7	11.5		3 sen	sors	1374 logs	Begin:	2015-03-1	8 11:29:31	End:	2015-03	-18 12:15:30
2	2015-03-18	11:29:31	25.5	41.7	11.5			Sensor 1	Temp(oC)	Max:	25.6	Min:	-16.8	Ave:	-5.4
2 3	2015-03-18	11:29:33	25.5	42.4	11.8			Sensor 2	Humi(%RH)	Max	68.4	Min:	15.4	Ave:	32.7
s 4	2015-03-18	11:29:35	25.5	43.6	12.2		-	Sensor 3	Dew Point	Max	12.3	Min:	-26.1	Ave:	-20.2
+ 5	2015-03-18	11:29:37	25.6	43.0	12.3			Sensor 3	Dewront	Max:	12.0	WIIIT.	-20.1	Ave:	-20.2
5	2015-03-18	11:29:39	25.6	42.2	11.7	_		nperature/DP						Humidity	96 RHD .
		11:29:43	25.5	39.7	10.8		(oC)	)						. annony	·····
7															100
	2015-03-18						50								100
3	2015-03-18	11:29:45	25.6	38.1	10.3	_	50 -								- 100
7 3 9	2015-03-18 2015-03-18	11:29:45 11:29:47	25.6 25.6	38.1 36.3	10.3 9.5		-								-
3 9 10	2015-03-18 2015-03-18 2015-03-18	11:29:45 11:29:47 11:29:49	25.6 25.6 25.6	38.1 36.3 34.4	10.3 9.5 8.7		30								-100
3 9 10 11	2015-03-18 2015-03-18 2015-03-18 2015-03-18	11:29:45 11:29:47 11:29:49 11:29:51	25.6 25.6 25.6 25.6	38.1 36.3 34.4 32.6	10.3 9.5 8.7 7.9		-								-
3 9 10 11 12	2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18	11:29:45 11:29:47 11:29:49 11:29:51 11:29:53	25.6 25.6 25.6 25.6 25.6	38.1 36.3 34.4 32.6 30.9	10.3 9.5 8.7 7.9 7.2		-								-
3 9 10 11 12 13	2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18	11:29:45 11:29:47 11:29:49 11:29:51 11:29:53 11:29:55	25.6 25.6 25.6 25.6 25.6 25.6 25.6	38.1 36.3 34.4 32.6 30.9 29.5	10.3 9.5 8.7 7.9 7.2 6.5		30								
3 ) 10 11 12 13 14	2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18	11:29:45 11:29:47 11:29:49 11:29:51 11:29:53	25.6 25.6 25.6 25.6 25.6	38.1 36.3 34.4 32.6 30.9	10.3 9.5 8.7 7.9 7.2		30								
3 9 10 11 12	2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18	11:29:45 11:29:47 11:29:49 11:29:51 11:29:53 11:29:55 11:29:57	25.6 25.6 25.6 25.6 25.6 25.6 25.6 25.5	38.1 36.3 34.4 32.6 30.9 29.5 28.3	10.3 9.5 8.7 7.9 7.2 6.5 5.8		30								
0 0 1 2 3 4 5 6	2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18	11:29:45 11:29:47 11:29:49 11:29:51 11:29:53 11:29:55 11:29:57 11:29:59	25.6 25.6 25.6 25.6 25.6 25.6 25.5 25.5	38.1 36.3 34.4 32.6 30.9 29.5 28.3 27.3	10.3 9.5 8.7 7.9 7.2 6.5 5.8 5.3		30								- - - - - - - - - - - - - - - - - - -
3 ) 10 11 12 13 14 15 16 17	2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18	11:29:45 11:29:47 11:29:49 11:29:51 11:29:53 11:29:55 11:29:57 11:29:57 11:29:59 11:30:01	25.6 25.6 25.6 25.6 25.6 25.6 25.6 25.5 25.5	38.1 36.3 34.4 32.6 30.9 29.5 28.3 27.3 26.3	10.3 9.5 8.7 7.9 7.2 6.5 5.8 5.3 4.7										- 60 - 60 - 40
3 ) 10 11 12 13 14 15 16 17 18	2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18	11:29:45 11:29:47 11:29:49 11:29:51 11:29:53 11:29:55 11:29:57 11:29:57 11:29:59 11:30:01 11:30:03	25.6 25.6 25.6 25.6 25.6 25.6 25.5 25.5	38.1 36.3 34.4 32.6 30.9 29.5 28.3 27.3 26.3 25.6	10.3 9.5 8.7 7.9 7.2 6.5 5.8 5.3 4.7 4.4		30								- - - - - - - - - - - - - - - - - - -
8 9 10 11 12 13 14 15 16 17 18 19	2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18	11:29:45 11:29:47 11:29:49 11:29:51 11:29:53 11:29:55 11:29:57 11:29:57 11:29:59 11:30:01 11:30:03 11:30:05	25.6 25.6 25.6 25.6 25.6 25.5 25.5 25.5	38.1 36.3 34.4 32.6 30.9 29.5 28.3 27.3 26.3 25.6 24.9	10.3 9.5 8.7 7.9 7.2 6.5 5.8 5.3 4.7 4.4 4.0										- 60 - 60 - 60
3 0 1 2 3 4 4 5 5 6 6 7 8 8 9 9 20	2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18	11:29:45 11:29:47 11:29:49 11:29:51 11:29:55 11:29:55 11:29:55 11:29:59 11:30:01 11:30:03 11:30:05 11:30:07	25.6 25.6 25.6 25.6 25.6 25.5 25.5 25.5	38.1 36.3 34.4 32.6 30.9 29.5 28.3 27.3 26.3 25.6 24.9 24.2	10.3 9.5 8.7 7.9 7.2 6.5 5.8 5.3 4.7 4.4 4.0 3.6										- 60 - 60 - 40 - 20
3 ) 10 11 12 13 14 15	2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18	11:29:45 11:29:47 11:29:49 11:29:51 11:29:55 11:29:57 11:29:57 11:29:57 11:29:59 11:30:01 11:30:03 11:30:05 11:30:07 11:30:09	25.6 25.6 25.6 25.6 25.5 25.5 25.5 25.5	38.1 36.3 34.4 32.6 30.9 29.5 28.3 27.3 26.3 25.6 24.9 24.2 23.6	10.3 9.5 8.7 7.9 7.2 6.5 5.8 5.3 4.7 4.4 4.0 3.6 3.2										
0 0 1 2 3 4 5 6 7 8 9 20 21	2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18 2015-03-18	11:29:45 11:29:47 11:29:49 11:29:51 11:29:53 11:29:55 11:29:57 11:29:59 11:30:01 11:30:03 11:30:07 11:30:09 11:30:11	25.6 25.6 25.6 25.6 25.5 25.5 25.5 25.5	38.1 36.3 34.4 32.6 30.9 29.5 28.3 27.3 26.3 25.6 24.9 24.2 23.6 23.1	10.3 9.5 8.7 7.9 7.2 6.5 5.8 5.3 4.7 4.4 4.0 3.6 3.2 2.9			113	700	1124244	115233	1200.11			- 60 - 40

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.

# 2.8 Exporting Logs from Logpro

- EXCEL : Export data list to an Excel file.
- Export data list to a PDF file.



BMP : Export graph to a BMP file.

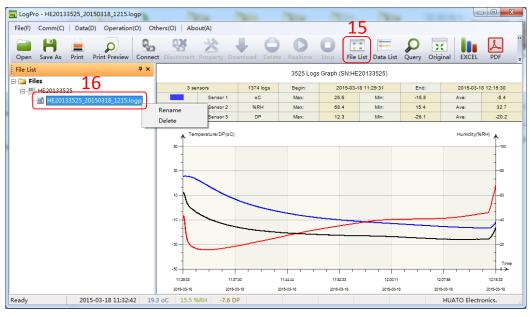
## 2.9 Delete Records in the Logger

14. From the toolbar select Delete<sup>5</sup>

teg LogPro - HE20133525_20150318_1259.logp				100	-	1	-			L	
File(F) Comm(C) C	Data(D) Operation(	O) Oth	ers(O)	About(A)	14						
Open Save As Pri		Connect	Disconr	nect Property D		Realtime		e List Data List		ginal EXCEL	PDF
Setup (USB Data Logg	er)	Ψ×				352	5 Logs Graph (SN:HE	20133525)			
۲ (۲)				3 sensors	171 logs	Begin:	2015	03-18 12:51:31	End:	2015-03-	8 12:59:33
				Delete	Concession of the local division of the loca		X	Min:	24.3	Ave:	24.8
Sampling Interval(s)	1	-	_	Delete	10000	100		Min:	41.0	Ave:	42.7
Logging Interval(s)	60							Min.	.0.9	HUTE	11.4
Logs	171		1	Do you want	to Delete all log:	from memo	rv?			Humidity	1
Total	43000	_	50		to beliete all log.	e memo	·				-100
Temperature Type	C		40 -								-
Log Mode	-		~ -	1	是(Y)		(N)				
Start Mode	Start Now	E	30		(I)						60
Delay Time	0		-	<u></u>							
Alarm Threashold			20-	·							j
CH1 High	90	_	1								t i
CH1 Low	-30		10	1	-						
CH2 High	99	-	. ]								1
Delay Time			12:51		-52.22 5-03-18	12:53:22	12:54:22 2015-03-18	12:55:11 2015-03-18		12:56:11	12:59:33
Ready	2015-03-18 12:53:46	5 24.7		2.2 %RH 11.0			20100010	10100010	-	HUATO Electr	

#### 2.10 Check the Save File in File List

- 15. From the toolbar select Filelist.<sup>6</sup>
- 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.

<sup>&</sup>lt;sup>5</sup> Clear the logger's memory. It will not affect downloaded file.

<sup>&</sup>lt;sup>6</sup> These files are located in the installed path of Logpro.

# **Chapter 3. Attention**

- HE17x water proof level is IP67. Do not put it into the water.
- HE17x 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 ER14250 lithium battery (3.7V) is not rechargeable.
- USB power supply (5V) cannot let the Data Logger work.

# Chapter 4. FAQ

# 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.

#### 4.2 Data & Time Error

Reason:

- The battery level is low
- The data logger is not synchronous properties, before start recording.

Solution:

- Replace the battery.
- Please sync the properties, before start recording.

## 4.3 Software "Runtime Error"

Reason:

• OS forbid software creating files.

Solution:

- Run the program (software) as an administrator.
- Install software in Disk D:\
- A data logger name cannot contain any of the following characters: \ / : \* ? " <> |
- Software's installation path cannot include Chinese character or garbage character.

#### 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