BESANTEK

BST-DL09

Single-Use USB PDF Temperature and

Humidity DataLogger

Manual

V1.0

Content

Chapter I Product Introduction

1.1Product Introduction

This product carries a new type of microcontroller, one-time record. Ability to generate PDF documents on their own, the user can access a variety of devices, easy to quickly browse recorded temperature and humidity data. Instrument equipped with a small LCD display, temperature and humidity at the same time display, user-friendly browsing to real-time temperature and humidity information, display data can be accurate to one decimal places, and eye-catching battery tips, always remind the electricity situation. At the same time, through the key switch, the user can get other information they need, including: the maximum recorded, minimum recorded, upper and lower limits of temperature and humidity. In addition it has a user-friendly mounting bracket can be fixed screws, installation more convenient and safe.

1.2Application

The product can be applied to cold storage, vaccines and blood products, food cold chain transportation, containers transportation, outdoor and other special environment.

1.3Product Feature

- IP67 waterproof and dustproof design, resistant to moisture, condensation and dust
- Low-power design, 1 / 2AA 3.6V lithium battery can work continuously for 6 months or more
- Comes with operating software, multiple data protection mechanisms to ensure that data is never lost
- high sensitivity probe, fast response, high precision
- maximum to record 7200 temperature and humidity data
- Instrument will connected with the computer to automatically generate PDF documents to view the analysis data more convenient and quick

1.4Performance Parameters

Parameters	Parameter index	Parameters	Parameter index
Voltage	1/2AA 3.6V Lithium battery	Temperature measuring range	-30~70 ℃
Working Temperature	-30~70℃	Temperature measuring accuracy	±0.5 ℃
Size	125*28*22mm	Relative humidity measuring range	0~100% RH
Weight	62g	Relative humidity measuring accuracy	±5% RH
Measuring area	About 50 ㎡	Interval logging	10s

Chapter II Instruction Manual

2.1Instrument appearance instructions

Figure 2-1 Front appearance diagram

1 - OK button : Instrument shutdown state, connected to PC set synchronize and time, long press this button for 3 seconds, the instrument boot and automatically enter the calibration mode, press this button again equipment shut down, turned off after press this button switch on the instrument into the recording mode.

When the instrument is turned on, press (short press) this button, the LCD will switch the display (real-time data, minimum value MIN, maximum value MAX, alarm lower limit LO, alarm upper limit HI cycle switching).

Instrument boot record state, long press this button for 3 seconds, the instrument off.

2 - Humidity light : The instrument records and humidity over limit state, the light once every 10 seconds, indicating that the humidity is exceeding limits.

3 - Temperature light : The instrument records and temperature over limit state, the light once every 10 seconds, indicating that the temperature is exceeding limits.

4 - LCD display

5 - USB interface : for the instrument access to the computer.

6 - bracket : can be fixed screws, installation and use more convenient.

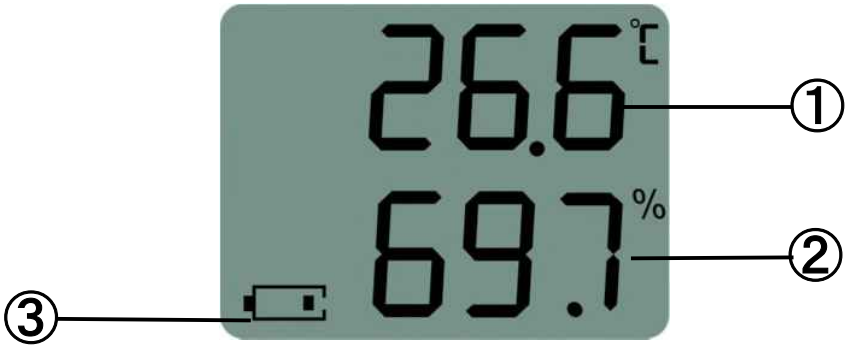

Figure 2-2 LCD display diagram

1 - Real-time temperature : The unit is ℃

2 - Real-time humidity : The unit is %

3 - Battery Level : Full grid is 3 grid

2.2Instrument instructions

Use Step : set the instrument and synchronize the time → instrument turn on and boot into calibration mode → the instrument turn on again, and recording data normally → connect to the computer, open the PDF view and save data → end use.

1.Set the instrument and synchronize the time : Connect to the computer by USB interface → Open the DataLogger software → Click [Get] to get the instrument configuration → Pop-up the ok prompt window, click [OK] → set the instrument upper and lower limits alarming and interval logging → click [Sync Setting】 synchronization settings.

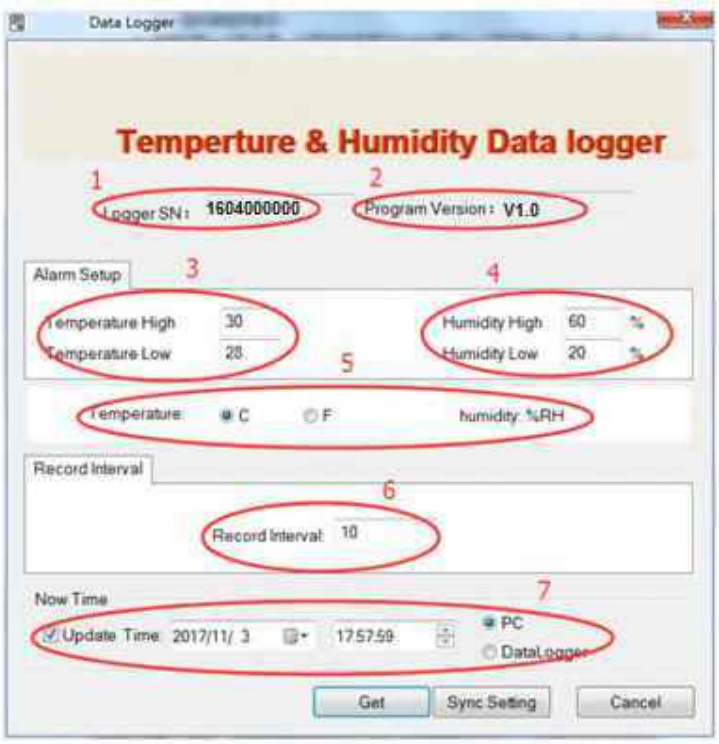

Figure 2-3DataLogger software interface

1. The serial number of the instrument: corresponding to the series number of label on the back of the instrument.

2. The program version of the instrument.

3. Temperature alarm upper and lower limit setting: the temperature measured by the instrument is not in the range of the setting upper and lower limit, instrument will be alarming state.

4. Humidity alarm upper and lower limit setting: the humidity measured by the instrument is not in the range of the setting upper and lower limit, instrument will be alarming state.

5. Display unit: temperature display unit is ℃, humidity display unit is %

Note: Select 【F】 option without any impact, the unit temperature is still displayed ℃.

6. Record interval settings: every set interval, the instrument records a piece of data in seconds, The set range is 5~43200S.

7. Check the "Update" option, the instrument synchronizes the computer time.

2.Instrument boot, enter calibration mode: After synchronizing time, the instrument is pulled out from the computer, press the OK button to power on, the instrument enters the calibration mode, normal display real-time temperature and humidity, can check the maximal value, minimum value , alarm lower limit and alarm upper limit, Does not display temperature and humidity units, does not generate PFD documents. As shown in Figure 2-4:

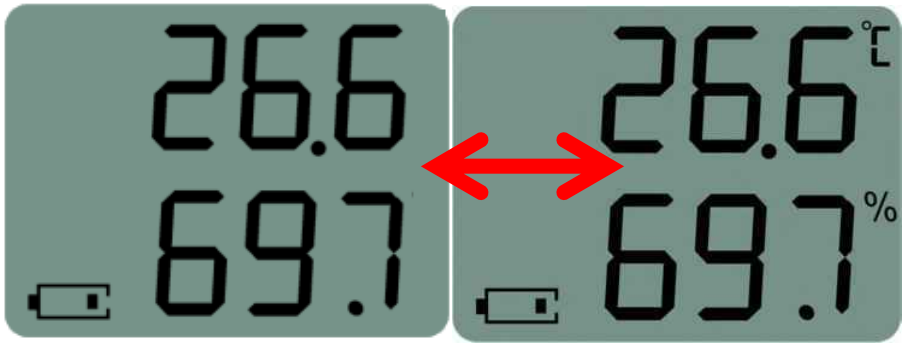

Figure 2-4 Calibration mode LCD display **Figure 2-5 Record mode LCD display**

3.Instrument is power on again, record data: Press OK to turn off the instrument after entering the calibration mode. The instrument will turn on again and enter the record state. At this moment, the instrument starts to record the data and normally display temperature and humidity to generate the PDF document

4.View data and save data: let instrument USB interface directly connect to the computer, waiting for the generation of PDF documents (according to the quantity of data recorded, will take a different time), after generate the PDF document, "computer "will appeared a removable storage device. After opening this disk, a PDF file will appear. Click this file to read the data recorded by this instrument, and can copy and paste the PDF document to other computer disk.

Note 1: It is suggested to rename the PDF document according to actual needs after copying the PDF document.

Note 2: the recording capacity of this instrument is 7200 sets of data. After the data storage reaches the upper limit, the LCD humidity column will show "FUL" and the instrument has finished recording.

5.End use: This product is a one-time use, so the instrument power off or connect to the computer in the recording state and the instrument can't power on or can't be

re-record after synchronized instrument setting, but can be connected to the computer to view and save the data.

2.3 PDF document description

1.PDF generation: After the instrument is connected to a computer, the PDF document will be generated. At this time, the temperature light will flash and the representative is generating PDF. After the PDF is generated, the user can read the recorded PDF document from the instrument.

2.**PDF document interface description:**

Figure 2-6 PDF Document Page 1

1）Instrument serial number

2）Over limit alarm prompt: blank = no alarm, red = alarm.

3）Set the recording interval, unit: second

4）Instrument recording start and end time

5）Total number of data recorded

6）Record the total length of time

7) The maximum, minimum and average temperature and humidity recorded by the instrument.

8）Set the lower limit of temperature and humidity

9）Temperature and humidity exceed the minimum number of limits set

10）Set the upper limit of temperature and humidity

11）The first excess lower limit and the last excess lower limit time

12）Excess the Min value in over limit state: No over limit record display **OK**, there is over limit record shows **Alarm.**

13）Excess the Max value in over limit state: No over limit record display **OK**, there is over limit record shows **Alarm.**

14）Temperature and humidity analysis curve: **blue curve for the temperature, yellow curve for the humidity.**

15）Temperature and humidity exceed the maximum number of limits set.

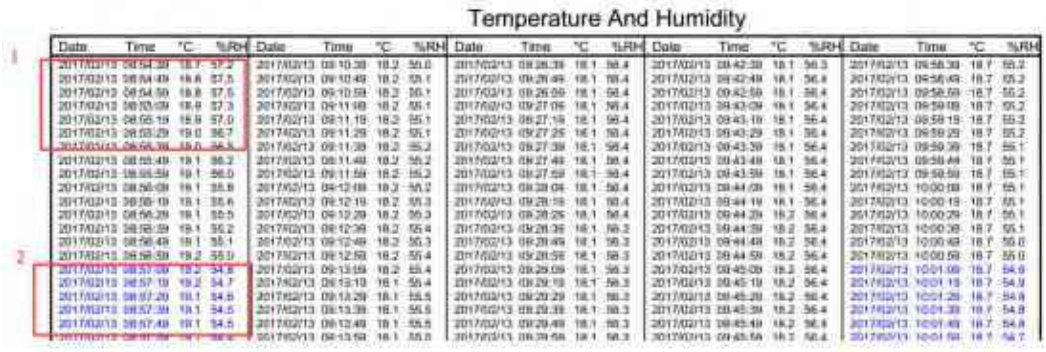

Figure 2-7 PDF Document Page 2

1. Normal data display

2. Over-limit data display (**temperature and humidity data will display blue if the value are excess**)

Chapter III Precautions

1. The PDF generation will take a certain amount of time. During this time, the instrument will not be pulled out from the port, otherwise the data will be lost.

2. After the instrument is connected to the computer, the instrument will be automatically ended the recording function and shutdown.

3. Button operation will increase the power consumption of the instrument, and avoid a large number of useless operations on the keys when necessary.

4. It can not be used for the second time if the instrument power off when recording the data, so please do not turn off or connect the machine to the computer during the recording process.

（VER 1.0）