

R C —4 Mini Temperature Data Logger Operation Instruction

I. Product overview:

This data logger is mainly used for temperature recording during storage and transportation of foodstuff, medicine, chemicals and other products, especially widely used in all links of warehousing, logistics and cold chain, such as refrigerated containers, refrigerated trucks, refrigerated package, cold storage, laboratory, etc.

II.Specification:

Product size: 84mm (length) X 44mm (width) X 20 mm (height)

III.Technical parameters:


1. Temperature unit: °C or °F optional
2. Temperature measuring range: -30°C ~+60°C; for optional external sensor, -40°C ~+85°C;
3. Ambient environmental temperature: -30°C ~+60°C;
4. Accuracy: $\pm 1^{\circ}\text{C}$;
5. Resolution: 0.1°C;
6. Record capacity: 16000points(MAX);
7. Record interval: 10s~24hour adjustable;
8. Sensor: Internal NTC thermal resistor;
9. Communication interface: USB interface;
10. Power supply: inner CR2450 battery or power supply via USB interface;
11. Battery life: in normal temperature, if the record interval sets as 15 minutes, it could be used above one year.

IV.Initial use:

1. Install RC-4 temperature data logger data management software. Connect RC-4 with computer via USB, and install USB driver according to the Installation Tips.
2. Open RC-4 temperature data logger data management software, after data logger connects with PC, it will upload information automatically. After checking the information, exit from connection interface.
3. Click the parameters icon. After finish the parameters setting, click "save" button to save all the parameters and exit from parameter setting interface.
4. Hold and press the button of data logger for above 4 seconds, the symbol “▶” will light, which means recording is started, then click “upload data” to check the data.
5. Exit from RC-4 temperature data logger data management software.

V.Data access

The recorded data information could be accessed from the temperature data logger. And this process will not clear the historical memory or stop record process if it is in the record status.

1. Connect the data logger with computer via USB cable, after successfully connection, the icon  shown in the LCD of data logger will light.
2. Open RC-4 temperature data logger data management software, it will automatically upload the data log by default setting of software. It could cancel “Auto

upload data” in the menu of “system setting”.

3. After data uploading, you could check data table, curve graph and report, and export them in format of Word/Excel/PDF/TXT. Click the icon “save data” to save the data to the computer data base; click the icon “send mail” to send the data to the set mailboxes. For the details, please see “system mail setting”

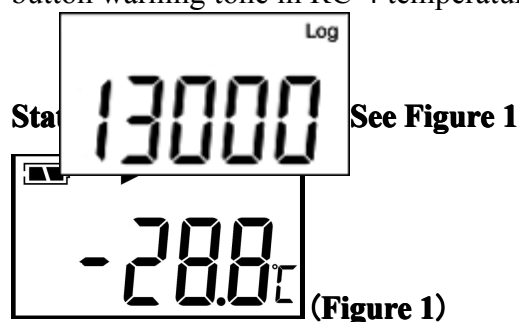
Note: RC-4 parameters setting is operated through computer; for the details, please see the help file of RC-4 temperature data logger data management software.

VI. Function description

The data logger display interfaces includes: status display, record capacity display, time display, date display, Max. temperature display, Min. temperature display, temperature upper limit display, temperature lower limit display.

If no operation within 15 minutes, the data logger will turn off the display automatically.

If the display has been turned off, short press the button to enter the display interface. Each time press the button, it will shift among the display interfaces according to the sequence as described above. If the internal buzzer is selected, you could set the button warning tone in RC-4 temperature data logger data management software.



After short press the button, it enters to the status display interface from the display turn-off status. The temperature displayed in the LCD screen is the current environmental temperature. In the status display interface:

If the symbol ► lights, indicate the data logger is in the status of recording.

If the symbol ► flashes, indicate the data logger is in the status of start time delay.

If the symbol ■ lights, indicate the data logger has stopped/terminated recording

If neither of the symbols ► and ■ lights, indicate the data logger has not started its function of recording.

If the symbols of ↑ and ↓ light, indicate the measured temperature exceeds its temperature upper/lower limit.

The temperature shown in this status display interface is the current environmental temperature.

Record capacity display interface:

When the symbol "Log" lights, it indicates that it enters to capacity display interface. The number shown in the LCD is the recorded temperature group, the interface is shown as Figure 2:

(Figure 2)

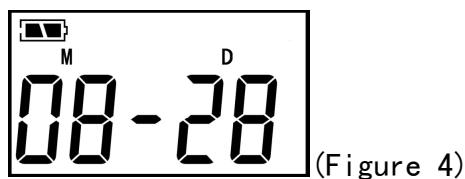
Time display interface:

In time display interface, it displays the hour and minute of the data logger. The time format is 24 hours. The display interface is as shown in Figure 3:

(Figure 3)

Date display interface:

In date display interface, it displays the month and date of the data logger, display interface is shown as Figure 4:

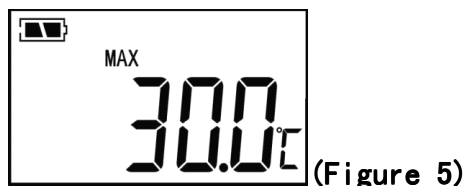


Note: The data below the symbol “M” indicates month, and the data below the symbol “D” indicates date.

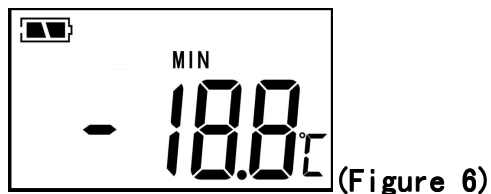
beginning
Figure 5:



Max.temperature display: The maximum temperature valued measured since the of recording, its display interface is shown as



Min.temperature display: The minimum temperature measured since the beginning of recording, display interface is shown as Figure 6:

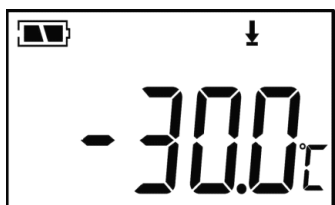


Temperature upper limit display interface shown as Figure 7:



(Figure 7)



Temperature lower limit display interface shown as Figure 8:



(Figure 8)




VII.Operation instruction:

1. Start recording

After setting RC-4 parameters in data management software, the function of recording has not been started yet, at this time, press the button for more than four seconds in the status display interface, the symbol  lights, and the recording has started. If the symbol  flashes, indicate the data logger is in the status of start time delay.



** After finishing parameters setting in RC-4 temperature data logger data management software, it will clear up the recorded historical data. Please read and save data before parameter setting!*

2. Stop recording:

- ① The data logger will automatically stop recording when the recording capacity is full. In the status display interface, the symbol “”lights, it means recording stops.
- ② If “permit stopping by pressing button” is set, press the button for more than four seconds, in the status display interface, the symbol “”lights, it means recording stops.
- ③ It could stop recording though setting in data management software. In the status display interface, the symbol “”lights, it means recording stops.

**After the data logger stops recording, it could not be started again by press the button. It could only be started by setting the parameters in RC-3 data management software.*

3. Alert status Instruction

During recording, if the measured temperature is higher than temperature upper limit, in the status display interface, the symbol “” lights, indicating upper limit alert; if the measured temperature is lower than temperature upper limit, in the status display interface, the symbol “”lights, indicating lower limit alert.

If the internal buzzer is selected, you could set the button alert tone in RC-4 temperature data logger data management software, it has three modes: Disabled, three beeps , ten beeps.

4. Record interval

The record interval could be set in RC-4 data management software. After setting, it

will save the data in the data logger according to the set record interval. In RC-4 data management software, when record interval is set, click the setting bar of record time length, then the software will automatically calculate the record time length.

5. Record time length

The “record time length “means that the total record time when the memory reaches its full capacity. After the record interval is set, click at the setting bar record time length, then the software will automatically calculate the record interval.

6. Clear the recorded data

The recorded data could be cleared through setting the parameters in RC-4 data management software.

7. Inner clock and calendar

The clock could be adjusted by RC-4 data management software.

8. Sensor failure




When there is a sensor failure or over temperature range, it could query by two methods as below;

1) When the temperature exceeds temperature range or there is a break circuit or short circuit, it will display “Err” in the position of temperature in the status display interface.

2) There will appear an instruction of “Sensor error” in RC-4 data management software.

9. Battery level indication

The battery level could be displayed in RC-4 LCD screen.

Battery level indication	Level
	25%~100%
	10%~25%
	<10%

Note: If the battery is in a very low level (<10%), please replace the battery timely.

10. RC-4 parameter setting items in temperature data logger data management software:

Note: It is the factory default setting in the brackets. The factory default state of data logger is without starting.
record interval (15 min); start delay time (0); meter station (1); Button stop (Disabled); Alert tone (disabled); temperature unit (° C); upper temperature limit (60 ° C); lower temperature limit (-30 ° C); temperature calibration (0 ° C); clock set (current time); set the number (empty); set user information (empty);

VIII.Battery replacement:

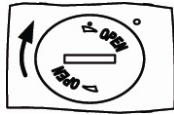


Figure 9



Figure 10

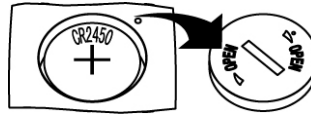


Figure 11

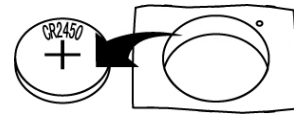


Figure 12

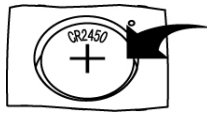


Figure 13

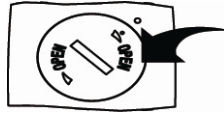


Figure 14



Figure 15

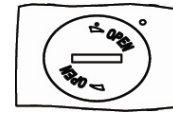


Figure 16

Replacement steps:

1. Rotate the battery cover clockwise to the position as shown in Figure 10.
2. Remove the battery cover.
3. Remove the old battery from the battery slot.
4. Put the new battery into the battery slot.
5. Place the battery cover in the position shown in Figure 14.
6. Rotate the battery cover counter clockwise to the position shown in Figure 16

Note: The pole piece in the bottom of the battery slot is negative.

IX. Accessory list

Standard accessory list

- One RC-4 temperature data logger
- One software installation CD
- One operation instruction
- One USB cable

Optional accessory list

External temperature sensor (1.1 M): connect external sensor through the headphone jack, temperature measuring will automatically switch to the external temperature sensor.

Internal buzzer: Set the button warning tone and alarm sound by "Parameter setting" of RC-4 temperature logger data management software.