Refrigerator Truck Data Logger

RMS-010

User Guide
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I Product Introduction

1.1 Product overview
Data logger RMS-010 is specially designed for refrigerator trucks as an easy and practical solution for cold chain logistics transportation. It has functions of field print, USB copy, buzzer alarm, overtime alarm of door open and close, and relay alarm. Built in multiple languages, it is applicable to different countries and regions.

The data logger is widely used in industries such as foodstuff, medicine and logistics in compliance with HACCP. It is also applied to places, such as laboratories where temperature needs monitoring and recording.

1.2 Functions and features
◆ Waterproof shell. Protection level: IP65.
◆ Big color LCD and friendly user interface.
◆ Built-in thermal printer can print recorded data in any record interval at any time.
◆ Two print modes: list and graph.
◆ PDF and TXT format files can be exported by USB disk.
◆ Record two channel temperature monitoring data up to 2*75000 points.
◆ Monitor dooropen and close status. Overtime alarm and record.

II Operation Instruction

2.1 Appearance
2.1.1 Display interface

![Display Interface Diagram]

- Date/Time
- Unit
- Temperature value
- Door status
- Record points
- Recording status
  - ACT: recording
  - WAIT: stop recording
2.1.2 Menu settings

- Print records
- USB copy
- Logger info
- Alarm settings
- Clock settings
- Record settings
- Printer settings
- Display mode settings
- Language settings
- Vehicle info settings
- Upper/lower limit settings
- Probe info settings
2.1.3 Alarm display

Alarm: over temp upper limit.
Alarm: over temp lower limit.
Alarm: sensor is not connected or failed.
Alarm: the door is open.

2.2 Installation
2.2.1 Accessory installation
2.2.1.1 Insert rules
2.2.1.2 Wiring rules
Refer to 2.2.2.1 to remove the front panel. Wire the lines according to the diagram below.

2.2.1.3 Wiring requirements
Standard factory configuration:
- T1 (6m) and T2 (18m).
- 12V power line
- Signal line: DOOR IN, ALARM OUT, RS-232 OUT

2.2.1.4 Install printing paper
Open the cover plate of the printer and put paper in the groove as shown in diagram 1.
Open the press paper plate and install printing paper as shown in diagram 2.
Close the press paper plate and the cover plate of the printer.
2.2.2 Install and fix the device
2.2.2.1 Install and dismount the panel

Loosen the four bolts to remove the front panel.

2.2.2.2 Fix the device

Use four M4 bolts to fix the device.

2.3 Use the device
2.3.1 Start and stop recording
2.3.1.1 Start recording

When display interface (2.1.1) shows, press the button OK to enter the menu (2.1.2). Use or to select record settings icon , then press OK to enter diagram 3 interface.

Use or to select and press OK. Use or to select and press OK, ACT will appear in the display interface (2.1.1), indicating it starts recording.

2.3.1.2 Stop recording
Repeat the same operation in 2.3.1.1, select Stop and press OK, then select OK, WAIT will appear in the display interface (2.1.1), indicating it stops recording.

Diagram 3

2.3.2 Print records

When display interface (2.1.1) shows, press the button OK to enter the menu (2.1.2). Use ← or → to select record settings icon , then press OK to enter diagram 4 interface. Use ↑ or ↓ to change start and ending date and time. Select Values and press OK to enter diagram 5 interface. Select Graph and press OK to enter list mode for printing. Select Graph and press OK to enter graph mode for printing.

Diagram 4

Diagram 5

Note: Please keep pressing OK for 3 ~ 6 sec to pause printing.

2.3.3 USB copy
Press or press in display interface (2.1.1) to enter the menu 2.1.2. Use or to select USB copy icon, and press to enter diagram 6 interface. Select the file format PDF or TXT, then press to start copying.

Diagram 6

Note:
1. The file name is RMS-010.pdf or RMS-010.txt.
2. Keep pressing for 3 ~ 6 sec to pause copying. The copied file will be incomplete or cannot be opened.
3. In recopying, rename the copied file; otherwise, it will be covered.
4. The USB format is FAT32, 8192 bytes for each cluster. If it is other formats, please format the USB disk and try again.
5. Please make sure the USB space is above 100Mb and below 16G.
6. Please do not pull out the USB disk during copying.
7. If it reminds “No Disk”, please pull out the USB disk and insert it again. Repeat the step 2.3.3.
8. If the copy fails more than three times, please change the USB disk.
9. Please use Adobe reader to read the copied file RMS-010.PDF.
2.4 Parameter settings
2.4.1 Menu design interface (Refer to 2.1.2)
2.4.2 Alarm settings
2.4.2.1 Alarm start

Press OK in display interface (2.1.1) to enter the menu 2.1.2. Use ← or → to select alarm settings icon , and press OK to enter diagram X interface. Use ← or → to select ON and press OK, and then press OK to save the settings.

2.4.2.2 Alarm delay

Press OK in display interface (2.1.1) to enter the menu 2.1.2. Use ← or → to select alarm settings icon , and press OK to enter diagram 7 interface. Use ← or → to select 01 min and ← or → to modify the value. Press OK, and then press OK to save the settings.

2.4.3 Set date and time

Press OK in display interface (2.1.1) to enter the menu 2.1.2. Use ← or → to select clock settings icon , and press OK to enter diagram 8 interface. Use ← or → to select hour/minute and ← or → to modify the value. Press OK, then press OK to save the settings.
2.4.4 Record settings

2.4.4.1 Set record interval and time

Press \textbf{OK} in display interface (2.1.1) to enter the menu 2.1.2. Use \( \uparrow \) or \( \downarrow \) to select record settings icon and press \textbf{OK} to enter diagram X interface. Use \( \uparrow \) or \( \downarrow \) to select \( \begin{array}{c} \text{hour/minute} \\ \end{array} \) and \( \uparrow \) or \( \downarrow \) to modify the value. Press \textbf{Ok}, then press \textbf{Ok} to save the settings.

2.4.4.2 Start and stop recording

Refer to 2.3.1

2.4.4.3 Set record modes

Cycle: record in cycle, i.e. new records cover the earliest one gradually when record data reaches 75000 points.

Single: record in single, i.e. new record stops when record data reaches 75000 points. It starts recording again when data is cleared manually.

Please refer to 2.3.1.1 for setting steps.

2.4.4.4 Clear data

Press \textbf{OK} in display interface (2.1.1) to enter the menu 2.1.2. Use \( \uparrow \) or \( \downarrow \) to select record settings icon and press \textbf{OK} to enter diagram 9 interface. Use \( \uparrow \) or \( \downarrow \) to select Yes and press \textbf{Ok} to enter diagram X interface. Use \( \uparrow \) or \( \downarrow \) to select the digit and \( \uparrow \) or \( \downarrow \) to modify the value. The default value is 1234. Use \( \uparrow \) or \( \downarrow \) to select \textbf{Ok} and press \textbf{Ok} to confirm.
2.4.5 Set printer types
It only supports thermal printer currently.

2.4.6 Set the display interface
It only supports “screen always on” mode.

2.4.7 Language settings
Press \redd{OK} in display interface (2.1.1) to enter the menu 2.1.2. Use \redd{shift} or \redd{up} to select language settings icon \redd{1}, and press \redd{OK} to enter diagram X interface. Use \redd{shift} or \redd{up} to select language type and press \redd{OK}. Use \redd{shift} or \redd{up} to select \redd{Ok} and press \redd{OK} to save the settings.

2.4.7 Vehicle info settings
Press \redd{OK} in display interface (2.1.1) to enter the menu 2.1.2. Use \redd{shift} or \redd{up} to select vehicle infosettings icon \redd{1}, and press \redd{OK} to enter diagram 10 interface. Use \redd{shift} or \redd{up} to select the digit and \redd{shift} or \redd{up} to modify the value. Use \redd{shift} or \redd{up} to select \redd{Ok} and press \redd{OK} to save the settings.
Note: Press and hold or to modify the value quickly.

Vehicle: characters of plate No. ≤ 9
Company: characters of company name ≤ 16

2.4.9 Upper/lower limit of alarm settings

Press in display interface (2.1.1) to enter the menu 2.1.2. Use or to select upper/lower limit of alarm settings icon, and press to enter diagram 11 interface. Use or to select and or to modify the value. Use or to select and press to save the settings.

Note: The setting range is -30.0~110.0

2.4.10 Sensor info settings

Press in display interface (2.1.1) to enter the menu 2.1.2. Use or to select sensor info settings icon, and press to enter diagram 12 interface. Use or
to select and \( \uparrow \) or \( \downarrow \) to modify the value. Use \( \leftarrow \) or \( \rightarrow \) to select and press \( \text{Ok} \) to save the settings.

Diagram 12
III Technical Index

3.1 Power supply: 9 ~ 18VDC, nominal voltage: 12VDC
3.2 Temperature control accuracy: ±0.1°C
3.3 Temperature display range: -30.0°C ~ 100.0°C, resolution: 0.1°C
3.4 Temperature measuring accuracy: ±0.5°C (0°C ~ 40°C); ±1°C (-25°C ~ 0°C); ±2°C (others)
3.5 Sensor: NTC (10K-25°C)
3.6 Record capacity: 75000*2 points
3.7 Application environment:
   Recording: -30°C ~ 70°C
   Printing: -10°C ~ 50°C
   Storing: -40°C ~ 85°C
   Humidity: 10%RH ~ 85%RH (non-condensing)
3.8 Ambient voltage: 86~106Kpa

IV Accessory Instruction

4.1 Standard accessories
   Two sensors with 6m and 18m wire respectively.
   One roll of thermo-sensitive paper, 38*57mm.
4.2 Optional accessories
   Power adapter: 12V1A.
   Power line: 2-core sheathed line which can be customized per client’s needs.
   The line used for monitoring door status: 2-core sheathed line which can be customized per client’s needs.
   Alarm output line: 2-core sheathed line which can be customized per client’s needs.
   Thermo-sensitive paper: 40*57mm.
V Trouble-shooting Instructions

5.1 Print fault
5.1.1 “Not connected” appears during printing.
   The printer is not connected. Please check whether data line and power line is connected normally.
5.1.2 “No paper to print” appears during printing.
   Short of paper. Please add printing paper.
5.1.3 Characters can not be printed.
   Please make sure whether printing paper is installed correctly. Refer to 2.2.1.4 for installing.

5.2 Copy fault
5.2.1 “Hardware problem” appears during copying.
   Hardware detection faults. Please shut down the device and restart it.
5.2.2 “No Disks” appears during copying.
   Please replace the USB disk and ensure its format is FAT32 with 8192 bytes for each cluster. If the disk is in other format, please format the USB disk and try again.

5.3 Record fault
5.3.1 If the device cannot record. Please refer to 2.3.1 to start recording.
5.3.2 The record cannot be started.
   Please refer to 2.4.4.3. Change the record mode to single and start recording again.
   Clear the records and start recording again.
5.4 There is no alarm info when exceeding upper/lower temperature limit.
   Check whether it is in alarm delay status.
   Please refer to 2.4.2.