

DATA LOGGING FRIDGE / FREEZER THERMOMETER

FEATURES

- High accuracy
- About 24 million readings logging
- Internal and external sensors reading display
- Minimum and maximum reading memories
- Low and high alarm limits setting
- Flashing light alarm indicator
- °C / °F exchange
- Real time display
- Waterproof external sensor
- Low battery indication
- Removable SD card
- CSV file data format
- Optional external power supply
- Flip out desk stand



SPECIFICATION

Measuring range	-50~70°C / -58~158°F
Display accuracy	±0.3°C / ±0.6°F -20~50°C , ±0.5°C / ±0.9°F otherwise
Display resolution	0.1°
Display reading update	10 seconds
Memory	Removable 2G SD card
Memory capacity	About 24 million readings, 1500 files
Data logging interval	Once per minute to once per 720 minutes user option, the default value is 5 minutes
Alarm limit setting resolution	0.1°
Default alarm value	Low: -10°C, High: 50°C
Time accuracy	±1 second per day
Time display format	12 / 24 hours format user option
Effective calendar period	2017~2099
Battery	1.5 volt, type AA or equivalent x 3 pieces
Battery life	About 2,500 hours in continuous operation with no alarm triggered
Working ambient temperature	0~50°C / 32~122°F
Display size	54(W) x 64(H) mm
External sensor cable length	2,000 mm
External sensor bottle size	19.5(Φ)x 40(H) mm PE bottle
Product size	83(W) x 120(H) x 26(D) mm
Accessories	1) 1.5 volt, type AA battery x 3 pieces. 2) Bottle sensor x 2 pieces. 3) Mini USB cable 1,000 mm length x 1 piece. 4) 100~240V power adapter x 1 piece. 5) SD card x 1 piece. 6) SD card reader x 1 piece.

INSTALLATION

1. Unpack the unit and connect the bottle probe.
2. Open the battery door and pull out the battery insulation strip.
3. Peel off display protective sheet.
4. Put the bottle sensor inside the fridge or freezer.

OPERATION

POWER ON/OFF

Press [ON/OFF] once to switch on. Press and hold the same button for about 3 seconds to switch off.

SET TEMPERATURE UNIT

Slide[°C/°F] switch to the desired temperature unit.

MINIMUM/MAXIMUM READING MEMORY

1. Press CLEAR button and hold for 3 seconds to reset the maximum/minimum memory, and then record the memory to the CSV file. Record the LOW/HIGH alarm and minimum/maximum value to the CSV file at the same time, and then generate new data files.
2. Always reset the memory once before taking new readings.

DATE AND TIME SETTING

1. Press [SET] and [▼] simultaneously until the display showing the hour format "12H".
 2. Press[▲] or [▼] to select 12 or 24 hours time format.
 3. Press [SET] to confirm hour format and start year setting. The last two digits of the year will be flashing (Default is "17").
 4. Press [SET] to confirm year and begin month setting. The month digit will be flashing (Default is "1").
 5. Press [▲] or [▼] to set the current month.
 6. Press [SET] to confirm month and start date setting. The date digit will be flashing (Default is "1").
 7. Press [▲] or [▼] to set the current date.
 8. Press [SET] to confirm date and begin hour setting. The hour digit(s) will be flashing.
 9. Press [▲] or [▼] to set the current hour.
 10. Press [SET] to confirm hour and begin minute setting. The minute digits will be flashing.
 11. Press [▲] or [▼] to set the current minute.
 12. Press [SET] to confirm minute and finish the date and time setting.
- * Press and hold the [▲] or [▼] button will increase or decrease the value automatically.

LOW /HIGH ALARM LIMIT AND DATA LOGGING INTERVAL SETTING

1. Press and hold [SET] until the time display showing "SET" then release the button. The "P1" low alarm limit will be flashing

- (Default is -10.0 and "LO" flashes).
2. Press [▲] or [▼] to set the value.
 3. Press [SET] to confirm "P1" low alarm limit and start high alarm limit setting. The "P1" high alarm limit will be flashing (Default is 50.0 and "HI" flashes).
 4. Press [▲] or [▼] to set the value.
 5. Press [SET] to confirm "P1" high alarm limit and start "P2" low alarm limit setting. The "P2" low alarm limit will be flashing (Default is -10.0 and "Lo" flashes).
 6. Press [▲] or [▼] to set the value.
 7. Press [SET] to confirm "P2" low alarm limit and start high alarm limit setting. The "P2" high alarm limit will be flashing (Default is 50.0 and "HI" flashes).
 8. Press [▲] or [▼] to set the value.
 9. Press [SET] to confirm "P2" high alarm limit and start data logging interval setting. The default value "5" (5 minutes) would flash.
 10. Press [▲] or [▼] to set the value.
 11. Press [SET] to confirm data logging interval and finish the settings.
 12. When the reading is lower or higher than the alarm limit,
 - a. The alarm will sound for 1 minute. And after 1 minute, the alarm will sound 2 seconds for every minute.
 - b. The LED will flash.
 The alarm sound will stop if the reading falls within the alarm limits or any button is pressed. But the "Lo" or "HI" icon and the LED will still be flashing which indicates that an alarm has been triggered.
 13. If the alarm has triggered, the month, date and time and "ON" icon would be displayed for 5 seconds for every 5 seconds.
 14. To cancel the icon and red light flashing, press [CLEAR] and hold for 3 seconds.
- * Once the alarm values were set, the alarm function would be started automatically. And the icon "⚠" would be displayed.
- * Press and hold the [▲] or [▼] button will increase or decrease the alarm limit value automatically.

ALARM ON/OFF

Press [ON/OFF] once to switch the alarm limit off or on.

DATA LOGGING ON/OFF

1. Make sure that the SD card is placed in the slot. "Sd" and current time would be displayed by turns.
 2. Press and hold [SET] for about 6 seconds to switch on or off the data logging.
 3. "ON / rEc" display means the data logging is on. "rEc" and current time would be displayed by turns.
 4. "OFF / rEc" display means the data logging is off. "Sd" and current time would be displayed by turns.
- * When the unit is connected to the computer, data recording would stop automatically.
- * It is recommended to use AC power adaptor in data logging mode.

DATA RETRIEVAL

1. Switch off the unit and do below step 2 or 3 to get the SD card connected to the Windows or Mac computer
2. Connect the unit to the Windows or Mac computer by the USB cable provided.
3. Open the SD card slot cover, push the card to take out the card and install it into the SD card USB adapter then insert the USB adapter into the computer.
4. Open the added disk on the computer.
5. Open the logging file in folder "TempData" on the disk to view the logged readings.

POWER INDICATION

The battery power capacity will be record to the CSV file.

RESET THE SETTINGS

Press [RESET] on the back to reset the unit to factory default settings.

NOTE

1. Do not operate the thermometer in the environmental temperature lower than 0°C / 32°F or higher than 50°C / 122°F otherwise incorrect readings or damage to the thermometer may result.
2. If the thermometer is not in use for a long period of time then remove the batteries from battery compartment to avoid battery leakage.

SYMBOLS

Symbol	Description	Action required
	Low battery voltage	Replace the batteries with the same type.
NO PROBE	1) Probe not connected. 2) Sensor open circuit.	1) Connect the probe. 2) Return the thermometer for repair.
LL.L	The reading is out of lower limit (-50°C).	Keep the measurement above lower limit.
HH.H	1) Sensor short circuit. 2) The reading is out of upper limit (70°C).	1) Return the thermometer for repair. 2) Keep the measurement below upper limit.
Sd	SD card installed.	NA
rEc	Data logging is on.	NA
FuLL	Memory capacity of SD card is full. Data logging would be turned off automatically.	Clear the memory in existing SD card or replace a new SD card.
FILE FuLL	Data files quantity is full, out of range about 1500 pieces.	Cancel the useless files.
Sd & Err	SD card is removed while data logging is turned on.	Replace the SD card immediately.