

A37 Carbon Dioxide Monitor User Manual

I. Introduction

CO₂ is a naturally occurring gas that emitted at great levels by human activity and it is one of several greenhouse gases in our atmosphere. CO₂ only accounts for 0.03% of the fresh air. If you breathe high concentration CO₂, you may be at risk of carbon dioxide intoxication. Symptoms of carbon dioxide toxicity include headache, irregular heartbeat, nausea, unconsciousness, or even death.

A37 is a CO₂ Monitor that measures CO₂ concentration, temperature and humidity. This monitor is widely used in homes, shopping malls, offices, vehicles, stations etc.

Please read carefully and follow all warnings and precautions before using the device.

II. Open box inspection

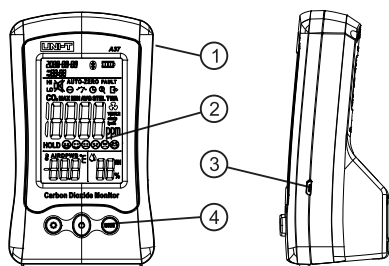
Open the box and take out the device. Please check whether the following items are deficient or damaged and contact your supplier immediately if they are.

- A37 CO₂ monitor ----- 1
- Protective case ----- 1
- User manual ----- 1
- USB cable ----- 1

III. Safety information

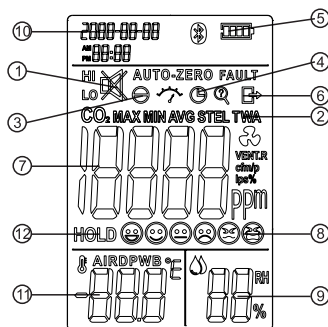
- Check the device and its accessories for any damage or anomaly before use. Do not use the device if the cover is damaged, or has any other malfunctions.
- Please follow the operation instructions.
- Please do not open the device case and modify the internal circuit.
- Do not store or use this device in high temperature, high humidity, flammable, explosive and strong electromagnetic environments.
- Charge the monitor when symbol is displayed.
- Regularly use soft cloth and mild detergent to clean the case. Do not use abrasant or solvent.
- A37 complies with CE standards.
- This monitor has ABC (Automatic Baseline Correction) function. Do not use this monitor in closed environment where CO₂ concentration remains relatively high.
- Use specified adapter to charge the device. The adapter should comply with UL/FCC safety standards.

IV. Structure



①: Case ②: LCD screen ③: USB port ④: Functional buttons

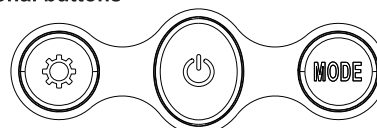
V. Symbols



| No. | Indication | No. | Indication |
|-----|-----------------------------|-----|--|
| 1 | Audio alarm ON/OFF | 7 | CO ₂ concentration |
| 2 | STEL/TWA/MAX /MIN/AVG modes | 8 | CO ₂ concentration grading emoticon |
| 3 | CO ₂ calibration | 9 | Relative humidity |
| 4 | Timing shutdown | 10 | Date/time |
| 5 | Battery status | 11 | Temperature |
| 6 | Exit calibration | 12 | Data hold |

VI. Operation instructions

1. Functional buttons



The following table shows the buttons functions in different modes.

| Modes | Functions | Buttons |
|-------------|---|---------|
| OFF | Long press: turn on/off the monitor | |
| | Long press: enter calibration mode | + |
| Measure | Short press: turn on/off the backlight | |
| | Short press to switch temperature unit °C/°F | |
| | Long press to turn on/off audio alarm | |
| | Short press: cycle switch between HOLD/MAX/MIN/AVG/TWA/STEL | |
| | Long press: reset to zero | |
| Calibration | Long press: calibrate the CO ₂ concentration (outdoor fresh air) | + |
| | Short press: increase the value | |
| | Short press: next parameter (double press to enter date/time calibration) | |
| | Long press: save | |
| | Short press: decrease the value | |
| | Short press: previous parameter | + |
| | Long press: exit calibration | + |

2. Operations

CO₂ measurement
Long press to turn on the monitor. It takes 120s to stabilize CO₂ concentration. CO₂ concentration, ambient temperature, relative humidity will be displayed on the screen. CO₂ concentration value is refreshed every 3 seconds.

Note: if CO₂>1000ppm, buzzer goes off with red backlight flashing. The audio alarm's default setting is OFF, long press to turn on the audio alarm.

1) Concentration grading emoticons

| | |
|--|--------------------|
| | 400ppm ~ 450ppm; |
| | 450ppm ~ 700ppm; |
| | 700ppm ~ 1000ppm; |
| | 1000ppm ~ 2000ppm; |
| | 2000ppm ~ 5000ppm; |
| | 5000ppm以上; |

Data

Short press MODE to cycle switch between HOLD/MAX/MIN/AVG/TWA/STEL values.

| Symbol | Indication |
|--------|---------------------------|
| HOLD | Data hold |
| MAX | Maximum value |
| MIN | Minimum value |
| AVG | Average value |
| TWA | Time weighted average |
| STEL | Short-term exposure limit |

TWA: The average exposure within the workplace to any hazardous contaminant or agent using the baseline of an 8 hour day or 40 hours week work schedule.

STEL: The acceptable exposure limit to a toxic or irritant substance over a short period of time (time-weighted average), usually 15 minutes.

Auto shutdown

The monitor will automatically shut down if there is no operation for 2 hours.

Backlight

Please refer to Operation Instructions-Functional Buttons


Audio alarm

Please refer to Operation Instructions-Functional Buttons

Temperature unit

Please refer to Operation Instructions-Functional Buttons

Battery

Charge the battery when  is displayed on the screen. It takes 2~3 hours to fully charge the battery.

3. Calibration

Date/time

Please refer to Operation Instructions-Functional Buttons to calibrate date/time.

CO₂

Note: CO₂ function has been calibrated before delivery. If the value is greatly deviated from the standard, you can calibrate it by either methods below:




1) Automatic calibration


A37 has the built-in self-correcting ABC (Automatic Baseline Correction) algorithm to automatically adjust the base value.

- a) Turn on the monitor and leave A37 at a place where there is flowing fresh air for 3 days (powered by the adaptor)
- b) ABC function will automatically adjust and correct the CO₂ standard value.

Warnings: ABC function is always on, do not use this monitor in closed environment where CO₂ concentration remains relatively high.

2) Manual calibration

- a) Turn on the monitor, leave it outdoor for 20 minutes
- b) Long press + until  appears on the screen. Calibration takes 10 minutes.

 symbol disappears when calibration is done.

Note: It is suggested to calibrate the monitor in outdoor environments where there is air flow. Keep device away from animals, plants and human.

VII. Specifications

1. Technical specifications

| Function | Range | Resolution | Accuracy |
|-----------------|----------------|------------|---|
| CO ₂ | 400~5000 ppm | 1ppm | ±(5% of rdg+50ppm) from 400~2000ppm *1 |
| Temperature | -10.0°C~50.0°C | 0.1°C | ±1°C *2 |
| Humidity | 0-99%RH | 1%RH | (10%RH~90%RH) ±5%RH @25°C |

*1: Measure environment: 1atm, ambient temperature and humidity

*2: It may be influenced by heat emitted by the adaptor

2. General specifications

| Specifications | Descriptions |
|------------------------|-------------------------------|
| Sensor | NDIR principle |
| ABC | Automatic baseline correction |
| Audio alarm | Buzzer |
| Visual alarm | Red backlight |
| Display | LCD screen |
| Low battery indication | √ |
| Auto power off | √ |

| | |
|-----------------------|---------------------------------------|
| Backlight | √ |
| Operating environment | 0°C~50°C, 0%RH~85%RH |
| Storage environment | -20°C~60°C, 0%RH~95%RH |
| Power supply | Built-in 3.7V DC rechargeable battery |
| Weight | 195g |
| Dimension | 75mm x 55mm x 130mm |

IX. CO₂ concentration and effects (only for reference)

| Concentration | Effect |
|---------------|---------------------------------------|
| 350~450ppm | Fresh air |
| 350~1000ppm | Normal |
| 1000~2000ppm | Turbid air, sleepy |
| 2000~5000ppm | Headache, irregular heartbeat, nausea |
| >5000ppm | Unconsciousness or even death |

X. Maintenance

- a. The maintenance and service of the device must be implemented by qualified professionals or the designated departments.
- b. Regularly use dry cloth to clean the cover. Do not use the detergent containing solvent composition
- c. To conserve battery, please turn off the device if do not being used for a long time.

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