UNI-T

A37
Carbon Dioxide Monitor
User Manual

I. Introduction

CO_2 is a naturally occurring gas that emitted at great levels by human activity and it is one of several greenhouse gases in our atmosphere. CO_2 only accounts for 0.03% of the fresh air. If you breathe high concentration CO_2, 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 CO_2 Monitor that measures CO_2 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.
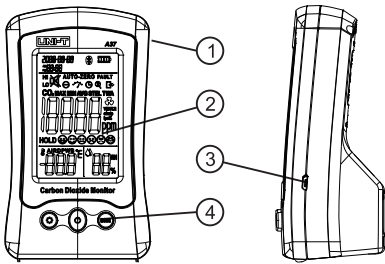
II. Open box inspection

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 CO_2 monitor -------------------- 1
Protective case ----------------------- 1
User manual --------------------------- 1
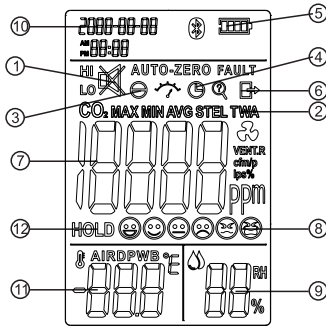USB cable ----------------------------- 1

III. Safety information

1. 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.
2. Please follow the operation instructions.
3. Please do not open the device case and modify the internal circuit.
4. Do not store or use this device in high temperature, high humidity, flammable, explosive and strong electromagnetic environments.
5. Charge the monitor when ▭ symbol is displayed.
6. Regularly use soft cloth and mild detergent to clean the case. Do not use abradant or solvent.
7. A37 complies with CE standards.
8. This monitor has ABC (Automatic Baseline Correction) function. Do not use this monitor in closed environment where CO_2 concentration remains relatively high.
9. Use specified adapter to charge the device. The adapter should comply with UL/FCC safety standards.

IV. Structure

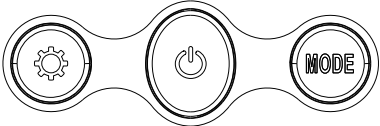①: Case ②: LCD screen ③: USB port ④: Functional buttons

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/STEL/TWA	MODE
	Long press: reset to zero	MODE
	Long press: calibrate the CO_2 concentration (outdoor fresh air)	⚙+MODE
Calibration	Short press: increase the value	⏻
	Short press : next parameter (double press to enter date/time calibration)	⚙
	Long press: save	⚙
	Short press: decrease the value	MODE
	Short press: previous parameter	⚙+MODE
	Long press: exit calibration	⚙+⏻

2.Operations

CO_2 measurement

Long press ⏻ to turn on the monitor. It takes 120s to stabilize CO_2 concentration. CO_2 concentration, ambient temperature, relative humidity will be displayed on the screen. CO_2 concentration value is refreshed every 3 seconds.

Note: if CO_2>1000ppm, buzzer goes off with red backlight flashing. The audio alarm's default setting is ON , long press ⚙ to turn OFF the audio alarm.

1)Concentration grading emoticons

Emoticon	Range
☺	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: CO_2 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 CO_2 standard value.
   Warnings: ABC function is always on, do not use this monitor in closed environment where CO_2 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.

3) The setting of date and time.
a) In shutdown mode, long press 【⊚】 + 【◐】 to enter the setting interface, short press 【⊚】 two times to set date and time.
b) User can press the plus button 【◐】 and the minus button 【⊖】 to adjust the setting and long press 【⊚】 to save the data.
c) Long press 【⊚】 + 【◐】 again to exit the setting and shut down the meter; restart the meter to enter measurement interface, if there are still have deviation after 3 minutes. User can reset it again.

VII. Specifications
1.Technical specifications

Function	Range	Resolution	Accuracy
CO₂	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.

UNI-T®
UNI-TREND TECHNOLOGY（CHINA）CO., LTD.

No.6, Gong Ye Bei 1st Road,
Songshan Lake National High-Tech Industrial
Development Zone, Dongguan City,
Guangdong Province, China
Tel: (86-769) 8572 3888
http://www.uni-trend.com