

TIS CO2 Carbon Dioxide Monitor User Manual

I. Introduction

CO2 is naturally occurring gas emitted at high levels by human activity, along with being one of several greenhouse gases in our atmosphere. CO2 only accounts for 0.03% of fresh air and if you breathe in high concentrations of it, you could suffer from carbon dioxide intoxication. Symptoms of carbon dioxide toxicity include headache, irregular heartbeat, nausea, unconsciousness, or worse.

A HIGH CONCENTRATION OF CO2 CAN INDICATE POOR VENTILATION GIVING RISE TO A HIGHER RISK OF AIR BORNE VIRUSES CIRCULATING IN THE WORK PLACE.

The TIS CO2 is a CO2 Monitor that measures CO2 concentration, temperature and humidity. This monitor can be used in homes, shopping centres, offices, vehicles etc.

PLEASE READ CAREFULLY THE FOLLOWING WARNINGS AND PRECAUTIONS BEFORE USING THIS DEVICE

II. Open box inspection

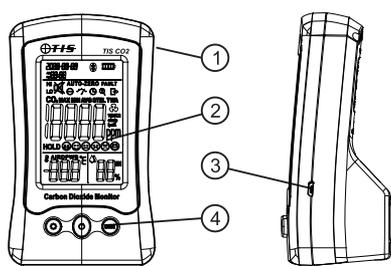
Open the box and take out the device. Please check whether the following items are deficient or damaged and contact your supplier immediately if they are.

- TIS CO2 monitor -----1
- Protective Case-----1
- User manual-----1
- USB Cable-----1

III. Safety information

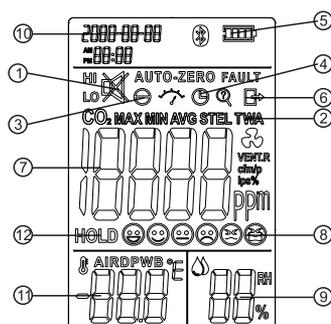
1. Check the device and its accessories for any damage or anomaly before use. Do not use the device if the cover is damaged, or has any other malfunctions.
2. Please follow the operation instructions.
3. Please do not open the device case and modify the internal circuit.
4. Do not store or use this device in high temperature, high humidity, flammable, explosive and strong electromagnetic environments.
5. Charge the monitor when symbol is displayed.
6. Regularly use a soft cloth and mild detergent to clean the case. Do not use abrasives or solvents
7. TIS CO2 complies with CE & UKCA Standards
8. This monitor has ABC (Automatic Baseline Correction) function. Do not use this monitor in closed environment where CO2 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

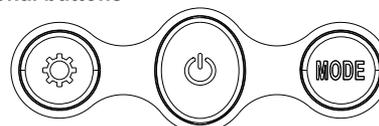
V. Symbols



No.	Indication	No.	Indication
1	Audio alarm ON/OFF	7	CO2 concentration
2	STEL/TWA/MAX /MIN/AVG modes	8	CO2 concentration grading emoticon
3	CO2 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	
	Long press: reset to zero	
Calibration	Long press: calibrate the CO2 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 ON, long press to turn OFF 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

TIS CO₂ has a built-in self correcting ABC (Automatic Baseline Correction) algorithm to automatically adjust the base line.

a) Turn on the monitor and leave the TIS CO₂ at a place where there is flowing fresh air for 3 days (powered by the adapter)

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.

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
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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彩盒 菲林做货要求：

序号	项目	内容	备注
1	尺寸	展开尺寸:285*210mm 折后: 105*142.5mm	
2	材质	60g书纸	
3	颜色	单色双面	
4	外观要求	完整清晰、版面整洁, 无斑墨、残损、毛边、刀线错位等缺陷。	
5	装订方式		
6	表面处理		
7	其它	无	
版本		REV.1 旧料号:110401111013X 修改图标 (康念园2023-1-11)	
DWH 设计	李志权 2022/4/7	MODEL 机型: TIS C02 (A37改)	Part NO. 物料编号: 110401111553X
CHK 审核		 优利德科技(中国)股份有限公司 UNI-T [®] UNI-TREND TECHNOLOGY (CHINA) CO.,LTD	
APPRO. 批准			