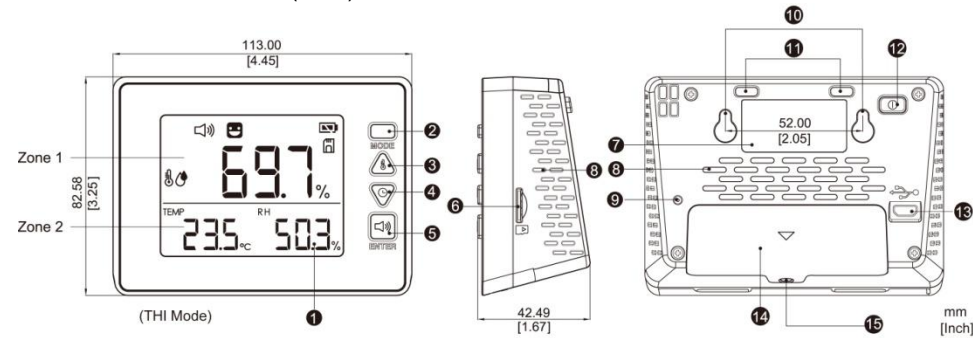# Indoor Air Quality Meter Instructions Manual

Model: CO2390

Product Overview

Thank you for selecting CO2390 indoor air quality meter. CO2390 indoor air quality meter is smart, compact and easy-to-use. In addition to measuring the CO_2 concentration, CO2390 can also measure the ambient temperature and the relative humidity **(CO_2+THI+Temp.+RH)**. This product is developed to detect the presence of CO_2 in ambient air and help people to take care of Indoor Air Quality. CO2390 can be widely used in the office building, school, exhibition hall, shopping mall, meeting room, fitness center, restaurant and other public places where personal comfort, healthy is important.

Features:

☑ IAQ/HVAC applications

☑ Measurement target: CO_2, THI (Temperature-Humidity Index), Temp., RH

☑ Dual beam NDIR technology is used to measure CO_2 concentration up to 5,000ppm

☑ Temperature-Humidity Index (THI) indicates comfort conditions with the indoor environment

☑ Built-in real time clock (RTC) & micro SD card

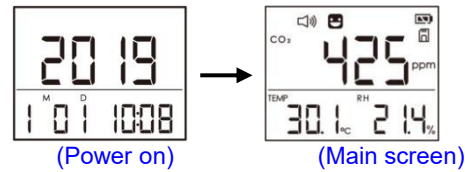|				
1. LCD Display	2. Mode Button	3. Up Button	4. Down Button	5. Enter Button
6. Micro SD Slot	7. Label	8. Ventilation Slots	9. Gas Entry Hole	10. Screw Position
11. Hole For Hook	12. Power Switch	13. Power Inlet	14. Battery Cover	15. Screw

LCD display symbol description:

Symbol	Meaning	Description
425 ppm	CO_2 concentration, parts per million (ppm)	The current CO_2 concentration
TEMP	Ambient temperature	Ambient temperature
RH	Relative humidity	Relative humidity
THI	THI (Temperature-Humidity Index)	Indicate the environmental comfort.
😊😐☹	Three LED displays	Show the current Indoor Air Quality.
🔋	Battery capacity	3 levels display
🔊	Alarm	Alarm icon
CA.H	High/low gas concentration calibration	Calibrate the sensor while the reading deviates from the actual gas concentration.
AL LH	High/low gas concentration alarm	High/low gas concentration alarm settings
RESET	Recover Factory Setting	Recover factory default settings and cancel any customized settings.
ALL	Display cycle	Cycle through all readings.
📟	Micro SD card	Micro SD card working status (When the icon flashes, it means that the Micro SD card is broken or full; when the icon remains stationary, it indicates normal operation.)

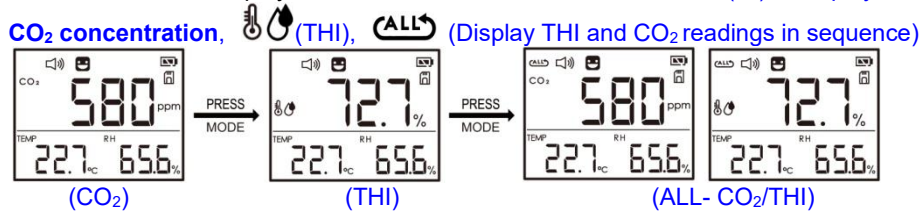## Operation Instructions

1. Power on:

Press Power Switch (⏻)(located on the back of the device) to turn on the device. After warming up, the device will sound two beeps and display the main screen. (Warm-up time: <60 sec. @ 22°C)

(Power on) → (Main screen)

2. Measurement:

2.1 Zone 1:

The default screen displays CO_2 concentration. Press Mode Button (②) to display modes:

CO_2 concentration, 🌡💧(THI), **ALL** (Display THI and CO_2 readings in sequence)
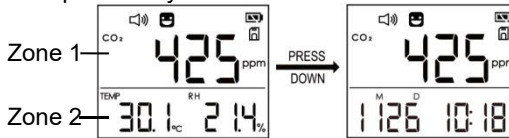

(CO_2)   (THI)   (ALL- CO_2/THI)

2.1.1 THI (Temperature-Humidity Index) is calculated from ambient temperature and relative humidity to indicate the environmental comfort.. **THI value displays :**

≤74%	😊	Comfort
75%~79%	😐	Acceptable
≥80%	☹	Discomfort

2.1.2 ALL: Display THI and CO_2 readings in sequence in interval time (the default interval time is 5 sec). If you need to change the display interval time, please see the section 5.4.

2.2 Zone 2:

The default screen displays the temp./humidity, press Down Button (④) to switch between <temp./humidity> and <date/time>.
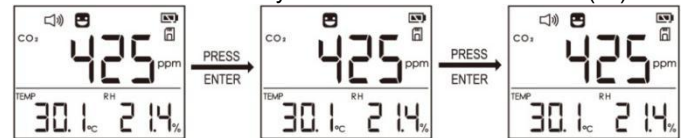

3. °C/°F switch:

When the temperature is displayed on the screen, press Up Button (③) to switch °C/°F.

4. Buzzer on/off:

The buzzer is activated by default. Press Enter Button (⑤) to turn off/on the buzzer.
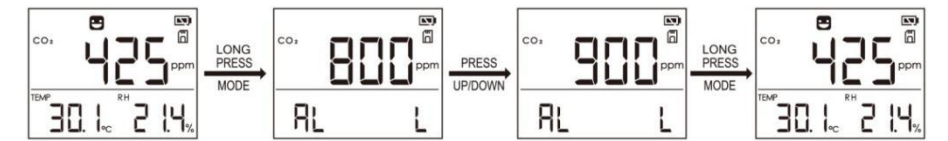

5. Setting:

Press and hold Mode Button (②) to proceed **CO_2 Alm_L** (low gas concentration alarm) setting mode. And

then press Mode Button (②) to select other setting modes in sequence: **CO_2 Alm_L** (low gas concentration alarm)→**CO_2 Alm_H** (high gas concentration alarm)→**Altitude→Data logging interval time→Display cycle interval time→Reset ALM (**Recover alarm to factory settings**).** Press and hold Mode Button (②) again to return to the main screen.
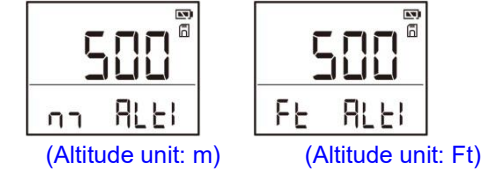
5.1 CO_2 Alm_L/ CO_2 Alm_H

Under the target setting, press Up (③) / Down (④) Button to adjust the value. Then press Enter Button (⑤) to confirm the setting value and proceed the next setting. (EX: **CO_2 Alm_L**)
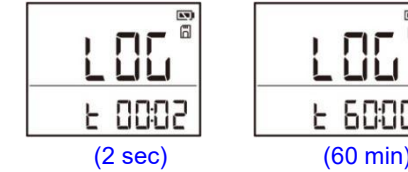

5.2 Altitude: If the temperature unit is °C, the altitude unit is "m", and the adjustment range is -100~4,000.
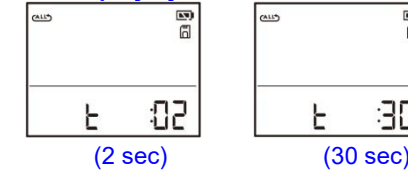
If the temperature unit is °F, the altitude unit is "Ft", and the adjustment range is -500~9,500.

(Altitude unit: m)   (Altitude unit: Ft)

5.3 Data logging interval time: The adjustment options are 2/5/10/15/30 sec, 1/2/5/10/15/20/30/60 min.

(2 sec)   (60 min)

5.4 Display cycle interval time: The adjustment range is 2 seconds ~ 30 seconds.
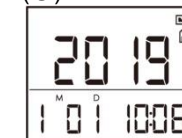

(2 sec)   (30 sec)

5.5 Reset ALM: Select "YES" to reset all alarm settings to factory defaults.

6. Real-time setting:

Press and hold Down Button (④) to proceed the date and time setting. The default format is 24-hour. Press Up (③) / Down (④) Button to edit the parameters, and press Enter Button (⑤) to proceed the next setting. The setting in sequence: year→month→date→hour→minute. After the last setting is completed, press Enter Button (⑤) to return to the main screen.
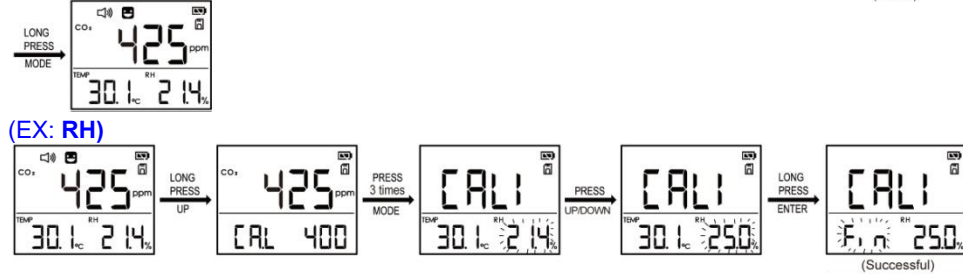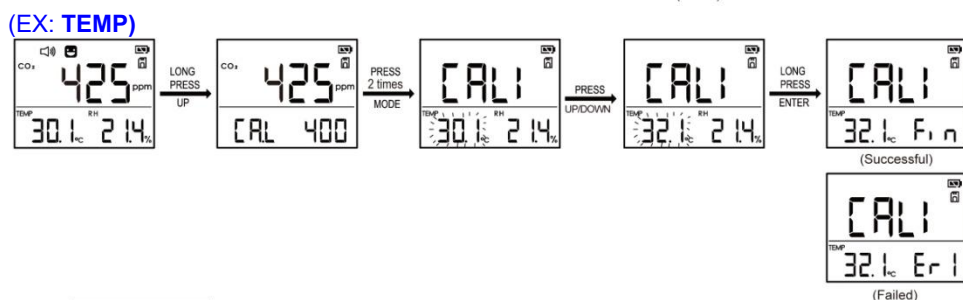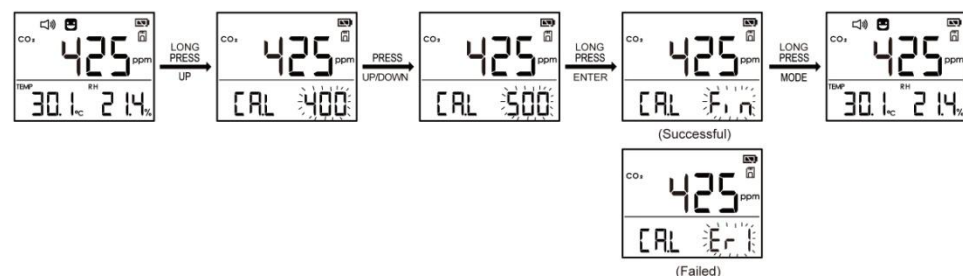

7. Calibration:

7.1 Press and hold Up Button (③) to proceed **CO_2 CA.L** (low concentration calibration). And then press Mode Button (②) to select the other calibration modes in sequence: **CO_2 CA.L** (low concentration calibration)→**CO_2 CA.H** (High concentration calibration)→**TEMP →RH→Reset CALI** (Recover calibration to factory settings).

7.2 Under the target calibration, press Up (③) / Down (④) Button to adjust the calibration value, then press and hold Enter Button (⑤) to confirm the calibration setting value. If the setting is successful, "Fin" displays on the LCD and hear one long beep followed by two short beeps; if the setting is failed, "ER1" displays on the LCD and hear four short beeps. Next, press Mode Button (②) to proceed the next calibration mode.

(EX: **CO_2 CA.L**)

(EX: TEMP)

(EX: RH)

7.3 **Reset CALI**: Select "YES" to reset all calibration settings to factory defaults.

7.4 Press and hold Mode Button (⊘) to return to the main screen.

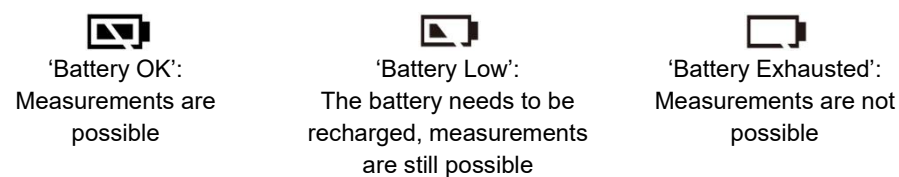7.5 The calibration value by default and adjustment range:
    a. **CO_2 CA.L**: The default is 400ppm and the adjustment range is 0~1,000ppm
    b. **CO_2 CA.H**: The default is 1,000ppm and the adjustment range is 1,000~3,000ppm
    c. **TEMP**: Adjust the current temperature value
    d. **RH**: Adjust the current humidity value

8. Power off:
Press the Power Switch (⊘) to turn off the device.

Rechargeable Battery

Battery message:

'Battery OK':
Measurements are
possible

'Battery Low':
The battery needs to be
recharged, measurements
are still possible

'Battery Exhausted':
Measurements are not
possible

Battery installation:
1. Loosen the screw (⊕) and pull out the battery cover (⊘).
2. Replace and reinstall with a new battery.
3. Place the battery cover (⊘) back and fasten the screw (⊕).

Battery charging:
During battery charging, the temperature of the device will rise about 2C°. At this time, the measurements of temperature and humidity will be affected by temperature rise. (5V/1A USB adapter charger)

Note:
1. The device has two separate batteries, supplied with Li-ion 3.7V Unprotected Button top 18650 battery *1pcs (L65~67mm, Ø18~19mm) and CR1220 lithium cell *1pcs. The CR1220 lithium cell is designated for date/time display and located underneath the rechargeable battery.
2. Please install batteries in the correct polarity. If the battery polarity is reversed, the capacity will be insufficient and the battery life will be shortened.

Safety Instructions

Warning: Your safety is very important to us .To ensure to use the product correctly and safely, we would like to draw your attention to read the warning and entire User Manual before using the product. These are important safety information and should be observed at all times.
1. Please handle the devices lightly, do not subject the product to impact or shock.
2. Do not immerse the product in water. Water can cause electric shock, fire or malfunctionwhich may result in damage.
3. Do not keep the product under the hot and moisture environment. Keep the product away from the heat source or near water.
4. Please use only the included power adaptor. Improper power adaptor or power sources can cause serious damage to the product, or result in injury or death to the user.

Product Care

To ensure you receive the maximum benefit from using this device, please observe the follow guidelines.
1. During battery charging, the temperature of the device rises. The temperature and humidity sensors are affected. At this time, measurements are only for reference. After batteries are fully charged and the device cools down, measurements are reliable.
2. **Repair –** Do not attempt to repair the device or modify the circuitry by yourself. Please contact with the local dealer or a qualified repairman if the device needs servicing.
3. **Cleaning –** Disconnect the power before clean. Use a damp cloth, do not use the liquid cleaning agent, such as benzene, thinner or aerosols.
4. **Maintenance** – Recommend to conduct a comprehensive test and calibration every year, ensure the normal operation of the device.

Specifications

Measurement Items - CO_2, THI, Temperature, RH
Measurement Method - Dual Beam NDIR (CO_2)
Display - Zone 1: CO_2, THI
            Zone 2: Temperature, RH or Date/Time
Sample Method - Diffusion or flow through (0.05 ~ 0.2l/min)

CO_2 Specification:	
Measurement Range	0~5,000ppm (0.5%)
Accuracy	0~3,000ppm: ±50ppm or 5% of reading, whichever is greater; >3,000ppm: ±7%
Resolution	1ppm
Repeatability	±20ppm@400ppm
Pressure Dependence	0.13% of reading per mm Hg
Response Time	<2min for 63% of step change
Warm-Up Time	<60 seconds at 22°C
Alarm Level	Alarm 1: 800ppm, Alarm 2: 1,200ppm (default), adjustable
Update Period	2 sec

Temperature Specification:	
Measurement Range	0-50°C (32~122°F)
Accuracy	±1°C (±2°F) when the fan blows to the device directly, the accuracy of temperature is ±1.5°C
Resolution	0.1°C
Response Time	20-30min (case must equilibrate with environment)
Warm-Up Time	1min
RH Specification:	
Measurement Range	0~100%
Accuracy	±5%RH@23°C
Resolution	0.1%RH
Data logging Functions:	
Sampling Interval	2/5/10/15/30 sec, 1/2/5/10/15/20/30/60 min
Storage Capacity	depend on Micro SD card capacity (max.16G Micro SD card)
Operating Conditions	0°C~40°C (32°F~104°F), 0~95%RH, non-condensing, with lithium-ion battery 0~50°C (32~122°F), 0~95%RH, non-condensing, without lithium-ion battery
Storage Conditions	-20~60°C (-4~140°F), 0~85%RH, non-condensing, without lithium-ion battery
Power Supply	Rechargeable Battery (not included): Li-ion 3.7V Unprotected Button top 18650 battery*1pcs (L65~67mm, Ø18~19mm) (Battery Life: more than 4 hours @1800mAH) USB or 5 VDC AC adapter
Dimension	113*82.6*42.5mm (4.5*3.3*1.7inch)
Weight	173.5g (rechargeable battery not included)

Installation Instruction

1. You can put CO2390 on the table or hang it on the wall.
2. Please note the following when hanging it on the wall. Choose a suitable location to install CO2390, fix screws to the wall.
Please see 「**Dimension**」 section to check the distance between the screws.

⚠ CE 🗑 ♻
Ref.No.: