

# Wall Mount CO2 Monitor Operating Instructions

Model: ZGw08PR

## Product Overview

Thank you for selecting ZGw08PR CO2 wall mount monitor. This product was developed to detect the presence of CO2 in the ambient air and help people to take care of the Indoor Air Quality. The compact device is designed for use in HAVC in the building. The demand controlled ventilation in the building, also the greenhouse with the CO2 concentration control.

By using the CO2 monitor as the indicator, it can easily get the current CO2 concentration together with the ventilation rate. And then adjust the ventilation to take care of the comfort condition automatically by the setting data. So the over-ventilation of the building can be reduced, and the energy can be saved. The ZGw08PR can be widely used in the office building, green house, school, exhibition, shopping mall.

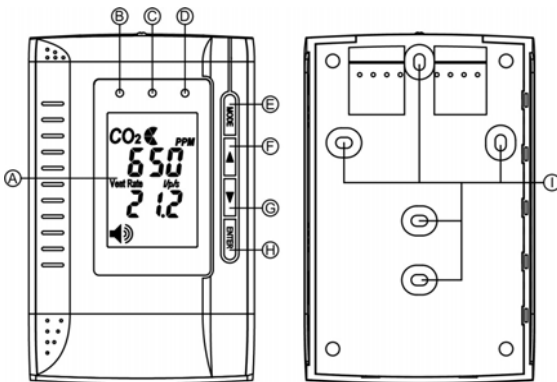
The ZGw08PR is easy to use and has many features:

- NDIR ( Non-Dispersive-Infrared) technology used to measure CO2 concentration
- Three different LED display show the current Indoor Air Quality situation.
- Relay output
- Reliable Sensor provides long-term calibration stability.
- The visual and audible alarm function can be adjustable by user.
- Mounting bracket with terminal block provides quick easy installation.

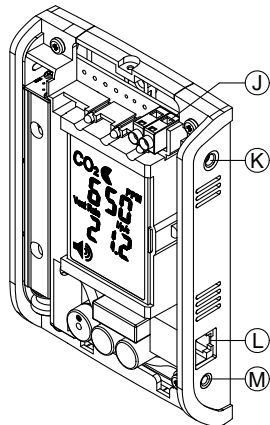
## Operation Instruction

Front view

Back view



Side view



- A. Main LCD Display
- B. Green LED Display (<800ppm)
- C. Yellow LED Display (800-1200ppm)
- D. Red LED Display (>1200ppm)
- E. Mode Button
- F. Up Button
- G. Down Button
- H. Enter Button
- I. Screw Position
- J. Terminal Block for Relay Output
- K. Power Inlet for AC adapter(6VDC)
- L. RJ 45 Socket (For factory use only)
- M. Gas Entry Hole

\*RJ 45 Socket including the RS232

## LCD Display Symbol

Symbol	Meaning	Description
	CO2 Concentration PPM Parts Per Million	The current CO2 concentration in your household.
	Ventilation Rate cfm/p Cubic Feet Minute/Person	The Present Cubic Feet/Minute Ventilation for one person.
	Ventilation Rate L/P/S Liter/Person/Second	The Current Liter/ Second Ventilation Rate for one person.
	Alarm	The Alarm Setting Icon,the factory setting with alarm is buzzer off
<b>CALIBRATING</b>	Calibration	To calibration the CO2 sensor when the accuracy deviates from the actual CO2 concentration.
<b>AL 1</b>	Alarm Level 1	The 1 <sup>st</sup> Alarm Level. Relay status will invert after CO2 level exceeds AL1 The Buzzer and Yellow LED will work after CO2 level exceeds AL1
<b>AL 2</b>	Alarm Level 2	The 2 <sup>nd</sup> Alarm Level The Buzzer and Red LED will work after CO2 level exceeds AL2
<b>ReFactSet</b>	Recover Factory Setting	To Recover Factory Setting to cancel the customize Setting

## Safety Instruction

**Warning:** Your safety is very important to us. To ensure you use your product correctly and safety, we would like to your attention to read those warning and the entire User Manual before using the product. These Warnings provide important safety information and should be observed at all times.

1. Please take the devices lightly, do not subject the product to impact or shock.
2. Do not immerse the product in water.
3. Please pay attention to the terminal block connection instruction, the wrong mode of operation or opposite installation will destroy the circuit of the devices.
4. Do not touch the exposed electronic circuitry of the device under any circumstances. Keep the circuit is close during installation. As there is the danger of electric shock.
5. Please keep the devices away from children touch to avoid the dangerous or the accident.
6. Do not keep the product under the hot and moisture environment. Keep the product away from the heat source or near water.
7. 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.
8. Please ensure the screws are fixed on the wall tightly. Do not let the screws approach or close to the surface of PCB board during installation. It has the risk of circuit damage or irreparable damage to device.

## Caring for product

To make sure you receive the maximum benefit from using this product, please observe the follow guideline.

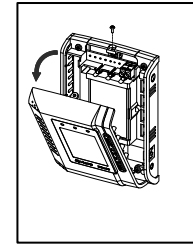
1. Cleaning ---Disconnect the power before clean. Use a damp cloth, do not use the liquid cleaning agent, such as benzene, thinner or aerosols.
2. Repair---- Do not attempt to repair the product or modify the circuitry by yourself. Please contact with the local dealer or a qualified repairman if the product needs servicing.
3. Calibration--- Please observe the calibration operation to make sure the accuracy for the devices when it's necessary.
4. Air circulation--The vents allow the air circulation liquid for measurement of the CO2 concentration and the ventilation should not be blocked.

## Installation Step

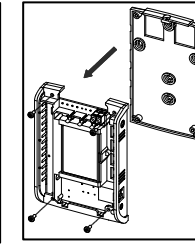
- Step 1: Release the screw from the device, take the front cover off.
- Step 2: Release the four screws from the back cover, take the CO2 board from the back cover.
- Step 3: Using the screw to fix the back cover to the current outlet, let the wires come out of the hole. Please pay attention to the terminal block connection data information.
- Step 4: Re-assembling the CO2 board by screw to the back cover.

Step 5: After finishing the terminal block wire connection. Press the front cover to the LCD display, and tighten the Front Cover screw with screwdriver.

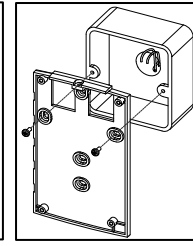
Step 6: Connect the AC adapter with the power inlet.



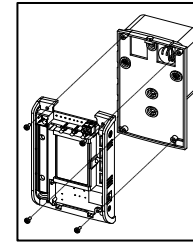
Step 1



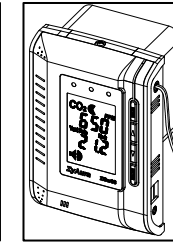
Step 2



Step 3



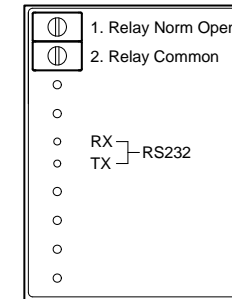
Step 4



Step 5 & 6

## Wiring Connection

**Caution:** The RJ45 socket is only for factory calibration use, not for LAN, it was covered by plastic cover, the incorrect RJ 45 connection will have the risk of circuit damage or irreparable damage to devices.

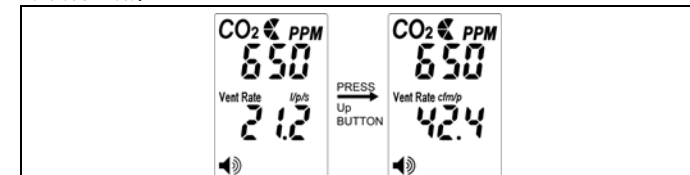


## Customizing Settings

When the power has been connected, The ZGw08PR CO2 monitor will begin to work. In order to meet your personal requirement, it is advisable to set up the customizing parameter.

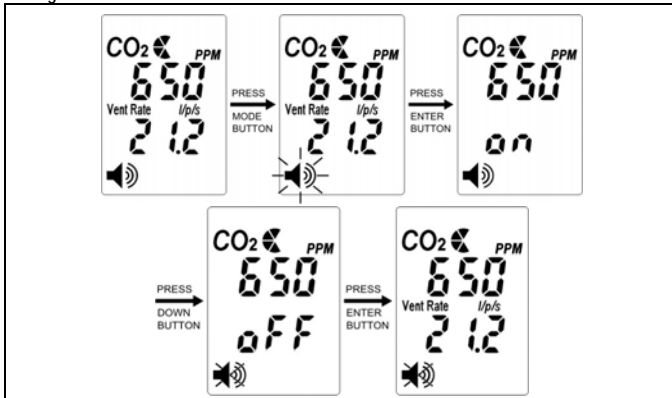
WarmUp: It lasts approximately 1min before WARM UP disappears; all MODE functions will not response during warm up.

Ventilation Rate:



1. Press up/down to choose the ventilation rate modes.
2. When pressing up button, the LCD display sequence is Vent Rate l/p/s -> Vent Rate cfm/p. When pressing down button, The LCD display sequence is reverse.

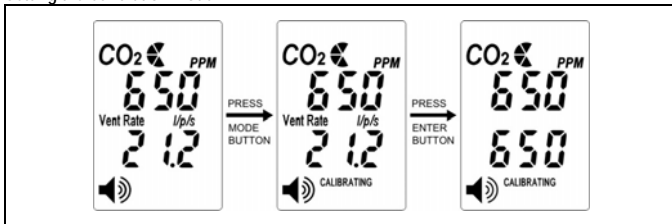
### Setting the alarm function:



1. Press the MODE, the speaker icon flashes simultaneously.
2. Press ENTER, use up/down to select the on/off.
3. Press ENTER again to save the setting.

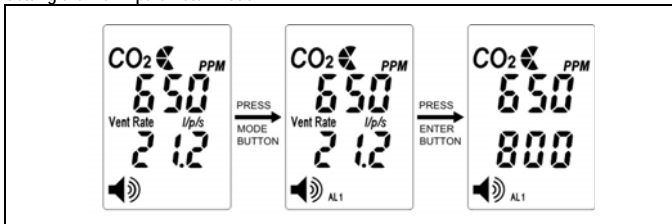
Note: The factory setting with alarm is buzzer off, user can set the alarm on/off according to the alarm function instruction.

### Setting the Calibration mode:



1. Press the MODE, the CALI icon flashes.
2. Press the ENTER, CALI show on the display.
3. Adjust the display to the ambient CO2 value by up/down button.
4. Press the MODE more than 10 sec, CALI flashes. Calibration will be done automatically after 10minutes and LCD will display 'Pass' or "Fail". If it shows "fails", please try again.

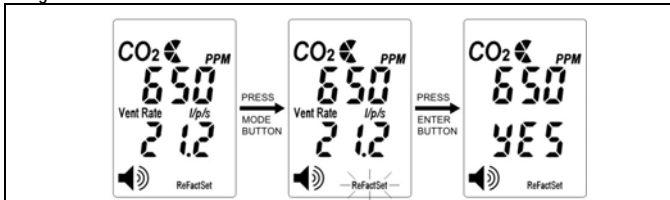
### Setting the Alarm parameter Mode



1. Press the MODE, the speaker icon flashes simultaneously.
2. Press ENTER. Using the Up/Down to set the parameter.
3. Press the ENTER again to save the data.

Remark: There have AL1 & AL2 when you press the mode. You can set the two different levels on your opinion. The step is 100 ppm per times

### Using the ReFactSet Mode:



1. Press MODE, The ReFactSet flashes simultaneously.
2. Press ENTER, Using the Up/Down to select the No/Yes.
3. After the selecting, Press the ENTER to save the changes.

Remark: If the user setting the data or calibrate the sensor wrongly. You can use the ReFactSet (Recover the factory Setting) to come back the factory setting data.

### Specification

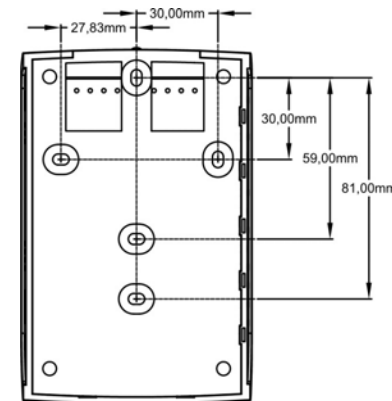
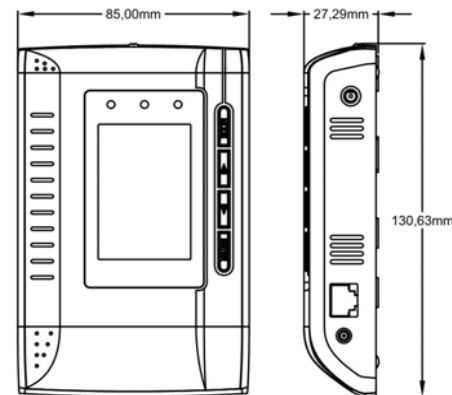
Method - NDIR

Sample Method - Diffusion or flow through (50 -200 ml/min)

### Performance - CO2

Measurement Range	0-3,000 ppm display
Display Resolution	1ppm at 0-1,000ppm;10ppm at 1,001-3,000ppm
Accuracy	±75ppm or ±5% of reading whichever is greater
Repeatability	±20 ppm @400ppm
Temperature Dependence	Typ. ±0.2% of reading per °C or ±2 ppm per °C, whichever is greater, referenced to 25°C
Pressure Dependence	0.13% of reading per mm Hg
Response Time	About 2min for 90% of step change
Warm-Up Time	<60 seconds at 22°C
Zone LED Display	Green:<800ppm Yellow:800~1200ppm Red: >1200ppm
Power Supply	6VDC AC adapter @the power entry
Relay Output	30VDC or 250VAC, max 2A., SPST. Normal Open
Operating Temperature	0°C ~50°C (32°F -122°F)
Operating Humidity Range	0 - 95% RH non-condensing
Storage Temperature	-20°C to +60°C(-4°C to 140°F)

### Dimension



### Calibration

Notice: Before calibrating ,you need standard gas or semi-standard gas, there are 3 methods to get standard gas.

#### Method A: use CO2 in office/building

- Use two Meters (One is the device for calibration. The other one is a calibrated (new) one.
- Use ambient room gas for calibration in office, waiting at least 10min,until the CO2 reading doesn't change.
- (Notice: user must not breathe toward the ZGw08PR, CO2 from the user will affect the reading of ZGw08PR)

- Use the reading of the new device as the standard
- Calibrate the device by the Cali Mode instruction .

#### Method B: use CO2 outsidess

- Use ambient room gas for calibration outsidess, waiting at least 10min ,until the CO2 reading doesn't change.
- ( Notice: user must not breathe toward the ZGw08PR, CO2 from the user will affect the reading of ZGw08PR)
- Use 380-420ppm as the standard reading.
- Calibrate the device by the Cali Mode instruction .

#### Method C: use standard CO2 in the bottle

- Pump the standard CO2 gas (0~1000ppm, flux = 0.1-0.2 liter/min) into the ZGw08PR from the Gas Entry Hole waiting about 2-3min.
- Calibrate the device by the Cali Mode instruction.

**ZyAura**  
Monitoring the invisible

Radiant Innovation Inc. [Http://www.ZyAura.com](http://www.ZyAura.com)  
1F, No.3, Industrial East 9<sup>th</sup> Road, Science-Based Industrial Park, HsinChu, Taiwan 300.

Ref.No. : 032011

