Operation Manual



Battery operated & big display CO2,RH,DP,TEMP. Monitor

CE

INTRODUCTION

This is a battery operated device with anti-theft and anti-modification function in order to be your best indoor air quality helper for public space management.
Equipped with NDIR sensor and easy-to-use, in addition to measuring the CO_2 concentration, it also measures relative humidity, dew point and ambient temperature. It is also a smart recorder to memorize the peak and average value of past 24 hours.

MATERIAL SUPPLIED

The standard package contains below:

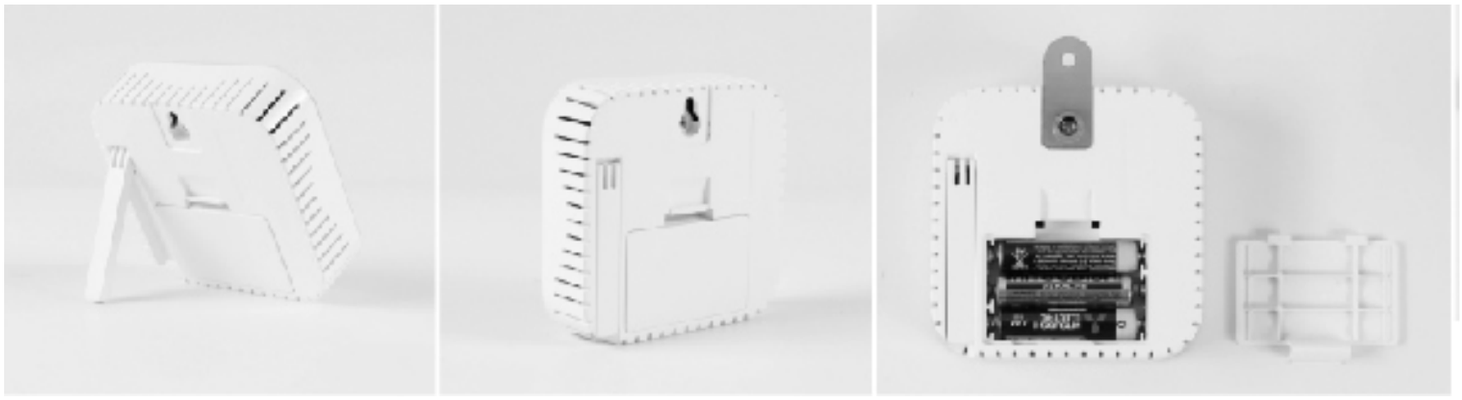
- CO_2 monitor x 1pc
- AAA battery x 3pcs
- Anti-theft hanging screw set
- Operation manual x 1pc



APL ASIA CO., LTD. Authorized Distributor
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POWER UP

This CO_2 meter is designed as desktop or wall mount use. It is extremely energy saving and powered up by 3pcs AAA batteries.
Remove battery cover and install 3 same brand new AAA batteries in correct polarity and good contact, then, put back the battery cover.



	ECO mode	Regular mode
LCD update	Every 1 min.	Every 10 sec.
Power consumption	40uA	70 uA
AAA alkaline life time	>1 year	>6 months

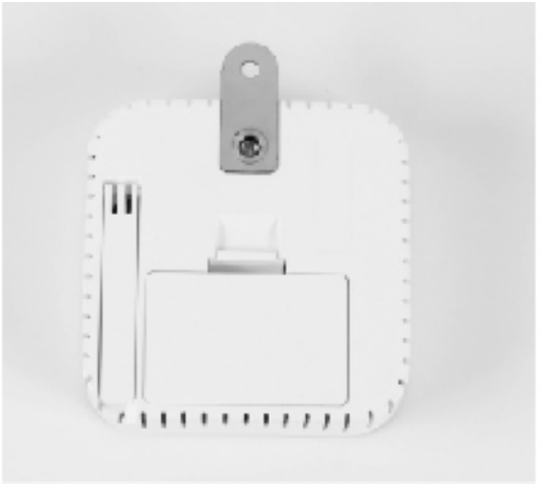
CAUTION

Please remove batteries and store it well when this monitor left idle for long. The brand of the three batteries is better to be the same and don't mix use new and old batteries.
The vents allow the air circulation for measurement and the ventilation should not be blocked.

ANTI-THEFT

If the monitor is used in public space, please install the enclosed stainless anti-theft hanger and fix it to wall via provided screw and screw driver







ANTI-MODIFICATION

If the monitor is used in public space, you may activate the anti-modi fication password feature to avoid setting change. This feature is default OFF. See “**SETUP**” password section to read the details.

PRODUCT FEATURE

- Extraordinary power saving feature to provide 1 year monitoring by only 3 pieces AAA batteries.
- One key press to review the logged 8-hour average, 24-hour average and 24-hour peak value
- NDIR (non-dispersive infrared) waveguide CO2 technology
- Programable 3 emoji icons to indicate indoor air quality level
- Buzzer function could be activated while required, mute function is available while buzzer function is on
- CO2 manual calibration feature is included

LET'S START

1 Pre-check:
This is to confirm the meter is good to use after transportation



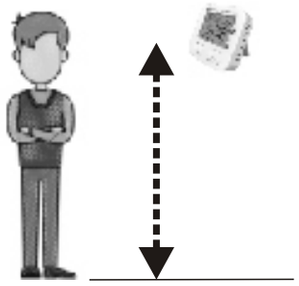
Must be
1.Sunny day
2. Away from any CO_2 source

2 Pre-check:
Leave the monitor next to open window for 20 minutes



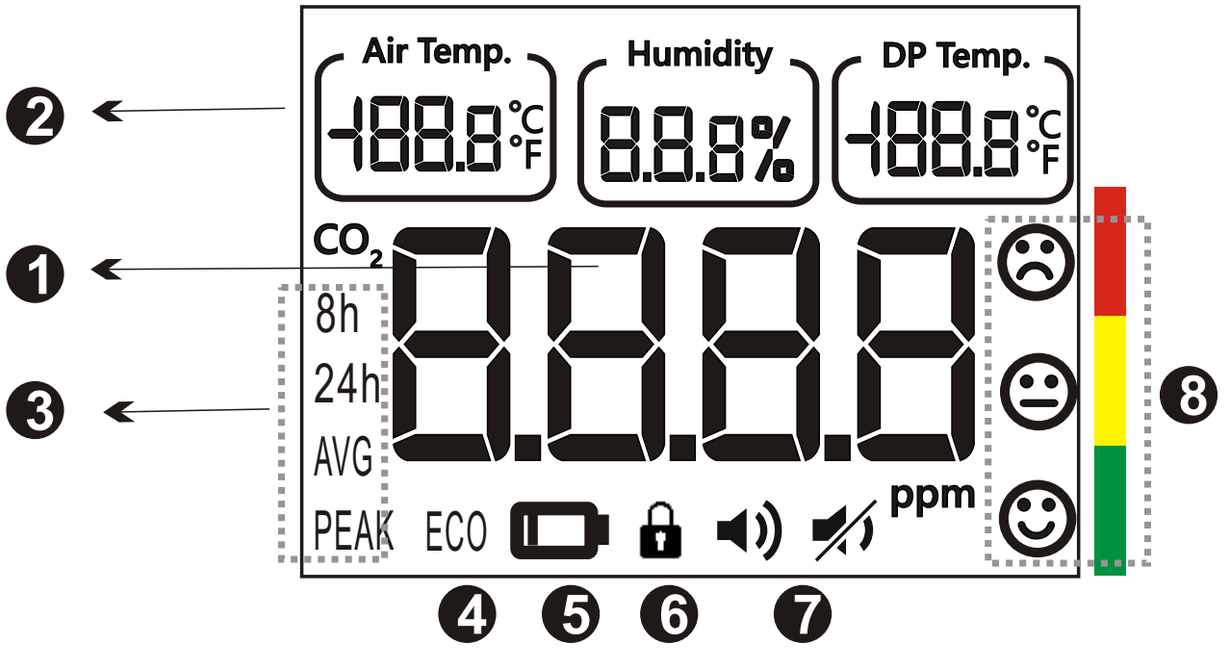
CO_2 must be 350~450ppm **(If not, please see calibration page.)**

3 Install in the suitable place



1.5~1.7 meter height is suitable

DISPLAY



1. CO_2 concentration, parts per million (ppm). NDIR CO_2 sensor, display up to 9999ppm
2. Ambient /Dew point temperature. °C/°F switchable. Range 0.0~50.0°C (32.0~122.0°F). Relative humidity. Range 5~95%RH
3. Logged 24 or 8-hour statistic data.
4. ECO mode icon. Means the display only update once a minute.
5. Low battery icon appears to remind user to replace batteries
6. Lock icon to indicate the meter can't be changed without password
7. CO2 concentration alarm buzzer. Buzzer is default as OFF and can be activated through keypad
8. Three emojis. The default status of current CO_2 level <800ppm 800ppm~1000ppm >1000ppm

KEYPAD



4 functional keys:

⏻ -Short press to turn on the meter.
Long press 3 seconds to turn off the meter. *Note 1

AVG -Press to check the logged statistics value of 8-hr average, 24-hr average and 24-hr peak value. *Note 1

SET -Press longer time to enter setup mode. *Note 1
While in setup mode, press to confirm setting.

MUTE -While buzzer sounds, press to mute

✚ -While in setup mode, press to adjust value

SET & ✚ -To proceed 400ppm CO_2 calibration

SET & MUTE -While lock function is on, press together to enter unlock process

***Note 1, If the meter is protected by password, unlock first.**

OPERATION

1. Power on and Measure:

Press "**POWER**" key to turn on and 10 seconds warm-up starts, the meter will then start to measure CO2 concentration, ambient temp. relative humidity and also display dew point temperature.

2. Statistic value of logged CO_2 measurement:

Press " **AVG** " key to check the logged statistics value of past 8-hr average, 24-hr average and 24-hr peak value. This is a useful tool for you to check history without downloading effort.

3. Buzzer Mode:

Besides value display, this meter is also equipped with programmable buzzer features. There are 2 buzzer modes: OFF&ON. Default OFF. While CO_2 exceeds AL threshold and buzzer feature is ON, buzzer beeps once a second until it is manually off by pressing " **MUTE**" key. After pressing mute key, the "Buzzer ON" icon keeps flashing until the CO_2 no longer exceeds AL threshold.

4. Password:

Press **" SET "& " MUTE "** simultaneously to enter password unlock procedure. The value flashes from first digit. Press " **+** " to adjust. Once select, press " **SET** " to confirm and adjust the next digit, repeat till 4 digits password are fully entered. "  " shall now disappears.

5. Setup mode:

Long press **" SET "** key till entering the setup mode. Then, press **" SET "** key to select features in sequence: Emoji & Alarm threshold, Unit (temperature unit), Buzzer, Password, ABC calibration and ECO (energy-saving mode)

Press **" + "** key to adjust value for each feature.

***Note 2: During the setting process, the device will return to the main screen after 30 sec of idle time.**

5.1 Emoji & Alarm threshold:

Three emojis. The default status is  <800ppm,  800ppm~1000ppm  >1000ppm.

The threshold to turn smile face to flat is adjustable from 600ppm to 3,000 ppm, the interval is 100ppm.

The threshold to turn flat face to cry is adjustable from 600ppm to 3,000ppm, the interval is 100ppm. This threshold is also related to buzzer alarm trigger. This value shall be bigger than previous emoji. If two thresholds are set intentionally the same, flat emoji will be skip. Ex: If both threshold is set as 800ppm, below 800 is smile, above 800 will be cry and also turn on buzzer sound.

5.2 Temperature unit:

Press **"+"** to switch between C and F. Press " **SET** " to next feature.

5.3 Buzzer activation:

Buzzer is default OFF for using in quiet places.

Press **“+”** to adjust it to ON. Press “ **SET** “ to next feature

5.4 Password:

Password lock is default OFF. If you plan to install this meter in public space and want to avoid unauthorized operation, turn this feature to ON.

Press **“+”** to adjust it to ON, then, press “**SET**” key to choose 4 digits. This is a 4 digits password lock. Press **“+”** to adjust and then press “**SET** ”to confirm.

5.5 ABC CO_2 Calibration:

ABC means Auto Baseline Calibration. This meter will use the lowest CO_2 value in the past 7.5 days as 400ppm to auto calibrate itself. This feature is excellent for user who can’t take off the meter from wall to do fresh air calibration next to opened window, such as school. However, please never turn on ABC function if this meter is installed in a closed public place where people is there 24/7, such as hospital.

Press **“+”** to adjust it to ON. Press “ **SET** “ to next feature.

5.6 ECO:

The default ECO is “OFF’ and display update every 10 seconds. After ECO mode is turned on, the display updates once a minute. ECO mode can provide 1 year usage without the need to change batteries.

CO_2 CALIBRATION

The meter is calibrated at standard 400ppm CO_2 concentration in factory. It's suggested to do manual calibration regularly to maintain good accuracy.

First of all, leave the meter in a known 400ppm CO_2 condition for some minutes. press **" SET "** & **" + "** keys at the same time till "**CAL**" appears. Press **" + "** to choose no or yes then Pressing **" SET "** key to start the calibration. After a period of 300 seconds count down, the display show "**Pass**" on display to indicate the calibration is done. Press **"SET"** key return to normal measuring mode.

To quit calibration, pressing " **MUTE**" longer time during any moment of calibration period, except the final 15 seconds



CAUTION:

Do not calibrate the meter in the air with unknow CO_2 level, Otherwise it will be taken as 400 ppm and leads to inaccurate measurement. The manual calibration is suggested to be done outdoor with good ventilation, fresh air and sunny day where CO_2 level is around 400ppm. Do not calibrate in rainy day because high humidity will affect the CO_2 level in air. Do not calibrate in places crowded with people or close to where exist high CO_2 such as ventilating outlets or fireplaces.

Must be
1.Sunny day
2. Away from any CO_2 source

SPECIFICATON

Measuring range CO2 Temperature Humidity Dew point	 0~9999 ppm, 0.0~50.0°C (32.0~122.0°F) 5.0~95.0% RH -68.2~50.0°C (-90.8~122°F)
Resolution	1ppm , 0.1°C/°F, 0.1%RH
Accuracy CO2 Temperature Humidity	 ±50ppm±3% of reading（ 400~5000ppm) 5001~9999 is 10% of reading. N/A for <400ppm ±0.6°C/±1°F ±5%RH (at 25°C, 10~90%RH) ; ±7%RH (at 25°C , other range)
Warm-up time	10 seconds
Response time CO2 Tair Humidity	 <5 mins (90% step change) <2 mins (90% step change) <20 minutes (90% step change)
Operating condition	0~50°C , 0~95% RH (avoid condensation)
Storage condition	-20~ 50°C,0~95%RH(avoid condensation)
Power supply	3pcs AAA batteries
Power consumption	Eco mode: 40uA ; regular mode: 70uA
Buzzer	~70dB at 10cm distance
Meter/LCD size	86x86x25 mm / 60 x 44 mm
IP	IP30
Housing Material	ABS
Mounting height	1.4~1.8 M
Weight	115g
Standard package	Meter, battery, hanging screw set, manual, paper box

ERROR CODE

CODE	PROBLEM/SOLUTION
E34	CO_2 sensor is damaged **Solution**: Send back to repair
E03	Measured reading is above the upper limit **Solution**:For CO2 E03, put the meter in fresh air for 5 mins. If it not works, send back to repair
E02	Measured reading is under the lower limit **Solution**:For CO2 E02, Re-calibrate. If it not works, send back to repair
E04	Original data source is in E01~E03 condition. **Solution**:For CO_2 peak/avg. E04, fix error code of CO_2 first. For other E04 , leave the meter in room condition for 30 mins. If not works, send back to repair
Fail	To indicate the calibration is fail **Solution**:Put meter in fresh and stable CO_2 condition to calibrate again.
E36	To indicate the power is too low to cause CO_2 sensor fail Solution: Replace with 3 same brand new batteries.

? Can't power on

If low battery icon used to appear, please change to 3 same brand brand new batteries. Don't mix use different brands and new/old batteries.

? I forget the password I set

Please contact the store where you purchase meter from for further help.

WHAT TO DO IF AIR QUALITY IS BAD?

CO_2 level	Action
Green	Normal concentration level, no action required; check monitor is working correctly
Yellow	Ventilation required, partially or fully open trickle ventilators or leave room door partially open
Red	Significant ventilation required, open window and leave door fully open

WARRANTY & RETURN AUTHORIZATION

The meter is warranted to be free from defects in material and workmanship for a period of one year from the date of purchase. This warranty covers normal operation and does not cover misuse, abuse, alteration, neglect, improper maintenance, or damage resulting from leaking batteries. Proof of purchase is required for warranty repairs. Warranty is void if the meter has been opened.

Authorization must be obtained from the supplier before returning items for any reason. When requiring a RA (Return Authorization), please include data regarding the defective reason, the meters are to be returned along with good packing to prevent any damage in delivery and insured against possible damage or loss.

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Measuring / Testing Instruments !

- Hygrometer/Psychrometer
- Thermometer
- Anemometer
- Sound Level Meter
- Air Flow meter
- Infrared Thermometer
- K type Thermometer
- K.J.T. type Thermometer
- K.J.T.R.S.E. type Thermometer
- pH Meter
- Conductivity Meter
- T.D.S. Meter
- D.O. Meter
- Saccharimeter
- Manometer
- Tacho Meter
- Lux / Light Meter
- Moisture Meter
- Data logger
- Temp./RH transmitter
- Wireless Transmitter .....

More products available !

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2023/10 V1.1