

App available for free at:



# User Manual

## 2250 LogiCO2®-Scout Glow

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### ENGLISH

**LogiCO2®-Scout Glow: Portable Bluetooth CO2-sensor for smartphone (below mentioned the "Scout").**



### **WARNING!**

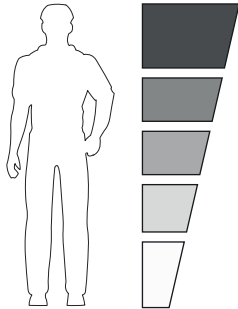
Please read these instructions carefully prior to start-up and use. These instructions should be saved for future reference and passed on to any subsequent owner. Failure to follow any of these instructions could result in bodily harm or death, and could void product warranties. LogiCO2 International AB, its affiliates and third party providers assume no responsibility for claims arising from improper or careless use or handling of its products. Retain this instruction.

## Important Safety Information!

The Scout is an instrument that measures the CO<sub>2</sub> concentration in the ambient air. Through Bluetooth the Scout sends the measurements to a smartphone with the Scout App, enabling a person to know if it is safe or not to enter a place that may contain high levels of CO<sub>2</sub> (“Danger Zone”). The reading of the concentration is done safely OUTSIDE the Danger Zone. Since a CO<sub>2</sub> reading normally takes at least 30 seconds to complete, and the human body reacts in about 2 seconds, it is dangerous to rely on a Scout mounted on your belt, or otherwise carried on a person. Before conducting the actual Danger Zone testing, always conduct a CO<sub>2</sub> reading in fresh outdoor air to ensure that the Scout is calibrated (see Fresh Air Testing below).

When testing a Danger Zone, the Scout should be placed into the LogiCO<sub>2</sub>® foam ball provided with the Scout (below mentioned the “Foam Ball”) and rolled into the Danger Zone, where the measurement is made in accordance with these instructions. The value is displayed on the phone outside the Danger Zone using the LogiCO<sub>2</sub>-app.

The Scout does not have a digital display and does not display the CO<sub>2</sub> levels. In case of an alarm the Scout units red LED alarm indicators and an alarm sound will activate. The app on the phone will also make an audible alarm if it is connected to the Scout unit.



## CO<sub>2</sub> Concentration Levels (%) and Effects

<u>(%)</u>	<u>Effect</u>
20.0	Death within a few seconds.
10.0	Convulsion, Unconsciousness, Death.
7.0	Dizziness, Vomiting, Headache, Reduced blood supply to brain.
4.0	IDLH -Immediate Danger to Life and Health.
3.0	Normal exhale concentration; increased breath and pulse rates.
1.0	Shortness of breath possible.
0.5	Maximum for working conditions (TWA 8 hr.PEL).
0.1-0.2	Recommended max value in public areas.
0.04	Fresh air.

## Function

The Scout is a portable CO<sub>2</sub> sensor with Bluetooth communication. It works together with a smartphone app called "LogiCO<sub>2</sub>-Scout" (iPhone or Android) (the "App"), in which the current CO<sub>2</sub> concentration is displayed on the screen. The App enables fresh air calibration as well as Time Weighted Average ("TWA") measurement. It also has a battery indicator and a graphical log.

The App displays the actual CO<sub>2</sub> concentration. Depending on the measured levels, the App will display a warning and emit warning sounds. Charge the Scout with the provided USB (USB to micro-USB) charging cable. The Scout uses state-of-the-art Non Dispersive IR technology to measure the CO<sub>2</sub> concentration.

Once started, the Scout will not turn off automatically. To save battery time, turn it off by pushing the on/off button (3 seconds).

The Scout can also be used as a work environment sensor to measure the average CO<sub>2</sub> levels over an 8 hour work day ("TWA monitoring") in accordance with the US Occupational Safety and Health Administrations ("OSHA") regulations.

In case of an alarm the Scout units red LED alarm indicators and an alarm sound will activate. The app on the phone will also make an audible alarm if its connected to the Scout unit.



**WARNING!** The Scout is used only to measure CO<sub>2</sub> in the ambient air. It is NOT designed to detect smoke, fire, carbon monoxide, or any other poisonous gas. If used for TWA measuring purposes the Scout does NOT replace a fixed mounted CO<sub>2</sub> sensor.

## First Start and Charging

**First start:** The Scout is delivered in "Deep- Sleep-Mode\*". To start the Scout for the first time, shortly connect it to a USB charger with the enclosed cable. The App shows the battery charging status.

**Charging:** When charging the Scout, the LED flashes quickly red and green. When the Scout is fully charged, the LED turns green.

When starting the Scout; if the LED on the Scout lights green followed by a short red blink and then goes dark, the battery needs to be charged. Do not use the Scout unless fully charged.

**Low battery warning:** Low battery status is indicated with a blinking green LED and a beeping buzzer.

Charge only within 0-45°C / 32-113°F temperature.

\*Deep-Sleep-Mode is a battery saving mode for long time storage (more than 2 months). This mode prevents the Scout from being unintentionally turned on. To enter the Deep-Sleep-Mode, turn off the Scout by pressing and holding the on/off-button until the LED flashes white three times (approx. 6 seconds). In the Deep-Sleep-Mode it is only possible to turn on the Scout by connecting it to a USB charger.

## Connection with Android or iPhone Smartphone

Download the App “LogiCO2-Scout” from App Store or Google Play. Start the App and the Scout. GREEN LED on the Scout indicates that the Scout is in operation, but not connected to a smartphone. BLUE LED indicates connection with a smartphone.

### Settings:

In settings, ensure that Bluetooth is activated, In the App click  (settings symbol) and under Active Alarms ensure that Pre-alarm, High alarm (STEL), TWA alarm (PEL) and Lost communication are activated.

**NOTE!** Only use the smartphone App to connect to the Scout. Do not pair/connect via the smartphones Bluetooth settings.

### Android:

Pic.1: Tap on “Scan devices”.

Pic.2: Tap on “LOGICO2-x” to connect. If more than one Scout is within the smartphones range, they will all be visible in the “Scanning for devices”-list. To be sure that you connect to your own Scout, tap on “Check”. If it is “your Scout”, the LED on it will flash blue twice.

Pic.3: Connected. When connected, the LED on the Scout turns blue and the App will start showing the CO2 concentration.

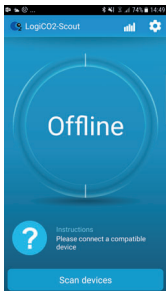
### iPhone:

Pic.4: Tap CONNECT to connect with the Scout.

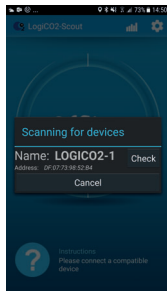
Pic.5: When connected, the LED on the Scout turns blue and the App will start showing the CO2 concentration.

**IMPORTANT!** Ensure that the volume on the iPhone is on max level.

Pic. 1



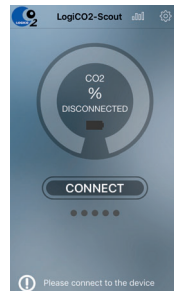
Pic. 2



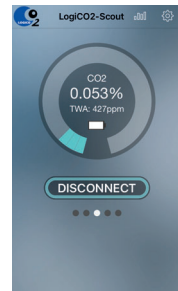
Pic. 3



Pic. 4



Pic. 5



## Connection Trouble

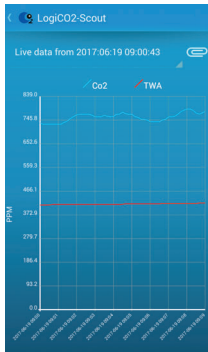
If there are problems connecting the Scout to your smartphone, turn the Scout off and on to clear its “connection memory”. If there are still problems, turn your smartphone off and on to reset its Bluetooth communication function. **NOTE!** Only use the smartphone App to connect to the Scout. Do not pair/connect via the smartphones Bluetooth settings.

## Logging

It is possible to see graphs of both TWA measurements as well as actual CO2 measurements. Tap on the graph symbol in the upper right corner of the App. The X-axis represents time and the Y-axis represents the CO2-concentrations.

The logging graph will be saved in the phone. Graphs can be sent as csv-files via e-mail.

### Android



### iPhone



## Fresh Air Testing



**WARNING!** Always conduct a fresh air test, and calibrate the Scout if necessary, prior to each actual Danger Zone testing.

**Note:** Normal fresh outdoor air has a CO2 concentration of 0,03 to 0,05% (average 0,04%) depending on different factors, such as: geographical location, time of season and altitude.

### Procedure:

1. Start the Scout outside. Choose a place with fresh outdoor air protected from rain. Also avoid sources of high CO2 concentration such as smoke from fire, ventilation exhaust and crowded areas. Avoid breathing on the Scout during the fresh air testing.
2. Connect the Scout with the smartphone and ensure that there is a blue LED light.
3. Check that the app shows a reading for at least 2 minutes.
4. If a fresh air testing indicates CO2 levels between 0.03% and 0.05% proceed with CO2 Danger Zone testing (See section How to Conduct a CO2 Danger Zone Testing below).
5. If the Scout shows a CO2 value below 0,03% or higher than 0,05%, you must calibrate the Scout. (See Calibration section below)

## Calibration



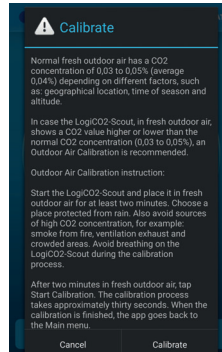
**WARNING!** Do not calibrate the LogiCO<sub>2</sub>-Scout indoors. Always conduct calibration outside in fresh air.

### Procedure:

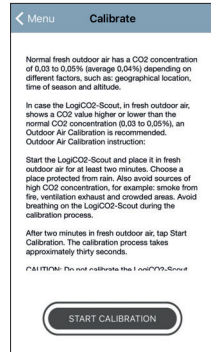
1. Start the Scout outside. Choose a place with fresh outdoor air protected from rain. Also avoid sources of high CO<sub>2</sub> concentration such as smoke from fire, ventilation exhaust and crowded areas. Avoid breathing on the Scout during the calibration.
2. Connect the Scout with the smartphone and ensure that there is a blue LED light.
3. After two minutes in fresh outdoor air, tap Start CALIBRATE in the upper right corner of the App. The calibration process takes approximately thirty seconds.
4. Follow the fresh air calibration instructions in the App.

**Android and iPhone:** Tap on the Gear in the upper right corner of the App and then tap on Calibrate. Follow the fresh air calibration instructions in the App.

### Android



### iPhone

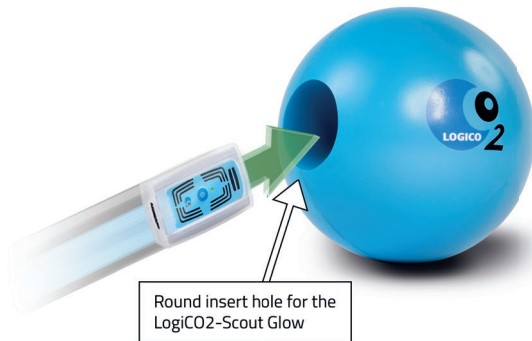


## Calibration Log

All of the calibrations done by the user will be saved with time and date in the Scout App. These can be emailed as a csv-file from the app via e-mail.

## How to Conduct a CO<sub>2</sub> Danger Zone Testing

1. Turn on the Scout and connect to a smartphone. Double check that the LED light is blue.
2. Conduct a Fresh Air Testing, and calibrate the Scout if testing indicates CO<sub>2</sub> values less than 0.03% or above 0.05%.
3. Place the Scout unit into the silicone casing, then insert the Scout into the Foam Ball's hole and make sure that it is in the middle of the ball so that it is protected from all sides. Double check that the blue LED light is still on by looking into one of the holes.



4. Ensure that the App shows reading.
5. Gently role the Foam Ball into the Danger Zone.



**WARNING!** Be sure to roll the Foam Ball along the ground and do NOT toss it up in the air. (The range between the Scout and the smartphone can be up to 100 feet. The communication distance can be less depending on structures and other environmental conditions between the Scout and the smartphone).

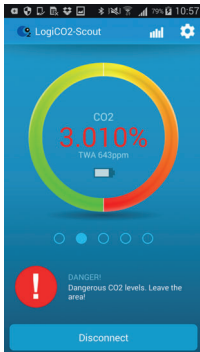
6. Check that there is a reading for at least 30 seconds to ensure reading of CO<sub>2</sub> level is completed.
7. **In case of a Red High Alarm** (Dangerous CO<sub>2</sub> level warning. CO<sub>2</sub> levels at 3% or above): **Do NOT enter the Danger Zone. LEAVE THE AREA IMMEDIATELY and call 911.** Failure to do so can cause bodily harm and death.
8. In case of a Pre-Alarm (CO<sub>2</sub> levels at 1.5% or above): Open doors and windows as much as possible. Call service to locate the leak. A service technician should only enter the Danger Zone under the supervision of another person.

## Dangerously High CO<sub>2</sub> Concentration

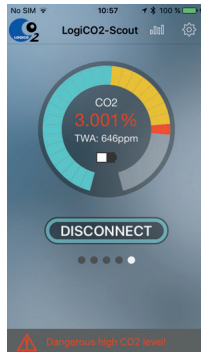
When the CO<sub>2</sub> concentration is over 3%, the Scouts red LED alarm indicators will start flashing and audible alarm will activate, the smartphone will start emitting warning sounds ("Red High Alarm"). The Scout and the smartphone will emit lower warning sounds at 1,5% CO<sub>2</sub> levels ("Pre-Alarm").

**Red High Alarm:** Do NOT enter the Danger Zone. Leave the area immediately and call 911.

Android



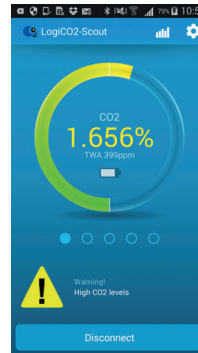
iPhone



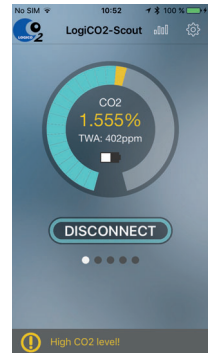
**Pre-Alarm:** Open doors and windows as much as possible. Call service technician.

**IMPORTANT!** A service technician should only enter the Danger Zone under the supervision of another person.

Android



iPhone





## TWA (Time Weighted Average) Monitoring

It is unhealthy for humans to be exposed to more than the Hygienic Limit Value of CO<sub>2</sub> during an 8-hour working day. The Hygienic Limit Value exposure of CO<sub>2</sub> over 8 hours/day in the USA and most other countries is 0,5% or 5000 ppm CO<sub>2</sub>. Time Weighted Average (TWA) is the average concentration of CO<sub>2</sub> over an 8-hour period. The Scout can be used to measure TWA. When used for this purpose, always conduct a Fresh Air Testing as described above before use. If needed, calibrate the Scout according to these instructions. Ensure that fixed mounted CO<sub>2</sub> sensors are installed in accordance with safety regulations.

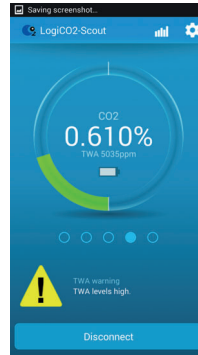
The Scout and the smartphone will emit warning sounds when TWA exceeds 0,5% or 5000 ppm CO<sub>2</sub> ("TWA-Alarm").

**In case of a TWA-Alarm:** Open doors and the windows as much as possible. Find the source or the reason for the high CO<sub>2</sub> concentration. If not found, call service. A service technician should only enter the Danger Zone under the supervision of another person.

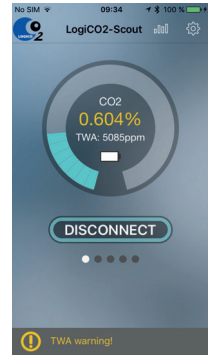


**WARNING!** If used for TWA measuring purposes the Scout does NOT replace a fixed mounted CO<sub>2</sub> sensor.

Android



iPhone



## Technical Specifications

**Operating Principle:** Non-dispersive infrared (NDIR)

**Measurement range:** 0-6% volume CO<sub>2</sub>

### Battery information

**Powered:** Li-Ion 3,6V, 1150mAh  
**Operating time:** Approx. 12h  
**Charging:** With a USB - Micro USB cable to a normal smartphone charger  
**Charging time:** Approx. 2,5h

### LED indications

**Green:** Operation, no connected smartphone.  
**Blue:** Bluetooth communication with smartphone.  
**Red, blinking:** Battery charging, shown together with green or blue indication.

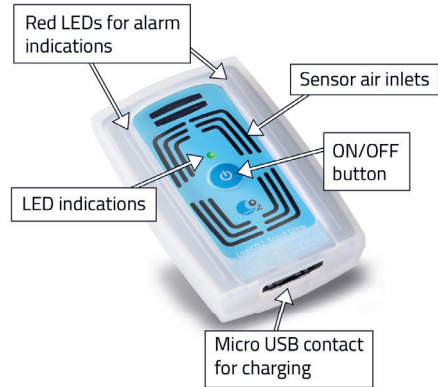
**Warning levels:** 1,5% and 3% CO<sub>2</sub> concentration, 5000 ppm TWA alarm.

**Weight:** 75 g / 2.65 oz

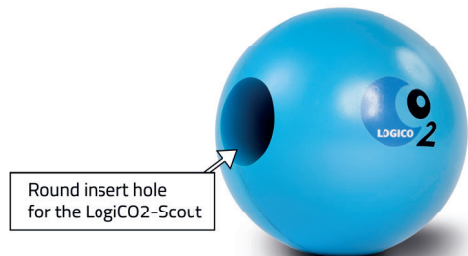
**Dimension (HxWxD):** 90.6 x 57.1 x 20mm / 3.6" x 2.2" x 0.8"

## Product features

### LogiCO<sub>2</sub>-Scout Glow



### Foam ball





## Scan the QR-code below to download the free companion app to the LogiCO2 Scout

Or search your appstore for the application  
"LogiCO2 Scout" by LogiCO2



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