# resideo

## CO$_2$ Monitor

R200C2

## APPLICATION

**Making shared spaces healthier places**

In order to be more energy efficient, we have greatly improved the insulation of our homes and workspaces, to retain heat and lower our energy waste, but in doing so we have removed the natural ventilation avenues that allowed our homes to breathe.

Carbon Dioxide, or $CO_2$, is a natural part of the atmosphere and the air we breathe. Humans exhale – depending on physical activity – between 4 and 50 liters of $CO_2$ per minute. Too much CO2 leads to fatigue, deepened breathing, headache, increased blood pressure and pulse, decreased hearing ability.

The R200C2 monitor clearly indicates $CO_2$ levels and alerts to increases via audio and visual alerts so you can take action to ventilate the room and let fresh air in (or $CO_2$ out of the room).

By installing a carbon dioxide monitor in your home or building, you can easily assess the air quality indoors, and see at a glance when levels become excessive, allowing you to take action to keep yourself and others healthier.

**Where to install?**

The R200C2 $CO_2$ monitor should be installed in every room containing a fuel-burning appliance, and in rooms where people spend time, such as the living room, bedrooms, school rooms, home offices, meeting rooms or play rooms. $CO_2$ is slightly heavier than air, so the monitor should be wall mounted at eye level.

## SPECIAL FEATURES

*   **Clear LED reading**
    The R200C2 features a clean, defined colour LED read out that tells you what the real-time ppm (parts per million) of carbon dioxide is in the room. The status bar displayed is colour coded green, yellow and red, for convenient understanding at a glance.

*   **Alert system**
    If high levels of carbon dioxide are detected, the ppm indicator will turn red, and a 75 dB voice alarm will sound to alert you to take immediate action to ventilate the room and seek fresh air. Voice alert function and other acoustic alarms can be switched off as needed.

*   **Room temperature**
    Alongside the ppm reading, our alarm also tells you the temperature of the room, which is great for keeping children, pets and the elderly comfortable in both summer and winter.

*   **Humidity detection**
    The R200C2 measures the humidity levels of the room too, which helps you to keep everyone cool and comfortable in summer.

*   **10 Year Service Life and Warranty**
    Our alarm is built to last, with a market-leading 10 year service life for a great return on your investment and added peace of mind.

*   **Beautiful design**
    At just 37mm thick, our carbon dioxide monitor is modern, clean, and designed to fit in discreetly with your decor.

*   **Key features**
    Comes with a number of helpful features, such as voice notifications, backup battery, and wall design.

# TECHNICAL DATA

| Specifications | |
|---|---|
| Working voltage: | DC 5 V (Power adapter 5 V / 1 A) |
| $CO_2$ sensor technology: | Non Dispersive Infrared (NDIR) |
| $CO_2$ measurement range: | 400 ~ 5000 ppm |
| $CO_2$ measurement error range: | ± (50 ppm + 5 %) |
| Pressure dependence: | + 1.6 % per kPa deviation from normal pressure |
| $CO_2$ measurement resolution and response time: | 1 ppm; T90 < 120 s |
| Temperature range: | −5 °C ~ 50 °C or 23 °F ~ 122 °F |
| Temperature measurement error range: | ± 0.5 °C or 0.9 °F |
| Temperature measurement resolution/response time: | 0.1 °C / °F; T90 < 120 s |
| Humidity measurement resolution and response time: | 0.1 %; T90 < 600 s |
| Humidity measurement range: | 0.0 % ~ 99.9 % RH |
| Humidity measurement error range: | ± 5 % RH |
| Backup battery running time: | 12 hours |
| Sensor service life: | 10 years (Display shows: "End" at the end of service life) |
| Protection class: | IP40 |
| Dimensions: | 99 mm x 99 mm x 37 mm |
| Weight: | 291 g (net weight) |
| **Standards** | |
| Approvals: | EN IEC 63000:2018 |

| Carbon dioxide levels and guidelines | |
|---|---|
| 400 ppm | Normal outdoor air level. |
| 400 ~ 1000 ppm | Typical level indoors with good ventilation.<br><br>Note: If $CO_2$ levels are low when building is sealed and occupied, check for over ventilation (too much fresh air = energy wasted). |
| > 1000 ppm | ASHRAE and OSHA recommended this as the maximum level acceptable in a closed room. Considered maximum comfort level in many countries. |
| > 1200 ppm | Poor air quality – requires ventilation. |
| > 2000 ppm | According to many studies this level of $CO_2$ produces a significant increase in drowsiness, tiredness, headache, lower levels of concentration and increased likelihood of spreading respiratory viruses like colds, etc. |
| > 5000 ppm | OSHA and NIOSH first threshold for safety. Maximum allowed concentration within an 8 hour working period. |

ASHRAE: The American Society of Heating, Refrigerating and Air-Conditioning Engineers
OSHA: The Occupational Safety and Health Administration (USA)
NIOSH: The National Institute for Occupational Safety and Health (USA)

# TRANSPORTATION AND STORAGE

| Parameter | Value |
|---|---|
| Environment: | clean, dry and dust free |
| Ambient temperature: | 10 °C - 45 °C |
| Storage temperature: | -10 °C - 60 °C |
| Ambient relative humidity: | 0 % * - 95 % * |

*non condensing

# ORDERING INFORMATION

### Options

| Description: | OS.-No.: |
|---|---|
| Monitor for West Europe with 1000/1500 thresholds | R200C2-A CO2 |
| Monitor for West Europe with 900/1200 thresholds | R200C2-B CO2 |
| Monitor for East Europe with 1000/1500 thresholds | R200C2-E CO2 |
| Monitor for UK with 1000/1500 thresholds | R200C2-A-UK CO2 |

# TECHNICAL CHARACTERISTICS



### Green

A green indicator means $CO_2$ levels are safe, harmless, and under a healthy ≤ 1000 ppm limit.

### Yellow

A yellow light is a warning sign, to flag when levels have reached between 1000 ppm ~ 1500 ppm. You should consider ventilating your home at this point, opening a window or door to allow fresh air in.

### Red

When levels reach above 1500 ppm, the red colour alert will flash and the alarm will emit a 75 dB alarm sound. You should take immediate action to ventilate the room and everyone should access fresh air.