

SE8000 Room Controllers

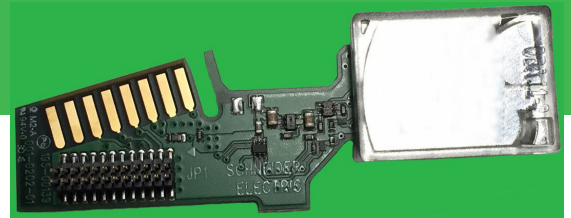
SE8000 CO₂ Sensor Module Data Sheet VCM8001V5045

Out-of-the-box CO₂ sensor module to improve fresh air quality in schools, restaurants, offices and other small buildings.

Product at a glance

Commercial spaces or small office buildings require a constant flow of fresh and conditioned air to create a healthy environment for people inside the building. The CO₂ sensor controls fresh air flow on the SE8650 model (IAQ feature), and displays the CO₂ sensors value on the SE8350 model. Use of CO₂ sensors with an energy efficiency program is one enabler for Building LEED, BREEAM and Green Star Certification.

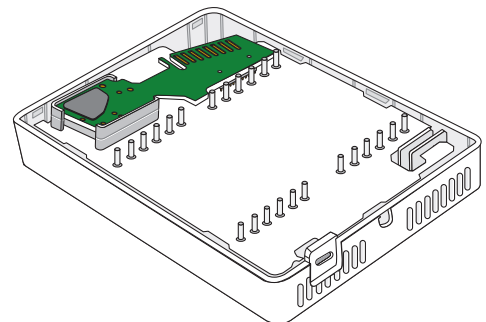
- **Finish:** platinum EQC coating improves optic performance
- **Performance:** maintains high performance in varying air type environments
- **Reliability:** provides accurate and reliable carbon dioxide measurement
- **Conformity:** conforms to ASHRAE specifications for Green Building Standards.
- **Improved air quality:** achieves optimal ventilation and reduces stagnant air
- **Durability:** adapts to a multitude of environments
- **Affordable:** easily convince customers to invest in improved Indoor Air Quality (IAQ)
- **Convenience:** Install to any SE8000 Room Controller in minutes



Benefits

All CO₂ sensors are maintenance-free in normal environments thanks to the built-in self-correcting Automatic Baseline Correction (ABC) algorithm function. The sensors have a life expectancy of 15 years and do not require any calibration.

- Miniature size
- Requires no calibration
- Maintenance free
- Long term stability
- Low power consumption



The convenience of an out-of-the-box module simplifies full implementation in minutes.

CO₂ Sensor Module Overview

Overview

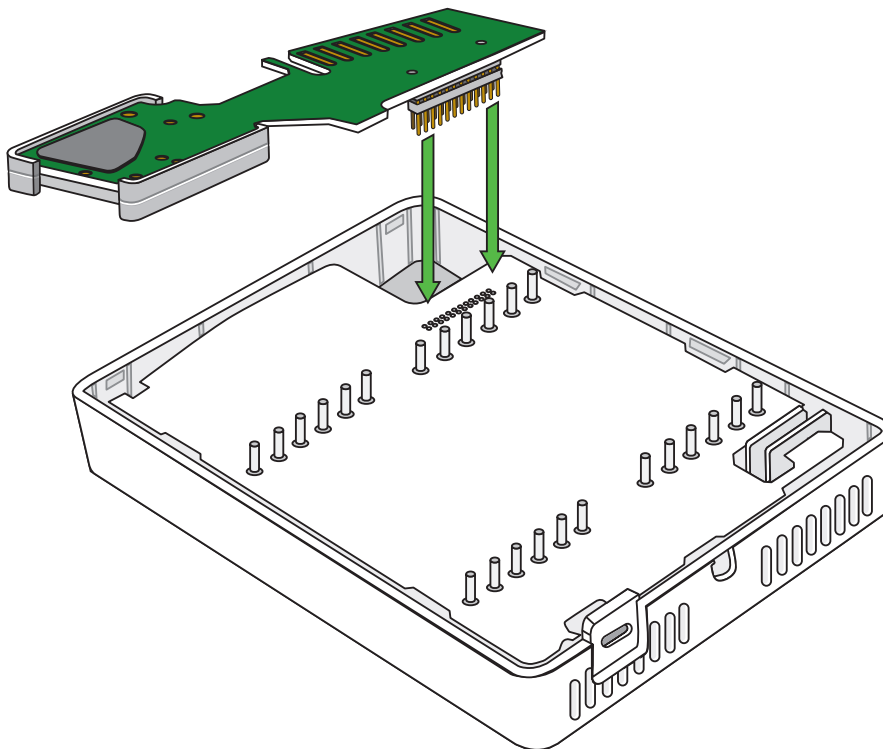
The CO₂ sensor is an optional built-in easy-to-install module for the SE8000 Room Controllers. For HVAC applications, the CO₂ sensor can be used to monitor the indoor air quality, its data made available to interfacing devices on the Room Controller's data buses (i.e. BACnet), and control of fresh air inputs into the monitored zone. Typical site installations can include indoor zones with constant or periodic high concentrations of people, or in close proximity to commercial equipment generating high levels of CO₂ gas.

Since CO₂ gas is odorless and colorless making leakages difficult to detect, the CO₂ sensor ensures the wellbeing of personnel located in industrial zones where CO₂ generating equipment is installed.

Carbon dioxide measurement is required in many applications from building automation and greenhouses to life sciences and safety.

Easy and worry free

The CO₂ sensor module is easy to install on any SE8000 Room Controller. The sensor is installed inside the Room Controller directly on the PC board via the pin connector, and requires no after service maintenance.



Specifications

Main Specifications for CO₂ Sensor

| Item | Description |
|---|--|
| Target gas | CO ₂ |
| Operating Principle | Non-dispersive infrared (NDIR) |
| Measurement range | 400 - 10,000 ppm |
| Measurement interval | 2 - 7 seconds |
| Accuracy | ±30ppm +3% of reading (400 - 2,000 ppm range) |
| Pressure dependence | + 1.6% reading per kPa deviation from normal pressure |
| Response time | Approximately 2 minutes |
| Operating temperature | 23°F to 131°F (-5°C to 55°C) with excursions |
| Operating humidity | 0 to 95% RH non-condensing |
| Storage temperature | -40°F to +158°F (-40°C to +70°C) |
| Dimensions | 2.8in x 0.99in x 0.32in (71mm x 25.1mm x 8.2mm) |
| Weight | 0.3oz (8g) |
| Power supply | 3.4V to 4.5V |
| Power consumption | 300 mA peak (28 mA average) |
| Life expectancy | 15+ years |
| Agency Compliance | EMC Directive 2014/30/EU BS/EN 60730-1 BS/EN 60730-2-9 BS/EN 60730-2-13 |
| Environmental Compliance | RoHS Directive 2011/65/EU & 2015/863/EU REACH Directive 1907/2006 |
| Internal Serial Communications between Sensor and Room Controller | UART, Modbus protocol |
| Maintenance | Maintenance-free |

Ordering Information

Part number

VCM8001V5045

Firmware Version

The SE8000 Room Controller must be running Firmware version 2.0 or greater (starting with shipment of products with date code 1842 or later) to activate the functionality of the CO₂ sensor module. The CO₂ sensor module will not function with any Firmware version below 2.0. Make sure to download the latest Firmware version from The Exchange before installing the CO₂ sensor module.

Room Controller Input Power

Usage of the CO₂ sensor module within the Room Controller draws additional power. It is recommended when using the CO₂ sensor module, the site transformer be capable to accommodate the additional power consumption. Room Controller power consumption of 12 VA is required.