



Case study #3: COVID19 + general ventilation systems

My system has CO₂ sensors: Do I need to adapt my settings?

CO₂ particle visualisation, Source: Linde Group, Fascinating Gases

Remember



Good/healthy indoor air quality
More essential than ever

Correctly maintained/operated HVAC solutions → Key – not least because of COVID19

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Hands-on recommendations

Expert advice What can I practically do?

- Keep system settings unchanged when already running on CO₂ demand control**

To maintain acceptable building CO₂ level, additional ventilation is required when:

 - More people are present
 - Acceptable CO₂ level is lowered

CO₂ demand control safeguards:

 - Avoiding fall of relative humidity below recommended minimum levels due to unnecessary high ventilation demand (optimally 50%, minimum 40%, not exceeding 60%)
 - Keeping energy use to minimum
- Extend operating hours**

Run ventilation system 24/7
Demand control enables: Several air exchanges during night
+ Fresh air in the morning

- Check if system has schedule**

In AHU's control system, identify schedule setting
In many systems, manual mode can be activated to surpass usual schedule
- Check if system has CO₂ control**

Demand control can involve one central sensor, or independent room controllers (e.g. VAV system)
If building has CO₂ sensor(s), system is probably demand controlled → No further action required

Good to know: CO₂ levels

CO₂ (or IAQ sensors) measure/control building's CO₂ level by adjusting fresh air flow rate → Providing fresh air to people present in space
CO₂ level = Expressed in parts per million (PPM)
Accepted (often recommended) indoor CO₂ level = 800-1.000PPM
Best achievable CO₂ level = ~400PPM → Common outdoor air level
CO₂ level of 1500PPM = high → Can cause drowsiness and headaches, negatively impacting the well-being of occupants.

