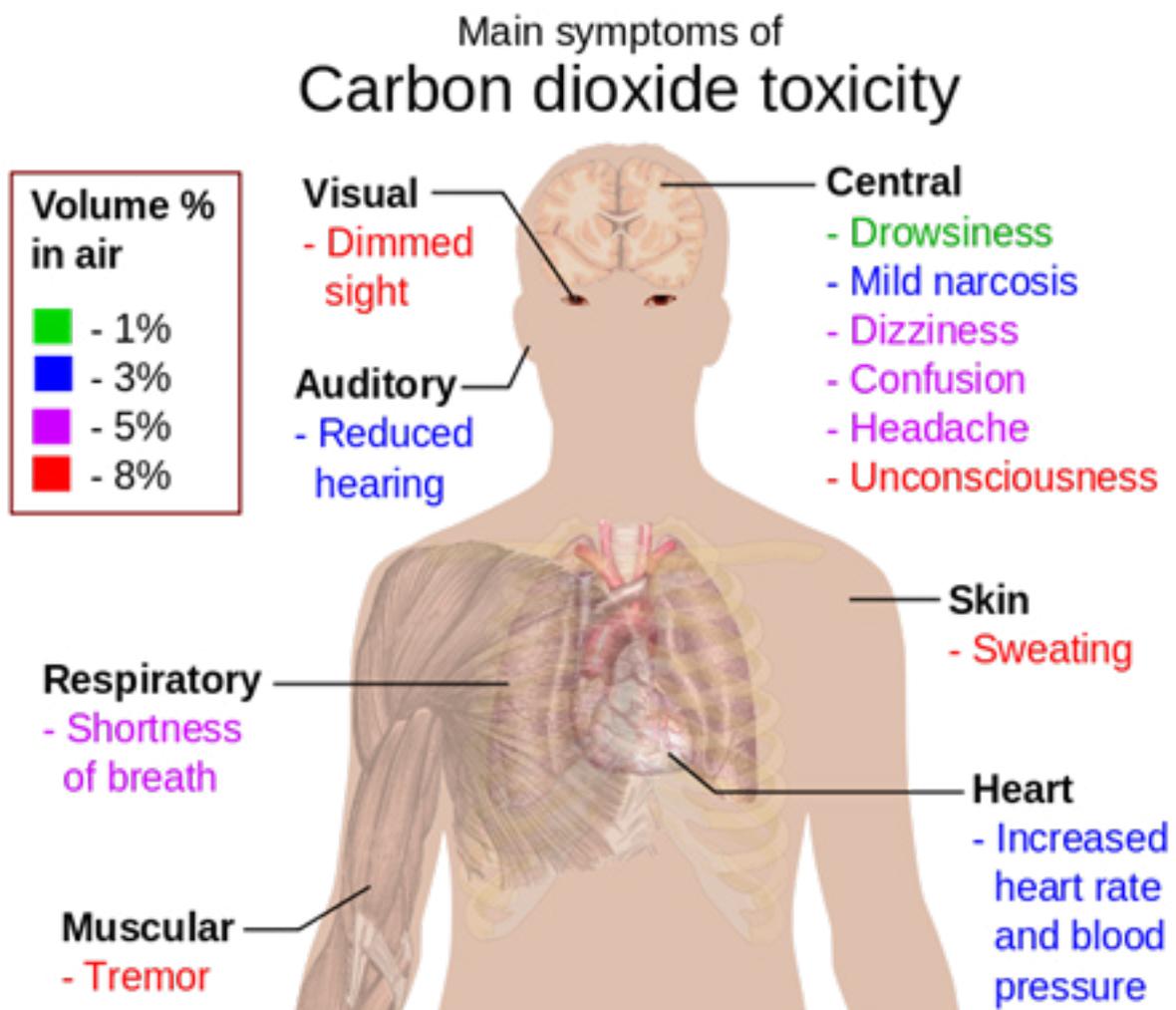


# CO<sub>2</sub> – Carbon Dioxide control using MTSC/CO<sub>2</sub> thermostat

What exactly is Carbon Dioxide (CO<sub>2</sub>) and why is it so important to measure it? Carbon dioxide in its gas state at low concentrations is colourless and odourless. At high concentrations, the CO<sub>2</sub> gas has a sharp, acidic odour. The average content of CO<sub>2</sub> in the air we breathe on a daily base is approximately 0.041% depending on location. Carbon Dioxide in concentrations between 1–8% is toxic. At those levels we will feel several effects on our body that in some cases even have lethal impacts. Drowsiness, dizziness, visual and hearing dysfunction and at the highest levels suffocation and death.



The industries today such as food, oil and chemical are using CO<sub>2</sub> for a variety of reasons and in high concentrations. CO<sub>2</sub> can also be used for our daily usage refrigeration, food processing, freezing, metalwork and more... In fact, in both its liquid gas and solid form, CO<sub>2</sub> is used extensively in a multitude of industries and as such knowing a bit more about it, how it reacts with our environment and what it can do to us if we are exposed to it is important.

The causes of CO<sub>2</sub> related incidents Because CO<sub>2</sub> is heavier than air, in relatively high concentrations and without the dispersing effects of wind, CO<sub>2</sub> can collect in sheltered/pocketed locations, especially around machinery where walkways and corridors may be quite narrow and have dead ends. Poor ventilation is one of the main causes of excessive CO<sub>2</sub> concentrations in enclosed spaces. It is so important to have the right detection equipment for sensing and handling CO<sub>2</sub>.

**How can Meitav-tec help?**

CO<sub>2</sub> Levels are measured as PPM (Parts per Million). You can generally get up to 600ppm indoor without any adverse effects. As you can see in the following chart of indoor air quality, once you get past 1000-1500ppm you will start noticing adverse effects.

CO2 [ppm]	Air Quality
2000	BAD significant increase in drowsiness, tiredness, headache and a common discomfort
1900	
1800	
1700	
1600	
1500	
1400	
1300	
1200	
1100	
1000	FAIR Target indoor range
900	
800	GOOD Typical indoor range
700	

The lower the CO<sub>2</sub> levels, the better one can work productivity. This is why it's important to measure and constantly conduct CO<sub>2</sub> Monitoring within your workplace.

Meitav-tec can advise you for your particular requirement, the right equipment needed to protect your house, business and workforce.

The MTSC/SUPER/CO<sub>2</sub> thermostat Suitable for Fan-Coil, A/C and other HVAC applications. Integrated with temperature & CO<sub>2</sub> sensor that measures CO<sub>2</sub> levels, option to choose between two ppm ranges: 0 ÷ 1200 ppm \ 0 ÷ 2000 ppm.

Combined with output signal to a fresh air damper MTSC/SUPER/CO<sub>2</sub> can decide to increase or to reduce your fresh air flow and by that give you a healthier and more suitable environment. This thermostat could help your HVAC system to reduce the CO<sub>2</sub> PPM value and save energy by minimizing the use of the Fresh Air supply to the required levels.

Damper controlling the fresh air in the room according to the CO<sub>2</sub> measured value, Working only based on the mode and the set point (whether there is demand or not), the damper will open or close accordingly.

A part from the CO<sub>2</sub> monitoring and the fresh air damper control we mentioned earlier, you can also use Meitav-tec product as a reliable source of CO<sub>2</sub> sensor that communicate with your B.M.S (using BACNET or MODBUS protocols) and let you know if the value is too high and alert you with Internal light indications for communication indication and exception alert to revert your attention.



Our **MTSC/SUPER/CO<sub>2</sub>** comes in different looks, voltage and colours so it will fit your environment as much as possible:

Vertical / Horizontal panels,

24VAC and 110-220VAC operating models

Black/white frame colour,

Black/white LCD colour

Programmable / Non-Programmable

Thermostat / user interface panel for CTU controller

With/ Without B.M.S. communication (BACNET & MODBUS),

Lights control.

[Link to the MTSC/SUPER/CO<sub>2</sub> datasheet](#)



### **MRSCO<sub>2</sub> sensor and its features:**

MRSC is a Temperature-Humidity-CO<sub>2</sub> All in one decorative sensor for Wall Mount installation with supply voltage of 24VAC / DC.

MRSCO<sub>2</sub> has MODBUS Communication; MRSCO<sub>2</sub> is also equipped with ALARM port (dry contact) and 3 x 4-20mA or 0-10 VDC Outputs for the Temperature, Humidity and CO<sub>2</sub> values.

[Link to the MRSCO<sub>2</sub> datasheet](#)

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