CO_2 sensors
CD-1/ CD-2

Application

- Indoor carbon dioxide concentration measurement.
- Air capacity control depending on CO_2 concentration.
- Efficient energy saving device.

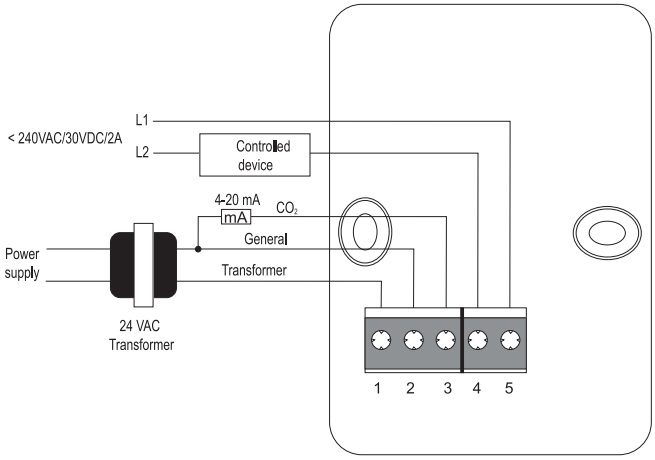
Design

The sensor has two separate outputs, a normally opened dry relay contact and an analogue output 0–10 V that is adjustable fo 2–10 V/ 0–20 mA/4–20 mA. The relay output is used to turn the fan on/off depending on indoor CO_2 concentration and the analogue output is used for smooth fan speed control for a fan with EC motor or a fan with extra speed controller with 0–10 V input. In case of smooth fan speed control the fan speed varies proportionally to carbon dioxide emissions. Due to the relay and analogue outputs the sensor is compatible with any ventilation system. The self-calibration system ensures reliable sensor operation during the sensor service life.

Modifications

- CD-1: integrated LED lights for indication of CO_2 concentration and a touch button for operation mode switching (mode 1: on, mode 2: off, mode 3: operation according to CO_2 concentration). The button is used to turn the fan on or turn it off when CO_2-based ventilation is not required.
- CD-2: no integrated LED-lights and no touch button. This model is recommended for premises requiring permanent ventilation as school classes and other public premises.

Sensor wiring diagram



Mounting and power supply

- Wall surface mounting.
- 24 VAC low current power supply.
- The sensor has a socket for AT power unit offered as an accessory (AT-220/25 or AT-120/25 models).

Technical data

Parameters	Value
Power supply / Consumption	24 VAC (50/60 Hz ± 10 %), 24 VDC/1.6 W Max
Gas sensing element	Non-dispersive infrared detector (NDIR) with self-calibration system
CO_2 measuring range	0–2,000 ppm (parts per million)
Accuracy at 25 °C, 2,000 ppm	±30 ppm + 3 % of reading
Response time	max. 2 min
Warm up time for each turning-on	2 hours (first time), 2 minutes (operation)
Analogue output	0–10 VDC (default), 4–20 mA selectable by jumpers
On/Off output	1X2A switch load Four set points selectable by jumpers
6 LED lights for CO_2 concentration indication (for CD-1 model)	1st green indicator lights when CO_2 concentration is below 600 ppm 1st and 2nd green indicators light when CO_2 concentration is 600–800 ppm 1st yellow indicator lights when CO_2 concentration is 800–1200 ppm 1st and 2nd yellow indicators light when CO_2 concentration is 1200–1400 ppm 1st red indicator lights when CO_2 concentration is 1400–1600 ppm 1st and 2nd red indicators light when CO_2 concentration is above 1600 ppm
Operating conditions / Storage regulations	0–50 °C; 0–95 % RH non condensing/ 0–50 °C
Weight/Dimensions	0.120 kg/100 mm x 80 mm x 30 mm