

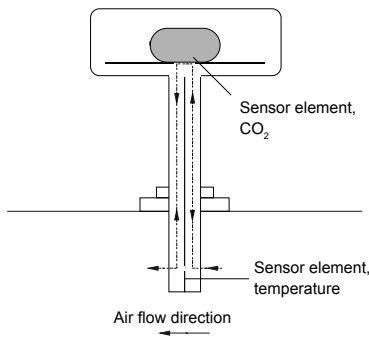


# CTDT2

CO<sub>2</sub> and temperature transmitter for duct mounting

Transmitter for measuring carbon dioxide concentration and temperature in air. Measuring range 0...2000 ppm and CO<sub>2</sub> output signal 0...10 V DC or 4...20 mA (settable). Passive PT1000 output and 0...10 V DC for temperature.

CTDT2 has a probe in the shape of a so-called venturi tube with two air channels. The CO<sub>2</sub> sensor element is mounted in the cover part of the casing and the temperature sensor element is located inside the probe. The air in the ventilation duct is transported to the CO<sub>2</sub> sensor element through one half of the probe and then back to the duct through the other half. The temperature sensor is located inside the probe.



## Mounting

To ensure proper function, make sure that the cover is properly fastened and that the cable gland makes a tight seal around the cable.

Place the transmitter in the air flow direction of the ventilation duct according to the marks on the cover.

The air flow direction is either from right to left (as in the example above) or from left to right.

## Applications

The carbon dioxide level gives a direct indication of the indoor air quality. This information can be used to control ventilation with high precision and improve the air quality. By increasing the air exchange only when it is necessary, it is possible to minimise energy costs.

CTDT2 can for example be used to control ventilation in residential and office areas.

### Short facts about CTDT2

- Combined CO<sub>2</sub> and temperature transmitter
- Infrared technology (NDIR)
- CO<sub>2</sub> concentration 0...2000 ppm measuring range
- Excellent long-term stability
- Easy installation and service-friendly housing
- Probe only 12 mm
- Automatic CO<sub>2</sub> calibration

### Measuring principle

The CO<sub>2</sub> concentration is measured using infrared light.

This technique has many advantages:

- Very high accuracy
- Exact identification of the detected gas
- Low risk of contamination
- Short response time
- Excellent long-term stability

### Automatic calibration

CTDT2 has automatic CO<sub>2</sub> calibration, which means that manual recalibration is not required during the lifetime of the transmitter.

### Supply voltage and output signal

The supply voltage is 24 V AC or 15...35 V DC and the output signal is 0...10 V DC.

### Settable CO<sub>2</sub> output signal

Flipping an internal DIP-switch inside CTDT2 will change the CO<sub>2</sub> output signal from 0...10 V to 4...20 mA. This change will not affect the CO<sub>2</sub> output range.



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## Technical data

### CO<sub>2</sub>

Measurement principle	NDIR (Non-Dispersive Infrared Technology)
Measuring range	0...2000 ppm
Accuracy (at 25°C)	< ± (50 ppm + 2 % of the measured value)
Time constant (response time)	< 100 s at 3 m/s air speed in the duct
Temperature dependence	Typ. 1 ppm CO <sub>2</sub> /°C (-20...+45°C)

### Temperature

Working range	0...50°C
Accuracy (at 20°C)	±0.3°C
Time constant (response time)	< 50 s

### General

Supply voltage	24 V AC ±20 %, 50...60 Hz, 2 VA 15...35 V DC
Power consumption	15 mA, max. 0.5 A for 0.3 s
Ambient temperature	-20...+60°C
Storage temperature	-20...+60°C
Ambient humidity	0...95 % RH, non-condensing
Long-term stability	Typ. 20 ppm / year
Warm-up time	< 5 min (only applies to CO <sub>2</sub> )
Protection class	IP65 with probe downwards, otherwise IP20



**EMC emissions & immunity standards:** This product conforms to the requirements of the EMC Directive 2004/108/EC through product standards EN 61326-1 and EN 61326-2-3 for industrial environments.

**RoHS:** This product conforms to the Directive 2011/65/EU of the European Parliament and of the Council.

## Wiring

1	Supply voltage 24 V AC or 15...35 V DC
2	System neutral
3	Signal neutral
4	CO <sub>2</sub> output 0...10 V DC or 4...20 mA
5	Temperature output 0...10 V DC
6	Temperature output PT1000
7	Temperature output PT1000

## Dimensions (mm)

