

CO<sub>2</sub>-and temperature transmitters

## CTRTA(-D)-LB



### Description

A range of room transmitters for measuring carbon dioxide concentration in indoor environments. The transmitter has a built-in CO<sub>2</sub> sensor with working range 0...2000 ppm and output signal 0...10 V, as well as a built-in PT1000 temperature sensor with separate terminals.

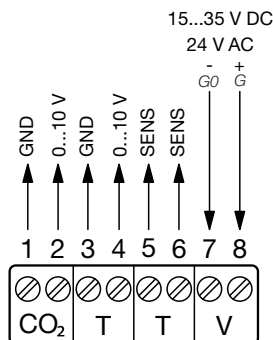
- Output signal CO<sub>2</sub>, 0...10 V DC referring to 0...2000 ppm
- Temperature sensor, 0...10 V DC referring to 0...50°C and PT1000 class DIN B
- CO<sub>2</sub> concentration, 0...2000 ppm
- Temperature, 0...50°C
- Good long-term stability
- RCBC algorithm

Transmitters with automatic calibration combining measurement of CO<sub>2</sub> level and temperature in the same casing.

The sensors are mounted in the cover-part of the casing. The cover is easy to detach from the back by means of snap-in grips and detachable terminals. This makes mounting easier. Furthermore, no cables have to be disconnected, simplifying service and replacement.

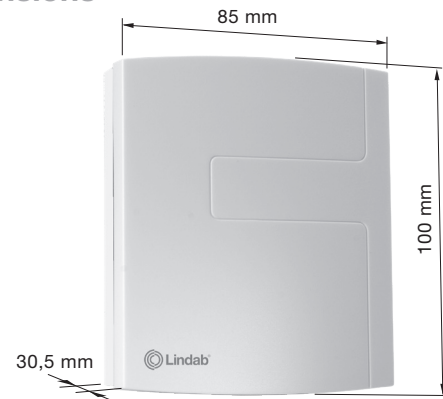
The transmitters are intended for wall mounting in HVAC systems.

### Wiring



**N.B.** System neutral and signal neutral should be separately wired, because of current peaks in the supply wires. Screw terminal: Max. 1.5 mm<sup>2</sup>

### Dimensions



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

The CO<sub>2</sub> concentration is measured using infrared light, a technique that measures the absorption in gases. It has a reference measuring system that compensates values in relation to changes in light intensity. 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

### Temperature sensor

The unit has built-in 0...10 V and PT1000 temperature sensors, working range 0...50°C.

Note! The PT1000 sensor is not compensated for internal warm-up. The passive temperature output must be calibrated with a controller.

Using the built-in PT1000 sensor as external sensor for Regula Combi as the room controller, the suggested temperature compensation for the Analog Input AI1 is -1,8°C. This is added in Regula Combi parameter P56 or to the associated EXOline, Modbus or BACnet signal.

### RCBC algorithm

The transmitter is equipped with a function that can be activated to get a more stable CO<sub>2</sub> level in a room that is not used for parts of a day.

### Order code

CTRTA-LB / CTRTA-D-LB

Product

# CO<sub>2</sub>-and temperature transmitters CTRTA(-D)-LB

## 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 supply air only when necessary, it is possible to minimise energy costs.

The transmitter is especially suited for environments such as cinemas, schools, hospitals, conference rooms, assembly halls, etc.

## Automatic calibration

The transmitters have automatic calibration, which means that manual recalibration is not required during the lifetime of the transmitter.

## Supply voltage

The transmitter uses a supply voltage of 24 V AC  $\pm$ 10%, 50...60 Hz or 15...35 V DC. It automatically detects and adapts to the supply voltage connected.

## Display (-D models)

Display models have an LCD display showing carbon dioxide concentration and temperature in an alternating series.

## Models

Model	Description
<b>CTRTA-LB:</b>	CO <sub>2</sub> and temperature transmitter
<b>CTRTA-D-LB:</b>	CO <sub>2</sub> and temperature transmitter with display

## Technical data

Supply voltage:	24 V AC/DC (21.6...26.4 V AC / 15...35 V DC)
Power consumption:	< 2.5 W
Energy consumption:	< 0.5 Wh
Transformer power:	5 VA
Electrical connection	
Screw terminals:	max. 1.5 mm <sup>2</sup> (AWG 16)
Ambient temperature:	-5...+50°C
Ambient humidity:	10...90% RH, non-condensing
Storage temperature:	-25...+60°C
Protection class:	IP30
Dimensions (W x H x D):	85 x 100 x 30.5 mm
Colour:	Signal white RAL 9003

## Technical data CO<sub>2</sub> sensor

Output signal CO <sub>2</sub> :	0 - 10 V DC referring to 0 - 2000 ppm
Working range:	0 - 2000 ppm
Accuracy at 20°C:	< $\pm$ (50 ppm + 2% of the measured value)
Temperature dependance:	typ. 5 ppm / K
Long-term stability:	typ. 20 ppm / year
Time constant:	< 90 sec.
Warmup time:	< 5 min.

## Technical data temperature sensor 0...10V

Temperature sensor:	PT1000 class DIN B
Working range:	0...50°C
Accuracy:	$\pm$ 0.3°C range 1...9 V)



This product carries the CE mark. More information is available on demand.