

# CRT-A-24 / CRT-D-A-24 ROOM TRANSMITTER

for CO2 and temperature. CRT-A-24 without display, CRT-D-A-24 with display.



## TECHNICAL DATA

<b>Supply voltage:</b>	24V AC/DC
<b>Power consumption:</b>	10 mA (avg.) 42 mA (max.)
<b>Outputs, 0-10V</b>	
<b>Analogue out 1:</b>	CO2 (0-2000 ppm), ( $>5$ k $\Omega$ imp.)
<b>Analogue out 2:</b>	Temperature (0-50°C) ( $>5$ k $\Omega$ imp.)
<b>LED indicators</b>	
<b>Green, continuous light:</b>	Operation
<b>Green, flashing:</b>	Temperature adjustment
<b>Red, flashing:</b>	CO2 calibration
<b>Screw terminals:</b>	4 x 1.5 mm <sup>2</sup>
<b>Flat-blade screwdriver:</b>	3.0 x 0.5 mm
<b>Dimensions WxHxD:</b>	92 x 92 x 28.5 mm
<b>Weight:</b>	
<b>CRT-A-24:</b>	90 grams
<b>CRT-D-A-24:</b>	100 grams
<b>Protection class:</b>	IP20

## FEATURES

- Internal automatic self-calibration
- Two analog outputs
- Infrared measurement technology (NDIR)
- Easy installation
- Normally maintenance-free

## FUNCTION

CRT is a room transmitter for connection to regulator/control unit. It has two 0-10V analogue outputs. One for CO2 with measurement range 0-2000 ppm and one for temperature with measurement range 0-50°C.

The CO2 sensor in the CRT is maintenance-free in normal environments thanks to the built-in self-correcting ABC algorithm. The CO2 sensor has an expected lifetime of at least 15 years and does not require any additional calibration when used in normal indoor air applications. CRT-D-A-24 has a display that shows measured CO2 and temperature alternately

CRT has two LED indicators and two pushbuttons. The LEDs indicate green for operation and offset adjustment of temperature and red for calibration of CO2.

### Push-button functions

The CO2 sensor can be fresh air and zero calibrated with the aid of a push button. The temperature sensor measurement value can also be adjusted in parallel to adapt to the conditions where the transmitter is placed. These adjustments are performed via the push buttons on the circuit board (marked B1 and B2).

### CO2 calibration - Push button B1

#### Calibration with fresh air

Air out the room so that the CRT is only exposed to fresh air. Avoid breathing directly onto the product.

Perform the fresh air calibration by briefly pressing button B1. Red LED L1 flashes quickly. Now the measurement value is changed to 400 ppm, which is the normal CO2 concentration in fresh air.

### Zero calibration

Zero calibration of the CO2 sensor requires access to non-CO2 gas, e.g. nitrogen, and should only be performed by specially trained personnel.

### Temperature adjustment – Push button B2

Adjustment range  $\pm 3^\circ\text{C}$  in  $0.2^\circ\text{C}$  increments. With each press of the button, the measured value is increased by  $0.2^\circ\text{C}$  until the measurement value is increased by  $+3.0^\circ\text{C}$ . At the next press, the measurement value is lowered by  $-3.0^\circ\text{C}$ , then  $-2.8$ ,  $-2.6$  etc.

Each button press is indicated by the green LED (L2) turning off. On the CRT-D-A-24, the adjusted temperature is shown in the display.

To reset to the original reading, press and hold the push button for more than 10 seconds, until L2 starts flashing rapidly.

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## USE

CRT is used for CO2 and temperature measurement in indoor environments.

## INSTALLATION

CRT is installed on the wall of the room to be controlled. Avoid installation in direct sunlight or near heat or cooling sources. If it is installed over a junction box/cable pipe, these must be sealed to avoid affecting measurement results. Screws with specially adapted head size are attached.

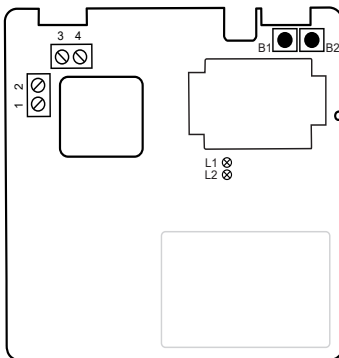
## MAINTENANCE

CRT is normally maintenance-free. If necessary, calibration of the CO2 meter as well as adjustment of temperature measurement values can be performed via push buttons on the circuit board.

## ORDER EXAMPLE

Item No.	DESCRIPTION
CRT-A-24	Room transmitter
CRT-D-A-24	Room transmitter with display

## WIRING DIAGRAM



⊗ 1	G+ 24V AC/DC
⊗ 2	G0
⊗ 3	CO2 0-10V
⊗ 4	Temp. 0-10V
■ B1	CO2 Calibration
■ B2	Temp. Offset
⊗ L1	Red LED: CO2 Calibration
⊗ L2	Green LED: Operation. Temp. Offset