CO2RT(-D)/CO2HRT

CO_2-transmitters for room mounting

CO2RT... is a series of room transmitters for measuring carbon dioxide levels in air. The units have a built-in temperature sensor with output signal 0...10 V DC and PT1000-sensor.

- **CO_2-level 0...2000 ppm**
- **Temperature 0...50°C**
- **Relative humidity 10...90% RH (CO2HRT)**
- **With or without LCD display**
- **Excellent long term stability**
- **Snap-in cover**

Regin's CO2RT series, with patented auto calibration process, sets new standards in CO_2 measuring for HVAC applications. In the same casing, the CO2RT series combines measuring of CO_2-level, temperature and optional relative humidity.

The sensor is 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, which simplifies service and replacement.

Measuring principle

The CO_2-concentration is measured by means of 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.

The method gives several advantages:

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

Automatic calibration

CO2RT is calibrated automatically, which means that manual recalibration is not required during the lifetime of the sensor.

Temperature sensor

The models have a built-in temperature sensor, range 0...50°C, for a 0...10 V and PT1000 output signal.

Humidity (only CO2HRT-(D))

CO2HRT-(D) has a built-in humidistat that measures relative humidity within the range 10...90% RH referring to 0...10 V output voltage (working range 1...9 V).

Display (only -D-models)

The display models have an LCD-display showing actual values in an alternated series.

Applications

The CO_2-level gives a direct indication of the indoor air quality. With this basic information, the ventilation can be controlled with high precision and the air quality improved. At the same time, the supply air will only be increased when necessary and the energy costs will thereby be reduced.

CO2(H)RT... is suitable in environments such as cinemas, schools, conference rooms, assembly-halls etc.

Models

CO2RT	Measuring range 0...2000 ppm
CO2RT-D	Measuring range 0...2000 ppm, with display
CO2HRT	Like CO2RT with built-in humidity transmitter
CO2HRT-D	Like CO2RT-D with built-in humidity transmitter

Technical data

Supply voltage	24 V AC +/- 15%, 50...60 Hz or 15...35 V DC
Power consumption	3 W
Ambient temperature	-5...+55°C
Ambient humidity	0..90% RH, not condensating
Temperature dependance	typ. 5 ppm CO_2/°C
Storage temperature	-40...70°C (models without display), -20...70°C (models with display)
Long term stability	typ. 20 ppm / year
Response time	< 90 s
Warm-up time	< 5 min
Protection class	IP30
Measuring principle	NDIR (Non-Dispersive Infrared Technology)
CE	**EMC emissions & immunity standards:** This product conforms to the requirements of the EMC Directive 2004/108/EC through product standards EN 61000-6-2 and EN 61000-6-3. **RoHS:** This product conforms with the Directive 2011/65/EU of the European Parliament and of the Council.

Working range

CO_2	0...2000 ppm
Temperature	0...50°C
Humidity	10...90% RH

Accuracy (at 20°C)

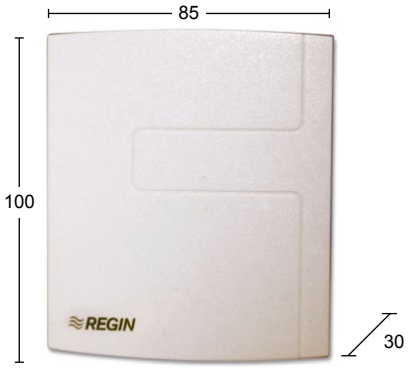
CO_2	< ± (50 ppm +2% of measuring value)
Temperature	± 0.3°C
Humidity	± 3% RH (30...70% RH), ±5% RH (10...90% RH)

Outputs

Output signal	CO_2 0...10 V DC referring to 0...2000 ppm
Output signal	0...10 V DC referring to 0...50°C, PT1000-sensor (class DIN B)
Output signal	0...10 V DC referring to 10...90 % RH (working range 1...9 V)
Display	LCD-display showing actual values in an alternated series

Wiring and dimensions

1	Supply voltage 24 V AC
2	System neutral 24 V AC
3	Output 0...10 V (humidity)
4	Output 0…10 V (temperature)
5	Output 0…10 V (CO_2)
6	Signal neutral
7	Output, PT1000-sensor
8	Output, PT1000-sensor



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N.B. System neutral and signal neutral should be separately wired, because of current peaks in the supply wires. Screw terminal: Max. 1.5 mm²

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