CO_2 room sensor

SAC

Description

The SAC CO_2 sensor measures air quality through the presence of carbon dioxide in air ducts in the range between 0...2000 or 0...5000 ppm. The measurement of CO_2 concentration happens through a NDIR sensor that operates on an infrared basis and which compensates the presence of any impurity. The product can be provided with humidity or humidity/temperature sensor.
Output 0 ... 10 V DC or 4 ... 20 mA outputs.

Technical specifications

Measurement range CO_2	0...2000 / 0...5000 ppm
Accuracy CO_2	±60 ppm (0...2000 ppm) ±2% FS
	±150 ppm (0...5000 ppm) ±2% FS
Accuracy temperature (*)	± 0,3K (5...60°C) + 1% FS
Accuracy humidity (*)	25°C ± 2% RH (20...80%RH) + 2% FS
Power supply	12(20)...34 V AC/DC
Power consumption	40...100 mA
Sensor setting up time	60 min.
Working resistance at 0...10 V DC	10...100 kOhm
Working resistance at 4...20 mA	50...500 Ohm
CO2 sensitive element	NDIR self adjusting
Sensible element	Self-calibrating NDIR
Electrical connection	Screw terminal for cables 1,5 mm^2
Protection type	IP 30
Housing	ABS RAL9010
Working range RH	0...98% RH in aria pulita e non condensata
Working temperature °C	0...+50°C
Standards	Conformità CE, RoHs

(*) See models hereafter.

Model	Temperature	Humidity	Output
SACV	-	-	0...10 V DC
SACTV	•	-	0...10 V DC
SACTHV	•	•	0...10 V DC
SACC	-	-	4...20 mA
SACTC	•	-	4...20 mA
SACHC	-	•	4...20 mA

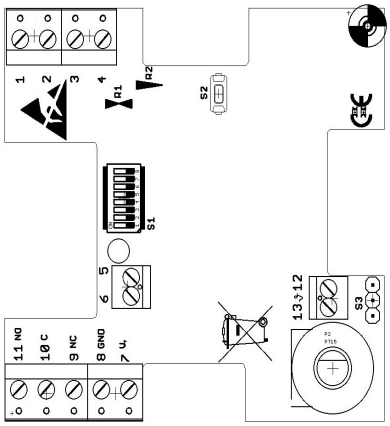
Optional: Suffix D version with display

(*) Replace "**X**" with the number of selected passive sensor:

"X"	Type of passive sensor
1	Pt100 (DIN EN 60751 Cl. B)
3	Ni1000 (TK6180)
5	NTC20k (±1%)
6	NTC10k (±1%) BETA 3435K

Eatec srl - Loc. Förche 20 - I-39040 Naz/Sciaves (BZ) - Tel. +39 0472 055617 - Fax +39 0472 089807 - info@eatec.it - www.eatec.it

Electrical wirings



	Output 0...10 V			Output 4...20 mA			
PIN	CO_2	CO_2/T	CO_2/T/H	PIN	CO_2	CO_2/T	CO_2/H
1	ppm	temp	temp	1	-	-	-
2	-	ppm	humidity	2	-	-	-
3	-	-	ppm	3	ppm	temp	humidity
4	-	-	-	4		ppm	ppm
5	(passive poti)						
6	(passive poti)						
7	V+						
8	GND						
9	(relay NC)						
10	(relay C)						
11	(relay NO)						
12	(passive sensor)						
13	(passive sensor)						
S3	polarity R3						
S2	CO_2 Manual adjustment to 400 ppm						

Dip-switch setting

Temperature range selection

Range	1	2
-30...+70°C	OFF	OFF
-20...+80°C	ON	OFF
0...+50°C	ON	ON
0...+100°C	OFF	ON

Humidity range selection

Range	3	4	5	6
Relative humidity				
0...100%	OFF	OFF	OFF	OFF
Absolute humidity				
0 g/m³...30g/m³	ON	OFF	OFF	OFF
0 g/m³...50g/m³	ON	ON	OFF	OFF
0 g/m³...80g/m³	ON	ON	ON	OFF
Mix ratio				
0 g/kg...30g/kg	OFF	OFF	OFF	ON
0 g/kg...50g/kg	OFF	OFF	ON	ON
0 g/kg...80g/kg	OFF	ON	ON	ON
Dew point				
0...+50°C	OFF	ON	ON	OFF
-50...+100°C	ON	OFF	OFF	ON
-20...+80°C	OFF	ON	OFF	ON
Enthalpy				
0 kj/kg...85kj/kg	ON	ON	ON	ON

CO_2 range selection / setting

Range	7	8
CO_2		
0...2000 ppm	OFF	
0...5000 ppm	ON	
Self adjusting		
Not activated		ON
Activated		OFF

Autocalibration CO_2 sensor: The sensor must be mounted with the ventilation slots against the flow direction. The screw connector shall be installed in the direction of the ventilation slots.
The sensor shall be exposed to fresh air at least once a day, otherwise it will give incorrect readings on long term.
The sensor requires 15 days of calibration to be adapted to the real values.

Dimension (mm)