



**Description**

The SAC CO<sub>2</sub> sensor measures air quality through the presence of carbon dioxide in the room in the range between 0...2000 or 0...5000 ppm. The measurement of CO<sub>2</sub> 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**

<b>Measurement range CO<sub>2</sub></b>	0...2000 / 0...5000 ppm
<b>Accuracy CO<sub>2</sub></b>	±60 ppm (0...2000 ppm) ±2% FS ±150 ppm (0...5000 ppm) ±2% FS
<b>Accuracy temperature</b>	± 0,3K (5...60°C) + 1% FS
<b>Accuracy humidity</b>	25°C ± 2% RH (20...80%RH) + 2% FS
<b>Power supply</b>	12...34 V AC/DC (20...34 V AC/DC with relay)
<b>Power consumption</b>	40...100 mA
<b>Sensor setting up time</b>	60 min.
<b>Working resistance at 0...10 V DC</b>	10...100 kOhm
<b>Working resistance at 4...20 mA</b>	50...500 Ohm
<b>CO<sub>2</sub> sensitive element</b>	NDIR self adjusting
<b>Sensible element</b>	Self-calibrating NDIR
<b>Electrical connection</b>	Screw terminal for cables 1,5 mm <sup>2</sup>
<b>Protection type</b>	IP 30
<b>Housing</b>	ABS RAL9010
<b>Working range RH</b>	0...98% RH in contaminant-free, non-condensing air
<b>Working temperature °C</b>	0...+50°C
<b>Standards</b>	CE, RoHs compliance



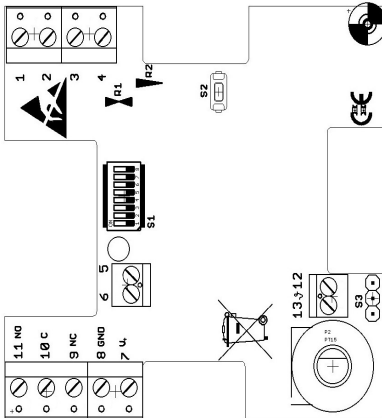
Model	Temperature	Humidity	Output
SACV	-	-	0...10 V DC
SACTV	•	-	0...10 V DC
SACTHV	•	•	0...10 V DC
SACC	-	-	4...20 mA
SACTC	•	-	4...20 mA
SACHC	-	•	4...20 mA

Optional: suffix "D" version with display and/or suffix "R" relay version

(\*) 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

## Electrical wirings



Output 0...10 V				Output 4...20 mA			
PIN	CO <sub>2</sub>	CO <sub>2</sub> /T	CO <sub>2</sub> /T/H	PIN	CO <sub>2</sub>	CO <sub>2</sub> /T	CO <sub>2</sub> /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 <sub>2</sub> Manual adjustment to 400 ppm						

## Dip-switch setting

Temperature range selection	Range	1	2	Humidity range selection	Range	3	4	5	6	CO <sub>2</sub> range selection / setting	Range	7	8		
	-30...+70°C	OFF	OFF		Relative humidity	0...100%	OFF	OFF	OFF		OFF	CO <sub>2</sub>	0...2000 ppm	OFF	
	-20...+80°C	ON	OFF		Absolute humidity	0 g/m <sup>3</sup> ...30g/m <sup>3</sup>	ON	OFF	OFF		OFF	0...5000 ppm	ON		
	0...+50°C	ON	ON		0 g/m <sup>3</sup> ...50g/m <sup>3</sup>	ON	ON	OFF	OFF		Self adjusting	Not activated	ON		
	0...+100°C	OFF	ON		0 g/m <sup>3</sup> ...80g/m <sup>3</sup>	ON	ON	ON	OFF		Activated	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							

Autocalibration CO<sub>2</sub> 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)

