

EasyLogic™ Sensors

Duct CO₂ Transmitters

CP-AI-C2-SE



Product Description

The CP-AI-C2-SE is a duct-mount CO₂ transmitter designed for environmental monitoring and HVAC control applications. This device is ideal for commercial, industrial and general buildings, ensuring air quality and energy efficiency. Each device features an active sensor that converts a measurement into an analog output: 4-20 mA or 0 to 10 Vdc.

This sensor is ideal for:

- HVAC system control for improved comfort and energy savings
- Hospitals, schools, museums and other workplaces requiring air quality control

Features

- Field calibratable, non-dispersive infrared CO₂ sensor
 - NDIR based, dual-channel device compensates for drift and deterioration for high-accuracy output
- Automatic Baseline Calibration for improved accuracy and field performance
- Selectable output: 4 to 20 mA or 0 to 10 Vdc
- Supports DC and AC power supplies
- Key component for the LEED green building program, WELL Building Standard and RESET® Standard*
- Compliant with ASHRAE standards for environmental control and indoor air quality

*Leadership in Energy and Environmental Design (LEED) is a registered trademark of the US Green Building Council. The WELL Building Standard is a trademark of the International WELL Building Institute in the United States and other countries.

Available Products

Part Number	Description
CP-AI-C2-SE	Duct-mount CO ₂ transmitter, ±50 ppm ±3%

Specifications

General	
Operating voltage	24 Vac ±10% or 24 Vdc ±20%*
Frequency	50/60Hz
Power consumption	≤2 VA
CO ₂ Sensor	
Sensor type	NDIR, dual channel
Measuring range	0 to 2000 ppm
Accuracy	±50 ppm ±3% of measured value (400 to 2000 ppm)
Repeatability	±2%
Analog output	DC power supply: 0 to 10V / 4 to 20mA AC power supply: 0 to 10V
Output power	Min. load resistance for 0 to 10V operation: 10kΩ Min. input voltage for 4 to 20mA operation: 250 Ω loop = 19.2 VDC; 500 Ω loop = 21.6 VDC
Time to first read	60s
Response time	≤60s T90
Calibration**	Automatic Baseline Calibration Manual calibration
Environmental	
Operating temp.	-10 to 50 °C
Operating humidity	0 to 95% RH (non-condensing)
Storage temp.	-20 to 70 °C
Storage humidity	0 to 95% RH (non-condensing)
IP rating	IP65
Housing material	PC+ABS, UL94-V0
Regulatory Information	
Agency approvals	CE: EMC (EN61326-1) Green Premium: EU ROHS, China ROHS, REACH, RCM (Australia), UKCA (UK)
Weight	
Including packaging	350 g

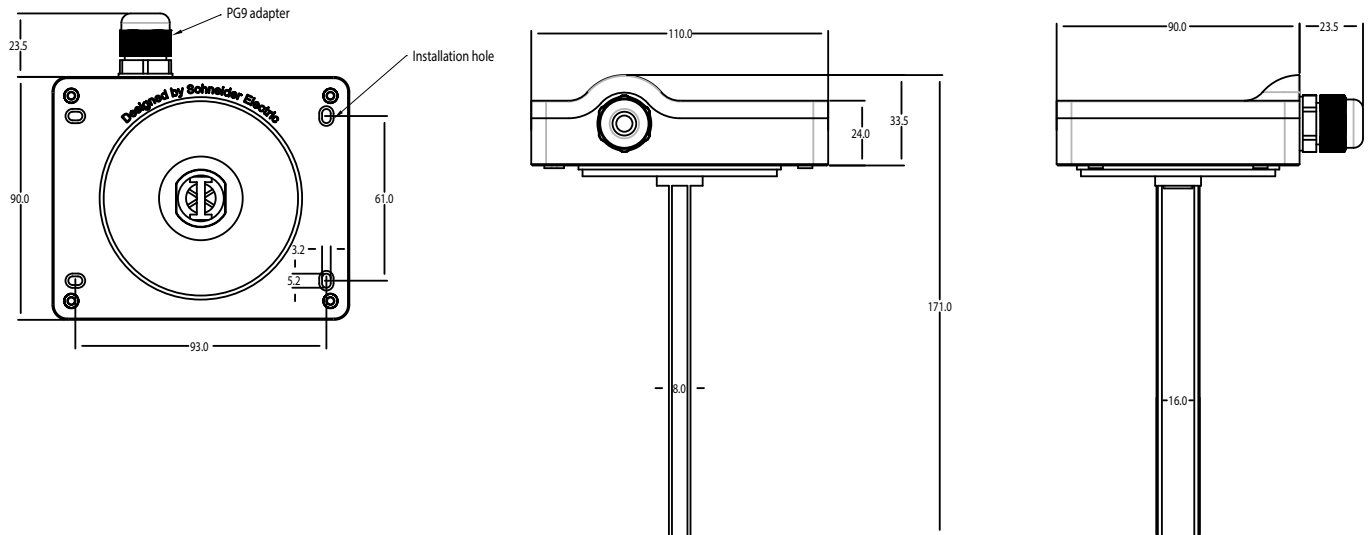
*Class 2. Connect all devices with proper polarity; AC power supply only supports 0 to 10V output.

**For details, see the CO₂ Sensor Calibration section of this document.

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Dimensions (mm)



Safety Information

Important Information

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service or maintain it. The following special message may appear throughout this bulletin or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

NOTICE

NOTICE is used to address practices not related to physical injury.

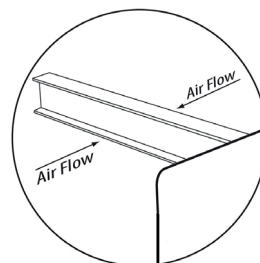
Please Note

Electrical equipment should be installed, operated, serviced and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has the skills and knowledge related to the construction, installation and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

Installation

1. Disconnect power prior to installation.
2. Drill a hole ≥ 18 mm in the duct at the measurement point. Insert the probe into the duct.
3. Open the front housing and mount the housing box to the duct using the attached self-tapping screw.
4. Note that the PG-9 fitting should point downward to avoid water entering the housing. The air guide slot should face the airflow:



5. Wire according to the diagram in the Wiring section.
6. Tighten the waterproof PG-9 fitting. Replace the front housing and tighten the screws.

Wiring

NOTICE

PRODUCT DAMAGE DUE TO INCORRECT POWER POLARITY

- Power polarity must be observed with a DC supply as well as an AC supply. If the power supply is connected incorrectly, this can lead to the destruction of the sensor.

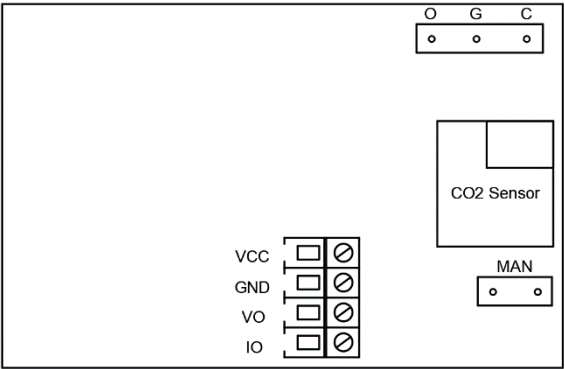
Failure to follow these instructions may result in product damage.

NOTICE

INACCURATE READINGS

- Do not run wiring in the same conduit as AC power wiring. Close proximity to AC power may influence accuracy.
- Do not install the product in hazardous or classified locations.

Failure to follow these instructions can result in reduced accuracy.



Power supply and analog output:

VCC	24VDC + or 24VAC L
GND	Ground (-)
VO	0 to 10V output
IO	4 to 20mA output

CO2 Sensor Calibration
Automatic Baseline Calibration (ABC)

ABC (Automatic Baseline Calibration) is a self-calibration feature that automatically adjusts the CO₂ sensor to compensate for drift. When ABC is enabled, the sensor records the lowest reading within every 24-hour interval and compares these values over a 7-day running period. If a statistically significant amount of drift is detected, the ABC applies an automatic correction factor.

G – O: Recommended (factory setting), ABC is on, for applications where the building is unoccupied within a 24-hour timeframe.

G – C: ABC is off, for applications where the building is occupied 24 hours a day.

Manual Calibration

Rough installation or transportation of this device can result in inaccurate sensor readings and baseline drift. To quickly recover accuracy after installation, it is possible to do a manual calibration. Place the sensor in an environment where CO₂ levels are approximately 400 ppm and short circuit the two pins of 'MAN' for >6s. The device will set the current CO₂ concentration as 400 ppm.

Cyber Security

At Schneider Electric, we have always considered cyber security as a key requirement and are committed to providing more reliable, stable and secure products to minimize potential cyber risks and better protect customer life, property and the environment.

Cybersecurity aims to protect your systems, communications networks, devices, etc., from possible attacks such as destruction, data tampering, or disclosure of confidential information. In addition to the recommendations in this article, it is strongly recommended that you follow the Schneider Electric Defense in Depth approach to cybersecurity. In our system technical note "How to reduce vulnerability to cyber attacks?" This method is described in In addition, you can find more useful resources and up-to-date information at Schneider Electric's Cybersecurity Support Portal.

Communication Security

Communication port used for Schneider Electric.

Security Disposal

When equipment needs to be disposed, it is recommended to destroy it through a safe channel to ensure that the equipment is not re-deployed to your operational systems or illegally exploited.

Cybersecurity Vulnerability/Incidents

You can access the Schneider Electric Cybersecurity Support Portal (<https://www.se.com/ww/en/work/support/cybersecurity/vulnerability-policy.jsp>) to check the vulnerability management policy or report potential cybersecurity vulnerability or incidents.

China RoHS Compliance Information
Environment-Friendly Use Period (EFUP) Table

部件名称 Part Name	有害物质 / Hazardous Substances					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
塑料 Plastic parts	O	O	O	O	O	O
电子元器件 Electronic	X	O	O	O	O	O
金属部件 Metal parts	X	O	O	O	O	O
触点 Electrical contacts	O	O	O	O	O	O
线缆和线缆附件 Cables & cabling accessories	O	O	O	O	O	O

本表格依据SJ/T 11364的规定编制
O: 表示该有害物质在该部件所有均质材料中的含量均在GB/T 26572规定的限量要求以下。
X: 表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572规定的限量要求。
本表中标有“X”的所有部件均符合欧盟RoHS法规
This table is made according to SJ/T 11364.
O: Indicates that the concentration of hazardous substance in all of the homogeneous materials for this part is below the limit as stipulated in GB/T 26572.
X: Indicates that concentration of hazardous substance in at least one of the homogeneous materials used for this part is above the limit as stipulated in GB/T 26572.
All the parts with “X” comply with EU ROHS.