

# SenseCAP SOLO CO2 Sensor



## Features

- NDIR CO2 sensor technology
- High accuracy, fast response, and superior stability
- Universal protocol: MODBUS RS-485 and SDI-12
- Wide-range power supply: 5V ~ 16V
- Easy to install and integrate

## Applications

- Smart Agriculture
- Building ventilation systems
- Industry ventilation systems
- Airport, train station, shopping mall, office, classroom and other public places for air quality measurement and indication
- Lab., warehouse, and other places to detect CO2

## Introduction

SenseCAP SOLO CO2 Sensor is a digital NDIR (nondispersive infrared) sensor, which enables the highest accuracy in the measurement of CO2 level in the atmosphere continuously and accurately for long-term use. It's designed with a built-in calibration functionality, making it more accurate and reliable in measurement. We've also added a specially-designed PTFE filter which allows airflow and ensures fast response. It comes with MODBUS RS485 and SDI-12 protocols, compact in size, can be easily integrated into various application scenarios.

## Specifications

CO2	
Range	400 ~ 5000 ppm
Accuracy	$\pm (50\text{ppm} + 5\% \cdot \text{MV})$ (in 400~3000ppm)
Resolution	1 ppm
General Parameters	
Product Model	SOLO CO2 5000
Interface	RS-485
Protocol	MODBUS-RTU RS485/ MODBUS-ASCII RS485/ SDI-12 (v1.4)
Response Time (T90)	<5 minutes for 90% step change typical
IP Rating	IPx5 (the PTFE filter is not waterproof)
Operating Temperature	-10 ~ 50 °C
Operating Humidity	0 ~ 85% (non-condensing)
Cable Length	2 meters
Probe Dimensions	110 * 50 * 35 mm
Device Weight	300g

MODBUS RS-485	
Power Supply	5V ~ 16V
Current Consumption	$V_{in}=16V: 22\text{mA}$ (typical) $V_{in}=12V: 28\text{mA}$ (typical) $V_{in}=9V: 34\text{mA}$ (typical) $V_{in}=5V: 57\text{mA}$ (typical)
Warm-up Time	120s (typical)
Scan Interval	1s
Poll Rate	1Hz
Response Time	$\leq 4\text{ms}$
SDI-12	
Power Supply	5V ~ 16V
Current Consumption (Sleep Mode)	$V_{in}=16V: 28\mu\text{A}$ (typical) $V_{in}=12V: 29\mu\text{A}$ (typical) $V_{in}=9V: 30\mu\text{A}$ (typical) $V_{in}=5V: 35\mu\text{A}$ (typical)
Current Consumption (Active Mode)	$V_{in}=16V: 20\text{mA}$ (typical) $V_{in}=12V: 27\text{mA}$ (typical) $V_{in}=9V: 33\text{mA}$ (typical) $V_{in}=5V: 55\text{mA}$ (typical)
Warm-up Time	15ms
Scan Interval	120s (typical)

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