

Technical Datasheet

Carbon Dioxide (CO₂) Transmitter ATMOS SERIES - CarbonDio50





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CARBON MONOXIDE GAS DETECTOR & TRANSMITTER

The Polwax CarbonDio50 is an advanced carbon dioxide (CO_2) transmitter designed to deliver accurate and reliable CO_2 concentration measurements across diverse environments. Engineered with precision and durability in mind, the CarbonDio50 ensures consistent performance for both indoor and industrial applications.

The gas-permeable membrane on the sensor shell has good gas permeability, the gas in the environment can circulate freely, and the imported sensor is built in the shell, which has high measurement accuracy. Quick Response.

Our company provides a one-year warranty for the product. Under normal circumstances, the service life is up to 5 years. Our co2 sensor housing is waterproof and dustproof and is not easily damaged. Only need to replace the breathable membrane regularly every year.

Features

- Easy to Install and suitable for Wall Mounting
- High Accuracy and Stability
- Wide Measuring Range
- Output Signal : 4 20 mA / 0 10 V
- Accurate CO₂ Detection
- Protection Rating: IP65 for outdoor and harsh environment use
- Low Power Consumption
- Compact and Durable Design
- User-Friendly Configuration
- Energy Efficient
- Integrated Temperature Compensation
- Easy Integration
- Ruggedized Enclosure
- Advanced Communication RS-485
- Compact Design

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Applications

Indoor Air Quality Management: Ideal for offices, schools, and public spaces to monitor CO₂ levels and maintain healthy air quality.

Greenhouse Climate Control: Supports precision CO₂ monitoring for enhanced plant growth and yield optimization.

Industrial Safety: Ensures safe CO₂ concentrations in confined spaces and manufacturing environments.





Technical Details

Measurement Range	0-2000ppm/ 0-5000ppm/ 0-10000ppm
Accuracy	5000 ppm: ±(50ppm +3% F•S)(25°C),10000 ppm:±(50ppm +5% F•S) (25°C)
Resolution	1ppm
Warm-up time	2min (available), 10min (max.)
Sensor Type	High-precision photodiode
Output Options	4-20mA, 0-10V
Power Supply	12V-24V DC
Stability	<2%F·S
Non-linearity	<1%F·S
Data update	2s
Humidity Range	0-95% RH (non-condensing)
Protection Rating	Ip65 (water-resistant and dustproof)
Output Signals	Rs485 (Modbus RTU), 4-20mA, 0-5V, 0-10V
Mounting Options	Wall mount, Pole mount
Communication Protocols	MODBUS RTU
Housing Material	Industrial-grade ABS
Process Connection	High-strength, dustproof, waterproof

Model Selection Chart

Polwax CarbonDio50



Dimensions

Polwax CarbonDio50



Applications & Case Studies

Case Study 1: Improving Indoor Air Quality in Corporate Offices

Background: A large corporate office in Mumbai faced rising complaints about poor air quality and employee discomfort.

Challenge: High occupancy led to increased CO₂ levels, resulting in fatigue, reduced productivity, and discomfort.

Solution: The Polwax CarbonDio50 was deployed in key office areas, integrated with the HVAC system through its 4-20 mA output. The CO_2 data was used to adjust ventilation rates automatically.

Outcome:

Employees reported noticeable improvements in comfort and focus. Additionally, energy consumption dropped by 12% due to optimized ventilation cycles.

Case Study 2: Enhancing Agricultural Greenhouse Production

Background: A commercial greenhouse in Pune struggled to maintain optimal CO₂ levels for its tomato crop during peak growing seasons.

Challenge: Inconsistent CO_2 levels led to uneven plant growth, affecting yield and quality.

Solution:

Multiple CarbonDio50 transmitters were installed throughout the greenhouse, connected via RS485 for centralized monitoring and control. This allowed for precise CO_2 enrichment adjustments.

Outcome:

Crop yield improved by 18%, with better uniformity in growth. The greenhouse also achieved more efficient CO_2 usage, reducing operational costs.





POLWAX Group has got an experienced, highly-qualified project team conducting extensive R&D operations. Owing to that, goods holding the POLWAX brand feature customer-tailored flexibility and meet requirements of various industries.

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