

BASIOX COMBO SENSOR

CO / NO₂

Model Series: BC-CONO₂-WP-XXX



INTRODUCTION

COMBINED CO / NO₂ SENSOR

Carbon monoxide is a colorless, odorless, tasteless, and highly toxic flammable gas. It is a product of incomplete combustion of carbon-containing fuels. This means it forms when fuels like wood, gasoline, charcoal, natural gas, propane, oil, and coal don't burn completely.

Exposure can cause headaches, dizziness, weakness, nausea, vomiting, confusion, and loss of consciousness. High concentrations can be fatal. Long-term exposure, even at lower levels, can lead to heart problems and brain damage. Those particularly vulnerable include unborn babies, infants, the elderly, and individuals with heart or respiratory conditions.

Nitrogen dioxide is a reddish-brown gas with a characteristic sharp, pungent odor. It is a prominent air pollutant and one of the most toxic oxides of nitrogen.

Breathing air with high concentrations of NO₂ can irritate the airways. Short-term exposure can aggravate respiratory diseases, particularly asthma, leading to symptoms like coughing, wheezing, and difficulty breathing. Longer exposures may contribute to the development of asthma and increase susceptibility to respiratory infections. Children and the elderly are generally more at risk.

APPLICATIONS

Environmental Monitoring for Individuals, Government Agencies, Facility Managers, and Healthcare Providers, Hospitality & Education Institutions.

ENVIRONMENTAL SUSTAINABILITY

Contributes to the formation of smog, acid rain, and particulate matter, impacting visibility and damaging ecosystems.

NO₂ plays a crucial role in the formation of **smog** (ground-level ozone) and **acid rain** when it reacts with other substances in the atmosphere. It also contributes to the formation of fine particulate matter, which has its own set of health risks. Acid rain can harm sensitive ecosystems like lakes and forests, and NO₂ can contribute to nutrient pollution in waterways and reduce visibility (haze).

FEATURES AND BENEFITS

- ▶ **Comprehensive Monitoring via Mobile and Web Applications:** Provides detailed, real- time information on gas concentrations and environmental conditions through both mobile and web interfaces.
- ▶ **Automated Alerts and Safety Notifications:** Delivers immediate alerts and safety recommendations to users when gas levels exceed predefined thresholds, enhancing safety and response times.
- ▶ **Historical Data Visualization:** Allows users to access historical sensor data with customizable graphical displays in hourly, daily, weekly, and monthly formats, facilitating trend analysis and environmental assessment.
- ▶ **Cloud-Based Data Storage and Integration:** Sensor data is securely stored in the cloud, ensuring easy access and seamless integration with other applications through Modbus RS485 or API-based protocols.
 - **Inbuilt Memory Backup:** Equipped with onboard memory to prevent data loss during network outages, ensuring uninterrupted data logging and integrity.
 - **Precision Calibration:** Each device undergoes span calibration to maintain accurate measurements and reliable performance over time.
- ▶ **Seamless Integration with Air Quality Control Systems:** Compatible with a wide range of air control systems, allowing for automated adjustments and improved air management based on real-time sensor data.

TECHNICAL SPECIFICATIONS OF MODEL NO: BC-CO/NO2-WP-XXX

WORKING PRINCIPLE	CO: Electrochemical NO2: Solid Polymer Electrolytic
MEASUREMENT RANGE	CO: 0 - 5000 ppm NO2: 0 - 10 ppm
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RESOLUTION	CO: 1 ppm NO2: 0.25 ppm

CONNECTIVITY

DATA-PUSH PROTOCOL	HTTPS post request to host-server
DATA-PULL	HTTPS request on device IP
DATA INTERVAL	5 to 60 minutes- configurable

DATA SECURITY

DEVICE/APP	HTTPS Protocol
DATA OVER THE NETWORK	TLS Secured- AWS Certificate
SENSITIVE DATA: PHONE, EMAIL	AES Encryption

DEVICE FEATURES

CALIBRATION & VALIDATION	Span calibration and mid-point validation
DISPLAY TYPE	WebApp/Mobile App
DEVICE INTERFACE	On-device Software/API
SOFTWARE CAPABILITY	SarHHM Cloud Platform (in-house on AWS server) and on premise
DIMENSIONS	85(W)*85(D)*25(H) mm
DEVICE SUPPLY VOLTAGE	110 V to 240 V AC / DC - 1Amp. Preferably 12 V DC - 1 Amp, AC / DC - 1Amp.
POWER CONSUMPTION	5 Watt/hour- 3.6 KW/month
OPERATING AMBIENT TEMPERATURE	-20 °C to 60 °C
OPERATING HUMIDITY	-0-95% RH
BODY MATERIAL	UV-Resistant ASA UL94HB with Silicone Gasket / Color: Off White
MOUNTING METHOD	Wall
COMMUNICATION	4 to 20mAmp/ LoRa/ModBus RTU/ WiFi
DATA STORAGE	Inbuilt memory backup, up to to 24h
DEVICE/APP	HTTPS Protocol
DATA OVER THE NETWORK	TLS Secured- AWS Certificate

REGULATORY COMPLIANCE

CERTIFICATIONS	CE, RoHS
DISPOSABILITY	Dispose of the sensor in accordance with local electronic waste disposal regulations to minimize environmental impact.