

BASIOX COMBO IAQ SENSOR

T/RH/TVOC/CO/CO₂

Model Series: BC-IAQ-XXX



INTRODUCTION

COMBINED T/RH/TVOC/CO/CO₂ IAQ SENSOR

Temperature, Humidity, TVOC, CO & CO₂ Combined Sensor in an increasingly interconnected world, monitoring environmental conditions has become paramount for ensuring health, comfort, and safety in various indoor and outdoor settings. A combined sensor that measures temperature, humidity, total volatile organic compounds (TVOC) carbon monoxide (CO), and carbon dioxide (CO₂) provides a comprehensive approach to assessing air quality and environmental conditions.

Temperature and humidity are fundamental parameters that influence human comfort and physiological responses, as well as the growth of organisms. Accurate measurement allows for optimal climate control in buildings, enhancing energy efficiency and occupant well-being.

TVOC levels indicate the presence of volatile organic compounds, which can originate from household products, paints, and solvents, affecting air quality and potentially posing health risks. Monitoring TVOC helps in identifying pollution sources and ensuring a healthy indoor environment.

Carbon Monoxide (CO) is a colorless, odorless, and tasteless gas that is highly toxic to humans and animals. It is produced by the incomplete combustion of carbon-containing fuels such as gasoline, natural gas, oil, coal, and wood. Common sources of CO include vehicle exhaust, gas appliances, and industrial processes.

CO₂ concentration is an important indicator of indoor air quality. Elevated CO₂ levels can lead to discomfort and decreased cognitive function, especially in enclosed spaces. Monitoring CO₂ helps ensure adequate ventilation and a healthy living or working environment.

APPLICATIONS

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

ENVIRONMENTAL SUSTAINABILITY

The Basiox Combo IAQ sensor, with combined parameters provide a holistic view of air quality and environmental health, enabling proactive management of indoor environments and contributing to overall well-being. Advanced combined sensors enable real-time monitoring and data collection, aiding in the assessment of air quality trends and facilitating informed decision-making for both individuals and organizations. By providing accurate, real-time data on harmful air pollutants, this sensor combination enables individuals, businesses, and governments to make informed decisions to reduce emissions and improve air quality. The continuous monitoring capabilities allow for proactive measures to be taken in reducing pollutant levels, thereby minimizing environmental impact. Furthermore, the integration of this sensor system with air quality control technologies supports the development of more sustainable and energy-efficient operations, contributing to a healthier environment and a lower carbon footprint.

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-IAQ-XXX

WORKING PRINCIPLE	T, RH & TVOC: Complementary Metal Oxide Semiconductor, CO2: Photo Acoustic NDIR and CO:Electrochemical
MEASUREMENT RANGE	Temperature -40°C to +125°C RH 0 to 100% TVOC 0 to 5000 ppb CO2 0 to 5000 ppm CO - 0 to 5000 ppm
RESOLUTION	Temperature 0.01°C RH 0.1% CO2 10 ppm TVOC 300 ppb CO - 1 ppm

CONNECTIVITY

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

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	SarthHHM 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	ABS Plastic
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.