

BASIOX NH3 SENSOR

Ammonia Sensor

Model Series: BC-NH3-WPXXX



INTRODUCTION

Ammonia (NH3)

Ammonia (NH3) is a colorless, pungent gas composed of nitrogen and hydrogen. It's a common nitrogenous waste product in animals and plays a crucial role in the nitrogen cycle. Ammonia is widely used in various industries, including:

- Fertilizers: It's a key component in many fertilizers due to its high nitrogen content, essential for plant growth.
- Refrigeration: Ammonia is a popular refrigerant in industrial and commercial applications.
- Cleaning products: It's used as a cleaning agent in household and industrial settings.
- Chemical production: Ammonia is a precursor for many other chemicals, such as urea, nitric acid, and ammonium salts.

While ammonia is essential for many applications, it's also a toxic gas and can be dangerous if inhaled or ingested. It's important to handle ammonia with care and follow safety guidelines.

ENVIRONMENTAL SUSTAINABILITY

The Basiox NH3 sensor, which monitors Ammonia (NH3), plays a significant role in environmental sustainability by enabling better monitoring and management of ammonia emissions and indoor air quality. NH3 sensors contribute significantly to environmental sustainability by facilitating emissions monitoring, enhancing energy efficiency, improving indoor air quality, and supporting data-driven strategies aimed at reducing greenhouse gas emissions. Their implementation is a proactive step toward a more sustainable future, helping communities and industries align with global carbon reduction goals.

TECHNICAL FEATURES

- ▶ **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.

APPLICATIONS

Environmental Monitoring for Individuals, Government Agencies, Facility Managers, and Healthcare Providers.

TECHNICAL SPECIFICATIONS OF MODEL NO: BC-NH3-XXX

WORKING PRINCIPLE	Solid Polymer Electrolytic
MEASUREMENT RANGE	0 - 100 ppm
MINIMUM DETECTION RANGE	0.1 ppm
DRIFT	<2% per month

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	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	4-20 mA/ LoRaWAN /ModBus RTU/ WiFi
DATA STORAGE	Inbuilt memory backup, up to 24h
DEVICE/APP	HTTPS Protocol
DATA OVER THE NETWORK	TLS Secured- AWS Certificate

LoRaWAN CHIPSET SPECIFICATION

FREQUENCY	860-930 MHz
CHIPSET	Semtech (SX1262) + STM (STM32L)
MODULATION	FSK and LoRa Modulation
ANTENNA	External Antenna
OPERATING TEMP. RANGE	-40°C to +85°C
DIMENSION	10.0mm X 8.0mm X1.6mm
INTERFACE VOLTAGE (VDC for VIO)	3.3 VDC
SUPPLY VOLTAGE	2.2V - 3.6V for VDD_MCU, VDD_RF, VDD_TCXO
TRANSMIT MODE CURRENT	118mA @22dBm setting
TRANSMIT POWER	Up to +21.5dBm
RECEIVE MODE CURRENT	15.5mA @125kHz BW
RECEIVER SENSITIVITY	-135.5dBm @1% per 125kHz BW, SF=12
HOST INTERFACE	I2C / UART / USB / SPI
COMPLIANCE	RoHS
TECHNOLOGY	LPWA
CERTIFICATIONS	FCC / IC / CE / MIC / KC / NCC / ANATEL

REGULATORY COMPLIANCE

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