

BASIOX CONTROLS-T & RH SENSOR

T & RH Sensor

Model Series: BC-T/RH- Ex-XXX



INTRODUCTION

Temperature & Humidity (T/RH)

In a world increasingly reliant on precise environmental control, the temperature and humidity sensor stand as a crucial tool. These versatile devices provide essential data about the air around us, measuring both temperature and relative humidity in a single, compact unit. From ensuring comfortable living spaces and optimizing industrial processes to supporting agricultural advancements and meteorological research, temperature and humidity sensors play a vital role in numerous applications. This introduction will explore the functionality, working principles, and diverse uses of these sensors, highlighting their importance in maintaining optimal conditions across a wide range of fields.

ENVIRONMENTAL SUSTAINABILITY

The Basiox T & RH sensor, which monitors Temperature & Humidity, plays a significant role in environmental sustainability by enabling better monitoring and management of indoor air quality. T & RH 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-T/RH-Ex-XXX

WORKING PRINCIPLE	Complementary metal- oxide-semiconductors (CMOS)
MEASUREMENT RANGE	-40°C to 125°C/Accuracy: ±0.5°C For Temp 0 to 100% Accuracy: ± 2% For RH
MINIMUM DETECTION RANGE	3 - 4 meters in Radius

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	Auto calibrated/Factory Calibrated
DISPLAY TYPE	WebApp/Mobile App
DEVICE INTERFACE	On-device Software/API
SOFTWARE CAPABILITY	SarHHM Cloud Platform (in-house on AWS server) and on premise
DEVICE SUPPLY VOLTAGE	Preferably 5 VDC - 1 Amp
POWER CONSUMPTION	5 Watt/hour- 3.6 KW/month
DIMENSIONS	110mm x 110mm 70mm
OPERATING AMBIENT TEMPERATURE	-20 °C to 60 °C
DATA STORAGE	Inbuilt memory backup, up to 24h
OPERATING HUMIDITY	-0-95% RH
DATA OVER THE NETWORK	TLS Secured- AWS Certificate
BODY MATERIAL	Flameproof / Atex Enclosure
DEVICE/APP	HTTPS Protocol
ADDITIONAL OUTPUT	Volt Free Contact
COMMUNICATION	4-20 mA/ LoRaWAN / ModBus RTU/ WiFi
MOUNTING METHOD	Space / Duct

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.

