DATA SHEET

Check-Air

checkup
OBJECTS WITH LIFE INSIDE

PRODUCT APPLICATIONS

- ❑ Outdoor ambient air quality monitoring
- ❑ Industrial areas and urban monitoring
- ❑ Construction sites, landfills, and emission-sensitive locations
- ❑ Integration into IoT monitoring networks with LoRaWAN connectivity

KEY FEATURES

MULTI-GAS MONITORING

The device integrates four AQ7 sensors dedicated to CO, SO_2, NO_2, and O_3, with measurements in ppb/ppm and a built-in compensation algorithm to ensure long-term signal stability and accuracy.

PARTICULATE MATTER SENSOR

The NextPM optical sensor measures PM1, PM2.5, and PM10, with a range of 0–1000 µg/m³, a detection limit below 1 µg/m³, and a selectable refresh rate of 1/10/60 seconds.

TEMPERATURE AND HUMIDITY

The system includes temperature and relative humidity measurement, also used for environmental compensation and correlation of air quality data.

LORAWAN CONNECTIVITY

Data transmission is carried out via LoRaWAN in the Sub-GHz 868 MHz band, with transmission power up to 14 dBm and sensitivity down to -137 dBm.

OUTDOOR ENCLOSURE

The electronics are housed in a Fibox ABS enclosure, with IP45 protection rating, dimensions 120 × 200 × 75 mm, suitable for outdoor applications.

DESCRIPTION

The Check-Air system is a monitoring unit designed for continuous outdoor ambient air quality monitoring. The device combines four electrochemical channels for the detection of CO, SO_2, NO_2, and O_3 with an optical sensor for particulate matter (PM1, PM2.5, and PM10), along with temperature and humidity measurements for environmental compensation of the readings.
Data transmission is carried out via a LoRaWAN network, making the product suitable for distributed sensor networks in smart cities, industrial monitoring, and remote environmental control applications.
The ABS enclosure, with an IP45 protection rating, allows for outdoor installation, while the 220V AC power supply ensures continuous system operation.

TECHNICAL SPECIFICATIONS

Gas Sensor

SENSOR	RANGE	LOW DET. LIMIT	RESOLUTION
CO	0-20 ppm	40 ppb	10 ppb
NO_2	0-1 ppm	5 ppb	5 ppb
O_3	0-1 ppm	5 ppb	5 ppb
SO_2	0-1 ppm	5 ppb	2 ppb

Particulate Sensor

technology	optical
outputs	PM1. PM2.5, PM10
concentration	from 0 to 1000 µg/m³
detection limit	>1 µg/m³
particle size range	from 0.3 to 10 µm
linearity error	<5%
repeatability error	<3%
Refresh rate	1 / 10 / 60 s
warm-up time	10 s
supply voltage	5 VDC
power consumption	<80 mA, 300 mA max
operating conditions	-20°C to 70°C, 0-95% RH non-condensing
dimensions	62 x 52 x 23 mm
weight	45 g

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TECHNICAL SPECIFICATIONS

System characteristics

AQ7 board supply	5 VDC
AQ7 digital output	RS485 or I2C
AQ7 analog outputs	raw signal; 0 to 3 V calibrated and compensated
AQ7 board dimensions	39.1 x 44.6 x 29 mm with sensor
LoRaWAN frequency	868 MHz EU
transmission power	up to 14 dBm
receiver sensitivity	-137 dBm
communication protocol	LoRaWAN
enclosure material	ABS
enclosure protection	IP45
enclosure dimensions	120 x 200 x 75 mm
enclosure color	Grey RAL 7035
product power supply	220V AC

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