

AirTech

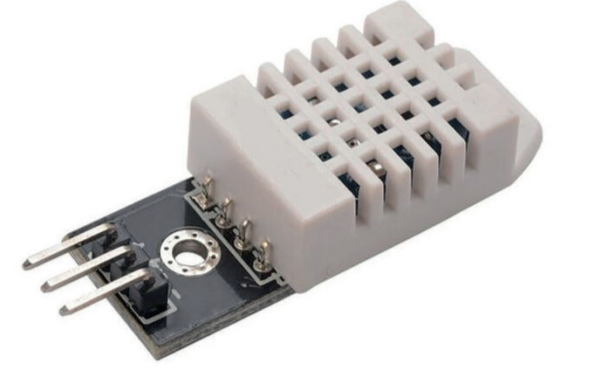
Smart Air Quality Monitor

Temperature and humidity

AirTech can measure temperature and humidity levels in the environment. Temperature affects comfort levels and can impact productivity and overall well-being. Humidity levels, on the other hand, can influence the growth of mold, allergens, and other biological contaminants. Monitoring temperature and humidity helps create a comfortable and healthy indoor environment.

Sensor: DHT22

The DHT22 sensor is a low-cost, reliable digital temperature and humidity sensor. It provides accurate measurements and is widely used in weather monitoring and home automation projects.



VOCs

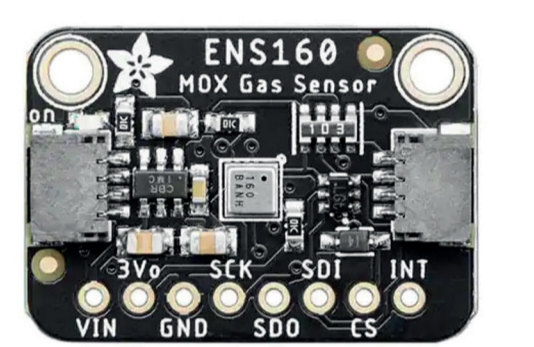
AirTech measures volatile organic compounds (VOCs), which are organic chemicals that can be released from various sources such as building materials, furniture, cleaning products, and personal care items. VOCs can contribute to indoor air pollution and have been associated with various health effects. Monitoring VOC levels helps identify potential sources of pollution and reduce exposure to them.

CO2

AirTech monitors carbon dioxide (CO2) levels, which can indicate indoor air quality and ventilation. High levels of CO2 can lead to symptoms such as drowsiness, poor concentration, and reduced cognitive performance. Monitoring CO2 levels helps ensure adequate ventilation and can contribute to a healthier and more productive indoor environment.

Sensor: ENS160

The ENS160 sensor can measure Carbon Dioxide (CO2) and Volatile Organic Compounds (VOCs) simultaneously. It incorporates intelligent algorithms that perform advanced processing of raw sensor measurements directly on the chip enabling accurate calculations of all measurements without overwhelming the main host processor.



PM2.5 and PM10

AirTech measures fine particulate matter (PM2.5) and coarse particulate matter (PM10), which are airborne particles with diameters of 2.5 micrometers or smaller and 10 micrometers or smaller, respectively. These particles can originate from sources such as combustion processes, industrial emissions, and vehicle exhaust. Monitoring PM2.5 and PM10 levels is important as they can penetrate deep into the respiratory system and have detrimental effects on respiratory health.

Sensor: SDS011

The SDS011 Laser Sensor has a built-in fan and logic-level serial communication, which helps providing direct readings of the PM2.5 and PM10 values without having to use maths to manipulate raw values to obtain the desired results.

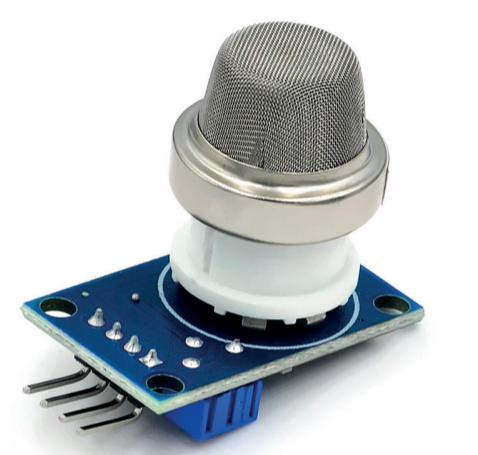


Ozone (O3)

AirTech diligently measures levels of ozone, a highly reactive gas composed of three oxygen atoms, to assess its impact on air quality and potential health risks. High concentrations of ground-level ozone can cause respiratory issues, eye irritation, and exacerbate existing respiratory conditions such as asthma. By monitoring ozone levels, AirTech enables users to identify ozone pollution and take necessary precautions to minimize exposure and protect their health.

Sensor: MQ131

The MQ131 is a compact, low power, and affordable sensor to detect ozone gas. It's commonly used in air quality monitoring and industrial safety projects.



Mobile application

- **User-friendly interface:** monitoring air quality parameters with ease using an intuitive application interface.
- **Real-time measurements:** possibility to stay informed with real-time data on PM2.5, PM10, CO2, VOCs, temperature, and humidity.
- **Customized notifications:** Setting personalized alerts for exceeding air quality thresholds.
- **Historical data access:** tracking air quality trends and make informed decisions based on past measurements.
- **Device settings adjustment:** customizing monitoring parameters and preferences effortlessly.



Circuit diagram for hardware module

