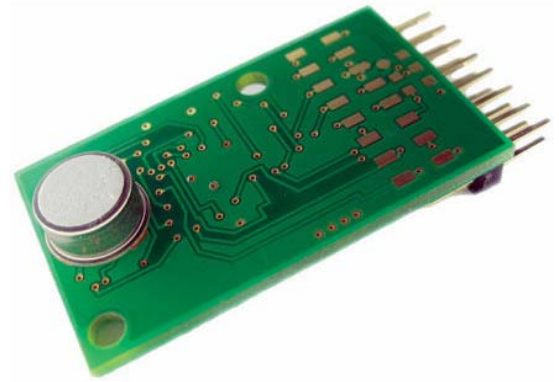


Datasheet: iAQ-2000 Sensor

Air quality prediction beyond CO2

The climate control industry views indoor air quality as a measure of temperature, humidity, and carbon dioxide (CO₂) levels. Most consumers, however, evaluate air quality by the amount of volatile organic compounds (VOCs), such as smoke, cooking odors, bio-effluence and outdoor pollutants. While temperature and humidity are easy to measure, sensors for measuring CO₂ (IR absorption) can be expensive and VOCs difficult to detect – until now.



Superior detection with MOS technology

The iAQ-2000 Indoor Air Quality Module is a sensitive, low-cost solution for detecting poor air quality. This module uses micro-machined metal oxide semiconductor (MOS) technology to detect a broad range of VOCs while correlating directly with CO₂ levels in the room.

Energy savings

The iAQ-2000 is equipped with a MOS sensor element for the detection of a broad range of reducing gases such as CO and VOCs. A change of resistance in the presence of these gases generates a signal that is translated into specific air quality levels and linked to specific gas concentration ranges. When threshold air quality levels for target gases are exceeded, the module alerts the climate control system to increase ventilation. When VOC levels are minimized, the module instructs the system to decrease ventilation, thereby saving energy and lowering building operating costs.

Air quality as close to human perception as possible

In any demand-controlled ventilation environment where air quality is important, including large commercial facilities, offices, classrooms, kitchens and bathrooms, the iAQ-2000 Indoor Air Quality Module performs accurately and reliably. Plus, the module's small size and low power consumption facilitate installation in a variety of applications.

Key Benefits

- High sensitivity and fast response
- Direct, reliable correlation to CO₂ levels
- Low power consumption reduces energy costs
- Small size for convenient installation
- Flexible communications

Substances Detected

- CO, CH₄, LPG
- Alcohols
- Ketones
- Organic acids
- Amines
- Aliphatic hydrocarbons
- Aromatic hydrocarbons

Features

Electrical

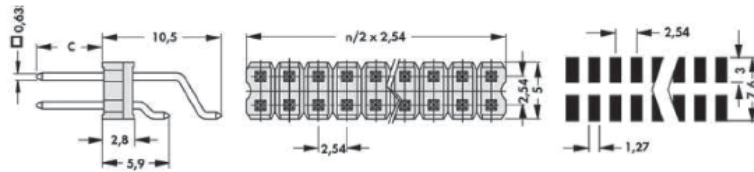
Power supply5.0 ± 0.25V, max. 20 mV ripple
 Power consumption 22-30 mA depending on supply voltage
 Output signal options TTL, RS232 (TTL level), SPI, I2C, 0-5V, PWM

Environmental

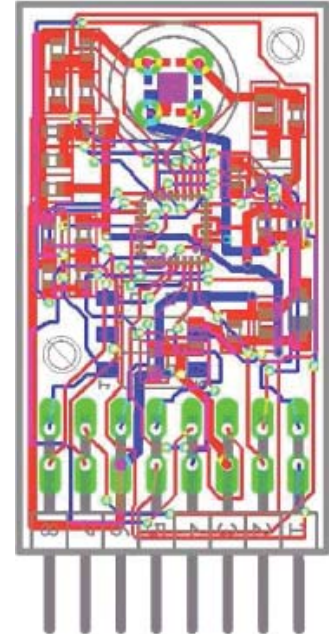
Operating temperature 0 to 50°C
 Storage temperature -25 to 50°C
 Humidity range 5 to 95% r.h., non-condensing

Mechanical

PCB Dimensions (approximate) 22 x 38 mm
 Weight (approximate) 10 grams
 Connector Fischerelektronik, SL 17 SMD 058

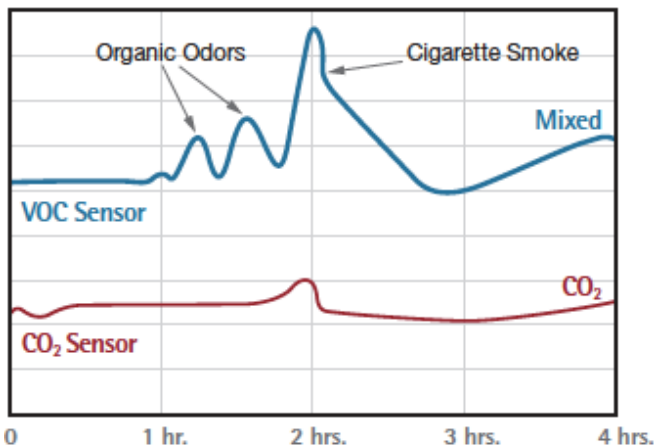


PCB / Connector Pin Out



	First Row	Second Row
1	Reset	MISO (I/O)
2	CLK	MOSI (I/O)
3	GND	RxD (I/O)
4	PWM_L	TxD (I/O)
5	PWM_H	I2C (SDA, I/O)
6	VCC	I2C (SCL, I/O)
7	INT0 (I/O)	I/O
8	T0 (I/O)	I/O

Comparison of Air Quality Measurements



Traditional carbon dioxide sensors do not respond to changes in air quality caused by odors, cigarette smoke, and other volatile organic compounds.