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FaradaIC®

Faraday-Ox® Digital Oxygen Gas Measuring Module

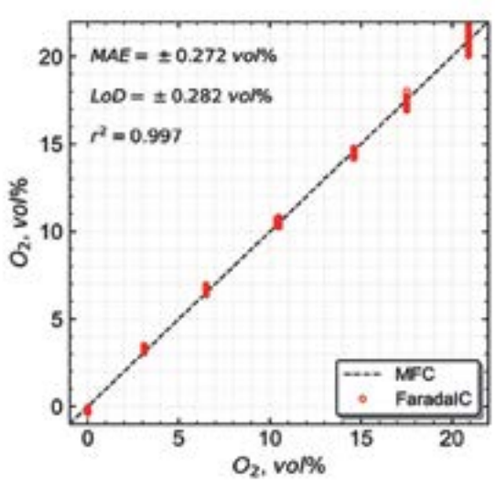
Applications

- Atmosphere monitoring
- Food and material packaging, storage and logistic
- IoT and Industrial IoT (IIoT)
- Production, agriculture, farming
- Food quality monitoring

Features

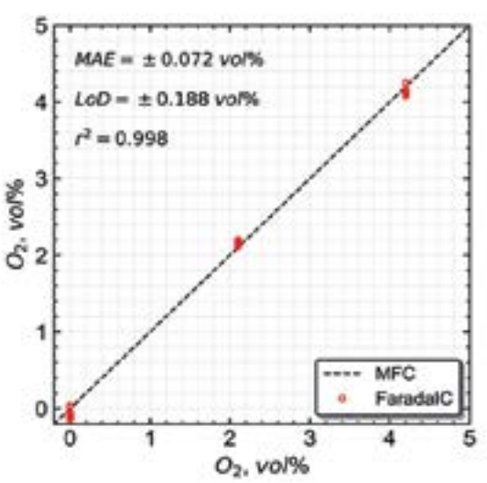
- Measurement Ranges from 0% O_2
- Ultra-low Power < 5 µA
- Small Size (about 50 cents coin)
- Fast Response (< 1s for warm-up)
- Digital Output UART
- Factory calibration included
- No Aging Effects
- Integrated RH and T Sensor

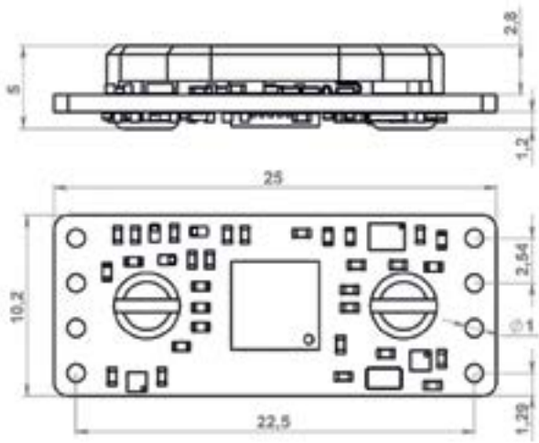
The **Faraday-Ox® Digital Oxygen Gas Sensing Module** is a digital oxygen measurement module designed for efficiency and practicality, and is characterized by its compact size and ultra-low power consumption. Pulsed mode operation further reduces power consumption without compromising performance. This module simplifies integration through a standard digital interface and is factory calibrated for immediate and reliable use. Within the module, integrated humidity and temperature sensors provide vital environmental compensation, enhancing the accuracy of oxygen measurements.



The **Faraday-Ox® Digital Oxygen Gas Sensing Module** is factory calibrated for immediate and reliable use. Within the module, integrated humidity and temperature sensors provide vital environmental compensation, enhancing the accuracy of oxygen measurements. Additionally, each module is equipped with mechanisms to compensate for sensor aging, ensuring consistent performance over time.

The **Faraday-Ox® development Kit** is a pre-configured solution to deliver digital oxygen concentration measurements and provide a graphical dashboard. The development kit is completed with a **Bluetooth® BLE** or **USB-C** connection and a GUI.



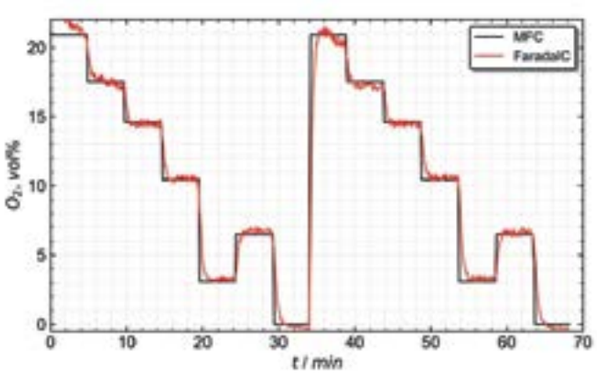


All dimensions are in mm

Technical Specifications *preliminary*

Option or customized range	006	010	1521	100
Measurement Range (vol.% O_2)	0-6	0-10	15-21	0-100
Resolution	20 ppm	25 ppm	50 ppm	250 ppm
Temperature Range	-20 °C ... +85 °C			
Accuracy (vol.% O_2)	0.20	0.20	0.30	0.30
Repeatability (vol.% O2)	0.02	0.02	0.03	0.03
Factory calibration	included, no aging effects when not in use			
Humidity Range	0 ... 95 % (non-condensing)			
Supply voltage	3.2 ..... 5.5 V (5V-A : 4.5....5.5 V)			
Life Time	up to 5 years*)			
Long Time Output Drift	< 5% signal/year			
Recommended Storage Temp	-20°C ~ 50°C			
Storage Life	5 years in original packaging			
Average supply current	~5 µA			
Peak current*)	<25 mA			
Interface	UART (115200 b/s)			
Dimensions	10.2 x 25.0 x 5.0 mm			
Weight	1.3 g			
RoHS Compliance	RoHS Compliant			
Cross-Sensitivity (5% CO_2)	none			

* Depends on environmental conditions and measurement parameters



The **Faraday-Ox® Digital Oxygen Gas Sensing Module** can be used in various applications. With its small design on a chip using MECS-Technology® it is perfectly targeted into high volume markets.

Additionally to the ultra low power and low-cost MEMS type manufacturing, the small design offers significant speed advantages over traditional electrochemical sensors with response times below 1s which allows even the monitoring and analysis of the human breath.