

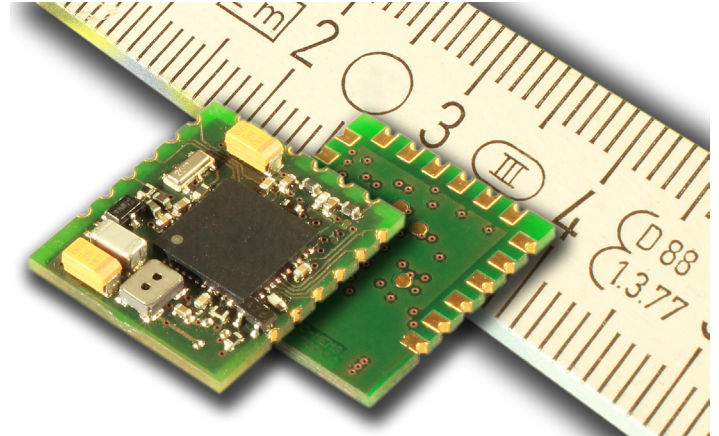
USM-MEMS-VOC compact UNITRONIC sensor module for air quality measurements (VOC)

USM-MEMS-VOC - A sensor module, with which volatile organic compounds (VOC) in the air can be recognized very quickly and with very high accuracy thanks to a special sampling process.

The compact UNITRONIC Sensor Module VOC (USM-MEMS-VOC) is based on the innovative, highly stable TGS 8100 semiconductor MEMS sensor from Figaro. With the USM-MEMS-VOC UNITRONIC did expand already existing sensor solutions which now include the smallest, fastest and as well low power consuming sensor module.

Thanks to the Digital Sampling Process (DSP), specially developed by UNITRONIC for the USM products and as well Figaro MEMS technology the module is able to use the very short response times and measurement cycles of the gas sensor without any limitations and at the same time achieve a high level of accuracy in the measurement. The USM-MEMS-VOC reacts within 8 seconds to the release of harmful gases. Another benefit compared to the conventional semiconductor sensors is the low power consumption of the used MEMS sensor TGS8100. The USM-MEMS-VOC sensor module needs less than 20mA in continuously operation mode. Due to the low voltage supply of 1,8V the sensor module is suitable to be used in battery powered applications.

The module, measuring only 15mm x 17mm as SMD component part, can be easily integrated into customer's own circuits and applications thanks to a PWM and a digital output (UART). Included Base-Level-Shift algorithm and automatically temperature / humidity compensation using an external RH/Temp sensor allows to use the USM-MEMS-VOC with in control systems to regulate air conditioning.

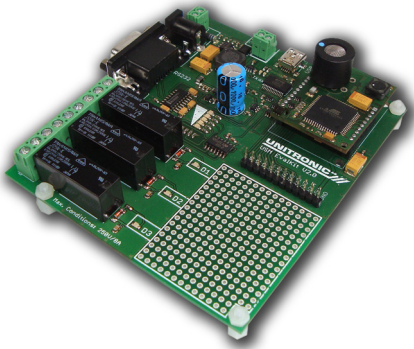


One example of a software and hardware adaption is the „ventilation on demand“ with this software a ventilator can be switched on only when there is a contamination of air or the humidity is over a present value. In this application an additional temperature and humidity sensing element can be connected.

Features:

- Cost-effective
- Smallest dimensions 17 x 15 x 3 mm
- SMD component part
- Low Power <20mA
- Detection of volatile organic compounds (VOC)
- Easy assembling
- Ultra-sensitive
- Long-term stable
- Customizations
- Interface for connecting external Temperature and Humidity sensor
- Base Level Shifting Algorithm

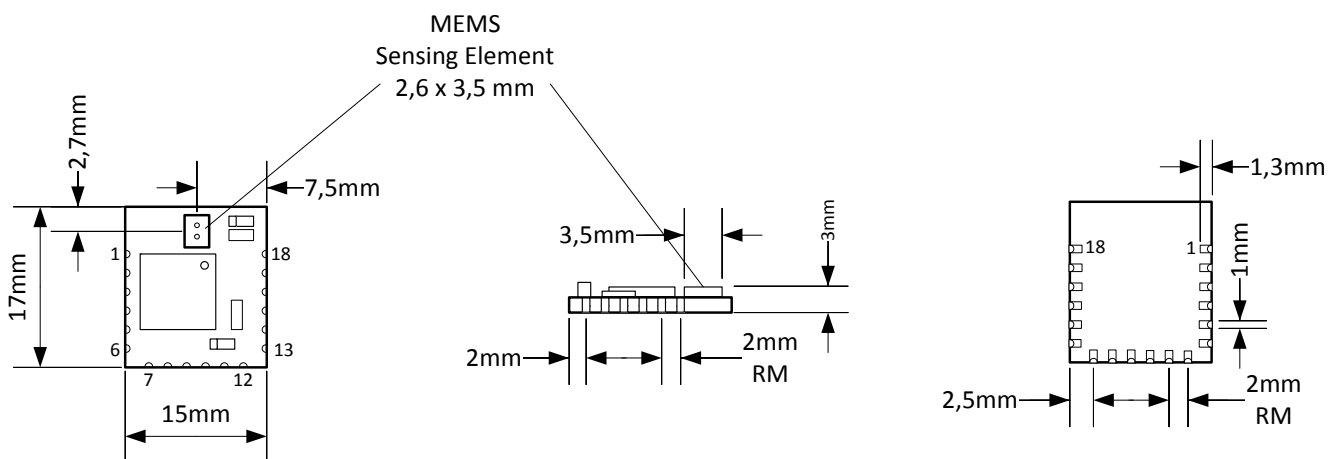
Technical Specification

Power Supply	1,8 VDC
Outputs	UART 3 x digital 1 x PWM I2C for external temperature and humidity sensor SPI (optional)
Sensor analysis	DSP
Dimension	17 x 15 x 3 mm
Temperature and Humidity sensing	Optional using external Temp&RH sensor
Software	Windows® visualization software
Base Level Shifting	For optimal adaption on the environment
<div style="text-align: center;">  </div> Evaluation Kit	USM-MEMS-VOC EVAL 12 – 35VDC RS232-(F09) USB 2.0 3 galvanic isolated relays Analog output Development area where all needed signals could be measured

USM-MEMS-VOC
Top View

USM-MEMS-VOC
Side View

USM-MEMS-VOC
Bottom View



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