

# EVM-SP-03-SP3S

**SPECIFICATIONS**

## Evaluation module for air quality application

### EVM-SP-03-SP3S

This module is designed to evaluate FIS air quality sensor, SP3S-AQ2. The LEDs indicate the degree of air pollution such as cigarette smoke. The specially designed MPU includes software which optimizes the sensor output similar to human sense. This module is useful for customer's pre-investigation before the development of their own device which controls the ventilation of air conditioners, air purifiers, etc.



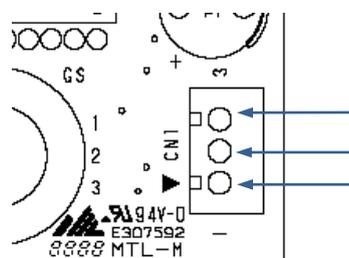
#### Applications

- Air purifier
- Air conditioner with air purifier
- Auto ventilator
- Air monitor, etc.

#### Specifications

Item	Specification
Gas sensor	SP3S-AQ2-01
Supply voltage	5VDC±4%
Analogue output	Gas sensor signal ※1
Current consumption	About 50mA
Warm-up time	Two minutes
Pollution indication	Four level with LEDs (clean-low-middle-high)
Operating temperature	0°C to 40°C (No condensation)
Storage temperature	-10°C to 60°C
Measurement	35mm × 45mm
Weight	About 12g

#### IN/OUT specification



Pin No.	Name	Specification
3	GND	
2	Output	Analogue sensor output, 0 to 5VDC ※1
1	Power supply	5VDC±4%

※1 : This doesn't mean the gas concentration.  
If pollution level increases, this signal increases.

- \* Your own extension cables can be directly soldered to the connector.
- \* If the above extension cables are too long, the supply voltage will drop. In this case, adjust the main power supply so that the supply voltage on the board should be within the specification (5VDC+/-4%)

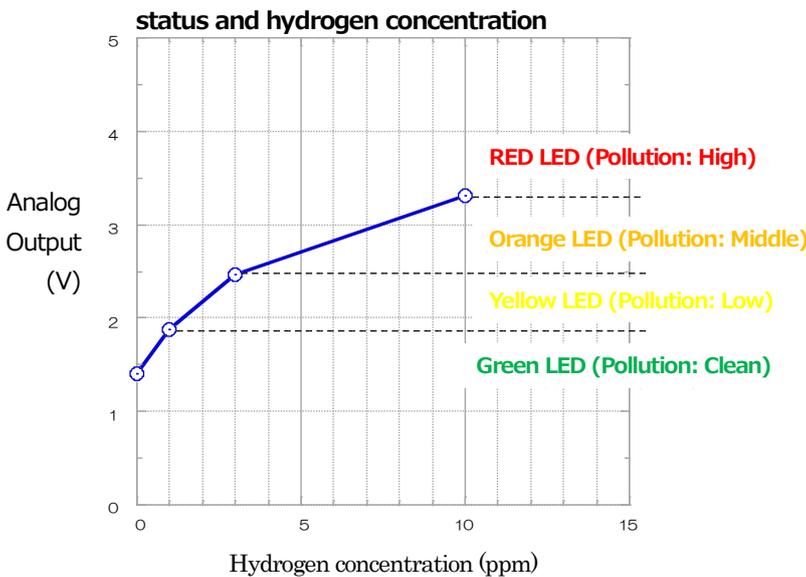
■ How to operate

- 1) Supply the module with 5VDC+/-4%. **Note:** If you want to measure the output, connect a voltmeter between pins 2 and 3 **before** supplying voltage.
- 2) Wait two minutes for warm-up during which green LED blinks.
- 3) When the green LED changes from blinking to lit, the module is ready for operation. LEDs will light depending on the degree of the pollution. See Fig. 1.
- 4) Turn off the supply voltage after measurement.

Fig. 1 LED status and pollution

Pollution	LED status
Clean	■ □ □ □ □
Low	□ ■ □ □ □
Middle	□ ■ □ ■ □
High	□ ■ □ □ ■

Fig. 2 Relationship between analogue output, LED



▼Note 1 : Fig. 2 shows the relationship between analogue output, LED status, and hydrogen concentration. The sensor also can respond to ethanol, acetone, etc.

▼Note 2 : Refer to the sensor leaflet on our website for sensor characteristics.

▼Note 3 : The module shows the pollution degree according to the change of **gas sensitivity** of the sensor. Fig.2 shows typical characteristics. The sensors are different sensor by sensor. Therefore, the modules may vary to a certain extent.

Notes:

- Do not directly apply high concentration gas to the sensor, such as lighter gas, ethanol.
- The sensor can respond to odorless gas.
- Place the module where the sensor is not directly influenced by wind.
- The sensor may respond to a rapid change in temperature and humidity.

Please contact

JANUARY, 2018

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In the interest of continued product improvement, we reserve the right to change design features without prior notice.