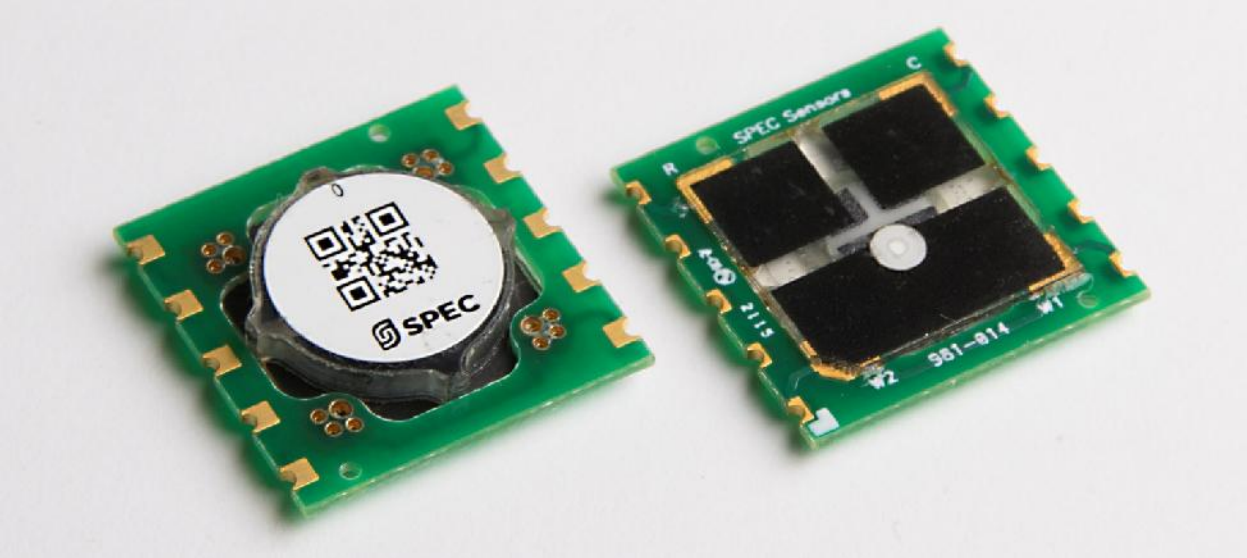
NEW! IAQ_100 Package 110-802

August 2015

15x15 Indoor Air Quality Sensor 100 ppm Package 110-802



DESCRIPTION

SPEC Sensors' IAQ_100 is a **S**creen **P**rinted **E**lectro**C**hemical sensor component specifically designed for the broad detection of gases associated with poor air quality: sulfides, alcohols, ammonia, odorous gases, and Carbon Monoxide.

BENEFITS

- **Zero Power Sensor**
  - **Sensor Circuit - < 10 uW max**
- **Cold operation - No Heating required**
- **Rugged Design- Not poisoned by sulfides, chlorides, NH3**
- **Stable Response– Not affected by humidity, CO2, N2, Ar, most saturated hydrocarbons, hexane**
- **Small Size& Low Profile - 20x20x3 mm**
- **Sensitive - In the ppm range**
- **Easy to Use - Linear Response**
- **Long Life - 10 years expected life**
- **Fast Response - < 20 seconds**
- **ROHS Compliant**

APPLICATIONS

- **Bad Air Quality Detection**
- **Indoor Air Monitor**
- **Air Purifier Controls**
- **Weather Stations**
- **Internet of Things**
- **Smart Homes**
- **Early Fire Detection**
- **Leak Detection**
- **HVAC Ventilation Control**

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Measurement Range	0 to 100 ppm (calibrated as CO equivalents)
Response Time to 90%	< 20 seconds typical
Sensitivity	12 +/- 3 nA/ppm (CO equivalents)
Expected Operating Life	> 5 years (10 years @ 23+/-3C; 40+/-10% RH)
Operating Temperature Range	-10 to 40 C (0 to 40 C continuous)
Operating Humidity – non-condensing	0 to 100% RH (15 to 95% continuous)
Power Consumption	< 10 uW circuit & ambient gas dependent
Zero Drift (Over Temperature Range)	+/- 2 ppm (CO equivalents)
Lower Detection Limit	0.1 ppm CO (depends on the gas & electronics)

CROSS SENSITIVITY

This sensor exhibits sensitivity to a wide range of gases. The following table lists the relative response of common gases.

Gas	ppm	Typical Response (as ppm CO)
Carbon Monoxide	**100**	**100**
Hydrogen Sulfide	100	370
Ozone	100	-70
Nitrogen Dioxide	100	-50
Sulfur Dioxide	100	70
Ethanol	100	140
Nitric Oxide (NO)	100	80
Chlorine	100	-50
n-Heptane	100	0
Ammonia	100	1
Methane	100	0
Saturated Hydrocarbons	100	0

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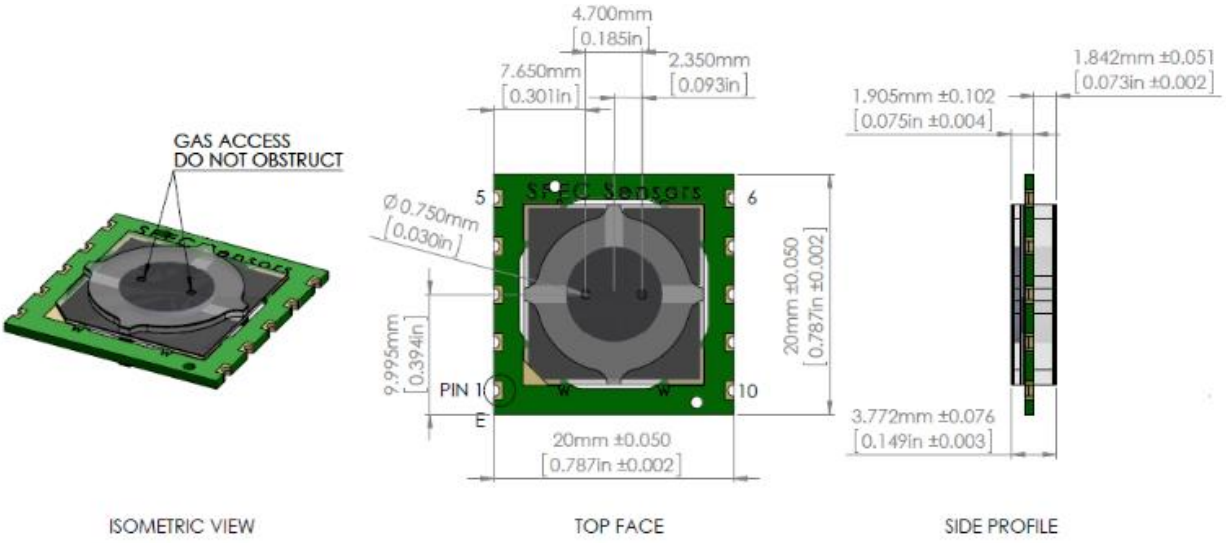
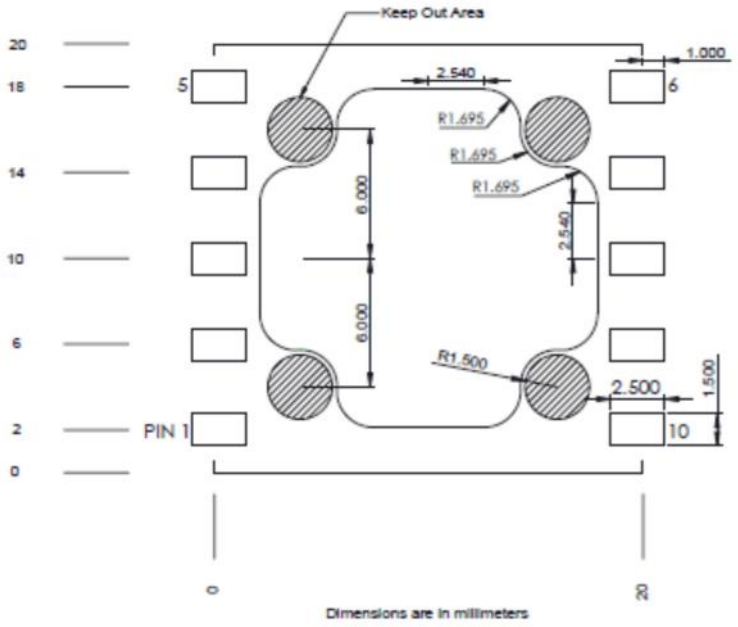
DIMENSIONS



PCB LAYOUT GUIDELINES



PIN	CONNECTION
1	WORKING
2	NC
3	NC
4	NC
5	REFERENCE
6	COUNTER
7	NC
8	NC
9	NC
10	WORKING

IMPORTANT PRECAUTIONS

All sensor designs are made for air monitoring @ 1 atm +/- 0.2 atm. As applications of use are outside our control, all information is given without legal responsibility. Customers should test under their own conditions to ensure the sensors are suitable for their requirements. Contact the factory to discuss any application beyond human breathable air to discuss specific concerns.

- Condensation and Water (1)
- Salt Water Contamination (1)
- High Temperature Operation (> 70C) for more than 1 month
- Low Humidity Operation (< 15% RH) for more than 3 months
- High levels of particles or soot (proper filtering is required)
- Extreme levels of pollutants may swamp sensor and/or circuits
- Do not place restrictions in front of sensor to block gas access

(1) Use of clean porous PTFE membrane or filter cap will address this concern)

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