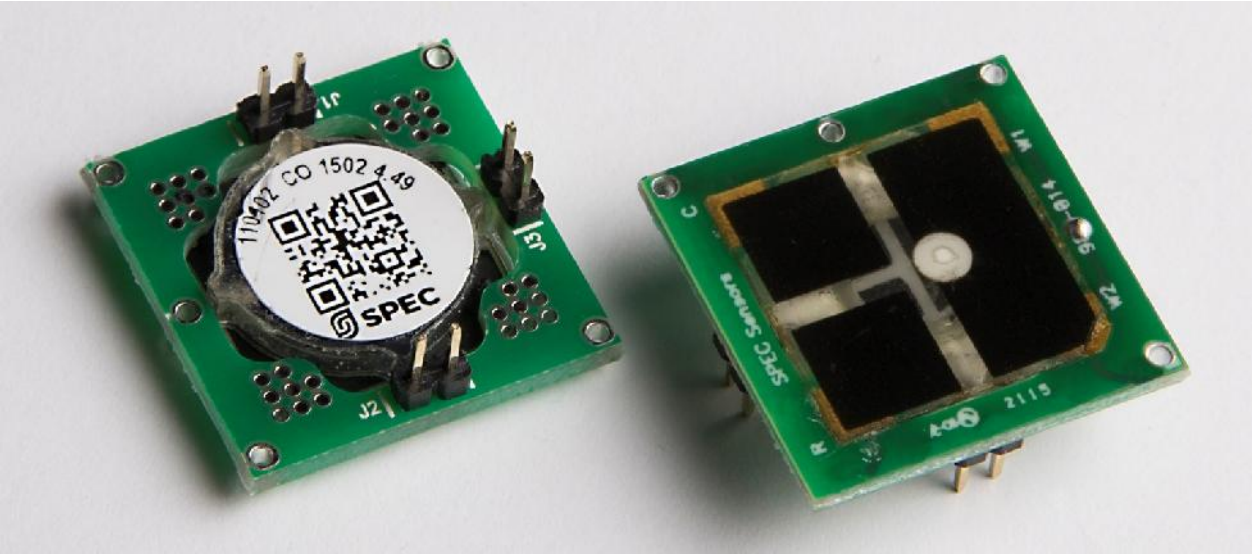
3SP_NO2_20 P Package 110-501

February 2016

15x15 NO2 Sensor 20 ppm P Package 110-501



BENEFITS

- **Small Size with Low Profile (20x20x3 mm)**
- **Long Life (10 years expected life)**
- **Fast Response (< 15 seconds)**
- **Low Power Consumption**
- **Individually Calibrated (NIST Traceable)**
- **ROHS Compliant**

APPLICATIONS

- **Air Quality Monitoring**
- **Industrial Safety**
- **Air Purification Control**

DESCRIPTION

SPEC's printed sensors offer the performance of the best quality electrochemical sensors at a fraction of the price. SPEC's printed sensors are also ultra-thin, offering easy integration into wireless, portable, and networked solutions. These sensors are ideal for health, environmental, industrial and residential monitoring, because of their high performance, low cost and small size.

Measurement Range	0 to 20 ppm
Resolution	< 20 ppb (instrumentation dependent)
Repeatability	< +/- 3 % of reading
Response Time	< 15 seconds typical
Sensitivity @ -200 mV bias	40 +/- 10 nA/ppm
Expected Operating Life	> 5 years (10 years @ 23+/-3C; 40+/-10% RH)
Operating Temperature Range	-40 to 50 C (-20 to 40 C recommended)
Operating Humidity Range – non-condensing	0 to 100% RH (15 to 95% recommended)
Power Consumption	10 to 50 uW (circuit & ambient NO2 dependent)

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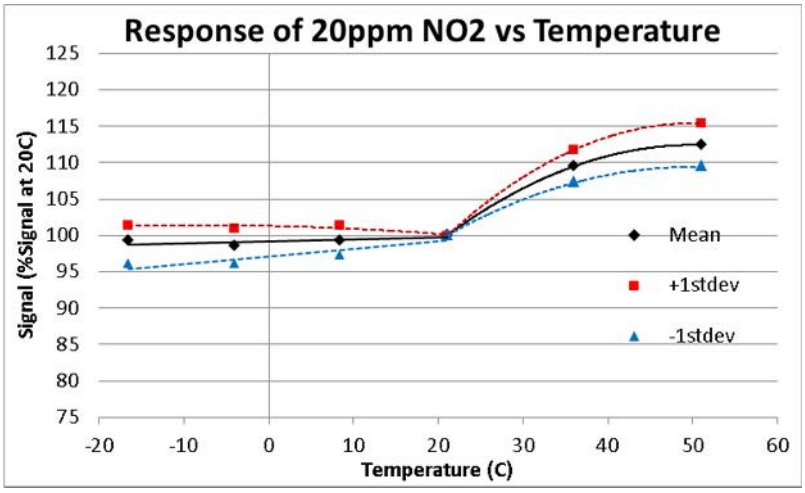
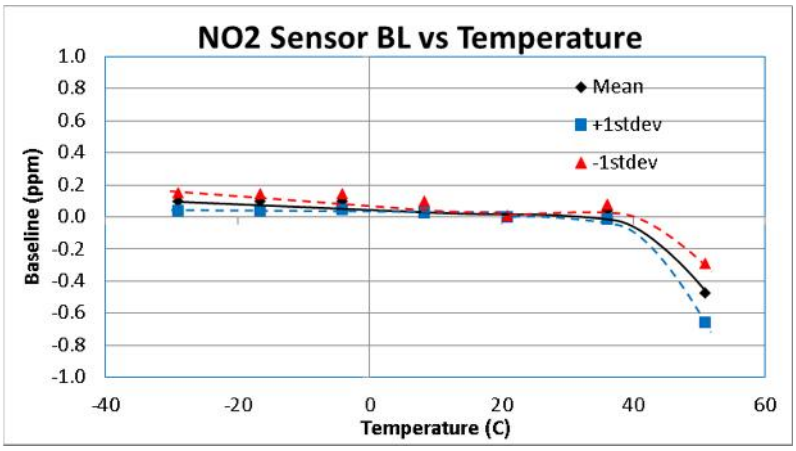
CROSS SENSITIVITY

Gas/Vapor	Concentration	Typical Response PPM NO2
Methane	500 ppm	< 0.1
Ammonia	100 ppm	< 0.1
Nitrogen Dioxide	10 ppm	10
Hydrogen Sulfide	25 ppm	-5.8
Carbon Monoxide	400 ppm	< 0.1
Ozone	5 ppm	5
Sulfur Dioxide	20 ppm	< 0.1
Nitric Oxide (NO)	50 ppm	0.2
Chlorine	10 ppm	< 0.1
n-Heptane	500 ppm	< 0.1

TEMPERATURE EFFECT

Temperature fluctuations have a predictable, easily compensated effect on the sensor signal**.** The figures at below shows the typical Temperature dependency the output and baseline of 3SP_NO2_20 sensors under constant humidity of 40-50 % RH. This is a very uniform and repeatable effect, easily compensated for in hardware or software.





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IMPORTANT PRECAUTIONS

All sensor designs are made for air monitoring @ 1 atm +/- 0.2 atm. Because applications of use and device implementation are outside our control, SPEC Sensors cannot guarantee performance in a given device or application, and disclaims any and all liability therefore. **Customers should test under their own conditions to ensure the sensors are suitable for their requirements.**

Contact the factory to discuss specific concerns that might damage the sensor performance or life.

- 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 Bias voltage
- Highly contaminated air over a prolonged period
- High levels of particles or soot (unless proper filtering is provided)

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

MARKING INFORMATION

Sensors have serial numbers printed with individual NIST Traceable calibration data printed on each sensor. (CO version shown)

	Unique Serial Number	Sensor Part Number	Target Gas	Date Code (YYMM)	Sensitivity Code (nA/ppm)
Alph-Numerica Code:		100105	CO	1510	2.78
2D Code:	101915010903	100105	CO	1510	2.78

STORAGE CONDITIONS

The calculated shelf life for sealed, packaged components is 12 months from the pack seal date, when stored in the factory-sealed bag under the following conditions:

A. Temperature: 5 to 25 °C
B. Relative Humidity: 20 to 80%
C. Pressure: 1 ± 0.2 atm
D. Storage Time: 12 months

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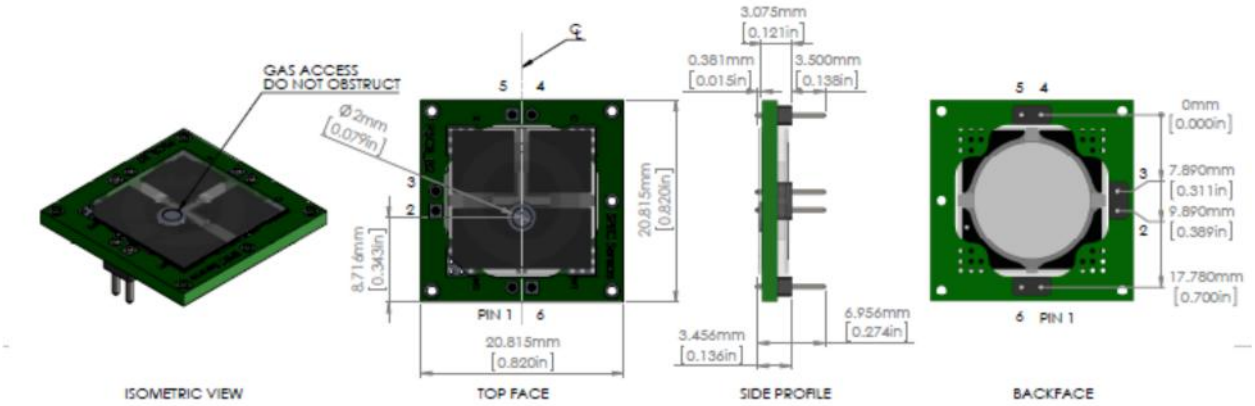
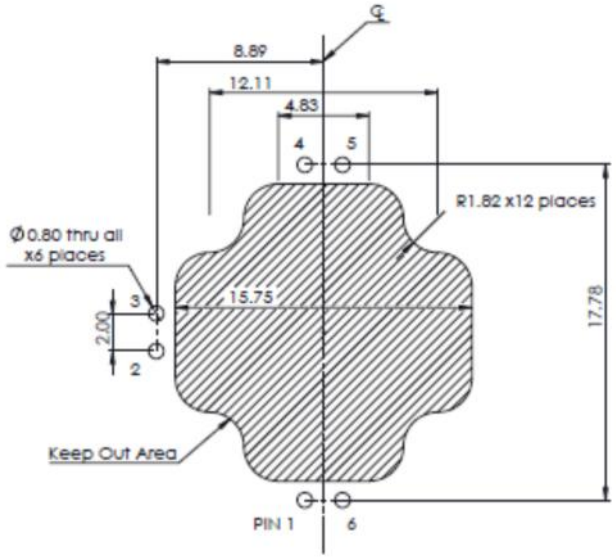
DIMENSIONS



PIN	CONNECTION
1	WORKING
2	N/A
3	N/A
4	REFERENCE
5	COUNTER
6	WORKING

PCB LAYOUT GUIDELINES



Dimensions are in millimeters

PIN	CONNECTION
1	WORKING
2	NC
3	NC
4	REFERENCE
5	COUNTER
6	WORKING

Notes:
-(6) 0.8 mm drilled diameter Holes
-Recommended Socket
(for removable sensor option)
P/N: 3M 950502-60102-AR
-If using socket, keep out area
may not be required. Use caution.