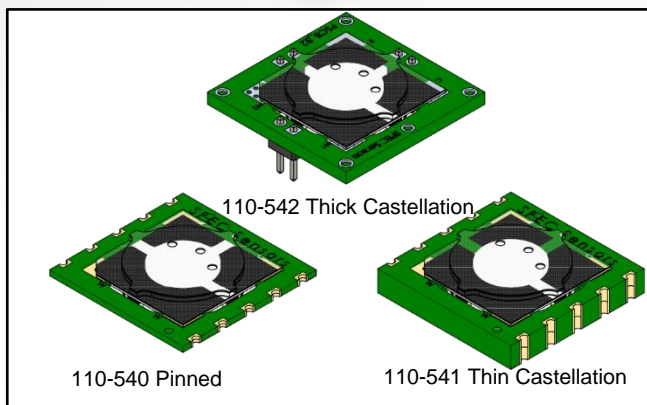
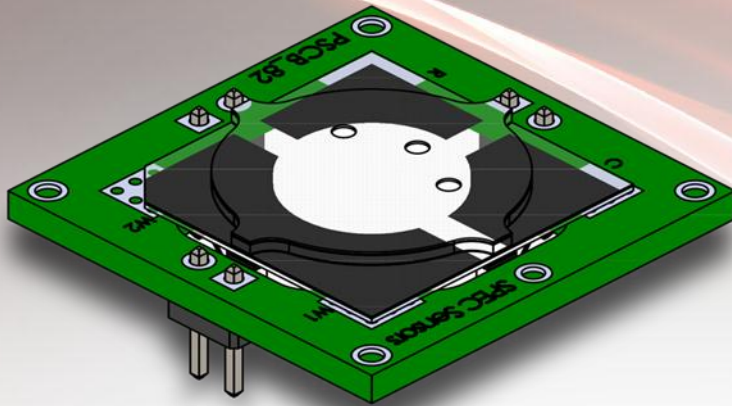


# High Sensitivity Nitrogen Dioxide (NO<sub>2</sub>) Sensor

## 110-54x



Interlink Electronics Screen Printed Electrochemical sensor (SPEC Sensor™) revolutionizes the current state of the art, enabling new applications in consumer, medical, and industrial safety. Interlink Electronics offer the performance of the best quality electrochemical sensors at a fraction of the price. The 110-54x family High Sensitivity Nitrogen Dioxide sensors are small and low-profile, facilitating easy integration into wireless, portable, and other IoT solutions. These sensors are ideal for health, food, environmental, industrial, and residential monitoring, because of their high performance, low cost, and small size. IE'S High Sensitivity Nitrogen Dioxide Sensor are available in three packages (110-540, 110-541, 110-542).

### FEATURES

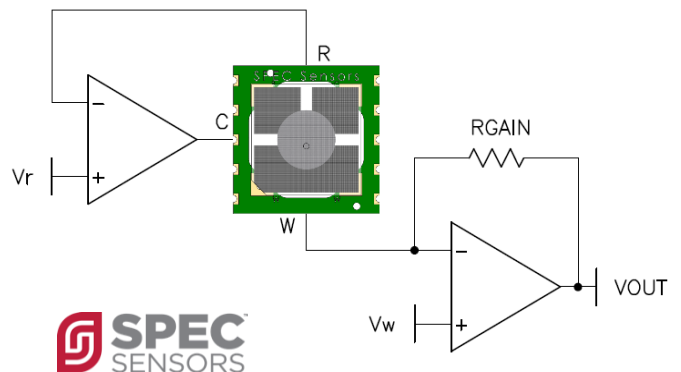
- Small Size & Low Profile
- Improved stability and low ppb sensitivity
- NEW Onboard Filter Removes Ozone!!!
- Accurate & Linear Response
- Long Life (10 +years)
- Ultra-Low Power < 50 uW max
- ROHS Compliant

### APPLICATIONS

- Outdoor Air Quality
- Indoor Air Quality
- Weather Stations
- Internet of Things
- Smart Homes
- Industrial Safety

The diagram below shows the basic measuring circuit for the 110-54x. The sensor generates an electric current which is converted into output voltage (V<sub>out</sub>) using a linear circuit like the one shown.

Notes: V<sub>bias</sub> = V<sub>w</sub>-V<sub>r</sub>



## SPECIFICATIONS

Parameter	Typical Value	Unit	Notes
Measurement Range	0 to 2	ppm	1,2,3
Lower Detection Limit	0.01	ppm	1,2
Resolution	0.005	ppm	1,2
Accuracy	± 5	%	1
Response Time – T (90)	< 25	mins	1
Sensitivity Range	-50 ± 25	nA/ppm	1
Expected Operating Life	10	years	1
Operating Temperature Range	-30 to 55	°C	3
Operating Humidity Range	10 to 95	%	3,4
Operating Pressure Range	0.8 to 1.2	atm	3
Operating Bias Range	0 to -25	mV	
Power Consumption	10 to 50	uW	2

1. At standard conditions (25 °C, 50% RH, 1 atm), unless otherwise indicated.
2. Depends on circuit design.
3. Recommended operating range. The sensor may be damaged, and warranty voided if operated outside the specified range. For the best optimum accuracy operate sensor at -20 to 40 °C and 15 to 90% RH.
4. Non-condensing.

## CROSS SENSITIVITY

Most chemical sensors exhibit some cross-sensitivity to other gases. The following table lists the relative response of common potential interfering gases, and the concentration at which the data was gathered.

Gas/Vapor	Concentration	Typical Response as PPM NO2
Nitrogen Dioxide	5 ppm	5
Hydrogen	200 ppm	0
Carbon Monoxide	400 ppm	0
Ozone	0.82 ppm	0
Sulfur Dioxide	10 ppm	0
Hydrogen Sulfide	25 ppm	0
Ethanol	200 ppm	0
Formaldehyde	10 ppm	0
Ethylene	50 ppm	0
Chlorine	10 ppm	1.3
Nitric Oxide	10 ppm	0
Ammonia	100 ppm	0

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