

NSI Multipoint Gas Sensor Arrays

Flexible sensing strips, blankets and custom configurations

01 REFERENCE ARRAY ARCHITECTURES



8-sensor sensing strip



16-location sensing blanket

8-sensor strip geometry	Sensor spacing:	25 mm
	Flex strip dimension:	230 mm × 30 mm
	Strip thickness:	< 2.5 mm
	Housing:	94 mm × 35 mm × 21 mm
16-location blanket geometry	Sensor spacing:	50 mm
	Blanket dimension:	221 mm × 229 mm
	Blanket thickness:	<2.5 mm
	Housing:	75 mm × 35 mm × 21 mm
Measurement / alarms	Individual resistance signals for indicative gas-presence monitoring; application-specific alarm thresholds.	
Gas response	Hydrogen (primary); also responds to CO, alcohol vapours and other reducing gases.	
Temperature	Sensor elements tested –15 to 60°C; complete-array operating range TBD.	
Relative humidity	0–100% RH design target; condensation mitigation requires additional power or protective packaging.	
Power supply	3.3–5 V DC to power electronics or charge a battery.	
Power / battery	Application dependent; days to years on 500 mAh battery	
Data / readout	Individual sensor resistance via BLE; nominal 1 Hz. Laptop visualization; mobile integration possible.	
Lifetime	Condition-dependent; years expected. In evaluation; Sensor elements retained response after 5+ years of storage.	

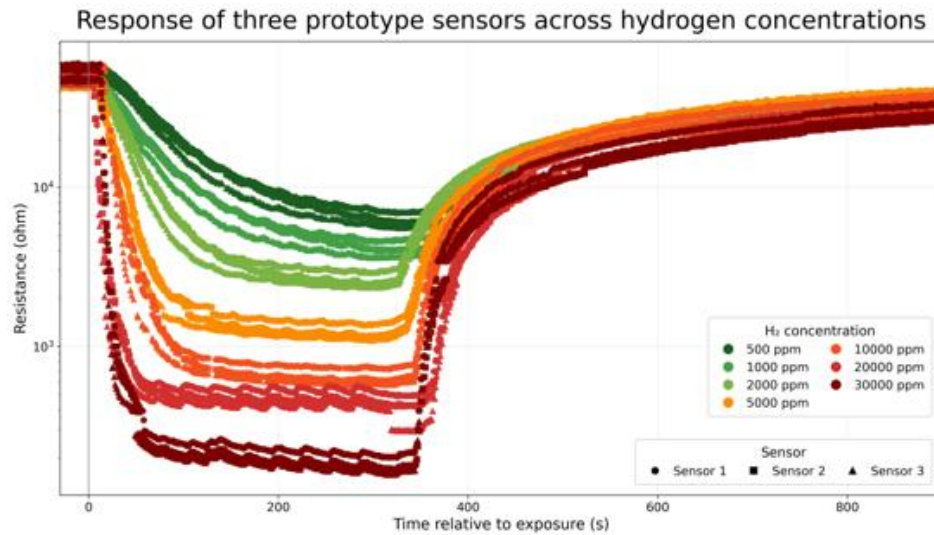
02 CUSTOM ARRAY ARCHITECTURES

Sensor count, spacing and geometry can be adapted to equipment and coverage needs. Array housing, power supply, microcontroller, communication protocol and alarm thresholds can be tailored to the system.

03 1206 SENSING ELEMENT SPECIFICATIONS

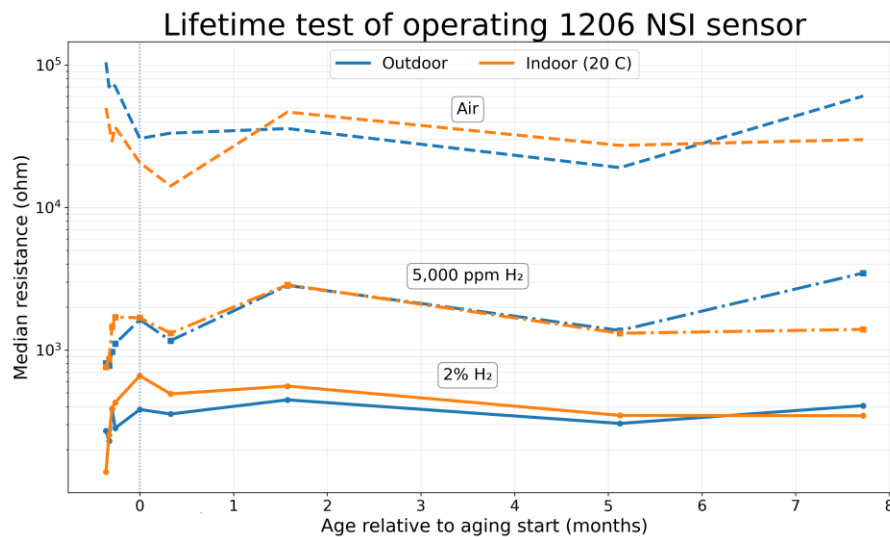
Form / interface	Passive chemiresistive 1206 SMD, 3.2 × 1.6 × 1.5 mm; simple resistive interface.
Operation	No heater required; millisecond-scale resistance readout.
H ₂ response	500–30,000 ppm tested (0.05–3%); seconds-scale indicative response.
Other gases	CO, alcohol vapours and other reducing gases; nonselective response.
Temperature / RH	Tested –15 to 60°C; long-term operation demonstrated below 75% RH.
Substrates / production	Standard FR-4 or Kapton; PCB-panel manufacturing.
Calibration	Indicative gas-presence monitoring with coarse alarm thresholds; routine recalibration is not anticipated.

04 MEASURED SENSOR PERFORMANCE (1206 SENSOR ELEMENT)



Measured exposures span 500–30,000 ppm H₂ (0.05–3%). Resistance differs by orders of magnitude between air and 2% H₂ (20,000 ppm, or 50% of the 4% hydrogen LEL). For indicative gas sensing, not suitable for calibrated and certified safety alarms.

05 ONGOING SENSOR LIFETIME TEST (1206 SENSOR ELEMENT)



Air, 5,000 ppm and 2% H₂ resistance values remain distinguishable over 6+ months in the ongoing lifetime test.

DISCLAIMER & PROPRIETARY TECHNOLOGY

Disclaimer: NSI sensors and arrays are prototype hardware for qualitative gas mapping. They are not certified safety devices and do not replace mandatory safety sensors.

Non-analysis: NSI sensing technology is strictly proprietary. Sensor strips and sensor elements must not be disassembled or analyzed without prior written permission from an officer of Novel Sensors Inc.

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