

# MPS™ Flammable Gas Sensor

## Next Generation Combustible Gas Sensor Delivering TrueLEL™

NevadaNano's Molecular Property Spectrometer™ (MPS) Flammable Gas sensor is powering the next generation of combustible gas detection. The MPS delivers unprecedented reliability, accuracy, and worker safety by simultaneously detecting 12 of the most common combustible gases, including Hydrogen. We call this TrueLEL™. No other sensor can accurately report 0-100% LEL across 12 different gases with just one factory calibration, the MPS never requires field calibration.

With its robust industrial design, the MPS doesn't drift, decay, or poison and requires no maintenance over its lifetime. And with its data-rich reporting capabilities, the MPS will instantly let you know if a fault exists and why.

The MPS Flammable Gas sensors accuracy is enhanced by integrated, real-time measurements and built-in compensation for temperature, pressure, and humidity. Gas concentration readings are accurate across the full environmental range including rapid environmental transients, delivering best-in-class false positive accuracy.

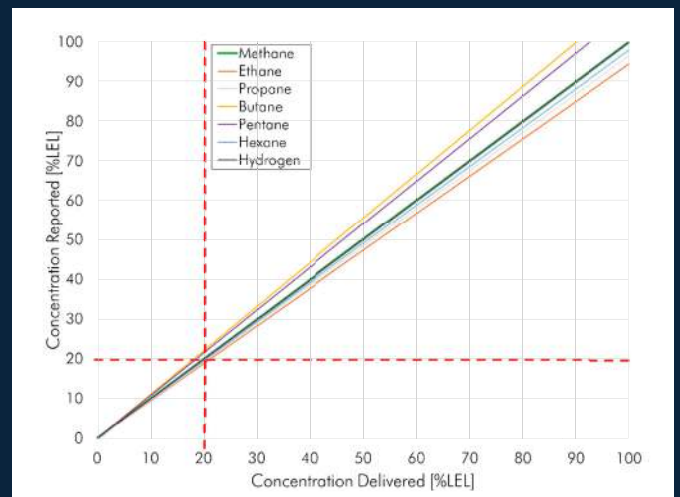


The MPS Flammable Gas sensor is certified intrinsically safe certified, stable, inherently immune to poisons, and never requires servicing or calibration. Sensor readings are output on a UART digital bus providing industry first gas classification or industry-standard analog output for easy integration and improved performance into existing designs.

Legacy flammable gas detection products cannot promise the same combination of accurate and reliable detection of multiple gases across the full environmental range.

## TrueLEL: Accurate measurement of 12 gases. No calibration. No correction factors.

Gas	Detection Range	Accuracy*
Butane (C <sub>4</sub> H <sub>10</sub> )	0-100% LEL	+5% LEL
Ethane (C <sub>2</sub> H <sub>6</sub> )	0-100% LEL	+5% LEL
Ethylene (C <sub>2</sub> H <sub>4</sub> )	0-100% LEL	+15% LEL
Hexane (C <sub>6</sub> H <sub>14</sub> )	0-100% LEL	+5% LEL
<b>Hydrogen (H<sub>2</sub>)</b>	0-100% LEL	+5% LEL
Isopropanol (C <sub>3</sub> H <sub>8</sub> O)	0-100% LEL	+5% LEL
<b>Methane (CH<sub>4</sub>)</b>	0-100% LEL	+3% LEL
Pentane (C <sub>5</sub> H <sub>12</sub> )	0-100% LEL	+5% LEL
<b>Propane (C<sub>3</sub>H<sub>8</sub>)</b>	0-100% LEL	+5% LEL
Propylene (C <sub>3</sub> H <sub>6</sub> )	0-100% LEL	+10% LEL
Toluene (C <sub>7</sub> H <sub>8</sub> )	0-100% LEL	+5% LEL
Xylene (C <sub>8</sub> H <sub>10</sub> )	0-100% LEL	+10% LEL



\*The MPS Flammable Gas Sensor has detection capability for many flammable gases. Contact us for more details.

# MPS™ Flammable Gas Sensor

## An Industry First: Automated Classification of Flammable Gases

The MPS Flammable Gas Sensor uses patented algorithms to classify and notify users of the detected gases or gas mixtures. This type of actionable information—unavailable with other sensor platforms—enables end users to quickly pinpoint and track the source of the leak.



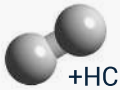
### Class 1 Hydrogen

Molecular Weight: 2.0 [g/mol]  
Density: 0.09 [kg/m<sup>3</sup>]  
Typical # Carbons: 0



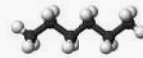
### Class 4 Light Gas (or Light Gas Mixture)

Avg. Mol. weight: 25-75 [g/mol]  
Avg. Density: 1.2-2.5 [kg/m<sup>3</sup>]  
Typical # Carbons: 1-4  
Example gases: Ethane, Propane, Butane, Isopropanol



### Class 2 Hydrogen Mixture

Avg. Mol. weight: 1-14 [g/mol]  
Avg Density: 0.1-0.6 [kg/m<sup>3</sup>]  
Typical # Carbons: varies  
\*This classification is unique as it guarantees the presence of hydrogen and another flammable gas



### Class 5 Medium Gas (or Medium Gas Mixture)

Avg. Mol. weight: 55-120 [g/mol]  
Avg. Density: 1.5-4.0 [kg/m<sup>3</sup>]  
Typical # Carbons: 2-8  
Example Gases: Pentane, Hexane



### Class 3 Methane/Natural Gas

Avg. Mol. weight: 16-19 [g/mol]  
Avg Density: 0.6-0.9 [kg/m<sup>3</sup>]  
Typical # Carbons: 1-2



### Class 6 Heavy Gas (or Heavy Gas Mixture)

Avg. Mol. weight: 80+ [g/mol]  
Density: 3.5+ [kg/m<sup>3</sup>]  
Typical # Carbons: 6+  
Example Gases: Octane, Toluene, Xylene (aromatic hydrocarbons)

The MPS Flammable Gas Sensor & TrueLEL delivers enhanced safety, reliability, and lower total cost of ownership.

### MPS Features & Benefits

#### Enhanced Safety across Many Applications and Wide-Ranging Environments

- Accurate LEL measurements for single gas exposures as well as multi-gas mixtures, including Hydrogen
- Built-in real-time environmental compensation
- Reduced costly and nuisance - false alarms

- Real-time auto gas classification – delivering complete answer – powering analytics

#### Trustworthy Performance and No Maintenance Required

- No calibration required
- Immune to poisoning
- Built in Self-Test
- 2 year warranty with 5+ year expected lifetime
- Certified intrinsically safe
- Low-power: 29 mW average

