



Molecular Property Spectrometer™ MPS™ Flammable Gas Sensor

Next Generation Configurable Gas Sensor

NevadaNano offers a highly configurable analog output as a drop-in replacement to conventional, legacy sensor types (NDIR, Cat bead). This configurability can prevent the need for circuit board changes and for additional certification.

Configurable voltage levels:

- 0% LEL [V]:** Baseline voltage of analog out for a fully initialized sensor in clear air.
 - Slope [V/%LEL]:** The change in the analog out voltage per percent LEL of gas detected. Used with 0%LEL level to generate the span voltage.
 - Warm up Phase 1:** The number of whole seconds after Power On Self Test (POST) that the sensor will output a programmable output voltage during sensor initialization.
 - Warm up Phase 2:** The number of whole seconds that the sensor will output a programmable output voltage during sensor initialization.
- Notes:** Warm up Phase 1 + Warm up Phase 2 = 105 Seconds. Two different voltage levels can be programmed during this time, or they can be programmed to be the same voltage. After this 105-second period, there is an additional, fixed 14-second internal initialization sequence prior to True LEL™ gas detection. The sensor will output the Warm up Phase 2 voltage during this time.
- Fault [V]:** The voltage output if the sensor detects a fault condition or detects flammable gas during the initialization sequence.

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 Methane, Natural Gas, Propane & Hydrogen
- Built-in real-time environmental compensation (-40 - 75° C and 0 to 100% humidity)
- Comprehensive sequence of self-checks
- Real-time auto gas classification – delivering complete answers – powering analytics

Trustworthy Performance and No Maintenance Required

- Zero false alarms
- Zero maintenance (no calibration)
- Zero poisoning
- Fast response time T90 <20 seconds
- Comprehensive sequence of self-checks
- 2 year warranty
- 10+ year lifetime



Configurable item	Warm-Up Phase 1	Warm-Up Phase 2	Slope [V/%LEL]	0% LEL [V]	100% LEL [V]	Fault [V]
Voltage range	0.1 to 2.9V	0.1 to 2.9V	0.008-0.025* Default = 0.016	0.2 to 1V Default = 0.4	(Slope*100)+0% LEL Default = 2.0	0.1 to 2.9V Default = 2.9
Time range (seconds)	0 to 105	105-(Warm up Phase 1)	NA	NA	NA	NA

* Choosing a Slope value less than 0.010V/%LEL will result in reduced gas reporting resolution

It is observed from the table above that there could be conflicting programmable voltages set, for example, the fault voltage programmed within the operating span voltage, etc. The customer needs to carefully consider the programmable options to ensure that the analog output voltage suits the application in all conditions. NevadaNano is not responsible for errors caused by incorrect parameter specification.