

# MPS™ Methane Gas Sensor Molecular Property Spectrometer™

NevadaNano's MPS™ Methane Gas Sensor quickly and accurately detects methane leaks in the most challenging environments - from Arctic wellheads to shale fields in South Texas. Real-time sensor arrays powered by the MPS Methane Gas Sensor continuously feed cloud-based monitors for immediate alerts and prioritization. 24/7 point detection is the ideal solution to achieve fast mitigation of fugitive methane emissions across the entire oil and gas supply chain.

The MPS Methane Gas Sensor is built on a robust Microelectromechanical-system (MEMS) platform that is inherently low power, poison and drift immune, and requires no field servicing or re-calibration intervals that can be measured in years. Built-in environmental compensation enables reliable, accurate performance across a range of harsh conditions, from -40°C to 75°C and 0% to 99% relative humidity. The MPS Methane Gas Sensor is a natural choice for accurate methane sensing in harsh, remote, and complex environments.

## Operating Principle

The Molecular Property Spectrometer (MPS) Methane Gas Sensor's transducer is a micro-machined membrane with an embedded Joule heater and resistance thermometer. The MEMS transducer is mounted on a PCB and packaged inside a flameproof enclosure open to ambient air. Presence of methane causes changes in the thermodynamic properties of the air/gas mixture that are measured by the transducer. The thermodynamic property measurements are processed by patent-pending algorithms to report accurate concentration.



## Features

- Built-in environmental compensation
- No cross-sensitivity to T, RH, P
- Inherently poison immune
- No field re-calibration required.
- 5+ year lifetime
- Low power — 29 mW typical
- 24/7 monitoring





## Gas Detection

**Sensor Range** 300 - 1500 ppm

**Accuracy** +/- 250ppm

Accuracy guaranteed across full environmental range. Please contact the factory for additional information.

**Resolution** 250 ppm

**Response Time (T90)** <20 seconds

**Calibration Interval** >5 years

**Sensor Lifetime** >5 years



## Environmental Operating Range

**Temperature** -40° to 75°C

**Humidity** 0 to 99 %RH

**Pressure** 80 to 120 kPa

Accuracy guaranteed in non-condensing environments. Alternative mechanical configurations can improve condensation robustness.



## Electrical

**Operating Voltage** 3.3 - 5.25 VDC

**Current Consumption [mA]** Average 8.9      Operating Range 5.0 - 21.0

**Digital Input/Output** Communication: 5 pin UART      Logic Level: 3.3 V programmable analog out (optional)



## Mechanical



**Dimensions** 16.6mm (H) x 20.0mm (Ø)

**Mass** 8.0 +/- 0.5 grams

**Body Material** Ultem PEI