

# Nasagas

*Methane and propane leak detector*

## Datasheet for commercial purpose



***mi* microplan**  
HVAC automatic test equipment  
*Your tests, We care*

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### **1. General information**

*Nasagas* is a gas detector for industrial use, supplied as optional equipment on the Microplan end of line test benches or for stand-alone use. The instrument can detect the presence of a gas leak in the circuits of the appliance under test and communicate to the Microplan bench or signal via a sound effect to the operator if the leak exceeds a given threshold. *Nasagas* has a high sensitivity to methane, propane, butane and other hydrocarbons.

Every other use is forbidden if not preventively agreed with Microplan S.r.l.

## 2. Instrument description

*Nasagas* is composed of the following components

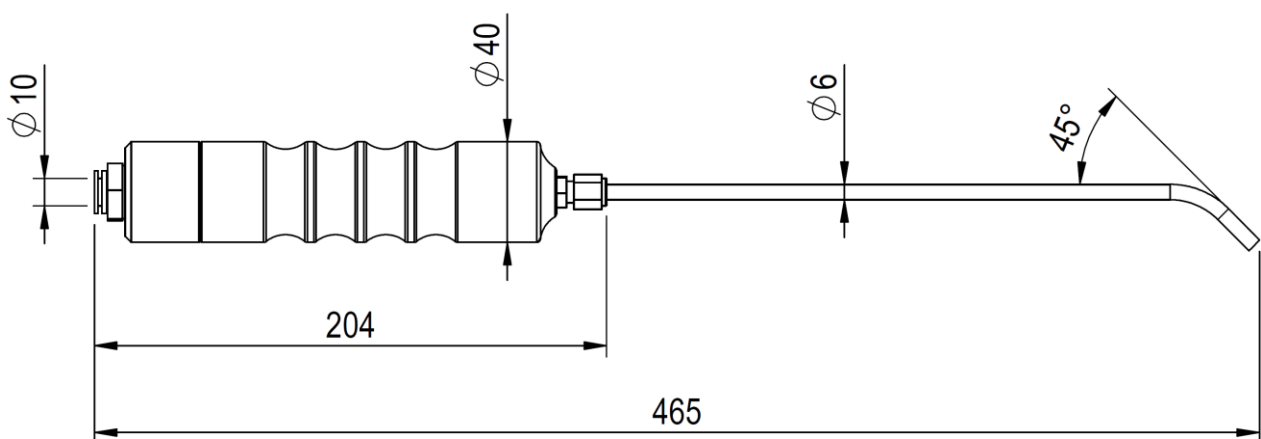
- A gas suction system, powered by compressed air, working with the depression obtained by a Venturi pipe. This circuit is installed on the hydraulic unit of the Microplan test bench.
- A sniffer, connected to the test bench with a thin sheath. The sniffer consists of a polizene handle and a metal suction nozzle. The gas, sucked through the suction nozzle, reaches the sensor located in the handle; at the end the gas is expelled through the outlet connection of the Venturi pipe of the main unit.
- An electric interface board, located in the main electric cabinet of the test bench.

When *Nasagas* is activated the results of the gas detection is displayed on the screen of the bench or on the display of the *Nasagas* itself in the stand-alone configuration.

Industrial environments could be gas polluted, therefore *Nasagas* can run a zeroing action before being activated by the test sequence or by the operator, setting the zero of its sensitivity according to the condition of the air in the environment: within certain limits, this compensates the mentioned pollution of the air.

### 2.1. Dimensions

Here below the main dimensions of the final part of the sniffer.



The default length of the sheath of the sniffer is 3 meters.  
Different length of the sheath is available on customer request.

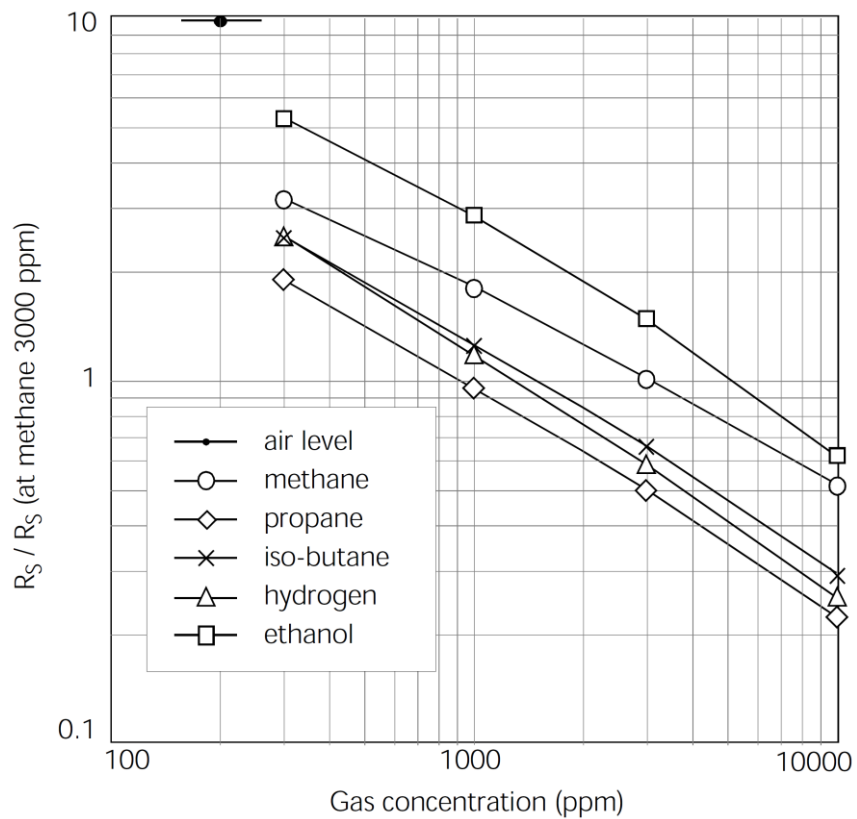
Some *Nasagas* configurations feature a separate box where the electronic is contained.

## 2.2. Technical data

Electric supply:	24VDC $\pm$ 10%
Power consumption:	2.4W
Air pressure inlet:	2 bar
Air consumption:	10 l/min
Gas detected:	methane, propane, butane and other hydrocarbons

The semiconductor gas sensor, mounted inside the sniffer, has a high sensitivity to methane, propane, butane and other hydrocarbons with reduced sensitivity to alcohol.

Here below the graph with the sensitivity characteristics of the sensor.



### 3. List of available models

#### 3.1. Nasagas 2.0 Integrated

This is one of the two versions of the sniffer designed to be integrated with Microplan test benches, or possibly with other systems under request.

As shown in the image below, all the elements of the sniffer, except the final handler, are mounted inside the test bench.

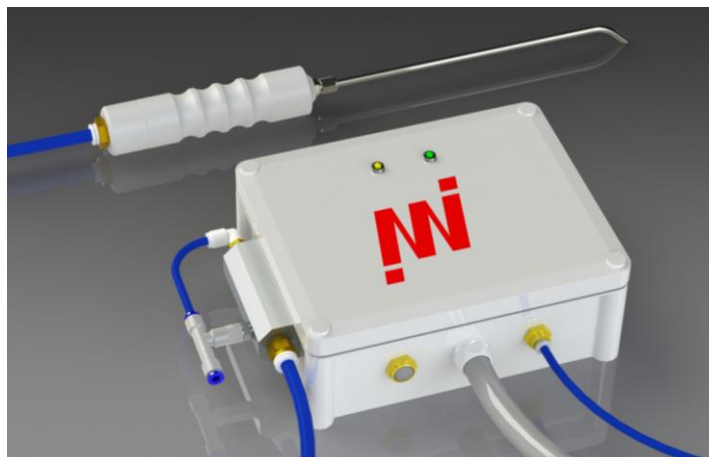


*Nasagas 2.0 Integrated* is activated by the test sequence program and the results of the gas detection is displayed on the screen of the bench.

#### 3.2. Nasagas 2.1 FER

This is the second type of *Nasagas* designed to be integrated with Microplan's test benches.

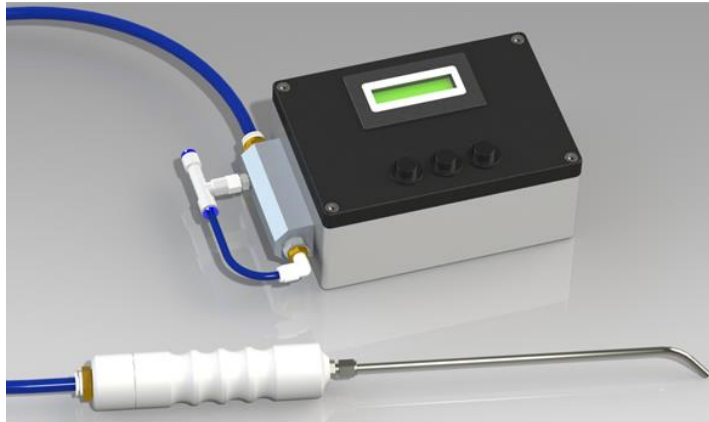
Its layout, with an external box, makes it very suitable for the integration in existing test benches too, as its installation is limited to the wiring of the analogic signal and the supply of compressed air.



*Nasagas 2.1 FER* is activated by the test sequence program too and the results of the gas detection is displayed on the screen of the bench.

### 3.3. Nasagas 2.1 SA

This item is designed to work “stand-alone”, so without inputs from or outputs to any external system.



Nasagas SA 2.1 is composed of a main unit and a sniffer, connected to each other by a flexible sheath.

The main unit is equipped with a display and three multifunctional keys for the setting operations. A pulse sound signal varies its frequency as the aspirated gas concentration changes: the higher is the gas concentration the higher is the pulse sound frequency. As the percentage of gas vary a visual bar on the display shows the saturation level of the gas sensor in the instrument.

## 4. How to use Nasagas

### 4.1. Preliminary considerations

#### NOTICE

When not used by the operator, the sniffer should be placed where the air is as clean as possible, to prevent the instrument from detecting an excessive percentage of gas during the zero phase. This could affect the instrument's detection capabilities

#### WARNING

From the Venturi pipe outlet connection of the Nasagas, located on the hydraulic unit of the test bench, an air-fuel mixture may come out; for this reason, the outlet of the Nasagas suction system must be connected, through approved piping for fuel gas, to a suitable classified zone, where gas sucked up by Nasagas can be released with no danger.

#### NOTICE

If the instrument is supplied with an air pressure lower or higher than 2 bar, the instrument performance may deteriorate significantly.

## 4.2. How the instrument works

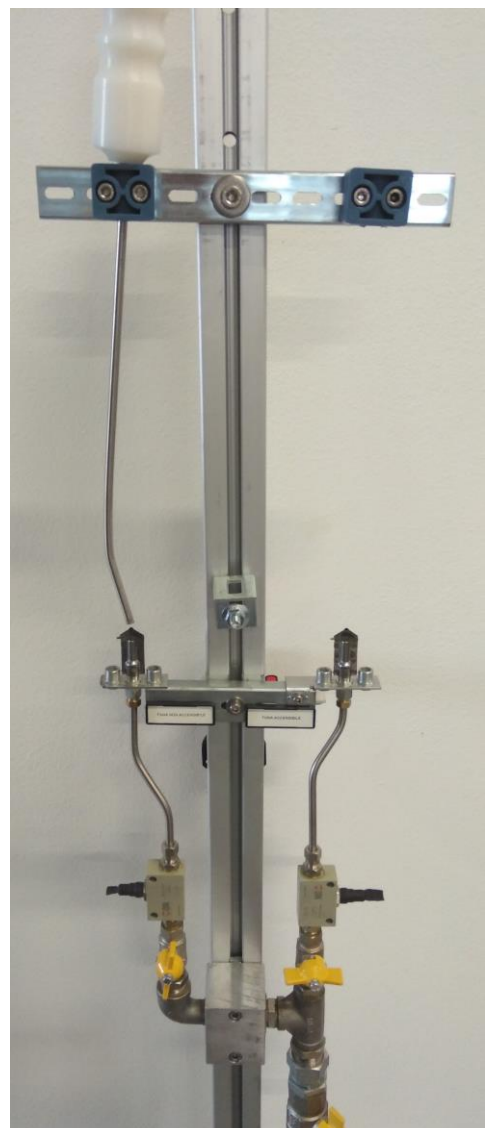
Nasagas is neither a measuring instrument, nor an analyzer, it is a detector. It belongs to the sniffers category because it has been designed to detect a leak on the outside of a circuit.

A sniffer, whatever is the type, cannot measure neither a valid concentration of a leaking gas, nor the flow rate of the leak. The signal obtained from a sniffer, in fact, is highly dependent on how far the sensor is from the leaking point, on the direction of the hole that leaks, on the density of the leaking gas (natural gas disperses upwards, LPG downwards), on the ventilation conditions around the point of leak and many other factors.

## 4.3. Sensitivity test

The gas sensor, over time and due to use, loses progressively sensitivity. Therefore, periodically, it is recommended to perform a test to check the detection level of the Nasagas against a calibrated leak. To do this, we suggest to predispose a small methane burner equipped with an adjustable flow restrictor on the gas pipe or, alternatively, a gas circuit with a pressure regulator and a calibrated nozzle. The sensitivity test can be performed in the following way:

- Activate the suction of the Nasagas, with the sniffer in a zone with clear air.
- Check that the signal is less than 50% of the full scale. If not, the sensor must be replaced.
- Open the gas and ignite the torch flame; gradually reduce the flow of gas to the burner until the flame goes out and it is no more ignitable. Alternatively pressurize the gas circuit with the calibrated nozzle.
- Place the tip of the sniffer where the point of origin of the flame was (or in proximity of the calibrated nozzle).
- If the signal of the sensor increases over a set value (e.g. 50%), the sensitivity of the sensor is still acceptable.



## 5. Maintenance and spare parts

The Nasagas includes two components subject to maintenance or replacement.

- Gas sensor: please replace it every 4 months or when the sensitivity of the Nasagas is no longer satisfactory.  
It is recommended to keep at stock at least two spare sensors for each Nasagas.
- Sintered filter: please provide a periodic replacement of the filter located inside the handle at intervals not exceeding one year.  
It is recommended to keep at stock at least one spare sintered filter for each Nasagas.