

H2 SENSOR

Simply, Smart Sensor Safety Detect Hydrogen

Reference : H2.SENSOR



Description

Eliminate the risks of using Hydrogen as a Carrier Gas in GC Analysis

Hydrogen has long been considered the best carrier gas for gas chromatography. In many cases, hydrogen has become the carrier gas of choice since it offers fast analysis, high efficiency, reduced costs, and prolonged column life.

Hydrogen the De Facto Choice for GC Laboratories

To underscore the status of hydrogen as the de facto carrier gas of choice, ASTM subcommittee D0.204 for Hydrocarbon Analysis strongly recommends developing new methods with hydrogen.

The advantages of hydrogen are clear; but it does have a significant downside. Hydrogen is an explosive gas! An undetected gas leak can occur with a broken column or a leaking connection. The danger is that an undetected gas leak could result in an explosion in the GC oven placing laboratories and their personnel at risk.



Benefits & Savings

FAST ANALYSIS

The diffusion rate of hydrogen and helium are roughly the same (both 3-4 times faster than N₂), but hydrogen is half as viscous as helium and therefore the linear gas velocity is higher and retention times are shorter in isothermal analysis.

HIGH EFFICIENCY

Hydrogen has the flattest Van Deemter curve. Compared to helium and nitrogen, hydrogen needs the lowest plate number to achieve the same resolution over a large range of linear velocity.

PROLONGED COLUMN LIFE

For some applications, a temperature program can be used to speed up the analysis when using helium as a carrier gas, but this may result in a shorter lifetime of the column due to higher temperatures.

REDUCED COSTS

Helium, a rival to Hydrogen has its advantages as a carrier gas for GC ; but it also has key disadvantages which are cost and availability. A tank of GC quality hydrogen is approximately 3 times less expensive than its helium equivalent. The price disparity between the two will not improve as the existing helium reserves are drying up and the demand is increasing across different industries. The use of a hydrogen generator also provides long term cost savings. A hydrogen generator allows for the production of the gas on an as needed basis ; which avoids the costs associated with storing gas.

Standard Features

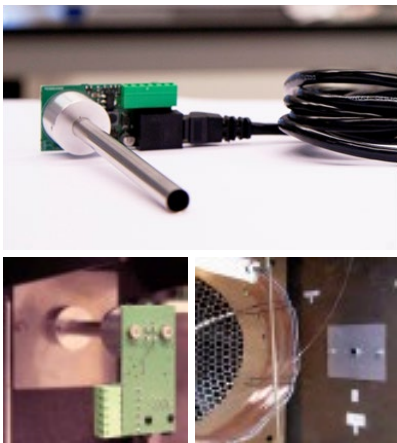
- Explosion risk eliminated
- Lower operating costs
- Optical and acoustic alarms including an SMS alarm text message
- Automatic alarm activation
- Automatic carrier gas switching from H₂ to N₂
- Automatic stop signal sent to the GC
- Easy Calibration
- Easy to Install
- Compatible with all GC's
- Leak Detection indicates analysis is compromised
- Multi-sensor capability, supports up to 4 sensors :
 - Hydrogen
 - Hydrogen as Leak Detector
 - Temperature
 - Barometric Pressure
 - Level (liquid) weight

H2

The ability to safely detect hydrogen leaks in the GC oven is critical to any laboratory using hydrogen as a carrier gas. The new H2 Sensor ensures the safe use of hydrogen in GC analysis. It does this by constantly monitoring the H2 concentrations in the GC oven and automatically switching to an inert gas when typically 25% LEL is reached ; this important feature eliminates the risks and at the same time ensures safety.

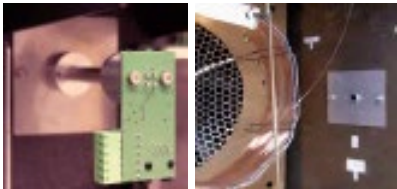
Mode of operation

Sensor is installed in the GC oven for continuous monitoring of H2 concentrations in the oven air. The measured gas concentration shown on the LCD screen of the external controller. When the hydrogen concentration reaches the user defined level, typically between 25% and 50% LEL (equal to 1% - 2% by Vol H2), the LCD screen starts flashing, an acoustic signal is transmitted and the carrier gas will automatically be switched to an inert gas.



Who benefits from using the simply, smart H2 sensor ?

All GC and online GC's using hydrogen as a carrier gas.



Simply, Smart,
Multi-Sensor installed in GC oven

MODELS	H2 SENSOR
GENERALS INFORMATIONS NITROGEN	
Multiple Sensors	Max. 4 sensors individually controlled
Integration	Gas Sensor integrated in GC oven, carrier gas switch and LCD display are in an external controller
Lower Explosion Limit	Catalytic Pellistor gas sensor, linear range of 0 - 2% H2 (0 - 50% LEL)
Detection range	0 - 50% LEL (0 - 2.0% by vol. H2)
Safety	User defined alarm level optical and/or acoustic alarm up to 50% LEL
Instrument readings	Provide real time sensor readings with alarm levels, channel states
User Interface	User menu for configuration (password protected)
Valve	High pressure 3 way solenoid valve
Dimensions (W x H x D)	11 x 5.5 x 14 cm (4.3" x 2" x 5.5")
Open operating temperature	Up to 450°C (842°F) - 24VDC power adapter



GoldService
Satisfaction Guaranteed

The products are guaranteed 24 months*. Beyond, your investment continues to be supported by our maintenance program [Gold Service]. Our world class technical assistance offers Programmed preventive maintenance to ensure optimal performance of your Gas generator F-DGSI and a priority intervention in case of failure.

*Year 2 of warranty subject to generator being serviced at end of the first year by a F-DGSI-approved agent in accordance with fixed annual maintenance schedule. For full terms and conditions, visit www.f-dgs.com

GS: **TECNOLOGIA APLICADA**

