



# COMBINE HYDROGEN/ ZERO AIR GAS GENERATOR SERIE H2-ZA



This unit can provide both hydrogen gas and zero grade air to FID detectors on Gas Chromatographs .

Hydrogen gas is produced from deionized water using a Proton Exchange Membrane Technology. Zero air is produced by purifying compressed air sourced from the air network to a total hydrocarbon concentration of < 0.05 ppm (measured as methane).

**An interchangeable top panel allows for direct mounting of the three models of H2 generator ( needs only to specific the H2 model).** Units are complete systems with highly reliable components engineered for easy installation, operation, and long term performance.

## APPLICATIONS :

- \*Fuel gas and air Flame Ionization Detectors
- \*Flame Photometric Detectors
- \*Total Hydrocarbon Analyzers.

## Benefits and Savings

### ■ Improved chromatograph result

The reduction of hydrocarbons on zero air part, including methane to < 0.05 ppm decreases the background noise level and gives the baseline much better stability, considerably increasing detector sensitivity and ensuring precise analytical results.

The use of hydrogen as a carrier gas allows lower temperature elution, thus extending the life of the chromatograph column. Hydrogen as a carrier gas is faster and more sensitive than the more-expensive helium. Run time savings of 25% to 35% without a decline in resolution.

### ■ Increased laboratory efficiency

A constant, uninterrupted gas supply of guaranteed purity eliminates interruptions of analyses to change cylinders and reduces the amount of instrument re-calibrations required.

### ■ Save money

The unit only requires connection to a suitable socket and to external source of compressed air for the zero air part  
The investment can be paid back in less than one year

### ■ Improved safety

The very limited internal volume (less than 50 ml for H2) allows safe use of the gas generators where the use of cylinders is risky or prohibited.

The application of tested safety technologies stops the unit in the event of leaks or malfunctions

### ■ Simple installation

Gas generators can be installed in the laboratory, on or under a bench, eliminating the need for long gas lines from cylinders secured elsewhere

## Standard Features

**An interchangeable top panel allows for direct mounting of the three models of H2 generator ( needs only to specific the H2 model)**

### FOR ZERO AIR PART :

- HC < 0.05 ppm
- CO < 0.05 ppm
- External clean and dry air compressor required at maxi. 7 bar

### FOR HYDROGEN PART :

- 3 models available : ND-H2, PAR-H2 and WM-H2 series
- Flow rate available : 100,160, 250, 400, 500, 650, 800, 900 and 1000 cc/min depending on H2 models
- PEM technology
- Pressure up to 12 bar
- Patented gas/water separator electronically controlled
- LCD touch screen :real time outlet pressure, water quality, water level, autodiagnosics with alarms
- Remote PC monitoring in standard via RS232 or RS485 to interface the unit with customer's PC software
- Water tank protected and filtered
- Remote wireless display control in option
- Autorefill included in standard
- Capabilities allowing to work in parallel mode





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**Hydrogen** is produced using distilled or deionized water from hydrolysis, through a polymer membrane. Electrolytic dissociation separates the water into its two main components: hydrogen ready for analytical use, and oxygen that is released into the air.

No acid nor alkaline solutions are used in the hydrogen generation cycle.

The drying system is different following the model used :

- ND-H2 Series : the dessicant cartridge is easy to remove for replacement or for refilling
- PAR-H2 Series : used a single column dryer with programmable automatic regeneration via an integrated calendar
- WM-H2 Series : no dessicant cartridge maintenance is required : used a double column dryer with automatic regeneration

**Zero Air part** use three steps to transform ambient air into analytical grade air.

**Step 1: Pre-filtration.**

The external oil-free compressor delivers air through a high efficiency filter that traps any particles that may damage the system. The filter has an automatic purge and traps oil, water and any other particles larger than 5 microns in size.

**Step 2: HC and CO trapping.**

The air leaving the filter enters a high-temperature platinum catalyser, which through oxidation eliminates hydrocarbon molecules down to < 0.05 ppm.

**Step 3: Final filtration.**

A high-efficiency filter is used to prevent any kind of particles from entering the instrument.

## Technical Specifications

### ZERO AIR SPECIFICATIONS

<b>Total HC out</b>	< 0.05 ppm
<b>Total CO out</b>	< 0.05 ppm
<b>Pressure out</b>	@ 5 bar

### HYDROGEN SPECIFICATIONS

H2 Models	ND-H2 Séries	PAR-H2 Séries	WM-H2 Séries
<b>Flow rate (cc/min)</b>	100,160, 250, 400	100,160, 250, 400, 500, 650, 800, 900	100,160, 250, 400, 500, 650, 800, 900, 1000
<b>Purity</b>	> 99.9995%	> 99.9999%	> 99.99999%
<b>Max. Pressure</b>	@ 12 bar		
<b>Internal water tank</b>	2.3 liters with autorefill included		
<b>Temperature range</b>	From 5°C to 35°C		
<b>LCD touch screen</b>	Resolution 128x64 touch screen (operating parameters, system status, alarms)		
<b>Options</b>	<ul style="list-style-type: none"> <li>- communication port : RS-232, RS-485, USB, LAN</li> <li>- Remote wireless display control</li> <li>- Possible to working in parallel mode</li> </ul>		
<b>Water quality</b>	Deionised or distilled > 10MΩ		
<b>Dimensions (L x H x P)</b>	40x63x53 cm		
<b>Outlet port</b>	1/8 Swagelock		
<b>Weight</b>	From 20 to 35kg depends of model		
<b>Power consumption</b>	From 200W to 800W depend of model		

Reference	H2 Flow rate	Zero air Flow rate	Reference	H2 Flow rate	Zero air Flow rate
H2/AIR 150-1.5	150 cc/min	1.5 L/min	H2/AIR 150-3	150 cc/min	3.0 L/min
H2/AIR 250-1.5	250 cc/min	1.5 L/min	H2/AIR 250-3	250 cc/min	3.0 L/min
H2/AIR 400-1.5	400 cc/min	1.5 L/min	H2/AIR 400-3	400 cc/min	3.0 L/min
H2/AIR 500-1.5	500 cc/min	1.5 L/min	H2/AIR 500-3	500 cc/min	3.0 L/min
H2/AIR 650-1.5	650 cc/min	1.5 L/min	H2/AIR 650-3	650 cc/min	3.0 L/min
H2/AIR 800 -1.5	800 cc/min	1.5 L/min	H2/AIR 800 -3	800 cc/min	3.0 L/min
H2/AIR 900-1.5	900 cc/min	1.5 L/min	H2/AIR 900-3	900 cc/min	3.0 L/min
H2/AIR 1000-1.5	1000 cc/min	1.5 L/min	H2/AIR 1000-3	1000 cc/min	3.0 L/min



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