



High Purity Hydrogen Generators

THE PAR-H₂ AND WM-H₂ series provide a higher purity grade of hydrogen and can be used for GC and GC/MS carrier gas application as well as ICP-MS reaction gas.

THE PAR-H₂ uses a single column dryer with programmable automatic regeneration via an integrated clever calendar.

THE WM-H₂ uses an exclusive double gas column dryer regeneration system thus eliminating all down time for maintenance that is typical of other systems on the market, guaranteeing the best hydrogen purity at all times.

MAIN FEATURES AND BENEFITS

- **Purity PAR-H₂**
99.9999%, O₂ < 0.1ppm, H₂O < -70°C.
- **Purity WM-H₂**
99.99999%, O₂ < 0.1 ppm, H₂O < -70°C.
- No maintenance to replace the dessicant cartridge.
- 12 bar pressure available, 16 bar in option.

High level of operator safety

- Unique 9 stage, fail safe, explosion protection system.
- Automatic internal / external H₂ leak detection.
- Patented gas/water separator electronically controlled.
- H₂ sensor in option for carrier gas use.

Good user interface

LCD touch screen showing in real time H₂ pressure, H₂ flow rate, dessicant cartridge saturation %, water quality, water level, and status of the system with auto-diagnostic in case of alarms.

Class leading PEM cell

- Continuous monitoring of vital parameters.
- Unique cell construction and water quality management ensure reliability and longevity of the cell.

Unique features

- Canister filling mode in serie to fill a large canister with the pressure of 16 bar to allow to have a cartridge that can be used for portable GC in the field.
- USB port available allowing the units to be connected to the PC in order to upgrade or train the user by internet.
- Auto refill water tank in standard for most of the range.
- Remote PC monitoring in standard via RS232 or RS485 to interface the unit with customer's PC software.

THE BENEFITS TO USE HYDROGEN AS CARRIER GAS

- Improved chromatograph result
- Using H₂ as a GC carrier gas increases analysis speed and sensitivity when compared to helium and nitrogen.
- When H₂ is used as a carrier gas, as it requires lower elution temperatures and thus improves the column.

- Using hydrogen as GC carrier gas significantly increases analysis speed and separation efficiency compared to Helium. Gas costs and downtime are also reduced due to the change from a cylinder based supply.
- Get all the benefits of the hydrogen generator as carrier gas... without taking any risk!

The sensor can be connected directly with the Alliance hydrogen generators. It continuously monitors the atmosphere in the GC oven and transmits the data to the hydrogen generator. When the hydrogen concentration detected exceeds the threshold of safety, the hydrogen generator will be automatically blocked and reported an audible and visual alarms. The oven is immediately shut off and the cooling flap opens.





SERIES PAR-H₂ / WM-H₂ Hydrogen Gas Generators

APPLICATIONS : GC-FID / NPD / FPD / TCD / GC-carrier gas / GCMS / ICPMS / collision cell / THA

Specifications and Ordering Information

Models	Flowrate ml/min	Purity %	H ₂ dryer	Pressure	Water reservoir capacity with auto refilled included	Communication VAC	Voltage	Electrical Consumption	Dims W xHxD cm	Weight Kg
PAR-H2 120	120	99.9999	Programmable auto regeneration cartridge	12 bar	2.3 L	RS232, RS485, USB port in series	90 - 240	280 W	30 x43 x 43	15
WM-H2 120	120	99.99999	Auto-drying technology	12 bar	2.3 L	RS232, RS485, USB port in series	90 - 240	280 W	30 x43 x 43	15
PAR-H2 180	180	99.9999	Programmable auto regeneration cartridge	12 bar	2.3 L	RS232, RS485, USB port in series	90 - 240	280 W	30 x43 x 43	15
WM-H2 180	180	99.99999	Auto-drying technology	12 bar	2.3 L	RS232, RS485, USB port in series	90 - 240	280 W	30 x43 x 43	15
PAR-H2 260	260	99.9999	Programmable auto regeneration cartridge	12 bar	2.3 L	RS232, RS485, USB port in series	90 - 240	280 W	30 x43 x 43	15
WM-H2 260	260	99.99999	Auto-drying technology	12 bar	2.3 L	RS232, RS485, USB port in series	90 - 240	280 W	30 x43 x 43	15
PAR-H2 400	400	99.9999	Programmable auto regeneration cartridge	12 bar	2.3 L	RS232, RS485, USB port in series	90 - 240	280 W	30 x43 x 43	15
WM-H2 400	400	99.99999	Auto-drying technology	12 bar	2.3 L	RS232, RS485, USB port in series	90 - 240	280 W	30 x43 x 43	15
PAR-H2 500	500	99.9999	Programmable auto regeneration cartridge	12 bar	2.3 L	RS232, RS485, USB port in series	90 - 240	450 W	30 x43 x 43	25
WM-H2 500	500	99.99999	Auto-drying technology	12 bar	2.3 L	RS232, RS485, USB port in series	90 - 240	450 W	30 x43 x 43	25
PAR-H2 650	650	99.9999	Programmable auto regeneration cartridge	12 bar	2.3 L	RS232, RS485, USB port in series	90 - 240	450 W	30 x43 x 43	25
WM-H2 650	650	99.99999	Auto-drying technology	12 bar	2.3 L	RS232, RS485, USB port in series	90 - 240	450 W	30 x43 x 43	25
WM-H2 800	800	99.9999	Auto-drying technology	12 bar	2.3 L	RS232, RS485, USB port in series	90 - 240	450 W	30 x43 x 43	25
WM-H2 900	900	99.9999	Auto-drying technology	12 bar	2.3 L	RS232, RS485, USB port in series	90 - 240	560 W	30 x43 x 43	25
WM-H2 1000	1000	99.9999	Auto-drying technology	12 bar	2.3 L	RS232, RS485, USB port in series	90 - 240	560 W	30 x43 x 43	25
WM-H2 1200	1200	99.9999	Auto-drying technology	12 bar	2.3 L	RS232, RS485, USB port in series	90 - 240	560 W	30 x43 x 43	25



Hydrogen Gas Generators

THE BENEFIT OF USING H₂ AS FUEL GAS

- Eliminates inconvenient and dangerous hydrogen cylinders from the laboratory.
- Increases the accuracy of analyses and reduces the cleaning requirement of the detector.

THE LC-H₂ AND ND-H₂ series are ideal for supplying hydrogen fuel gas to all known combustion detectors used routinely in GC and THA. These series use a desiccant cartridge which can be refilled or replaced by a new one.

MAIN FEATURES AND BENEFITS

- **Purity**
99.9999%, O₂ < 1ppm, H₂O < -55°C.
- **7 bar pressure for LC-H₂, 10 bar pressure for ND-H₂.**
- **Limited routine maintenance :**
Replacing / Regenerating of desiccant cartridge, water filter and deioniser bag.
- **H₂ cartridge saturation sensor**
correlated with the flow produced.
- **Stackable with Zero Air generator**
2 solutions in 1. Forming a FID gas station.

High level of operator safety

- Unique 9 stage, fail safe, explosion protection system.
- Automatic internal / external H₂ leak detection.
- Patented gas/water separator electronically controlled.
- H₂ sensor in option for carrier gas use.

Class leading PEM cell

- Continuous monitoring of vital parameters.
- Unique cell construction and water quality management ensure reliability and longevity of the cell.

Good user interface

LCD touch screen showing in real time H₂ pressure, H₂ flow rate, desiccant cartridge saturation %, water quality, water level, and status of the system with auto-diagnostic in case of alarms.

Unique features

- USB port available allowing the units to be connected to the PC in order to upgrade or train the user by internet.
- Auto refill water tank in standard for most of the range.
- Remote PC monitoring in standard via RS232 or RS485 to interface the unit with customer's PC software.
- Capabilities allowing to work in parallel mode.



SERIES LC-H₂ / ND-H₂

APPLICATIONS : GC-FID / NPD / FPD / TCD / THA

Specifications and Ordering Information

Models	Flowrate ml/min	Purity %	H ₂ dryer	Pressure	Water reservoir capacity with auto refilled included	Communication VAC	Voltage	Electrical Consumption	Dims W x H x D cm	Weight Kg
LC-H ₂ 100	100	99.9995	Dessicant cartridge	7 bar	2.1 L	RS232 in series RS485 in option	90 - 240	80 W	25 x 30 x 32	10
LC-H ₂ 140	140	99.9995	Dessicant cartridge	7 bar	2.1 L	RS232 in series RS485 in option	90 - 240	100 W	25 x 30 x 32	10
LC-H ₂ 180	180	99.9995	Dessicant cartridge	7 bar	2.1 L	RS232 in series RS485 in option	90 - 240	120 W	25 x 30 x 32	10
ND-H ₂ 120	120	99.9995	Dessicant cartridge	10 bar	2.3 L	RS232 in series RS485 in option	90 - 240	100 W	30 x43 x 43	15
ND-H ₂ 180	180	99.9995	Dessicant cartridge	10 bar	2.3 L	RS232 in series RS485 in option	90 - 240	125 W	30 x43 x 43	15
ND-H ₂ 260	260	99.9995	Dessicant cartridge	10 bar	2.3 L	RS232 and RS485 in series	90 - 240	185 W	30 x43 x 43	15
ND-H ₂ 400	400	99.9995	Dessicant cartridge	10 bar	2.3 L	RS232 and RS485 in series	90 - 240	220 W	30 x43 x 43	15
ND-H ₂ 500	500	99.9995	Dessicant cartridge	10 bar	2.3 L	RS232 and RS485 in series	90 - 240	240 W	30 x43 x 43	25



Hydrogen Gas Generators

THE H₂ / AIR FID STATION combines the hydrogen series LC-H₂ and Zero Air Serie ZA generators in one unit; Hydrogen gas is produced from deionised 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).

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 Fuel Gas increases the accuracy of analysis and reduces the cleaning requirement of the detector.

MAIN FEATURES AND BENEFITS

- **Purity FID-H₂ / AIR**
99.9995%, H₂O Dewpoint < -55°C, O₂ < 1 ppm.
CH₄ < 0.05 ppm.
CO < 0.05 ppm.
- **External clean and dry air compressor** required at maximum 7 bar.
- **Save space on the bench.**



SERIES FID-H₂ / AIR

APPLICATIONS : GC-FID

Specifications and Ordering Information

FID STATION*	H ₂ / Zero Air flow rate cc/min	H ₂ / AIR purity	H ₂ dryer	H ₂ / AIR Delivery pressure	Air inlet pressure And air quality required	Water reservoir capacity	Communication	Voltage VAC	Electrical Consumption	Dimensions W x H x D cm	Weight Kg
FID-H ₂ / AIR -100-1500	100/1500	> 99.9995% H ₂ O Dewpoint < -55°C O ₂ < 1 ppm CH ₄ < 0.05 ppm	Dessicant cartridge	7 bar g / Up to 6.5 bar g	Maximum 7 bar Max.inlet hydrocarbons content < 100 ppm water dewpoint < -20°C	1.2 L	RS232 in series RS485 in option	90 - 240	180 W	28 x 43 x 31	12
FID-H ₂ / AIR -140-1500	140/1500	-- --	-- --	7 bar g / Up to 6.5 bar g	-- --	1.2 L	RS232 in series RS485 in option	90 - 240	200 W	28 x 43 x 31	12
FID-H ₂ / AIR -180-1500	180/1500	-- --	-- --	7 bar g / Up to 6.5 bar g	-- --	1.2 L	RS232 in series RS485 in option	90 - 240	220 W	28 x 43 x 31	12

* ZA serie needs to be connected to an external clean and dry compressed Air source