

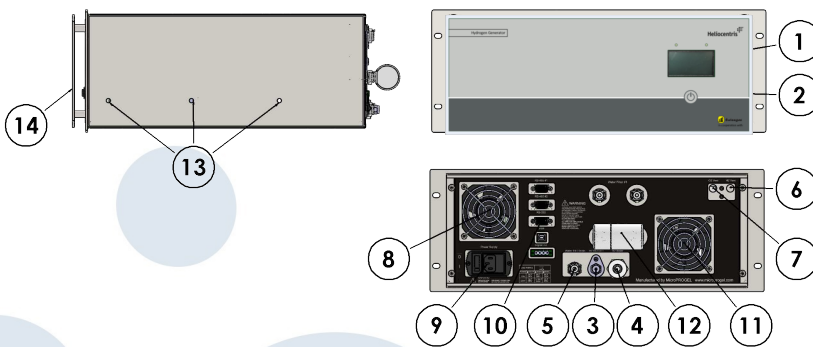
## HG Rack Series



The HG Rack Series series generators use an electrolytic cell with polymeric membrane (PEM) to produce pure hydrogen. The innovative gas drying system is completely maintenance-free and allows continuous operation, 24 hours a day. The exclusive, electronically-controlled gas/liquid separator, automatic checking for internal leaks whenever starting the unit, and constant control of operating parameters guarantee maximum safety.

Up to 20 units can be connected in parallel.

The touch-screen LCD interface provides simple and user-friendly management of all functions on the unit.



- 1 Touch-screen LCD 128x64 pixel
- 2 START/STOP button
- 3 Hydrogen Outlet
- 4 Hydrogen purge
- 5 Water feed connector for filling the tank
- 6 Hydrogen vent
- 7 Oxygen vent
- 8 Cooling fan air outlet
- 9 Power connection and switch
- 10 I/O connectors: RS485 – RS232 – USB – Digital I/O
- 11 Cooling fan air intake
- 12 Water filter
- 13 Holes for sliding rails
- 14 Front handles

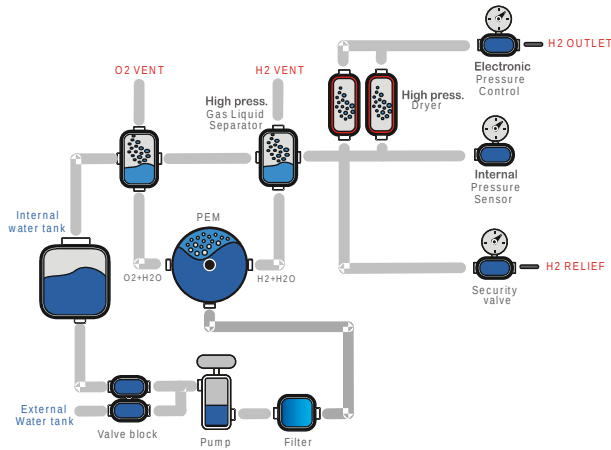
### Main Applications

- Carrier gas for GC and GS-MS
- ICP-MS collision gas
- Flame ionization detector feed gas (FID)
- Refilling metal hydride tanks for use with fuel cells

### Main Features

- **Available Flow-rates:**  
up to 1200 cc/min
- **Outlet pressure:**  
up to 16 bar/232 psi
- **Hydrogen purity:**  
>99.99999%
- **Drying system:**  
Innovative maintenances-free system for continuous 24-hour operation
- **Internal water tank:**  
1.1 litres, with electronic level control and “Autorefill” from external tank, included as standard
- **Dimensions:**  
Standard 19" 4U/5U RACK (40 cm deep)
- **Weight:**  
15 to 22 kg (depending on the model)
- **Certification:**  
CE, ISO9001

## Principle diagram



Hydrogen is produced from distilled water using a polymeric membrane (PEM). No acid or alkaline solutions are used. The drying stage requires no maintenance. A two-column drying system with automatic regeneration ensures the maximum grade of hydrogen purity.

Models	K00-1305 HG 24	K00-1306 HG 30	K00-1303 HG 72	K00-1304 HG 198
<b>General data</b>				
Electrolytic cell	PEM technology			
H2 purity	>99.99999%			
Outlet pressure	16 bars/232psi			
H2 flow rate cc/min (max)	400	500	1200	3300
<b>Communication</b>				
RS232	X	X	X	X
RS485	X	X	X	X
USB	X	X	X	X
LAN				
<b>Software functions</b>				
Parallel mode capability	X	X	X	X
Fill canister function	X	X	X	X
<b>Water</b>				
Quality	Deionized, ASTM II, <0.1uS			
Supply pressure (Min)	-0.2 bars (1.4 psi)			
Supply pressure (Max)	1 bar (14 psi)			
Supply flow-rate (min,max)	0.2 l/min, 1.5 l/min			
Internal tank capacity	1.1 l			
External tank capacity	5 or 10 l			
<b>Electrical data</b>				
Power supply connection type	IEC320-C13			Triple 4 pole connector
Power supply voltage	100-240Vac 50/60Hz			24V DC
Installed power (max)	280W	450W	560W	50 A
Fuse rating 5x20mm	4A 250VAC	6.3A 250VAC		ext. power supply
Dimensions	19" RACK 4U – 40cm deep			19" Rack 5U-40 cm deep
Net weight (water tank empty)	20 kg	22 kg	25 kg	29 kg
<b>Connections</b>				
Hydrogen outlet	1/8" compression fitting			
Water	Quick release push-in fitting			

### Accessories:

Remote Software	K00-1307
Deionizer Water Filter HG30/HG72	L90-0010
Deionizer Water Filter HG198	L90-0011

Heliocentris

## MHS – Metal Hydride Storage Canisters

Compact and safe hydrogen storage at low pressure

ACADEMIA OFFERING

The metal hydride storage canisters from Heliocentris allow safe and compact storage of relatively large amounts of hydrogen at low pressures.

Heliocentris' metal hydride storage canisters can store a multiple amount of hydrogen in comparison to a pressure storage at low pressure.

The metal hydride storage canisters are available in three different dimensions with storage capacities of 200 Ni, 400 Ni and 800 Ni hydrogen at 25 bar filling pressure.

The MHS 200 and MHS 400 storages comply with the Art. 4.3 and the MHS 800 with the category 1 of the pressure equipment directive lowering the barriers of hydrogen usage in contrast to pressure storage devices.

### Technology

The Heliocentris metal hydride storages are equipped with a low temperature AB2 metal alloy on a TiMg base:

- absorb the hydrogen in the alloy lattice after adsorption at the surface
- can store hydrogen at high volume- and low weight density (ideal for stationary application)
- has a low plateau pressures at about room temperature
- has a low thermal conductivity

The canister is designed as a passive surface cooled system. Heat ducting can be applied by the user with air ventilation or water cooling.

### Temperature Handling

The nominal parameters of the canister are defined for a canister surface temperature of 20°C. The absorption/ desorption performance of the storage can be sensitively influenced by thermalizing the canister surface by:

- cooling the storage surface for absorption (filling) by water or air with 5 ... 20°C
- heating the storage surface for a continuously desorption by water or air with 20 ... 50°C
- usage of the ambient air with passive or active ventilation

### Integration, Usage and Safety

An integrated quick coupling allows an easy and safe connection to an individual hydrogen source. The storage is equipped with a pressure and temperature relief valve to avoid dangerous conditions.



MHS 200 Art.-Nr. K00-0648  
MHS 400 Art.-Nr. K00-0649  
MHS 800 Art.-Nr. K00-0650

MHS 800 MHS 400 MHS 200