

# PG PLUS HYDROGEN GENERATOR

VICI DBS  
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DETECTOR GRADE



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## DESCRIPTION

The VICI DBS® PG Plus hydrogen generators offer the optimum combination of safe operation, reliability and performance. Designed as a hazard free alternative to high pressure cylinders, all that is required is deionized water and a standard electrical supply for weeks of continuous operation.

Utilizing the VICI DBS proprietary prepared field proven PEM (Proton Exchange Membrane) incorporated inside a 100% titanium cell provides superior generator performance and cell life. The unique high pressure permeation membrane drying system eliminates the requirement for desiccant cartridges along with the associated downtime and cost. Innovative software control allows unrivaled operational performance and safety as well as the additional options of auto water feed, remote networking and cascading for built in redundancy.

With a maximum output capacity of 600 mL/min, one generator can supply up to 14 GCs. The compact design allows the generator to be installed directly in the laboratory eliminating the requirement for long gas lines and guaranteeing the delivery of high purity gas to your GC.

A sophisticated control system connected to a touch screen continuously monitors vital operating parameters to ensure safe and consistent performance. Built in sensors will shut the generator down if internal/external leaks are present, contaminated water, low water or over pressure. This is why the VICI DBS generators meet the strict safety guidelines to be certified for CE, FCC, MET (UL and CSA compliant).



### INCREASE EFFICIENCY

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



### IMPROVE SAFETY

Gas is produced on demand, which allows for the safe use of the hydrogen generator when cylinders are prohibited or regarded as potentially dangerous. Sophisticated software control and full alarm capability, including for hydrogen leaks, gives the user full control of the gas supply.



### ENHANCE PERFORMANCE

Gas generators can be installed in the laboratory close to the instrument, eliminating the need for long gas lines from external cylinder supplies. A constant guaranteed high purity gas supply improves stability and ensures greater reproducibility of results.





## FEATURES

Produces a continuous supply of H<sub>2</sub> | On-demand supply 24/7 | Flow rate: 100 to 600 mL/min | Purity: +99.9996% | Pressure: 11 barg (160 psig) | Proprietary 100% titanium cell technology | Unique permeation membrane drying system | USB connectivity | 2-year complete cell and product warranty | Easy to install, operate and maintain | Vibration / Earthquake safety sensor; places unit into Stand by |



## BENEFITS

Eliminates dangerous high pressure cylinders helping to keep your employees safer | Removes the logistics, inconvenience, downtime and costs of a cylinder system | Flow capacity to match your specific instrument demands | Ideal for all GC detector applications | Meets and exceeds the requirements for the most demanding GC applications | Superior hydrogen production with reliable long life cell | Minimal maintenance - no desiccant cartridges to change | PC monitoring for maintenance, diagnostics and remote connection | Peace of mind | Improve your laboratory work flow and productivity



## OPTIONS

I/O board | Remote control software (RS232 or USB) | Cascading hardware (standard or high purity) | Autorefill



## APPLICATIONS

### GC APPLICATIONS

- GC-FID fuel gas
- GC-NPD plasma gas
- GC-FPD fuel gas

### ANALYZER APPLICATIONS

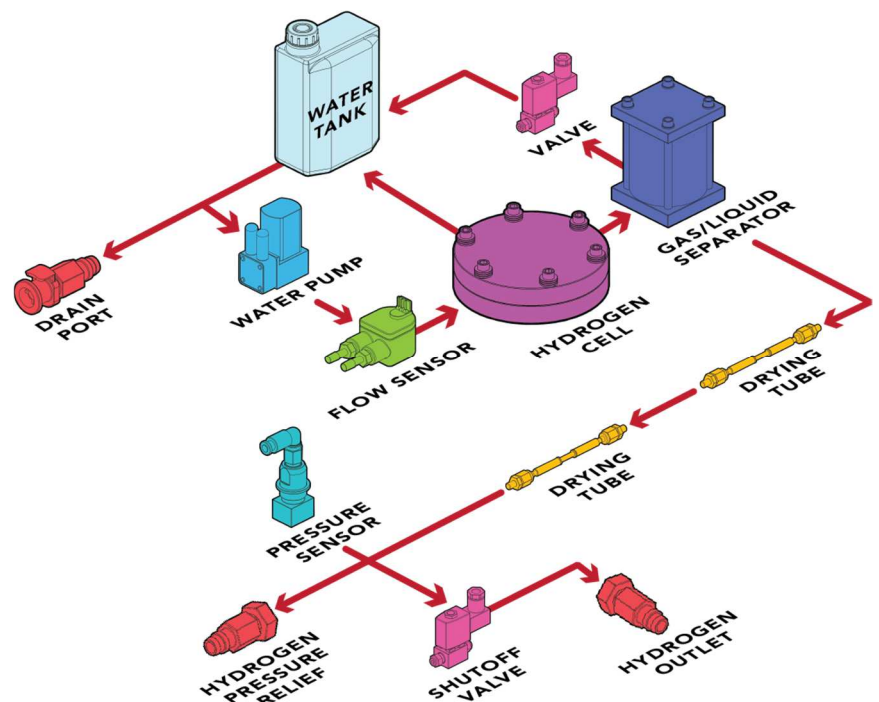
- Total Hydrocarbon Analyzer (THA) fuel gas

### OTHER LAB APPLICATIONS

- Hydrogenation reactors
- Hydrogen fuel cells

## OPERATING DIAGRAM

Hydrogen is produced from the hydrolysis of deionized water across a PEM (proton exchange membrane), housed in a 100% titanium cell. The resultant hydrogen is dried via a dual stage process, a gas liquid separator and a unique dual high performance membrane dryer. In addition to water all that the generator requires is a standard connection and supply of electricity for a continuous 24/7 supply of high purity hydrogen. Consumable items are limited to the replacement of a deionizer bag every 6 months.



MODELS & SPECS	PG PLUS 100	PG PLUS 160	PG PLUS 250	PG PLUS 300	PG PLUS 500	PG PLUS 600
Flow mL/min	100	160	250	300	500	600
Purity	+99.9996%					
Dew point at 7 barg (100 psig)	-25 °C (-77 °F)					
Outlet pressure barg (psig)	0.5 to 11 (7 to 160)					
Technology	PEM (Proton Exchange Membrane) - 100% Titanium cell					
Drying system	Regenerative Permeation Membrane					
Deionized water quality	Minimum < 1 micro S/cm @25°C - 1 Mohm-cm@25°C - ASTM II Recommended < 0.2 microS/cm @25°C - 5 Mohm-cm @25°C - ASTM II					
Internal water tank (liters)	2.5					
Safety	Automatic shut down - internal/external hydrogen leak, overpressure and low water					
Display	Touch screen with operating parameters, system status and safety alarms					
LED indicators	Power on/off, system ready, errors					
Interface	USB mod A					
Electrical supply	110-120V 60Hz / 220-240V 50Hz					
Power consumption (watts)	75	95	140	180	190	230
Dimensions mm (in)	230W x 480H x 370D (9W x 19H x 15D)					
Weight kg (lbs)	13 (28.5)	13 (28.5)	13 (28.5)	14 (31)	15 (33)	15 (33)
Shipping dimensions mm (in)	580W x 570H x 400D (22.8W x 22.4H x 15.7D)					
Shipping weight kg (lbs)	17 (37.5)	17 (37.5)	17 (37.5)	18 (39.5)	19 (42)	19 (42)
Operating temp °C (°F)	15 to 35 (59 to 95)					
Outlet connection	1/8" Compression					
Certification	CE, FCC, MET (UL and CSA compliant)					
OPTIONS						
Auto water refill	Continuous water feed from an external water supply					
Cascading	Up to 10 units – built in redundancy for guaranteed up-time					
Interface	RS232/RS485, external contacts, PC control and intranet					

## ORDERING INFORMATION (for best service, please call to discuss your application before placing your order).

### PG PLUS 100

**DB-PHG100-EU** 230-240V/50-60Hz  
**DB-PHG100-US** 115V/60Hz  
**DB-PHG100-JP** 100V/60Hz

### PG PLUS 160

**DB-PHG160-EU** 230-240V/50-60Hz  
**DB-PHG160-US** 115V/60Hz  
**DB-PHG160-JP** 100V/60Hz

### PG PLUS 250

**DB-PHG250-EU** 230-240V/50-60Hz  
**DB-PHG250-US** 115V/60Hz  
**DB-PHG250-JP** 100V/60Hz

### PG PLUS 300

**DB-PHG300-EU** 230-240V/50-60Hz  
**DB-PHG300-US** 115V/60Hz  
**DB-PHG300-JP** 100V/60Hz

### PG PLUS 500

**DB-PHG500-EU** 230-240V/50-60Hz  
**DB-PHG500-US** 115V/60Hz  
**DB-PHG500-JP** 100V/60Hz

### PG PLUS 600

**DB-PHG600-EU** 230-240V/50-60Hz  
**DB-PHG600-US** 115V/60Hz  
**DB-PHG600-JP** 100V/60Hz