

## Hydrogen-fuelled, Stationary Backup Power

1.7 kW - 5 kW

### Description

Ballard Power Systems offers complete direct hydrogen backup power solutions designed for telecom and related networks applications. FCgen®-H2PM systems are clean, reliable, quiet, economical and have been deployed worldwide for critical backup power applications.

Ballard's FCgen®-H2PM systems use hydrogen fuel cell technology with a fully integrated power management system and can be configured as either integrated or standalone modules. These systems are best suited for short duration runtime applications, requiring infrequent backup power for short periods of time (relatively lower total kW hours), or for temporary use, providing continuous power over a range of kW hour requirements.

### Features

**Low operating cost** - High efficiency and optional external hydrogen storage for extended run backup power solutions requiring inspection only once per year and maintenance only every 3rd year (two air filters)

**Reliable backup** - Simple modular system design with few moving parts and optional UltraCaps for "Battery Free" solution

**Modular and flexible solutions** - Indoor and outdoor installation - 19" rack mountable (telecom standard) with backup and UPS configuration, multiple systems can be connected in parallel for higher power applications up to 30 kW

**Temperature range** - Suitable for operation in extreme climates



**Environmental** - Zero emissions, with low noise and no vibrations

**Ease of use** - Remote monitoring allows the customer to monitor fuel volume, performance data and control system operation and hydrogen cylinders permit easy swap for refueling

**Compact footprint** - small imprint, quiet operation and low weight allows for flexible installation, scalable, modular systems for network growth

### PRODUCT SPECIFICATIONS

<b>Design</b>	Fuel cell	Direct hydrogen PEM fuel cell	
	Cooling	Air	
	Bridging energy	VRLA batteries <sup>1</sup>	
<b>Performance</b>	Maximum power, kW	<b>1.7</b>	<b>5.0</b>
	Voltage Range, VDC	48 to 55 or -48 to -55	
	Ambient temperature	-20°C to +45°C	
<b>Fuel</b>	Type	Gaseous Hydrogen	
	Fuel Purity	≥ 99.95% purity	
	Fuel Consumption <sup>2</sup> , Nm <sup>3</sup> /kWh	0.82	0.80
	Run Time <sup>3</sup> , hrs	35	12
<b>Communication</b>	Interfaces	Dry Contacts	
<b>Physical</b>	Dimension (w x d x h) cm	45 x 63 x 36	50 x 57 x 62
	Weight, kg	40	75
<b>Safety Compliance</b>	Certifications	CE, ANSI/ CSA FC1:2012	CE
<b>Emissions</b>	Exhaust	Zero PM, NOx & SOx, minimal CO & CO <sub>2</sub>	
	Water	No liquid water, drainage not required	
	Sound level	47 dBA at 7 meters, 62 dBA at 1 meter (5kW)	
<b>Options</b>	Cold weather kit temp range	-40 to +40 ambient	
	Battery-free bridging energy	UltraCaps	
	CAN bus	RJ-45 connector	RJ-11 connector

<sup>1</sup> Inside 92Ah <sup>2</sup> At maximum power <sup>3</sup> At full power with 6 hydrogen cylinders, 49L (200 bar) each

#### Options:

- ❖ Inverter for AC application
- ❖ Outdoor cabinet
- ❖ Remote monitoring
- ❖ H<sub>2</sub> cylinder cabinet

#### FCgen®-H2PM System Diagram

