

ElectraGen™ Fuel Cell back-up power systems



Fuel cell back-up power systems provide high system availability and predictable performance across a broad range of climates. Offering competitive whole-of-life costs and an environmentally friendly power source, fuel cell back-up systems make an attractive solution for critical power applications with long autonomy requirements.

What is a fuel cell?

A fuel cell is a device that generates electricity by a chemical reaction. Hydrogen and oxygen (air) are the 2 "fuels" of that reaction. One great appeal of fuel cells is that they generate electricity with very little pollution - much of the hydrogen and oxygen used in generating electricity ultimately combine to form a harmless by-product, namely water.

Typical applications

Predictable performance, suitable for outdoor use over a wide range of temperatures from -40°C to +50°C.

- **Environmentally friendly, zero harmful emissions**

Applications: City centre locations where operation of stand-by diesel generators may not be possible

- **Long autonomy, high reliability and long operating life**

Applications: Railway signalling, traffic control systems, emergency communication networks.

- **Near zero maintenance with annual inspection periods**

Applications: Remote sites; telecommunication and broadcast networks.

- **Whisper quiet, compact and lightweight unit**

Applications: Suitable for indoor installations such as data centres, technical rooms and building security.

Case study:

Site: Pigna Corbino, Corsica
Telecom shelter (indoor)

Application: Backup of telecom mobile network site

Product: ElectraGen™5XTR

Configuration: -48VDC

Fuel: Hydroplus
(62% methanol, 38%water)

Customer motivations:

- Backup of an important site where grid failure is frequent
- Increase site availability and customer satisfaction
- Not possible to install a Genset (no space and UNESCO classified site)
- Long autonomy: Remote site with difficult access (H2 logistic impossible)
- Environmental friendly solution
- Low maintenance and remote monitoring



Fuel Cell systems and reformer modules

CHLORIDE

What type of fuel ?

Chloride fuel cells offer the choice of two fuel options:

Industrial hydrogen gas

Supplied in 7 or 9m³ cylinders.

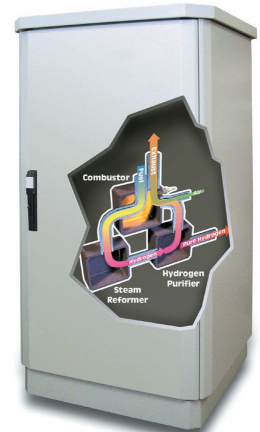
(around 8-10kWh of energy per cylinder)



Methanol/water liquid fuel

The ElectraGen™ system can be paired with the ElectraGen™XTR Module, a methanol fuel reformer designed to provide a direct hydrogen feed when storage space is limited or weight restrictions are enforced.

(1 litre of methanol/water fuel = 1 kWh)



ElectraGen™XTR Module

(liquid fuel solution)

The CE, TÜV certified ElectraGen™XTR Module is a liquid fuelled extended run module built to produce high purity hydrogen on demand for the family of ElectraGen™ back-up power fuel cell systems.

The ElectraGen™XTR Module allows the reliable production of hydrogen to the ElectraGen™ fuel cell systems, enabling days of operation from a very compact liquid fuel source. The ElectraGen™XTR Module also provides an economically sound solution to help avoid the traditional challenges associated with hydrogen delivery and storage by producing hydrogen on site upon demand. It is perfect for remote locations where frequent hydrogen delivery may not be practical.

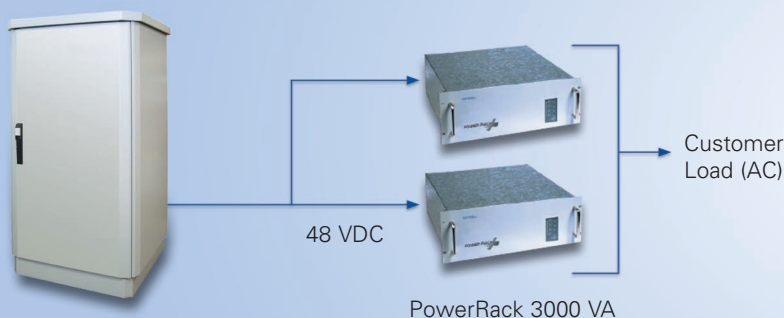
Advantages to Methanol Fuel

Methanol is an ideal source of hydrogen to power today's fuel cells due to its consistent high quality, extremely low freezing point, lower reforming temperature and readily available supply options. Its very low sulphur content simplifies the reforming process, reduces the capital, operating and maintenance costs of the fuel cell system and greatly reduces the risk of fuel cell damage. Methanol's lower reforming temperature ensures faster start up, improved system efficiencies, lower fuel processor capital costs and a longer fuel processor life.



Suitable for DC & AC applications

Compatible with Chloride PowerRack®/ PowerLan® product ranges



ElectraGen™3 system or
ElectraGen™5 system

PowerRack 3000 VA

Specifications

ElectraGen™3 system ElectraGen™5 system

Continuous power output

3000 Watts, load following
5000 Watts, load following

Voltage: output nominal -48 VDC
(with the option for +48 and +24)

Fuel consumption: 15 slpm of H2 per kWh
Temperature range: -40°C to +50°C

Fuel Specifications:

Commercial grade hydrogen (99.95% dry)
Methanol/water mix (ElectraGen™XTR)

Physical Specifications:

Dimensions: (WxDxH) 648 x 997 x 1345 mm
Weight: (approximate) 220 kg
Noise: <70 dB @ 1 metre
Elevation: 0 - 2000 metres
Location: outdoor rated

Certifications/Safety:

Certifications: CE, ANSI/CSA FC-1,
NEBS Level 3
Seismic rating: Seismic Zone 4

Monitoring/Controls:

Remote monitor and control system
Historic and operational data
Eight configurable dry contacts

Options:

Ultra-capacitor energy storage
module available

Communications: Ethernet/IP
AC output (UPS configuration)

Chloride UK

George Curl Way
Southampton
Hampshire
SO18 2RY

T +44 (0)23 8061 0311
F +44 (0)23 8061 0852
E uk.enquiries@chloridepower.com

www.chloridepower.co.uk