Deliver non-stop, reliable power with fuel flexibility, regardless of location

Telecom carriers increasingly compete to provide voice, video and data services to customers. Customers expect constant connectivity. Power outages not only equal loss of connectivity, but loss of safety/security, especially in remote locations – which customers no longer tolerate. Backup power must be a priority, not an afterthought.

Batteries and generators have been the popular choices for backup power, not because of their superior technology, but because of corporate inertia. However, batteries typically cannot provide the long runtimes and require frequent replacement, while generators are dirty, noisy, large and break down too often. Theft of these assets may also be an issue.

Altergy has developed breakthrough fuel cell technology built to the highest standards, delivering the most reliable, cost effective backup power solution available today. These next generation solutions allow telecom providers to modernize their networks and meet customer connectivity and long runtime demands.

For locations where hydrogen fuel may be difficult to obtain, Altergy offers an advanced fuel cell backup power system integrated with a state-of-the-art hydrogen gas generator. Altergy’s Freedom Power System EX (EX for extended runtimes) delivers a reliable backup power system that can integrate seamlessly with established network infrastructure, simplify fuel logistics and provide extended runtimes.

With the largest deployed fuel cell fleet in telecom and CATV, Altergy is the trusted backup power partner since 2001.

**Altergy’s Freedom Power System EX (FPS-EX)**

Fuel flexibility where hydrogen availability is limited
- Extended runtime up to 100 hours
- Eliminate well known issues with batteries and generators
- Simple, low-cost maintenance
- Zero-emission fuel cell certification supports sustainability initiatives
- Reduce theft of batteries, generators and fuel
- Made in USA

**Altergy’s Freedom Power fuel cells provide freedom from:**

- Batteries
- Generators
- Pollution
- Noise
- The Grid
# Alteryg Fuel Cell FPS-EX (Patent Pending)

**Engine with Integrated Hydrogen Gas Generator**

![Image](image-url)

<table>
<thead>
<tr>
<th><strong>Output</strong></th>
<th><strong>Rated Standby Power</strong></th>
<th>5 kW</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Nominal Current</strong></td>
<td>105</td>
</tr>
<tr>
<td><strong>Voltage</strong></td>
<td><strong>Rated (VDC)</strong></td>
<td>48</td>
</tr>
<tr>
<td><strong>Input Power</strong></td>
<td>48V Nominal</td>
<td>246W (standby)</td>
</tr>
<tr>
<td><strong>Physical</strong></td>
<td><strong>Dimensions (W x D x H)</strong></td>
<td>48 x 42 x 53 in. / 122 x 107 x 135 cm</td>
</tr>
<tr>
<td></td>
<td><strong>Weight</strong></td>
<td>876 lbs. / 397 kg</td>
</tr>
<tr>
<td><strong>Fuel</strong></td>
<td><strong>Type and Grade</strong></td>
<td>Methanol-water mix reformed into gaseous hydrogen</td>
</tr>
<tr>
<td></td>
<td><strong>Tank Size</strong></td>
<td>100 Gallons / 378 liters</td>
</tr>
<tr>
<td></td>
<td><strong>Consumption (Liters Per Hour)</strong></td>
<td>1-1.4 liters / hr / kWh</td>
</tr>
<tr>
<td><strong>Operational</strong></td>
<td><strong>Ambient Temperature</strong></td>
<td>-20°C to 46°C (GR1293)*</td>
</tr>
<tr>
<td></td>
<td><strong>Relative Humidity</strong></td>
<td>5% to 95% non-condensing</td>
</tr>
<tr>
<td></td>
<td><strong>Location</strong></td>
<td>Outdoor Use Only</td>
</tr>
<tr>
<td></td>
<td><strong>Altitude</strong></td>
<td>-200 to 10,000 feet</td>
</tr>
<tr>
<td><strong>Control Electronics</strong></td>
<td><strong>Monitoring Software</strong></td>
<td>Real time control communications with GUI to provide system and site status and allow user input of operating parameters. Field upgrades through communication port.</td>
</tr>
<tr>
<td></td>
<td><strong>I/O Interfaces</strong></td>
<td>RS-232, RS-485 and ethernet supported. User-defined dry contacts. Optional wireless monitoring.</td>
</tr>
<tr>
<td><strong>Environmental</strong></td>
<td><strong>Noise</strong></td>
<td>&lt;60dBA @ 7 meters</td>
</tr>
<tr>
<td><strong>Fuel Cell Engine Safety / Certification / Compliance</strong></td>
<td>CSA / ANSI FC 1-2014 (fuel cell) and CSA / ANSI FC 5-2017 (reformer), FCC 47CFR Part 15, Subpart B, Class A</td>
<td></td>
</tr>
</tbody>
</table>

* Specification subject to change without notice. *Cold weather kit for temperatures below freezing. **Some certifications pending.

[Image: installations-of-the-alteryg-reformer-in-the-bahamas.png]

www.altergy.com
Tel: 916.458.8590
Email: info@altergy.com

Copyright © 2020 Altergy Systems. All rights reserved. Published 08/2020
Why Choose Altergy’s Hydrogen Gas Generator FPS-EX Fuel Cell System vs. Diesel Generators?

**Efficient & Reliable:**
- Extended runtime up to months of operation
- Applications available in remote, hard to reach locations
- Direct DC power output
- No need to over-size capacity for load transients
- Easier and less costly to permit

**Sustainable:**
- Hydrogen – non carbon fuel
- Near zero emissions
- No engine oil oxidation, bore glazing or black smoke
- Quiet operation

**Better Fuel:**
- Diesel storage shelf life 28 days vs. unlimited with Methanol
- No fuel mold microbe contamination or additives required
- Methanol is less flammable than gas
- Cold weather reliability (-70 degrees C)
- No cold weather fuel gelling

**Cost Effective:**
- Lower total cost of ownership
- Eliminates fuel theft
- Simpler maintenance and operations
- US investment tax credit available