altergy®
Leading the Fuel Cell Revolution

CLEAN RELIABLE, POWER ANYTIME, ANYWHERE

altergy
FREEDOM POWER TECHNOLOGY

Compact, rugged, reliable and proven fuel cell power system

Altergy, the leading producer of hydrogen fuel cells for telecom backup power, is pleased to introduce the Freedom Power™ Nacelle, a lightweight and compact packaging of its rugged, clean, reliable and proven hydrogen fuel cell power system.

Nacelle dramatically decreases the footprint, volume, weight and price of hydrogen fuel cells while providing numerous mounting options. Nacelle can be cabinet, shelter, wall, door, or pole mounted.

Altergy has developed a better solution, using its breakthrough hydrogen fuel cell power systems technology that delivers clean, sustainable, reliable power, cost effectively when the grid fails. These next generation solutions allow telecom providers to modernize their networks to meet connectivity and sustainability demands as well as FCC backup power mandates. These Freedom Power™ Systems eliminate costly batteries, battery maintenance, battery replacements, generators and environmental issues.

The Freedom Power™ Nacelle shares Altergy's rich history of telecom reliability, performance and durability with more than 8.3 million watts deployed and more than 32 million operating hours.

With the largest deployed fleet of hydrogen fuel cells in telecom Altergy is the trusted backup power partner since 2001.

Altergy's Freedom Power System – Nacelle

- Meets sustainability and climate change objectives
- Produces power with no greenhouse gas (GHG) emissions
- Eliminates performance and replacement issues with batteries and generators
- Low initial capital costs
- Lowest Total Cost of Ownership
- Long runtime solution
- Smallest footprint, highest power density
- Made in the USA

Altergy's Freedom Power fuel cells provide freedom from:

Altergy Freedom Power System – Nacelle

Altergy Freedom Power System – Nacelle

Model Number		FPS – 148N	FPS – 2.5 48N	FPS – 548N
Output [1]	Rated Standby Power (kW) [1]	1 kW	2.5 kW	5 kW
	Nominal Current (A)	21	52	105
Voltage	Rated (VDC)	48	48	48
Physical	Dimensions (W x D x H in.)	28" x 14" x 24"	21" x 17" x 47"	21" x 17" x 47"
	Weight (lbs)	160 lbs	280 lbs	330 lbs
Fuel	Type and Grade	Gaseous hydrogen, industrial grade 99.95% pure (CGA-G-5.3 Type 1, Grade B)		
	Supply Pressure	40 to 100 psig / 2.75 to 6.89 bar		
	Runtime	Various, Unlimited with Altergy Freedom Fuel service		
Operational [1]	Ambient Temperatures [2]	-40°C to +50°C		
	Relative Humidity	5% to 95% non-condensing		
	Location	Indoors with suitable air management or outdoors with suitable enclosure		
	Altitude	10,000 ft		
Control Electronics	Supervisory Control	32-Bit Digital Signal Controller w/on-board, real time diagnostics, communications, thermal & systems management. Sensor less brushless direct current motor control		
	Power Conditioning	Fully digital, multi-phase, interleaved DC/DC converter		
	Monitoring Software	Real time control communicates with GUI to provide system and site status and allow user input of operating parameters. Field upgrades through communication port		
	I/O Interfaces [3]	Ethernet supported. Four user-defined dry contacts. Optional wireless monitoring. Optional RS-232, RS-485 and additional user defined contacts		
	Sensors	Fuel pressure, leak detection, ambient temperature & humidity, stack & electronics temperatures, fan & filter conditions, stack & output currents and voltages, tampering		
Environmental	Clean	California Air Resources Board (CARB) certified as a zero emission electrical power generator. By-product is water		
	Green	Recycles residual heat to increase fuel and system efficiency. Can use "Green" hydrogen fuel (generated from biomass, hydroelectric, solar or wind powered electrolysis)		
	Noise	<60dBA @ 3 meters		
Safety/Certification/Compliance [4]		Designed and tested to NEBS Level 3 criteria and certified under CSA FC-1, 2012		

1. FPS Engines can be combined to achieve up to 100 kW of output.
2. 10 °C (50 °F) and below requires low temperature configuration, 40 °C (104 °F) or higher requires high temperature configuration.
3. I/O Options vary by model number
4. Some certifications pending.

Specifications subject to change without notice

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