



*Changing the Way the World Gets its Power®*

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# Altery's Freedom Power™ System (FPS) Product Line



**FPS Engines** provide an excellent alternative to batteries and generators. The plug-n-play design allows system modules to be stand-alone or combined to produce a wide range of power output.

These clean and green products have been certified by the California Air Resources Board (CARB) as zero-emission power generators that deliver the power quality, reliability and on-demand standby and ride-through capabilities required for telecommunications, cable/broadband, data centers, homeland security and other essential 24/7 operations.



**Power Cabinets** are designed specifically for the Altery FPS and are available for indoor or outdoor installations and for both temperate and severe climates. The FPS can also be installed in a customer provided cabinet that meets ANSI/CSA specific requirements.



**Fuel Cabinets** are available in several size configurations to store fuel at the point of use. Altery's fuel storage cabinets utilize either standard steel cylinders or our advanced composite fuel storage tanks. In addition to holding much more fuel (at high pressure) in the same or less space than steel cylinders, our composite tanks are capable of being refilled onsite. This lightweight composite solution is also ideal for rooftop applications.



**Transient Power Modules** provide the initial bridge power for start-up and seamless transition from a power failure using either sealed VRLA batteries or optional ultracapacitors.

## Communications

**Communications** and remote monitoring of your FPS can be provided by using either a wireless or ethernet communications protocol.

## Rectifiers

**Rectifiers** are provided to convert your onsite alternating current (AC) to rectified direct current (DC) for charging the TPM.

## Inverters

**Inverters** are provided to convert the FPS direct current (DC) to alternating current (AC) for emergency AC power requirements.

## Accessory Kits

**Accessory Kits** are provided to upgrade existing product in the field (e.g., upgrading from a 5 kW system to a 10 kW system).

# Altery's Freedom Power™ System Overview

Altery's Freedom Power System (FPS) is a fuel cell based, high efficiency power generator that delivers the power quality, reliability, standby and on-demand ride-through capabilities required for mission critical applications. These clean and green products have been certified by the California Air Resources Board (CARB) as zero-emission power generators.

The heart of Altery's FPS is its advanced fuel cell engine, offered in either 24 VDC or 48 VDC configuration. The engine consists of a fuel cell stack constructed from durable stainless steel and plastic, integrated into the balance of plant that includes thermal, fuel, power and voltage management systems.

Freedom Power Systems are designed with a plug-n-play feature that allows them to operate in a stand-alone mode or to be combined with additional engines to produce a range of power outputs up to 30 kW. Altery's plug-n-play design also allows optional peripherals to interface seamlessly into the system.

These systems are intended for standby power applications where they are connected to the electrical grid and uniquely monitors the buss voltage (Standby Mode). When the monitored buss voltage drops below a preset minimum, the



The Altery Freedom Power™ System

system automatically switches from Standby Mode to Active Mode and the system initiates power generation. Power is generated and regulated until a preset minimum, stable voltage returns to the monitored buss.

In addition to an industry leading rugged and modular design, the FPS has the smallest, most compact footprint in the industry. For example our FPS-5 (5 kW module) is only 21" wide, 30 inches deep and 24.5 inches tall.

Altery offers interior and exterior enclosure options designed to house the engine and its peripherals, as well as enclosures for fuel storage utilizing either standard steel cylinders or our advanced composite fuel storage tanks. The composite tanks hold more fuel (at high pressure) in less space than steel cylinders. They also are capable of being refilled onsite.



# FPS Engine — FPS Series

The heart of Alteryg's FPS is an advanced fuel cell engine offered in either 24 VDC or 48 VDC configuration.

The heart of Alteryg's FPS is an advanced fuel cell engine offered in either 24 or 48 VDC configuration. The cells that make up a fuel cell stack are constructed from durable stainless steel and plastic. The fuel cell stack is integrated with the balance of plant including thermal management, fuel management, power and voltage management, creating a complete FPS Engine. The engines are designed with a plug-n-play feature that allows them to operate in a stand-alone mode or to be combined with additional engines to produce a range of power outputs up to 30 kW. Alteryg's plug-n-play design also allows optional peripherals to interface seamlessly into the FPS.

Each engine features an integrated supervisory control system that consists of a 32-bit digital



Front View

signal controller with on-board diagnostics. This control system manages the function of the fuel cell, including real-time system monitoring and control, as well as thermal management. Sensors include fuel pressure



Rear View

leak detection, ambient temperature and humidity, stack and electronics temperature, mass air flow, fan and filter conditions, stack and output currents and voltages, and tampering detection and reporting. In addition to optional user-definable factors, it communicates via a Graphic User Interface (GUI) to provide system and site status and allows user input of operating parameters. External communications and monitoring are facilitated by USB, RS-232 and ethernet connections, as well as 4 user-defined digital Input/Outputs. Power conditioning and regulation is performed by a fully digital, multi-phase, interleaved DC/DC converter that delivers precisely regulated DC power output.

# The Alteryg Freedom Power™ System (FPS)<sup>1</sup> Specifications

Model Number	FPS - 524	FPS - 548	FPS - 1024	FPS - 1048	FPS - 1524	FPS - 1548	FPS - 2024	FPS - 2048	FPS - 2524	FPS - 2548	FPS - 3024	FPS - 3048
<b>Output</b>	Rated Standby Power (kW) 210	5 105	10 420	15 210	20 630	25 315	30 840	40 420	50 1050	60 525	70 1260	80 630
<b>Voltage</b>	Rated Current (A) 24	48	24	48	24	48	24	48	24	48	24	48
	Rated (VDC) 21 to 29	42 to 58	21 to 29	42 to 58	21 to 29	42 to 58	21 to 29	42 to 58	21 to 29	42 to 58	21 to 29	42 to 58
<b>Physical (Engines Only)</b>	Dimensions <sup>2</sup> (w x d x h in.) 21 x 33 x 25 / 53 x 83 x 63 cm	179	378	557	746	945	1144	Standard 23" rack, shelf mount or Alteryg approved enclosure				
	Weight (lbs)	179	378	557	746	945	1144					
<b>Fuel</b>	Mounting	Standard 23" rack, shelf mount or Alteryg approved enclosure										
	Type and Grade	Gaseous hydrogen, industrial grade, 99.95% pure										
<b>Operational</b>	Supply Pressure	40 to 100 psig / 2.75 to 6.89 bar										
	Consumption (SLPM)	60	120	180	240	300	360					
<b>Environmental</b>	Ambient Temperatures <sup>3</sup>	-40 °C to 50 °C / -40 °F to 122 °F										
	Relative Humidity	5% to 100% non-condensing										
<b>Control Electronics</b>	Location	Indoors with suitable air management or outdoors with suitable enclosure										
	Altitude	10,000 ft / 3048 m										
<b>Safety/Certification/Compliance</b>	Clean	California Air Resources Board (CARB) certified as a zero emission electrical power generator. By-product is water										
	Green	Can recycle residual heat to increase fuel and system efficiency. Can use "Green" hydrogen fuel (generated from biomass, hydroelectric, solar or wind powered electrolysis)										
<b>Control Electronics</b>	Noise	<60dBA @ 1 meter										
	Supervisory Control	32-Bit Digital Signal Controller w/on-board, real time diagnostics, communications, thermal & systems management. Sensorless 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										
<b>Sensors</b>	I/O Interfaces	USB, RS-232, RS-485 and Ethernet supported. Four user defined dry contacts. Optional wireless										
	Sensors	Fuel pressure, leak detection, ambient temperature & humidity, stack & electronics temperatures, fan & filter conditions, stack & output currents and voltages, tampering										
<b>Safety/Certification/Compliance</b>												
CSA/ANSI FC 1-2004 Standard, FCC 47CFR Part 15, Subpart B, Class A, NEBS Level 3												

1. Up to six 5 kW FPS Engines can be paralleled to achieve between 5 to 30 kW of rated standby power output.  
 2. Dimensions include additional clearance to assure proper airflow and cooling in an enclosure. See Alteryg installation manual for details.  
 3. 10 °C (50 °F) and below requires low temperature configuration, 40 °C (104 °F) or higher requires high temperature configuration.  
 4. Some certifications pending.

Specifications subject to change without notice

# Power Cabinet — 200 Series

Allergy offers welded, aluminum, powder coated interior and exterior power cabinets designed to house the FPS Engine and the Transient Power Module (TPM).

Exterior cabinets are watertight and feature full width, swing open front access doors. Interior enclosures are standard 23" open rack mount accommodations.

Each Model 225 exterior power cabinet accommodates one FPS Engine and one TPM (rack mounted), and up to 6 standard (steel) compressed gas cylinders in a separate compartment below. Access doors, with perforated and louvered panels, which channel operation and cooling air, allow easy access for servicing the FPS Engine or air filters.

Each Model 240 FPS exterior power cabinet accommodates up to two FPS Engines and up to two TPMs. Full extension slide mounts allow easy access to all sides of the FPS Engine for field servicing. Removable rear access panels facilitate air filter servicing.

The compact Model 245 FPS exterior power cabinet is an exact replica of the 240 model but houses only one FPS Engine and one TPM for those applications where a smaller footprint is desired. Stacking this cabinet atop the 240 standard model accommodates 15kW for a smaller footprint.

Each Model 250 interior power cabinet accommodates up to two FPS Engines and up to two TPMs.



Standard Power Cabinet  
(front view opened)  
Either 5 or 10 kW  
(Model # 240)



Standard Power Cabinet  
(rear view)  
Either 5 or 10 kW  
(Model # 240)



Standard Power Cabinet  
(front view closed)  
Either 5 or 10 kW  
(Model # 240)



Std. Compact Power Cabinet  
(rear view)  
5 kW (only)  
(Model # 245)



Std. Compact Power Cabinet  
(rear view)  
5 kW (only)  
(Model # 245)



Std. Compact Power Cabinet  
(front view opened)  
5 kW (only)  
(Model # 245)



Slimline Cabinet  
(front view closed)  
5 kW only  
(Model # 225)



Indoor Rack-Mount Cabinet  
Either 5 or 10 kW  
(Model # 250)



Slimline Cabinet  
(front view opened)  
5 kW only  
(Model # 225)

## Power Cabinet Specifications

Slimline Cabinet		Model # 225
Cabinet Physical	Dimensions (w x d x h):	30" x 56" x 92" / 76 cm x 142 cm x 234 cm
	Weight:	Empty 400 lbs / 181 kg
	Clearance Area: <sup>1</sup>	Back of Cabinet – 24" / Front of Cabinet 32" – For assistance contact Sales Representative

Standard Power Cabinet		Model # 240
Cabinet Physical	Dimensions (w x d x h):	26" x 44" x 72" / 66 cm x 112 cm x 183 cm
	Weight:	Empty 300 lbs / 136 kg
	Clearance Area: <sup>1</sup>	Back of Cabinet – 24" / Front of Cabinet 32" – For assistance contact Sales Representative <sup>1</sup>

Standard Compact Power Cabinet		Model # 245
Cabinet Physical	Dimensions (w x d x h):	26" x 44" x 44" / 66 cm x 112 cm x 112 cm
	Weight:	Empty 190 lbs / 86 kg
	Clearance Area: <sup>1</sup>	Back of Cabinet – 24" / Front of Cabinet 32" – For assistance contact Sales Representative <sup>1</sup>

Indoor Rack-Mount Cabinet		Model # 250
Cabinet Physical	Dimensions (w x d x h):	24" x 43" x 81" / 60 cm x 109 cm x 206 cm
	Weight:	Empty 270 lbs / 123 kg
	Clearance Area: <sup>1</sup>	Back of Cabinet – 24" / Front of Cabinet 32" – For assistance contact Sales Representative

Note: Environmental cabinet space conditioning for conditions lower than 5° C requires a cabinet heater. Please specify the voltage requirements in your region.

--- 120VAC 60 cycles US / 220VAC 50 cycles European / or Others ---

# Fuel Cabinet — 300 Series

Altergy's Fuel Cabinets utilize either standard steel cylinders (6 or 9 each) or Altergy's advanced composite fuel storage tanks (2 or 4 each).

The Fuel Storage Modules feature welded aluminum, powder coated, weather tight construction and full width, swing open front doors.

Altergy's advanced ultra high pressure (UHP) composite fuel tank solution provides more fuel storage capacity in the same space when compared to standard steel cylinders, and has the added capability of being refilled onsite.

Their compact footprint and light weight make composite tanks ideal for small spaces or rooftop applications.



6-Bay Steel Cylinders  
Fuel Storage Module  
(Model # 330)



2-Bay Composite Tanks  
Fuel Storage Module  
(Model # 320)



9-Bay Steel Cylinders  
Fuel Storage Module  
(Model # 310)



4-Bay Composite Tanks  
Fuel Storage Module  
(Model # 300)

## Fuel Cabinet Specifications

Steel Cylinders in Cabinet		6 Steel Cylinders – Model # 330	9 Steel Cylinders – Model # 310
Physical	Dimensions: (w x d x h)	25" x 41" x 72" / 64 cm x 104 cm x 183 cm	37" x 41" x 72" / 94 cm x 104 cm x 183 cm
	Set-Back Clearance Area: <sup>1</sup>	Contact customer service or AHJ <sup>1</sup>	Contact customer service or AHJ <sup>1</sup>
	Weight:	233 lbs / 106 kg (without cylinders)	309 lbs / 140 kg (without cylinders)
Performance	Storage Pressure:	2,200 psig / 155 kg/cm	150 – 2,200 psi / 155 kg/cm
	Capacity:	6.61 lbs / 3 kg	9.92 lbs / 4.5 kg
	Support:	40.6 kW – hr	61 kW – hr
	Support @ 5 kW:	8 hr	12 hr
Operation	Location:	Outdoor	Outdoor
	Fill Interface:	CGA-350	CGA-350

Composite Tanks in Cabinet		UHP - 1 (1 Tank) – Model # 325	UHP - 3 (3 Tanks) – Model # 305
		UHP - 2 (2 Tanks) – Model # 320	UHP - 4 (4 Tanks) – Model # 300
Physical	Dimensions (w x d x h):	25" x 41" x 72" / 64 cm x 104 cm x 183 cm	37" x 41" x 72" / 94 cm x 104 cm x 183 cm
	Set-Back Clearance Area: <sup>1</sup>	Contact customer service or AHJ <sup>1</sup>	Contact customer service or AHJ <sup>1</sup>
	Weight:	550 lbs / 250 kg (with cylinders)	880 / 400 kg (with cylinders)
Performance	Storage Pressure:	3,600 psig / 250 bar	150 – 3,600 psig / 250 bar
	Capacity:	11.6 lbs / 5.25 kg	23.15 lbs / 10.5 kg
	Support:	76 kW – hr	152 kW – hr
	Support @ 5 kW:	15 hr	30 hr
Operation	Location:	Outdoor	Outdoor
	Fill Interface:	SAE J2600 @ 250 bar	SAE J2600 @ 250 bar

1. Height clearance is in accordance with NFPA 55 and NFPA 853 based on siting location.

NOTE: Determine storage demand below and choose corresponding catalog number.

Estimated Runtime Hours						
kW Output	6 Steel Cylinders Model # 330	9 Steel Cylinders Model # 310	UHP - 1 (1 Tank) Model # 325	UHP - 2 (2 Tanks) Model # 320	UHP - 3 (3 Tanks) Model # 305	UHP - 4 (4 Tanks) Model # 300
5	8.5	12.8	7.5	15.0	22.5	30.0
10	4.3	6.4	3.8	7.5	11.3	15.0
15	2.8	4.3	2.5	5.0	7.5	10.0
20	2.1	3.2	1.9	3.8	5.6	7.5
30	1.4	2.1	1.3	2.5	3.8	5.0

Steel Cylinders based on 500 grams (200 scf) per cylinder at 150 bar (2,200 psig)  
 Composite Tanks based on 2.62 kilograms (1108 scf) per tank at 250 bar (3,625 psig)  
 Based on 60 grams per kW-hr

Only one fuel storage module per two engines maximum without additional options — due to flow capacity

Steel cylinder weight: 110 pounds / 50 kg each

Composite tank weight: 125 pounds / 57 kg each

# Transient Power Module — 400 Series

The Altergy FPS Transient Power Module (TPM) provides bridge power to equipment during the few seconds between power outage and the FPS Engine starting and producing full power. The TPM uses either one of the following to store the bridge between a power outage and power:

- Sealed (Value Regulated Lead Acid) Batteries — 24 VDC or 48 VDC; or
- Ultracapacitor — 24 VDC or 48 VDC

The TPM must be ordered as either 24 VDC or 48 VDC to match your power plant and FPS.

Note: The TPM is installed in the same Altergy Power Cabinet as the FPS Engine.



Battery Version TPM  
24 VDC  
(Model # 400)

Battery Version TPM  
48 VDC  
(Model # 405)

## The Ultracapacitor Version of the TPM – Limited Availability



(front view)

Ultracapacitor TPM  
48 VDC  
(Model # 425)



(rear view)

Ultracapacitor TPM  
24 VDC  
(Model # 420)

## Transient Power Module Specifications

TPM – Batteries		24 Volt – Model # 400	48 Volt – Model # 405
<b>Physical</b>	Dimensions (w x d x h):	19" x 25.5" x 5" / 48 cm x 65 cm x 13 cm	19" x 25.5" x 5" / 48 cm x 65 cm x 13 cm
	Weight:	123 lbs / 56 kg	123 lbs / 56 kg
	Mounting:	19" / 23" Rack	19" / 23" Rack
<b>Performance</b>	Rated net power:	5 kW	5 kW
	Bridge Capacity:	25 kW - min	25 kW - min
	Rated peak current:	240 A	120 A
	Operating voltage (nominal):	24 VDC	48 VDC
	Operating voltage (range):	21 to 29 VDC	42 to 58 VDC
<b>Operation</b>	Ambient temperature:	36 to 115 °F / 10 to 46 °C	36 to 115 °F / 10 to 46 °C
	Relative humidity:	5 to 100%	5 to 100%
	Location:	Alteryx approved cabinet	Alteryx approved cabinet

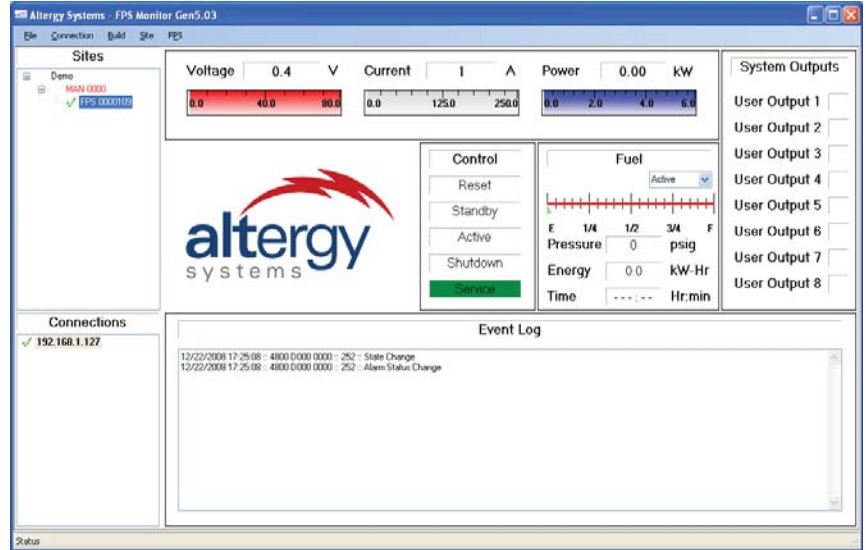
TPM – Ultracapacitors		24 Volt – Model # 420	48 Volt – Model # 425
<b>Physical</b>	Dimensions (w x d x h):	19" x 30.5" x 5" / 48 cm x 77 cm x 13 cm	19" x 30.5" x 5" / 48 cm x 77 cm x 13 cm
	Weight:	92 lbs / 42 kg	92 lbs / 42 kg
	Mounting:	19" / 23" Rack	19" / 23" Rack
<b>Performance</b>	Rated net power:	5 kW	5 kW
	Bridge Capacity:	5 kW - min	5 kW - min
	Rated peak current:	240 A	120 A
	Operating voltage: (nominal)	24 VDC	48 VDC
	Operating voltage: (range)	21 to 29 VDC	42 to 58 VDC
<b>Operation</b>	Ambient temperature:	36 to 115 °F / 10 to 46 °C	36 to 115 °F / 10 to 46 °C
	Relative humidity:	5 to 100%	5 to 100%
	Location:	Alteryx approved cabinet	Alteryx approved cabinet



# Communications — 500 Series

Remote monitoring and control of the Alteryg Freedom Power™ System can be provided using the integrated Ethernet communications protocol or the optional wireless communication. By utilizing the unique Customer Graphic User Interface (GUI) the FPS Monitor software can remotely monitor and/or control the following:

- DC Plant Operations.
- Fuel Cell Operations (see FPS Engine Specifications for Monitored Functions).
- Fuel Pressure.
- Disconnect Grid Power and Verify Fuel Cell Operations



FPS Monitor Control and Monitor Interface

## Communications Specifications

Fuel Cell Monitoring Software	Description
Connection Types	Ethernet, Serial, Auxiliary and Comm Ports
1. Ethernet: - (Model # 500)	Ethernet connection
2. Wireless: - (Model # 510I)	"I" = IDEN Wireless modem
(Model # 510C)	"C" = CDMA Wireless modem
(Model # 510G)	"G" = GSM Wireless modem
Operating System	Windows (only)

# Rectifiers — 600 Series

The optional Alteryg supplied rectifiers are used to convert your onsite alternating current (AC) to rectified direct current (DC) for charging the TPM. These rectifiers must be ordered as either 24 VDC or 48 VDC to match your TPM.

**Note:** *These units are available by special request through an Alteryg Sales Representative.*

# Inverters — 700 Series

The optional Alteryg supplied inverters are used to convert the direct current (DC) from the FPS to alternating current (AC) to supply local computers and server farm applications.

**Note:** Pure sine inverters should be used to provide clean, stable power for equipment that is sensitive to AC voltage irregularity.

**Note:** *These units are available by special request through an Alteryg Sales Representative*

# Accessory Kits — 800 Series

**Accessory kits include:**

- Power Cabinet Upgrade Kit.
- High Pressure Manifold Pressure Kit.
- Composite 250 Bar Cylinder Kit.
- Optional High Pressure Fuel Access Door.
- Auxiliary Battery Charger.
- Power Cables for FPS-5 and TPM.
- Configuration-Presetup Kit.

## Accessory Specifications

Model No.	Description	Function
800	Power Cabinet Upgrade Kit	Upgrading from a 5 kW FPS engine to a 10 kW FPS engine in same standard cabinet (Model # 240)
810	High Pressure Manifold Pressure Kit	Upgrading from steel cylinders in Fuel Cabinet to composite tanks in same cabinet
820	Composite 250 Bar Cylinder Kit	Composite tanks (each) added for greater storage volume
830	Optional High Pressure Fuel Access Door	Security used to separate main fuel cabinet from the fueling access nozzle
840	Auxiliary Battery Charger	Used for maintaining charge on the internal battery and for “jump starting” an engine with a dead battery
850E - 24 or 48	Power Cable for Engine to DC Buss	Power cable from Engine (10k) to DC Buss – Designate 24 or 48 VDC
850T - 24 or 48	Power Cable for TPM to DC Buss	Power cable from TPM to DC Buss – Designate 24 or 48 VDC
860	Configuration-Presetup Kit	Setup charge for upgrading componets

# Configurator

How to configure a Freedom Power System for your needs:

On the opposite page you will notice a staged approach to designing your equipment. To understand the characteristics of each component, please refer to the appropriate section. Please use the following steps to configure your FPS order:

1. Model number starts with FPS.
2. Determine power (kW) demand for your power output then select the corresponding number: 5 for 5 kW, 10 for 10 kW, 15 for 15 kW, etc.
3. Determine the voltage requirement and select the corresponding number: either 24 for 24 volts or 48 for 48 volts.
4. Select the Power Cabinet for your application then select the corresponding number from the table listed in Step 4.  
*"Refer to page 6"*
5. Select the Fuel Cabinet for your runtime requirement then select the corresponding number from the table listed in Step 5.  
*"Refer to page 8"*
6. Select the Transient Power Module for your bridge power application then select the corresponding number from the table listed in Step 6.  
*"Refer to page 10"*
7. Determine the Communications monitoring application and select the corresponding number from the table listed in Step 7.  
*"Refer to page 12"*
8. Rectifiers – ***These units are only available by special request through an Alteryx Sales Representative***  
*"Refer to page 13"*
9. Inverters – ***These units are only available by special request through an Alteryx Sales Representative***  
*"Refer to page 13"*
10. Accessory Kits – Modular kits available to accommodate increases in the electrical output (e.g., 5 kW to 10 kW) or storage capabilities (e.g. steel to composite) of the site. *"Refer to page 13"*

Following are examples of valid configuration output:

**FPS - 548 - 240 - 320 - 405 - 500**

Model – kW/Voltage – Power Cabinet – Fuel Cabinet – TPM – Communications – Rectifier – Inverter – Accessory

To only purchase an Engine and TPM you only need to insert the Module and TPM numbers.

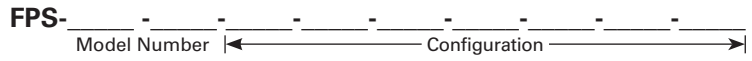
**FPS - 548 - 405**

Model – kW Voltage – TPM

# FPS Series Product Configuration System

Alteryx Freedom Power™

FPS Series Product



**Step 1:**

Model number starts with FPS

**Step 2:**

To designate kW enter the single code: 5 for 5k, 10 for 10k, etc.

**Step 3:**

To designate VOLTAGE enter the single code: 24 for 24V or 48 for 48V.

**Step 4:**

To designate POWER CABINET enter 200 Series #

POWER Cabinet		
200 Series		
Standard	Slim-line	Rack Mnt
5kW or 10kW		
240	225	250

"Refer to page 6"

**Step 5:**

To designate FUEL CABINET enter 300 Series #

FUEL Cabinet					
300 Series					
Steel		Composite			
6 Bay	9 Bay	1 Bay	2 Bay	3 Bay	4 Bay
330	310	325	320	305	300

"Refer to page 8"

**Step 6:**

To designate TPM enter 400 Series #

TPM			
400 Series			
Battery		Ultracaps	
24V	48V	24V	48V
400	405	420	425

"Refer to page 10"

**Step 7:**

To designate COMMUNICATIONS enter 500 Series #

COMMUNICATIONS	
500 Series	
Ethernet	Wireless
500	510-(I,C,G)

"Refer to page 12"

**Step 8:**

To designate RECTIFIERS enter 600 Series #

RECTIFIERS			
600 Series			
Combo		Add. Bus	
24V	48V	24V	48V
Call Sales Representative			

"Refer to page 13"

**Step 9:**

To designate INVERTERS enter 700 Series #

INVERTERS	
700 Series	
Call Sales Representative	

"Refer to page 13"

**Step 10:**

To designate ACCESSORY KITS enter 800 Series #

ACCESSORY KITS			
800 Series			
800	810	820	830
840	850-E 850-T	860	

"Refer to page 13"

# Company Overview

Changing the Way the World Gets its Power®

Think of it. Freedom. From

- the power grid
- oil dependency
- batteries
- pollution

**That Freedom is available. Now.**

Altergy Systems designs and manufactures proprietary proton exchange membrane (PEM) fuel cell systems, collectively known as Altergy Freedom Power™ Systems. These compact, rugged, highly efficient systems generate electrical power at the point of use — making reliable, distributed power generation a reality.

An excellent alternative to batteries and generators, this innovative PEM fuel cell based system gives you the power you need, when and where you need it most.

Telecommunications, data centers, and other mission-critical applications benefit greatly from the uninterrupted, on-demand power, peak shaving and load



*The Altergy Freedom Power™ System*

shedding made possible by Altergy's innovative fuel cell systems.

Not only are Altergy's systems rugged and reliable, they can be cost-effectively mass produced.

As a result, Altergy's validated technology breaks critical fuel cell barriers and shifts not one but three existing paradigms: the perception that all fuel cells are expensive; how fuel cells are designed, manufactured and used; and, of greatest significance, how the 21st century world will be powered.

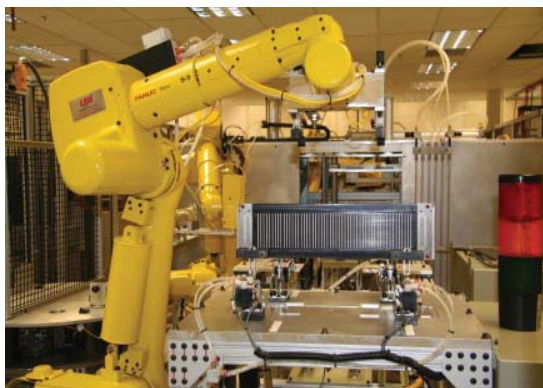


# The Alteryg Freedom Power™ System

## The unique Alteryg advantage

Alteryg Freedom Power Systems are the first truly viable commercial fuel cell solution. This unique status is the result of several differentiating characteristics:

- Capable of Being Mass Produced  
Freedom Power products are designed from the outset to be produced in high volume using off-the-shelf materials; stamped and molded fabrication; established high volume manufacturing processes; and standard, robotic automated assembly equipment.



Alteryg's automated, high volume fuel cell assembly line.

- Lower Cost  
Alteryg's innovative product design and the use of low-cost materials and automated manufacturing reduces critical component costs, enabling fuel cell pricing that is competitive with traditional power sources.
- More Rugged, More Durable  
Fragile components typically used in

competitors' fuel cells, such as graphite plates, have been replaced in Alteryg's design by rugged, highly durable components that withstand the severe environment experienced in industrial use.

- Smaller Footprint



The smallest footprint in the industry

Alteryg's products are heralded as having the smallest footprint of any existing PEM-based product in today's marketplace. With space a premium in many application environments, the more compact Alteryg system works where other fuel cell systems cannot.

As a result of these unique characteristics, Alteryg is changing the way the world gets its power.

# Contact Information

## Sales Contact

To obtain warranty information, contact an Alteryg Service Representative at:  
(916) 458-8590 or [Warranty\\_Info@alteryg.com](mailto:Warranty_Info@alteryg.com).

## Customer Service

If you have questions or in case of emergency, please contact  
Alteryg Customer Support at:

140 Blue Ravine Road  
Folsom, CA 95630 USA  
[support@alteryg.com](mailto:support@alteryg.com)

Telephone: (916) 458-8590 – Normal Business Hours (8:00 am to 5:00 pm Pacific Time)  
(916) 715-4787 – After Normal Business Hours



Alteryg's 35,000 sq. ft. headquarters  
and manufacturing facility is located in  
Folsom, California.