

90kVA / 90kW  
FCXTREME

**35+**  
YEARS IN BUSINESS  
Established 1987



**FCX**  
**SYSTEMS**

*Engineered for Endurance*  
MADE IN THE USA SINCE 1987



## Ground POWER Solutions For All Generations Of Aircraft

**The FCXtreme Series provides reliable solid-state converters that are designed to provide aircraft ground power in "low profile" applications such as under passenger boarding bridges, in maintenance hangars, or on flight lines.**

All models optimized and tested to perform a continuous output power rating with 200% overload capacity in 24/7 operations.

- Individual phase regulation, improved efficiency, and low input current distortion
- Innovative, adaptive wave optimization and voltage stabilization
- Laminated bus design eliminates transient voltage surges for high performance and increased reliability
- Lightweight powder-coated steel enclosure with sealed electronics compartment superior to typical aluminum enclosures to reduce RF emissions
- Full-featured user interface with detailed troubleshooting menus added to the advanced diagnostic and logging system

- High contrast 4 line by 20 character display with full feature user interface and 16 button keypad. Separate standalone controls to ensure ease of use for most frequent functions
- Standard RS485 Modbus communication and integration capability with available RJ45 Ethernet connection capability

### Suitable For:

Fixed/Rotary Wing Aircraft and All Other  
400 Hz Applications



**Through an innovative design, advanced diagnostic and logging systems, and rugged modular construction, FCXtreme Series products assure maximum power availability and minimal maintenance time.**

FCX Systems has been serving the military, commercial, and industrial markets since 1987. Our knowledgeable, experienced sales staff is waiting to review your requirements and specifications. Please call us at **(304)983-0400** or submit your inquiry via email to **sales@fcxinc.com**. We are eager to provide your solution.

**Specifications below based on 90kVA / 90kW. Other ratings and types are available. Please contact us for more information.**

Electrical Characteristics		
I N P U T	Input Voltage	380-415V, 3ph, 50Hz / 480V, 3ph, 60Hz $\pm 10\%$ (Other voltages available upon request)
	Input Power Factor	0.8 to Unity (1.0) (Typically $\geq 0.95$ at 50% and above)
	Surge Protection	Integral Surge Supression compliant with UL 1449 and IEEE C62.41.1 and IEEE C62.41.1 (Location Category B) requirements
	Inrush Current	None, Soft Charge to rated voltage
	Input Current Distortion	$\leq 5\%$ at full rated load
	Full Load Amperage	90kVA - 96 Amps   90kW - 123 Amps
O U T P U T	Output Voltage	200/115V, 3ph, 400Hz or 208/120V, 3ph, 400Hz (Other voltages available upon request)
	Power output	90kVA / 90kW
	Efficiency	$\geq 87\%$ @ 50% Load $\geq 91\%$ @ 100% Load (Note: Systems requiring an input transformer, apply 2% reduction to efficiency numbers)
	No Load input Losses	$\leq 7\%$ of converter output kW rating (Typically $\leq 5\%$ )
	Overload	110% (60 minutes), 125% (5 minutes), 150% (2 minutes), 200% (20 seconds) Standard. 300% (4 seconds) Optional
	Short Circuit	System designed and tested to withstand short circuit current (bolted line to ground fault and bolted three phase fault) without damage until the integral protective controls and devices interrupt the fault
	Output Voltage THD	$\leq 3\%$ L-L / L-N for Linear Loads, $\leq 5\%$ L-L / L-N for Non-Linear Loads, $\leq 4\%$ for Unbalanced (15%) Linear Loads
	Output Voltage Amplitude Modulation	$\leq 0.5\%$ of nominal voltage rating, no load to full load
	Frequency Stability	$\pm 0.01\%$ under all operating conditions
	Phase Angle Regulation	120° between adjacent phases $\pm 2^\circ$ (Balanced Load), 120° between adjacent phases $\pm 4^\circ$ (15% Unbalanced Load)
	Transient Output Voltage Recovery	Meets or exceeds MIL-STD-704F
Environmental Rating		
Ambient Temperature Range		Operating: -40 °C to +55 °C (-40 °F to +131 °F)
Relative Humidity Range		10 to 95% w/out condensation
Ambient Pressure from Sea Level		Ambient Pressure: Sea Level to 9843ft (3000m)
Monitoring and Control Panel		
Controls		Start, Stop/Reset, Output On/Off, Emergency Stop
Indicators		LED indicators: Power On, Converter On, Module Fault, Input Voltage Fault, Output Voltage Fault, Overload, 28VDC E/F Interlock, 28VDC E/F Bypass Mode, Output 1 On, Output 2 On
Instrumentation		4 Line by 20 Character Backlit Display
Data Logging		Total of 200 events (100 Events per unit when dual outputs are incorporated)
Diagnostics		System designed with built-in test circuit that monitors both primary and protective circuits of the unit. Performs system check of each circuit board and communication port to internal component interfaces.
Alarm Functions		Audible Alarm rated 80dB(A) @ 2ft w/ Alarm silence function & indicator activates when system fault condition is detected

Input and Output Connections		
Circuit Breaker		Circuit breaker conforming to UL489
Input Circuit Breaker		UL listed thermal magnetic trip circuit breaker
Output Contactor		Three pole, magnetic coil contactor rated for full load, overload, and short circuit conditions. Contactor interlock with all protective controls to open in the event of fault condition. (Typical for aircraft cable applications)
Output Circuit Breaker		UL listed molded case switch derated for 400Hz application. (Typical for distribution applications)
Aircraft Interlock Circuit		A safety interlock circuit included on the unit output to detect 28VDC feedback signal from the aircraft. Bypass function supplied as well
Protection		
Input Under/Over Voltage, Phase Loss, Input Power Loss, Access Door(s) Interlock, Output Under/Over Voltage per Mil-STD-704F, Output Overload, and Over Temperature		
Automatic Line Drop Compensation		
Adjustable automatic line drop compensation, configurable from 0 - 10%		
Acoustical Noise		
Maximum continuous acoustical noise level $\leq 72$ dBA		
Assembly Construction		
Enclosure is suitable for indoor or outdoor environments and provides protection equivalent to NEMA 250, Type 3R. Integral forced air cooling intake and exhaust openings are covered as required. All components except for the user interface are totally enclosed within the unit. Design employs modular construction for ease of maintenance and repair. All wiring is uniquely labeled with identification thoroughly documented and as built schematics provided within the Operation & Maintenance manual. Finish is durable, scratch resistant, rust inhibiting, electrostatically applied powder coat finish. Standard color: Signal White (RAL 9003). Other colors available upon request.		
Codes and Standards		
Meets or Exceeds		UFGS 26 35 45 SAE ARP-5015 NFPA 70 UL 1012 MIL-STD-704F
Option and Accessories		
28.5VDC Output with up to 600A rating Bridge mounted brackets Hand tow cart Vehicle tow trailer 18" / 36" Floor stand Dual output contactors		Remote operators station(s) Output power cables Power usage monitoring

At FCX Systems, we take pride in our highly trained support staff, dedicated to providing the best operational and technical support in the industry. Factory technicians are available for on-site training, maintenance and repair services, either in conjunction with our available maintenance plans, or as standalone services. Operational and maintenance training are also available at our factory. With FCX you can rest assured that you will have the support you need, when you need it, from a friendly, professional and experienced staff, 24/7/365. Contact us at **(304)983-0403** or [service@fcxinc.com](mailto:service@fcxinc.com).