



ED-FPC Series™ Frequency & Phase Converters 3kVA - 5kVA



Unique Frequency/Phase Conversion and Power Conditioning Capabilities

Falcon's ED-FPC Series™ Frequency/ Phase Converter and Regenerative Power Source has been designed to tame harsh field power. It provides reliable computer-grade power suitable for power-sensitive equipment.

The ED converts incoming three-phase utility or generator power to DC which is regulated and fed into a robust PWM MOSFET inverter. The inverter stage then regenerates new regulated, single-phase computer-grade power of the desired frequency.

This approach removes voltage transients, sags, surges and the frequency stability problems often encountered from ground-based and aircraft generator systems, as well as third-world utility sources.

Additionally, the ED-FPC allows for the connection of single-phase equipment to a three-phase source while maintaining a balanced power draw from all three phases. This helps eliminate excessive harmonics and the nuisance tripping of circuit breakers due to phase imbalance created on the three-phase source.

Superior output power quality is assured with $\pm 3\%$ voltage regulation and a sinewave harmonic distortion of less than 3%. Frequency regulation is maintained at $\pm 1\%$. The output specifications are held over the entire input voltage and frequency range, no load to full load.

COTS Availability and a Rugged, Deployment-Ready Design

To accommodate field, mobile and aircraft installations, the ED-FPC is designed to meet the shock and vibration requirements of RTCA/DO160, Zone A and the Munson Road Test. As requirements vary depending on the specific application, final qualification testing must be performed prior to deployment.

Light Weight and Small Size is Ideal for Aircraft, Mobile and Shelter Usage

With a weight of under 80 pounds, the ED-FPC is one-third the weight of other products. Its compact 4U rackmount form factor allows for easy integration into aircraft, ground-based mobile and shelter applications.

Aircraft - The ED-FPC converts 115/200 Vac, 400Hz three-phase aircraft "Wild Power" to computer-grade 120Vac, 60Hz, single-phase power. It provides an easy solution to powering land-based systems from fixed-wing and rotary aircraft 400Hz power.

Mobile - Originally designed for use with HMMWV three-phase generator systems, the ED-FPC is ideally suited for mobile implementation and survivability. It delivers computer-grade power for critical tactical systems on board the HMMWV. Models are also available for use with single-phase generators.

Shelters - Due to its light weight and small size, the ED-FPC is a good solution for powering sensitive computer-based equipment from the small generators typically incorporated into Single and Dual-Pallet Shelters.

The ED-FPC can also be invaluable when designed into Mobile Medical, Combat Hospital or Laboratory Shelters. Laboratory equipment, such as Mass Spectrometers, Gas Chromatographs, Genetic Analyzers, Centrifuges and Protein Synthesizers, demand a level of power quality that most generator sources cannot deliver. Additionally, the equipment is typically designed to operate from single-phase power. Due to the large amount of equipment required, generator phase balancing can also be an issue.

When used in Command and Control Shelters, the ED-FPC supplies computer-grade power to computers, network, satellite equipment and tactical systems. To discuss you specific application, please contact Falcon Military Sales.

Advanced Features:

- * Small and Lightweight Design
- * Double-Conversion Frequency/ Phase Conversion with Computer-Grade Output
- * Three-Phase Input and Single- Phase Sinewave Output Solves Phase Balancing Problems
- * Converts Wide Range 45- 450Hz Input Power to Fixed Frequency 50, 60 or 400Hz Output Power
- * Wide Input Voltage Range with $\pm 3\%$ Output Voltage Regulation
- * Basic Rectifier Input Greatly Increases Reliability in Harsh Power Environments
- * Rugged & Proven MOSFET PWM Inverter Design
- * Provides True Sinewave, Low Distortion Computer-Grade Power
- * Low Output Impedance Capable of Supporting Loads with a High Inrush
- * Rugged Rackmount Form Factor

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ED-FPC Series Rackmount Frequency & Phase Converters

SPECIFICATION

Model Numbers	ED-FPC-3000RM-3/1-4 ED-FPC-3000RM-3/1-5 ED-FPC-3000RM-3/1-6	ED-FPC-4000RM-3/1-4 ED-FPC-4000RM-3/1-5 ED-FPC-4000RM-3/1-6	ED-FPC-5000RM-3/1-4 ED-FPC-5000RM-3/1-5 ED-FPC-5000RM-3/1-6
Application	Frequency/Phase Converter with Regenerated Output		
Nominal VA	3000	4000	5000

Electrical Input

AC Voltage, +10% -10%	115/200 Vac 3Ø or 120/208Vac 3Ø without modification		
Current-Amps	9.6A per phase	12.8A per phase	16A per phase
Frequency Range	47Hz - 450Hz		
Isolation	None		

Electrical Output

AC Voltage	115 Vac or 120 Vac 1Ø, ± 3% (specify at the time of order)		
Voltage Regulation	± 3% no load to full load		
Frequency	50Hz ±1% (-5 models) or 60Hz ±1% (-6 models) or 400Hz ±1% (-4 models)		
Watts	2100	2800	3500
Current-Amps	25	33	43
Non – Linear Repetitive Peak (Amps)	60	80	100
Total Harmonic Distortion	< 3% @ 100% Linear Load, < 5% @ 100% Non-Linear Load		
Overload	200% for 0.5 Seconds, 120% for 30 Seconds		
Dynamic Response	± 5% RMS for 100% Step Load Change, 1ms Recovery Time		
Output Protection	Short Circuit and Overload		

Electrical Connections

Input	(1) MS3452W24-10P (Located on the front panel)
Output	(1) MS3452W22-22S (Located on the front panel)

Environmental

Operating Temperature	-10° C to 50° C (14° F to 122° F)
Storage Temperature	-20° C to +60° C (-4° F to 140° F)
Humidity	10% to 95% Non – Condensing
Operating Altitude	10,000 Feet
Cooling	Low Velocity Forced Air Fans
Air Flow	Front to Back
Audible Noise @ 1.5 Meters	54dBA @ 1.5 Meters

Controls and Indicators

Sequenced LEDs	Load Level
Single LED	Utility Present, Summary Alarm, Inverter On
Audible Alarms	Utility Interrupt, Inverter Failure, Overload
Communications	Dry Contact Closures on Utility Loss via 9 Pin "D" Connector

Mechanical

Dimensions	H x W x D inches (mm)	6.97 x 17.13 x 21.06 (177.1 x 435.1 x 534.92)
Chassis		4U Rackmount
Weight	lb. (kg)	Aprox. 80 (36.3)
Mounting		Rackmount Front Panel and Slide Rail Mounting Holes

