

## PRODUCT APPLICATIONS

400Hz frequency converter designed and hardened for shipboard use. Shock and Vibration resistance mounting and an EMI hardened enclosure provide reliable 400Hz suitable for any environment a naval ship can encounter. This converter is designed to go into an electronics equipment room deep inside the ship.



## INPUT

- Input voltage: 400 to 500V ac
- FLA @480V Rated Current
- PF 0.8: 93A +/- 15%
- PF 1: 118A +/- 15%
- Input Frequency: 45 to 65Hz
- Inrush current: None (0)
- FLA: 30kVA- 45 Amps +/- 15%
  - 45kVA- 65 Amps +/- 15%
  - 50kVA- 73 Amps +/- 15%
  - 60kVA- 88 Amps +/- 15%
  - 90kVA- 130 Amps +/- 15%
- Rectification: Magnetic wave-shaping 12 Pulse
- Line current distortion: <5%

## OUTPUT

- Rated Power: 30-45-50-60-90kVa, PF 1.0 to 0.8 Lag
- Voltage: 3x 115/200 VAC, WYE, ABC-N
- Frequency: 400 Hz +/-0.1%
- Power Factor: 0.7 lag to 0.95 lead
- Voltage Regulation: <0.5% for balanced and up to 30% unbalanced loads
- Voltage Recovery: <8% and recovery time <10ms at 100% load change
- Total harmonic content:
  - <2% at linear load (Typ. 1.5%)
  - <2% at non linear load according to ISO 1540
- Transient Performance: Exceeds MIL-STD-704
- Crest Factor: 1.414 +/-3%
- Voltage Modulation: <1.0%
- Phase Angle Symmetry:
  - 120° +/-1° for balance load
  - 120° +/-2° for unbalance load
- Overload Rating @all kVA Ratings:
  - 125% for 10 minutes (90kVA = 112.5kVA)
  - 150% for 60 seconds (90kVA = 135kVA)
  - 200% for 30 seconds (90kVA = 180kVA)
  - 300% for 10 seconds (90kVA = 270kVA)
  - 400% for 1 second (90kVA = 360kVA - 1040 amps)

## KEY FEATURES

- Currently in use on Canadian Frigates and AOPS ships
- Individual phase regulation at aircraft interface, perfect voltage regulation even with unbalanced loads.
- Meets and exceeds MIL-STD-704F requirements.
- Total Harmonic Content <3%
- Airborne Noise <65DB@1M
- Operating temperatures -40°C to +56°C
- Relative humidity 10-100%
- Foundation base frame and mount 930Lbs.
- Weight - 328kg (725 lbs.) No Support Frame/No Cables
- 420kg (925 lbs.) With mounting frame and shock mounts
- Digital Information Display
- Digital diagnostics aid for troubleshooting
- Building Management System compatible
- Soft Start Feature eliminates inrush current
- EMI Hardened Shell

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### KEY CERTIFICATIONS

- MIL-STD-704F - Aircraft Electrical Power Characteristics
- DFS400 - Specifications for 400Hz Aircraft Power
- BS 2G 219 - General requirements for ground support equipment
- SAE ARP 5015 - Ground Equipment 400Hz ground power performance requirements
- EN2282 - Aerospace series characteristics of aircraft electrical supplies
- ISO 6858:2017(E) - Aircraft Ground Support Electrical Supplies
- MIL-S-901D - High Impact Mechanical Shock
- MIL-STD-167-1 - Mechanical Vibrations of Shipboard Equipment
- EN62040-1-1 General & safety requirement
- EN61558-2-6 General & safety requirement
- EN61000-6-4 Electromagnetic compatibility generic emission standard
- EN61000-6-2 Generic immunity standard
- EN1915-1&2 Machinery; general safety requirements
- EN12312-20 Machinery; general safety requirements
- CSA/ESA Certified
- Network Quality/Tolerance in accordance with STANAG 1008
- MIL-STD-461G
  - CE101 - Waiver Issues for 3 minor peaks (300Hz/15A, 420Hz/3.5A, 660Hz/3.2A)
  - CE102
  - CS101
  - CS144
  - CS115
  - CS116
  - RE101
  - RE102 - Waiver issued for 3 minor peaks (Narrow band 4.36dB/0.35MHz, 5.9dB/6.195MHz, 2.91dB/11.225MHz)
- RS103
- Certification Reports available upon request