Non-Linear Inverter (NLI)

Modern aircraft are moving towards 270VDC power, yet legacy loads often require 3-phase input power. The GE Aviation Non-Linear Inverter, converts 270 VDC input power into regulated 115 VAC, 400 Hz, three-phase output and is capable of continuously providing 10,000 VA of output power to non-linear type loads. It can power loads with many different qualities; diode rectification input AC voltage, operation on single phase inputs (unbalanced loads), or highly capacitive or inductive devices.

The 3-phase Inverter provides overload and short circuit protection with automatic recovery. High power density is provided using GE Silicon Carbide (SiC) modules. This enables switching frequencies of 5 to 10 times that of Silicon devices. The NLI increases power availability to the platform, thus eliminating the need to shed critical system loads to bring different systems online.

Features:

- GE 200°C qualified SiC Power MOSFETS enables High Efficiency and High Power Density
- Overload and Short Circuit Protection with auto-recovery
- Operation at higher switching frequencies resulting in better fidelity of the output voltage
- Digital control via FPGA controller
- Capable of reliably providing 10,000 VA loads with to 40kVA output
- Input to Output (I/O) Isolation
- MIL-STD-461 compliant
- Mil-STD-704 Compliant, 270 VDC to 3 Phase 400Hz AC Power Source
- On-board BIT and diagnostics
- 90% Efficiency
- Liquid cooled design – Polyalphaolefin (PAO) or Ethylene Glycol (EGW)

Physical

- Weight: < 16 kg (35 lbs.)
- Dimensions: H - 208mm (8.19’’), W - 209mm (8.26’’), L - 329mm (12.97’’)

Environmental

- Coolant: -40°C to +50°C, 1.5 gpm, 25 psid; 150 psig input pressure. Tailorable to system requirements.
- Shock: MIL-STD-810E
- Vibration: MIL-STD-810E
- Humidity: DO-160D

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015000G1</td>
<td>180-325VDC</td>
<td>115VAC @ 400Hz</td>
<td>8,000VA or 10,000VA</td>
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</tbody>
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