



ZIN Technologies

# Aerospace Power Converters

## Models: Standard, Modified and Custom

### Aerospace Power Converters

#### DESIGN HIGHLIGHTS

DC-DC & DC-AC Converters for Aerospace Applications  
Multiple kW Power Outputs  
DC-DC Applications  
Battery Chargers  
ISS Docking Power Supplies  
Motor Drives  
Power Inverters  
Planar Magnetics  
Overcurrent Protection  
Low Ripple and Noise

#### CUSTOM POWER MAGNETICS

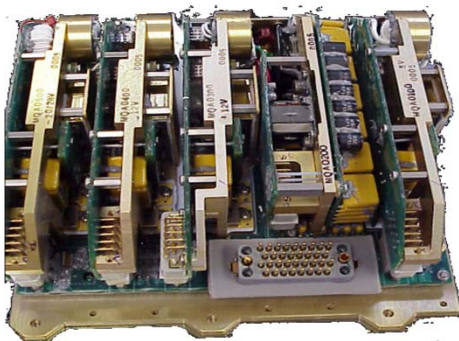
Planar Transformers  
Current Sense Transformers  
EMI Filters

#### EXTENSIVE TELEMETRY

Input / Output Voltage  
Input / Output Current  
System Temperatures

#### MISSION CRITICAL DESIGN

Complete Internal Redundancy Options  
Efficiency Range From 90 TO 94%  
Operating Temperatures -190°C to +200°C  
EEE Parts Selection per:  
EEE-INST-002 / MSFC-STD-3012  
Radiation-Hardened: 100kRAD  
Size, Weight & Power Efficient Design  
MIL-STD-461 EMC Tests  
Thermal Vacuum Cycling / Outgassing  
Shock and Vibration



ZIN Technologies is a proven designer of DC-DC and DC-AC power converter solutions for a wide range of space applications. ZIN has created custom power conversion solutions for crewed and mission critical applications, most recently NASA's Commercial Crew program.

ZIN excels in space-rated DC-DC converter design, manufacture, and test. In many space power systems, it is necessary to convert electrical power between two different systems. For example, vehicles that dock with the International Space Station (ISS) require a power converter to charge the spacecraft's batteries from ISS's 120V power bus.

ZIN's DC-DC converter designs handle multiple kilowatts of power with efficiency up to 95%. ZIN's DC-DC converter designs utilize state-of-the-art technology such as soft switching and synchronous rectification to meet our customers' specifications. ZIN implements the designs using space-grade, radiation-hardened components that provide reliability for mission-critical applications. ZIN also designs DC-AC converters for space-based motor drives and power inverters.

- ZIN designs power converter magnetics in-house, and can therefore tightly integrate electronics and magnetics. ZIN designs custom planar magnetics that offer size, weight, and efficiency advantages over traditional designs.
- ZIN's power converter designs are modular, and offer features such as on/off control, adjustable voltage and current limits, and extensive voltage, current, and temperature telemetry. ZIN has developed a library of modular common power converter features that allow us to exceed customer expectations quickly and economically.
- The power converters are designed for critical applications, and meet requirements for EMC, Shock, Vibration, Thermal Vacuum, Outgassing, Radiation, and EEE parts control.



**ZIN Technologies Inc.**

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Founded in 1957, ZIN provides engineering services and products to NASA and the aerospace industry. ZIN has managed the development of Mission Critical Class A/B space flight hardware (aerospace/space systems) from formulation, design, and development through to fabrication, integration, testing, verification, and mission operations.

Our experience includes the development and validation of new technologies (sensors, inertial navigational measurement units (IMUs), composites, advanced acoustic resonant attenuation, optics, power, additive manufacturing and wireless/RF).

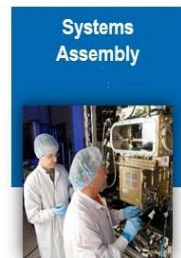
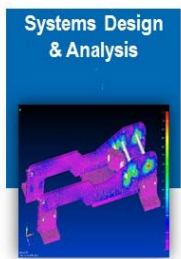
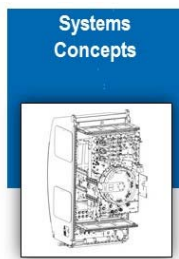
ZIN provides hardware and service for ISS research investigations, space launch systems, satellite systems, and space based human research projects enabling future space and science missions.



**Focus on Quality - Certified and Compliant with Industry and Government Quality Standards**



## OUR PRODUCTS & SERVICES



- ❑ **Minority Owned-SDB**
- ❑ **AS9100 certified**
- ❑ **DCAA Approved Forward Pricing**
- ❑ **Headquartered Cleveland Ohio**
- ❑ **Award Winning Capabilities**

