# High Voltage DC-DC Converter

Input 400-800v: Output 28v: Power 4kW


## Multi-Market. Multi-Platform. Multi-Use

- Wide input voltage range supports more electric, hybrid-electric, and all-electric platforms
- 97% efficient, high power density conversion enables a light, sustainable, quieter aircraft
- Versatile 4kW power converter serves as power system's building block

Crane Aerospace & Electronics is an industry leader in power technology that accelerates the electrification of air, land and sea vehicles and systems. We've leveraged our more than 60 years of power expertise to deliver technology advancements that provide higher power in smaller and more efficient products.

By understanding the need of our performance-driven customers, Crane A&E engineers have designed and developed a uniquely versatile, modular High Voltage DC-DC Converter. Our one-of-a-kind converter delivers a wide input range (400-800v) that supports more-electric, hybrid-electric, and all-electric platforms. It supports multiple cooling options and converters can be paralleled to match a customer's power need.

Crane A&E's High Voltage DC-DC Converter converts high voltage source power into a power system's 28v DC bus. The converter is 97% efficient and packs 4kW of power into a small package. As the commercial aviation and defense industries move toward alternative fuel sources, Crane A&E is positioned to meet demand with its multi-market, multi-platform, multi-use High Voltage DC-DC Converter.

### Multi-Market

- Commercial Aviation
- Defense

### Multi-Platform

- Turbine
- Electric
- Hybrid–Electric
- Hydrogen

### Multi-Use

- Distributed Bus Power
- Actuation, Motors and Fans
- Avionics

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## Features

- Input range: 400-800v
- Output: 28v
- Power: 4kW (Parallelable to higher power levels)
- 97% efficient
- Lightweight
- Supports conduction, fan or liquid cooling modules
- Parallel capability adjusts to specific power needs

## Electrical Design Description

The power train of Crane's High Voltage DC-DC converter uses a highly efficient topology to minimize size, weight and dissipation.

Multiple modules are incorporated into the DC-DC converter. The input module serves as the high voltage electrical interface to the aircraft. It contains functions that ensure compliance with RF emissions, RF susceptibility, lightning and inrush current control. The supervisory module interfaces with aircraft control and monitoring functions. It provides protection and surveillance functions for the DC-DC converter.

## Performance Summary

| KEY CHARACTERISTICS | |
|---|---|
| **Electrical** | |
| Input Voltage<br>Output Voltage Regulation | 400-800 Vdc<br>28 ± 0.5Vdc (nominal, can be set) |
| Output Ripple Voltage | <1.0V peak mean and mean valley |
| Maximum Current | 140 A |
| Output Power | 4kW (parallel capable to increase power output) |
| Operating Temperature | -40 ˚C to +70 ˚C |
| Over Voltage Limit | Settable |
| Over Current Limit | Settable |
| EMI Filter | DO-160, Section 21, Cat. M |
| Cooling Method | Conduction, Fan or Liquid |
| **Mechanical** | |
| Weight | ˜ 6 lbs (depends on cooling method selected) |
| Environmental Protections | DO-160G |
| Dimensions (LxWxD) | 11.5" x 6.2" x 2" |
| Mounting Face Temperature | ≤ +90 ˚C |
| Converter Efficiency | 97% at full load |







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