



DEFENSE POWER ELECTRIFICATION SOLUTIONS



High Power Traction Motor Inverter /
Generator Controller

MISSION CRITICAL.
CRANE POWER.





- High-density power converters up to 30kW, scalable to 250kW for ground or airborne high-energy systems
- High-efficiency AC-DC power conversion modules for ground system electrification and high-demand defense systems
- Advanced uni- and bi-directional DC-DC power conversion and inversion technologies for military electric vehicle powertrains
- State-of-the-art onsite high-power lab and full environmental test and manufacturing facility

OUR HISTORY

Crane Aerospace & Electronics owns a rich history of providing rugged, reliable and efficient mission-critical electrical power solutions for the defense market. Located in Fort Walton Beach, Florida, our facility was constructed in 1958 after winning a contract with nearby Eglin Air Force Base. Over time, the site evolved from developing low and high voltage power supplies for

EW and C4ISR applications to becoming an industry-leading supplier of innovative power conversion and power management systems. Today, Crane A&E's Defense Power solution has matured its technology to power military ground system platforms and the modern era of military vehicle electrification.



ELECTRICAL POWER CAPABILITIES

Crane A&E's Defense Power products are engineered to excel in the harshest conditions, where failure isn't an option. We're proud to offer AC-DC, DC-DC and power system level solutions that feature superior size, weight and cost, efficient packaging and scalability to match customer requirements.

Key Capabilities

- High Power Conversion (Available or in development)
 - Bi/Uni-Directional solutions (4-250kW)
 - (270-800VDC) input / 6-400VDC output (15-30kW)
 - (600-900VDC) input / 270VDC or 28VDC output (4kW)
 - 600VDC input - variable output (60-250kW)
 - 600VDC input - 120/208VAC 3-phase output
 - 120/208VAC 3-phase input - various DC output
 - 250kW (400kW peak) Traction Motor Inverter / Generator Controller
- High efficiency and density
- Digital interfaces and control
- Communication interfaces: J1939/CAN, RS 485, ethernet
- EMI/EMC MIL-STD-461 verified
- Rugged MIL design shock/vibration to MIL-STD-810
- Customizable performance and packaging to meet customer needs

HIGH POWER LAB

Our Fort Walton Beach facility's state-of-the-art High Power Lab, billed "The Powerhouse," allows Crane A&E's engineering team to design, build and test systems and subsystems requiring up to 1MW – enough power to supply upward of 800 homes.

Lab Features

- 1.5MW power availability
- Discrete/systems
- Three overhead power rails
 - 277/480VAC
 - 120/208VAC
 - Variable voltage, variable frequency
- Static/pulsed loads
- Environmental capability
- Multiple workstations

THE **POWER**HOUSE
AT FORT WALTON BEACH
HIGH POWER. HIGH CAPABILITY



DEFENSE POWER

ELECTRIFICATION

VEHICLE SOLUTIONS

Crane A&E offers highly engineered power solutions optimized for next-gen military vehicle electrification powertrain needs. Our product lineup features scalable DC-DC bi-directional power conversion and inversion solutions that deliver high power density, exceptional efficiency and reliable performance in demanding operational environments.

- Dual J1939 CAN interfaces
- Liquid cooled chassis – up to 85°C coolant
- IP67, HVIL, built in test, self-protection
- Wide input ranges, accommodating HV battery direct connection to bus
- **Bi-Directional Power Configurations**
 - 600-28VDC, 15kW
 - 600VDC to variable, 60-250kW
 - 30-200kW import/export (600VDC-115/208VAC Converter)
 - Bi-directional for export power and vehicle-to-grid
- **Uni-Directional Power Conversion Configurations**
 - 600-28VDC, 15kW and 30kW
 - 600-270VDC, 15kW



POWER SYSTEM SOLUTIONS

Crane A&E delivers custom configurable power system solutions utilizing our DC-DC and AC-DC power conversion modules, which are easily integrated through a blind-mate chassis design. Flexible input/output options, scalable module redundancy, and near unlimited output voltage combinations allow systems to be tailored precisely to mission power needs.

- Integrated power system solution with command/control, power and cooling distribution
- Parallelable (up to 12 power converters)
- Blind-mate power, signal and cooling interfaces
- Integrated EMI filtering and circuit protection
- AC or DC input
- Liquid or forced air cooling
- Product support through lifecycle



Image courtesy of © Raytheon

APPLICATIONS: **VEHICLE ELECTRIFICATION** • **RADAR SYSTEMS** • **DIRECTED ENERGY** • **COUNTER-UAS** • **ELECTRONIC WARFARE** • **MICROGRIDS**

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FEATURED PRODUCTS

POWER SYSTEM SOLUTIONS

Crane A&E offers custom system level power solutions by paralleling power conversion modules into an integrated chassis to meet customers' specific requirements.

- Input power options
 - 120/208VAC 3 Phase 50-60Hz
 - 120/208VAC 3 Phase 400Hz
 - 277/480VAC 3 Phase 50-60Hz
 - 600VDC
 - 270VDC
- Output voltage options: 6-400VDC
- Output parallel capability: up to 500kW
- Cooling system options: Liquid cooled, forced air cooled



AC-DC POWER CONVERSION

Crane A&E's AC-DC power conversion modules deliver superior SWaP with power factor correction above 99% in rugged 15 and 30kW configurations.

- Input power options
 - 120/208VAC 3 Phase 50-60Hz
 - 120/208VAC 3 Phase 400Hz
 - 277/480VAC 3 Phase 50-60Hz
- Output voltage options: 6-400VDC
- Output power options
 - 15-30kW per LRU
 - Parallel up to 12 converters
- EMI compliance w/MIL-STD-461E
- >92% efficiency



DC-DC POWER CONVERSION

Crane A&E's DC-DC power conversion modules deliver rugged MIL-STD-qualified performance in 15 and 30kW configurations.

- Input power options
 - 270VDC
 - 400VDC
 - 600VDC
 - 800VDC
- Output voltage options: 6-400VDC
- Output power options
 - 15-30kW per LRU
 - Parallel up to 12 converters
- >95% efficiency



TRACTION MOTOR INVERTER

Crane A&E's new High Power Traction Motor Inverter is a next-generation, high-efficiency 600VDC to 3-phase AC power converter engineered for military ground vehicle and expeditionary energy applications.

- 250kW continuous, 400kW peak power
- Silicon carbide (SiC) switching technology
- Wide voltage range (300-800VDC input)
- Bi-directional design supports motoring and generating
 - Regenerative braking, silent mobility, idle reduction applications
- High-speed AC output supports a range of propulsion / auxiliary motor applications



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