

**ONE TECHNOLOGY CORE
INFINITE INDUSTRY POSSIBILITIES**

**TAILORED POWER ELECTRONICS
TO DRIVE INNOVATION ACROSS INDUSTRIES**

CUSTOM EMBEDDED POWER ELECTRONICS SOLUTIONS

From defense to off-highway, energy storage, and advanced industrial automation, Prima Electro excels in developing **application-specific solutions** by leveraging deep expertise in **digital** and **power electronics**. The company draws on **extensive knowledge of semiconductor technologies—including SiC, and GaN**—combined with proven capabilities in inverter architecture, high-density integration, and ruggedized system design. Each solution is engineered to customer specifications, from feasibility analysis through final validation, ensuring real-world operational readiness.

PRIMA ELECTRO DELIVERS

- **Improved reliability**
Designs tailored to thermal, environmental, and EMC constraints
- **Smart integration**
Precise alignment with the control strategy, sensors, and safety requirements
- **Scalable platforms**
Modular solutions adapted to future system evolutions
- **Faster time to value**
Engineering support from concept to certification and industrialization

DEFENCE & AVIONICS

TAILORED POWER ELECTRONICS FOR CRITICAL MISSIONS

50+ Motor Drive

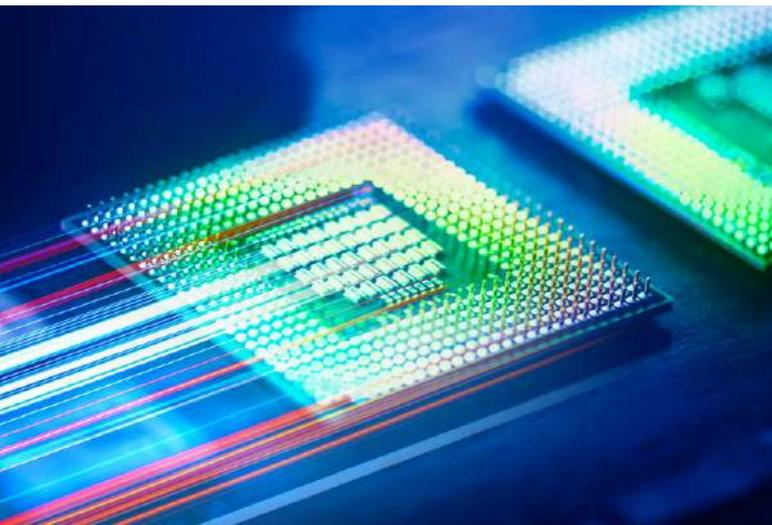
Custom motor drive **tailored** for **naval** and **defence** applications. Engineered to customer specifications, it ensures **compactness, efficiency, and EMC compliance** in harsh embedded environments.

- 5kW, 50Arms three-phase drive
- High-speed SiC MOSFET switching
- Optimized thermal footprint for E-Pod integration
- Fully insulated power stage and auxiliary input
- Communication: EtherCAT, CANopen (opt.)
- Feedback: Resolver, STO, NTC/KTY sensors
- Operational down to -30°C

150kW Traction Inverter

Three-level 150 kW inverter architecture with **high power density** and integrated liquid cooling. Optimized for **avionic and harsh environment applications**, it ensures >98% efficiency and meets DO-160 EMC standards.

- **SiC** Technology and optimized thermal design
- Integrated **EMC filters** (common-mode and differential-mode, DO-160 compliant)
- Embedded cold plate, no sealing interfaces
- **High Power density** for space-constrained installations
- DC input range: **600–900 V**, designed **up to 1200 V**
- 40kHz switching for balance of filter size and losses
- Avionic-grade power/signal connectors for enhanced and reliability
- LEM open-loop sensors for precise AC output monitoring
- Design validated via PLECS and thermal stress analysis





OFF-HIGHWAY & SPECIAL VEHICLES

COMPACT DUAL-OUTPUT CHARGING, READY FOR DUTY

eTwinCHARGER10

An efficient, air-cooled 10kW OBC designed to independently charge two different battery packs; this solution combines reliability and high power density with compact form factor.

- **AC Input:** 340–440 VAC | Output: 28V - 128V DC (dual-channel)
- **Max Charging Power:** 10kW | Efficiency: 96% at full load
- **Cooling:** Air-cooled with Top Side Cooling SiC MOSFETs
- **Power Density:** 0.6 kW/L
- **Communication:** Ethernet and CAN

ENERGY & INDUSTRIAL SYSTEMS

SMART MODULAR POWER CONVERSION

eBESS50

Compact, high-efficiency, and modular energy conversion system engineered to address demanding energy storage needs in both grid-connected and off-grid scenarios. Leveraging advanced SiC-based technology and adhering to international grid standards and certifications, the eBESS50 delivers exceptional power density, robust communication capabilities, and the versatility required for a wide spectrum of industrial energy storage applications.

- **Rated Power:** 50kW
- **Input Voltage Range:** 208–690Vac, 3P4W+PE

- **DC Output Voltage:** 700–1500Vdc
- **Efficiency:** >99%
- **Overload Capability:** 120% for 1 min; 150% for 10 sec
- **Architecture:** 3 level topology
- **Cooling:** Air cooling
- **Communication Interfaces:** TCP/IP, CAN (optional), RS-485
- **Certifications:** UL1741, UL9540, IEC 62477-1, IEC 62909
- **Grid Codes:** EN50549-1, G99, VDE4105/4110, AS4777, IEC27001

CROSS-SECTORAL APPLICATIONS

SCALABLE MULTI-INVERTER PLATFORM FOR COMPRESSORS AND BEYOND

A high-efficiency, ruggedized inverter family with three integrated drives—perfect for complex systems such as compressors, yet adaptable to a wide range of applications, from industrial automation to off-highway and energy systems.

- **Power range:** 80 to 180kW (Main Inverter)
- **Auxiliary Drives:** 4kW / 8Arms (Aux 1) | 8kW or 0.6kW / up to 16Arms (Aux 2)
- **Output Current:** up to 320Arms @ 460VAC
- **Input Voltage:** 380–500VAC ±10%
- **Efficiency:** 98%
- **Frequency:** 0–400Hz, 4kHz (8kHz optional)

Ruggedized and Safe by Design

- **Enclosure:** IP54 or NEMA4X (UL-50), with IP68-rated fans
- **Operating temp:** -20°C to +50°C
- **Certifications:** IEC/UL 61800 compliant

Integrated Control Features

- Built-in CANBus Control Unit with 60+ analog/digital I/Os
- UL-certified 24V/4A output
- 3 independent CAN nodes for each inverter
- Multiple STO channels



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