Prima Electro

PROUD TO MAKE
YOUR IDEAS WORK

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

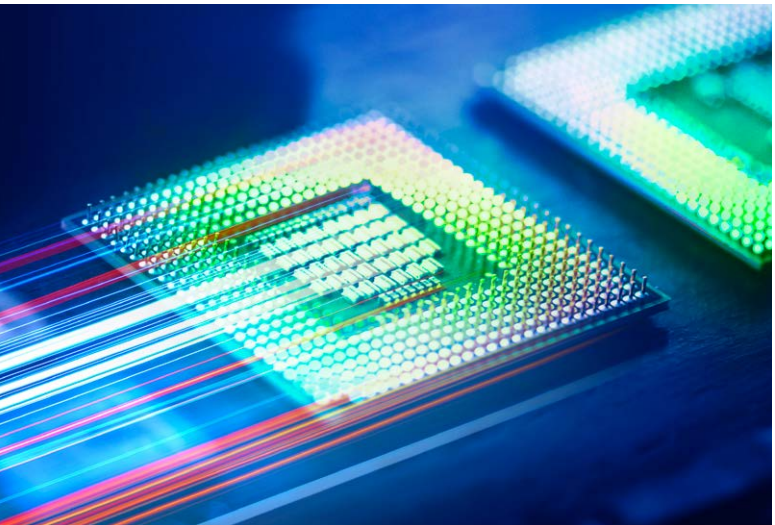
DEFENCE & AVIONICS

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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