Turntide Electrification™

Reduce your time to market, de-risk your investment, and maximize performance, quality, and safety with an end-to-end electrification solution.

Construction | Agriculture | Marine | Trains | Buses | Commercial Trucks

De-Risk

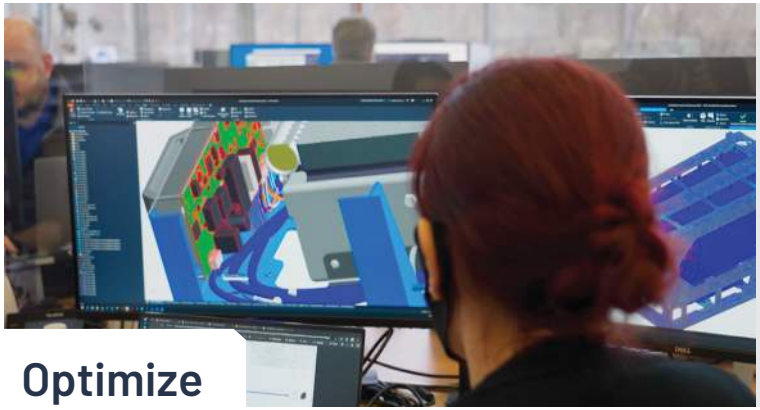
Deliver your electrification strategy with minimal risk and leverage decades of experience.

Benefit from best practices and innovation on similar EV vehicles

With over 60 years of electrification experience, we have likely already solved problems you have not yet anticipated.

Supporting vehicle integration

If you want to electrify your existing IC engine vehicle and get to market quickly, we have the products, skills, and knowledge to support you at every stage. From component selection through to complex vehicle communications integration.



Optimize

Optimal performance with best-in-class components from a single source.

Scalable and configurable

Our customers often want to electrify a range of vehicles with different power levels or even voltages. Our scalable product families are designed with these challenges in mind and support a wide range of power and voltage needs while maintaining a common functionality and interface.

Best-in-class products working together

Efficiency is key for electrification: it delivers longer range, better performance, or both. We design our products to ensure we are at the forefront of electrification efficiency.

Lead

Go to market faster and secure your leadership position with products adhering to the strictest safety and reliability criteria.

Safe

Customers have been using our products for years in some of the most demanding applications, from hypercars and trucks, to construction and agriculture. Our products have met some of the most stringent electrification safety levels.

Reliability

With almost 300,000 vehicles in the field globally, we have experience designing products. Our technical teams partner with you to ensure the products deliver the performance and reliability your applications need.

One-stop shop for mission-critical, best-in-class, scalable components:

Batteries, inverters, motors, pumps, and fans for a range of electrification solutions — all available from a single supplier.

Batteries

Lithium nickel manganese cobalt oxide (NMC) modular battery packs with a range of voltage and power capacities.

KEY BENEFITS

- Designed for rapid deployment and volume manufacture
- Modular design provides a flexible and scalable battery solution to achieve voltage and capacity
- High energy density provides more energy in less space
- Built-in BMS with CAN communications to enable optimized charging and operation

KEY TECHNICAL FEATURES

- Voltage range of 48V to 52V
- High voltage: connect modular packs in series for systems up to 500V
- Battery Energy from 4.5 to 8 kWh
- Air cooled with an option for liquid cooling
- Energy density up to 184 Wh/kg

Inverters

Scalable Inverters designed to satisfy a wide range of challenging applications.

- Available with a range of power and voltage levels to align with your machine electrification requirements
- Utilize a proprietary software configuration tool to adapt to your specific application and machine needs
- Supports a wide range of motor types, encoder variants, and protocols to work with your chosen motor specification
- High levels of functional safety available on selected models to satisfy legal compliance

- Battery voltages supported 24V to 800V
- Power levels from 7kW to 350kW
- Air cooled and liquid cooled
- Power density to over 30kW/l and 32kW/kg

Motors

Highly efficient axial flux motors to deliver world-class performance with compact dimensions.

- Very high torque and power density
- Low cogging and low ripple torque
- Scalable and stackable design supports a range of power and torque configurations within a consistent design
- Water glycol liquid cooling for improved heat transfer and enhanced performance

- Suitable for inverter supply voltages <800V_{DC}
- Peak output power up to 880kW with nominal output power of 376kW*
- Peak Efficiency >95% (includes power inverter)
- IP67 rated shaft seals (optional)
- Integrated PT100 winding temperature sensors

*based on Turntide Axial Flux Motor 440 for up to 20s test conditions

Thermal

Coolant pumps and variable electronic fans to deliver efficient operation in hybrid or electric vehicles.

- Pumps offer SAE J1939 or CAN J1939 control
- Pump family tested against ISO 16750 Environmental test standards
- Fans feature long life, brushless, sensor-less motor
- Fans are environmentally sealed (IP67)

- Pumps offered in 24V and 48V
- Pumps Input DC Power: 450W
- 48V cooling fans (10", 11" and 15" designs)
- 15" fan's Best Efficiency Point is 3764 m3/h @ 4350RPM

TURNTIDE®

Contact our **team of experts** for more information at **electrificationsales@turntide.com**