

# POWER *on the MOVE*

Military and Commercial Vehicle Power Electronics



# TDI POWER HAS DEVELOPED A NEW TECHNOLOGY to meet the demands of today's Vehicular Market....

**TODAY'S MILITARY & COMMERCIAL VEHICLES PRESENT EVER INCREASING DEMANDS ON VEHICLE ELECTRICAL POWER SYSTEMS. OPTIMIZED SYSTEMS MUST PROPERLY ADDRESS THE CONFLICTING REQUIREMENTS OF HIGHER POWER LOADS, MORE DIFFICULT ENVIRONMENTS AND LOWER COST.**

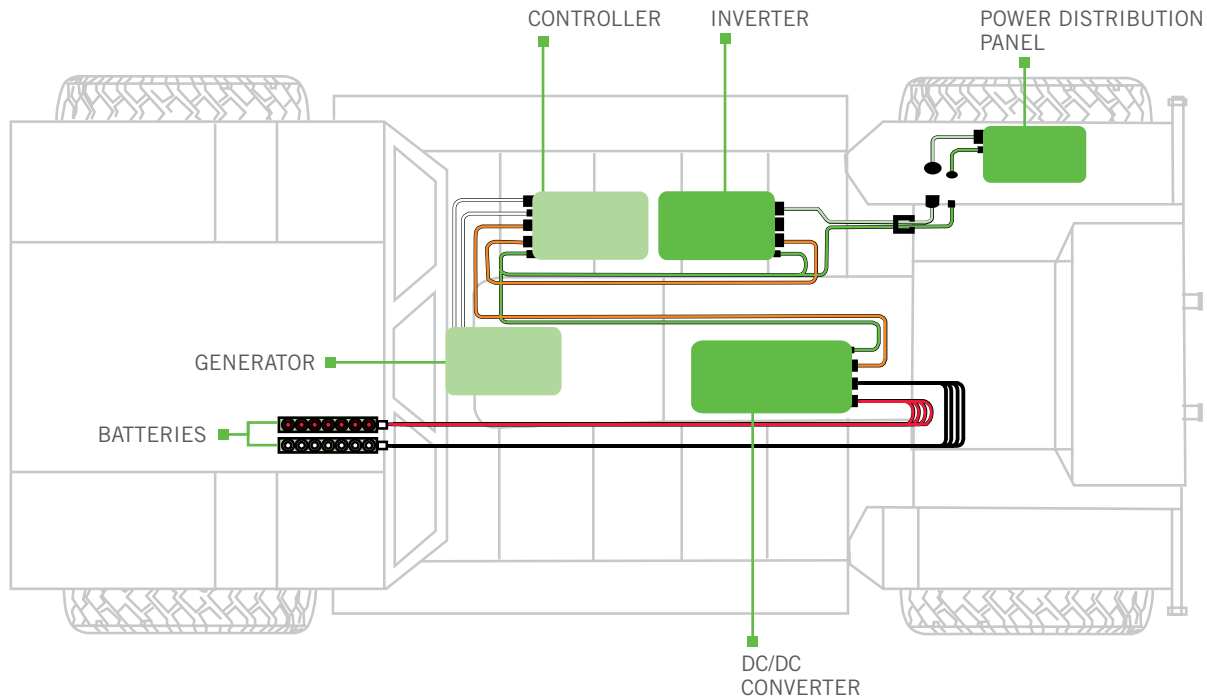


## FORCES DRIVING TODAY'S MOBILE POWER NEEDS:

- Vetronics DC power for Command, Control, and Communication Systems is increasing dramatically
- More AC Power needed for on-vehicle and off-vehicle applications
- Environmental conditions are worsening (temperature, vibration, etc)
- Rising fuel and logistics costs
- Increasing demand for quiet operation (both on the battlefield and in the city)
- Downtime is unacceptable

# POWER NEEDS

# TDI POWER CAN CONFIGURE A **COMPLETE** ELECTRICAL POWER SYSTEM FOR YOUR APPLICATION



## BENEFITS OF A COMPLETE VEHICLE ELECTRICAL POWER SYSTEM BY TDI POWER

- EXTENDED ENGINE LIFE AND OVERALL ENHANCED VEHICLE RELIABILITY
- REDUCED FUEL CONSUMPTION
- MORE HORSEPOWER BY ELECTRIFYING TRADITIONALLY BELT-DRIVEN SYSTEMS
- FREQUENT STOPS AND STARTS - NOT A PROBLEM!
- MEET CITY POLLUTION AND NOISE ABATEMENT LAWS
- EXPORT AC POWER OFF VEHICLE WITHOUT TOWING A GENERATOR
- OPERATE IN EXTREME ENVIRONMENTAL CONDITIONS - EVEN SUBMERGED!

# POWERFUL BENEFITS

# LIQUACORE™ POW

TDI's Liquacore (patent pending) power management technology allows the electronics package to remain sealed while enabling efficient management of waste heat in a convenient location, at very high power densities. The cooling liquid employed is either water or a mixture of water and ethylene glycol (anti-freeze). By using standard power modules we can easily configure a high power solution.

## DC/DC POWER SOLUTIONS



**STANDARD POWER MODULE  
BUILDING BLOCK**

**DC/DC CONFIGURED PRODUCT**  
with proven electrical & coolant sub-systems

**TAILORED SYSTEM**  
Unique mechanical configuration

## TDI POWER'S LIQUACORE™ APPROACH:

- 12VDC, 28VDC, 48VDC, 370VDC and 700VDC solutions
- More power at lower RPMs
- Modular and scalable for higher power needs - up to 100kW
- "Clean" power for sensitive electronics (MIL-STD-704)
- Effective management of internal component temperatures results in better reliability
- Well suited for high volume manufacturing using common mechanical extrusions and mainstream components resulting in lower costs
- Configurable to custom sizes and shapes
- Power density > 35 Watts per cubic inch

# THE SOLUTION

# POWER MANAGEMENT

TDI Power's core competency is our ability to customize power conversion products to demanding customer and industry standards, delivering highly reliable products that meet market driven cost targets. We produce systems for on-board power and export power that will operate flawlessly under the most severe environmental conditions.

## DC/AC POWER SOLUTIONS



**STANDARD POWER MODULE  
BUILDING BLOCK**

**DC/AC EXPORT INVERTER**  
up to 30KW of AC power

**USER INTERFACE**  
with standard connections

## PROVIDING THE BEST PERFORMANCE FOR ON-VEHICLE APPLICATIONS:

- Meets MIL-STD-810 vibration, mechanical shock and immersion (fording)
- Works with coolant temperatures up to 80°C
- Meets the EMC requirements of MIL-STD-461
- Provides solutions that are easily customized to meet development timelines and budgets
- Battery management for all cell types
- Manages typical vehicular power spikes and transient conditions
- Ease of repair/maintenance
- Supports COTS procurement strategy

# LIQUACORE™

## **ABOUT TDI POWER**

TDI Power is a leading, private manufacturer of highly reliable and technologically advanced electrical power solutions. Built on a 50 year history of engineering innovation, TDI is recognized as a market driven organization that focuses on our competitive strengths to meet our customers' needs. Our diverse capabilities allow us to serve the military/aerospace, industrial, medical and test and measurement markets. Our commitment is to deliver high-end, problem solving solutions where and when needed.

From our state-of-the-art shop floor manufacturing control system, to our philosophy of conservative design practices, TDI Power's very structure is built around creating the highest possible quality products. Design Verification Testing, Highly Accelerated Life Testing (HALT), Highly Accelerated Stress Screening (HASS) and internal labs for thermal and EMI testing add to our analytical capabilities and dedication to continuous improvement, higher reliability, and lower overall program costs.

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