

Rethink Energy.  
Harvest More Green.



# E-Force® Inverter – High Performance Redefined

Magnetek's modular utility-scale E-Force Inverters are designed to regulate DC power produced by wind turbines, photovoltaic systems, fuel cells or hydro-power into clean utility-grade, distributed AC power. The E-Force platform is scalable to 5MW with several hundred megawatts installed in the U.S.

The E-Force Inverter's compact, field-proven design increases the electrical power that is available from renewable sources, reduces the time and cost of installation, and assures a long service life. It's designed with generous de-rating criteria on critical components, achieving an extremely robust and reliable inverter capable of delivering maximum power availability on a continuous basis. With this Energy Engineered® design concept, E-Force units achieve peak efficiencies of over 97%. Total current harmonic distortion is less than 5% through E-Force's control switching technology. Inverters are available in standard forced-air-cooled or optional liquid-cooled versions. Sophisticated self-diagnostics and remote monitoring capabilities allow customers to monitor energy generation and operational status.

Optional E-House™ enclosures are available to house balance of plant components including transformers and switch gear.

The Magnetek E-Force family of high-power inverters is ideal for your most demanding renewable energy applications. Magnetek's E-Force design means high availability for our customers, allowing them to harvest more green.



# Solar

## E-Force® Air-Cooled Solar Inverter

Magnetek's E-Force Solar Inverter is designed for grid-tied large solar applications such as ground mount installations. E-Force offers two Maximum Power Point Tracking (MPPT) algorithms that maximize energy produced under varying light conditions. Magnetek's unique switching technology includes large capacity Insulated Gate Bi-polar Transistors (IGBTs) to improve service life.

- Over 97% efficient
- Unity power factor standard
- Less than 5% total current distortion
- Dual MPPT
- NEMA 1 enclosure
- UL 1741 (approval pending)
- Compact size and high power density

### Options

- Self diagnostics available for remote monitoring
- Grid support options
  - LVRT
  - VAR Control (adjustable from 95% lead to 95% lag)



## E-House™ Enclosures for Solar Inverters

The needs of PV site developers and operators are as wide and varied as the terrain where sites are located. Our durable E-House enclosures are designed to withstand local conditions, whether it's snow load or desert sun, delivering long system life. Magnetek delivers on your green energy investment with solutions that offer total balance of system value. Our modular enclosures are designed for quick, easy installation, minimizing field wiring and installation costs. Features and options include:

### Features

- Fully insulated (multiple R values available)
- Structures comply with local code requirements
- Constructed to meet road legal size (split section if needed)
- Pre-wired for rapid deployment and field installation

### Options

- Inverter only enclosures
- Inverter and step up transformer (15Kv to 34.5Kv)
- Inverter, transformer and protective switchgear (15Kv to 34.5Kv)



# Wind

## E-Force<sup>®</sup> Air-Cooled Wind Inverter

Magnetek's E-Force Wind Inverter efficiently tames the energy produced by large wind turbines and delivers it to the grid. The E-Force three-phase, utility-interconnected inverter is designed for use with permanent magnet generator technology. It remains on-line and rides through utility transient conditions providing seamless performance of your wind turbine when normal voltage levels resume.

- Scalable from 500 kW to 5MW
- Variable speed input for use with permanent magnet generator technology
- Over 97% efficient
- Near-unity power factor standard (adjustable from 95% lead to 95% lag)
- Less than 5% total current distortion
- Low Voltage Ride Through (LVRT)
- Large-capacity IGBTs
- Self diagnostics available for remote monitoring
- Designed to meet seismic zone 4 requirements

## E-Force<sup>®</sup> Liquid-Cooled Wind Inverter

Based on Magnetek's innovative E-Force Air-Cooled Inverter technology platform, this high-power density, liquid-cooled inverter provides optimal thermal performance for applications where air cooling is unsuitable. The E-Force Liquid-Cooled Inverter is ideal for sealed structure applications such as near shore wind turbines or sealed tower applications. The E-Force Liquid-Cooled Inverter incorporates the features of our air-cooled design, plus:

- Separate internal coolant loop for IGBTs from other heat generating sources
- Designed for 50/50 water and glycol coolant
- Closed-loop system for minimal radiated heat
- Requires external heat exchanger
- Robust coolant hoses and fittings
  - High reliability
  - Easy maintenance

Ask about Magnetek's fuel cell and hydro power capabilities.





## Rethink Energy.

Magnetek has been in the renewable energy business for nearly two decades. We build Engineered Energy® subsystems that deliver conditioned power from renewable energy sources to the utility grid. Whether it's solar panels, wind turbines, fuel cells or hydro power, when you rethink energy, think Magnetek.

## Harvest More Green.

When customers choose Magnetek, they can trust they're getting advanced, proven power control technology. Our field-tested, grid-connected power conversion platform reliably delivers a return on your green energy investment.

In addition to providing power control and delivery systems for the renewable energy industry, Magnetek is also North America's largest supplier of digital drive systems for industrial cranes and hoists and the world's largest independent builder of digital motion control systems for elevators. In underground mining, we are building a new generation of regenerative digital drive systems. We're dedicated to innovative system design and state-of-the-art manufacturing, and to providing turnkey solutions, expert engineering and application support. We employ some of the top development and application engineers in the industry. Magnetek designs, builds and tests digital power systems in our ISO 9001:2008 certified manufacturing facilities in the United States.

# Service & Technical Support

Magnetek's power conversion experts provide customers with unsurpassed service from start to finish, including commissioning, remote diagnostics, unit history tracking, training, and upgrading. We offer field installation and technical support, as well as on-site and in-house training programs. Our highly trained team of technical experts provides superior service and support — where and when it's needed.

