

# Refrigeration Condensers

Turntide™ Technologies is defining a new standard for refrigeration efficiency with the Turntide Smart Motor System. The system outperforms any existing motor technology with its software-enhanced, programmable Turntide Smart Motors. Its variable speed control platform delivers unprecedented levels of energy efficiency and diagnostics that have never been available with electric motors. The Smart Motor System significantly reduces refrigeration energy costs, yielding payback in less than three years for most applications.

## The Turntide Smart Motor System

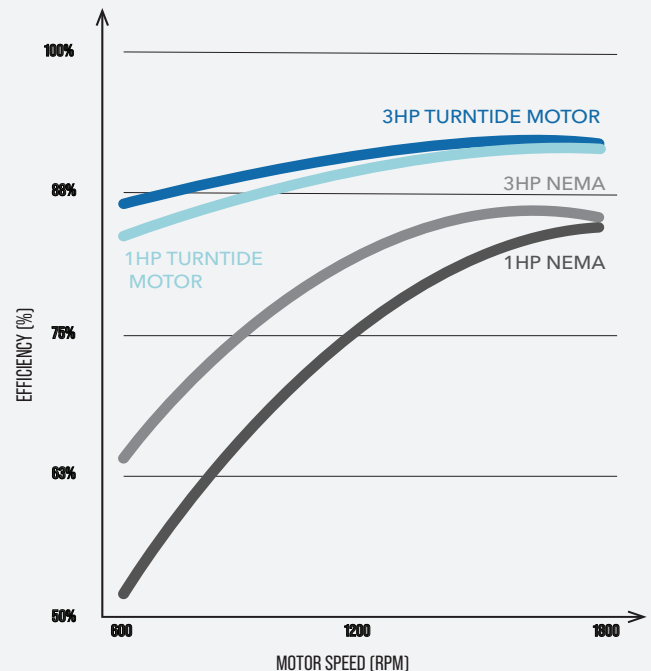
Most refrigeration systems waste energy by relying on condensers with inefficient motors and constant speed fans. Even newer systems with NEMA premium efficiency motors are wasting energy, primarily due to their constant speed operation. The Turntide Smart Motor System breaks through today's efficiency barriers with revolutionary new technology.

### A truly intelligent system offers unprecedented efficiency

- Software control enables real-time, remote system monitoring and control via a web dashboard that communicates cloud-based data and analytics.
- Real-time monitoring includes an automated fault detection with the capability to send alerts if abnormal operating conditions arise. The system integrates easily with building management systems via industry standard protocols.
- Over-the-air updates enable performance optimization of embedded firmware and control sequences, resulting in a system that improves over time.

### Enhanced reliability

- Turntide Smart Motors are guaranteed for three years. Their simple, rugged design includes the highest quality components, long-life bearings, low operating temperatures, and low start-up inrush current/torque, providing fewer points of possible failure.



The Turntide Smart Motor System delivers dramatically higher efficiencies.

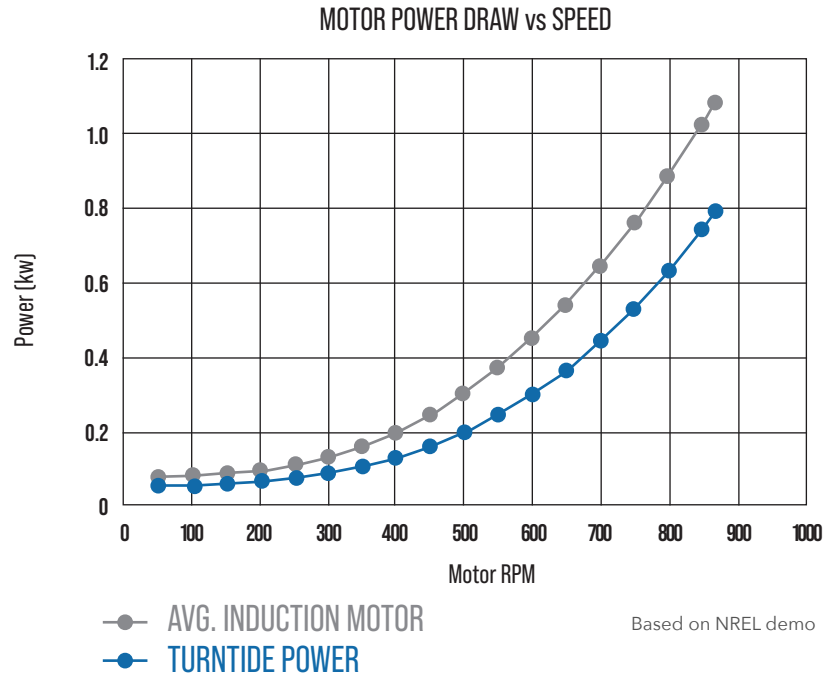


## Proven Performance

In a field demonstration conducted by the National Renewable Energy Laboratory (NREL), the Smart Motor System delivered superior performance. The trial replaced two constant speed induction refrigeration condenser motors at a Super Center in Denver, Colorado with Turntide Smart Motor Systems. The software controlled variable speed operation of the Smart Motor System delivered 70-74% annual energy savings compared to the original constant speed induction motors.

Additionally, NREL found that when compared to a VFD on the induction motors with VHPC, the Turntide Smart Motor System provided energy savings of 31-34% annually.

### COMPARATIVE FAN POWER DRAW OF AN AVERAGE INDUCTION MOTOR VS THE TURNTIDE SMART MOTOR AT VARIOUS FAN SPEEDS.



Bottom line, the Turntide Smart Motor System can reduce refrigeration operating costs through a combination of actual energy savings and analytics that support smarter maintenance and a reduction in emergency service calls.

### Indemnity

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Turntide Technologies (formerly Software Motor Company) has developed the world's most efficient and intelligent electric motor system. The revolutionary Smart Motor System is based on proven switched reluctance technology, now managed with advanced cloud software and connected to precise controls via IoT. Turntide's vision is to eliminate the 25% of global electricity consumption that is wasted by legacy motors, thus accelerating the world's transition from fossil fuels. Turntide is based in Sunnyvale, Calif., with offices in San Francisco; Arlington, Wash.; and Kennesaw, Ga. Turntide has installed Smart Motor Systems with dozens of customers, reducing their motor electricity consumption by an average of 64%, and is powering the systems of leading OEMs. For further information, visit [www.turntide.com](http://www.turntide.com).