COMPANY OVERVIEW

Introducing the World's Most Energy-Efficient, Cost-Effective, Motors and Controllers

OVERVIEW

Electricity consumption is essential to modern business.

Yet this consumption comes at a significant cost to bottom lines and to the environment. Quantum Motor Corporation (QMC) is here now. Our revolutionary, software driven, switch reluctance motor drastically improves efficiency, helping large consumers of electricity to significantly reduce their costs and their environmental footprint.

SAVE MONEY

SAVE ENERGY

SAVE THE PLANET

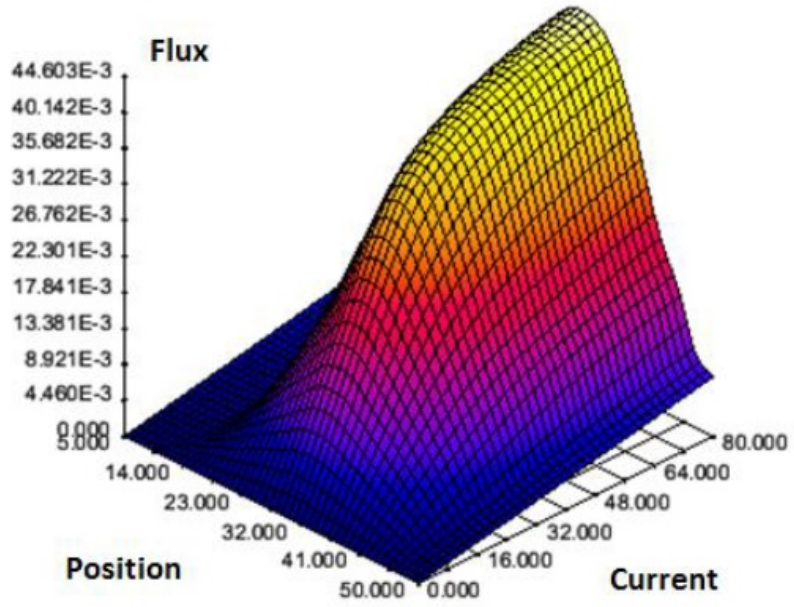
+50% of all global electricity is used by electric motors.

The superior efficiency of the QMC Quark Motor System leads to large savings and a significant reduction in greenhouse gas emissions to protect our planet.

Discover the game-changing new standard: The ultra-efficient QMC Quark Motor System

QMC developed this next-generation Quark Motor to change the way the world uses energy. The QMC Quark Motor System is the world's most energy-efficient, highly reliable motor. It is an integrated solution that includes the QMC Quark Motor and the QMC Motor Controller, with networking and connection capabilities to the QMC Cloud pending. It can also be integrated into modern building management systems using industry-standard communications protocols such as Modbus & BACnet.

By combining optimal efficiency, reliability, and cost-effectiveness, the QMC Quark Motor System can significantly reduce energy consumption and demand of HVAC, refrigeration, pumping, and other applications where induction motors are in use.



This new ultra-efficient solution is the result of innovation in three key areas

1 Motor Efficiency

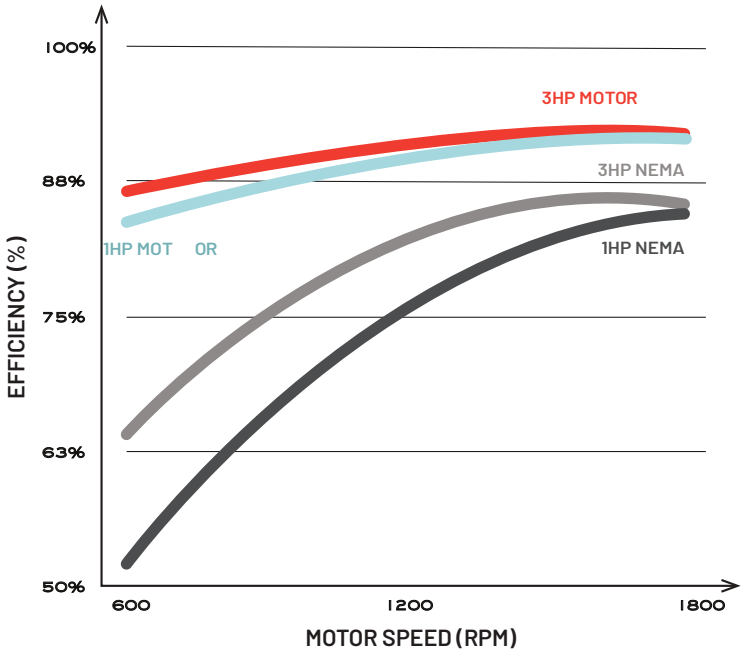
The QMC Motor Controller and its algorithms are unique to the patented high rotor pole switched reluctance motor, which is designed to optimize energy use across the entire speed range from 200 RPM to 3,200 RPM. Not only is it more efficient at full-rated speed, the QMC Quark Motor also maintains efficient operation across the operating speed range, making it even more efficient than an induction motor with a variable frequency drive (VFD). Below Pending.

When multiple motor systems are installed at a single site, communication can be integrated by installing the Quark Supervisor. This simple solution communicates via Modbus® or via IEEE802.15.4 to the QMC Quark Motor System, providing a connection to the QMC Cloud or integration with existing Building Management Systems over BACnet®.*

REMARKABLE RESULTS	
75% **energy and cost savings, size 1 to 5 hp**	**variable speed drive 1 to 5 hp with same saving of energy and cost - 200 rpm to 3200**

Source: US Department of Energy

Quark Motor Efficiency vs. NEMA Premium



QMC Quark Motors exceed the efficiency of NEMA Premium Motors at all speeds.

2 Reliability

The superior reliability of the QMC Quark Motor System stems from the patented QMC Quark Motor. This simpler design is so highly trusted it has been used for decades in zero-fault-tolerance applications like nuclear reactors and mining.

The QMC Quark Motor is designed for the rigors of variable speed operation over a 30-year life or longer. With no rotor windings and with a simpler internal design, the motor runs cooler, eliminating overheating failures, contributing to longer life and lower energy use.

- No magnets or overlapping coils—common causes of motor failure
- No rotor current—the small arcs that cause bearing damage in induction motors controlled by variable frequency drives
- Fully encapsulated, military grade bearings and wide radius coils

3 Intelligence

QMC Quark Motors are fully software enabled with built-in sensors for speed, torque, and temperature. When connected to the QMC Cloud, operating data from the QMC Quark Motor System is continually transmitted to the cloud through a secure connection, allowing for remote monitoring, decision-making, and action from just about anywhere.

The QMC Quark Motor System continuously monitors operation for signs of degradation or faults in the motor or equipment. Criteria for warning conditions can be set remotely, and alarm conditions can be set to alert relevant personnel. Operating parameters can be updated at any time through the secure cloud connection.

"The **QMC** Quark Motor and its intelligent controls are delivering up to 75 percent annualized energy savings when compared to conventional fan motors."

Dr. Kamil Agi, SensorComm Technologies, Inc. - Cisco Smart Cities Partner

QMC Quark Motor System

The QMC Quark Motor System is a complete solution that includes the QMC Quark Motor, the microprocessor-based Quark Motor Controller, networking and IoT platform capabilities, pending. Our motors are next generation ultra-efficient smart electric motors, providing the optimal combination of performance, efficiency, reliability, and cost effectiveness, free of rare-earth metals.

The QMC Quark Motor Controller manages the QMC Quark Motor as well as associated monitoring and control of key devices in applications such as RTUs and air handlers. A data connection between the QMC Quark Motor and QMC Motor Controller allows the monitoring of internal motor sensors and information. System alerts and alarms can be configured when utilizing the QMC Cloud or when an integration with Building Management Systems is done via Modbus or BACnet.*

COMPLETE DATA ANALYTICS

Comprehensive performance and efficiency data from integrated sensors can be stored in the cloud for intelligent decision making, pending.

SOFTWARE CAPABILITIES

Sophisticated software ensures motors run at peak performance and efficiency at all times. Our free software provides an intuitive dashboard for monitoring and control, pending.

ALERTS & ALARMS

Minimize downtime with automated alerts, alarms, and failure modes of operation.

INTEGRATION

Supports simple setup and programming for non-technical users, complemented by a full suite of open software APIs that support integration with building automation and building management systems, pending.

AUTOMATION

Integrates with all major building automation, networking and communications protocols and provides automation and monitoring features with ample universal I/O and connectivity features, pending.

*Pending, contact QMC Solutions Team for details on BACnet and Modbus integration.

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The Newport Beach California based Quantum Motor Corporation (QMC) is setting a new standard of efficiency, reliability, and intelligence with the QMC Quark Motor System. QMC combines modern computing and software control with the proven reliability of switched reluctance motor technology to achieve an unprecedented optimal efficiency. The patented QMC Quark Motor System only uses energy when it is needed, thereby significantly reducing space conditioning and refrigeration energy costs. A fully programmable IoT controls package facilitates maintenance savings and easy integration with existing building systems.