



COMPANY OVERVIEW

# Introducing the World's Most Energy-Efficient, Cost-Effective, Internet-Enabled Motors and Controls

POWER IS VALUABLE. USE IT INTELLIGENTLY.

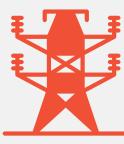


## Electricity consumption is essential to modern business.

Yet this consumption comes at a significant cost to bottom lines and to the environment. Software Motor Company is changing that. Our revolutionary, software driven, switch reluctance motor drastically improves efficiency, helping large consumers of electricity reduce their costs and their environmental footprint.



SAVE MONEY



SAVE ENERGY



SAVE THE PLANET

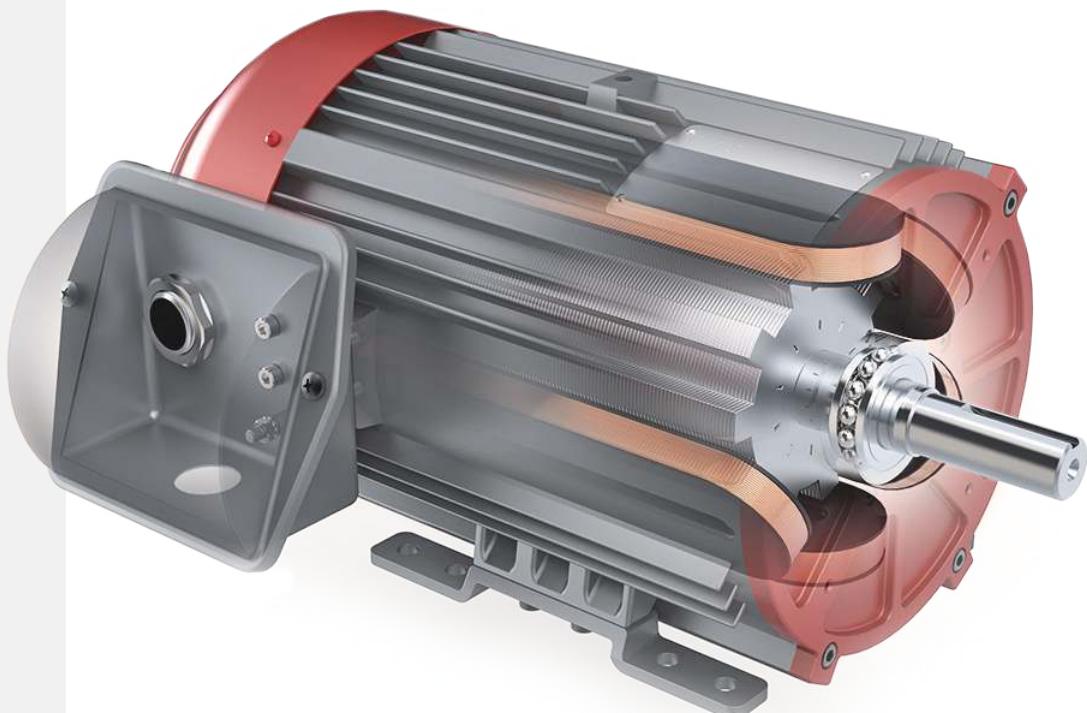
**45% of all global electricity is used by electric motors.**

The superior efficiency of the SMC Smart 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 SMC Smart Motor System

SMC developed this next-generation smart motor to change the way the world uses energy. The SMC Smart Motor System is the world's most energy-efficient, highly reliable motor. It is an integrated solution that includes the SMC Smart Motor and the SMC Motor Controller, complete with networking and connection capabilities to SMC Hosted Services. It can also be integrated into modern building management systems using industry-standard communications protocols.

By combining optimal efficiency, reliability, and cost-effectiveness, the SMC Smart 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 SMC 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 100 RPM to 3,600 RPM. Not only is it more efficient at full-rated speed, the SMC Smart 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).

When multiple motor systems are installed at a single site, communication can be integrated by installing the SMC Supervisor. This simple solution communicates via Modbus® or 802.11 WiFi to the SMC Smart Motor System, providing a connection to SMC Hosted Services or integration with existing Building Management Systems over BACnet®.\*

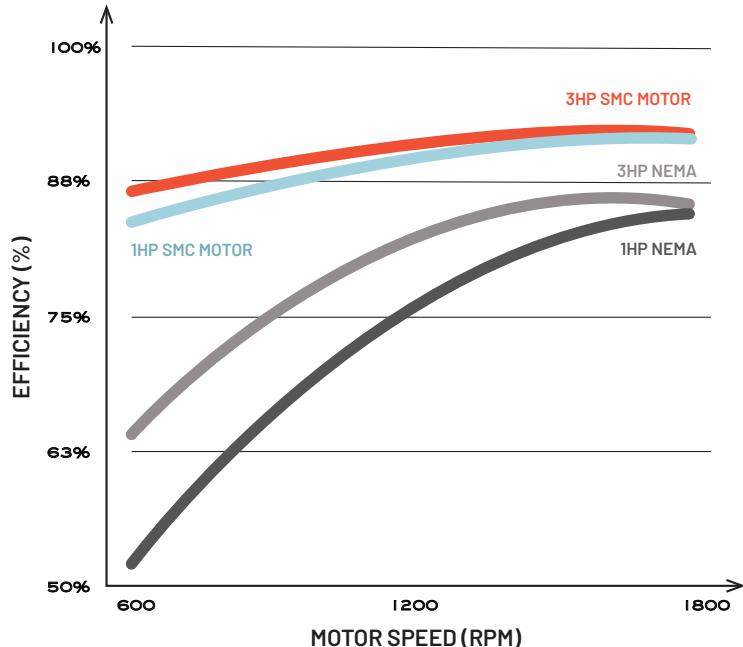
#### REMARKABLE RESULTS

**>50% more efficient than high-efficiency fixed speed motors**

**>25% more efficient than high-efficiency motors with variable speed drives**

Source: US Department of Energy

#### SMC Motor Efficiency vs. NEMA Premium



**SMC Smart Motors exceed the efficiency of NEMA Premium Motors at all speeds.**

### 2 Reliability

The superior reliability of the SMC Smart Motor System stems from the patented SMC Smart 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 SMC Smart 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

SMC Smart Motors are fully software enabled with built-in sensors for speed, torque, and temperature. When connected to SMC Hosted Services, operating data from the SMC Smart 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 SMC Smart 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 SMC Smart Motor and its intelligent controls are delivering up to 75 percent annualized energy savings when compared to conventional fan motors."

Richard Almini, Legacy Mechanical and Energy Services

## SMC Smart Motor System

The SMC Smart Motor System is a complete solution that includes the SMC Smart Motor, the microprocessor-based Smart Motor Controller, networking and IoT platform capabilities. 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 SMC Smart Motor Controller manages the SMC Smart Motor as well as associated monitoring and control of key devices in applications such as RTUs and air handlers. A data connection between the SMC Smart Motor and SMC Motor Controller allows the monitoring of internal motor sensors and information. System alerts and alarms can be configured when utilizing SMC Hosted Services 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.



### 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.



### 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.



### 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.

\*Contact SMC Solutions team for details on BACnet and Modbus integration.



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The Silicon Valley based Software Motor Company is setting a new standard of efficiency, reliability, and intelligence with the SMC Smart Motor System. SMC combines modern computing and software control with the proven reliability of switched reluctance motor technology to achieve an unprecedented optimal efficiency. The patented SMC Smart 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.