

CASE STUDY

# Full-Service Restaurant Achieves 53% Savings in Total Annualized HVAC Fan Motor Energy Savings

## The Challenge

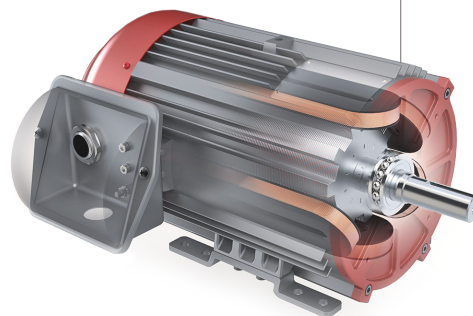
A Southern California full-service restaurant chain, focused on delivering a fine dining experience at an affordable cost, wanted to reduce both its increasing energy bills and its costly HVAC maintenance, while continuing to deliver optimal comfort for its customers. It implemented a pilot program with SMC at a single test restaurant.

The pilot restaurant was challenged with keeping consistent comfort levels during all hours of operation, and it did not have a building automation system in place. The chain implemented variable frequency drives (VFDs) on some of its systems, but found that during emergency maintenance, the systems were often left “jumped out,” rendering them inoperable. The company also wanted to implement remote fault diagnostics, so that its mechanical service provider could address system problems more proactively.

Ultimately, the company recognized it needed a more efficient system that allowed for remote monitoring and fault detection.

## The Solution: Upgrade the RTU Motors with the SMC Smart Motor System

The company chose to upgrade the HVAC system at the pilot site by replacing the VFDs and standard induction motors with the SMC Smart Motor System. Because it is entirely software driven, the SMC Smart Motor System operates more efficiently and reliably. It also delivers key information and insight into system and motor health through SMC Hosted Services.



## Profile

Publicly traded culinary group  
with a portfolio of upscale  
casual locations



**BUILDING SIZE**  
7,500 sq. ft.



**HVAC SYSTEM SIZE**  
2 rooftop units (RTUs)



**SMC SMART MOTOR  
SYSTEM SIZE**  
5 HP

## Results

By replacing one fixed-speed induction motor and one VFD-controlled induction motor with an SMC Smart Motor System, the customer realized:

### EFFICIENCY

- The restaurant achieved 53% in total annualized fan motor energy savings
- Most impressively, the SMC Smart Motor System demonstrated 41% improvement in efficiency, even on the system that previously had a VFD applied

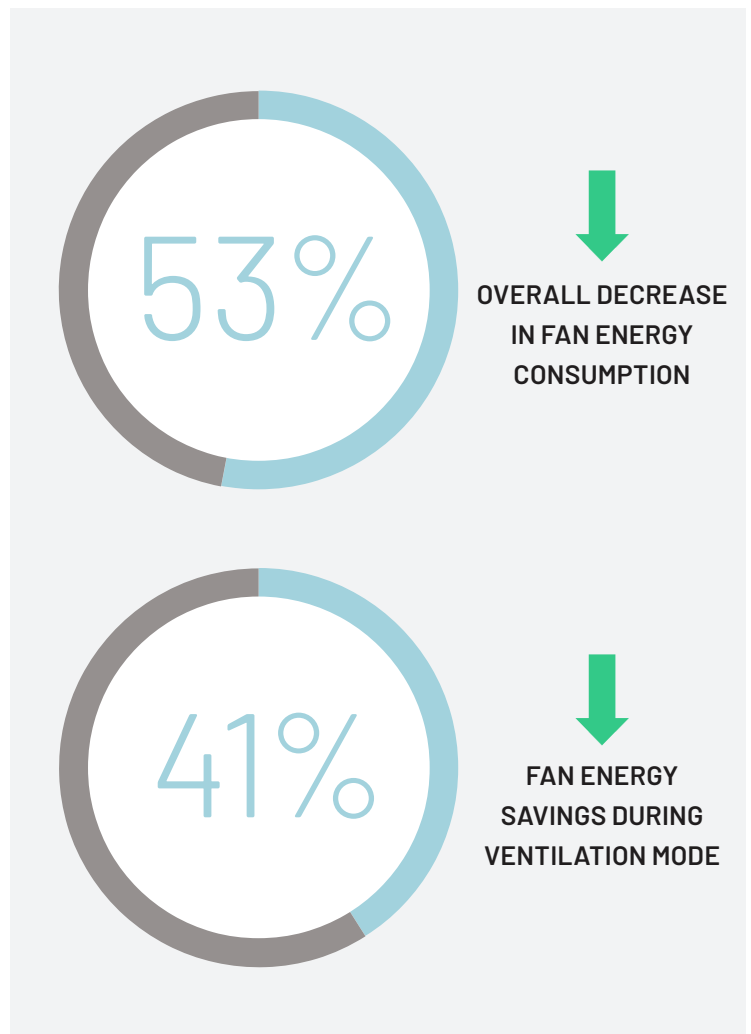
### RELIABILITY

- Simplified motor design and predictive maintenance capabilities resulted in a system that's more reliable and resilient
- System scalability ensured the same operational improvements could be made consistently across all restaurants

### INTELLIGENCE

The SMC solution provided insight that led to improved energy efficiency and greater reliability. Once the new system was operational and serving as a building automation system, diagnostics made a surprising discovery: a flaw in the building's wiring caused refrigeration motors to shut down whenever the lights were turned off. This explained why food was spoiling so quickly, and wasting a significant amount of money.

Based on the success of the pilot program, this company committed to upgrading HVAC system motors across its chain of restaurants with SMC Smart Motor Systems.



## SMC SMART MOTOR SYSTEM DELIVERS BETTER CONTROL

- ✓ Reduced energy consumption & costly HVAC maintenance
- ✓ Greater energy savings
- ✓ Improved operational efficiency and reliability



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.

**POWER IS VALUABLE. USE IT INTELLIGENTLY.**

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