

Basin Street Properties Retrofit Seven Rooftop Units with Smart Motor Systems and Realized Total Annualized Fan Motor Energy Savings of 53%

The Challenge

Basin Street Properties was committed to sustainable, resilient asset management and energy performance improvements across its portfolio. It had a specific goal to optimize HVAC system energy efficiency and make the system intelligent with a solution that could:

- Remotely correlate rooftop unit (RTU) motor data with sensor data collected by the building automation system (BAS)
- Migrate from scheduled to predictive maintenance and dynamic maintenance scheduling
- Implement remote system monitoring and fault detection to enable faster response from the facilities team—and protect tenant satisfaction

The Solution: Upgrade RTUs with the Turntide™ Smart Motor System

To establish a baseline of current HVAC energy use, energy monitoring kits were installed on three existing AHU motors. Following an approximately two-month M&V period, 10 existing constant speed induction motors were replaced with SMC Smart Motor Systems, also running at constant speed: three 10 HP, five 7.5 HP and two 5 HP. Another two 3 HP motors were added eight weeks later.

Profile

Commercial real estate development, investment and management company with over 4 million square feet under management



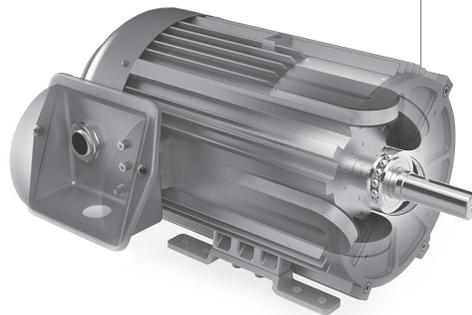
BUILDING SIZE
20,000 sq. ft.



HVAC SYSTEM SIZE
7 rooftop units (RTUs)



SMART MOTOR SYSTEM SIZES
(7) 1 HP



Results

By replacing induction motors in RTUs with Smart Motor Systems, Basin Street Properties achieved greater:

Efficiency

- Total annualized fan motor energy savings of 53%
- Power draw savings of 30% during heat/cool mode (1,550 RPM) and 87% during vent mode (690 RPM)
- Monthly energy savings of 881 kWh (energy use decreased from 1,659 kWh to 778 kWh after installation)
- Reduced the carbon footprint and achieved sustainability gains

Reliability

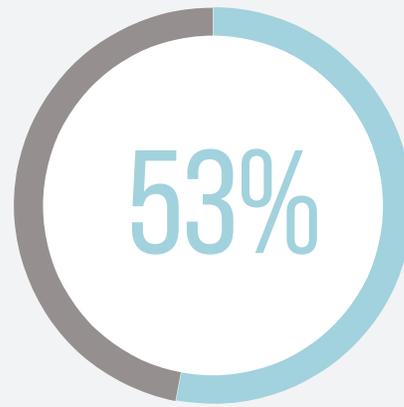
- Simpler motor design and predictive maintenance capabilities made the system more reliable and resilient
- Improved ability to monitor and control occupant comfort—a critical factor behind tenant satisfaction

Intelligence

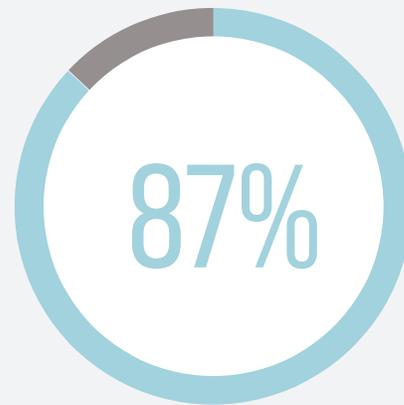
- Remote monitoring capabilities enabled the detection of a motor pulley malfunction during the pilot phase. The maintenance team was alerted immediately, and a quick replacement was made.

1,659 kWh – 778 kWh

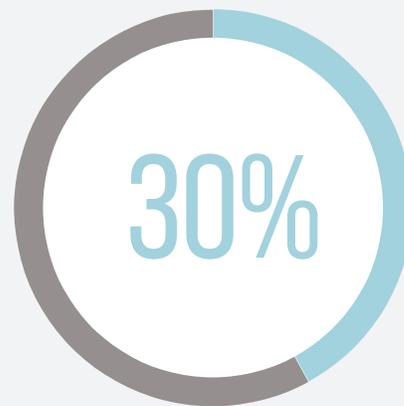
881 KWH ENERGY SAVED MONTHLY



Overall decrease in fan energy consumption



Fan Energy Savings during ventilation mode



Fan Energy Savings during heat/cool mode



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.

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