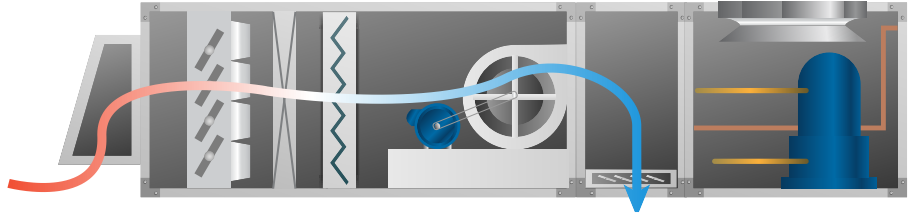


Rooftop Units Application Data Sheet

Turntide Smart Motor System™

Sitting on the top of buildings, Rooftop Units (RTUs) work behind the scenes in buildings to maintain optimal indoor conditions – from keeping customers comfortable in a hot, humid environment, to ensuring food is stored at the right temperature for optimal freshness.



Unfortunately, HVAC systems, including RTUs, run on old, inefficient technologies. Due to their importance to everyday business operations, HVAC can contribute up to 35% of energy costs within a building – reducing profits and increasing utility bills.

Designed with a Optimal Efficiency Motor™, the **Turntide Smart Motor System™** drastically reduces the energy consumption of RTUs with zero compromise to HVAC run conditions: saving energy, money, and the environment.



Immediate Energy Savings

Turntide motors save energy through patented switched reluctance design, which utilizes optimal device physics and control algorithms to run more efficiently.



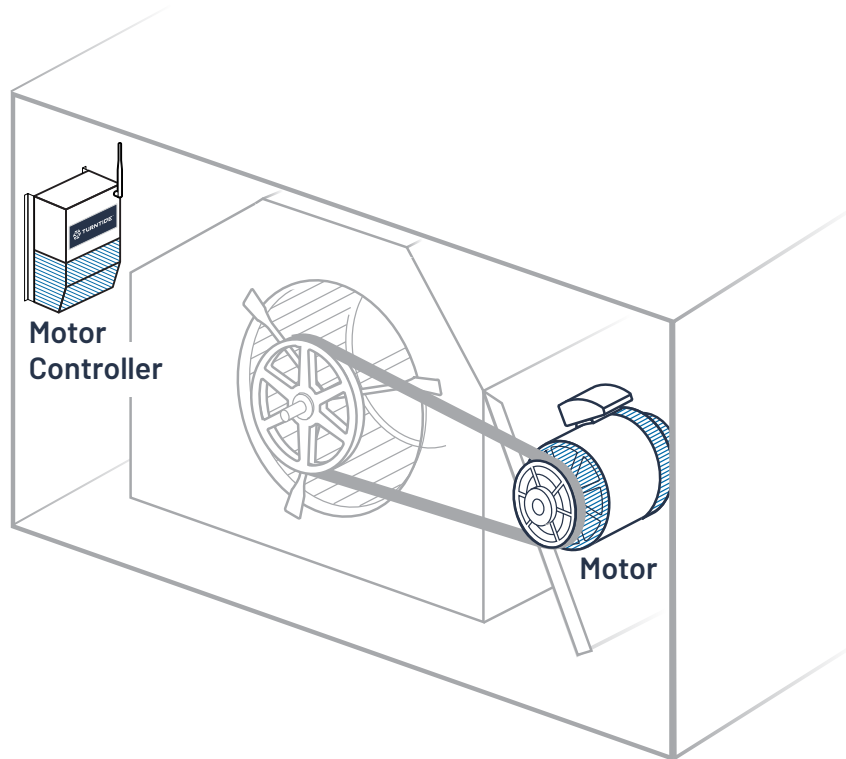
Gets Better and Smarter Over Time

Turntide motors utilize operating conditions and runtime data to generate improved control algorithms that further optimize system efficiency.

The Turntide Smart Motor System™ for Rooftop Units

The Turntide Smart Motor System is a high-impact energy conservation measure that delivers immediate and long-term savings. By swapping out legacy AC induction motors and replacing them, Turntide reduces HVAC energy use by an average of 64%

What's in the Turntide Smart Motor System?



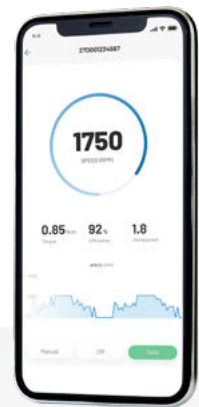
Smart Motor

Our patented high rotor pole switched reluctance motor with advanced device physics runs more efficiently and reliably.



Motor Controller

The controller helps the variable-speed motor work at optimized efficiency across a broad range of speeds, enables customized sequences of operation or application-specific functionality, and protect the system from damage or failure.



Turntide Technician

Turntide Technician mobile app makes evaluating, commissioning, and installing Turntide energy conservation projects easy.

Outperforms Existing HVAC Efficiency Measures

13%

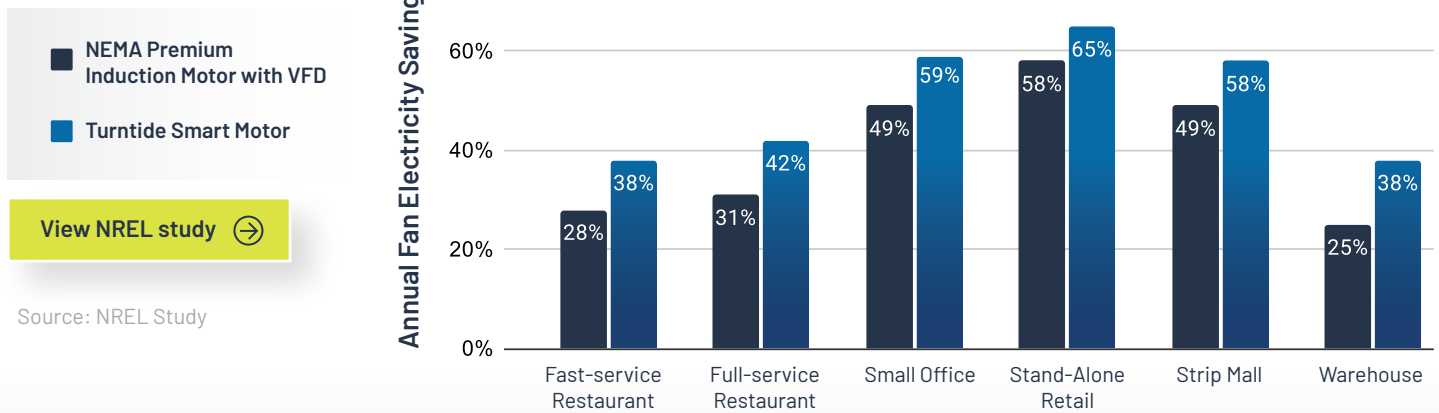
The ultimate energy conservation measure

The Smart Motor System makes HVAC equipment more efficient, more intelligent, ultra reliable, and simple.

Better performance than VFD retrofit

Source: NREL Study

Annual Fan Electricity Savings from Motor Retrofit



■ NEMA Premium Induction Motor with VFD
■ Turntide Smart Motor

[View NREL study](#) →

Source: NREL Study

Proven to Improve HVAC Performance in RTUs

Sustainability focused british retailer Wilko installs Turntide Smart Motor System to dramatically reduce energy bills and carbon footprint



THE RESULTS:

>40% energy reduction compared to baseline

20% additional energy savings paired with BMS system

800 Turntide Motors deployed across Wilko retail locations

Turntide Smart Motor System Specifications



Motor Compatibility

Turntide smart motors are designed with industry-standard specifications, matching nameplate specs found on an AC induction motor.

Horsepower

- 1-15 HP

Voltage

- 208-230V
- 460V
- 575V

RPM Range

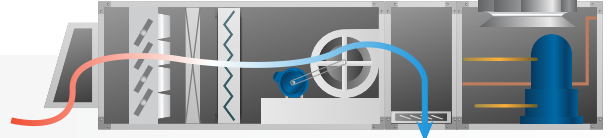
- 100-3600 RPM

NEMA Frame Sizes

- 56Y
- 56/56H
- 56Z/56HZ/143T/145T
- 182T/184T
- 213T/215T

NEMA Motor Enclosure

- TEFC



RTU Compatibility

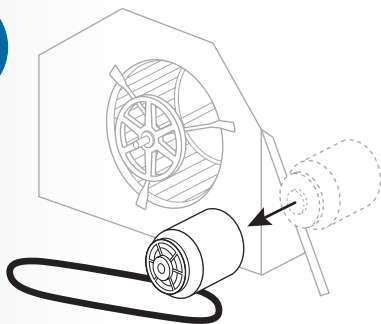
The Turntide Smart Motor System is compatible with rooftop unit systems for most building types.

Building Types

- Shopping Malls
- Retail
- School
- Office
- Hotel
- Supermarkets
- Industrial/Warehouses
- And Many More

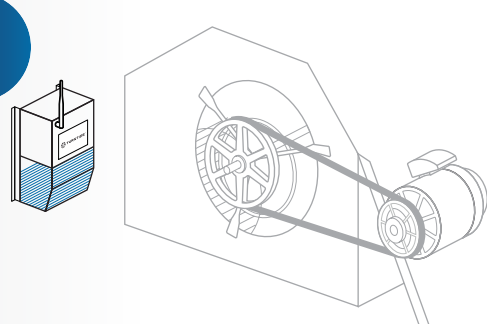
RTU Retrofit: 5 Easy Steps

1

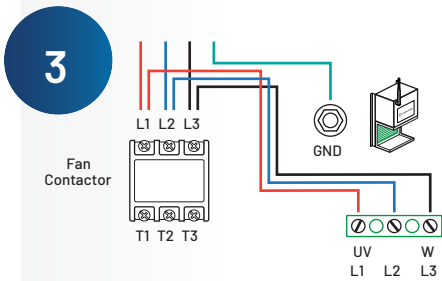


The original motor in the rooftop unit is removed, and replaced with a Turntide smart motor

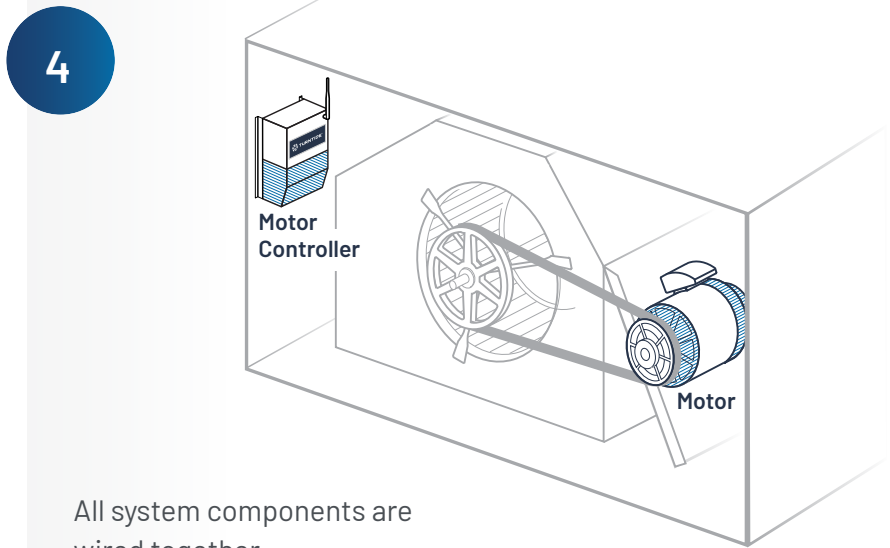
2



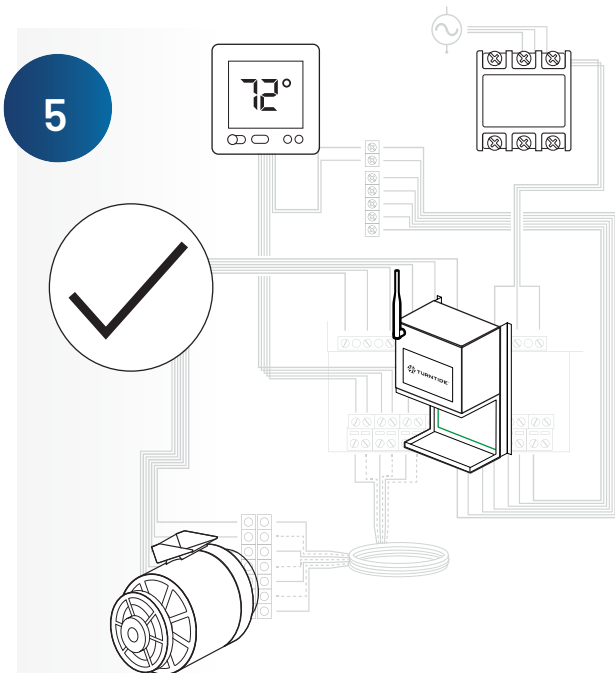
The Turntide motor controller is installed to connect with the motor



3
Jumper pins are verified to ensure proper configuration before wiring the system together



4
All system components are wired together



5
System is started up to test and ensure all components work properly for 24/7 safe, reliable operation

For full install information, refer to www.turntideacademy.com

TURNTIDE TECHNOLOGIES

Our breakthrough technologies accelerate electrification and sustainable operations for energy-intensive industries