

How do VFDs save energy?

Motor energy is a function of speed. The power drawn by the motor varies with the cube of the motor's speed. If the motor speed is reduced by 25 percent, its energy use is reduced by nearly 60 percent.

Where do I find potential VFD opportunities?

1. Where HVAC equipment is operating at less than full load.
Building systems are sized for peak load conditions. 90% of the time equipment may be operating at part load.
2. Where HVAC equipment may be oversized.
An oversized system may be due to lighting retrofits, fewer occupants or less internal heat loads. Designing for peak load over-sizes the system for most operating hours.
3. Where two-speed motors are used.
Replace a two-speed motor with a VFD to provide additional energy savings and better control.

HVAC Applications

Look for applications where equipment runs at part load conditions.

Examples:

- Cooling tower fan control
- VAV AHUs – replace inlet guide vanes
- Pumps – remove throttling valves
- Existing VFDs that are 10 years or older.

Benefits of VFDs:

- Energy savings
- Reduced stress on belts, bearings and motors.
- Better control – increased comfort
- Advanced energy saving algorithms
- Replaces controls such as contactors, overload, timer and fan proving switch
- Replaces mechanical restrictions to flow (valves, dampers, inlet guide vanes)

Resources:

www.tranedrives.com

- Literature, brochures
- Submittal documentation
- Shop drawings
- Pricing Guide
- Energy Savings Analysis Tool
- Tech Support: 877-TRANE ME

Information Needed for Pricing

- Voltage, motor HP?
- Any enclosure requirements?
- Disconnect switch?
- Bypass required?
- Multi-motor application?
- Any space limitations?
- BAS Communications needed?
- Harsh Environment, such as pollution, high altitude, or high temperature operation?

TR200 Features

- Dual DC link reactor – reduced harmonics
- Graphical keypad – for energy logging
- Real time clock – for standalone operation or maintenance reminders
- Comprehensive USB laptop interface
- Customizable - Multiple options to meet various customer's requirements

Information Needed for Energy Analyzer Report

- Energy cost per kWh
- Motor HP and voltage
- Hours of operation for motor
- Application: (AHU, pump, cooling tower)

General questions that can lead to Trane Drive opportunities:

- Trane Value:**
- World Class VFD solutions
 - 24/7 Tech Support
 - Parts Availability

- Customer Benefits:**
- Highly reliable and efficient VFDs
 - Backed by knowledgeable representatives
 - Serviced by trained technicians
 - Supported by Trane Supply Parts Centers

Opening Questions:

- How do you decide on what variable frequency drives to use on your projects?
- Are you aware that we have our own brand of VFD?
- Does your company have annual energy reduction goals?



Probing Questions:

- Who do you call when you have a drive problem?
- Do you have existing VFDs that were installed 10-15 years ago?
- What challenges do you face in meeting your energy reduction goals?



Clarifying Questions:

- What is your risk if you have a VFD go down?
- What can happen if you cannot get a quick response to repair a VFD?
- What is the impact of not meeting your energy reduction goals?



Closing Questions:

- What would be the main benefits of having Trane provide and support the VFDs in your facility?
- Would a 98% efficient Trane drive be of value to you?
- Would you consider a proposal for a Trane Drive solution?



Trane – by Trane Technologies (NYSE: TT), a global climate innovator – creates comfortable, energy efficient indoor environments through a broad portfolio of heating, ventilating and air conditioning systems and controls, services, parts and supply. For more information, please visit trane.com or tranetechnologies.com.

All trademarks referenced in this document are the trademarks of their respective owners.

© 2020 Trane. All Rights Reserved.

BAS-SLB066-EN
06/18/2020