

Variable Frequency Drives (VFDs)

What are variable frequency drives (VFDs)?

A variable frequency drive (VFD) is a type of motor controller that drives an electric motor by varying the frequency and voltage supplied to the electric motor. Instead of running at full speed constantly, the motor can operate at a lower speed when demand is reduced, thereby consuming less energy. Other names of VFDs include variable speed drive, adjustable speed drive and adjustable frequency drive.

Additional benefits

- ▶ Reduces motor wear and tear while providing soft start
- ▶ Provides a soft start that reduces the mechanical and electrical stress on motor components during startup
- ▶ Provides less maintenance and repair costs and more efficient motor operation over time



Program eligibility criteria

- ▶ Installation of a VFD in commercial settings where VFD not previously installed.
- ▶ Applications include: AHU supply fans, hot and chilled water distribution pumps, and cooling tower fans.
- ▶ Not applicable to compressor controls.
- ▶ Supply fans must not have variable pitch blades.
- ▶ Motor horsepower less than or equal to 100 hp does not require custom energy savings measurement or data logging. Motor horsepower greater than 100 hp does require custom energy savings measurement.
- ▶ New construction and equipment used for process loads are excluded.

Necessary information for project savings calculations

- ▶ Application type (what type of equipment is it being added to? AHU supply fan, hot water pump, chilled water pump)
- ▶ Motor horsepower (picture of motor nameplate with horsepower listed)
- ▶ AHU only: Baseline part load control type (e.g., outlet damper, inlet damper, inlet guide vane, constant volume/no control)
- ▶ Climate zone or county
- ▶ Building type