



Variable Speed Drives - Heating, Ventilation and Air Conditioning (HVAC)

Approximately half of the electricity in commercial buildings is used to move air and water around. Motor driven components used in HVAC are the highest energy consumer in the commercial sector. Using variable speed drives within HVAC systems saves energy and money.

VARIABLE SPEED DRIVE - HVAC



OVERVIEW

Most HVAC systems are designed to operate fans and pumps at a constant speed for peak load. This means the HVAC system is typically oversized during the majority of operating hours for most applications. Variable speed drives (VSDs), also referred to as variable frequency drives (VFDs), are capable of varying the output speed of a motor to meet the demand of the system. VSDs match the amount of work or load on a motor to the amount of energy that is required, reducing energy use. VSDs also have built-in soft start capability, which extends the life of the motor.

INCENTIVES

Incentives are available for **new equipment installations** through Idaho Power's Commercial and Industrial Energy Efficiency Program.

- An incentive of \$60 per hp is available for installing a VSD/VFD on chilled water pumps, condenser water pumps and cooling tower fans
- An incentive of \$100 per hp is available for installing a VSD/VFD on supply, return, outside air, make-up air fans and hot water pumps

To qualify, VSD/VFD must be installed on variably-loaded electric motors, that are not required by code for new construction. The motors must be 5hp or larger and operate at least 2,000 hours per year, some exceptions may apply. All VSD/VFD installations must comply with Idaho Power's Rule K "Practices and Requirements for Harmonic Control".

Visit idahopower.com/business for program details and requirements.

Payback

Costs vary depending on the size of motor and how often the fan operates annually. The payback period, including incentives, is typically between 6 months and 2 years.

References

Schneider Electric. Boosting the Energy Efficiency of HVAC Systems with Variable Speed Drives. Sourced on September 8, 2016 from <http://static.schneider-electric.us/docs/Motor%20Control/AC%20Drives/Class%208839%20M-Flex/8800DB0601.pdf>

Department of Energy. Energy Savings Potential and Opportunities for High-Efficiency Electric Motors in Residential and Commercial Equipment. Sourced on September 6, 2016 from <http://energy.gov/sites/prod/files/2014/02/f8/Motor%20Energy%20Savings%20Potential%20Report%202013-12-4.pdf>



P.O. Box 70
1221 W. Idaho St.
Boise, ID 83702
idahopower.com

