



Today's marketplace is full of voices promoting adjustable speed drives (ASDs) with competing claims of savings and benefits. What's all this discussion about?

An ASD controls the speed of an induction motor by adjusting the voltage and frequency that supply the motor. Affinity laws—*which show that change in power consumption is proportional to the cube of the change in speed*—illustrate energy-savings potential through the use of adjustable speed technology. What you may not have heard, however, is that in addition to saving energy, ASDs can improve operational processes and reduce motor maintenance costs.

Is ASD Technology Right for You?

Adjustable speed drives can be very useful in applications with variable torque loads like centrifugal pumps, fans and blowers, as well as in HVAC and compressed air systems. However, ASDs are not a plug-in solution. In some cases, such as constant-power or constant-speed applications and high-static-pressure pumps, ASDs will NOT save energy.

How can you find out if ASDs will be a boon to your facility budget? Motor Decisions MatterSM (MDM) has you covered. On the MDM Website (www.motorsmatter.org), you'll find an entire section focused on this topic. Two resources, in particular, can help you assess whether ASDs are appropriate for your operations and also help you develop a preliminary estimate of your energy savings and payback to identify and screen potential projects.

Get Answers to Your Questions

The National Electrical Manufacturers Association (NEMA) Application Guide for AC Adjustable Speed Drive Systems is the first resource you should review. Key selection and application factors include the motor, drive type, electrical supply, mechanical insulation and controls. The Guide also includes important safety and operational considerations that help you make a smart decision.

Boosting Your Bottom Line: Tools To ‘Drive’ Your Motor Energy Savings

Written by Motor Decisions Matter
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Second, to help assess the economics of this investment, you’ll need to estimate how much energy can be saved—and *what the payback period will be*. The Bonneville Power Administration (BPA) developed an ASD Calculator to help you estimate the installed cost of an adjustable speed drive, including materials and labor, energy savings and simple payback for installations on fans and pumps. Users have the option of selecting from specific fan and pump types or providing measured power (kW) entries for application types not included in the calculator. Developed for the Department of Energy (DOE), the BPA ASD Calculator is an excellent tool.

With these resources, you’ll be in a better, more informed position to talk with an expert such as a utility account rep, motor distributor or your local service center about installing a drive. **MT**

The Motor Decisions Matter (MDM) campaign is managed by the Consortium for Energy Efficiency (CEE), a North American nonprofit organization that promotes energy-saving products, equipment and technologies. For further information, contact MDM staff at mdminfo@cee1.org or (617) 589-3949.

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