



VARIABLE FREQUENCY DRIVE INCENTIVE PROGRAM



Sponsored by Nebraska Public Power District
in Partnership with its Wholesale Utility Customers - 2009

ENERGYWISESM
Use less. Spend less. Do more.

WHY PURCHASE VARIABLE FREQUENCY DRIVES?

Many motors driving various equipment such as, but not limited to, pumps, fans, injection molding machines and conveyors operate at a constant speed. Therefore, to control the amount of work the motor is providing at any given time, devices are used to reduce the machine's output through artificial loading, essentially wasting energy. Examples include outlet valves or dampers, which restrict output to decrease the flow rate to a desired level for the system, or a bypass loop which simply diverts the fluid. In some cases, the machine runs at higher speed than is necessary to do the job. This wastes energy.

Variable frequency drives (VFDs, also referred to as variable speed drives) can reduce output by controlling the motor rather than having the motor work at a constant, almost full load and adjusting the system to obtain a desired result. Variable speed drives are especially effective at reducing power and energy consumption to centrifugal equipment such as pumps and fans. This is because a reduction in flow is directly proportional to a reduction in speed, while the reduction in power is proportional to the cube of the change in speed.



POTENTIAL SAVINGS

VFD Energy Savings Chart*

Load	Savings
100 %	0 %
90 %	27.1 %
80 %	48.8%
70%	65.7%
60%	78.4%

For centrifugal loads, small decreases in equipment rotating speed or fluid flow yield significant reductions in energy use. For example, reducing speed (flow) by 20 percent can reduce power requirements by approximately 50 percent. (See *Savings Chart, left.*)

Actual savings will vary based on load and motor characteristics.

* Centrifugal loads only

~ \$30 per horsepower incentive! ~

OTHER PROGRAM SPECIFICS

- Available to industrial and large commercial customers
- Limited to VFDs from 1 to 200 horsepower
- Not available to customers who qualify for the EnergyWiseSM Irrigation Efficiency Incentive Program
- Not available for replacement VFDs or non-centrifugal loads.

HOW TO PARTICIPATE

Submit an application along with the required documentation to your participating utility. Be sure all terms and conditions on the back of the application are met before applying.



For program guidelines or application, please visit with your local public power utility or go to www.nppd.com and click on EnergyWiseSM Incentives.