

UPGRADE TO VARIABLE FREQUENCY DRIVES AND SAVE

VFD Benefits

- **Energy savings:** Reduced energy consumption is achieved by operating motors at part load with a higher motor efficiency than non-VFD systems. Variable torque load systems benefit the most from this upgrade, since power to the motor drops with the cube of the motor speed. Constant torque loads save energy in direct proportion to lower motor speed.
- **Extended equipment life:** VFDs can decrease wear and tear by providing equipment with the ability to slowly accelerate and decelerate motors.
- **Cost savings:** A reduction in both operating and maintenance costs.

Drive Up Savings for Your Facility

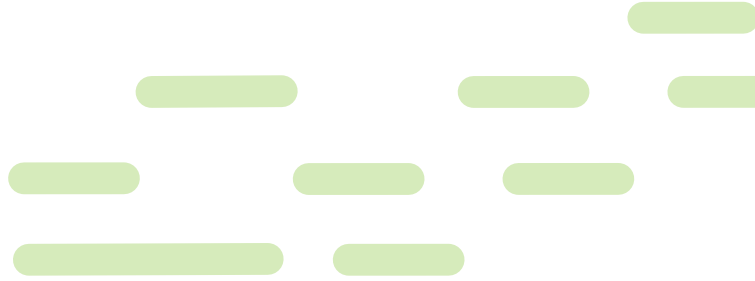
Help your equipment run smooth and steady with incentives on variable frequency drives (VFDs) from Custom Energy Solutions. With less wear on your motors, you will notice reductions in maintenance requirements and costs. Making the switch to VFDs can also improve system performance and ultimately have a huge effect on your bottom line.

Installing VFDs on motors saves energy by utilizing the affinity laws. These laws show that a small decrease in the rotating speed of the motor can greatly reduce the power input needed and yield big savings. Reducing the rotating speed of the motor by just 20 percent can reduce the power input needed by about 50 percent.

Control Type	Annual Electricity Consumption* (MWh/yr)	Electricity Consumption Savings (%)	Annual Electricity Cost Savings** (\$/yr)
No Controls	200 MWh	0%	-
Outlet Damper	187 MWh	6%	\$1,300
Variable Inlet Vane	165 MWh	18%	\$3,500
VFD	104 MWh	48%	\$9,600

*25 kW motor operating 8,000 hr/yr variable load profile (1,600 hr @ 100% flow, 3,200 hr @ 75% flow, 3,200 hr @ 50% flow)

** Electricity rate of \$0.10/kWh



VFDs automatically adjust the power to match the needs of your facility; for example, if only four of ten stations are operating, the motor will run at 40 percent power, instead of full power. By adjusting voltage and frequency, VFDs help motors operate at the most efficient speed for any given use. Once a VFD is installed, it works automatically. Set it and forget it.

Not sure if VFDs are right for your facility? VFDs can be applied in all types of buildings that have motors in HVAC systems, fans and pumps.

Great uses for VFDs:

- Cooling tower fans, exhaust fans, air supply fans, boiler draft fans, kitchen hoods, HVAC rooftop units and dust collection fans
- Hot water pumps, chilled water pumps, process pumps and water source heat pump loops

Let Us Help

When it comes to making the change, proper installation is vital to VFD performance. The location, environment, humidity levels, grounding, supply voltage and motor protection of the facility must be considered before beginning the project. Energy Efficiency Alberta program allies are here to help make your upgrade easier.

About Us

We are dedicated to helping Albertans save energy and reduce their carbon footprint. Custom Energy Solutions offers incentives that make it easier and more affordable for facilities with high energy needs to update older equipment with energy-saving solutions. The result is more comfortable, efficient buildings with lower operating costs.

Get Started

For full details on incentives, visit efficiencyalberta.ca/customsolutions.

