



OVERVIEW

20% reduction in speed can give up to 50% energy saving.

Global Solutions...

wireless control for hundreds of applications

with Invertek Drives the solutions start here!

- easy to use and incredible performance
- leading edge design and technology
- highly committed to innovation
- products you can rely on
- global support and suppliers

For more information, visit www.invertek.co.uk

COMPANY

SAVING ENERGY

The optimum solution for centrifugal fans and pumps

Delivering results around the World

Fan and Pumping applications have been an important part of the variable speed drives industry for many years, where the benefits of energy saving, improved enhanced control and performance are well known. However, with the ever increasing energy costs, and the worldwide focus on the environment, the market for inverters in these types of applications continues to grow.

So how are the energy savings achieved? Centrifugal fans and pumps have a particular characteristic where the torque required to turn them is proportional to the square of the speed. The power required is then proportional to the cube of the speed. From this, it can be seen that a reduction in the fan speed gives a much larger reduction in the power consumption, and a 20% reduction in speed can save up to 50% of the energy consumption!

Many fan and pump installations operate at a constant flow rate, even though the actual demand for them varies widely. The required flow is then adjusted using mechanical valves or dampers, which reduce the overall system efficiency. Invertek's Optidrive E2, Optidrive Plus and Optidrive VTC all feature built in PI or PID control, designed so that the drive can automatically maintain a constant pressure or flow set point, based on a signal provided from a feedback transducer. For example, where a pump is used to pump fluid at a constant pressure into a system where the demand may vary, a transducer can be installed to measure the actual pressure, and the Optidrive can be pre-programmed with the desired setpoint. The Optidrive will then adjust the pump speed to maintain the pressure automatically, providing a simple, reliable means to achieve consistent energy savings, particularly when compared to a pump simply running at full speed continuously, controlled by throttle or recirculation valves. Automated systems, which remove the need for an operator to manually adjust the speed almost always provide the optimum energy savings.

Invertek's Optidrive VTC has been specifically for centrifugal fan and pump applications, and as such has features dedicated to this industry which can further assist the energy saving potential. The PID controller has an additional 'Sleep / Wake' function, which allows the drive to automatically shut down if the preset feedback level has been maintained over a programmable time period, and restart when demand requires. Again, this automatic system, once programmed, removes the need for operator intervention, meaning that the maximum savings are achieved with minimal effort, and also simplifies the installation when retrofitting to existing applications.



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