

## Variable Speed Drives

*What are they? What are their applications?*

A variable speed drive is a particular type of motor controller that drives an electrical motor by varying the frequency and voltage that is being supplied to it. Variable speed drives are known by many names, including inverters and variable frequency drives; and they come in a couple of different forms – AC (alternating current) or DC (direct current) variable speed drives.

For instance, if you have a pump or fan application that doesn't require your electrical motor to run at full speed, a VSD can be implemented to ramp the frequency, voltage and speed of the motor up or down. If these requirements change down the line, that's fine too – the VSD will simply turn up or down the motor speed to meet these requirements.



On the surface, a variable speed drive's primary purpose is to run a motor at variable speeds as and when required; however even the simplest VSD is capable of so much more! The VSD acts at all levels of an application by protecting, controlling and monitoring connected equipment. Smart technology in the form of a VSD acts as a multipurpose tool that focuses on completing several tasks at once; resulting in a reduction in energy consumption and costs. A VSD allows you to cleverly match the speed of the connector, without facing huge energy bills from stopping and starting the motor. Coupled with the fact that consistently running the motor at an accurate speed can extend the lifespan of your motor, with reduced shut-downs and boot-ups, a variable speed drive certainly seems a cost-effective solution to meet the requirements of your production processes. Variable speed drives are the ideal solutions for a number of applications throughout your production process.

This includes the use of variable speed drives in fans, as reducing the speed with a VSD is a much more cost and energy efficient way of reducing the speed in a fan unit without the need for a dampener. Similarly, with a pump application, a variable speed drive offers an improved level of efficiency by delivering superior control to a throttle control system. A third application of a variable speed drive would be an air compressor system.

Whilst this can vary by application, most air compressors comprise of a constant torque load and have less scope for energy savings than fan or pumps, therefore whilst it might not offer the same money savings as other solutions, variable speed drive applications can still offer the same extended life expectancy of machinery.

**But these are just a few solutions that you can use a variable speed drive for; and they do suit many other applications.**