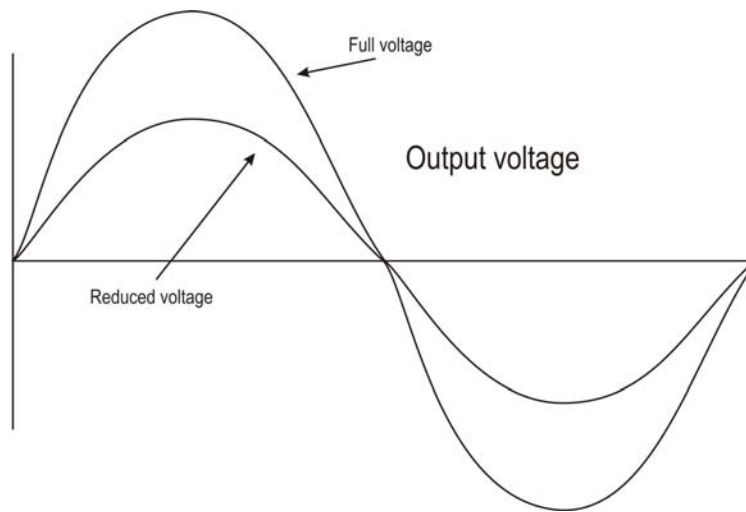


Voltage Control

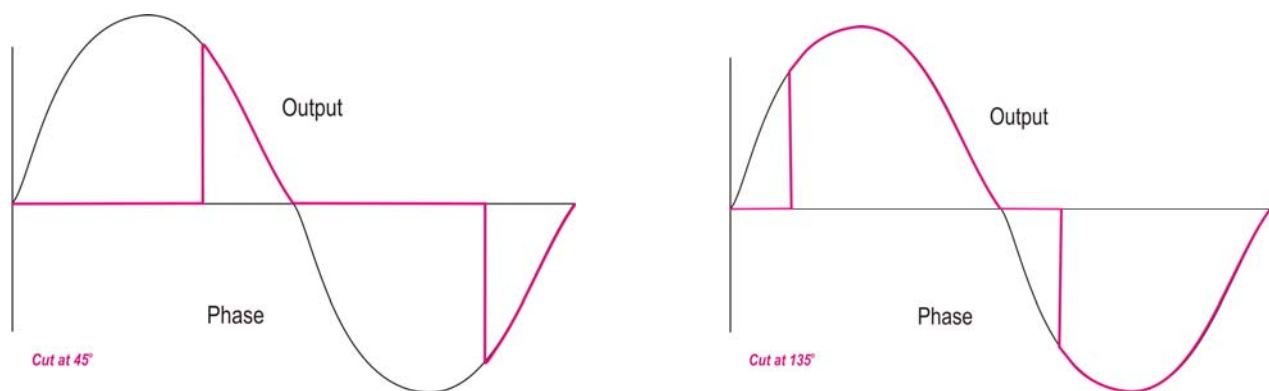
A reduction of the voltage supply to an AC induction motor will result in a reduction of the motor speed. Reducing the voltage supply increases the amount of slip and therefore a reduction in motor speed. Varying the voltage supply will therefore lead to a variable motor speed.

Variable voltage is a simple control method but is an inefficient control method. Increasing the motor slip increases the motor losses and therefore inefficiencies. It will also lead to an increase in motor temperature rise and possible overloading of the motor and reduced life expectancy.

There are two methods of variable voltage control. One uses transformers to vary the magnitude of the sinusoidal supply voltage, the other is thyristor voltage control that chops the sinusoidal waveform resulting in a reduction voltage magnitude.



Voltage waveform of a transformer based controller



Waveform of a thyristor based voltage controller