

Sinus Filter

The output from a Frequency Drive is in the form of Pulse Width Modulation to mimic a sinusoidal voltage waveform. This high frequency square wave produces harmonic waveforms and high voltage differences between the motor phases and phase to earth. The potential difference can be as high as 2,000 volts.

The high potential difference will cause damage to motor windings and early life failure. The potential difference between phase and earth leads to bearing currents as the potential difference tries to ground itself to earth via the bearings. The situation is worse with more than one motor connected to the frequency drive output due to reflected waves between motors and drive. The only solution to this problem is the use of a Sinus Filter on the frequency drive output. This smoothes the output from the drive to a true sinusoidal waveform.