Abstract

Generally the harmonics are not presents in a supply which is given to the drives but the harmonics are generated by the load itself. Harmonic distortion is form of electrical noise that can cause a problem such as, motor may overheat or become noisy and torque oscillations in the rotor can lead to mechanical resonance and vibration, capacitors overheat. All power electronic converters used in different types of electronic systems can increase harmonic
disturbances by injecting harmonic currents directly into the grid. Common non-linear loads include motor starters, variable speed drives, computers and other electronic devices. After the identification of the harmonics, it can be reduced either by modifications to the drive system or by using external filtering. The current harmonics depend on the drive construction and load. Factors that increase current harmonics include large motor compared to the supply transformer higher motor load. Factors that decrease current harmonics include Greater DC or AC inductance, Higher number of pulses in the rectifier. By using simulation with MATLAB software we can reduce the harmonics for AC drives to overcome the above mentioned problems and to get smooth performance.

References

- R. Fehr, "Harmonics Made Simple" by P. E. , Engineering Consultant, Jan 2001
- Dr. Suhail. A. Qureshi, &quot;Power factor improvement in Harmonically Polluted Power System and Design of Harmonic Filter&quot;; AUPEC 04 Conference held in the University of Queensland Brisbane, Australia, 26 -29, Sept, 2004.
- Dr. Suhail. A. Qureshi &quot;Design and Costing of Low Cost Harmonic Filter&quot;;, U. E. T Lahore , 1999
- 10 Fluke Power Instruments, www. fluk. com
- MathWorks corporation www. mathworks. com
Identification of harmonics in AC drives & design of Harmonic filter using SIMULINK


Index Terms

Computer Science

Harmonic Filter
Keywords
Point Of Common Coupling (pcc)  Short Circuit Safe.  Adjustable Speed Drives (asd)