

ICT AND TCI

Integrated Control Technologies is a distributor of Transcoil products which include AC Line and Load Reactors and Power Line Harmonic Filters.

LOAD REACTORS

Load Reactors are used on the output of AC drives to protect the motor when wire path are more than 300 feet .

TRAINING NEWS

Integrated Control Technologies is conducting an AC and DC Drives Training Course in December. Contact your ICT sales representative for more details.

Are Line Reactors Required when using AC Drives?



- AC drives cause power line harmonics which result in voltage and current waveform distortion.
- The addition of impedance as AC reactance will help mitigate current distortion.
- AC Line Reactors aid in reducing voltage line transients that can damage the input diode bridge of an AC Drive.
- 3% impedance helps in eliminating bus overvoltage tripping.
5% impedance protects physical damage to most drive components.

The advancement of AC Drive technology has enabled manufacturing to react to market demands of flexible manufacturing. As the price of AC drives continues to decrease and performance increases, more and more AC drives are being applied to machinery. As these products are applied to more and more applications, problems have surfaced regarding their application.

AC Drives utilize Insulated Gate Bipolar Transistors (IGBT's) which switch at very high frequencies. This switching induces power line harmonics which cause distortion in voltage and current waveforms. This distortion can cause other equipment to fail pre-maturely or act erratically.

Some AC drives such as Yaskawa; utilize a DC link choke which can reduce current distortion by approximately 40-60%, although this may not have a quantifiable impact on measured voltage distortion.

As far as AC Drives are concerned, the most important circuit element which influences the amount of harmonic current present in the distribution system is the amount of system impedance and where it is located. System impedance is the amount of AC reactance in a power distribution system.

AC line reactors serve another role in reducing line transient voltage to the input of an AC Drive rectifier. Transient line voltages can be a result of switching power factor correction capacitors, lighting strikes or non-isolated SCR based drive on the branch circuit.

In summary, AC line reactors are a good investment for both your power line quality and in the protection of your AC drive.