

<b>APPLICATION NOTE</b>	<b>FECA-AN-135</b>
<b>Use of DC Link Reactor for Larger Hp Rated Drives</b>	

<b>Inverter type</b>	FRENIC-Eco series
<b>Software version</b>	All versions
<b>Required options</b>	None
<b>Related documentation</b>	-
<b>Author</b>	Terry Webb Shane Spencer
<b>Date</b>	1/27/2012
<b>Revision</b>	

### Introduction

Fuji Electric provides, as standard, a DC link reactor for all **FRENIC-Eco** drives 75Hp and greater at 208/230V, and 100Hp and greater at 460V, that is shipped with the drive. The DC link reactor must be connected to the drive without exception. An optional AC line reactor may be used along with the DC link reactor to mitigate power system harmonic currents and reduce transients, but is not an acceptable replacement for the DC link reactor supplied with the inverter.

Utilizing the DC link reactor provided with the drive results in the following benefits:

- Improved power factor
- Peak input current is reduced
- Reduction in harmonics generated by the drive

The DC link reactor provided with the drive is a component that was specifically designed to be installed and utilized with the drive. Fuji Electric has performed all product validation and UL testing with the DC link reactor connected for the larger rated drives (as mentioned above).

NOTE: While an AC line reactor may provide similar benefits, it must be noted that Fuji Electric's DC link reactors have equivalent AC line impedance greater than 5% (estimated between 8% and 10% depending on the drive rating and type). AC line reactors produce a voltage drop estimated at the percent impedance rating at full load current, so installing a 10% impedance AC line reactor will result in approximately a 10% voltage drop and may result in reducing the drive's torque performance.

### Drive Ratings Where DC Link Reactors Are Provided & Required

<i>FRENIC-Eco</i>		
<b>208/230V</b>		
Hp Ratings	DC Link Reactor	AC Line Reactor
1Hp through 60Hp	Optional	Optional
75Hp through 125Hp	Provided by Fuji Electric & Required to be Installed	Optional (Install in Addition to the DC Link Reactor)
<b>460V</b>		
Hp Ratings	DC Link Reactor	AC Line Reactor
1Hp through 75Hp	Optional	Optional
100Hp through 900Hp	Provided by Fuji Electric & Required to be Installed	Optional (Install in Addition to the DC Link Reactor)

### Disclaimer

This note is intended to provide information related to the use of the **FRENIC-Eco** drives 75Hp and greater at 208/230V, and 100Hp and greater at 460V. It is in no way intended to replace the User's Manual or Instruction Book. For wiring/connection details please see the associated drive product instruction manual provided with each drive.