Fuji Electric
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APPLICATION NOTE	FECA-AN-150
MEGA Common DC Bus All Drives Powered	

Inverter type	FRENIC MEGA
Software version	All
Required options	None
Related documentation	FRENIC MEGA Instruction Manual INR-SI47-1457a-E and Userôs Manual MEHT536
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Date	2/03/14
Revision	

Introduction

A decelerating motor can regenerate voltage back onto the DC bus, turning the motor into a generator. In this instance, the VFD can trip a fault for over voltage (OV). A braking unit and resistor can be used to dissipate the additional voltage, but the drawback is the energy is turned into heat. An alternative method is a common DC bus configuration. When one motor is decelerating, a second VFD can use the regenerated voltage on the bus to operate its motor. This app note will provide capacities and a wiring example for the setup.

Configuration

All drives are connected to AC power. Consult the driveôs manuals for breaker sizing. Contactors are utilized on the inputs for disconnecting means.

AC Reactor

All drives must have an AC reactor of 3% or higher installed on the 3 phase AC line in front of the drive.

Braking

In the event that the total power being used is negative, or the driving VFD doesnôt use up the extra voltage on the bus and the voltage approaches 800V for 460V drives, and 400V for 230V drives a braking units and resistors are needed. The braking units and resistors should be sized for the HP rating of the VFD.

AC VFD selection

For this configuration, the HPs of the drives are going to be the same.

***Note:** Consult Fuji when connecting more than two AC VFDs together or when pairing up AC VFDs with differing HP ratings.

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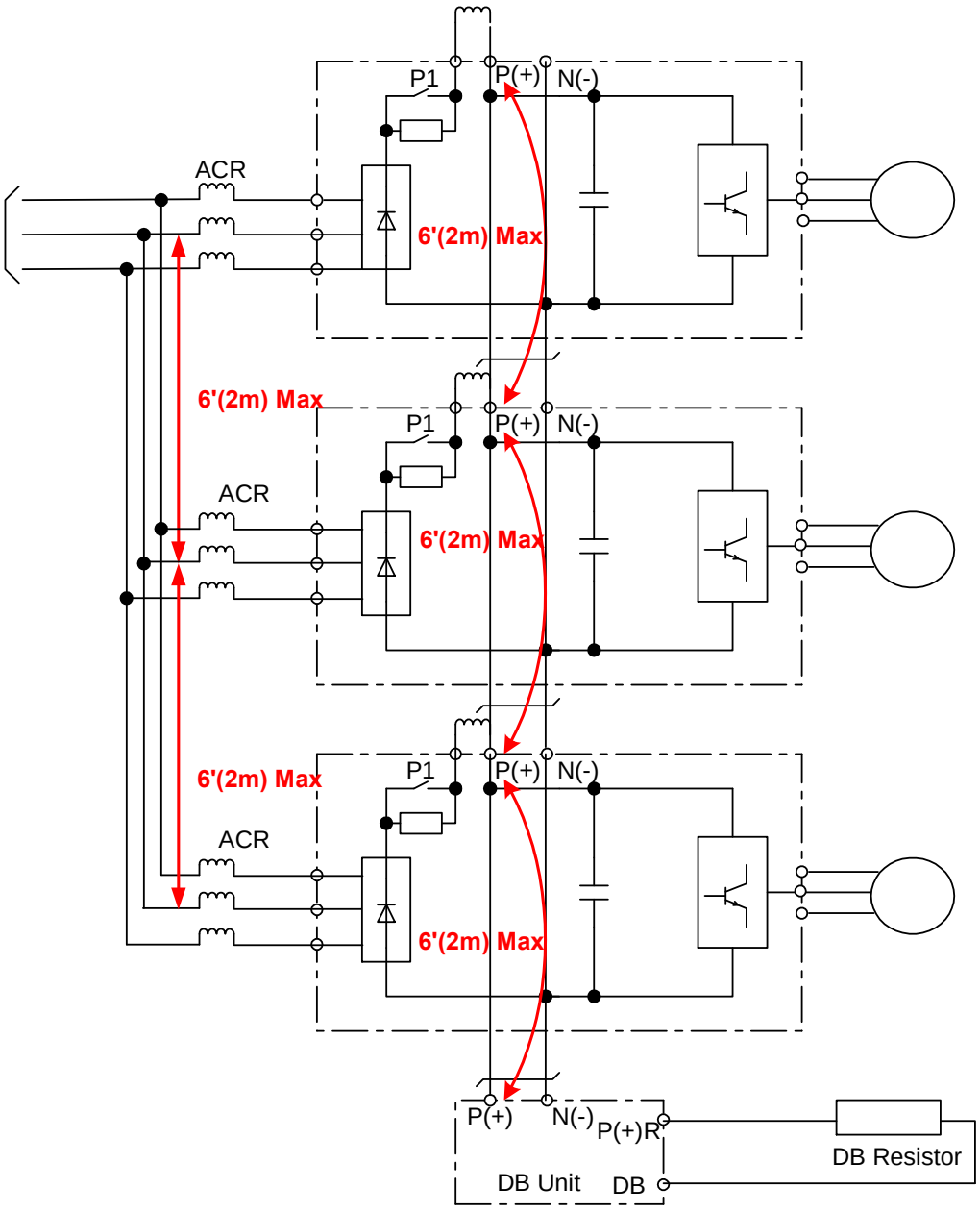
Wiring

When installing the wiring, follow all local and national wiring codes. Connect the three phase AC input to all drives. It is recommended to control the AC power with one breaker. If there are multiple breakers, make sure to turn them all on at the same time. Connect the P(+) and N(-) terminals to the same connections on the second drive. Leave the factory installed jumper on P1 to P+. The length of the P(+), N(-), L1, L2, and L3 cables need to be kept to a maximum of 6Ft (2m) max between the connections. They should be run parallel to minimize inductance.



For further information:
See **MEGA User's Manual MEHT536** and **FRENIC-MEGA Instruction Manual (INR-SI47-1457a-E)**.