The Application Note is pertinent to the Quantum III / Mentor II Family

**DC Motors with 240VDC Armature and Field Voltage**

There are many instances, especially retrofit applications, where the existing motor has a 240vdc armature and a 240vdc field. The field output for standard DC Drives is typically 150vdc for fixed **voltage supplies** (size 2 and 3 Mentor II and Quantum III drives) and 216vdc (max available output voltage) for the **current regulated supplies** (size 1 Mentor II and Quantum 3 drives). Even when the larger Size 2 & 3 drives utilize the external **FXM5** field current regulator, a 240vdc-field voltage cannot be attained with a 240vac line. Addition of a simple boost transformer can solve the problem. This application note will provide solutions for these situations.

**Size 1 Drives**

*Current Regulated Field (Internal)*
Connection Diagrams

Remove terminal strip jumper between L11-L12

* Connection shown is for 240vac line, transformer primary is 240 / 480

T1 P/N BT48V10A-CR
8 Amps Maximum

These components are stocked and sold through the North American Service Center

To order please contact sales @ 716-774-1193
**Size 2 & 3 Drives**

**Fixed Field Voltage**

- **Quantum III**
- **Mentor II**

* Connection shown is for 240vac line, transformer primary is 120 / 240

- T1 P/N BT32V15A-VR
  - 15Amps Maximum
- T1 P/N BT32V20A-VR
  - 20Amps Maximum

These components are stocked and sold through the North American Service Center

To order please contact sales @ 716-774-1193
Notes:

1. Size 2 & 3 drives MUST be programmed for the “European” field setting; F- jumper wire must be connected to the “EF-” connection

2. Remove jumper connection between FE1 and FE2 on size 2 & 3 Quantum III drives.
Size 2 & 3 Drives

Current Regulated Field (External)

Quantum III

Mentor II

FXM5

FXM5

T1 Part #
BT48V10A-CR
10 amps max

T1 Part #
BT48V20A-CR
20 amps max

230VAC Input Power From Drive Maintain L1 - L3 phasing

L1

L3

PS Transformer

Field Loss Relay Opens on Fault
Field Economy Close for Full Field
Connect to E-Stop
Connect to Field Economy Relay In Analog Mode

Optional Connection when digital control not used

1 amp KTK

To Motor If Field Weakening

A+ a-

1 amp KTK

0.5 amp KTK

20 amp dc max. Motor Field

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