



Field Regulator Unit

Models FR1000-000 and FR3500-000

3204 Rocky River Road, Heath Springs, SC 29058
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General Description

The Carotron **FR1000-000** and **FR3500-000** **Field Regulator Units** are designed to provide current regulation for DC motor or generator field windings rated from 0.2A-10A and 1.5A to 35A respectively. These units are easily set up as constant horsepower "crossover" controls to give a motor extended speed operation. Also, they can be set up as alternative field current supplies in single or multiple motor applications.

These units will operate from a single-phase 50/60 Hz line between 230 and 460 VAC, $\pm 10\%$, with no line voltage programming required. They have intuitive set-up with three basic adjustments: MIN CURRENT, MAX CURRENT and CROSSOVER set point. A built-in field current ammeter with 0.1-ampere resolution further simplifies set-up.

An independent DC tachometer scaling circuit is included. When the FR1000-000 and FR3500-000 are used in a constant horsepower application with CAROTRON drives from the CHOICE or ELITE series, the extended speed tachometer voltage can be easily scaled to "fit" the standard 7 volt-per-thousand tachometer input range on these models. This alleviates the need to calculate drive resistor values to be added for scaling the tachometer input for models that do not have an adjustable tachometer input range.

Current control resolution is optimized with a programming jumper that selects a 2, 4, 6, 8, 10 or 15, 20, 25, 30 or 35 ampere range. There's no need to calculate the number of turns of wire to thread through a current sensor.

Fuses are provided for protection of the components in both the low voltage power supply and high current section.

FAULT contact (opens on FAULT) provided for ARMATURE OVER VOLTAGE or FIELD UNDER CURRENT fault conditions.



Standard Features

- No separate control supply required due to wide input range switching power supply
- IC regulated power supplies, metal film resistors and cermet potentiometers for stable operation under varying conditions of temperature and line voltage
- Terminal strips provided for easy connection
- Line Voltage Fusing included
- Oversized power handling components
- Compact dead front chassis design

Electrical Specifications

AC INPUT

- 230 VAC \pm 10%, 50/60 Hz \pm 2 Hz, 1 Phase
- 460 VAC \pm 10%, 50/60 Hz \pm 2 Hz, 1Phase

MAXIMUM DC FIELD OUTPUT

- 200 VDC, 10 Amps for FR1000-000, 35 Amps for FR3500-000 @ 230 VAC input
- 400 VDC, 10 Amps for FR1000-000, 35 Amps for FR3500-000 @ 460 VAC input

FIELD CURRENT TRIP

- 6 to 1 Range

CURRENT REGULATION

- + 0.5% of set current

OPERATION TEMPERATURE RANGE

- 0 to 55 degrees C

ADJUSTMENTS

- P1 Tach Gain
- P2 Tach Offset
- P3 Min Field Current
- P4 Max Field Current
- P5 Crossover Set Point

CROSSOVER APPLICATION INPUTS:

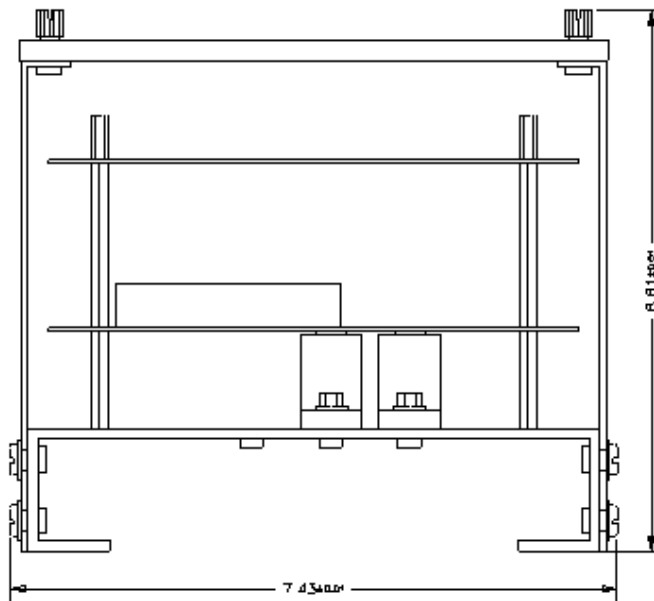
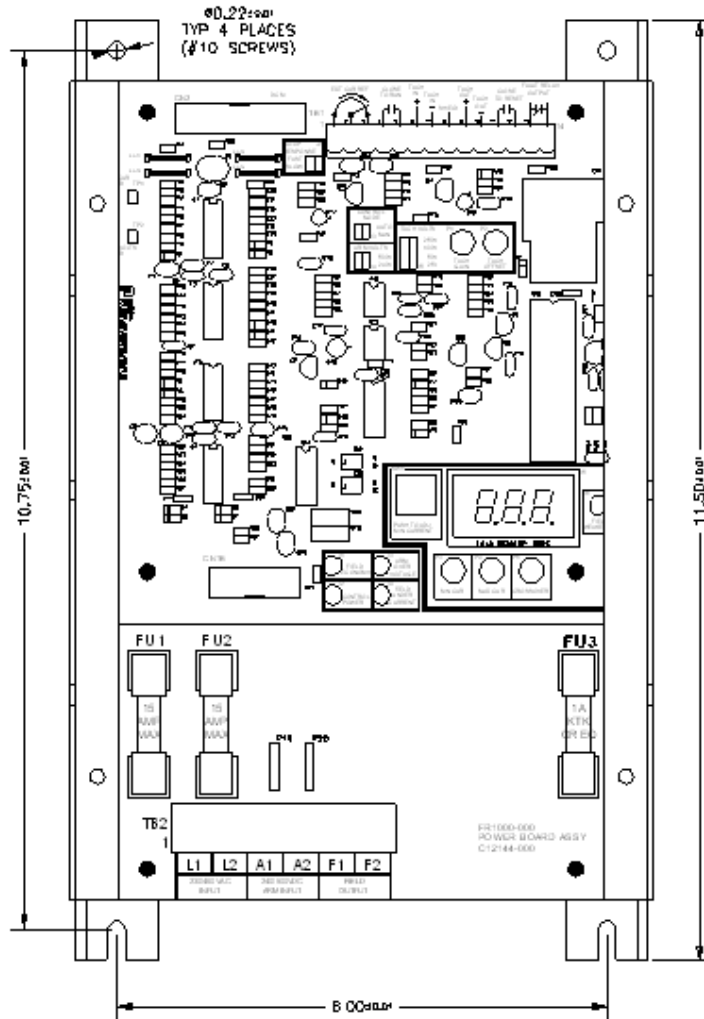
ARMATURE INPUT

- 0 to 240 VDC
- 0 to 500 VDC

MAXIMUM TACHOMETER INPUT

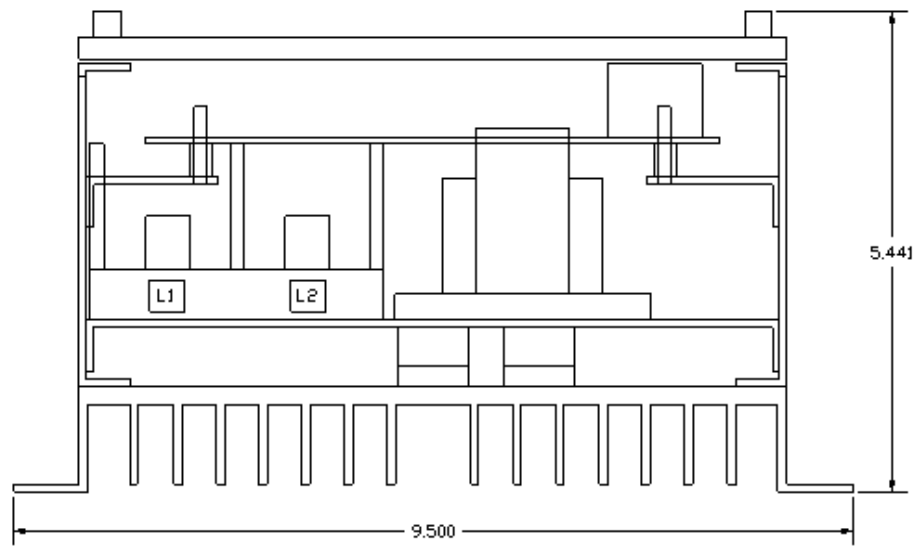
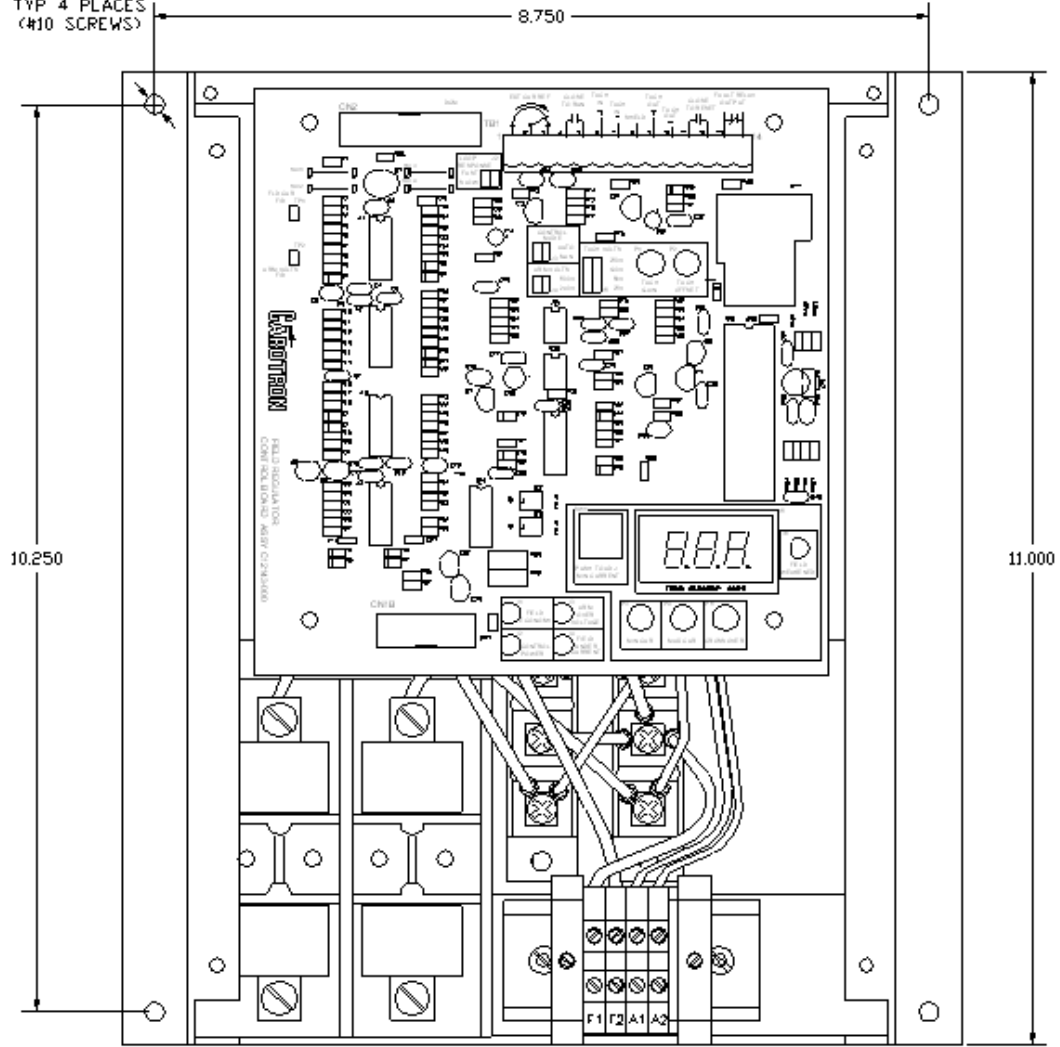
250 VDC

FR1000-000

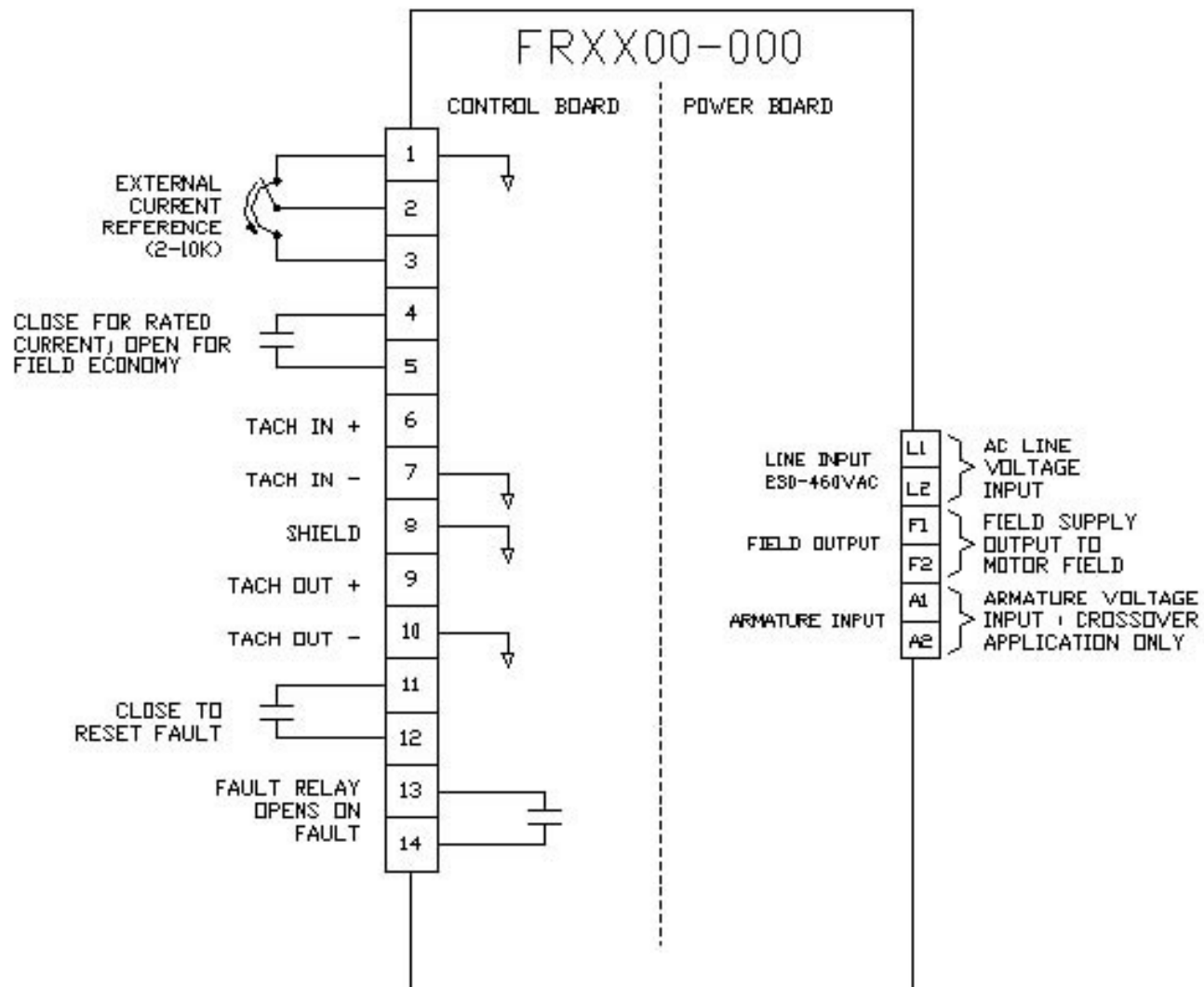


FR3500-000

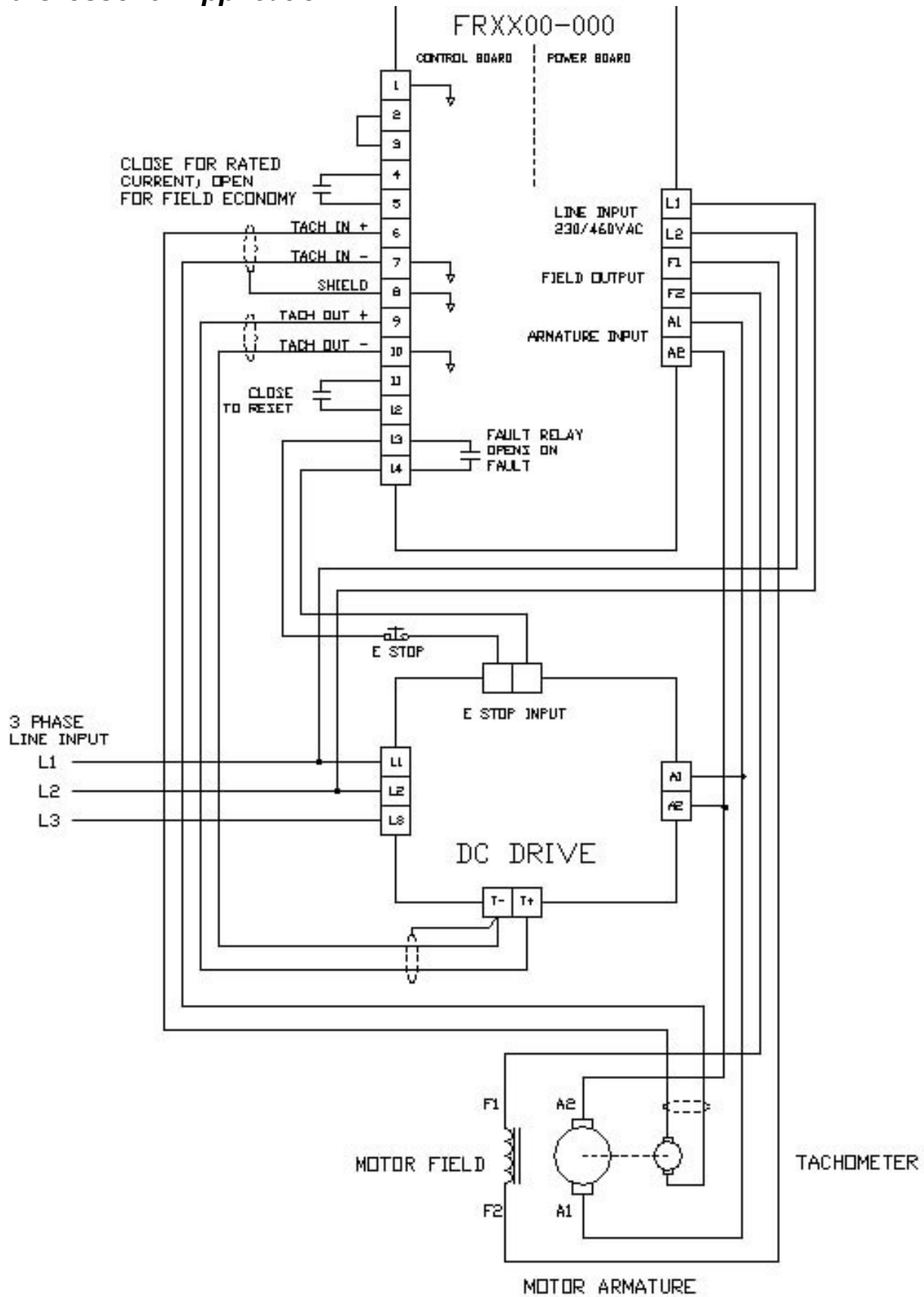
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TYP 4 PLACES
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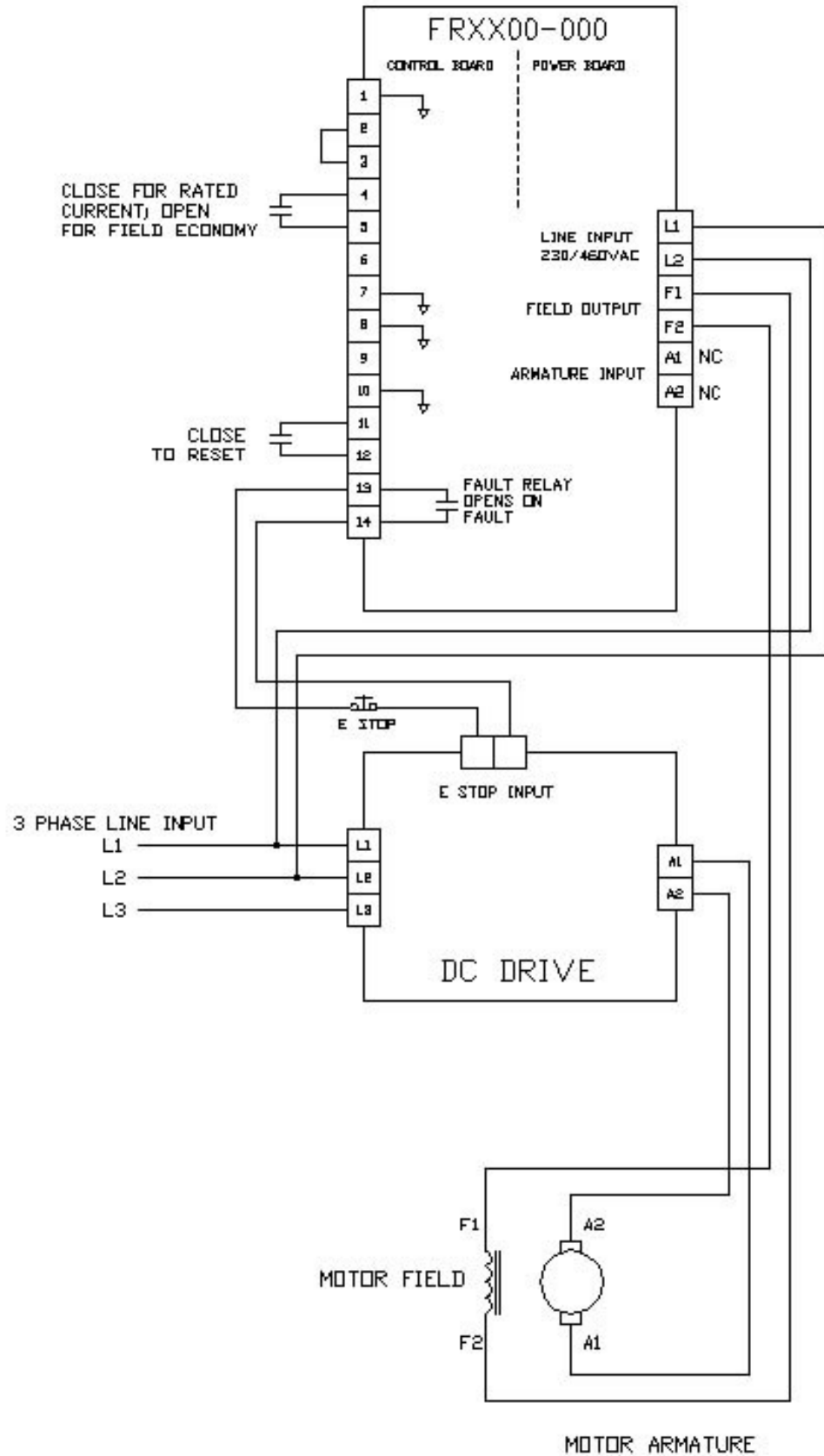
General Connections



Field Crossover Application



Field Supply Application



Field Regulator Unit
Models FR1000-000 and FR3500-000



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