

Calibration of 590 External Stack Drives

Armature Current

Parallel combination of R1 - R4 on the back board. Leave the armature current calibration slots blank on the plug-in calibration card.

$$R_{IA} = \frac{2200}{(I_A - 1)} \quad \text{ohms}$$

Field Current

Parallel combination of R10 & R11 on the plug-in calibration card.

$$R_{10} // R_{11} = \frac{4000}{I_F} \quad \text{ohms}$$

For stack controllers with Option 43, high field current option,

$$R_{10} // R_{11} = \frac{20000}{I_F} \quad \text{ohms}$$

When the field is in voltage control mode, use the appropriate formula from above and assume the field current to be 0.2 A.

Armature Voltage

Series combination of R8 & R9 on the plug-in calibration card.

$$R_8 + R_9 = \frac{(\text{Armature Volts} - 100)}{10} \quad \text{Kohms}$$

Tach Feedback

Series combination of R6 & R7 on the plug-in calibration card.

For tach feedback voltage (at Max speed) up to 200VDC:

$$R_6 + R_7 = (\text{Tach Volts} - 10) \quad \text{Kohms}$$

If tach volts at max speed exceeds 200VDC: Set **R₆ = 120K** and **R₇ = 68K**. Also, an external series resistor **R_E** is required at terminal B2, its value given by the formula:

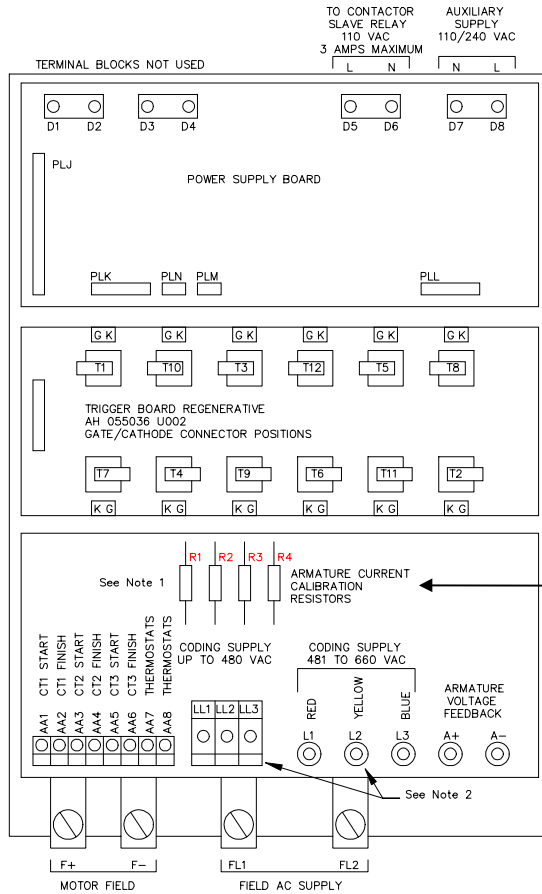
$$R_E = \frac{(\text{Tach Volts} - 200)}{5} \quad \text{Kohms}$$

Power dissipation of **R_E** is given by:

$$W = \frac{(\text{Tach Volts} - 200) \times 5}{1000} \quad \text{Watts}$$

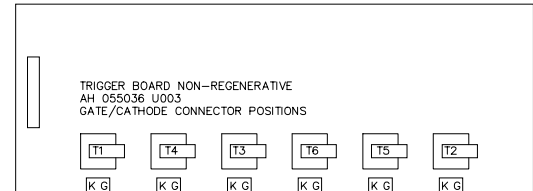
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Armature current calibration resistors are to be installed on the back board, as shown below. Do not install any armature current calibration resistors on the plug-in calibration card.



Header Functions

PLJ Control door signals
 PLK Current transformers
 PLL Field thyristor firing
 PLM Armature sense
 PLN Stack heatsink trip



Armature current calibration resistors

1. If any resistor value > 5 ohms use a 0.5 W resistor
 For resistors 2.5 to 5 ohms use a 1 W resistor
 For resistors 1.25 to 2.5 ohms use a 2 W resistor
 For resistors 0.75 to 1.25 ohms use a 3 W resistor
2. Terminals LL1, LL2, LL3 are rated to 480VAC. For higher line voltages, from 481 to 660VAC, use terminals L1, L2, L3.

- **All 590DRV models are factory calibrated at the full load currents of their respective HP ratings.**
- **All 590 controller models are factory calibrated at the full current rating of their respective stacks. The User should recalibrate the controller to match the motor armature current rating. See previous page for procedure.**
- **All external stack drives are shipped with the field in 'Voltage Control' mode and calibrated at 0.2 amps. If Current control mode is desired, the User must calibrate the controller to match the rated field current of the motor. See previous page for procedure.**