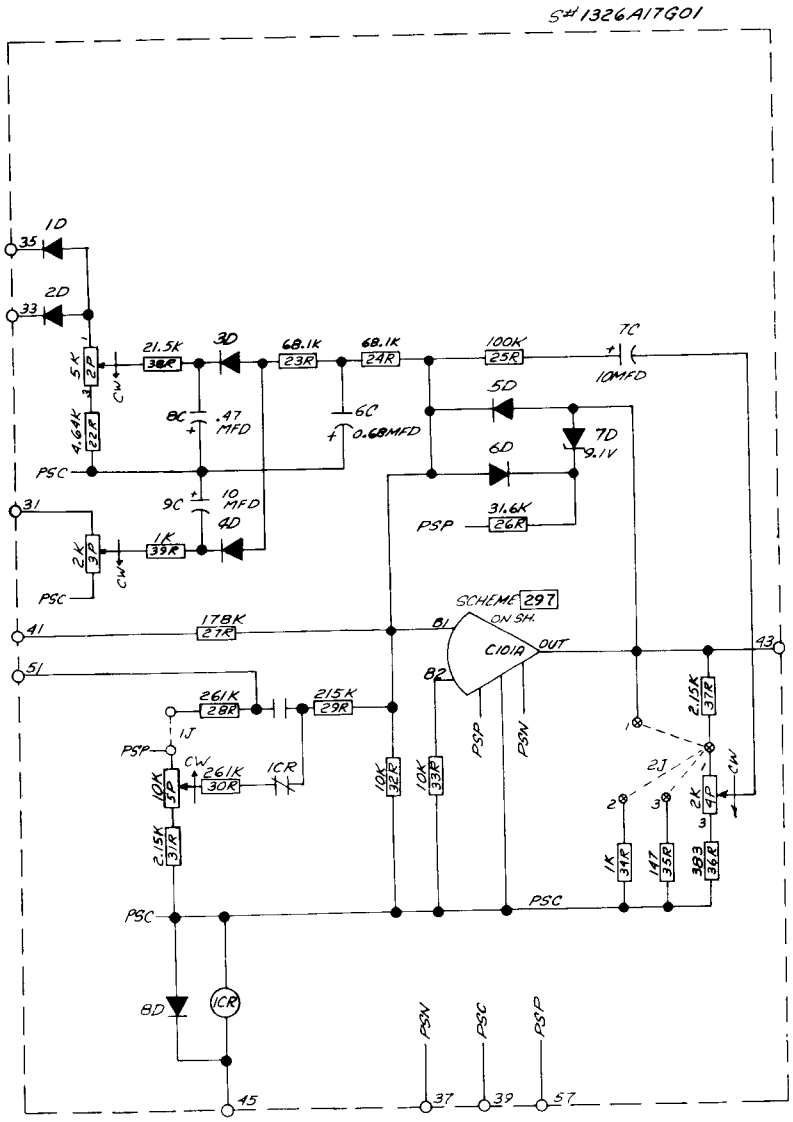
FIELD CURRENT CONTROLLER

I. DESCRIPTION

This module is designed as a current controller for the field exciter portion of C-56 Thyristor power systems for motor armatures as described in I.L. 16-800-126. It receives a field current feedback signal (-if) on terminal 31, which is compared with a reference signal applied thru resistor 29R. This reference may come from terminal 51 or thru jumper 1J from PSP. Relay 1CR allows for selecting weak-field or full-field strength.

The error signal is amplified in a C101A operational amplifier as described in I.L. 16-800-24, and drives the gate pulse generator. The overall response is of the proportional-integral type. The module can be used in speed regulator systems with bus voltage control in the field weakening range.



ALL RESISTORS = 0.5W UNLESS OTHERWISE SPECIFIED.

FIELD CURRENT CONTROLLER SCHEMATIC DIAGRAM

II. ADJUSTMENTS

Potentiometers: 2P ---- bus voltage feedback adjustment
3P ---- field current reference adjustment
4P ---- gain adjustment

III. SPECIFICATIONS AND RATINGS

Transfer Function: $\frac{e_{out}}{e_{in}} = \frac{1 + pR_fC_f}{K_pR_iC_f}$

Gain Adjustment (4P):

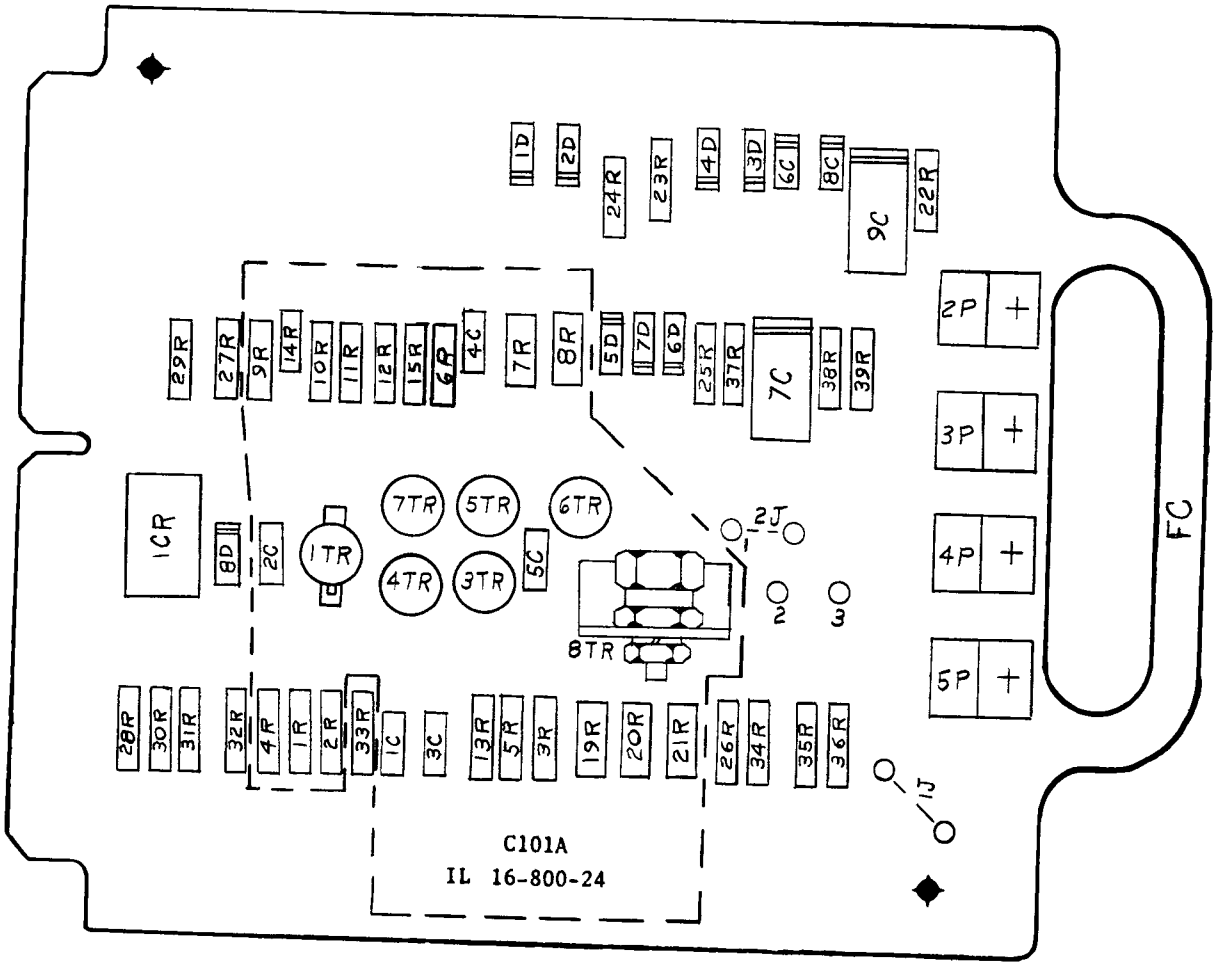
2J position 1	1	$\frac{1}{K}$	6.2
2J position 2	3.2	$\frac{1}{K}$	19
2J position 3	16	$\frac{1}{K}$	97

Output Swing: +0.5V, -9-5V, with load up to 10MA.

$T_c = R_fC_f$ approximately cancels the field time delay. It is fixed at one second

Ambient Temperature: 0 to 55°C

Power Requirements:
PSP: +24V, ± 0.5V 50mA
PSN: -24V, ± 0.5V 40mA



PC CARD (Front View)