A1101 CYCLING CONTROL

MODULE: 1828A01

I. INTRODUCTION

The A1101 Cycling Control Board generates a triangular waveform which is used to perturbate the output frequency of an Accurcon Adjustable Frequency Inverter. This type of control is used on traverse drives for ribbon break.

The circuit is capable of producing a triangular wave with equal positive and negative slopes or a sawtooth wave with a negative slope much larger than the positive slope.

The board is compatible with the A1101 Logic system and plugs into the standard A1101 Logic cage.

II. DESCRIPTION OF OPERATION

Figure 1 is a schematic of the Cycling Control Module including typical external connections to the board.

Operational amplifiers 1-0A and 2-0A act as a comparator and integrator respectively operating in a bistable mode. The triangular frequency is adjustable by 1P. Jumper 1J is used to select a sawtooth (Position 1) or a triangular (Position 2) waveform.

The magnitude of the triangular (sawtooth) waveform is adjustable by means of 2P.

Amplifier 4-0A is used to invert the frequency reference signal. The output of this operational amplifier is summed with the triangular waveform which is connected from 49 to 55 through an external contact. This contact is used to switch the Cycling Control input to the frequency reference circuit on and off.

The output of 3-0A (terminal 53) is the input to the adjustable frequency oscillator board. Figure 2 shows typical waveforms at terminal 53.

Terminals 33, 51 and 59 can be used for test purposes.

III. SPECIFICATIONS

Power Supply: ±13 , < 30 mA (from standard A1101 Power Supply).

Output Waveform:

Type: Selectable with 1J

Position 1 - Sawtooth
Position 2 - Triangular

Period: Adjustable with 1P

Triangular : 5 to 180 seconds
Sawtooth : 5 to 90 seconds

Amplitude: Adjustable with 2P

0 to 1.25V minimum at terminal 53.(Provides a minimum of 15% frequency perturbation).

Sawtooth Fall Time: 2.5 ±.5 sec.

IV. SERVICE

Semi-automatic test equipment is available at the factory for testing printed circuit cards. Any printed circuit card requiring repair should be returned to:

Westinghouse Electric Corporation
Industrial Equipment Division
P.O. Box 225, Buffalo, N.Y. 14240

FIGURE 1
CYCLING CONTROL SCHEMATIC

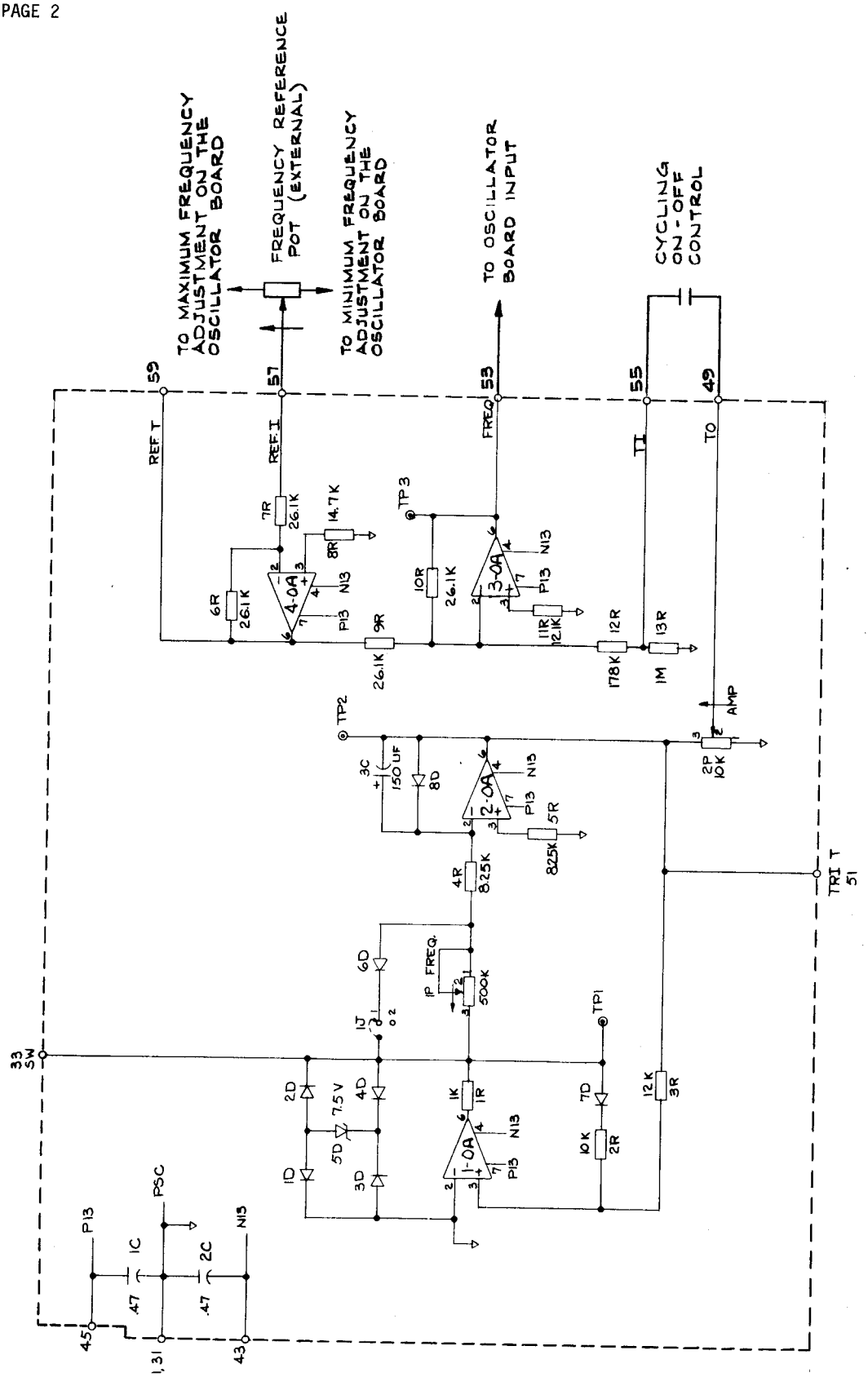

FIGURE 2
WAVEFORMS AT TERMINAL 53