849B NETWORK
DESCRIPTION

CONTENTS PAGE

1. GENERAL

1.01 This section describes the 849B network, which is designed for use in V4 telephone repeater applications.

1.02 The 849B network is used in place of a 227-type amplifier when gain is not required but equalization is required in circuits receiving from H88 or D88 loaded cable. The network provides transmission level control, impedance matching between H88 or D88 loaded cable and 600-ohm circuits, and a transformer centertap on the 1200-ohm side for simplex signaling.

2. EQUIPMENT DESCRIPTION

2.01 The 849B network is a plug-in unit (see Fig. 1) equipped with a 15-pin connector plug and is designed to be plugged directly into the mating connector socket of the equipment mounting shelf. The unit consists of a 600:1200-ohm transformer and a 600-ohm balanced pad (when the required 89-type plug-in resistor is inserted in the pad socket). The network is housed in a metal can approximately 1-3/4 inches wide by 1-3/4 inches high by 7 inches long.

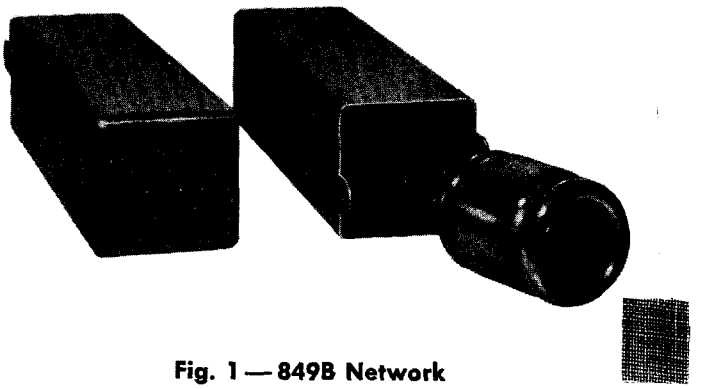

Fig. 1 — 849B Network

2.02 Recessed in the front of the can is a 6-pin socket for receiving the 89-type plug-in resistor (see Note). An extractor tool, KS-5637, L1 is helpful in removing the 89-type plug-in resistor from its socket. Tabs are provided on the front of the can to facilitate removing the network from its connector socket by the use of a 602C or 602D tool.

Note: The 89-type resistor is not a part of the network. It must be ordered separately.

3. CIRCUIT DESCRIPTION

3.01 Fig. 2 is a schematic of the 849B network showing typical circuit connections. Transmission signals from H88 or D88 loaded cable are received by the network through terminals 1 and 5. Terminals 4 and 8 connect the network output to a 600-ohm circuit.

3.02 When equalization is required, terminals 7 and 9 connect the low-frequency section of the associated 359D equalizer in series with the

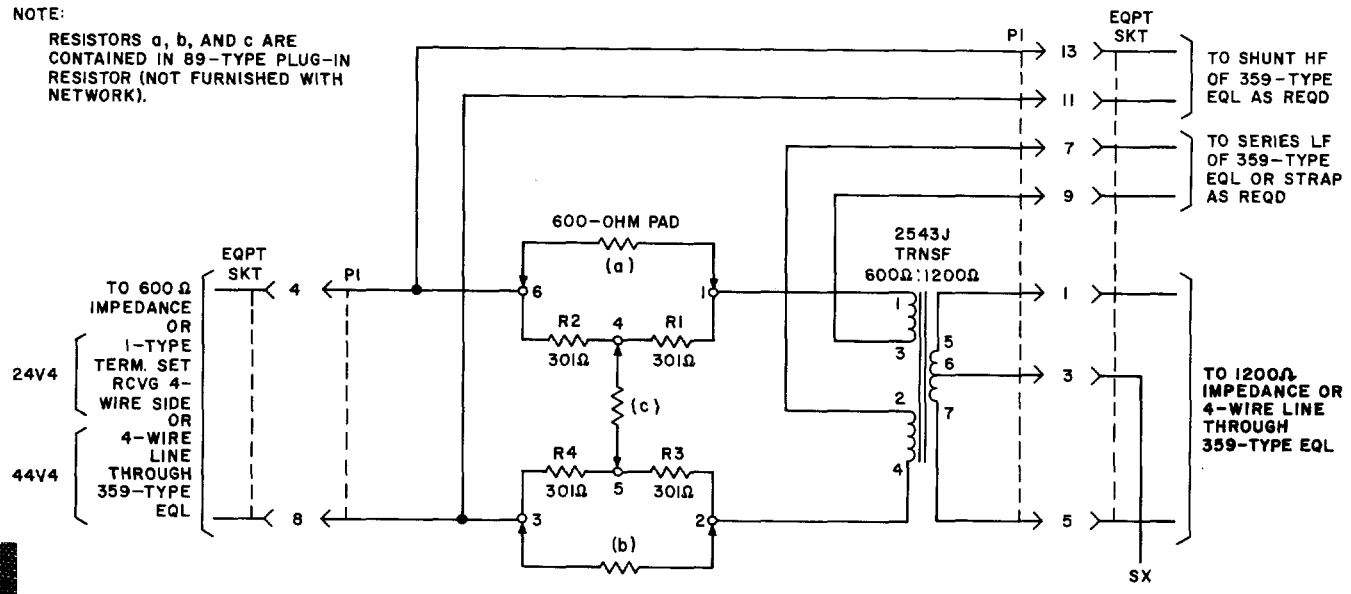

Fig. 2 — 849B Network — Schematic and Typical Circuit Connections

transformer. Terminals 11 and 13 bridge the shunt high-frequency section of the 359D equalizer across the line. When equalization is not required, terminals 7 and 9 are strapped in the associated 359J equalizer to provide circuit continuity in the transformer and terminals 11 and 13 are left unconnected.

3.03 The 2543J 600:1200-ohm transformer serves to match the impedance of the H88 or D88 loaded cable to the 600-ohm repeater circuit. The transformer centertap on the 1200-ohm side is brought out to network terminal 3 to derive a simplex leg from the 4-wire receiving pair.

3.04 The 600-ohm balanced pad provides a means of setting the transmission level as desired. The loss is adjustable in 0.25-db steps by selection of the proper 89-type plug-in resistor. The 849B network 1-kc power loss between nominal impedances is equal to the 0.4-db loss of the transformer plus the loss of the pad.

3.05 Table A gives the loss-frequency and delay-frequency characteristics of a typical 849B network as measured between nominal impedances.

TABLE A — 849B NETWORK — TYPICAL LOSS-FREQUENCY AND DELAY-FREQUENCY CHARACTERISTICS

FREQUENCY (HZ)	LOSS (DB) RELATIVE TO 1000 HZ	DELAY (MICROSECONDS)
100	1.9	575
200	0.9	200
300	0.5	110
400	0.4	70
500	0.3	43
700	0.1	25
1000	0	16
2000	−0.1	7
3000	−0.1	6