849A NETWORK
DESCRIPTION

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1. GENERAL

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

1.02 The 849A network is used in place of a 227-type amplifier when gain is not required in transmitting into H88 or D88 loaded cable. The network provides transmission level control, impedance matching from a 600-ohm impedance (such as the 4-wire transmitting side of a 1-type terminating set, nonloaded cable, or a carrier circuit) to a 1200-ohm impedance (such as H88 or D88 loaded cable), and a transformer tap on the 1200-ohm side for simplex signaling.

2. EQUIPMENT DESCRIPTION

2.01 The 849A 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 network 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.

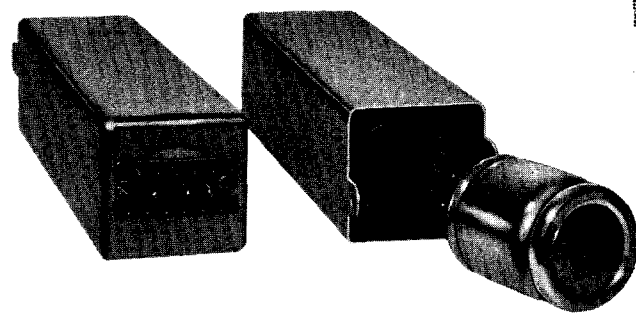

Fig. 1 — 849A Network

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, as needed to meet circuit requirements.

3. CIRCUIT DESCRIPTION

3.01 Fig. 2 is a schematic of the 849A network showing typical circuit connections. Transmission signals are applied through terminals 1 and 5. In V4 repeaters, terminals 2 and 10 normally connect the 1200-ohm network output to the 4-wire line through a 359-type equalizer. The output is also strapped to terminals 4 and 8 to provide flexibility in special applications.

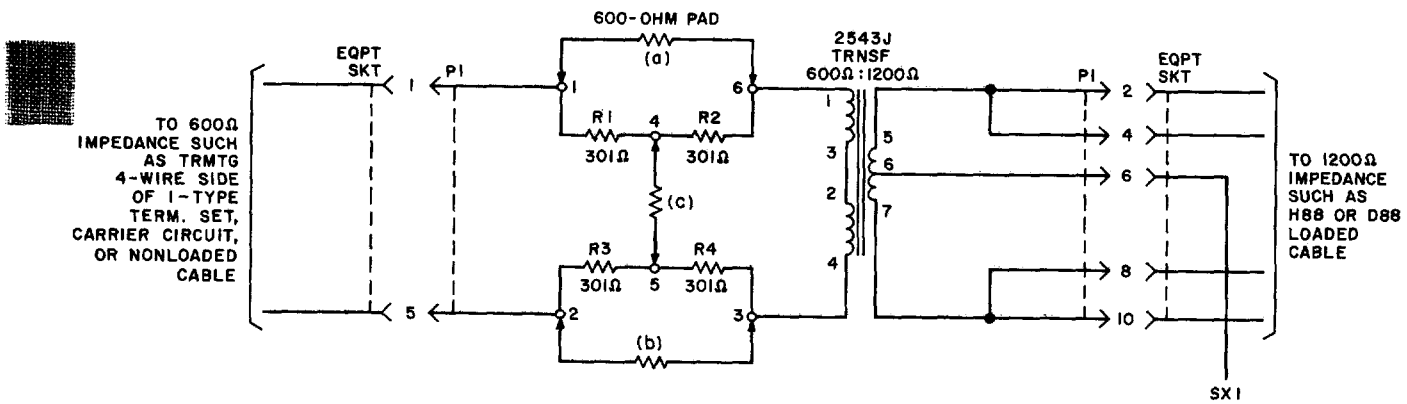

Fig. 2 — 849A Network — Schematic and Typical Circuit Connections

3.02 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 849A 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.

3.03 The 2543J 600:1200-ohm transformer serves to match the impedance of 600-ohm equipment to that of H88 or D88 loaded cable. The transformer centertap on the 1200-ohm side is brought out to network terminal 6 to derive a simplex leg from the transmit pair.

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

TABLE A — 849A 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	—
3000	−0.1	—