

849E NETWORK DESCRIPTION

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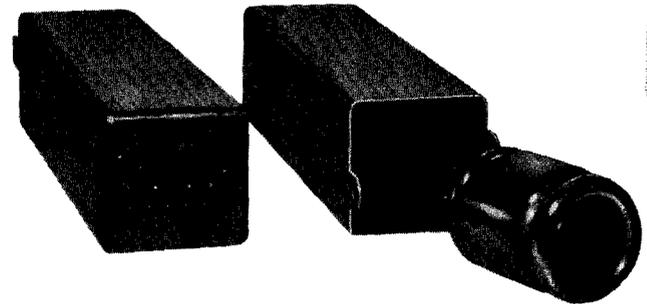


Fig. 1 — 849E Network

1. GENERAL

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

1.02 The 849E network is used normally in the basic V4 repeater in place of the transmitting 227-type amplifier when gain is not required. The network is designed to work between a 600-ohm circuit and short lengths of nonloaded cable, between 600-ohm circuits, or when the repeater is used in a conference circuit. To use it in the receiving side of the basic V4 repeater, the connections to the input and output sides of the mating equipment socket must be interchanged (see 3.02). The network provides transmission level control and a transformer center-tap for simplex signaling.

2. EQUIPMENT DESCRIPTION

2.01 The 849E 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 600:600-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.

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 849E network showing typical circuit connections. Transmission signals from a 600-ohm source are applied to terminals 1 and 5. Terminals 4 and 8 normally connect the output to a 600-ohm circuit or to a short length of nonloaded cable. The output is also strapped to terminals 2 and 10 to provide flexibility in special applications.

3.02 To use the 849E network for the receiving side of the basic V4 repeater, the connections to the input and output sides of the mating connector socket must be interchanged. If this is not done, the transformer in the network will be inserted between the 600-ohm equipment and the pad and not at the line side of the pad, where it belongs.

3.03 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 1-kc power loss of the network and associated 89-type resistor between nominal impedances is equal to the 0.5-db loss of the transformer plus the db loss marked on the 89-type resistor.

3.04 The 2586H 600:600-ohm transformer is used to connect 600-ohm circuits to short lengths of nonloaded cable or to other 600-ohm circuits. The transformer centertap on the line side is brought out to network terminal 6 to derive a simplex leg from the cable pair.

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

TABLE A — 849E NETWORK — TYPICAL LOSS-FREQUENCY AND DELAY-FREQUENCY CHARACTERISTICS		
FREQUENCY (HZ)	LOSS (DB) RELATIVE TO 1000 HZ	DELAY (MICROSECONDS)
100	0.7	300
200	0.3	110
300	0.2	50
400	0.1	32
500	0.1	20
700	0.1	13
1000	0	8
2000	-0.1	3
3000	-0.1	3

NOTE:

RESISTORS a, b, AND c ARE CONTAINED IN THE 89-TYPE PLUG-IN RESISTOR (NOT FURNISHED WITH NETWORK).

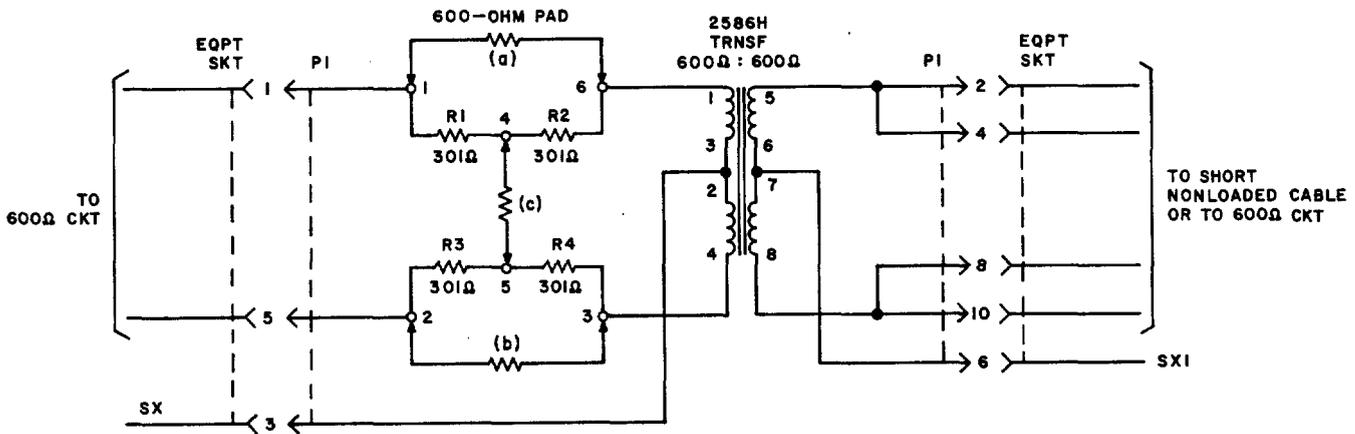


Fig. 2 — 849E Network — Schematic and Typical Circuit Connections