

V4 TELEPHONE REPEATER 24V4D REPEATER MOUNTING SHELF

DESCRIPTION

CONTENTS	PAGE
1. GENERAL	1
2. EQUIPMENT DESCRIPTION	1
3. CIRCUIT DESCRIPTION	3
4. POWER ARRANGEMENTS	3

Auxiliary Equipment:

- (a) 4066-Type Network
- (b) 648A Low-Pass Filter
- (c) 434A Plug (furnished with shelf).

1. GENERAL

1.01 This section describes the J98615BL mounting shelf (SD-97047-01) for the 24V4D repeater. This shelf was assigned for use at locations where emergency power is not provided, but continuity of service is essential.

1.02 The 24V4D repeater shelf is similar to the 24V4C shelf, but provides, in addition, a socket for a 332A relay, which automatically switches the transmission path around the repeater, without gain, whenever the power supply to the repeater is interrupted. Since the relay is essential to the continuity of the transmission and signaling paths, it has been made a part of the J-specification material and is shipped with the shelf.

1.03 The 24V4D mounting shelf includes a test jack field and a designation card holder and provides mounting space for the following V4 plug-in apparatus units.

1.04 The 24V4D shelf can also be used in situations where the 24V4A or the 24V4C would be the economic choice if available. When a 24V4D shelf is used as a 24V4A, the only equipment needed from the auxiliary list above is the 434A plug. When it is used as a 24V4C, any one of the following combinations may be used:

- 4066 network and 434A plug
- 4066 network and 648A filter
- Two 4066 networks.

2. EQUIPMENT DESCRIPTION

2.01 Figure 1 shows the J98615BL, 24V4D repeater mounting shelf equipped with typical V4 plug-in apparatus. Front and rear views of the unequipped shelf are shown in Fig. 2. The mounting shelf consists of seven connector sockets, a test jack field, a designation card holder, a terminal strip, and connecting circuit wiring assembled in a shelf which measures 1-3/4 inches high by 23 inches long. The 24V4D mounting shelf is arranged to mount in bays drilled for 1-3/4 inch mounting plates.

2.02 The plug-in apparatus mounting positions are designated on the front edge of the mounting shelf. From left to right, the mounting positions, associated connector sockets, and plug-in apparatus are shown in Table A.

2.03 A 434A plug is furnished with each 24V4D repeater mounting shelf. It provides circuit continuity for plug-in positions FLT/NET. or NET. when circuit conditions require it (see Table A).

Basic 24V4 Equipment:

- (a) One 1-Type Terminating Set
- (b) Two 227-Type Amplifiers or 849-Type Networks
- (c) One 359-Type Equalizer
- (d) One 332A Relay (furnished with shelf).

TABLE A

24V4D REPEATER MOUNTING SHELF
PLUG-IN APPARATUS MOUNTING POSITIONS

MOUNTING POSITION	CONNECTOR SOCKET	V4 PLUG-IN APPARATUS			
FLT/NET. NET.	J1 (20-Pin) J2 (20-Pin)	COMBINATION, DEPENDING ON CIRCUIT REQUIREMENTS:			
		Empty 434A Plug *	434A Plug * 4066 Net.	648A Flt 4066 Net.	4066 Net. 4066 Net.
TERM. SET	J3 (20-Pin)	1-Type Terminating Set			
T AMPL	J4 (15-Pin)	227-Type Amplifier or 849-Type Network (Transmitting)			
R AMPL	J5 (15-Pin)	227-Type Amplifier or 849-Type Network (Receiving)			
EQL	J6 (20-Pin)	359-Type Equalizer			
RELAY	J12 (20-Pin)	332A Relay			

*Required for circuit continuity.

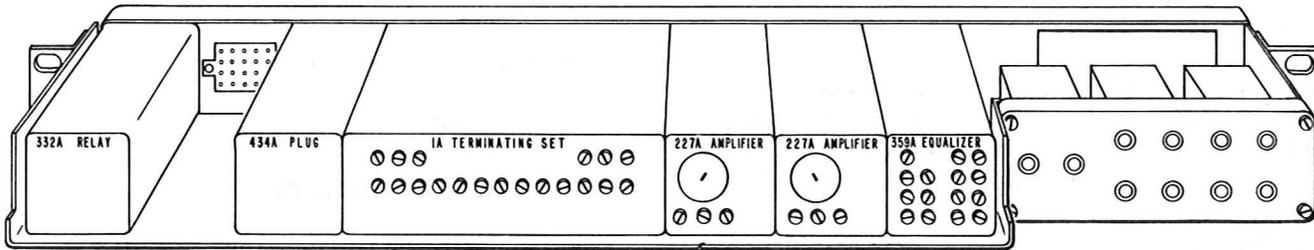


Fig. 1—24V4D Repeater Mounting Shelf—Typically Equipped

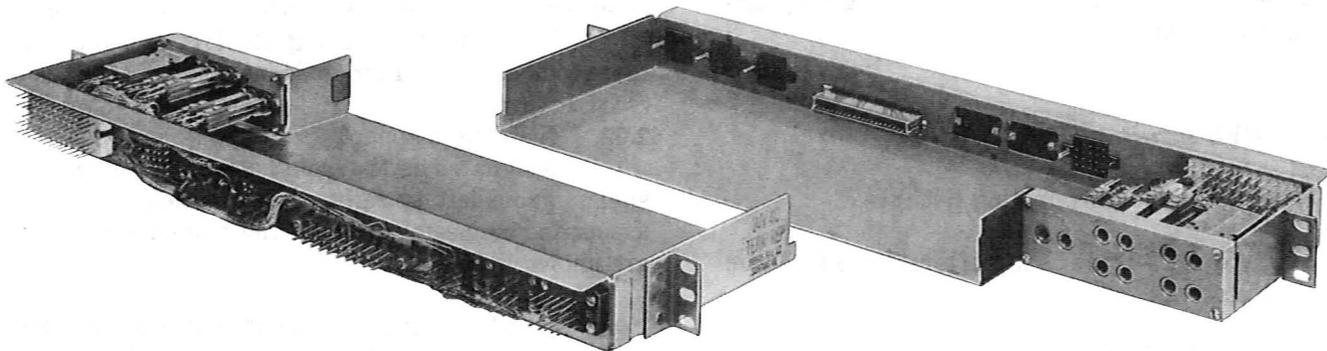


Fig. 2—24V4D Repeater Mounting Shelf—Unequipped—Front and Rear Views

2.04 The test jack field, located to the right of the plug-in sockets, is an integral part of the mounting shelf. The test jack field consists of five 518AM (twin) jacks. These test jacks are permanently wired into the repeater mounting shelf circuit to provide access to the amplifier inputs and outputs, 2- and 4-wire lines, and 2- and 4-wire sides of the terminating set. These test jacks provide convenient points for testing and alignment of the repeater and permit high-impedance monitoring at each of these points. The test jack designations and their locations in the repeater circuit are permanently marked on the faceplate of the test jack field to promote correct usage when testing and adjusting the repeater.

2.05 A wire-wrap terminal strip (TS1) is provided on the rear of the mounting shelf. Points in the 24V4D repeater circuit which may require external connections are brought out to this terminal strip. This makes possible the installation of a 24V4D repeater shelf by wire-wrap connections at a single terminal strip and eliminates the necessity of making connections to the individual connector sockets.

3. CIRCUIT DESCRIPTION

3.01 Figure 3 is a block schematic of the 24V4D repeater illustrating connector sockets, test jacks, and terminal strip connecting circuit wiring. These circuits are factory wired as part of the repeater mounting shelf. Optional wiring arrangements allow access to the 4-wire ports of the 1-type terminating set. These arrangements allow the use of external equipment, such as SF signaling equipment or echo suppressors, as required.

4. POWER ARRANGEMENTS

4.01 For normal operation, the 227-type amplifier requires 18 mA at -24 Vdc. The J98615BL, L1 mounting shelf is designed for operation from a -48 volt supply only, as it is equipped with a 1400-ohm voltage-dropping resistor in each of the amplifier power supply circuits. The J98615BL, L2 mounting shelf is similar to the L1, but provides in addition a cable and plug-in connector for connecting the power and signal leads directly from an 800A PBX. When the amplifiers are operated from a 48-volt regulated battery supply, the 1400-ohm voltage-dropping resistor connected in series with each amplifier power supply lead in combination with a capacitor inside the amplifier provides satisfactory battery noise filtering.

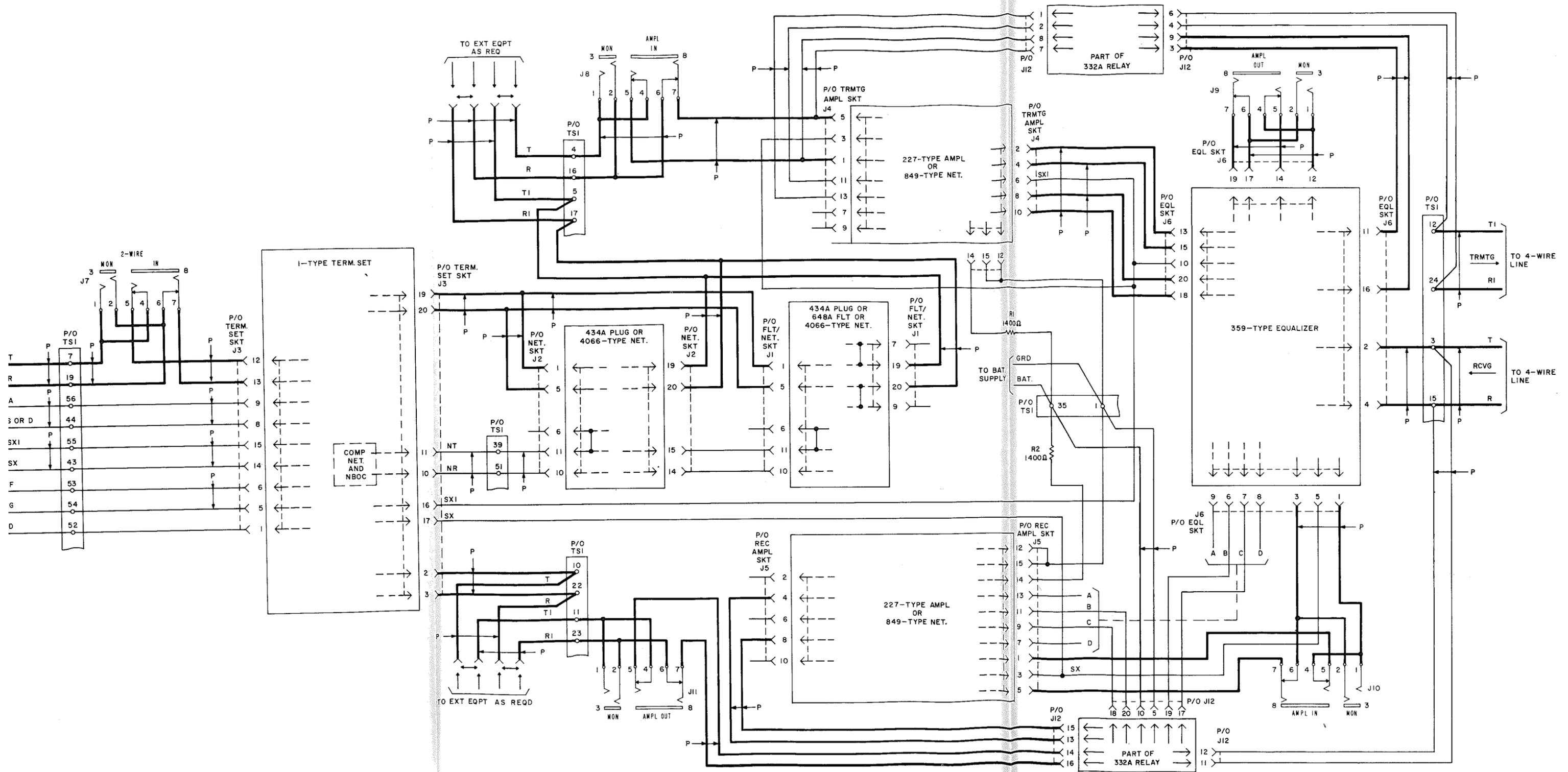


Fig. 3—24V4D Repeater Connecting Circuits—Block Schematic

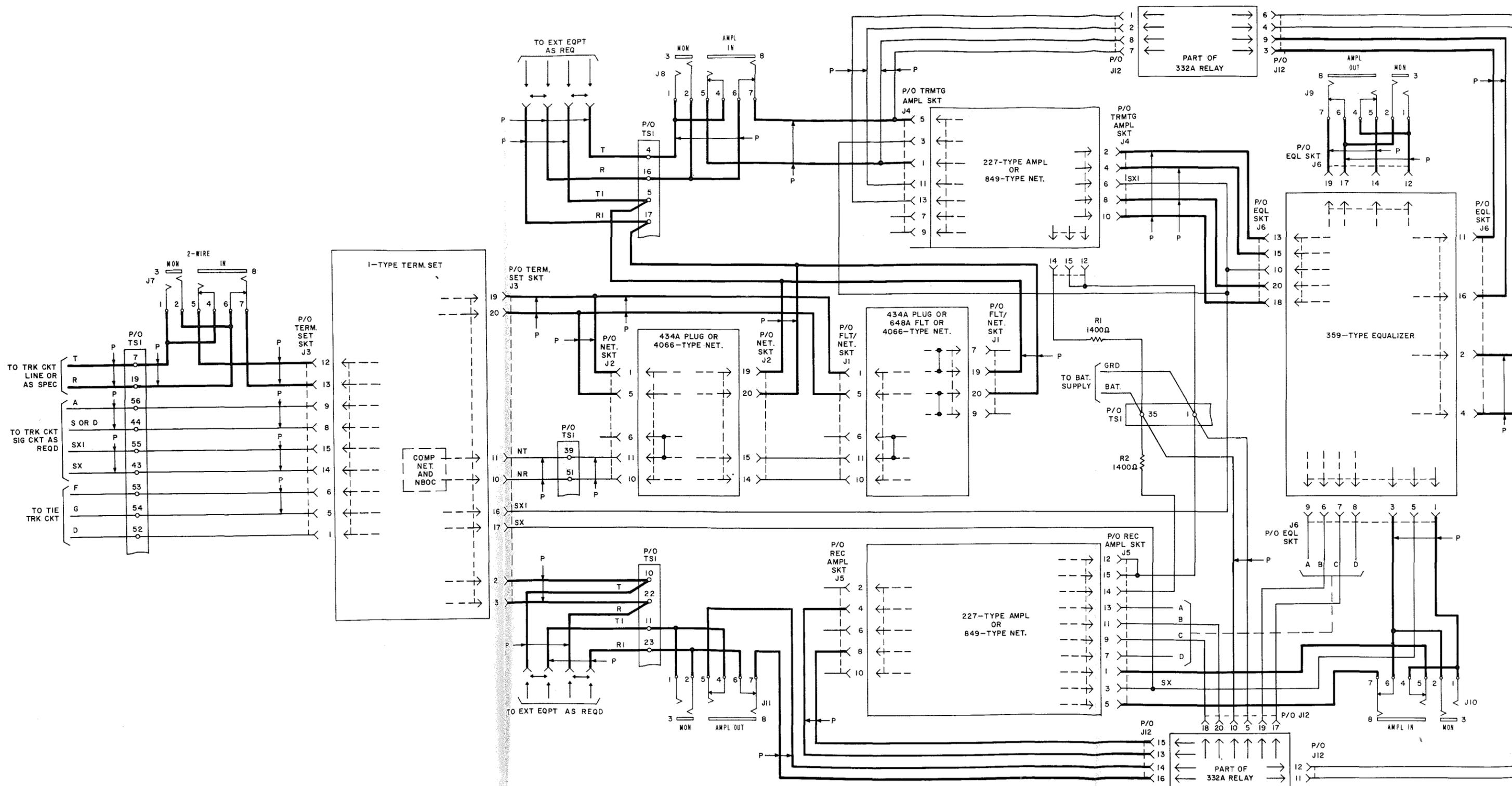


Fig. 3—24V4D Repeater Co Schematic