

TYPE N1 AND ON CARRIER REPEATERS – REPEATERED HIGH-FREQUENCY LINE REPEATER TESTS – N1A TRANSISTORIZED REPEATERS MEASUREMENT OF DC POWER SUPPLY CURRENT

The purpose of this test is to measure the dc power supply current for N1A transistorized repeaters.

This section is reissued to add the requirements for regulated line current.

When N1A transistorized repeaters have no local source of power, dc power is supplied over simplex arrangements on the cable pairs used for carrier transmission. In this manner, up to three repeaters may be powered in series. The dc voltage at a repeater is controlled by 22-volt regulating diodes in series with the simplex cable. The repeater current is determined by measuring the voltage drop across a 24-ohm, 2-percent resistor in series with the diodes. Figure 1 illustrates the relationship between the voltage measured and the direct current supplied to the repeater.

The line current received at a remote repeater may be supplied from a constant current regulated source or from an unregulated source. Lower values of current are specified when supplied from a constant current regulated source.

APPARATUS:

1 — KS-14510 Volt-Ohm-Milliammeter (VOM) or Equivalent (20,000 Ohms per Volt)

STEP	PROCEDURE
1	At the repeater, first verify that there is a plug in jack J2 and then remove the plug from jack J3 (color-coded yellow).
2	Set the VOM to the 12-volt scale.
3	Measure the voltage between pin 10 of J3 (+) and pin 4 of the TEST jack on the repeater (–) (see Fig. 2). If the measured voltage is less than 3 volts, change the VOM to the 3-volt scale.
	Requirement: See Table A.
	Note: If the repeater being tested is between the power feed point and a 240-type amplifier followed by another repeater in the same power feed circuit, use the requirements in the YES column of Table A (see Fig. 3).

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3 (Cont)	TABLE A VOLTAGE REQUIREMENTS <table><tr><th rowspan="2">POWER SOURCE</th><th rowspan="2">CABLE TEMPERATURE</th><th colspan="2">240-TYPE AMPL IN POWER FEED CIRCUIT</th></tr><tr><th>NO</th><th>YES</th></tr><tr><td rowspan="2">Unreg- ulated</td><td>Normal (+30° to + 70°F)</td><td>2.5 to 2.8 volts</td><td>3.1 to 3.4 volts</td></tr><tr><td>Extreme (below +30°F and above +70°F)</td><td>2.4 to 4.0 volts</td><td>3.0 to 4.6 volts</td></tr><tr><td>Constant current regu- lated</td><td>Normal and extreme (-40° to +115°F)</td><td>2.2 to 2.4 volts</td><td>2.8 to 3.0 volts</td></tr></table>	POWER SOURCE	CABLE TEMPERATURE	240-TYPE AMPL IN POWER FEED CIRCUIT		NO	YES	Unreg- ulated	Normal (+30° to + 70°F)	2.5 to 2.8 volts	3.1 to 3.4 volts	Extreme (below +30°F and above +70°F)	2.4 to 4.0 volts	3.0 to 4.6 volts	Constant current regu- lated	Normal and extreme (-40° to +115°F)	2.2 to 2.4 volts	2.8 to 3.0 volts
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4	If the requirement listed in Table A is not met, refer to Sections 362-015-515 and 362-405-502 or 362-455-501 for adjustment of the power supply.																	

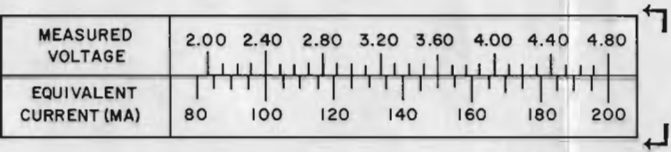


Fig. 1 — Conversion Scale

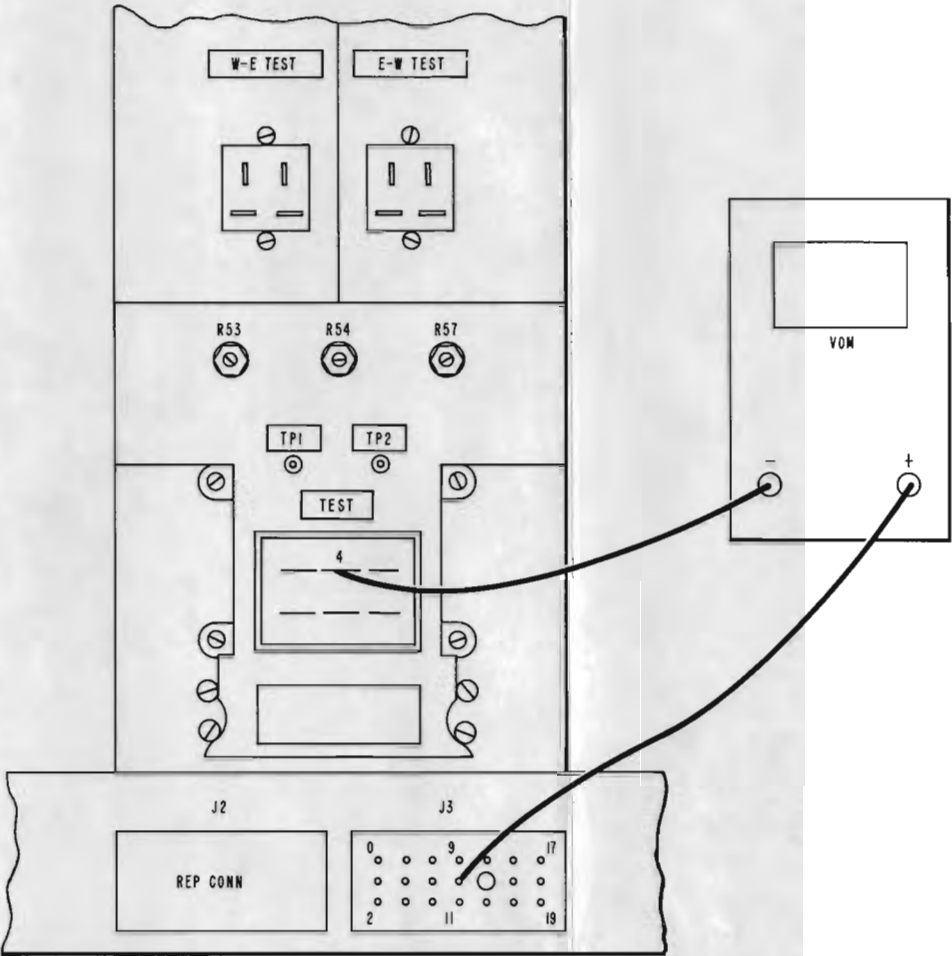
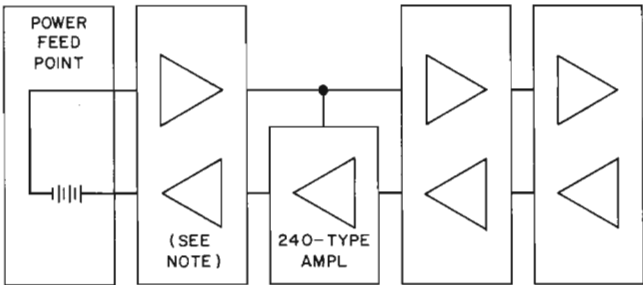


Fig. 2 — Test Layout



NOTE:
THIS REPEATER IS IN 240 AMPLIFIER
POWER FEED CIRCUIT.

Fig. 3 — Power Feed Circuit