

**TYPE N2 CARRIER TELEPHONE SYSTEM**  
**POWER SUPPLY UNITS J87216A AND J87216C**  
**TESTS AND ADJUSTMENTS**

This section covers the initial installation, voltage adjustment, output ripple voltage test, and trouble conditions for the N2 carrier power supply unit (J87216A or J87216C).

The power supply is an automatically regulated semiconductor-type power supply. It converts an input of -44 to -52 volts dc to a regulated output of -21 volts dc.

Power to the N2 terminal may be transferred to an alternate power supply unit by using the J99272U switching set as covered in another section of this series.

This section is reissued to include the J87216C unit.

**APPARATUS:**

- 1 — J99272U Switching Set (N2)
- 1 — Hewlett-Packard 400-Type Vacuum Tube Voltmeter (VTVM)
- 1 — W2DW Cord
- 1 — KS-8585, Unwired List 9 Plug

STEP	PROCEDURE
	<p><b>A. Initial Installation Tests and Adjustments</b></p> <p><i>Note:</i> Perform these steps before plugging in the unit.</p>
1	<p>◆ Check that the proper size odd or even bay fuse, its protection fuse, the individual terminal PWR distribution fuse, and the individual terminal ALM distribution fuse are in place at the top of the bay.◆</p>
2	<p>◆ Check that fuse F1 is provided in the power supply unit.◆</p>
3	<p>Check that the N2 terminal is fully equipped with plug-in units (except for the power unit). On partially equipped terminals, one J99272AE 3-channel power load unit must be placed in an unused compandor slot for each three channels not equipped.</p>

STEP	PROCEDURE
4	Set the ADJ VOLTS potentiometer on the power unit to the maximum counterclockwise position.
5	Plug the power supply unit into the N2 switching set.
6	On the N2 switching set, turn the VM & RIPPLE switch to ALT, and the LOAD switch to TEST ALT.
7	Connect the P2 plug on the switching set to the TST PWR jack of the alarm unit.
8	Adjust the ADJ VOLTS potentiometer on the power supply unit for a reading of -21.0 volts on the N2 switching set meter. (Slowly turn the potentiometer clockwise to increase or counterclockwise to decrease the voltage.) If the voltage is allowed to increase beyond 23 volts, sufficient current may flow in the voltage protection circuit to open the protection fuse in the unit.  <i>Note:</i> Do not adjust the R4 potentiometer; this is a factory adjustment only.
9	Operate the test switch on the switching set to FULL LOAD.  <i>Requirement:</i> The voltmeter shall read $-21.0 \pm 0.1$ volts.
10	Release the test switch.
11	Connect the VTVM to the N2 switching set RIPPLE TEST -21V and G jacks (bottom VTVM post to the G jack).
12	Measure the ripple voltage.  <i>Requirement:</i> 0.012 volt maximum.
13	Remove the power unit from the switching set and place it in the terminal.
14	Recheck the voltage per Test B.
	<b>B. In-Service Voltage Test</b>
1	Set the N2 switching set LOAD switch to TEST ALT, and the VM & RIPPLE switch to REG.
2	Connect plug P2 to the TST PWR jack on the alarm unit.  <i>Requirement:</i> $-21 \pm 0.3$ volts.
	<b>C. In-Service Output Ripple Voltage Test</b>
1	If the N2 switching set is being used, connect the VTVM to the RIPPLE TEST 21V and G jacks, set the VM & RIPPLE switch to REG, set the LOAD switch to TEST ALT, and connect plug P2 to the TST PWR jack of the alarm unit.  <i>Requirement:</i> 0.012 volt maximum.

STEP	PROCEDURE
2	<p>If the N2 switching set is not available, place an unwired KS-8585, List 9 plug in the TST PWR jack of the alarm unit and connect the VTVM to terminals 1 and 3 (bottom VTVM post to 3). Use care not to short the terminals.</p> <p><b>Requirement:</b> 0.012 volt maximum.</p> <p><b>D. Troubles</b></p>
1	<p>If the requirements of Tests A, B, or C cannot be met, refer to Table A for the possible cause. If the unit is defective, replace it using the procedures of the appropriate section in this series.</p>

TABLE A	
TROUBLE	POSSIBLE CAUSES
No output voltage	Failure or disconnection of the input power Blown supply fuse and/or F1 fuse in the power supply Defective components within the unit
Low output voltage	Low input voltage ADJ VOLTS potentiometer incorrectly set Defective components within the unit
High output voltage	High input voltage ADJ VOLTS potentiometer incorrectly set Defective components within the unit Low or no external load
Erratic output voltage	Loose or broken pins in the plug of the unit Defective components within the unit
High output ripple voltage	High input ripple voltage Defective components within the unit
Fuse F1 or supply fuse blown	Output shorted Output voltage adjusted to over -24 volts dc Defective components within the unit