CONVERTER

J87288A

OPERATING METHODS

1. GENERAL

1.01 The J87288A converter-regulator was designed to supply dc power to the LMX-2 or L4 Carrier System. The converter is rated at −25 volts dc, 2.5 amperes with a nominal input of −24 volts dc. The output is well regulated against changes of input voltages between −20 and −26 volts for loads of 0 to 2.5 amperes. The output of the converter is monitored for excessive high voltage. An output above 29 volts will automatically cause the converter to shut down.

1.02 This section is reissued to change the recommended voltmeter. This issue does not affect the Equipment Test List.

1.03 Routine checks should be made during a period when they will cause the least service reaction.

1.04 The instructions given in this practice are based on circuit schematic drawing SD-81797-01. For a detailed description of operation, see the corresponding circuit description.

1.05 The converter will function with the following circuits:

SD-50669-01 Toll Systems, L4 Carrier

SD-50152-01, SD-50192-01, SD-50235-01, SD-50236-01 — Toll Systems, LMX-2

1.06 For more detailed information on operation and maintenance of individual equipment or apparatus, refer to the appropriate Bell System Practice.

2. LIST OF TOOLS AND TEST APPARATUS

CODE OR SPEC NO.	DESCRIPTION
TOOLS	
—	3-Inch C Screwdriver
TEST APPARATUS	
—	◗ Voltmeter, Weston Model 931, 300/150/75/30 VDC, 1000 Ohms Per Volt Sensitivity ◖
	or
KS-19178	Voltmeter, 1000 Ohms Per Volt Sensitivity
	or
—	◗ Multimeter, Digital, John Fluke Model 8100A
	or
KS-20599	Voltmeter, Digital

3. OPERATION

3.01 ***General:*** This converter is designed for continuous operation. When putting the converter in service, check that:

(a) The external input fuse is removed.

(b) All external connections are made in accordance with the SD drawings covering the associated circuits of which the converter is a part.

(c) There is nothing in, on, or above the converter to interfere with operation or prevent free ventilation.

3.02 ***Starting:*** To start the converter, insert the external input fuse of the proper type and rating.

Caution: If the converter has not been modified in accordance with SD-81797-01, Issue 5B, option U, allow the converter to cool for 15 minutes before attempting any restarts.

3.03 ***Stopping:*** To take the converter out of service, remove the external input fuse.

4. ROUTINE CHECKS

4.01 When checking the output voltage of the converter, use the ◗Weston Model 931◖ voltmeter and refer to Table A for the correction required to read the actual output voltage. If an equivalent voltmeter is used, refer to CD-81797-01 for additional information.

TABLE A

OUTPUT VOLTAGE

	WESTON MODEL 931 OR KS-19178 VOLTMETER INDICATIONS (VOLTS)	ACTUAL CONVERTER OUTPUT AFTER CORRECTION (VOLTS)
Maximum Lower Limit	21.1	24.7
Normal Operation	21.4	25.0
Maximum Upper Limit	21.6	25.3

Caution: The correction applied to the readings in Table A will not be correct if any meter is used that is not of 1000 ohms per volt impedance.

Note 1: No correction to the meter reading is required when using the digital voltmeters—John Fluke Model 8100A and KS-20599.

Note 2: Refer to CD-81797-01 for cases in which meters not specified in the Bell Systems Practice must be used.

4.02 Check the output voltage at the interval specified in the Equipment Test List. Connect ◗Weston Model 931◖ voltmeter, set on the 30 VOLTS DC scale, to the OUTPUT test jacks J1(+) and J2(−). Verify that the actual output voltage from the converter is within the allowable tolerances specified in Table A. If the voltage is not within the allowable tolerances, use the ADJ VOLTS (R19) potentiometer and adjust as necessary.

Note: The R6 potentiometer is adjusted at the factory and should not be adjusted in the field.

4.03 Electrolytic capacitors should be maintained in accordance with Section 032-110-701.

5. TROUBLES

5.01 When any kind of trouble is encountered, decide whether to locate the trouble with the equipment operating or de-energized. Trouble is easier to find if the converter can be fully energized on a test bench. The input must be protected with a 5-ampere fuse. If the trouble is of a nature that causes excessive output from the equipment, take the initial steps with the system de-energized, and energize it for short periods only, while electrical measurements are made. Also, operation for more than a few minutes at a time while trouble exists, even though the output may not be excessive, may result in overheating of some components. It is essential, when testing, to be alert to the need for quickly shutting down the converter at any time until the trouble is localized and cleared.

5.02 Point-to-point voltages are given in SD-81797-01 and should be used to localize any trouble. Refer to Section 032-173-301 before checking semiconductors.