

RECTIFIER J87215

SEMICONDUCTOR TYPE

OPERATING METHODS

1. GENERAL

1.01 This section covers the operation of the J87215 semiconductor-type rectifier. This rectifier is initially intended to provide dc power to the Data Set 101A.

1.02 This rectifier provides well regulated dc power from 117-volt ac 60-cycle power service. The dc output provides two 20-volt outputs, 0.500 amperes.

Caution: Voltages inside the rectifier case are over 300 volts to ground. Avoid all contact with terminals. Do not allow a test pick to touch two metal parts at the same time or destructive and dangerous short circuits may occur. Disconnect ac supply before opening cover to work inside of rectifier except as necessary to make tests.

1.03 Routine checks are intended to detect defects in the equipment and, insofar as possible to guard against circuit failures which interfere with service. Checks other than those required by trouble conditions should be made during a period when they will not interfere with service.

1.04 The instructions are based on drawing SD-81536-01. For detailed description of the operation, see the corresponding circuit description.

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

2. OPERATION

Preparing to Start Initially

2.01 When placing the rectifier into service initially, check that:

- (a) The proper size fuses are provided in the ac line.
- (b) All external connections are made in accordance with the schematic drawing covering the associated circuit.

Initial Adjustments

2.02 The rectifier has no disconnecting switches and is connected to the ac power by a twist lock connector and to the associated components by three solder-type terminals. There are no adjustments.

3. ROUTINE CHECKS

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

4. MAINTENANCE

4.01 In general, the components most likely to become defective with use are the electrolytic capacitors and the resonating capacitor.

4.02 To avoid unbalance in the rectifying element when replacing a defective diode or diodes, all other diodes in this rectifying element should also be replaced.

Trouble Chart

4.03 If trouble develops, check the possible causes in the order given below. If the trouble is not found, look for loose or open connections or short circuits due to foreign matter lying across wiring terminals.

Caution: The ac voltage across the terminals of the C1 capacitor exceeds 300 volts even though the ac power source is disconnected. When making tests inside the unit, take care to avoid any contacts with the leads or terminals of this capacitor.

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TROUBLE	POSSIBLE CAUSE
(a) No output voltage	Failure or disconnection of the input power. Blown ac supply fuse. Defective T1 transformer. Shorted capacitors or open R1 or R2 resistor.
(b) Low output voltage	Low input power voltage. Excessive load on rectifier. Breakdown of any or all capacitors. Defective R1 or R2 resistor. Defective T1 transformer. Defective rectifying element.

TROUBLE	POSSIBLE CAUSE
(c) High output voltage	High input power voltage. Defective T1 transformer. Shorted R1 or R2 resistor.
(d) High ripple voltage	C2 or C3 capacitor open. Defective rectifying element.
(e) Erratic output voltage	Fluctuating input power voltage. Intermittent open or short in any component. Defective connections.