

# INSTRUCTION MANUAL

## REGULATED POWER SUPPLIES

### LOD-W-152, LOD-X-152

#### SPECIFICATIONS AND FEATURES

DC OUTPUT — Voltage regulated for line and load. For voltage and current ratings see table I below.

TABLE I

MODEL	VOLTAGE RANGE	MAXIMUM CURRENT (AMPS) AT AMBIENT TEMPERATURE		
		40°C	50°C	60°C
LOD-W-152	±12 to ±15	3.0	2.2	1.4
LOD-X-152	±12 to ±15	2.0	1.4	0.8

Current range must be chosen to suit the appropriate maximum ambient temperature. Current ratings apply for entire voltage range.

**REGULATED VOLTAGE OUTPUT (each side)**

- Regulation (line) ..... 0.15% for input variations from 105-125 or 125-105 volts AC.
- Regulation (load) ..... 0.15% for load variations from no load to full load or full load to no load
- Ripple and Noise ..... 1.5mV rms, 5mV peak to peak.
- Temperature Coefficient ..... 0.03%/°C
- Remote Sensing ..... Provision is made for remote sensing to minimize the effect of power output lead resistance on DC regulation. Sensing leads should be a twisted pair to minimize AC pickup. A 2.5 mf elect., capacitor may be required between output terminals and sense terminals to reduce noise pickup.

**OVERSHOOT** — No overshoot under conditions of power turn-on, turn-off, or power failure.

**AC INPUT** — 105-125 or 210-250 volts AC at 47-440 Hz. Standard LOD-W and LOD-X power supplies are factory wired for 105-125 volt input, but are available factory wired for 210-250 volt input on request. See Figure 1 and schematic diagram for rewiring of AC input. Input power\*: 182 Watts (LOD-W). 135 Watts (LOD-X). Power factor\*: 0.7. Ratings apply for 57-63 Hz input. For 47-53 Hz input derate current 10% for each ambient temperature given in table I. For 63-440 Hz input consult factory.

\*With output loaded to full current rating and input voltage 125 volts AC, 60 Hz.

**TRACKING** — Absolute difference between negative and positive outputs within 2%; 0.2% change for all conditions of line, load, and temperature.

**OVERLOAD PROTECTION** — Automatic electronic current limiting circuit, limits output current to a safe value, protecting load and power supply when overloads and direct shorts occur.

**INPUT AND OUTPUT CONNECTIONS** — See outline drawing for location.

- AC input ..... Terminals on transformer
- Ground ..... Terminal on transformer
- DC output ..... Turret terminal on printed circuit board
- Sensing ..... Turret terminal on printed circuit board
- Overvoltage Protector ..... Quick disconnect terminal on printed circuit board with mating connector attached.

**OPERATING AMBIENT TEMPERATURE RANGE AND DUTY CYCLE** — Continuous duty from 0°C to +60°C ambient with corresponding load current ratings for all modes of operation.

**STORAGE TEMPERATURE** — -20°C to +85°C

**DC OUTPUT CONTROL** — Screwdriver voltage adjust control permits adjustment of DC output voltage. See outline drawing for location of control.

**GUARANTEE** — 60 day guarantee from date of shipment . . . . . materials and labor.

**PHYSICAL DATA**

- Size ..... LOD-W: 9" x 4-7/8" x 2-3/4"; LOD-X: 7" x 4-7/8" x 2-3/4"
- Weight ..... LOD-W: 7-1/4 lbs. net; 7-3/4 lbs. shipping; LOD-X: 5-3/4 lbs. net; 6-1/4 lbs. shipping.
- Finish ..... Gray, FED. STD. 595 No. 26081

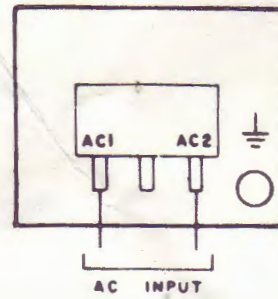
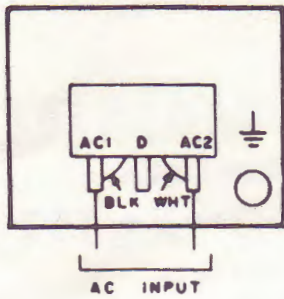
**MOUNTING** — Three surfaces, each with clearance mounting holes, can be utilized for mounting this unit. Air circulation is required when unit is mounted in confined areas. Refer to Outline Drawing for mounting details.

**"J" OPTION** — Standard LOD-W and LOD-X power supplies can be obtained for 90-110 VAC, 47-440 Hz input. For 47-53 Hz input derate current 10% for each ambient temperature given in table I. For 63-440 Hz input consult factory.

**ACCESSORIES**

- Overvoltage Protector ..... L-12-0V Series Overvoltage Protectors are available.

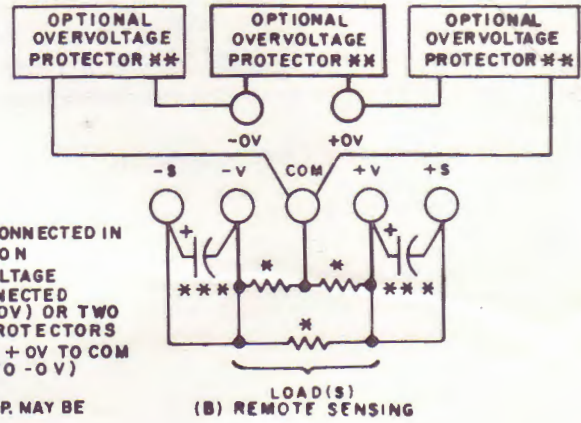
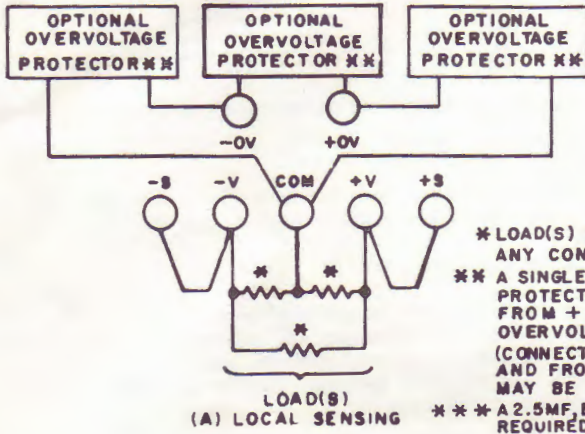




\* AC INPUT CONNECTION SHOWN IS FOR 105-125VAC  
 FOR 210-250V INPUT, DISCONNECT BLK & WHT TRANSFORMER  
 LEADS FROM TERMS AC1 & AC2 AND RECONNECT BOTH LEADS  
 TO TERM D

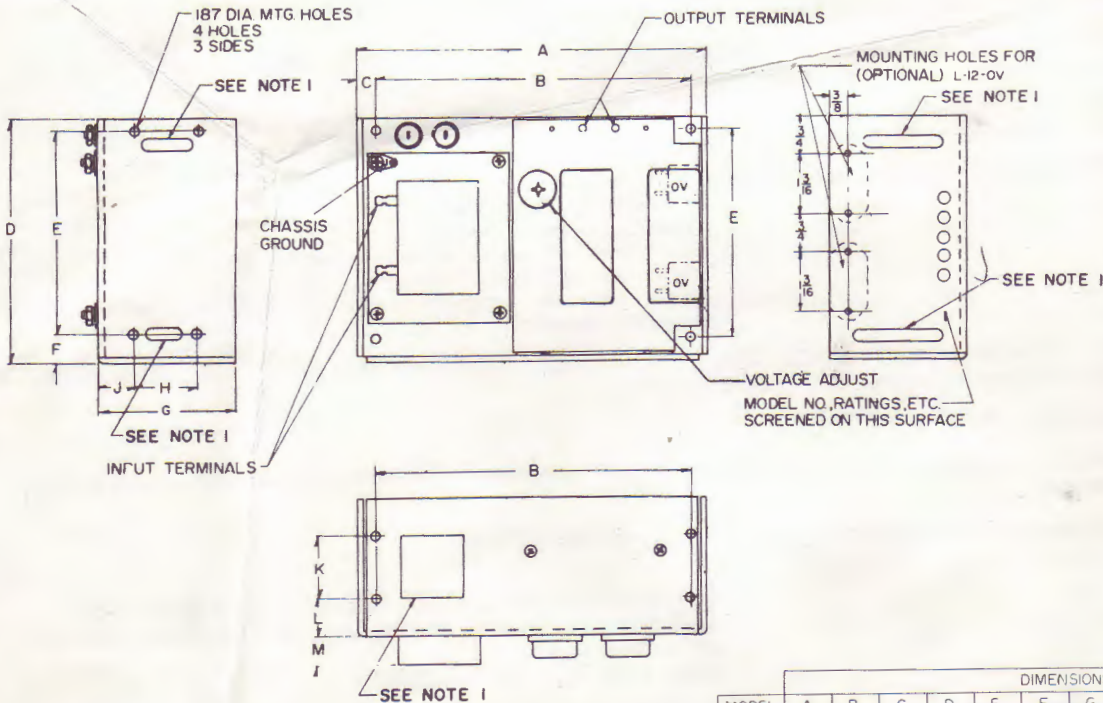
Figure 1. AC Input Connection.

Figure 2. AC Input Connection, "J" Option.



\* LOAD(S) CAN BE CONNECTED IN  
 ANY CONFIGURATION  
 \*\* A SINGLE OVERVOLTAGE  
 PROTECTOR (CONNECTED  
 FROM +OV TO -OV) OR TWO  
 OVERVOLTAGE PROTECTORS  
 (CONNECTED FROM +OV TO COM  
 AND FROM COM TO -OV)  
 MAY BE USED.  
 \*\*\* A 2.5MF, ELECT., CAP. MAY BE  
 REQUIRED.

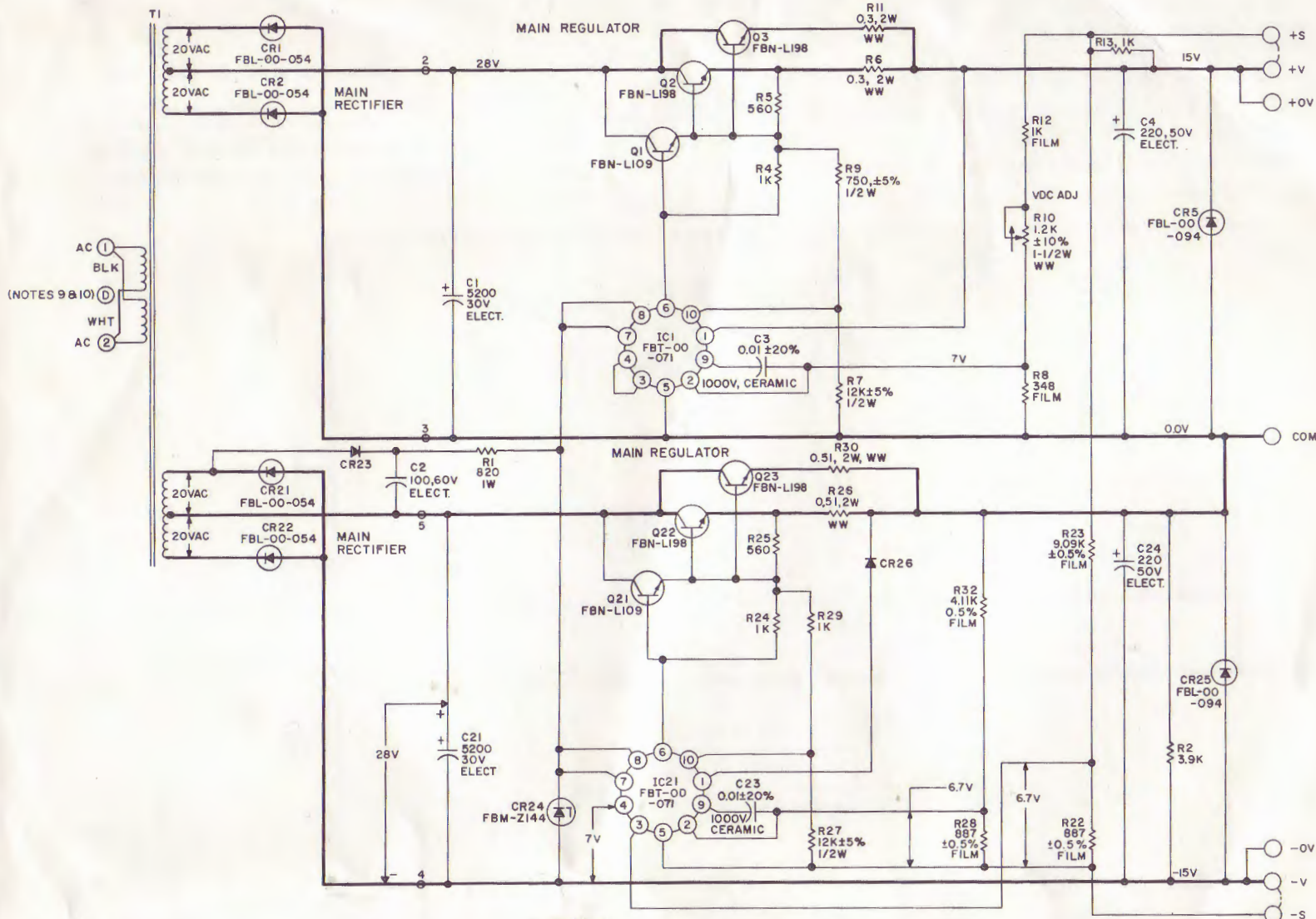
Figure 3. DC Output Connection.



.NOTES:  
 1. CUSTOMER MUST PROVIDE CLEARANCE IN HIS  
 MOUNTING SURFACE FOR VENT HOLES TO ALLOW  
 FOR AIR CIRCULATION.

MODEL	DIMENSIONS											
	A	B	C	D	E	F	G	H	J	K	L	M
LOD-X	7	6 <sup>11</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>8</sub>	4 <sup>7</sup> / <sub>8</sub>	4 <sup>11</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>4</sub>	1 <sup>13</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>4</sub>	1 <sup>13</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>
LOD-W	9	8 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	4 <sup>7</sup> / <sub>8</sub>	4 <sup>11</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>4</sub>	1 <sup>13</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>4</sub>	1 <sup>13</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>4</sub>	9 <sup>9</sup> / <sub>16</sub>

Outline Drawing.



FOR WIRING OF POWER SUPPLY TO LOAD REFER TO SUPPLY-TO-LOAD WIRING DIAGRAMS.  
 DOTTED CONNECTIONS SHOWN INDICATE JUMPERS IN PLACE FOR LOCAL SENSING CONNECTION.

SCHEMATIC DIAGRAM  
 REGULATED POWER SUPPLY  
 LOD-W-152

**LAMBDA**  
 ELECTRONICS  
 MELVILLE, NEW YORK  
 DIVISION OF **Veeco** INSTRUMENTS INC.

NOTES:

1. RESISTORS ARE CARB. FILM 1/4W WITH VALUES IN OHMS, UNLESS OTHERWISE NOTED.
2. RESISTOR TOLERANCES: CARB. FILM  $\pm 5\%$ , FILM  $\pm 1\%$ , WIREWOUND  $\pm 5\%$ , UNLESS OTHERWISE NOTED.
3. CAPACITOR VALUES ARE IN MICROFARADS.
4. CAPACITOR TOLERANCES: ELECTROLYTIC  $-10$   $+75\%$ .
5. DESIGNATIONS ARE LAMBDA PART NUMBERS.

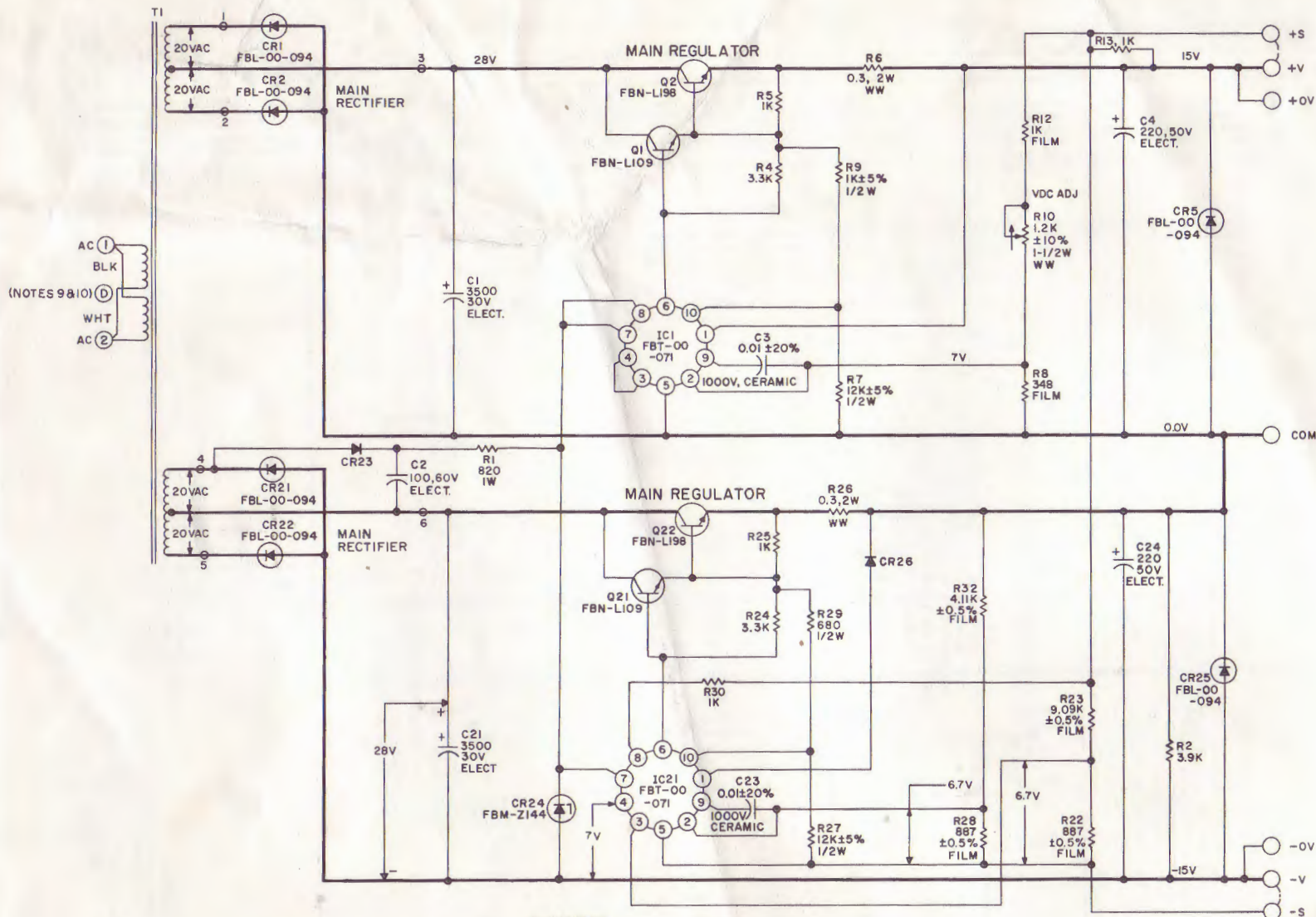
6. SYMBOLS:

- ↑ INDICATES CLOCKWISE ROTATION OF SHAFT.
- ⊥ INDICATES CONNECTION TO CHASSIS.
- LAMBDA PART NO. FBL-00-030; USE IN 4002 DIODE FOR REPLACEMENT UNLESS OTHERWISE NOTED.
- ⊙ INDICATES TERMINAL ON PRINTED CIRCUIT BOARD.
- INDICATES ACTUAL UNIT MARKING.

7. CONDITIONS FOR CIRCUIT POINT MEASUREMENTS:  
 INPUT: 115VAC, 60 Hz. MAX. RATED VOLTAGE NO LOAD.  
 INDICATED VOLTAGES ARE TYPICAL VALUES AND ARE D.C. UNLESS OTHERWISE NOTED. D.C. MEASUREMENTS TAKEN WITH 20,000 OHMS/V VOLT METER BETWEEN COM. AND INDICATED POINTS UNLESS OTHERWISE NOTED.

8. DERATE CURRENT 10% FOR 47-53 Hz INPUT, FOR 63-440 Hz INPUT CONSULT FACTORY.
9. T1 PRIMARY CONNECTION SHOWN IS FOR 105-125 VAC INPUT. FOR 210-250 VAC INPUT: DISCONNECT BLK & WHT TRANSFORMER LEADS FROM TERMINALS AC1 & AC2. RECONNECT BOTH LEADS TO TERM. D.
10. "J" OPTION UNITS HAVE SINGLE T1 PRIMARY. AC INPUT IS 90-110 VAC.





FOR WIRING OF POWER SUPPLY TO LOAD REFER TO SUPPLY-TO-LOAD WIRING DIAGRAMS. DOTTED CONNECTIONS SHOWN INDICATE JUMPERS IN PLACE FOR LOCAL SENSING CONNECTION.

SCHEMATIC DIAGRAM  
REGULATED POWER SUPPLY  
LOD - X - 152

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