

5 YEAR GUARANTEED SWITCHING

Lambda LR series



Features—LR series

More reliability with a 50% lower parts count, in a 25% smaller package

New patented circuit layout for simple and reliable operation and high thermal and electrical efficiency

Power MOSFET provides fast and efficient switching

5 Year Guarantee

LR power supplies are designed to meet MIL-STD-810C

New custom IC Control Circuit for reliable control and operation

Integral EMI Filter provides protection to meet stringent requirements of MIL-STD-461A and FCC Docket 20780 Class A

Convection cooled, no fans or blowers needed

Remote Turn-on/Turn-off

RJ /CSA (presently under test)

Specifications—LR series

DC Output

Voltage range shown in tables.

REGULATED VOLTAGE

regulation, line 0.1% from 95 to 132VAC
regulation, load 0.1% from no load to full load
ripple and noise 10mV RMS, 35mV pk-pk for 5V and 6V models; 15mV RMS, 100mV pk-pk for 12V through 28V models; 35mV RMS, 150mV pk-pk for 48V models

temperature coefficient 0.03%/°C
remote programming resistance 1000 ohms/volt
remote programming voltage volt per volt

AC Input

line 95 to 132VAC, 47-440Hz
power 225 watts maximum for LRS-53
380 watts maximum for LRS-54

DC Input

145VDC \pm 10%

Efficiency

70% min (5V through 15V models)
75% min (20V through 48V models)

Overshoot

No overshoot at turn-on, turn-off or power failure

Ambient Operating Temperature

Continuous duty - 10°C to 71°C with suitable derating above 40°C.

Storage Temperature Range

-55°C to +85°C

Overload Protection

ELECTRICAL

External overload protection; automatic electronic current limiting circuit limits the output current to a preset value, thereby providing protection for the load as well as the power supply.

Thermal

Self-resetting thermostat

Fusing

Line fuse removes the power supply from the line if a short occurs in the input circuitry.

Overvoltage Protection

Overvoltage protection is standard on all models. If output voltage increases above a preset level, inverter drive is removed.

Cooling

All units are convection cooled. No fans or blowers are needed.

Soft-Start Circuit

The turn-on-in-rush current will not exceed four times the steady state input current.

DC Output Controls

Simple screwdriver adjustment over the entire voltage range.

Input and Output Connections

AC Input... Barrier strip mounted on chassis

DC Output... Through heavy duty buss bars on LRS-54.

Barrier strip on LRS-53.

DC Sensing... Through barrier strip adjacent to output terminals.

Remote On/Off... Barrier strip mounted on chassis

Mounting

Two mounting surfaces and two mounting positions.

Power Failure

5V and 6V models will remain within regulation limits for at least 16.7 msec. after loss of AC power when operating at full load, V_O max, and 105VAC input at 60Hz.

Remote Sensing

Provision is made for remote sensing to eliminate the effects of power output lead resistance on DC regulation.

Remote Turn-On/Turn-Off

Provision is made for digitally controlled remote turn-on, turn-off. (TTL Compatible)

Fungus Proofing

All units are rendered fungi inert.

Military Specifications

The LR series is designed to pass the following tests in accordance with MIL-STD-810C.

- 1) Low Pressure—Method 500.1, Procedure I
- 2) High Temperature—Method 501.1, Procedures I and II
- 3) Low Temperature—Method 502.1, Procedure I
- 4) Temperature Shock—Method 503.1, Procedure I
- 5) Temperature-Altitude—Method 504.1, Procedure I
Class 2 (0°C Operating)
- 6) Humidity—Method 507.1, Procedure I
- 7) Fungus—Method 508.1, Procedure I
- 8) Vibration—Method 514.2, Procedures X and XI
- 9) Shock—Method 516.2, Procedures I and III

EMI

Conducted EMI conforms to FCC Docket 20780 Class A, and MIL-STD-461A Notice 4 CE04 for power leads.

Physical Data

Package Model	Weight		Size Inches
	Lbs. Net	Lbs. Ship	
LRS-53	3¼	4¼	2-3/8 x 4-7/8 x 8
LRS-54	6½	7½	3 x 4-7/8 x 11

Accessories

Rack Adapters (LRA-14, LRA-15, LRA-17) and cable system available.

Finish

Gray Fed. Std. 595, No. 26081.

Guaranteed for 5 Years

Five year guarantee includes labor as well as parts. Guarantee applies to operation at full published specifications at end of 5 years.

UL /CSA

Under Evaluation

5 year guaranteed switching selector guide

AC input, single output fixed voltage

Models LR, LGA, LJ and LJA

MODEL	REGULATION (line, load)	RIPPLE (mV RMS)	MAX AMPS AT AMBIENT OF				COMPLETE ELECT. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE
			40°C	50°C	60°C	71°C					
5 VOLTS ±5% ADJ.											
LRS-53-5	0.1%, 0.1%	10	25.0	21.5	17.5	10.0	9	53	2-3/8 x 4-7/8 x 8	106	375
LRS-54-5	0.1%, 0.1%	10	40.0	34.0	27.5	19.5	9	54	3 x 4-7/8 x 11	106	460
6 VOLTS ±5% ADJ.											
LRS-53-6	0.1%, 0.1%	10	21.0	18.5	16.0	8.3	9	53	2-3/8 x 4-7/8 x 8	106	375
LRS-54-6	0.1%, 0.1%	10	35.0	31.0	24.0	17.0	9	54	3 x 4-7/8 x 11	106	460
12 VOLTS ±5% ADJ.											
LRS-53-12	0.1%, 0.1%	15	12.5	11.2	9.6	7.2	9	53	2-3/8 x 4-7/8 x 8	106	375
LRS-54-12	0.1%, 0.1%	15	22.0	18.5	15.0	10.0	9	54	3 x 4-7/8 x 11	106	460
15 VOLTS ±5% ADJ.											
LRS-53-15	0.1%, 0.1%	15	10.0	9.0	7.7	5.8	9	53	2-3/8 x 4-7/8 x 8	106	375
LRS-54-15	0.1%, 0.1%	15	18.0	15.0	12.0	8.0	9	54	3 x 4-7/8 x 11	106	460

5-year guaranteed switching selector guide

AC input, single output fixed voltage
Models LR, LGA, LJ and LJA

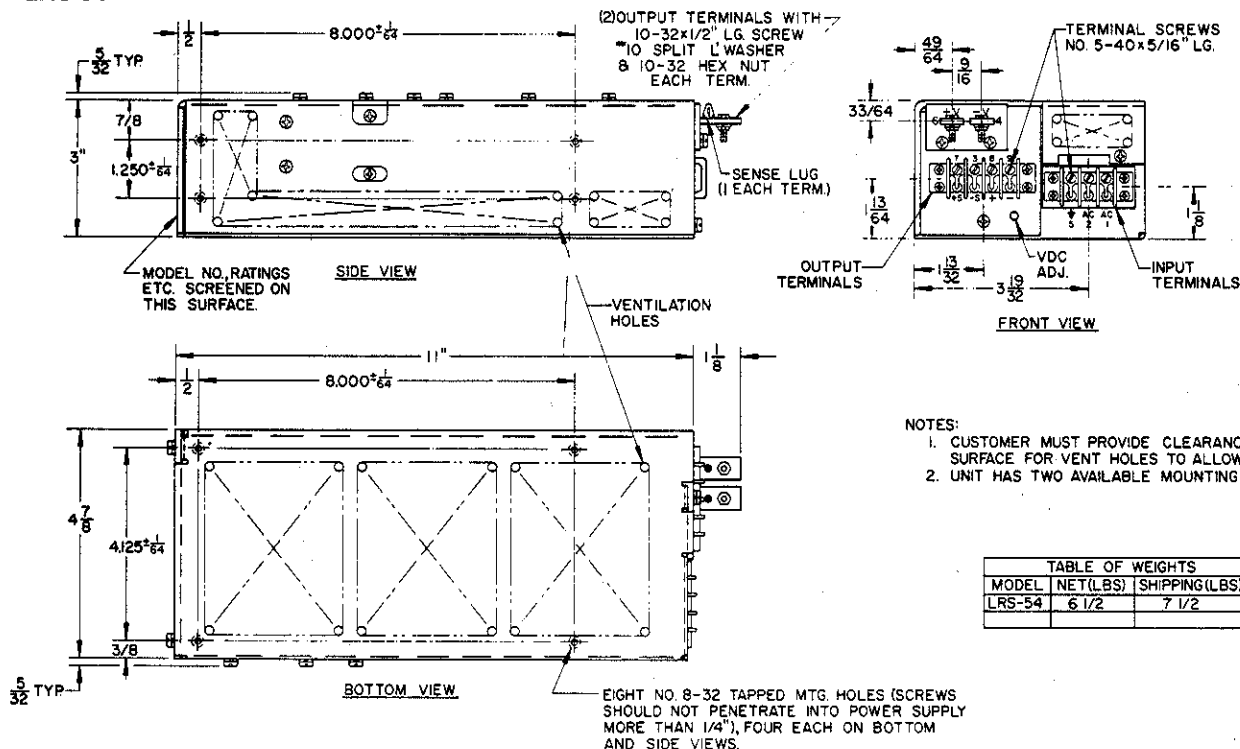
MODEL	REGULATION (line, load)	RIPPLE (mV RMS)	MAX AMPS AT AMBIENT OF				COMPLETE ELECT. SPEC. PG.	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG.	PRICE
20 VOLTS $\pm 5\%$ ADJ.											
LRS-53-20	0.1%, 0.1%	15	7.7	6.9	5.9	4.5	9	53	2-3/8 x 4-7/8 x 8	106	375
LRS-54-20	0.1%, 0.1%	15	13.5	11.5	8.5	5.5	9	54	3 x 4-7/8 x 11	106	460
24 VOLTS $\pm 5\%$ ADJ.											
LRS-53-24	0.1%, 0.1%	15	6.5	5.8	5.0	3.8	9	53	2-3/8 x 4-7/8 x 8	106	375
LRS-54-24	0.1%, 0.1%	15	11.5	9.5	7.5	4.5	9	54	3 x 4-7/8 x 11	106	460
28 VOLTS $\pm 5\%$ ADJ.											
LRS-53-28	0.1%, 0.1%	15	5.7	5.1	4.4	3.3	9	53	2-3/8 x 4-7/8 x 8	106	375
LRS-54-28	0.1%, 0.1%	15	9.5	8.5	6.5	4.0	9	54	3 x 4-7/8 x 11	106	460
48 VOLTS $\pm 5\%$ ADJ.											
LRS-53-48	0.1%, 0.1%	35	3.3	2.8	2.4	1.8	9	53	2-3/8 x 4-7/8 x 8	106	375
LRS-54-48	0.1%, 0.1%	35	5.8	5.1	3.6	2.3	9	54	3 x 4-7/8 x 11	106	460

PART IV—DIMENSIONAL DRAWINGS

MODULAR POWER SUPPLIES

LRS-53 and LRS-54

LRS-54



LRS-53

