

PART III—TEST, SYSTEMS AND LABORATORY POWER SUPPLIES

LAMBDA'S LQ AND LPT SERIES



PURE DC FOR LOW NOISE, HIGH RELIABILITY APPLICATIONS

- Ripple: $150\mu\text{V}$ Regulation: .005%
Temperature Coefficient: .005% Pure DC best describes these specifications that make the LQ Series ideal for low noise ATE, lab, or any application requiring high quality and reliability.
- 21 models available in five package sizes, up to 500VDC, up to 140 Watts. This breadth of line allows an engineer to specify an exact model tailoring the output power to the application.
- The LQ Series is designed using a multi-function voltage regulator IC with built-in chip temperature regulation.
- All models feature a digital meter readout, constant voltage or constant current operation, and packaging designed for bench or rack mount use. They provide the versatility for either laboratory or ATE test use.
- The LQ and LPT Series are backed with Lambda's 5 year guarantee. This ensures the product will operate to published specifications for the life of the product per its guarantee. All models are designed using the best quality components, designed in margins and overall reliability... ideal for industrial and lab type applications.
- Grade 1 design.

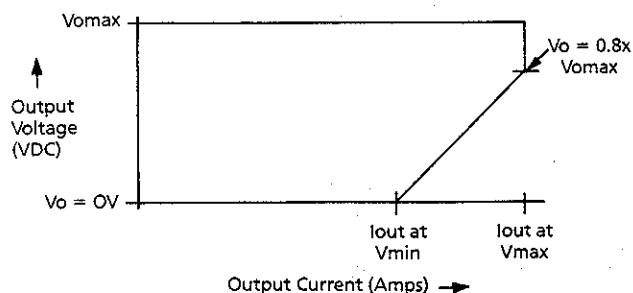
PART III—TEST, SYSTEMS AND LABORATORY POWER SUPPLIES

LAMBDA'S LQ SERIES, LPT SERIES

DC OUTPUT

Refer to the tables. For LQ-530 Series only, refer to figure below.

Fig. 1



REGULATED VOLTAGE

regulation, line	0.005% + 0.5mV (0.01% + 1mV for LPT) for line variations from 105 to 132VAC (187 to 242VAC on "V" options; 205 to 265VAC on "V1" options).
regulation, load	0.005% + 0.5mV (0.01% + 1mV for LPT) for load variations from 0 to full load.
ripple and noise (20MHz Bandwidth)	1mV pk-pk, 150µV RMS (300µV on LQ-415 and LQD-425) with plus or minus terminal grounded. (1.5mV pk-pk, 500µV RMS for LPT.)
temperature coefficient	± (0.005% Vo + 10µV)/°C. (With external programming resistors.) (0.015% + 3mV/°C for LPT.)
remote programming resistance	1000Ω/volt nominal (500Ω/volt nominal on LQ-415 and LQD-425 200Ω/volt for LPT). Downward programming to voltages less than 1 volt must be accomplished in two steps; first, from original voltage value to 1 volt, and then from 1 volt to final desired value.
remote programming voltage	volt per volt.

CONSTANT CURRENT

(automatic crossover)	
range	LQD, LQ-410, LQ-520 Series-1% to I _{out} max (min 45mA or 1% for LPT). LQ-530 Series-1% to ≈ 70% I _{out} max (refer to Fig. 1).
regulation, line	1mA max for line variations from 105 to 132VAC (187 to 242VAC for "V" options; 205 to 265VAC for "V1" options). (Less than 0.2% or 7.5mA for LPT.)
regulation, load	2.5mA max for load changes from 0 to rated DC voltage. 3.5mA max for LQ-415 and LQ-425 models.

AC INPUT

line	105 to 132VAC (47-440Hz) standard input (derate output by 10% at 50Hz). See options. Consult factory for operation above 63Hz.
------	--------------------------------------------------------------------------------------------------------------------------------

OPERATING TEMPERATURE RANGE

Continuous duty from 0 to 60°C with appropriate deratings above 30°C (see table).

STORAGE TEMPERATURE

-55°C to +85°C.

OVERLOAD PROTECTION THERMAL

By self-resetting thermostat.

ELECTRICAL

External overload protection, adjustable, automatic current limiting circuit limits output current to preset value. Current limiter variable from zero to I_{MAX} or to appropriate max. value at output voltage setting via front panel adjustment (see fig. 1) for LQ-530 series only.

INTERNAL FAILURE PROTECTION

Provided by primary and secondary fuses.

COOLING

Convection cooled—no fans or blowers required.

DC OUTPUT CONTROLS

Coarse/fine (LQD-421, LQ-410, LQ-411, LQ-530, LQ-531, LQ-520, LQ-521, LPT) or multitrack (LQD-422 through LQD-425, LQ-412, through LQ-415, LQ-532 through LQ-534 and LQ-522-LQ-524) voltage adjust and single turn current adjust on front panel. An adjustable range of 1%-Vo max to Vo max is provided by the internal programming potentiometer; programming over the full 0 to Vo max range can be accomplished by remote programming.

POWER CONTROL

On-off switch on front panel.

METERS

Digital panel meter standard on all sets. Monitors output voltage/current by means of volt/amp selector switch. (Each output on LPT models has a separate analog voltmeter and ammeter.)

INPUT AND OUTPUT CONNECTIONS

Heavy duty barrier strip at rear of chassis. Five-way binding posts on front panel for output connections.

REMOTE SENSING

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

SERIES/PARALLEL OPERATION

Provision is made for auto series/auto parallel (master-slave) operation to permit tracking to a common reference.

PHYSICAL DATA

Package Model	Lbs. Net.	Lbs. Ship	Size Inches
LQD-420	12	15	5 ³ / ₁₆ × 8 ³ / ₈ × 10 ³ / ₃₂
LQ-410	9	12	5 ³ / ₁₆ × 4 ³ / ₁₆ × 10
LQ-520	14	18	5 ³ / ₁₆ × 4 ³ / ₁₆ × 15 ¹ / ₂
LQ-530	25	30	5 ³ / ₁₆ × 8 ³ / ₈ × 15 ⁵ / ₈
LPT	24	29	5 ³ / ₁₆ × 12 ¹ / ₂ × 11

OPTIONS

AC INPUT

Add Suffix	For Operation at:	Add to Price
-V	187 to 242VAC, 47-440Hz	12%
-V1	205 to 265VAC, 47-440Hz	12%

Derate output by 10% at 50Hz. Consult factory for operation above 63Hz.

ACCESSORIES

For rack adapters and other accessories, see Part IV of this catalog.

FUNGUS PROOFING

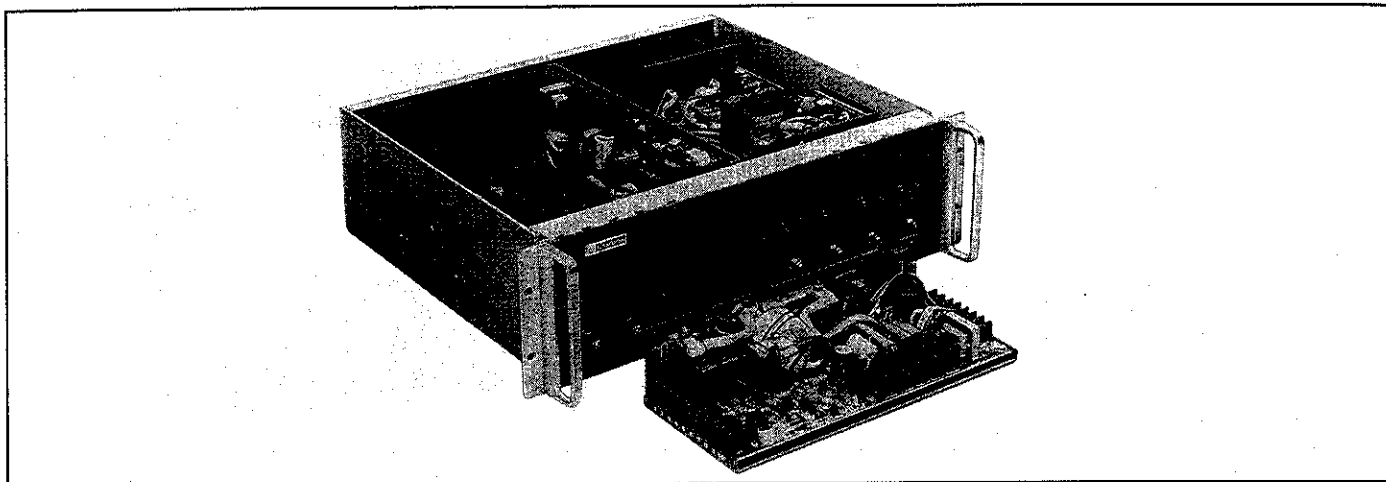
Add Suffix "-R" to Model Number and add 10% to price.

GUARANTEED FOR 5 YEARS

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

PART III—TEST, SYSTEMS AND LABORATORY POWER SUPPLIES

LAMBDA'S LPS SERIES UNINTERRUPTIBLE POWER SYSTEM



- ☐ Truly uninterruptible, glitch-free operation
- ☐ Includes 416W modules
- ☐ Five minute minimum battery backup at 400 watts of DC power
- ☐ A double pole, single throw circuit breaker; AC pilot light; and DC battery fuse are all located on the front panel
- ☐ Front panel LED's indicate AC line fail, charger fail, and battery-low
- ☐ DC output voltage adjust potentiometers and test points provided on front panel
- ☐ AC line fail, charger fail, and battery-low interface signals available as normally open relay contacts via a rear plate terminal strip
- ☐ Completely assembled and ready to use

The Lambda LPS Series is designed for use with today's modern switching power supplies which accept either AC or high voltage DC input. The LPS modules may be purchased alone, or used as one of the basic building blocks in a user customized UPS Power System. A standard Lambda UPS system consists of an LPS unit, a Lambda power supply, and a battery to provide loss-of-power protection. The Lambda UPS Power System comes assembled in a rack adapter, complete with indicator lights.

Lambda's LPS Series consists of two packages, the LPS-40 (master module) and LPS-41 (slave module). The LPS-41 has the same power rating as the LPS-40, but contains neither the charger nor failure alarm circuitry. Any number of master or slave modules can be connected in parallel for increased output power and/or increased battery charging current.

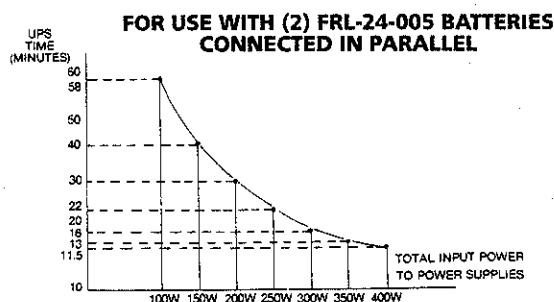
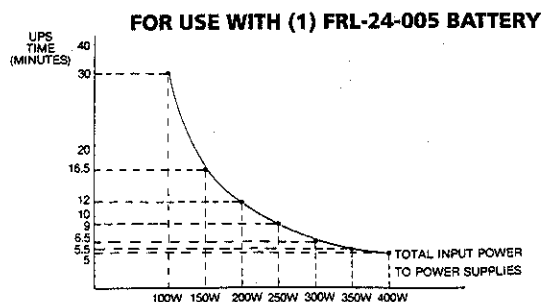
To select the number of UPS modules that fit your needs, you must know the sum of the input power to your power supplies. The input power can be found in the specification sheets of the individual power supplies or can be approximated by dividing the output power of the power supply by its efficiency.

Each UPS module provides 416 watts of input power to your power supplies. Single module systems require the LPS-40. In multi-module systems, one module must be an LPS-40 (master module). You may wish to add master modules in lieu of slave modules to provide battery charging current, thus reducing battery charging time.

MODEL	MAXIMUM CURRENT OUTPUT OF UPS MODULE (A)				COMPLETE MECH. SPEC. PG.	PRICE/QTY.			
	40°C	50°C	60°C	71°C		1	10	25	100
LPS-40	3.2	2.8	2.45	2.15	189	\$719	\$686	\$658	\$567
LPS-41	3.2	2.8	2.45	2.15	189	618	588	565	481
LPS-V-40	1.75	1.52	1.32	1.16	189	719	686	658	567
LPS-V-41	1.75	1.52	1.32	1.16	189	618	588	565	481

NOTE: AC input power for LPS-40 and LPS-41 is 105-132VAC. AC input power for LPS-V-40 and LPS-V-41 is 187-265VAC.

Both master and slave modules are rated at 416W. Any number of modules can be connected in parallel for increased output power.



USE THESE GRAPHS TO DETERMINE HOLD-UP CAPABILITIES. POWER IS INPUT POWER OF POWER SUPPLIES. $P_{IN} = \frac{P_{OUT}}{\text{EFFICIENCY}}$

PART III — TEST, SYSTEMS AND LABORATORY POWER SUPPLIES

LABORATORY AND TEST SELECTOR GUIDE

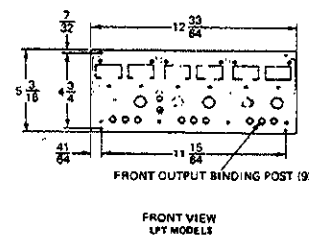
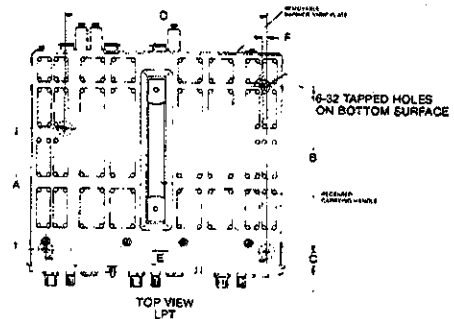
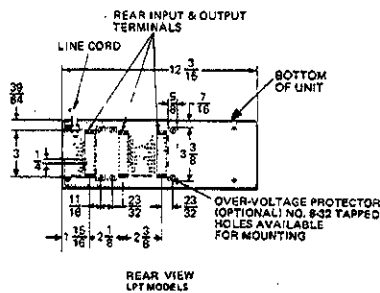
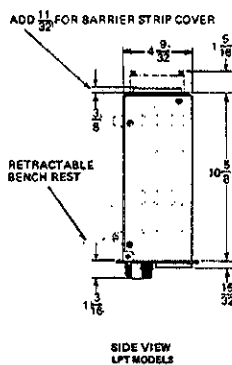
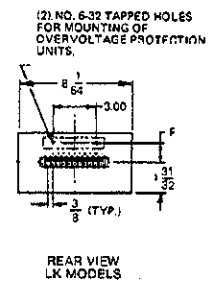
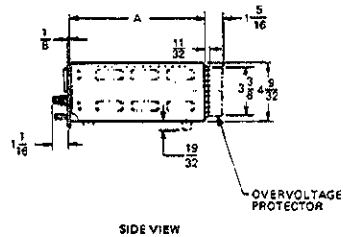
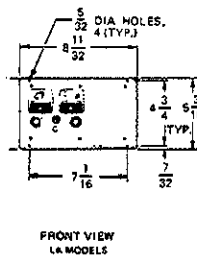
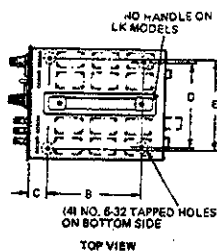
LPT Series. Triple Output.

VOLTAGE RANGE (VDC)	MAX CURRENT AT AMBIENT OF (AMPS)				COMPLETE ELEC. SPEC. PG.	COMPLETE MECH. SPEC. PG.	DIMENSIONS (inches)	QTY. 1	PRICE QTY. 10	QTY. 25	MODEL
	30°C	40°C	50°C	60°C							
0-7	5.0	4.50	4.0	3.5	129	193	5 ³ / ₁₆ × 12 ¹ / ₂ × 11	\$2219	\$2114	\$2028	LPT-7202-FM
0-20	1.5	1.35	1.2	1.0							
0-20	1.5	1.35	1.2	1.0							

PART V—MECHANICAL DRAWINGS

LK SERIES AND LPT SERIES

LPT Series— $\frac{3}{4}$ Rack
LK Series— $\frac{1}{2}$ Rack



MODEL	A	B	C	D	E	F
LK $\frac{1}{2}$ RACK SERIES	16	12 ¹⁹ / ₁₆	1 ¹ / ₄	6 ⁷ / ₁₆	6 ⁷ / ₁₆	1 ²⁷ / ₆₄
LPT $\frac{3}{4}$ RACK MODEL	6	7 ⁵¹ / ₃₂	2 ¹ / ₃₂	9 ⁷ / ₈	10 ³ / ₄	1 ¹ / ₄

TERMINAL STRIP
SCREW SIZE
5-40 X 1/4