

**Specification**

# LPA01

High frequency, dc accurate, power amplifier for laboratory and industrial applications.

**Description**

LPA01 is a high frequency amplifier with 1A current output capability at 20V pk-pk from dc to greater than 1MHz. It uses a composite amplifier arrangement with an integrated power driver to give dc accuracy and excellent high frequency performance, with high reliability.

LPA01 is compensated to drive any capacitive, inductive or resistive load; internal short circuit protection plus power diodes with high energy transient absorption devices protect the LPA01 against overload or inductive flyback transients.

The gain is set using 0.1% resistors for accuracy and thermal stability.

As well as ac and ac+dc coupling there is a special coupling mode, ac+(dc), where the dc component is not eliminated entirely but is reduced by a factor of about 10. This is particularly useful for testing wound components with a controlled dc bias current where the dc resistance of the component is considerably lower than the ac resistance. The high frequency bandwidth can also be reduced with a low pass filter.

The LPA01 is mains powered and housed in a robust steel cabinet.

Parameter	LPA 01	units
Input connector	isolated BNC	
Input impedance	10k	$\Omega$
Peak input voltage	$\pm 12$	V
Input common mode range	$\pm 40$	V
Input offset voltage	1.5	mV
	5	mV (max)
Input coupling	ac, ac+dc, ac+(dc)	
AC coupling filter -3dB	16	Hz
(DC) gain factor	0.1	
Full power bandwidth	1M @20V pk-pk	Hz
Low bandwidth -3dB	80k	Hz
Low bandwidth filter attenuation	40	dB/decade
Low bandwidth filter type	linear phase	
Gain options	x1, x4, x10	
Low frequency gain accuracy	0.1	%
Output connector	isolated BNC	
Continuous output current	1	A
Peak output voltage	$\pm 12$	V
Slew rate	600	V/us
Temperature range	0 - 40	$^{\circ}\text{C}$
Size	8.5 x 15 x 25	cm
Weight	2	kg
Power source (UK) (USA)	230V $\pm 10\%$ , 50Hz	
	115V $\pm 10\%$ , 60Hz	
Power consumption	40	VA (max)

**Notes:**

All specifications at 230V, 50Hz, 23 $^{\circ}\text{C}$  unless otherwise stated.

All specifications are typical values unless otherwise stated.

These specifications are quoted in good faith but Newtons4th Ltd reserves the right to amend any specification at any time without notice.



**Newtons4th Ltd.**  
 30 Loughborough Road, Mountsorrel,  
 Loughborough, LE12 7AT  
 phone: (0116) 230 1066  
 fax: (0116) 230 1061  
 web site: www.newtons4th.com

## **IMPORTANT SAFETY INSTRUCTIONS**

This equipment is designed to comply with BSEN 61010-1 (Safety requirements for electrical equipment for measurement, control, and laboratory use) – observe the following precautions:

- Ensure that the supply voltage agrees with the rating of the instrument printed on the back panel *before* connecting the mains cord to the supply.
- This appliance *must* be earthed. Ensure that the instrument is powered from a properly grounded supply outlet.
- The input and output connectors, and the internal circuitry are isolated from earth - do not exceed  $\pm 40V$  peak common mode.
- Keep the ventilation holes on the underneath, rear, and sides free from obstruction.
- Do not operate or store under conditions where condensation may occur or where conducting debris may enter the case.
- There are no user serviceable parts inside the instrument – do not attempt to open the instrument, refer service to the manufacturer or his appointed agent.
- In the event of a failure of the mains fuse, disconnect the mains cord and replace the fuse with the same type and rating, as shown on the rear of the instrument.
- Switch off the amplifier and ensure that the output current has fallen to zero before disconnecting an inductive load from the output.

**Note: Newtons4th Ltd. shall not be liable for any consequential damages, losses, costs or expenses arising from the use or misuse of this product however caused.**

### Warranty

This product is guaranteed to be free from defects in materials and workmanship for a period of 12 months from the date of purchase.

In the unlikely event of any problem within this guarantee period, first contact Newtons4th Ltd. or your local representative, to give a description of the problem. If the problem cannot be resolved directly then you will be given an RMA number and asked to return the unit. The unit will be repaired or replaced at the sole discretion of Newtons4th Ltd.

This guarantee is limited to the cost of the LPA01 itself and does not extend to any consequential damage or losses whatsoever including, but not limited to, any loss of earnings arising from a failure of the product.

In the event of any problem with the equipment outside of the guarantee period, Newtons4th Ltd. offers a full repair service – contact your local representative.

The LPA01 does not require any calibration.

### Declaration of Conformity

We, Newtons4th Ltd, declare that the product LPA01, conforms to the requirements of Council Directives:

89/336/EEC relating to electromagnetic compatibility:  
EN 55022 Class A

73/23/EEC relating to safety of laboratory equipment:  
EN 61010-1

October 2000

Eur Ing Allan Winsor BSc CEng MIEE  
(Director of Newtons4th Ltd)