

Specification

Parameter	LPA 400	units
Input connector	isolated BNC	
Input impedance	10k	Ω
Peak input voltage	± 8	V
Input common mode range	± 40	V
Input offset voltage	1.5	mV
	5	mV (max)
Input coupling (switch)	ac, ac+dc, ac+(dc)	
AC coupling filter -3dB	16	Hz
(DC) gain factor	0.1	
Full power bandwidth	100k @800V pk-pk	Hz (min)
Low bandwidth -3dB (switch)	80k	Hz
Low bandwidth filter attenuation	40	dB/decade
Low bandwidth filter type	linear phase	
Gain options (switch)	x50, x200, x500	
Low frequency gain accuracy	0.1	%
Output connector	isolated BNC	
Peak output voltage	± 400	V
Slew rate	500	V/us
Output impedance	50	Ω
Maximum ac output current	50	mA rms
Maximum dc output current	70 @ >250Vdc	mA dc
	25 @ 0V	
Temperature range	0 - 40	$^{\circ}\text{C}$
Size	8.5 x 15 x 25	cm
Weight	2.5	kg
Power source (UK)	230V $\pm 10\%$, 50Hz	
	(USA) 115V $\pm 10\%$, 60Hz	
Power consumption	45	VA (max)

Notes:

All specifications at 230V, 50Hz, 23 $^{\circ}\text{C}$ unless otherwise stated.
 All specifications are typical values unless otherwise stated.
 Derate output current linearly for output voltages between those stated.

LPA400

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

Description

LPA400 is a high frequency amplifier with $\pm 400\text{V}$ peak voltage output capability from dc to greater than 100kHz. At lower output levels, the gain extends beyond 1MHz. It uses an integrated power driver with regulated high voltage supplies to give dc accuracy and excellent high frequency performance, with high reliability.

The gain is switch selectable as x50, x200, or x500 and uses 0.1% low temperature coefficient resistors for accuracy and thermal stability.

LPA400 is unconditionally stable driving resistive, capacitive or inductive loads and can deliver 50mA rms continuously into any load. An indicator on the front panel indicates that the output is on and there is a switch to reset the protection circuitry in the event that it has been triggered by excessive output current.

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 LPA400 is housed in a robust steel cabinet.



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IMPORTANT SAFETY INSTRUCTIONS

This product can generate lethal voltages. Observe all 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.
- Use only safety connection leads approved to BSEN 61010-1.
- The input and output connectors, and the internal circuitry are isolated from earth - do not exceed $\pm 40V$ peak common mode.
- Keep all the ventilation holes on the underneath, rear, top, 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 amplifier – *do not attempt to open the case*, refer service to the manufacturer or his appointed agent. Potentially lethal voltages are present inside the instrument even when no input signal is present.
- 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 amplifier.
- 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 LPA400 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 LPA400 does not require any calibration.

Declaration of Conformity

We, Newtons4th Ltd, declare that the product LPA400, 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

January 2001

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