

# Series LPA601

Precision Gaging LVDT Displacement Transducer,  
AC/AC, Air Push Armature



## Description

The Series LPA601 displacement transducer is designed for precision displacement and position measurements where the LVDT's armature tip must be retracted to allow components to move. This is accomplished by using air to both push the armature to its extended position and then retract it as required. The armature is supported with precision linear ball bearings which ensures excellent repeatability and overall performance. This series of displacement sensors can be adapted to many quality assurance applications in industrial environments. They are constructed of stainless steel and have a non-rotational armature with ball tip. This position sensor requires separate signal conditioning and provides optimum performance when powered with between 0.5 V and 7V at 5KHz. The compact size of the LPA601 series makes it ideal for applications requiring limited space. All Series LPA601 displacement transducers are shipped with traceable calibration certificates.

## Standard Features

- Stroke ranges from  $\pm 0.04$  inches to  $\pm 0.20$  inches
- Air Push Armature
- $\pm 0.25\%$  Linearity
- Precision Linear Ball Bearings
- AC power
- Broad Temperature Range
- All Stainless Steel Construction
- Traceable Calibration Certificate

## Optional Features

- 0.1% Linearity
- Expanded Operating Temperature Range
- Special Cable Lengths
- Mounting Blocks
- Alternative Probe Tips

## Performance

### Stroke Ranges

$\pm 0.04$  inches to  $\pm 0.2$  inches

### Linearity

$\pm 0.25\% \pm 0.1$  of full stroke max

### Output (Full scale rms)

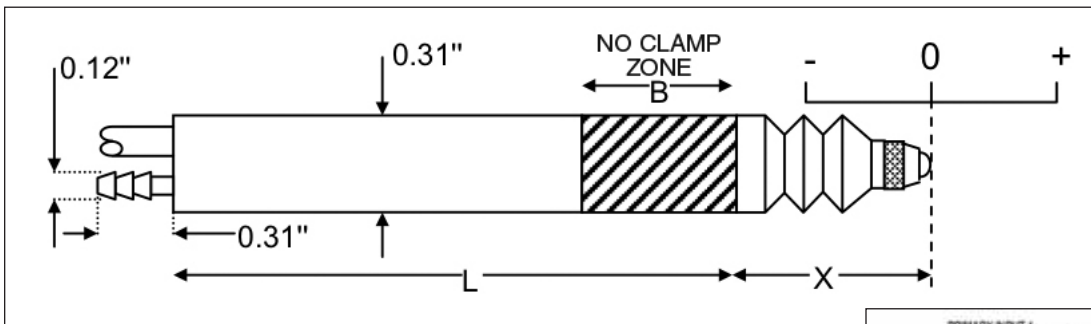
(0.8 to 3.7) Volts/Volt (dependent on stroke)

LPA601X

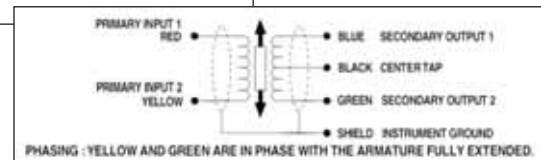
# Series LPA601 Specifications

Baseline Configuration Specs Represented.  
Modifications Encouraged - See Below  
Custom Designs Available

## Dimensions (inches)



### Connection Details



Range	L"	X"	B"
±0.04"	2.8	1.02	0.6
±0.1"	3.0	0.79	0.7
±0.2"	4.4	0.87	1.2

Range	Linearity Error (%F.S.)	Total Weight	Air Pressure Minimum	Air Pressure Maximum	Inward Over-Travel	Outward Over-Travel	Sensitivity (Nom)
±0.04"	≤± 0.25	0.4oz	6psi	9psi	0.06"	0.01"	150mV/V
±0.1"	≤± 0.25	0.5oz	7psi	9psi	0.03"	0.01"	375mV/V
±0.2"	≤± 0.25	0.6oz	7psi	8psi	0.05"	0.01"	700mV/V

## Mechanical Characteristics

### Resolution

Infinite.

### Repeatability

0.000006 inches.

### Residual Null Output

0.1% of full stroke output.

### Case Material

Stainless Steel.

### Armature Type

Air-push with linear ball bearings.

### Probe End

Ball end.

### Probe Material

Hardened Tungsten Carbide.

### Air filter

≤ 0.00002 inches.

### Relative humidity

≤ 60%.

### Air pressure

Minimum 6 psi to Maximum 9 psi.

## Electrical Characteristics

### Excitation Supply

0.5V to 7V rms, 2kHz to 10kHz, sinusoidal.  
(Calibrated at 5V rms, 5kHz, sinusoidal).

### Electrical Termination

High Quality Polyurethane Shield Cable (6 ft.) (Optional cable lengths available).

### Phase Shift

10° (Typical).

### Output Load (Optimum)

100K Ohms.

## Environmental Characteristics

### Operating Temperature Range

-40°F to +212°F.

### Temperature Effect on Zero

±0.006% F.S./°F (typical).

### Temperature Effect on Span

±0.006% F.S./°F (typical).

## MODEL IDENTIFICATION

**L P A 6 0 1**

SERIES

ELECTRICAL TERMINATIONS

Please specify termination required:

X = 1 Axial Cable Exit (Standard)



## Modifications and Warranty

MODIFICATIONS: We realize transducer applications vary greatly and as such our designs are flexible. Choice of pressure port, electrical termination, material compatibility and performance characteristics are a few of the many options available. Specifications on this datasheet represent the standard configuration only. Product and company names listed are trademarks of their respective companies. Specifications subject to change without notice.

WARRANTY: Stellar Technology warrants that its product shall be free from defective workmanship and/or material for a twelve month period from the date of shipment, provided that Stellar Technology's obligation hereunder shall be limited to correcting any defective material FOB our factory. No allowance will be made for any expenses incurred for correcting any defective workmanship and/or material without written consent by Stellar Technology. This warranty is in lieu of all other warranties expressed or implied.

**LORD SENSING**

Stellar Technology

ISO 9001/AS9100

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Due to the nature of technology, changes are inevitable. For latest technical specifications, see our website.

237 Commerce Drive • Amherst, NY 14228 • USA  
Tel: 716.250.1900 • Fax: 716.250.1909  
Web: stellartech.com • Email: info@stellartech.com