

# Series LSU61X

Short Stroke LVDT Displacement Transducer, DC/DC, Unguided Armature



## Description

The Series LSU61X is a short stroke precision LVDT which takes a DC supply and provides a DC output. These displacement sensors operate from unregulated power supplies of +24 Vdc to +40 Vdc or dual  $\pm 12$  Vdc to  $\pm 20$  Vdc and utilizes an internal amplifier to generate a  $\pm 5$  Vdc output signal. The internal electronics also includes a filter circuit. The armature is loose fit in the bore of the LVDT and is attached to the moving part by a threaded end. Precise alignment along the bore produces a frictionless movement. This design allows the armature to be separated from the body without disconnecting either part. This type of LVDT is most suited for applications where dynamic measurements are to be made. The body and probe are constructed from stainless steel. The compact size of the LSU61X series makes it ideal for applications requiring limited space. All Series LSU61X displacement transducers are shipped with traceable calibration certificates.

## Standard Features

- Stroke ranges from  $\pm 0.10$  inches to  $\pm 0.40$  inches
- Internal Signal Conditioning
- DC/DC
- Compact Size
- Free Unguided Armature
- Low Friction Bearing Assembly
- $\pm 0.5\%$  Linearity
- All Stainless Steel Construction
- Traceable Calibration Certificate

## Optional Features

- Improved Linearity
- Mounting Blocks

## Performance

### Stroke Ranges

$\pm 0.10$  inches to  $\pm 0.40$  inches

### Linearity

$\pm 0.5\%$  of full stroke (maximum)

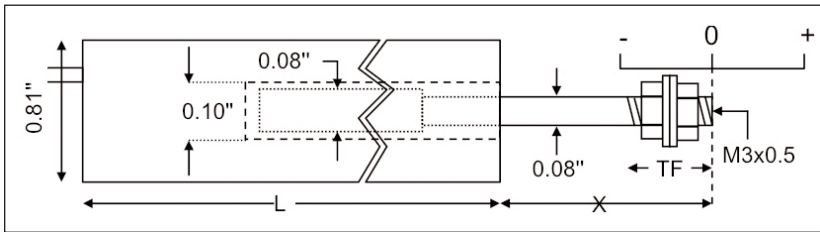
$\pm 0.25\%$  or  $\pm 0.1$  (as available options)

LSU61X

# Series LSU61X Specifications

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

## Dimensions (inches)



Range	Linearity error (% F.S.)	L	X	Total Weight	Armature Weight	TF	Inward over-travel
±0.1"	<± 0.5	2.5"	1.3"	2.60z	0.050z	0.7"	0.46"
±0.2"	<± 0.5	2.5"	1.3"	2.60z	0.060z	0.7"	0.35"
±0.3"	<± 0.5	2.5"	1.3"	2.60z	0.060z	0.7"	0.26"
±0.4"	<± 0.5	2.5"	1.3"	2.60z	0.070z	0.7"	0.15"

## Mechanical Characteristics

### Residual Null Output

0.1% of full stroke output.

### Repeatability

Within 20 microinches.

### Case Material

Stainless steel.

### Armature Type

Unguided.

### Probe Thread

M3 x 0.5.

## Set-ups

Please Specify Set-up Required:

	(-)	(0)	(+)
<b>Standard</b>			
1	0V	5V	10V(+0%-5%)
2	-5V(+0%-5%)	0V	+5V(+0%-5%)
<b>Optional</b>			
3	10V(+0%-5%)	5V	0V
4	+5V(+0%-5%)	0V	-5V(+0%-5%)

## Electrical Characteristics

### Supply Voltage (Dual)

±12Vdc to ±20Vdc, 30 mA.

### Supply Voltage (Single)

24Vdc to 40Vdc (must be floating), 30 mA.

### Output Impedance

2 Ohms.

### Output Load (Optimum)

10K Ohms.

### Output Ripple

30mV.

### Electrical Output Bandwidth

200 Hz.

### Electrical Termination

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

## Environmental Characteristics

### Operating Temperature Range

-58°F to +176°F.

### Temperature Effect on Zero

±0.006%/°F.

### Temperature Effect on Span

±0.017%/°F.

## MODEL IDENTIFICATION

**L S U 6 1 X**  
SERIES

ELECTRICAL TERMINATIONS

Please specify termination required:

- X = 1 Axial Cable Exit (Standard)
- 2 Radial Cable Exit (Optional)
- 3 Axial Connector (Optional)
- 4 Radial Connector (Optional)



MODIFICATIONS: We realize LVDT applications vary greatly and as such our designs are flexible. Choice of 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.

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237 Commerce Drive • Amherst, NY 14228 • USA

Tel: 716.250.1900 • Fax: 716.250.1909

Email: [info@stellartech.com](mailto:info@stellartech.com)

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