

# Series LLU60X

Long Stroke LVDT Displacement Transducer, AC/AC,  
Unguided Armature



## Description

The Series LLU60X is a high performance long stroke LVDT displacement transducer with an unguided armature energized with AC power. The unguided armature design is a very basic configuration. The armature is loose fit in the bore of the LVDT and is attached to the moving point by a male thread. Precise alignment along the bore produces a frictionless movement. The Series LLU60X is ideal for mechanical vibration measurements. The armature can be separated from the body without disconnecting either part. This position sensor requires separate signal conditioning and provides optimum performance when powered with between 0.5V and 7V at 5KHz. The compact size of the LLU60X series makes it ideal for applications requiring limited space. These displacement transducers are ruggedly constructed of all stainless steel and are able to withstand harsh environments where high ambient temperature and vibration are present. All Series LLU60X displacement transducers are shipped with traceable calibration certificates.

## Standard Features

- Stroke ranges from  $\pm 0.5$  inches to  $\pm 8.0$  inches
- Unguided Armature
- Frictionless Configuration (Zero Wear)
- AC power
- $\pm 0.5\%$  Linearity
- Broad Temperature Range
- All Stainless Steel Construction
- Traceable Calibration Certificate

## Optional Features

- Improved Linearity
- Expanded Operating Temperature Range
- Axial Connector
- Sealing Against Moisture Ingress
- Mounting Blocks

## Performance

### Stroke Ranges

$\pm 0.5$  inches to  $\pm 8.0$  inches

### Linearity

$\pm 0.5\%$  of full stroke max  
 $\pm 0.25\%$  or  $\pm 0.1$  options on some ranges

### Output (Full scale rms)

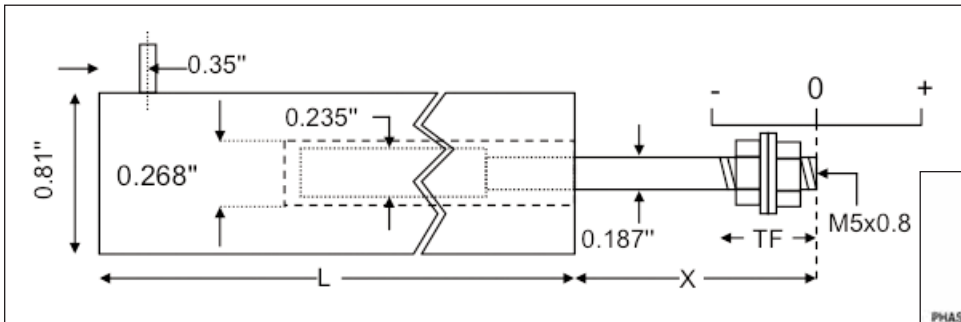
3.2 Volts/Volt  
(dependent on stroke)

LLU60X

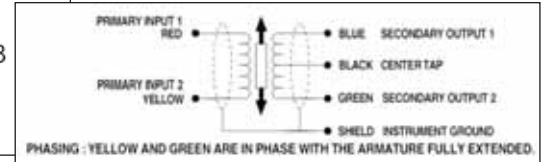
# Series LLU60X Specifications

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

## Dimensions (inches)



## Connection Details



Range	Linearity error (% F.S.)	L	X	Total Weight	Armature Weight	TF	Inward over-travel	Sensitivity (nom)
±0.5"	<± 0.5	5.0"	1.7"	6oz	0.6oz	0.6"	0.6"	0.7V/V
±1"	<± 0.5	6.1"	2.7"	8oz	0.8oz	0.6"	0.9"	0.9V/V
±2"	<± 0.5	10.6"	3.2"	11oz	1.3oz	0.6"	0.6"	1.5V/V
±3"	<± 0.5	15.0"	4.7"	1.0lb	1.9oz	0.6"	1.1"	1.5V/V
±4"	<± 0.5	16.8"	5.2"	1.3lb	2.5oz	0.6"	0.6"	3.2V/V
±6"	<± 0.5	24.3"	7.2"	1.8lb	3.5oz	0.6"	0.6"	2.4V/V
±8"	<± 0.5	31.8"	10.2"	2.6lb	4.9oz	1.1"	1.1"	1.5V/V

## Mechanical Characteristics

### Resolution

Infinite.

### Residual Null Output

0.1% of full stroke output.

### Case Material

Stainless steel.

### Armature Type

Unguided.

### Probe Thread

M5 x 0.8.

## Electrical Characteristics

### Power

AC.

### Excitation Supply

0.5V to 7V rms, 2kHz to 10kHz

(sinusoidal)

Factory calibrated at 5V rms, 5kHz

(sinusoidal).

### Electrical Termination

High Quality Polyurethane Shield Cable

(6 ft.)

### Phase Shift

10° (Typical).

### Output Load (Optimum)

100K Ohms.

## Environmental Characteristics

### Operating Temperature Range

-60°F to +250°F

(-60°F to +400°F optional for ≤ ±4.0" or below).

### Temperature Effect on Zero

±0.005%/°F.

### Temperature Effect on Span

±0.005%/°F.

## MODEL IDENTIFICATION

**L L U 6 0 X**

SERIES

ELECTRICAL TERMINATIONS

Please specify termination required:

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



## 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.

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