

# Series LLC60X

Long Stroke LVDT Displacement Transducer, AC/AC,  
Captive Guide Armature



## Description

The Series LLC60X is a high performance long stroke AC powered LVDT displacement transducer with a captive guided armature. The armature is captured in the LVDT housing and is guided by a low-friction bearing assembly. These LVDT's have a total stroke range of 1 to 37 inches. The Series LLC60X displacement transducers can be used for both static and dynamic applications. 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 LLC60X 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 LLC60X displacement transducers are shipped with traceable calibration certificates.

## Standard Features

- Stroke Ranges from  $\pm 0.5$  Inches to  $\pm 18.5$  Inches
- Captive Armature
- Low Friction Bearing Assembly
- AC Power
- $\pm 0.5\%$  Linearity
- Output of 0.8 Volts/Volts to 3.7 Volts/Volt
- Broad Temperature Range
- All Stainless Steel Construction
- Traceable Calibration Certificate

## Optional Features

- Improved Linearity
- Self Aligning Bearings
- Rod-End Bearings
- Expanded Operating Temperature Range
- Axial Connector
- Sealing Against Moisture Ingress
- Mounting Blocks

## Performance

### Stroke Ranges

$\pm 0.5$  inches to  $\pm 18.5$  inches

### Linearity

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

### Output (Full scale rms)

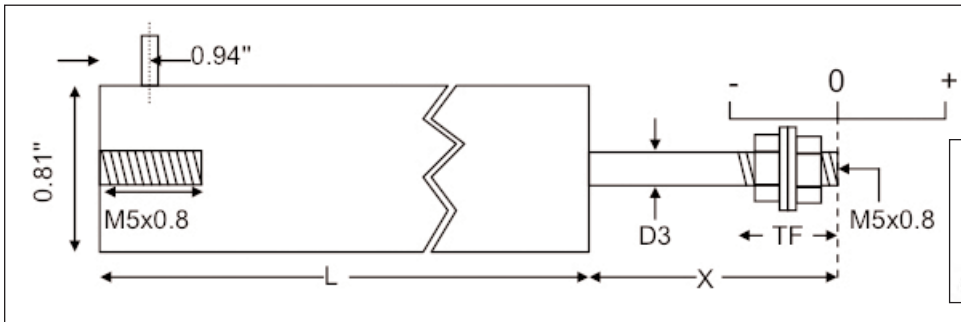
(0.8 to 3.7) Volts/Volt  
(dependent on stroke)

LLC60X

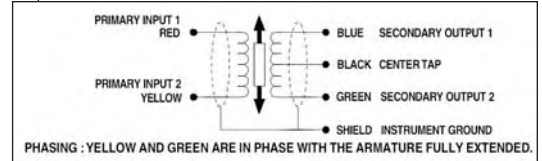
# Series LLC60X Specifications

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

## Dimensions (inches)



## Connection Details



Range	Linearity error (% F.S.)	L	X	D3	Total Weight	TF	Inward over-travel	Outward over-travel	Sensitivity (nom)
±0.5"	<± 0.5	6.0"	1.5"	0.187"	10oz	0.6"	0.4"	0.47"	0.7V/V
±1"	<± 0.5	7.1"	2.5"	0.187"	12oz	0.6"	0.5"	0.39"	0.9V/V
±2"	<± 0.5	11.6"	3.0"	0.187"	1.1lb	0.6"	0.4"	0.55"	1.5V/V
±3"	<± 0.5	16.0"	4.5"	0.187"	1.4lb	0.6"	0.9"	0.59"	1.5V/V
±4"	<± 0.5	17.8"	5.0"	0.187"	1.6lb	0.6"	0.3"	0.55"	3.2V/V
±6"	<± 0.5	25.3"	7.0"	0.187"	2.3lb	0.6"	0.5"	0.67"	2.4V/V
±8"	<± 0.5	32.8"	10.0"	0.187"	3.1lb	1.3"	0.9"	0.98"	1.5V/V
±10"	<± 0.5	40.6"	12.0"	0.187"	3.5lb	1.1"	1.3"	1.38"	2.0V/V
±15"	<± 0.5	56.5"	16.0"	0.187"	4.7lb	0.8"	0.5"	0.51"	3.2V/V
±18.5"	<± 0.5	67.0"	20.0"	0.236"	5.6lb	1.1"	0.2"	1.30"	3.6V/V

## Mechanical Characteristics

### Resolution

Infinite.

### Residual Null Output

0.1% of full stroke output.

### Case Material

Stainless steel.

### Armature Type

Captive Guided.

### 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.) Radial Exit (Standard).

### 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. Only applies to stroke ranges ≤ ±4.0").

### Temperature Effect on Zero

±0.005%/°F.

### Temperature Effect on Span

±0.005%/°F.

## MODEL IDENTIFICATION

**L L C 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 Leads Only for Customer Wiring (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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