



# Series LLS60X

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



## Description

The Series LLS60X is a high performance long stroke LVDT displacement transducer with a spring return armature energized with AC power. The armature is restrained and guided by a very low friction bearing assembly. An internal spring automatically positions the armature to its full extension. This design is used where it is not possible to connect the transducer armature to the moving part being measured. This position sensor requires separate signal conditioning and provides optimum performance when powered with between 0.5 Vand 7V at 5KHz. The compact size of the LLS60X series makes it ideal for applications requiring limited space.

This 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 LLS60X displacement transducers are shipped with traceable calibration certificates.

## Performance

### Stroke Ranges

± 0.5 inches to ± 3.0 inches

### Linearity

± 0.5% of full stroke max

± 0.25% or ± 0.1 options on some ranges

### Output (Full scale rms)

1.5 Volts/Volt

(dependent on stroke)

## Standard Features

- Stroke ranges from ±0.5 inches to ±3.0 inches
- Spring return armature
- Low friction bearing assembly
- AC power
- ±0.5% Linearity
- Broad Temperature Range
- All Stainless Steel Construction
- Traceable Calibration Certificate

## Optional Features

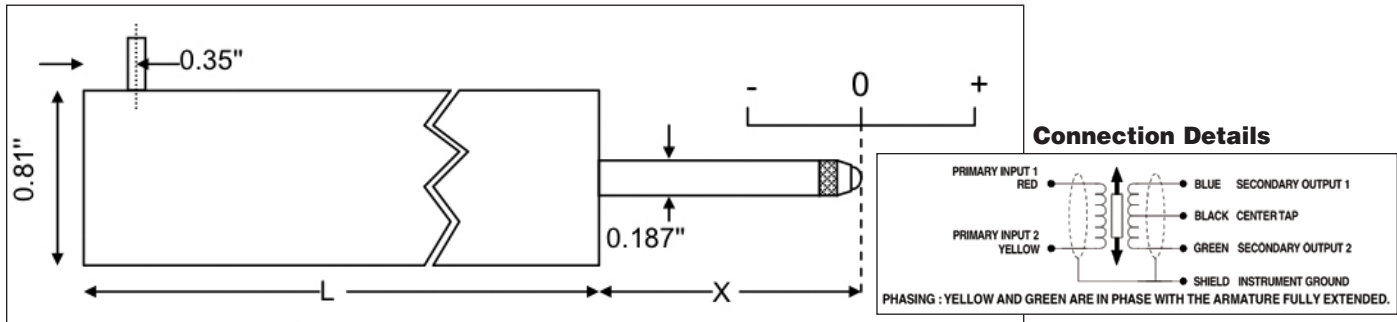
- Improved Linearity
- Expanded Operating Temperature Range
- Axial Connector
- Sealing Against Moisture Ingress
- Mounting Blocks

# Series LLS60X

## Specifications

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

### Dimensions (inches)



Range	Linearity error (% F.S.)	L	X	Total Weight	Spring Force at X	Spring Rate	Inward over-travel	Outward over-travel	Sensitivity (nom)
±0.5"	<± 0.5	5.3"	1.5"	6oz	4.7oz	2.0oz/inch	0.04"	0.51"	0.7V/V
±1"	<± 0.5	6.4"	2.5"	8oz	7.2oz	3.0oz/inch	0.1"	0.39"	0.9V/V
±2"	<± 0.5	10.9"	3.0"	14oz	6oz	1.8oz/inch	0.3"	0.55"	1.5V/V
±3"	<± 0.5	15.3"	4.5"	1.1lb	1lb	3.2oz/inch	0.6"	0.59"	1.5V/V

### Mechanical Characteristics

#### Resolution

Infinite.

#### Residual Null Output

0.1% of full stroke output.

#### Case Material

Stainless steel.

#### Armature Type

Spring Return.

#### Probe Type

Ball end.

### 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 stroke ranges  $\leq \pm 4.0$ ").

#### Temperature Effect on Zero

$\pm 0.005\%/^{\circ}\text{F}$ .

#### Temperature Effect on Span

$\pm 0.005\%/^{\circ}\text{F}$ .

### MODEL IDENTIFICATION

**L L S 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.



ISO 9001/AS9100

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

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