

# Series LYU60X

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



## Description

The Series LYU60X submersible long stroke LVDT is designed specifically for applications requiring displacement measurements while submerged in fresh water or most other non-corrosive liquids and gases for prolonged periods. Pressure ratings range from 145 psi to 3000 psi. The free unguided armature is loose fit in the bore of the LVDT body and is attached to the moving part by a male thread. Precise alignment along the bore produces a frictionless movement. The armature can be separated from the body without disconnecting either part. These LVDT's have stroke ranges from  $\pm 0.5$  inches to  $\pm 8$  inches. These displacement transducers are ruggedly constructed of all stainless steel and are able to withstand harsh underwater environments such as mining, upstream oilfield, geophysical, and industrial processes. This position sensor requires separate signal conditioning and provides optimum performance when powered with between 0.5V and 7V at 5KHz. All Series LYU60X displacement transducers are shipped with traceable calibration certificates.

## Standard Features

- Stroke ranges from  $\pm 0.5$  inches to  $\pm 8$  inches
- Submersible
- AC/AC
- Pressure Ratings of 145 psi to 3000 psi
- Unguided Armature
- Frictionless Movement
- $\pm 0.5\%$  Linearity
- Infinite Resolution
- All Stainless Steel Construction
- Traceable Calibration Certificate

## Optional Features

- Improved Linearity
- Cable and Connector Exits
- Mounting Blocks

## Performance

### Stroke Ranges

$\pm 0.5$  inches to  $\pm 8$  inches

### Linearity

$\pm 0.5\%$  of full stroke max  
 $\pm 0.25\%$  or  $\pm 0.1$  options on some ranges  
 (0.8 to 3.7) Volts/Volt (dependent on stroke) (Refer to dimension table)

### Output (Full scale rms)

### Resolution

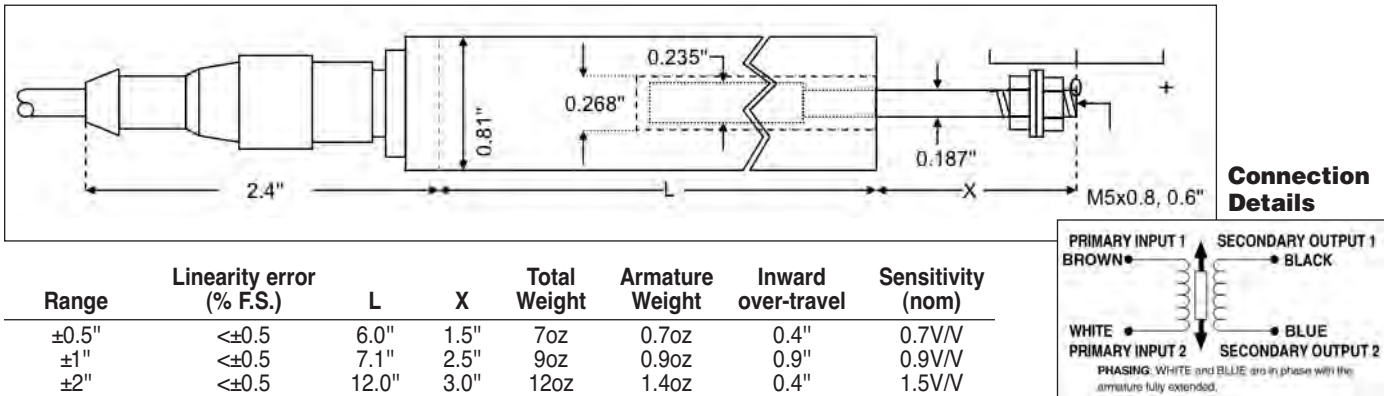
Infinite

LYU60X

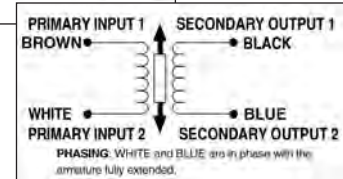
# Series LYU60X Specifications

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

## Dimensions (inches)



Range	Linearity error (% F.S.)	L	X	Total Weight	Armature Weight	Inward over-travel	Sensitivity (nom)
±0.5"	<±0.5	6.0"	1.5"	7oz	0.7oz	0.4"	0.7V/V
±1"	<±0.5	7.1"	2.5"	9oz	0.9oz	0.9"	0.9V/V
±2"	<±0.5	12.0"	3.0"	12oz	1.4oz	0.4"	1.5V/V
±3"	<±0.5	16.5"	4.5"	1lb	2.0oz	0.9"	1.5V/V
±4"	<±0.5	17.8"	5.0"	1lb	2.5oz	0.4"	3.2V/V
±6"	<±0.5	24.9"	7.0"	2lb	3.7oz	0.4"	2.4V/V
±8"	<±0.5	33.8"	10.0"	3lb	5.0oz	1.4"	1.5V/V



## Mechanical Characteristics

**Case Material**  
Stainless steel.

**Armature Type**  
Unguided.

**Probe Thread**  
M5 x 0.8.

## Electrical Characteristics

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

**Output Load (Optimum)**  
100K Ohms.

**Electrical Termination**  
Underwater connector with fitted cable (16 ft.) 145 psi maximum static pressure (standard)  
Axial connector (standard)  
(Consult factory for available optional terminations)

## Environmental Characteristics

**Operating Temperature Range**  
-40°F to +250°F.

**Temperature Effect on Zero**  
±0.006% F.S./°F (typical).

**Temperature Effect on Span**  
±0.006% F.S./°F (typical).

## MODEL IDENTIFICATION

**L Y U 6 0 X**

SERIES

ELECTRICAL TERMINATIONS

Please specify termination required:

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