



ISO 9001/AS9100 Certified

LSU61X

SHORT STROKE LVDT DISPLACEMENT TRANSDUCER,
DC/DC, UNGUIDED ARMATURE

YOUR ENGINEERED SOLUTION SOURCE SM



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 ± 12 Vdc to ± 20 Vdc and utilizes an internal amplifier to generate a ± 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.

PERFORMANCE

STROKE RANGES

± 0.10 inches to ± 0.40 inches

LINEARITY

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

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

STANDARD FEATURES

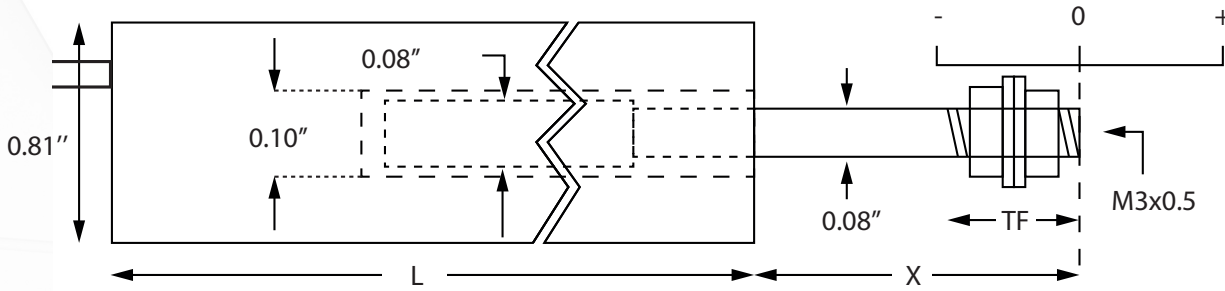
- Stroke ranges from ± 0.10 inches to ± 0.40 inches
- Internal Signal Conditioning
- DC/DC
- Compact Size
- Free Unguided Armature
- Low Friction Bearing Assembly
- $\pm 0.5\%$ Linearity
- All Stainless Steel Construction
- Traceable Calibration Certificate

OPTIONAL FEATURES

- Improved Linearity
- Mounting Blocks



A US Manufacturer of: Pressure, Temperature, Load/
Force/Torque, and Displacement Sensors.



RANGE	LINEARITY ERROR (% F.S.)	L	X	TOTAL WEIGHT	ARMATURE WEIGHT	TF	INWARD OVER-TRAVEL
±0.1"	<± 0.5	2.5"	1.3"	2.6oz	0.05oz	0.7"	0.46"
±0.2"	<± 0.5	2.5"	1.3"	2.6oz	0.06oz	0.7"	0.35"
±0.3"	<± 0.5	2.5"	1.3"	2.6oz	0.06oz	0.7"	0.26"
±0.4"	<± 0.5	2.5"	1.3"	2.6oz	0.07oz	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:

SET-UP	(-) POSITION	(0) POSITION	(+) POSITION
STANDARD			
1	0V	5V	10V(+0%-5%)
2	-5V(+0%-5%)	0V	+5V(+0%-5%)
OPTIONAL			
3	10V(+0%-5%)	5V	0V
4	+5V(+0%-5%)	0V	-5V(+0%-5%)

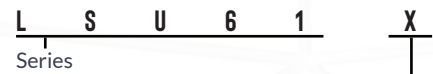
ELECTRICAL CHARACTERISTICS

- SUPPLY VOLTAGE (DUAL)**
±12Vdc to ±20Vdc, 30 mA.
- SUPPLY VOLTAGE (SINGLE)**
24Vdc to 40Vdc (must be floating), 30 mA.
- OUTPUT IMPEDENCE**
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



ELECTRICAL TERMINATIONS

Please specify termination required:

- 1 Axial Cable Exit (Standard)
- 2 Radial Cable Exit (Optional)
- 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.



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Due to the nature of technology, changes are inevitable.
For latest technical specifications, see our website.

CONNECTION DETAILS

Standard

Input Connections		Output Connections	
Dual Supply		1. 0 - 10V	Yellow
+12 to +20V Input	Red	2. ± 5V	Green
-12 to -20V Input	Blue	COMMON	Black
0V Common I/P, O/P	Black		
Instrument Ground	Shield		

Single Supply*			
+24 to +40V Input	Red		
Supply Negative	Blue		
Instrument Ground	Shield		

* SUPPLY MUST BE FULLY FLOATING
OUTPUT COMMON FLOATS AT $V_s/2$

Optional

O/P1 (Nom)	0V	+5V	+10V
O/P2 (Nom)	-5V	0V	+5V

See cal. Cert. for exact figures
INSULATE UNUSED OUTPUT

Note: If only Output 2 (±5V) is required then the supply minimum can be ±10V (dual) or 20V (single)

Optional

Dual Supply		Single Supply*	
+12 to +20V Input	Red	24 to 40V Input (VS)	Red
-12 to -20V Input	Blue	Supply Common	Blue
0V Common I/P, O/P	Black	Output Common**	Black
Output 1 10-0V	Yellow	Output 1 10-0V	Yellow
Output 2 (+/-) 5V	Green	Output 2 (+/-) 5V	Green
Instrument Ground	Shield	Instrument Ground	Shield

Single Supply**			
24 to 40V Input (VS)	Red		
Supply Common	Blue		
Output Common**	Black		
Output 1 10-0V	Yellow		
Output 2 (+/-) 5V	Green		
Instrument Ground	Shield		

* SUPPLY MUST BE FULLY FLOATING
** OUTPUT COMMON FLOATS AT $V_s/2$

Optional

O/P1 (Nom)	+10V	+5V	0V
O/P2 (Nom)	+5V	0V	-5V

See Cal. Cert. for exact figures
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