

Series LYS61X

Submersible Long Stroke LVDT Displacement Transducer,
DC/DC, Spring Armature



Description

The Series LYS61X submersible, long stroke, DC powered 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 LYS61X has an internal spring return armature that fully extends the length of the armature. These units have low-friction, non-rotating ball-ended probes designed to withstand side loads that can occur in many submersible applications. This design is used where it is not possible to connect the transducer armature to the moving part being measured. This position sensor operates 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. 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. All Series LYS61X displacement transducers are shipped with traceable calibration certificates.

Standard Features

- Stroke ranges from ± 0.1 inches to ± 3 inches
- Submersible
- ± 5 Vdc – F.S. output
- Spring Return Armature
- Low Friction Bearing Assembly
- DC/DC
- $\pm 0.5\%$ Linearity
- High Resolution
- Encapsulated Integral Electronics
- Broad Temperature Range
- All Stainless Steel Construction
- Traceable Calibration Certificate

Optional Features

- Improved Linearity
- Cable and Connector Offerings
- Mounting Blocks

Performance

Stroke Ranges

± 0.1 inches to ± 3 inches

Linearity

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

Output Voltage

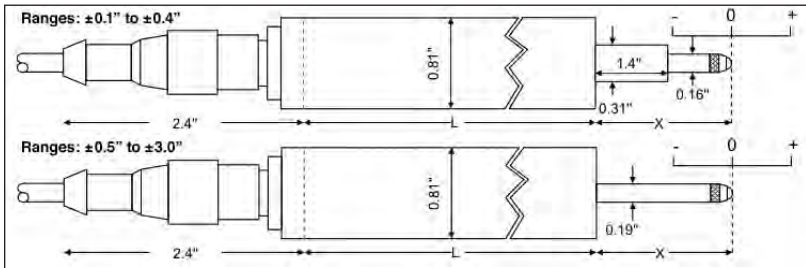
± 5 Vdc

LYS61X

Series LYS61X 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
±0.1"	<±0.5	2.7"	0.5"	5oz	3oz	8.5oz/inch	0.09"	0.06"
±0.2"	<±0.5	2.7"	0.5"	5oz	3oz	7.1oz/inch	0.01"	0.06"
±0.3"	<±0.5	2.7"	0.7"	5oz	5oz	5.8oz/inch	0.1"	0.06"
±0.4"	<±0.5	2.7"	0.9"	5oz	6oz	7.2oz/inch	0.06"	0.06"
±0.5"	<±0.5	8.0"	1.5"	9oz	4.4oz	2.0oz/inch	0.2"	1.1"
±1"	<±0.5	9.1"	2.5"	11oz	7.0oz	2.3oz/inch	0.2"	1.0"
±2"	<±0.5	13.9"	3.0"	15oz	15oz	3.6oz/inch	0.2"	1.1"
±3"	<±0.5	18.5"	4.5"	1.2lb	1lbs	3.2oz/inch	1.1"	1.1"

Mechanical Characteristics

Case Material

Stainless steel.

Armature Type

Spring Return.

Probe

Ball end (standard)

Optional probe tips available.

Pressure Rating

145 psi (standard).

3000 psi (maximum) – depends on cable exit option.

Set-ups

Please Specify Set-up Required:

(-) (0) (+)

Set-up Position Position Position

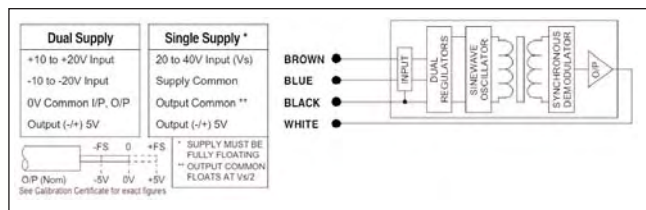
Standard

1	0V	5V	10V(+0%-5%)
2	-5V(+0%-5%)	0V	+5V(+0%-5%)

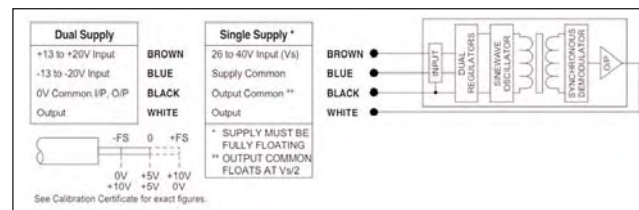
Optional

3	10V(+0%-5%)	5V	0V
4	+5V(+0%-5%)	0V	-5V(+0%-5%)

Connection Details - Standard



Connection Details - Optional



Electrical Characteristics

Supply Voltage (Dual)

±12 to ±20 Vdc, 30 mA.

Supply Voltage (Single)

24Vdc to 40Vdc (must be floating), 30 mA.

Output

±5 Vdc.

Output Impedance

2 Ohms.

Output Load (Optimum)

10K Ohms.

Output Ripple

30mV peak to peak (typical).

Electrical Output Bandwidth

200 Hz.

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

-58°F to +176°F.

Temperature Effect on Zero

±0.006% /°F (typical).

Temperature Effect on Span

±0.017% /°F (typical).

MODEL IDENTIFICATION

L Y S 6 1 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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