

Series LWU60X

Subsea LVDT Displacement Transducer, AC/AC,
Unguided Armature



Description

The Series LWU60X is a submersible LVDT displacement transducer with an unguided armature energized with AC power. These units are specifically designed for use in sea water and other very demanding environments including some corrosive liquids. The LWU60X displacement transducers are made of welded 316 stainless steel and have a thru bore. Because of their heavy duty construction, these units are suitable for the most rigorous applications including 10 years submersible in seawater at a depth of 7500 ft. (2300 m). The armature is loose fit in the bore of the LVDT and is attached to the moving point by a male thread. Non-magnetic fluids enter the armature tube without affecting the operation on the transducer. In addition, this thru-hole design helps overcome the problems of marine growth. This position sensor requires external signal conditioning. All Series LWU60X displacement transducers are shipped with traceable calibration certificates.

Standard Features

- Stroke ranges from ± 0.5 inches to ± 4 inches
- Unguided Armature
- Submersible in Sea Water to 7500 ft.
- AC/AC
- $\pm 1\%$ Linearity
- 316 Stainless Steel Welded Construction
- High Cycle Life
- Traceable Calibration Certificate

Optional Features

- Customer Specified Subsea Connectors

Performance

Stroke Ranges

± 0.5 inches to ± 4.0 inches

Linearity

$\pm 0.5\%$ of full stroke max
 $\pm 1\%$ of full stroke for ± 1 inch range

F.S. Output

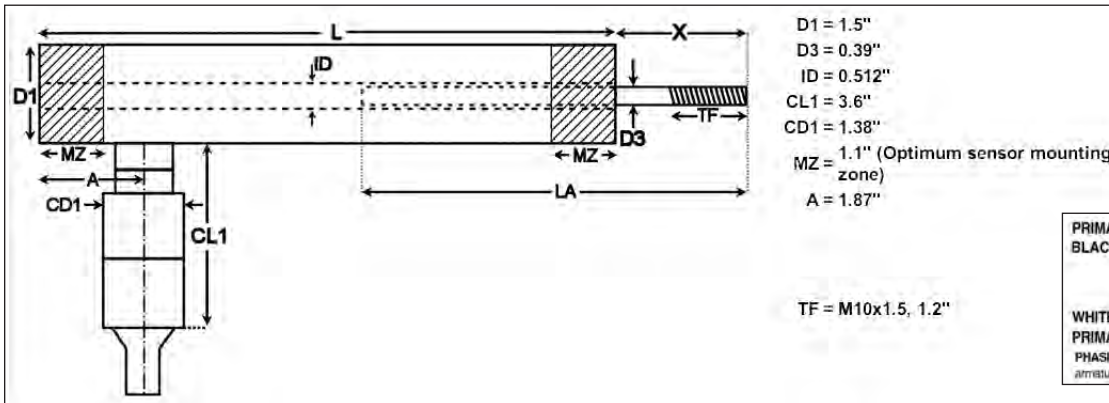
0.8 to 3 volts rms per volt
(dependent of unit)

LWU60X

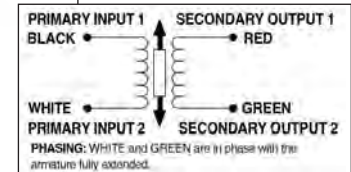
Series LWU60X Specifications

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

Dimensions (inches)



Connection Details



Range	Linearity error (% F.S.)	L	X	LA	Total Weight	Armature Weight	Sensitivity (nom)
±0.5"	<± 0.5	8.8"	2.09"	5.7"	2.3lb	3.2oz	0.3V/V
±1"	<± 1.0	9.9"	2.60"	6.7"	2.6lb	3.5oz	0.4V/V
±2"	<± 0.5	13.6"	3.58"	10.4"	3.6lb	5.6oz	0.3V/V
±3"	<± 0.5	17.1"	4.61"	13.7"	4.1lb	7.4oz	0.5V/V
±4"	<± 0.5	21.1"	5.59"	17.3"	4.5lb	9.2oz	0.7V/V

Mechanical Characteristics

Resolution

Infinite.

Case Material

Stainless steel.

Armature Type

Unguided.

Probe Thread

M10 x 1/5 (1.2 inches long).

Static Pressure

3500 psi (maximum).

Maximum Working Depth

7500 ft. (2300 meters).

Electrical Characteristics

Excitation Supply

1V to 7V rms, 1kHz to 5kHz, sinusoidal.
(Calibrated at 5V rms, 5kHz, sinusoidal).

Impedance

100K Ohms optimum.

Phasing

WHITE and GREEN (see "Connection Details" illustration below) are in phase with the armature fully extended.

Electrical Termination

Polyurethane Shield Cable (6 ft.).
Additional Cable Lengths (available option).
Radial Exit (standard).

Environmental Characteristics

Operating Temperature Range

-40°F to +140°F

Temperature Effect on Zero

±0.006% F.S./°F (typical).

Temperature Effect on Span

±0.017% F.S./°F (typical).

MODEL IDENTIFICATION

L W U 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)
- 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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Due to the nature of technology, changes are inevitable. For latest technical specifications, see our website.

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