

# Series LWU65X

Subsea LVDT Displacement Transducer, DC/DC,  
with 4-20 mA Output, Unguided Armature



## Description

The Series LWU65X is a submersible LVDT displacement transducer with an unguided armature. This DC to DC LVDT incorporates a built-in LVDT amplifier thus enabling a DC supply and 4-20 mA current output. These units are specifically designed for use in sea water and other very demanding environments including some corrosive liquids. The LWU65X 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. All Series LWU65X displacement transducers are shipped with traceable calibration certificates.

## Standard Features

- Stroke ranges from  $\pm 0.5$  inches to  $\pm 4$  inches
- DC/DC
- 4-20 mA Output
- Unguided Armature
- Submersible in Sea Water to 7500 ft.
- $\pm 1\%$  Linearity
- 316 Stainless Steel Welded Construction
- High Cycle Life
- Traceable Calibration Certificate

## Optional Features

- Customer Specified Subsea Connectors
- Customer Specified Cable Lengths

## Performance

### Stroke Ranges

$\pm 0.5$  inches to  $\pm 4.0$  inches

### Linearity

$\pm 0.5\%$  of full stroke max

$\pm 1\%$  of full stroke for  $\pm 1$  inch range

### F.S. Output

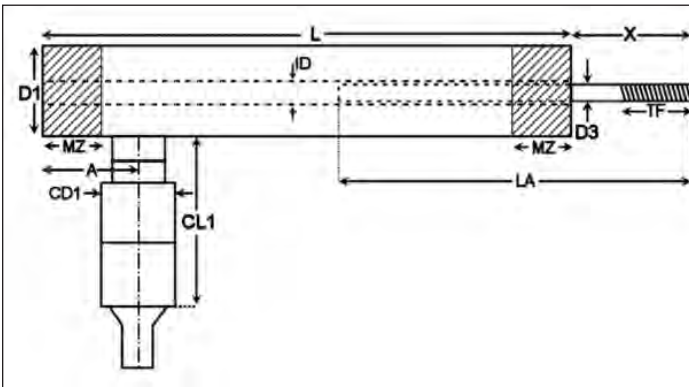
4-20 mA current

LWU65X

# Series LWU65X Specifications

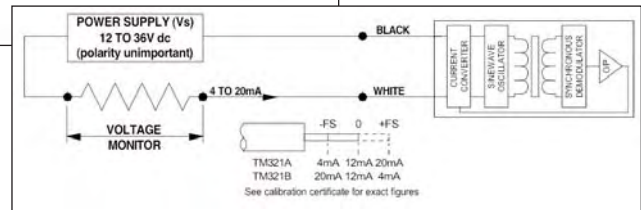
Baseline Configuration Specs Represented.  
Modifications Encouraged - See Below  
Custom Designs Available

## Dimensions (inches)



- A = 1.87"
- CD1 = 1.4"
- CL1 = 3.6"
- D1 = 1.5"
- D3 = 0.39"
- ID = 0.512"
- MZ = 1.1" (Optimum sensor mounting zone)
- TF = M10x1.5, 1.2"

## Connection Details



Range	Linearity error (% F.S.)	L	X	LA	Total Weight	Armature Weight
±0.5"	<± 0.5	8.8"	2.09"	5.7"	2.5lb	3.2oz
±1"	<± 1.0	9.9"	2.60"	6.7"	2.9lb	3.5oz
±2"	<± 0.5	13.6"	3.58"	10.4"	3.9lb	5.6oz
±3"	<± 0.5	17.1"	4.61"	13.7"	4.3lb	7.4oz
±4"	<± 0.5	21.1"	5.59"	17.3"	4.7lb	9.2oz

## Mechanical Characteristics

### 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).

## Set-ups

Please Specify Set-up Required:

Set-up	Position		
	(-)	(0)	(+)
1	4mA	12mA	20mA
2	20mA	12mA	4mA

## Electrical Characteristics

### Excitation / Supply

12 to 36Vdc.

### Loop Resistance (Maximum)

(Supply voltage - 11) x 50 Ohms.

### Output Load

10K Ohms.

### Output Ripple

50  $\mu$ A (peak-to-peak).

### Electrical Output Bandwidth

200 Hz.

### Electrical Termination

Polyurethane Shield Cable (6 ft.).

Additional Cable Lengths (available option).

Radial Exit.

## Environmental Characteristics

### Operating Temperature Range

+14°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 5 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.

Find More Information at:  
[stellartech.com](http://stellartech.com)

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

Email: [info@stellartech.com](mailto:info@stellartech.com)

Copyright © Stellar Technology Incorporated • All Rights Reserved  
Datasheet P/N: 233653A

