Series LLU60X
Long Stroke LVDT Displacement Transducer, AC/AC, Unguided Armature

Description
The Series LLU60X is a high performance long stroke LVDT displacement transducer with an unguided armature energized with AC power. The unguided armature design is a very basic configuration. The armature is loose fit in the bore of the LVDT and is attached to the moving point by a male thread. Precise alignment along the bore produces a frictionless movement. The Series LLU60X is ideal for mechanical vibration measurements. The armature can be separated from the body without disconnecting either part. This position sensor requires separate signal conditioning and provides optimum performance when powered with between 0.5V and 7V at 5KHz. The compact size of the LLU60X series makes it ideal for applications requiring limited space. These displacement transducers are ruggedly constructed of all stainless steel and are able to withstand harsh environments where high ambient temperature and vibration are present. All Series LLU60X displacement transducers are shipped with traceable calibration certificates.

Standard Features
- Stroke ranges from ±0.5 inches to ±8.0 inches
- Unguided Armature
- Frictionless Configuration (Zero Wear)
- AC power
- ±0.5% Linearity
- Broad Temperature Range
- All Stainless Steel Construction
- Traceable Calibration Certificate

Optional Features
- Improved Linearity
- Expanded Operating Temperature Range
- Axial Connector
- Sealing Against Moisture Ingress
- Mounting Blocks

Performance

<table>
<thead>
<tr>
<th>Stroke Ranges</th>
<th>± 0.5 inches to ± 8.0 inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linearity</td>
<td>± 0.5% of full stroke max</td>
</tr>
<tr>
<td></td>
<td>± 0.25% or ± 0.1 options on some ranges</td>
</tr>
<tr>
<td>Output (Full scale rms)</td>
<td>3.2 Volts/Volt</td>
</tr>
<tr>
<td></td>
<td>(dependent on stroke)</td>
</tr>
</tbody>
</table>

Your Application-Solution Source™
Series LLU60X
Specifications

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

Dimensions (inches)

<table>
<thead>
<tr>
<th>Range</th>
<th>Linearity error (% F.S.)</th>
<th>L</th>
<th>X</th>
<th>Total Weight</th>
<th>Armature Weight</th>
<th>TF</th>
<th>Inward over-travel</th>
<th>Sensitivity (nom)</th>
</tr>
</thead>
<tbody>
<tr>
<td>±0.5”</td>
<td>&lt;± 0.5</td>
<td>5.0”</td>
<td>1.7”</td>
<td>6oz</td>
<td>0.6oz</td>
<td>0.6”</td>
<td>0.6”</td>
<td>0.7V/V</td>
</tr>
<tr>
<td>±1”</td>
<td>&lt;± 0.5</td>
<td>6.1”</td>
<td>2.7”</td>
<td>8oz</td>
<td>0.8oz</td>
<td>0.6”</td>
<td>0.9”</td>
<td>0.9V/V</td>
</tr>
<tr>
<td>±2”</td>
<td>&lt;± 0.5</td>
<td>10.6”</td>
<td>3.2”</td>
<td>11oz</td>
<td>1.3oz</td>
<td>0.6”</td>
<td>0.6”</td>
<td>1.5V/V</td>
</tr>
<tr>
<td>±3”</td>
<td>&lt;± 0.5</td>
<td>15.0”</td>
<td>4.7”</td>
<td>1.0lb</td>
<td>1.9oz</td>
<td>0.6”</td>
<td>1.1”</td>
<td>1.5V/V</td>
</tr>
<tr>
<td>±4”</td>
<td>&lt;± 0.5</td>
<td>16.8”</td>
<td>5.2”</td>
<td>1.3lb</td>
<td>2.5oz</td>
<td>0.6”</td>
<td>0.6”</td>
<td>3.2V/V</td>
</tr>
<tr>
<td>±5”</td>
<td>&lt;± 0.5</td>
<td>24.3”</td>
<td>7.2”</td>
<td>1.8lb</td>
<td>3.5oz</td>
<td>0.6”</td>
<td>0.6”</td>
<td>2.4V/V</td>
</tr>
<tr>
<td>±6”</td>
<td>&lt;± 0.5</td>
<td>31.8”</td>
<td>10.2”</td>
<td>2.6lb</td>
<td>4.9oz</td>
<td>1.1”</td>
<td>1.1”</td>
<td>1.5V/V</td>
</tr>
</tbody>
</table>

Electrical Characteristics

Power
AC.

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

Electrical Termination
High Quality Polyurethene Shield Cable (6 ft.)

Phase Shift
10° (Typical).

Output Load (Optimum)
100K Ohms.

Environmental Characteristics

Operating Temperature Range
-60°F to +250°F
(-60°F to +400°F optional for ≤ ±4.0” or below).

Temperature Effect on Zero
±0.005%/°F.

Temperature Effect on Span
±0.005%/°F.

MODEL IDENTIFICATION

L L 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)

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.