**Description**

The Series LLS60X is a high performance long stroke LVDT displacement transducer with a spring return armature energized with AC power. The armature is restrained and guided by a very low friction bearing assembly. An internal spring automatically positions the armature to its full extension. This design is used where it is not possible to connect the transducer armature to the moving part being measured. This position sensor requires separate signal conditioning and provides optimum performance when powered with between 0.5 V and 7V at 5kHz. The compact size of the LLS60X series makes it ideal for applications requiring limited space.

This 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 LLS60X displacement transducers are shipped with traceable calibration certificates.

**Standard Features**
- Stroke ranges from ±0.5 inches to ±3.0 inches
- Spring return armature
- Low friction bearing assembly
- 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**

**Stroke Ranges**

± 0.5 inches to ± 3.0 inches

**Linearity**

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

**Output (Full scale rms)**

1.5 Volts/Volt
(dependent on stroke)
Series LLS60X 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>Spring Force at X</th>
<th>Spring Rate</th>
<th>Inward over-travel</th>
<th>Outward over-travel</th>
<th>Sensitivity (nom)</th>
</tr>
</thead>
<tbody>
<tr>
<td>±0.5&quot;</td>
<td>±0.5</td>
<td>5.3&quot;</td>
<td>1.5&quot;</td>
<td>6oz</td>
<td>4.7oz</td>
<td>2.0oz/inch</td>
<td>0.04&quot;</td>
<td>0.51&quot;</td>
<td>0.7V/V</td>
</tr>
<tr>
<td>±1&quot;</td>
<td>±0.5</td>
<td>6.4&quot;</td>
<td>2.5&quot;</td>
<td>8oz</td>
<td>7.2oz</td>
<td>3.0oz/inch</td>
<td>0.1&quot;</td>
<td>0.59&quot;</td>
<td>0.9V/V</td>
</tr>
<tr>
<td>±2&quot;</td>
<td>±0.5</td>
<td>10.9&quot;</td>
<td>3.0&quot;</td>
<td>14oz</td>
<td>6oz</td>
<td>1.8oz/inch</td>
<td>0.3&quot;</td>
<td>0.55&quot;</td>
<td>1.5V/V</td>
</tr>
<tr>
<td>±3&quot;</td>
<td>±0.5</td>
<td>15.3&quot;</td>
<td>4.5&quot;</td>
<td>1.1lb</td>
<td>1lbs</td>
<td>3.2oz/inch</td>
<td>0.6&quot;</td>
<td>0.59&quot;</td>
<td>1.5V/V</td>
</tr>
</tbody>
</table>

Mechanical Characteristics

Resolution
Infinite.

Residual Null Output
0.1% of full stroke output.

Case Material
Stainless steel.

Armature Type
Spring Return.

Probe Type
Ball end.

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 Polyurethane 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 stroke ranges ≤ ±4.0").

Temperature Effect on Zero
±0.005%/°F.

Temperature Effect on Span
±0.005%/°F.

MODEL IDENTIFICATION

L L S 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)