Series LMS60X
Miniature LVDT Displacement Transducer, AC/AC, Spring Armature

Description
The Series LMS60X is a precision LVDT packaged in a compact size with an internal spring return armature that fully extends the length of the armature. These LVDT’s have low-friction, non-rotating ball-ended probes designed to withstand side loads that can occur in many industrial applications. The body and probe are constructed from stainless steel and the internal windings are fully encapsulated with magnetic shielding allowing them to be clamped into steel housings. 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 0.5V and 7V at 5KHz. The compact size of the LMS60X series makes it ideal for applications requiring limited space. All Series LMS60X displacement transducers are shipped with traceable calibration certificates.

Standard Features
- Stroke ranges from ±0.01 inches to ±0.5 inches
- Miniature Size
- Spring Return Armature
- Low Friction Bearing Assembly
- AC Power
- ±0.5% Linearity
- Broad Temperature Range
- All Stainless Steel Construction
- Traceable Calibration Certificate
- Axial or Radial Cable Exit

Optional Features
- Improved Linearity
- Expanded Operating Temperature Range
- Radiation Resistance to 100 M rads
- Mounting Blocks

Performance

<table>
<thead>
<tr>
<th>Stroke Ranges</th>
<th>± 0.01 inches to ± 0.5 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>38 mV/V to 775 mV/V (dependent on stroke)</td>
</tr>
</tbody>
</table>

Your Application-Solution Source℠
**Series LMS601**

**Specifications**

**Dimensions (inches)**

Ranges: ±0.01” to ±0.04” = 0.31”
Ranges: ±0.1” to ±0.5” = 0.37”

**AXIAL:**

<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>±0.01”</td>
<td>±0.5</td>
<td>1.9”</td>
<td>0.48”</td>
<td>0.4oz</td>
<td>2.1oz</td>
<td>11oz/’inch</td>
<td>0.02”</td>
<td>0.02”</td>
<td>38mV/V</td>
</tr>
<tr>
<td>±0.02”</td>
<td>±0.5</td>
<td>1.9”</td>
<td>0.48”</td>
<td>0.4oz</td>
<td>2.1oz</td>
<td>11oz/’inch</td>
<td>0.01”</td>
<td>0.01”</td>
<td>75mV/V</td>
</tr>
<tr>
<td>±0.04”</td>
<td>±0.5</td>
<td>2.1”</td>
<td>0.52”</td>
<td>0.4oz</td>
<td>1.4oz</td>
<td>11oz/’inch</td>
<td>0.10”</td>
<td>0.01”</td>
<td>150mV/V</td>
</tr>
<tr>
<td>±0.1”</td>
<td>±0.5</td>
<td>2.4”</td>
<td>0.45”</td>
<td>0.9oz</td>
<td>3.1oz</td>
<td>9oz/’inch</td>
<td>0.05”</td>
<td>0.05”</td>
<td>375mV/V</td>
</tr>
<tr>
<td>±0.2”</td>
<td>±0.5</td>
<td>3.1”</td>
<td>0.48”</td>
<td>1.1oz</td>
<td>3.2oz</td>
<td>7oz/’inch</td>
<td>0.04”</td>
<td>0.05”</td>
<td>700mV/V</td>
</tr>
<tr>
<td>±0.3”</td>
<td>±0.5</td>
<td>3.44”</td>
<td>0.60”</td>
<td>1.2oz</td>
<td>4oz</td>
<td>6oz/’inch</td>
<td>0.04”</td>
<td>0.05”</td>
<td>502mV/V</td>
</tr>
<tr>
<td>±0.4”</td>
<td>±0.5</td>
<td>3.88”</td>
<td>0.75”</td>
<td>1.4oz</td>
<td>5oz</td>
<td>4oz/’inch</td>
<td>0.10”</td>
<td>0.05”</td>
<td>576mV/V</td>
</tr>
<tr>
<td>±0.5”</td>
<td>±0.5</td>
<td>4.76”</td>
<td>0.85”</td>
<td>1.7oz</td>
<td>4.9oz</td>
<td>4oz/’inch</td>
<td>0.1”</td>
<td>0.05”</td>
<td>775mV/V</td>
</tr>
</tbody>
</table>

**Electrical Characteristics**

**Excitation Supply**
0.5V to 7V rms, 2kHz to 10kHz, sinusoidal.
(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**
-4°F to +257°F.

**Temperature Effect on Zero**
±0.006%/°F (typical).

**Temperature Effect on Span**
±0.006%/°F (typical).

**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.

**Connection Details**

**ELECTRICAL TERMINATIONS**

Please specify termination required:
X = 1 Axial Cable Exit (Standard)
2 Radial Cable Exit (Optional)

**Copyright © 2015 LORD Corporation • All Rights Reserved**

Datasheet P/N: 233625B DCN 9338

237 Commerce Drive • Amherst, NY 14228 • USA
Tel: 716.250.1900 • Fax: 716.250.1909
Web: stellartech.com • Email: info@stellartech.com

Due to the nature of technology, changes are inevitable. For latest technical specifications, see our website.
Series LMS602
Specifications

Dimensions (inches)

Ranges: ±0.01” to ±0.04” = 0.31”
Ranges: ±0.1” to ±0.5” = 0.37”

RADIAL:

<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>±0.01”</td>
<td>±0.5</td>
<td>2.0”</td>
<td>0.48”</td>
<td>0.4oz</td>
<td>2.1oz</td>
<td>11oz/inch</td>
<td>0.02”</td>
<td>0.02”</td>
<td>38mV/V</td>
</tr>
<tr>
<td>±0.02”</td>
<td>±0.5</td>
<td>2.0”</td>
<td>0.48”</td>
<td>0.4oz</td>
<td>2.1oz</td>
<td>11oz/inch</td>
<td>0.01”</td>
<td>0.01”</td>
<td>75mV/V</td>
</tr>
<tr>
<td>±0.04”</td>
<td>±0.5</td>
<td>2.1”</td>
<td>0.52”</td>
<td>0.4oz</td>
<td>1.4oz</td>
<td>11oz/inch</td>
<td>0.10”</td>
<td>0.01”</td>
<td>150mV/V</td>
</tr>
<tr>
<td>±0.1”</td>
<td>±0.5</td>
<td>2.5”</td>
<td>0.45”</td>
<td>0.9oz</td>
<td>3.1oz</td>
<td>9oz/inch</td>
<td>0.05”</td>
<td>0.05”</td>
<td>375mV/V</td>
</tr>
<tr>
<td>±0.2”</td>
<td>±0.5</td>
<td>3.3”</td>
<td>0.48”</td>
<td>1.1oz</td>
<td>3.2oz</td>
<td>7oz/inch</td>
<td>0.04”</td>
<td>0.05”</td>
<td>700mV/V</td>
</tr>
<tr>
<td>±0.3’</td>
<td>±0.5</td>
<td>3.5’</td>
<td>0.60”</td>
<td>1.2oz</td>
<td>4oz</td>
<td>6oz/inch</td>
<td>0.04”</td>
<td>0.05”</td>
<td>502mV/V</td>
</tr>
<tr>
<td>±0.4’</td>
<td>±0.5</td>
<td>4.0”</td>
<td>0.75”</td>
<td>1.4oz</td>
<td>5oz</td>
<td>4oz/inch</td>
<td>0.10”</td>
<td>0.05”</td>
<td>576mV/V</td>
</tr>
<tr>
<td>±0.5’</td>
<td>±0.5</td>
<td>4.8”</td>
<td>0.85”</td>
<td>1.7oz</td>
<td>4.9oz</td>
<td>4oz/inch</td>
<td>0.1”</td>
<td>0.05”</td>
<td>775mV/V</td>
</tr>
</tbody>
</table>

Electrical Characteristics

Excitation Supply
0.5V to 7V rms, 2kHz to 10kHz, sinusoidal.
(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
-4°F to +257°F.

Temperature Effect on Zero
±0.006%/°F (typical).

Temperature Effect on Span
±0.006%/°F (typical).

Model Identification

<table>
<thead>
<tr>
<th>L</th>
<th>M</th>
<th>S</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>0</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

SERIES

Electrical Terminations
Please specify termination required:
X = 1 Axial Cable Exit (Optional)
2 Radial Cable Exit (Standard)

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.