The UniMeasure LX-PA Series linear position transducer with analog output is a low cost, compact alternative for use in light to moderate duty applications in dry environments. The plastic bodied device is ideal for high volume OEM situations where cost is a major consideration and in applications where small size or low weight are of paramount importance. Model LX-PA is available in eleven different measurement ranges with a maximum range of 50" (1250 mm). The output is voltage from a potentiometric voltage divider circuit. In the basic configuration, the electrical connections are made directly to the contacts on the potentiometer of the unit. Electrical cable and a cover for the potentiometer are optionally available. Standard potentiometer value is 1K ohm with optional values of 5K and 10K ohm available.

**SPECIFICATIONS**

**GENERAL**
- Measurement Ranges: See Table 1
- Sensing Device: Precision Potentiometer
- Resolution: Essentially Infinite
- Linearity:
  - 2", 2.8", 3.8", 4.7" ranges: ±1.0% Full Scale
  - 10" to 25" ranges: ±0.5% Full Scale
  - 30" to 50" ranges: ±0.25% Full Scale
- Repeatability: ±0.03% Full Scale
- Construction: Thermoplastic Body
- Cable: 0.016 (0.4 mm) Jacketed Stainless Steel
- Wire Rope Tension: See Table 1
- Weight: 3 oz. (85 gm)
- Connections: Solder terminals
- Dimensional Information: See Supplemental Data
- Life:
  - Ranges to 4.7": 1,000,000 full stroke cycles
  - Ranges 10" to 25": 250,000 full stroke cycles
  - Ranges 30" to 50": 125,000 full stroke cycles

**ENVIRONMENTAL**
- Operating Temperature: -25°C to 75°C
- Storage Temperature: -50°C to 80°C
- Operating Humidity: 95% R.H. max. non-condensing
- Vibration: 15 G's 0.1 ms max.
- Shock: 50 G's 0.1 ms max.
- Ingress Protection: IP-40 (NEMA 1)

**ELECTRICAL**
- Input Impedance: 1000 ±15%
- Output Impedance: 0 to 1000 Ω
- Excitation Voltage: 30 Volts max. AC or DC

**TABLE 1**

<table>
<thead>
<tr>
<th>RANGE</th>
<th>NOMINAL OUTPUT AT 1 VDC INPUT VOLTAGE (volts)</th>
<th>NOMINAL WIRE ROPE TENSION (oz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2&quot;</td>
<td>30 Volts max. AC or DC</td>
<td>1.3</td>
</tr>
<tr>
<td>2.8&quot;</td>
<td>25 Volts max. AC or DC</td>
<td>1.9</td>
</tr>
<tr>
<td>3.8&quot;</td>
<td>20 Volts max. AC or DC</td>
<td>2.2</td>
</tr>
<tr>
<td>4.7&quot;</td>
<td>15 Volts max. AC or DC</td>
<td>2.6</td>
</tr>
<tr>
<td>10&quot;</td>
<td>10 Volts max. AC or DC</td>
<td>3.0</td>
</tr>
<tr>
<td>15&quot;</td>
<td>8 Volts max. AC or DC</td>
<td>3.5</td>
</tr>
<tr>
<td>20&quot;</td>
<td>6 Volts max. AC or DC</td>
<td>4.0</td>
</tr>
<tr>
<td>25&quot;</td>
<td>5 Volts max. AC or DC</td>
<td>4.4</td>
</tr>
<tr>
<td>30&quot;</td>
<td>4 Volts max. AC or DC</td>
<td>5.0</td>
</tr>
<tr>
<td>35&quot;</td>
<td>3 Volts max. AC or DC</td>
<td>6.0</td>
</tr>
<tr>
<td>40&quot;</td>
<td>2 Volts max. AC or DC</td>
<td>8.0</td>
</tr>
<tr>
<td>50&quot;</td>
<td>1 Volt max. AC or DC</td>
<td>10.0</td>
</tr>
</tbody>
</table>

**MODEL NUMBER CONFIGURATION**

**LX-PA-**

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

**1. WIRE ROPE**
- 0: Unshielded
- 1: 0.016 (0.4 mm) Stainless Steel
- 2: 0.016 (0.4 mm) Stainless Steel
- 3: 0.016 (0.4 mm) Stainless Steel
- 4: 0.016 (0.4 mm) Stainless Steel
- 5: 0.016 (0.4 mm) Stainless Steel
- 6: 0.016 (0.4 mm) Stainless Steel

**2. POTentiOMETER VALUE**
- 1: 1K ohm
- 2: 5K ohm
- 3: 10K ohm

**3. COVER & ELECTRICAL CONNECTION LOCATION**
- X: No Cover
- Y: Cover, w/ Electrical Exit Location 1
- Z: Cover, w/ Electrical Exit Location 2
- AA: Cover, w/ Electrical Exit Location 3
- BB: Cover, w/ Electrical Exit Location 4

**4. ELECTRICAL CABLE**
- N: No Electrical Cable
- O: 150 mm (6") signal
- P: 1 m (3')
- Q: 2 m (6.5')
- R: 3 m (10')
- S: 4 m (13.5')
- T: 5 m (16.5')

**5. ELECTRICAL**
- Input Impedance: 1000 ±15%
- Output Impedance: 0 to 1000 Ω
- Excitation Voltage: 30 Volts max. AC or DC

**BASIC CONFIGURATION (FOR ALL RANGES)**

**LX-PA-50-N1N-NNN**

**6. CONNECTOR**
- X: No Connector
- Y: Cable to Cable Connector
- Z: Cable to Cable Connector
- A: Cable to Mating Connector
- B: Cable to Transducer
- C: Cable to Mating Connector
- D: Cable to Transducer

For option “K”, electrical cable with mating connector may be ordered separately as item number 10248-xM, where “x” is the required length in meters. Options only apply when electrical cable is selected.

PM Instrumentation | 59 rue Emile Deschanel | F-92400 Courbevoie | France
+33(0) 46 91 93 32 | contact@pm-instrumentation.com | www.pm-instrumentation.com
**DIMENSIONAL INFORMATION**

**LX-PA Series**

<table>
<thead>
<tr>
<th>RANGE</th>
<th>DIM &quot;A&quot; (inch)</th>
<th>DIM &quot;A&quot; (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2&quot;, 10&quot;</td>
<td>1.01</td>
<td>25.7</td>
</tr>
<tr>
<td>2.8&quot;, 15&quot;, 30&quot;</td>
<td>1.14</td>
<td>29.0</td>
</tr>
<tr>
<td>3.8&quot;, 20&quot;, 40&quot;</td>
<td>1.30</td>
<td>33.0</td>
</tr>
<tr>
<td>4.7&quot;, 25&quot;, 50&quot;</td>
<td>1.46</td>
<td>37.1</td>
</tr>
</tbody>
</table>

Dimensions in brackets are millimeters.

**ACCESSORIES**

**10346 – RIGHT ANGLE MOUNTING BRACKET**

The Right Angle Mounting Bracket serves as a base for mounting the LX transducer perpendicular to a surface. The transducer may be mounted in any of four different wire rope exit orientations when mounted on the outside of the bracket (see figure) or any of three orientations when placed above the bracket mounting holes.

ORDER MODEL NUMBER: 10346

**10156 – TWO AXIS SWIVEL BASE**

With a capability of 360° rotation about the vertical axis and 245° rotation about the horizontal axis, the 10156 Two Axis Swivel Base allows easy setup of the LX-PA or the LX-EP transducer. The axes may be locked in place after the transducer is oriented. Ideal for quick setups.

ORDER MODEL NUMBER: 10156

**10067 – AUXILIARY WIRE ROPE EXTENSION KIT**

The auxiliary wire rope extension may be used to facilitate mounting the transducer remotely from the measurement point. The clip on the extension attaches to the eye fitting on the transducer. The eye fitting on the opposite end, which is identical to the fitting on the transducer, mounts to the moving element. The extension kit is also available with the clip end unterminated for situations where it is more convenient to size the wire rope length during installation. Clip and crimp fitting are included with the unterminated version.

ORDER MODEL NUMBER: 10067

Dimensions in brackets are millimeters.
The UniMeasure LX-EP Series linear position transducer with digital output is a low cost, compact device for use in light to moderate duty applications in dry environments. The plastic bodied device is ideal for high volume OEM situations where cost is a major consideration and in applications where small size or low weight are of paramount importance. The sensing element in the LX-EP is an optical incremental encoder with electrical outputs consisting of two square wave, TTL level output channels in quadrature. Each output channel is open collector, current sinking with an internal 5.4K pullup resistor.

The electrical connection to the LX-EP is a common configuration with five pins of .025" (.64 mm) square pins on .100" (2.54 mm) centers. An accessory electrical cable offered in various lengths is available.

**SPECIFICATIONS**

**GENERAL**
- Measurement Ranges: See Table 2
- Sensing Device: Incremental Optical Encoder
- Resolution: See Table 2
- Linearity: ±.010% of Full Scale
- Repeatability: ±.015% of Full Scale
- Construction: Thermoplastic Body
- Wire Rope: Ø.018 (0.46 mm) Jacketed Stainless Steel
- Wire Rope Tension: See Table 2
- Weight: 3 oz. (85 gm)
- Connector: 0.025" (0.64 mm) square pins on 0.100" (2.54 mm) centers
- Dimensional Information: See Supplemental Data
- Life: Ranges 10" to 25"...2,000,000 full stroke cycles
- Ranges 30" to 50"...1,000,000 full stroke cycles

**ENVIRONMENTAL**
- Operating Temperature: -40°C to 75°C
- Storage Temperature: -40°C to 85°C
- Operating Humidity: 95% R.H. max. non-condensing
- Vibration: ±.50G
- Shock: ±50G
- Ingress Protection: IP-40 (NEMA 1)

**FOOTNOTES TO SPECIFICATIONS**
1. Supplemental Data section located at end of LX Series pages.
2. Resolution shown is for times one counting mode. Resolution may be increased by a factor of four with interface electronics capable of quadrature times 4 counting mode.
3. Resolution shown is a calculation based upon the capstan diameter, wire rope diameter and line count of the encoding device. Tolerance on resolution accounts for resolutional differences from unit to unit due to manufacturing tolerances on the capstan and wire rope. In practice, the output count in a given unit of travel is an integer.

**TABLE 2**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>RANGE (mm)</th>
<th>RESOLUTION (counts/mm)</th>
<th>RESOLUTION TOLERANCE %</th>
<th>NOMINAL WIRE ROPE TENSION (oz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LX-EP-10</td>
<td>10-100</td>
<td>113.5, 4.46</td>
<td>±.50%</td>
<td>16</td>
</tr>
<tr>
<td>LX-EP-15</td>
<td>15-150</td>
<td>82.5, 3.25</td>
<td>±.35%</td>
<td>10</td>
</tr>
<tr>
<td>LX-EP-20</td>
<td>20-200</td>
<td>62.3, 2.45</td>
<td>±.35%</td>
<td>8</td>
</tr>
<tr>
<td>LX-EP-25</td>
<td>25-250</td>
<td>50.4, 1.98</td>
<td>±.35%</td>
<td>6</td>
</tr>
<tr>
<td>LX-EP-30</td>
<td>30-300</td>
<td>82.5, 3.25</td>
<td>±.35%</td>
<td>10</td>
</tr>
<tr>
<td>LX-EP-40</td>
<td>40-400</td>
<td>62.3, 2.45</td>
<td>±.35%</td>
<td>8</td>
</tr>
<tr>
<td>LX-EP-50</td>
<td>50-500</td>
<td>50.4, 1.98</td>
<td>±.35%</td>
<td>6</td>
</tr>
</tbody>
</table>

**MODEL NUMBER CONFIGURATION**

**LX-EP-**

<table>
<thead>
<tr>
<th>RANGE</th>
<th>DIM &quot;L&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-100</td>
<td>1 m (3 ft)</td>
</tr>
<tr>
<td>15-150</td>
<td>2 m (6.5 ft)</td>
</tr>
<tr>
<td>20-200</td>
<td>3 m (10 ft)</td>
</tr>
<tr>
<td>25-250</td>
<td>4 m (13.5 ft)</td>
</tr>
<tr>
<td>30-300</td>
<td>5 m (16.5 ft)</td>
</tr>
</tbody>
</table>

**ACCESSORY—10172 ELECTRICAL CABLE (LX-EP ONLY)**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Dim &quot;L&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>10172-1M</td>
<td>1 m (3 ft)</td>
</tr>
<tr>
<td>10172-2M</td>
<td>2 m (6.5 ft)</td>
</tr>
<tr>
<td>10172-3M</td>
<td>3 m (10 ft)</td>
</tr>
<tr>
<td>10172-4M</td>
<td>4 m (13.5 ft)</td>
</tr>
<tr>
<td>10172-5M</td>
<td>5 m (16.5 ft)</td>
</tr>
</tbody>
</table>

**WIRE COLOR CODE**
- GND to BLK
- NC
- chA to WHt
- +Vin to RED
- chB to GRN
LX-EP
Low-Cost Digital Output - High Accuracy

DIMENSIONAL INFORMATION

LX-EP Series

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ACCESSORIES

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ORDER MODEL NUMBER: 10346

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With a capability of 360° rotation about the vertical axis and 245° rotation about the horizontal axis, the 10156 Two Axis Swivel Base allows easy setup of the LX-PA or the LX-EP transducer. The axes may be locked in place after the transducer is oriented. Ideal for quick setups.

ORDER MODEL NUMBER: 10156

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ORDER MODEL NUMBER: 10067

10067- -CM-

1. DIMENSION "L"
   Specify Dimension "L" in centimeters to the nearest whole centimeter.

2. UNTERMINATED CLIP END
   Specify the wire rope length required. Specify "CLIP END" if the clip is required. The clip and crimp sleeve are included in the kit.

"L" = 0.3 cm (0.12")

Dimensions in brackets are millimeters.
LX Series
COMPACT, LOW COST

Featuring:

- Low Cost
- Lightweight
- Thermoplastic Case
- Analog or Digital Output
- Non-Critical Alignment
- Infinite Resolution
- Easy Installation
- Compact Size
- 50” (1250 mm) Max. Range
- 11 Measurement Ranges