

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 0.018 (0.46 mm) Jacketed Stainless Steel
- Wire Rope Tension See Table 1
- Weight 3 oz. (85 gm)
- Connections Solder terminals
- Dimensional Information See Supplemental Data⁽¹⁾
- 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 Ω ±15%
- Output Impedance 0 to 1000 Ω
- Excitation Voltage 30 Volts max. AC or DC

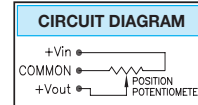


TABLE 1

MODEL	RANGE		NOMINAL OUTPUT ⁽²⁾ AT 1 VDC INPUT VOLTAGE		NOMINAL WIRE ROPE TENSION	
	(inch)	(mm)	(mV/in)	(mV/mm)	(oz)	(N)
LX-PA-2	2	50	469	18.5	16	4.4
LX-PA-2.8	2.8	70	341	13.4	10	2.8
LX-PA-3.8	3.8	96	258	10.1	8	2.2
LX-PA-4.7	4.7	120	207	8.1	6	1.7
LX-PA-10	10	250	88	3.5	16	4.4
LX-PA-15	15	380	64	2.5	10	2.8
LX-PA-20	20	500	49	1.9	8	2.2
LX-PA-25	25	625	39	1.5	6	1.7
LX-PA-30	30	750	32	1.3	10	2.8
LX-PA-40	40	1000	24	1.0	8	2.2
LX-PA-50	50	1250	20	0.8	6	1.7

FOOTNOTES TO SPECIFICATIONS

1. Supplemental Data section located at end of LX Series pages.
2. To Calculate nominal output in application, multiply nominal output shown by excitation voltage of application.

MODEL NUMBER CONFIGURATION

LX-PA- 0 1 2 3 4 5 6

BASIC CONFIGURATION (FOR ALL RANGES)

LX-PA-50-N1N-NNN

- 0 RANGE**
- 2 2" (50 mm)
 - 2.8 2.8" (70 mm)
 - 3.8 3.8" (96 mm)
 - 4.7 4.7" (120 mm)
 - 10 10" (250 mm)
 - 15 15" (390 mm)
 - 20 20" (500 mm)
 - 25 25" (640 mm)
 - 30 30" (750 mm)
 - 40 40" (1000 mm)
 - 50 50" (1250 mm)

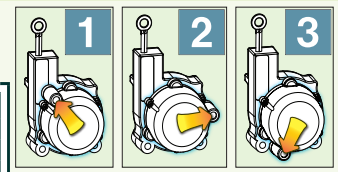
- 1 WIRE ROPE**
- N 0.018 (0.45 mm) Nylon Jacketed Stainless Steel
 - S 0.016 (0.4 mm) Stainless Steel

- 2 POTENTIOMETER VALUE**
- 1 1K ohm
 - 3 5K ohm
 - 4 10K ohm

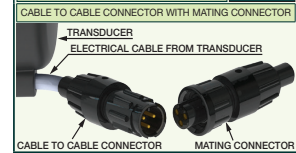
- 3 N Required Designator**

- 4 COVER & ELECTRICAL CONNECTION LOCATION**
- N No Cover
 - 1 Cover, w/ Electrical Exit Location 1
 - 2 Cover, w/ Electrical Exit Location 2
 - 3 Cover, w/ Electrical Exit Location 3
- 5 ELECTRICAL CABLE**
- N No Electrical Cable
 - P 150 mm (6") pigtail
 - 1 1 m (3')
 - 2 2 m (6.5')
 - 3 3 m (10')
 - 4 4 m (13.5')
 - 5 5 m (16.5')

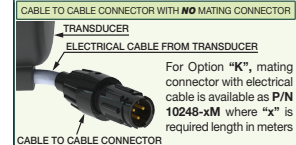
- 6 CONNECTOR**
- N No Connector
 - C Cable to Cable Connector w/ Mating Connector, See **FIG A**
 - K Cable to Cable Connector w/ NO Mating Connector, See **FIG B**
- For option "K", electrical cable with mating connector may be ordered separately as item number **10248-xM**, where "x" is the required length in meters.
1. "C" and "K" options only apply when electrical cable is selected.
 2. Cable to cable connector does not connect cable shield/drain wire.



CONNECTOR OPTION "C" FIG A

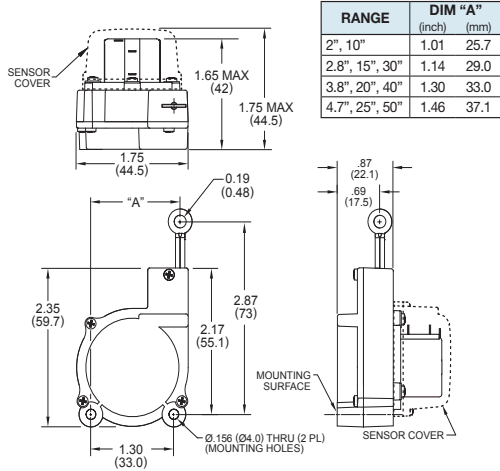


CONNECTOR OPTION "K" FIG B



DIMENSIONAL INFORMATION

LX-PA Series



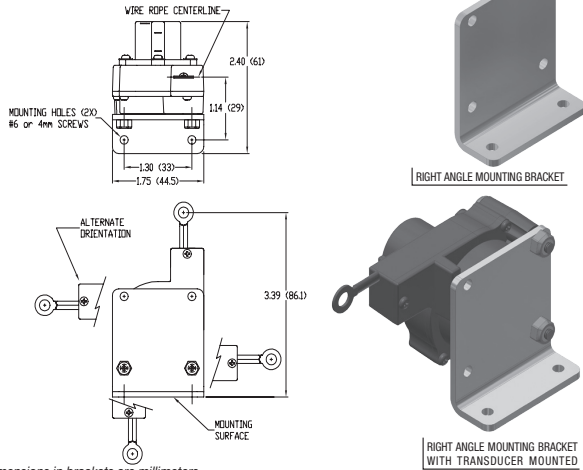
Dimensions in brackets are millimeters

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.

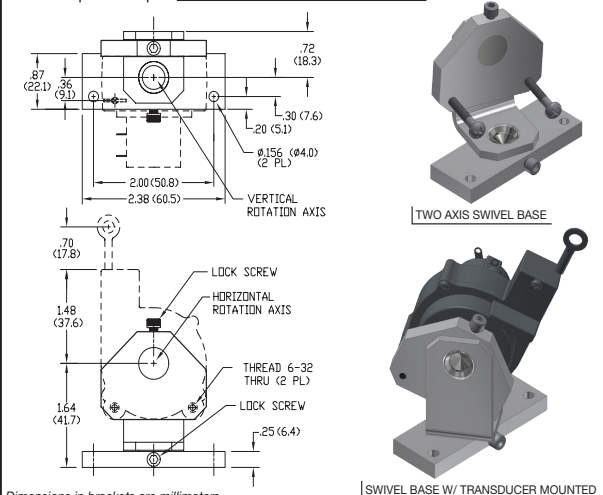
ORDER MODEL NUMBER: 10346



Dimensions in brackets are millimeters

10156 - TWO AXIS SWIVEL BASE

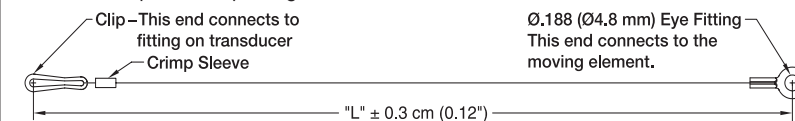
With a capability of 360° rotation about the vertical axis and 245° rotation about the horizontal axis, the 10156 Two Axis Swivel Base allows easy setup of the LX-PA or the LX-EP transducer. The axes may be locked in place after the transducer is oriented. Ideal for quick setups. **ORDER MODEL NUMBER: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



Dimensions in brackets are millimeters

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.



10067- -CM-

- DIMENSION "L"**
Specify Dimension "L" in centimeters to the nearest whole centimeter
NOTES: 1. 1 cm = 0.394", 1 inch = 2.54 cm
2. Shortest length "L" is 5 cm (approximately 2")
- UNTERMINATED CLIP END**
Leave Blank... Completed kit (No designator required)
U Unterminated Clip End (clip and crimp sleeve included in kit)

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 5.4KΩ pullup resistor. The electrical connection to the LX-EP is a common configuration with five pins of .025" (.64 mm) square shape on .100" (2.54 mm) centers. An accessory electrical cable offered in various lengths is available.



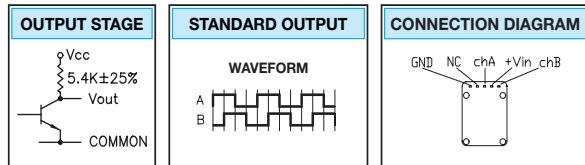
SPECIFICATIONS

GENERAL

Measurement Ranges See Table 2
 Sensing Device.....Incremental Optical Encoder
 Resolution See Table 2
 Linearity±0.10% of Full Scale
 Repeatability.....±0.015% of Full Scale
 Construction.....Thermoplastic Body
 Wire Rope.....0.018 (0.46 mm) Jacketed Stainless Steel
 Wire Rope Tension See Table 2
 Weight3 oz. (85 gm)
 Connector.....0.025" (0.64 mm) square pins on 0.100" (2.54 mm) Centers
 Dimensional Information..... See Supplemental Data⁽¹⁾
 Life
 Ranges 10" to 25"2,000,000 full stroke cycles
 Ranges 30" to 50"1,000,000 full stroke cycles

ELECTRICAL

Excitation Voltage.....5.00 ± 0.25 VDC
 Excitation Current.....30 mA max.
 OutputTwo channel square wave in quadrature,
 TTL level current sinking with 5.4KΩ pullups



ENVIRONMENTAL

Operating Temperature.....-40°C to 75°C
 Storage Temperature.....-40°C to 85°C
 Operating Humidity95% R.H. max. non-condensing
 Vibration5G
 Shock50G
 Ingress ProtectionIP-40 (NEMA 1)

FOOTNOTES TO SPECIFICATIONS

- Supplemental Data section located at end of LX Series pages.
- 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.
- 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 resolution 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

MODEL	RANGE		RESOLUTION ^[2]		RESOLUTION TOLERANCE ^[3]	NOMINAL WIRE ROPE TENSION	
	(inch)	(mm)	counts/inch	counts/mm		(oz)	(N)
LX-EP-10	10	250	113.5	4.46	±.50%	16	4.4
LX-EP-15	15	380	82.5	3.25	±.35%	10	2.8
LX-EP-20	20	500	62.3	2.45	±.35%	8	2.2
LX-EP-25	25	625	50.4	1.98	±.35%	6	1.7
LX-EP-30	30	750	82.5	3.25	±.35%	10	2.8
LX-EP-40	40	1000	62.3	2.45	±.35%	8	2.2
LX-EP-50	50	1250	50.4	1.98	±.35%	6	1.7

MODEL NUMBER CONFIGURATION

LX-EP-

0

BASIC CONFIGURATION (FOR ALL RANGES)

LX-EP-50

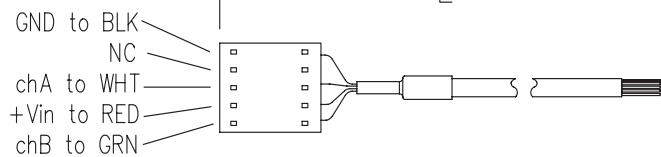
0	RANGE
10	10" (250 mm)
15	15" (390 mm)
20	20" (500 mm)
25	25" (640 mm)
30	30" (750 mm)
40	40" (1000 mm)
50	50" (1250 mm)

Note: For mating connector with electrical cable see Accessory 10172.

ACCESSORY-10172 ELECTRICAL CABLE (LX-EP ONLY)

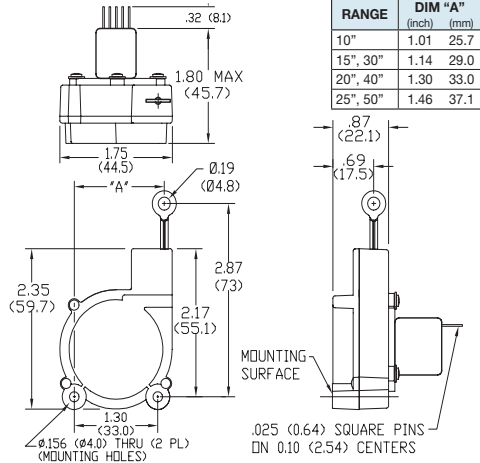
Part No.	Dim "L"
10172-1M	1 m (3 ft)
10172-2M	2 m (6.5 ft)
10172-3M	3 m (10 ft)
10172-4M	4 m (13.5 ft)
10172-5M	5 m (16.5 ft)

WIRE COLOR CODE



DIMENSIONAL INFORMATION

LX-EP Series



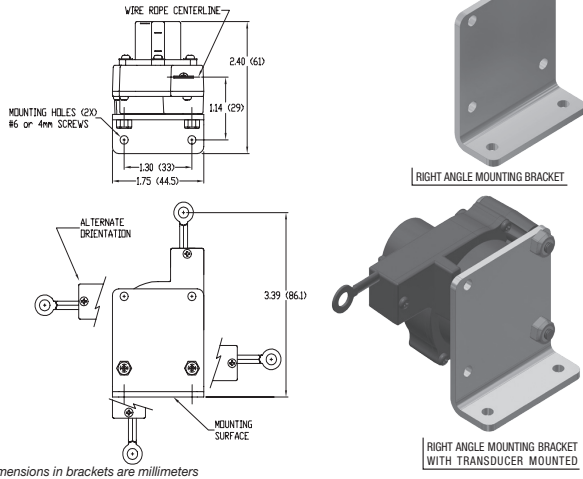
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ACCESSORIES

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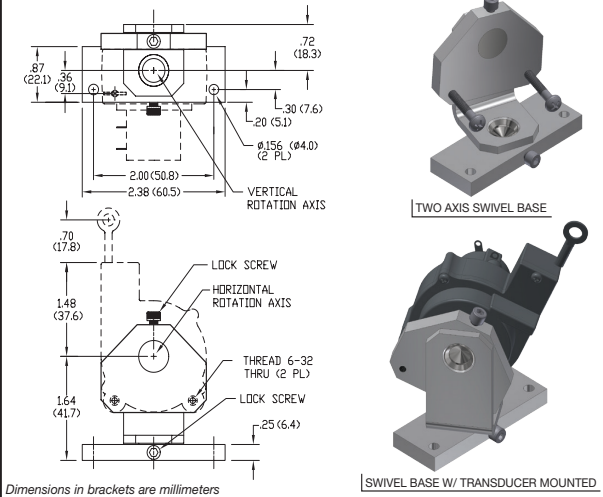
ORDER MODEL NUMBER: 10346



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10156 - TWO AXIS SWIVEL BASE

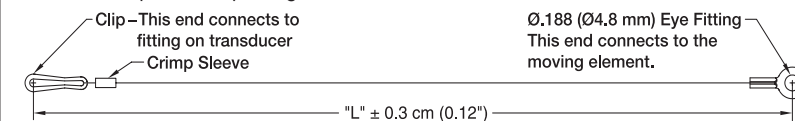
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10067- -CM- -

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2. Shortest length "L" is 5 cm (approximately 2")
- 2 UNTERMINATED CLIP END**
Leave Blank.... Completed kit (No designator required)
U..... Unterminated Clip End (clip and crimp sleeve included in kit)

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

