



# MT2E1

## Cable-Actuated Position Sensor

Incremental Encoder Output • Test Applications

Compact String Pot • 0-30 & 0-50 inch Stroke Range Options

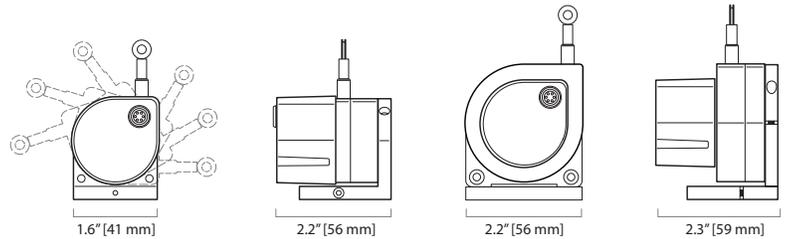
Dual Axis 360° Mounting Bracket

Drop and Crash Test Applications

Aluminum & Polycarbonate Enclosure

The MT2E1 is the encoder-based member of our family of rugged, accurate miniature cable-actuated position transducers. The MT2E1 features a highly-tensioned heavy-duty measuring cable that was designed for the high-acceleration demands encountered in drop testing and automotive crash tests.

The MT2E1 was designed with 2-axis 360° rotation in its mounting bracket which allows for fast and simple installation in any direction.



30 inch

50 inch

### GENERAL

**Full Stroke Range Options**

0-30, 0-50 inches

**Output Signal**

incremental encoder

**Accuracy**

0.04% full stroke

**Repeatability**

± 0.02% full stroke

**Resolution:**

**30-inch Range**

316 ± 5 pulses per inch

**50-inch Range**

188 ± 2 pulses per inch

**Measuring Cable**

Ø.019-in. nylon-coated stainless steel

**Enclosure Material**

anodized aluminum

**Sensor Cover Options**

polycarbonate and aluminum

**Sensor**

optical incremental encoder

**Weight, 30-inch**

0.5 lb. max.

**Weight, 50-inch**

1.0 lb. max.

### ELECTRICAL

**Input Voltage,  $V_{in}$**

5 - 26 VDC

**Input Current**

50 mA (max, no load)

**Output Driver**

push-pull (sink/source, 20mA max.)

**Output Voltage,  $V_{out}$**

$V_{out} = V_{in}$

**Mating Plug**

LEMO FGG.OB.304.CLAD52

### MECHANICAL

**Measuring Cable Tension**

see ordering information

**Maximum Acceleration**

see ordering information

### ENVIRONMENTAL

**Operating Temperature**

-32° to 158° F (0° to 70°C)

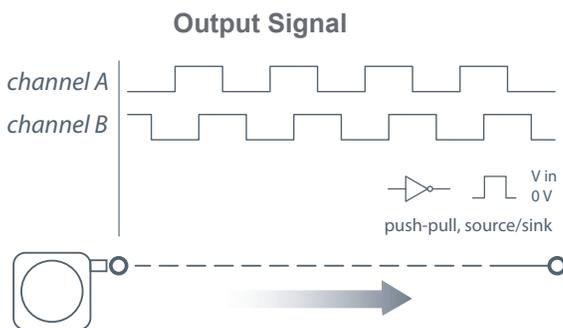


Fig. 1 - Outline Drawing, 30-inch range:

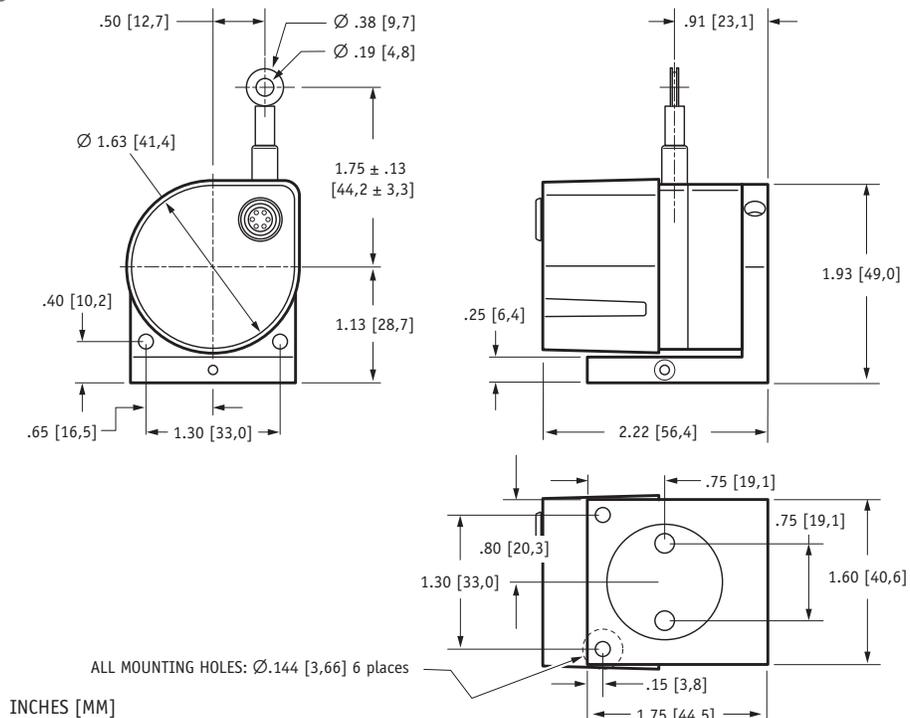
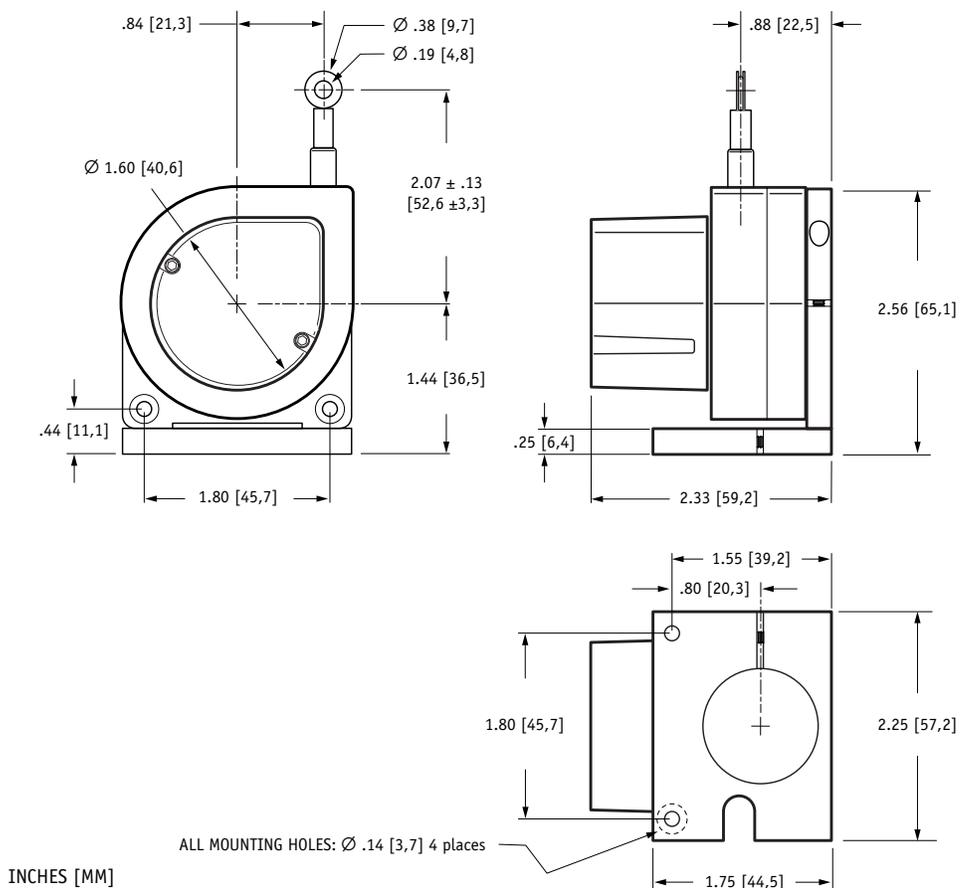


Fig. 2 - Outline Drawing, 50-inch range:



# MT2E1

Test Applications • Incremental Encoder Output Signal

## Ordering Information:

### Model Number:

#### 30-inch Ordering Guide

**MT2E1 - 30** <sub>order code:</sub>     <sup>A</sup> -     <sup>B</sup> - **316** -     <sup>C</sup>

Sample Model Number:

**MT2E1 - 30E - 33 - 316 - M1**

- R** range: 30 inches
- A** measuring cable termination: eyelet
- B** measuring cable tension: 33 oz. (±6 oz.)
- C** electrical connection: end-mounted connector



see fig. 1

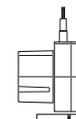
#### 50-inch Ordering Guide

**MT2E1 - 50** <sub>order code:</sub>     <sup>A</sup> -     <sup>B</sup> - **188** -     <sup>C</sup>

Sample Model Number:

**MT2E1 - 50E - 22 - 188 - M1**

- R** range: 50 inches
- A** measuring cable termination: eyelet
- B** measuring cable tension: 22 oz. (±6 oz.)
- C** electrical connection: end-mounted connector



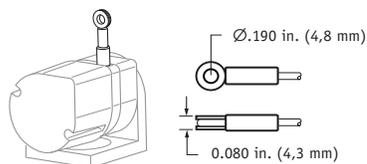
see fig. 2

### Measuring Cable Termination:

**A** *order code:*

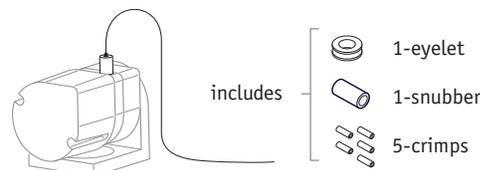
**E**

Eyelet



**L**

Leader Cable (24 in. long)



### Measuring Cable Tension:

**B** *order code:*

**9**

**14**

**33**

30-inch range option:	9 (±3) oz.	14 (±5) oz.	33 (±10) oz.
max. cable acceleration:	99 g	136 g	136 g
spring cycle-life, 80% extension:	≥ 1 million	150,000	75,000
spring cycle-life, 50% extension:	≥ 1 million	≥ 1 million	≥ 1 million

**B** *order code:*

**9**

**22**

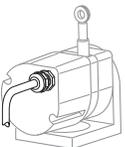
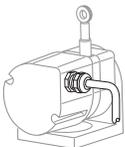
50-inch range option:	9 (±3) oz.	22 (±7) oz.
max. cable acceleration:	46 g	68 g
spring cycle-life, 80% extension:	≥ 1 million	150,000
spring cycle-life, 50% extension:	≥ 1 million	≥ 1 million

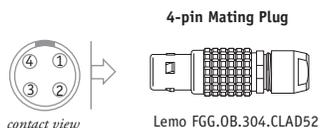
## Ordering Information (cont.):

### Electrical Connection:

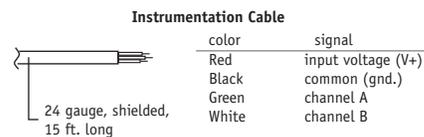
	<b>M1</b>	<b>M1A</b>	<b>M2</b>	<b>M2A</b>	<b>M3</b>	<b>M3A</b>
<b>order code:</b>						
<b>sensor cover:</b>	polycarbonate	aluminum	polycarbonate	aluminum	polycarbonate	aluminum
<b>electrical connection:</b>		end-mount connector <i>mating plug included</i>		side-mount connector <i>mating plug included</i>		top-mount connector <i>mating plug included</i>

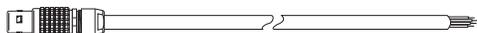
	<b>C1</b>	<b>C1A</b>	<b>C2</b>	<b>C2A</b>	<b>C3</b>	<b>C3A</b>
<b>order code:</b>						
<b>sensor cover:</b>	polycarbonate	aluminum	polycarbonate	aluminum	polycarbonate	aluminum
<b>electrical connection:</b>		end-mount instrumentation cable <i>15-ft. long, 24 gauge shielded</i>		side-mount instrumentation cable <i>15-ft. long, 24 gauge shielded</i>		top-mount instrumentation cable <i>15-ft. long, 24 gauge shielded</i>



pin#	signal
1	input voltage (V+)
2	common (gnd.)
3	channel A
4	channel B



### Accessories:



#### Part Number

9603957-0015

#### Description

15 ft. long cordset. Includes mating connector with 15 ft., 24 gauge, shielded multiconductor cable. Signals: V+, Gnd, Channel A, Channel B