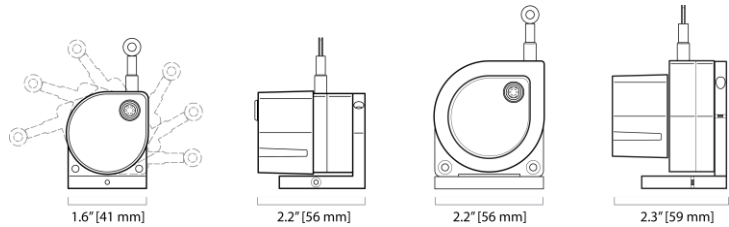


# MT2A

## Cable Actuated Sensor

### Test Applications • Voltage Divider

**Compact String Pot • Flight/Crash Test Applications**  
**Dual Axis 360° Mounting Bracket**  
**3, 9, 15, 30 and 50-inch Stroke Range Options**  
**Aluminum & Polycarbonate Enclosure • GAM Certification**

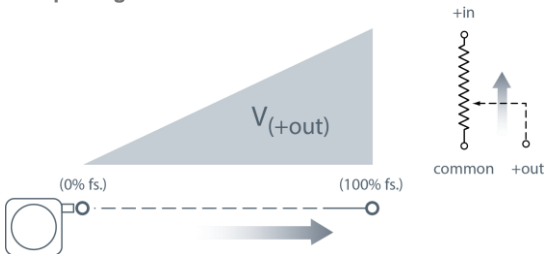


The MT2A is a member of our family of rugged, accurate miniature cable-extension position transducers designed specifically for test applications. One of the major benefits to this sensor is its 2-axis 360° rotating mounting bracket to allow for fast and simple installation in any direction.

The MT2A comes in 5 different measuring ranges: 0-3", 0-9", 0-15", 0-30", 0-50" and features a highly-tensioned heavy-duty measuring cable designed for the high-acceleration demands encountered in flight testing and automotive crash tests.

For extreme impact applications, a new rugged all aluminum sensor cover is now available!

#### Output Signal



#### General

<b>Full Stroke Range Options</b>	0-3, 0-9, 0-15, 0-30, 0-50 inches, min.
<b>Output Signal</b>	voltage divider (potentiometer)
<b>Accuracy</b>	± 1.1% to 0.15% full stroke (see ordering information)
<b>Repeatability</b>	± 0.02% full stroke
<b>Resolution</b>	essentially infinite
<b>Measuring Cable</b>	Ø.019-in. nylon-coated stainless steel
<b>Enclosure Material</b>	anodized aluminum
<b>Sensor Cover Options</b>	aluminum or polycarbonate
<b>Sensor</b>	conductive plastic-hybrid potentiometer
<b>Weight</b>	0.5 lb. max.

#### Electrical

<b>Input Resistance</b>	10K ohms (± 10%)
<b>Power Rating, Watts</b>	2.0 at 158°F (70° C), derated to 0 @ 255°F (125°C)
<b>Recommended Maximum Input Voltage</b>	30V (AC or DC)
<b>Electrical Stroke</b>	94% ±4% of input voltage
<b>Mating Plug</b>	LEMO FGG.OB.304.CLAD52

#### Mechanical

<b>Measuring Cable Tension Options</b>	see ordering information
<b>Maximum Measuring Cable Acceleration</b>	136 g

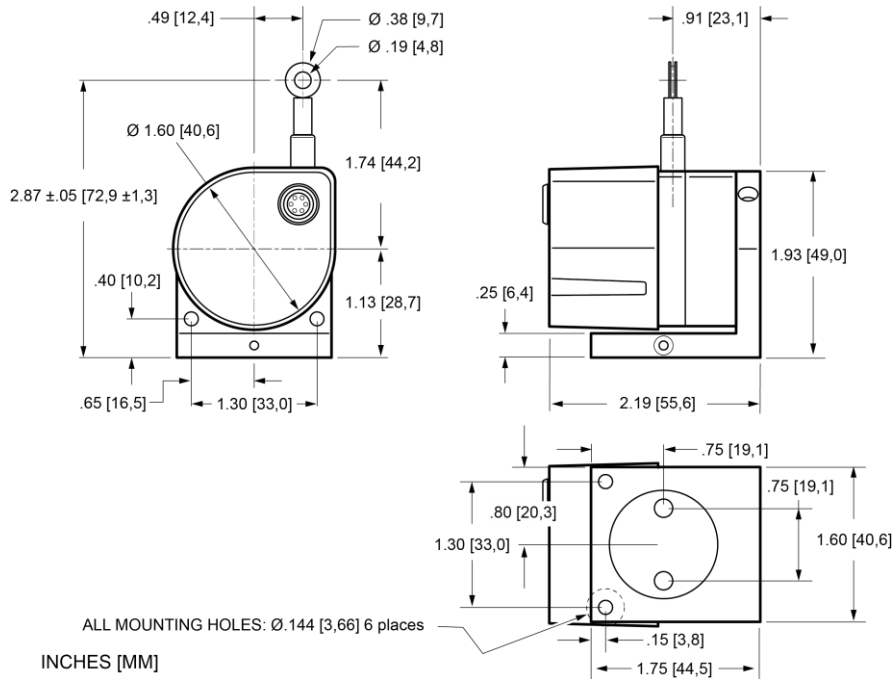
#### Environmental

<b>Operating Temperature</b>	-65° to 255° F ( -55° to 125°C)
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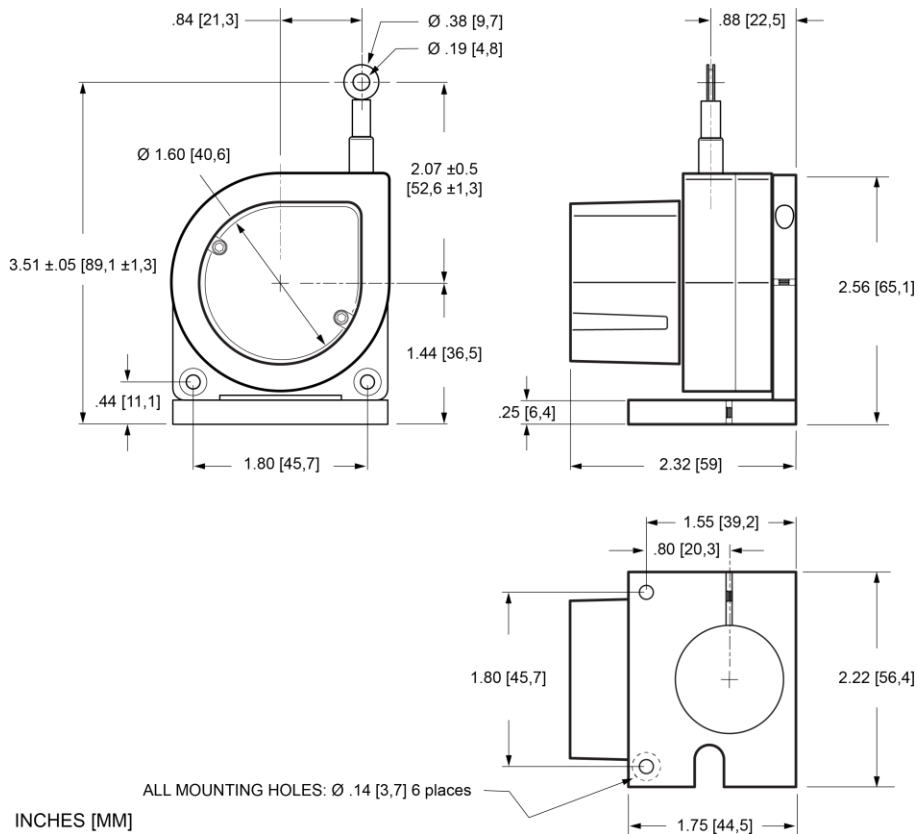
# MT2A

Test Applications • Voltage Divider

## Outline Drawing (0-3 to 0-30 inch ranges)



## Outline Drawing (0-50 inch range)



# MT2A

Test Applications • Voltage Divider

## Ordering Information

### Model Number:

**MT2A** -      **R** -      **A** -      **B** - **10K** -      **C**

*order code:*

Sample Model Number:

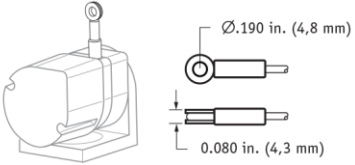
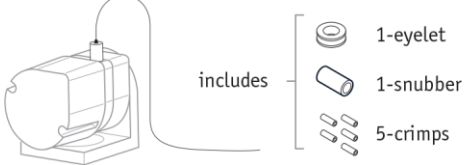
**MT2A - 9E - 33 - 10K - M1A**

- R** range: 9 inches
- A** measuring cable termination: eyelet
- B** measuring cable tension: 33 oz. (±6 oz.)
- C** electrical connection: end-mounted connector w/ aluminum sensor cover




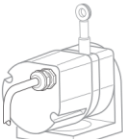
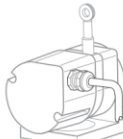

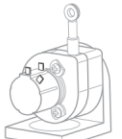
### Full Stroke Range:

<b>R</b> <i>order code:</i>	<b>3</b>	<b>9</b>	<b>15</b>	<b>30</b>	<b>50</b>
full stroke range, min:	3 inches	9 inches	15 inches	30 inches	50 inches
potentiometer cycle-life:	$2.5 \times 10^6$	$8.3 \times 10^5$	$5.0 \times 10^5$	$2.5 \times 10^5$	$2.5 \times 10^5$
accuracy (% of full stroke):	1.1 %	.25%	.20%	.15%	.15%

### Measuring Cable Tension:

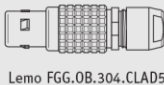
<b>A</b> <i>order code:</i>	<b>E</b>	<b>L</b>
	Eyelet	Leader Cable (24 in. long)
	 <p>Ø.190 in. (4,8 mm) 0.080 in. (4,3 mm)</p>	 <p>includes</p> <ul style="list-style-type: none"> <li>1-eyelet</li> <li>1-snubber</li> <li>5-crimps</li> </ul>

### Electrical Connection/ Sensor Cover:

<b>C</b> <i>order code:</i>	<b>M1</b>	<b>M1A</b>	<b>M2</b>	<b>M2A</b>	<b>M3</b>	<b>M3A</b>	
sensor cover:	polycarbonate	aluminum	polycarbonate	aluminum	polycarbonate	aluminum	
electrical connection:		end-mount connector*		side-mount connector*		top-mount connector*	
<b>C</b> <i>order code:</i>	<b>C1</b>	<b>C1A</b>	<b>C2</b>	<b>C2A</b>	<b>C3</b>	<b>C3A</b>	<b>S</b>
sensor cover:	polycarbonate	aluminum	polycarbonate	aluminum	polycarbonate	aluminum	none**
electrical connection:							
	end-mount, instrumentation cable (15-ft. long, 24 ga., shielded)		side-mount, instrumentation cable (15-ft. long, 24 ga., shielded)		top-mount, instrumentation cable (15-ft. long, 24 ga., shielded)		solder terminals

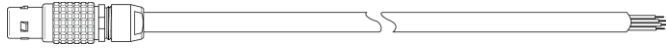
4-pin mating plug		Instrumentation Cable		Solder Terminals	
pin#	signal	color	signal	terminal	signal
1	+in	Red	+in	CW	+in
2	common	Black	common	CCW	common
3	+out	Green	+out	S	+out

*contact view*  Lemo FGG.0B.304.CLAD52

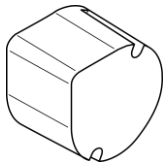
*24 ga., shielded*

\*mating plug included \*\*blank cover available, see **Accessories** on next page

**Accessories**



<b>Part Number</b> 9603957-0015	<b>Description</b> 15 ft. long cordset. Includes mating connector with 15 ft., 24 gauge, shielded multiconductor cable
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*Additional blank sensor covers can be ordered separately. This cover comes without electrical wiring access holes so customer can drill to their requirements.  
Includes screws and gasket.*

<b>Part Number</b> 9604197-0000 9603958-0000	<b>Description</b> Aluminum sensor cover Polycarbonate sensor cover
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**GAM EG 13 Certification (0-3 to 0-30 inch ranges only)**

**QUALIFICATION LEVEL FOR CLIMATIC AND THERMAL ENVIRONMENT**

External Overpressure, operating (GAM EG 13 Fasc.21)

5 cycles: 1...4.5 Bar in 3 min., 4.5 Bar for 12 hours, 4.5...1 Bar in 1 min.

1 cycle: 1...3.2 Bar in 7.5 min., 3.2 Bar for 2 min., 3.2...8 Bar in 5 sec., 8 Bar for 2 hours, 8...1 Bar in 2 Bar/sec.

1 cycle: 1...4.5 Bar in 20 msec. 4.5 Bar for 5 sec, 4.5...1 Bar in 20 msec.

Thermal Vacuum Transitory, operating (GAM EG 13 Fasc.10)

Room pressure and temperature (1 Bar A; 20°C ±2°C)

1...10-3 mBar in 100 seconds

Vacuum (10-3 mBar) for 10 min.

Climatic Cycles (GAM EG 13 Fasc.8)

Dry heat: 24 hours @ 70°C ±2°C Relative Humidity < 50%

Wet heat: 24 hours @ 70°C ±2°C Relative Humidity = 50%

Cold: 24 hours @ -10°C ±2°C Relative Humidity < 50%

Wet heat: 24 hours @ 70°C ±2°C Relative Humidity = 100%

Dry Heat (Relative Humidity <50%)

Room temperature to 70°C in 30 min

70°C for 5 hours, non-operating

70°C for 5 hours, operating

70°C to room temperature in 20 minutes

**QUALIFICATION LEVEL FOR MECHANICAL ENVIRONMENT**

Random Vibrations (GAM EG 13 Fasc.42 mod. Op1)

20...2000 Hz, 3 min. per axis, operating, 34 g.

20...2000 Hz, 20 sec. per axis, operating, 45 g.

Random Vibrations (GAM EG 13 Fasc.41 mod. Op3)

Compensated Levels, short duration

3...300 Hz @ .2 – .002 g<sup>2</sup>/ Hz.

Research Critical Frequency

Logarithmic Run, 1 octave / min., 1...2000 Hz.

Steady Acceleration, operating (GAM EG 13 Fas.45)

37 g, 3 min. per direction (2 directions per axis)

Sinusoidal Vibrations, operating (Gam EG 13 Fasc.41 mod. Op3)

Logarithmic run, 1 octave/min. on 3 axis

3...50 Hz. 9 hours per axis @0.6...1.25 g

Sinusoidal Vibrations, operating (Gam EG 13 Fasc.41 mod. Op3)

Logarithmic run, 1 octave/min. on 3 axis

5...2 KHz. 3 axis @12...25 g.

Average Shock (GAM EG 13 Fasc.43 Mode Op1)

1 shock, 1/2 sinusoidal, 100g. 6 msec. operating, with longitudinal and back direction

Free Fall (GAM EG 13 Fasc.43 Mode Op4)

6 consecutive drops on wood table, height = 100mm

## **NORTH AMERICA**

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MT2A 12/01/2015