

Cable-Extension Position Transducer

Precision Potentiometric Output

Ranges: 0-3, 0-9, 0-15, 0-30 inches

Flight/Crash Test Applications • 360° 2-Axis Mount



MT2A



Specification Summary:

GENERAL

Full Stroke Range Options 0-3, 0-9, 0-15, 0-30 inches, min.
 Output Signal voltage divider (potentiometer)
 Accuracy $\pm 1.1\%$ to 0.25% full stroke, *see ordering information*
 Repeatability $\pm 0.02\%$ full stroke
 Resolution essentially infinite
 Measuring Cable $\varnothing.019$ -in. nylon-coated stainless steel
 Enclosure Material anodized aluminum
 Sensor Cover Options aluminum or polycarbonate
 Sensor conductive plastic-hybrid potentiometer
 Weight 0.5 lb. max.

ELECTRICAL

Input Resistance 10K ohms ($\pm 10\%$)
 Power Rating, Watts 2.0 at 158°F (70°C), derated to 0 @ 255°F (125°C)
 Recommended Maximum Input Voltage 30V (AC or DC)
 Output Signal Change Over Measurement Range $94\% \pm 4\%$ of input voltage
 Mating Plug LEMO FGG.OB.304.CLAD52

MECHANICAL

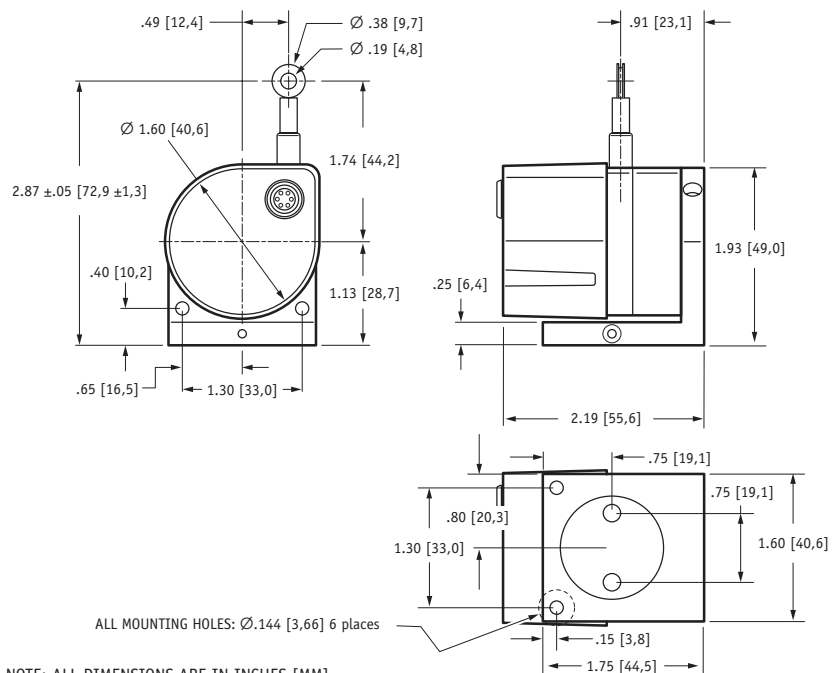
Measuring Cable Tension Options 9, 14 and 33 oz., *see ordering information*
 Maximum Measuring Cable Acceleration 136 G's, *see ordering information*

ENVIRONMENTAL

Operating Temperature -65° to 255° F (-55° to 125°C)

GAM EG 13 CERTIFICATION

Specifications *see back page*

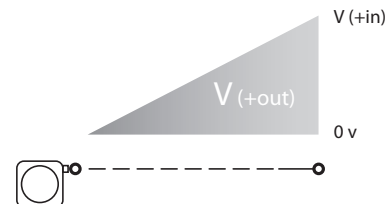


The MT2A is a member of our family of rugged, accurate miniature cable-extension position transducers designed specifically for test applications. One of the major benefits to this sensor is its 2-axis 360° rotating mounting bracket to allow for fast and simple installation in any direction.

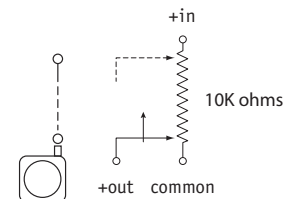
The MT2A comes in 4 different measuring ranges: 0-3", 0-9", 0-15" and 0-30" and features a highly-tensioned heavy-duty measuring cable designed for the high-acceleration demands encountered in flight testing and automotive crash tests.

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

Output Signal



Schematic



Ordering Information

Model Number:

MT2A - - - **10K** -
order code: R A B C

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:

R order code:	3	9	15	30
full stroke range, min:	3 inches	9 inches	15 inches	30 inches
potentiometer cycle-life:	2.5×10^6	8.3×10^5	5.0×10^5	2.5×10^5
accuracy (% of full stroke):	1.1 %	.25%	.25%	.25%

Measuring Cable Termination:

A order code:	E	L
	Eyelet	Leader Cable (24 in. long)

Measuring Cable Tension:

B order code:	9	14	33
tension:	9 (±2) oz.	14 (±4) oz.	33 (±6) oz.
max. cable acceleration:	99 G's	136 G's	136 G's

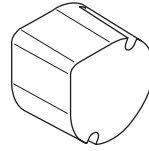
Electrical Connection/ Sensor Cover:

C order code:	M1	M1A	M2	M2A	M3	M3A		
sensor cover:	polycarbonate	aluminum	polycarbonate	aluminum	polycarbonate	aluminum		
electrical connection:		end-mount connector*		side-mount connector*		top-mount connector*		
C order code:	C1	C1A	C2	C2A	C3	C3A	S	
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

 contact view	4-pin mating plug Lemo FGG.0B.304.CLAD52	<table border="1"> <thead> <tr> <th>pin#</th> <th>signal</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>+in</td> </tr> <tr> <td>2</td> <td>common</td> </tr> <tr> <td>3</td> <td>+out</td> </tr> </tbody> </table>	pin#	signal	1	+in	2	common	3	+out	<table border="1"> <thead> <tr> <th>color</th> <th>signal</th> </tr> </thead> <tbody> <tr> <td>Red</td> <td>+in</td> </tr> <tr> <td>Black</td> <td>common</td> </tr> <tr> <td>Green</td> <td>+out</td> </tr> </tbody> </table>	color	signal	Red	+in	Black	common	Green	+out	<table border="1"> <thead> <tr> <th>terminal</th> <th>signal</th> </tr> </thead> <tbody> <tr> <td>CW</td> <td>+in</td> </tr> <tr> <td>CCW</td> <td>common</td> </tr> <tr> <td>S</td> <td>+out</td> </tr> </tbody> </table>	terminal	signal	CW	+in	CCW	common	S	+out
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*mating plug included **blank cover available, see **Accessories** on next page

Accessories:



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.

Part Number	Description
9603957-0015	15 ft. long cordset. Includes mating connector with 15 ft., 24 gauge, shielded multiconductor cable

Part Number	Description
9604197-0000	Aluminum sensor cover
9603958-0000	Polycarbonate sensor cover

GAM EG 13 Certification

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 mins
 - 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/ Hz.
- Reasearch 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, wlongitudinal and back direction
- Free Fall (GAM EG 13 Fasc.43 Mode Op4)
 - 6 consecutive drops on wood table, height = 100mm

version: 6.0 last updated: October 14, 2010