

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 Ranges 0-3, 0-9, 0-15, 0-30 inches, min., *see ordering information*
 Output Signal voltage divider (potentiometer)
 Accuracy $\pm 1\%$ 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 polycarbonate
 Sensor conductive plastic-hybrid potentiometer
 Weight 0.5 lb. max.

ELECTRICAL

Input Resistance 10K ohms ($\pm 10\%$)
 Power Rating, Watts 2.0 at 70° C (derated to 0 @ 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 -40° to 125° C

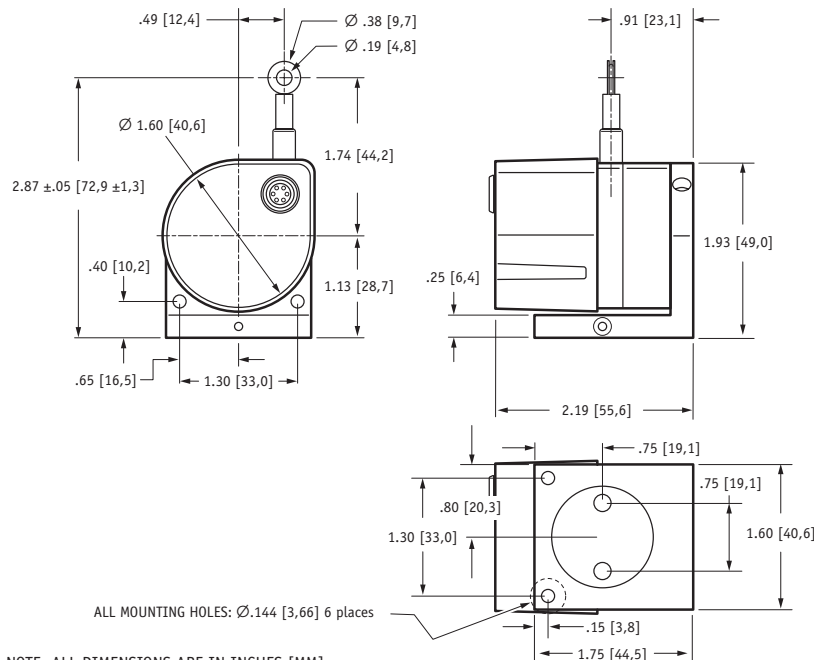
GAM EG 13 CERTIFICATION

Specifications *see back page*



The MT2A: a new member to our family of rugged, accurate miniature cable-extension position transducers. Available in measuring ranges of 0-3", 0-9", 0-15" and 0-30", the Celesco MT2A features a highly-tensioned heavy-duty measuring cable that was designed for the high-acceleration demands encountered in flight testing and automotive crash tests.

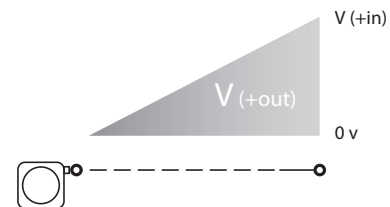
The MT2A was designed with 2-axis 360° rotation in its mounting bracket which allows for fast and simple installation in any direction.



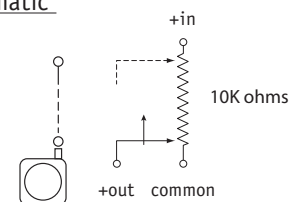
NOTE: ALL DIMENSIONS ARE IN INCHES [MM]

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Output Signal



Schematic



celesco
 celesco.com • info@celesco.com

Ordering Information:

Model Number:

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

Sample Model Number:

MT2A - 9E - 33 - 10K - M1

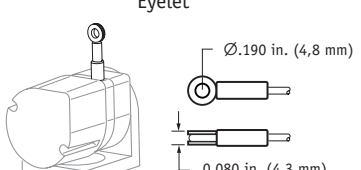
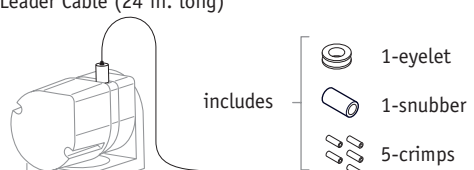
- R** range: 9 inches
- A** measuring cable termination: eyelet
- B** measuring cable tension: 33 oz. (±6 oz.)
- C** electrical connection: end-mounted connector

Full Stroke Range:

R <i>order code:</i>	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 %	.25%	.25%	.25%

Measuring Cable Termination:

A *order code:*

E	L
Eyelet	Leader Cable (24 in. long)
	

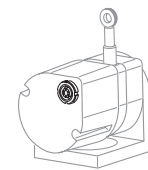
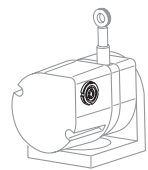
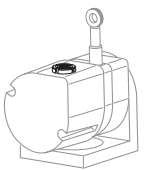
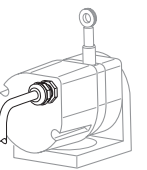
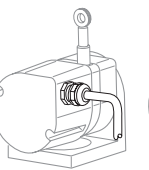
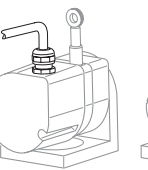
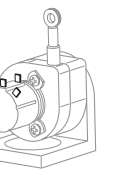

Measuring Cable Tension:

B *order code:*

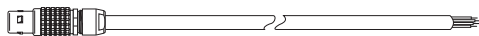
	9	14	33
tension:	9 (±2) oz.	14 (±4) oz.	33 (±6) oz.
max. cable acceleration:	99 G's	136 G's	136 G's
min. spring cycle-life:	100,000	75,000	25,000

Electrical Connection:

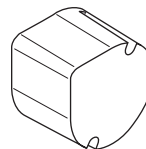
C *order code:*

M1	M2	M3	C1	C2	C3	S																
end-mount connector	side-mount connector	top-mount connector	end-mount strain relief	side-mount strain relief	top-mount strain relief	solder terminals (cover optional)																
																						
<p>4-pin Connector</p>  <p>contact view</p> <p>Lemo FGG.0B.304.CLAD52</p>			<p>Instrumentation Cable</p> <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> <p>24 gauge, shielded, 15 ft. long</p>			color	signal	Red	+in	Black	common	Green	+out	<p>Solder Terminals</p> <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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CW	+in																					
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Accessories:



Part No.: 9603957-0015
 Description: 15 ft. long cordset
 includes mating connector and 15 ft., 24 gauge, shielded multiconductor cable



Part No.: 9603958-0000
 Description: sensor cover (includes screws and gasket)

Cover may be ordered separately when customer wants to provide either their own connector or strain relief. This cover comes without electrical wiring access holes so customer can drill to their requirements.

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 ±2C Relative Humidity < 50%
- Wet heat: 24 hours @ 70°C ±2C Relative Humidity = 50%
- Cold: 24 hours @ -10°C ±2C Relative Humidity < 50%
- Wet heat: 24 hours @ 70°C ±2C 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 g2/ 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, longitudinal and back direction

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

- 6 consecutive drops on wood table, height = 100mm