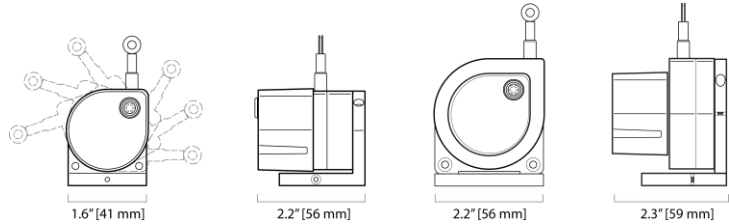


# MT2A

## 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**

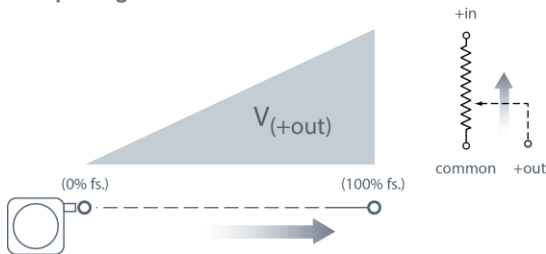


The MT2A is a member of our family of rugged, accurate miniature cable-extension position transducers designed specifically for test applications. One of the major benefits to this sensor is its 2-axis 360° rotating mounting bracket to allow for fast and simple installation in any direction.

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                             |

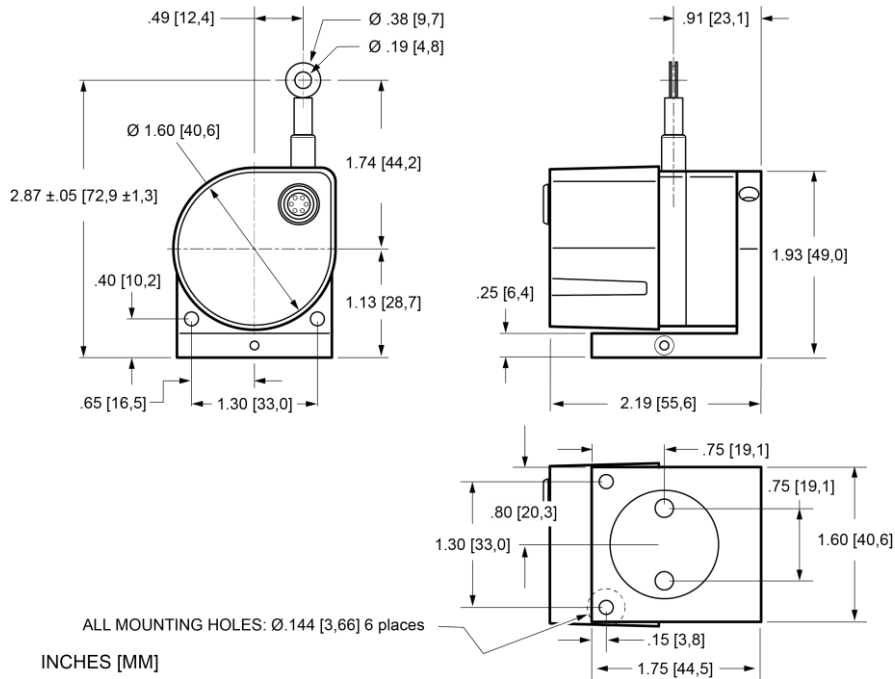
#### Mechanical

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

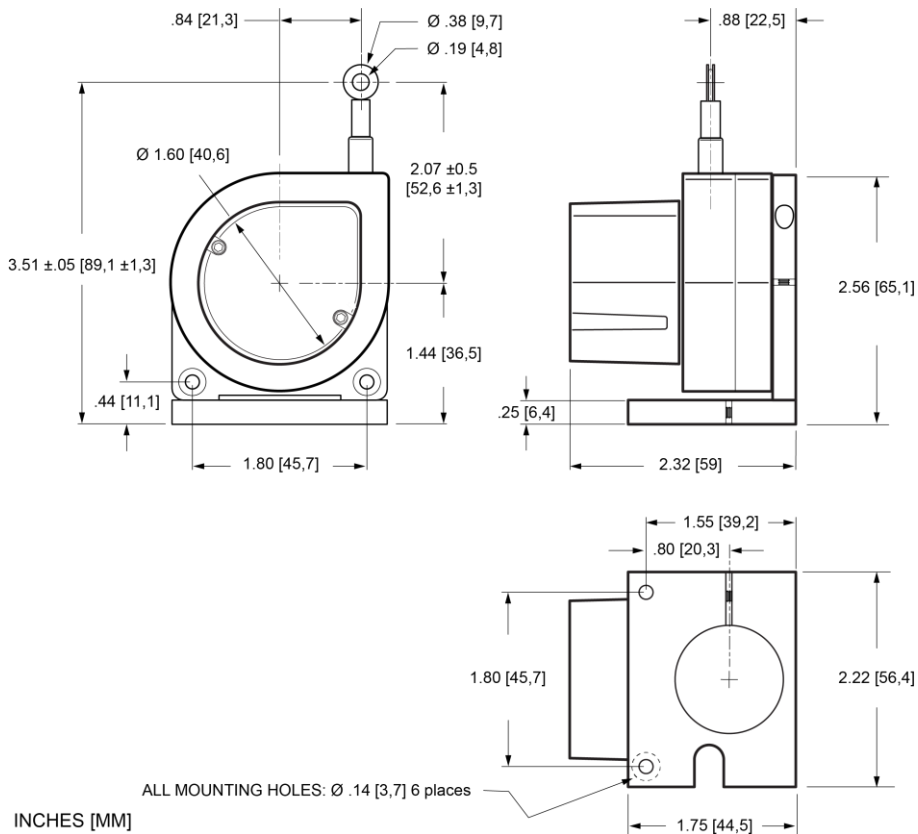
#### Environmental

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

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



Outline Drawing (0-50 inch range)



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:

| <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 Termination:

**A** *order code:*      **E**      **L**

Eyelet      Leader Cable (24 in. long)

Ø.190 in. (4,8 mm)

0.080 in. (4,3 mm)




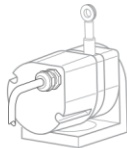
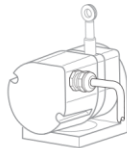

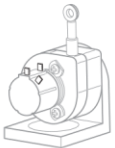
includes

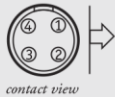
- 1-eyelet
- 1-snubber
- 5-crimps

Measuring Cable Tension:

|                                 |            |             |             |
|---------------------------------|------------|-------------|-------------|
| <b>B</b> <i>order code:</i>     | <b>9</b>   | <b>14</b>   | <b>33</b>   |
| 3, 9, 15, 30-in. range options: | 9 (±2) oz. | 14 (±4) oz. | 33 (±6) oz. |
| max. cable acceleration:        | 99 g       | 136 g       | 136 g       |
| <b>B</b> <i>order code:</i>     | <b>9</b>   | <b>22</b>   |             |
| 50-in. range options:           | 9 (±2) oz. | 22 (±6) oz. |             |
| max. cable acceleration:        | 46 g       | 68 g        |             |

**Electrical Connection/ Sensor Cover:**

|                        |   |   |   |  |   |   |   |                  |
|------------------------|---|---|---|--|---|---|---|------------------|
| <b>ⓐ</b> order code:   | <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>ⓑ</b> order code:   | <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<br>(15-ft. long, 24 ga., shielded) |  | side-mount, instrumentation cable<br>(15-ft. long, 24 ga., shielded) |  | top-mount, instrumentation cable<br>(15-ft. long, 24 ga., shielded) |  | solder terminals |

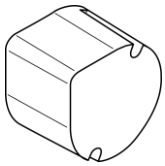
|  | <b>4-pin mating plug</b><br>Lemo FGG.OB.304.CLAD52 | <table border="1"> <tr> <th>pin#</th> <th>signal</th> </tr> <tr> <td>1</td> <td>+in</td> </tr> <tr> <td>2</td> <td>common</td> </tr> <tr> <td>3</td> <td>+out</td> </tr> </table> | pin# | signal | 1 | +in | 2 | common | 3 | +out | <table border="1"> <tr> <th>color</th> <th>signal</th> </tr> <tr> <td>Red</td> <td>+in</td> </tr> <tr> <td>Black</td> <td>common</td> </tr> <tr> <td>Green</td> <td>+out</td> </tr> </table> | color | signal | Red | +in | Black | common | Green | +out | <table border="1"> <tr> <th>terminal</th> <th>signal</th> </tr> <tr> <td>CW</td> <td>+in</td> </tr> <tr> <td>CCW</td> <td>common</td> </tr> <tr> <td>S</td> <td>+out</td> </tr> </table> | terminal | signal | CW | +in | CCW | common | S | +out |
|--|--|---|------|--------|---|-----|---|--------|---|------|--|-------|--------|-----|-----|-------|--------|-------|------|--|----------|--------|----|-----|-----|--------|---|------|
| pin#   | signal   |   |      |        |   |     |   |        |   |      |  |       |        |     |     |       |        |       |      |  |          |        |    |     |     |        |   |      |
| 1  | +in  |   |      |        |   |     |   |        |   |      |  |       |        |     |     |       |        |       |      |  |          |        |    |     |     |        |   |      |
| 2  | common   |   |      |        |   |     |   |        |   |      |  |       |        |     |     |       |        |       |      |  |          |        |    |     |     |        |   |      |
| 3  | +out   |   |      |        |   |     |   |        |   |      |  |       |        |     |     |       |        |       |      |  |          |        |    |     |     |        |   |      |
| color  | signal   |   |      |        |   |     |   |        |   |      |  |       |        |     |     |       |        |       |      |  |          |        |    |     |     |        |   |      |
| Red  | +in  |   |      |        |   |     |   |        |   |      |  |       |        |     |     |       |        |       |      |  |          |        |    |     |     |        |   |      |
| Black  | common   |   |      |        |   |     |   |        |   |      |  |       |        |     |     |       |        |       |      |  |          |        |    |     |     |        |   |      |
| Green  | +out   |   |      |        |   |     |   |        |   |      |  |       |        |     |     |       |        |       |      |  |          |        |    |     |     |        |   |      |
| terminal   | signal   |   |      |        |   |     |   |        |   |      |  |       |        |     |     |       |        |       |      |  |          |        |    |     |     |        |   |      |
| CW   | +in  |   |      |        |   |     |   |        |   |      |  |       |        |     |     |       |        |       |      |  |          |        |    |     |     |        |   |      |
| CCW  | common   |   |      |        |   |     |   |        |   |      |  |       |        |     |     |       |        |       |      |  |          |        |    |     |     |        |   |      |
| S  | +out   |   |      |        |   |     |   |        |   |      |  |       |        |     |     |       |        |       |      |  |          |        |    |     |     |        |   |      |

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

**Accessories**



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



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                |
|--------------|----------------------------|
| 9604197-0000 | Aluminum sensor cover      |
| 9603958-0000 | Polycarbonate sensor cover |

**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 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<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**

Measurement Specialties, Inc.,  
a TE Connectivity company  
20630 Plummer Street  
Chatsworth, CA 91311  
Tel +1 800 423 5483  
Tel +1 818 701 2750  
Fax +1 818 701 2799  
Customercare.chtw@te.com

**TE.com/sensorsolutions**

Measurement Specialties, Inc., a TE Connectivity company.

Measurement Specialties, TE Connectivity, TE Connectivity (logo) and EVERY CONNECTION COUNTS are trademarks. All other logos, products and/or company names referred to herein might be trademarks of their respective owners.

The information given herein, including drawings, illustrations and schematics which are intended for illustration purposes only, is believed to be reliable. However, TE Connectivity makes no warranties as to its accuracy or completeness and disclaims any liability in connection with its use. TE Connectivity's obligations shall only be as set forth in TE Connectivity's Standard Terms and Conditions of Sale for this product and in no case will TE Connectivity be liable for any incidental, indirect or consequential damages arising out of the sale, resale, use or misuse of the product. Users of TE Connectivity products should make their own evaluation to determine the suitability of each such product for the specific application.

© 2015 TE Connectivity Ltd. family of companies All Rights Reserved.

MT2A 12/01/2015

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: [ocean@oceanchips.ru](mailto:ocean@oceanchips.ru)

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А