



The M Series miniature joystick is a low profile potentiometric controller providing precision multi-axes finger-positioning control. Available with up to three axes and two pushbuttons, the M Series joystick is ideal for applications requiring a compact low operating force controller. Featuring 17 ergonomically designed handles, typical applications include CCTV, robotics, electric wheelchairs, and measurement systems. The M Series is the de facto standard industrial joystick for the CCTV professional.



KEY FEATURES

- World's #1 selling joystick for CCTV applications**
- Potentiometric sensing**
- One, two or three axes**
- Low profile design with 17 handle options**



M series

Miniature resistive joysticks

OPTION SELECTION



SERIES

MOUNTING BEZEL
C Split Bezel
F Square Bezel
L Rubber Boot Kit

MODEL

| | |
|---|-------------------------|
| 1 | 2 Axes |
| 2 | 2 Axes with Pushbuttons |
| 3 | 3 Axes |
| 4 | 3 Axes with Pushbuttons |

CENTERING

| | |
|---|-----------------------|
| 0 | Spring Centering |
| 6 | Torque Set (Friction) |

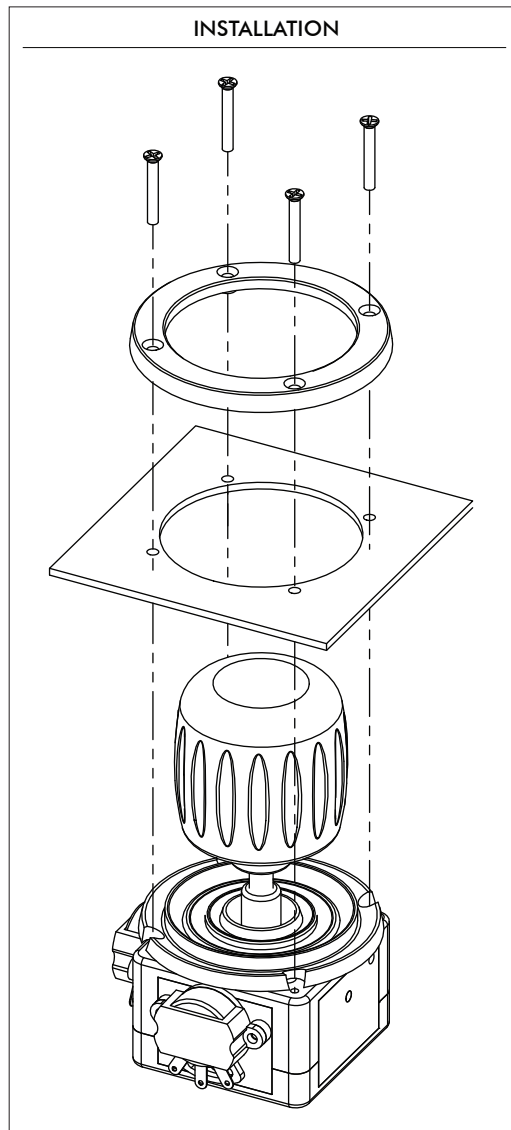
HANDLE

| | |
|---|------------------------|
| 0 | Tapered Convex |
| 1 | Concave Tip |
| 2 | Flat Tipped |
| 3 | Concave Tip - Long |
| 5 | Pushbutton |
| 6 | Straight Tip - Short |
| 8 | 3 Axes |
| 9 | 3 Axes with Pushbutton |
| A | Straight Tip - Mid |
| B | Straight Tip - Long |
| C | Ball Tip |
| E | Pushbutton |
| G | Pushbutton |
| H | Pushbutton |
| M | 3 Axes No Button |
| N | 3 Axes with 1 Button |
| Q | 3 Axes with 2 Buttons |

OUTPUT OPTIONS

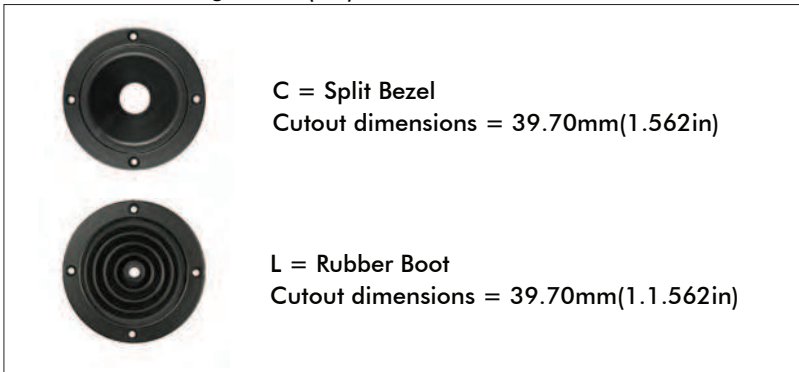
Potentiometers³ :

| | |
|---|-----------|
| P | 5KΩ, 220° |
| M | 5KΩ, 56° |
| R | 5KΩ, 50° |



NOTES

1. Front Mounting Bezels (FM)



2. Rear mounting bezels (RM)



3. Potentiometer specifications are located on the next page.



Mounting accessories. Standard hardware includes:

- C = Ring, cup, and 4 black screws 2-56x1/2in
- L = Ring and 4 black screws 2-56x1/2in
- F = Square bezel, 4 screws 2-56x1/2in, and 4 screws 2-56x1/4in

Note: The company reserves the right to change specifications without notice.

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Miniature resistive joysticks

SPECIFICATIONS

MECHANICAL (FOR X AND Y AXES)

| | | |
|--------------------------------------------|---|---------------------------|
| Break Out Force | – | 0.7N (0.16lbf) |
| Operating Force | – | 1.3N (0.29lbf) |
| Maximum Applied Force | – | 100N (22.48lbf) |
| Mechanical Angle of Movement | – | 56° |
| Expected Life | – | See potentiometer options |
| Mass/weight | – | Varies |
| Package Size (mm) (L x W x H) or (Dia x H) | – | Varies |
| Lever Action (Centering) | – | Spring or Friction |

MECHANICAL (FOR Z AXIS)

| | | |
|--------------------------|---|-----------------------|
| Break Out Torque | – | 0.022N·m (0.19lbf·in) |
| Operating Torque | – | 0.040N·m (0.35lbf·in) |
| Maximum Allowable Torque | – | 0.049N·m (0.43lbf·in) |
| Mechanical Angle | – | 90° |
| Handle Action | – | Spring |

ENVIRONMENTAL

| | | |
|-----------------------|---|--------------------------------|
| Operating Temperature | – | -25°C to 70°C (-13°F to 158°F) |
| Storage Temperature | – | -40°C to 70°C (-40°F to 158°F) |

POTENTIOMETER OPTIONS

| Potentiometer | P | M | R |
|-----------------------|--------------------|--------------------|--------------------|
| Electrical Element | Conductive Plastic | Conductive Plastic | Conductive Plastic |
| Track Resistance | 5K | 5K | 5K |
| Linearity | ±1.0% | ±5.0% | ±1.0% |
| Track Operating Angle | 220° | 56° | 50° |
| CRV | ±1.5% | ±1.5% | ±1.0% |
| Power Dissipation | 0.25W @ 40°C | 0.5W @ 70°C | 1W |
| Rotational Life | 1,000,000 | 1,000,000 | 10,000,000 |

CENTERING OPTIONS

- **SPRING CENTERING**
The joystick returns to center when the handle is released.
- **TORQUE SET**
Torque set provides absolute positioning with uniform friction applied to "X" and "Y" axes.

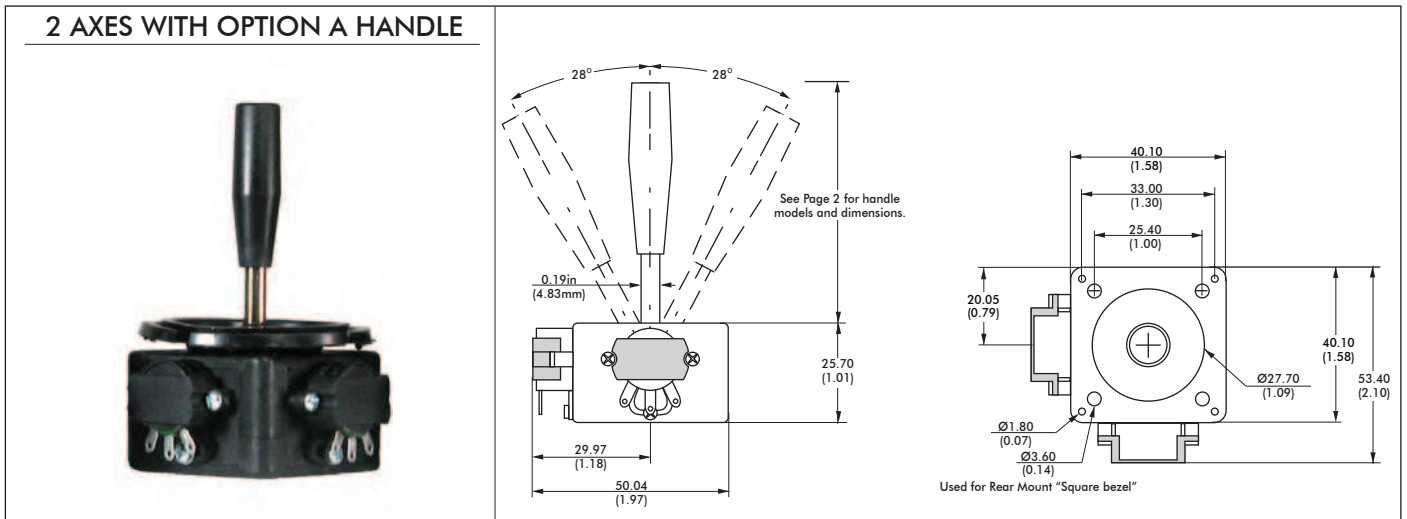
NOTES:

- All values are nominal
- Specifications are subject to the joystick configuration. Contact Technical Support for the performance of your specific configuration
- The M Series is intended for internal applications

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Miniature resistive joysticks

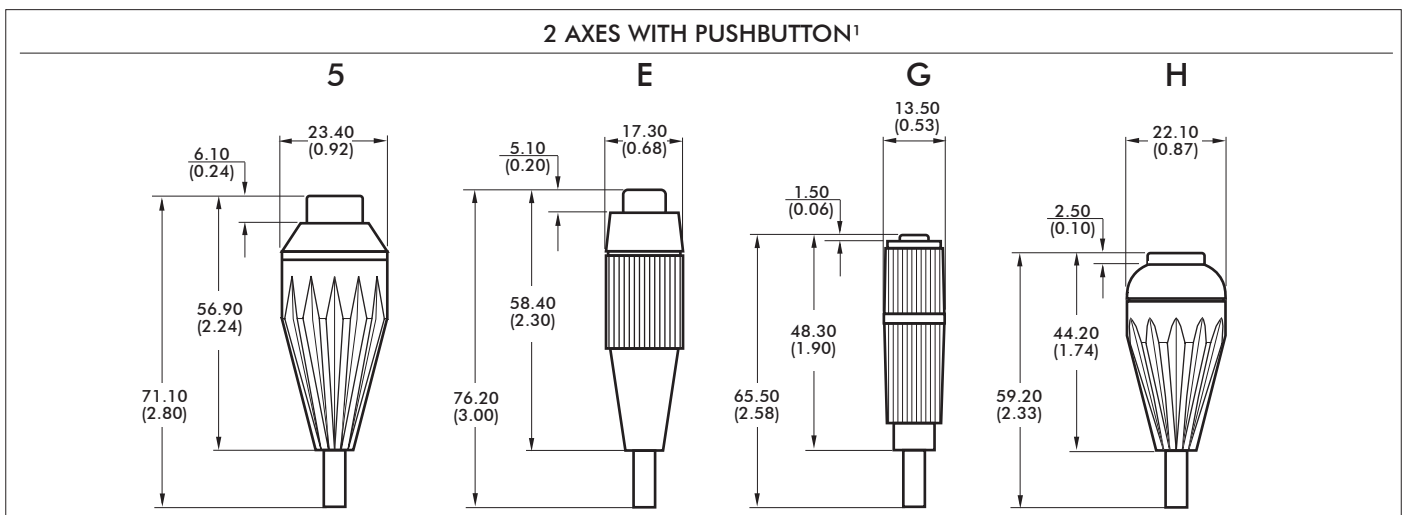
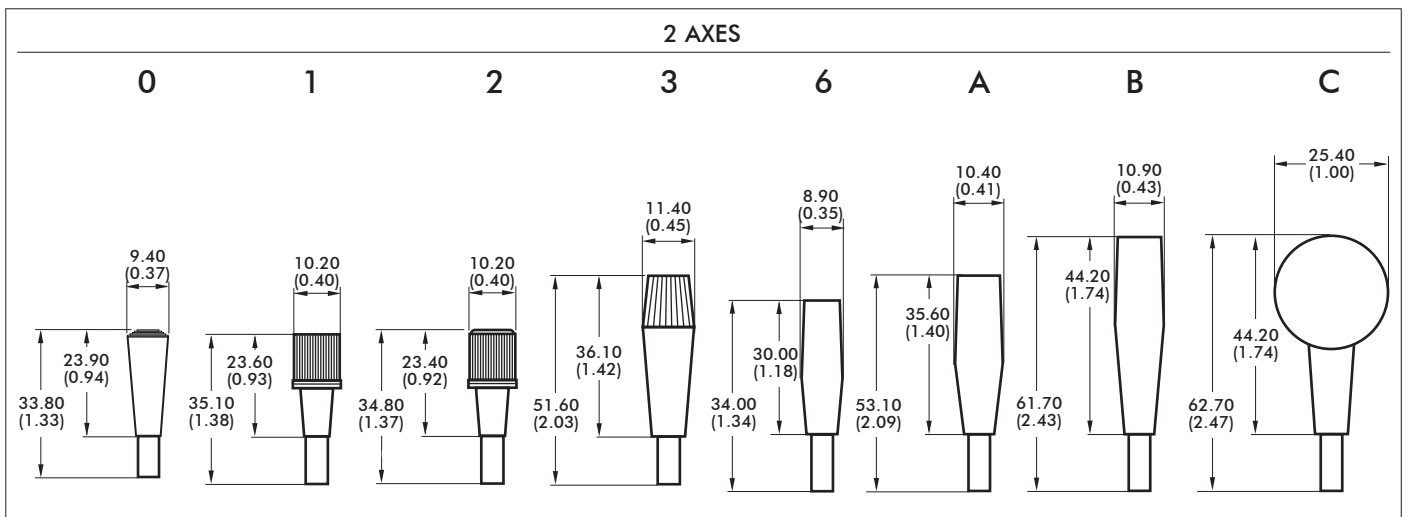
DIMENSIONAL DRAWINGS



NOTES:

1. Mechanical dimensions represent a joystick with the largest potentiometer option.
2. Potentiometer size will vary according to selected option.

HANDLES



NOTES:

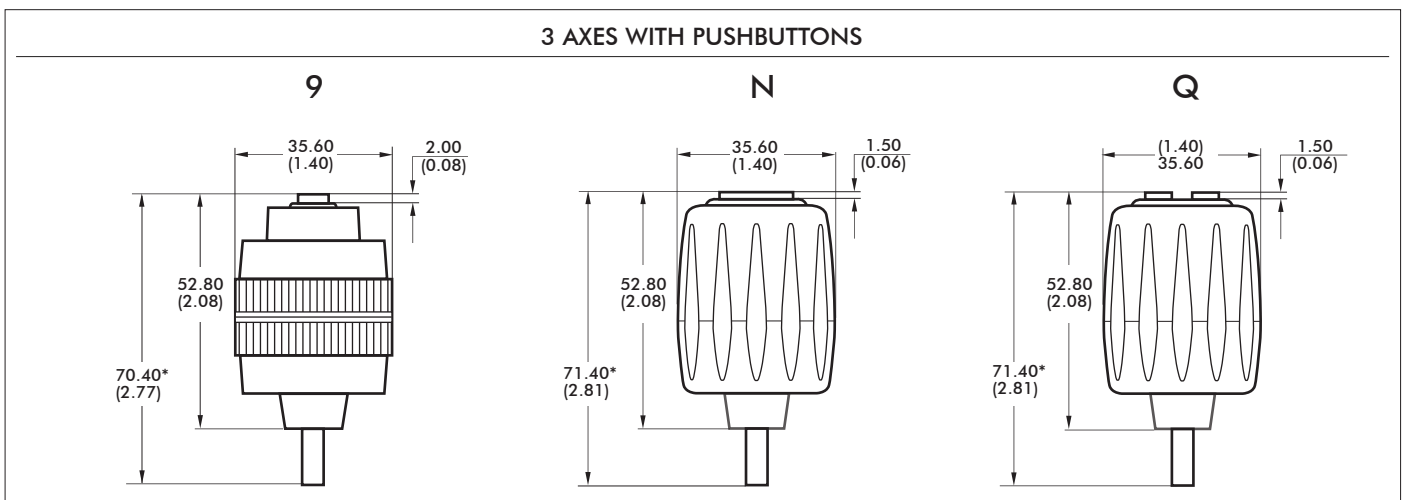
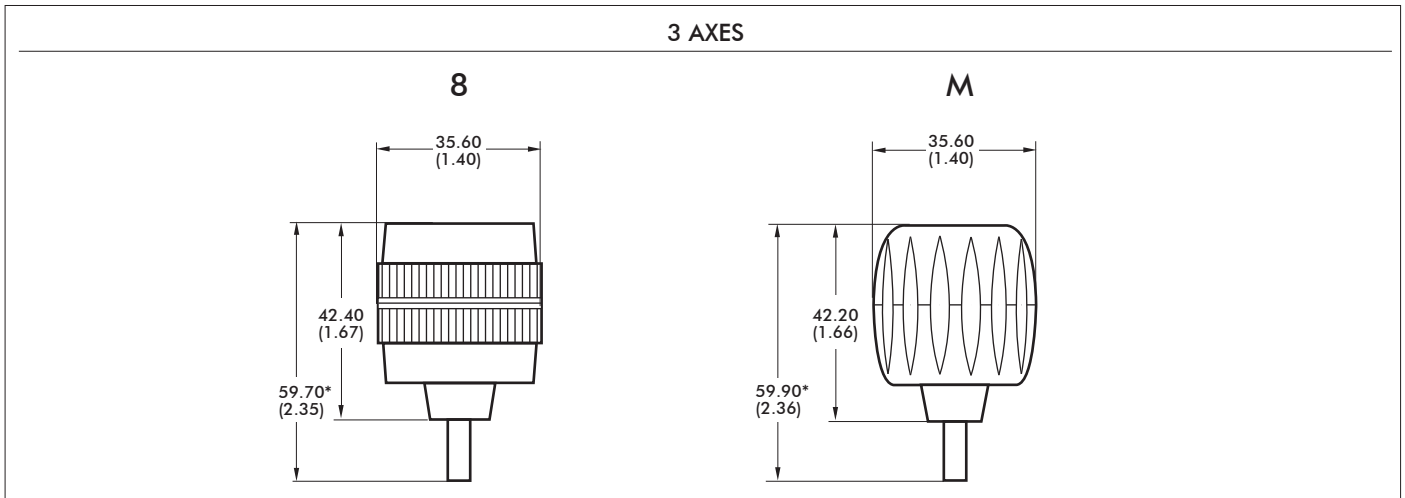
1. Pushbuttons are not sealed. Joysticks are intended for internal applications only.

Note: The company reserves the right to change specifications without notice.

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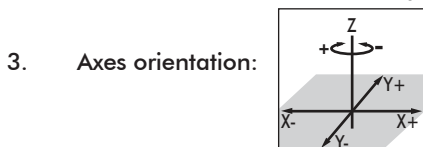
Miniature resistive joysticks

DIMENSIONAL DRAWINGS - continued



NOTES:

1. Dimensions are in mm/(inch)
2. Pushbuttons are not sealed. Joysticks are intended for internal applications only.



4. Wiring information:
 - Cables are provided for pushbuttons and the Z axis.
 - Cables are not supplied for the potentiometers (axes X and Y).

| DEFAULT WIRE COLOR CODE* | | |
|---------------------------------------------------------------------|---------------|-----|
| COLOR | FUNCTION | AWG |
| 2 OR 3 AXES JOYSTICK WITH 1 PUSHBUTTON - OPTIONS 5,E,G,H,9,N | | |
| ORANGE | Switch 1 | 28 |
| ORANGE | Switch Common | |
| 3 AXES JOYSTICK WITH 2 PUSHBUTTONS - Option Q** | | |
| ORANGE | Switch 1 | 28 |
| BROWN | Switch 2 | |
| GREEN | Switch Common | |
| Z AXIS IN A 3 AXES JOYSTICK - OPTIONS 8,9,M,N,Q | | |
| RED | Supply | 28 |
| WHITE | Signal | |
| BLUE | Return | |

NOTES:

- * Wires for the Z axis and for the pushbuttons are 292mm (11.5in) and stripped.
- ** Handle "Q" pushbuttons are shown in the following drawing:

