

M series

Miniature resistive joysticks

Distinctive features and specifications



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

MECHANICAL (FOR X AND Y AXIS)

- 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" axis.

- 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.

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

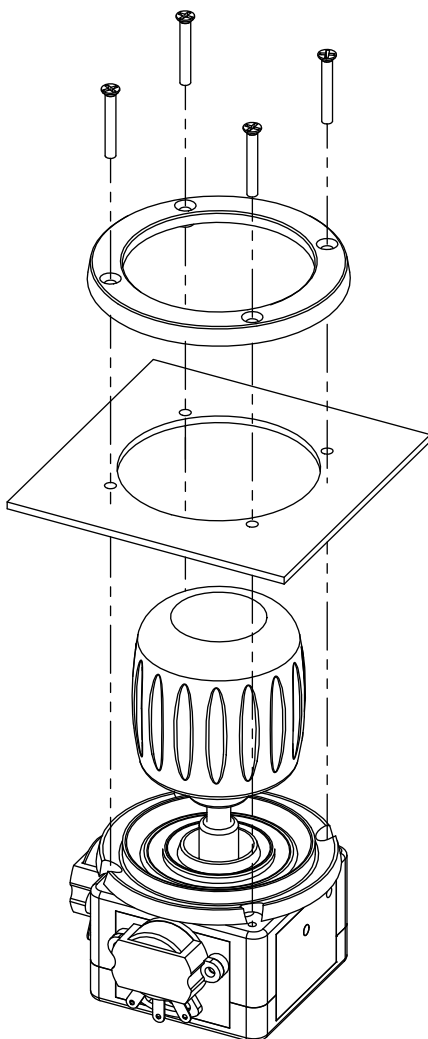
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Overview

M		1				1	
SERIES			Mounting Bezel			Handle	
			C Split Bezel F Square Bezel L Rubber Boot Kit			0 Tapered Convex 1 Concave Tip 2 Flat Tipped 3 Concave Tip - Long 5 Pushbutton 6 Straight Tip - Short 8 3 Axis 9 3 Axis with Pushbutton A Straight Tip - Mid B Straight Tip - Long C Ball Tip E Pushbutton G Pushbutton H Pushbutton M 3 Axis No Button N 3 Axis with 1 Button Q 3 Axis with 2 Buttons	
	Model			Centering			Output Options
	1 2 Axis 2 2 Axis with Pushbuttons 3 3 Axis 4 3 Axis with Pushbuttons			0 Spring Centering 6 Torque Set (Friction)			Potentiometers³: P 5K Ω , 220° M 5K Ω , 56° R 5K Ω , 50°

INSTALLATION



NOTES:

1. Front Mounting Bezels (FM)



C = Split Bezel
Cutout dimensions = 39.70mm(1.562in)

L = Rubber Boot
Cutout dimensions = 39.70mm(1.562in)

2. Rear mounting bezels (RM)



F = Square Bezel
Cutout dimensions = 30.15mm(1.187in)

3. Potentiometer specifications are located on the previous page.



Mounting accessories.

Standard hardware includes:

C= Ring, cup, and 4 black Phl screws 2-56x1/2in

L= Ring and 4 black Phl screws 2-56x1/2in

F= Square bezel, 4 screws 2-56x1/2in Phl, and 4 screws 2-56x1/4in Phl

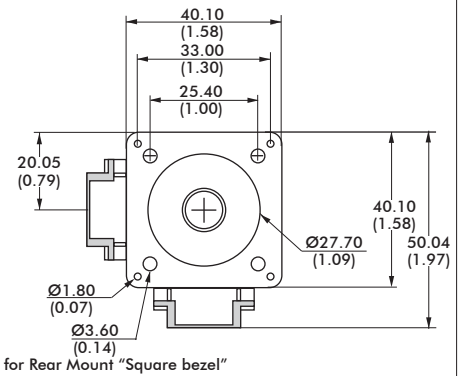
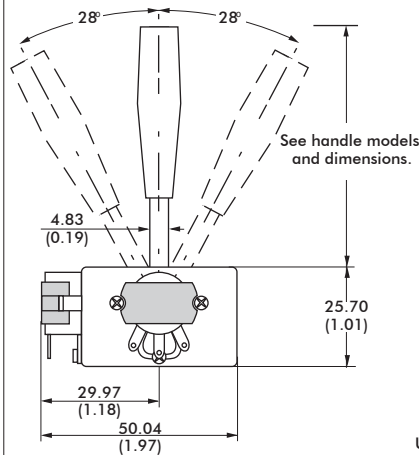
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Overview

2 AXIS WITH OPTION A HANDLE

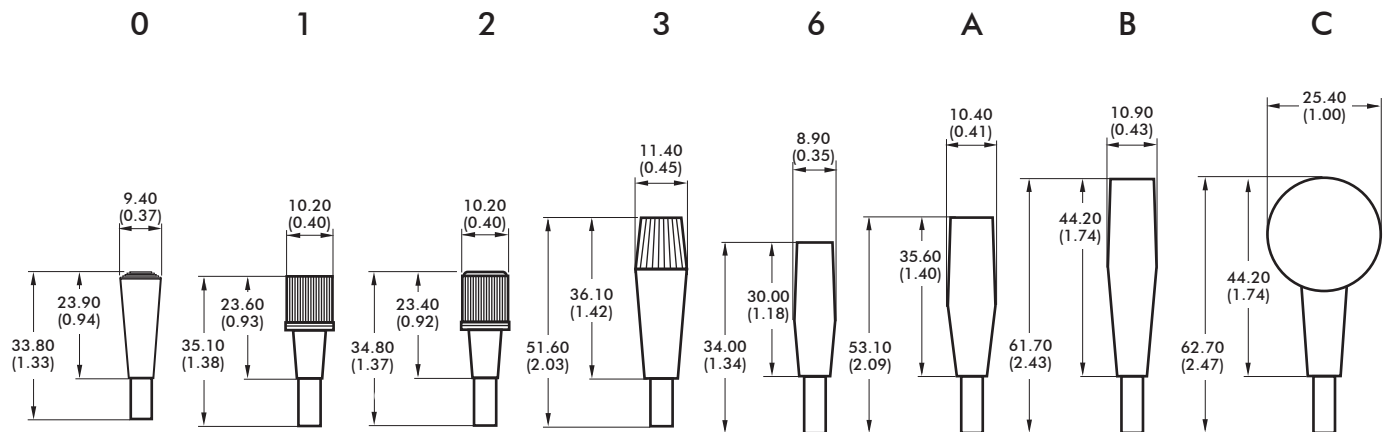


NOTES:

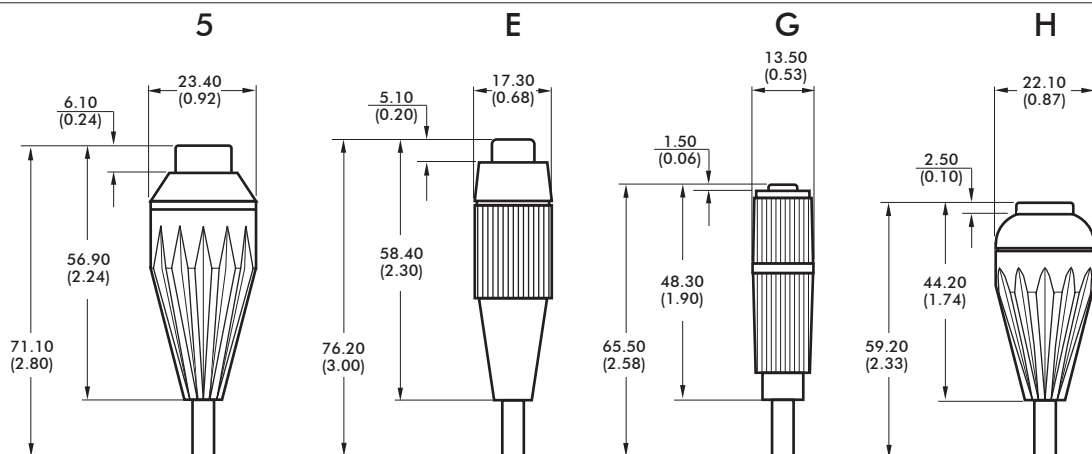
1. Mechanical dimensions represent a joystick with the largest potentiometer option.
2. Potentiometer size will vary according to selected option.

HANDLES

2 AXIS



2 AXIS WITH PUSHBUTTON¹



NOTES:

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

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

APEM

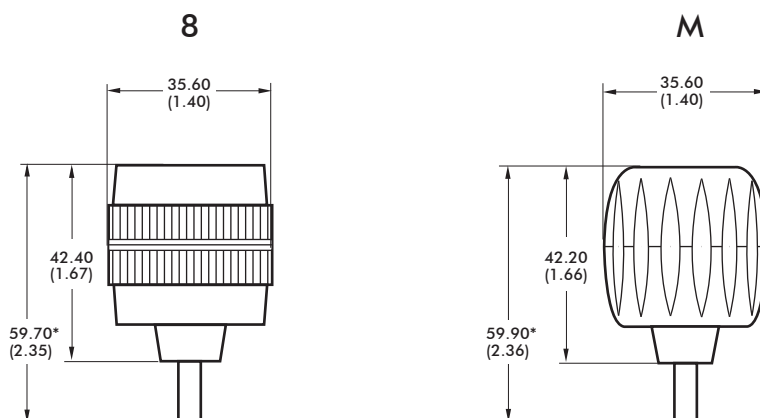
www.apem.com

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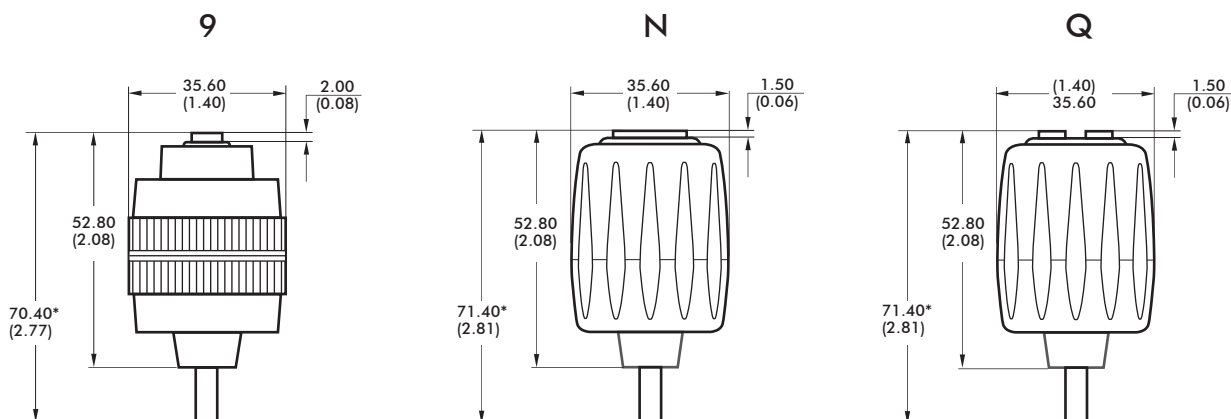
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Overview

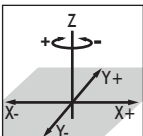
3 AXIS



3 AXIS WITH PUSHBUTTONS



NOTES:

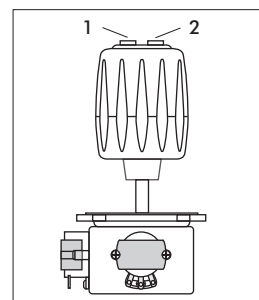
- Dimensions are in mm/(inch).
- Pushbuttons are not sealed. Joysticks are intended for internal applications only.
- Axis orientation:
 
- Wiring information:
 - Cables are provided for pushbuttons and the Z axis.
 - Cables are not supplied for the potentiometers (axis X and Y).

DEFAULT WIRE COLOR CODE*

COLOR	FUNCTION	AWG
2 OR 3 AXIS JOYSTICK WITH 1 PUSHBUTTON - OPTIONS 5,E,G,H,9,N		
ORANGE	Switch 1	28
ORANGE	Switch Common	
3 AXIS JOYSTICK WITH 2 PUSHBUTTONS - Option Q**		
ORANGE	Switch 1	28
BROWN	Switch 2	
GREEN	Switch Common	
Z AXIS IN A 3 AXIS 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:



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