P3 America, Inc.

Motion Control and Automation Products

Multi-Axis Joystick Controller - Potentiometer — Series JC50

2 dimension coordinate type with dual directional (4 way) micro-switches and pushbutton handle

- **Single and Dual Axis - Heavy Duty**
- **Position Hold or Spring Return**
- **Pushbutton Handle Option (IP65)**
- **Center and/or Directional Micro-Switches**
- **Center or Positional Detents**
- **5 mio. operations life**
- **RoHS**

2 dimension coordinate type with round handle and optional mounting plate

1 dimension coordinate type with round handle, directional micro-switches and optional mounting plate

Optional concave style handle

Electrical Data (Note 1)	
Electrical Travel	X and Y Axis: 60° (±30° from center)
Resistance Value	10kΩ ±15%
Independent Linearity Tolerance	±3%
Resolution	Infinite
Output Smoothness	< 0.2% against applied voltage
Contact Resistance Variation	< 5% C.R.V.
Dielectric Strength	500VAC, 1 minute
Insulation Resistance	> 1000MΩ at 500VDC
Rated Power	0.2W (potentiometers)
Pushbutton Handle	N.O. (momentary) 125VAC / 3A 300,000 operations life
Directional Micro-Switches	SPDT 125VAC / 5A 200,000 operations life

- **Special Specifications Available**
  Special resistance values, center tap potentiometers, center detect micro-switch, directional micro-switches, detents, custom cabling, other customization to suit.

Note 1: Customers should test and verify device performance in any given application. General specifications values are measured at temperatures of +15°C ~ +35°C. Specifications are subject to change without notice.

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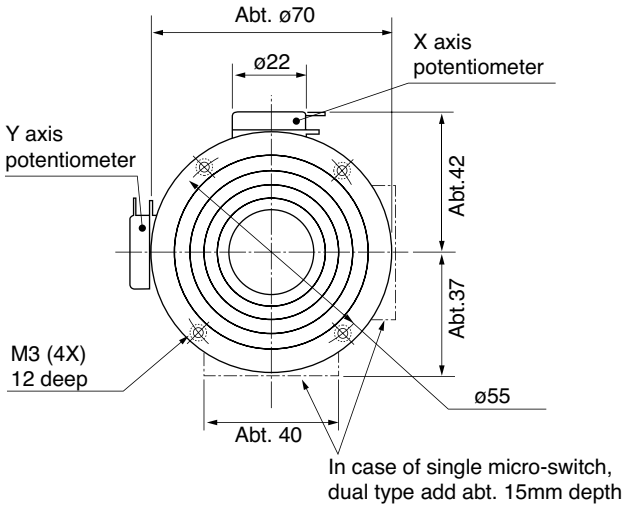
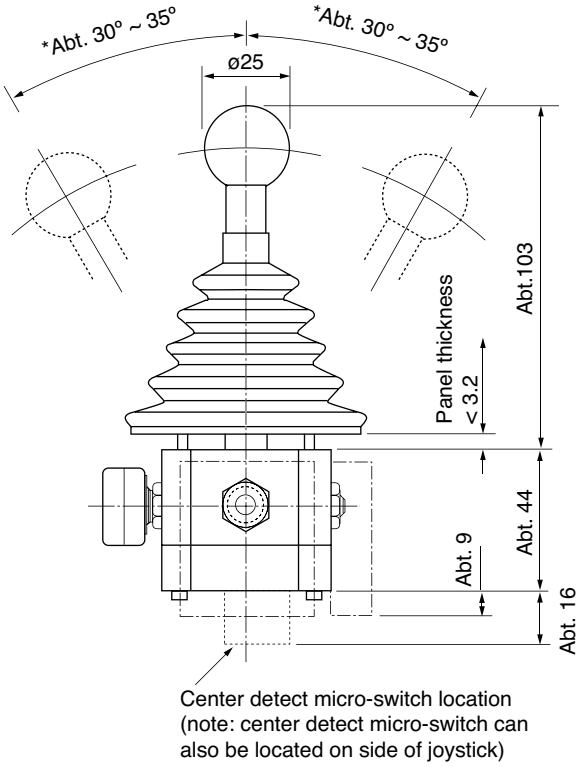
Mechanical Data (Note 1)	
Mechanical Travel	X, Y Axes: approx. ±30° ~ ±35° from center
Operating Force	X, Y, Axes: 3 ~ 15N (300 ~ 1500gf) w/standard spring return
Operating Temperature	-20°C ~ +65°C
Vibration	10 ~ 55Hz 98m/s² (10G)
Shock	30G
Life Expectancy	> 5,000,000 random operations
Protection Grade	IP65 (above panel)
Weight	approx. 350g

Dimensions (mm)

*In case of handle pattern type Q, angle becomes ±20° ~ ±25° from center position





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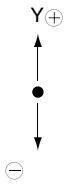
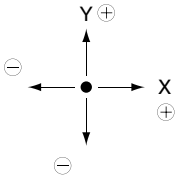
Handle Operating Patterns

Type: I



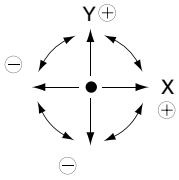
Single axis

Type: X



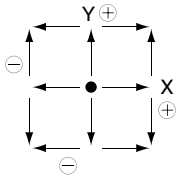
Dual axis
Operates on X or Y axis only.

Type: O



Dual axis
Omni-directional circular pattern.

Type: Q

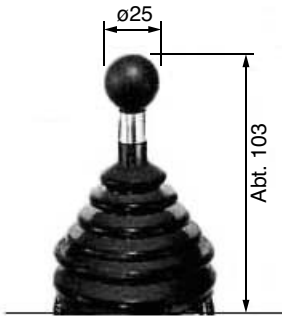


Dual axis
Omni-directional square pattern. Operating angle becomes ±20° ~ ±25° from center.

Handle Types

dimensions (mm)

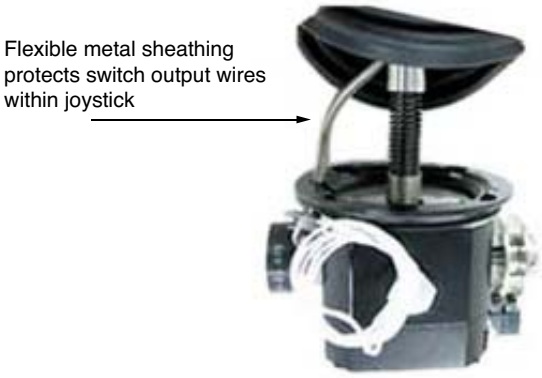
Round Knob (standard)



Pushbutton Handle

Concave Handle

Pushbutton Handle Features



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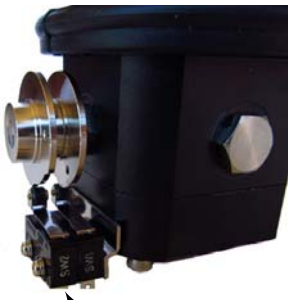
Center Detect Micro-Switch Option

In case center detect micro-switch is located on bottom of joystick. Allows for one switch for both X and Y axis.

Switch Type	SPDT (N.O. C N.C.)
Electrical Rating	125VAC / 5A
Rated Life	> 200,000 operations
Activation	'ON' at center position 'OFF' at ±5° from center



In case center detect micro-switch is located on side of joystick. For dual axis, two switches required.

Axis Driven Directional Micro-Switches

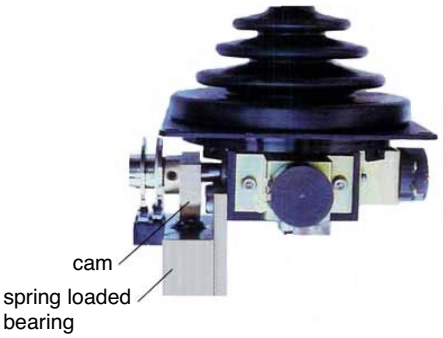
Switch Type	SPDT (N.O. C N.C.)
Electrical Rating	125VAC / 5A
Rated Life	> 200,000 operations
Activation	*'ON' at ±5° from center 'OFF' at center position

*Activation angle can be specified by customer. Ex. at end of travel, 50% of travel, etc.

Micro-switches can be ganged and activation angles can be independently specified. Ex. @ 20%, 40% and 80% of travel, etc.

Detent Mechanism(s)

Detents provide operator with a distinct tactile feedback of a specific position. In case of configurations without spring return to center (position hold with increased operating friction), tactile sense of center position is missing. A center detent can be utilized to provide the operator with this positive feel.
In joystick configurations with or without spring return to center, detents can be spaced along the X and/or Y axis to provide a specific feedback of a specified position.
In case of spring return to center types, detent force can be adjusted to either maintain a specified position without operator or allow handle to return to center. Please consult us for specific applications.



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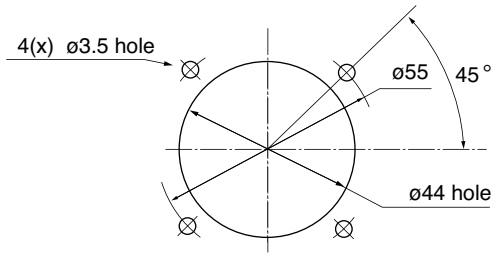
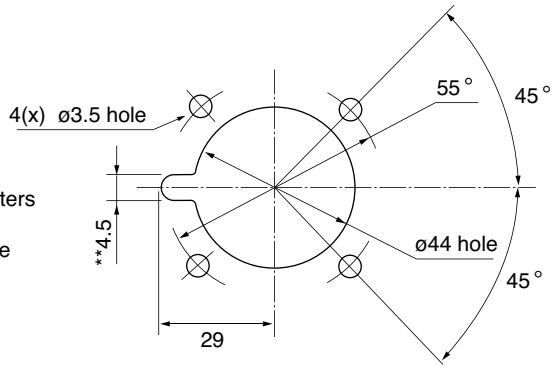
Panel Arrangements (non-pushbutton handle types)



Dimensions: mm

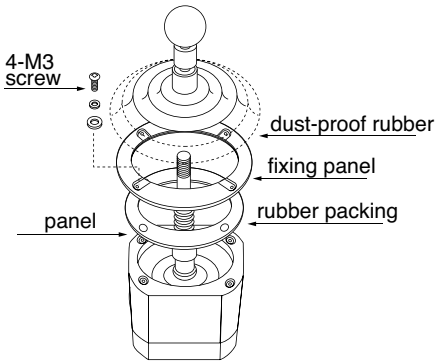
Panel Arrangements (with pushbutton handle)

**Note: For configurations other than standard potentiometers mounted, this dimension may change and/or move to seperate location



Dimensions: mm

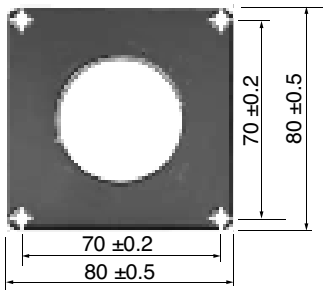
Mounting



1. Turn up rubber boot to see fixing panel
2. remove screws and then rubber packing
3. Set to panel and attach as shown.

Optional Mounting Plate

Thickness: 2mm



Dimensions: mm

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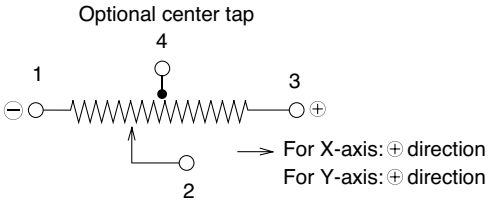
Wiring Details



Potentiometer terminals can be fitted with AMP 110 series connectors (2.8 X 0.5mm) or equivalent.

Pushbutton handle lead wires are AWG26, 300mm in length.

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