


# JC50 Series

## Multi-Axis Joystick Controller (Potentiometer)



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° ( $\pm 30^\circ$ from center)
Resistance Value	10k $\Omega$ $\pm 15\%$
Independent Linearity Tolerance	$\pm 3\%$
Resolution	Infinite
Output Smoothness	< 0.2% against applied voltage
Contact Resistance Variation	< 5% C.R.V.
Dielectric Strength	500VAC, 1 minute
Insulation Resistance	> 1000M $\Omega$ 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.

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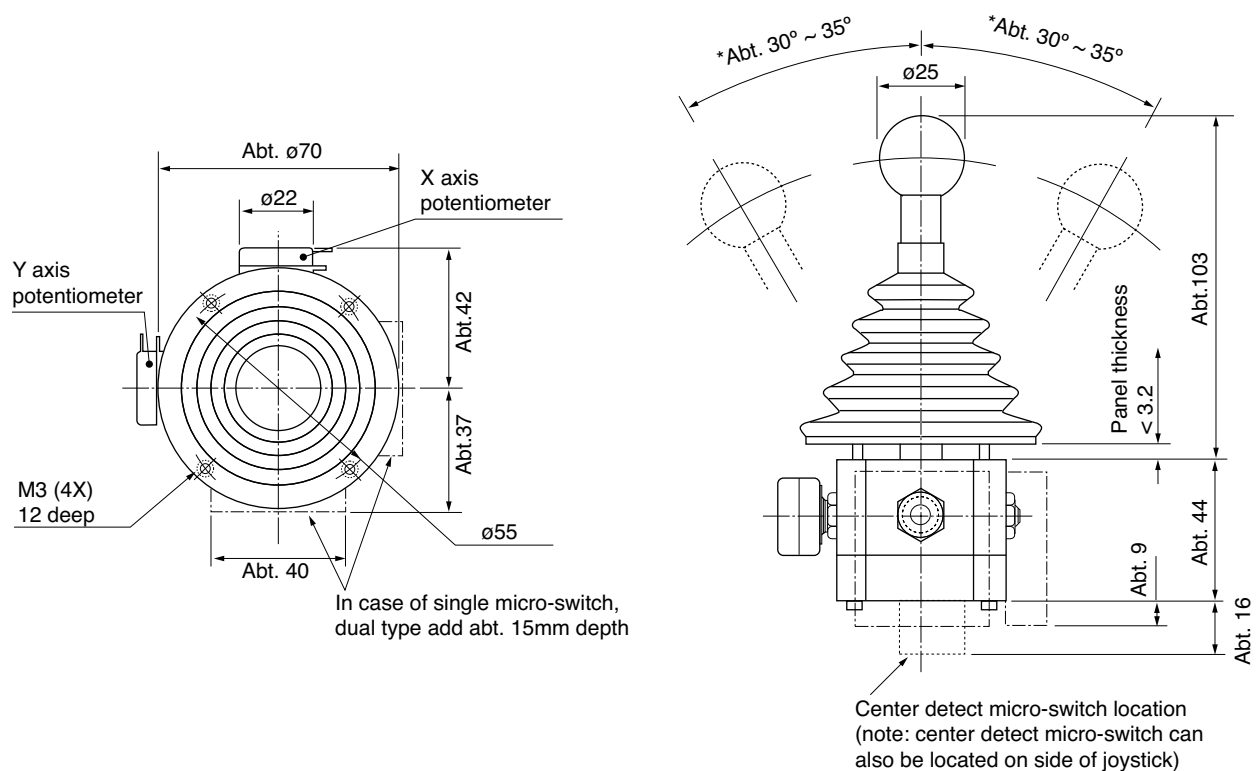
## Multi-Axis Joystick Controller (Potentiometer)

### Mechanical Data (Note 1)

Mechanical Travel	X, Y Axes: approx. $\pm 30^\circ \sim \pm 35^\circ$ 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/s <sup>2</sup> (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  $\pm 20^\circ \sim \pm 25^\circ$  from center position



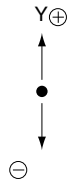
# JC50 Series

## Multi-Axis Joystick Controller (Potentiometer)

### Handle Operating Patterns

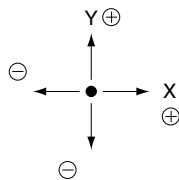
Type:

I



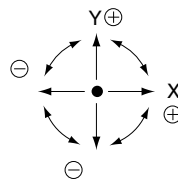
**Single axis**

X



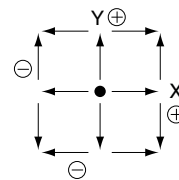
**Dual axis**  
Operates on X  
or Y axis only.

O



**Dual axis**  
Omni-directional  
circular pattern.

Q



**Dual axis**  
Omni-directional  
square pattern. Operating  
angle becomes  $\pm 20^\circ \sim$   
 $\pm 25^\circ$  from center.

### Handle Types

dimensions (mm)

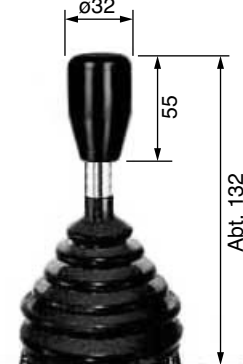
**Round Knob  
(standard)**



**Pushbutton Handle**



**Concave Handle**



### Pushbutton Handle Features



Flexible metal sheathing  
protects switch output wires  
within joystick



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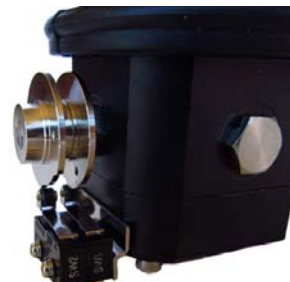
## Multi-Axis Joystick Controller (Potentiometer)

### 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 $\pm 5^\circ$ 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



Cams

Micro-switches

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

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

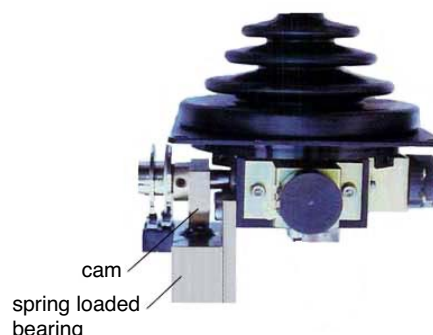
Micro-switches can be ganged and activation angles can be independently specified. Ex. @ 20%, 40% and 80% of travel, etc.

### 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.

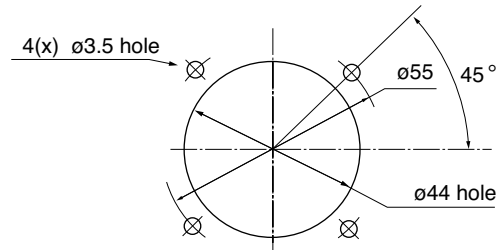
In case of spring return to center types, detent force can be adjusted to either maintain a specified position without operator or allow handle to return to center. Please consult us for specific applications.



# JC50 Series

## Multi-Axis Joystick Controller (Potentiometer)

### Panel Arrangements (non-pushbutton handle types)

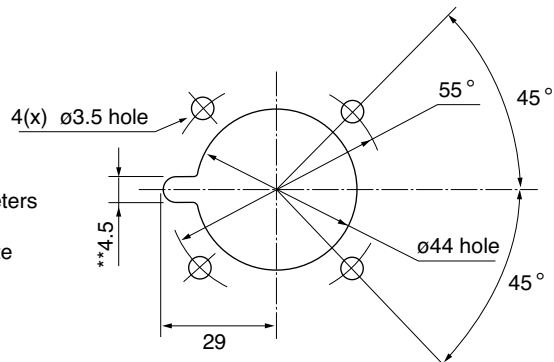


Dimensions: mm

### Panel Arrangements (with pushbutton handle)

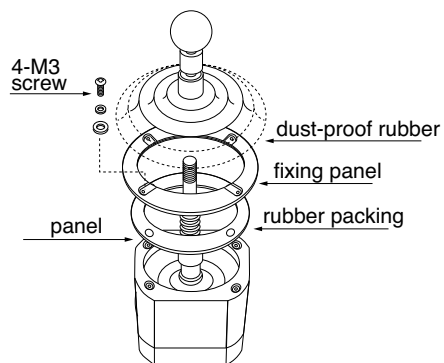


**\*\*Note:** For configurations other than standard potentiometers mounted, this dimension may change and/or move to separate location



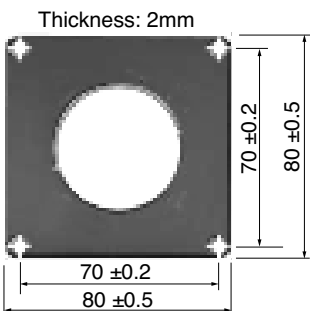
Dimensions: mm

### 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

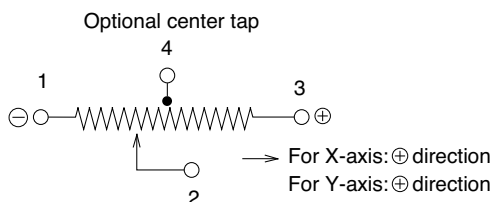


Dimensions: mm

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## Multi-Axis Joystick Controller (Potentiometer)

### 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.