


# JA50 Series

## Multi-Axis Joystick Controller (Potentiometer)



2 dimension coordinate type with spring return and rubber boot

- Single, Dual and Triple Axis
- Position Hold or Spring Return
- Up to 320° Z Axis Angle
- X,Y Axis with Guided Feel
- Switch and Detent Options
- 5 mio. operations life
-  **RoHS**



2 dimension coordinate type, position hold (no spring), without rubber boot.

3 dimension coordinate type, position hold (no spring), without rubber boot. Full handle twist for Z axis.

3 dimension coordinate type, Z axis potentiometer incorporated in knob which twists and has spring return to center.

### Electrical Data (Note 1)

Electrical Travel	X and Y Axis: 60° (±30° from center) Z Axis: 320° (±160° from center) Without spring return Z Axis: 90° (±45° from center) With spring return
Resistance Value	10kΩ ±15% (X, Y and Z axis)
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 (0.06W Z Axis with potentiometer inside knob)

### Special Specifications Available

Special resistance values, center tap potentiometers, center detect micro-switch, directional micro-switches, detents, other customization to suit.

Note 1: Customers should test and verify device performance in any given application. Specifications are subject to change without notice.

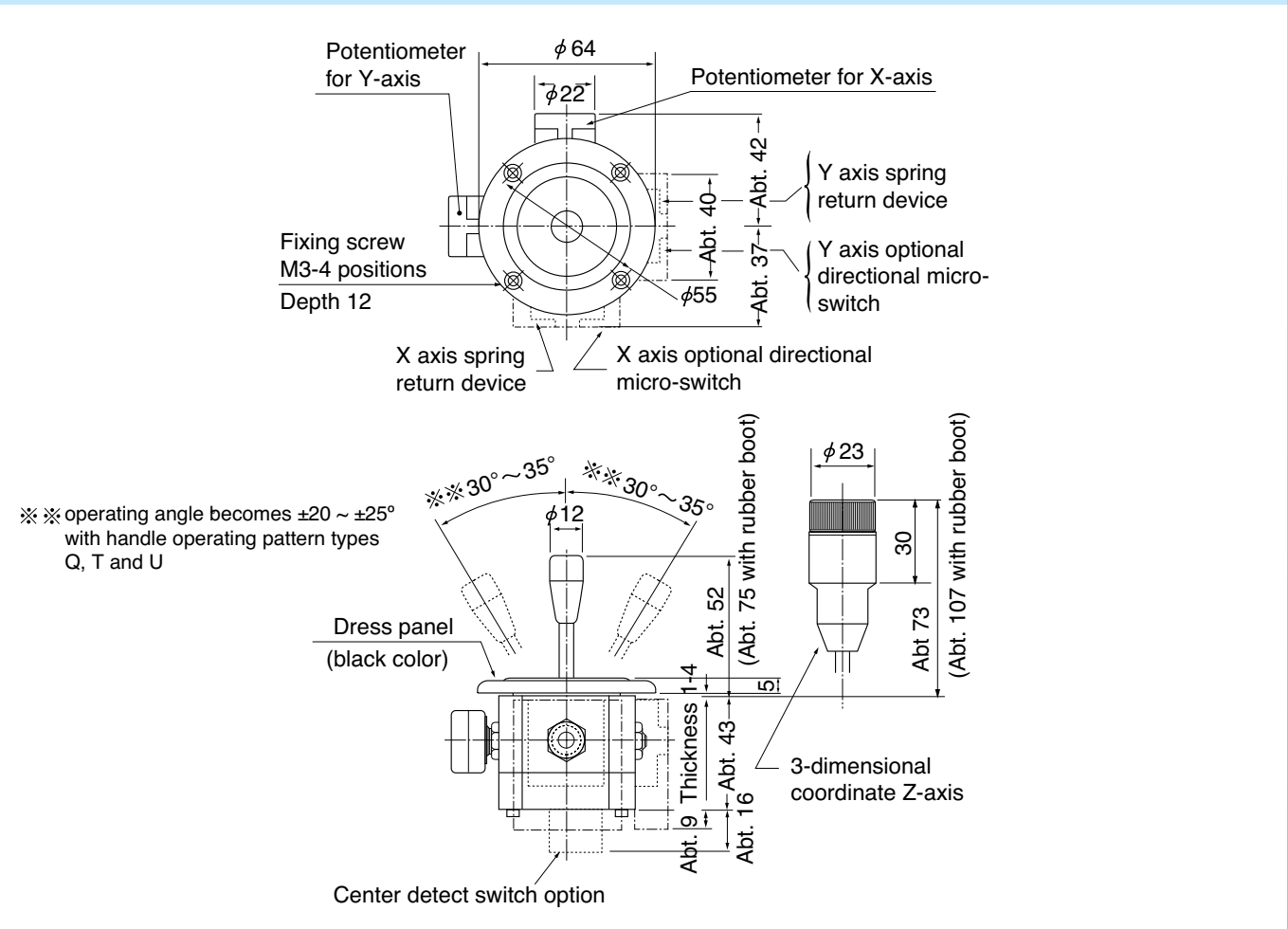
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### Mechanical Data (Note 1)

Mechanical Travel	X, Y Axes: approx. $\pm 30^\circ \sim \pm 35^\circ$ from center Z Axis: $320^\circ (\pm 160^\circ)$ without spring return Z Axis: $\pm 45^\circ \sim \pm 50^\circ$ from center with spring return
Operating Force	X, Y, Z Axes: 0.5 ~ 0.8N (without spring return) X, Y Axes: 0.8 ~ 1.5N (with spring return) Z Axis: 20 ~ 85mN·m (with 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	IP40 (IP54 with boot, dual axes only)
Weight	230 ~ 300g depending on options

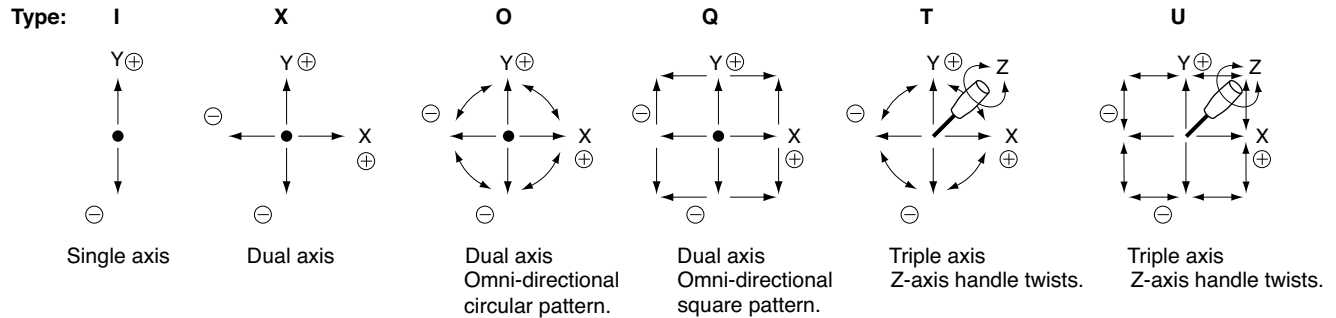
### Dimensions (mm)



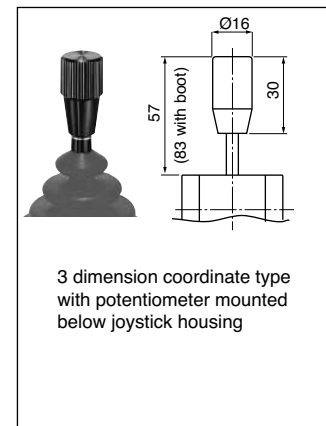
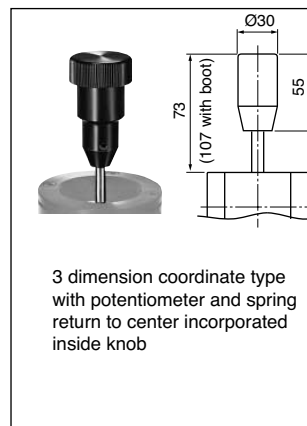
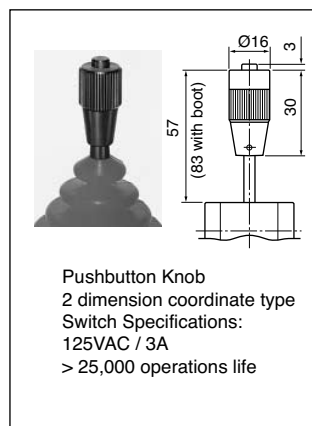
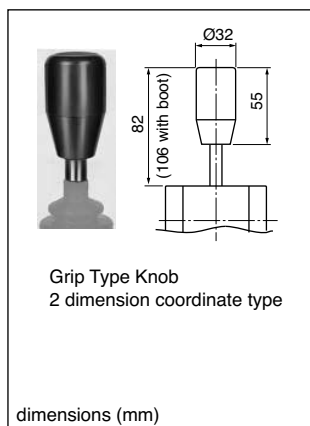
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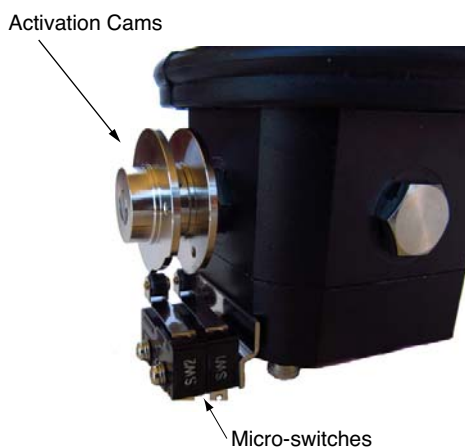
### Handle Operating Patterns



### Optional Handles



### Axis Driven Micro-Switches



<b>Center Detect Switch (JA90 &amp; JB90)</b>	Switch Type	SPDT (N.O. C N.C.)
	Electrical Rating	125VAC / 5A
	Life Expectancy	min. 200,000 operations
	Activation	"ON" @ center "OFF" @ ±5° from center

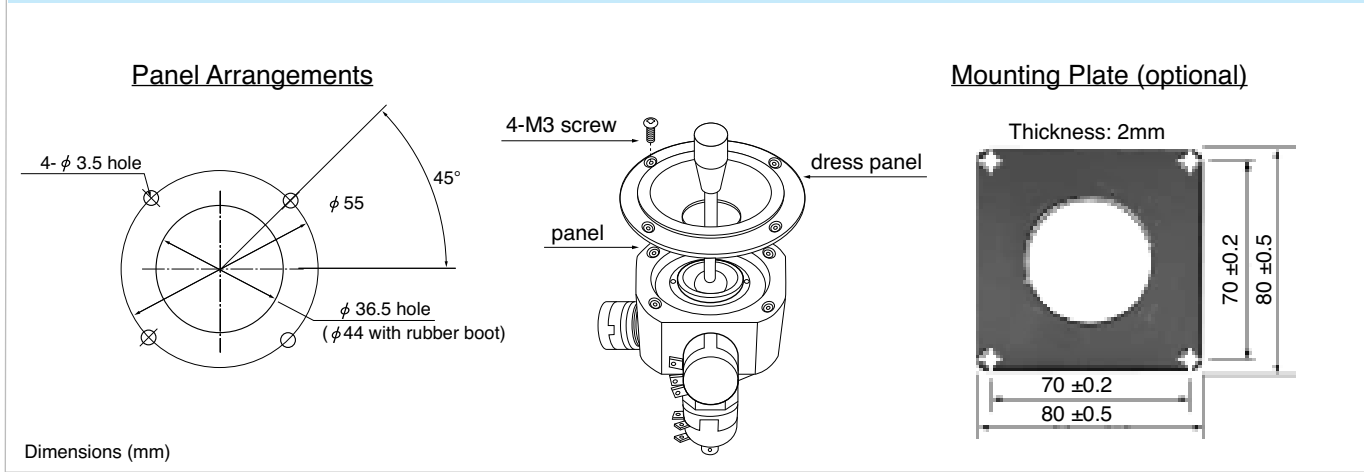
<b>Directional Switches (JA90 Only)</b>	Switch Type	SPDT (N.O. C N.C.)
	Electrical Rating	125VAC / 5A
	Life Expectancy	min. 200,000 operations
	Activation	"ON" @ ±5° from center * "OFF" @ center

\* Customer can specify activation angle of switches

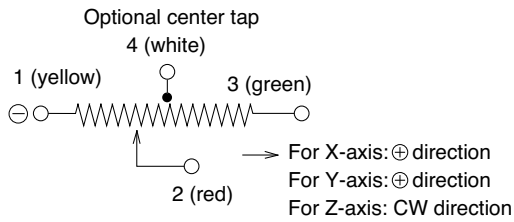
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### Mounting Details



### X, Y & Z Axis Potentiometer Schematic



For Z axis with potentiometer incorporated inside knob, terminals shall be leadwires, approx. 300mm length, AWG28

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