

Multi-Function Joystick Controller

Series JH60C



- Dual, Triple or Quad Axis
- Precision Hall Effect Potentiometers
- Multiple Pushbutton Options
- Dual Output Option for all Axis
- High EMS / ESD Durability
- 5 Mio. Operations Mechanical Life
- **RoHS**



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

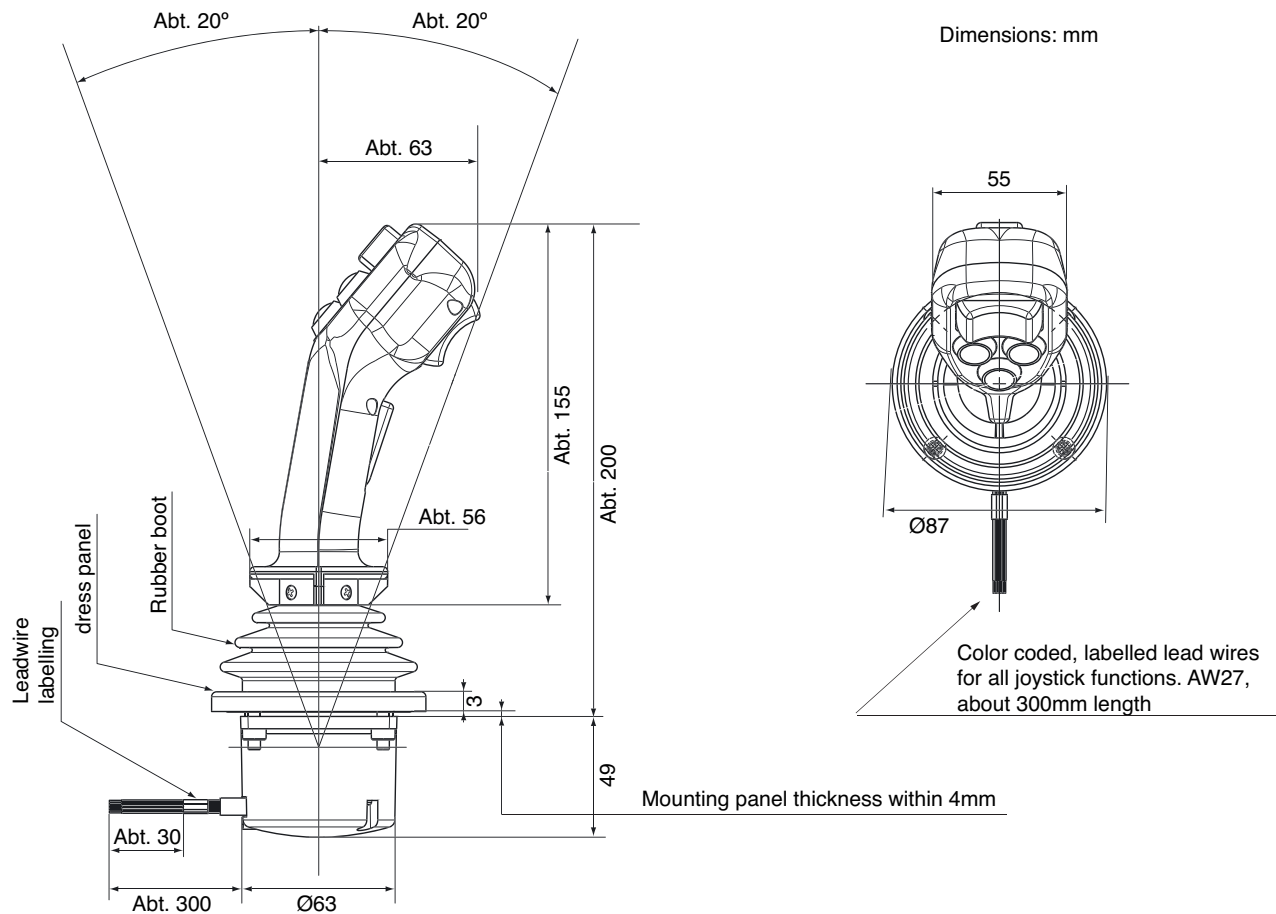
Multi-Axis Joystick Controller

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X and Y Axes Mechanical Data (Note 1)

Mechanical Travel	approx. $\pm 20^\circ$ from center (40° overall)
Operating Force	Spring return w/guided feel; 3N ~ 4.5N (300 ~ 450gf)
Operating Temperature	$-20^\circ\text{C} \sim +60^\circ\text{C}$
Vibration	10 ~ 55Hz 98m/s^2 (10G)
Shock	30G
Life Expectancy	> 5,000,000 random operations
Protection Grade	IP40
Weight	approx. 800g

Basic Dimensions



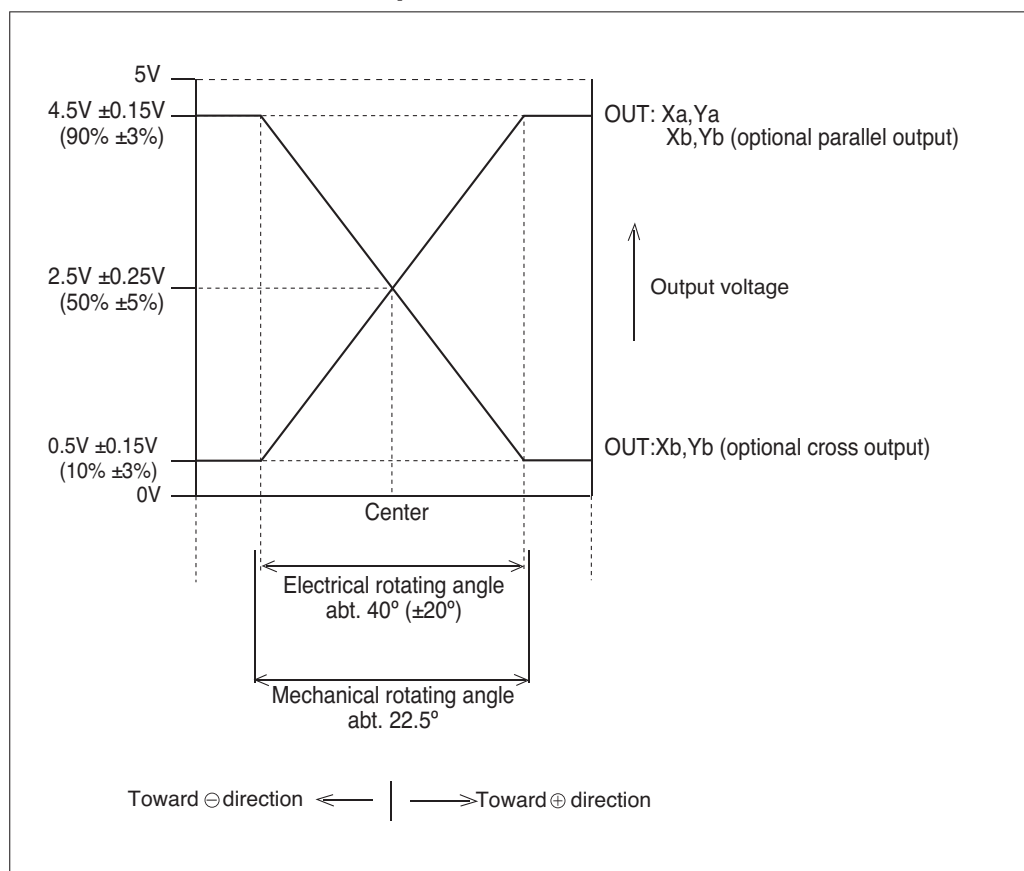
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Specifications of X and Y Axis Hall Effect Potentiometer (Note 1)

Electrical Travel	40° ($\pm 20^\circ$ from center)
Load Resistance	over 10k Ω
Independent Linearity Tolerance	$\pm 3\%$
Resolution	Infinite
Applied Voltage	5VDC $\pm 10\%$
Effective Output	0.5V ~ 4.5V (redundant option)
EMS Durability	100V/m (80MHz~1GHz sine-wave 80% AM modulation)
ESD Durability	± 8 KV contact ± 15 KV aerial discharge (IEC61000-4-2)
Dielectric Strength	1 minute at 500VAC
Insulation Resistance	Over 1000M ohms at 500VDC

Output Characteristics



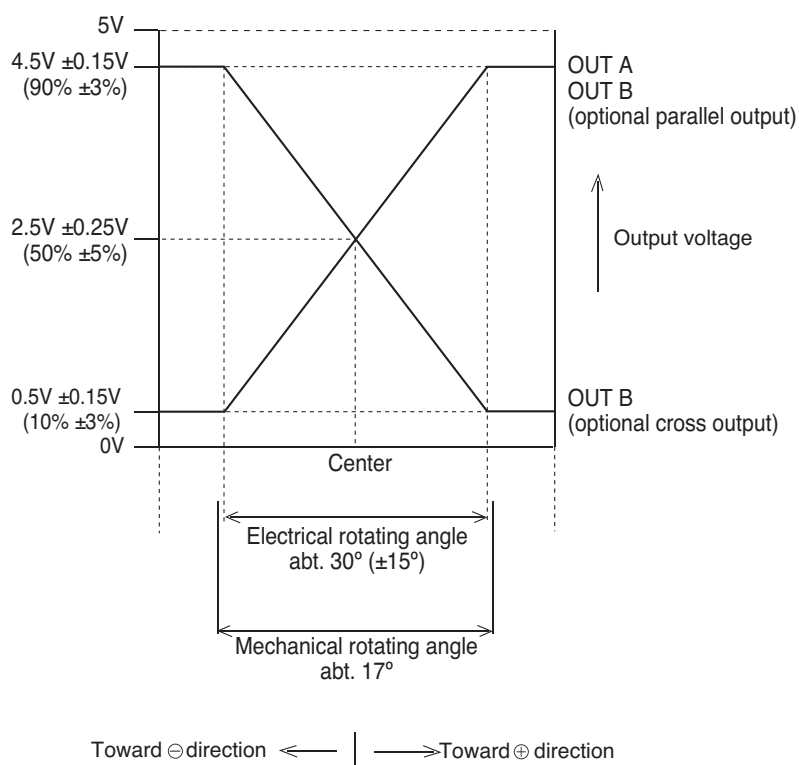
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Specifications of Z Axis (see-saw type) Hall Effect Potentiometer (Note 1)

Electrical Travel	30° ($\pm 15^\circ$ from center)
Operating Force	Spring return; 24mN · m ~ 30mN · m
Return to Center Accuracy	50% $\pm 3\%$
Load Resistance	over 10k Ω
Independent Linearity Tolerance	$\pm 3\%$
Resolution	Infinite
Applied Voltage	5VDC $\pm 10\%$
Effective Output	0.5V ~ 4.5V (redundant option)
EMS Durability	100V/m (80MHz~1GHz sine-wave 80% AM modulation)
ESD Durability	± 8 KV contact ± 15 KV aerial discharge (IEC61000-4-2)
Dielectric Strength	1 minute at 500VAC
Insulation Resistance	Over 1000M ohms at 500VDC

Output Characteristics



Z1 Axis



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Specifications of Pushbutton Switches (Note 1)

Model Number	59-111 (black) Manufactured by ITW Switches
Operating Characteristics	Momentary type (SW-ON when pushed)
Rating	100mA, 50VDC
Dielectric Strength	1000VAC, 1 minute
Insulation Resistance	> 1000MΩ at 500VDC
Mechanical Life Expectancy	500,000 operations max.

Circuit diagram and wiring connection diagram for push button switch

SW1 (Yellow) —○—○— (Yellow)
 SW2 (Gray) —○—○— (Gray)
 SW3 (White) —○—○— (White)



Specifications of Trigger (Dead Man) Switch (Note 1)

Model Number	SPVQ810100 Manufactured by ALPS
Operating Characteristics	Momentary type (SW-ON when pushed)
Rating	100mA, 12VDC
Dielectric Strength	500VAC, 1 minute
Insulation Resistance	> 100MΩ at 500VDC
Mechanical Life Expectancy	300,000 operations max.

Circuit diagram and wiring connection diagram for dead man switch

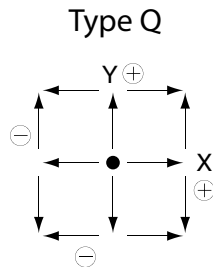
SW7 (Red) —○—○— (Red)



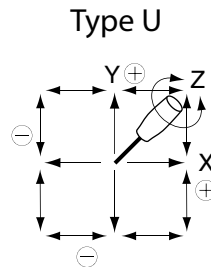
Multi-Axis Joystick Controller

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X and Y Axis Lever Operating Pattern



Dual axis
Omni directional (360°)



Triple axis
X and Y axis, Omni directional (360°)
Z axis, rocker potentiometer

Handle Variations



w/dual axis
thumb control
hall effect
controller

w/three see-saw
potentiometer
single axis
controls

w/two see-saw
potentiometer
single axis
controls, three
pushbuttons switches
and trigger switch

w/two see-saw
potentiometer
single axis
controls, two
colored switches.

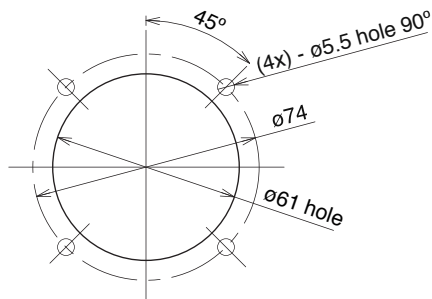
w/five colored
pushbutton switches
and trigger switch

Multi-Function Joystick Controller - Hall Effect Potentiometer

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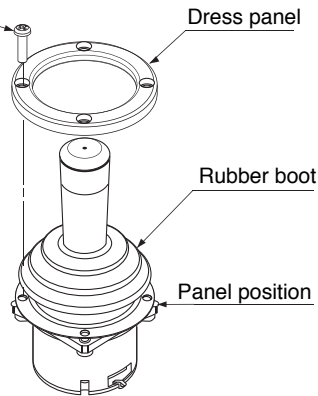
Mounting Details

Panel arrangements

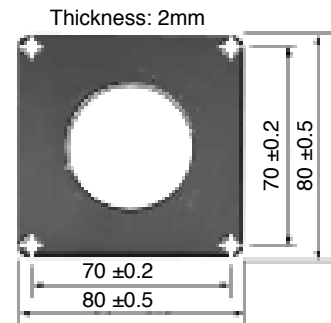


Dimensions (mm)

(4x) - M5 x 20 screws
(Included)



Mounting Plate (optional)



1. Remove 4 screws from dress panel.
2. Put joystick from below panel as shown
3. Assemble the dust proof rubber boot and dress panel as shown with 4 supplied screws.