

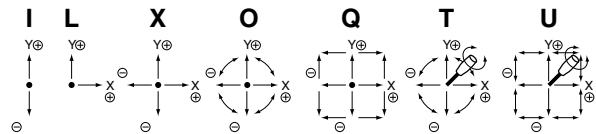
# H50JA

New Product

Potentiometer with a hall effect IC type resistive element

## Nomenclature

- **S** means special mechanical specifications not applicable to our standard.
- **H** means hall effect IC type potentiometer(HSM18E) incorporated type.
- **50** means approx. size of base housing in mm.
- **J** means joystick controller.
- **Kind of types**  
**A** means 1- or 2- dimensional coordinate and also means hall effect IC type potentiometers are mounted outside housing case.
- **K** means square shape.
- **Mechanism**  
**X** means 1-dimensional coordinate.  
**Y** means 2-dimensional coordinate.
- **Available directions of lever operation as below illustration**  
**Standard version:**  
**O**: Omni-directional 360° operating type.  
**Special version:**  
**I**: I figure (Y) directional operating type.  
**L**: L figure(+Y, +X only) directional operating type.  
**X**: Cross direction(+) of X and Y operating type.  
**Q**: Square-directional 360° operating angle.  
**T**: In addition to 360-omni-directional operation, 3-dimensional coordinate operation is possible by rotating knob in which a potentiometer is incorporated.  
**U**: In addition to "Q operation", 3-dimensional coordinate operation is possible by rotating knob in which a potentiometer is incorporated.  
**S**: Special directions of lever operation other than above mentioned types.



**S** **H** **50** **J** **A** **K** - **Y** **O** - **2** **0** **R2** **G** - **0000**

- **Number of potentiometers to be incorporated**  
**0**...no potentiometer incorporated. **1**...1 potentiometer incorporated.  
**2**...2 potentiometers incorporated.
- **Number of switches to be incorporated**  
**0**...no switch incorporated. **1**...1 switch incorporated. **2**...2 switches incorporated.  
**3**...3 switches incorporated. **4**...4 switches incorporated.  
**5**...5 switches incorporated. **6**...6 and over 6 switches incorporated.  
**9**...9 Other switches to your special request.
- **With spring return device:**  
**R1**: with spring return device for 1-dimensional coordinate.  
**R2**: with spring return device for 2-dimensional coordinate.
- **Mounting accessories:**  
**G**: with dust proof rubber cover.  
**P**: with sub-panel for mounting.
- **Special part number:**  
 In case we produce customized product, we add 4-digit branch number.

# This joystick controller offers longer operation life, vibration resistance, high reliability and safety.



**H50JAK-YO-20R2**  
(Standard 2-dimensional coordinate type)

## STANDARD SPECIFICATIONS

### Mechanical performance

**Controlling range of operating lever:** 2-dimensional coordinate type.  
Omni-directionally approx.  $\pm 18^\circ \sim \pm 22^\circ$  operation from center position.

**Operating force:** With spring return device with directive feeling.

X and Y directions: Approx. 0.8~1.5N(80~150gf)

**Operating temperature range:**  $-20^\circ\text{C} \sim +65^\circ\text{C}$

**Vibration:** 10~55Hz 98m/s<sup>2</sup>

**Shock:** 294m/s<sup>2</sup>

**Mechanical life expectancy:** Approx. 10,000,000 operations.

**Mass:** 2-dimensional coordinate type: Approx. 280g

### Electrical performance

**Hall effect IC type potentiometer(SHSM18E) mounted**

- Applied voltage:  $5\text{V} \pm 10\%$  D.C.
- Effective output: Approx. 0.5V~4.5V
- Electrical rotating angle: Approx.  $\pm 18^\circ$
- Independent linearity tolerance:  $\pm 3\%$
- Load resistance: over 10K $\Omega$

**Resolution:** Infinitesimal

**Dielectric strength:** 1 minute at 250V.A.C.

**Insulation resistance:** Over 100M $\Omega$  at 250V.D.C.

**EMS durability:** 100V/m(80MHz~1GHz 1KHz sine-wave 80%AM modulation)

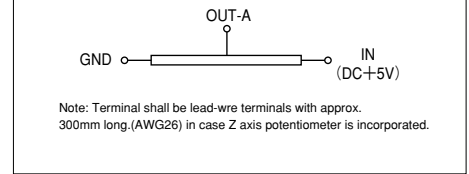
**ESD durability:**  $\pm 8\text{KV}$  contact  $\pm 15\text{KV}$  aerial discharge 10 times at 1second interval, single discharge.

### Special Specifications Available

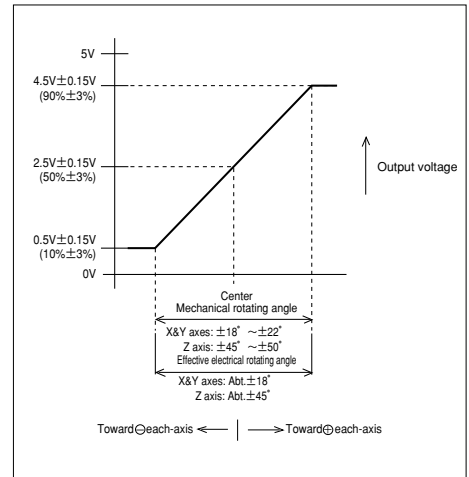
Please see page 45, a table of "Standard and Special Specifications Available".

Regarding kind of output characteristic, dual cross output or dual parallel output instead of single output is also available.

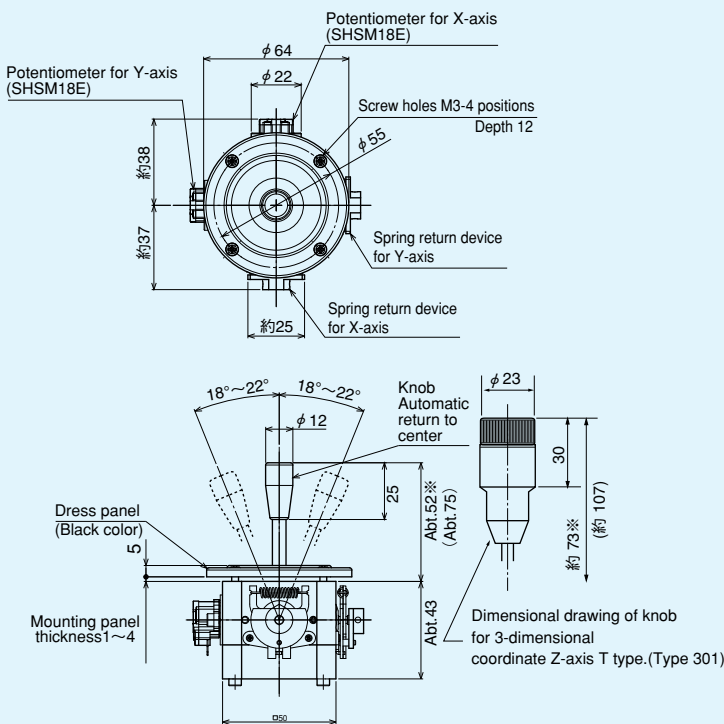
### Terminal Connection Diagram



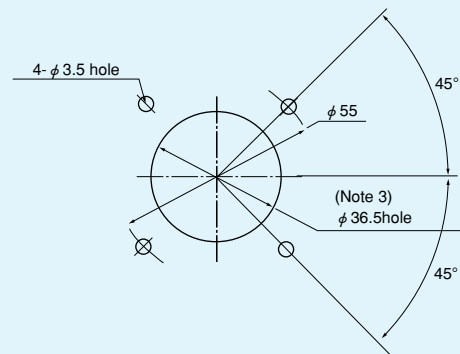
### Output Characteristic



## Standard Dimensions



## Panel Arrangements



Note 3: In case of a dust-proof rubber cover is mounted, it is  $\phi 44$  hole.

Note 1: In case a dust-proof rubber cover is mounted, the shape of dress panel shall change. \* Numeral in parentheses shows that of with a dust-proof rubber cover.

Note 2: 4 pcs. of mounting screws(M3X14) are attached.

(Unit : mm)