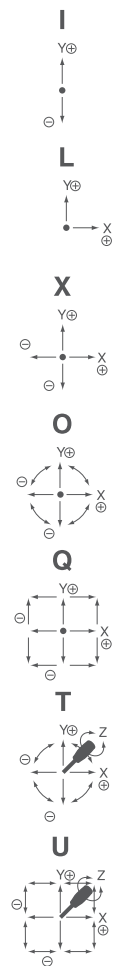
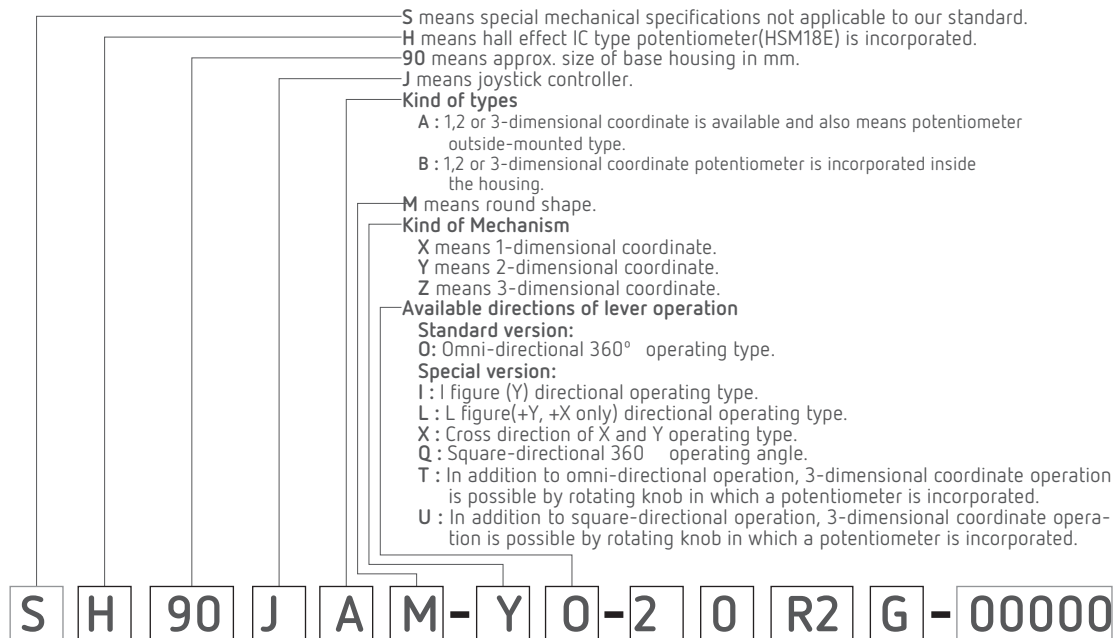




outside mounted type H90JA | Potentiometer incorporated type H90JB

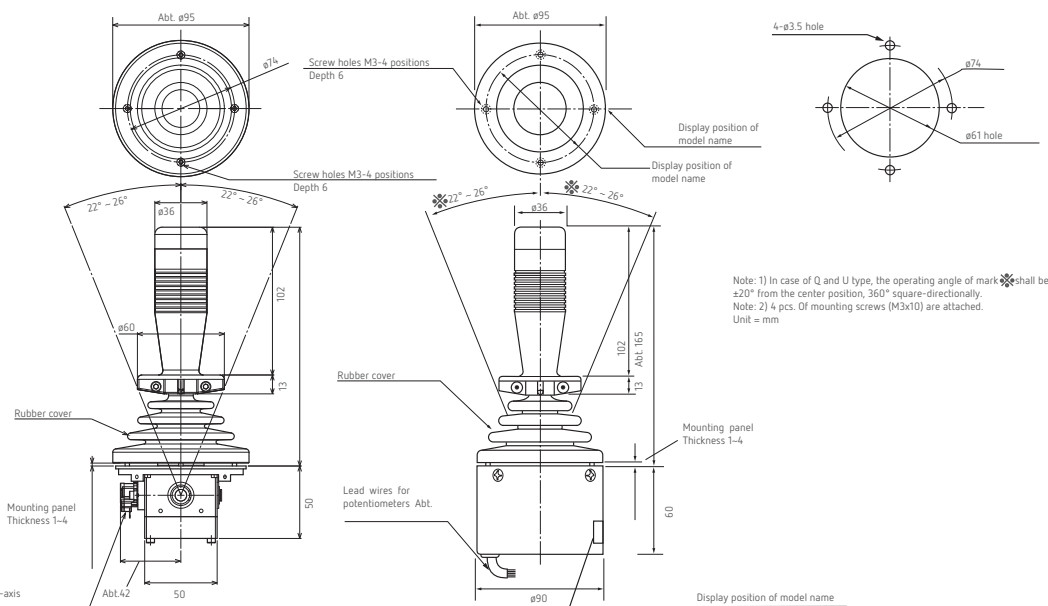


## Model H90JA/H90JB



**Number of potentiometers to be incorporated**  
 0 no potentiometer incorporated. 11 potentiometer incorporated.  
 22 potentiometers incorporated. 33 potentiometers incorporated.  
**Number of switches to be incorporated**  
 0 no switch incorporated. 11 switch incorporated. 22 switches incorporated.  
 33 switches incorporated. 44 switches incorporated.  
 55 switches incorporated. 66 and over 6 switches incorporated.  
 99 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.  
**R3**: with spring return device for 3-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 or 5-digit branch number.

### Standard Dimensions



Potentiometer for Y-axis (SHSM18E)

**Standard specifications**

**Mechanical performance**

**Controlling range of operating lever:**

- 2-dimensional coordinate type: Omni-directionally approx.  $\pm 22^\circ \sim \pm 26^\circ$  operation from center position.
- 3-dimensional coordinate type: Approx.  $\pm 45^\circ \sim \pm 50^\circ$  operation from center position of knob in addition to the operating range of 2-dimensional coordinate type.

**Operating force:** (Standard spring return device : Automatically return to center(Omni-directional type))

X and Y directions: Approx. 2 ~ 12N(200~ 1200gf)

X direction: Approx. 20~ 85mNm(200~ 850gcm)

**Operating temperature range:** - 20°C ~ 65°

**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. 650g  
3-dimensional coordinate type: Approx. 750g

**Electrical performance**

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

- Applied voltage: 5V  $\pm$  10% D.C.
- Effective output: Approx. 0.5V ~ 4.5V
- Electrical rotating angle: X and Y-axis: Approx.  $\pm 22^\circ$  Z-axis: Approx.  $\pm 45^\circ$
- Independent linearity tolerance:  $\pm 3\%FS$
- 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:**  $\pm 8KV$  contact  $\pm 15KV$  aerial discharge 10 times at 1 second interval, single discharge.

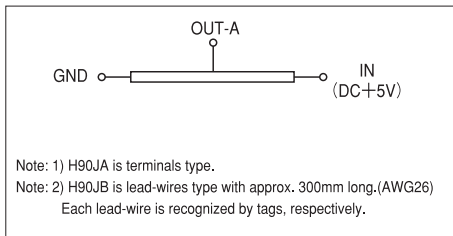


**H90JAM-YO-20R2G**  
(Standard : 2-dimensional coordinate type)

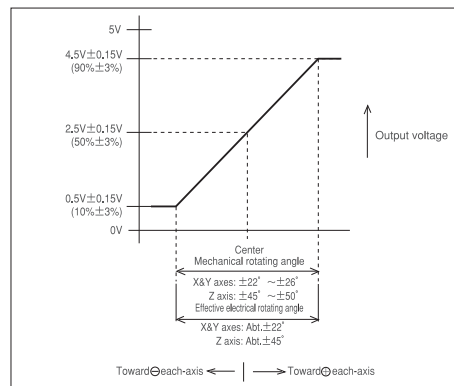


**H90JBM-YO-20R2G**  
(Standard : 2-dimensional coordinate type)

**Terminal Connection Diagram**



**Output Characteristic**



**Special Specifications Available**

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

**Specially Ordered Versions for Z axis** The following versions are available to Z axis knob for both models H90JAM and H90JBM.

