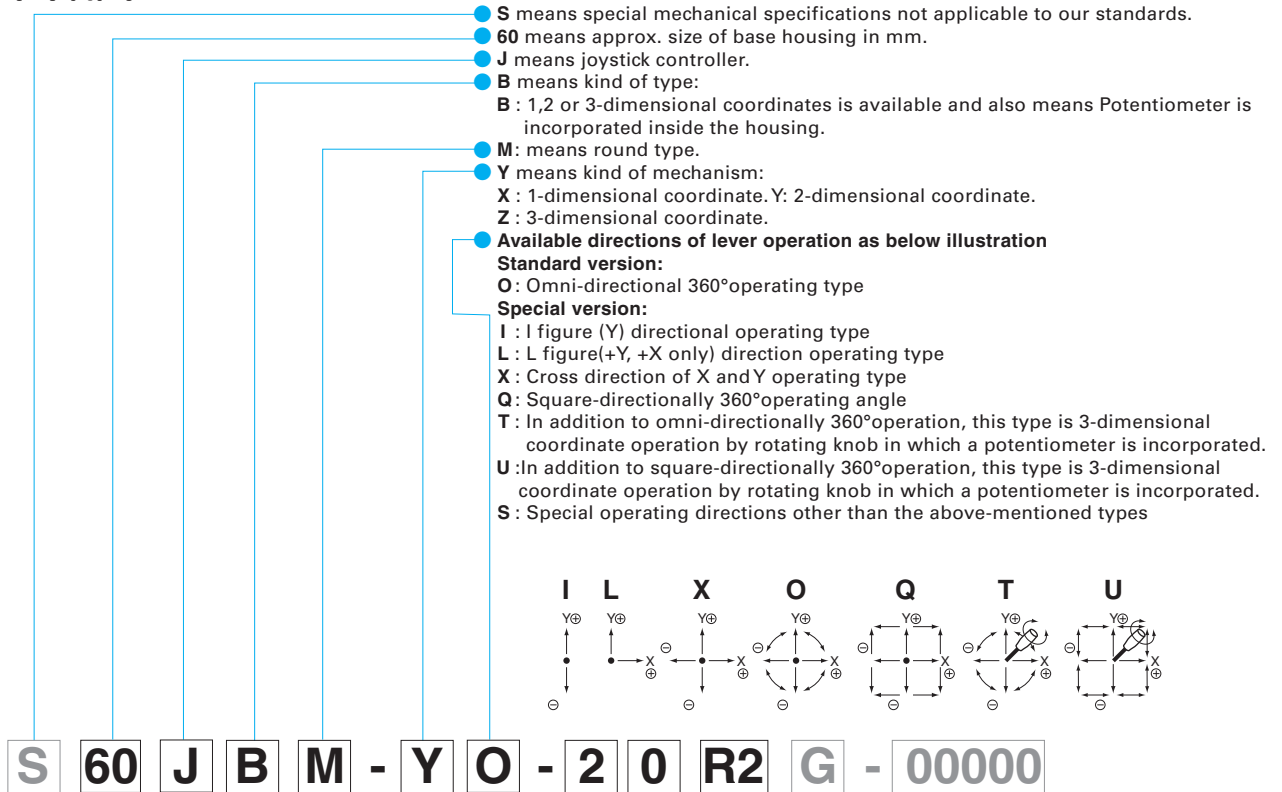


# 60JB

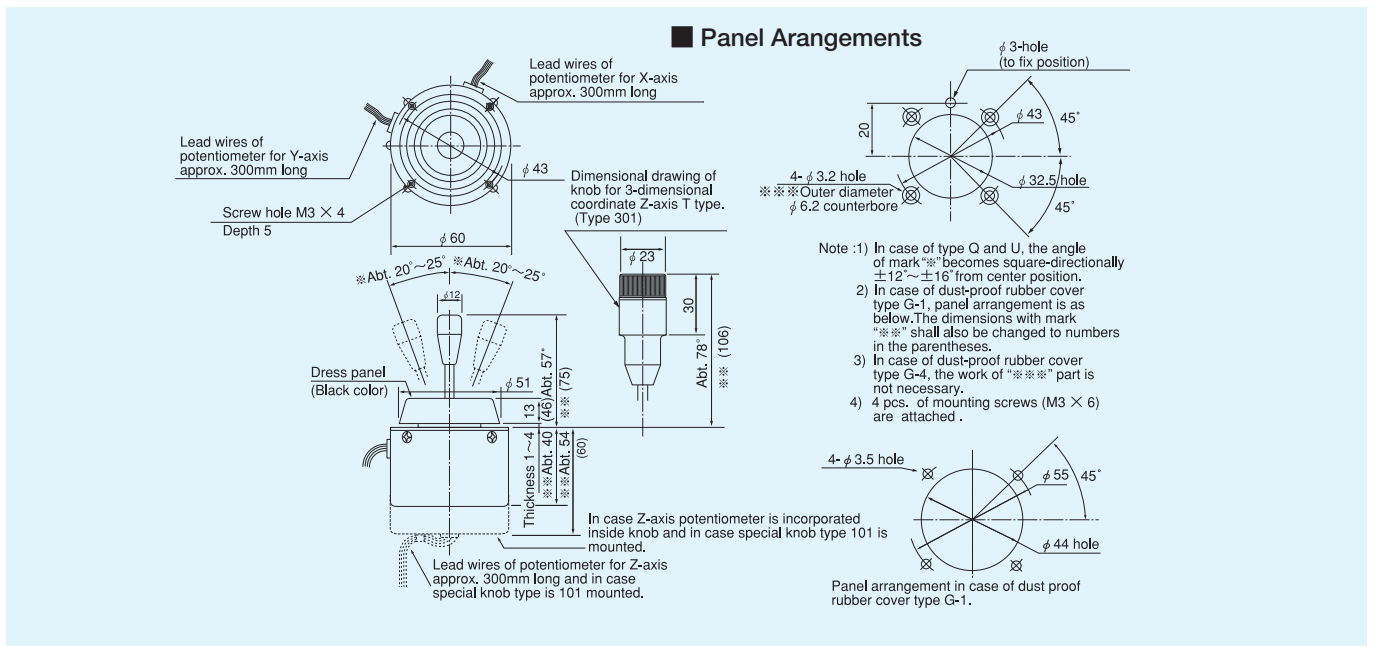
- Potentiometer incorporated type
- With conductive plastic element

## Nomenclature



- Number of potentiometers to be incorporated.**  
**0** : no potentiometer incorporated. **2** : 2 potentiometers incorporated.  
**1** : 1 potentiometer incorporated. **3** : 3 potentiometers incorporated.  
**Number of switches to be incorporated.**  
**0** : no switch incorporated. **1** : 1 switch incorporated. **2** : 2 switches incorporated.  
**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





**60JBM-YO-20R2**  
(Standard 2-dimensional coordinate type)



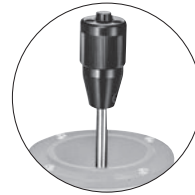
**60JBM-YO-20R2G**  
(With dust-proof rubber type G-1)



**60JBM-ZT-30R3G**  
(3-dimensional coordinate, Z axis potentiometer-inside-knob incorporated type and flat shaped rubber cover type G-4)

When the dust-proof rubber cover is required, the type will be G-1 unless particularly specified. The height from the mounting surface is about 75mm.

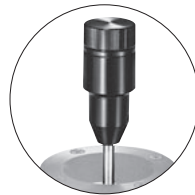
**Special Knobs Available**  
For detailed dimensions, please refer to page 52.



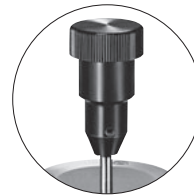
Knob 101



Knob 202



Knob 301



Knob 302



Knob 305

**STANDARD SPECIFICATIONS**

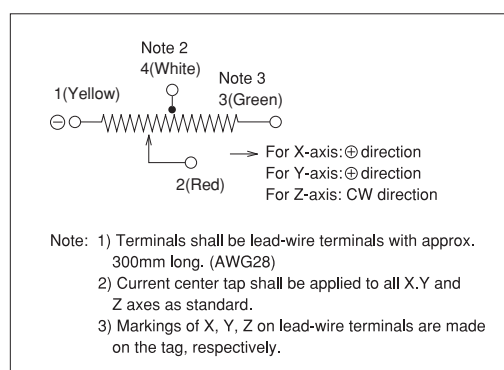
**Mechanical Performance**

<b>Controlling range of operating lever</b>	Controlling range of operating lever : ● 2-dimensional coordinate type : Omni-directionally approx. $\pm 20^\circ \sim \pm 25^\circ$ operation from center position. ● 3-dimensional coordinate type : Approx. $\pm 45^\circ \sim \pm 50^\circ$ operation from the center position of knob, in addition to the controlling range of 2-dimensional coordinate type.
<b>Operating force</b>	Standard spring return device (Automatically return to center) - X, Y directions: Approx. 0.8 ~ 1.5N (80 ~ 150gf.) [with 2 springs (with directive feeling) as standard version] - X, Y directions: Approx. 1 ~ 5N (100 ~ 500gf.) [with 1 spring (omni-directional type) as optional version] - Z direction: Approx. 20 ~ 85mN·m (200 ~ 850gf·cm)
<b>Operating temperature range</b>	-20°C ~ +65°C
<b>Vibration</b>	10 ~ 55Hz 98m/s <sup>2</sup>
<b>Shock</b>	294m/s <sup>2</sup>
<b>Life expectancy</b>	Approx. 5,000,000 operations
<b>Mass</b>	2-dimensional coordinate type : Approx. 240g 3-dimensional coordinate type : Approx. 300g

**Electrical Performance**

<b>Potentiometers mounted</b>	Special resistive element is exclusively used for 60JB series, 10kΩ±15%, 0.2W (conductive plastic resistive element) Electrical rotating angle approx. 40° Independent linearity tolerance ±3% In case of 3-dimensional coordinate Z-axis potentiometer-inside-knob incorporated type (T-type), the following potentiometer is used: SFCP12AC 10kΩ±15% Independent linearity tolerance±3%, 0.06W Electrical rotating angle : Approx. 90°
<b>Output smoothness</b>	Below 0.2% against input voltage.
<b>Contact resistance variation</b>	Below 6% C.R.V.
<b>Resolution</b>	Essentially infinite
<b>Dielectric strength</b>	1 minute at 500V.A.C.
<b>Insulation resistance</b>	Over 1,000MΩ at 500V.D.C.

**Terminal Connection Diagram**



**Special Specifications Available**

Please see page 51, a table of "Standard and Special Specifications Available".