

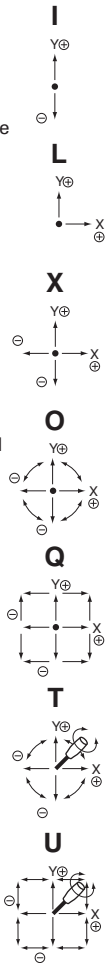
# 90JA · 90JB

● 90JA: Potentiometer outside-mounted ● 90JB: Potentiometer incorporated ● With conductive plastic element

## Nomenclature

S means special mechanical specifications not applicable to our standards.

- 90 means approx. size of base housing in mm.
- J means joystick controller.
- A means kind of type :  
A : 1,2 or 3-dimensional coordinate is available and also means Potentiometer outside-mounted type.  
B : 1,2 or 3-dimensional coordinate Potentiometer is incorporated inside the housing.
- M : means round type
- Y means kind of mechanism : X 1-dimensional coordinate.  
Y : 2-dimensional coordinate. Z: 3-dimensional coordinate.  
4 and more numbers : Over 4-dimensional coordinate.
- Available directions of lever operation  
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 directional of X and Y operating type.  
Q : Square-directional 360° operating angle.  
T : In addition to omni-directional 360° operation, this type is 3-dimensional coordinate operation by rotating knob in which a potentiometer is incorporated.  
U : In addition to square-directional 360° operation, this type is 3-dimensional coordinate operation by rotating knob in which a potentiometer is incorporated.  
S : Special operating directions other than the above-mentioned types.

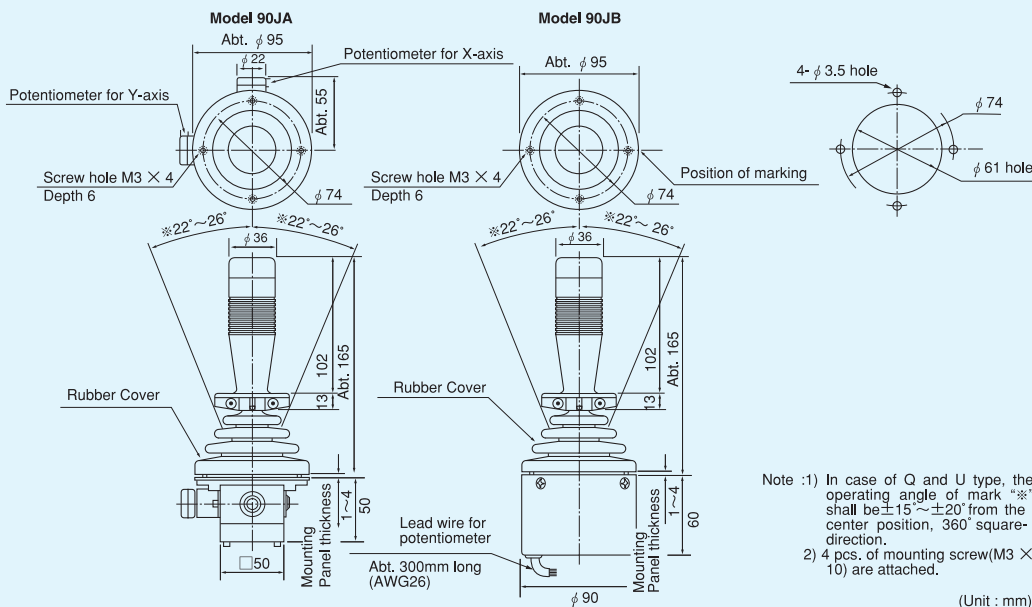


**S** **90** **J** **A** **M** - **Y** **O** - **2** **0** **R2** **G** - **00000**

- 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.  
3...3 switches incorporated. 4...4 switches incorporated. 5...5 switches incorporated.  
6...6 and over 6 switches incorporated. 9...others.
- With spring return device (90JA · JB standard) :  
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.(90JA · JB standard) P : with sub-panel or mounting.
- Special part number :  
In case we produce customized product, we add 4-digit or 5-digit branch number.

## Standard Dimensions

### Panel Arrangements





**90JAM-YO-20R2G**  
(Standard

2-dimensional coordinate type)



**90JBM-YO-20R2G**  
(Standard

2-dimensional coordinate type)

## STANDARD SPECIFICATIONS

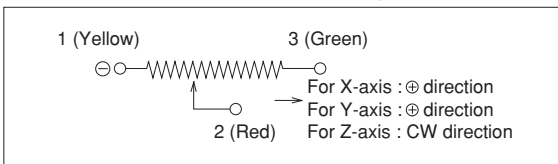
### Mechanical Performance

<b>Controlling range of operating lever</b>	<ul style="list-style-type: none"> <li>● 2-dimensional coordinate type : Approx. <math>\pm 22^\circ \sim \pm 26^\circ</math> omni-direction from center position.</li> <li>● 3-dimensional coordinate type : Approx. <math>\pm 45^\circ \sim \pm 50^\circ</math> operation from center position of knob in addition to the operating range of 2-dimensional coordinate type.</li> </ul>
<b>Operating force</b>	Standard spring return device : Automatically return to center. X, Y directions : Approx. 2 ~ 12N (200 ~ 1,200gf) 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. 650g 3-dimensional coordinate type : Approx. 750g

### Electrical Performance

<b>Potentiometer mounted</b>	90JA type : SF22E, 10kΩ±15%, 0.2W, (conductive plastic resistive element) Independent linearity tolerance ±3% Electrical rotating angle for X & Y axis : Approx. 44° 90JB type : Special resistive element is exclusively used for 90JB series : 10kΩ±15%, 0.2W (conductive plastic resistive element) Independent linearity tolerance ±3% Electrical rotating angle for X & Y axis : Approx. 44° In case of 90JA and 90JB with 3-dimensional coordinate Z-axis potentiometer-inside-knob incorporated type, the following potentiometer is used: SF22AC, 10kΩ±15%, 0.3W, Independent linearity tolerance ±3% Electrical rotating angle: Approx. 90°
<b>Output smoothness</b>	Below 0.2% against input voltage.
<b>Contact resistance variation</b>	Below 5% C.R.V.
<b>Resolution</b>	Essentially infinite.
<b>Dielectric strength</b>	1 minute at 500 V.A.C.
<b>Insulation resistance</b>	Over 1,000 MΩ at 500 V.D.C.

### Terminal Connection Diagram



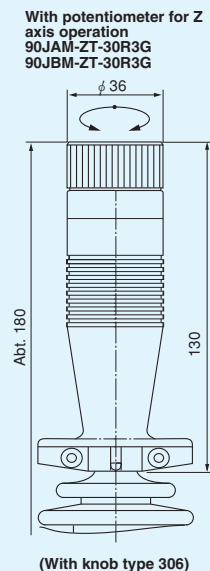
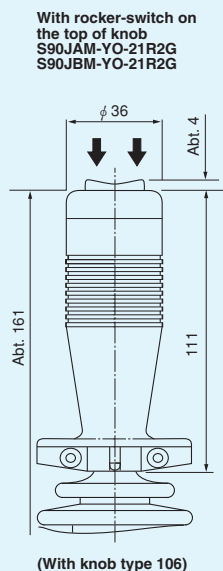
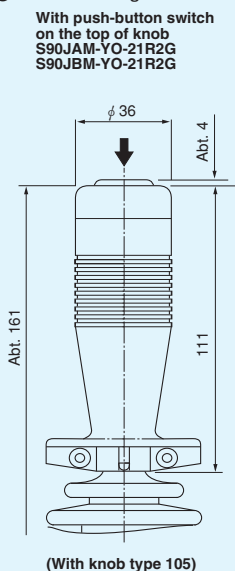
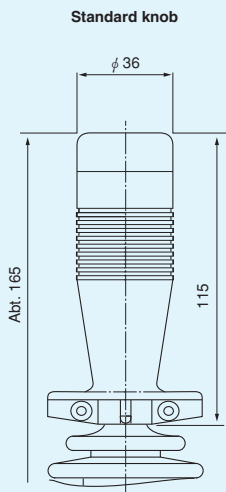
### Special Specifications Available

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

⊙ For outdoor applications, please use model 90JA series.

### Special Knobs Available

The following versions are available to knob for both models 90JAM and 90JBM.



(Unit : mm)