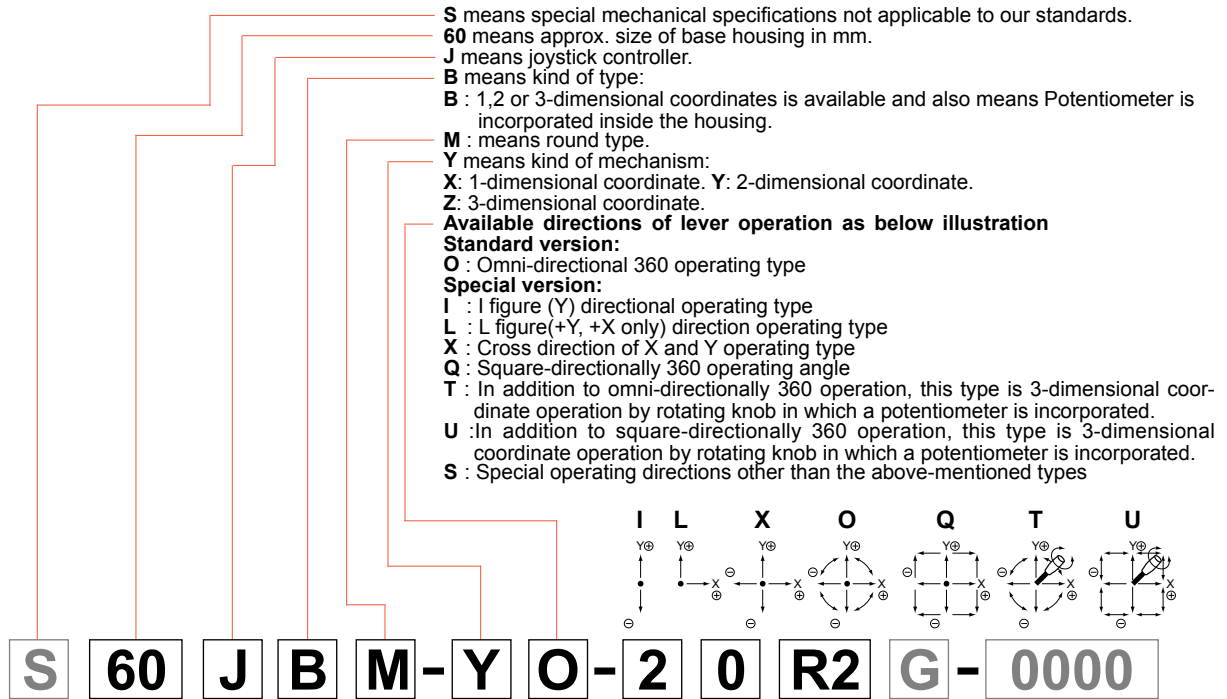




Model 60JB Potentiometer incorporated type

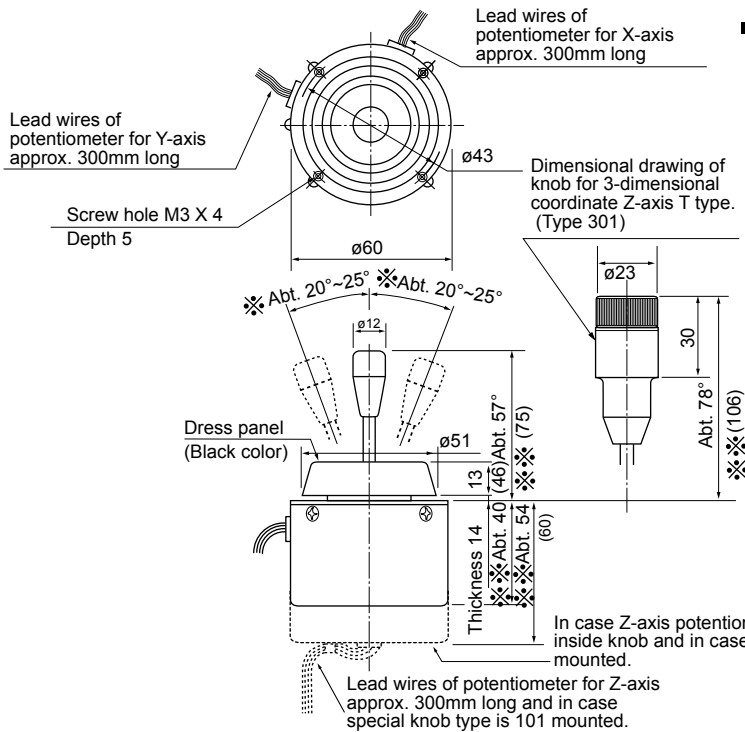
Potentiometer with a conductive plastic resistive element

Nomenclature

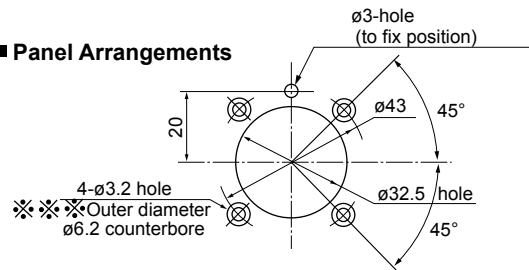


Number of potentiometers to be incorporated.
0 no potentiometer incorporated. **2** potentiometers incorporated. **1** potentiometer incorporated. **3** potentiometers incorporated.
Number of switches to be incorporated.
0 no switch incorporated. **1** switch incorporated. **2** switches incorporated.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

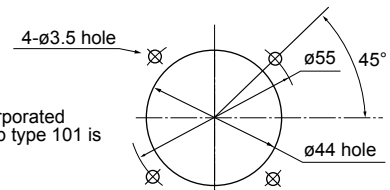
Standard Dimensions



Panel Arrangements



- Note:
- In case of type Q and U, the angle of mark "※※※" becomes square-directionally and $\pm 12^\circ \sim \pm 16^\circ$ from center position.
 - In case of dust-proof rubber cover type G-1, panel arrangement is as below. The dimensions with mark "※※※" shall also be changed to numbers in the parentheses.
 - In case of dust-proof cover type G-4, the work of "※※※" part is not necessary.
 - 4 pcs. of mounting screw (M3 X 6) are attached.



Panel arrangement in case of dust proof rubber cover type G-1.

(Unit : mm)

Standard Specifications

Mechanical Performance

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.

Operating force :

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)

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

Vibration : 10~55Hz 98m/s²

Shock : 294m/s²

Life expectancy : Approx. 5,000,000 operations

Mass : 2-dimensional coordinate type : Approx. 240g

3-dimensional coordinate type : Approx. 300g

Electrical Performance

Potentiometers mounted :

Special resistive element is exclusively used for 60JB series, 10k Ω \pm 15%, 0.2W (Electrical rotating angle approx. 40°), independent linearity tolerance \pm 3% (conductive plastic resistive element).

In case of 3-dimensional coordinate Z-axis potentiometer-inside-knob incorporated type (T-type), the following potentiometer is used :

SFCP12AC 10k Ω \pm 15%. independent linearity tolerance \pm 3%, 0.06W (Electrical rotating angle : Approx. 90°).

Output smoothness : Below 0.2% against input voltage.

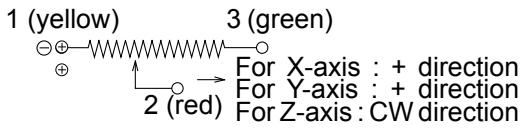
Contact resistance variation : Below 6% C.R.V.

Resolution : Essentially infinite

Dielectric strength : 1 minute at 500V.A.C.

Insulation resistance : Over 1,000M Ω at 500V.D.C.

Terminal Connection Diagram



Note :1) Terminals shall be lead-wire type, whose length is approx. 300mm long . (AWG26)
2) Output leadwires from X, Y and Z axes are discriminated by the tags and similar device attached on respective leadwires.



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



60JBM-ZT-30R3
(3-dimensional coordinate Z-axis
potentiometer-inside-knob
incorporated type) and flat
shaped rubber cover (type G-4)



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

ALTHERIS bv

Scheveningseweg 15
2517 KS DEN HAAG
The Netherlands

+31 (0)70 3924421

+31 (0)70 3644249

Offices in : Benelux | Germany | France | UK | Italy | USA

www.altheris.com

sales@altheris.nl

LEADERS IN SENSORS & HEAVY DUTY JOYSTICKS

ALTHERIS
SENSORS & CONTROLS