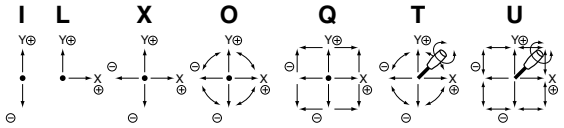
60JB

Potentiometer with a conductive plastic resistive element

Nomenclature

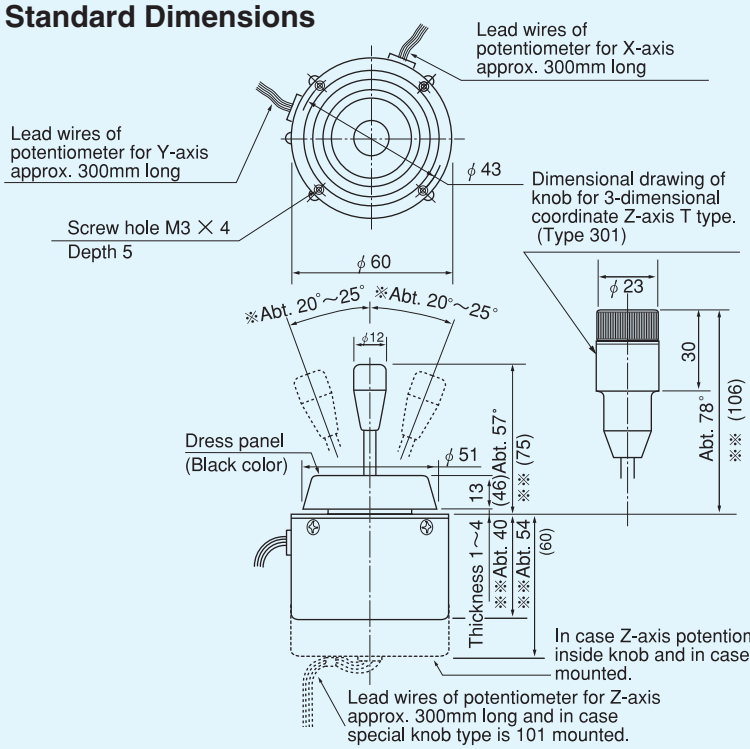
- **S** means special mechanical specifications not applicable to our standards.
- **60** means approx. size of base housing in mm.
- **J** means joystick controller.
- **B** means kind of type:
  B : 1,2 or 3-dimensional coordinates is available and also means Potentiometer is incorporated inside the housing.
- **M** : means round type.
- **Y** means kind of mechanism:
  X : 1-dimensional coordinate. **Y**: 2-dimensional coordinate.
  Z : 3-dimensional coordinate.
- **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) direction operating type
  X : Cross direction of X and Y operating type
  Q : Square-directionally 360˚ operating angle
  T : In addition to omni-directionally 360˚ operation, this type is 3-dimensional coordinate operation by rotating knob in which a potentiometer is incorporated.
  U :In addition to square-directionally 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



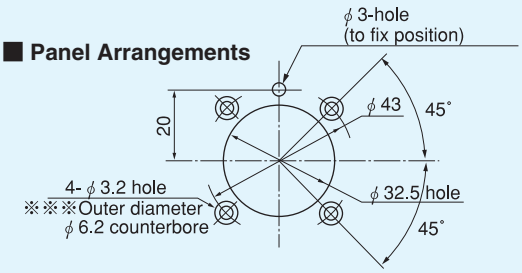
S	60	J	B	M	-	Y	O	-	2	0	R2	G	-	00000

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.
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.

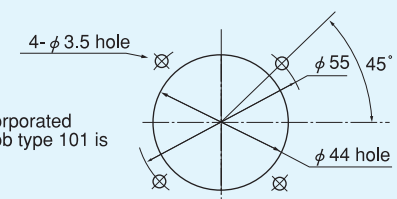
Standard Dimensions



■ Panel Arrangements



Note :1) In case of type Q and U, the angle of mark"※"becomes square-directionally ±12˚~±16˚from center position.
2) 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.
3) In case of dust-proof rubber cover type G-4, the work of "※※※" part is not necessary.
4) 4 pcs. of mounting screws (M3 × 6) are attached .



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

(Unit : mm)

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

S60JBM-ZT-30R3G
(3-dimensional coordinate, knob type 301 and flat shaped rubber cover type G-4)

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

STANDARD SPECIFICATIONS

●Mechanical Performance

Controlling range of operating lever :

- 2-dimensional coordinate type : Omni-directionally approx. ±20°～±25° operation from center position.
- 3-dimensional coordinate type : Approx. ±45°～±50° 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°C～+65°C
Vibration : 10～55Hz 98m/s^2
Shock : 294m/s^2
Life expectancy : Approx. 5,000,000 operations
Mass : 2-dimensional coordinate type : Approx. 240g
3-dimensional coordinate type : Approx. 300g

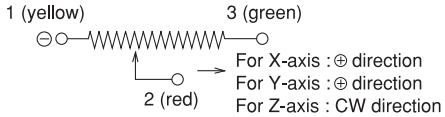
●Electrical Performance

Potentiometers mounted :

Special resistive element is exclusively used for 60JB series, 10kΩ±15%, 0.2W (Electrical rotating angle approx. 40°), independent linearity tolerance±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 10kΩ±15% . independent linearity tolerance±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 1,000MΩ 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.

●Special Specifications Available

Please see page 47, a table of "Standard and Special Specifications Available".