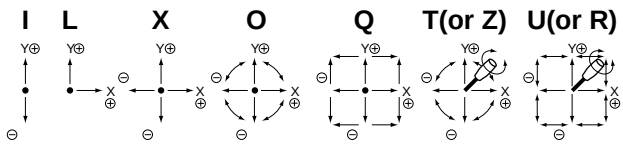
50JA

Nomenclature

S means special mechanical specifications not applicable to our standards.
50 means approx. size of base housing in mm
J means joystick controller.
A means type available with 1-, 2- and 3-dimensional coordinates.
Potentiometers outside-mounted type.
K means square shape.
Y means kind of mechanism:
X means 1-dimensional coordinate. **Y** means 2-dimensional coordinate
Z means 3-dimensional coordinate.

Available directions of lever operation as below illustration:
(Standard Version)
O : Omni-directionally 360° operating type.
(Special Version)
Q : Square-directionally 360° operating type.
X : Cross direction of X and Y only operating type
I : I-figure (Y) direction only operating type.
L : L-figure (+Y, +X only) direction operating type.
Z : In addition to 360° omni-directional operation. this type is also available with 3-dimensional coordinate operation by rotating an operating lever. Potentiometer is mounted on the body side of joystick in case of standard version, and also can be incorporated inside the knob (T type) on request.
R : In addition to operating directions of type Q, this type is also available with 3-dimensional coordinate operation by rotating an operating lever. Potentiometer is mounted on the body side of joystick in case of standard version and also can be incorporated inside the knob (U type) on request.
S : Special operating directions other than the above-mentioned types.



S	50	J	A	K	-	Y	O	-	2	0	R2	G	-	0000

Number of potentiometers to be mounted.
0···no potentiometer mounted.
1···1 potentiometer mounted.
2···2 potentiometers mounted.
3···3 potentiometers mounted.

Number of switches to be mounted.
0···no switch mounted.
1···1 switch mounted.
2···2 switches mounted.
3···3 switches mounted.
4···4 switches mounted.
5···5 switches mounted.
6···6 and over 6 switches mounted.
9···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 basing on customer's specifications with 4 digits number.

50JAK-YO-20
(standard)
(2-dimensional coordinate type)

50JAK-ZZ-30
(3-dimensional coordinate type)

STANDARD SPECIFICATIONS

●Mechanical Performances

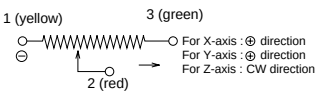
Controlling range of operating lever :
- 2-dimensional coordinate type : Omni-directionally approx.±30°～±35°, operation from center position.
- 3-dimensional coordinate type : Approx. 320° rotation by knob-operation in addition to the controlling range of 2-dimensional coordinate operation.
  (in case of center-returning type with spring return device, the operating range is approx. ±45°～±50° from center position.)

Operating force : Without spring return device.
Standard : Approx. 0.5～0.8N (50～80gf.)
High torque type : Approx. 2～6N (200～600gf.)
With spring return device : (subject to directivity)
X, Y directions : Approx. 0.8～1.5N (80～150gf)
Z direction : Approx. 20～85mN•m (200～850gf•cm.)
Operating temperature range : -20°C～+65°C
Vibration : 10～55Hz 98m/s^2 (10G)
Shock : 294m/s^2 (30G)
Life expectancy : Approx. 5,000,000 operations
Mass : 2-dimensional coordinate type : Approx. 280g
3-dimensional coordinate type : Approx. 230g

●Electrical Performances

Potentiometers mounted : SFCP22E 10k Ω±15% , 0.2W, independent linearity tolerance±3% (conductive plastic resistive element).
For X and Y axes : Electrical rotating angle : Approx. 60°
For Z axis : Electrical rotating angle : Approx. 320°
With spring return device for Z axis : Electrical rotating angle approx. 90°
[All terminals can be fitted with the AMP110 series fasten receptacle (2.8 × 0.5mm) or equivalents.]
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 5% 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

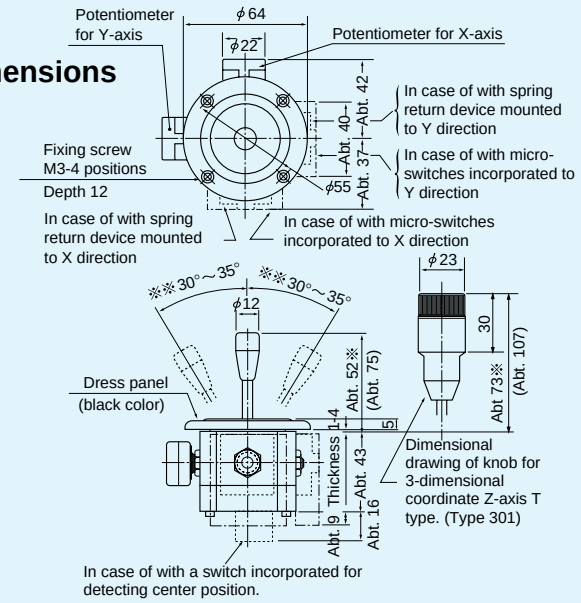


Note : Terminals coming out from potentiometers shall be lead-wire terminals with approx. 300mm long in case of Z-axis potentiometer incorporated type.(AWG26)

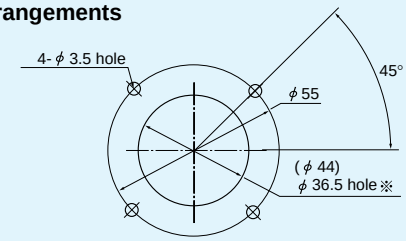
●Special Specifications Available

Please see page 41, a table of “Standard and Special Specifications Available”.

Standard Dimensions



■Panel Arrangements



Note : In case of with dust proof rubber cover, the dimensions of “※” part changes to ϕ 44 mm. hole.

Note: 1) In case of with dust-proof rubber cover, the dimensions of dress panel and ※part dimension shall change to numbers in parentheses.
2) In case of type Q, R and U, the angle of mark “※” becomes 360° square-directionally and ±20°～±25° from center position.
3) 4 pcs. of mounting screws (M3 × 14) are attached.

(Unit : mm)