



## Features

■ **Two functions in one, a touch switch built into the ball plunger.**

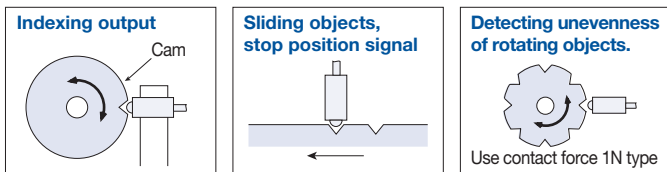
Able to provide identifying and positioning functions using notches on index rotating or sliding objects as well as output a confirmation signal.

Reduces the number of components and design man-hours, allowing miniaturization of the machine.

■ **For customers selecting contact force of 1 N (-F)**

Please select CS-Touch Switch (refer to P4-3) in case of position or presence detection by straight travel contact and not for sliding.

◎ **CS-Touch Switch provides long stroke with small pre-travel making signal setting easy.**



## Standard specification

### Indexing check

unit: mm

| Product name | Contact force(N) (axial direction) | with LED  |
|--------------|------------------------------------|-----------|
| BP060A       | min.6 max.13                       | BP060A -L |

### Sliding touch

unit: mm

| Product name | Contact force(N) (axial direction) | with LED   |
|--------------|------------------------------------|------------|
| BP060A -F    | 1                                  | BP060A -LF |

-F: Contact force 1N

-L: LED indicator (120mm from the sensor)

◎The edge surface has not been tempered. Do NOT use it as a stopper.

## Common specification

|                           |   |
|---------------------------|---|
| Switch structure          | Dry contact   |
| Output mode               | A : Normally open   |
| Signal point              | 0.5 from surface  |
| Stroke                    | 0.8   |
| Repeatability             | Both On→Off, Off→On/ 0.01<br>(At operating speed 50-200mm/min)* |
| Movement differential     | 0   |
| Protective structure      | IP40  |
| Contact life time(Spring) | 3 million   |
| Contact material          | SUS 440 HRC 50-   |
| Case material             | SUS 303   |

\*Operating speed slower than 10mm/min is not recommended.

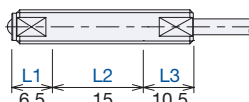
| unit: mm                          |  |
|-----------------------------------|--|
| Cable<br>(Refer to P2-9)          | Standard length 2m Oil resistant $\phi 2.8 / 2$ cores,<br>Tensile strength 30N, minimum bending R7<br>Cable protector (Detachable)                 |
| Operating temperature range       | 0°C-80°C (Ice-free)  |
| Temperature drift                 | 0 (because of no amplifier)  |
| Oscillation                       | 10-55Hz total amplitude 1.5 for X,Y,Z each direction   |
| Impact                            | 300m/s <sup>2</sup> for X,Y,Z each direction   |
| Contact rating<br>(Refer to P7-3) | DC5V-DC24V Steady current : 10 mA or less<br>(rush current: 20 mA or less)<br><b>When using the switch with LED, limit the current below 10mA.</b> |
| Standard accessory                | Two fixing nuts and a toothed washer   |

◎ **The following options are available.**

- LED indicator

## Tightening torque for case screws and nuts

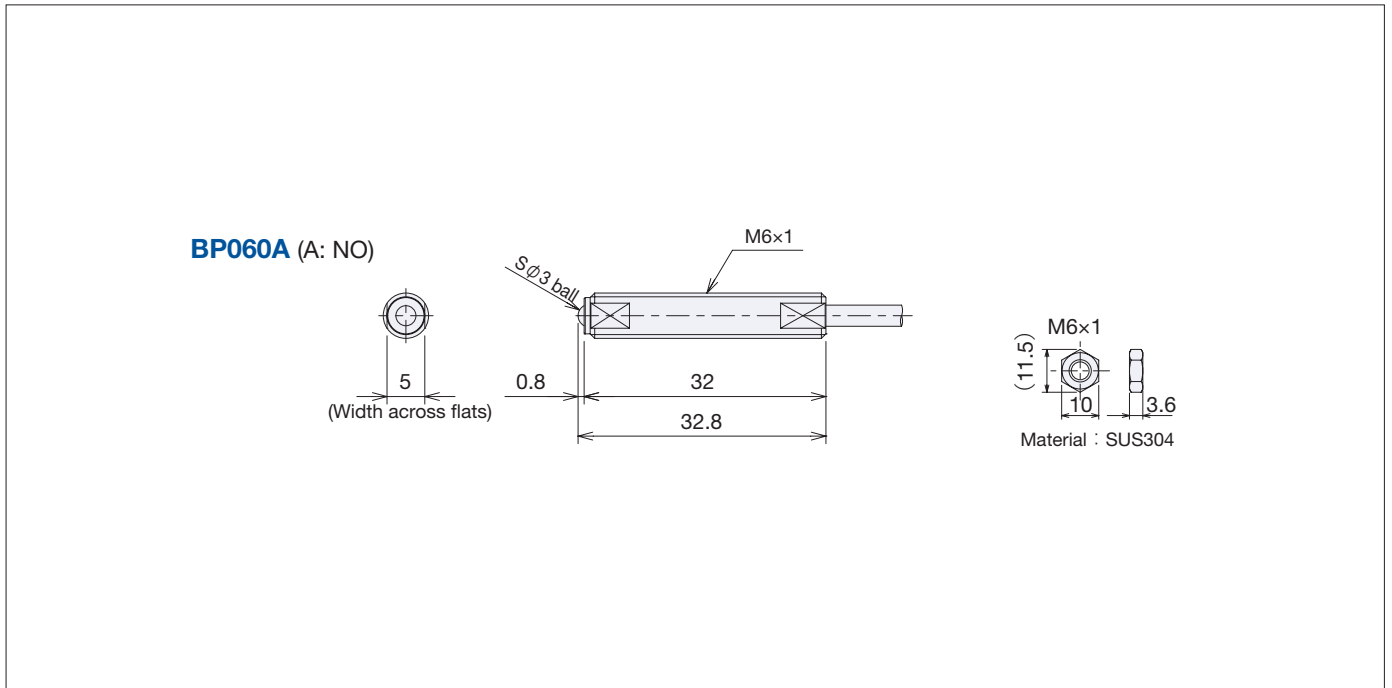
| Applicable model | Tightening torque |      |        |
|------------------|-------------------|------|--------|
|                  | L1                | L2   | L3     |
| BP060A           | 2.5N·m            | 5N·m | 2.5N·m |



## Caution

Use the lower torque (i.e. torque corresponding to L1 and L3) while tightening the bolt between lengths L1 and L2 or L2 and L3 in the picture. Please make sure to use a locknut if the bolt is likely to shift in position due to the vibrational impacts.

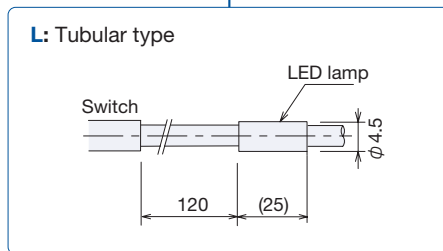
Outer dimension



Options

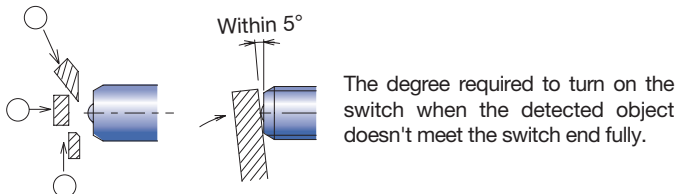
| Product name | LED indicator                             | Contact force            |
|--------------|---|--------------------------|
| BP060A       | Blank: No LED<br>L: 120mm from the switch | Blank: Standard<br>F: 1N |

▶ e.g.) BP060A-L



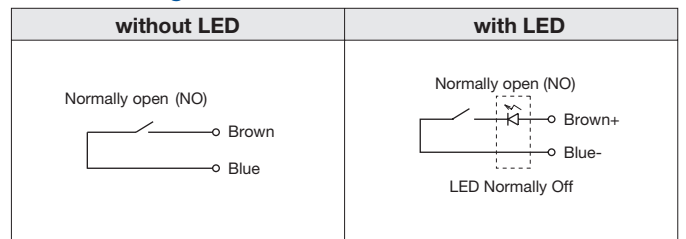
How to use

Suitable for angled touch



- When using for rotation indexing, adjust the position in consideration of eccentricity and core blurring accuracy of rotating objects.
- According to the operating circumstance, the signal point varies due to wear of the contacting part.
- Carefully calculate the angle and roughness of chamfer so that the contacting part is not easily worn off.
- Try not to bend the threaded part during installation. It will cause malfunction.

Circuit diagram



Electrical specification / circuit diagram. (Refer to P2-1)

**When using the switches with LED option, limit the current below 10mA.** (Refer to P7-3 "Confirmation of switch operation")