

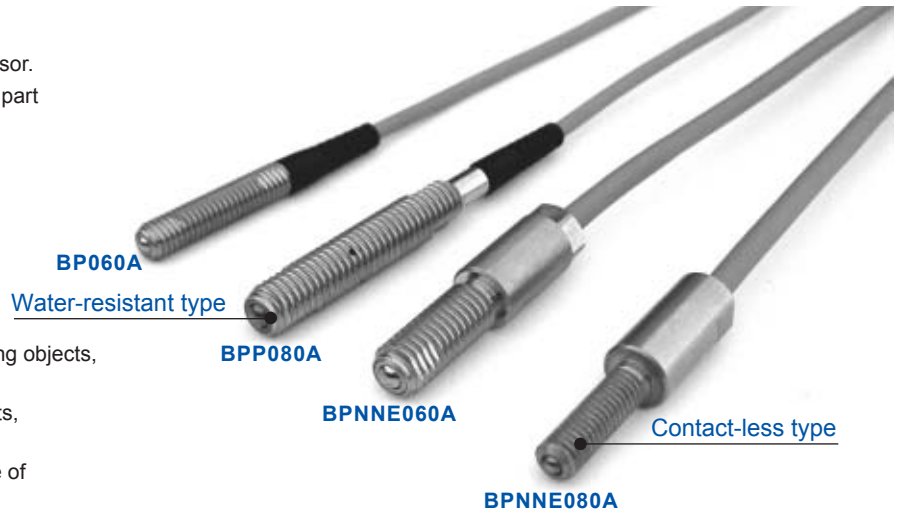
# Ball Plunger with Sensors

## Features

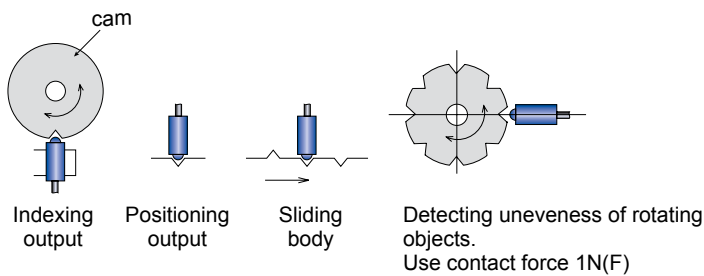
- Ball plunger with built-in actuating signal output sensor.
- Simplicity of designing and quite useful for reduced part costs.
- Assisting reduced equipment size.
- Contact type and Contact-less type are available.

## Application

- Can be used for Indexing and positioning of a rotating objects, and confirmation signal.
- Positioning according to the notch of a sliding objects, and confirmation signal.
- Can be used for confirmation and count of presence of unevenness of the sliding and rotating objects.



## Example



## Common Mechanical Specifications

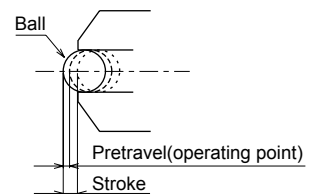
unit : mm

Product No.	Contact type						Contact-less type (NPN / PNP)			
	BP060A	BP080A	BP100A	BPP065A	BPP080A	BPP100A	BPNNE060A BPNE060A	BPNNE080A BPNE080A	BPNNE100A BPNE100A	
Mode	A : NO(normally open)						A : NO(normally open)			
Protective structure	I P40□			I P47(water-resistant)			I P47(water-resistant)			
Stroke	0.8	1.0	1.2	0.8	1.0	1.2	0.8	1.0	1.2	
Pretravel	0.3	0.5	0.7	0.3	0.5	0.7	0.3	0.5	0.7	
Movement differential	0						0.04			
Working temperature range	0 ~ 80°C (with the exception of freeze)									
Temperatuer drift	0						0.03/10 ~ 40°C (MAX)			
Contact force*	MIN	6	8	10	6	8	10	6	8	10
	MAX	13	16	20	13	16	20	13	16	20
Contact life	10 million times									
Contact material	Hardened steel ball(SUJ2 HRC55~)			Tungsten carbide ball			Hardened steel ball(SUJ2 HRC55~)			
Cable	2m Oil-resistant 2-core φ3						2m Oil-resistant 3-core φ4			

\* When ordering low contact force type(1N), add "F" after the type.



Orders for heat-resistant (ambient temperature: 200°C) and sensors provided with vacuum, non-magnetic and other special specifications are also accepted. Please consult your dealer(not available for contact-less type).

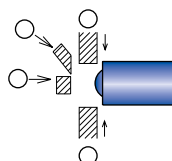


## Electrical Specifications • Circuit Diagrams P5

## Precautions for use

### How to apply detecting objects

Can be used for sliding in every direction.



The end surface is not hardened.

Do not use the end surface as a stopper.

Since the operating points change with wear of contact balls, design so as to reduce wear.

When using for rotation indexing, adjust the position in consideration of eccentricity and core blurring accuracy of rotating objects.