

# Magnetic Proximity Sensors (Reed)

## BP2 Series Cylindrical Reed Sensor

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### General Description

The BP2 Series is a cylindrical reed sensor designed for reliable proximity switching, position detection, and motion sensing. Its robust threaded metal housing (available in M8, M12, and M18 sizes) makes it exceptionally suited for demanding industrial environments where mechanical strength and easy installation are required. The compact form factor allows for versatile mounting in space-constrained applications.

This series is offered in Normally Open (NO), Normally Closed (NC), and Changeover (SPDT) contact forms. BST provides extensive customization options for cable length, connector type, and specific electrical ratings to meet unique application needs.

### Key Features

- Zero Standby Power Consumption
- Multiple Magnetic Sensitivity Options for Flexible Design
- Exceptionally High Reliability with Long Mechanical Life (Billions of Operations)
- Fast Switching Response Time ( $\leq 0.5$  ms)
- IP67 Waterproof Rating for Harsh Environments
- Metal Threaded Housing (M8, M12, M18) for Robust Mounting
- Wide Operating Temperature Range:  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$
- Custom Cable, Connector, and Housing Solutions Available
- RoHS & REACH Compliant

### Application

- Intelligent home appliance
- Industrial Automation & Control (Position/Limit Sensing)
- Automotive Systems (Non-Safety Critical: Brake Pedal, Seatbelt Detection)
- Security & Access Control Equipment
- Fitness and Sports Machinery
- Metering and Counter Devices

### Environmental Specifications

Item	Specification
Vibration Resistance	10 - 2000 Hz, 20 G
Shock Resistance	100 G, 6 ms
Thermal Cycling	-40°C ~ +125°C, 100 cycles
High-Temperature Storage	+125°C
Low-Temperature Storage	-40°C
Humidity Test	85°C, 85% RH
IP Rating	IP67

### Mechanical Specifications

Item	Specification
Housing Material	PA / PET /Stainless Steel / Metal Alloy
Housing Color	Natural Metal / Black
Cable Material	PVC (Standard)
Cable Type	2-wire (NO/NC) / 3-wire (Changeover)
Standard Cable Length	300 mm (Custom lengths available)
Cable Gauge	AWG24 (Other gauges optional)
Thread Size (Standard)	M8 x 1, M12 x 1, M18 x 1.5
Ingress Protection	IP67
Operate Distance	5 – 17.8 mm (Varies with magnet)
Operating Temperature	-40°C to +125°C
Storage Temperature	-40°C to +125°C

### Electrical Specifications

Item	BP2-XXX-A (NO)	BP2-XXX-B (NC)	BP2-XXX-C (Changeover)
Contact Form	Form A (NO)	Form B (NC)	Form C (SPDT)
Rated Power (max)	100 W	10 W	10 W
Switching Voltage (max)	200 V	200 V	200 V
Switching Current (max)	1 A	0.5 A	0.5 A
Breakdown Voltage (min)	400 V	250 V	250 V
Contact Resistance (initial)	≤100 mΩ	≤150 mΩ	≤150 mΩ
Insulation Resistance	≥10 <sup>9</sup> Ω	≥10 <sup>9</sup> Ω	≥10 <sup>9</sup> Ω
Operate Time	≤0.5 ms	≤0.5 ms	≤0.5 ms
Release Time	≤0.5 ms	≤0.5 ms	≤0.5 ms
Switching Frequency	Up to 200 Hz	Up to 200 Hz	Up to 200 Hz

## Part Number Naming & Standard Models

### BP2 – XX – X – XXX

Code	Description
BP2	Series
XX	Housing type (23 = standard rectangular)
X	Cable exit direction (L/R/D)
X	Contact Form: A = NO / B = NC / C = Changeover
XXX	Cable length or customer option code

Model	Contact Form	Rated Power (max)	Switching Voltage (max)	Switching Current (max)	Operate Distance (mm)	Thread Size	Std. Cable Length (mm)
BP2-08-A-300	Normally Open (Form A)	100 W	200 V	1 A	5 - 17.8	M8	300
BP2-08-B-300	Normally Closed (Form B)	10 W	200 V	0.5 A	5 - 17.8	M8	300
BP2-08-C-300	Changeover (Form C)	10 W	200 V	0.5 A	5 - 17.8	M8	300
BP2-12-A-300	Normally Open (Form A)	100 W	200 V	1 A	5 - 17.8	M12	300
BP2-12-B-300	Normally Closed (Form B)	10 W	200 V	0.5 A	5 - 17.8	M12	300
BP2-12-C-300	Changeover (Form C)	10 W	200 V	0.5 A	5 - 17.8	M12	300
BP2-18-A-300	Normally Open (Form A)	100 W	200 V	1 A	5 - 17.8	M18	300
BP2-18-B-300	Normally Closed (Form B)	10 W	200 V	0.5 A	5 - 17.8	M18	300
BP2-18-C-300	Changeover (Form C)	10 W	200 V	0.5 A	5 - 17.8	M18	300
BP2-08-A-500	Normally Open (Form A)	100 W	200 V	1 A	5 - 17.8	M8	500
BP2-08-B-500	Normally Closed (Form B)	10 W	200 V	0.5 A	5 - 17.8	M8	500
BP2-08-C-500	Changeover (Form C)	10 W	200 V	0.5 A	5 - 17.8	M8	500
BP2-12-A-500	Normally Open (Form A)	100 W	200 V	1 A	5 - 17.8	M12	500



Model	Contact Form	Rated Power (max)	Switching Voltage (max)	Switching Current (max)	Operate Distance (mm)	Thread Size	Std.Cable Length (mm)
BP2-12-B-500	Normally Closed (Form B)	10 W	200 V	0.5 A	5 - 17.8	M12	500
BP2-12-C-500	Changeover (Form C)	10 W	200 V	0.5 A	5 - 17.8	M12	500
BP2-18-A-500	Normally Open (Form A)	100 W	200 V	1 A	5 - 17.8	M18	500
BP2-18-B-500	Normally Closed (Form B)	10 W	200 V	0.5 A	5 - 17.8	M18	500
BP2-18-C-500	Changeover (Form C)	10 W	200 V	0.5 A	5 - 17.8	M18	500
BP2-08-A-1000	Normally Open (Form A)	100 W	200 V	1 A	5 - 17.8	M8	1000
BP2-12-B-1000	Normally Closed (Form B)	10 W	200 V	0.5 A	5 - 17.8	M12	1000
BP2-18-C-1000	Changeover (Form C)	10 W	200 V	0.5 A	5 - 17.8	M18	1000

**Important Notes:**

- 1, Physical Dimensions: The datasheet does not provide specific mechanical drawings, please contact BST for more sensor information.
- 2, Parameter Basis: The parameters in the table are based on the "standard" configurations mentioned in the datasheet (e.g., PA housing, black color, AWG24 cable). Selecting other optional features may cause slight variations.
- 3, Magnet Matching: Reed sensors require a magnet to operate. The Operate Distance (5-17.8mm) is influenced by the size, strength, and position of the magnet. Magnet circuit design must be considered during selection.
- 4, Standard models listed above are for reference. Cable length, contact form, lead direction, connector type and electrical ratings can be customized OEM / ODM solutions are available upon request.

Reference Drawing (Different sizes are available, please contact BST for more sensor information)

