

Hall Effect Proximity Switch CYBP8-20DL2

A Hall Effect proximity switch is a non-contact electronic switch, which consist of a permanent magnet or ferromagnetic part as trigger intermediary and a Hall Effect sensor IC. The Hall sensor IC detects the change of the magnet field when the permanent magnet comes in the close proximity to it and generates an electric signal. This signal is amplified and rectified to control the output signal of the switch.

Compared with magneto-electric, optoelectronic and capacitive proximity switches, Hall proximity switches have the advantages of good output wave shape, high stability, low costs, unaffected by oil, dirt and vibration, and wide operating temperature etc. They are very suitable for integrating in PC systems and various kinds of industrial control equipments, and are optimal switches for position control, speed measurement, counting, direction detection and automatic protection etc.

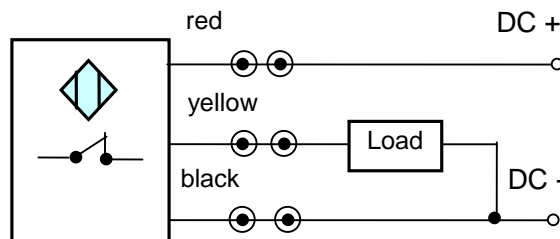
General Properties

Ambient temperature:	-25/40°C~+125/150°C	Ambient humidity:	35%~95%
Max. supply current:	≤ 25mA	Reverse supply voltage:	≤ -35V
Frequency range:	0~50KHz	Position repeatability:	0.02mm
Overcurrent indication:	Red LED	Sensing object:	Magnet S-pole
Max. output current:	200mA	Power supply:	8 – 30V
Max. sensing distance:	8mm	Max. voltage drop:	1.0V
Output type	OC, PNP, closed single	Case material:	Brass, chrome plated
Isolation voltage:	AC 1500V, 50/60Hz, 1min	Cylinder with Screw	M12 x 1, length: 40mm
Action indication	Yes	Output surge protection	Yes
Output short protection	Yes	Protection class	IP66

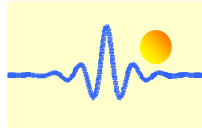
OC: Output transistor without any inner connected resistor. An outer resistor must be connected to the output for applications.

Operation Point (Gauss)			Release Point (Gauss)			Hysteresis (Gauss)		
Min	typ.	Max	Min	typ.	Max	Min	typ.	Max
70	200	350	50	140	330	20	60	80

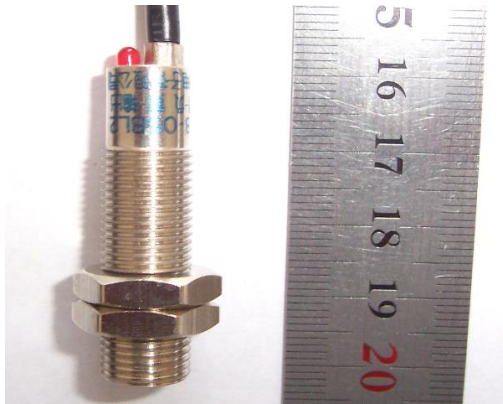
Connection



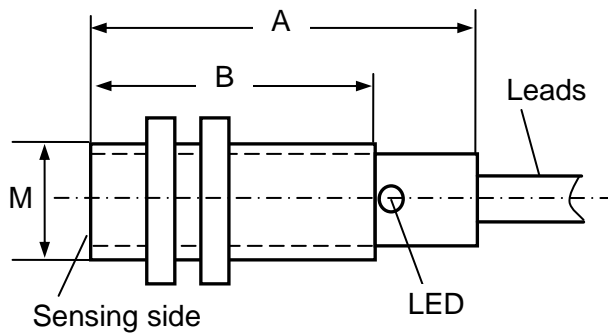
R: Pull-up resistor, 1k ~ 10k, normally 2k~3k



Mounting Dimensions

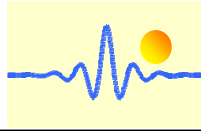


Diameter	Screw pitch (mm)	Length (mm)	Length of leads (m)
M12	1.0	40	2.0 max 0.5 Typical



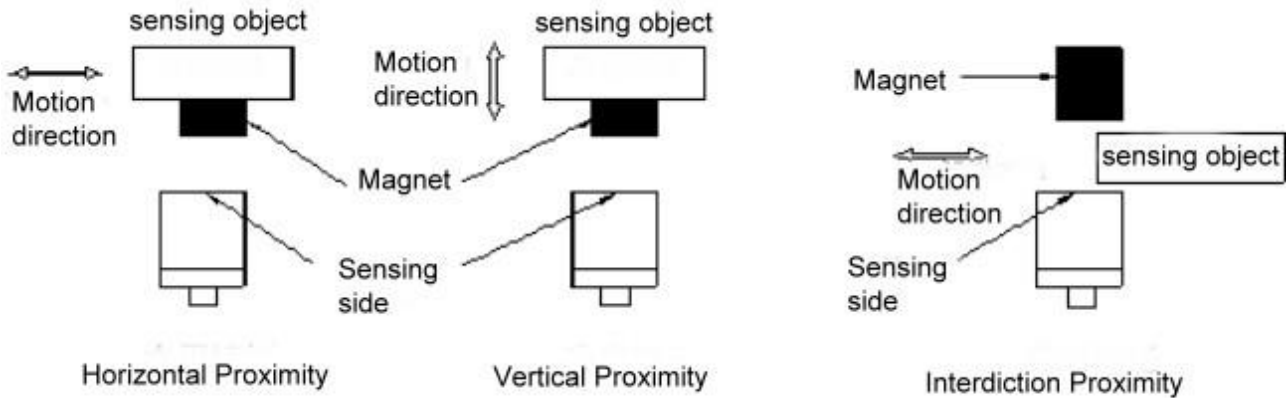
Case Style	L2
A (mm)	40
B (mm)	30
M (mm)	M12 x 1





Application Notes

1) Application Methods



2) Magnets

The magnets can be selected according to the maximum sensing distance. The following table show some standard NdFeB and SmCo magnets for the applications.

SmCo Magnets (maximum working temperature: 250°C – 350°C)

Type	Dimensions	Type	Dimensions	Type	Dimensions	Type	Dimensions
B1-S	4x3.3x(1.5)	B4-S	4.5x4.5x(4)	D8-S	Φ8x(3.5)	D15-S	Φ15x(6)
B2-S	5x4x(2.2)	D3-S	Φ3x(5)	D10-S	Φ10x(6)	D18-S	Φ18x(8)
B3-S	5x5x(2.5)	D6-S	Φ6x(3.5)	D12-S	Φ12x(4)		

NdFeB Magnets (maximum working temperature: 80°C – 200°C)

Type	Dimensions	Type	Dimensions	Type	Dimensions	Type	Dimensions
B1-N	4x3.3x(1.5)	B4-N	4.5x4.5x(4)	D8-N	Φ8x(3.5)	D15-N	Φ15x(6)
B2-N	5x4x(2.2)	D3-N	Φ3x(5)	D10-N	Φ10x(6)	D18-N	Φ18x(8)
B3-N	5x5x(2.5)	D6-N	Φ6x(3.5)	D12-N	Φ12x(4)		

Magnetization direction: in height direction (dimension in bracket)

Maximum sensing distance of magnets (T=25°C)

Magnet type (N or S)	B1	B2	B3	B4	D3	D6	D8	D10	D12	D15	D18
Sensing distance (mm)	3.0	4.0	5.0	6.0	3.0	7.0	9.0	12.0	12.0	16.0	20.0

For further info visit please website: <http://www.cy-magnetics.com>